Esso Australia Pty Ltd

FINAL WELL REPORT

SCALLOP-1

JANUARY to MARCH 2003

Esso Australia Pty Ltd

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SCALLOP-1

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VOLUME 1 of 4

Esso Australia Pty Ltd
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01st July, 2003

Mr. D. L. Whiteman
Field Drilling Manager
ExxonMobil Development Company, Drilling
Melbourne, Australia

SCALLOP-1 FINAL WELL REPORT

Dan,

Attached is the Final Well Report for the Scallop-1 exploration well which was drilled with the Transocean semi-submersible rig "Sedco 702" in Licence Area VIC/RL2. The well was drilled vertically and deepened to 3,174mMD, logged, plugged and abandoned in 33.0 days versus the original AFE time of 42.5 days.

Non-productive time (NPT) was 26.0 hours (3.3%) and was primarily associated with:

(a) waiting on weather prior to commencing demooring operations (17.25 hours);

(b) logging problems associated with a MDT equipment fault at surface and re-logging a section of the hole interval (5.25 hours).

(c) integrity issues on the kill line side of BOP system during pressure testing operations (1.75 hours).

AFE NPT allowance was 3.0 days. The estimated final drilling cost is US$10.2M (includes scope changes), which is 15% below the original AFE which was approved for US$12.0M.

There were two minor reportable incidents during Scallop-1 drilling. The first involved the accidental venting of Barite/Bentonite product over a supply vessel while it was offloading cargo next to the rig. The second incident was when a floorman irrigated his eye at an eye wash station when a drop of mud got in his eye during tripping operations while he was wearing safety glasses, noting that no mud got onto the safety glasses.

Yours faithfully,

Colin Johancsik

Colin A. Johnacsik
Engineering Drilling Manager

/Attach.

cc:	G.A. Nash	EAPL - Melbourne (1 hard plus 1 electronic copy)
	S. Sazenis	EAPL - Melbourne (3 hard plus 5 electronic copies for distribution with the Well Completion Report)
	Library	EAPL - Melbourne (2 hard plus 2 electronic copies)
	S. Clarke	EMDC Drilling - Houston (1 hard plus 1 electronic copy)
	Drilling Files	EMDC Drilling - Melbourne (Original plus 1 hard copy plus 2 electronic copies)

ESSO AUSTRALIA PTY LTD

SCALLOP-1
EXPLORATION WELL

TRANSCOCEAN SEMI-SUBMERSIBLE
"SEDCO 702"

FINAL WELL REPORT

PREPARED BY:
RUDOLF M FüRCHTENICHT
APRIL 2003

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GENERAL WELL SUMMARY

Well Summary Data Sheet

WELL SUMMARY DATA SHEET

Well Name:	Scallop-1		
Partners:	Esso Australia Pty Ltd	-	25 %
	BHP Billiton	-	25 %
	Woodside Petroleum	-	30 %
	Santos	-	20 %
Block:	License VIC /RL2		
	Bass Strait, Australia		
Final Well Location:	**GDA 1994**		
	Latitude	:	38° 12' 48.615" South
	Longitude	:	147° 35' 28.879" East
	MGA 94, Zone 55, CM 147 deg E		
	Easting	:	639,314.95 mE
	Northing	:	5,769,298.84 mN
Rig Contractor:	Transocean - Semi-Submersible Sedco 702		
Well Type:	Offshore, Wildcat		
Well Profile:	Vertical Well		
Actual Depths:	Water Depth	:	109.6 m
	RT - Sea Level	:	25.9 mMD/TVD
	RT - Mudline	:	135.5 mMD/TVD
	RT - Total Depth	:	3,174.0 mMD/ 3,173.5 mTVD
	***Note**: All depths referenced to Mean Sea Level (MSL).*		
Casings Setting Depths:	30" x 20" Conductor Casing	:	179.0 mMD/TVD
	20" x 13-3/8" Surface Casing	:	900.8 mMD/TVD
Key Operational Dates:	Commenced Tow	:	23:00 hrs, 29 Jan, 2003
	Arrived on Location	:	03:30 hrs, 01 Feb, 2003
	Spudded Well	:	12:00 hrs, 02 Feb, 2003
	Reached Original TD	:	13:30 hrs, 21 Feb, 2003
	Reached Final TD	:	09:45 hrs, 22 Feb, 2003
	Completed Logging	:	05:30 hrs, 27 Feb, 2003
	Completed P&A	:	13:30 hrs, 02 Mar, 2003
	Rig Release	:	00:00 hrs, 04 Mar, 2003
Time Analysis:	AFE Days	:	42.5 days
	Total Actual Days	:	33.04 days (*including Scope Changes*)
	Total NPT Days	:	1.08 days
Cost Analysis:	Original AFE	:	A$24,048,000
	Estimated Well Costs	:	A$19,653,600
	FOREX	:	A$1.00 = US$0.52
Key Performance Indicators:	Cost per metre	:	A$4,061 per metre / US$2,112 per metre
	Cost per day	:	A$390.0k per day / US$202.9k per day
	***Note**: Excludes (i) Logging (ii) Mob/Demob and (iii) Tangibles.*		

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Drilling Complexity Index

Date: 26/03/2003

Field: Near Field Exploration Well

Well: Scallop-1

Engineer: Rudolf M Fürchtenicht

Supervisor: Colin A. Johancsik

DCI: 3.7

	Base Criterion	Base Criterion Value	Base Pts	Additional Factors	AF Pts	Spec Pts	Special Points Explanation	Supv Init	TOT PTS
D1	New / Reclaimed Well	New Well	0	Subsea Wellhead	2	0			2
D2	Learning Curve	NFW	5	Limited Logistics	1	0			6
D3	True Vertical Depth	8 - 12 kft [2450 - 3660 m]	2	N/A	0	0			2
D4	Vertical Section versus TVD below mudline	[12 - 15 kft BML] Vertical	0	N/A	0	0			0
D5	Total Planned Dogleg	<30 degrees	0	None	0	0			0
D6	Min Target Width (ft) / Measured Depth (kft)	>25	1	Multiple Targets	2	0			3
D7	Mud Weight (ppg)	9 - 12	1	N/A	0	0			1
D8	Mud Overbalance (psi)	500 - 1500	2	N/A	0	0			2
D9	Drilling Margin (ppg)	>2.0	1	N/A	0	0			1
D10	Temperature	< 275 F (135 C)	1	N/A	0	0			1
D11	Hole Stability	[Shale SA=200-300] WBM>14 days	3	None	0	0			3
D12	Casing Program (Number of Strings)	1 or 2 Strings / Liners	0	Enter the number in cell F17 per this cell's comment...	0	0			0

File Location: Scallop-1_Final_Report_Drilling_Complexity_Index.xls
Tab Reference: Drilling Complexity

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Drilling Complexity Index

	Base Criterion	Base Criterion Value	Base Pts	Additional Factors	AF Pts	Spec Pts	Special Points Explanation	Supv Init	TOT PTS
D13	Rig Type	Moored Floater	3	Water Depth = 250 - 500 ft	1	0			4
D14	Rig Capability	Extra Capacity	0	None	0	0			0
D15	Months Working Since Stacked	Ongoing	0	N/A	0	0			0
D16	Location & Discharges	Offsh disch, Onsh closed	1	N/A	0	0			1
D17	H_2S	[Possible H2S] 5-10K BOP	2	N/A	0	0			2
D18	Safety / Heath / Evironmental Impact	>3 Events	4	N/A	0	0			4
D19	Formation Issues	Multiple zones / single hole section Moderate problems expected	5	N/A	0	0			5
D20	Special Considerations		0		0	0			0

Max Hole Angle (degrees): 2.0

TOTAL POINTS = 37

Mud Type(s) Used:

- [x] Water Based
- [ ] Diesel Oil Based
- [ ] Mineral Oil Based
- [ ] Synthetic Based
- [ ] Drill-in Fluid

Probability Category

Consequence	A	B	C	D	E
I					23
II				1	28
III			1	4	14
IV		1		10	24

THIS WELL MIGHT BENEFIT FROM TECHNICAL TEAM CONSULTATION.
TECHNICAL TEAM TRIGGERS ARE HIGHLIGHTED.

SEQUENCE OF OPERATIONS

Start Date	Time	Actual Days	Operation
29 Jan, 2003	23:00	2.19	Commenced tow from BHPB Minerva-3 location to Scallop-1.
01 Feb, 2003	03:30	1.35	Dropped first anchor. Commenced mooring and R/U operations.
02 Feb, 2003	12:00	1.08	Spudded well. Drilled 36" hole to 179.0mMD. Ran & cemented 30" x 20" conductor casing at 179.0mMD.
03 Feb, 2003	14:00	2.43	Drilled 17-1/2" hole to 917.0mMD. Ran & cemented 20" x 13-3/8" surface casing at 900.8mMD.
06 Feb, 2003	00:15	1.07	R/U and ran Subsea BOP Stack & Riser.
07 Feb, 2003	02:00	1.16	P/U DP. Displaced Riser to mud & condition hole. Conducted Leak-off Test to 16.1ppg EMW
08 Feb, 2003	05:45	13.32	Drilled 12-1/4" hole to original TD at 3,126.0mMD.
21 Feb, 2003	13:30	0.84	Deepened 12-1/4" holt to final TD at 3,174.0mMD.
22 Feb, 2003	09:45	1.53	Conditioned hole. POOH to log the well.
23 Feb, 2003	22:30	3.29	Logged Well.
27 Feb, 2003	05:30	3.33	Commenced Plugged & Abandoned of the well.
02 Mar, 2003	13:30	1.45	Commenced anchor recovery.
04 Mar, 2003	00:00	--	Released semi-submersible Sedco 702 from location.

Total Programme Days:	33.04 days
Total NPT Days:	1.08 days
Total Change of Scope Days:	2.60 days

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Milestone Report

Well Name: Scallop-1

Well ID	Category	Type	Start Timestamp	Start MD	Start TVD	Description	Rig Contractor	Rig Name
SCALLOP_1	MILE	Reached target depth	21/02/03 13:40	3,126	3,126	Reached programme TD of 3,126mMD. Approval to extended TD to first water wet sands or 3,230m by MOC dated 20 Feb 2003 due to change in geological base case.	Trans Sed Forex	Sedco 702
SCALLOP_1	MILE	Reached target depth	22/02/03 9:45	3,174	3,174	Final TD called after LWD log confirmed water wet sands.	Trans Sed Forex	Sedco 702
SCALLOP_1	MILE	Began suspension activities	27/02/03 5:30	3,174	3,174	Advised from town that well will NOT be suspended. Make preparations to P&A well. RIH with cement stinger to set open hole P&A plugs.	Trans Sed Forex	Sedco 702
SCALLOP_1	MILE	Released rig	04/03/03 0:00	-	-	Last anchor hauled in and bolstered at 0000 hrs 04 March 2003. Rig released from Scallop #1 location. Rig on town back to Port Dampier in Western Australia as part of Demobilisation agreement.		

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Wellname: Scallop-1

Days, Depth, Mud Weight, and Cost Report

Report Date	Days on AFE	Days From Spud	Measured Depth [mMDRT]	True Vertical Depth [mTVDRT]	Drilling Cummulative Cost [A$]	Completion Cummulative Cost [A$]	Mud Weight [ppg]	Pore Pressure [ppg]	Leak Off Test [ppg EMW]	Management Summary
30-Jan-03	0.04	0.0	0	0	6,743,960		0.00	0	0	Last anchor off bottom at 22:50hrs. Commence tow @ 23:00hrs while deballasting to transit draft. 4 nautical miles from Minerva 3 location @ 00:00hrs.
31-Jan-03	1.04	0.0	0	0	7,090,356		0.00	0	0	Distance travelled 141.3 miles. Distance to location 147.3miles. Average speed. 6.48knts. ETA at location 01:23hrs 01 Feb.
1-Feb-03	2.04	0.0	0	0	7,427,946		0.00	0	0	Travelled total of 314.8miles. Distance in last 24hrs 180.5miles. MODUSPEC continue rig inspection.
2-Feb-03	3.04	0.0	0	0	7,762,098		0.00	0	0	Moor rig over Scallop #1 location. Run and pretension anchors. MODUSPEC continue with rig acceptance inspections. Offload bulks from supply vessels. Mix kill mud.
3-Feb-03	4.04	0.5	179	179	8,134,907		0.00	0	0	P/up Drill pipe. Offload cement from supply vessels. Make up 36" BHA. RIH. Tagged competent mud line at 135.51m. Drill 36" hole to 179m. Run and cement 30" structural casing with W/H and PGB.
4-Feb-03	5.04	1.5	506	506	8,477,605		8.40	0	0	Displace cement. POOH Lay out cement stinger. Make up Cement head. Pick up 17 1/2" BHA. Drill from 179m to 506m.
5-Feb-03	6.04	2.5	917	917	8,990,788		8.60	0	0	Drilled 17 -1/2 hole from 506m to 917m. Pump sweeps and circulate hole clean, Conduct wiper trip to shoe @ 179m. Condition hole prior to running casing.
6-Feb-03	7.04	3.5	917	917	9,498,069		8.60	0	0	POOH Rack back 17- 1/2" BHA. Rig up run and cement 13-3/8" casing..
7-Feb-03	8.04	4.5	917	917	9,848,392		8.60	0	0	Lay out 18 3/4" wellhead running tool. Run BOP and riser. Function test BOPS. Test Casing. P/up D/pipe.
8-Feb-03	9.04	5.5	917	917	10,268,185		8.60	0	0	Function test BOP's on both pods. Pick up 5" D/pipe. Lay out 17 1/2" BHA. Make up 12 1/4" BHA. RIH hold choke drill. Drill out cement. Displace well to 9.0ppg KCL PHPA mud system.
9-Feb-03	10.04	6.5	1303	1303	10,671,742		9.50	0	16.5 *	Condition mud. Conduct FIT to 16.5 EMW. Drill and survey 12 1/4" hole from 920m to 1303m.
10-Feb-03	11.04	7.5	1870	1870	11,033,843		9.60	0	16.5 *	Drill and survey 12 1/4" hole from 1303m to 1870m. Backream each connection.
11-Feb-03	12.04	8.5	2154	2154	11,379,887		9.70	0	16.5 *	Drill and survey 12 1/4" hole from 1870m to 2154m.
12-Feb-03	13.04	9.5	2303	2303	11,714,193		9.70	0	16.5 *	Drill and survey 12 1/4" hole from 2154m to 2303m. Backream each connection.
13-Feb-03	14.04	10.5	2465	2465	12,067,415		10.30	0	16.5 *	Drill and surveyed 12 1/4" Hole from 2346m to 2465m. Backream each connection.
14-Feb-03	15.04	11.5	2595	2595	12,414,457		10.30	8.6	16.5 *	Drill and survey 12 1/4" hole from 2465m to 2595m.
15-Feb-03	16.04	12.5	2618	2618	12,733,156		10.30	8.6	16.5 *	Drilled 12-1/4" hole from 2595m to 2618m. Pull out of hole for bit change.
16-Feb-03	17.04	13.5	2706	2706	13,063,221		10.30	8.6	16.5 *	RIH to 2618m with new bit and drill & survey 12-1/4" hole from 2618m to 2706m..
17-Feb-03	18.04	14.5	2830	2830	13,394,425		10.40	8.6	16.5 *	Drill & survey 12-1/4" hole from 2706m to 2830m.
18-Feb-03	19.04	15.5	2914	2914	13,700,563		10.30	8.6	16.5 *	Drill @ survey 12-1/4" hole from 2830m to 2914m.
19-Feb-03	20.04	16.5	2933	2933	14,018,916		10.30	8.6	16.5 *	Drill 12-1/4" hole to 2933m. Drop gyro survey tool, POOH, change bit and pick up LWD/MWD assy. RIH to drill to TD.
20-Feb-03	21.04	17.5	2996	2996	14,335,825		10.30	8.6	16.5 *	Ran in hole & drilled 12-1/4" hole from 2933m to 2996m.

ExxonMobil

Wellname: Scallop-1

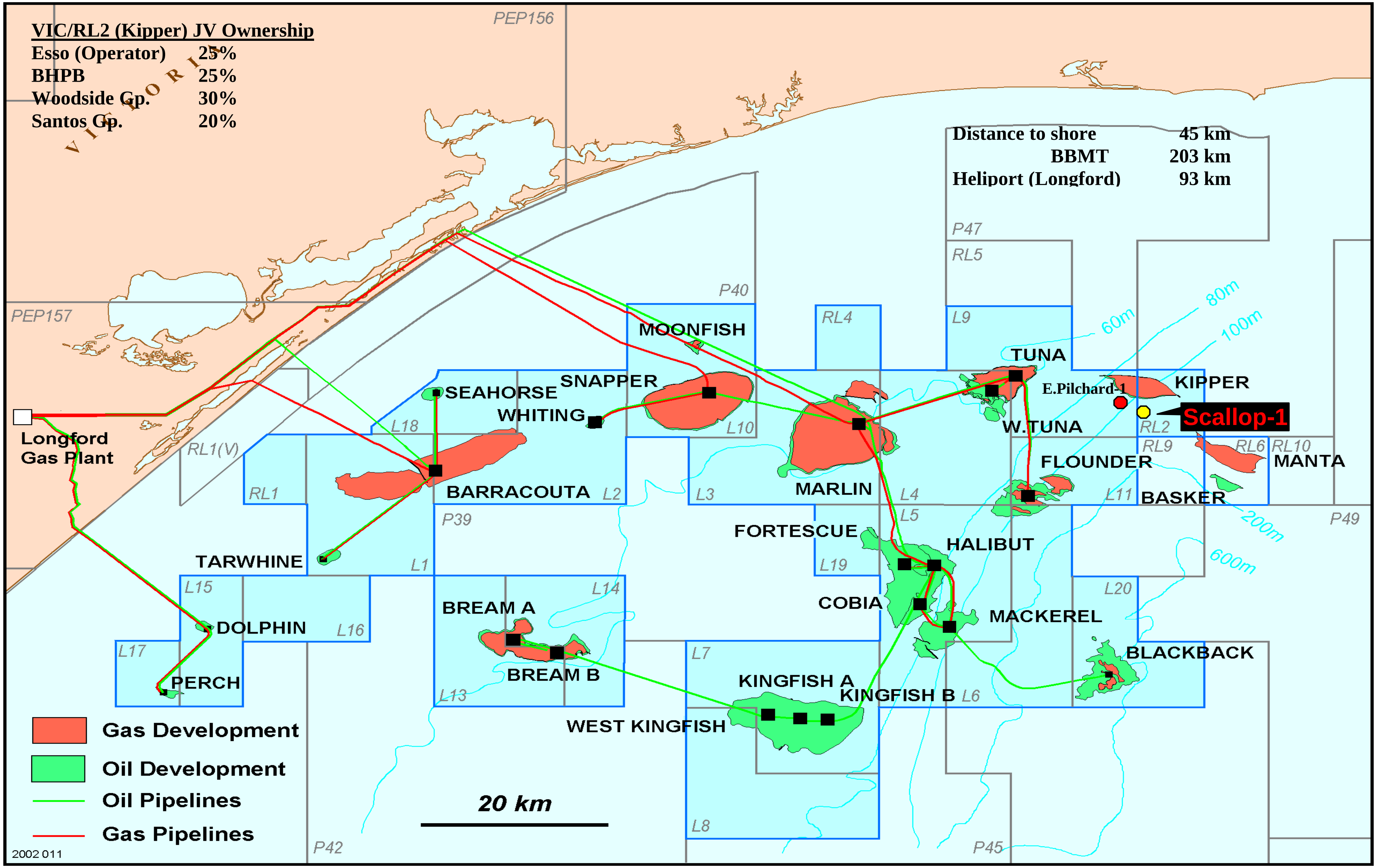
Days, Depth, Mud Weight, and Cost Report

Report Date	Days on AFE	Days From Spud	Measured Depth [mMDRT]	True Vertical Depth [mTVDRT]	Drilling Cummulative Cost [A$]	Completion Cummulative Cost [A$]	Mud Weight [ppg]	Pore Pressure [ppg]	Leak Off Test [ppg EMW]	Management Summary
21-Feb-03	22.04	18.5	3080	3080	14,927,978		10.30	8.6	16.5 *	Drill 12-1/4" hole from 2996m to 3080m.
22-Feb-03	23.04	19.5	3154	3154	15,266,666		10.30	8.6	16.5 *	Drill, log and survey 12-1/4" hole from 3080m to 3154m.
23-Feb-03	24.04	20.5	3174	3174	15,625,509		10.30	8.6	16.5 *	Drill to TD at 3174m, Make wiper trip to shoe, Circ, Pull out of the hole.
24-Feb-03	25.04	21.5	3174	3174	15,944,128		10.40	8.6	16.5 *	POOH, tested BOP's, Commenced running TD logs.
25-Feb-03	26.04	22.5	3174	3174	16,257,837		10.40	8.6	16.5 *	Completed logging run #1 & commence run #2 MDT - pressures and samples.
26-Feb-03	27.04	23.5	3174	3174	16,565,903		10.40	8.6	16.5 *	Complete MDT sample & pressure program, Continue with TD logging program.
27-Feb-03	28.04	24.5	3174	3174	16,898,007		10.40	8.6	16.5 *	Continued running TD logs - DUAL CSAT-VSP & CST-GR.
28-Feb-03	29.04	25.5	3174	3174	17,936,192		10.40	8.6	16.5 *	Completed TD logging. RIH and set 3 open hole P&A plugs.
1-Mar-03	30.04	26.5	3174	3174	18,266,514		10.40	8.6	16.5 *	Complete open hole P&A plugs and tag top one. POH and set EZSV squeeze pkr.
2-Mar-03	31.04	27.5	3174	3174	18,711,283		0.00	0	0	Set & test P&A plugs, Lay out drill pipe, Pull riser & BOP's.
3-Mar-03	32.04	28.5	3174	3174	19,037,219		0.00	0	0	Cut and recover 30" Wellhead, and PGB. Conduct Seabed survey. Lay out MOST tool, Lay down D/collars, and remaining tubulars from derrick. WOW. Wind gusting 45-55kts..
4-Mar-03	33.04	29.5	3174	3174	19,653,638		0.00	0	0	WOW. Backload Lady Elizabeth with Esso owned and third party equipment. Recover anchors. Last anchor recovered and bolstered at 0000 hrs 4 Mar 03

Note: Recalculation of LOT at end of well indicated true LOT as 16.1 ppg EMW (w/ 1,085psi, 9.0 ppg @ 900.79mTVD).

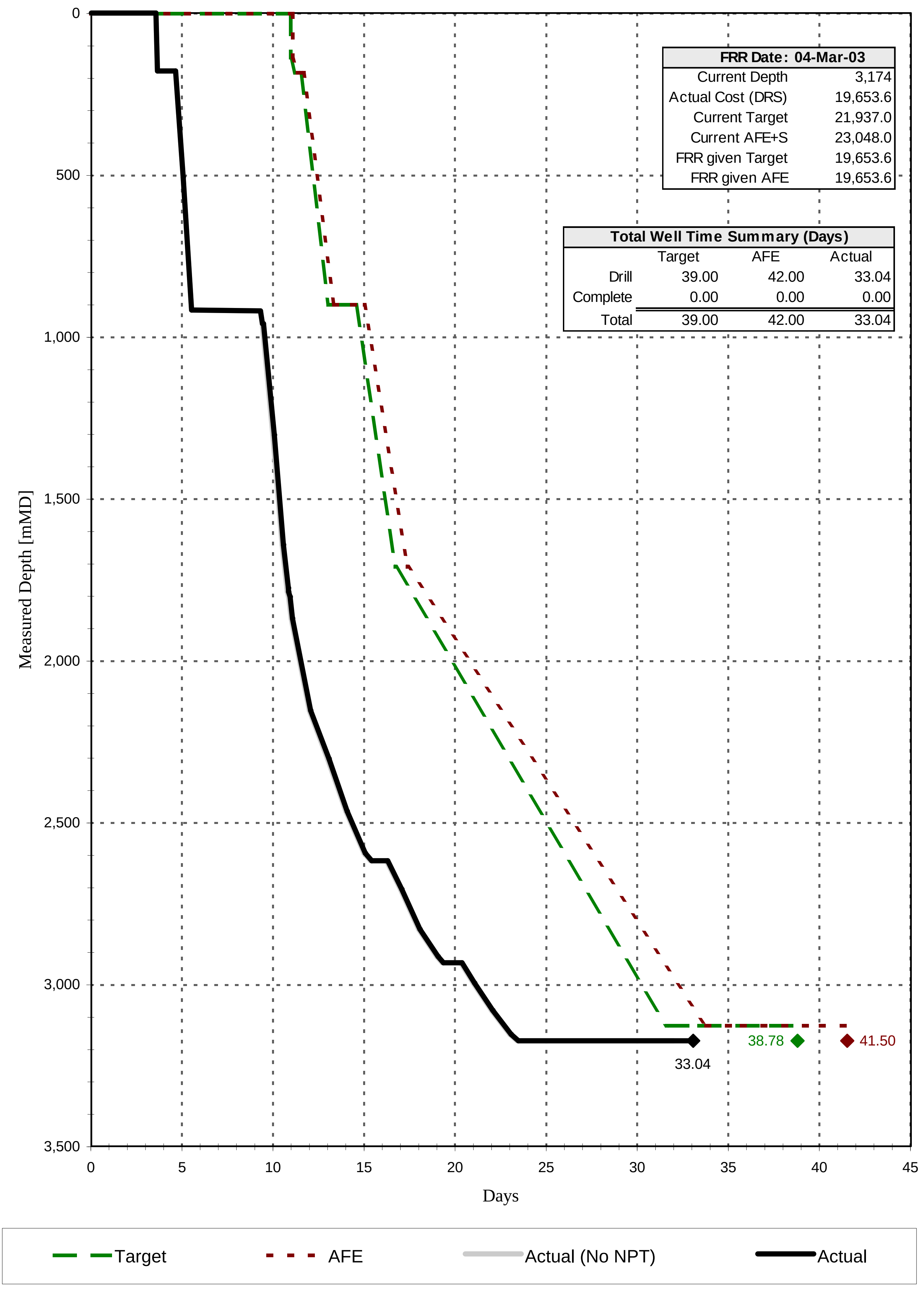
Location Map

LOCATION MAP



Well Progress Curve

Scallop-1
Days vs. Depth



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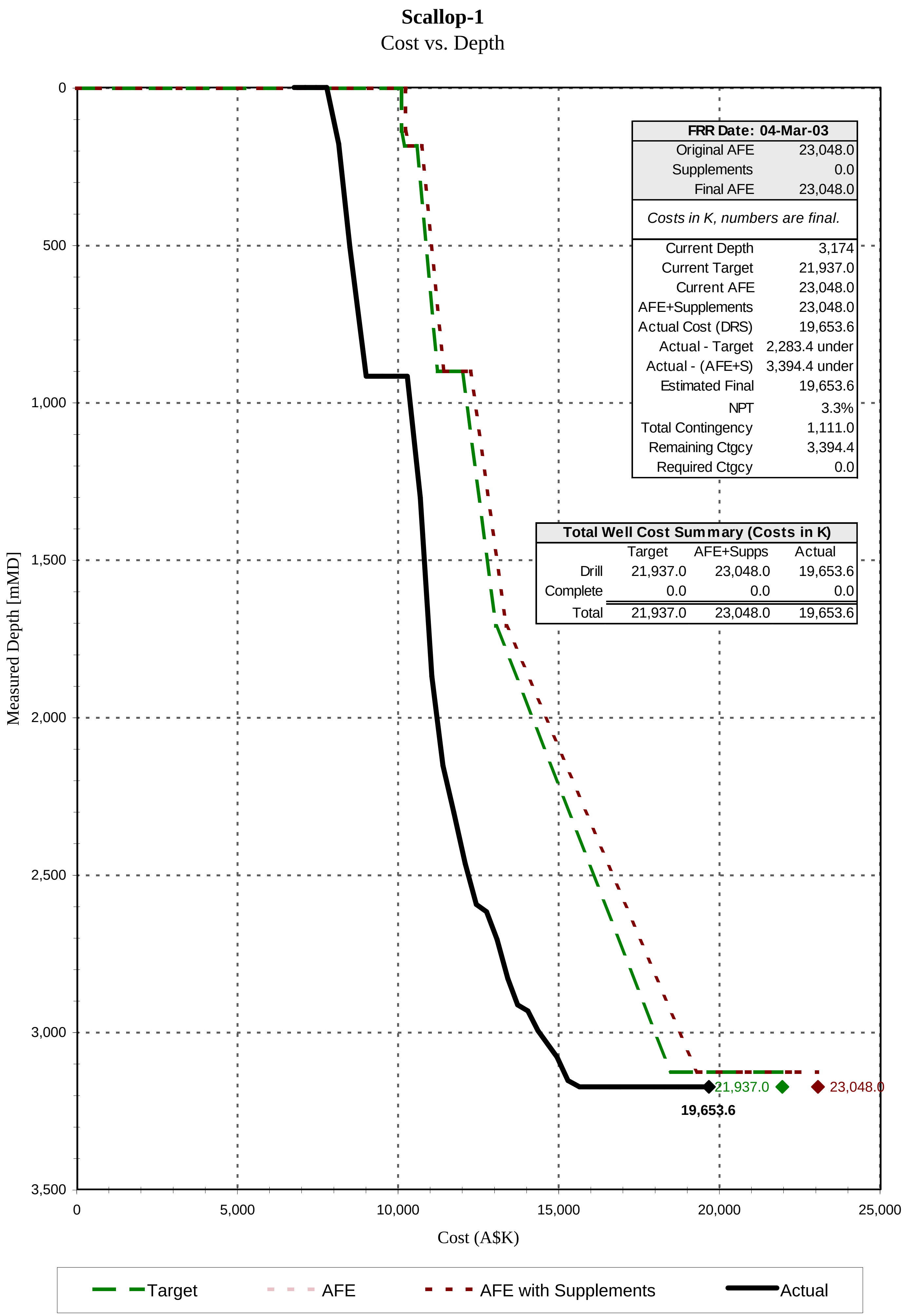
Tab Reference: Days vs Depth



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Tab Reference: Cost vs Depth

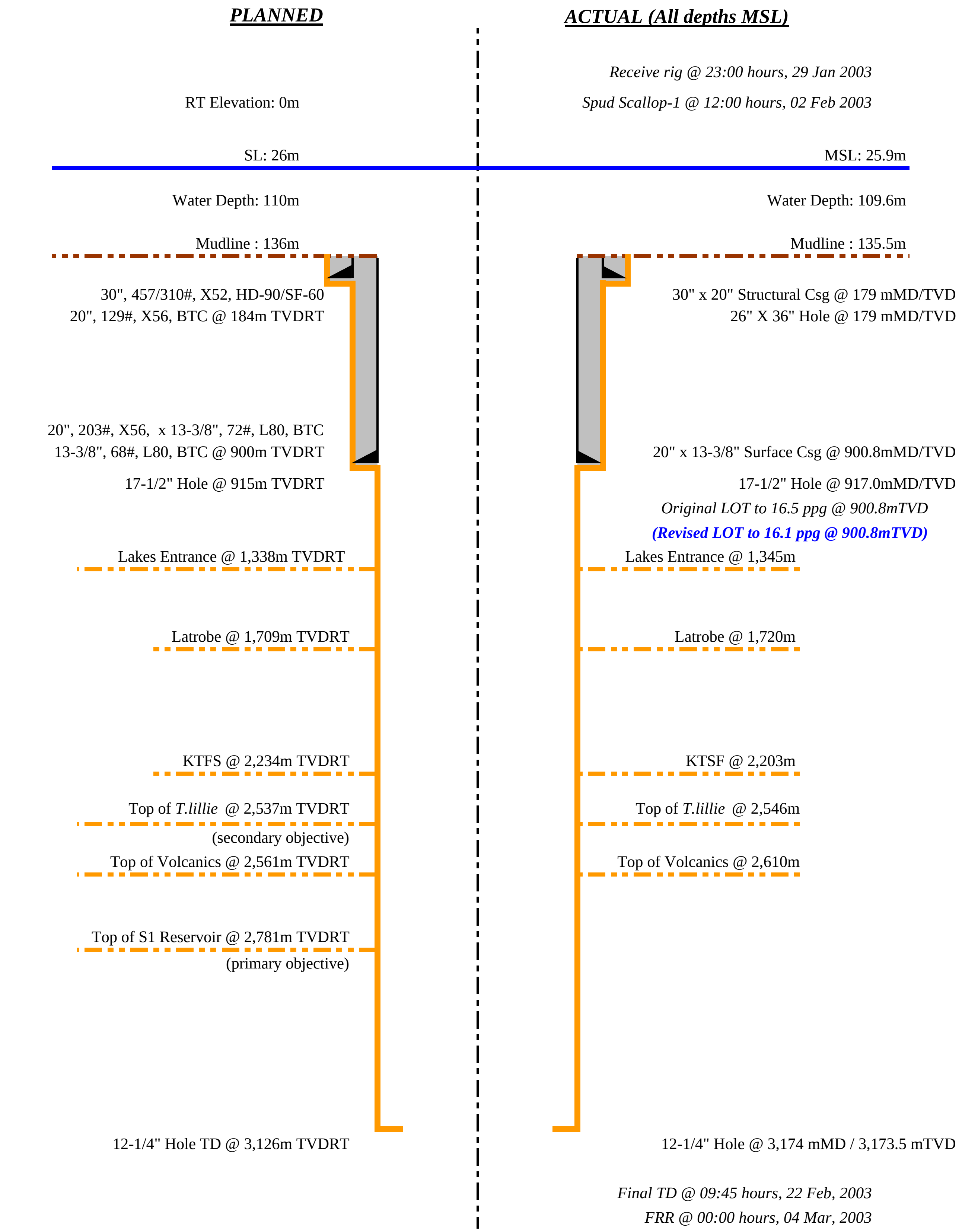
Wellbore Schematic

PLANNED vs ACTUAL WELLBORE SCHEMATIC

TRANSOCEAN "SEDCO 702"

SCALLOP-1

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)



File Location: Scallop-1_Wellbore_Schematics_Final.xls
Tab Reference: Plan vs Act Wellbore Schematic

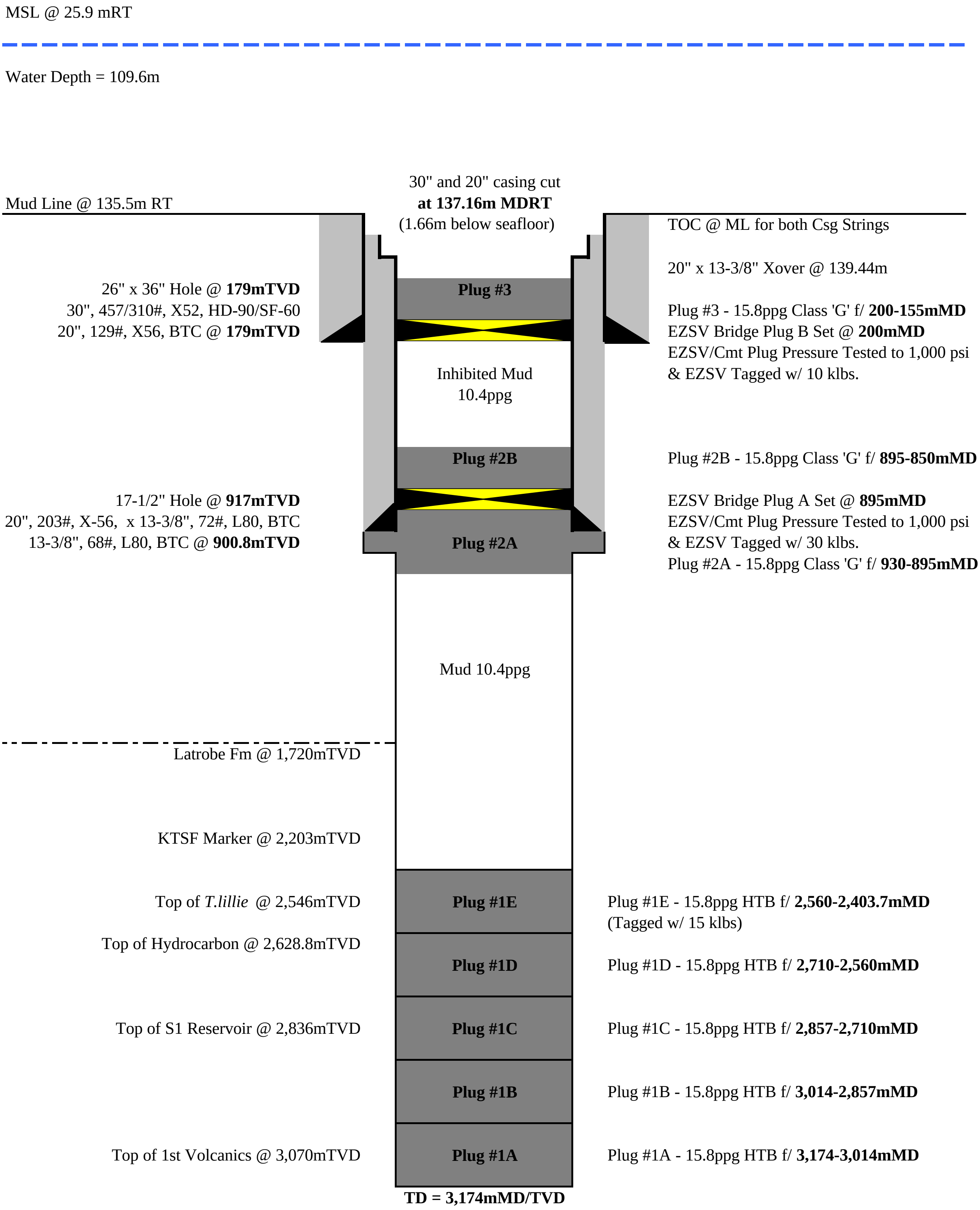
ACTUAL PLUG & ABANDONMENT WELLBORE SCHEMATIC

TRANSOCEAN "SEDCO 702"

SCALLOP-1

Final Location: GDA 1994. Latitude 38° 12' 48.615" S, Longitude 148° 35' 28.879" E.
MGA 94 Zone 55 CM 147deg E, Easting 639,314.95m, Northing 5,769,298.84m

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)



File Reference: Scallop-1_Wellbore_Schematics_Final.xls
Tab Reference: Actual P&A Schematic

Sonsub

Eni Saipem

Memo

FAXED
3/2/03

To	:Tommy Vestal
From	:Colin Murray
Copy to	:
Subject	:Pre-spud Seabed Survey

Date :01.02.03

Sonsub performed a seabed survey of the Scallop-1 spud in area on 01.02.03

The survey was performed both visually and with the aid of sonar targeting to a radius of 100 meters in all axis of the compass, North, South, East and West.

The purpose of this survey was to identify any items on the seabed that may cause problems spudding in the well, and to act as a baseline to indicate the impact of drilling operations. The survey had the following results:

The seabed to a radius of 100 metres from the spud in area was found to be flat and featureless. The sonar targeting and visual survey failed to locate any recordable items that may hinder the drilling of the Scallop-1 well.

Colin Murray

C. Murray

ROV Supervisor
Sonsub International

Sonsub

Eni Saipem

Memo

To	: George Sharkey	Date	: 02.03.03
From	: Colin Murray		
Copy to	:		
Subject	: Post Well Seabed Survey		

Sonsub performed a seabed survey of the Scallop-1 well site area on 02.03.03

The survey was performed both visually and with the aid of sonar targeting to a radius of 100 meters in all axis of the compass, North, South, East and West.

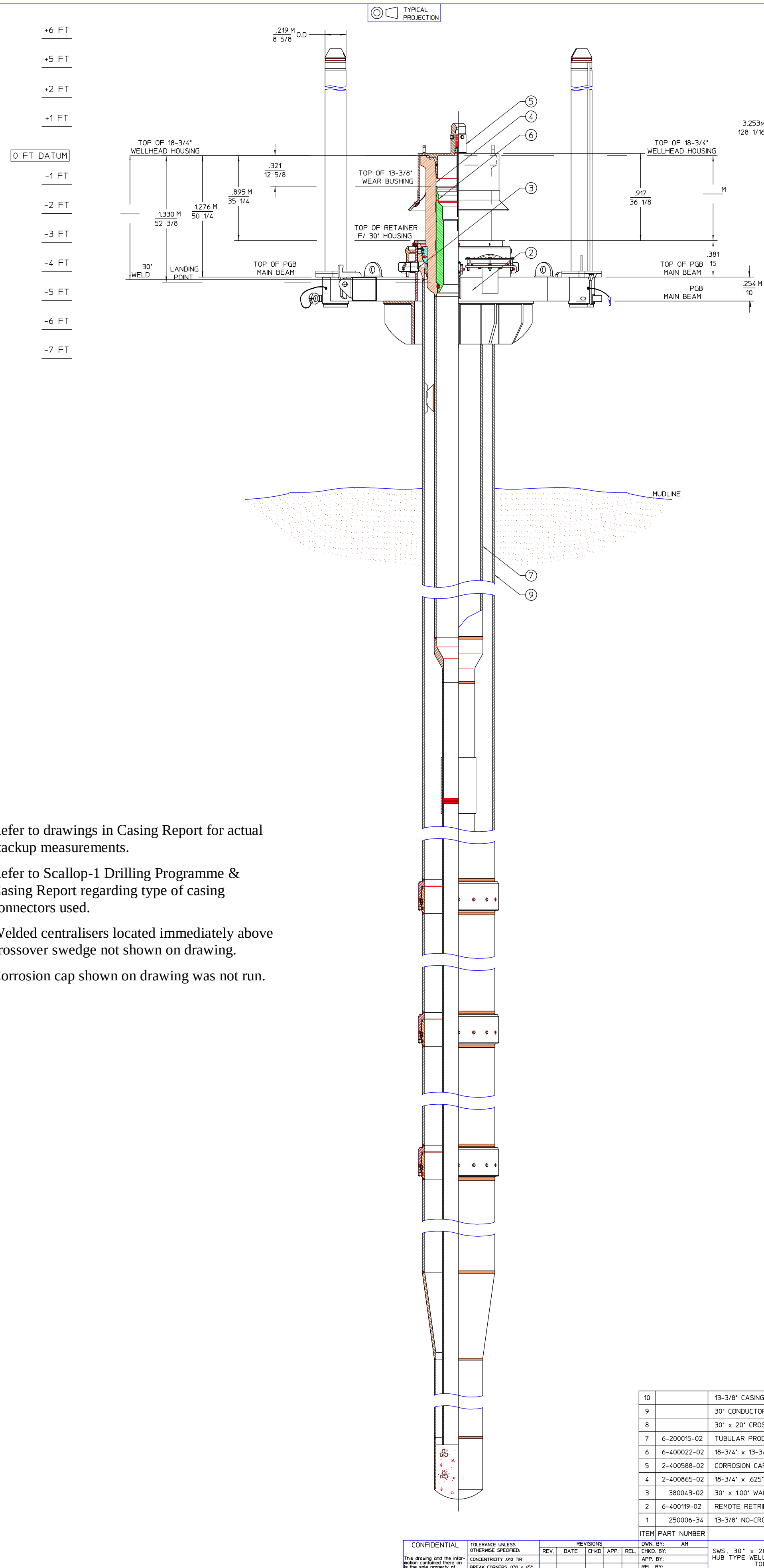
The purpose of this survey was to identify any items on the seabed that may have been the result of the drilling operations. The survey had the following results:

The seabed to a radius of 100 metres from the well site area was found to be flat and featureless. The sonar targeting and visual survey failed to locate any recordable items that may have been caused by the Scallop-1 well program.

Colin Murray

C Murray

ROV Supervisor
Sonsub International



Note (1) : Refer to drawings in Casing Report for actual stackup measurements.

Note (2) : Refer to Scallop-1 Drilling Programme & Casing Report regarding type of casing connectors used.

Note (3): Welded centralisers located immediately above crossover swedge not shown on drawing.

Note (4): Corrosion cap shown on drawing was not run.

ITEM	PART NUMBER	DESCRIPTION
10		13-3/8" CASING
9		30" CONDUCTOR PIPE
8		30" x 20" CROSSOVER SWEDGE
7	6-200015-02	TUBULAR PRODUCT W/ 20" x 13-3/8" CROSSOVER SWEDGE
6	6-400022-02	18-3/4" x 13-3/8" EXTENDED LENGTH WEAR BUSHING
5	2-400588-02	CORROSION CAP
4	2-400865-02	18-3/4" x .625" WALL WELLHEAD HOUSING
3	380043-02	30" x 1.00" WALL HUB TYPE WELLHEAD HOUSING
2	6-400119-02	REMOTE RETRIEVABLE PGB W/ ROTATING (CIW) POST TOP
1	250006-34	13-3/8" NO-CROSS COUPLING

CAD

CONFIDENTIAL

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TOLERANCE UNLESS OTHERWISE SPECIFIED:
CONCENTRICITY .010 TIR
BREAK CORNERS .030 x 45°
FILLET RADIUS .030/.060 R
FRACTIONAL DIMENSIONS ±1/16"
.X ±.1 | ANGLES ±0°30'
.XX ±.03 | MACHINED SURFACE FINISH 125
.XXX ±.010

REVISIONS				
REV.	DATE	CHKD.	APP.	REL.

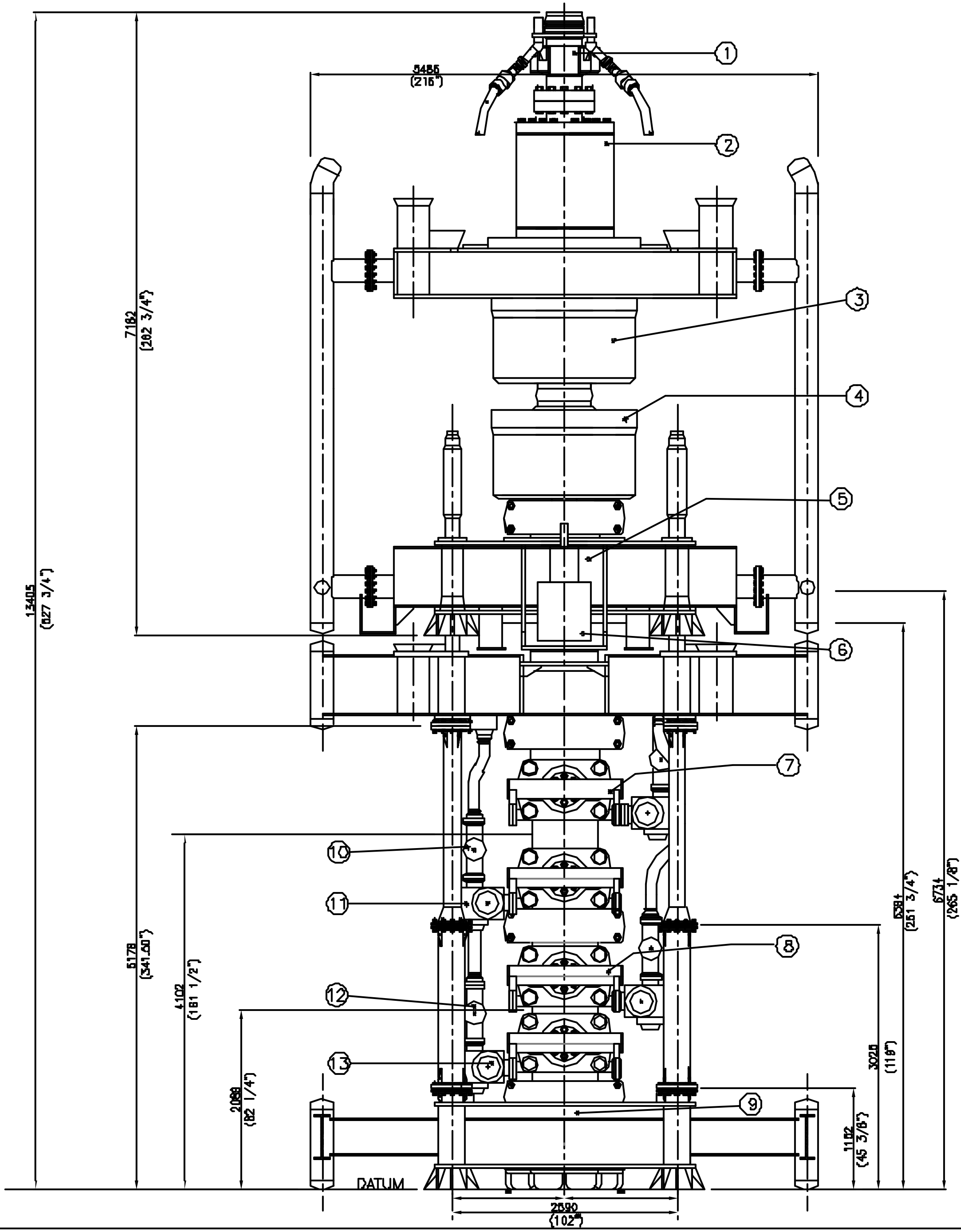
DWN. BY: AM
CHKD. BY:
APP. BY:
REL. BY:
REL. DATE:
MATERIAL:
ALL DIMENSIONS IN INCHES

SWS, 30" x 20" x 13.37" CASING PROGRAMME, SS-10C, W/ 18.75" HUB TYPE WELLHEAD HOUSING MATE W/ PGB C/W ROTATING CIW POST TOPS, W/ 20" x 13.37" CROSSOVER SWEDGE, STACK UP

DRIL-QUIP DRIL-QUIP ASIA PACIFIC PTE LTD.

DWG SIZE	PART NUMBER	LAST REV
A0	6-SD-40023-26	

NOTES:



(1) RISER ADAPTER
FOR REGAN FD 8 RISER
LOWER CONNECTION: BX 163 FLANGE

(2) FLEX JOINT
OIL STATES " DIVERTER II "
UPPER CONNECTION: BX 163 FLANGE
LOWER CONNECTION: BX 163 FLANGE

(3) UPPER ANNULAR
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 163 STUDDED TOP
LOWER CONNECTION: BX 164 FLANGE

HOSE: COFLEXIP 10000 PSI

(4) LOWER ANNULAR
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 164 STUDDED TOP
LOWER CONNECTION: BX 164 HUB

(5) RISER CONNECTOR
LMRP CONNECTOR: CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 164 HUB

(6) MANDREL
BOP ADAPTER FOR CAMERON MODEL 70 CONNECTOR

(7) RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: SHEAR/ BLIND
' SHEAR RAMS "
RAMS FITTED WITH LARGE OPERATING PISTONS AND
EXTENDED BODY TO ALLOW PIPE SHEARING

RAMS FITTED: 5" PIPE
' UPPER RAMS '
EXTENDED BODY TO ALLOW PIPE SHEARING

(8) RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: VARIABLE
'MIDDLE RAMS "

RAMS FITTED: 5" PIPE
' LOWER RAMS '

(9) WELLHEAD CONNECTOR
CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 164 HUB

(10) TO (13) FAILSAFE VALVES
' CAMERON ' 3-1/16" (8 EACH)

NOTES

REV	DATE	DESCRIPTION	BY	CHKD	APP'D	CLIENT
D	15 FEB 02	ISSUED FOR APPROVAL	B.B.	R.T.	R.T.	
A	15 FEB 02	ISSUED FOR COMMENT	B.B.	R.T.	R.T.	

REVISIONS

REFERENCE DRAWINGS

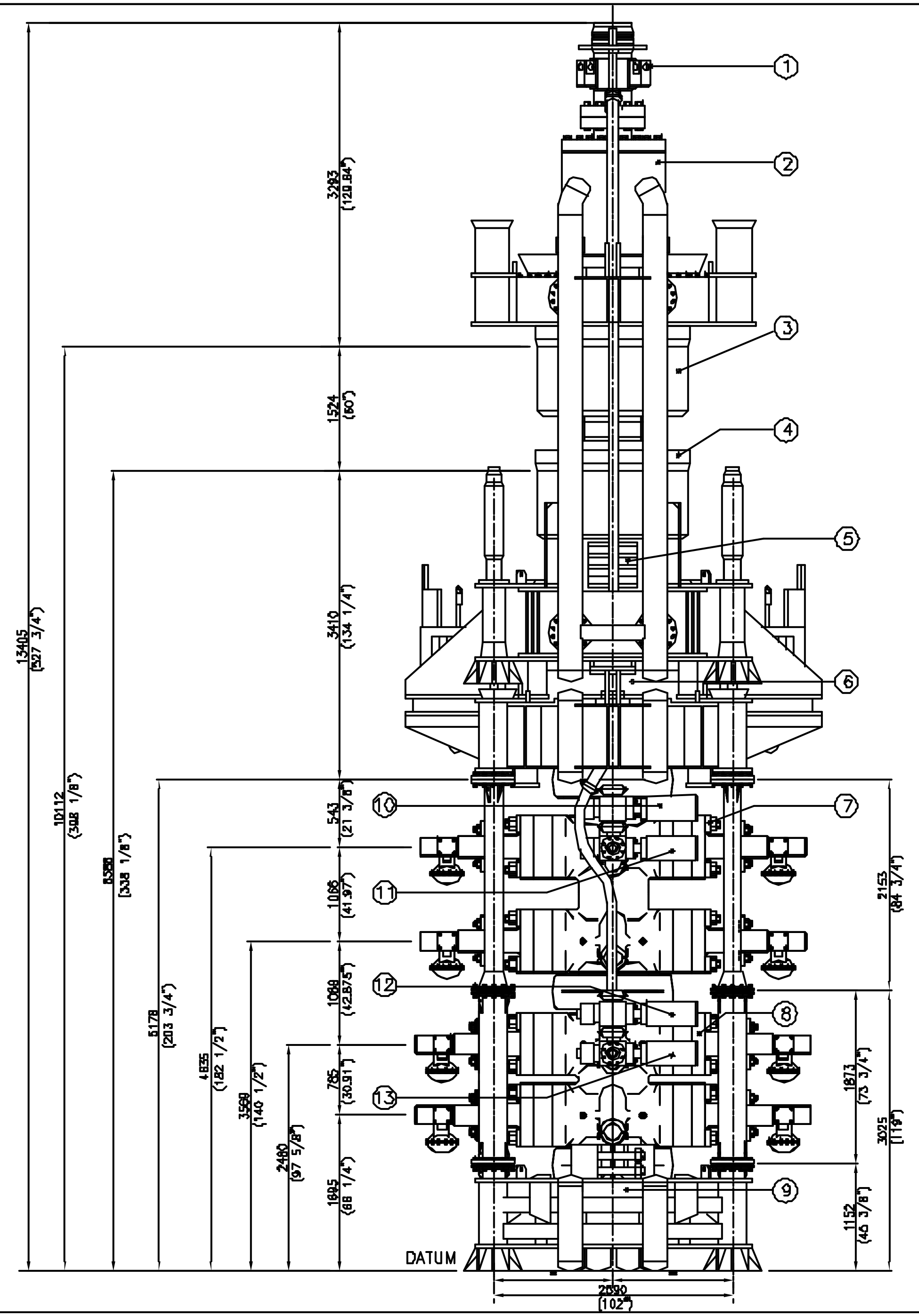
Transocean SedcoForex
SEDCO FOREX INTERNATIONAL INC.
LEVEL 5, 229 ST GEORGE'S TERRACE
PERTH WA 6000 AUSTRALIA

INSTALLATION	SEDCO 702
PROJECT	18 3/4" 10K B.O.P.
DRAWING TITLE	FORWARD / AFT ELEVATION

HAMPCO

ORIGINATED	B. BAIN	CHECKED	R.TYTLER
DRAWN	B. BAIN	APPROVED	R.TYTLER
DATE	12 FEB 02	SCALE	1:25
CLIENT No.	-	DRAWING SIZE	A1
DRAWING No.	A-C-3253-M-GA-002-TF	REV	0

FILE No.: A-C-3253-M-GA-002-TF | DRAWING SIZE: A1



(1) **RISER ADAPTER**
FOR REGAN FD 8 RISER
LOWER CONNECTION: BX 163 FLANGE

(2) **FLEX JOINT**
OIL STATES " DIVERTER II "
UPPER CONNECTION: BX 163 FLANGE
LOWER CONNECTION: BX 163 FLANGE

(3) **UPPER ANNULAR**
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 163 STUDDED TOP
LOWER CONNECTION: BX 164 FLANGE

HOSE: COFLEXIP 10000 PSI

(4) **LOWER ANNULAR**
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 164 STUDDED TOP
LOWER CONNECTION: BX 164 HUB

(5) **RISER CONNECTOR**
LMRP CONNECTOR: CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 164 HUB

(6) **MANDREL**
BOP ADAPTER FOR CAMERON MODEL 70 CONNECTOR

(7) **RAM PREVENTERS**
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: SHEAR/ BLIND
' SHEAR RAMS '
RAMS FITTED WITH LARGE OPERATING PISTONS AND
EXTENDED BODY TO ALLOW PIPE SHEARING

RAMS FITTED: 5" PIPE
' UPPER RAMS '
EXTENDED BODY TO ALLOW PIPE SHEARING

(8) **RAM PREVENTERS**
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: VARIABLE
'MIDDLE RAMS '

RAMS FITTED: 5" PIPE
' LOWER RAMS '

(9) **WELLHEAD CONNECTOR**
CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 164 HUB

(10) **FAILSAFE VALVES**
TO
(13) ' CAMERON ' 3-1/16" (8 EACH)

NOTES

D	15 FEB 02	ISSUED FOR APPROVAL	B.B.	R.T.	R.T.	
A	15 FEB 02	ISSUED FOR COMMENT	B.B.	R.T	R.T.	
REV	DATE	DESCRIPTION	BY	CHK'D	APP'D	CLIENT

REVISIONS

REFERENCE DRAWINGS

Transocean SedcoForex
SEDCO FOREX INTERNATIONAL INC.

INSTALLATION	SEDCO 702
PROJECT	18 3/4" 10K B.O.P.
DRAWING TITLE	STARBOARD / PORT ELEVATION

HAMPCO

ORIGINATED	B. BAIN	CHECKED	R.TYTLER
DRAWN	B. BAIN	APPROVED	R.TYTLER
DATE	12 FEB 02	SCALE	1:25
CLIENT No.	-	DRAWING SIZE	A1
DRAWING No.	A-C-3253-M-GA-001-TF	REV	0

FILE No.: A-C-3253-M-GA-001-TF DRAWING SIZE: A1

Scallop 1
Gippsland Basin, Victoria

GEOLOGICAL DISCUSSION

OBJECTIVES & UNCERTANTIES

The Scallop-1 well was drilled as a wildcat exploration well, approximately 3 km south-east of East Pilchard-1. The well was located in 110 metres of water, within the VIC/RL2 licence area of the Gippsland Basin, and was drilled to a TD of 3,174 mMD (3,148.1 mTVDSS).

The Scallop-1 well targeted hydrocarbons in the fluvial reservoirs of the sub-volcanic Golden Beach Group (*T.lilliei – N.Senectus* age). A lowside fault dependent closure was mapped on the Scallop fault block, straddling the VIC/RL2 - VIC/L9 permit boundary. Two possible DHIs (flatspots) had also been identified. The primary risk for the Scallop-1 well was that the "flatspots" observed were related to residual gas, or lithological complications within the reservoir section.

A secondary objective for the well was possible fault dependent closures in the fluvial-coastal plain reservoir facies in the shallower upper *T.lilliei* Latrobe Group section (above the volcanics).

RESULTS

A comparison of prognosed versus actual stratigraphy penetrated in Scallop-1 is summarised below. The prognosed stratigraphy was based on adjacent well data and regional seismic correlations.

The primary sub-volcanic objectives of the well (from top to bottom: Top Volc, Intra-Volc, First Volc) were intersected some 11-47m deep to prognosis. This is due largely to stratigraphic complexities associated with the intercalation of the volcanic packages with the sedimentary sequence, as well as velocity variations. The net to gross of the reservoir section was as predicted prior to drilling (38%), resulting in multiple sealing units and reservoir systems.

The well intersected a total of 5.6 net metres of oil and 28.8 net metres of gas between the top of Top Volcanics (2,611.8 mMD) and TD. Two oil-bearing reservoirs were encountered from 2,628.7m-2,841.4 mMD, in thin sands interbedded within and immediately below Top Volc. Oil sample analyses indicate a GOR of 1,375 scf/stb and 41.3° API gravity. A series of thin gas-bearing sands were found from 2888.4m-3147.1m MD (three gas sands below Intra Volc and another three gas sands below First Volc), intercalated with water-bearing sands. PVT analyses indicate the gas to be fairly liquids-rich (33 stb/mscf) but with CO_2 concentrations of around 18%.

Hydrocarbon column heights are generally well constrained, based on the interpretation of pressure data, log data and current maps. The oil column height for the upper oil sand is 108m (from mapped crest to interpreted OWC). For the lower oil sand the oil column varies from 129-170m depending on which aquifer gradient is used (Figure 2), assuming an oil gradient of 0.83 psi/m (PVT analysis) and the absence of gas caps. Gas column heights range from 61-70m in the sub-Intra-Volc reservoirs and 118-146m in the sands below First Volc. There is some uncertainty in the gas-water contacts of the three gas sands below First Volc since two aquifer gradients are present, resulting in a variation of 16m. Despite this uncertainty, these First Volc gas sands contribute the most to the discovered volumes. These gas column calculations assume a gas gradient of 0.42 psi/m (PVT analysis) and the absence of a downdip oil leg, which, if present, would be small according to pressure data.

Although geophysical modelling work is not yet complete, initial analysis suggests the two main gas zones below Intra Volc and First Volc correspond with the potential DHIs identified pre-drill.

The secondary target, i.e. possible fault-dependant closure in the upper *T.lilliei* Latrobe Group, was intersected 10m shallow to prediction and was found to be water-bearing without hydrocarbon shows. This could have resulted from the failure of fault seal or top seal to support a hydrocarbon column of this height (>80m), resulting in a lack of closure at this level.

FORMATION RESERVOIR TOPS

Formation/ Zone	mTVDSS			mMDRT
	Predicted	Actual	Difference	
Top Lakes Entrance Fm	-1,312	-1,254	58m high	1,280
Top Latrobe Group	-1,683	-1,697	14m low	1,723
KTFS	-2,208	-2,178	30m high	2,204
Top *T.lilliei*	-2,511	-2,501	10m high	2,527
Top of Volcanics	-2,535	-2,586	51m low	2,612
Base of Volcanics (Top S reservoirs)	-2,755	-2,802	47m low	2,828
Top Intra-Volc	-2,796	-2,821	25m low	2,847
Base Intra-Volc	-2,846	-2,857	11m low	2,860
Top 1st Volc	-2,984	-3,041	57m low	3,067
Base 1st Volc	-3,034	-3,067	33m low	3,093
TOTAL DEPTH	**-3,100**	**-3148**		**3,174**

SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

Cuttings

Type	Number	Interval	Frequency
Washed & Dried	6	917 - 1,660 mMDRT	10m
		1,660 - 3,174 mMDRT	5m
Lightly Washed and Air Dried	1	917 - 1,660 mMDRT	10m
		1,660 - 3,174 mMDRT	5m

Conventional Coring

No conventional core was cut in Scallop-1.

Sidewall Cores

1,717m - 3,165 mMDRT CST, 60 shots, 52 recovered (87%), 7 missing and 1 empty.

WIRELINE LOGS, MWD/LWD AND SURVEYS

WIRELINE LOGGING SUITE NUMBER 1			
DATE LOGGED: 23/02/03 - 27/02/03 **HOLE SIZE:** 12-1/4" **CASING SHOE:** 900.8m			**DRILLERS DEPTH:** 3,174m **LOGGERS DEPTH:** 3,177.4m **LOGGERS CASING SHOE:** 900.2m
TYPE OF LOG	**FROM**	**TO**	**RPT. SECT. / SUMMARY.**
PEX-HALS-HNGT-LEHQT	900.2	3,177.5	3,170.0 - 3,073.0m
MDT-GR-LEHQT	1,780.0	3,162.0	66 pretests and 9 sample
FMI-DSI-LEHQT	135.0	3,177.5	3,160.0 - 3,052.0m, GR and DSI to seafloor.
DUAL CSAT-VSP-GR	173.6	3,171.0	Acquired 111 levels at 15m spacing
CST-GR	1,717.0	3,165.0	Cut 60 cores, recovered 52. Recovery: 87%

MWD/LWD/SURVEYS			
Survey /Log	**Company**	**Top (mMDRT)**	**Bottom (mMDRT)**
Multishot Survey	SDI	135.0	907.8
Multishot Survey	SDI	907.8	2,923.0
MWD/LWD (RAB-D&I)	Schlumberger	2,923.0	3138.3

HORNER PLOT

HORNER PLOT

Run No.	Type of Log	From	To	Temp (°C)	tL	log(tc+tL)/tL
1	PEX-HALS-HNGS-LEHQT	3177.5	900.2	110	25.67	0.02864158
2	MDT-GR-LEHQT	3162.0	1780.0	115.5	39.0	0.01906301
3	FMI-DSI-GR-LEHQT	3177.5	135.0	120	68.33	0.01098267
4	DUAL CSAT-VSP	3171.0	173.6	122.2	82.33	0.00913459
5	CST-GR	3165.0	1717.0		97.17	

Note: Time circulated on bottom = 3hrs 30 mins *(hrs:mins)*

T = measured temp
t_L = time since circ stopped
Tt_c = time circulated on bottom

GEOTHERMAL GRADIENT (°C / 100 m)

Sea Floor Temperature:	**4.0**	(°C)
Extrapolated BHT:	**127.2**	(°C)
Geothermal Gradient:	**3.9**	(°C / 100 m)

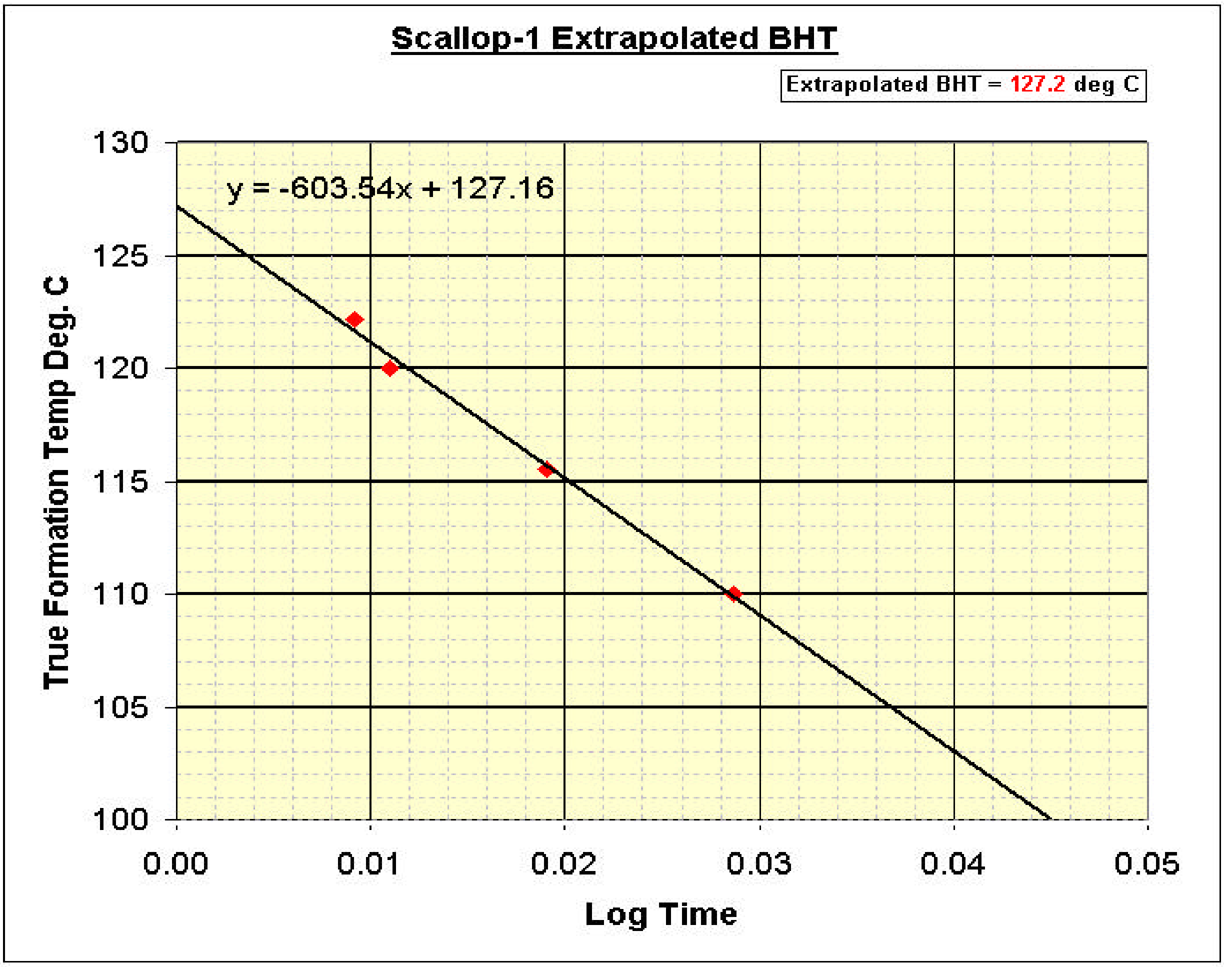


Figure 1: Scallop-1 Horner Plot

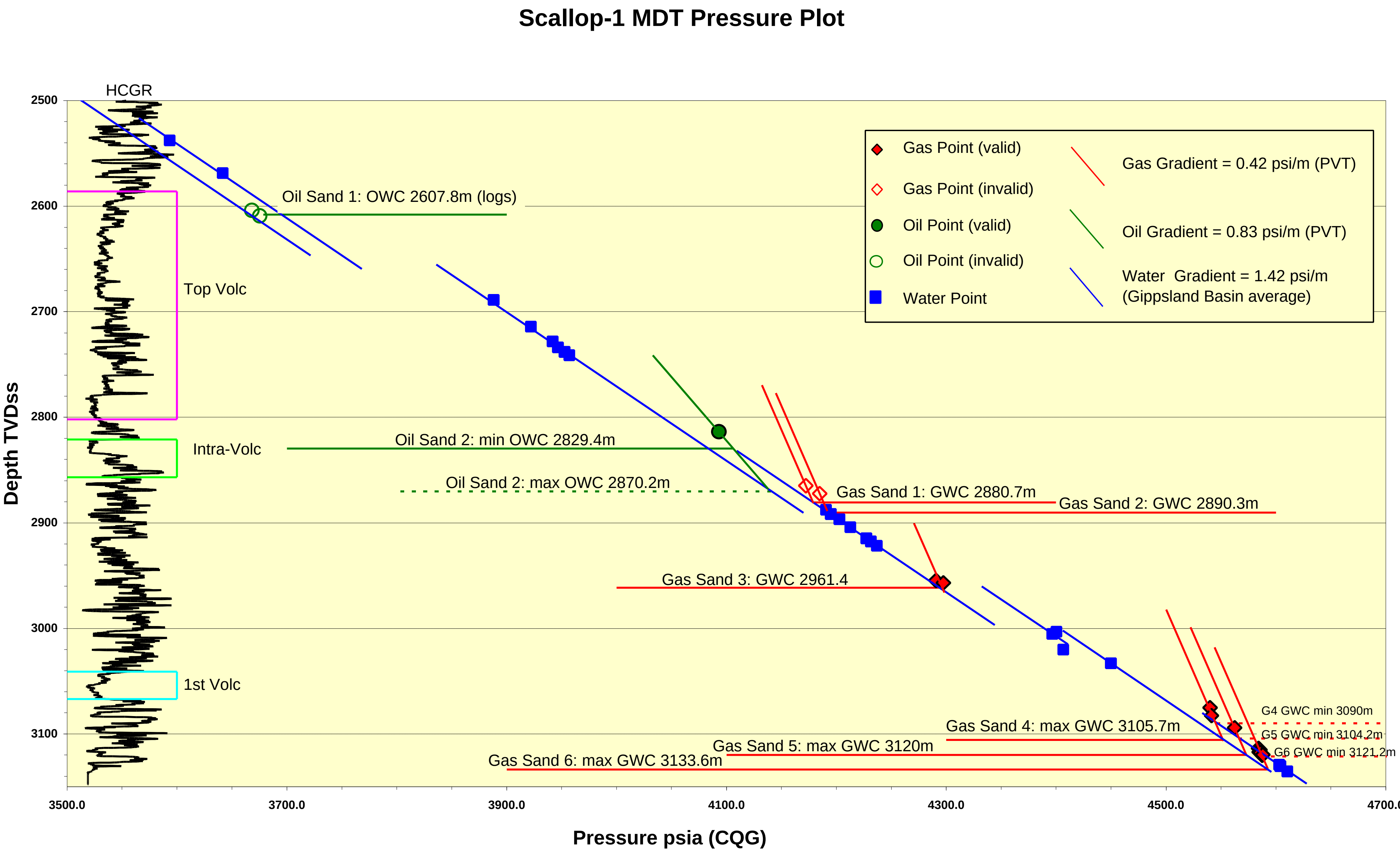


Figure 2: Scallop-1 Pressure data

Time Distribution Summary

ExxonMobil

Detailed Accountable Rig Time Report

Well Name Scallop-1
Job Type Drilling
Date Range All Data

Description	Original				Scope Change				Total			
	Hours	Percent Hours	Cost [A$]	Percent Cost [%]	Hours	Percent Hours	Cost [A$]	Percent Cost [%]	Hours	Percent Hours	Cost [A$]	Percent Cost [%]
Detailed Description Time Accountability Summary												
Productive Time Summary												
Drilling Time Summary												
SCALLOP_1 Drilling Time Summary												
Job running 29-Jan-03 23:00 to 04-Mar-03 00:00												
BOP												
Install, remove or change BOP (incl change rams)	0.8	0.1	10,186	0.1	0	0	0	0	0.8	0.1	10,186	0.1
Test BOP, wellhead or tree	14.5	1.8	192,085	1.6	0	0	0	0	14.5	1.8	192,085	1.6
Install, remove or change wellhead	7.0	0.9	95,065	0.8	0	0	0	0	7.0	0.9	95,065	0.8
Run, pull or handle riser	32.5	4.1	417,178	3.6	0	0	0	0	32.5	4.1	417,178	3.6
Sub-Total	**54.8**	**6.9**	**714,513**	**6.1**	**0**	**0**	**0**	**0**	**54.8**	**6.9**	**714,513**	**6.1**
Cementing												
Mix, pump and place cement slurry	15.8	2.0	205,113	1.8	0	0	0	0	15.8	2.0	205,113	1.8
Pressure test squeeze or other cement	3.0	0.4	38,778	0.3	0	0	0	0	3.0	0.4	38,778	0.3
Sub-Total	**18.8**	**2.4**	**243,891**	**2.1**	**0**	**0**	**0**	**0**	**18.8**	**2.4**	**243,891**	**2.1**
Circulating												
Circulate or pump	30.3	3.8	397,242	3.4	0	0	0	0	30.3	3.8	397,242	3.4
Change out fluid	2.0	0.3	25,974	0.2	0	0	0	0	2.0	0.3	25,974	0.2
Sub-Total	**32.3**	**4.1**	**423,216**	**3.6**	**0**	**0**	**0**	**0**	**32.3**	**4.1**	**423,216**	**3.6**
Drilling												
Drill (new hole)	316.0	39.8	4,152,063	35.5	0	0	0	0	316.0	39.8	4,152,063	35.5
Directional survey	1.0	0.1	13,191	0.1	0	0	0	0	1.0	0.1	13,191	0.1
Drill cement, plugs, etc. to clean-out	4.3	0.5	55,071	0.5	0	0	0	0	4.3	0.5	55,071	0.5
Ream (backream) or wash	5.8	0.7	74,903	0.6	0	0	0	0	5.8	0.7	74,903	0.6
Pit or safety drill	2.3	0.3	28,535	0.2	0	0	0	0	2.3	0.3	28,535	0.2
Sub-Total	**329.3**	**41.5**	**4,323,763**	**36.9**	**0**	**0**	**0**	**0**	**329.3**	**41.5**	**4,323,763**	**36.9**
Logging												
Log	74.5	9.4	967,993	8.3	0	0	0	0	74.5	9.4	967,993	8.3
Sub-Total	**74.5**	**9.4**	**967,993**	**8.3**	**0**	**0**	**0**	**0**	**74.5**	**9.4**	**967,993**	**8.3**
Mobilizing												
Move or tow rig in or out	52.5	6.6	1,677,270	14.3	0	0	0	0	52.5	6.6	1,677,270	14.3
Rig up or rig down rig (or reconfigure)	3.0	0.4	75,664	0.6	0	0	0	0	3.0	0.4	75,664	0.6
Moor or demoor	31.5	4.0	599,574	5.1	0	0	0	0	31.5	4.0	599,574	5.1
Sub-Total	**87.0**	**11.0**	**2,352,507**	**20.1**	**0**	**0**	**0**	**0**	**87.0**	**11.0**	**2,352,507**	**20.1**
Rig												
Service rig (including slip drilling line)	2.8	0.3	35,849	0.3	0	0	0	0	2.8	0.3	35,849	0.3
Sub-Total	**2.8**	**0.3**	**35,849**	**0.3**	**0**	**0**	**0**	**0**	**2.8**	**0.3**	**35,849**	**0.3**
Testing												
Test formation (including FIT, DST, RFT, etc.)	1.3	0.2	15,853	0.1	0	0	0	0	1.3	0.2	15,853	0.1
Sub-Total	**1.3**	**0.2**	**15,853**	**0.1**	**0**	**0**	**0**	**0**	**1.3**	**0.2**	**15,853**	**0.1**

ExxonMobil

Detailed Accountable Rig Time Report

Well Name Scallop-1
Job Type Drilling
Date Range All Data

Description	Original Hours	Original Percent Hours	Original Cost [A$]	Original Percent Cost [%]	Scope Change Hours	Scope Change Percent Hours	Scope Change Cost [A$]	Scope Change Percent Cost [%]	Total Hours	Total Percent Hours	Total Cost [A$]	Total Percent Cost [%]
Tripping												
Run string in hole	25.8	3.2	336,658	2.9	0	0	0	0	25.8	3.2	336,658	2.9
Pull string out of hole	36.8	4.6	483,534	4.1	0	0	0	0	36.8	4.6	483,534	4.1
Pick up or make up string, BHA, or tools	39.8	5.0	527,583	4.5	0	0	0	0	39.8	5.0	527,583	4.5
Break and lay down string, BHA or tools	22.0	2.8	285,472	2.4	0	0	0	0	22.0	2.8	285,472	2.4
Short trip (not to surface)	14.0	1.8	192,356	1.6	0	0	0	0	14.0	1.8	192,356	1.6
Set or release downhole equipment	3.3	0.4	42,988	0.4	0	0	0	0	3.3	0.4	42,988	0.4
Sub-Total	**141.5**	**17.8**	**1,868,591**	**16.0**	**0**	**0**	**0**	**0**	**141.5**	**17.8**	**1,868,591**	**16.0**
Tubulars												
Rig up or rig down crews	2.8	0.3	37,264	0.3	0	0	0	0	2.8	0.3	37,264	0.3
Run tubular (casing, liner or production tubing)	14.3	1.8	189,160	1.6	0	0	0	0	14.3	1.8	189,160	1.6
Sub-Total	**17.0**	**2.1**	**226,423**	**1.9**	**0**	**0**	**0**	**0**	**17.0**	**2.1**	**226,423**	**1.9**
Waiting												
Planned wait	3.0	0.4	41,149	0.4	0	0	0	0	3.0	0.4	41,149	0.4
Sub-Total	**3.0**	**0.4**	**41,149**	**0.4**	**0**	**0**	**0**	**0**	**3.0**	**0.4**	**41,149**	**0.4**
Wireline Work												
Wireline work (other than logging)	5.0	0.6	64,684	0.6	0	0	0	0	5.0	0.6	64,684	0.6
Sub-Total	**5.0**	**0.6**	**64,684**	**0.6**	**0**	**0**	**0**	**0**	**5.0**	**0.6**	**64,684**	**0.6**
Job running 29-Jan-03 23:00 to 04-Mar-03 00:00	767.0	96.7	11,278,431	96.4	0	0	0	0	767.0	96.7	11,278,431	96.4
SCALLOP_1 Drilling Time Summary	767.0	96.7	11,278,431	96.4	0	0	0	0	767.0	96.7	11,278,431	96.4
Drilling Time Summary	767.0	96.7	11,278,431	96.4	0	0	0	0	767.0	96.7	11,278,431	96.4
Productive Time Summary	**767.0**	**96.7**	**11,278,431**	**96.4**	**0**	**0**	**0**	**0**	**767.0**	**96.7**	**11,278,431**	**96.4**
Non-Productive Time Summary												
Accountable Trouble Time												
SCALLOP_1 Non-Productive Time Summary												
Mud/fluids problem												
Event running 08-Feb-03 08:30 to 08-Feb-03 10:00												
Circulating												
Circulate or pump	1.5	0.2	19,023	0.2	0	0	0	0	1.5	0.2	19,023	0.2
Sub-Total	**1.5**	**0.2**	**19,023**	**0.2**	**0**	**0**	**0**	**0**	**1.5**	**0.2**	**19,023**	**0.2**
Weather or environment problem												
Event running 02-Mar-03 13:30 to 03-Mar-03 06:45												
Waiting												
Unplanned wait	17.3	2.2	312,840	2.7	0	0	0	0	17.3	2.2	312,840	2.7
Sub-Total	**17.3**	**2.2**	**312,840**	**2.7**	**0**	**0**	**0**	**0**	**17.3**	**2.2**	**312,840**	**2.7**
Accountable Trouble Time	**18.8**	**2.4**	**331,863**	**2.8**	**0**	**0**	**0**	**0**	**18.8**	**2.4**	**331,863**	**2.8**

ExxonMobil

Detailed Accountable Rig Time Report

Well Name Scallop-1
Job Type Drilling
Date Range All Data

Description	Original				Scope Change				Total			
	Hours	Percent Hours	Cost [A$]	Percent Cost [%]	Hours	Percent Hours	Cost [A$]	Percent Cost [%]	Hours	Percent Hours	Cost [A$]	Percent Cost [%]
Contractor-Caused Trouble Time												
SCALLOP_1 Non-Productive Time Summary												
BOP or riser problem												
Event running 23-Feb-03 15:00 to 23-Feb-03 16:45												
BOP												
Test BOP, wellhead or tree	1.8	0.2	23,233	0.2	0	0	0	0	1.8	0.2	23,233	0.2
Sub-Total	**1.8**	**0.2**	**23,233**	**0.2**	**0**	**0**	**0**	**0**	**1.8**	**0.2**	**23,233**	**0.2**
Contractor-Caused Trouble Time	**1.8**	**0.2**	**23,233**	**0.2**	**0**	**0**	**0**	**0**	**1.8**	**0.2**	**23,233**	**0.2**
Third-Party Caused Trouble Time												
SCALLOP_1 Non-Productive Time Summary												
Logging problem												
Event running 24-Feb-03 08:15 to 24-Feb-03 13:00												
Logging												
Log	4.8	0.6	62,088	0.5	0	0	0	0	4.8	0.6	62,088	0.5
Event running 25-Feb-03 22:15 to 25-Feb-03 22:45												
Logging												
Log	0.5	0.1	6,418	0.1	0	0	0	0	0.5	0.1	6,418	0.1
Sub-Total	**5.3**	**0.7**	**68,506**	**0.6**	**0**	**0**	**0**	**0**	**5.3**	**0.7**	**68,506**	**0.6**
Other rig equipment problem												
Event running 05-Feb-03 08:00 to 05-Feb-03 08:15												
Tubulars												
Run tubular (casing, liner or production tubing)	0.3	0.0	3,238	0.0	0	0	0	0	0.3	0.0	3,238	0.0
Sub-Total	**0.3**	**0.0**	**3,238**	**0.0**	**0**	**0**	**0**	**0**	**0.3**	**0.0**	**3,238**	**0.0**
Third-Party Caused Trouble Time	**5.5**	**0.7**	**71,744**	**0.6**	**0**	**0**	**0**	**0**	**5.5**	**0.7**	**71,744**	**0.6**
Non-Productive Time Summary	**26.0**	**3.3**	**426,840**	**3.6**	**0**	**0**	**0**	**0**	**26.0**	**3.3**	**426,840**	**3.6**
Time Accountability Summary	**793.0**	**100.0**	**11,705,271**	**100.0**	**0**	**0**	**0**	**0**	**793.0**	**100.0**	**11,705,271**	**100.0**

NOTE:
(a) The sum of the percentages for non-scheduled time and cost may exceed 100% due to overlapping events.
(b) Details shown are with pro-rated **"Intangible" Costs.**
(c) Data shown herein does not reflect the "Out-of-Scope" work undertaken to Deepening of the well and additional cost & time taken to evaluate the well on a success case. This is best reflected in the "Cost Reconsilation" Table.
(d) Total Flat Time = 477 hours

Time Repartition Analysis

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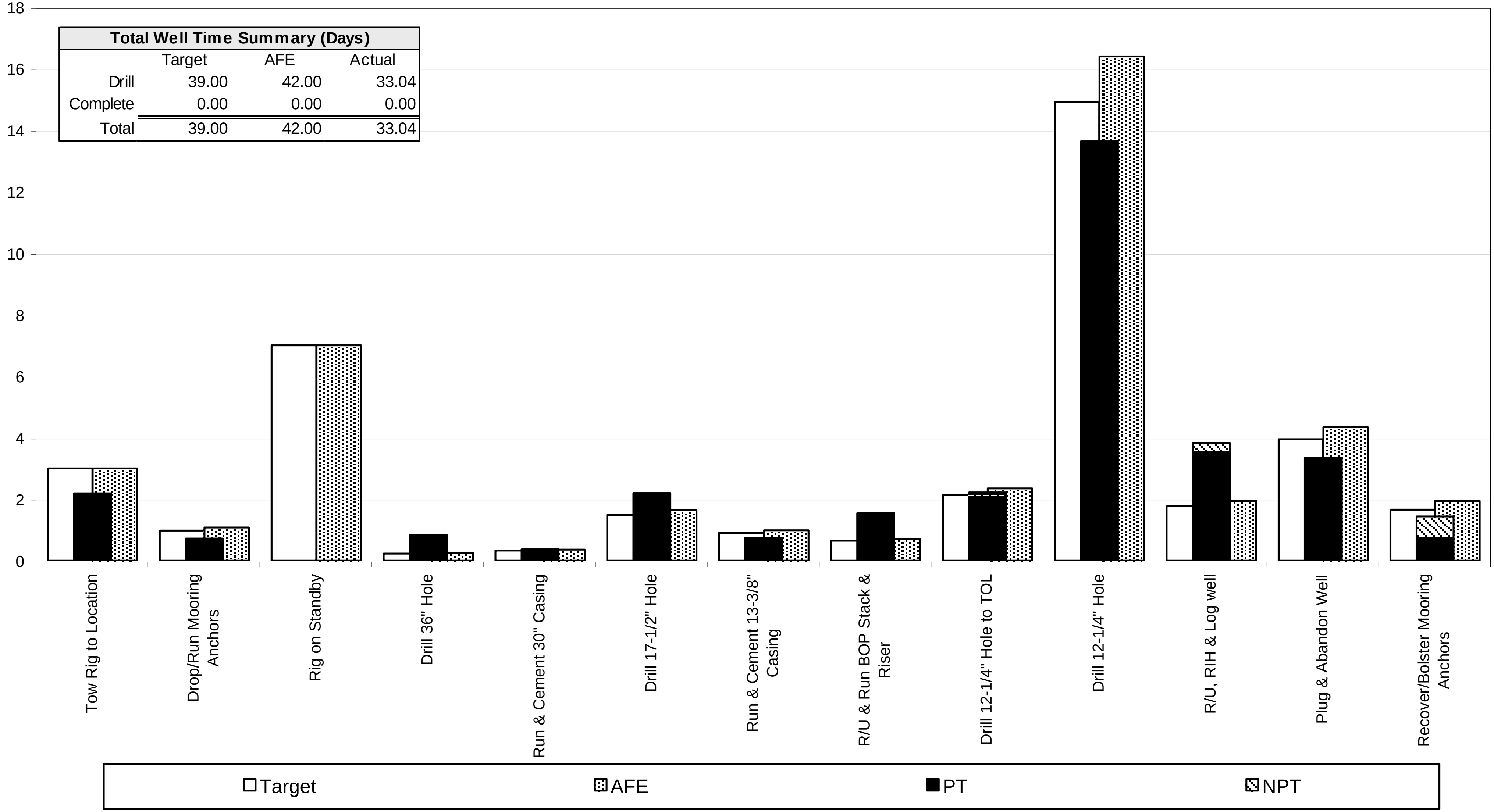
Scallop-1

Actual vs. Planned Days Comparison



Total Well Time Summary (Days)

	Target	AFE	Actual
Drill	39.00	42.00	33.04
Complete	0.00	0.00	0.00
Total	39.00	42.00	33.04

File Location: Scallop-1_Final_Report_DRS_Surveillance_Tool_Rev4.xls
Tab Reference: Phase Time Stacks

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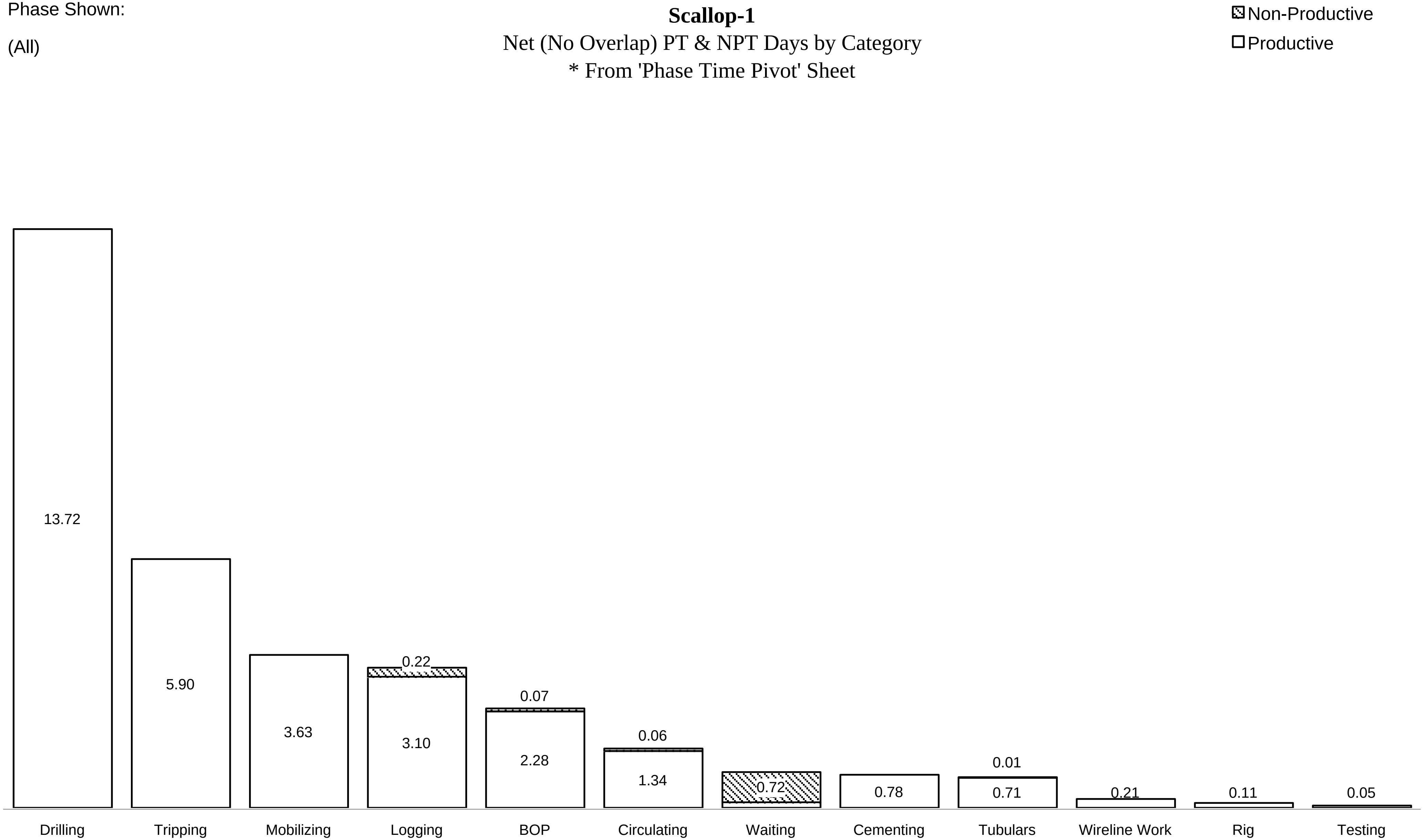
Phase Shown:

(All)

Scallop-1

Net (No Overlap) PT & NPT Days by Category

* From 'Phase Time Pivot' Sheet



File Location: Scallop-1_Final_Report_DRS_Surveillance_Tool_Rev4.xls
Tab Reference: Time Stacks

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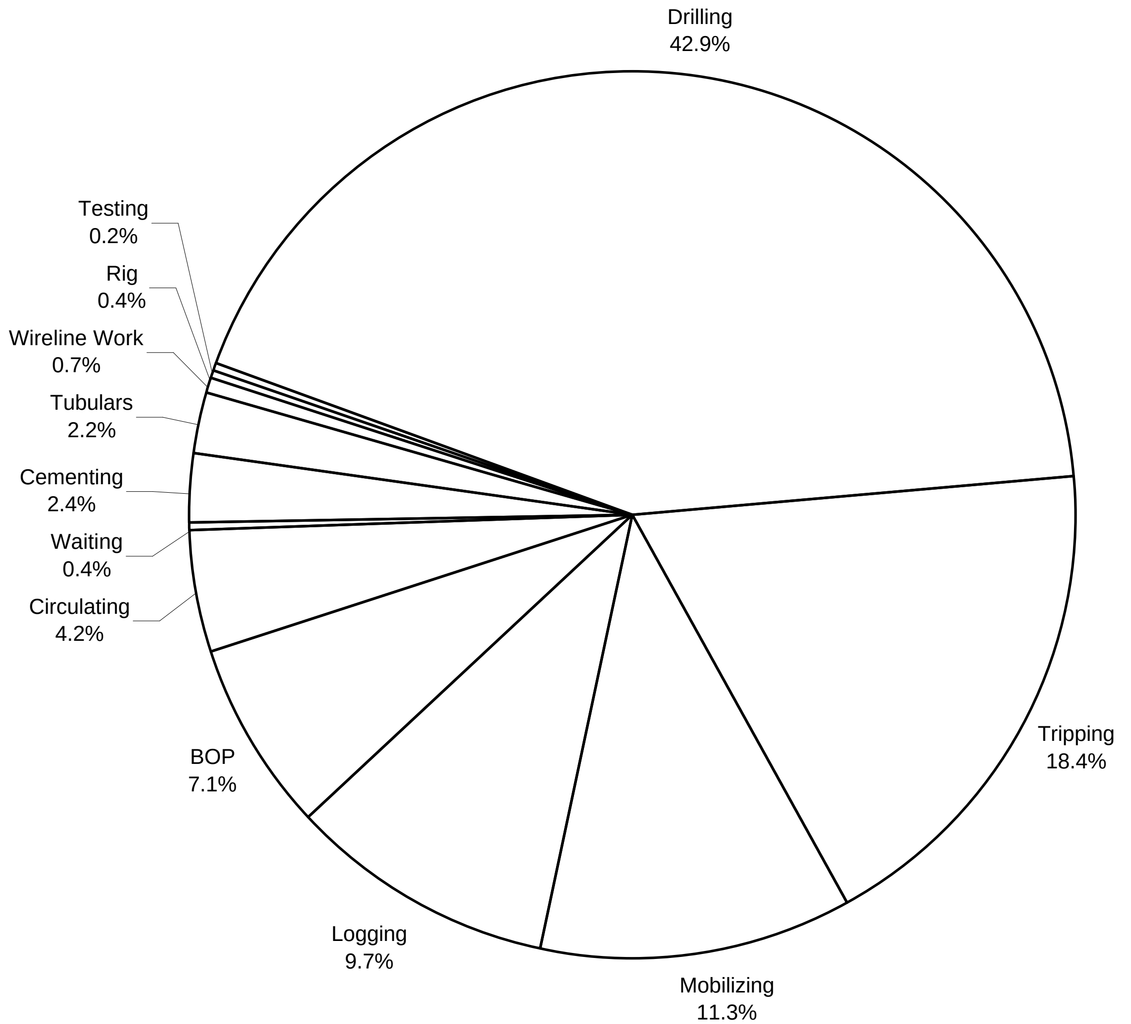
Scallop-1

Productive Time (Percent by Category)

* From 'Activities by Category' Sheet



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Well Name: Scallop-1

Category Breakdown Summary

Category	Total Days	Productive Days	Non-Productive Days	PT %	NPT %
Drilling	13.72	13.72	0.00	100.0%	0.0%
Tripping	5.90	5.90	0.00	100.0%	0.0%
Mobilizing	3.63	3.63	0.00	100.0%	0.0%
Logging	3.32	3.10	0.22	93.4%	6.6%
BOP	2.35	2.28	0.07	96.9%	3.1%
Circulating	1.41	1.34	0.06	95.6%	4.4%
Waiting	0.84	0.13	0.72	14.8%	85.2%
Cementing	0.78	0.78	0.00	100.0%	0.0%
Tubulars	0.72	0.71	0.01	98.6%	1.4%
Wireline Work	0.21	0.21	0.00	100.0%	0.0%
Rig	0.11	0.11	0.00	100.0%	0.0%
Testing	0.05	0.05	0.00	100.0%	0.0%
Total	**33.04**	**31.96**	**1.08**	**96.7%**	**3.3%**

NPT Summary

ExxonMobil

Well Name: Scallop-1

NPT Breakdown Summary

Category	Type	Start Time stamp	End Time stamp	Elapsed Time	Start MD	End MD	End TVD	Start TVD	NPT?	Acc Party Type	Acc Party Name	Description
RIG	Other rig equipment problem	05/02/03 8:00	05/02/03 8:15	0.25	917	917	917	917	Yes	Third Party	Weatherford	Seal leaking on Weatherford casing tong
CIRC	Mud/fluids problem	08/02/03 8:30	08/02/03 10:00	1.50	959	959	959	959	Yes	Operator		Circulate and shear mud and polymers, due to losses at shakers.
RIG	BOP or riser problem	23/02/03 15:00	23/02/03 16:45	1.75	3,174	3,174	3,174	3,174	Yes	Contractor	Transocean Sedco Forex	While testing BOP's lost integrity in kill line. Found kick off sub above jumper hose on LMRP sheared out of supporting nut letting pin separate from box. Unable to pressure up on kill line.
FE	Logging problem	24/02/03 8:15	24/02/03 13:00	4.75	3,174	3,174	3,174	3,174	Yes	Third Party	Schlum Wireline	Had intermittent faults communicating through MDT tool. Removed martineau probe leaving MDT with only large area probe.
FE	Logging problem	25/02/03 22:15	25/02/03 22:45	0.50	3,174	3,174	3,174	3,174	Yes	Third Party	Schlum Wireline	After starting to log up from bottom, caliper pad was found to have failed to fully open. Section was re-logged.
WAIT	Weather or environment problem	02/03/03 13:30	03/03/03 6:45	17.25	0	0	0	0	Yes			Wait on Weather. Wind gusting 40-56kts. Seas 4-5metres. Unable to backload Lady Elizabeth, and commence demooring.

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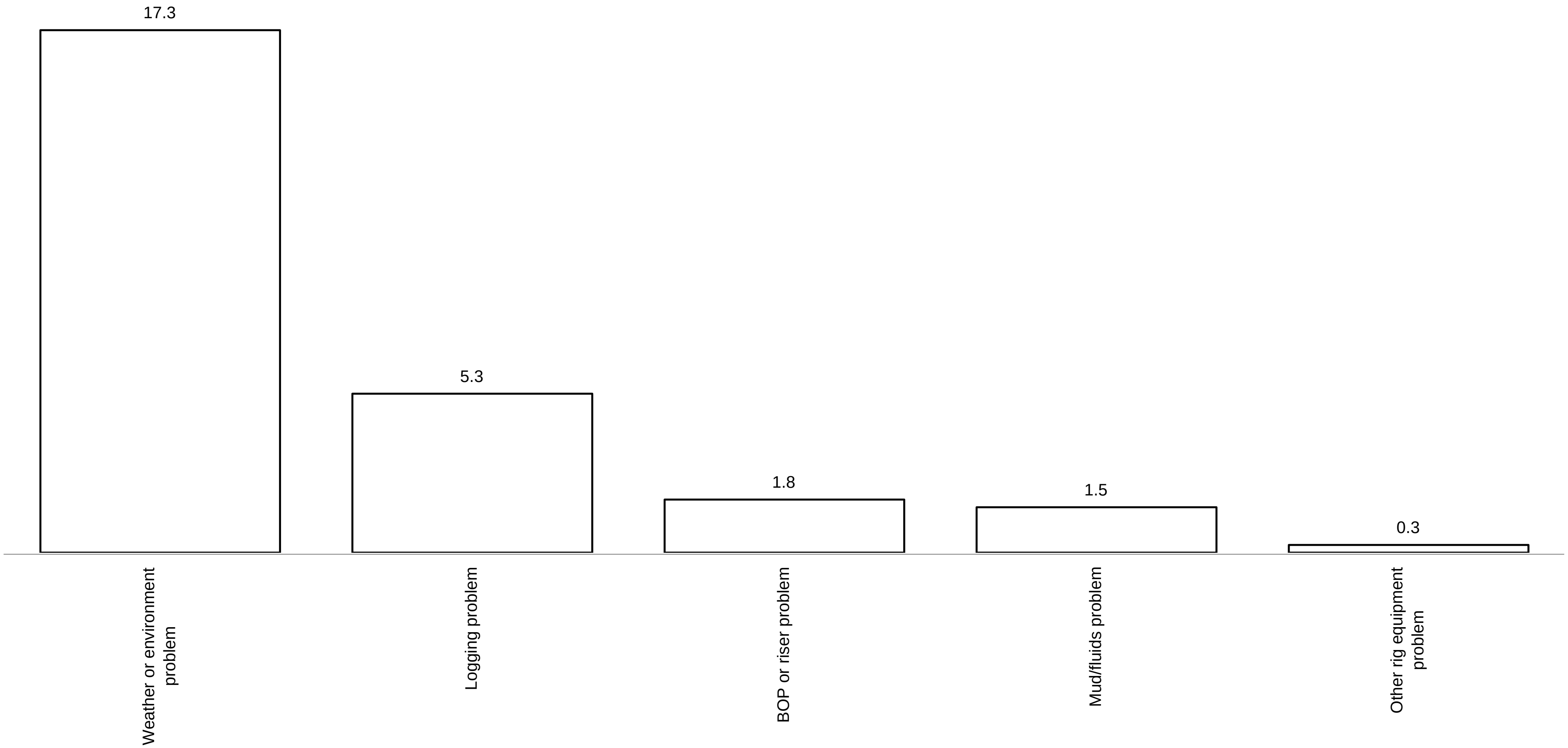
Scallop-1

Non-Productive Time (Hours)

* From 'Activities with NPT' Sheet



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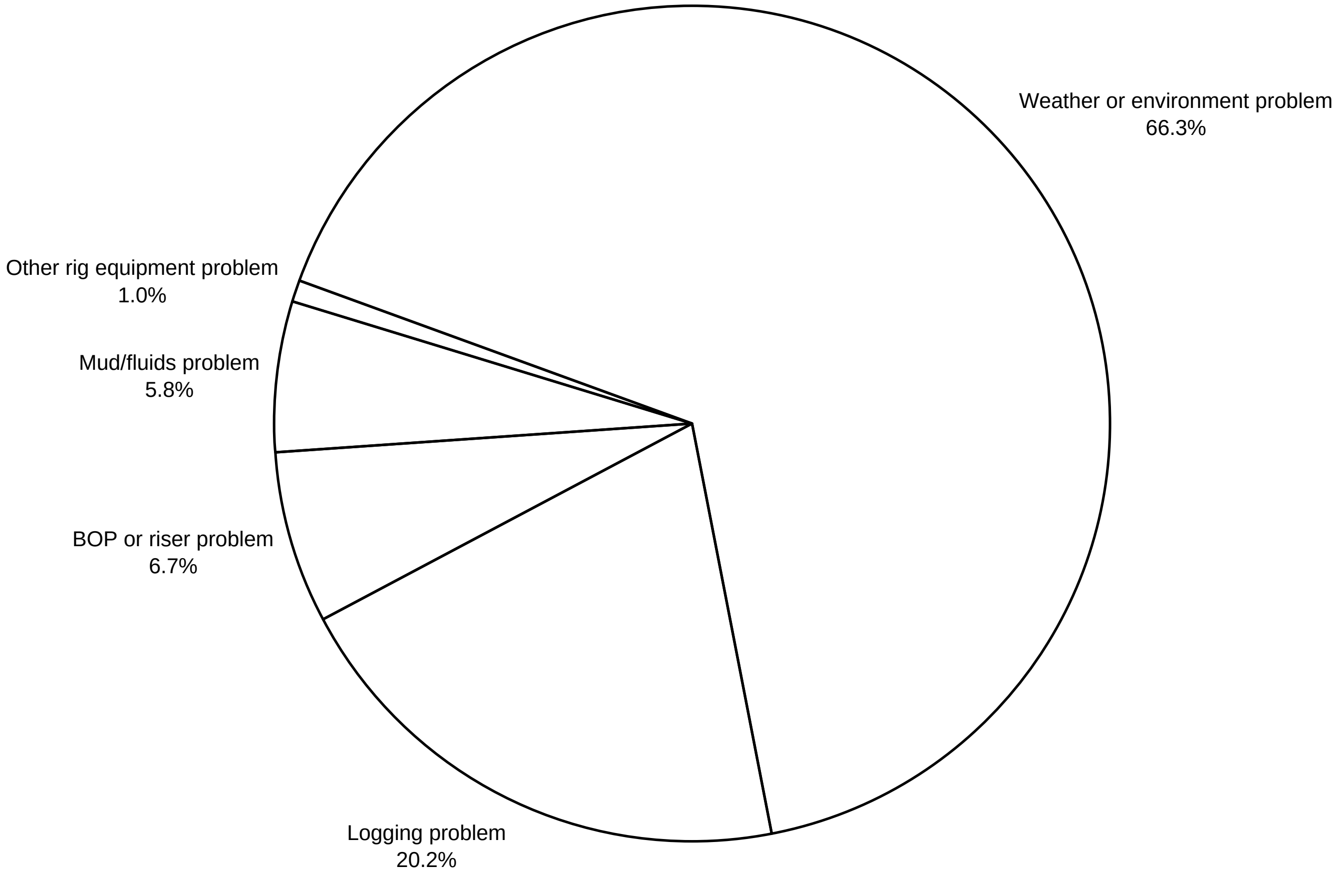
Scallop-1

Non-Productive Time (Percent)

* From 'Activities with NPT' Sheet



FAILURE REPORT SUMMARY

#	Date	Description	Responsible Party	NPT [hrs]	Closeout Report Included
1	05 Feb, 03	Seal leaking on Weatherford casing tong.	Weatherford	0.25	No
2	08 Feb, 03	Circulate to shear mud and polymers due to losses at shakers.	Operator/Bariod	1.50	No
3	23 Feb, 03	Lost integrity in kill line during pressure testing of BOP Stack.	Transocean	1.75	Yes
4	24 Feb, 03	Intermittent fault communicating through MDT toolstring.	Schlumberger	4.75	Yes
5	25 Feb, 03	Re-log interval due to caliper pad of FMI toolstring not being fully extended.	Schlumberger	0.50	Yes
6	02 Mar, 30	Waiting on Weather before commencing de-mooring operations.	Other	17.25	No
			Total Time	**26.00 hrs** **1.08 days**	

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Non-Conformance Report

SECTION COMPLETED BY LEAD SURVEILLANCE ENGINEER/TECHNICIAN

Identifier's name:	George Sharkey
Date:	23/02/03
Site:	NFW
Well No.:	Scallop-1
Responsible Third Party:	Transocean

Incident Number: 217

Result of Non-Conformance:	Downtime	☑
	Potential Downtime	☐
Categorisation of Non-Conformance:	Equipment Failure	☑
	Delivery Delays	☐
	Design Fault	☐
	Maintenance Fault	☐
	Human Error	☐
	Other	☐
Effects of Non-Conformance:	Safety Concerns	☐
	Financial / Time loss	☑
	Environmental	☐
	Other	☐

Description of Non-Conformance (as detailed in Original NCR) and additional comments as necessary:

* While testing BOP stack, lost integrity in the kill line. Found that the kick off sub above the jumper hose on LMRP flex joint had sheared out of the supporting nut letting the pin separate from the box.
* Since the failure has been observed only with the ROV and the riser is still deployed, the current recommendation is to inspect the failure upon recovery of the riser to determine what type of maintenance, inspection, or design change should be made.
* The riser is Vetco FD 8, 19¾" ID.

SECTION COMPLETED BY VERIFIER/KEY CONTACT (if different from Verifier)

Verifier's name:	RMF
Key contact name (if different form Verifier):	
Date:	25/02/03

Conflict with the current contract/agreement?: Yes: ☑

If Yes, give details: * Kill line connection on the LMRP of the BOP equipment failed while in service.

Recommended Remedial Action/Folllow-up Plans:

* Immediate follow up is not possible as the subsea BOP Stack needs to be pulled before an investigation can be performed.
* Upon recovery of the BOP Stack, a preliminary report is to be presented to the Offshore Drilling Supervisor & Drilling Superintendent.
* Transocean to investigate the failure and provide a detailed report 14 days after pulling the BOP Stack as to the cause of the failure, actions taken to fix the failure and proactive actions taken to eliminate/minimise the reoccurrance of this problem, especially if EAPL was utilising the rig in the future.

SECTION COMPLETED WHEN NC CLOSED OUT

Date: 03/03/03

Non-Conformance action closed out: Yes: ☑

(leave unchecked if No)

Action Taken:

Refer to Transocean "Operation Event Report" for a detailed description of events and remedial actions.

Immediate Action Taken to Correct Problem :
* As the well was drilled to an anticipated TD and the programme was to log the well, an exemption was obtained from the DPI and Transocean Region Manager to continue with the logging only. Any decision to deepen the well or to run casing would require securing of the well and pulling of the BOP Stack to facilitate repairs.
* A used kick out sub was on board and a nut was ordered and manufactured in Perth.
* The failed Kick out sub will be replaced once the BOP is pulled.
* Two kick out subs and lock nuts have been ordered on the 2002 budget
(AFE-35) in February 2002, the rig is still waiting on delivery.

Changes Made To Prevent Re-Occurrence of Event :
* The PMS system stipulates 6 monthly checks on this equipment,

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Non-Conformance Report

the kick out subs will now be dismantled and visually inspected during "between wells maintenance" and annual MPI inspections to be continued.

Management Comments :
* Ensure this new procedure is carried out.

Operation Event Report

Printed : 03-Mar-2003

Rig Name : Sedco 702 **Report Type :** **Report Number :** ER-702-03-005 **Date of Event :** 23-Feb-2003

Equipment Type : BOP

Equipment Down : LMRP riser adapter kick out sub **S/N :** Kill kick out sub

Manufacturer : ABB **PSS # :** IJ-480-20 **Model # :** 07062901

Work Order # : JCF-49508 and JCF-55950

Accumulated Running Hours : **Age in Years Since New :**

Downtime Date	Downtime Hours
23-Feb-2003	1.75

Total Downtime for Incident : 1.75 **Hours**

Event :

Pressure testing BOP's to 5,000 psi, test #6 of pressure testing schedule. Whilst pressuring up to 5,000 psi, a pressure drop from 4,500 psi to 0 psi was observed (noting that all previous tests were conducted down the kill line to the BOP). Fault finding the cause, pressure tested cement unit OK, pressure test from cement unit to the manifold valves OK, pressure test from the cement unit down the kill line to the fail safe valves, found the system would not hold pressure. During fault finding the ROV conducted an inspection on the kill side of the BOP visually they could see fluid leaking from the kick out sub on the riser adapter kill line. Downtime of 1.75 hours.

Reasons for Event :

Whilst kill line kick out sub was under pressure, the lock nut threaded area on the kick out sub was stripped, forcing the pin end of the sub down, resulting in it separating from the riser kill line box. Last MPI inspection completed 09-10-2001, no defects were found.

Action Taken to Correct Problem :

As the well was drilled to an anticipated TD and the programme was to log, an exemption was obtained from the DPI and Transocean Region Manager to continue with the logging only. Any decision to deepen the well or to run casing would require the securing of the well and pulling of the BOP Stack to facilitate repairs. A used kick out sub was onboard, and a nut was ordered & manufactured in Perth. The failed Kick out sub will be replaced once the BOP is pulled. Two kick out subs and lock nuts have been ordered on the 2002 budget (AFE-35) in February 2002, the rig is still waiting on delivery.

Changes Made To Prevent Re-Occurrence of Event :

The PMS system stipulates 6 monthly checks on this equipment, the kick out subs will now be dismantled and visually inspected during "between wells maintenance" and annual MPI inspections to be continued.

Management Comments :

Field Support/Operation Support/Engineering Comments :

Ensure this new procedure is carried out.

Person Making Out Report : Ross

TRANSOCEAN "SEDCO 702"
KICKOFF SUB KILL LINE FAILURE PICTURES

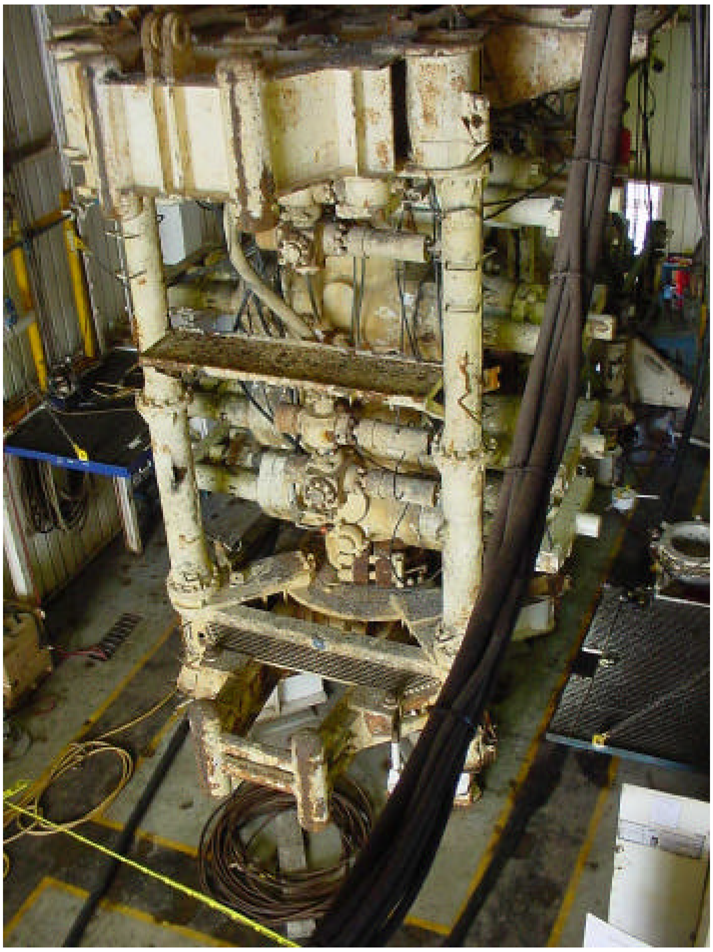

Figure 1 - Overview Photo of Sedco 702 BOP Stack.

Figure 2 & 3 - View of Kill Line & Kick Off Sub on BOP Stack.

The picture does not show the slight drop in the Kill Line Sub which resulted in the seal been broken between the kill line connections of the above Riser Joint and the Kick Off Sub of the Lower Marine Riser Package (LMRP).

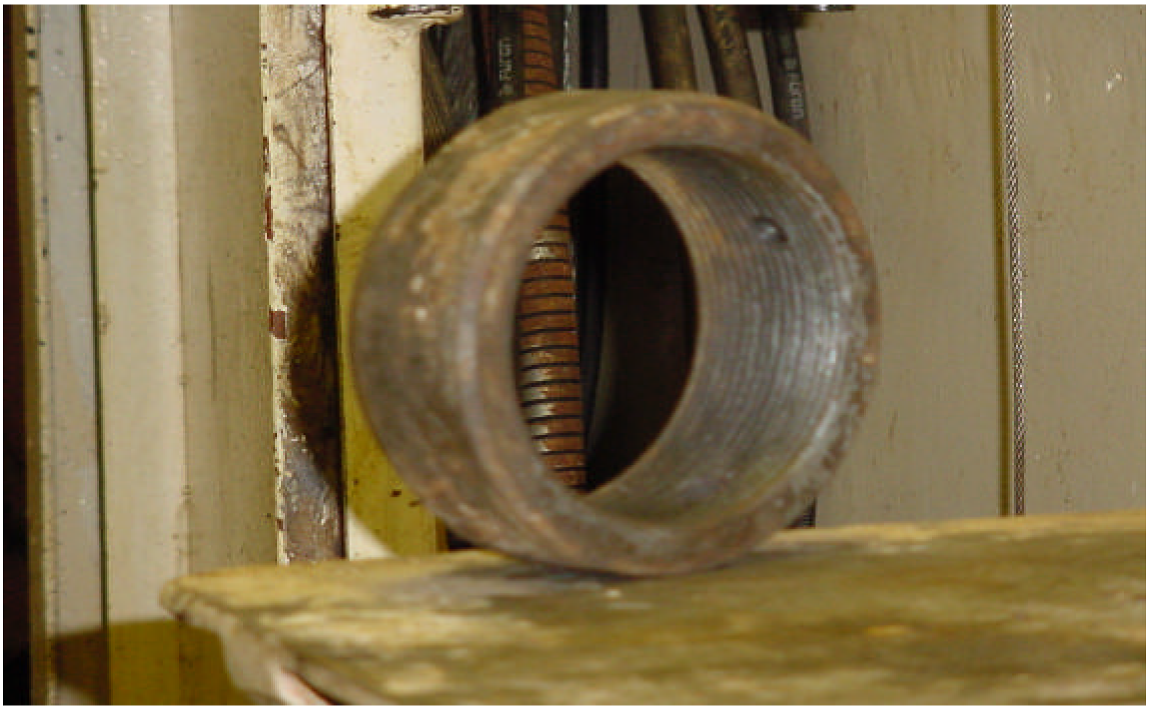

Figure 4 - View of the Failed Kick Off Sub Nut. Internal threads, although still visible were well rounded and permitted the Sub to drop.

Figure 5 - View of the Failed Kick Off Sub. Threads, although quite visible were well rounded and permitted the Sub strip pass the nut to drop.

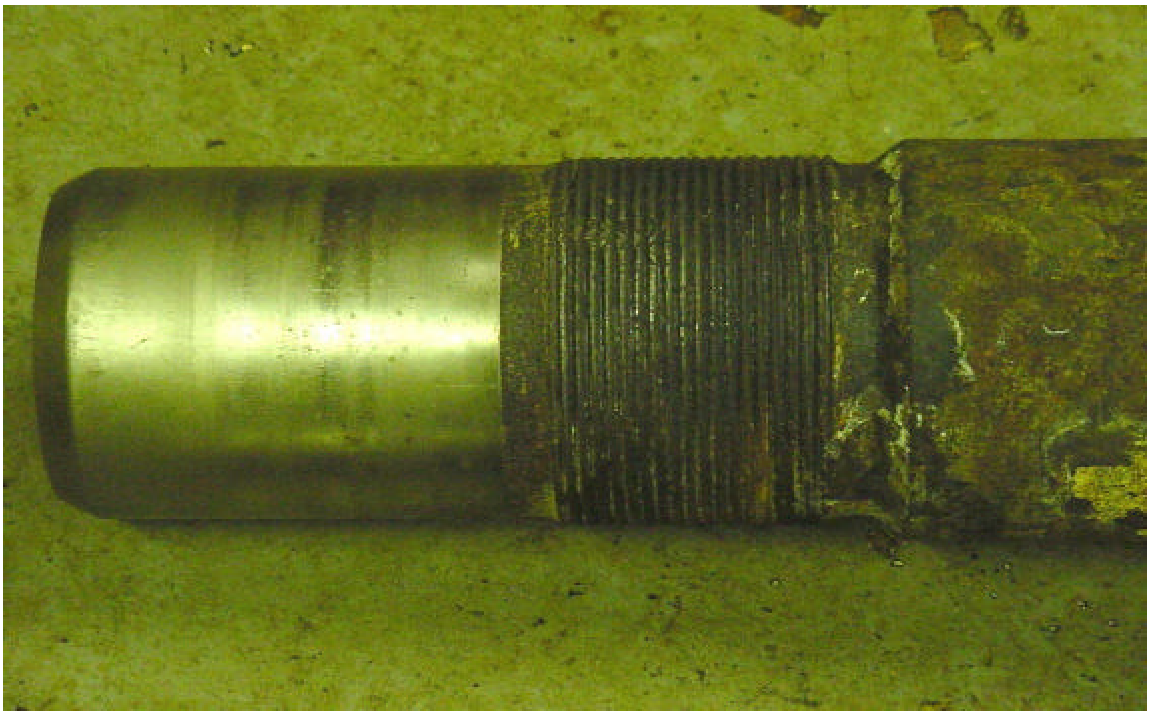

Figure 6 - Wider view of the Failed Kick Off Sub.

Figure 7 - Comparison of two Kick Off Subs.

Note: Comparison is been made between two different subs, one has a 30 degree bent angle profile while the other has a 45 degree profile. Comparison is included purely to compare a new versus an old sub.

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Non-Conformance Report

SECTION COMPLETED BY LEAD SURVEILLANCE ENGINEER/TECHNICIAN

Identifier's name:	Murray Jackson
Date:	25/02/03
Site:	NFW
Well No.:	Scallop-1
Responsible Third Party:	Schlumberger

Incident Number: 219

Description of Non-Conformance (as detailed in Original NCR) and additional comments as necessary:

* After powering up the tool and starting logging, it was noticed the caliper did not fully open so that the 70 meter section had to be repeated.
* Check caliper is fully open before commencing run.

Result of Non-Conformance:	Downtime	☑
	Potential Downtime	☐
Categorisation of Non-Conformance:	Equipment Failure	☐
	Delivery Delays	☐
	Design Fault	☐
	Maintenance Fault	☐
	Human Error	☑
	Other	☐
Effects of Non-Conformance:	Safety Concerns	☐
	Financial / Time loss	☑
	Environmental	☐
	Other	☐

SECTION COMPLETED BY VERIFIER/KEY CONTACT (if different from Verifier)

Verifier's name:	RMF
Key contact name (if different form Verifier):	
Date:	26/02/03
Conflict with the current contract/agreement?: Yes:	☑
If Yes, give details:	* Schlumberger personnel not paying sufficient attention to the operations being conducted.

Recommended Remedial Action/Folllow-up Plans:

* Schlumberger to investigate and provide a response to by 14th March, 2003

SECTION COMPLETED WHEN NC CLOSED OUT

Date:	05/03/03
Non-Conformance action closed out: Yes:	☑
(leave unchecked if No)	

Action Taken:

Refer to Schlumberger Service Quality Report 05-Mar-03. Report details actions taken to ensure problem does not re-occur. Responsibility lays with the onsite Schlumberger Engineer to ensure that this does not happen again.

Failure Analysis:
* When the toolstring was run to bottom, debris and cuttings at the bottom of the hole may have been lodged around the caliper which prevented the caliper arms from fully opening. This should have been observed when the caliper reading was showing 8-3/4" hole instead of 12-1/4". Schlumberger Engineer was distracted with ensuring that other logs were functional and reliance was placed on line tension rather than caliper size to determine if the caliper arms were fully open, an oversight by the Engineer.
* Note that if excessive pad-pressure was applied upfront, it may effect the log results as data collection would have been stretched/smeared and was the reason for not applying pad-pressure upfront.
* It was after commencement of logging at 3,108m when the toolstring was rotating excessively that the Engineer realised that the caliper arm was not fully extended.

Conclusion:

* Schlumberger Engineer to take the necessary time to ensure that all readings are correct before commencing logging operations as per Schlumbergers guidelines/procedures which is to verify the caliper size as part of their reference check when logging.
* Standard procedure of a minimum of 10% pad pressure is proposed even in vertical wells, this is to be preformed as soon as the logging tension normailses.

Esso Australia Pty. Ltd
Service Quality Report – 5 March, 2003
Well: Scallop-1
Logging Date: 23 February, 2003

Logging Job Details

Time Summary:

Run	Operating Time (Hrs)	Lost Time (Hrs)
1A: PEX-HALS-HNGS	7.75	0
1B: MDT-GR	35.5	5
1C: FMI-DSI-GR	12	0.58
1D: CSAT-GR (VSP Survey)	16	0
1E: CST-GR	6.75	0
Lost Time / Total Operating Time = 7.2%	78	5.58

REW Engineers: Francisco Marcano, Josie Robertson
Crew: Everton D'Mello, John Featherstone, Marcus Cave, Richard DeGroot, Peter Lawrence
Geologists: Gordon Wakelin-King, Glen Smith

Run 1A: PEX-HALS-HNGS

This is the depth reference log for the following runs. The repeat section was logged first, across the zone of interest 3145-3089 m. The main pass was logged in high resolution from 3174.5 to 1640 m at 1800 ft/hr. At 1640 m the logging speed was increased to 3600 ft/hr and standard resolution outputs were acquired to the 13 3/8" casing shoe at 900.2 m. The HNGS measurement was corrected for potassium in real-time and barite in playback. The maximum recorded temperatures from the thermometers in the logging head were used to correct the log data on return to surface. The caliper recorded in-gauge borehole with minor washout sections. Further log details are reported in the remarks section of the log header.

Run 1B: MDT-GR (Pressures and Sampling)

After rigging up the toolstring: MRPS-MRHY-MRPS-MRHY-LFA-MRPO-MRSC-MRMS-MRMS-MRPC-SGTL-TCCBF-LEHQT, problems were encountered on powering up. The telemetry system enabling the tools to 'token pass' and recognize module ID codes was not completing the power-up communication sequence. Troubleshooting began and backup tools were used in order to provide a functioning toolstring. Unable to get the double probe toolstring to power up, the decision was made to run in hole with a single probe (large diameter) configuration. The requirements of the MDT program were successfully met using this toolstring. Further troubleshooting and failure analysis is underway to identify the cause and prevent a similar failure from occurring again.

In summary, 66 pretests were taken, 10 x 450 cc samples were recovered and a 1 Ga sample chamber was filled. The samples contained gas and oil, identified from the OFA analysis while pumping out.

Run 1C: FMI-DSI-GR

The repeat section was logged first, across the zone of interest. The FMI main pass was logged from TDL up to 2580 m. During this pass it was noticed that the calipers were not fully open until pad pressure was applied (log section 3172-3108 m). A repeat pass was made to cover this section. DSI was logged in BCR mode from TDL at 3177.5 m to the casing shoe with maximum logging speed 1200 ft/hr. Along with GR, DSI was logged in P&S mode through casing until the signal was lost at 270 m. The upper dipole was extracted from the BCR data and presented in the logs.

Run 1D: CSAT –GR (Zero Offset VSP Survey)

Dual CSAT tools were run with a 14.5 m spacing between geophones. Two compressed air guns with 150 cu in capacity were used for the seismic source. The hydrophone surface sensor was placed 5 m below the guns. The rig air supply was used with a build up time of 10 seconds. Seven checkshot levels were made while running in hole to provide quality control. Poor geophone coupling was found where the borehole was washed out at levels 2794.5 and 2780 m. Moved one meter deeper to obtain a valid signal. Noise was observed on the X and Y axes of both geophones during the acquisition of some levels, it can be filtered out during processing. The VSP levels were continued through casing until 173.6 m where the signal is lost. VSP field processing was provided following logging and included in the final print.

Run 1E: CST-GR

Two CST-D guns with 30 bullets each were used to acquire core samples. Of the 60 shots attempted, 52 samples were recovered, 1 bullet was empty and 7 were lost in hole. This resulted in a recovery factor of 86.7%.

WELL: Scallop-1
CLIENT: ESSO Australia Pty. Ltd
SUBJECT: Failure Report – Run 1B MDT
DATE: 4-Mar-03

MDT Tool Failure

Toolstring: **MRPS-MRHY-MRPS-MRHY-LFA-MRPO-MRSC-MRMS-MRMS-MRPC-SGTL-TCCBF-LEHQT**

Failure Description:
While toolstring was in the derrick prior to running in hole, unable to power up and establish communication between the MDT modules (10 modules total).

Troubleshooting performed on the job:
1) To rule out software or acquisition system problems, the MAXIS was shut down and restarted and a new software configuration was used. Still unable to power up. The logging head insulation and continuity checks were verified.

2) Disconnected the toolstring near the top and proceeded to power up the toolstring while adding one module at a time. Checked and cleaned the MDT pin connections. If the tool failure was re-produced the backup modules were used in replacement, until a working toolstring was connected. Unfortunately, could not get the double probe combination to communicate and the decision was made to run in hole with the single probe (total 8 modules).

Troubleshooting performed in base (up to 4-Feb-03):
1) Connected complete toolstring horizontally. Powered up using the shop system. All modules are in communication and tool power-up is successful. Run operational tests to verify. Checked the power lines on the bottom of the toolstring using a multimeter to verify the voltage is not leaking somewhere in the toolstring. Shock-tested all tool connections using rubber hammer. Put toolstring under tension to simulate the weight of tool when hanging vertical in the derrick. No telemetry errors were reported and the toolstring powered up with every test.

2) Further troubleshooting needs to carried out in order to isolate the hardware problem. Low voltages lines for the communication electronic boards are suspected.

WELL: Scallop-1
CLIENT: ESSO Australia Pty. Ltd
SUBJECT: Failure Report – Run 1C FMI
DATE: 4-Mar-03

FMI Data Quality

Toolstring: **FMI-DSI-SGTL-DTAA-DTCH-LEHQT**

Failure Description:

Calipers partially open when logging up from bottom, calipers open completely after pad pressure was applied at 3108 m. A 2nd pass was required to acquire valid data over the bottom 64 m of the borehole, during this pass pad pressure was applied as soon as the logging tension normalized. Successful caliper measurements were achieved by the use of pad pressure.

Failure Analysis:

The problem did not occur during the repeat section, before tagging TD, and it repeated on the 2nd time TD was tagged. An over pull was observed while releasing the tool string from the bottom of the hole every time the tool tagged TD.

A caliper check was performed as par of the rig down procedures.

It was concluded that when logging the main pass up from TD, the four-arm FMI caliper had not fully opened due to debris and cuttings in the bottom of the borehole. Some time was utilized in order to determine TD right after the tool started moving, the logging engineer did not realized the calipers were partially open until the depth 3108 m was reached.

***Conclusion*:**

Standard procedure of a minimum of 10% pad pressure is proposed even in vertical wells, this is to be preformed as soon as the logging tension normalizes.

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Non-Conformance Report

SECTION COMPLETED BY LEAD SURVEILLANCE ENGINEER/TECHNICIAN

Identifier's name:	George Sharkey
Date:	24/02/03
Site:	NFW
Well No.:	Scallop-1
Responsible Third Party:	Schlumberger

Incident Number: 218

Description of Non-Conformance (as detailed in Original NCR) and additional comments as necessary:

* Had intermittent faults communicating through modular dynamic tester tool. Removed martineau probe leaving MDT with only large area probe and replaced primary tools with backup tools. MDT was run and successfully logged well.
* At this time, it has not been possible to troubleshoot the tools due to personnel and equipment being dedicated to an active logging program.
Until this problem is resolved, it is recommended that the traditional single probe configuration be run.
* It is probable that follow-up will be required after the well has been completed and the problem has been diagnosed.

Result of Non-Conformance:	Downtime	☑
	Potential Downtime	☐
Categorisation of Non-Conformance:	Equipment Failure	☐
	Delivery Delays	☑
	Design Fault	☑
	Maintenance Fault	☑
	Human Error	☑
	Other	☑
Effects of Non-Conformance:	Safety Concerns	☐
	Financial / Time loss	☑
	Environmental	☐
	Other	☐

SECTION COMPLETED BY VERIFIER/KEY CONTACT (if different from Verifier)

Verifier's name:	RMF
Key contact name (if different form Verifier):	
Date:	26/02/03

Conflict with the current contract/agreement?: Yes: ☑

If Yes, give details: * Did not meet contract requirements.

Recommended Remedial Action/Folllow-up Plans:

* Schlumberger to investigate and provide a detailed inspection report and response as to the cause of the failure by 14th March, 2002.

SECTION COMPLETED WHEN NC CLOSED OUT

Date: 13/03/03

Non-Conformance action closed out: Yes: ☑
(leave unchecked if No)

Action Taken:

* Refer to Schlumberger MDT Failure Report 13-Mar-03. Report details immediate response to failure and proposed short term remedy, although the subjective quick fix is not recommended as a long term remedy which is still be investigated.

Failure Analysis:
Due to the oversize of the sockets, the contact metal-to-metal contact between the pins and sockets was intermittent and highly dependent on the tool's position. The problem offshore could not be reproduced in the horizontal position but intentional disconnection of the token pass lines enabled the problem to be reproduced.

Conclusions:
(1) Schlumberger (Australia) contacted Schlumberger's Technical Centre. They were advised that issue has been recognised and several modifications have been done to the bulkhead with the latest release being in Sept-2002. The SALE Division at the time did not source the new bulkheads which was a short coming on their part. Note that Schlumberger advised EAPL that the new bulkheads may have some other inherent problems which are currently being fixed.
(2) New troublefree bulkheads have been ordered and will be

installed when received.
(3) In the interim, the bulkhead sockets are to be tested by introducing a 0.06" pin in each one of the sockets and to feel for a restriction. Although this is a subjective process, it is the only workable option at the time.
(4) A "No-Go" gauge design has been proposed for development by the product center wihc is currently under review.
(5) This issue has been communicated to the Australian & New Zealand region and its already public in Schlumberger's "InTouch" database which is assessable for the rest of the world.

WELL:	**Scallop-1**
CLIENT:	**ESSO Australia Pty. Ltd**
SUBJECT:	**Failure Report – Run 1B MDT**
DATE:	**13-Mar-03**

MDT Tool Failure

Toolstring: **MRPS-MRHY-MRPS-MRHY-LFA-MRPO-MRSC-MRMS-MRMS-MRPC-SGTL-TCCBF-LEHQT**

Failure Description:
While toolstring was in the derrick prior to running in hole, unable to power up and establish communication between the MDT modules (10 modules total).

Troubleshooting performed on the job:
1) To rule out software or acquisition system problems, the MAXIS was shut down and restarted and a new software configuration was used. Still unable to power up. The logging head insulation and continuity checks were verified.

2) Disconnected the toolstring near the top and proceeded to power up the toolstring while adding one module at a time. Checked and cleaned the MDT pin connections. If the tool failure was re-produced the backup modules were used in replacement, until a working toolstring was connected. Unfortunately, could not get the double probe combination to communicate and the decision was made to run in hole with the single probe (total 8 modules).

Troubleshooting performed in base (up to 4-Feb-03):
1) Connected complete toolstring horizontally. Powered up using the shop system. All modules are in communication and tool power-up is successful. Run operational tests to verify. Checked the power lines on the bottom of the toolstring using a multimeter to verify the voltage is not leaking somewhere in the toolstring. Shock-tested all tool connections using rubber hammer. Put toolstring under tension to simulate the weight of tool when hanging vertical in the derrick. No telemetry errors were reported and the toolstring powered up with every test.

2) Further troubleshooting needs to be carried out in order to isolate the hardware problem. Low voltages lines for the communication electronic boards are suspected.

Update on final troubleshooting performed in base:
1) A detailed electrical check was started using the Auto-trim machine. This machine uses the same electrical plugs that all MDT modules and, connecting to the upper and lower ends of the tool, it performs all the electrical checks.

2) Some tests failed in the Pump Out module.

3) It was observed that the sockets inside the upper bulkhead of the Pump Out module were over sized, causing a loosen fit of the pins from the connectors. The continuity to the sockets was dependant on connector positioning.

4) The Token Pass lines and the 50Vlts lines had oversized pins.

Failure analysis:

Due to the oversize of the sockets the contact in between pins and sockets was intermittent and depending on tool position. The problem does not reproduce when the tool is horizontal but it was reproduced once these lines were intentionally disconnected. The Token pass lines are critical for the tool communication to the logging cabin system.

Conclusions:

1) After this problem was found Intouch from Schlumberger was contacted and feedback is presented as an attachment. This issue has been recognized and several modifications have been done to the bulkhead, with the latest release on Sep-2002.

2) A Go-Nogo gauge design has been proposed to the product center and it is today under consideration.

3) In the mean while the Bulkhead sockets are to be tested by introducing a 0.06” pin in each one of the sockets and feel for restriction in the process.

4) This issue will be communicated to the Australia and New Zealand region and it’s already public in the Intouch database for the rest of the world.

5) A new bulkhead has been ordered and is to be installed when received.

Schlumberger Oilfield Australia

314 Raglan Street, (P.O. Box 230)
Sale, VIC 3850

Ph: 61-3-5143 2242
Fax: 61-3-5143 2450

Schlumberger

May 5, 2003
Follow-Up
After further research, there have been several changes to the initial conclusions. The most significant being the change to the checking procedure of the 22 pin hermetically sealed connector which is found on all MDT modules.
The following was taken from the initial MDT tool failure report. Comments in Blue.

Conclusions:

1) After this problem was found Intouch from Schlumberger was contacted and feedback is presented as an attachment. This issue has been recognized and several modifications have been done to the bulkhead, with the latest release on Sep-2002.
No Changes.
2) A Go-Nogo gauge design has been proposed to the product center and it is today under consideration.
The Go-Nogo gauge design suggested by the Sale location was rejected, but a more reliable design has been offered by the product center which measures the extraction force required to pull a pin from the MDT bulkhead.
3) In the mean while the Bulkhead sockets are to be tested by introducing a 0.06" pin in each one of the sockets and feel for restriction in the process.
This will no longer be necessary with the new design.
4) This issue will be communicated to the Australia and New Zealand region and it's already public in the Intouch database for the rest of the world.
Issue has been communicated through Intouch, as well as local technical bulletins. In fact, by sharing the knowledge from this failure to the rest of the Schlumberger community, we were able to help close out several "mystery" MDT failures that people have had around the world.
5) A new bulkhead has been ordered and is to be installed when received.
New bulkheads have been placed into the tools in Sale. Bulkheads in other tools throughout Australia will be replaced if/when they do not pass the new Extraction Force Test.

Trevor Speldrich
Schlumberger Location Manager, Sale Victoria
Office: (61) 3 5143 2242
Mobile: (61) 4 1786 5397
email: trevor@sale.oilfield.slb.com

AFE

AUTHORITY FOR EXPENDITURE

L.7401D.001 ← NOW

AFE TITLE:	SCALLOP-1 EXPLORATION WELL	AFE NUMBER:	~~L0201C.001~~
CO. NO:	01	CUSTODIAN NAME:	CHRIS MEAKIN
LOCATION:	VIC/RL2	WIZARD ID:	CPMEAKI
WORK GROUP:	EMDC DRILLING - AUSTRALIA OFFSHORE	WIZARD CUSTODIAN NO.:	13006

PRIMARY PROJECT EXPENDITURE TYPE (SELECT USING 'X'):		FUNDING REQUEST PHASE:	
RATE ENHANCEMENT/TECHNICAL		PROJECT SCOPE STUDY (PS)	
SAFETY		PROJECT DETAILED DESIGN (PD)	
ENVIRONMENTAL		PHASE 1 ASSET EXPENDITURE (AE)	
REGULATORY		TOTAL ASSET EXPENDITURE (AE)	X
OTHER ECONOMIC	X		

FORECAST MILESTONE DATES (MM/YY):

SCOPING STUDY	
DETAILED DESIGN	
OPERATIONAL	Mar-03

ESTIMATED COST DETAILS (A$)

THIS PHASE		CURRENT		PREVIOUS	
MAJOR EQUIPMENT		$	321,000	$	-
MATERIALS		$	2,150,000	$	-
CONTRACT LABOUR & SERVICES		$	18,810,000	$	-
ALLOCATIONS		$	1,767,000	$	-
CONTINGENCY		$	-	$	-
TOTAL 100%		$	23,048,000	$	-
EXXONMOBIL NET	25%	$	5,762,000	$	-
BHP BILLITON	25%	$	5,762,000	$	-
WOODSIDE	30%	$	6,914,400	$	-
SANTOS	20%	$	4,609,600	$	-
TOTAL PROJECT COST		$	23,048,000	$	-

SCOPE / JUSTIFICATION / ASSET DETAILS / PROJECT EXECUTION PLAN / SHE ISSUES / PROJECT TEAM:

(USE ATTACHMENTS WHERE NECESSARY)

The above funds are requested to drill the Scallop-1 exploration well to 3100m TVDSS to test a lowside, fault-dependent trap in the sub-volcanic (Golden Beach) section on the Scallop fault block, and test the validity of two possible DHIs. The well will also test fault seal in this part of the pre-Latrobe section.

The estimated duration of this well, including 10% contingency, is 42. days, of which 3 days has been allowed for the move from Otway Basin, and a further 7 days allowed for waiting for necessary approvals.

This AFE is based on dry hole costs, and does not include additional logging costs (e.g. MDTs), deepening, running and cementing 9-5/8" casing and suspending the well, any or all of which may be required if the well is successful. The AFE includes an allowance of $5.9M to demobilise the rig to Darwin.

In this AFE costs in US Dollars have been converted to Australian Dollars at a 0.52 exchange rate.

ExxonMobil NWI is US$2,996,240.

AE FUNDING REQUEST USE ONLY:		DETAILS:
DOES THIS AFE REPLACE EXISTING EQUIP OR FAC?	~~YES / NO~~	

FINANCIAL SERVICES USE ONLY:

CAPITAL vs EXP:		EX. RATE:	
DATE:		US$ NET:	
EM APR LEVEL REQ:		BUDGET CLASS:	01

ASSET SET UP:

ASSET CLASS:		ASSET NUMBER:	
LOCATION:		AFE CLEARING RULES:	
BOOK DEPN KEY:		CONTROLLABLE / NON-CONTROLLABLE:	
RRT RATE:		SEGMENT:	74
SUMMARY 1:	0140.300.74	SUMMARY 2:	~~0140.01~~ 0.74
INPUT BY:		DATE:	10/1/3 24/1/3
REVIEWED BY:		DATE:	

ROLE	APPROVAL LEVEL*	NAME	SIGNATURE	DATE
CUSTODIAN		Chris Meakin		9-Jan-2003
ENGINEERING MANAGER		Colin Johancsik		9-01-03
OPERATIONS SUPERINTENDENT		~~Frank Kratzer~~ George Sharkey	George K. Sharkey	10 Jan 2003
DRILLING MANAGER		Daniel L. Whiteman		10 Jan 2003
GIPPSLAND PROJECT MANAGER		Glen Nash		10 Jan 2003
AREA GEOSCIENCE MANAGER	5	Doug Schwebel		10/01/03

* APPROVAL (LEVEL:) - REFER TO DOAG SPECIFIC USE SCHEDULES, BUDGETS SECTION FOR REQUIREMENTS

COST ELEMENT	DESCRIPTION	ESTIMATED COST CURRENT	ESTIMATED COST PREVIOUS
(A) EQUIPMENT			
100	SUBSURFACE PRODUCTION EQ.	$ -	
101	SURFACE CASING	$ 247,000	
103	INTERMEDIATE CASING	$ -	
105	PRODUCTION CASING	$ -	
106	TUBING	$ 6,000	
107	WELLHEAD ASSEMBLY	$ 68,000	
	SUB-TOTAL (A)	$ 321,000.00	$ -
(B) MATERIALS			
130	OTHER MATERIALS	$ 63,000	
131	OTHER MATERIALS - INTANGIBLES	$ 63,000	
138	FUEL PRODUCTS DIESEL	$ 966,000	
150	FLOAT EQUIPMENT, CENTRALISERS	$ 6,000	
151	DRILLING FLUID/CEMENT	$ 613,000	
152	DRILL BITS	$ 439,000	
	SUB-TOTAL (B)	$ 2,150,000.00	$ -
(C) CONTRACTS & RENTALS			
201	CONTRACT TRANSPORT - Land & Courier	$ 109,000	
202	CONTRACT TRANSPORT - Air Fixed Wing & H'copter	$ -	
203	CONTRACT TRANSPORT - Marine	$ 2,713,000	
209	DIVING/ROV SERVICES	$ 222,000	
213	ONSHORE SERVICES (Site Construction On-shore Mob/Demob)	$ -	
214	OFFSHORE CONSTRUCTION - Rig Mob	$ 5,887,000	
217	ELECTRIC LOGGING/PERFORATING	$ 845,000	
218	MUD LOGGING	$ 179,000	
219	DIRECTIONAL DRILLING	$ 267,000	
220	CORING	$ -	
221	CEMENTING SERVICES	$ 252,000	
222	DRILLING/WORKOVERS	$ 6,783,000	
223	MISCELLANEOUS DRILL SERVICES	$ 936,000	
225	PRODUCTION TESTING	$ -	
230	OTHER	$ 474,000	
	SUB-TOTAL (C)	$ 18,667,000.00	$ -
(D) TECHNICAL / PROFESSIONAL SERVICES			
260	ENGINEERING CONSULTANTS	$ 50,000	
268	TECH SERVICE - NON AFFILIATE	$ 93,000	
	SUB-TOTAL (D)	$ 143,000.00	$ -
	SUB-TOTAL (C) + (D)	$ 18,810,000.00	$ -
(E) ALLOCATIONS			
413	EMDC/OTHER AFFILIATE CHARGES	$ 490,000	
501	WELL INSURANCE	$ -	
608	ALLOC GEOPHYSICAL OPS	$ -	
609	ALLOC FORMATION EVALUATION	$ -	
647	ALLOCATION OPEX TO CAPEX	$ 42,000	
690	ALLOCATION MANUAL ADJUSTMENT	$ -	
702	ALLOC EXPLORATION EHL G&G ALLOCATIONS-OPS GEOLOGY & AIPC	$ 63,000	
707	ALLOC EXPLORATION GEOPHYSICAL OPERATIONS	$ -	
708	ALLOC EXPLORATION FORMATION EVALUATION	$ 63,000	
760	ALLOC MARINE TERMINALS/ONSHORE BASE	$ 105,000	
761	ALLOC PRODUCTION MARINE SERVICES	$ -	
762	ALLOC PRODUCTION TRANSPORT - SUPPLY VESSEL	$ 238,000	
763	ALLOC OFFSHOIRE CATERING	$ -	
764	ALLOC PRODUCTION TRANSPORT - AIRCRAFT/HELICOPTERS	$ 168,000	
765	ALLOC - PROD OPS SUPPORT	$ -	
770	ALLOC DRILLING OVERHEAD	$ 573,000	
782	ALLOC RESERVOIR TECHNOLOGY	$ 25,000	
	SUB-TOTAL (E)	$ 1,767,000.00	$ -
(F) CONTINGENCY			
970	CONTINGENCY ALLOWANCE	$ -	
	SUB-TOTAL (F)	$ -	$ -
	AFE TOTAL (A + B + C + D + E + F)	$ 23,048,000	$ -

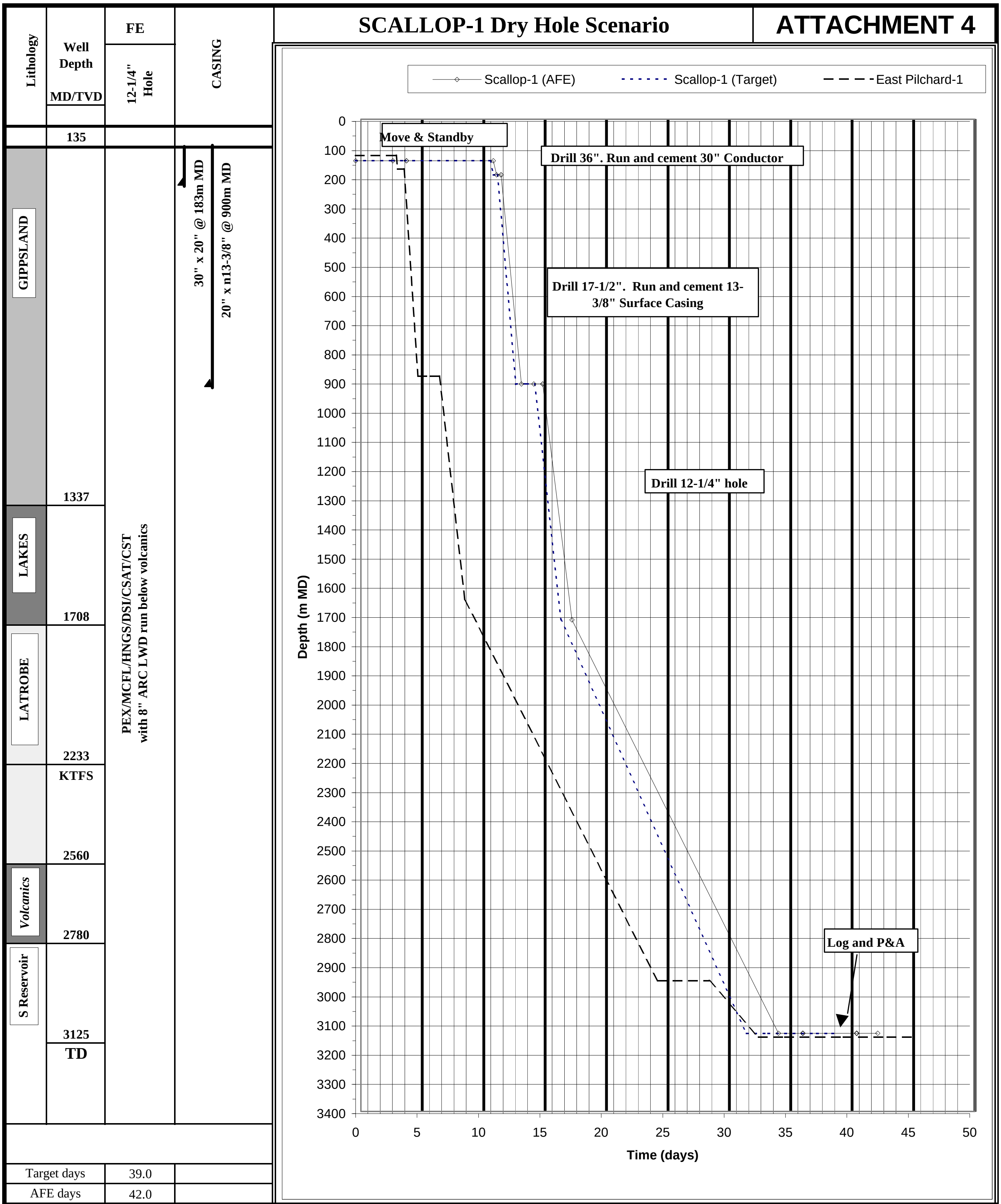
ESTIMATE PREPARED BY:

DATE:

ESTIMATE NO.

ESTIMATE CLASS:

Well Progress Curve



	Near-Field Wildcat	
TD	3125	m MDRT
	3125	m TVDRT
Max Tangent angle:	vertical	
Target Location (AMG Zone 55):	639,316 mE	
	5,769,300 mN	
Target Depth & Size:	3125m TVDRT, 150m square target with a hard northern boundary.	

Summary Scallop-1 Dry Hole:
Accept rig from previous Operator. Move to Scallop-1 location. Moor & rig-up. Drill 26" x 36" hole. Run and cement 30" conductor. Drill 17-1/2" surface hole riserless and run and cement 13-3/8" surface casing with PGB. Drill 12-1/4" hole to TD. Log and P&A. Release rig.

xonMobil Exploration Co
st Office Box 4778
ouston, Texas 77210-4778

W. F. Threlfall
Vice President
S.E. Asia/Russia/Australia

ExxonMobil Proprietary

ExxonMobil Exploration

December 13, 2002

Mr. J. Cousins
Executive Vice President
ExxonMobil Exploration Company
Houston, TX

Subject: Australia -- Scope change Gippsland Scallop well

Dear John:

We request your endorsement for a scope change to drill the Scallop well in the Gippsland RL2 permit. Santos and Woodside plan to drill the Scallop well in 1Q 2003 regardless of whether Esso or BHPB participate. If any party does not participate, there is a sole risk provision that would charge non-participating parties a penalty to buy ~~there~~ their way back in of 600% of the drilling costs. In the December 11 Joint Venture Committee meeting, Santos and Woodside voted to drill the well and we now have 7 days to either change our no vote or continue to not participate and be subject to the sole risk penalty. The current well cost estimate is $2.25M net ($9.0M gross).

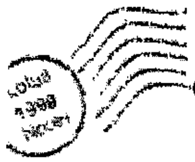
Sufficient EMEC Functional Authority Advance Commitment Funds are available for this request. However, we will not commit to the Scallop well until after we receive formal 2003 budget release funds from Dallas, which we expect in the next few days. In the event we do not receive the 2003 approved budget before the 7 days expire, we will seek your endorsement for a 2003 advance commitment of $2.25M. Please indicate your endorsement for the scope change to drill the 2003 Scallop well.

Sincerely,

ENDORSED: RC Schwartz 12/13/02
R. C. Schwartz date

FINAL REVIEW: John Cousins December 16, 2002.
J. Cousins date

RECEIVED TIME 17. DEC. 9:06



Ron H Reinten

01/28/03 09:51 AM

To: Daniel L Whiteman/U-SouthPacific/ExxonMobil@xom, Glen A Nash/U-SouthPacific/ExxonMobil@xom
cc: Mark J Nolan/U-SouthPacific/ExxonMobil@xom, Doug A Schwebel/U-SouthPacific/ExxonMobil@xom, Bruno Jardin/U-SouthPacific/ExxonMobil@xom, Paul M Tobin/U-SouthPacific/ExxonMobil@xom, David K Beenie/U-SouthPacific/ExxonMobil@xom, Tanya Bush/B/U-SouthPacific/ExxonMobil@XOM
Subject: RE: Scallop Approval

Dan / Glen,

With this note from Santos we now have budget approval from all the JV parties. Woodside and Santos have approved the revised budget excluding the A$1.8M gross for stand-by. As such could you please adjust the well AFE to remove this element of the costs.

I will send a copy of the other approval letters to you in todays mail.

Regards
Ron Reinten
Special Projects Adviser
ExxonMobil Production
Ph: +61 3 9270-3954
Fax: +61 3 9270-3571
E-mail: ron.h.reinten@exxonmobil.com

This message and any attachments may contain proprietary or confidential information. If you are not the intended recipient or you received the message in error, you must not use or distribute the message. Please notify the sender immediately and destroy the original message. Thank you.
----- Forwarded by Ron H Reinten/U-SouthPacific/ExxonMobil on 28/01/2003 09:52 AM -----

"Hoyle, Steven W" <Steven.Hoyle@santos.com>

24/01/2003 07:32 PM

To: <ron.h.reinten@exxonmobil.com>
cc: <glen.a.nash@exxonmobil.com>
Subject: RE: Scallop Approval

Ron,
Santos approves the operators budget minus the $1.8M for stand-by.
Thanks
Steve Hoyle
Manager Commercial and Planning
Southern Australia Business Unit

Santos Ltd
Level 10, 91 King William Street,
Adelaide, South Australia, 5000
Phone : 08 8224 7643
Mobile: 0418 7643 20
Fax : 08 8224 7520

-----Original Message-----
From: ron.h.reinten@exxonmobil.com [mailto:ron.h.reinten@exxonmobil.com]
Sent: Thursday, 23 January 2003 07:55
To: Hoyle, Steven W
Cc: glen.a.nash@exxonmobil.com
Subject: Re: Scallop Approval

Steve,

By now you will have seen that we have received all the required approvals bhpbilliton

BHP Billiton Petroleum Pty Ltd
600 Bourke Street
Melbourne Victoria 3000 Australia
GPO Box 86A
Melbourne Victoria 3001 Australia
Tel +61 3 9609 3333 Fax +61 3 9609 3015
bhpbilliton.com

15 January 2003

TO:
Mr Ron Reinten
Esso Australia Resources Pty Ltd
12 Riverside Quay
Southbank, Victoria 3006
Fax: 03 9270 3571

CC:
Mr Giovanni diToro
Woodside Eastern Energy Pty Ltd
1 Adelaide Terrace
Perth WA 6000
Fax: 08 9348 6494

Mr Steve Hoyle
Santos Offshore Pty Ltd
Level 29
Santos House
91 King William Street
Adelaide SA 5000
Fax: 08 8224 7520

Dear Ron,

REVISED RL2 2003 BUDGET & WORKPLAN (SCALLOP –1 WELL APPROVAL)

BHP Petroleum approves the proposed revised RL2 budget of A$ 23.298 million and work-plan, as represented in your letter of 10th Jan 2003. This includes A$250k for technical and overhead, and A$ 23.048 million for the Scallop-1 well.

RECEIVED
17 JAN 2003
ESSO AUSTRALIA
PRODUCTION TECHNOLOGY

Yours sincerely,

for

Rick Smith
VIC/RL2 Operating Committee Representative
Technical Manager Bass Strait

WOODSIDE

AUSTRALIAN ENERGY

Mr Ron Reinten
Esso Australia Resources Pty Ltd
12 Riverside Quay
Southbank VIC 3006
Fax : 03 9270 3571

22 January 2003

Dear Ron

REVISED RL2 2003 BUDGET AND WORKPLAN (SCALLOP-1 WELL APPROVAL)

Woodside Energy Ltd approves the proposed revised RL2 budget and work plans as represented in your letter of 10th January 2003 as follows:

1. Woodside approves the A$250,000 for technical work and overhead; and
2. Woodside approves the Scallop-1 exploration well AFE excluding the A$1.8m component related to seven days' standby to receive regulatory approvals. We believe that this component is not required as approval to drill Scallop-1 has been granted by DPI.

Your sincerely

Giovanni di Toro

Giovanni di Toro
VIC/RL2 Operating Committee Representative

cc: Mr Mel Osborne
BHP Billiton
Fax: 03 9609 3015

Mr Steve Hoyle
Santos Offshore Pty Ltd
Fax: 08 8224 7520

RECEIVED
22 JAN 2003
ESSO AUSTRALIA
PRODUCTION TECHNOLOGY

"Hoyle, Steven W" <Steven.Hoyle@santos.com>
To: <ron.h.reinten@exxonmobil.com>
cc: <glen.a.nash@exxonmobil.com>
Subject: RE: Scallop Approval

24/01/2003 07:32 PM

Ron,
Santos approves the operators budget minus the $1.8M for stand-by.
Thanks
Steve Hoyle
Manager Commercial and Planning
Southern Australia Business Unit

Santos Ltd
Level 10, 91 King William Street,
Adelaide, South Australia, 5000
Phone : 08 8224 7643
Mobile: 0418 7643 20
Fax : 08 8224 7520

PRODUCTION TECHNOLOGY
ESSO AUSTRALIA
28 JAN 2003
RECEIVED

-----Original Message-----
From: ron.h.reinten@exxonmobil.com [mailto:ron.h.reinten@exxonmobil.com]
Sent: Thursday, 23 January 2003 07:55
To: Hoyle, Steven W
Cc: glen.a.nash@exxonmobil.com
Subject: Re: Scallop Approval

Steve,

By now you will have seen that we have received all the required approvals from the government and as such there is no longer any need for the A$1.8M for stand-by. As such you are free to approve the well without that provision (and I am a bottle of wine up - { :)}).

On the FMIS run, this is a standard tool that we use with strategraphically complex wells. The tool gives a clear picture of bed dip and is very useful when you expect faulting. Given the issues that arise in the Kipper area with faults etc, we believe the information from this tool is essential.

Regards
Ron Reinten
Special Projects Adviser
ExxonMobil Production
Ph: +61 3 9270-3954
Fax: +61 3 9270-3571
E-mail: ron.h.reinten@exxonmobil.com

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"Hoyle, Steven W" <Steven.Hoyle@santos.com>
To: <ron.h.reinten@exxonmobil.com>
cc:
Subject: Scallop Approval

21/01/2003 06:53 PM

Jeffrey T Bye

24/01/03 17:11

To: Shirley Sargent/SouthPacific/ExxonMobil@xom
cc: Stuart Morarty/SouthPacific/ExxonMobil@xom
Subject: Scallop 1

Shirley

As discussed raising the AFE in Wizard is approved. Three of the four parties have formally approved but it was agreed by all parties to participate. As such I feel endorsement from Santos will arrive as they have indicated that they agree with the well being drilled.

Jeff Bye
Upstream Operations Accounting Manager
ExxonMobil Australia
Ph: 613 9270 3149 Fax: 613 9270 3294
E-mail: jeffrey.t.bye@exxonmobil.com

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Final Well Cost Report

ExxonMobil

Well Cost Worksheet

Well Name: Scallop-1

Class	Description	AFE	Actual	Percent	30-Jan-03	31-Jan-03	1-Feb-03	2-Feb-03	3-Feb-03	4-Feb-03	5-Feb-03	6-Feb-03	7-Feb-03	8-Feb-03
101	Surface Casing	247,000	93,634	37.9%	15,708	0	0	0	0	0	140,414	131,851	0	0
106	Tubing	6,000	0	0.0%	0	0	0	0	0	0	0	0	0	0
107	Wellhead Assembly	68,000	215,455	316.8%	0	0	0	0	0	0	0	0	0	0
	EQUIPMENT	**321,000**	**309,089**	**96.3%**	**15,708**	**0**	**0**	**0**	**0**	**0**	**140,414**	**131,851**	**0**	**0**
130	Other Materials	63,000	48,438	76.9%	42	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
131	Other Material-Intangible	63,000	33,042	52.4%	0	0	0	0	0	0	0	0	0	0
138	Fuel Products Diesel	966,000	469,775	48.6%	1,961	47,059	31,297	15,519	15,519	13,865	20,000	17,600	9,413	9,413
150	Float Equip, Centralizers	6,000	6,036	100.6%	0	0	0	0	0	0	5,985	15,971	0	0
151	Drilling Fluid / Cement	613,000	750,232	122.4%	0	0	0	0	38,657	10,200	51,824	29,049	45,950	13,468
152	Drill Bits	439,000	253,115	57.7%	0	0	0	0	0	0	0	17,850	0	101,952
	MATERIALS	**2,150,000**	**1,560,638**	**72.6%**	**2,003**	**48,059**	**32,297**	**16,519**	**55,176**	**25,065**	**78,809**	**81,470**	**56,363**	**125,833**
201	Contract Transport-Land	109,000	66,083	60.6%	83	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
202	Contract Transport-Air	0	41,724	100.0%	324	7,775	18,450	18,450	18,450	18,450	0	0	0	0
203	Contract Transport-Marine	2,713,000	2,015,975	74.3%	2,654	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689
209	Contract/Rent-Diving, ROV	222,000	230,618	103.9%	264	6,340	4,020	4,020	4,020	4,020	6,270	6,270	6,270	6,270
214	Offshore Mob & Demob	5,887,000	5,392,146	91.6%	5,783,699	0	0	0	0	0	0	0	0	0
217	Electric Logging	845,000	1,061,076	125.6%	15,000	0	0	0	0	0	0	0	0	0
218	Mud Logging	179,000	123,327	68.9%	184	4,420	775	775	775	775	3,645	3,645	3,645	3,645
219	Directional Drilling	267,000	241,963	90.6%	28,903	2,106	2,106	2,106	2,106	2,106	5,279	5,279	5,279	5,279
221	Cementing Services	252,000	196,316	77.9%	198	4,752	3,867	3,867	3,867	3,867	4,397	4,397	4,397	4,397
222	Drilling	6,783,000	5,234,557	77.2%	8,163	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921
223	Misc Drill Services	936,000	1,083,671	115.8%	88,852	15,826	7,967	17,807	17,807	17,807	18,026	18,026	18,026	18,026
230	Other	474,000	631,418	133.2%	525,252	5,585	6,575	1,970	1,970	1,970	4,810	4,810	4,810	4,810
	CONTRACTS & RENTALS	**18,667,000**	**16,318,874**	**87.4%**	**6,453,576**	**272,414**	**269,370**	**274,605**	**274,605**	**274,605**	**268,037**	**268,037**	**268,037**	**268,037**
260	Engineering Consultants	50,000	77,045	154.1%	6,552	2,500	0	7,105	7,105	7,105	2,500	2,500	2,500	2,500
268	Technical Service Affiliate	93,000	0	0.0%	0	0	0	0	0	0	0	0	0	0
	TECH/PROF SERVICES	**143,000**	**77,045**	**53.9%**	**6,552**	**2,500**	**0**	**7,105**	**7,105**	**7,105**	**2,500**	**2,500**	**2,500**	**2,500**
413	Other Affiliate Charges	490,000	387,944	79.2%	130,623	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473
647	Alloc. Opex to Capex	42,000	0	0.0%										
702	Alloc-Expl Gippsland	63,000	63,000	100.0%	0	0	0	0	0	0	0	0	0	0
708	Allocation-Expl Form Eval	63,000	63,000	100.0%	0	0	0	0	0	0	0	0	0	0
760	Prod Support Service-BBMT	105,000	165,208	157.3%	208	5,000	17,500	5,000	5,000	5,000	5,000	5,000	5,000	5,000
762	Alloc Prod Trans-Boats	238,000	75,000	31.5%	0	0	0	12,500	12,500	12,500	0	0	0	0
764	Alloc Prod Trans-Air	168,000	79,200	47.1%	0	0	0	0	0	0	0	0	0	0
770	Alloc Drilling Support	573,000	529,640	92.4%	135,290	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950
782	Alloc-Reservoir Tech	25,000	25,000	100.0%	0	0	0	0	0	0	0	0	0	0
	ALLOCATIONS	**1,767,000**	**1,387,992**	**78.6%**	**266,121**	**23,423**	**35,923**	**35,923**	**35,923**	**35,923**	**23,423**	**23,423**	**23,423**	**23,423**
	TOTAL	**23,048,000**	**19,653,638**	**85.3%**	**6,743,960**	**346,396**	**337,590**	**334,152**	**372,809**	**342,698**	**513,183**	**507,281**	**350,323**	**419,793**
	Days on AFE				0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0
	Days from Spud				0.0	0.0	0.0	0.0	1.0	2.0	3.0	4.0	5.0	6.0
	Hole Cut				0	0	0	0	44	327	411	0	0	0
	Measured Depth				0	0	0	0	179	506	917	917	917	917
	Plugback Depth													
	Job Number				1	1	1	1	1	1	1	1	1	1
	Job Type				Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling

ExxonMobil

Well Cost Worksheet

Well Name: Scallop-1

Class	Description	9-Feb-03	10-Feb-03	11-Feb-03	12-Feb-03	13-Feb-03	14-Feb-03	15-Feb-03	16-Feb-03	17-Feb-03	18-Feb-03	19-Feb-03	20-Feb-03	21-Feb-03
101	Surface Casing	0	0	0	0	0	0	0	0	0	0	0	0	0
106	Tubing	0	0	0	0	0	0	0	0	0	0	0	0	0
107	Wellhead Assembly	0	0	0	0	0	0	0	0	0	0	0	0	0
	EQUIPMENT	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
130	Other Materials	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
131	Other Material-Intangible	0	0	0	0	0	0	0	0	0	0	0	0	0
138	Fuel Products Diesel	9,413	17,426	17,426	21,178	20,000	20,000	15,900	5,724	9,794	9,794	21,624	10,685	10,939
150	Float Equip, Centralizers	0	0	0	0	0	0	0	0	0	0	0	0	0
151	Drilling Fluid / Cement	99,184	49,715	33,658	18,168	38,262	32,082	7,839	29,381	26,450	1,384	1,769	11,264	10,563
152	Drill Bits	0	0	0	0	0	0	0	0	0	0	0	0	143,333
	MATERIALS	**109,597**	**68,141**	**52,084**	**40,346**	**59,262**	**53,082**	**24,739**	**36,105**	**37,244**	**12,178**	**24,393**	**22,949**	**165,835**
201	Contract Transport-Land	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
202	Contract Transport-Air	0	0	0	0	0	0	0	0	0	0	0	0	0
203	Contract Transport-Marine	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689
209	Contract/Rent-Diving, ROV	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270
214	Offshore Mob & Demob	0	0	0	0	0	0	0	0	0	0	0	0	0
217	Electric Logging	0	0	0	0	0	0	0	0	0	0	0	0	0
218	Mud Logging	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645
219	Directional Drilling	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	115,787
221	Cementing Services	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397	4,397
222	Drilling	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921
223	Misc Drill Services	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	39,876
230	Other	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810
	CONTRACTS & RENTALS	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**268,037**	**400,395**
260	Engineering Consultants	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
268	Technical Service Affiliate	0	0	0	0	0	0	0	0	0	0	0	0	0
	TECH/PROF SERVICES	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**
413	Other Affiliate Charges	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473
647	Alloc. Opex to Capex													
702	Alloc-Expl Gippsland	0	0	0	0	0	0	0	0	0	0	0	0	0
708	Allocation-Expl Form Eval	0	0	0	0	0	0	0	0	0	0	0	0	0
760	Prod Support Service-BBMT	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
762	Alloc Prod Trans-Boats	0	0	0	0	0	0	0	0	0	0	0	0	0
764	Alloc Prod Trans-Air	0	0	0	0	0	0	0	0	0	0	0	0	0
770	Alloc Drilling Support	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950
782	Alloc-Reservoir Tech	0	0	0	0	0	0	0	0	0	0	0	0	0
	ALLOCATIONS	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**
	TOTAL	**403,557**	**362,101**	**346,044**	**334,306**	**353,222**	**347,042**	**318,699**	**330,065**	**331,204**	**306,138**	**318,353**	**316,909**	**592,153**
	Days on AFE	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0
	Days from Spud	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0
	Hole Cut	386	567	284	149	162	130	23	88	124	84	19	63	84
	Measured Depth	1,303	1,870	2,154	2,303	2,465	2,595	2,618	2,706	2,830	2,914	2,933	2,996	3,080
	Plugback Depth													
	Job Number	1	1	1	1	1	1	1	1	1	1	1	1	1
	Job Type	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling

ExxonMobil

Well Cost Worksheet

Well Name: Scallop-1

Class	Description	22-Feb-03	23-Feb-03	24-Feb-03	25-Feb-03	26-Feb-03	27-Feb-03	28-Feb-03	1-Mar-03	2-Mar-03	3-Mar-03	4-Mar-03
101	Surface Casing	0	0	0	0	0	0	0	0	0	0	-194,339
106	Tubing	0	0	0	0	0	0	0	0	0	0	0
107	Wellhead Assembly	0	0	0	0	0	0	0	0	0	0	215,455
	EQUIPMENT	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21,116**
130	Other Materials	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	16,396
131	Other Material-Intangible	0	0	0	0	0	0	0	0	0	0	33,042
138	Fuel Products Diesel	23,086	29,192	7,950	8,140	4,897	11,320	5,660	2,735	12,911	22,768	-30,433
150	Float Equip, Centralizers	0	0	0	0	0	0	0	0	0	0	-15,920
151	Drilling Fluid / Cement	4,934	18,983	1	1	1	17,616	1	6,365	58,906	0	94,557
152	Drill Bits	0	0	0	0	0	0	0	0	0	0	-10,020
	MATERIALS	**29,020**	**49,175**	**8,951**	**9,141**	**5,898**	**29,936**	**6,661**	**10,100**	**72,817**	**23,768**	**87,622**
201	Contract Transport-Land	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
202	Contract Transport-Air	0	0	0	0	0	0	0	0	0	0	-40,175
203	Contract Transport-Marine	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	63,689	-24,727
209	Contract/Rent-Diving, ROV	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	6,270	38,644
214	Offshore Mob & Demob	0	0	0	0	0	0	0	0	0	0	-391,553
217	Electric Logging	0	0	0	0	0	0	727,876	10,000	10,000	0	298,200
218	Mud Logging	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	3,645	17,208
219	Directional Drilling	20,987	20,987	20,987	15,887	13,487	13,487	13,487	13,487	13,487	13,487	-157,491
221	Cementing Services	4,397	4,397	4,397	4,397	4,397	4,397	5,877	12,451	64,181	4,397	-12,139
222	Drilling	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	159,921	108,922
223	Misc Drill Services	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	18,026	409,053
230	Other	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	4,810	-41,774
	CONTRACTS & RENTALS	**283,745**	**283,745**	**283,745**	**278,645**	**276,245**	**276,245**	**1,005,601**	**294,299**	**346,029**	**276,245**	**206,168**
260	Engineering Consultants	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	-20,822
268	Technical Service Affiliate	0	0	0	0	0	0	0	0	0	0	0
	TECH/PROF SERVICES	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**-20,822**
413	Other Affiliate Charges	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	6,473	50,185
647	Alloc. Opex to Capex											
702	Alloc-Expl Gippsland	0	0	0	0	0	0	0	0	0	0	63,000
708	Allocation-Expl Form Eval	0	0	0	0	0	0	0	0	0	0	63,000
760	Prod Support Service-BBMT	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	-7,500
762	Alloc Prod Trans-Boats	0	0	0	0	0	0	0	0	0	0	37,500
764	Alloc Prod Trans-Air	0	0	0	0	0	0	0	0	0	0	79,200
770	Alloc Drilling Support	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950
782	Alloc-Reservoir Tech	0	0	0	0	0	0	0	0	0	0	25,000
	ALLOCATIONS	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**23,423**	**322,335**
	TOTAL	**338,688**	**358,843**	**318,619**	**313,709**	**308,066**	**332,104**	**1,038,185**	**330,322**	**444,769**	**325,936**	**616,419**
	Days on AFE	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0
	Days from Spud	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0
	Hole Cut	74	20	0	0	0	0	0	0	0	0	0
	Measured Depth	3,154	3,174	3,174	3,174	3,174	3,174	3,174	3,174	3,174	3,174	3,174
	Plugback Depth											
	Job Number	1	1	1	1	1	1	1	1	1	1	1
	Job Type	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling	Drilling

ExxonMobil

Well Name: Scallop-1

Phase Breakdown Summary

Days Summary

Phase Name	Target	Orig AFE	Actual	Act-Tgt	Act-AFE	PT-Tgt
Tow Rig to Location	3.00	3.00	2.19	-0.81	-0.81	-0.81
Drop/Run Mooring Anchors	0.98	1.08	0.72	-0.26	-0.36	-0.26
Rig on Standby	7.00	7.00	0.00	-7.00	-7.00	-7.00
Drill 36" Hole	0.23	0.26	0.84	0.61	0.58	0.61
Run & Cement 30" Casing	0.33	0.36	0.36	0.03	0.00	0.03
Drill 17-1/2" Hole	1.49	1.64	2.20	0.71	0.56	0.71
Run & Cement 13-3/8" Casing	0.90	0.99	0.74	-0.16	-0.25	-0.17
R/U & Run BOP Stack & Riser	0.65	0.71	1.54	0.89	0.83	0.89
Drill 12-1/4" Hole to TOL	2.14	2.35	2.22	0.08	-0.13	0.02
Drill 12-1/4" Hole	14.90	16.39	13.64	-1.26	-2.75	-1.26
R/U, RIH & Log well	1.77	1.94	3.82	2.05	1.88	1.76
Plug & Abandon Well	3.95	4.34	3.33	-0.62	-1.01	-0.62
Recover/Bolster Mooring Anchors	1.66	1.94	1.44	-0.22	-0.50	-0.94
Total	39.00	42.00	33.04	-5.96	-8.96	-7.04

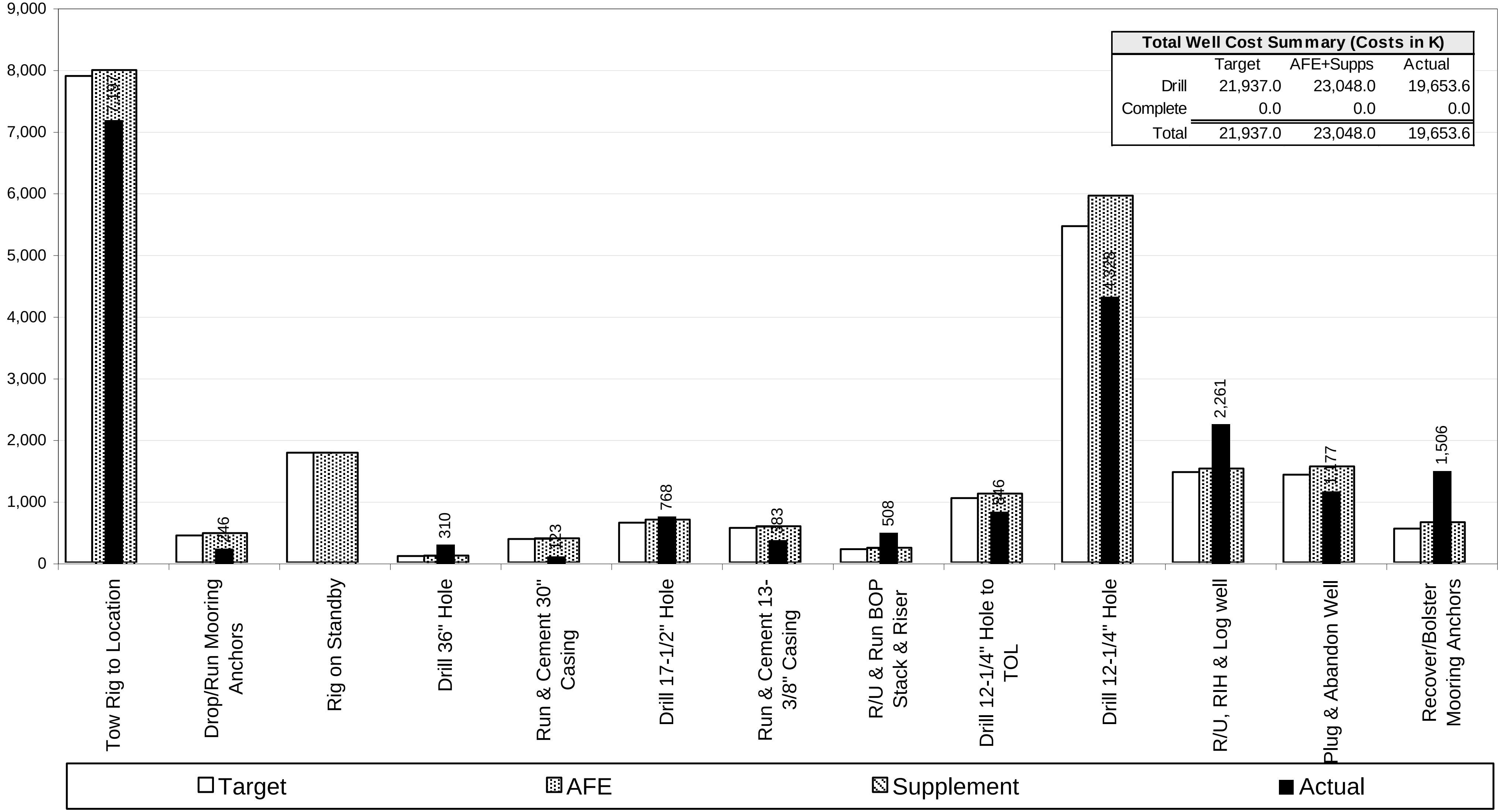
Cost Summary (Costs in A$K)

Phase Name	Target	Orig AFE	Actual	Act-Tgt	Act-AFE	NPT Fixed
Tow Rig to Location	7,888.0	7,982.0	7,197.3	-690.7	-784.7	0.0
Drop/Run Mooring Anchors	437.0	474.0	245.9	-191.1	-228.1	0.0
Rig on Standby	1,779.0	1,779.0	0.0	-1,779.0	-1,779.0	0.0
Drill 36" Hole	104.0	111.0	310.5	206.5	199.5	0.0
Run & Cement 30" Casing	379.0	390.0	122.8	-256.2	-267.2	0.0
Drill 17-1/2" Hole	646.0	695.0	767.9	121.9	72.9	0.0
Run & Cement 13-3/8" Casing	558.0	588.0	383.0	-175.0	-205.0	3.1
R/U & Run BOP Stack & Riser	215.0	237.0	507.8	292.8	270.8	0.0
Drill 12-1/4" Hole to TOL	1,043.0	1,114.0	846.4	-196.7	-267.7	17.9
Drill 12-1/4" Hole	5,452.0	5,947.0	4,328.4	-1,123.6	-1,618.6	0.0
R/U, RIH & Log well	1,466.0	1,524.0	2,261.2	795.2	737.2	90.4
Plug & Abandon Well	1,423.0	1,555.0	1,176.7	-246.3	-378.3	0.0
Recover/Bolster Mooring Anchors	547.0	652.0	1,505.9	958.9	853.9	263.4
Total	21,937.0	23,048.0	19,653.6	-2,283.4	-3,394.4	374.8

ExxonMobil

Scallop-1

Actual vs. Planned Cost Comparison (A$K)



Preliminary Well Cost Reconciliation

Scallop-1

Preliminary Well Cost Reconciliation

Date: 19th March 2003

Prepared by: Rudolf M. Fürchtenicht

Approved by: Daniel L. Whiteman

Well: Scallop-1

Rig: Sedco 702

FRR Date: 04 Mar 2003

Item	Days	Cost (A$K)	Remarks
Original AFE	42.00	23,048.0	
Final AFE (Original + Supplements)	42.00	23,048.0	
Original Target	39.00	21,937.0	
Extended Logging Programme	1.76	704.8	Original Logging programme was for "Dry Hole" case. Logging programme (time & additional logs) was extended due to discovery of hydrocarbons.
Deepening of Well	0.84	282.2	Lower objective of well was not observed via LWD when original TD was reached. Decision made to deepen the well by 104m to 3,230mMD.
Final Target (Original + Scope Changes)	41.60	22,924.0	
Operational Deviations			
Reduced Tow & Mooring Times	-1.07	-415.8	Favorable weather conditions and efficient anchor handling resulted in reduced tow & anchor handling times
Reduced Demobilisation Time/Cost		-466.0	Favorable conditions has resulted in a reduced tow time to demobilse the rig & AHT vessels.
Rig Standby not required	-7.00	-1,779.0	Well Planning completed and Goverment approvals obtained prior to rig availability. No requirement to place the rig on Standby.
Rigging up to Spud	0.61	206.5	Additional time was required to stock up the rig (offload materials) and P/U DP prior to spudding 36" hole. Operations were originally scheduled to be performed during the "Rig Standby" period.
Casing Operations	-0.14	-434.4	Miscellaneous savings from operational efficiencies (time), equipment and services during casing running operations
Hole Conditioning	0.71	121.9	Additional time required to condition the 17-1/2" hole which included an additional wiper trip prior to running 13-3/8" casing.
Misc. Stack Running Inefficiencies	0.41	140.3	Additional time was required to prepare and to run the BOP Stack.
Drilling Preparations	0.48	152.5	Picking up and racking back DP to reach 12-1/4" TD.
Improved 12-1/4" Drilling Performance	-2.08	-870.6	Bit Strategy & use of Roller Reamer eliminated 2 bit trips and prolonged PDC bit life in hole, less bits used ($205k)
P&A Operational Efficiencies	-0.62	-246.3	No requirement to set 2nd Open Hole P&A plug and P&A optimisations.
Reduced Demooring Time & Other	-0.94	-269.8	Miscellaneous operational efficiencies (time) and cost estimating differences (allocations, logistical/technical support) offset by lump sum end of well charges.
Damaged Wellhead Equipment		215.5	Wellhead equipment was damaged on road transportation to boat terminal (BBMT).
Operational Deviations Net Sum	-9.64	-3,645.2	
Trouble / NPT			
Waiting on Weather	0.72	263.4	Waiting on Weather to commence demooring activities
Logging Problems	0.20	61.5	Intermittent fault communicating with MDT. Troubleshoot by installing single, not dual, MDT probe.
BOP Problems	0.07	22.8	Lost integrity of kill line during BOP Stack test. Exception raised to permit completion of Logging Ops followed by P&A Operations.
Mud/Fluid Mixing Problems	0.06	17.9	Circulate and shear mud due to high losses over shakers upon drilling out shoetrack.
Logging Problems	0.02	6.1	After commencing logging with FMI, caliper arm found not to be open. Interval had to be re-logged.
Casing Handling Equip Problems	0.01	3.1	Leaking seal on casing tong.
Trouble Total	1.08	374.8	736.2 K under planned NPT
Other Deviations			
Other Deviations Net Sum	0.00	0.0	
SUMMARY			
DRS ACTUAL (with scope changes)	33.04	19,653.6	
DRS ACTUAL (without scope changes)	30.44	18,666.6	
PLANNED NPT	3.00	1,111.0	Planned NPT = 7.1%
ACTUAL NPT	1.08	374.8	Actual NPT = 3.3%
ACTUAL DRILLING NPT	1.08	374.8	Drilling NPT = 3.3%
ACTUAL COMPLETION NPT	0.00	0.0	Completion NPT = 0.0%

Scallop-1

Preliminary Well Cost Reconciliation

Part II - Planning Savings

Describe any planning phase optimizations prior to AFE approval. Include dollar amounts. Examples of planning savings may include, but are not limited to optimized casing programs

Amount (K)	Remarks
0.0	Due to short planning time, no planned savings were achieved prior to AFE approval. Some executional savings were made prior to spudding the well.

Part IIa - Technical Savings

Describe any savings that can be attributed to a new technology. Include dollar amounts. An axample of a new technology is a rotary steerable system.

New Technology	Amount (K)	Remarks

Part III - Monthly Highlights

Describe highlights including: noteworthy achievements, safety records, industry records, performance improvements and new technology applications.

Item	Remarks
1	Achieved a fast tracked execution schedule and achieved objectives 15% below AFE with 3.3% NPT
2	Look alike well design approach referencing nearest and most recent offset allowed successful fast tracking of all engineering and well plan deliverables (in less than one month).
3	Diligence in preparation (RA, ERP, EP, SC, drilling programme) and successful interaction with Regulators resulted in full approvals in 5 days from submission.
4	Focus on key drilling learnings from recent wells (East Pilchard-1 & Beardie-1) contributed to near problem free operation and improved drilling rate performance which included: (a) use of LWD to call TD eliminating the potential of having to deepen the well after running wireline logs. (b) review of shallow hazards eliminated the requirement to drill a pilot hole. (c) Near-bit roller reamer maintained gauged hole and prolonged bit life in volcanics.
5	Excellent SHE performance with 40,443 man-hours worked, zero environmental incidents but one first aid (one drop of mud in eye, used eye wash station returned to work).

Part IV - Learnings

Describe any key learnings from this well that may have applicability elsewhere.

Item	Remarks
1	Fast tracked schedule added approximately $US 2M (+25% to well cost) in additional mob/demob costs compared to recent wells (Scallop: US$2.8M, Beardie: US$0.5M, Pilchard: US$1.1M).
2	Effective capture and documentation of past programme learnings allowed numerous programme efficiencies.
3	Near bit roller reamers were effective in improving bit performance through abrasive volcanics sections.
4	Intensive inspection of rig equipment and marine vessels conducted despite challenging fast track execution contributed to low NPT .
5	Extra effort was made to induct each of the 4 marine vessel crews at BBMT returned good results in safety performance.
6	Opportunity Observation: As the only major contractor with high complexity equipment and no current independent QA/QC, Schlumberger (and other logging companies) should be targeted for development and implementation of QA/QC programmes, particularly for high cost wells.
7	Opportunity Observation: Disposable well design may offer savings for future programmes (hole size reduction, ability to use hydraulic release casing disconnect, etc.) where possible.
8	EAL management spent 10 days on location over the 33 day well focusing on "Nobody Gets Hurt" and created an excellent working relationship with the crews and TransOcean management. This was important to keep up moral with the rig going to cold stack after our well. In addition, the availability of an experienced team onsite who were familiar with both EAL and the Sedco 702 enabled Scallop to fast track and provide the safety and operational results expected.

Part V - Variances from Original AFE

Explain Actual versus AFE variances (positive or negative) due to operational performance, NPT, etc. Include dollar amounts. List and briefly describe the major events that drove the variances from original AFE. The listing should tell the story of the well.

Phase Name	Amount (K)	Remarks
Tow Rig to Location	-784.7	Favourable weather conditions resulted in both reducing the tow time from Minerva-3 to Scallop-1, and reducing the time for demob from Scallop-1 to Port Dampier, WA.

Scallop-1

Preliminary Well Cost Reconciliation

Drop/Run Mooring Anchors	-228.1	Efficient anchor running operations resulted in some time savings.
Rig on Standby	-1,779.0	Rig was able to commence operations upon reaching location. It was not placed on standby which was budgeted for 7 days.
Drill 36" Hole	199.5	Additional time was taken to stock up the rig (offload materials) and P/U DP prior to spudding which was originally planned to be performed during the standby period which did not occur.
Run & Cement 30" Casing	-267.2	Misc savings from operational efficiencies (time) and cost for 30" Wellhead & Casing Equipment (part of Lump Sum Package) was differed for inclusion at end of well resulted in savings made during this phase.
Drill 17-1/2" Hole	72.9	Time was spend rigging up cementing equipment before drilling out the shoe (performed during this drilling phase) and additional time was required to condition the hole which included an additional wiper trip prior to running casing resulted in additional costs.
Run & Cement 13-3/8" Casing	-205.0	Misc savings from operational efficiencies (time) and cost for 13-3/8" Wellhead Equipment (part of Lump Sum Package) was differed for inclusion at end of well resulted in savings made during this phase.
R/U & Run BOP Stack & Riser	270.8	Additional time was taken to prepare & run BOP Stack, which included conducting drills & inspections prior to P/U 12-1/4" BHA which accounted for the additional costs for this phase.
Drill 12-1/4" Hole to TOL	-267.7	Implementation of bit strategy improved drilling performance down to the Top of Latrobe Formation.
Drill 12-1/4" Hole	-1,618.6	Implementation of bit strategy improved drilling performance, saved on 2 bit trips and additional bits. Savings were offset by time & cost taken to deepen the well.
R/U, RIH & Log well	737.2	Logging programme was extended due to discovery of hydrocarbons.
Plug & Abandon Well	-378.3	No shallow hydrocarbons requiring upper hole isolation, and an improved P&A stratgey minimised WOC time.
Recover/Bolster Mooring Anchors	853.9	Additional demob cost not captured at start of well included herein, including costs for (a) Wellhead Equipment from previous phases, (b) damaged wellhead equipment from road accident and (c) extra Swire personnel for tow to Dampier.

Describe each AFE supplement and / or scope change. Include dollar amounts. Be sure to describe the reason for each supplement and / or scope change listed below.

Type	Amount (K)	Remarks
Scope Change	704.8	Original Logging programme was for "Dry Hole" case. Logging programme (time & additional logs) was extended due to discovery of hydrocarbons.
Scope Change	282.2	Lower objective of well was not observed via LWD when original TD was reached. Decision made to deepen the well by 104m to 3,230mMD.

SCALLOP-1 - LESSONS LEARNT

OBSERVATIONS

Item	Date	Description
1.	15-Jan-03	***For future drilling operations in the area, may need to establish if additional current, wind, wave and anchor tension data is required for collection. Data would be used in determining mooring design Metocean assumptions and the resultant anchor line tensions for any development work in the area (i.e. Kipper).*** * Current, wind, wave and anchor tension data was not collected on this well due to the short time frame in the preparation of the well to organise for the appropriate services to be available for the collection of the data.
2.	15-Jan-03	***Although a Drill-on-Paper review session was NOT conducted for this well, the benefits which were observed when it was conducted on previous wells supports continuing this practice.*** * Due to the limited planning time, a Drill-on-Paper session was not conducted for the Scallop-1 well. Although the well was drilled ahead of the estimated time, the opportunity to conduct a thorough review of the programme to identify opportunities for optimisation and which would have allowed for face-to-face contact between the key players was not possible in this instance. * A Risk Assessment run by URE Risk Engineering was still conducted and 9 follow up action items were noted and closed out prior to spudding the well.
3.	29-Jan-03	***The rig was able to commence operations as soon as it reached the Scallop-1 location and no standby time was required.*** * With the short notice to prepare for the well, there was a possibility of having to place the rig on standby for a period of approximately 7 days while preparations for the drilling of the well continued and Regulatory approvals were being requested prior to spudding. * Delays at BHPP's Minerva-3 well location provided some additional time for the preparation of the Scallop-1 well and Governmental approvals were successfully obtained earlier than expected which enabled EAPL to be in a position to spud the well once it arrived at the location without any requirement for rig standing-by.
4.	01-Feb-03	***Time permitting, future communication of the Operations Safety Plan and Information Pamphlet would be communicated prior to drilling the well.*** * The Scallop-1 Operations Safety Plan and EAPL objectives were successfully communicated directly to all individuals offshore via presentations when they completed their tower despite the inability to do so prior to picking up the rig due to the fast tracked programme. Unfortunately, it was not the most efficient manner as personnel were generally tired and their attention span was limited after a 12 hour working day however, this was the most effective method at the time. * The Scallop-1 Information Pamphlet was distributed all personnel who were offshore and who were heading offshore via all the contractors management however there was no feedback as to its efficiency.

5.	03-Mar-03	***For drilling programmes whereby EAPL will be the last Operator to utilise the contracted MODU and AHT vessels, need to ensure contingency plans are in place for the supply of large quantities of fuel for the AHT vessels prior to their departure from the location and/or that additional fuel is taken onboard the vessels prior to the planned departure for the well location.*** * Scallop-1 was the first well in recent times that EAPL was the last Operator to utilise a MODU and AHT vessels before they went off hire. As a result, the rig and vessels required a significant volume of fuel to be loaded onto the vessels prior to their departure from the Scallop-1 location to cover the long tow back to Dampier, WA. Due to the limited fuel storage capacity available at BBMT (450,000 litres), BBMT ran out of fuel and there were no tankers to restock the fuel tanks. The shortage was eventually overcome by transferring fuel from the production supply vessels to the AHT vessels and by purchasing fuel from an alternative vendor. * In retrospect, it should have been realised earlier that the AHT vessels needed a significant amount of fuel prior to leaving the Scallop-1 location as the tow would have been a continuous tow with no planned stoppages along the way back to the Port of Dampier in WA. Additional fuel could have been loaded onto the AHT vessels towards the latter part of the well to ensure the vessels were fully loaded prior to departing. * Alternately and as was done for Scallop-1, fuel transfer from a production support vessel to the AHT vessels of the rig was conducted successfully, proves that it can be done and that it was learning experience for the BBMT staff. Should capacity limitations be a problem at BBMT, consideration could be given to using the storage capacity of the production support vessels should large fuel quantities be required over a short period of time.
6.		***Services Companies not regularly used by EAPL may require additional attention to detail when planning the well or scrutinised in greater detail prior to contract award.*** * It was noted that during the planning and execution of the drilling of the Scallop-1 well, Service Companies like Hughes Christensen & Dril-Quip where operations are run out of Perth operated below the standard normally expected by EAPL of is Service Companies. For example, bits which were ordered could not be supplied as requested and substitutions were made without consultation with EAPL and only noted prior to loadout onto the boats. Dril-Quip not providing prompt Engineering support related to several concerns raised during the planning of the well or good operational support from its local office.
7.		***Successful transfer of unused bulk from the Rig back to BBMT without any problems or concerns from BBMT or the Vessels.*** * Bulk cement and barite were both successfully backloaded from the rig to the vessels and then back to BBMT at the end of the well. The logistical co-ordinator noted that it was rare for bulk to be transferred back to BBMT from vessels and this was executed without any significant problems or concerns. It should however be noted that the condition of the bulk be noted prior to this process to ensure that contamination does not occur or the bulk is stored separately for immediate use on the next loadout.

GOOD PRACTICES

Item	Date	Description
1.	01-Feb-03	***Consider using a third vessel (either a production supply vessel or a contracted vessel) for future floater operations to <u>initially stock up the rig</u> with equipment and materials while the AHT vessels are running anchors.*** * Under the original timing for the well, the Sedco 702 would have been placed on stand-by after reaching the Scallop-1 location. This would have provided the opportunity for the two AHT vessels to stock up the rig with drilling equipment and materials. As it turned out, all the necessary Regulatory approvals and preparations were in place for immediate commencement of drilling operations when the rig got onto location. With the change in timing, the production supply vessel Lady Karri-Anne was initially and successfully used to stock up the rig soon after the anchors were run by the two AHT vessels. This eliminated any time spend waiting on drilling equipment and materials. ***NOTE:*** *Due to a low Variable Deck Load (VDL), BHPP's backload and the timing uncertainty, the upfront decision was made not to loadout any drilling equipment and/or materials prior to the tow from Minerva-3 to Scallop-1.*
2.	08-Feb-03	***Drilled out Shoetrack with seawater.*** * On Scallop-1, the 13-3/8" shoetrack down to the floatshoe was drilled out with seawater to avoid treating the mud for green cement. Excessive vibrations were NOT noted as was the case on Beardie-1 whereby the hycalog bit lost one or more teeth in the process. ***NOTE:*** *Both the Scallop-1 and Beardie-1 Packed BHA's were similar in design.*
3.	28-Feb-03	***Placement of an EZ Drill SV Squeeze Packer below the Float Collar has again been shown not a concern and if required, could be employed in the future.*** * Approval of the P&A programme for Scallop-1 was obtained from the Government for the placement of a 13-3/8" EZ Drill SV Squeeze Packer be set 5m above the Float Shoe. Prior to commencing operations, a requested from Operations was to change it placement to 5m above the Float Collar. * Concern was that there may be metal burrs around the Float Collar which may prevent the Packer from being run below. It was highlighted that the internal components of the Float Collar was molded from cement and drillable products. In addition, a 12-1/4" Packed BHA and several hundred rotating hours have taken place across the Float Collar which would have eliminated or removed any potential hang up points or burrs which could damage the Packer. * With the decision to run a junk basket below the Float Collar to establish access, the run verified that it was OK to proceed as per the original programme as there were no indications of any hang-up in the process. Accordingly, the EZSV Packer was then run and set above the Float Shoe. ***NOTE:*** *Reasons for running the EZSV Packer below the Float Collar was to minimise the risk of the formation lock-up while displacing the cement, thereby not placing cement below the shoe as per the Regulatory requirements.*
4.	03-Mar-03	***Consider using a third vessel (either a production supply vessel or a contracted vessel) for future floater operations to <u>backload the rig</u> of equipment and materials while the AHT vessels are recovering anchors and preparing to move off the location.*** * The production vessel Lady Elizabeth was used to backload the remaining equipment and materials from the Sedco 702. This freed up the AHT vessels which permitted them to stock up with fuel at BBMT and commence anchor recovery operation without having to make a 20+hr round trip with the backload that was carried by Lady Elizabeth and which could have delayed rig release. ***NOTE:*** *The West Tuna platform was manned during the de-mooring operations with a Crane Operator & Dogman so that the platform could be used as a storage area if there was a significant amount of backload to be sent back to BBMT, and turnaround would have resulted in a delay to the rig release from the well location. In the eventual execution, the use of West Tuna as a staging area was not required, but is an option which should be considered when planning future operations in the Bass Strait.*

5.	04-Mar-03	***Continue to utilise dedicated contract materials personnel to manage movement of 3rd party equipment into BBMT, dispatch of this equipment to the wellsite, return of this equipment from the wellsite, and then to the vendor.*** * On Scallop-1, the continued use of dedicated contract materials personnel was very successful, providing a single point of contact for materials 12 hours a day, seven days a week. This was especially evident when there was the potential to either suspend or plug & abandon the well, and equipment to perform either operation could not be loaded out at the same time. If the suspension equipment was pre-maturely loaded out to the rig, when the decision was made instead to P&A the well, they would have been delays as the suspension equipment would have to be loaded out late, in addition to the normal drilling equipment which would require backloading for rig released. ***NOTE:*** *There were not reportable instances where the drilling operations were or would have required suspension due to equipment not being available. This was primarily due to the use of a dedicated contract materials person.*
6.	Post Well	***Continue issuing bound copies of the drilling programme and Operational Safety Plan in sufficient quantities that all relevant personnel can have their own copy of these documents.*** * About 50 copies of the Drilling programme and the Operational Safety Plan, single side copied and spirally bound, were taken to the rig. This was very effective as it allowed key personnel to have their own copy of the programme in which they could add additional notes for reference as required.
7.	Post Well	***Continue use of laptops for at least the DRS computer and the geologist's computer.*** * Scallop-1 was the first Exploration well where laptop instead of desktop computers were used to manage operations offshore. This enabled the DRS computer to be hand carried out to/back in from the rig which permitted reports to be generated from day 1 till the last day whereas with desktops, delays in data entry (refer to Beardie-1) would have been experienced as the desktops would have been sent via the boats after operations had commenced and/or before operations had ceased. In addition, the Wellsite Geologist also used a laptop which enabled them to capture both mud and electric line logging data, for ease of data transmission to the Melbourne office. * At least 4 docking stations should be provided (Drilling Supervisors x2, Geologist & Spare) and additional hot-connect LAN connections should be available for Engineers who may visit the rig while operating. * The LAN Printer offshore should be wired so that printing is direct from the laptop computers to the printer without having to go through the server at Longford which results in long delays when printing. ***NOTE:*** *The PSO's computer was a desktop which was adequate for the operations being conducted.*
8.	Post Well	***Continue using a logistics co-ordinator offshore with the position rotated at two week intervals.*** * A logistics assistant (contract personnel from Skilled Engineering) was used to manage both personnel and material movements between the Sedco 702, Longford Heliport and BBMT. This again proved to be very successful allowing the Drilling Supervisors more time to supervise the drilling operations. In addition, the position was rotated every two weeks to optimise efficiency and minimise handovers, flights, etc.
9.	Post Well	***Continue to make available a Flush Mounted Spider or PS21 slips to run casing.*** * On Scallop-1, although the Flush Mounted Spider was available, Operations advised that due to short casing interval (~ 765m), they preferred using hand slips. * Operations did not advise of any problems with the power tongs been above head level for make-up as was the case on Beardie-1. This may be a rig specific requirement but the option should be kept open for any future operations. * Option should also be discussed with the Rig Contractor at the time as to how they normally conduct such operations.

10.	Post Well	***Continue use of the KCl, glycol, PHPA, polymer mud system on future wells.*** * The mud system used on Scallop-1 performed well. The system was based on lessons learnt from historical operations in the Bass Strait and the recent floater wells drilled in the area (East Pilchard-1 and Beardie-1). * Minimal hole problems were observed during the drilling of the well which took 15.2 days and permitted the well to be logged for 4.8 days without the requirement of a conditioning trip. The last run into the hole with the 3-1/2" cement stinger BHA did not encounter any problems with NO fill on bottom.
11.	Post Well	***For longer drilling campaigns where Gearhart Redback Roller Reamers are used constantly, consider having offshore personnel trained in the redressing of the Reamers.*** * On Scallop-1, additional Roller Reamers had to be sourced on short notice to replace the Roller Reamers which were pulled from the well due to lack of knowledge in the redressing of Gearhart's Redback Roller Reamers. Instruction manuals were provided and spare Reamers were provided at the wellsite. The proximity of Gearhart (Adelaide) and availability additional NB Roller Reamers on short notice enabled replacement reamers to be sent offshore but this might not have been possible if Gearhart had no spare reamers. In addition, at the time of the request, Gearhart had no personnel available to go offshore who could redress the Reamers. ***NOTE:*** *Operations advised that they redressed one roller reamer (which was to be used only as a contingency) without any problems but it was not run in the hole.*
12.	Post Well	***Successful implementation of a detailed bit strategy programme for drilling the well.*** * Based on the learning's from East Pilchard-1 (refer to Bit Strategy Programme), bit performance on Scallop-1, when compared to East Pilchard-1, was better due to the implementation of a detailed bit strategy programme. The 12-1/4" PDC bit's performance was exceptional although it would appear that the bearing life (krevs) for the Hughes roller cone bits may require additional scrutiny/evaluation. ***NOTE:*** *(a) Although the bearings of the Hughes bit were listed as effective, comments from Operations indicated they were close to the end of their useful life which when compared against their krev curves, appeared to be below expectations.* *(b) The post analysis work on the bits used in the well is included at the end of this report.*
13.	Post Well	***For Cost Monitoring, continue with system recommended from Beardie-1 but additional emphasis should be placed on ensuring periodic major cost items are accurately captured at the time of expenditure.*** * The recommendations from Beardie-1 were implemented with good success during the drilling of Scallop-1. Time spent by the Drilling Supervisors entering cost data was reduced significantly, however for the initial few days, it may have appeared that we had gone to the other extreme whereby periodic major costs like bits, tubulars, etc were not included in the daily cost reporting. * It is recommended that the same method of tracking cost be used in future well with the following points taken into account: (a) Drilling Supervisors should be aware of the periodic major cost items for inclusion into the daily cost report and if they are unaware of the cost, they should request it from the Engineer. If various services and equipment are used or are requested by the Drilling Supervisor without advising the Engineer, this often results in significant cost reconciliation discrepancies towards the end of the well or disagreement during invoicing sign-off's. (b) Any fixed or major costs changes should be recorded on the day it occurs rather than several days later as this creates problems at the end of the well with the Engineer ends up spending a lot of time (i.e. days) working out and backing out costs during the cost reconciliation process. (c) Engineer should be aware of planned major cost expenditure (i.e. lump sum or rates) and forward this information to the Drilling Supervisor for inclusion in the following day's cost report. * Cost reconciliation at the end of Scallop-1 took longer than planned but primarily, if cost are noted at the time of expenditure and the costs are captured accurately, then time spent by the Supervisor entering the data into DRS and time spent by the Engineer to reconcile the cost would jointly be reduced.

RECOMMENDATIONS

Item	Date	Description
1.	15-Jan-03	***Facilitate early discussions with Geology to ensure that the well target size is maximised where possible to will allow the use of lower cost survey tools, and eliminates the potential need to obtain directional motors for correction runs required with smaller targets.*** * On Scallop-1, the original target size was increase to a larger 150m square target with a northern hard boundary which allowed for the use of the lower cost Andergauge Anderdrift tool from spud to the 2,916mMD (below the primary objective) as opposed to MWD services (which could include Directional drillers, MWD personnel, MWD equipment and motors). * As MWD was included in the packaged LWD logging suite at no additional cost, MWD was run from 2,916m to total depth at 3,174mMD. ***NOTE:*** *(a) The well was spudded 1.56m SSW of the intended location. The final bottom hole location at TD was 43.0m N of the intended location. It should be noted that if the target size (originally indiscriminately sized) had not been increased (as request from Drilling), directional drilling services would have been required to meet the well objectives.* *(b) Drop Gyro surveys were conducted prior to POH at 17-1/2" interval TD (917mMD) and at 2,916mMD in the 12-1/4" hole interval, prior to picking up the LWD logging suite.*
2.	Post Well	***Consider placement of the LWD toolstring closer to the bit if either (a) the primary objective has been drilled within the target boundary and the well is being deepened or (b) when the bit is pulled to pickup the LWD toolstring, and forward projection of the wellpath indicates that wellpath will be within the target boundaries, then the BHA could be modified by moving the LWD sensors closer to the bit which would minimise the time taken and amount of rathole which will have to be drilled to evaluate the formation before calling TD.*** * On Scallop-1, after drilling past the Primary S1 Reservoir Objective (2,836mMD), the BHA was pulled at 2,933mMD to change the bit and to pick up the LWD toolstring (as this was going to be the last bit run prior to drilling ahead to total depth at 3,174mMD). As the primary objective had been met and the position of the wellbore was only 35.6m North of the target well centre (which had a 150m square boundary), restrictions could have been eased on having to run a packed BHA, instead running a pendulum BHA which would have placed the LWD sensors closer to the bit. Due to the slow ROP through the volcanics and having to log down to the interval of interest before calling TD, placement of the LWD toolstring above bit would have reduce the amount of time and additional rat hole drilled. ***NOTE:*** *No additional time would have been required to place the LWD closer to the bit as the BHA was pulled at 2,916mMD for the LWD. All that would have resulted is that a pendulum instead of a packed assembly would have been run.*
3.	01-Feb-03	***Ensure that the minimum anchor chains lengths are run as per the programme (which should include some additional length (e.g. extra 200m) to account for any anchor slippage during tensioning) or obtain a Management of Change to reflect the change to the programme.*** * On Scallop-1, the anchor chain lengths were not run as per the programme during the mooring phase. The Rig Contractor shortened the required chain length without advising the Drilling Supervisor. Additional time would have been required to re-run the chains and alternative operations had commenced when this was noted. Quick inspection indicated that this would not have been a problem but appropriate approval was not obtained at the time. ***NOTE:*** *Based on the final mooring plan, discussions with Rig Contractor and Drilling Supervisors should be held to determine the additional length of chain to be run/pulled out to allow for any chain length reduction during the tensioning operation so as to ensure that the final chain length run meets the programme requirements.*

4.	03-Mar-03	***Continue with the practice of using <u>at least</u> a 26 ft long 20" extension joint below the 18-3/4" High Pressure Wellhead Housing to allow the wellhead to be severed <u>at least</u> 5m below the seafloor as required by P(SL)A Clause 514(10). Consider placing the centraliser fins (which were used to aid with centralisation of the casing during casing cutting operations) immediately <u>below</u> the 20" x 13-3/8" crossover to further aid centralisation during cutting and maximise the interval that the casing could be cut. Alternatively, if the centraliser fins were placed above the crossover, ensure that their overall length does not prohibit cutting the casing down to at least 5m below the mudline and this could be done by either shortening the length of the fins or having a longer 20" extension joint.*** * From observations made on Beardie-1, approval was sought and received from DPI to cut the Scallop-1 casing strings at a <u>minimum depth</u> of 1.5m below the mudline. The actual casing cut was 1.66m below the mudline. It was noted that during the casing cutting operations, indications were that the PGB and wellhead housing may have slumped to one side prior to completely cutting the casing and resulted in the minor problems experienced. * Thinking at the wellsite was that by cutting the casing shallow, there may have been no lateral support for the cut casing which may have caused the wellhead housing to slump/tilt. * The fluctuation in pressure readings observed while cutting may have been the result of the slumping. Because the PGB and wellhead housing had slumped, that made it difficult to latch onto the wellhead housing with the MOST tool when it was required. * The question still remains what is a suitable depth to cut the casing and this should be tabled for further discussion when planning the next well. Refer to Recommendations, point #5.
5.	03-Mar-03	***Vendor dependent, consider the use of Dril-Quip's HAC System to eliminate the requirement to cut the 30" conductor casing for plug and abandonment operations OR the use of two joints of 20" casing below the wellhead housing to enable the surface casing to be cut deeper.*** * As noted above, the slumping/tilting of the PGB and wellhead housing may have been the result of cutting the casing too shallow. In retrospect, it may have been possible to cut the casing deeper but cutting the casing too deep may have prevented recovery of the casing (due to good cement bonding between the formation and casing). * An option which was available for Scallop-1 which would have eliminated the requirement to cut the casing would have been to use Dril-Quip's Hydraulic Abandonment Connector (HAC) Release System. During initial planning, Dril-Quip advised that the HAC system was not suitable for wells which were going to be suspended and they had no history of using such a system for production wells. As the design criteria for the well was for the option to suspend the well, the HAC system was not pursued. In retrospect for exploration wells, this should be considered as an option even though the well may be suspended. Time needs to be spend reviewing the design of the HAC system so as to evaluate the advantages and disadvantages of having a suspended or production well with this system. * Alternatively, consider using either a longer 20" extension below the wellhead housing or an additional 20" casing joint, but the casing connector would have to be evaluated as to its suitability, especially if the hole will be drilled into the pay zones.
6.	Post Well	***Consider putting provisions in any future Contract that any equipment supplied by the Contract which is found to be not suitable for operations and which are furnished by EAPL will be reimbursed to EAPL by the Contractor.*** * Inspection of Sedco 702 Well Control Equipment found Sedco's Lower Kelly Valve and IBOP Stabbing Valve to be leaking. Replacements were supplied by EAPL for the drilling of the well.

7.	Post Well	***Consider filling the 1 gallon chamber of the MDT toolstring with freshwater which could then be used to flush the MDT probe should it become plugged with filter cake/baracarb debris during operation. Final decision would have come from Geoscience if this suggestion is to be used.*** * For Scallop-1, a dual probe MDT toolstring was planned to overcome past problems of the single large area MDT probe becoming plugged off with filter cake/baracarb debris. However, but due to a faulty bulkhead/connection (refer to NCR Report), the planned toolstring had to be reconfigured and a single probe was eventually run without any downhole problems experienced. * It is likely that EAPL's preference in the future will still be to run a dual probe MDT toolstring. This will be dependent of logging requirements at the time. * As a learning, there is an additional step which could be taken to minimise one of the MDT probe's (martineau) from plugging off if a dual probe system is being run. This involves filling the primary fluid chamber with freshwater which could in turn be used to flush the probe should it become plugged. Note that this only applies for the martineau probe as the fluid slots of the probe are larger and there is less potential to overpressure the internal components of the MDT toolstring as the freshwater is being pumped out the probe. ***NOTE:*** *Baracarb is added to the mud system during the drilling of the well to prevent fluid loss, differential sticking and plug off any fractures in the coals.*
8.	Post Well	***Consider use of a Near Bit Roller Reamer instead of a Near Bit Stabiliser for future wells to assist with maintaining the hole in gauge, and to minimise the potential for the bit to go undergauge especially when drilling long hole intervals, even in non-abrasive formations. In addition, consider use of a 6-pt Roller Reamer for better BHA stability.*** * After evaluating the East Pilchard-1 bit record, it was postulated that the reason for the drop in ROP for the first 12-1/4" PDC bit was because the bit went undergauge by a 1/4" and the stabilisers were being used to drill the hole. The other bit runs also showed some minor gauge wear (1/16"). From log data, indications were that the formations which were drilled on East Pilchard-1 were rather abrasive. As East Pilchard-1 was an offset well to the Scallop-1 well, the decision was made to replace the planned Near Bit Stabiliser with a Near Bit Roller Reamer. * Gearhart was primarily selected due to ease of redressing the roller reamers with new cutters and historical experience of their use. On Scallop-1, roller reamers were used in all the 12-1/4" BHA's to good effect. The 12-1/4" PDC bit drilled to the top of the volcanics before it was pulled and was pulled in-gauge. The following two TCI bits, which drilled through the volcanics, were pulled 1/16 to 2/16" undergauge. Good gauge protection and the use of the roller reamers are believed to have minimised gauge wear. * In addition, observations made offshore were that if Gearhart's Roller Reamers are used in the future, consider using a 6-point instead of a 3-point roller reamer. The reamers have approximately 3" to 4" of full gauge contact with the wellbore and therefore has the potential to act as a point contact which may contribute to unnecessary vibrations and/or localised bending between the bit and second stabiliser in the BHA as WOB is applied. A 6-point reamer could help if this is concern as it would provide additional contact points, providing the benefits of a roller reamer and added rigidity without having to run a stabiliser. * Also, the distance from the bit to the point contact of a standard 3-point Near Bit Roller Reamer is approximately 1.5m. This distance reduces the effectiveness of the Reamer in a packed BHA when compared to a Near Bit Stabiliser and which may result with it behaving like a bent sub although this was not observed on Scallop-1. Gearhart has addressed this concern by manufacturing NB Reamers with shorter shanks below the Reamer which places the bit immediately below the Roller Reamer.

9.	Post Well	***For future mud programme, aim to minimise the amount of overbalance in the well.*** * The recommended mud weight for the drilling of Scallop-1 was programmed between 9.5 to 10.5 ppg. During the drilling of the well, the mud weight was kept towards the upper boundary of 10.3 to 10.4ppg from 2,443mMD to Total Depth. Feedback from Geoscience was that the mud weight used may have been unnecessarily high which could have accounted for the masking of the total gas measurement measured during the drilling of the well. * The highest pore pressure taken from Scallop-1 was 8.8 ppg at 3,129.5mMD. The pore pressures from East Pilchard-1 (which had larger gas bearing sands intervals) was around 8.8 ppg. The effective overbalance in Scallop-1 was approximately 866 psi at TD. * In light of this, in the planning of future drilling programmes, it is recommended that the mud programme be revisited with the option to reduce the amount of overbalance in the well to assist both with improved drilling performance and well evaluation.
10.	Post Well	***Discuss with Geoscience prior to execution, the option to run the MDT toolstring as the second logging suite, as this has the potential to eliminate the potential need to run a wiper trip during the logging operations.*** * Past experience with MDT runs have shown that a wiper trip is likely to be conducted prior to running the MDT toolstring, especially if the well has been standing static for a long period of time while conducting other logging operations. * On Scallop-1, the MDT was run as the second suite of logs. As the static time was short and the hole conditions were good, this negated the need to run a wiper trip, even for the rest of the logging suites. The concern with running the MDT suite second is that there may be insufficient time to establish the sample intervals and this could be the reason for running the MDT later in the programme.
11.	Post Well	***Strongly recommended that if a Service Company cannot supply the required materials, equipment or supporting documentation as requested by the Operator, that such a Company not be used in the future or provisions taken in the Contract that exposure incurred by the Operator be directly forwarded to the Service Company as a result of non-compliance.*** * For floater operations, a wellhead manual is critical for planning and operational purposes. Although constantly requested and promised at the time (both prior to receiving the rig and while drilling the well), Dril-Quip failed to provide an appropriate/correct wellhead manual as requested, even at the end of the well (e.g. Dril-Quip sent a generic manual which was previously used for another operator, with several sections not relevant included while omitting sections relevant to EAPL operations). * This was a short fall by Dril-Quip noted both by Engineering and the offshore Supervisors. There were numerous occasions whereby a manual was required but not available, especially relevant in cases when the Dril-Quip Engineer might not be on the rig should a problem occur.
12.	Post Well	***Source dedicated larger double door containers to reduce damage to mud and chemical product during transfer which will reduce product being wasted or written off. This would cut down on some of the unnecessary costs incurred on each well drilled.*** * During the loading/unloading of palleted chemicals from double door OPC rental containers, the chemical packaging on several occasions were getting damaged during the transfer process. This is potentially a difficult issue to resolve as pallets are manufactured to a standard size which prevents two pallets from being correctly placed, side-by-side within the container and the rental containers have been constructed with minor consideration for oilfield packaging. It would appear that container design has been constructed so that multiple containers can be loaded "side-ways" onto a 40 ft trailer thus maximising transport volume capacity but not utilisation efficiency. * A suggestion to resolve this issue by the logistical personnel is to have dedicated larger containers specially rented or manufactured specifically for EAPL offshore use. Existing BBMT owned containers provided this flexibility however a limited number are available for exploration related drilling activity.

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Scallop-1 Alterative Well Design Comparison

Scallop-1 - Alternative Well Designs Comparisons For Improved Plug & Abandonment Scenarios

	ACTUAL - Suspension Dsg Discovery, Non-Keeper	CASE A POTENTIAL - P&A Dsg Discovery, Non-Keeper	CASE B POTENTIAL - P&A Dsg Dry Hole	CASE C POTENTIAL - P&A Dsg Discovery, Non-Keeper
Conductor Hole	36" x 26" Hole	26" Hole	26" Hole	26" Hole
	30" x 20" Csg	20" Csg	20" Csg	20" Csg
Surface Hole	17-1/2" Hole	12-1/4" Hole	12-1/4" Hole	12-1/4" Hole
	13-3/8" x 18-3/4" W/head	9-5/8" Csg	9-5/8" Csg	9-5/8" Csg
Main Hole	12-1/4" Hole	8-1/2" Hole	8-1/2" Hole	8-1/2" Hole
	9-5/8" Csg (contingency)	----	----	----
Evaluation	LWD (GR-Res)	LWD (GR-Res)	LWD (GR-Res-Density-Sonic)	LWD (GR-Res-Density-Sonic)
	PEX-MDT-FMI-CST-VSP	PEX-MDT-FMI-CST-VSP	----	MDT-FMI-CST-VSP
Plug & Abandonment	Plug #1 - x5 stacked plugs	Plug #1 - x5 stacked plugs	Plug #1 - x2 stacked plugs	Plug #1 - x5 stacked plugs
	Plug #2 - x2 plugs w/ EZSV	Plug #2 - x2 plugs w/ EZSV	Plug #2 - x2 plugs w/ EZSV	Plug #2 - x2 plugs w/ EZSV
	Plug #3 - x1 plug w/ EZSV	Plug #3 - x1 plug w/ EZSV	Plug #3 - x1 plug w/ EZSV	Plug #3 - x1 plug w/ EZSV
	Conventional Csg Cut & Recovery	HAC Csg Recovery	HAC Csg Recovery	HAC Csg Recovery
Cost Savings				
Wellhead System	Conventional vs HAC	30,600	30,600	30,600
Casing	30" vs 20"	11,400	11,400	11,400
	13-3/8" vs 9-5/8"	32,500	32,500	32,500
	9-5/8" Contingency vs None	50,000	50,000	50,000
Mud	36" vs 26"	-	-	-
	17-1/2" vs 12-1/4"	19,300	19,300	19,300
	12-1/4" vs 8-1/2"	88,500	88,500	88,500
	P&A	5,800	5,800	5,800
Cement	30" vs 20"	5,100	5,100	5,100
	13-3/8" vs 9-5/8"	9,300	9,300	9,300
	12-1/4" vs 8-1/2" P&A	71,400	97,100	71,400
Bits	36" vs 26"	23,500	23,500	23,500
	17-1/2" vs 12-1/4"	78,900	78,900	78,900
	12-1/4" vs 8-1/2"	90,300	90,300	90,300
Logging	LWD Replacement 8-1/2"	N/A	- 627,200	- 627,200
	Wireline Logging	N/A	262,000	136,000
Time Savings				
Well Abandonment	Conventional vs HAC	122,200	122,200	122,200
Logging	Wireline Logging	N/A	1,284,200	111,700
Drilling	* Assume on improved ROP	-	-	-
POTENTIAL SAVINGS		A$ 638,800	A$ 1,583,500	A$ 259,300

NOTES:

(1) Potential cost savings are based on contract rates at time of comparison.

(2) Additional savings for casing could be achieved if casing grades & weights can be reduced for the P&A vs Suspension scenario if well design permits.

(3) Assumes A$466k for standby rental but not use of Schlumberger Wireline Tools, when not used for Case B.

(4) LWD Sonic-Density Neutron based on FLA 2003 proposals from Anadrill.

(5) Potential to reduce the rental/standby cost for the Wireline tools as indicated in point #3 if deal can be reached with use of LWD w/ sonic as part of package deal.

INCIDENT SUMMARY

#	Date	Classification	Incident
1	03 Feb, 2003	Other	Whilst discharging cargo at the Sedco 702 the Lady Kari-Anne was set up on the starboard side of the rig. While setting up at 12:00hrs the 702 control room was notified of the vessel position and asked not to vent product while the vessel was there. At 14:21 hrs a large cloud of Barite/ Bentonite completely engulfed the vessel, whilst the crane was in the process of discharging cargo. Note: The concerns of venting product, while the Lady Kari-anne was operating downwind, was not conveyed from one shift to the next. The Crews work 12-12 on the Sedco 702 and this information may not have been passed on during the changeover. Crews reminded of the need for good handovers, and the incident was reviewed at the Pre tour safety meetings.
2	14 Feb, 2003	First Aid	While tripping string out of hole, the mud bucket was being used due to a wet string. While working the mud bucket latch, a drop of mud got in the floorman's left eye. The floorman was wearing safety glasses and no mud got on the safety glasses. The floorman irrigated his eye at the eye wash station. The medic looked at the eye to confirm that there was no injury. The floorman returned to normal duties.

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EMDC Drilling Incident Report Form D-010

D-010 Incident Report Form

1. General Information

Date of Incident: Feb 03, 2003 **1200 hrs**

Current Classification: *(Highlight & Press F-1 for definition of each "check box")*

☐ LTI ☐ RWI ☐ MTI First Aid ☐ Minor ☐ Serious Near Miss X Near Miss

☐ Other ☐ Fire ☐ Vehicle ☐ SIE

Location/Country: Scallop 1/ Aust **Rig/Site: Sedco 702** **Rig Phone: 61 3 5142 2747**

Description of Incident: *One sentence.*	Supply vessel was discharging cargo at the Sedco 702 when it was inadvertently engulfed with Barite/Bentonite dust. The dust clouded over the vessel deck and covered the vessels deck crew.
Detailed Description:	Whilst discharging cargo at the Sedco 702 the Lady Kari-Anne was set up on the starboard side of the rig. While setting up at 12:00hrs the 702 control room was notified of the vessel position and asked not to vent product while the vessel was there. At 14:21 hrs a large cloud of Barite/Bentonite completely engulfed the vessel, whilst the crane was in the process of discharging cargo. NB: The concerns of venting product, while the Lady Kari-anne was operating downwind, was not conveyed from one shift to the next. The Crews work 12-12 on the Sedco 702 and this information may not have been passed on during the changeover. Crews reminded of the need for good handovers, and the incident was reviewed at the Pre tour safety meetings.
Extent of damage to company, contractor or 3rd party owned facilities and/or equipment:	None
Effect on Operations:	Venting of product ceased while the Lady Kari-anne was downwind of the vent discharge.
Associated Activity:	Weighing up Mud — **Area of Rig:** Stb side

What work was this associated with? Drilling Scallop #1

Were Equipment checks performed: Select option **Status: Select option**

Weather conditions : Good **Wind speed:** 15 knots **Wind Direction:** 330 **Temp:** 25

2. If Injury or Illness

☐ **Employee** **Contractor** ☐ **Other** **Drug Test Required Select option**

Name: **Company:** **Job Position:**

Nature of Injury or Illness:

Medical Response Taken:

Years Experience with Company: **Years Experience in Job:**

Number of Days into Shift: **Hours worked continuously before injury/illness:**

3. Incident Severity

Actual Severity: 0
Drop-down box

Potential Severity: 0
Drop-down box

Level 0 **Near Miss, Minor, First Aid only, no Restricted Work**
Level 1* **OSHA recordable, Restricted Work < 2 days, prescription medication, single stitch cuts**
Level 2* **Restricted Work < 10 days, serious bruises or abrasions, cuts that require stitches**
Level 3* **Restricted Work < 30 days, fractures, hospitalization, lost time**
Level 4* **Restricted Work > 30 days, amputations, disability**
Level 5* **Complete disability or fatality**

* Incident/Near Miss Investigation Summary must be completed for Actual Severity Level 1 and greater and is recommended for Potential Severity Level 3 and greater (see Section 4).

Distribution: Field Drilling Manager, Operations Manager
Drilling SH&E Manager
File

ExxonMobil Development

EMDC Drilling Incident Report Form D-010

4. Incident / Near Miss Investigation Summary

Root Cause Analysis Tool *Attach RCA Forms.*	☐ **Ask Why 5 Times**	☐ **TapRooT**â *Required for Actual Severity Level 3 and greater.*	☐ **Other** **Describe:**

Key Findings / Causal Factors

1.

Root Causes

1.

Corrective Actions (Do they address root causes identified above?)	**Party Responsible**	**Target Date**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Accepted By: ____________________ ____________________ ____________________
Name Signature Date

Closed Out By: ____________________ ____________________ ____________________
Follow Up Team Lead Name Signature Date

Name:	**Title:**	**Name:**	**Title:**
Prepared By: Anthony Bassett.	Oper. Supv	**Reviewed By:** Frank Kratzer, Drilling Superintendent	
Signature: on file		**Signature: on file**	

Distribution:	Field Drilling Manager, Operations Manager Drilling SH&E Manager File

Anthony A Bassett

05/03/2003 07:46

To: Robert S Stallard/U-SouthPacific/ExxonMobil@xom
cc: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom, metelli@net-tech.com.au, Tommy M Vestal/U-Houston/ExxonMobil@xom, George K Sharkey/U-Houston/ExxonMobil@xom
Subject: Re: Barite spill on vessel - follow up.

Rob.

I believe that this venting was a result of miss communication during Crew change over. The Drill crews were working 12 noon to midnight. As you can see from the vessels Incident report the vessel contacted the Sedco Control room at 12:00hrs. (During the changeover perion from one crew to the next) the vessel was accidentally covered in dust at 14:21hrs. The request to not vent product most likely missed being passed on to the afternoon shift crew in the changeover.

The Derrickman working in the sackroom may not have even been aware that there was a vessel operating downwind when he commenced mixing mud, thereby venting product. I spoke with both crews concerned and was unable to establish if the request to not vent product was actually passed on to the oncoming crew.

This type of incident is difficult to prevent 100% of the time as it takes a heightened awareness by the crews mixing mud etc. These topics are usually covered at the Pretour Safety meetings so that the crews are aware of any conflicting issues that may arise during the day. These PTSM are similar to the Toolbox meeting that is held at BBMT each morning prior to the start of the days activities.

Can I make a suggestion that the vessels masters ring the Drilling Supervisor direct on the MODU or Drilling rig if they have any concerns about having product vented, while they are discharging cargo. It is far easier for us to address the isssue then, and widen the loop of communication thereby preventing issues of this type.

Procedures will not prevent this type of incident as this was simply a breakdown in communication.

Feel free to give me a call if you would like to discuss this issue further.

Regards,
Tony Bassett.
Operations Supervisor Scallop #1
Phone 039270 3021

Email:- anthony.a.bassett@exxonmobil.com

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Robert S Stallard

Robert S Stallard

19/02/2003 13:47

To: Anthony A Bassett/U-SouthPacific/ExxonMobil@xom, Tommy M Vestal/U-Houston/ExxonMobil@xom
cc: metelli@net-tech.com.au, Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
Subject: Barite spill on vessel - follow up.

Gents the incident report issued by Sedco 702 (2-02-03 Bentonite discharge) listed the follow up action to be a review of procedures.

The incident report raised by the Lady Karri Ann for this incident indicated that ;
"Whilst the vessel was setting up in this position at 1200 the 702 Control and Sack Room were notified of vessels position and asked not to vent product whilst vessel was there. At 1421 a large cloud of Bentonite or Barytes completely engulfed the vessel, whilst the crane was in the process of discharging. The crane driver remarked he could not see the deck and the crew were completely engulfed in product"
Further to this, it took considerable time to clean the vessel decks with slippery residue remaining a

hazard for days.
Given similar incidents have happened in recent years, and that the vessel specifically requested that no venting take place while they (the vessel) were beneath the discharge point they need to be reassured that adequate controls have been implemented.

Could you please advise the outcome of this revision to satisfy the supply vessels concerns.

Regards,
Rob Stallard

Safety Environment Training Coordinator
Esso Australia Pty Ltd
Barry Beach Marine Terminal

Private Bag 1, Toora Vic. 3962

ph. 03 56880243 (4243) fax. 03 56881555
email; robert.s.stallard@exxonmobil.com

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George K Sharkey

21/02/03 15:38

To: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
cc: Murray G Jackson/B/U-SouthPacific/ExxonMobil@xom
Subject: Re: Barite spill on vessel - follow up.

The Sedco 702 Barge Procedures 702-BMD-001 Section 8 Subsection 5, 7.4 Use of Cement and Barite Silos states that "The Control Room must be informed before the task is commenced." The Barge Procedures are a controlled document.

The rig manager, Blue O'Shea, has given verbal approval to modify the procedure. In the future, if the supply vessel is working along side the rig and the ballast control operator receives notification that the bulk pneumatic tanks are to be used, he will notify the toolpusher to make a decision as to which operation should be suspended.

Blue O'Shea has authority to make the change while the Management of Change process takes place in Perth.

George K. Sharkey
Senior Operations Supervisor
Esso Australia Ltd.
Tel: 61 3 5142 2747
e-mail: george.k.sharkey@exxonmobil.com
Frank W Kratzer

Frank W Kratzer

02/19/03 12:54 AM

To: George K Sharkey/U-Houston/ExxonMobil@xom, Murray G Jackson/B/U-SouthPacific/ExxonMobil@XOM
cc:
Subject: Barite spill on vessel - follow up.

Lets discuss in the am.

Frank W. Kratzer
Operations Superintendent
Esso Australia
Mobil Exploration
0417 368 772
61 3 9270 3540

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----- Forwarded by Frank W Kratzer/U-SouthPacific/ExxonMobil on 19/02/03 18:00 -----

Robert S Stallard

19/02/03 13:47

To: Anthony A Bassett/U-SouthPacific/ExxonMobil@xom, Tommy M Vestal/U-Houston/ExxonMobil@xom
cc: metelli@net-tech.com.au, Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
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Given similar incidents have happened in recent years, and that the vessel specifically requested that no venting take place while they (the vessel) were beneath the discharge point they need to be reassured that adequate controls have been implemented.

Could you please advise the outcome of this revision to satisfy the supply vessels concerns.

Regards,
Rob Stallard

Safety Environment Training Coordinator
Esso Australia Pty Ltd
Barry Beach Marine Terminal

Private Bag 1, Toora Vic. 3962

ph. 03 56880243 (4243) fax. 03 56881555
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NOTES

- This report should be completed and distributed within 4 hours of incident occurring.
- All sections must be completed

BRIEF DESCRIPTION (Don't use names of people or speculate cause)			
DESCRIPTION:	Supply vessel was discharging cargo at the Sedco 702 when it was inadvertently engulfed with Barite/Bentoniite dust. The dust clouded over the vessel deck and covered the vessels deck crew.		
IMMEDIATE ACTIONS TAKEN:	Sedco 702 informed of incident. Crews reminded not to vent bulks when offloading cargo vessels down wind.		
DATE:	**02/02/03** (dd/mm/yr)	TIME:	**14:21** (24 hour format)
SITE: **Onshore - Pls Select**	**Offshore - Pls Select**	SPECIFIC AREA:	Lady Kari-anne/Sedco 702
EMPLOYEE (☐) CONTRACTOR (☐)	COMPANY: **Transocean/P&O**		
FOLLOWUP ACTIONS			
REQUIRED? Yes ☒ No ☐	DESCRIPTION: Procedure to be reviewed		
Person Responsible: Bill Henderson	Target completion date: 03-02-03		
INCIDENT INVESTIGATION REPORT *(Refer to 'INTERNAL REPORTING MATRIX' under forms)*			
REQUIRED? Yes ☐ No ☒	Person Responsible:	Target completion date: *(within 15 working days of incident)*	
REPORT INITIATOR			
CONTACT NAME: **A.Basset/T.Vestal**	PHONE: **0351 422870**		
TYPE OF INCIDENT (Refer to NOTES below) : DISTRIBUTION LIST			
Near Miss (6) : SITE	**SPILL / HCR INFORMATION** PRODUCT: VOLUME: TYPE OF CONTAINMENT:		
ADDITIONAL COMMENTS			
DISTRIBUTION LISTS (All lists are available as GROUPS in the NOTES ExxonMobil Directory)			
ALL	Send form to **UPST-SHE-LEVEL-A-ALL**		
SITE - OFFSHORE	Send form to **UPST-SHE-LEVEL-A-OFFSHORE**		
SITE - ONSHORE	Send form to **UPST-SHE-LEVEL-A-ONSHORE**		

NOTES:

1. Personal Injury
   - Other : an injury incurred that may require additional attention beyond that available at site
   - Minor : an injury that requires either no treatment or only first aid that is available at site
2. A Hydrocarbon Release is an unplanned/ uncontrolled release of gas/ LPG or atomised crude.
3. An Exposure is an incident where potentially hazardous fumes/ substances are inhaled or contacted with the body.
4. A Significant Near miss is an event, process condition or action that, in the judgement of ALT Leader, could have resulted in potential consequence 1 on RAMS Risk Matrix (eg dropped object)
5. A Well Control incident occurs when formation pressure is not controlled by the use of fluids to achieve greater hydrostatic pressure than formation pressure (eg surface blowout, underground blowout or well kick
6. A Near Miss is an event or action that could have resulted in an incident. Usually involves a loss of control
7. Other process incident involves an unwanted excursion or potential excursion outside approved plant or equipment operating envelope.
8. A Hazard is a condition or observation that has the potential to result in an incident. Often picked up during hazard hunts/ drills/ work observation.
9. Product Quality issues that may effect External Sales. Includes gas (H2S) and LPG (C_5+, ethane) problems
10. Occupational Illness is an abnormal condition, caused by exposure to environmental factors associated with employment. Excludes incident related injuries. Includes chemical burns, rash, oil acne, poisoning by metals/chemicals/ sprays, heatstroke etc

ExxonMobil Development

EMDC Drilling Incident Report Form D-010

D-010 Incident Report Form

1. General Information

Date of Incident: Feb 14, 2003 **1605 hrs**

Current Classification: *(Highlight & Press F-1 for definition of each "check box")*

☐ **LTI** ☐ **RWI** ☐ **MTI** **x First Aid** ☐ **Minor** ☐ **Serious Near Miss** ☐ **Near Miss**

☐ **Other** ☐ **Fire** ☐ **Vehicle** ☐ **SIE**

Location/Country: Scallop 1/ Aust **Rig/Site: Sedco 702** **Rig Phone: 61 3 5142 2747**

Description of Incident: *One sentence.*	Drop of mud entered floorman's left eye from mud bucket latch		
Detailed Description:	While tripping string out of hole, the mud bucket was being used due to a wet string. While working the mud bucket latch, a drop of mud got in the floorman's left eye. The floorman was wearing safety glasses, and no mud got on the safety glasses. The floorman irrigated his eye at the eye wash station. The medic looked at the eye to confirm that there was no injury. The floorman returned to normal duties.		
Extent of damage to company, contractor or 3rd party owned facilities and/or equipment:	None		
Effect on Operations:	None		
Associated Activity:	Tripping	**Area of Rig:**	Rig floor

What work was this associated with? Drilling

Were Equipment checks performed: Select option **Status: Select option**

Weather conditions : Good **Wind speed:** 10 knots **Wind Direction:** SE **Temp:** 20°

2. If Injury or Illness

☐ **Employee** **X Contractor** ☐ **Other** **Drug Test Required Select option**

Name: Josh Aylett **Company: Transocean** **Job Position: Floor man**

Nature of Injury or Illness: None

Medical Response Taken: Eye wash

Years Experience with Company:	**2½ years**	**Years Experience in Job:**	**5 yrs floorman**
Number of Days into Shift:	**Day 1**	**Hours worked continuously before injury/illness:**	**2 hours**

3. Incident Severity

Actual Severity: 0
Drop-down box

Potential Severity: 1
Drop-down box

Level 0 **Near Miss, Minor, First Aid only, no Restricted Work**
Level 1* **OSHA recordable, Restricted Work < 2 days, prescription medication, single stitch cuts**
Level 2* **Restricted Work < 10 days, serious bruises or abrasions, cuts that require stitches**
Level 3* **Restricted Work < 30 days, fractures, hospitalization, lost time**
Level 4* **Restricted Work > 30 days, amputations, disability**
Level 5* **Complete disability or fatality**

* Incident/Near Miss Investigation Summary must be completed for Actual Severity Level 1 and greater and is recommended for Potential Severity Level 3 and greater (see Section 4).

Distribution: Field Drilling Manager, Operations Manager
Drilling SH&E Manager
File

ExxonMobil Development

EMDC Drilling Incident Report Form D-010

4. Incident / Near Miss Investigation Summary			
Root Cause Analysis Tool *Attach RCA Forms.*	☐ **Ask Why 5 Times**	☐ **TapRooT**[â] *Required for Actual Severity Level 3 and greater.*	☐ **Other** **Describe:**

Key Findings / Causal Factors

1.

Root Causes

1.

Corrective Actions (Do they address root causes identified above?)	Party Responsible	Target Date
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Accepted By: ______________ Name ______________ Signature ______________ Date

Closed Out By: ______________ Follow Up Team Lead Name ______________ Signature ______________ Date

Name:	Title:	Name:	Title:
Prepared By: George Sharkey	Sr. Oper. Supv	**Reviewed By:** Frank Kratzer, Drilling Superintendent	
Signature: on file		**Signature: on file.**	

Distribution:	Field Drilling Manager, Operations Manager Drilling SH&E Manager File

EAPL Scallop-1

Hazard Identification and Risk Assessment

of

EAPL Exploration Well Scallop 1

HIRApac

Issue Date : 4/02/2003

HIR Apac	**EAPL Scallop-1** **Project Comments**	Date : 4/02/2003 Page No. : 1

Project : EAPL Exploration Well Scallop 1

EXECUTIVE SUMMARY

A project risk assessment for the planned exploration well Scallop 1 was completed on January 15, 2003. It was completed in accordance with standard ExxonMobil requirements. A total of 30 events were reviewed and their risk levels estimated. Certain EMDC Drilling events for a "standard floating drilling operation" were assessed as not applicable or credible. These are detailed later in the report.

There were no events with higher risk health/safety/environment consequences identified. Five events have been identified with all medium risk consequences. Seven events have all consequences assessed as low risk. The remaining 18 events all have risks in both medium and low risk categories.

Of the consequences evaluated, consequence types were:

- H&S	50
- Public disruption	3
- Environment	12
- Financial	41

A total of nine action items were identified and action parties assigned.

Report Endorsed: EAPL Drilling Engineering Manager

EAPL Drilling Operations Superintendent

Report Endorsed: EAPL Geoscience Project Manager - Gippsland

Report Approved: EAPL Drilling Manager

19/2/2003

SCOPE AND OBJECTIVES

This risk assessment focused on the Scallop 1 location. Scallop-1 is located in the Vic/RL2 licence area approximately 45 km south of the Victorian coast, 15 km east of Esso's Tuna platform and approximately 3 km south-east of the East Pilchard-1 . The water depth at the well location is approximately 110 m. The well will be drilled January/February 2003.

Scope covers the exploration well project and includes:
- Rig move to location
- Mooring operations

EAPL Scallop-1
Project Comments

Project : EAPL Exploration Well Scallop 1

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Scope covers the exploration well project and includes:
- Rig move to location
- Mooring operations

Project : EAPL Exploration Well Scallop 1

- Drilling operations (excluding production testing and coring)

WORKSHOP DETAILS

JANUARY 15
Team Leader:David Ure (Ure Risk Engineering Pty Ltd)
Assistant Team Leader and record keeper: Andrew Camp (Ure Risk Engineering Pty Ltd)
Esso Coordinator: Rudolf Furchtenicht (Drilling Engineer)

Members:

Esso: Frank Kratzer (Drilling Operations Superintendent), Colin Johancsik (Drilling Engineering Manager); John Richmond (Drilling Supervisor); George Sharkey (Drilling Supervisor); Rudolf Furchtenicht (Drilling Engineer); Glen Nash (Geoscience Project Manager); Andrew Hodgson (Operations Geologist); Simon Grope (Well Project Coordinator)

Transocean Sedco Forex: Rob Cameron (Rig Safety Training Coordinator); Blue O'Shea (Rig Manager 702); David Kom (Rig Engineer); Geoff Cuthbertson (Toolpusher - 702)

Swire Pacific Offshore: Colin MacDonald (Operations/HSE Manager);

Halliburton: David Brack (Cementer)

Worley Safety & Risk Management: Howard Proctor (Environmental Consultant); Steve Donner (Emergency Management & Risk Consultant)

Department of Primary Industries: Bruce Armour (Petroleum Regulation); Ka-Lok Siu (Petroleum Engineering Officer)

WORKSHOP METHODOLOGY

The ExxonMobil risk scenario method was used, with risk levels assessed on the ExxonMobil risk matrix. In assessing consequence and probability, the "most likely" outcomes were assessed. Where "injury" was considered an outcome, the most likely injury outcome is noted in each event.

The following standard events were assessed as having no risk contribution for the reasons given:
Diving Incident: No diving activities are currently planned.
Hydrogen sulphide release: The Scallop 1 Geological Programme was summarised for the workshop attendees, in particular with focus on geological hazards. It states that "Offset well data shows levels of H2S as follows:0 ppm from E. Pilchard-1 MDT samples, 0 ppm detected from Kipper-1 production test, 0-trace at Manta-1, 0-25ppm at Tuna-4."
Unauthorised entry to drilling rig: No history of similar events.

Specific items which could be considered as differences to previous wells were:
- possible change out of the rig tow bridle during Scallop 1 operations - not to be undertaken without detailed hazard identification exercise by drilling contractor
- no pilot hole to be drilled in surface hole - addressed in the shallow gas release scenario and considered not to increase risk
- change in map coordinate system and depth measurement zero - the group agreed to make special mention of these points in the well program and pre-spud meeting

Project : EAPL Exploration Well Scallop 1

WELL COMPARISON: GENERIC OFFSHORE WELL vs. SCALLOP 1

Characteristic	Generic Well	Scallop 1
ENVIRONMENT		
Climate	Moderate	Moderate
Min water temperature	12.8° C	11-22° C
LOCATION		
Distance offshore	80 km	45 km
Distance to Supply Base	129 km	203 km
Distance to heliport	129 km	93 km
WELL DEPTH		
MD-RT	3048 m	3126+ m
NORMAL PRESSURE		
Maximum Mud Weight	11 ppg	11 ppg
Mud Type	FW Polymer	FW KCl/Glycol/PHPA/Polymer
H2S EXPECTED	No	No
SHALLOW GAS EXPECTED	No, But Possible	No
PRODUCTION TEST	No	No
UNUSUAL SECURITY THREAT?	No	No
REGULATORY REQUIREMENTS	Moderate	Moderate

Key differences are not significant.

Deliverables

· Hazard list for each event
· Each event with risks evaluated in the four standard ExxonMobil consequence types (health and safety, public disruption, environmental impact and financial impact {reputation or loss of business opportunity included here})
· Risk scenario registers (one for each event) that include: identified hazards, consequences, event prevention and consequence mitigation measures with all controls in place, risk matrix results
· List of action items ranked by risk level, and event.

List of events evaluated

Event No.	Operation	Event Description
1	Aviation transport	Helicopter flight incident
2	Rig move	Personnel safety incident during rig move
3	Rig move	Failure of tow vessel/line (tow and positioning)
4	Mooring/marine	Failure during mooring/anchor handling operations
5	Mooring/marine	Failure of lifeboat supports or launch during maintenance or drills
6	Mooring/marine	Supply vessel collision with rig
7	Mooring/marine	Ship collision with rig (on tow or on location)
8	Mooring/marine	Rig ballast system failure
9	Well program execution	Mooring failure during drilling operations
10	Well program execution	Shallow gas release
11	Well program execution	Blowout with BOP installed
12	Well program execution	Annular flow around surface casing including broaching
13	Well program execution	Underground flow
14	Well program execution	Dropped BOP/riser
15	Well program execution	Mud-gas separator fails while under pressure
16	Well program execution	High pressure hose/chicksan/fitting/vessel failure
17	Well program execution	Dropped objects during drilling operations

Project : EAPL Exploration Well Scallop 1

18	Well program execution	Premature detonation of explosives
19	Well program execution	Fall from heights
20	Well program execution	Personnel safety incident
21	Well program execution	Hazardous materials release
22	Well program execution	Fuel or oil spill
23	Well program execution	Release of untreated sewage or waste
24	Well program execution	Accidental release from mud pit or tank (incl mud cuttings discharge)
25	Project execution - general	Civil unrest, terrorism, sabotage, criminal act, IR
26	Project execution - general	Personnel contract disease/illness
27	Project execution - general	Person overboard
28	Project execution - general	Rig structural failure
29	Project execution - general	Regulatory non-compliance
30	Project execution - general	Natural disaster

ACTION ITEM SUMMARY

A total of 9 action items were identified with key items relating to dropped objects prevention (event 17) and premature detonation of explosives (event 18).

Report Endorsed:

Security Representative: Not required for this project

____

Occupational Health representative: Not required for this project

____

No exception taken to report.
Law:

____

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 5

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 1

System/Operation : Aviation transport

Event : Helicopter flight incident

Causes :

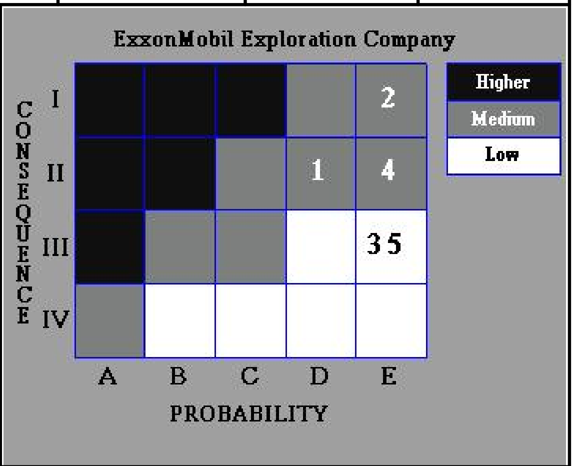
Adverse or rapidly changing weather
Pilot incapacitation (fatigue, A&D abuse, medical)
Lack of pilot/engineer skill/experience
Aircraft mechanical, hydraulic or electrical failure
Inadequate helipad condition/lighting
Contaminated fuel, Fuel starvation
Poor air traffic control / collision with other aircraft
Communication failure
Overload
Hazardous cargo (flammable or explosive)
Passenger or other person comes too close to rotating propellers
Inappropriate passenger behaviour
Debris on helipad
Movement of rig

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	D
2	Fatality	Health/Safety	I	E
3	Project delay	Financial	III	E
4	Damage to assets	Financial	II	E
5	Public reaction	Public disrupt	III	E

Risk Controls :

PREVENTION:
ExxonMobil aviation standards; Civil aviation standards
EAPL aviation policy
Inspection and maintenance program
Normal helicopter operations in daylight only
Aviation audits/assessments
Quality checks of fuel supply
Adherence to procedures; Flight following with live tracking
Co-pilot in each helicopter; Project-specific training
Helicopter induction briefing
Controls on arrival and departure by helideck crew
Markings on helideck; Inspection of helideck by aviation
Training for rig crew and all passengers on S76 helicopter included in overall rig induction

MITIGATION:
Emergency communication capability/ELT
EAPL ERP incl Public Affairs procedures
Search and Rescue
Flight following; Survival kits; Aircraft first aid kits
HUET training
Fast Rescue Craft on both support vessels
Vessel can respond very quickly during helicopter operations



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 1

System/Operation : Aviation transport

Event : Helicopter flight incident

Consequence Assessment Comments :

Rig will not be carrying survival suits (operations during summer).

Probability Assessment Comments :

Minimal population under flight path from Longford. Flights from Essendon are possible but expected to be low in number and for a few days only during the rig tow from offshore Otways.
Long incident-free history of helicopter operations in Bass Strait.
Short project duration (approx 40 days) - low number of flights.
Medium sized helicopter fleet.
No refuelling on rig for Esso helicopters.

Helicopter activity will take place during the rig move.
Not anticipating lots of air freight.
Rig has good record on helicopter safety performance.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003
Page No. : 7

Project : EAPL Exploration Well Scallop 1

Event No. : 2

System/Operation : Rig move

Event : Personnel safety incident during rig move

Causes :

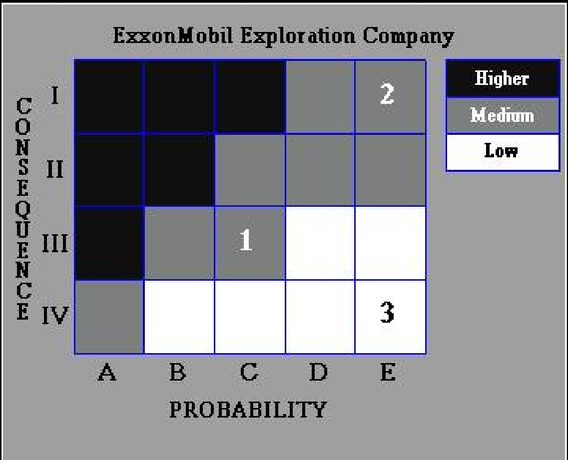
Unsecured hand tools
Pinching/crushing/caught between
Fatigue, Human error incl crane operator
Inadequately secured equipment
Overload of lifting equipment, Lifting slings/straps worn/damaged
Winch failure
Unclear instructions
Adverse weather conditions
Restricted space on site, Restricted visibility
Excess noise
Multiple activities simultaneously
Unfamiliar/untrained personnel, Inadequate/insufficient supervision
Electrical incident
Insufficient lighting

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (MTI)	Health/Safety	III	C
2	Fatality	Health/Safety	I	E
3	Disruption to project	Financial	IV	E

Risk Controls :

PREVENTION:
Rig move procedures / pre-move checklist
Pre-move planning meeting to ensure clear accountabilities
PM operations appropriate to conditions during the move
Contractor JSA, SMS, contractor START program
Toolbox and safety meetings
Appropriate supervision
Appropriate lighting for night time operations
Straps/ties for hand tools
Inspection of rig and other lifting equipment
Equipment maintenance
Appropriate training
Work permit system
ADU policy; Good housekeeping; Communications equipment
PPE; Securing of loose items
Contractor interface management
No work over side during rig move
Crane ops limited to good conditions
Ballasting during bad weather

MITIGATION:
ERP; First aid capability; Medic
Helicopter medical evacuation if required
Backup equipment to replace damaged items
Fire fighting equipment
Notification to relevant authorities eg AMSA



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 2

System/Operation : Rig move

Event : Personnel safety incident during rig move

Consequence Assessment Comments :

EAPL inspection of Essendon-based helicopter contractor includes emergency evacuation capability.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 9

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 3

System/Operation : Rig move

Event : Failure of tow vessel/line (tow and positioning)

Causes :

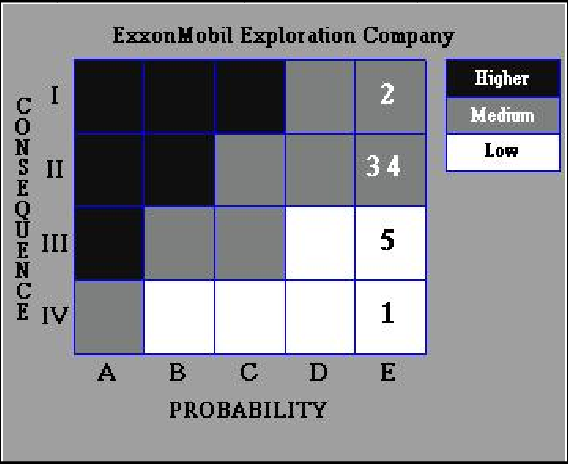
Overload of line
Line wear/corrosion/damage
Inadequate tow line inspection
Incorrect tow line specification
Intrusion of other vessel into tow path (busy shipping lanes)
Adverse weather
Mechanical failure on tow vessels
Ineffective maintenance of tow vessels
Operator error, Communications failure, Unskilled workers
Navigation error
Inadequate tow vessel specification
Vessel breakdown leads to loss of separation of tow vessels
Failure of shackles or padeyes

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First aid)	Health/Safety	IV	E
2	Fatality	Health/Safety	I	E
3	Collision with ship / platform / pipeline	Financial	II	E
4	Damage to rig/boat, delay to project	Financial	II	E
5	Spill of fuel/oil to ocean	Environmental	III	E

Risk Controls :

PREVENTION
Tow vessel specification/selection
Inspection of tow vessels; Two tow vessels being used
24 hour watch on tow vessel and rig
Positioning equipment/staff on board
Line specification, inspection program
Notification to AMSA of move plan; Navigation lighting
Weather monitoring and forecasting
Tow line monitoring from vessel
Marine certification of crew qualification
Additional crew during rig move
Rig move plans checked by rig insurer
Rig has marine crew permanently on board
Radar monitoring during rig move (TSF & EAPL)
Tow vessel has primary responsibility for navigation with back-up position monitoring by rig
Selection of trained crew; Documented rig move procedure
Back-up communications
No crew on tow boat decks while tow in progress
Chains recently inspected as part of last rig move

MITIGATION
Rig has anchors and own propulsion at ready during tow
Rig can maintain position with thrusters
Can evacuate rig by helicopter and escape boats if required
ERP; Medic on rig



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 3

System/Operation : Rig move

Event : Failure of tow vessel/line (tow and positioning)

Consequence Assessment Comments :

Plan to tow on number 2 and 3 anchor chains. Has been done successfully in North West Shelf by this rig contractor.

Primary tow vessel rated at 12000 hp. Secondary tow vessel 9000 hp. Primary tow vessel has new tow wire.

An emergency tow wire is available for use to maintain rig position in the event that a chain fails under tow.

Probability Assessment Comments :

EAPL's exposure to fuel/oil spill in the Otway Basin area is very small because the rig will always be moving further away from National Park/coast.

Total duration of this activity less than 4 days.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 11

Project : EAPL Exploration Well Scallop 1 **Event No. :** 4

System/Operation : Mooring/marine

Event : Failure during mooring/anchor handling operations

Causes :

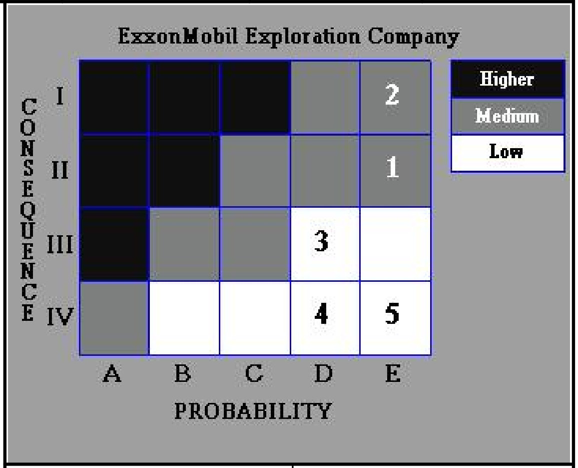
Anchor chain failure
Shackle, work wire failure
Boat failure
Pennant line failure
Equipment wear & corrosion
Inadequate specification of equipment
Anchor drags
Adverse weather
Mechanical failure
Operator error
Failure of communications between anchor-handling vessel and rig
Surveying equipment failure

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Anchor left behind (disruption to fishing)	Public disrupt	III	D
4	Anchor left behind requiring retrieval	Financial	IV	D
5	Move off location (delay to project)	Financial	IV	E

Risk Controls :

PREVENTION
Chains selected appropriate to service requirements
Mooring system designed for location
Independently verified mooring analysis
Chain tension monitoring, Storm-tension testing of chains
Permit to work/JSA; Mooring procedure
Inspection/testing of anchors/chains during previous well
Selection/training of personnel
Pre-tour meetings, Pre mooring planning meeting
Weather forecasting/monitoring
Mooring System complies with ABS Standard
Mooring equipment inspection and service life standards
Wire/chain/connecting links acceptance testing
Selection of anchors with adequate holding power for sea floor conditions
Procedure for anchor pull tests
Independent check that rig has been positioned correctly
Sea floor survey conducted; Rig thrusters available

MITIGATION
ERP; Medic on rig
Change tension on other anchors if one lost



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 4

System/Operation : Mooring/marine

Event : Failure during mooring/anchor handling operations

Consequence Assessment Comments :

Vessels have supported this rig in the previous well.

Kipper-2 and East Pilchard-1 are both about 3 km away from Scallop-1. These wells are below-seabed suspensions or abandonments.

All anchors tested as part of previous well.

Probability Assessment Comments :

Injuries more likely to boat crew than to rig crew

Swire last 18 months LTI free (6 vessels in rig support).

Drilling equipment is not planned to be prepared during anchor handling at Scallop location.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 13

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 5

System/Operation : Mooring/marine

Event : Failure of lifeboat supports or launch during maintenance or drills

Causes :

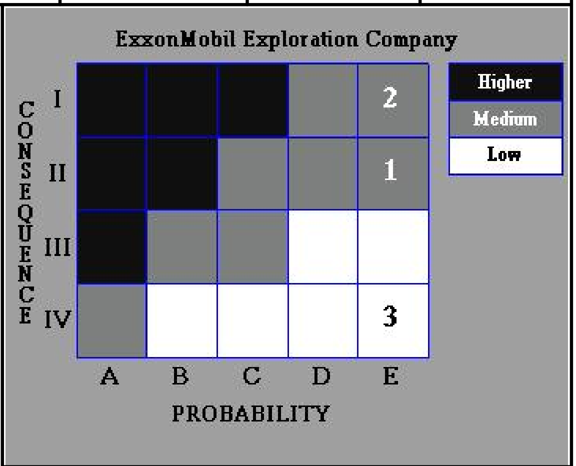
Inadequate maintenance/inspection
Failure of wires
Failure to install safety lines
Mechanical failure
Structural failure of lifeboat or davits

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Delay to project	Financial	IV	E

Risk Controls :

PREVENTION
Inspection/maintenance program
Designated personnel responsible for launching lifeboats (with training)
Limited access to lifeboats
Permit to work manages maintenance and access during drills
JSAs
Trained personnel
Slings on during maintenance

MITIGATION
ERP
Medic
Fast rescue craft on support vessels



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 5

System/Operation : Mooring/marine

Event : Failure of lifeboat supports or launch during maintenance or drills

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No history of lifeboat support failure on Sedco 702 or fleet.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003

Page No. : 15

Project : EAPL Exploration Well Scallop 1

Event No. : 6

System/Operation : Mooring/marine

Event : Supply vessel collision with rig

Causes :

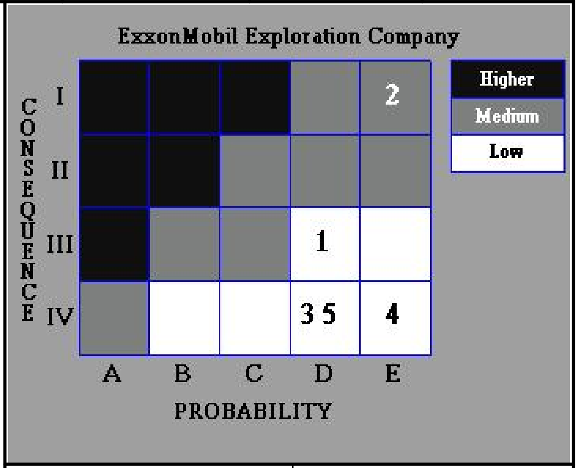
Loss of supply vessel power, control
Adverse weather
Operator error (including due to fatigue or ADU impairment)
Inadequate communication
Deviation from standard procedure
Incident during personnel transfer between rig and supply vessel
Inadequate length of transfer hoses

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First Aid)	Health/Safety	III	D
2	Fatality	Health/Safety	I	E
3	Damage to equipment	Financial	IV	D
4	Release to environment	Environmental	IV	E
5	Delay to project	Financial	IV	D

Risk Controls :

PREVENTION
Procedures for selection of experienced marine contractors with trained crews.
ADU policy stated in Marine Contract.
Marine Service Vessel specifications in Marine Contract.
Supply boats selected with adequate power and bow thrusters.
Weather/sea state operating limits
Radio communications between supply vessel and rig
Visual control over close manouevres
Rig heading selection for weather
Supply boat and rig ballast control procedures
Supply vessel master ultimate control over approach to rig
Transfer hoses long enough for transit draft
Dry break couplings used
Bulkhead protection
Heavy lift procedures
Hours of work managed to avoid fatigue
Live boat operations

MITIGATION
ERP
Design of rig permits loss of centre column without capsize
Fast rescue craft on both supply vessels
Medic on rig



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1	**Event No. :** 6

System/Operation : Mooring/marine

Event : Supply vessel collision with rig

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 17

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 7

System/Operation : Mooring/Marine

Event : Ship collision with rig (on tow or on location)

Causes :

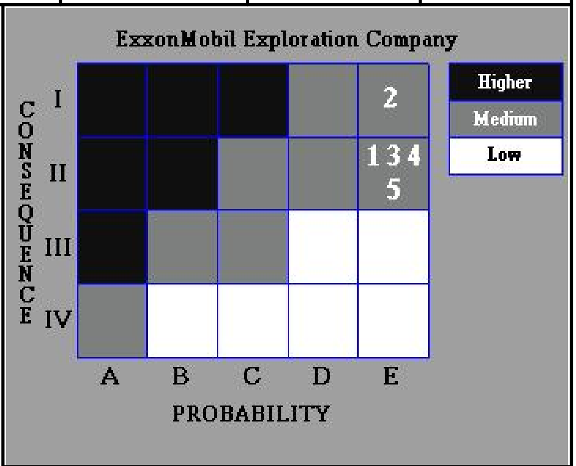
Loss of ship power, control
Adverse weather
Operator error
Inadequate communication (equipment, language etc)
Failure of radar
Navigation error
Ship deviates from normal shipping channel
Inadequate manning on ship

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Damage to equipment	Financial	II	E
4	Release to environment	Environmental	II	E
5	Delay to project	Financial	II	E

Risk Controls :

PREVENTION
AMSA notification process initiated by rig
PSLA notification re 500 m safety zone around rig
Radio communications between ship and rig
Radar watch at Longford and on rig/supply vessels during rig tow
Infringements notified to AMSA
Navigation lighting / foghorn
If on tow, follow standard shipping rules
If on location and supply boat nearby, supply boat would contact ship
Notification of naval movements

MITIGATION
ERP
Suspension of operations when collision imminent
Design of rig permits loss of centre column without capsize
Fast rescue craft on both supply vessels
Medic on rig



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 7

System/Operation : Mooring/Marine

Event : Ship collision with rig (on tow or on location)

Consequence Assessment Comments :

Seismic vessel will be operating near Blackback - rig will pass by during tow, but for a short time only. Seismic vessel contractor has been warned, and will be contacted when the move is under way.

Probability Assessment Comments :

Scallop-1 is just outside the Area To Be Avoided but not in the line that ships normally travel.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

HIR Apac

Date : 4/02/2003
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Project : EAPL Exploration Well Scallop 1

Event No. : 8

System/Operation : Mooring/marine

Event : Rig ballast system failure

Causes :

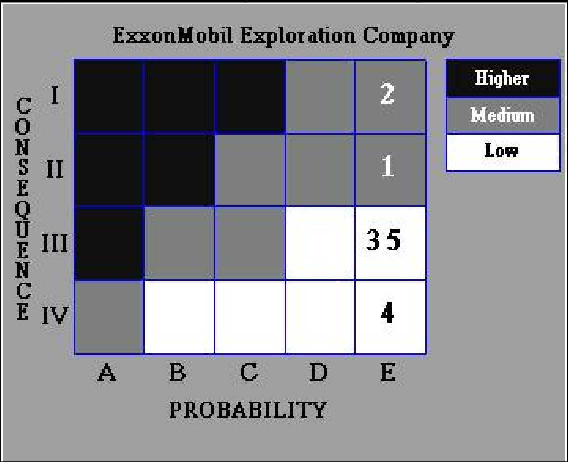
Loss of rig air causing inability to operate valves
Hull rupture
Operator error
Valve failure
Inadequate maintenance/testing
Damaged ballast piping by corrosion
Fire in Pump room
Fire in ballast control room

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Loss of assets	Financial	III	E
4	Release to environment	Environmental	IV	E
5	Delay to project	Financial	III	E

Risk Controls :

PREVENTION
Defined qualifications of ballast control operators
24-hour/day manning of ballast control room.
Daily stability calculations with accurate weights of equipment/materials and liquids (tank soundings), calculations checked by TSF Marine Department
Monthly verification of ballast/stability by manual calculations
Marine safety inspection/surveys
Damage stability analysis.
Documented ballast control procedures
Ballast control drills.
Redundancy in critical equipment (ballast pumps, bilge pumps, etc.)
Preventive maintenance program.
Back up rig air supply
Back up power supply
Include work on ballast control system in "Work Permit System".
Daily testing program of alarms and soundings of volumes
Valves fail safe (closed)
Fire/heat detection system / CO2 deluge system
Counter flood procedure to compensate for hull rupture
Manual override of pneumatic valves
Structural inspection performed in 2000

MITIGATION
ERP; Back up on rig air
Secondary deballast system using manual valves



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 8

System/Operation : Mooring/marine

Event : Rig ballast system failure

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 21

Project : EAPL Exploration Well Scallop 1 **Event No. :** 9

System/Operation : Well program execution

Event : Mooring failure during drilling operations

Causes :

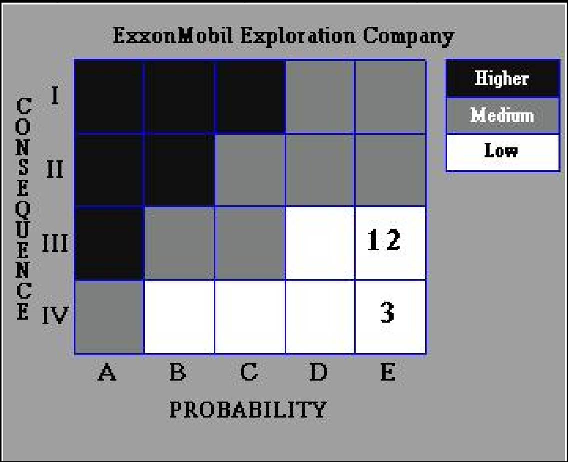
Anchor chain failure
Shackle failure
Equipment wear & corrosion
Inadvertantly inadequate specification of equipment
Anchor drags
Adverse weather
Mechanical failure
Operator error
Incorrect or inadequate procedures

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (MTI)	Health/Safety	III	E
2	Damage to equipment	Financial	III	E
3	Delay to project (drifted off location)	Financial	IV	E

Risk Controls :

PREVENTION
Chains selected appropriate to service requirements
Mooring system designed for location
Independently verified mooring analysis
Chain tension monitoring; Storm-tension testing of chains
Permit to work/JSA
Visual inspection/testing of anchors/chains
Selection/training of personnel; Pre-tour meetings
Weather forecasting/monitoring
Procedures to cover maximum position offset and suspension of operations
Monitoring systems for BOP and riser angles
Riser tension monitoring procedure and equipment
Site survey conducted

MITIGATION
ERP; Medic on rig
Change tension on other anchors if one lost
Rig can use thrusters



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 9

System/Operation : Well program execution

Event : Mooring failure during drilling operations

Consequence Assessment Comments :

Rig will not be operating near pipelines or platforms. Distance to nearest platform is about 15 km.

Workshop considered fatality as non-credible consequence.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 23

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 10

System/Operation : Well program execution

Event : Shallow gas release (no surface casing in place)

Causes :

Geological shallow gas, not predicted
Swabbing
Unfamiliar crews
Ineffective maintenance

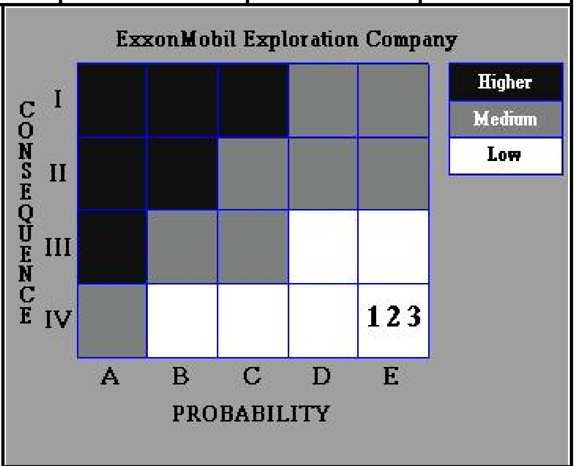
with ignition sources as compounding factor

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First Aid)	Health/Safety	IV	E
2	Loss of assets	Financial	IV	E
3	Delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Shallow gas geological evaluation and well location selection
Selection of trained personnel
Pre-spud meeting
Toolbox meetings
ROV at seabed to monitor gas in returns
Rig contractor riserless drilling procedures

MITIGATION:
Well control training and drills
Escape routes
ERP (incl safe havens, and abandonment plan)
Rig medic
Supply boat told to keep upwind while drilling riserless
Fire fighting equipment
Weighted mud on standby



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 10

System/Operation : Well program execution

Event : Shallow gas release (no surface casing in place)

Consequence Assessment Comments :

Geological advice says that there is a very low probability of shallow gas for this well. Combined with previous history, the workshop concluded that Scallop-1 is no different to Beardie-1 and East Pilchard-1 in this regard.

Pilot hole will not be drilled.

The workshop was of the opinion that the risks arising from this scenario were at the very lowest end of the matrix.

Probability Assessment Comments :

Shallow gas release not previously encountered in Bass Strait (<850m)

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003
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Project : EAPL Exploration Well Scallop 1

Event No. : 11

System/Operation : Well program execution

Event : Blowout with BOP installed

Causes :

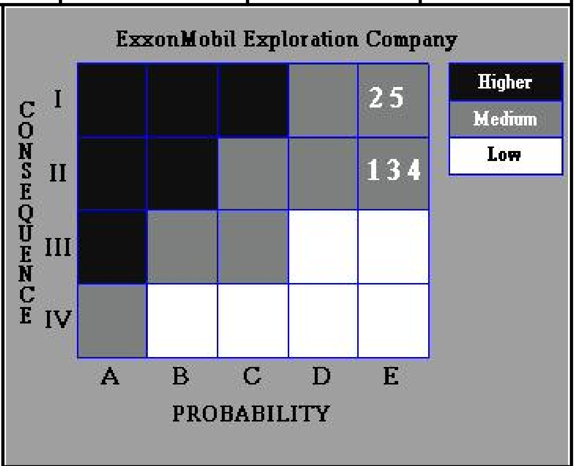
Driller pulling too fast for conditions/swabbing
Supervisor fails to rectify pulling speed
Insufficient trip margin
Trip book procedures fail
Incorrect mud density specification
Formation pressure higher than expected
Changed/unexpected formation conditions
Mud density adjustment error
Mud density measurement error
Gas cutting of mud
Improper use of trip tank
Failure to comply with standard drilling practices
Rig personnel failure to detect low density during routine checks
Mud engineer fails to detect low mud density

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Loss of assets or delay to project	Financial	II	E
4	Release to environment	Environmental	II	E
5	Public reaction	Public disrupt	I	E

Risk Controls :

PREVENTION:
BOP specifications (ExxonMobil, API)
Wellhead specifications
Casing design and specs/inspection
Pre-acceptance inspection of BOP equipment
Regulatory compliance requirements
BOP maintenance, inspection, and testing program
BOP drills
Well control training
Trained crews and supervision
Contractor's well-control procedures
ExxonMobil well-control procedures
Pit level monitoring and kick detection equipment, with redundancy
Pore pressure prediction
ExxonMobil supervision
Calibrated mud density measuring equipment
Lost circulation materials

MITIGATION:
ERP
Well control procedures
Oil spill response plan
Rig medic
Rig fire fighting capability



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 11

System/Operation : Well program execution

Event : Blowout with BOP installed

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

Project : EAPL Exploration Well Scallop 1	**Event No. :** 12

System/Operation : Well program execution

Event : Annular flow around surface casing including broaching

Causes :

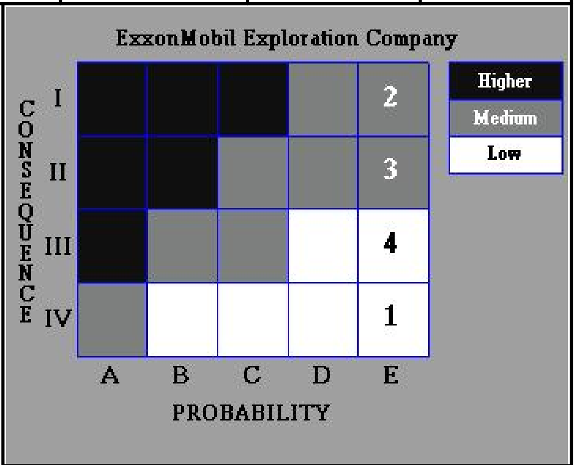
Poor primary cementation
Gas cut cement
Underbalance of formation pressure during cement gellation
Casing centralisation not effective
Casing or wellhead failure
Mechanical failure of cementing unit
Poor quality cement/additives
Poor cement analysis/testing program
Operator error
Improper supervision
Improper slurry design
Poor detection of cement integrity problem
Undetected hydrocarbon
Surface casing set too shallow

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First Aid)	Health/Safety	IV	E
2	Fatality	Health/Safety	I	E
3	Loss of assets or delay to project	Financial	II	E
4	Release to environment	Environmental	III	E

Risk Controls :

PREVENTION:
Professionally engineered cement jobs
Pressure Integrity Test
Independently verified casing design
Pre-job cement testing
Competent cementing contractor
QC on cement and additives
Close supervision of cement jobs
Surface casing to exceed minimum depth
Minimum formation strength
Vertical well control
Casing centralisation
Large excess of cement is pumped
ROV monitors for cement returns

MITIGATION:
ERP
Oil spill response plan
Rig medic
Remedial cementing capability
Gas detection



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 12

System/Operation : Well program execution

Event : Annular flow around surface casing including broaching

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	EAPL Scallop-1 **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 29

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 13

System/Operation : Well program execution

Event : Underground flow

Causes :

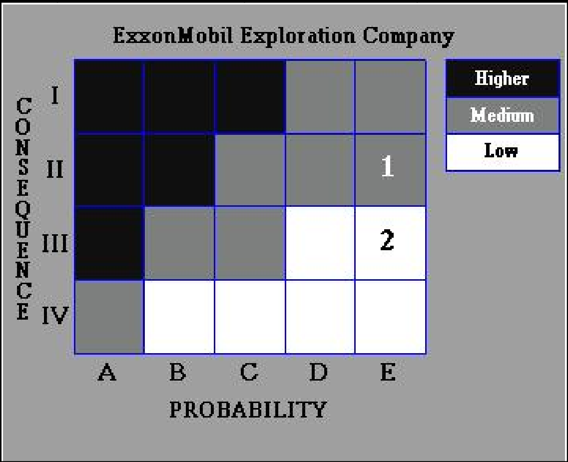
Driller pulling too fast for conditions/swabbing
Insufficient formation integrity
Lost circulation
Supervisor fails to rectify pulling speed
Insufficient trip margin
Trip book procedures fail
Incorrect mud density specification
Formation pressure higher than expected
Changed/unexpected formation conditions
Mud density adjustment error
Mud density measurement error
Gas cutting of mud
Improper use of trip tank
Failure to comply with standard drilling practices

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Loss of asset (incl reservoir damage, reserves)	Financial	II	E
2	Delay to project	Financial	III	E

Risk Controls :

PREVENTION:
BOP specifications (ExxonMobil, API)
Casing design and specs/inspection
Run casing if required
Pre-acceptance inspection of BOP equipment
Regulatory requirements
BOP maintenance, inspection, and testing program
BOP drills
Well control training
Trained crew
Trained supervision
Contractor's well-control procedures
ExxonMobil/rig contractor standard procedures
Pit level monitoring and kick detection equipment
Pore pressure prediction
ExxonMobil supervision
Calibrated mud density measuring equipment
Lost circulation materials
Increase mud weight

MITIGATION:
Increase mud weight
ERP
Well control procedures
Relief well procedures
Capability to pump barite weighted mud through cement unit



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 13

System/Operation : Well program execution

Event : Underground flow

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003

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Project : EAPL Exploration Well Scallop 1

Event No. : 14

System/Operation : Well program execution

Event : Dropped BOP/riser

Causes :

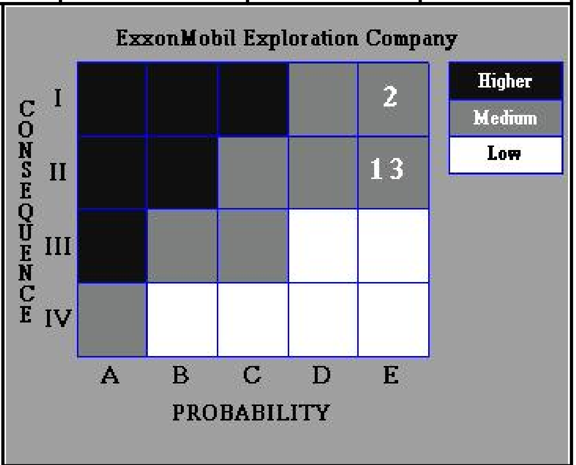
Fatigue of equipment
Inadequate maintenance or inspection
Operator error
Overload/under-rated equipment
Inappropriate modification of equipment
Failure to follow procedure
Absence of running procedures
Failure of communications
Adverse weather

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Delay to project	Financial	II	E

Risk Controls :

PREVENTION
Inspection program for all riser components/connections, handling tools and lifting/hoisting equipment during rig acceptance testing and before running.
Weather and vessel motion limits for running BOP.
Pre-job safety meeting.
Rig JSAs held prior to running BOP
Crew change handover
Documented riser running/pulling procedures.
Verification that LMRP connector is fully locked before running BOP and lock-out LMRP connector open function on control panel while running BOP.
Monitoring and testing of riser connector make up.
Trained personnel
Equipment specification on lifting equipment and connectors etc
Connector design to minimise likelihood of inadvertent disconnection

MITIGATION
ERP
Spare riser joints



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 14

System/Operation : Well program execution

Event : Dropped BOP/riser

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

Last riser inspection undertaken about October 2002.

	EAPL Scallop-1 **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 33

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 15

System/Operation : Well program execution

Event : Mud-gas separator fails while under pressure & fire results

Causes :

Incorrect equipment specification
Error in determining service pressure and flowrate
Corrosion, erosion
Circulate out kick
Incorrect well control procedure
Incorrect supervision
Line blockage

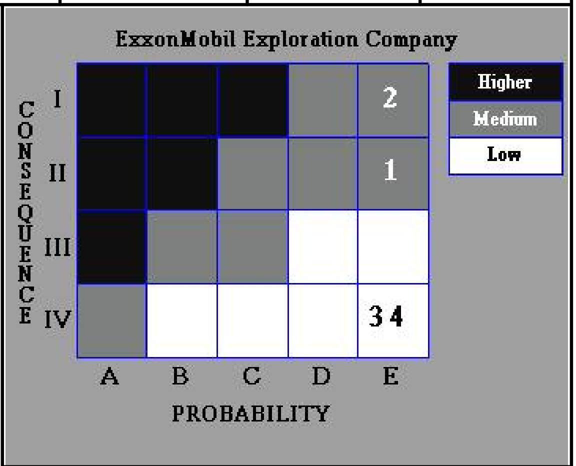
AND
Ignition source

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Release to environment	Environmental	IV	E
4	Loss of asset or delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Mud gas separator meets specifications (ExxonMobil, API)
Dimensional verification and throughput calculation
Maintenance, inspection, and testing program
Well control training
Trained crew
Trained supervision
Contractor's well-control procedures
ExxonMobil/rig contractor standard procedures
ExxonMobil supervision
Correct rig up
Pre acceptance inspection
Equipment inspection and maintenance

MITIGATION:
ERP
Well control procedures incl bull heading
Oil Spill Response plan
On site medic/hospital
Rig fire fighting capability



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 15

System/Operation : Well program execution

Event : Mud-gas separator fails while under pressure & fire results

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 35

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 16

System/Operation : Well program execution

Event : High pressure hose/chicksan/fitting/vessel failure

Causes :

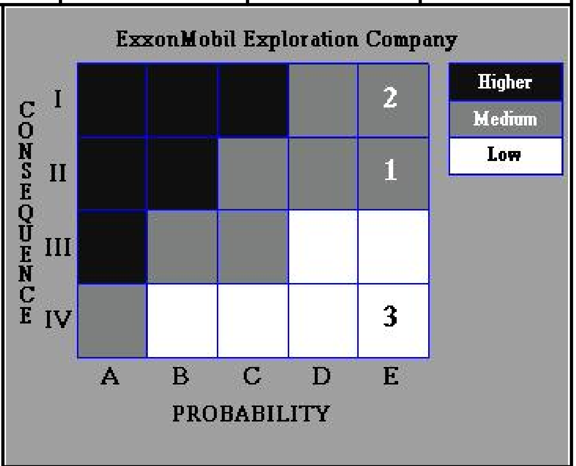
Pressure rating exceeded/PSV fails to relieve
Equipment damaged or worn or corroded
Connection failure
Wrong fitting/ mismatched union
Operator error
Piping not restrained
Improper makeup
Ineffective maintenance
Manufacturing defect
Inadequate supervision
Procedural error

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Damage to assets/Delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Equipment specification
Manufacturing QA/QC
Contractor interface management re compatibility of equipment (included in pre acceptance inspection)
Permit to work procedures (esp for > 1000 psi)
Maintenance, inspection, testing procedures (incl relief valve inspections)
Use of appropriate equipment (in test)
JSAs
Trained personnel
Job-specific pressure testing procedures
Use of calibrated pressure gauges
Clear communications
Expert third party inspection agencies where appropriate

MITIGATION:
Minimise personnel in area
Barriers, warning signage, PA announcement
PPE
ERP
On site medic/hospital
Bunding, spill catching
OSR plan
Non-hazardous fluids used for pressure testing
Use of appropriate pipe and hose restraints



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 16

System/Operation : Well program execution

Event : High pressure hose/chicksan/fitting/vessel failure

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 37

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 17

System/Operation : Well program execution

Event : Dropped objects during drilling operations

Causes :

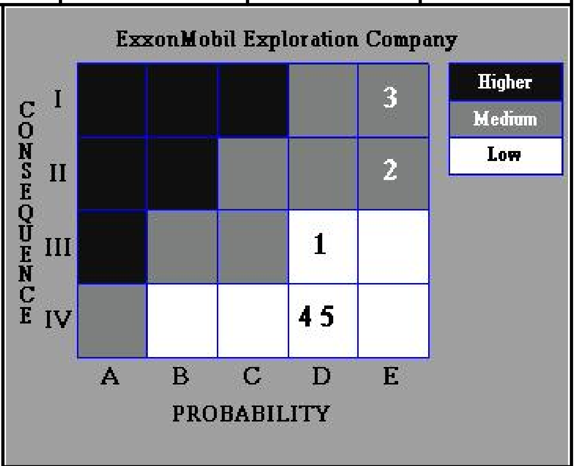
(Item/load falls off forklift or crane, item falls out of derrick)
Top drive equipment failure
Unsecured hand tools
Materials fatigue, Vibration
Structural failure
Human error
Inadequately secured equipment
Overload of lifting equipment
Lifting slings/straps worn/damaged
Items falling off load
Winch failure, Draw works failure, Drill-line failure
Drill-string failure
Wireline failure, Sheave failure (including logging contractor)
Loss of control of travelling blocks

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (MTI)	Health/Safety	III	D
2	Serious injury (LTI)	Health/Safety	II	E
3	Fatality	Health/Safety	I	E
4	Loss of assets (incl damage to rig or well)	Financial	IV	D
5	Delay to project	Financial	IV	D

Risk Controls :

PREVENTION:
Straps/ties for hand tools
Rig and other lifting equipment inspection incl top drive
Work permit system
Equipment maintenance, sling inspection and labelling
Critical function testing
JSA / THINK-START-FOCUS program
Training and supervision, dedicated crane drivers
Appropriate lifting procedures (incl engineered lifts for heavy crane lifts)
Housekeeping procedures
Crane logs, tools in derrick register
Derrick book (records items taken up to be returned)
Shutdown switch on travelling block
Taglines and use of dogman
Limitation on overhead work
Dropped objects campaign

MITIGATION:
PPE
ERP
First aid capability
Medic
Backup equipment to replace damaged items
Cover hole



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	Two

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1	**Event No. :** 17

System/Operation : Well program execution

Event : Dropped objects during drilling operations

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

BHPBP conducted dropped objects hazard study for the well operations immediately prior to Scallop 1, so the rig contractor has very recent review and awareness.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 39

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 18

System/Operation : Well program execution

Event : Premature detonation of explosives

Causes :

Stray electric current including:
- Welding machines
- earth faults
- lightning
- static electricity

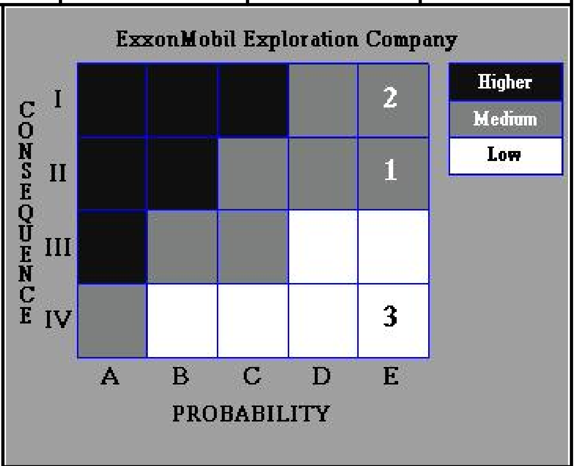
Non-compliance with storage and handling procedures
Human error
Incorrect packaging on explosives
Sources of EMR including:
- radar (from aircraft and naval vessels)
- radio communications
- antennae-bearing devices.
- mobile phones

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Delay to project, Loss of assets	Financial	IV	E

Risk Controls :

PREVENTION:
Stray current and EMR monitoring before explosive is armed
Work permit (to control hazards from EMR and stray currents)
Drilling and contractor procedures cover radio silence requirements and hot-work during explosives activities.
JSAs
Pre job safety meeting
Visual indications for helicopter landing
Training of specialist contractor personnel and rig crew/radio operator
Minimise use of explosives
Licensed explosives handler
Adequate supervision
No arming of explosives during lightning
Designated smoking areas
Mobile phones controlled on rig during drilling operations (procedure, induction)
Notification of naval movements
EM Explosives checklist completed by Schlumberger
Jettison skids

MITIGATION:
ERP
On-site medic/hospital
Minimal personnel during explosives activities



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 18

System/Operation : Well program execution

Event : Premature detonation of explosives

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 41

Project : EAPL Exploration Well Scallop 1 **Event No. :** 19

System/Operation : Well program execution

Event : Fall from heights

Causes :

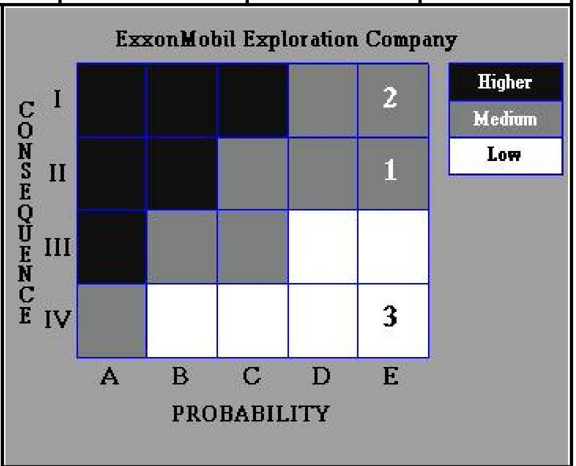
Incorrect or inadequate procedures
Inadequate training
Failure of height safety equipment
Inadequate job design
Adverse weather
Human error

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Delay to project	Financial	IV	E

Risk Controls :

PREVENTION
Hand rails/kick plates located in normal walking and access areas.
All hand rails conform to required specifications.
Personnel are required to conform to the ExxonMobil height safety standards for work outside hand rail areas.
Adequate supervision
Personnel are trained in the knowledge and use of height safety standards.
Appropriate specification and selection of equipment
Pre-job safety meeting
Selection of trained personnel / on the job training
Pre-job inspection of all hoist equipment
Adequate communications during manhoist
Minimise work at heights
Full body harness is required
Secondary fall protection for derrickman
Personnel transfer procedures to-from boats (Billy Pugh)

MITIGATION
Fall arrest devices where applicable
First aid capability at site
ERP incl medical evacuation if required



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1	**Event No. :** 19

System/Operation : Well program execution

Event : Fall from heights

Consequence Assessment Comments :

If tow bridle is changed out on location, a separate risk assessment will be conducted. This activity is not considered in this risk assessment.

Probability Assessment Comments :

TSF workshop participants advise of no recents falls from heights.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003

Page No. : 43

Project : EAPL Exploration Well Scallop 1

Event No. : 20

System/Operation : Well program execution

Event : Personnel safety incident

Causes :

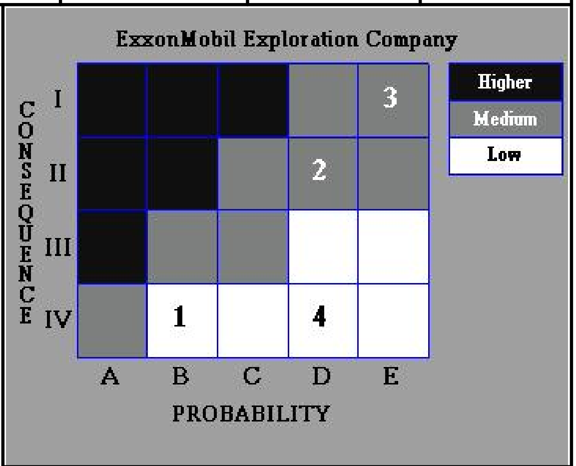
Slips/trips/falls/crush/pinch
Slip/walk inadvertently on rotary table
Stabbing board/scaffolding interference with top drive
Failure of tong tie-back line or drawworks brake band
Substance abuse
Prior/existing injury
Struck by object
Work with sharp objects
Foreign objects in eyes/skin (eg dust, grinding waste, caustic)
Excessive noise
Heat (burns/scalds), UV light (welding/sun)
Electrocution / Electrical incident
Derrickman struck by travelling equipment
Man riding winch

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First aid)	Health/Safety	IV	B
2	Injury (LTI)	Health/Safety	II	D
3	Fatality	Health/Safety	I	E
4	Delay to project	Financial	IV	D

Risk Controls :

PREVENTION:
PPE (including sun protection)
ADU policy
Equipment maintenance and inspection
JSA / Selection of appropriate tools / Toolbox and safety meetings
Permit to work
On-site supervision
Good housekeeping
Competent personnel (skills, experience, training)
Inspection during installation and use of top drive
Dedicated manriding winches or permit when using other winches
Fall arrest device
Individual training
Induction briefing re site hazards, equipment
THINK-START program
Limitations on hours of work
No jewellery / electrical PM program / electrical procedures / electrical equipment selection and labelling
Noise maps / noisy areas signposted / hearing tests
Worksite illumination assessed on case by case basis

MITIGATION:
On site medic
On site hospital
ERP (incl medical evacuation if reqd)



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 20

System/Operation : Well program execution

Event : Personnel safety incident

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 45

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 21

System/Operation : Well program execution

Event : Hazardous materials release

Causes :

Inappropriate packaging, storage, handling, use and disposal of:
- Radioactive substances
- Corrosive substances (acidic/basic)
- Toxic substances
- Carcinogenic material
- Samples in pressurised containers
- Flammable liquids or gases (e.g. paints, battery gases)

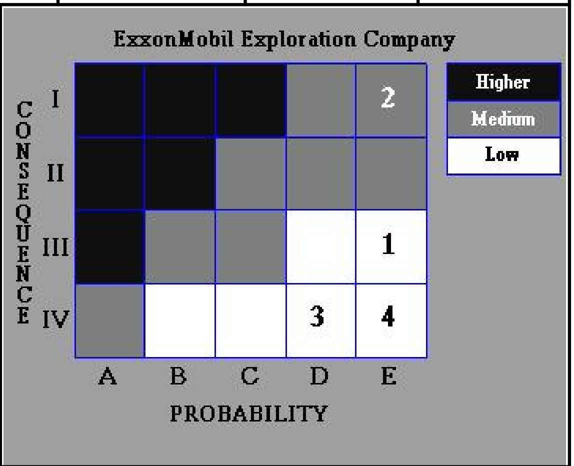
Drop of material from forklift, crane
Inappropriate labelling, Improper use/mixing, Improper storage
Transportation incident (eg forklift puncturing)
Inadequate training / communication / supervision
Failure to use correct PPE
Inadequate/inappropriate/ failure of PPE
Improper sampling procedures

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (MTI)	Health/Safety	III	E
2	Fatality	Health/Safety	I	E
3	Release to environment	Environmental	IV	D
4	Delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Safe handling procedures
JSA
Appropriate storage procedures covering segregation and security (including IMDG Code of supply boats)
Appropriate containers, labelling
Hazard register (Chemalert)
MSDSs (Infosafe 2000)
Haz Mat training / DG training (TSF person has IMDG and IATA training)
Permit to work (especially radioactive materials), confined space entry if gases possible
PPE
Procedures by contractors for handling, disposal
Procedures that minimise use of hazardous materials and exposure times
Waste management plan incl briefing in induction
Personal and area monitoring (for radioactive materials)
Rig design (e.g. ventilation in battery rooms)

MITIGATION:
Bunding for Dangerous Goods storage and handling areas
First aid (incl on-site neutralising agents)
Emergency eye wash and shower
MSDSs; ERP
Procedures for recovery and disposal of radioactive material by competent personnel



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	One

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 21

System/Operation : Well program execution

Event : Hazardous materials release

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 47

Project : EAPL Exploration Well Scallop 1 **Event No. :** 22

System/Operation : Well program execution

Event : Fuel or oil spill

Causes :

Rupture or failure of line (fill up or transfer)
Rupture or failure of storage container
Pump leak
Overfill
Operator error
Failure of seals, Failure of level indicators
Failure of fuel transfer procedures, Failure of bunding
Disassembly of equipment
Failure of communication
Adverse weather

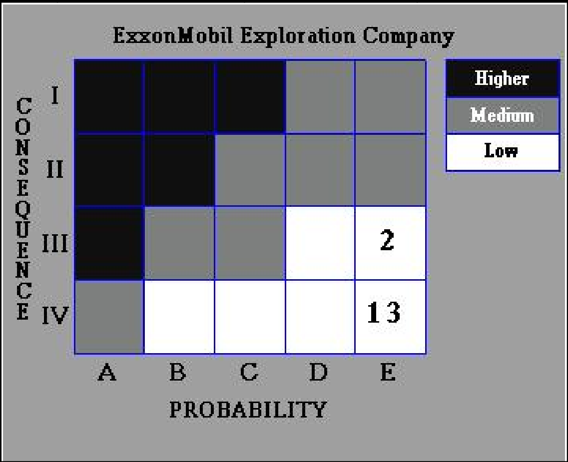
AND
Ignition source

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (First Aid)	Health/Safety	IV	E
2	Release to environment	Environmental	III	E
3	Loss of assets (caused by fire), delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Procedures incl continuous manning during transfer
Continual monitoring of ullage
Equipment maintenance
Supply of spare seals
Work permit system incl JSA
Trained personnel
Adequate lighting
Dry break couplings
Radio communication during fuel transfer
Weather considered when deciding upon on transfers
EM & TSF hydrocarbon transfer checklists
Pressure testing of fuel transfer lines
Drills

MITIGATION:
Bunding, drip pans and oil absorbent materials on rig
Drip pans on boats
Fuel transfer emergency stop button on vessel bridge
On site medic/hospital
ERP (incl evacuation)
Oil spill response plan incl kits on rig and boats
Fire fighting equipment
Flotation collars standard on transfer hoses



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 22

System/Operation : Well program execution

Event : Fuel or oil spill

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

The workshop considered the fatality consequence to be non-credible for this scenario.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

HIR Apac

Date : 4/02/2003
Page No. : 49

Project : EAPL Exploration Well Scallop 1

Event No. : 23

System/Operation : Well program execution

Event : Release of untreated sewage or waste

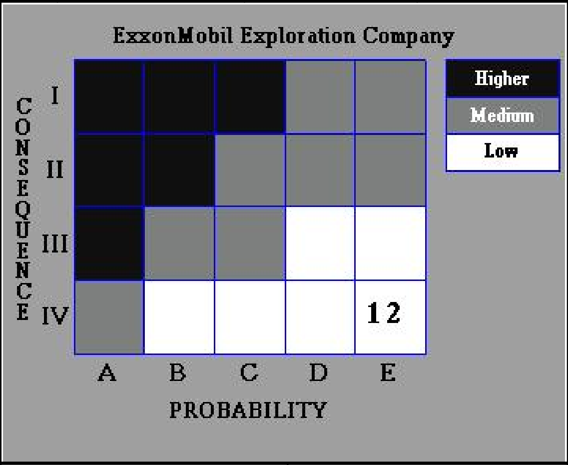
Causes :
(Paper waste, solid waste, fluid waste)

Unclear waste management procedures and policies
Lack of training
Line or container failure
Ineffective waste treatment
Operator error
Ineffective equipment maintenance and inspection
Improper storage and handling procedures

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Release to environment	Environmental	IV	E
2	Public reaction	Financial	IV	E

Risk Controls :
PREVENTION:
EM water guidelines (in medical plan)
Waste management procedures
Training
Supervision
PPE
Personal hygiene management
Environment Management Plan

MITIGATION:
First aid
Medic
ERP



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 23

System/Operation : Well program execution

Event : Release of untreated sewage or waste

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 51

Project : EAPL Exploration Well Scallop 1	**Event No. :** 24

System/Operation : Well program execution

Event : Accidental release of mud (incl mud cuttings discharge)

Causes :

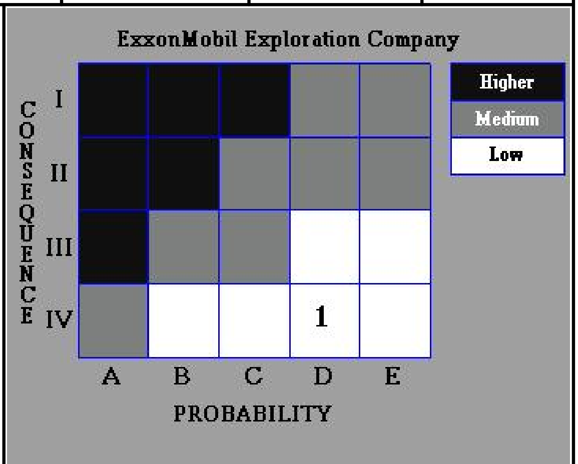
Line or container failure
Operator error
Ineffective equipment maintenance and inspection
Slip joint leak

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Release to environment	Environmental	IV	D

Risk Controls :

PREVENTION:
Designed mud system
Trained personnel
Equipment tested
Use of water-based muds (not oil-based)
Inspection of slip joints

MITIGATION:



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 24

System/Operation : Well program execution

Event : Accidental release of mud (incl mud cuttings discharge)

Consequence Assessment Comments :

The Environment Plan specifies that water based drilling mud can be discharged overboard which is within regulatory requirements.

Probability Assessment Comments :

No comments were recorded.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003
Page No. : 53

Project : EAPL Exploration Well Scallop 1

Event No. : 25

System/Operation : Project execution - general

Event : Civil unrest, terrorism, sabotage, criminal act, IR

Causes :

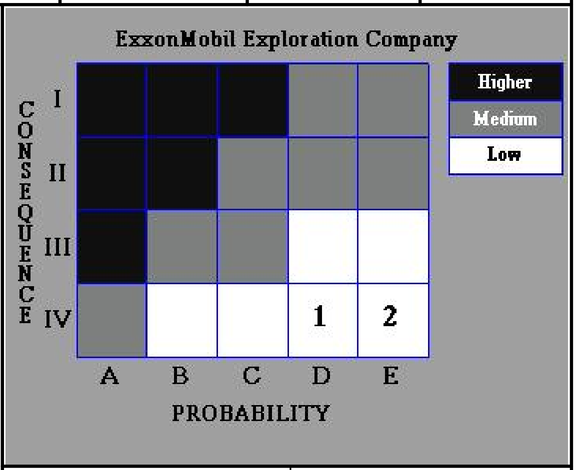
Failure to manage public interfaces
Terrorist event (bomb threat, death threat etc)
Industrial espionage
Industrial unrest
Local concerns about emissions from drilling activity

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Disruption to project	Financial	IV	D
2	Damage to equipment	Financial	IV	E

Risk Controls :

PREVENTION:
Global security group provide security services/controls documented in security procedures manuals
Security information/intelligence
Communications
Kidnap/ransom/extortion procedure
Good industrial relations practices
Public Affairs community awareness plans

MITIGATION:
First aid training
ERP
Counselling services post-trauma
Passive resistance
Copies of critical documents



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 25

System/Operation : Project execution - general

Event : Civil unrest, terrorism, sabotage, criminal act, IR

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

	EAPL Scallop-1 Hazard Identification & Risk Assessment Register	Date : 4/02/2003 Page No. : 55

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 26

System/Operation : Project execution - general

Event : Personnel contract disease/illness

Causes :

Water-borne infection
- Inadequate water standard
- Contaminated water supply
- Inadequate water purification
- Inadequate water storage
- Ineffective water testing

Blood-borne infection & STDs

Food-borne infection (eg Hepatitis A)
- Inadequate food storage/preparation/transportation
- Inadequate kitchen hygiene
- Inadequate personal hygiene/pre-existing medical condition
- Poor food quality

Air-borne infection

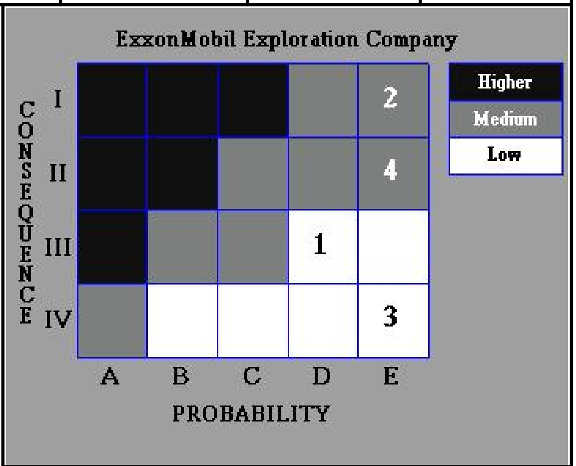
Allergies

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Illness (MTI)	Health/Safety	III	D
2	Fatality	Health/Safety	I	E
3	Delay to project	Financial	IV	E
4	Long-term personnel disability	Health/Safety	II	E

Risk Controls :

PREVENTION:
Pre-employment medical assessment for all personnel
Assessment of fitness for work
Water control protocol
Catering services program (health/hygiene)
Universal hygiene procedures (communicated during pre-startup assessment)
Hygiene checks by Medic
Pre-startup assessment of facilities by OHD
Supervision of catering contractor
Sampling of water on regular basis
Air system anti-bacterial spray used regularly

MITIGATION:
Medical equipment on site (minimum specification incl secure storage of prescription drugs)
ERP
On rig hospital / medic
Medical evacuation



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 26

System/Operation : Project execution - general

Event : Personnel contract disease/illness

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003
Page No. : 57

Project : EAPL Exploration Well Scallop 1

Event No. : 27

System/Operation : Project execution - general

Event : Person overboard (including during rig move)

Causes :

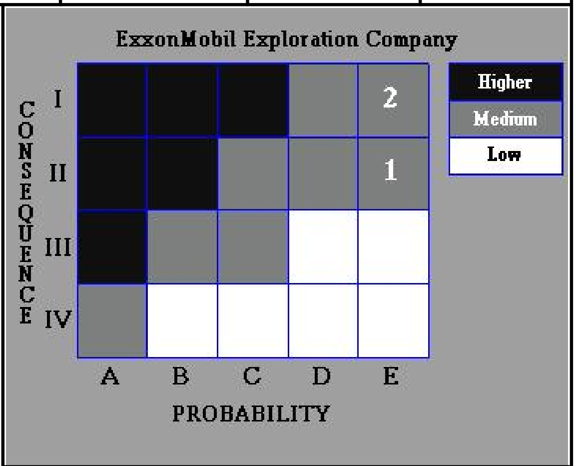
Human error
Failure to follow procedures incl PPE
Failure of PPE
Barrier/handrail failure
Incident during personnel transfer
Hypnotic effect of sea motion
Impact from suspended load
Wave action from supply vessel
Adverse weather (supply vessel)
Fall from heights
Blown off helideck
Slips trips falls
Slippery deck, poor housekeeping
Capsize of fast rescue boat

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E

Risk Controls :

PREVENTION:
Design specifications for hand rails, integrity of decking and grating, kick plate (or toe-plate).
MODUSPEC inspection includes handrails
Ongoing handrail surveillance covered in hazard identification
"Work Permit" system for work outside hand rails and in other exposed areas.
Procedures requiring use of work vest, safe scaffolding and restraining harness when working over water.
Restricted entry to exposed areas and limit work in exposed areas during heavy weather/pronounced vessel motion and daylight hours when possible.
Safe work practices developed for any work over water (i.e. JSA).
Inspection of personnel lifting devices such as personnel baskets.
Training and procedures for personnel to wear life jackets, transfers occur only in good weather, and only trained personnel operate crane lifting basket.
Prohibition on work over water during rig tow.
Safety lines

MITIGATION:
Life jacket / work vest
ERP
Fast rescue craft
Supply boat



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 27

System/Operation : Project execution - general

Event : Person overboard (including during rig move)

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

EAPL Scallop-1
Hazard Identification & Risk Assessment Register

Date : 4/02/2003

Page No. : 59

Project : EAPL Exploration Well Scallop 1

Event No. : 28

System/Operation : Project execution - general

Event : Rig structural failure

Causes :

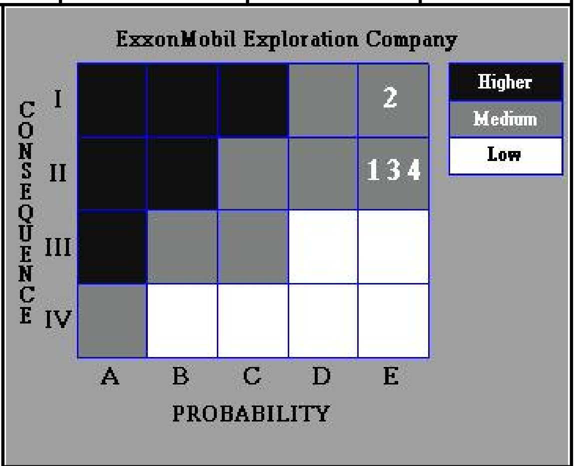
Fatigue
Corrosion
Adverse weather
Ineffective/inappropriate inspection/maintenance
Overload
Inappropriate modifications to rig
Inadequate design
Fire - explosion

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (LTI)	Health/Safety	II	E
2	Fatality	Health/Safety	I	E
3	Release to environment	Environmental	II	E
4	Delay to project / damage to assets	Financial	II	E

Risk Controls :

PREVENTION
MODUSpec includes review of the operational history of rig for evidence of extensive rough weather operations in the past.
Certification Society documentation and damage stability analysis.
Verification of rig design by 3rd party (ABS)
Any modifications need to be approved by 3rd party (ABS)
Modification control procedures. Records of previous structural repairs and confirmation that repairs were made properly.
Daily stability checks/reports.
Fire detection
No production testing
Metocean analysis
Maintenance program (corrosion control, NDT on major structural members)

MITIGATION:
Abandon ship procedures and drills.
ERP
Oil spill contingency plan.
Adequate (200%) lifeboat/liferaft capacity and frequent inspection/maintenance/testing of same.
Life preservers, and other safety items.
Search and rescue plans
Emergency well control procedures.
Supply vessels



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 28

System/Operation : Project execution - general

Event : Rig structural failure

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 61

Project : EAPL Exploration Well Scallop 1	**Event No. :** 29

System/Operation : Project execution - general

Event : Regulatory non-compliance

Causes :

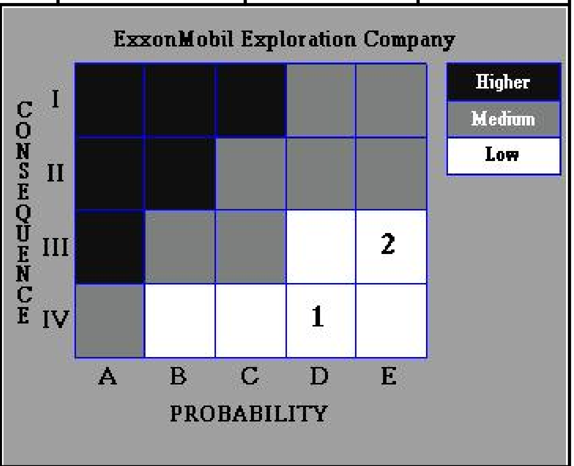
Laws/regulations not known or understood
Complexity of local regulatory requirements
Unable to obtain necessary internal/co-venturer approvals
Insufficient EAPL resource allocation
Inadequate, lost or erroneous data/information
Change of regulations
Delays to obtaining licences/permits
Human error
Immigration/customs problems
Deliberate flouting of law
Approval not within authority level
Approval process not completed
Contractor, partner regulatory problem
Poor communication

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Delay to project	Financial	IV	D
2	Fines	Financial	III	E

Risk Controls :

PREVENTION:
Regulatory compliance plan
Early/ongoing dialogue with regulators
Awareness of internal government processes
Influence of regulatory process
Formal approval of non-compliance
Training
Involvement by regulator in planning process
Awareness of vessel safety case, bridging document

MITIGATION:
Legal defence
Close liaison with regulator



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1	**Event No. :** 29

System/Operation : Project execution - general

Event : Regulatory non-compliance

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

HIR Apac	**EAPL Scallop-1** **Hazard Identification & Risk Assessment Register**	Date : 4/02/2003 Page No. : 63

Project : EAPL Exploration Well Scallop 1 — **Event No. :** 30

System/Operation : Project execution - general

Event : Natural disaster

Causes :

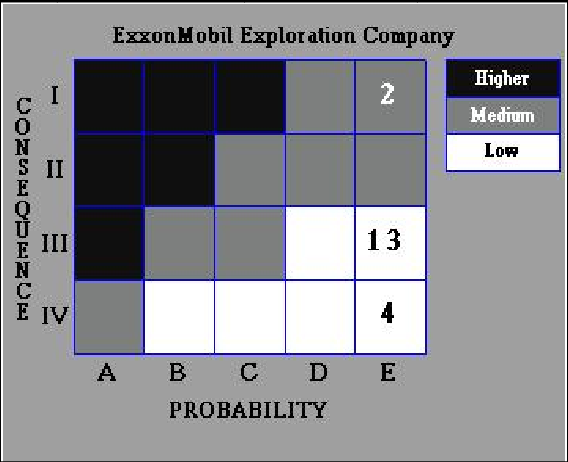
Lightning
High winds
High seas

	Consequence	Consequence Type	Consequence Category	Probability Category
1	Injury (MTI)	Health/Safety	III	E
2	Fatality	Health/Safety	I	E
3	Loss of assets	Financial	III	E
4	Delay to project	Financial	IV	E

Risk Controls :

PREVENTION:
Lightning conductors
Weather forecast
Vessel design criteria
Mooring analysis
Metocean analysis

MITIGATION:
ERP
Rig design incl lightning protection devices
Fire fighting equipment
Aviation policy limit on wind speed
Wind speed limit on crane operations
Medic



Drilling	
Exploration	
ALARP?	Yes
Action Item/s?	None

Project File : Scallop1.mdb

Project : EAPL Exploration Well Scallop 1

Event No. : 30

System/Operation : Project execution - general

Event : Natural disaster

Consequence Assessment Comments :

No comments were recorded.

Probability Assessment Comments :

No comments were recorded.

EAPL Scallop-1 Risk Rank	Date :4/02/2003 Page No. : 65

Project: EAPL Exploration Well Scallop 1 | **Consequence Type:** All | **Rank Mode:** Risk (All risks for each event)

Rank No.	Event No.	System/Operation	Event	Consequence	Consequence Type	C Cat.	P Cat.	Risk	Risk Level
1	1	Aviation transport	Helicopter flight incident	Injury (LTI)	Health/Safety	II	D	5	Medium
2	1	Aviation transport	Helicopter flight incident	Fatality	Health/Safety	I	E	5	Medium
3	1	Aviation transport	Helicopter flight incident	Damage to assets	Financial	II	E	5	Medium
4	2	Rig move	Personnel safety incident during rig ..	Injury (MTI)	Health/Safety	III	C	5	Medium
5	2	Rig move	Personnel safety incident during rig ..	Fatality	Health/Safety	I	E	5	Medium
6	3	Rig move	Failure of tow vessel/line (tow and p..	Fatality	Health/Safety	I	E	5	Medium
7	3	Rig move	Failure of tow vessel/line (tow and p..	Collision with ship / platform /..	Financial	II	E	5	Medium
8	3	Rig move	Failure of tow vessel/line (tow and p..	Damage to rig/boat, delay to pro..	Financial	II	E	5	Medium
9	4	Mooring/marine	Failure during mooring/anchor handlin..	Injury (LTI)	Health/Safety	II	E	5	Medium
10	4	Mooring/marine	Failure during mooring/anchor handlin..	Fatality	Health/Safety	I	E	5	Medium
11	5	Mooring/marine	Failure of lifeboat supports or launc..	Injury (LTI)	Health/Safety	II	E	5	Medium
12	5	Mooring/marine	Failure of lifeboat supports or launc..	Fatality	Health/Safety	I	E	5	Medium
13	6	Mooring/marine	Supply vessel collision with rig	Fatality	Health/Safety	I	E	5	Medium
14	7	Mooring/Marine	Ship collision with rig (on tow or on..	Injury (LTI)	Health/Safety	II	E	5	Medium
15	7	Mooring/Marine	Ship collision with rig (on tow or on..	Fatality	Health/Safety	I	E	5	Medium
16	7	Mooring/Marine	Ship collision with rig (on tow or on..	Damage to equipment	Financial	II	E	5	Medium
17	7	Mooring/Marine	Ship collision with rig (on tow or on..	Release to environment	Environmental	II	E	5	Medium
18	7	Mooring/Marine	Ship collision with rig (on tow or on..	Delay to project	Financial	II	E	5	Medium
19	8	Mooring/marine	Rig ballast system failure	Injury (LTI)	Health/Safety	II	E	5	Medium
20	8	Mooring/marine	Rig ballast system failure	Fatality	Health/Safety	I	E	5	Medium
21	11	Well program executio..	Blowout with BOP installed	Injury (LTI)	Health/Safety	II	E	5	Medium
22	11	Well program executio..	Blowout with BOP installed	Fatality	Health/Safety	I	E	5	Medium
23	11	Well program executio..	Blowout with BOP installed	Loss of assets or delay to proje..	Financial	II	E	5	Medium
24	11	Well program executio..	Blowout with BOP installed	Release to environment	Environmental	II	E	5	Medium
25	11	Well program executio..	Blowout with BOP installed	Public reaction	Public disrupt	I	E	5	Medium
26	12	Well program executio..	Annular flow around surface casing in..	Fatality	Health/Safety	I	E	5	Medium
27	12	Well program executio..	Annular flow around surface casing in..	Loss of assets or delay to proje..	Financial	II	E	5	Medium
28	13	Well program executio..	Underground flow	Loss of asset (incl reservoir da..	Financial	II	E	5	Medium
29	14	Well program executio..	Dropped BOP/riser	Injury (LTI)	Health/Safety	II	E	5	Medium
30	14	Well program executio..	Dropped BOP/riser	Fatality	Health/Safety	I	E	5	Medium
31	14	Well program executio..	Dropped BOP/riser	Delay to project	Financial	II	E	5	Medium
32	15	Well program executio..	Mud-gas separator fails while under p..	Injury (MTI)	Health/Safety	II	E	5	Medium
33	15	Well program executio..	Mud-gas separator fails while under p..	Fatality	Health/Safety	I	E	5	Medium
34	16	Well program executio..	High pressure hose/chicksan/fitting/v..	Injury (LTI)	Health/Safety	II	E	5	Medium

Project: EAPL Exploration Well Scallop 1 | **Consequence Type:** All | **Rank Mode:** Risk (All risks for each event)

Rank No.	Event No.	System/Operation	Event	Consequence	Consequence Type	C Cat.	P Cat.	Risk	Risk Level
35	16	Well program executio..	High pressure hose/chicksan/fitting/v..	Fatality	Health/Safety	I	E	5	Medium
36	17	Well program executio..	Dropped objects during drilling opera..	Serious injury (LTI)	Health/Safety	II	E	5	Medium
37	17	Well program executio..	Dropped objects during drilling opera..	Fatality	Health/Safety	I	E	5	Medium
38	18	Well program executio..	Premature detonation of explosives	Injury (LTI)	Health/Safety	II	E	5	Medium
39	18	Well program executio..	Premature detonation of explosives	Fatality	Health/Safety	I	E	5	Medium
40	19	Well program executio..	Fall from heights	Injury (LTI)	Health/Safety	II	E	5	Medium
41	19	Well program executio..	Fall from heights	Fatality	Health/Safety	I	E	5	Medium
42	20	Well program executio..	Personnel safety incident	Injury (LTI)	Health/Safety	II	D	5	Medium
43	20	Well program executio..	Personnel safety incident	Fatality	Health/Safety	I	E	5	Medium
44	21	Well program executio..	Hazardous materials release	Fatality	Health/Safety	I	E	5	Medium
45	26	Project execution - g..	Personnel contract disease/illness	Fatality	Health/Safety	I	E	5	Medium
46	26	Project execution - g..	Personnel contract disease/illness	Long-term personnel disability	Health/Safety	II	E	5	Medium
47	27	Project execution - g..	Person overboard (including during ri..	Injury (LTI)	Health/Safety	II	E	5	Medium
48	27	Project execution - g..	Person overboard (including during ri..	Fatality	Health/Safety	I	E	5	Medium
49	28	Project execution - g..	Rig structural failure	Injury (LTI)	Health/Safety	II	E	5	Medium
50	28	Project execution - g..	Rig structural failure	Fatality	Health/Safety	I	E	5	Medium
51	28	Project execution - g..	Rig structural failure	Release to environment	Environmental	II	E	5	Medium
52	28	Project execution - g..	Rig structural failure	Delay to project / damage to ass..	Financial	II	E	5	Medium
53	30	Project execution - g..	Natural disaster	Fatality	Health/Safety	I	E	5	Medium
54	4	Mooring/marine	Failure during mooring/anchor handlin..	Anchor left behind (disruption t..	Public disrupt	III	D	4	Low
55	6	Mooring/marine	Supply vessel collision with rig	Injury (First Aid)	Health/Safety	III	D	4	Low
56	17	Well program executio..	Dropped objects during drilling opera..	Injury (MTI)	Health/Safety	III	D	4	Low
57	20	Well program executio..	Personnel safety incident	Injury (First aid)	Health/Safety	IV	B	4	Low
58	26	Project execution - g..	Personnel contract disease/illness	Illness (MTI)	Health/Safety	III	D	4	Low
59	1	Aviation transport	Helicopter flight incident	Project delay	Financial	III	E	3	Low
60	1	Aviation transport	Helicopter flight incident	Public reaction	Public disrupt	III	E	3	Low
61	3	Rig move	Failure of tow vessel/line (tow and p..	Spill of fuel/oil to ocean	Environmental	III	E	3	Low
62	4	Mooring/marine	Failure during mooring/anchor handlin..	Anchor left behind requiring ret..	Financial	IV	D	3	Low
63	6	Mooring/marine	Supply vessel collision with rig	Damage to equipment	Financial	IV	D	3	Low
64	6	Mooring/marine	Supply vessel collision with rig	Delay to project	Financial	IV	D	3	Low
65	8	Mooring/marine	Rig ballast system failure	Loss of assets	Financial	III	E	3	Low
66	8	Mooring/marine	Rig ballast system failure	Delay to project	Financial	III	E	3	Low
67	9	Well program executio..	Mooring failure during drilling opera..	Injury (MTI)	Health/Safety	III	E	3	Low
68	9	Well program executio..	Mooring failure during drilling opera..	Damage to equipment	Financial	III	E	3	Low

HIR Apac	EAPL Scallop-1 Risk Rank	Date :4/02/2003 Page No. : 67

Project: EAPL Exploration Well Scallop 1 | **Consequence Type:** All | **Rank Mode:** Risk (All risks for each event)

Rank No.	Event No.	System/Operation	Event	Consequence	Consequence Type	C Cat.	P Cat.	Risk	Risk Level
69	12	Well program executio..	Annular flow around surface casing in..	Release to environment	Environmental	III	E	3	Low
70	13	Well program executio..	Underground flow	Delay to project	Financial	III	E	3	Low
71	17	Well program executio..	Dropped objects during drilling opera..	Loss of assets (incl damage to r..	Financial	IV	D	3	Low
72	17	Well program executio..	Dropped objects during drilling opera..	Delay to project	Financial	IV	D	3	Low
73	20	Well program executio..	Personnel safety incident	Delay to project	Financial	IV	D	3	Low
74	21	Well program executio..	Hazardous materials release	Injury (MTI)	Health/Safety	III	E	3	Low
75	21	Well program executio..	Hazardous materials release	Release to environment	Environmental	IV	D	3	Low
76	22	Well program executio..	Fuel or oil spill	Release to environment	Environmental	III	E	3	Low
77	24	Well program executio..	Accidental release of mud (incl mud c..	Release to environment	Environmental	IV	D	3	Low
78	25	Project execution - g..	Civil unrest, terrorism, sabotage, cr..	Disruption to project	Financial	IV	D	3	Low
79	29	Project execution - g..	Regulatory non-compliance	Delay to project	Financial	IV	D	3	Low
80	29	Project execution - g..	Regulatory non-compliance	Fines	Financial	III	E	3	Low
81	30	Project execution - g..	Natural disaster	Injury (MTI)	Health/Safety	III	E	3	Low
82	30	Project execution - g..	Natural disaster	Loss of assets	Financial	III	E	3	Low
83	2	Rig move	Personnel safety incident during rig ..	Disruption to project	Financial	IV	E	2	Low
84	3	Rig move	Failure of tow vessel/line (tow and p..	Injury (First aid)	Health/Safety	IV	E	2	Low
85	4	Mooring/marine	Failure during mooring/anchor handlin..	Move off location (delay to proj..	Financial	IV	E	2	Low
86	5	Mooring/marine	Failure of lifeboat supports or launc..	Delay to project	Financial	IV	E	2	Low
87	6	Mooring/marine	Supply vessel collision with rig	Release to environment	Environmental	IV	E	2	Low
88	8	Mooring/marine	Rig ballast system failure	Release to environment	Environmental	IV	E	2	Low
89	9	Well program executio..	Mooring failure during drilling opera..	Delay to project (drifted off lo..	Financial	IV	E	2	Low
90	10	Well program executio..	Shallow gas release (no surface casin..	Injury (First Aid)	Health/Safety	IV	E	2	Low
91	10	Well program executio..	Shallow gas release (no surface casin..	Loss of assets	Financial	IV	E	2	Low
92	10	Well program executio..	Shallow gas release (no surface casin..	Delay to project	Financial	IV	E	2	Low
93	12	Well program executio..	Annular flow around surface casing in..	Injury (First Aid)	Health/Safety	IV	E	2	Low
94	15	Well program executio..	Mud-gas separator fails while under p..	Release to environment	Environmental	IV	E	2	Low
95	15	Well program executio..	Mud-gas separator fails while under p..	Loss of asset or delay to projec..	Financial	IV	E	2	Low
96	16	Well program executio..	High pressure hose/chicksan/fitting/v..	Damage to assets/Delay to projec..	Financial	IV	E	2	Low
97	18	Well program executio..	Premature detonation of explosives	Delay to project, Loss of assets..	Financial	IV	E	2	Low
98	19	Well program executio..	Fall from heights	Delay to project	Financial	IV	E	2	Low
99	21	Well program executio..	Hazardous materials release	Delay to project	Financial	IV	E	2	Low
100	22	Well program executio..	Fuel or oil spill	Injury (First Aid)	Health/Safety	IV	E	2	Low
101	22	Well program executio..	Fuel or oil spill	Loss of assets (caused by fire),..	Financial	IV	E	2	Low
102	23	Well program executio..	Release of untreated sewage or waste	Release to environment	Environmental	IV	E	2	Low

HIR Apac	**EAPL Scallop-1** **Risk Rank**	Date :4/02/2003 Page No. : 68

Project: EAPL Exploration Well Scallop 1 | **Consequence Type:** All | **Rank Mode:** Risk (All risks for each event)

Rank No.	Event No.	System/Operation	Event	Consequence	Consequence Type	C Cat.	P Cat.	Risk	Risk Level
103	23	Well program executio..	Release of untreated sewage or waste	Public reaction	Financial	IV	E	2	Low
104	25	Project execution - g..	Civil unrest, terrorism, sabotage, cr..	Damage to equipment	Financial	IV	E	2	Low
105	26	Project execution - g..	Personnel contract disease/illness	Delay to project	Financial	IV	E	2	Low
106	30	Project execution - g..	Natural disaster	Delay to project	Financial	IV	E	2	Low

EAPL Scallop-1
Actions

Project : EAPL Exploration Well Scallop 1

Event No. : 1

System/Operation : Aviation transport

Event : Helicopter flight incident

No.	Actions	Status	Facilitator	I. Date	C. Date
1	Review training (HUET) for Esso and contractor personnel. Target completion date: 18/1/2003	22/1/03: Confirmed via return checklist - Necessary information has been forwarded to FWK. Currently being reviewed. 31/1/03: HUET Certification of Sedco and 3rd Party Contractors have been reviewed. Isolated cases may still exist whereby HUET certification for individuals may have to be reviewed prior to going offshore.	FWK		Complete

HIR Apac	**EAPL Scallop-1** **Actions**	Date : 4/02/2003 Page No. : 70

Project : EAPL Exploration Well Scallop 1 | **Event No. :** 3

System/Operation : Rig move | **Event :** Failure of tow vessel/line (tow and positioning)

No.	Actions	Status	Facilitator	I. Date	C. Date
2	Vessel masters to be familiar with location of pipelines and fibre optic cable along rig move path. Target completion date: 17/1/2003	20/1/03: Confirmed via e-mail - Swire Pacific Offshore vessel Masters have checked and are aware of the locations of the pipeline and cables along the planned rig tow route.	Colin MacDonald/GS		Complete

HIR Apac	**EAPL Scallop-1** **Actions**	Date : 4/02/2003 Page No. : 71

Project : EAPL Exploration Well Scallop 1	**Event No. :** 8
System/Operation : Mooring/marine	**Event :** Rig ballast system failure

No.	Actions	Status	Facilitator	I. Date	C. Date
3	Confirm that damage stability analysis exists. Target completion date: 18/01/2003	17/1/03: Confirmed via e-mail - A damage stability analysis exists and is available if required from Sedco.	Blue O'Shea/GS		Complete

EAPL Scallop-1
Actions

Date : 4/02/2003

Page No. : 72

Project : EAPL Exploration Well Scallop 1

Event No. : 15

System/Operation : Well program execution

Event : Mud-gas separator fails while under pressure & fire results

No.	Actions	Status	Facilitator	I. Date	C. Date
4	Check that mud gas separator meets ExxonMobil specifications or gain approval for a deviation. Target completion date: 1/2/2003	31/1/03: Confirmed via return checklist - Information from Sedco has been forwarded to Esso (John Richmond). Information has been reviewed by Michael Johnson (EMDC) with use of ExxonMobil's KIK program to be satisfactory and complies with ExxonMobil Standards.	John Richmond		Complete

EAPL Scallop-1
Actions

Project : EAPL Exploration Well Scallop 1

Event No. : 17

System/Operation : Well program execution

Event : Dropped objects during drilling operations

No.	Actions	Status	Facilitator	I. Date	C. Date
5	Obtain appropriate frame to handle lifting of bulk KCl. Target completion date: 1/2/2003	22/1/03: Confirmed via discussion - Specific KCl bulk handling procedures will be prepared for inclusion in the Operations Safety Plan for induction with Sedco & Swire personnel. All four lifting points to be used when lifting the bags while onboard the rig. For transportation to & from BBMT, on the AHT vessels and onto the rig, bulk bags will be in standard containers. 31/1/03: Confirmed via e-mail - BBMT will supply 7.5t & 12t stingers (special hooks) for use on Sedco vessel when operations commence.	Baroid/John Richmond		Complete
6	Provide special hooks (with handles) for use with boats to Sedco 702. Target completion date: 1/2/2003	31/1/03: Confirmed via discussion/e-mail - (a) Discussed with Bariod who advised that lifting frames are not readily available. They advised that lifting straps on the bulk bags are designed to handle the load when used correctly (use of all 4 straps with a 4 part sling). BBMT is also not able to supply frame. (b) For transporation to & from BBMT, on the AHT vessels and onto the rig, bulk bags will be placed in shipping containers. A work permit will be raised to lift the bags from the containers to the mixing hopper. (c) Specific KCL bulk handling procedures will be prepared for inclusion in the On-Site Operations Safety Plan under "Work Permits" for induction with Sedco & Swire personnel. All four lifting points to be used when lifting the bags while onboard the rig.	George Sharkey		Complete

EAPL Scallop-1
Actions

Date : 4/02/2003

Project : EAPL Exploration Well Scallop 1	**Event No. :** 18
System/Operation : Well program execution	**Event :** Premature detonation of explosives

No.	Actions	Status	Facilitator	I. Date	C. Date
7	Check that new 71 MHz and CDMA phone installations do not adversely affect explosives. Target completion date: 1/2/2003	22/1/03: Confirmed via e-mail - 71MHz radio and CDMA MUST BE turned off. Microwave telephone connection can be left on as it does not affect explosive detonation.	George Sharkey		Complete

HIR Apac	**EAPL Scallop-1** **Actions**	Date : 4/02/2003 Page No. : 75

Project : EAPL Exploration Well Scallop 1	**Event No. :** 19
System/Operation : Well program execution	**Event :** Fall from heights

No.	Actions	Status	Facilitator	I. Date	C. Date
8	Review secondary fall protection requirements for manrider. Target completion date: 1/2/2003	31/3/03: Confirmed via discussion - Sufficient procedures are in place to address this concern. Manrider activities are limited during the drilling of the well and if/when required, the necessary procedures and safeguards are detailed in the On-Site Operations Safety Plan.	John Richmond		Complete

HIR Apac	# EAPL Scallop-1 Actions	Date : 4/02/2003 Page No. : 76

Project : EAPL Exploration Well Scallop 1	**Event No. :** 21
System/Operation : Well program execution	**Event :** Hazardous materials release

No.	Actions	Status	Facilitator	I. Date	C. Date
9	Check if there is any device for monitoring explosive atmosphere in battery room(s). Target completion date: 18/1/2003	22/1/03: Confirmed via return checklist - No provision for monitoring equipment. Area however is vented to the atmosphere.	Blue O'Shea/JR		Complete

GLOBAL OFFSHORE PTY.LTD

HYDROGRAPHIC SURVEYORS REPORT ON

QUALITY ASSURANCE/QUALITY CONTROL
SCALLOP-1 WELL SITE
MODU   POSITIONING

BY

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INTRODUCTION

On January 10th 2003 Arrowsmith Muir & Associates Pty.Ltd, Consultant Land Engineering & Hydrographic Surveyors were requested by Global Offshore Pty Ltd and Esso Australia to provide Quality Assurance & Quality Control services for the positioning of the MODU Sedoc702 at the site of Scallop-1 well drilling site in Gippsland Basin Licence Vic/RL2 Bass Strait Victoria Australia

This report has been prepared generally in accordance with Exxonmobil's ''Well Location and Reporting Offshore QC/QA Procedures'' and outlines the procedures adopted and the findings of the supervising Surveyor who carried out the work.

1.0 ARRIVAL AT RIG

The Sedco 702 was on Charter to BHP Petroleum and working on the Minerva 3 concession in the Otway Basin Southern Victoria and was to be assigned to Esso Australia on completion of of the work for BHP approximately 16th January 2003.
The rig was assigned to ESSO on Wednesday 29th January 2003 and the QC/QA surveyor received instructions to procede to the rig via helicopter departing Essendon Airport at 0900 hours January 30th.
The rig was under tow when the surveyor arrived on board at 1145 hours
The positioning equipment had been installed and was operational, using a set of values that had been used for the BHP work.

2.0 POSITIONING CONTRACTOR

The positioning contractor was Thales Geo Solutions Group Ltd and the surveyor and technician had been embarked on Monday January 27th prior to the arrival of the QC/QA surveyor.
All positioning equipment had been installed in the Control room of the rig with a remote display for the use of the control room personnel.along with a remote display on each anchor handling vessel

2.1 ANTENNAE INSTALLATION

The GPS antennae were installed on the forward end of helicopter deck , antenna 1. being attached to the Compass Standard while antenna 2 was attached to the hand rail approximately 15 meters to port of the vessels centreline.
The locations were such that the positions would capture as much as possible of the available horizon.
The only obstruction encroaching into the 10 degree horizontal curtain was the drilling derrick. .

3.0 THE SCALLOP-1 WELLSITE

The Scallop-1 location is approximately 310 NM East of Minerva 3 through the Bass Straits .This required a 75 hour tow before arriving at Scallop-1
A series of 8 waypoints had been determined along which the tow would procede and the positioning contractor was to monitor progress.
The coordinates of each waypoint are shown in the computer configuration file ATTACHMENT 7.and the route is defined and shown in ESSO Australia document ‘‘Scallop-1 Move & Mooring Program.Rev.1” . The tow progressed keeping usually within 200 metres of the proposed route.

4.0 POSITIONING EQUIPMENT

The primary positioning GPS was contained in ‘‘RACAL Skyfix Rig’’ ,which contains a Trimble 4000 series single frequency GPS receiver utilising Racal Star fix differential corrections.(System 1)
The secondary system was a Trimble 4000 SSI dual frequency GPS receiver using the same differential corrections asSystem 1 and running as a stand alone system to be used for the dual frequency logging only.
90938 /Spotbeam Skyfix UHF positioning also fed data to Racal Multifix positioning software.
Standard Racal rig positioning software was installed on two GNS 2 computers to provide the MODU position and that of the anchor handling vessels.
Two Gyro Compasses were also installed ,one interfaced to provide the vessels heading for translation of the observed antennae locations back to the Kelly or drill
string position.
The second compass was backup equipment.
A detailed list of all equipment is contained in ATTACHMENT 2 of the report.

5.0 DRILLING LOCATION.

All locations had been expressed in terms of GDA 94 (Geocentric Datum Australia 1994) with rectangular co-ordinates being expressed in MGA94 (Map Grid Australia 1994).
MGA94 is a Universal Transverse Mercator Projection with Scallop-1 being located in Zone 55 Central Meridian 147 Degrees East.
GDA94 and MGA94 have similar geometrical properties to WGS84 and its UTM grid consequently they can be considered to be the same.

The Co ordinates of the drilling location were provided to the QC/QA surveyor by ESSO Drilling Department and were:

Mapping system GDA94 148 deg 35’ 28.9’’ E Long.
38 deg 12’ 48.6’’ S Lat .

MGA94 co ordinates E.639316 m .
N.5769300 m.

Datum : Map Grid Australia
Reference Spheroid : Geocentric Datum Australia
Equatorial Semi Major Axis 6378137 metres
Eccentricity Squared 0.006694380023
Flattening 298.25
Projection : Universal Transverse Mercator (UTM)
Projection UTM Zone 55
Central Meridan (CM) 147deg E
Scale Factor at CM 0.9996
False Easting 500,000m
False Northing 10,000,000m

The above co-ordinate values provided were checked for Geographic to Grid conversion prior to the surveyor going to site and the following results derived.
GDA 94 148deg35 ’28.9’’E
38deg 12’48.6’’S
calculated grid E. 639315.467 m
N. 5769299.309 m
As the geographicals were quoted to 0.1 seconds of arc this conversion was considered satisfactory,
(one second of arc at Latitude 38 deg. south is approximately 100 metres)

5.1 CONTRACTORS VALUES.

The Positioning Contractor provided a copy of his values and these were verified as being the same as those provided to the surveyor prior to him going to the site.

6.0 TRANSIT TO SCALLOP-1 SITE.

The MODU after departing Minerva 3 on January 29 arrived at the Scallop-1 location at 2400 hours January 31st.
During the daylight hours of the 31st and while the rig was under tow a joint survey (closed traverse) was carried out using a Survey Total Station to locate the GPS Antennae,the centreline of the MODU,and the Kelly Bushing.
A point on centreline of the vessel was located on the helicopter deck and one on the centreline aft of the vessel . A direct distance from the Kelly to the aft point was measured using the total station EDM.
These points were selected and suitably located for the OC/QA surveyor to undertake his independent check after observation of the final fix.
A diagram of the traverse and location of the stations is contained in ATTACHMENT.1 of the report
The traverse closed to a linear accuracy of 1-650,this being considered to be satisfactory bearing in mind that the rig was under tow and constantly moving

7.0 ANCHOR PLACEMENT

A predetermined anchor pattern and run program for the rig had been designed and is contained in ATTACHMENT. 4 of the Esso Document ’’Move and Mooring Program Scallop-1 REV.1
Anchor #7 was initially dropped as the rig made its way along the predetermined route to location .
Once at location anchors were run in accordance with the program the last anchor being placed at 1600 hours Saturday February 1.
The locations of all anchors were fixed as dropped and are shown in ATTACHMENT 3 of the report.
The vessel was positioned on location and pre-tensioning of the anchors was commenced at 1800 hours February 1st.
A tension of 350 KIPS was maintained on all anchors with the vessel being held within 5 metres of location for 15 minutes.
The tension was then relaxed to the working tension of 240 KIPS and the vessel allowed to settle prior to spudding of the well

7.1 COMPASS CALIBRATION

On the afternoon of February 1 Thales carried out a Sun observation to calibrate the Gyro compass being used to translate the antenna location back to the Drill string position.
A C-O (calculated - observed) correction of -0.7 degrees was determined and inserted in the configuration file of the navigation computer.
A Correction was also observed for the standby compass (’’Meridian’’)
Copies of the observations and computations are provided in ATTACHMENT 6 of the report.

8.0 SPUDDING OF THE WELL

Spudding commenced 1200 hours February 2nd with 30 inch casing commencing to be run later that day .
It was considered that the well was committed by 2400 hours February 2..

8.1 LOGGING OF FINAL POSITION,FIX
A prediction chart for Satellite availability and position quality was developed for the Scallop-1 location and it was found that for final fix logging to be carried out in accordance with the specification logging could not commence before 0300 hours local time on February 3rd.
A copy of the mission planning diagram is appended to the report.
(See ATTACHMENT 4.)
Logging commenced with both the contractor and the QA/QC surveyor using the RTDGPS. Data from the Tracs TDMA Controller.
Additionally the Dual Frequency Trimble 4000SSI was set to commence to log at the same time.
Immediately prior to the commencement of final fix logging a printout from the navigation computer of the configuration file was requested and provided and is appended as ATTACHMENT 7.
The rejection elevation curtain was raised to 15 deg and an obstruction blockout input for the drilling derrick
The QA/QC Surveyor connected a laptop computer to the Contractor's System and simultaneously logged the fix data
The QA/QC logging software was ''HYDRO'' acquisition and guidance software which logged the DGPS antenna location (antenna.1) every 15 seconds in terms of UTM's computed from the WGS84 NMEA inputs.
A total of 730 fixes were recorded by the QA/QC surveyor and have been presented as a scatter diagram and compared with the contractors statistically analysed.result
The result of the comparison is shown as ATTACHMENT 5.
A Final Fix report generated by THALES and is presented in ATTACHMENT 8.

9.0 FINAL FIX LOCATION

The final Location of the well is in terms of:

WGS 84 (GDA 94)

38 deg 12' 48.615'' S
148deg 35' 28.879 ''E
SPHEROIDAL HEIGHT 27.05m
(MGA94) UTM Zone 55
E.639314.95
N.5769298.84
Heading 209.9 deg true

9.1 INDEPENDENT VERIFICATION OF FINAL CO-ORDINATES.

On conclusion of the final fix observations RTDGPS grid co-ordinates were observed on the centre line of the MODU forward and aft at the locations selected during the traversing operation
This would verify the heading and final Location directly without any need for a translation back from an antenna position using a gyro input.
The equipment used was a hand held GARMIN GPS2 Plus 12 channel GPS receiver reading directly in UTM zone 55 Grid Co-ordinate mapping system .
Differential corrections were received in RTCM format from the ‘‘Omnistar network ‘‘ with an OPTUS satellite mobile beacon and were derived using a multi station fix based on ground stations located Sydney,Melbourne & Adelaide.
The observed co ordinates were as follows

Forward mark	E.639301	N.5769271
Aft Mark	E.639337	N.5769333

Calculated grid bearing of the vessel 210 deg 08’
The distance between the observation stations is calculated to be 71.60 metres compared with that determined by traverse (70.25m)
The aft mark was determined to be 39.95 m aft of and online with the drill string (refer to onboard closed traverse) accordingly, the drill String was calculated to be at :

E.639317 N.5769298

This agreed with a final location by the contractor 0.8m Northing and 2.0 m Easting which was considered satisfactory.
The Final Position Fix -Differential GPS was then signed off by the QA/QC Surveyor and provided to the ESSO representative onboard with a preliminary report forwarded by fax to

Exxonmobil Exploration Company.
Upstream Technical Computing & Cartography Group
Houston. (Fax 281 6547718)

9.2 COLLECTION AND COMPUTATION OF DUAL FREQUENCY PHASE DATA

The dual frequency data from the Trimble 4000 SSI (Antenna 2) was downloaded but could not be computed owing to the base station information not being available for another 12 hours .
It was computed by THALES on return to their offices and forwarded to the QA/QC surveyor by Email.
The following comparison being Coordinates of the antenna computed from ‘‘Tinbinbilla’’ ACT. A Baseline length 310 Km.

MGA94 E. 639310.454
N.5769261.008

The resultant drill stem position based upon an X offset of 15.3m and Y offset 34.01m and a grid bearing of the vessel of 210.86 Deg. (Derived from Gyro plus convergence) was

MGA94 E.639314.765
N. 5769298.051

This compares with a final fix location within 0.2 m Easting and 0.8 m Northing

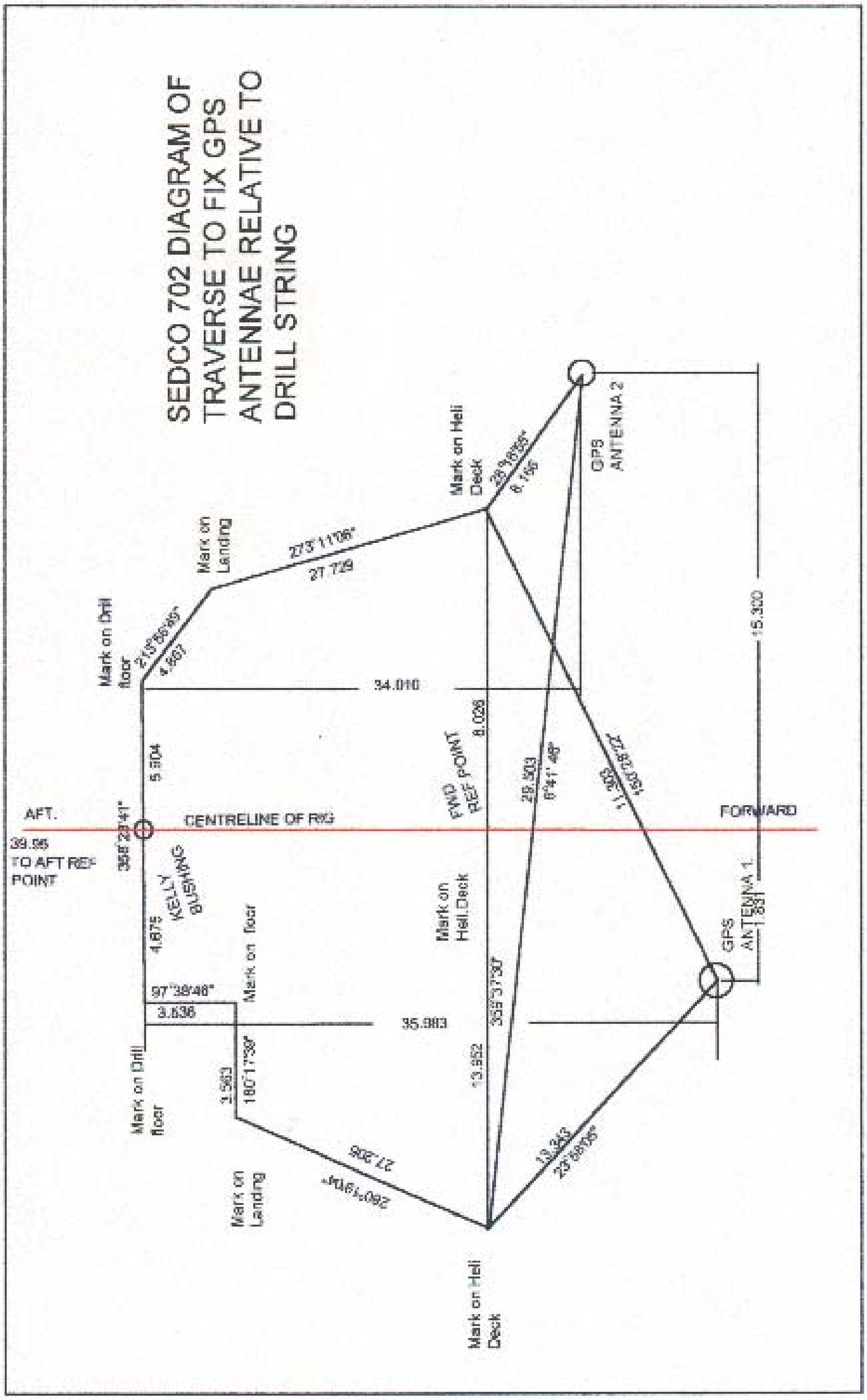
10.0 DIARY OF DAILY EVENTS & COMMENTS

The diary of daily events is contained as ATTACHMENT 9
During the course of the work no unusual astronomical events occurred which would have an influence on the data collection.
The data obtained during the positioning was of high quality and accordingly There is a high level of confidence in the final position.
The QA/QC surveyors ‘‘Ashtech’’ satellite processing software is still experiencing translation problems with the Rinex files produced from the Trimble DAT files. and once again the QA officer had to rely on the Contractor to process the static files.

Baselines of 300 Kms are considered somewhat excessive in length for the transference of accurate co ordinates. While the results from this project were satisfactory, the Company has become a subscriber to GPSNET a Victorian Lands Department Service where both real time and post processing files are available for baselines which will be of the order of 30 to 50 Kms in relation to the Gippsland Oil Fields

H.T.ARROWSMITH LS
SUPERVISING SURVEYOR
ARROWSMITH MUIR & ASSOCIATES PTY.LTD.

ATTACHMENTS



ATTACHMENT.1.

EQUIPMENT ON BOARD 702

Item #	Description	Model #	Serial #	Barcode	Status
1	90938/Spotbeam M Rx		832	AAR006832	OP
2	90938/Spotbeam MT Rx		1728	AAR114587	OP
3	90936 Rx		624	AAR006832	OP
4	Skyfix Rig Portable		029	AAR115799	OP
5	AD320-2 Antenna				OP
6	Seavey Whip Antenna				OP
7	Compaq Deskpro EP	PII 350MHz	H903 CCJ4 0369	ARR000010	OP
8	Compaq 17" Monitor			ARR000016	OP
9	Navigat FOG	2100		ARR000119	OP
10	Navigat Interface Box			ARR000120	OP
11	Epson Printer	LX300	22YY005341	ARR000167	OP
12	Epson Printer	LX300		ARR000160	Spare
13	Compaq Deskpro EN	PIII 700MHz		ARR000285	Repeater
14	Compaq 17" Monitor			ARR000012	Repeater
15	Toshiba Satellite Pro 480CDT Laptop		68024365	ARR000828	OP
16	Sextant				
17	UHF Whip Antenna				OP
18	UHF Whip Antenna				Spare
19	Comb. UHF/GPS Antenna				Spare
20	Comb. UHF/GPS Antenna				Spare
21	GPS/UHF Diplexer	AD280-3		ARR000352	OP
22	Global GPS 4 way splitter				OP
23	Trimble GPS Antenna x 2				OP
24	Tracs TDMA Controller	90774/3/40A	1111	ARR000338	OP
25	Tracs TDMA Controller	90774/3/40A			Spare
26	Tracs Multiplexer	90774/3/60A	1041	ARR000347	OP
27	Tracs Multiplexer	90774/3/60A	2012		Spare
28	Rack Mount PC	P3 1GHz		ARR001030	OP
29	Rack Mount PC	P3 800MHz		ARR000855	Spare
30	15” Flat Screen Monitor			ARR001124	Spare
31	15” Flat Screen Monitor			ARR001126	OP
32	Tracs Geopod	90773		ARR005575	Spare
33	Geopod interface box				Spare
34	Fluxgate compass			ARR000591	Spare
35	Trimble SSE		AAR000098		Spare
36	Trimble 4000 SSi		AAR000099		OP
37	Total Station (Topcon)	LG4233			OP
38	Meridian Surveyor Gyro		AAR001002		OP
39	Liebeit UPS		ARR000720		OP

ATTACHMENT 2.

EQUIPMENT ONBOARD PACIFIC CHALLENGER

Item #	Description	Model #	Serial #	Barcode	Status
1	Compaq Deskpro EN Series	667MHz 64MB		ARR000283	OP
2	Compaq 15” Monitor	S500		ARR000298	OP
3	Compaq Keyboard			ARR000306	OP
4	Compaq Mouse			ARR000205	OP
5	Tracs Geopod (SK8)	90773	1092	AAR005793	OP
6	Geopod interface box			ARR000369	OP
7	Geopod Antenna cable				OP
8	Fluxgate Compass	KVH1000		AAR117156	OP
9	PSU			ARR000526	OP

EQUIPMENT ONBOARD PACIFIC FRONTIER

Item #	Description	Model #	Serial #	Barcode	Status
1	Compaq Deskpro EN Series	667MHz 64MB			OP
2	Compaq 15” Monitor	S500		ARR000296	OP
3	Compaq Keyboard			ARR000712	OP
4	Compaq Mouse			ARR000713	OP
5	Tracs Geopod (SK8)	90773	1002	ARR000345	OP
6	Geopod interface box				OP
7	Geopod Antenna cable				OP
8	Fluxgate Compass	KVH1000		ARR000130	U/S
9	PSU				OP

ATTACHMENT 2.

THALES

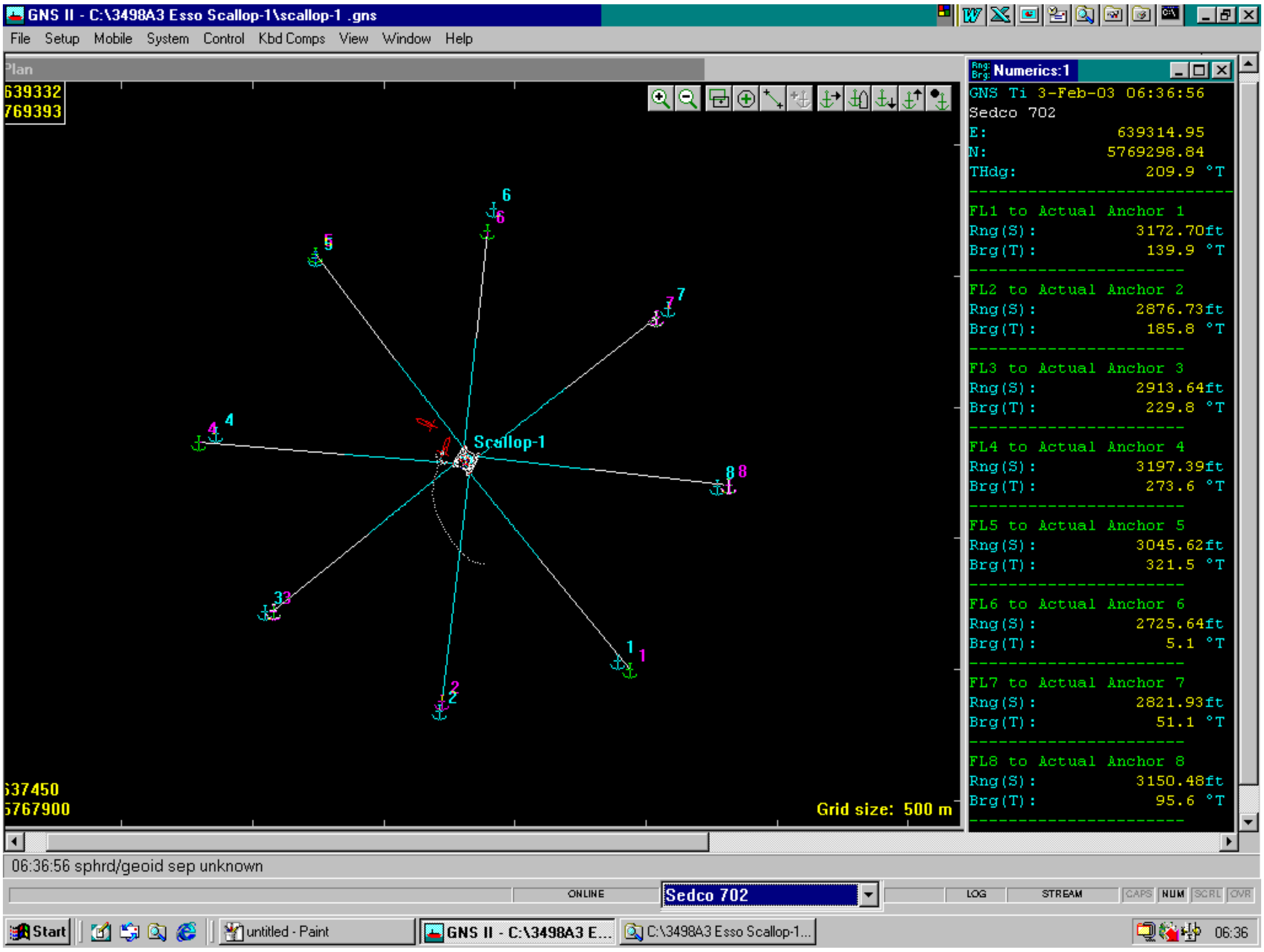
SEDCO 702 ANCHOR POSITIONS

2 Feb 2003 17:04

Main Anchors

Name	Intended E	Intended N	Dropped E	Dropped N
Anchor 1	639891.22	5768531.07	639937.04	5768500.67
Anchor 2	639213.23	5768342.41	639219.97	5768378.78
Anchor 3	638547.25	5768721.17	638579.13	5768721.84
Anchor 4	638359.95	5769399.50	638295.72	5769365.24
Anchor 5	638740.77	5770068.93	638737.18	5770082.68
Anchor 6	639418.76	5770257.59	639394.83	5770174.27
Anchor 7	640084.76	5769878.83	640040.83	5769843.49
Anchor 8	640272.05	5769200.49	640316.80	5769201.56

ATTACHMENT 3



ATTACHMENT 3.

Site name:
new site

Site description:

Almanac file name: alm03.030

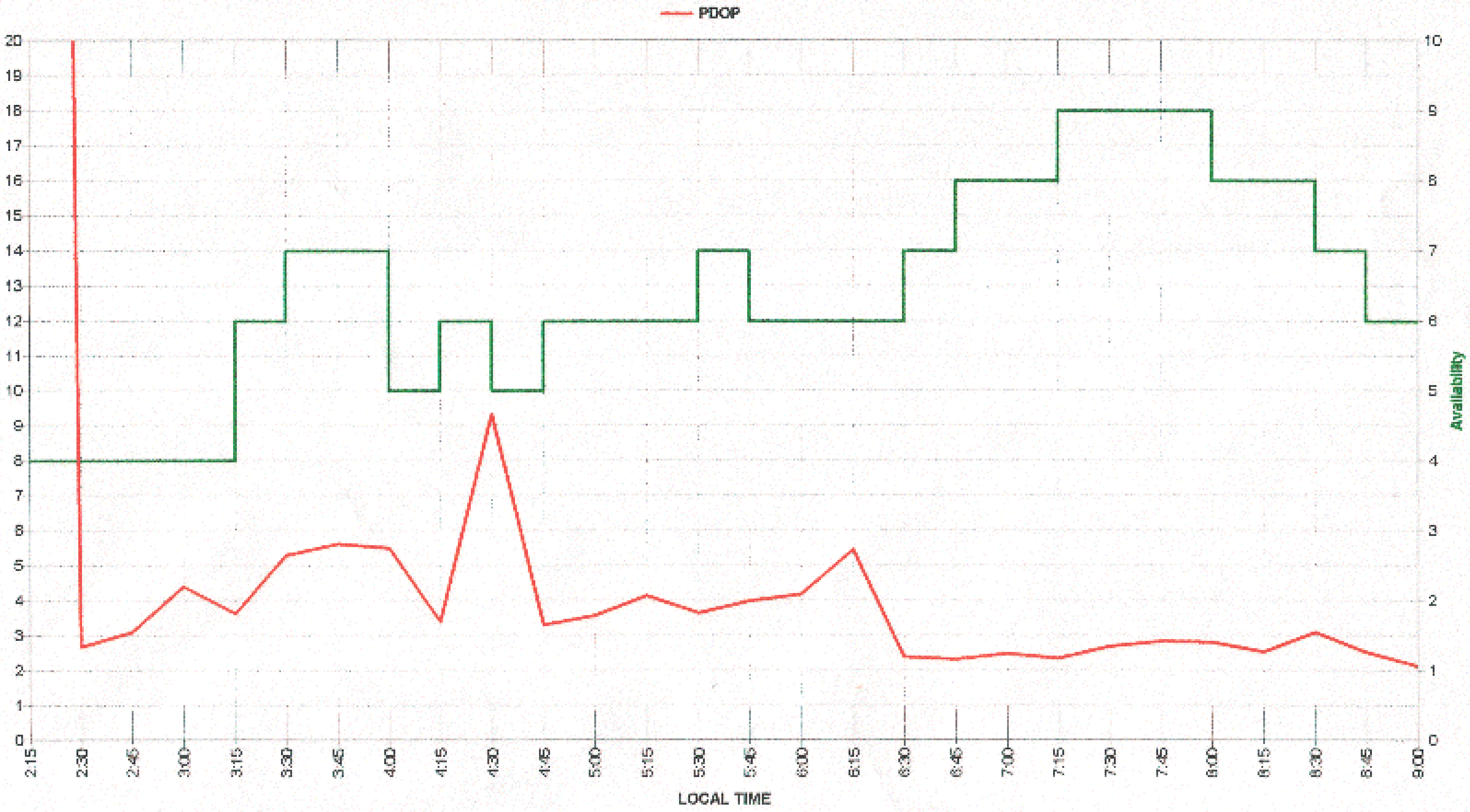
Available GPS satellites (PRN numbers):
1 2 3 4 5 6 7 8 9 10 13 14 15 16 17 18 19 21 22 23 24 25 26 27 29 30 31

Latitude : 37° 25' 32.67" S
Longitude: 147° 10' 56.35" E
Altitude : 0.00

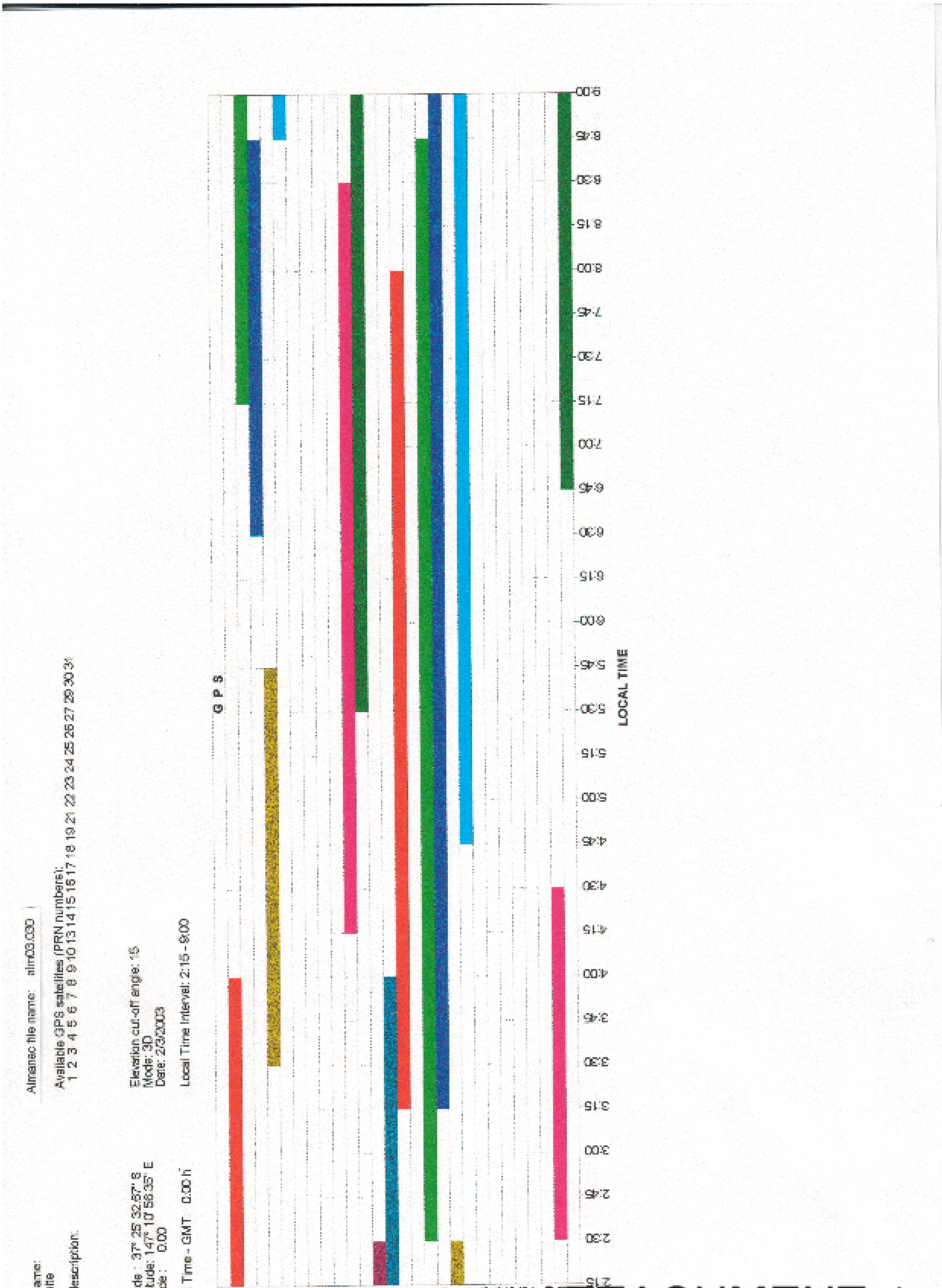
Elevation cut-off angle: 15
Mode: 3D
Date: 2/3/2003

Local Time - GMT: 0.00 h

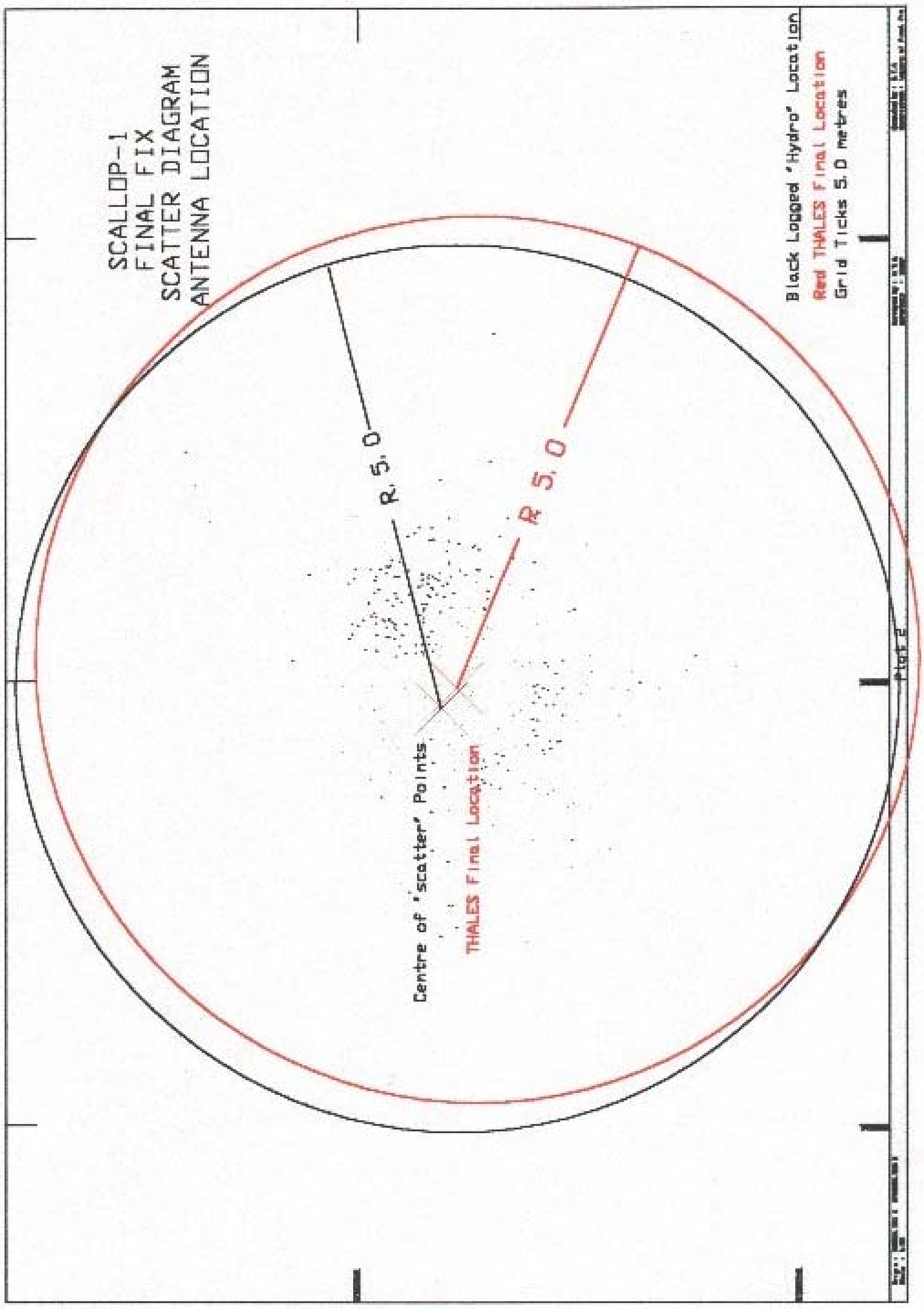
Local Time Interval: 2:15 - 9:00



ATTACHMENT.4.



ATTACHMENT.4.



ATTACHMENT 5.

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number:	3498A3
Job Description:	Rig Move to Scallop-1(Navigat)
Client:	Esso
Party Chief:	S.Schonknecht
Surveyor:	S.Schonknecht
Rig Name:	Sedco 702
Date:	1 February 2003

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Latitude (DMS):	-036	12	48
Longitude (DMS):	148	35	28
UTC Correction (HMS):	11.00		

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	18	59	07	000	00	00	052	05	18	207.90
Right	18	59	07	180	00	00	232	05	18	
Left	18	59	43	000	00	00	052	23	21	207.50
Right	18	59	43	180	00	00	232	23	21	
Left	19	00	10	000	00	00	052	00	20	207.80
Right	19	00	10	180	00	00	232	00	20	
Left	19	00	36	000	00	00	052	09	38	207.60
Right	19	00	36	180	00	00	232	09	38	
Left	19	01	00	000	00	00	051	52	41	207.80
Right	19	01	00	180	00	00	231	52	41	
Left	19	01	33	000	00	00	052	08	00	207.50
Right	19	01	33	180	00	00	232	08	00	
Left	19	02	04	000	00	00	051	55	19	207.60
Right	19	02	04	180	00	00	231	55	19	
Left	19	02	35	000	00	00	051	45	54	207.70
Right	19	02	35	180	00	00	231	45	54	
Left	19	02	59	000	00	00	051	37	18	207.80
Right	19	02	59	180	00	00	231	37	18	
Left	19	03	19	000	00	00	051	32	35	207.80
Right	19	03	19	180	00	00	231	32	35	
Left	19	03	53	000	00	00	051	21	02	208.00
Right	19	03	53	180	00	00	231	21	02	
Left	19	04	18	000	00	00	051	11	31	208.00
Right	19	04	18	180	00	00	231	11	31	

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

ATTACHMENT .6.

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Navigat)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18	59	07.0	052	05	16	259	15	33	207	10	15	207.17	207.90	-0.73
18	59	43.0	052	23	21	259	10	20	206	46	59	206.78	207.50	-0.72
19	00	10.0	052	00	20	259	06	25	207	06	06	207.10	207.80	-0.70
19	00	36.0	052	09	38	259	02	39	206	53	01	206.88	207.60	-0.72
19	01	00.0	051	52	41	258	59	10	207	06	29	207.11	207.80	-0.69
19	01	33.0	052	08	00	258	54	22	206	46	22	206.77	207.50	-0.73
19	02	04.0	051	55	19	258	49	52	206	54	33	206.91	207.60	-0.69
19	02	35.0	051	45	54	258	45	22	206	59	28	206.99	207.70	-0.71
19	02	59.0	051	37	18	258	41	53	207	04	35	207.08	207.80	-0.72
19	03	19.0	051	32	35	258	38	59	207	06	24	207.11	207.80	-0.69
19	03	53.0	051	21	02	258	34	03	207	13	01	207.22	208.00	-0.78
19	04	18.0	051	11	31	258	30	25	207	18	54	207.32	208.00	-0.68

Mean C-O -0.71

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

ATTACHMENT.6

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Meridian)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Datum: GDA94 **Projection: MGA Zone 55S CM 147° East**

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18	59	07 0	052	05	18	259	15	33	207	10	15	207.17	209 00	-1.83
18	59	43 0	052	23	21	259	10	20	206	46	59	206.78	208.70	-1.92
19	00	10 0	052	00	20	259	06	25	207	06	05	207.10	209.00	-1.90
19	00	36.0	052	09	38	259	02	39	206	53	01	206.88	208.70	-1.82
19	01	00.0	051	52	41	258	59	10	207	06	29	207.11	209.00	-1.89
19	01	33.0	052	08	00	258	54	22	206	46	22	206.77	208.50	-1.73
19	02	04.0	051	55	19	258	49	52	206	54	33	206.91	208 70	-1.79
19	02	35.0	051	45	54	258	45	22	206	59	28	206.99	208 70	-1.71
19	02	59.0	051	37	18	258	41	53	207	04	35	207.08	208 80	-1.72
19	03	19.0	051	32	35	258	38	59	207	06	24	207 11	209.00	-1.89
19	03	53.0	051	21	02	258	34	03	207	13	01	207 22	209.00	-1.78
19	04	18.0	051	11	31	258	30	25	207	18	54	207 32	209.00	-1.68

Mean C-O **-1.81**

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

ATTACHMENT.6.

2/02/03 00:52

GyroCal Meridian Scallop-1.xls Output Sheet Rev 5

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number:	3498A3
Job Description:	Rig Move to Scallop-1(Meridian)
Client:	Esso
Party Chief:	S.Schonknecht
Surveyor:	S.Schonknecht
Rig Name:	Sedco 702
Date:	1 February 2003

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Latitude (DMS):	-039	12	48
Longitude (DMS):	148	35	28
UTC Correction (HMS).	11.00		

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	18	59	07	000	00	00	052	05	18	209.00
Right	18	59	07	180	00	00	232	05	18	
Left	18	59	43	000	00	00	052	23	21	208.70
Right	18	59	43	180	00	00	232	23	21	
Left	19	00	10	000	00	00	052	00	20	209.00
Right	19	00	10	180	00	00	232	00	20	
Left	19	00	36	000	00	00	052	09	38	208.70
Right	19	00	36	180	00	00	232	09	38	
Left	19	01	00	000	00	00	051	52	41	209.00
Right	19	01	00	180	00	00	231	52	41	
Left	19	01	33	000	00	00	052	08	00	208.50
Right	19	01	33	180	00	00	232	08	00	
Left	19	02	04	000	00	00	051	55	19	208.70
Right	19	02	04	180	00	00	231	55	19	
Left	19	02	35	000	00	00	051	45	54	208.70
Right	19	02	35	180	00	00	231	45	54	
Left	19	02	59	000	00	00	051	37	18	208.80
Right	19	02	59	180	00	00	231	37	18	
Left	19	03	19	000	00	00	051	32	35	209.00
Right	19	03	19	180	00	00	231	32	35	
Left	19	03	53	000	00	00	051	21	02	209.00
Right	19	03	53	180	00	00	231	21	02	
Left	19	04	18	000	00	00	051	11	31	209.00
Right	19	04	18	180	00	00	231	11	31	

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

ATTACHMENT.6

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

JOB DETAILS
Job Number : 3498A3
Job Description : Rig Move
Company : Thales GeoSolutions Group Ltd
Client : Esso Australia Pty Ltd.
Time Zone : GMT ~~+10.00~~ +11.00

WORKING SPHEROID
GDA94 (GRS80)
Semi-major : 6378137.000 m
e Squared : 0.006694380023

WORKING PROJECTION
MGA94 Zone 55
Lat of Origin : 00°00'00.000"N
Long of Origin : 147°00'00.000"E
False Easting : 500000.00
False Northing : 10000000.00
Scale Factor : 0.999600
Units : Metres

GPS TRANSFORMATION
From : WGS 84
Semi-major : 6378137.000 m
e Squared : 0.006694380067
To : GDA94 (GRS80)
Dx : 0.000 m
Dy : 0.000 m
Dz : 0.000 m
Rot x : 0.0000 secs
Rot y : 0.0000 secs
Rot z : 0.0000 secs
Scale : 0.0000 ppm

WAYPOINTS

Minerva-3	E:	148591.04	N:	5708056.65	Ht:	0.00 m	Horz Toll:	50.00 m
anc1	E:	149313.00	N:	5707463.00	Ht:	0.00 m		
anc2	E:	148681.91	N:	5707214.70	Ht:	0.00 m		
anc3	E:	148000.00	N:	5707367.00	Ht:	0.00 m		
anc4	E:	147696.00	N:	5707920.00	Ht:	0.00 m		
anc5	E:	147909.00	N:	5708635.00	Ht:	0.00 m		
anc6	E:	148458.00	N:	5708936.00	Ht:	0.00 m		
anc7	E:	149224.00	N:	5708807.00	Ht:	0.00 m		
anc8	E:	149496.00	N:	5708192.00	Ht:	0.00 m		
Minerva-1	E:	148189.87	N:	5708525.00	Ht:	0.00 m		
Minerva-2a	E:	148465.68	N:	5706924.00	Ht:	0.00 m		
Minerva-4	E:	148918.00	N:	5706691.00	Ht:	0.00 m		
P1	E:	148668.00	N:	5708034.00	Ht:	0.00 m		
Scallop-1	E:	639316.00	N:	5769300.00	Ht:	0.00 m	Horz Toll:	5.00 m
wp2	E:	428128.37	N:	5651449.91	Ht:	0.00 m		
wp1	E:	197031.78	N:	5673692.65	Ht:	0.00 m		
wp3	E:	461477.00	N:	5651685.77	Ht:	0.00 m		
wp4	E:	500000.00	N:	5668612.06	Ht:	0.00 m		

Verified by: (sign) (print) H.T. Arrowsmith

06:46 3-Feb-2003

ATTACHMENT .7

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

wp5	E:	606225.78	N:	5693607.27	Ht:	0.00	m
wp6	E:	642790.58	N:	5717084.54	Ht:	0.00	m
wp7	E:	645222.30	N:	5771619.20	Ht:	0.00	m
wp8	E:	643083.93	N:	5772201.68	Ht:	0.00	m
wp8 new	E:	646732.42	N:	5775052.19	Ht:	0.00	m
wp7 new	E:	650436.42	N:	5775052.19	Ht:	0.00	m

TRACK GUIDANCE

tow route latest

SOL E:	148591.05	N:	5708056.65	HT:	0.00	KP:	0.000
EOL E:	197031.78	N:	5673692.65	HT:	0.00	KP:	59.337
SOL E:	197031.78	N:	5673692.65	HT:	0.00	KP:	59.337
EOL E:	428128.37	N:	5651449.91	HT:	0.00	KP:	291.481
SOL E:	428128.37	N:	5651449.91	HT:	0.00	KP:	291.481
EOL E:	461477.00	N:	5651685.77	HT:	0.00	KP:	324.843
SOL E:	461477.00	N:	5651685.77	HT:	0.00	KP:	324.843
EOL E:	500000.00	N:	5668612.06	HT:	0.00	KP:	366.937
SOL E:	500000.00	N:	5668612.06	HT:	0.00	KP:	366.937
EOL E:	606225.78	N:	5693607.27	HT:	0.00	KP:	476.102
SOL E:	606225.78	N:	5693607.27	HT:	0.00	KP:	476.102
EOL E:	642790.58	N:	5717084.54	HT:	0.00	KP:	519.564
SOL E:	642790.58	N:	5717084.54	HT:	0.00	KP:	519.564
EOL E:	650436.42	N:	5775052.19	HT:	0.00	KP:	578.042
SOL E:	650436.42	N:	5775052.19	HT:	0.00	KP:	578.042
EOL E:	646732.42	N:	5775052.19	HT:	0.00	KP:	581.746
SOL E:	646732.42	N:	5775052.19	HT:	0.00	KP:	581.746
EOL E:	640084.76	N:	5769878.82	HT:	0.00	KP:	590.171
SOL E:	640084.76	N:	5769878.82	HT:	0.00	KP:	590.171
EOL E:	639316.00	N:	5769300.00	HT:	0.00	KP:	591.133
SOL E:	639316.00	N:	5769300.00	HT:	0.00	KP:	591.133
EOL E:	638345.00	N:	5768595.00	HT:	0.00	KP:	592.333

MOBILES

Sedco 702 (semi-sub rig)

Shape Definition: Sedco702

Ellipse:-

Centre X: -29.72 m Y: 34.29 m

Hor Radius: 4.57 m Ver Radius: 4.57 m

Ellipse:-

Centre X: -29.72 m Y: 11.43 m

Hor Radius: 2.74 m Ver Radius: 2.74 m

Ellipse:-

Centre X: -29.72 m Y: -11.43 m

Hor Radius: 2.74 m Ver Radius: 2.74 m

Ellipse:-

Centre X: -29.72 m Y: -34.29 m

Hor Radius: 4.57 m Ver Radius: 4.57 m

Ellipse:-

Centre X: 29.72 m Y: 34.29 m

Hor Radius: 4.57 m Ver Radius: 4.57 m

Verified by: (sign) (print) H.T AARONSMITH

06:46 3-Feb-2003

ATTACHMENT 7.

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

```
  Ellipse:-
    Centre X:  29.72 m  Y:  11.43 m
    Hor Radius:   2.74 m  Ver Radius:   2.74 m
  Ellipse:-
    Centre X:  29.72 m  Y: -11.43 m
    Hor Radius:   2.74 m  Ver Radius:   2.74 m
  Ellipse:-
    Centre X:  29.72 m  Y: -34.29 m
    Hor Radius:   4.57 m  Ver Radius:   4.57 m
   Line:-
    X: -22.10 m  Y:  34.29 m
    X: -22.10 m  Y: -34.29 m
    X: -25.15 m  Y: -44.96 m
    X: -34.29 m  Y: -44.96 m
    X: -37.34 m  Y: -34.29 m
    X: -37.34 m  Y:  34.29 m
    X: -34.29 m  Y:  44.96 m
    X: -29.72 m  Y:  48.00 m
    X: -25.15 m  Y:  44.96 m
    X: -22.10 m  Y:  34.29 m
   Line:-
    X:  22.10 m  Y:  34.29 m
    X:  22.10 m  Y: -34.29 m
    X:  25.15 m  Y: -44.96 m
    X:  34.29 m  Y: -44.96 m
    X:  37.34 m  Y: -34.29 m
    X:  37.34 m  Y:  34.29 m
    X:  34.29 m  Y:  44.96 m
    X:  29.72 m  Y:  48.00 m
    X:  25.15 m  Y:  44.96 m
    X:  22.10 m  Y:  34.29 m
   Line:-
    X: -27.43 m  Y:  12.95 m
    X: -27.43 m  Y:  32.00 m
    X:  -1.22 m  Y:  32.00 m
    X:  -1.22 m  Y:  34.29 m
    X:  11.20 m  Y:  34.29 m
    X:  16.69 m  Y:  40.39 m
    X:  27.43 m  Y:  40.39 m
    X:  33.53 m  Y:  34.29 m
    X:  33.53 m  Y:  19.05 m
    X:  27.43 m  Y:  12.95 m
    X: -27.43 m  Y:  12.95 m
   Line:-
    X: -25.15 m  Y:  34.29 m
    X:  -1.22 m  Y:  34.29 m
   Line:-
    X:  29.72 m  Y:  29.72 m
    X:  29.72 m  Y: -29.72 m
   Line:-
    X:  25.15 m  Y: -34.29 m
    X: -25.15 m  Y: -34.29 m
   Line:-
    X: -29.72 m  Y: -29.72 m
```

Verified by: (sign) [signature] (print) H T ARROWSMITH

06:46 3-Feb-2003

ATTACHMENT 7

GMS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gms

```
   X: -29.72 m   Y:  29.72 m
  Line:-
   X: -16.69 m   Y: -34.29 m
   X: -16.69 m   Y: -11.43 m
   X:  -3.96 m   Y: -11.43 m
   X:  -3.96 m   Y:  -8.38 m
   X: -13.72 m   Y:  -8.38 m
   X: -13.72 m   Y:  10.67 m
   X:  13.72 m   Y:  10.67 m
   X:  13.72 m   Y:  -8.38 m
   X:   3.96 m   Y:  -8.38 m
   X:   3.96 m   Y: -11.43 m
   X:  16.69 m   Y: -11.43 m
   X:  16.69 m   Y: -34.29 m
  Line:-
   X:  11.20 m   Y:  34.29 m
   X:  25.15 m   Y:  34.29 m

 Tracking Point        : Datum
 Pitch and Roll Centre: Datum

 Selected Sources:-
  Primary Position : T1 Thales UKOOA (Using Antenna Offset : New GPS)
  Backup Position  : T2 Thales UKOOA (Using Antenna Offset : New GPS)
  Primary Heading  : N1 Navigat 2100
  Backup Heading   : S1 SGB 1000S
  Primary Height   : T1 Thales UKOOA
  Backup Height    : T2 Thales UKOOA
  Pitch and Roll   : Manual
  Soundings        : Manual
  Speed            : Position Filter
  Course Made Good : Posn Filter CMG

 Equipment:-
  T1 Thales UKOOA
   Status:  ON   Interface: COM3
   Antenna Offset Selected: New GPS
    X:     1.83 m Y:    35.98 m Z:     0.00 m Rng:   36.03 m Brg:  2.9°
   Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht S
   Update posn only when diff corrected
   Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
   Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

  T2 Thales UKOOA
   Status:  ON   Interface: COM4
   Antenna Offset Selected: New GPS
    X:     1.83 m Y:    35.98 m Z:     0.00 m Rng:   36.03 m Brg:  2.9°
   Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht S
   Update posn regardless of whether diff corrected
   Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
   Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

  N1 Navigat 2100
   Status:  ON   Interface: COM5
```

Verified by: (sign) [signature] (print) K T Henderson

06:46 3-Feb-2003

ATTACHMENT 7.

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

```
    C-O:  -0.7 degs  Stale Time: 5.0 s  SD: 0.1 degs
     Filter: Off  Gate: Off  Time Constant: 5.0 s  Sample Dwell: 0.5 s
    Pitch C-O:   0.0 degs  Roll C-O:   0.0 degs  Stale Time: 0.2 s

   T3 Tracs TDMA Master
    Status:  ON   Interface: COM6
    Antenna Offset Selected: GPS
     X:    1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°

   N2 NMEA
    Status:  OFF  Interface: COM2
    Antenna Offset Selected: GPS
     X:    1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°
    Position        : GGA
     Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht
    Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
    Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

   S1 SGB 1000S
    Status:  ON   Interface: COM7
    C-O:  -1.8 degs  Stale Time: 5.0 s  SD: 0.1 degs
     Filter: Off  Gate: Off  Time Constant: 5.0 s  Sample Dwell: 0.5 s

  Defined Offsets:-
   Datum
    X:    0.00 m Y:    0.00 m Z:    0.00 m Rng:    0.00 m Brg:  0.0°
   GPS
    X:    1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°
   Fairlead 7
    X:  -33.00 m Y:  -38.00 m Z:    0.00 m Rng:   50.33 m Brg:221.0°
   GPS2
    X:  -15.30 m Y:   34.04 m Z:    0.00 m Rng:   37.32 m Brg:335.8°
   New GPS
    X:    1.83 m Y:   35.98 m Z:    0.00 m Rng:   36.03 m Brg:  2.9°
   New SSE
    X:  -15.30 m Y:   34.01 m Z:    0.00 m Rng:   37.29 m Brg:335.8°

P. Challenger (tug)
  Shape Definition: P_Challenger
   Line:-
    X:  -6.50 m  Y:   0.00 m
    X:  -6.50 m  Y:  50.00 m
    X:   0.00 m  Y:  63.00 m
    X:   6.50 m  Y:  50.00 m
    X:   6.50 m  Y:   0.00 m
    X:  -6.50 m  Y:   0.00 m

  Tracking Point        : Datum
  Pitch and Roll Centre: Datum

  Selected Sources:-
   Primary Position : T4 Tracs TDMA Remote (Using Antenna Offset : SKB Geopc
   Primary Heading  : T4 Tracs TDMA Remote
   Primary Height   : Datum Displacement
```

Verified by: (sign) [signature] (print) H-T [handwritten name]

06:46 3-Feb-2003

ATTACHMENT 7

```
GMS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

   Pitch and Roll    : Manual
   Soundings         : Manual
   Speed             : Position Filter
   Course Made Good  : Posn Filter CMG

  Equipment:-
   T4 Tracs TDMA Remote
    Status:  ON   Interface: Not defined
    Antenna Offset Selected: SK8 Geopod
     X:     0.60 m Y:    53.00 m Z:     0.00 m Rng:    53.00 m Brg:  0.6°

  Defined Offsets:-
   Datum
    X:     0.00 m Y:     0.00 m Z:     0.00 m Rng:     0.00 m Brg:  0.0°
   SK8 Geopod
    X:     0.60 m Y:    53.00 m Z:     0.00 m Rng:    53.00 m Brg:  0.6°

P. Frontier (tug)
  Shape Definition: P_Frontier
   Line:-
    X:  -7.50 m   Y:    0.00 m
    X:  -7.50 m   Y:   50.00 m
    X:   0.00 m   Y:   65.00 m
    X:   7.50 m   Y:   50.00 m
    X:   7.50 m   Y:    0.00 m
    X:  -7.50 m   Y:    0.00 m

  Tracking Point        : Datum
  Pitch and Roll Centre: Datum

  Selected Sources:-
   Primary Position  : T5 Tracs TDMA Remote (Using Antenna Offset : SK8 Geopc
   Primary Heading   : Manual
   Primary Height    : Datum Displacement
   Pitch and Roll    : Manual
   Soundings         : Manual
   Speed             : Position Filter
   Course Made Good  : Posn Filter CMG

  Equipment:-
   T5 Tracs TDMA Remote
    Status:  ON   Interface: Not defined
    Antenna Offset Selected: SK8 Geopod
     X:     1.00 m Y:    45.00 m Z:     0.00 m Rng:    45.01 m Brg:  1.3°

  Defined Offsets:-
   Datum
    X:     0.00 m Y:     0.00 m Z:     0.00 m Rng:     0.00 m Brg:  0.0°
   SK8 Geopod
    X:     1.00 m Y:    45.00 m Z:     0.00 m Rng:    45.01 m Brg:  1.3°
```

Verified by: (sign) (print) H. F. [illegible]

06:46 3-Feb-2003

ATTACHMENT 7

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

ANCHORS
Sedco 702

Fairleads:-

Name	X	Y	Z	Rng	Brg
Fairlead 1	-35.00 m	35.00 m	0.00 m	49.50 m	315.0°
Fairlead 2	-33.00 m	38.00 m	0.00 m	50.33 m	319.0°
Fairlead 3	33.00 m	38.00 m	0.00 m	50.33 m	41.0°
Fairlead 4	35.00 m	35.00 m	0.00 m	49.50 m	45.0°
Fairlead 5	35.00 m	-35.00 m	0.00 m	49.50 m	135.0°
Fairlead 6	33.00 m	-38.00 m	0.00 m	50.33 m	139.0°
Fairlead 7	-33.00 m	-38.00 m	0.00 m	50.33 m	221.0°
Fairlead 8	-35.00 m	-35.00 m	0.00 m	49.50 m	225.0°

Main Intended Positions:-

Name	Easting	Northing	Depth	Tolerance
Anchor 1	639891.22	5768531.07	0.00 m	50.00 m
Anchor 2	639213.23	5768342.41	0.00 m	50.00 m
Anchor 3	638547.25	5768721.17	0.00 m	50.00 m
Anchor 4	638359.95	5769399.50	0.00 m	50.00 m
Anchor 5	638740.77	5770068.93	0.00 m	50.00 m
Anchor 6	639418.76	5770257.59	0.00 m	50.00 m
Anchor 7	640084.76	5769878.83	0.00 m	50.00 m
Anchor 8	640272.05	5769200.49	0.00 m	50.00 m

Main Actual Positions:-

Name	Easting	Northing	Depth	Tolerance
Anchor 1	639937.04	5768500.67	109.90 m	50.00 m
Anchor 2	639219.97	5768378.78	109.93 m	50.00 m
Anchor 3	638579.13	5768721.84	109.90 m	50.00 m
Anchor 4	638295.72	5769365.24	109.90 m	50.00 m
Anchor 5	638737.18	5770082.68	109.90 m	50.00 m
Anchor 6	639394.83	5770174.27	109.90 m	50.00 m
Anchor 7	640040.83	5769843.49	109.90 m	50.00 m
Anchor 8	640316.80	5769201.56	109.90 m	50.00 m

Verified by: (sign) (print) H-T ARROWSMITH

06:46 3-Feb-2003

ATTACHMENT 7

THALES Thales GeoSolutions Group Ltd

FINAL POSITION FIX - DIFFERENTIAL GPS

Job:	Rig Move
Job Number:	3498A3
Thales Surveyor:	S.Schonknecht
Client:	Esso Australia Pty Ltd.
Client Representative:	

Sampling started:	3 Feb 2003 03:17:51
Sampling end:	3 Feb 2003 06:17:45

Sedco 702

Final Datum / Drill String Position

Datum:	**GDA94 (GRS80)**		
Latitude:	38°12'48.615"S	Longitude:	148°35'28.879"E
Projection:	**MGA94 Zone 55**		
Easting:	639314.95	Northing:	5769298.84

Mean corrected heading:	209.88°T
SD heading:	0.1°T
Intended heading:	210.0°T
Difference from intended:	-0.1°
Gyro C-O:	-0.7°
Convergence:	-0.98°

Final Datum Position is 1.56m on a bearing of 221.1°T (222.1°G) from the intended location.

Above Final Datum / Drill String Position in datum: WGS 84
Latitude: 38°12'48.615"S Longitude: 148°35'28.879"E Spheroidal Ht: 27.05m

Final Antenna Position (T1 Thales UKOOA):
Sample size: 1988 fixes used out of a total of 2160.

Antenna offset

X:	1.83m	Y:	35.98m	Z:	0.00m
Range:	36.03m	Rel Brg from datum to antenna:			2.9°

Datum:	WGS 84				
Latitude:	38°12'49.598"S	Longitude:	148°35'28.077"E	Spheroidal Ht:	27.05m
Datum:	GDA94 (GRS80)				
Latitude:	38°12'49.598"S	Longitude:	148°35'28.077"E	Spheroidal Ht:	27.05m
Projection:	MGA94 Zone 55				
Easting:	639294.92	Northing:	5769268.90	Spheroidal Ht:	27.05m

Standard deviations

Long or E:	0.73m
Lat or N:	0.82m
Height:	1.98m
Position:	1.10m

ATTACHMENT 8.

Geodetic Parameters

GPS Spheroid Name: WGS 84
Semi-major (a): 6378137.00m
Semi-minor (b): 6356752.31m
Eccentricity: 0.00669438
Inverse Flatenning (1/f): 298.25722013

Local Spheroid Name: GDA94 (GRS80)
Semi-major (a): 6378137.00m
Semi-minor (b): 6356752.31m
Eccentricity: 0.00669438
Inverse Flatenning (1/f): 298.25722210

Projection Name: MGA94 Zone 55

Transformation Name: WGS 84 to GDA94 (GRS80)

Datum Shift Parameters: (Coordinate Frame Rotation)
dx: 0.0000m
dy: 0.0000m
dz: 0.0000m
rx: 0.0000
ry: 0.0000
rz: 0.0000
scale: 0.0000

Intended Datum Location
Datum: GDA94 (GRS80)
Latitude: 38°12'48.577"S Longitude: 148°35'28.921"E
Projection: MGA94 Zone 55
Easting: 639316.00 Northing: 5769300.00

ATTACHMENT 8.

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED

DAILY RECORD SHEET

Date: **29 January 2003**	Client: **BHPB**	Job No.:**3498A3**	Vessel:**Sedco 702**
Location: **Scallop-1**			

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Wednesday 29th January, 2003**
0415	Pacific Frontier starts chasing to anchor 4.
0437	Anchor 4 off the bottom.
0528	#4 PCC handed back to rig.
0530	Anchor 8 assigned to Pacific Frontier.
O547	Pacific Frontier starts chasing to anchor 8.
0609	Anchor 8 off the bottom.
0630	Rig ballasted to 60 feet draft
0714	#8 PCC handed back to rig.
0738	Pacific Frontier starts chasing to anchor 1.
0802	Anchor 1 off the bottom.
0858	#1 PCC handed back to rig.
0926	Pacific Frontier starts chasing to anchor 5.
0942	Anchor 5 off the bottom.
1030	Power spike tripped all navigation computers
1035	Navigation online OK
1048	#5 PCC handed back to rig.
1141	Moving rig to P1 location
1150	Rig all stop on P1 location, clear of Minerva 3 location, stand by until Pacific Challenger arrives
1247	Anchor 6 off the bottom. Stand by while vessel replacing anchor and jewellery
1425	Hauling in on #6
1450	Pacific Challenger arrives at Rig, TDMA OK
1634	#6 PCC handed back to rig.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED

DAILY RECORD SHEET

Date: **29 January 2003 cont**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Brekinridge
Client Personnel
Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Wednesday 29th January, 2003 continued**
1700	Pre move meeting held with Esso, Sedco Forex ,BHP, and AHV's masters.
1810	Pacific Challenger chasing to anchor 2.
1820	Anchor 2 off the bottom. Pacific Challenger chasing back to rig. Stop at 600 feet from rig.
1847	Pacific Frontier takes #3 PCC. Starts chasing to anchor.
2015	Anchor 2 passed back to rig.
2102	Anchor 3 off the bottom.
2200	Rig starts to haul in on Anchor 7. Start de-ballasting rig to 21 feet.
2250	Anchor 7 off the bottom. Tow started to Scallop-1.
2300	Rig handed over to Esso.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **30 January 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell	3m.			
Sea				
Wind	20 knots			
Bar				
Temp				

DIARY OF OPERATIONS — PAGE 36 OF

TIME	Time Zone = UTC + 11.0 **Thursday 30th January, 2003**
0100	On tow to Scallop-1. New configuration loaded. GDA94 Zone 55
0530	Waypoint #1 reached.
1630	Reconnaissance done for antenna offset traverse to be carried out.
	Unable to do Sun Azimuth gyro calibration due to rig being too unstable during tow.
	Monitor equipment performance and position while under tow. No incidents this day.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **31 January 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell	3-4m.			
Sea	rough			
Wind	35 knots			
Bar				
Temp				

DIARY OF OPERATIONS PAGE 37 OF

TIME	Time Zone = UTC + 11.0 **Friday 31st January, 2003**
0000	Continue on tow to Scallop-1.
0055	Rig reaches Waypoint 2.
0130	Anchor chain #3 jumped over bolster on starboard bow column. Approx. position of rig 435910 E. 5651774 N.
0335	Rig passing 775 m. south of Waypoint 3
0641	Rig passes Waypoint 4
1514	Rig passes Waypoint 5
1900	Offset traverse done to determine antenna offsets. GPS1 X +1.83, Y +35.98: GPS2 X –15.30, Y +34.40
2400	Continue monitoring rigs position.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED

DAILY RECORD SHEET

Date: **01 February 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

PAGE 38 OF

TIME	Time Zone = UTC + 11.0 **Saturday 01st February, 2003**
0015	Rig reaches Waypoint 7. Shortens up on chain length.
0100	Anchor assignment tested with both AHVs. Working well.
0150	Rig reaches WP 8 (5 N.M. from location).
0315	Rig 2 N.M. from Anchor 7 intended drop location.
0345	Rig 1 N.M. from Anchor 7 intended drop location.
0419	Anchor 7 on the bottom.
0450	Rig over location, Scallop-1.
0621	Anchor 3 on the bottom. Pacific Frontier.
0649	3 Chaser passed to Rig
0733	#6 Anchor passed to P. Frontier
0818	P. Challenger set to run Anchor 2
0824	Anchor 6 on the bottom.
0857	6 Chaser passed to Rig
0909	Anchor 2 on the bottom.
0933	5 Anchor passed to P. Frontier
0936	2 Chaser passed to Rig
1014	Anchor 5 on Bottom, anchor run out to 3300 feet.
1041	5 Chaser passed to Rig
1220	4 Anchor passed to P. Frontier
1312	Anchor 4 on Bottom, anchor run out to 3300 feet.
1336	4 Chaser passed to Rig
1443	3 Anchor passed to P. Frontier
1530	Anchor 8 on Bottom, anchor run out to 3300 feet.

ATTACHMENT 9.

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **01 February 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up	Equipment	Op	B/up	Thales Personnel
GPS	✔		Echo Sounder			S.Schonknecht
SkyFix Premier	✔		Sidescan			A. Breckenridge
SkyFix Spot	✔		Pinger			
SGB Gyro	✔		Boomer			
Meridien Gyro	✔		Heave Comp			
GNS 2	✔		Velocity Probe			
MultiFix 3	✔		CODA			
GNS Remote	✔					Client Personnel
						Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

PAGE 39 OF

TIME	Time Zone = UTC + 11.0 **Saturday 01st February, 2003 continued**
1558	3 Chaser passed to Rig
1624	1 Anchor passed to P. Frontier
1713	Anchor 1 on Bottom, anchor run out to 3300 feet.
1740	1 Chaser passed to Rig
1855	Gyro calibration carried out by sun azimuth observations. C-O Navigat FOG –0.71 deg. (Applied to GNS).
	C-O Meridian –1.81 deg. (Applied to GNS).
2043	Rig moved over location and pre-tensioned.
	Standing by for drill floor operations.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ______________ SURVEYOR

Signature ______________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **2 February 2003** Vessel:**Sedco 702**	Client: **Esso Australia** Location: **Scallop-1**	Job No.:**3498A3**

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS PAGE 40 OF

TIME	Time Zone = UTC + 11.0 **Sunday 2nd February, 2003**
	Standing by to do Final Fix.
0730	AB transfers to Pacific Frontier to demobilise TRACS navigation equipment.
1000	AB returns to Rig with all navigation equipment.
1200	Commence spud in operations
2400	Standing by for 30 inch casing to be run.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED

DAILY RECORD SHEET

Date: **3 February 2003** Client: **Esso Australia** Job No.:**3498A3** Vessel:**Sedco 702**
Location: **Scallop-1**

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS PAGE 41 OF

TIME	Time Zone = UTC + 11.0 **Monday 3rd February, 2003**
	Standing by for suitable satellite geometry window for Final Fix. Specs of PDOP<8 and minimum 5 satellites.
0317	Start Final Fix, streaming and logging in GNS and Multifix.
0318	Start carrier phase GPS logging on Trimble receiver. Session No.2795-033-0.
0618	Final Fix completed. Logging stopped.
1030	Reports completed. Prelim report faxed to D.Barrs in Houston and copy to Thales Perth.
	Unable to access Internet to download Auslig data for post processing of carrier phase data. To be done from Perth.
1100	All equipment packed up and manifested.
1510	SS departs rig for Sale/ Melbourne/Perth/. AB remains to demob Pacific Challenger.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

ATTACHMENT 9.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

Scallop-1 Positioning Report of the Sedco 702

Prepared for Esso Australia Pty Ltd

Report No: 3498A3

Thales GeoSolutions (Australasia) Limited
ABN 82 000 601 909
Hydrographic House
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BALCATTA WA 6021
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THALES

Thales GeoSolutions (Australasia) Limited
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Hydrographic House
4 Ledgar Road
Balcatta WA 6021
Tel: + 61 (0) 8 9344 7166
Fax: + 61 (0) 8 9344 8783

Prepared for

ESSO AUSTRALIA PTY LTD

DOCUMENT TITLE	:	SCALLOP-1 POSITIONING REPORT OF THE SEDCO 702
CLIENT	:	ESSO AUSTRALIA PTY LTD
LOCATION	:	GIPPSLAND BASIN, BASS STRAIT
PERMIT	:	VIC/RL-2
REPORT REF.	:	3498A3
REPORT REV NO.	:	0
REPORT ISSUE DATE	:	17 FEBRUARY 2003
SURVEY DATE	:	29 JANUARY – 4 FEBRUARY 2003

CONTENTS

APPENDICES

A - FINAL DIFFERENTIAL GPS DRILLSTEM POSITION AT SCALLOP-1

B - GNS2 STATIC DIFFERENTIAL GPS FIX GRAPHS

C - ANCHOR DEPLOYMENT GRAPHICS

D - SEDCO 702 ANCHOR PATTERN DETAILS AT SCALLOP-1

E - SEDCO 702 ANCHOR CATENARY CALCULATIONS

F - GYROCOMPASS CALIBRATION REPORTS

G - DIFFERENTIAL GPS CHECK FIXES

H - SEDCO 702 OFFSET DIAGRAM AND OFFSET TRAVERSE CALCULATIONS

I - PACIFIC FRONTIER AND PACIFIC CHALLENGER OFFSET DIAGRAMS

J - GNS2 CONFIGURATION FILE PRINTOUT

K - DIFFERENTIAL GPS SHORE BASED MONITORING

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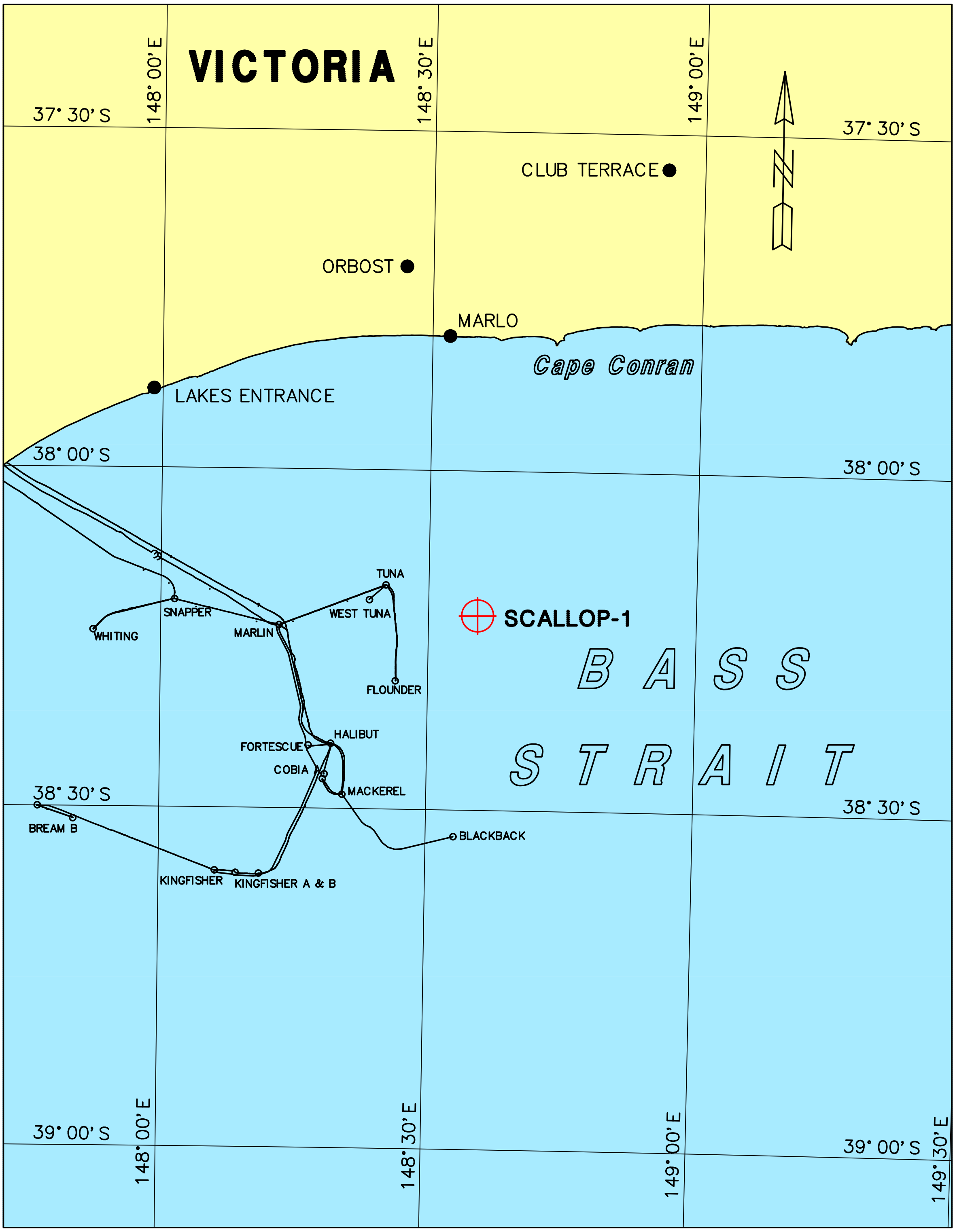
M - GPS CARRIER PHASE PROCESSING RESULTS AT SCALLOP-1

N - SATELLITE AVAILABILITY AND PDOP PREDICTION GRAPHS

O - REFERENCE STATION DESCRIPTIONS

P - DAILY REPORT SHEETS

LOCATION DIAGRAM



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ABSTRACT

This report details the positioning services provided by Thales GeoSolutions (Australasia) Limited (Thales), prior to and during the positioning of the semi-submersible drilling rig Sedco 702 at the Scallop-1 location for Esso Australia Pty Ltd (Esso).

Positioning of the Sedco 702 during the approach to and at the Scallop-1 location was provided by Thales' SkyFix/SkyFix Spot Differential GPS (Differential GPS) interfaced to Thales' Multifix 3 multiple reference station positioning software and Thales' GNS2 navigation software. The two anchor handling vessels (AHVs), Pacific Frontier and Pacific Challenger were positioned using Thales' Tracs/Tug Display Vessel Tracking System (VTS). The Sedco 702 was positioned at the Scallop-1 location at 2043 on 1 February 2003.

Intended Scallop-1 Location

The co-ordinates of the intended Scallop-1 location were provided by Esso as follows:

Datum: GDA94

Latitude	:	*38° 12' 48.577" South*
Longitude	:	*148° 35' 28.921" East*

Projection: MGA Zone 55, CM 147° East

Easting	:	*639 316.00m*
Northing	:	*5 769 300.00m*

Rig Positioning Tolerance : *± 5m*

Intended Rig Heading : 210.0° (T)

Final Differential GPS Drillstem Position at the Scallop-1 Location

The final Differential GPS Position of the Sedco 702 drillstem at the Scallop-1 location was computed from data observed between 0317 and 0617 on 3 February 2003. The final position is as follows:

Datum: GDA94

Latitude	:	*38° 12' 48.615" South*
Longitude	:	*148° 35' 28.879" East*

Projection: MGA Zone 55, CM 147° East

Easting	:	*639 314.95m*
Northing	:	*5 769 298.84m*

The final Differential GPS drillstem position is 1.56m on a bearing of 221.1° (T) from the intended Scallop-1 location.

Final Rig Heading : *209.88° (T)*

All times quoted in this report are Western Standard Time (UTC + 11.0 hours).

Carrier Phase Post Processed GPS Position at the Drillstem at the Scallop-1 Location

Datum: GDA94

Latitude	:	*38° 12' 48.641" South*
Longitude	:	*148° 35' 28.872" East*

Projection: MGA94 Zone 55, CM 147° East

Easting	:	*639 314.77m*
Northing	:	*5 769 298.05m*

This Carrier Phase position of the drillstem is 1.47m on a bearing of 130.0° (T) from the final Scallop-1 location and 2.12m on a bearing of 177.5° (T) from the intended Scallop-1 location.

1. RESULTS

1.1 FINAL DIFFERENTIAL GPS POSITION OF THE SEDCO 702 DRILLSTEM AT THE SCALLOP-1 LOCATION

The Sedco 702 was positioned at the Scallop-1 location at 2043 on 1 February 2003.

The final Differential GPS position of the Sedco 702 drillstem at the Scallop-1 location, was determined using Thales' MultiFix 3 positioning software interfaced to a DSM 12 GPS card, with differential corrections being provided by Thales' SkyFix Spot Differential GPS services.

The final fix routine, within Thales' GNS2 navigation software version 2.48, was used to compute the final Differential GPS position of the drillstem at the Scallop-1 location. A total of 1988 position fixes were recorded at 5 second intervals between 0317 and 0617 on 3 February 2003.

Refer to Appendix A for the GNS2 final Differential GPS position printouts at the Scallop-1 location. Associated graphs are located in Appendix B.

Differential corrections from the SkyFix Spot reference stations in Sydney, Melbourne and Adelaide were used in the MultiFix 3 software computations to derive the final Differential GPS position.

The final surface co-ordinates of the Sedco 702 drillstem at the Scallop-1 location, determined from Differential GPS observations are as follows:

Total number of samples used = 1988.

The computed antenna position is as follows:

GPS Antenna Position

Datum: WGS84

Latitude	:	38° 12' 49.598" South	(S.D. 0.82m)
Longitude	:	148° 35' 28.077" East	(S.D. 0.73m)
Ellipsoidal Height	:	27.05m	(S.D. 1.98m)

Transforming the above WGS84 co-ordinates to GDA94 co-ordinates using the parameters in section 8, gives the following antenna co-ordinates:

GPS Antenna Position

Datum: GDA94

Latitude	:	38° 12' 49.598" South
Longitude	:	148° 35' 28.077" East
Ellipsoidal Height	:	27.05m

By applying a distance of 36.03m on a bearing of 32.8° (T) from the antenna position, the following drillstem co-ordinates are calculated:

Final Differential GPS Position of the Drillstem at the Scallop-1 Location

Datum: GDA94

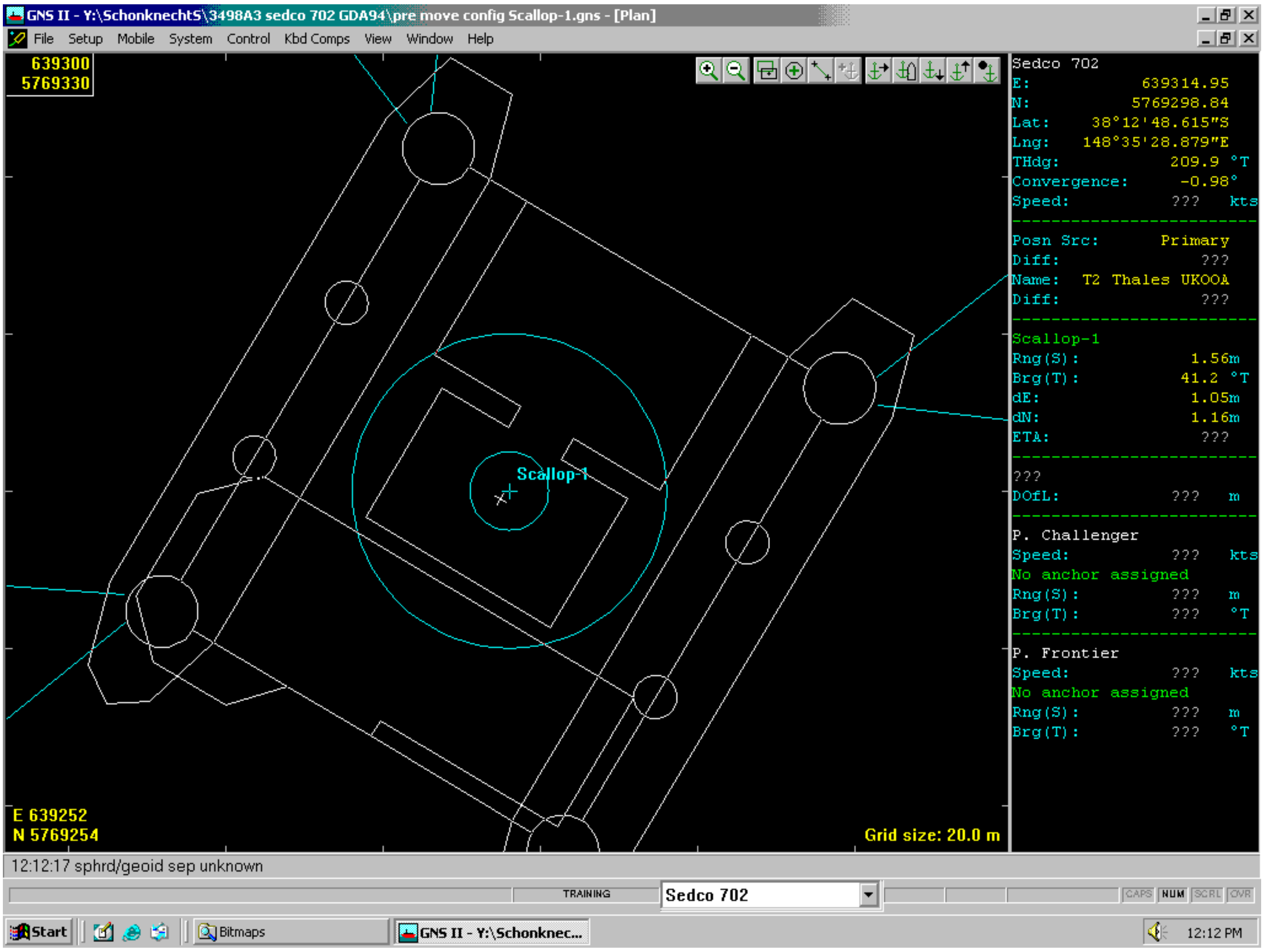
Latitude	:	38° 12' 48.615" South
Longitude	:	148° 35' 28.879" East

Projection: MGA Zone 55, CM 147° East

Easting	:	639 314.95m
Northing	:	5 769 298.84m

This final Differential GPS position of the drillstem is 1.56m on a bearing of 221.1° (T) from the intended Scallop-1 location.

Final Rig Heading : 209.88° (T)



Skyfix Spot Differential GPS Position and Intended Position at the Scallop-1 Location

1.2 SEDCO 702 ANCHOR POSITIONS

Deployed anchor positions were derived from the computed anchor function within the GNS2 software. The function takes into account the length of anchor chain out, water depth, anchor tension and the wet weight of anchor chain to compute the deployed anchor positions. The final anchor positions are tabulated below:

Datum: GDA94 Projection: MGA Zone 55, CM 147° East

Anchor	Intended Anchor Position		Final Anchor Position	
	Easting (m)	Northing (m)	Easting (m)	Northing (m)
Anchor 1	639 891.22	5 768 531.07	639 937.04	5 768 500.67
Anchor 2	639 213.23	5 768 342.41	639 219.97	5 768 378.78
Anchor 3	638 547.25	5 768 721.17	638 579.13	5 768 721.84
Anchor 4	638 359.95	5 769 399.50	638 295.72	5 769 365.24
Anchor 5	638 740.77	5 770 068.93	638 737.18	5 770 082.68
Anchor 6	639 418.76	5 770 257.59	639 394.83	5 770 174.27
Anchor 7	640 084.76	5 769 878.83	640 040.83	5 769 843.49
Anchor 8	640 272.05	5 769 200.49	640 316.80	5 769 201.56

Difference of final anchor positions from the intended anchor positions.

Anchor	Dropped by	Easting (m)	Northing (m)
Anchor 1	Pacific Frontier	-45.82	+30.40
Anchor 2	Pacific Challenger	-6.74	-36.37
Anchor 3	Pacific Frontier	-31.88	-0.67
Anchor 4	Pacific Frontier	+64.23	+34.26
Anchor 5	Pacific Frontier	+3.59	-13.75
Anchor 6	Pacific Frontier	+23.93	+83.32
Anchor 7	Sedco 702	+43.93	+35.34
Anchor 8	Pacific Frontier	-44.75	-1.07

Horizontal distance and bearing from the Sedco 702 fairleads to the final anchor positions.

Anchor	Bearing (T)	Horizontal Distance (ft)
Anchor 1	140°	3172
Anchor 2	186°	2876
Anchor 3	230°	2914
Anchor 4	273°	3197
Anchor 5	321°	3046
Anchor 6	5°	2726
Anchor 7	51°	2822
Anchor 8	96°	3150

Sedco 702 anchor details are located in Appendices C, D and E of this report.

1.3 STATEMENT OF CONFIDENCE IN FINAL DIFFERENTIAL GPS POSITION AT SCALLOP-1

The Standard Deviation of the antenna position during final fix is calculated at 1.10m.

Carrier Phase Post Processed GPS Position of the Drillstem at Scallop-1

Datum: GDA94

Latitude	:	38° 12' 48.641" South
Longitude	:	148° 35' 28.872" East

Projection: MGA94 Zone 55, CM 147° East

Easting	:	639 314.77m
Northing	:	5 769 298.05m

This Carrier Phase position of the drillstem is 1.47m on a bearing of 130.0° (T) from the final Scallop-1 location and 2.12m on a bearing of 177.5° (T) from the intended Scallop-1 location.

2. SAFETY

A pre-rig move meeting was held at Thales' Perth offices on 24 January 2003. Thales personnel M. Karklin, S. Schonknecht and A. Breckenridge were present. During the meeting safety procedures were discussed including correct operation and handling of equipment. It was also confirmed that personnel had been issued with the appropriate safety equipment.

On arrival at the Sedco 702 A. Breckenridge attended a rig induction incorporating:

- Rig Safety
- Emergency Response
- General Management
- Rig Tour

Should an incident occur, Thales' procedures require the incident to be recorded on the appropriate forms and Thales' QA & Safety Manager to be notified immediately. The QA & Safety Manager will initiate a full and thorough investigation with corrective action being introduced to prevent further incidents.

There were no incidents involving Thales personnel during this project. Thales personnel carried out their duties at all times in accordance with Company and Statutory Regulations and Guidelines.

When demobilising the Sedco 702, all equipment was packed securely in the designated area where it would not cause obstructions. All heavy or fragile boxes were clearly labelled to avoid accidents during handling.

A project debrief was also held at Thales' Perth offices on 6 February 2003. During the meeting the safety procedures that had been undertaken were discussed and reviewed. It was noted that all personnel had taken due care and as a result there had been no incidents.

3. SUMMARY

3.1 REQUIREMENTS

Thales GeoSolutions (Australasia) Limited were contracted by Esso Australia Pty Ltd to provide personnel and positioning equipment consisting of Thales' SkyFix/SkyFix Spot Differential GPS for the rig move of the Sedco 702 to the Scallop-1 location.

The project requirements were as follows:

(a) Provide real-time positioning of the semi-submersible drilling rig Sedco 702 and the anchor handling vessels Pacific Frontier and Pacific Challenger during the anchor recovery at the Minerva-3 location.

(b) Provide real-time positioning of the semi-submersible drilling rig Sedco 702 and the anchor handling vessels Pacific Frontier and Pacific Challenger, during transit to the Scallop-1 location.

(c) Differential GPS Positioning of the Sedco 702 at the Scallop-1 location.

(d) Real-time positioning (including GNS2 fixing/logging/streaming) of the Sedco 702, Pacific Frontier and Pacific Challenger during anchor deployment operations at the Scallop-1 location.

(e) Determine the final Differential GPS position of the Sedco 702 drillstem at the Scallop-1 location using a Multiple Reference Station Differential GPS solution.

(f) GPS carrier phase logging and processing to verify the final Differential GPS drillstem position.

(g) The provision of a comprehensive positioning report containing the final Differential GPS position of the Sedco 702 drillstem and anchors at the Scallop-1 location.

The positioning requirements were as follows:

(a) Intended Scallop-1 location:

Datum: GDA94

Latitude	:	38° 12' 48.577" South
Longitude	:	148° 35' 28.921" East

Projection: MGA Zone 55, CM 147° East

Easting	:	639 316.00m
Northing	:	5 769 300.00m

(b) Positioning tolerance : ± 5m

(c) Intended rig heading : 210.0° (T)

3.2 SUMMARY OF EVENTS

All times quoted are in Eastern Standard Time (UTC + 11.0 hours).

27 January 2003

0750 Thales Personnel SS and AB depart Perth.
1410 Arrive in Melbourne. Check in at Holiday Inn (UTC +11.0).

28 January 2003

0800 Thales personnel SS and AB check out of Holiday Inn. Depart for Essendon airport.
1000 Depart Essendon airport by helicopter for Sedco 702.
1055 Thales personnel SS and AB arrive on Sedco 702. AB attends orientation and induction.
1430 All equipment on Sedco 702 operational.
1505 Check Fix done at Minerva-3 (AGD84 Zone 54). 17.37m bearing 180.1 deg. True from intended.
2011 Check Fix done at Minerva-3 (GDA94 Zone 55). 15.80m bearing 199.5 deg. True from intended.
2027 Check Fix done at Minerva-3 (GDA94 Zone 54). 15.61m bearing 200.0 deg. True from intended.
Standing by for anchor recovery.

29 January 2003

0415 Pacific Frontier starts chasing to anchor 4.
0437 Anchor 4 off the bottom.
0528 #4 PCC handed back to rig.
0530 Anchor 8 assigned to Pacific Frontier.
O547 Pacific Frontier starts chasing to anchor 8.
0609 Anchor 8 off the bottom.
0630 Rig ballasted to 60 feet draft.
0714 #8 PCC handed back to rig.
0738 Pacific Frontier starts chasing to anchor 1.
0802 Anchor 1 off the bottom.
0858 #1 PCC handed back to rig.
0926 Pacific Frontier starts chasing to anchor 5.
0942 Anchor 5 off the bottom.
1030 Power spike tripped all navigation computers.
1035 Navigation online OK.
1048 #5 PCC handed back to rig.
1141 Moving rig to P1 location.
1150 Rig all stop on P1 location, clear of Minerva 3 location, stand by until Pacific Challenger arrives.
1247 Anchor 6 off the bottom. Stand by while vessel replacing anchor and jewellery.

29 January 2003 (continued)

1425 Hauling in on #6.
1450 Pacific Challenger arrives at Rig, TDMA OK.
1634 #6 PCC handed back to rig.
1700 Pre move meeting held with Esso, Sedco Forex ,BHP, and AHV's masters.
1810 Pacific Challenger chasing to anchor 2.
1820 Anchor 2 off the bottom. Pacific Challenger chasing back to rig. Stop at 600 feet from rig.
1847 Pacific Frontier takes #3 PCC. Starts chasing to anchor.
2015 Anchor 2 passed back to rig.
2102 Anchor 3 off the bottom.
2200 Rig starts to haul in on Anchor 7. Start de-ballasting rig to 21 feet.
2250 Anchor 7 off the bottom. Tow started to Scallop-1.
2300 Rig handed over to Esso.

30 January 2003

0100 On tow to Scallop-1. New configuration loaded. GDA94 Zone 55.
0530 Waypoint #1 reached.
1630 Reconnaissance done for antenna offset traverse to be carried out.
Unable to do Sun Azimuth gyro calibration due to rig being too unstable during tow.
Monitor equipment performance and position while under tow. No incidents this day.

31 January 2003

0000 Continue on tow to Scallop-1.
0055 Rig reaches Waypoint 2.
0130 Anchor chain #3 jumped over bolster on starboard bow column. Approx. position of rig 435910 E. 5651774 N.
0335 Rig passing 775 m. south of Waypoint 3.
0641 Rig passes Waypoint 4.
1514 Rig passes Waypoint 5.
1900 Offset traverse done to determine antenna offsets. GPS1 X +1.83, Y +35.98: GPS2 X –15.30, Y +34.40.
2400 Continue monitoring rigs position.

1 February 2003

0015 Rig reaches Waypoint 7. Shortens up on chain length.
0100 Anchor assignment tested with both AHVs. Working well.
0150 Rig reaches WP 8 (5 N.M. from location).
0315 Rig 2 N.M. from Anchor 7 intended drop location.
0345 Rig 1 N.M. from Anchor 7 intended drop location.
0419 Anchor 7 on the bottom.
0450 Rig over location, Scallop-1.

1 February 2003 (continued)

0621 Anchor 3 on the bottom. Pacific Frontier.
0649 #3 Chaser passed to Rig.
0733 #6 Anchor passed to P. Frontier.
0818 P. Challenger set to run Anchor 2.
0824 Anchor 6 on the bottom.
0857 #6 Chaser passed to Rig.
0909 Anchor 2 on the bottom.
0933 #5 Anchor passed to P. Frontier.
0936 #2 Chaser passed to Rig.
1014 Anchor 5 on Bottom, anchor run out to 3300 feet.
1041 #5 Chaser passed to Rig.
1220 #4 Anchor passed to P. Frontier.
1312 Anchor 4 on Bottom, anchor run out to 3300 feet.
1336 #4 Chaser passed to Rig.
1443 #8 Anchor passed to P. Frontier.
1530 Anchor 8 on Bottom, anchor run out to 3300 feet.
1558 #8 Chaser passed to Rig.
1624 #1 Anchor passed to P. Frontier.
1713 Anchor 1 on Bottom, anchor run out to 3300 feet.
1740 #1 Chaser passed to Rig.
1855 Gyro calibration carried out by sun azimuth observations. C-O Navigat FOG –0.71 deg. (Applied to GNS).
C-O Meridian –1.81 deg. (Applied to GNS).
2043 Rig moved over location and pre-tensioned.
Standing by for drill floor operations.

2 February 2003

Standing by to do Final Fix.
0730 AB transfers to Pacific Frontier to demobilise TRACS navigation equipment.
1000 AB returns to Rig with all navigation equipment.
1200 Commence spud in operations.
2400 Standing by for 30 inch casing to be run.

3 February 2003

Standing by for suitable satellite geometry window for Final Fix. Specs of PDOP<8 and minimum 5 satellites.

0317 Start Final Fix, streaming and logging in GNS and Multifix.

0318 Start carrier phase GPS logging on Trimble receiver. Session No.2795-033-0.

0618 Final Fix completed. Logging stopped.

1030 Reports completed. Prelim report faxed to D.Barrs in Houston and copy to Thales Perth. Unable to access Internet to download Auslig data for post processing of carrier phase data. To be done from Perth.

1100 All equipment packed up and manifested.

1510 SS departs rig for Sale/ Melbourne/Perth/. AB remains to demob Pacific Challenger.

4 February 2003

0600 AB demobs Pacific Challenger.

1155 SS depart Melbourne for Perth. Arrive Perth 1300 local time.

0130 AB departs Sedco 702 for Sale.

2115 AB departs Melbourne for Perth. Arrive Perth 2300 local time.

4. EQUIPMENT ANALYSIS

4.1 EQUIPMENT PERFORMANCE

During the positioning of the semi-submersible drilling rig Sedco 702 from the Minerva-3 location to the Scallop-1 location, no problems were encountered with Thales' equipment or software.

5. DESCREPANCIES/COMPARISONS

5.1 POSITION

GPS Carrier phase logging of the GPS2 antenna was carried out for the three hour final fix period to provide an independent check of position.

Post-processing could not be carried out on the vessel as there was restricted internet access and the necessary RINEX format reference station data could only be downloaded once back at the Thales Perth office. The results were calculated using GPSurvey (V 2.35a) software.

The Tidbinbilla Australian Regional GPS Network Station was used as a fixed reference station in the processing. See Appendix O for details of this reference station.

The computed GPS2 antenna position is as follows:

GPS2 Antenna Position

Datum: WGS84

Latitude	:	38° 12' 49.844" South
Longitude	:	148° 35' 28.721" East
Ellipsoidal Height	:	25.669m

Transforming the above WGS84 co-ordinates to GDA94 co-ordinates using the parameters in section 8, gives the following antenna co-ordinates:

GPS2 Antenna Position

Datum: GDA94

Latitude	:	38° 12' 49.844" South
Longitude	:	148° 35' 28.721" East
Ellipsoidal Height	:	25.669m

By applying a distance of 37.29m on a bearing of 5.66° (T) from the antenna position, the following drillstem co-ordinates are calculated:

Carrier Phase Post Processed GPS Position of the Drillstem at the Scallop-1 Location

Datum: GDA94

Latitude	:	38° 12' 48.641" South
Longitude	:	148° 35' 28.872" East

Projection: MGA94 Zone 55, CM 147° East

Easting	:	639 314.77m
Northing	:	5 769 298.05m

This GPS carrier phase position of the drillstem is 1.47m on a bearing of 130.0° (T) from the final Scallop-1 location and 2.12m on a bearing of 177.5° (T) from the intended Scallop-1 location.

6. DIFFERENTIAL GPS POSITION QUALITY

6.1 MULTIPATH EFFECTS

Comprehensive Multipath audits were carried out on the three SkyFix Premier Reference Stations used during the positioning of the Sedco 702 onto the Scallop-1 location.

The results of these Multipath audits are contained in Appendix L.

Real time monitoring of Multipath effects onboard the Sedco 702 were carried out during the vessel positioning and Final Fix stage. This was carried out using the Multifix 3 software facilities. No Multipath effects were noted during the positioning of the Sedco 702.

Special care was taken to identify satellite vehicles which may be affected by interference from the drilling derrick and remove this data from positioning calculations. See Curtain graph in Appendix B.

6.2 SOLAR ACTIVITY

Scintillation effects cause the degradation of signals from satellite communications systems. Scintillation effects were negligible at all times.

This was due to:

- Optimising Multifix configurations to exclude noisy data.
- Care taken in placing GPS antennae for clear communication from satellites.
- Minimal effects of scintillation in non-equatorial regions.

6.3 DIFFERENTIAL GPS SHORE BASED MONITORING INFORMATION

Shore based monitoring of a control point was carried out during the same period as the final fix logging period at Scallop-1. The same differential reference stations, (i.e. Sydney, Melbourne and Adelaide), were used in the shore based monitoring exercise. The distance from the Differential GPS position and the known co-ordinates ranged between 3.5m and 5.5m delivered by both the Spot Optus and the Skyfix POR satellite systems.

It should be noted that this monitor control point is located in Perth, some 2000km from the nearest (Adelaide) reference station. Poor reference station geometry, along with the distance to these reference stations contributes to the ranges experienced.

See Appendix K for the shore based monitoring results.

7. EQUIPMENT CHECKS AND CALIBRATIONS

7.1 DIFFERENTIAL GPS CHECK FIXES

Several Differential GPS check fixes of the drillstem position of the Sedco 702 at the Minerva-3 location were computed using Skyfix Spot Differential GPS. These check fixes were taken while the rig was ± 16m from the published location of Minerva-3. Check fixes were done in two datums and two zones to ensure the correct co-ordinates system was used for the client datum and projection change over for the tow and positioning of the Sedco 702 at Scallop-1, i.e. AGD84 Zone 54, GDA94 Zone 54 and GDA94 Zone 55. A total of 120 fixes were taken for each check fix. Appendix G contains the results of the check fixes of the Sedco 702 drillstem positioning at the Scallop-1 location.

Check Fix 1

The published Differential GPS co-ordinates of the Sedco 702 drillstem at the Minerva-3 location are as follows:

Datum : AGD84

Latitude	:	38° 42' 28.063" South
Longitude	:	142° 57' 28.046" East

Projection : AMG Zone 54, CM 141° East

Easting	:	670 231.50m
Northing	:	5 713 814.81m

The computed Differential GPS check fix co-ordinates of the Sedco 702 drillstem are as follows:

Datum : AGD84

Latitude	:	38° 42' 28.627" South
Longitude	:	142° 57' 28.045" East

Projection : AMG Zone 54, CM 141° East

Easting	:	670 231.10m
Northing	:	5 713 797.44m

The Differential GPS check fix of the Sedco 702 drillstem position is 17.37m on a bearing of 180.1°(T) from the published Minerva-3 location.

Check Fix 2

The published Differential GPS co-ordinates of the Sedco 702 drillstem at the Minerva-3 location are as follows:

Datum : GDA94

Latitude	:	38° 42' 22.747" South
Longitude	:	142° 57' 32.990" East

Projection : MGA Zone 54, CM 141° East

Easting	:	670 353.81m
Northing	:	5 713 991.05m

The computed Differential GPS check fix co-ordinates of the Sedco 702 drillstem are as follows:

Datum : GDA94

Latitude	:	38° 42' 23.223" South
Longitude	:	142° 57' 32.769" East

Projection : MGA Zone 54, CM 141° East

Easting	:	670 348.16m
Northing	:	5 713 976.50m

The Differential GPS check fix of the Sedco 702 drillstem position is 15.61m on a bearing of 200°(T) from the published Minerva-3 location.

Check Fix 3

The published Differential GPS co-ordinates of the Sedco 702 drillstem at the Minerva-3 location are as follows:

Datum : GDA94

Latitude	:	38° 42' 22.747" South
Longitude	:	142° 57' 32.990" East

Projection : MGA Zone 55, CM 147° East

Easting	:	148 591.04m
Northing	:	5 708 056.65m

The computed Differential GPS check fix co-ordinates of the Sedco 702 drillstem are as follows:

Datum : GDA94

Latitude	:	38° 42' 23.229" South
Longitude	:	142° 57' 32.773" East

Projection : MGA Zone 55, CM 147° East

Easting	:	148 586.44m
Northing	:	5 708 041.54m

The Differential GPS check fix of the Sedco 702 drillstem position is 15.80m on a bearing of 199.5°(T) from the published Minerva-3 location.

The client representative reviewed all geodetic parameters and antenna offsets at which time Thales' equipment was accepted as operating correctly.

7.2 GYROCOMPASS CALIBRATIONS

The Navigat 2100 FOG Gyrocompass and the backup S.G. Brown Meridian TSS Gyrocompass installed onboard the Sedco 702 were calibrated on 1 February 2003 using a Topcon GTS211D total station. A series of measurements of the horizontal angle between the centreline of the rig and the sun was observed while accurately recording local time at the instant of each observation. The gyrocompasses headings were simultaneously recorded within GNS2 data files.

Thales' Solar Observation software was used to determine the azimuth of the sun for each observation. The observed horizontal angle was applied to the sun's azimuth to determine the true heading of the rig. Each Computed (C) true heading was then compared with the Observed (O) gyrocompass heading to determine the Computed minus Observed (C-O) value for the gyrocompasses. The C-O value in GNS2 was set to zero prior to conducting the gyrocompass calibration.

Navigat 2100 Fibre Optic Gyrocompass (Primary Gyrocompass)

Observation Date: 1 February 2003

Average Local Time (HMS)	Average Horizontal Angle (DMS)	Azimuth Sun (DMS)	Azimuth RO (DMS)	Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18:59:07	052° 05' 18"	259° 15' 33"	207° 10' 15"	207.17°	207.90°	-0.73°
18:59:43	052° 23' 21"	259° 10' 20"	206° 46' 59"	206.78°	207.50°	-0.72°
19:00:10	052° 00' 20"	259° 06' 25"	207° 06' 05"	207.10°	207.80°	-0.70°
19:00:36	052° 09' 38"	259° 02' 39"	206° 53' 01"	206.88°	207.60°	-0.72°
19:01:00	051° 52' 41"	258° 59' 10"	207° 06' 29"	207.11°	207.80°	-0.69°
19:01:33	052° 08' 00"	258° 54' 22"	206° 46' 22"	206.77°	207.50°	-0.73°
19:02:04	051° 55' 19"	258° 49' 52"	206° 54' 33"	206.91°	207.60°	-0.69°
19:02:35	051° 45' 54"	258° 45' 22"	206° 59' 28"	206.99°	207.70°	-0.71°
19:02:59	051° 37' 18"	258° 41' 53"	207° 04' 35"	207.08°	207.80°	-0.72°
19:03:19	051° 32' 35"	258° 38' 59"	207° 06' 24"	207.11°	207.80°	-0.69°
19:03:53	051° 21' 02"	258° 34' 03"	207° 13' 01"	207.22°	208.00°	-0.78°
19:04:18	051° 11' 31"	258° 30' 25"	207° 18' 54"	207.32°	208.00°	-0.68°

Mean C-O = -0.71°

The mean C-O of -0.71° was input into the GNS2 navigation software and used during the final fix routine at the Scallop-1 location. See Appendix F for the gyrocompass calibration results.

S.G. Brown Meridian TSS Gyrocompass (Secondary Gyrocompass)

Observation Date: 1 February 2003

Average Local Time (HMS)	Average Horizontal Angle (DMS)	Azimuth Sun (DMS)	Azimuth RO (DMS)	Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18:59:07	052° 05' 18"	259° 15' 33"	207° 10' 15"	207.17°	209.00°	-1.83°
18:59:43	052° 23' 21"	259° 10' 20"	206° 46' 59"	206.78°	208.70°	-1.92°
19:00:10	052° 00' 20"	259° 06' 25"	207° 06' 05"	207.10°	209.00°	-1.90°
19:00:36	052° 09' 38"	259° 02' 39"	206° 53' 01"	206.88°	208.70°	-1.82°
19:01:00	051° 52' 41"	258° 59' 10"	207° 06' 29"	207.11°	209.00°	-1.89°
19:01:33	052° 08' 00"	258° 54' 22"	206° 46' 22"	206.77°	208.50°	-1.73°
19:02:04	051° 55' 19"	258° 49' 52"	206° 54' 33"	206.91°	208.70°	-1.79°
19:02:35	051° 45' 54"	258° 45' 22"	206° 59' 28"	206.99°	208.70°	-1.71°
19:02:59	051° 37' 18"	258° 41' 53"	207° 04' 35"	207.08°	208.80°	-1.72°
19:03:19	051° 32' 35"	258° 38' 59"	207° 06' 24"	207.11°	209.00°	-1.89°
19:03:53	051° 21' 02"	258° 34' 03"	207° 13' 01"	207.22°	209.00°	-1.78°
19:04:18	051° 11' 31"	258° 30' 25"	207° 18' 54"	207.32°	209.00°	-1.68°

Mean C-O = -1.81°

The S.G. Brown Meridian TSS gyrocompass although not utilised during fixing routines for this project, was used as a backup. Regular comparisons were made between the primary and secondary gyrocompasses and also the vessel's gyrocompass with no significant discrepancies noted.

7.3 VESSEL OFFSET CALCULATIONS

The offsets of both GPS antennae were calculated by means of a closed traverse running from the helideck to the drillstem and back to the helideck.

A Topcon GTS 211D Total Station and prisms were used.

The traverse was run from a base line established on the bow end of the helideck. Two additional control points were set out on either side of the helideck with the traverse running through both of these and over the drillstem.

Checks were also carried out by 30m tape measure to verify the offsets calculated by the traverse. Scale drawings on the rig were also checked against the calculated offset values.

Vertical observations were taken to establish the height difference between both GPS antennae and sea level at drilling draught.

Vessel Point	X Offset (m)	Y Offset (m)	Height Difference to Sea Level (m)
Drillstem	0.00	0.00	+25.908
GPS1	+1.83	+35.98	+21.28
GPS2	-15.30	+34.01	+21.15

Offset results and calculations are contained in Appendix H.

8. GEODETIC PARAMETERS

The datum for coordinates determined by Thales' SkyFix and SkyFix Spot Differential GPS are referenced to International Terrestrial Reference Frame 2000 (ITRF2000). The datum for coordinates listed in this report are referenced to the Geocentric Datum of Australia 1994 (GDA94).

8.1 ITRF2000 DATUM AND PROJECTION

Datum	:	**ITRF2000 (Epoch 1997.0)**
Ellipsoid/Spheroid	:	World Geodetic System 1984
Semi-major Axis (a)	:	6 378 137.000m
Semi-minor Axis (b)	:	6 356 752.314m
Eccentricity Squared (e^2)	:	0.006 694 380
Flattening ($^1/_f$)	:	298.257 223 563
Projection Name	:	**Universal Transverse Mercator (UTM)**
Projection Type	:	Universal Transverse Mercator (UTM)
UTM Zone	:	55 South
Central Meridian (CM)	:	147° East
Scale factor on the CM	:	0.9996
False Easting	:	500 000m
False Northing	:	10 000 000m
Latitude of Origin	:	0° (Equator)
Unit of Measure	:	International Metre

Note: The WGS84 datum and the ITRF2000 datum are consistent in the order of a few centimetres and are considered to be the same.

8.2 GDA94 DATUM AND PROJECTION

Datum	:	**Geocentric Datum of Australia 1994 (GDA94)**
Ellipsoid/Spheroid	:	Geodetic Reference System 1980 (GRS80)
Semi-major Axis (a)	:	6 378 137.000m
Semi-minor Axis (b)	:	6 356 752.314m
Eccentricity Squared (e^2)	:	0.006 694 380
Flattening ($^1/_f$)	:	298.257 222 101
Projection Name	:	**Map Grid of Australia (MGA)**
Projection Type	:	Universal Transverse Mercator (UTM)
UTM Zone	:	55
Central Meridian (CM)	:	147° East
Scale factor on the CM	:	0.9996
False Easting	:	500 000m
False Northing	:	10 000 000m
Latitude of Origin	:	0° (Equator)
Unit of Measure	:	International Metre

Note: Where an accuracy of a metre or greater is required, the WGS84 datum and the GDA94 datum are considered to be the same.

The datum for coordinates determined by Thales' SkyFix and SkyFix Spot Differential GPS are referenced to International Terrestrial Reference Frame 2000 (ITRF2000). The datum for coordinates listed in this report are referenced to the Australian Geodetic Datum 1984 (AGD84).

8.3 ITRF2000 DATUM AND PROJECTION

Datum	:	**ITRF2000 (Epoch 1997.0)**
Ellipsoid/Spheroid	:	World Geodetic System 1984
Semi-major Axis (a)	:	6 378 137.000m
Semi-minor Axis (b)	:	6 356 752.314m
Eccentricity Squared (e^2)	:	0.006 694 380
Flattening ($^1/_f$)	:	298.257 223 563

Projection Name	:	**Universal Transverse Mercator (UTM)**
Projection Type	:	Universal Transverse Mercator (UTM)
UTM Zone	:	50 South
Central Meridian (CM)	:	117° East
Scale factor on the CM	:	0.9996
False Easting	:	500 000m
False Northing	:	10 000 000m
Latitude of Origin	:	0° (Equator)
Unit of Measure	:	International Metre

Note: The WGS84 datum and the ITRF2000 datum are consistent in the order of a few centimetres and are considered to be the same.

8.4 AGD84 DATUM AND PROJECTION

Datum	:	**Australian Geodetic Datum 1984 (AGD84)**
Ellipsoid/Spheroid	:	Australian National Spheroid
Semi-major Axis (a)	:	6 378 160.000m
Semi-minor Axis (b)	:	6 356 774.719m
Eccentricity Squared (e^2)	:	0.006 694 542
Flattening ($^1/_f$)	:	298.25

Projection Name	:	**Australian Map Grid 1984 (AMG84)**
Projection Type	:	Universal Transverse Mercator (UTM)
UTM Zone	:	50
Central Meridian (CM)	:	117° East
Scale factor on the CM	:	0.9996
False Easting	:	500 000m
False Northing	:	10 000 000m
Latitude of Origin	:	0° (Equator)
Unit of Measure	:	International Metre

8.5 DATUM TRANSFORMATION - ITRF2000 TO GDA94

From the Geocentric Datum of Australia Technical Manual (Version 2.2) produced by the Inter-governmental Committee on Surveying & Mapping (ICSM), the ITRF2000 datum and the WGS84 datum are consistent at a level in the order of a few centimetres and are considered to be the same. Similarly, where an accuracy of a metre or greater is required, the GDA94 datum and the WGS84 datum are considered to be the same. In January 1994 the GDA94 datum and the ITRF datum were coincident, however the GDA94 datum is moving with the Australian tectonic plate in a North northeastly direction at a rate of approximately 7 centimetres per year.

The following 7-parameter datum transformation was used by Thales' GNS2 software to convert ITRF2000 coordinates to GDA94 coordinates:

Dx	=	0.000m
Dy	=	0.000m
Dz	=	0.000m
Rx	=	0.000"
Ry	=	0.000"
Rz	=	0.000"
Scale	=	0.000 p.p.m.

The sign convention used in Thales' GNS2 software is that used by the US Department of Defence, where a positive rotation about the Z axis is an anti-clockwise movement of the X and Y axes (when viewed from the North Pole looking towards the centre of the Earth).

8.6 DATUM TRANSFORMATION - ITRF2000 TO AGD84

From the Geocentric Datum of Australia Technical Manual (Version 2.2) produced by the Inter-governmental Committee on Surveying & Mapping (ICSM), the ITRF2000 datum and the WGS84 datum are consistent at a level in the order of a few centimetres and are considered to be the same.

The following 7-parameter datum transformation was used by Thales' GNS2 software to convert ITRF2000 coordinates to AGD84 coordinates:

Dx	=	+116.000m
Dy	=	+50.470m
Dz	=	–141.690m
Rx	=	+0.230"
Ry	=	+0.390"
Rz	=	+0.344"
Scale	=	–0.0983 p.p.m.

These transformation parameters were adopted by the Inter-governmental Advisory Committee on Surveying and Mapping Standards for Control Surveys in June 1990.

The sign convention used in Thales' GNS2 software is that used by the US Department of Defence, where a positive rotation about the Z axis is an anti-clockwise movement of the X and Y axes (when viewed from the North Pole looking towards the centre of the Earth).

9. EQUIPMENT DESCRIPTIONS

9.1 GNS2

GNS2 (General Navigation System) is Thales' third generation of On-line Navigation Survey Control software. It has been written by Thales' Software Support Group in C++ for operation under Windows® 95 or Windows® 98 or Windows® NT. GNS2 adheres to the operation and dialogue conventions of the Microsoft Windows® environment. Attention has been paid to preserving a consistent operator interface, while at the same time modifying individual dialogue boxes to reflect specific logical circumstances. It has been designed for operation with a pointing device such as a mouse or a tracker ball but control can still be effected in case of the absence or failure of such a device.

The program has the ability to accommodate a large number and variety of mobiles, including surface vessels/ships, anchor handling vessels, tugs, barges, ROVs, towfish, aircraft, vehicles and submersibles etc. The only limiting factors on the number of mobiles that can be tracked in GNS2 are the number of input/output serial communication ports available on the computer and the computer's memory.

For the input/output (I/O) of navigation and sensor data, GNS2 employs intelligent multi-channel serial communications boards to expand a computer's serial input/output facility. Currently GNS2 can support up to 26 communication (Comm) ports, which would consist of the computer's two internal Comm ports and three 8 channel serial communications boards fitted in the computer's internal expansion slots.

If Least Squares Computations (LSCs) are employed for positional calculations, whether two-dimensional (2D), three-dimensional (3D) or altitude aided, GNS2 uses standard iteration routines for the minimisation of residuals using 'variation of co-ordinate' algorithms. The number of positioning systems/computations that GNS2 can handle, is only limited by the number of I/O serial communication ports available on the computer and the computer's memory.

All input observables are accepted on interrupt. Screen updates and other internal triggers are paced to once per second but time critical activities occur at discrete moments as required.

The GNS2 application workspace can extend beyond the display area, which is normally restricted to a single monitor connected to the computer. By using one or more multiple VGA cards, an enlarged display area can spread across multiple monitors.

Currently GNS2 can display 14 different types of view windows. Several copies of the same type of view window can be invoked at any one time. This may be required when several mobiles are being tracked and a Plan, Helmsman's or Bullseye display are required for each one or when the data on several Comm ports are to be viewed simultaneously. Each window can be individually sized to optimise use of the available display area.

GNS2 can be operated in 2 modes; GNS2 Master or GNS2 Remote. GNS2 Master has the full functionality of GNS2. GNS2 Remote is run on a separate computer and allows independent configuration of the graphics display and its associated numeric information. GNS2 Remote is operated on Anchor Handling Vessels or anywhere where positional information is required. (eg. Vessel Masters, ROV Pilots, Winch Control Stations). The link between GNS2 Master and GNS2 Remote can be via a telemetry link or hard wired cable.

9.2 GLOBAL POSITIONING SYSTEM (GPS)

System Description

The NAVSTAR GPS (Navigational Satellite Timing and Ranging Global Positioning System) is a USA Military all-weather, space-based positioning system that transmits signals from a constellation of satellites orbiting the Earth. It is capable of providing suitably equipped users worldwide with accurate three-dimensional positions on, or near, the Earth's surface. The accuracy of these determined positions can vary from a few millimetres to several 10's of metres depending on the GPS receiver and on the method of data acquisition and processing. System design consists of three integrated parts: the Ground Control Segment, the Space Segment and the User Segment.

The operational space segment consists of 24 production satellites and 3 active spares; the term Space Vehicle (SV) is used as a synonym for satellite. The satellites are in high orbits, at approximately 20,200km, having an orbit period of 12 hours. They are arranged in 6 orbital planes, inclined at 55 degrees with near circular orbits. The configuration provides complete 4-satellite (3D) coverage worldwide.

GPS Observations

There are two important types of GPS observations (observables): Pseudo-range and Carrier Phase. Carrier phase is sometimes also referred to as carrier beat phase. Pseudo-range techniques are generally used for navigation. In high-precision baseline surveying the carrier phase is used. Although the (undifferenced) phase can be used directly, it has become common practice, at least in surveying applications, to process certain linear combinations of the original carrier phase observations (double differences and triple differences).

Pseudo-ranges

The pseudo-range is a measure of the distance between the satellite and the receiver at the epochs of transmission and reception of the signals. The transit time of the signals is measured by comparing (correlating) identical pseudo-random noise (PRN) codes generated by the satellite and by the receiver. A code-tracking loop within the receiver shifts the internal replica of the PRN code in time until maximum correlation occurs. The codes generated at the receiver are derived from the receiver's own clock, and the codes of the satellite transmissions are generated by the satellite system of clocks. It follows that unavoidable timing errors in both the satellite and the receiver clock will cause the measured quantity (pseudo-range) to differ from the geometric distance.

Where instantaneous positions are required, pseudo-range is the preferred observable. Given the satellite ephemeris (i.e. the position of the satellite at the epoch of transmission), there are seven unknowns: two clock errors, three receiver co-ordinates and the ionospheric and tropospheric delays. The effect of the satellite clock error is negligible for the typical navigation solution, particularly considering that the time errors are indistinguishable from the ionospheric and tropospheric delays. The satellite clocks are constantly monitored and synchronised with GPS time as maintained by the control centre. Actual offsets of the satellite clocks are approximated by polynomials in time and transmitted as part of the navigation message to the user for the correction of the measured pseudo-ranges. The ionospheric and tropospheric delays can be computed on the basis of ionospheric and tropospheric models, thus there are four unknowns left X, Y, Z and receiver clock error. These can be determined from four pseudo-ranges measured simultaneously to four GPS satellites.

Carrier Phase

The phase observable is the difference between the phase of the carrier signal of the satellite, measured at the receiver, and the phase of the local oscillator within the receiver at the epoch of measurement. This can be regarded as a biased range measurement of the satellite-receiver distance with the integer number of carrier waves being unknown. The wavelength of the L1 carrier is about 19cm. Because of the fraction of the carrier phase is measured, the term "interferometry" is often used to describe carrier phase techniques.

9.3 SKYFIX/SKYFIX SPOT DIFFERENTIAL GPS (DGPS)

Differential GPS (DGPS)

GPS is primarily a USA Defence space-based positioning system capable of operating worldwide and in all weather conditions. The USA Military can degrade the accuracy of GPS with the use of Selective Availability (SA) to control the accuracy of Pseudo-range measurements. Essentially, the user is given a false Pseudo-range for each satellite so that the resulting measurement is in error by a controlled amount. On the 1 May 2000 SA was discontinued conditionally and coincided with the successful demonstration of the ability to selectively deny GPS signals on a regional basis. SA has been set to zero and can be reinstated during periods of heightened global tension.

GPS signals are affected by several sources of positional bias, the largest of which was SA. The remaining biases of the ionosphere, the troposphere, time, satellite ephemeris and inherent reciever noise also give rise to substantial bias of position.

Differential GPS is a means by which the civil user can improve the accuracy and quality of GPS to the 1-3 metre level. It requires a receiver be located at a precisely known point from which pseudo-range corrections for each satellite can be determined and monitored. These pseudo-range corrections are then communicated by means of a telecommunications link to users at unknown locations. In the relative mode, most of the important systematic errors common to the known station and at the unknown location cancel out to improve the accuracy of the computed position.

SkyFix/SkyFix Spot Differential

<u>SkyFix</u>

Thales GeoSolutions (Australasia) Limited introduced its SkyFix Differential GPS System in Australia in February 1991, using the Inmarsat Pacific and Indian Ocean marine communications satellites as the differential data broadcast link. Extensive performance trials and projects undertaken to date have shown SkyFix to meet the best industry expectations in terms of quality of service and accuracy.

Satellite communications systems, particularly at the Inmarsat L-band frequencies of 1.5 GHz are reliable and free of the interference associated with the crowded MF/HF bands. This high data integrity gives users confidence that the corrections will be continuously received without interference.

The SkyFix Australian network comprises of reference stations at Dampier, Broome, Perth, Adelaide, Melbourne, Sydney, Cairns and Darwin.

<u>SkyFix Spot</u>

The SkyFix Spot Differential GPS System was launched in Australia in December 1994, using the OPTUS high powered focused communications satellite as the differential data broadcast link. Projects undertaken to date have shown SkyFix Spot to meet the industry expectations in terms of quality of service and accuracy.

The SkyFix Spot system has a link capacity of 1200 bits per second, similar to the SkyFix system but because it is only transmitting corrections from the Australian network an update rate of better than five seconds is achieved.

The OPTUS satellite uses the L-band frequencies of 1.5586 GHz and are very reliable and free of interference avoiding data loss associated with the crowded MF/HF bands.

The SkyFix Spot network comprises of reference stations at Dampier, Broome, Perth, Adelaide, Melbourne, Sydney, Cairns, Darwin, Alice Springs and also Ujung Pandang and Jakarta in Indonesia and Wellington, New Zealand.

The differential corrections generated at each reference station are brought via landline links to the data hub and control centre in Singapore, where the system is monitored for performance and quality. From there, a composite message containing full RTCM 104 version 2 formatted data from all reference stations are sent via dual redundant links to Satellite Earth Stations at Sentosa Island, Singapore, O.T.C. Perth, Western Australia and OPTUS, Perth, Western Australia, for uplink and broadcast over the Inmarsat Pacific and Indian Ocean Region satellites and the OPTUS Satellite.

The SkyFix/SkyFix Spot system includes a 24 hour monitoring facility to ensure the validity of data received at the control centre from the Differential GPS reference stations, and that the same data are received over the SkyFix/SkyFix Spot satellite data link.

9.4 TRIMBLE SERIES 4000 GPS RECEIVER

The Trimble Series 4000 GPS receiver is designed for moderate precision static and dynamic positioning applications. The GPS receiver provides time and three-dimensional station co-ordinates at a once-per-second update rate.

The receiver receives the civilian coded signal (C/A) from the GPS NAVSTAR satellites. The receiver automatically acquires and simultaneously tracks GPS satellites and precisely measures code phase and computes position and velocity.

Latitude, longitude and height values are output on the World Geodetic System (WGS84) Earth-centred, Earth-fixed co-ordinate system.

The receiver is designed to measure the following observables:

- Coarse/Acquisition (C/A) code Pseudo-ranges
- Rate of change of Pseudo-range
- Integrated Carrier

C/A code correlation techniques measure the propagation time of the signal from the satellite to the antenna. Latitude, longitude, height and time can be determined from measurements made from at least 4 satellites, by a process similar to triangulation.

To determine speed and heading, the receiver calculates the rate of change of Range (the range-rate) by measuring the Doppler shift of the carrier.

It is capable of receiving and processing differential corrections from other reference sources using the standard format of the Radio Technical Commission for Maritime Services, Special Committee 104 (RTCM SC-104), Version 1.0 or 2.0 protocols.

The Trimble Series 4000 GPS receiver has several options available, including internal data logging memory, event marker logging etc. and therefore may be used alone or as part of a more extensive navigation system.

9.5 MULTIFIX 3

9.5.1 System Overview

MultiFix 3 is Thales GeoSolutions third generation *multiple reference station* differential GPS (DGPS) real time position computation and quality control program. It is an integral part of the Thales SkyFix Premier service but can also be used with the standard SkyFix service. MultiFix 3 has more advanced features than its predecessor, MultiFix 2, including being able to use dual frequency receivers and form real time 'Iono-Free DGPS position solutions'.

MultiFix 3 is one of a series of programs available under the group name Zero, which includes other tools and utilities with a similar user interface and layout structure, like static and dynamic position comparison programs, a correction monitor program, a terminal program and a replay utility.

MultiFix 3 takes in Almanac, Ephemeris and Raw Code and Carrier measurements from a single or dual frequency GPS receiver (or, for replay, from logged files). It takes in RTCM SC104 Version 2 differential correction messages from one or more RTCM correction delivery systems. It also takes in RTCM Type 15 or Thales Proprietary RTCM Type 55 Ionospheric range corrections generated at selected SkyFix Premier reference stations and broadcast via the Thales global network of high (SkyFix Spot-Optus) and low (SkyFix-Inmarsat) power satellite based L-Band beams.

Key features of the program are:
- No limit on the number of RTCM correction delivery systems (data links)
- No limit on the number of RTCM differential reference stations
- No limit on the number of computations (solutions)
- Each computation can employ corrections from any combination of reference stations available
- Computations are weighted least squares with statistical evaluation based upon the UKOOA recommendations
- No limit on the number of outputs
- No limit on the number of view windows
- View windows can be customised
- Extra NMEA outputs can be defined
- TCP/IP communication via sockets for GPS, RTCM and position data transfer between networked computers

MultiFix 3 has been designed in a modular fashion such that data is passed between modules as if over a computer network. The core module MultiFix 3 performs the computation of position. Additional modules are available and more will be made available in the future. While a single computer can be used, the various modules will equally be able to be run on different computers, provided there is a network interconnection.

MultiFix 3 uses the EGM96 geoid/spheroid separation model.

The RTCM corrections that are generated at reference stations are contaminated by a variety of error components, one of which is Ionospheric delay. The Ionospheric delay is currently more variable because of greater sun spot activity. MultiFix 2 and MultiFix 3's standard computation uses the Klobuchar Ionospheric delay model. This model is updated periodically but is not responsive to the current short-term variability. MultiFix 3 has an additional calculation option when working with dual frequency receivers and in receipt of Type 15 or 55 RTCM messages. With dual frequency receivers, estimates can be made of the Ionospheric delay by examining the differences between the measurements from the two frequencies. If the same procedure for estimation of Ionospheric delay is performed at the reference stations and on the mobile, both the RTCM corrections and the pseudo-ranges can have the Ionospheric delay removed, effectively providing an Iono-Free DGPS position solution.

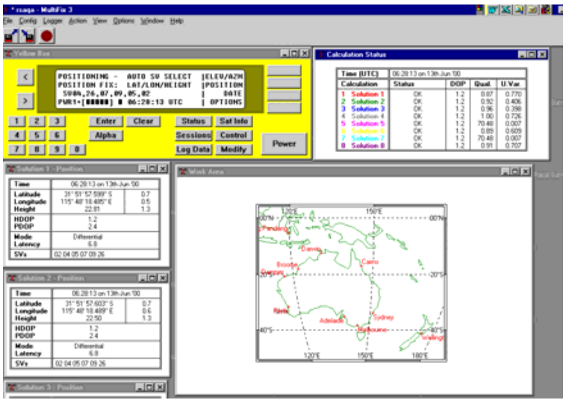
9.5.2 Hardware Requirements

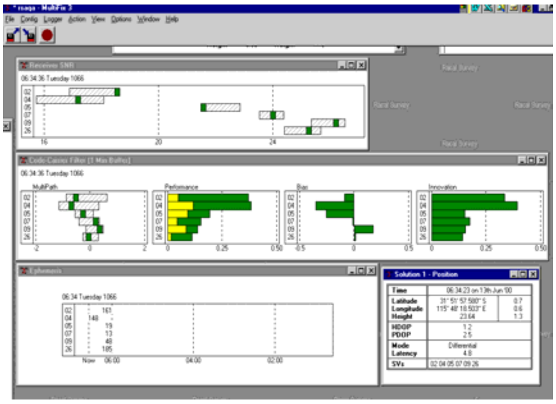
Optimum requirements for MultiFix 3 are:

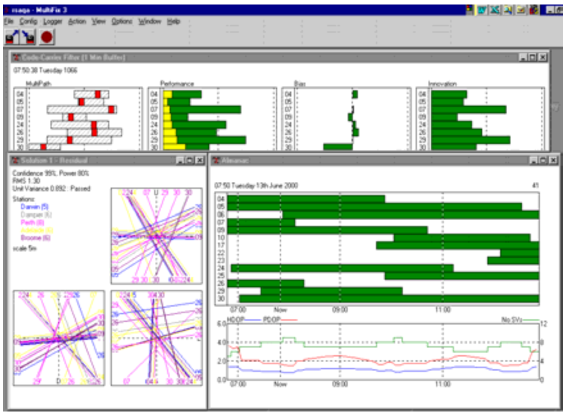
- 350 MHz Pentium II computer
- 32 Mb RAM
- Windows 95, 98 or NT operating system
- Graphics resolution of at least 800 x 600 pixels
- Intelligent multi-port serial I/O board

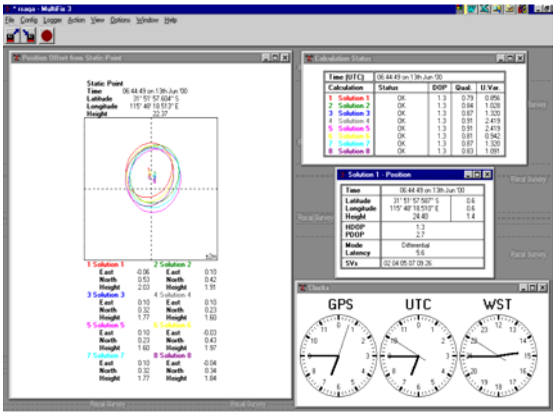
9.5.3 Positioning and Quality Control Displays

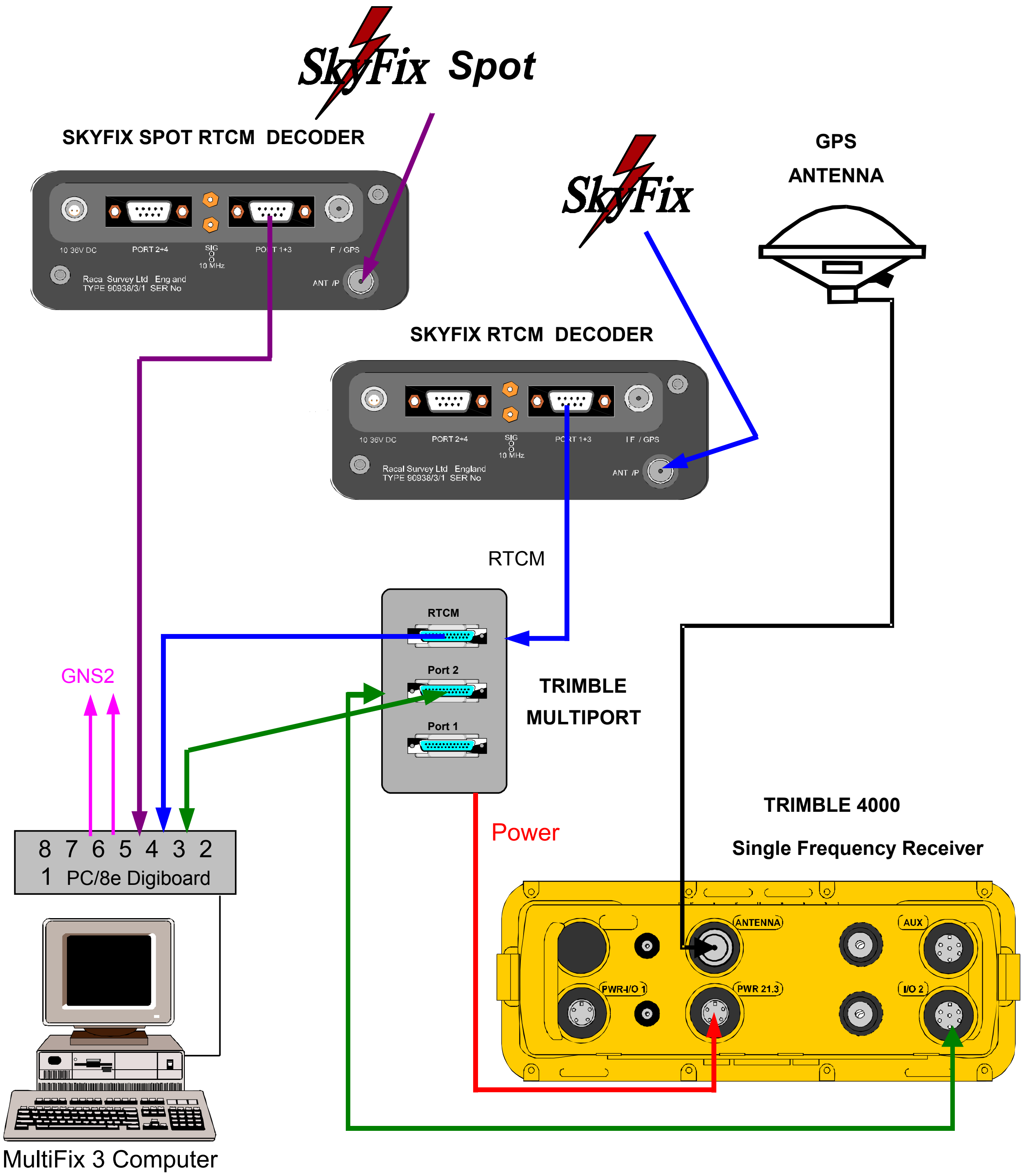
MultiFix 3 has a large number of features to accomodate the user requirements of highly accurate positions with quality control (QC) information and outputs in different formats. MultiFix 3 runs in a Windows environment, which allows the user to design a preferred screen layout by opening, sizing and placing the numerous displays that are available. Examples of the various displays can be found below.











Typical MultiFix 3 Interconnection With Trimble 4000 GPS Receiver

9.6 TRACS TDMA

Tracs TDMA (Time Division Multiple Access) is a high speed, intelligent network radio datalink which can operate in the VHF or UHF bands to provide an addressable network with integrated position reporting from an integrated/internal GPS receiver. The standard Tracs units are fitted with a Trimble SK8 GPS receiver, or a Trimble DSM GPS receiver.

Each unit in the network is assigned a unique address (1 to 255) enabling messages can be specifically addressed to that unit. A broadcast address (0) is provided to allow multiple units to receive a message, for example RTCM corrections. The system manages the data bandwidth by dividing it into timeslots synchronised by means of GPS 1PPS (pulse per second) timing pulse from an internal GPS receiver.

The standard Tracs system has a frequency band of 455.0MHz to 465.0MHz (frequency module 53R). The channel frequencies can be selected in 25kHz steps and the units are equipped with the facility to pre-store 10 selected frequencies within the 10MHz band. Units for use in Australia are fitted with 471MHz radios.

There are four types of messages that can be transmitted in a Tracs network.

- Position Reports automatically generated from the SK8 or DSM GPS receiver as a NMEA type or Raw Pseudo Range information.
- Transparent messages used to send unformatted data across the network eg. RTCM corrections.
- Open messages used to provide a general-purpose data link between units. This format is used by GNS to transfer information.
- Configuration messages used for remote configuration of units using the Destination ID to identify which unit is being configured.

9.7 NAVIGAT 2100 FIBRE OPTIC GYROCOMPASS (FOG)

The Navigat 2100 Fibre Optic Gyrocompass (FOG) is based on Fibre Optic technology and has no moving parts.

The FOG is supplied with a Thales manufactured interface unit, enabling the user to connect to the unit using the RS232 interface standard. The input and output of data is in the NMEA format, enabling the unit to be interfaced to any system that accepts the HDT heading message. The interface unit also allows the user to manually initialise the FOG, by means of the front panel with backlit display.

The FOG is designed for the constant input of vessel speed and latitude. The position update should occur at least every six hours with speed supplied instantaneously (unless stationary). If the FOG is not interfaced to a navigation package, the interface unit features a built in GPS receiver that can be used to provide speed and position information.

System specifications are as follows:

Accuracy (RMS Values):	Heading:	≤ 0.7° secant latitude*
	Roll / Pitch Angle:	≤ 0.5°
	Rate of Turn:	≤ 0.4° / minute
	X / Y Rate	≤ 0.4° / minute
	*secant latitude = 1 / cosine latitude	
Measuring Range:	Heading:	0° to 360°
	Roll & Pitch	± 45°
	Rates (X, Y, Z)	± 80° / second
Settling Time	Static Conditions	≤ 30 minutes
	Sea Conditions	≤ 45 minutes
	Rate of Turn	≤ 4 minutes

9.8 S.G. BROWN MERIDIAN SURVEYOR GYROCOMPASS

The S.G. Brown Meridian Surveyor Gyrocompass is a compact, simple-to-operate master heading reference instrument employing the effect of gravity and the earth's rotation to produce a True North reference. This reference may be read from a digital display and can be interfaced to a navigation system.

The normal starting cycle of the instrument is fully automatic and is initiated when the system power supply is switched on. A fail safe control circuit is incorporated which ensures that the compass is not damaged after a power failure when power is restored; the compass will restart automatically and carry out its normal settling program.

Among the standard features of the Meridian Surveyor are:

- A maximum of 45 minute settling time to within 0.7° of the meridian.
- Operation from a 12V DC electrical supply.
- Latitude and speed can be input manually or via GPS input.

System specifications are as follows:

Power Supply	:	24DC (acceptable range 18V – 36V DC) 3Amp at power-on.	
Performance	:	Static accuracy	< 0.1° secant latitude.
		Dynamic accuracy	< 0.6° secant latitude.
		Repeatability	< 0.25° secant latitude.
		Max rate of turn	200° per second.
		Time to settle within 0.7°	< 45 minutes.
		Latitude operating range	80° north to 80° south.
		Speed range	0 to 90 knots.
		Operating environment	0°C to 45°C
			-15°C to +55°C (reduced accuracy).
Dimensions	:	344mm(H) x 267mm (W) x 440mm(D).	
Weight	:	15.5kg.	

10. PERSONNEL AND EQUIPMENT

10.1 PERSONNEL

The following personnel were employed on this project:

For : Thales GeoSolutions (Australasia) Limited

S. Schonknecht	:	Surveyor/Team Leader
A. Breckenridge	:	Engineer

For : Esso Australia Pty Ltd

H. Arrowsmith	:	Client Representative

10.2 EQUIPMENT

The following equipment was provided for this project:

Sedco 702
2 x Compaq Computer, inc monitor, keyboard (for GNS2 / MultiFix 3)
1 x Thales SkyFix Mini Rig Portable
3 x SkyFix/SkyFix Spot MK II Receivers
1 x Compaq Computer, inc. monitor, keyboard (for GNS2 Remote)
1 x S.G. Brown TSS Gyrocompass
1 x Navigat 2100 Fibre Optic Gyrocompass
2 x Uninteruptable Power Supply (UPS)
2 x Epson LX300 Printers
2 x SkyFix Spot Antenna 90962/3/1
1 x Trimble 4000SSI GPS Receiver
1 x Trimble 4000SSE GPS Receiver
2 x Tracs Bricks
2 x Tracs Multiplexer
2 x UHF Antennae
1 x Topcon GT 211D Total Station C/W Prisms
2 x Tripods
1 x Laptop Computer

Pacific Frontier And Pacific Challenger (Each)
2 x Tracs Geopod
2 x Fluxgate compasses
2 x Tracs Box and Interface Box
1 x Compaq computer, inc. monitor, keyboard (GNS2 Tug Display)
1 x Uninteruptable Power Supply (UPS)

plus all associated software (GNS 2 version 2.48, MultiFix 3 version 1.24) c/w cables, consumables, software dongles etc.

11. DISTRIBUTION

Copies of this report have been distributed as follows:

Esso Australia Pty Ltd	: 2 copies
Attn: Mr Carl MacDonald	: 1 electronic copy
ExxonMobil Exploration Company (Houston)	: 5 copies
Attn: Mr Barry Barrs	: 1 electronic copy
Thales GeoSolutions (Australasia) Limited	: 1 copy

Stephen Schonknecht
Surveyor

Anthony Kerr
Survey Manager

APPENDIX A

FINAL DIFFERENTIAL GPS DRILLSTEM POSITION AT SCALLOP-1

THALES Thales GeoSolutions Group Ltd

FINAL POSITION FIX – DIFFERENTIAL GPS

Job:	Rig Move
Job Number:	3498A3
Thales Surveyor:	S.Schonknecht
Client:	Esso Australia Pty Ltd.
Client Representative:	

Sampling started:	3 Feb 2003 03:17:51
Sampling end:	3 Feb 2003 06:17:45

Sedco 702

<u>Final Datum / Drill String Position</u>

Datum:	**GDA94 (GRS80)**		
Latitude:	38°12'48.615"S	Longitude:	148°35'28.879"E
Projection:	**MGA94 Zone 55**		
Easting:	639314.95	Northing:	5769298.84

Mean corrected heading:	209.88°T
SD heading:	0.1°T
Intended heading:	210.0°T
Difference from intended:	-0.1°
Gyro C-O:	-0.7°
Convergence:	-0.98°

Final Datum Position is 1.56m on a bearing of 221.1°T (222.1°G) <u>from</u> the intended location.

Above Final Datum / Drill String Position in datum: WGS 84
Latitude: 38°12'48.615"S Longitude: 148°35'28.879"E Spheroidal Ht: 27.05m

Final Antenna Position (T1 Thales UKOOA):
Sample size: 1988 fixes used out of a total of 2160.

Antenna offset

X:	1.83m	Y:	35.98m	Z:	0.00m
Range:	36.03m	Rel Brg from datum to antenna:			2.9°

Datum:	WGS 84				
Latitude:	38°12'49.598"S	Longitude:	148°35'28.077"E	Spheroidal Ht:	27.05m
Datum:	GDA94 (GRS80)				
Latitude:	38°12'49.598"S	Longitude:	148°35'28.077"E	Spheroidal Ht:	27.05m
Projection:	MGA94 Zone 55				
Easting:	639294.92	Northing:	5769268.90	Spheroidal Ht:	27.05m

Standard deviations

Long or E:	0.73m
Lat or N:	0.82m
Height:	1.98m
Position:	1.10m

Geodetic Parameters

GPS Spheroid Name: WGS 84
Semi-major (a): 6378137.00m
Semi-minor (b): 6356752.31m
Eccentricity: 0.00669438
Inverse Flatenning (1/f): 298.25722013

Local Spheroid Name: GDA94 (GRS80)
Semi-major (a): 6378137.00m
Semi-minor (b): 6356752.31m
Eccentricity: 0.00669438
Inverse Flatenning (1/f): 298.25722210

Projection Name: MGA94 Zone 55

Transformation Name: WGS 84 to GDA94 (GRS80)

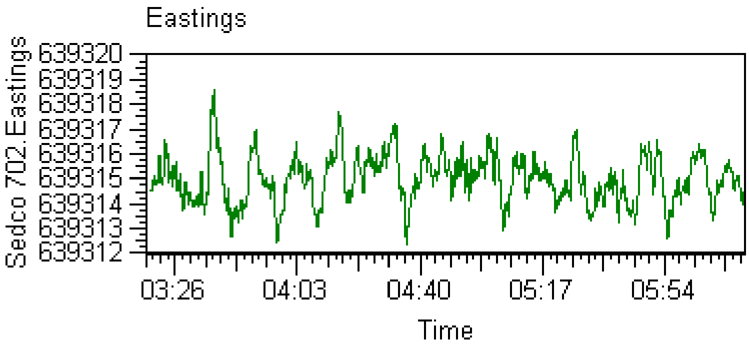
Datum Shift Parameters: (Coordinate Frame Rotation)

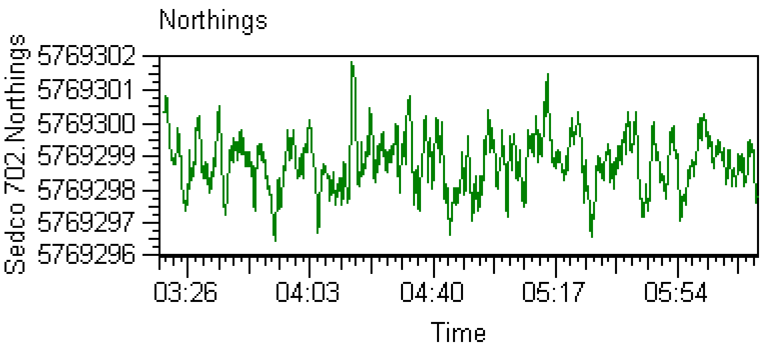
dx:	0.0000m
dy:	0.0000m
dz:	0.0000m
rx:	0.0000
ry:	0.0000
rz:	0.0000
scale:	0.0000

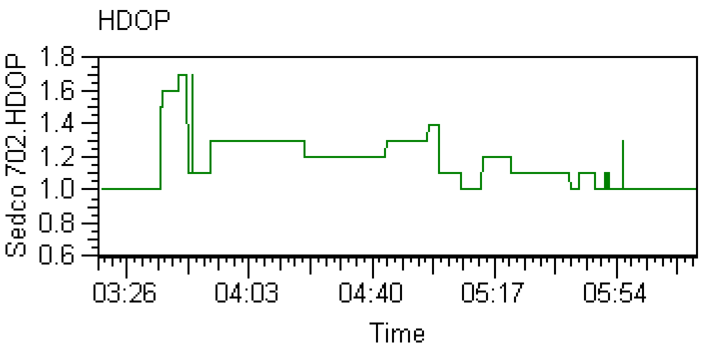
<u>Intended Datum Location</u>
Datum: GDA94 (GRS80)
Latitude: 38°12'48.577"S Longitude: 148°35'28.921"E
Projection: MGA94 Zone 55
Easting: 639316.00 Northing: 5769300.00

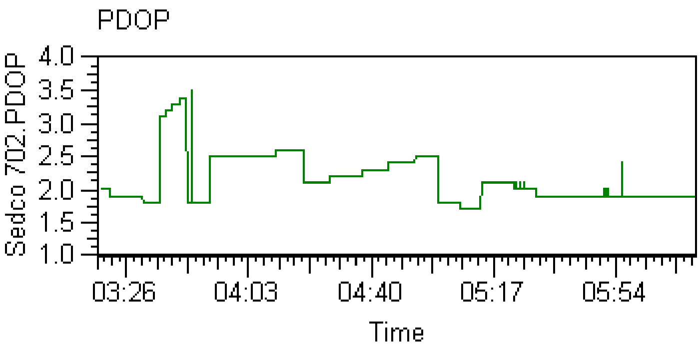
APPENDIX B

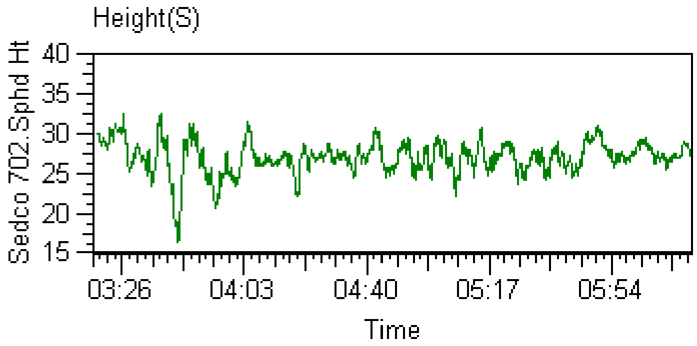
GNS2 STATIC DIFFERENTIAL GPS FIX GRAPHS

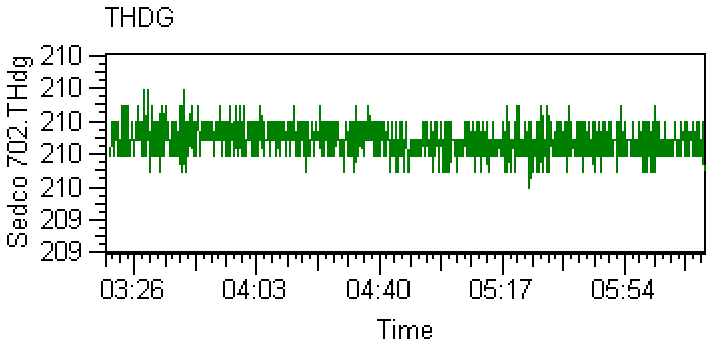

Eastings
Sedco 702.Eastings
639320
639319
639318
639317
639316
639315
639314
639313
639312
03:26
04:03
04:40
05:17
05:54
Time

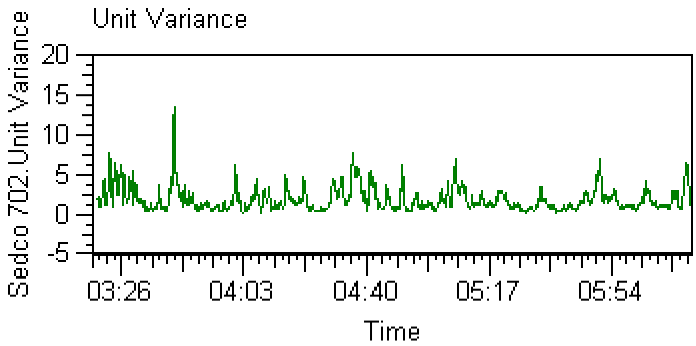

Northings
Sedco 702.Northings
5769302
5769301
5769300
5769299
5769298
5769297
5769296
03:26
04:03
04:40
05:17
05:54
Time

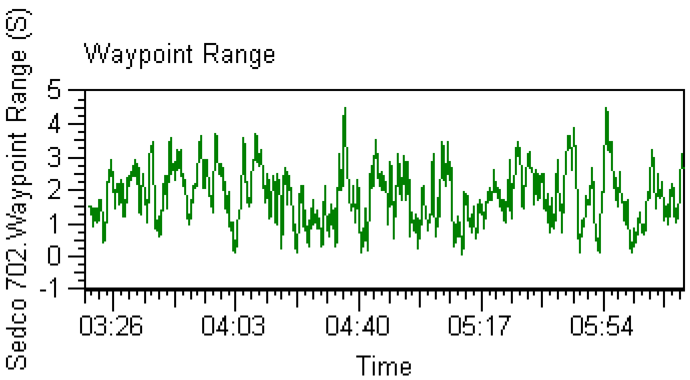

HDOP
Sedco 702.HDOP
1.8
1.6
1.4
1.2
1.0
0.8
0.6
03:26
04:03
04:40
05:17
05:54
Time


PDOP
Sedco 702.PDOP
4.0
3.5
3.0
2.5
2.0
1.5
1.0
03:26
04:03
04:40
05:17
05:54
Time


Height(S)
Sedco 702.Sphd Ht
40
35
30
25
20
15
03:26
04:03
04:40
05:17
05:54
Time


THDG
Sedco 702.THdg
210
210
210
210
210
209
209
03:26
04:03
04:40
05:17
05:54
Time


Unit Variance
Sedco 702.Unit Variance
20
15
10
5
0
-5
03:26
04:03
04:40
05:17
05:54
Time

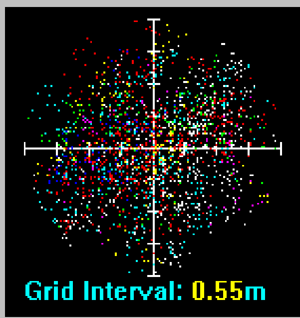

Waypoint Range
Sedco 702.Waypoint Range (S)
5
4
3
2
1
0
-1
03:26
04:03
04:40
05:17
05:54
Time

Scatter Plot: Final Fix 03 February 2003

Raw Static Fix Analysis: T1 Thales UKOOA

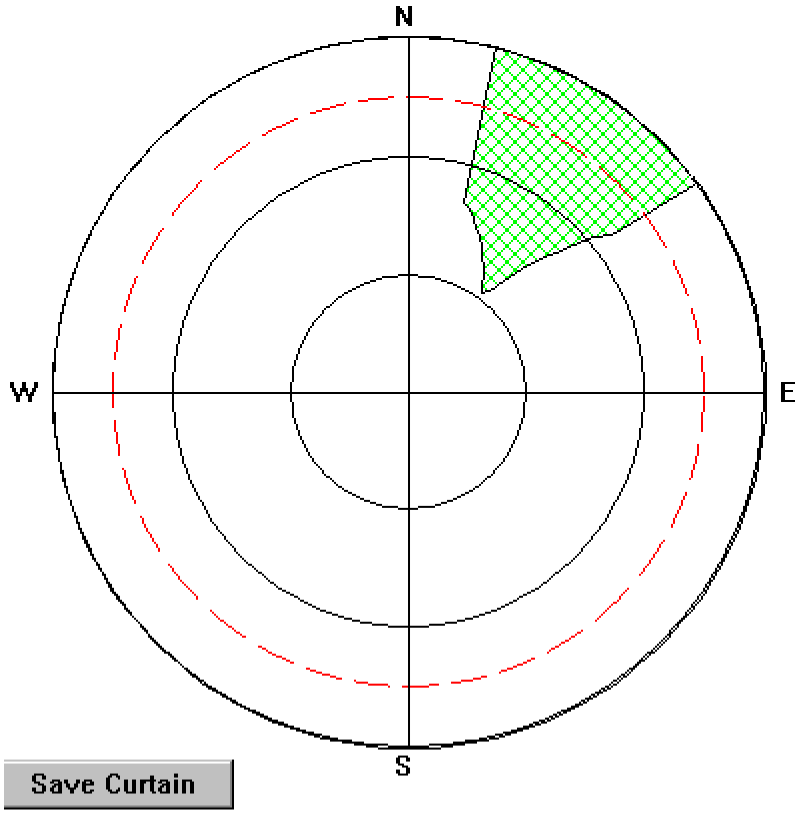
Raw Static Fix Analysis - T1 Thales UKOOA

	Latitude	Longitude	Ht	Resid	Constel
☑	38°12'49.593"S	148°35'28.142"E	27.70	1.59	6
☑	38°12'49.588"S	148°35'28.146"E	27.50	1.71	6
☑	38°12'49.574"S	148°35'28.151"E	27.60	1.95	6
☐	38°12'49.562"S	148°35'28.159"E	27.40	n/a	6
☐	38°12'49.552"S	148°35'28.172"E	27.20	n/a	6
☐	38°12'49.535"S	148°35'28.181"E	27.20	n/a	6
☐	38°12'49.526"S	148°35'28.183"E	27.40	n/a	6
☐	38°12'49.514"S	148°35'28.189"E	27.50	n/a	6
☐	38°12'49.506"S	148°35'28.188"E	27.40	n/a	6
☐	38°12'49.499"S	148°35'28.187"E	27.70	n/a	6
☐	38°12'49.503"S	148°35'28.179"E	27.40	n/a	6
☐	38°12'49.512"S	148°35'28.169"E	27.50	n/a	6
☐	38°12'49.510"S	148°35'28.174"E	27.30	n/a	6
☐	38°12'49.507"S	148°35'28.179"E	26.60	n/a	6
☐	38°12'49.508"S	148°35'28.182"E	25.90	n/a	6



Count:	1988
Mean Lat:	38°12'49.598"S
Mean Lng:	148°35'28.077"E
SD:	1.10

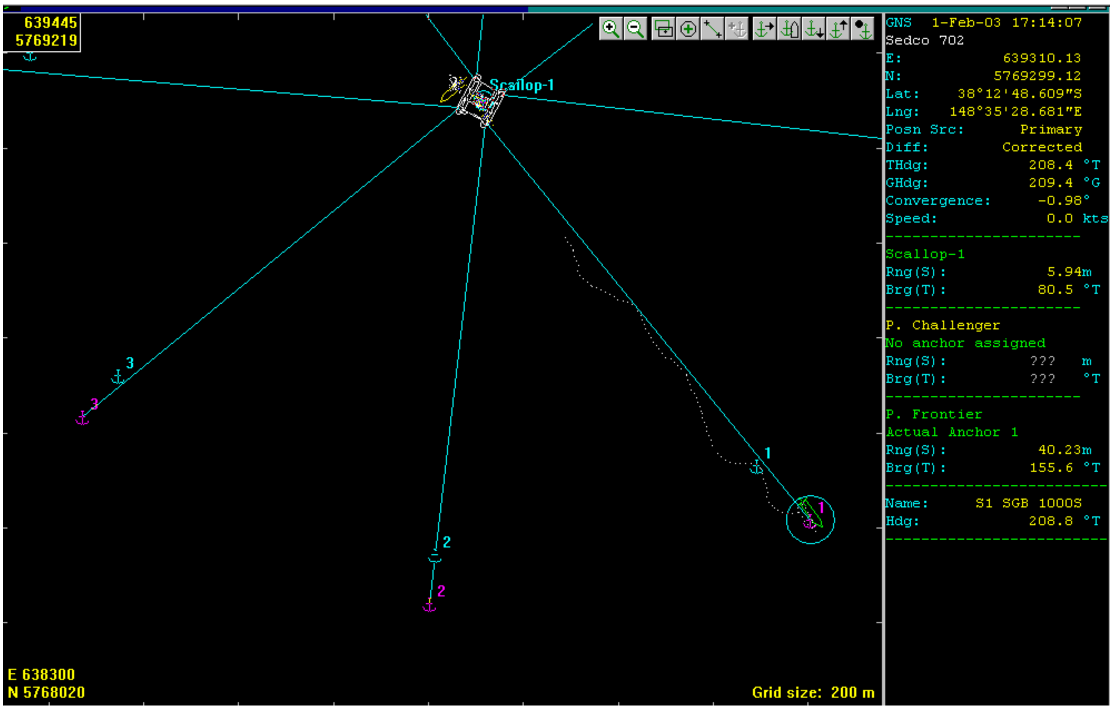
Find Max Resid | Gate... | Restore | Constell... | Start | Close


N
W
E
S
Save Curtain

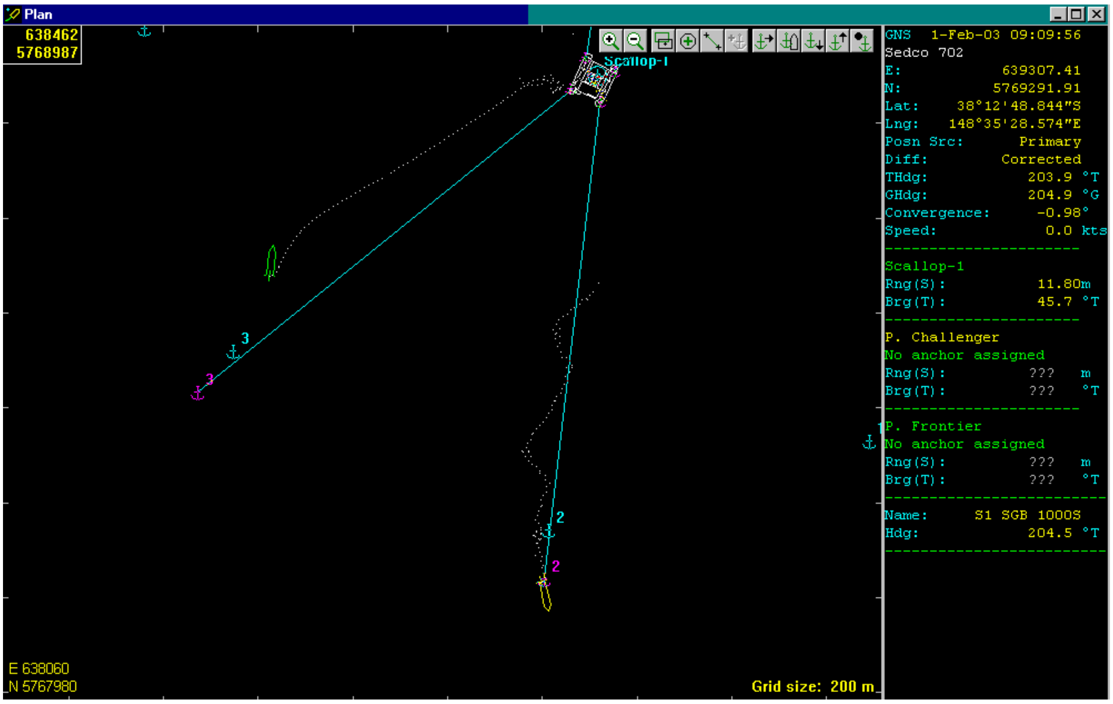
APPENDIX C

ANCHOR DEPLOYMENT GRAPHICS

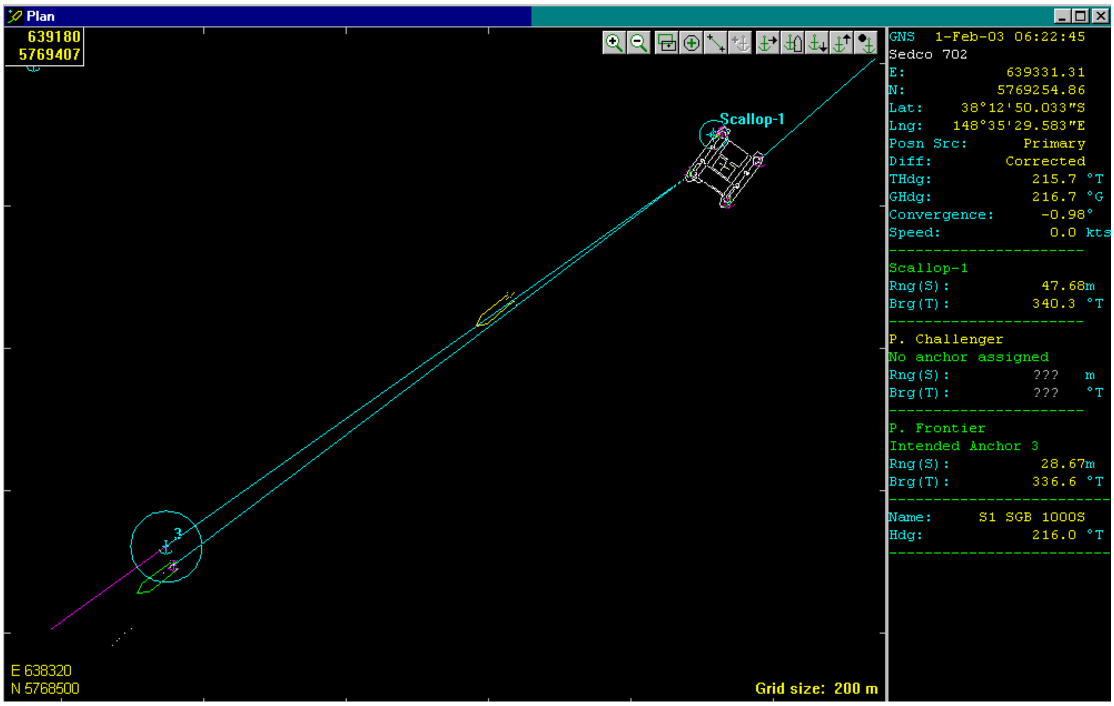
Anchor 1 – P.Frontier



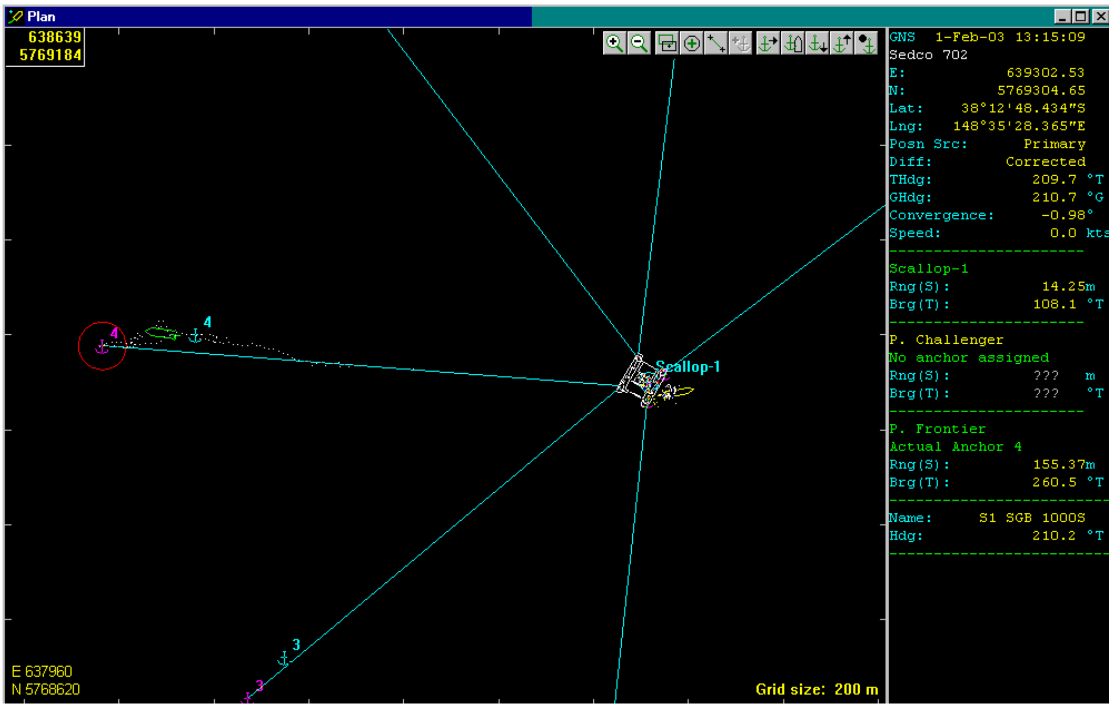
Anchor 2 – P.Challenger



Anchor 3 – P.Frontier



Anchor 4 – P.Frontier

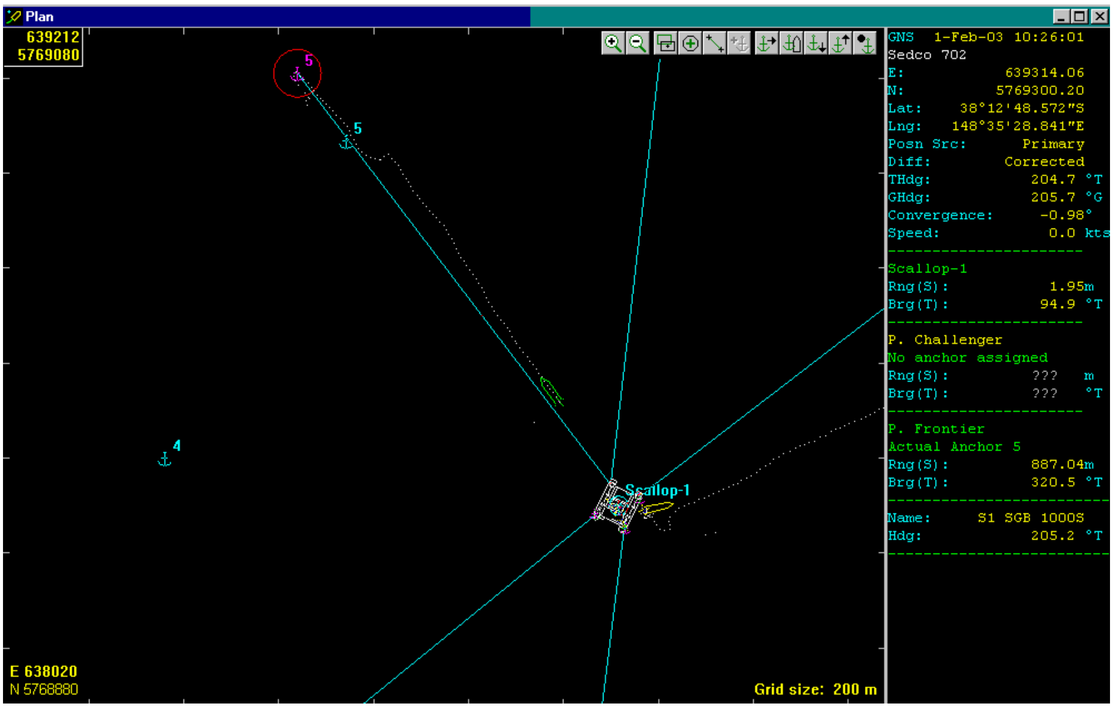


THALES **Thales GeoSolutions (Australasia) Limited**

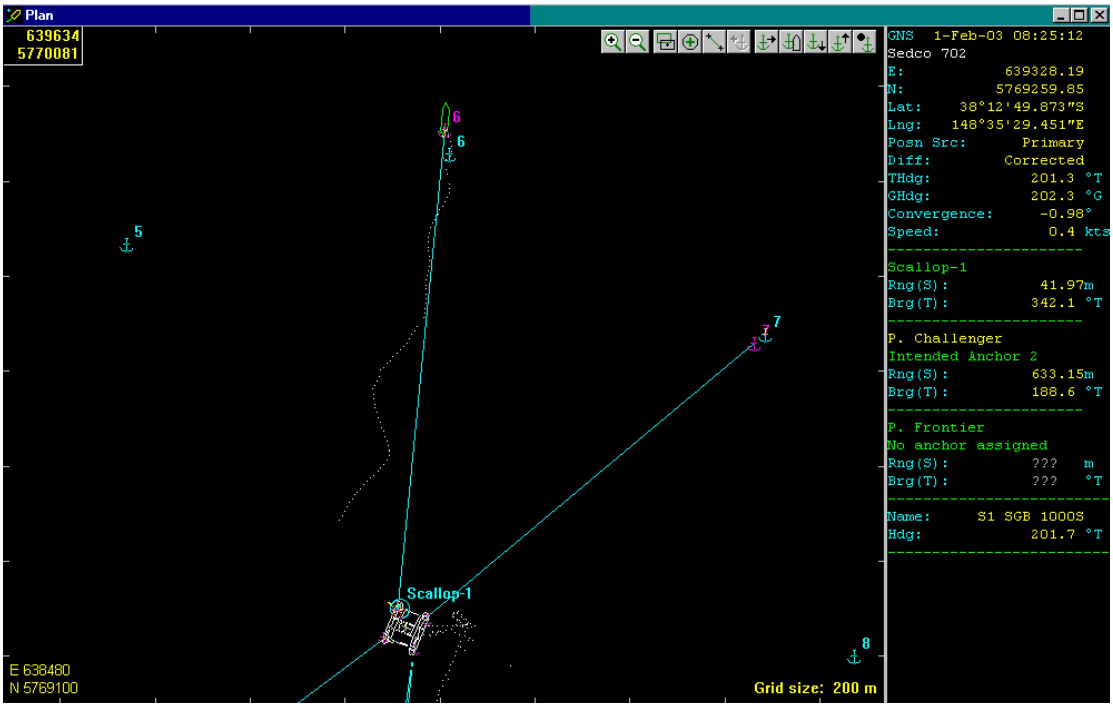
Project: Scallop-1 Positioning Report of the Sedco 702

Client: ESSO Australia Pty Ltd

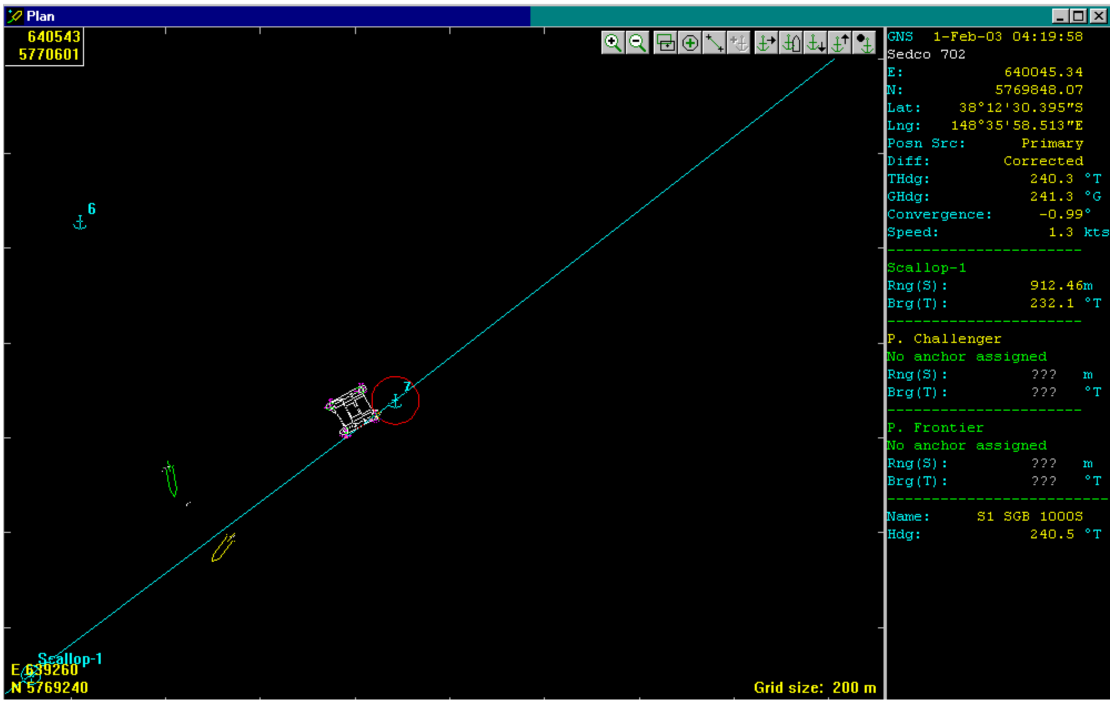
Anchor 5 – P.Frontier



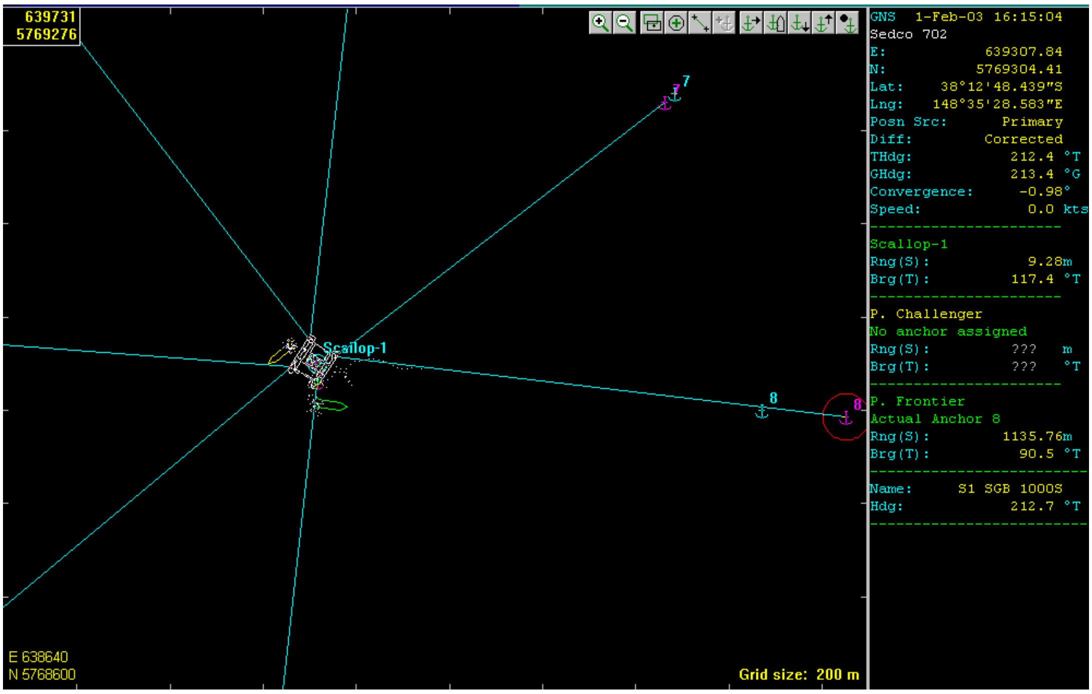
Anchor 6 – P.Frontier



Anchor 7 – Sedco 702



Anchor 8 – P.Frontier



APPENDIX D

SEDCO 702 ANCHOR PATTERN DETAILS AT SCALLOP-1

THALES

SEDCO 702 ANCHOR POSITIONS

3 Feb 2003 06:43

Main Anchors

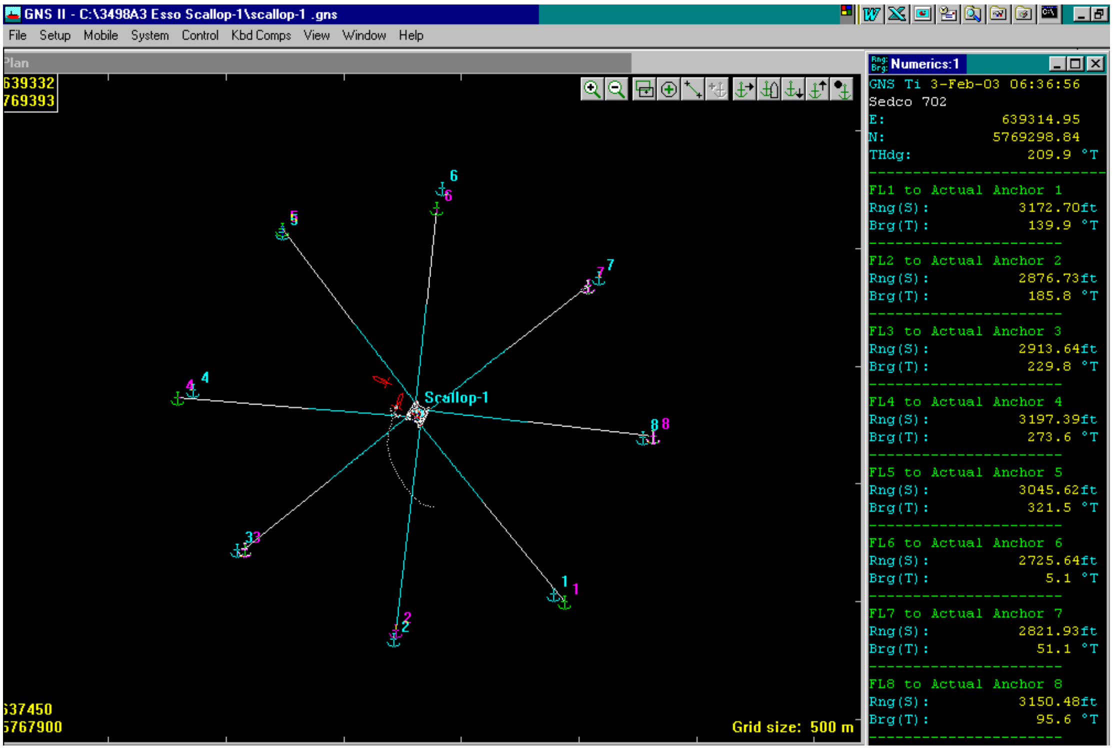
Name	Intended E	Intended N	Dropped E	Dropped N
Anchor 1	639891.22	5768531.07	639937.04	5768500.67
Anchor 2	639213.23	5768342.41	639219.97	5768378.78
Anchor 3	638547.25	5768721.17	638579.13	5768721.84
Anchor 4	638359.95	5769399.50	638295.72	5769365.24
Anchor 5	638740.77	5770068.93	638737.18	5770082.68
Anchor 6	639418.76	5770257.59	639394.83	5770174.27
Anchor 7	640084.76	5769878.83	640040.83	5769843.49
Anchor 8	640272.05	5769200.49	640316.80	5769201.56

THALES

Thales GeoSolutions (Australasia) Limited

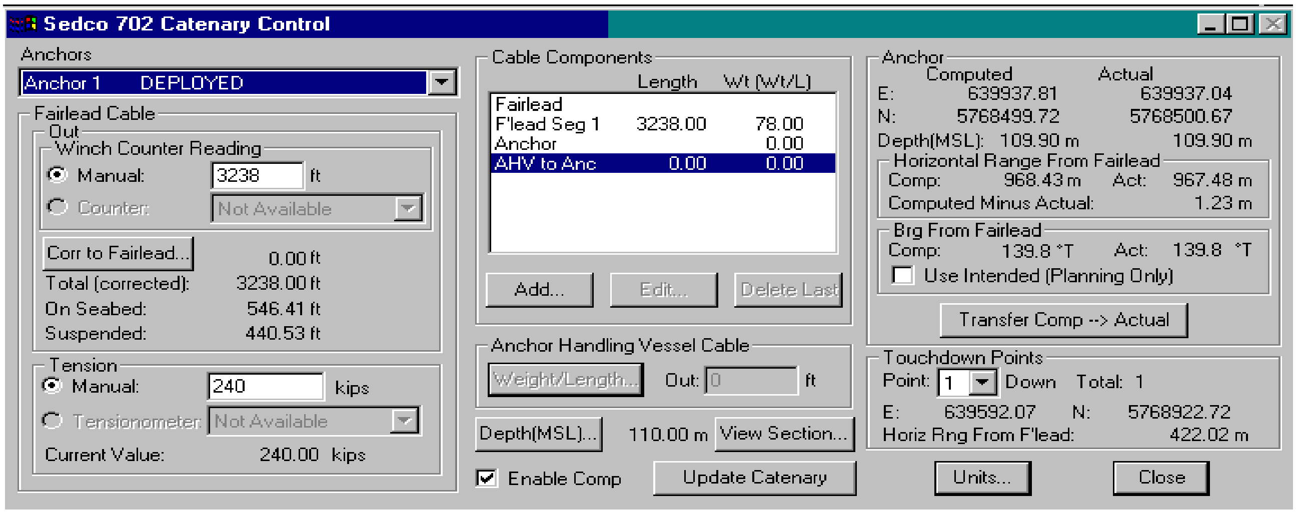
Project: Scallop-1 Positioning Report of the Sedco 702

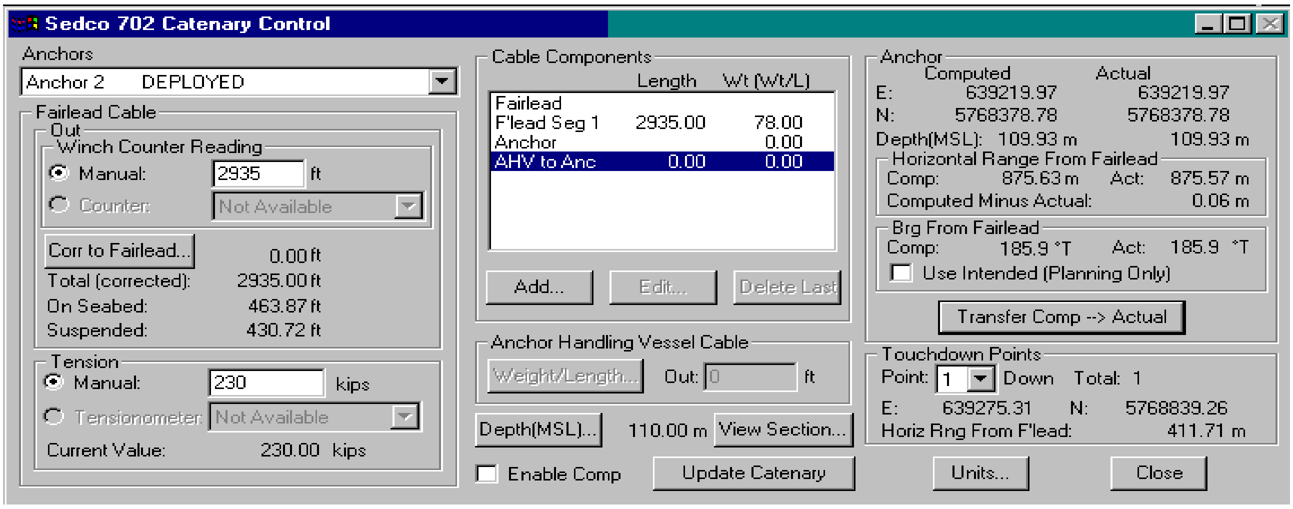
Client: ESSO Australia Pty Ltd

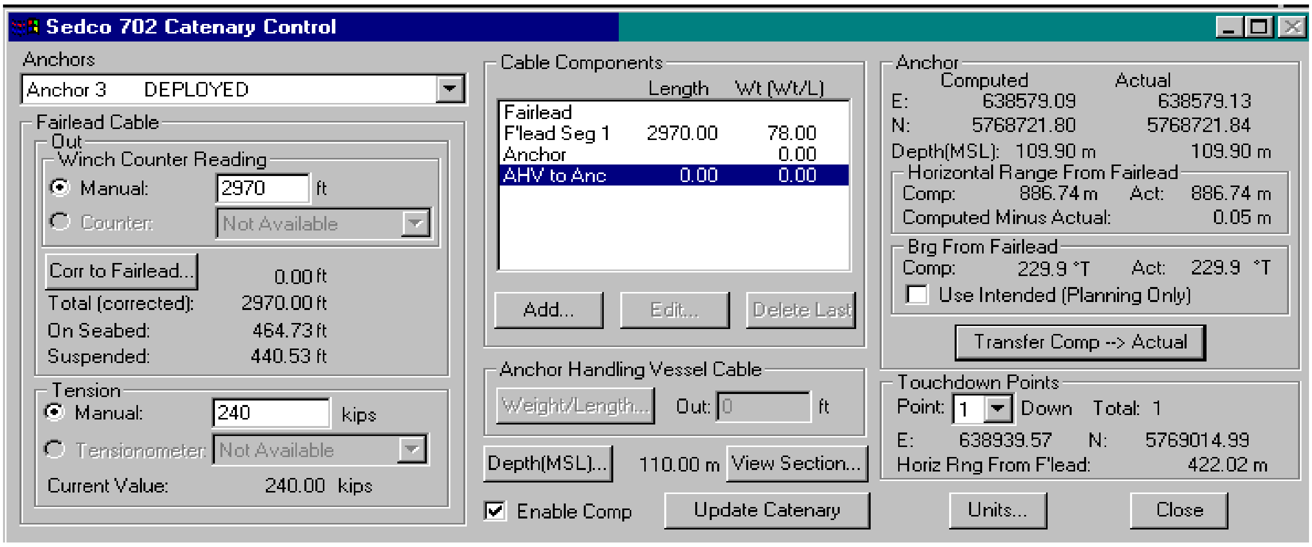


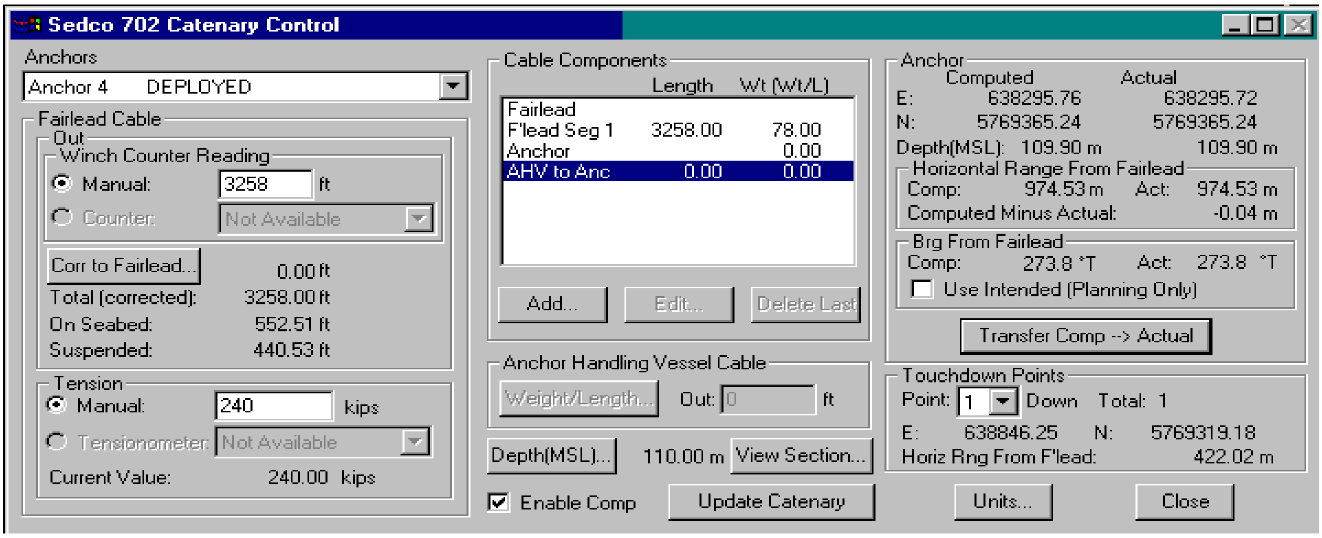
APPENDIX E

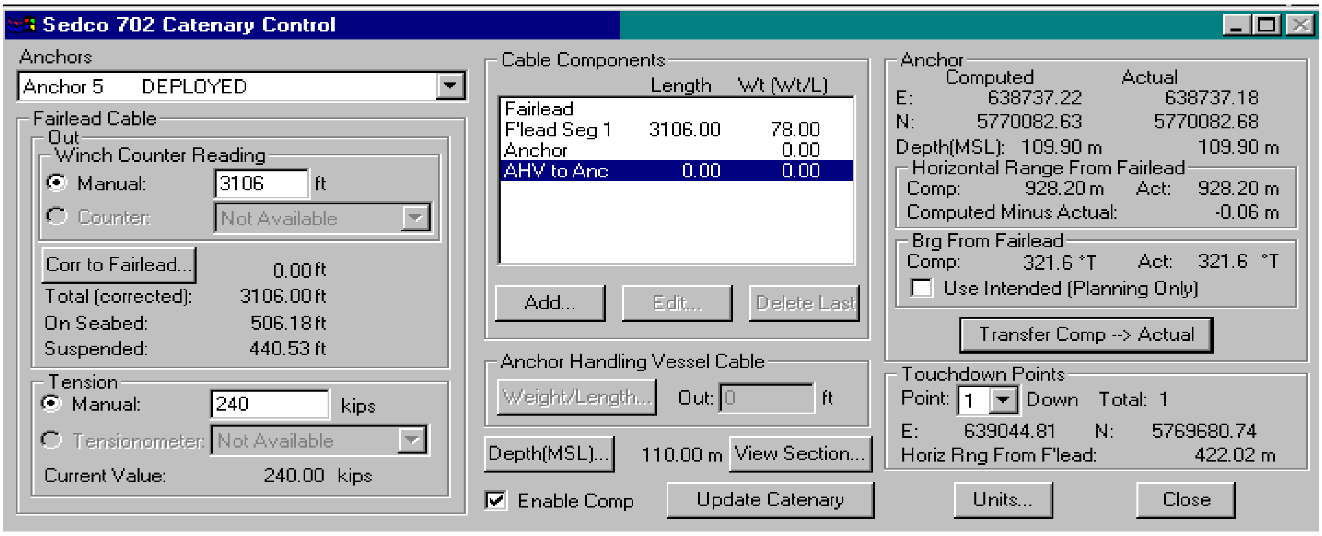
SEDCO 702 ANCHOR CATENARY CALCULATIONS

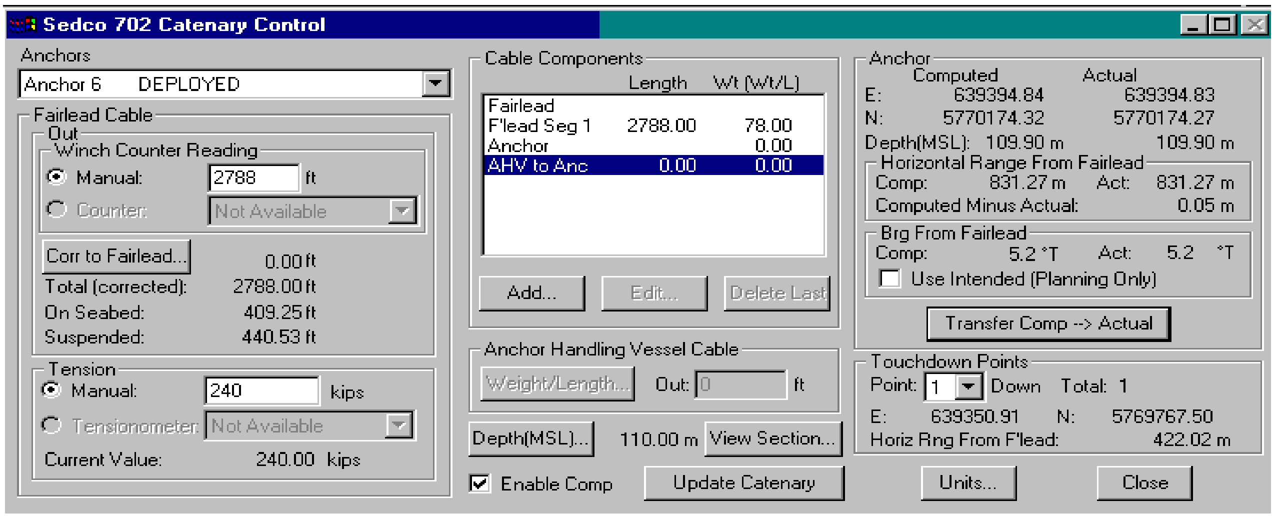

Sedco 702 Catenary Control
Anchors
Anchor 1 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 3238 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 3238.00 ft
On Seabed: 546.41 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 3238.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 639937.81 639937.04
N: 5768499.72 5768500.67
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 968.43 m Act: 967.48 m
Computed Minus Actual: 1.23 m
Brg From Fairlead
Comp: 139.8 °T Act: 139.8 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639592.07 N: 5768922.72
Horiz Rng From F'lead: 422.02 m
Units...
Close

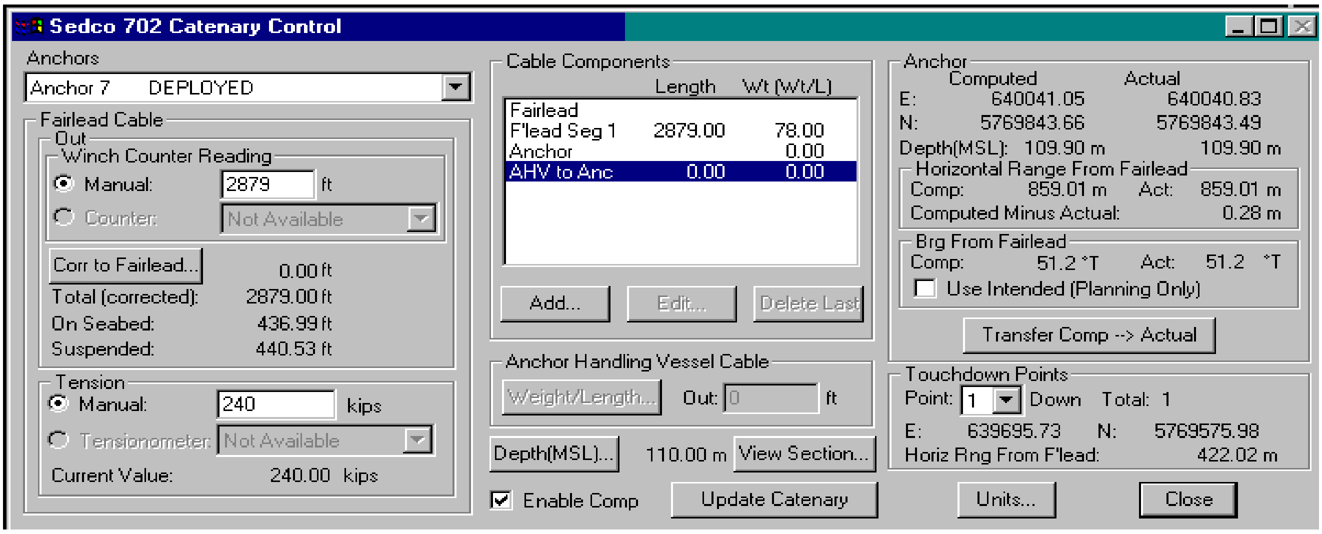

Sedco 702 Catenary Control
Anchors
Anchor 2 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 2935 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 2935.00 ft
On Seabed: 463.87 ft
Suspended: 430.72 ft
Tension
Manual: 230 kips
Tensionometer: Not Available
Current Value: 230.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 2935.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 639219.97 639219.97
N: 5768378.78 5768378.78
Depth(MSL): 109.93 m 109.93 m
Horizontal Range From Fairlead
Comp: 875.63 m Act: 875.57 m
Computed Minus Actual: 0.06 m
Brg From Fairlead
Comp: 185.9 °T Act: 185.9 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639275.31 N: 5768839.26
Horiz Rng From F'lead: 411.71 m
Units...
Close

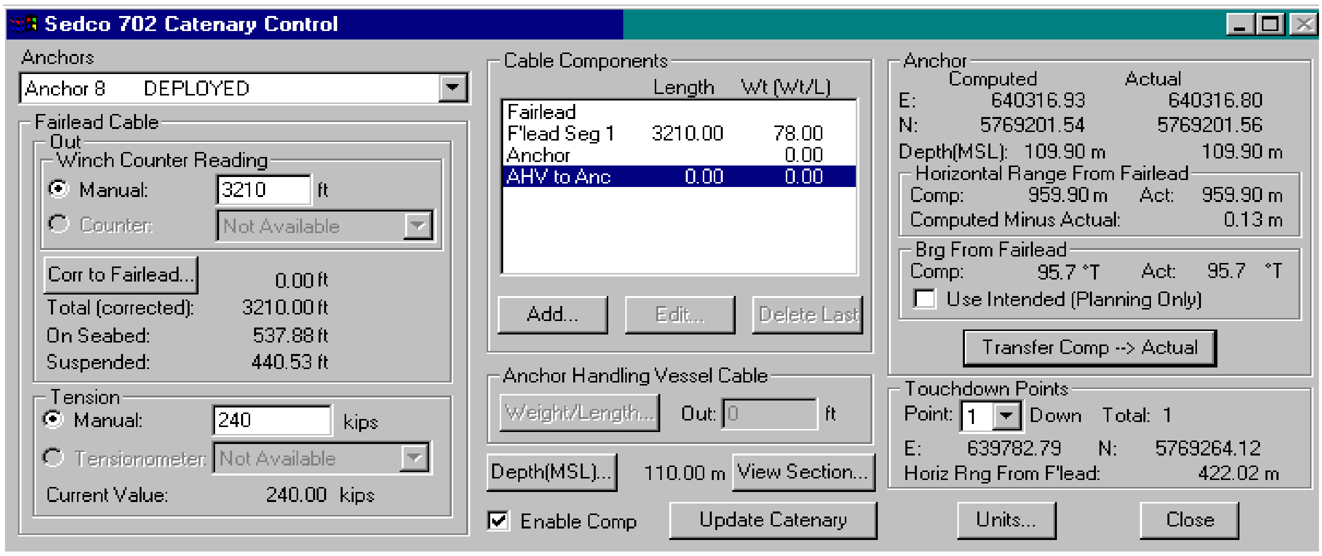

Sedco 702 Catenary Control
Anchors
Anchor 3 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 2970 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 2970.00 ft
On Seabed: 464.73 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 2970.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 638579.09 638579.13
N: 5768721.80 5768721.84
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 886.74 m Act: 886.74 m
Computed Minus Actual: 0.05 m
Brg From Fairlead
Comp: 229.9 °T Act: 229.9 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 638939.57 N: 5769014.99
Horiz Rng From F'lead: 422.02 m
Units...
Close


Sedco 702 Catenary Control
Anchors
Anchor 4 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 3258 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 3258.00 ft
On Seabed: 552.51 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 3258.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 638295.76 638295.72
N: 5769365.24 5769365.24
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 974.53 m Act: 974.53 m
Computed Minus Actual: -0.04 m
Brg From Fairlead
Comp: 273.8 °T Act: 273.8 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 638846.25 N: 5769319.18
Horiz Rng From F'lead: 422.02 m
Units...
Close


Sedco 702 Catenary Control
Anchors
Anchor 5 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 3106 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 3106.00 ft
On Seabed: 506.18 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 3106.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 638737.22 638737.18
N: 5770082.63 5770082.68
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 928.20 m Act: 928.20 m
Computed Minus Actual: -0.06 m
Brg From Fairlead
Comp: 321.6 °T Act: 321.6 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639044.81 N: 5769680.74
Horiz Rng From F'lead: 422.02 m
Units...
Close


Sedco 702 Catenary Control
Anchors
Anchor 6 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 2788 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 2788.00 ft
On Seabed: 409.25 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 2788.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 639394.84 639394.83
N: 5770174.32 5770174.27
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 831.27 m Act: 831.27 m
Computed Minus Actual: 0.05 m
Brg From Fairlead
Comp: 5.2 °T Act: 5.2 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639350.91 N: 5769767.50
Horiz Rng From F'lead: 422.02 m
Units...
Close


Sedco 702 Catenary Control
Anchors
Anchor 7 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 2879 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 2879.00 ft
On Seabed: 436.99 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 2879.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 640041.05 640040.83
N: 5769843.66 5769843.49
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 859.01 m Act: 859.01 m
Computed Minus Actual: 0.28 m
Brg From Fairlead
Comp: 51.2 °T Act: 51.2 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639695.73 N: 5769575.98
Horiz Rng From F'lead: 422.02 m
Units...
Close


Sedco 702 Catenary Control
Anchors
Anchor 8 DEPLOYED
Fairlead Cable
Out
Winch Counter Reading
Manual: 3210 ft
Counter: Not Available
Corr to Fairlead... 0.00 ft
Total (corrected): 3210.00 ft
On Seabed: 537.88 ft
Suspended: 440.53 ft
Tension
Manual: 240 kips
Tensionometer: Not Available
Current Value: 240.00 kips
Cable Components
Length Wt (Wt/L)
Fairlead
F'lead Seg 1 3210.00 78.00
Anchor 0.00
AHV to Anc 0.00 0.00
Add... Edit... Delete Last
Anchor Handling Vessel Cable
Weight/Length... Out: 0 ft
Depth(MSL)... 110.00 m View Section...
Enable Comp
Update Catenary
Anchor
Computed Actual
E: 640316.93 640316.80
N: 5769201.54 5769201.56
Depth(MSL): 109.90 m 109.90 m
Horizontal Range From Fairlead
Comp: 959.90 m Act: 959.90 m
Computed Minus Actual: 0.13 m
Brg From Fairlead
Comp: 95.7 °T Act: 95.7 °T
Use Intended (Planning Only)
Transfer Comp --> Actual
Touchdown Points
Point: 1 Down Total: 1
E: 639782.79 N: 5769264.12
Horiz Rng From F'lead: 422.02 m
Units...
Close

APPENDIX F

GYROCOMPASS CALIBRATION REPORTS

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Meridian)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Latitude (DMS):	-038	12	48
Longitude (DMS):	148	35	28
UTC Correction (HMS):	11.00		

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	18	59	07	000	00	00	052	05	18	209.00
Right	18	59	07	180	00	00	232	05	18	
Left	18	59	43	000	00	00	052	23	21	208.70
Right	18	59	43	180	00	00	232	23	21	
Left	19	00	10	000	00	00	052	00	20	209.00
Right	19	00	10	180	00	00	232	00	20	
Left	19	00	36	000	00	00	052	09	38	208.70
Right	19	00	36	180	00	00	232	09	38	
Left	19	01	00	000	00	00	051	52	41	209.00
Right	19	01	00	180	00	00	231	52	41	
Left	19	01	33	000	00	00	052	08	00	208.50
Right	19	01	33	180	00	00	232	08	00	
Left	19	02	04	000	00	00	051	55	19	208.70
Right	19	02	04	180	00	00	231	55	19	
Left	19	02	35	000	00	00	051	45	54	208.70
Right	19	02	35	180	00	00	231	45	54	
Left	19	02	59	000	00	00	051	37	18	208.80
Right	19	02	59	180	00	00	231	37	18	
Left	19	03	19	000	00	00	051	32	35	209.00
Right	19	03	19	180	00	00	231	32	35	
Left	19	03	53	000	00	00	051	21	02	209.00
Right	19	03	53	180	00	00	231	21	02	
Left	19	04	18	000	00	00	051	11	31	209.00
Right	19	04	18	180	00	00	231	11	31	

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

THALES

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Meridian)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18	59	07.0	052	05	18	259	15	33	207	10	15	207.17	209.00	-1.83
18	59	43.0	052	23	21	259	10	20	206	46	59	206.78	208.70	-1.92
19	00	10.0	052	00	20	259	06	25	207	06	05	207.10	209.00	-1.90
19	00	36.0	052	09	38	259	02	39	206	53	01	206.88	208.70	-1.82
19	01	00.0	051	52	41	258	59	10	207	06	29	207.11	209.00	-1.89
19	01	33.0	052	08	00	258	54	22	206	46	22	206.77	208.50	-1.73
19	02	04.0	051	55	19	258	49	52	206	54	33	206.91	208.70	-1.79
19	02	35.0	051	45	54	258	45	22	206	59	28	206.99	208.70	-1.71
19	02	59.0	051	37	18	258	41	53	207	04	35	207.08	208.80	-1.72
19	03	19.0	051	32	35	258	38	59	207	06	24	207.11	209.00	-1.89
19	03	53.0	051	21	02	258	34	03	207	13	01	207.22	209.00	-1.78
19	04	18.0	051	11	31	258	30	25	207	18	54	207.32	209.00	-1.68

Mean C-O **-1.81**

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Navigat)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Latitude (DMS):	-038	12	48
Longitude (DMS):	148	35	28
UTC Correction (HMS):	11.00		

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	18	59	07	000	00	00	052	05	18	207.90
Right	18	59	07	180	00	00	232	05	18	
Left	18	59	43	000	00	00	052	23	21	207.50
Right	18	59	43	180	00	00	232	23	21	
Left	19	00	10	000	00	00	052	00	20	207.80
Right	19	00	10	180	00	00	232	00	20	
Left	19	00	36	000	00	00	052	09	38	207.60
Right	19	00	36	180	00	00	232	09	38	
Left	19	01	00	000	00	00	051	52	41	207.80
Right	19	01	00	180	00	00	231	52	41	
Left	19	01	33	000	00	00	052	08	00	207.50
Right	19	01	33	180	00	00	232	08	00	
Left	19	02	04	000	00	00	051	55	19	207.60
Right	19	02	04	180	00	00	231	55	19	
Left	19	02	35	000	00	00	051	45	54	207.70
Right	19	02	35	180	00	00	231	45	54	
Left	19	02	59	000	00	00	051	37	18	207.80
Right	19	02	59	180	00	00	231	37	18	
Left	19	03	19	000	00	00	051	32	35	207.80
Right	19	03	19	180	00	00	231	32	35	
Left	19	03	53	000	00	00	051	21	02	208.00
Right	19	03	53	180	00	00	231	21	02	
Left	19	04	18	000	00	00	051	11	31	208.00
Right	19	04	18	180	00	00	231	11	31	

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

Thales GeoSolutions (Australasia) Limited

ABN 82 000 601 909

Solar Observation for Azimuth (Hour Angle) 2003

Thales Job Number: 3498A3
Job Description: Rig Move to Scallop-1(Navigat)
Client: Esso
Party Chief: S.Schonknecht
Surveyor: S.Schonknecht
Rig Name: Sedco 702
Date: 1 February 2003

Datum: GDA94 Projection: MGA Zone 55S CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
18	59	07.0	052	05	18	259	15	33	207	10	15	207.17	207.90	-0.73
18	59	43.0	052	23	21	259	10	20	206	46	59	206.78	207.50	-0.72
19	00	10.0	052	00	20	259	06	25	207	06	05	207.10	207.80	-0.70
19	00	36.0	052	09	38	259	02	39	206	53	01	206.88	207.60	-0.72
19	01	00.0	051	52	41	258	59	10	207	06	29	207.11	207.80	-0.69
19	01	33.0	052	08	00	258	54	22	206	46	22	206.77	207.50	-0.73
19	02	04.0	051	55	19	258	49	52	206	54	33	206.91	207.60	-0.69
19	02	35.0	051	45	54	258	45	22	206	59	28	206.99	207.70	-0.71
19	02	59.0	051	37	18	258	41	53	207	04	35	207.08	207.80	-0.72
19	03	19.0	051	32	35	258	38	59	207	06	24	207.11	207.80	-0.69
19	03	53.0	051	21	02	258	34	03	207	13	01	207.22	208.00	-0.78
19	04	18.0	051	11	31	258	30	25	207	18	54	207.32	208.00	-0.68

Mean C-O **-0.71**

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

APPENDIX G

DIFFERENTIAL GPS CHECK FIXES

THALES Thales GeoSolutions Group Ltd

CHECK FINAL POSITION FIX – DIFFERENTIAL GPS

Job Description: Rig Move
Job Number: 3498A3
Thales Surveyor: S.Schonknecht
Client: Esso Australia Pty Ltd.
Client Representative:

Sampling started: 28 Jan 2003 19:55:47
Sampling end: 28 Jan 2003 20:04:25

Sedco 702
Intended datum location
Datum: GDA94 (GRS80)
Latitude: 38°42'22.747"S Longitude: 142°57'32.990"E
Projection: MGA94 Zone 55
Easting: 148591.04 m Northing: 5708056.65 m

Final Antenna Position (T1 Thales UKOOA):
Sample size: 110 fixes used out of a total of 120.

Antenna offset

X:	1.92m	Y:	35.30m	Z:	0.00m
Range:	35.35m	Rel Brg from datum to antenna:			3.1°

Datum:	WGS 84				
Latitude:	38°42'24.303"S	Longitude:	142°57'32.263"E	Spheroidal Ht:	19.94m
Datum:	GDA94 (GRS80)				
Latitude:	38°42'24.303"S	Longitude:	142°57'32.263"E	Spheroidal Ht:	19.94m
Projection:	MGA94 Zone 55				
Easting:	148575.59	Northing:	5708007.90	Spheroidal Ht:	19.94m

Standard deviations
Long or E: 0.60m
Lat or N: 0.41m
Height: 0.85m
Position: 0.73m

Final Datum Position
Datum: **GDA94 (GRS80)**
Latitude: 38°42'23.229"S Longitude: 142°57'32.773"E

Projection: **MGA94 Zone 55**
Easting: 148586.44 m Northing: 5708041.54 m

Mean corrected heading: 197.3°T
SD heading: 0.1°T
Intended heading: 200.0°T
Difference from intended: -2.7°
Gyro C-O: 0.0°
Convergence: 2.53°

Final Datum Position is 15.80m on a bearing of 199.5°T (196.9°G) from the intended location.

THALES Thales GeoSolutions Group Ltd

CHECK FINAL POSITION FIX – DIFFERENTIAL GPS

Job Description: Rig Move
Job Number: 3498A3
Thales Surveyor: S.Schonknecht
Client: Esso Australia Pty Ltd.
Client Representative:

Sampling started: 28 Jan 2003 20:14:13
Sampling end: 28 Jan 2003 20:24:10

Sedco 702

Intended datum location

Datum: GDA94 (GRS80)
Latitude: 38°42'22.747"S Longitude: 142°57'32.990"E
Projection: MGA94 Zone 54
Easting: 670353.81 m Northing: 5713991.05 m

Final Antenna Position (T1 Thales UKOOA):
Sample size: 100 fixes used out of a total of 120.

Antenna offset

X:	1.92m	Y:	35.30m	Z:	0.00m
Range:	35.35m	Rel Brg from datum to antenna:			3.1°

Datum:	WGS 84				
Latitude:	38°42'24.297"S	Longitude:	142°57'32.259"E	Spheroidal Ht:	21.85m
Datum:	GDA94 (GRS80)				
Latitude:	38°42'24.297"S	Longitude:	142°57'32.259"E	Spheroidal Ht:	21.85m
Projection:	MGA94 Zone 54				
Easting:	670335.12	Northing:	5713943.64	Spheroidal Ht:	21.85m

Standard deviations

Long or E: 0.71m
Lat or N: 0.40m
Height: 1.28m
Position: 0.81m

Final Datum Position

Datum: **GDA94 (GRS80)**
Latitude: 38°42'23.223"S Longitude: 142°57'32.769"E

Projection: **MGA94 Zone 54**
Easting: 670348.16 m Northing: 5713976.50 m

Mean corrected heading: 197.3°T
SD heading: 0.1°T
Intended heading: 200.0°T
Difference from intended: -2.7°
Gyro C-O: 0.0°
Convergence: -1.23°

Final Datum Position is 15.61m on a bearing of 200.0°T (201.2°G) from the intended location.

THALES Thales GeoSolutions Group Ltd

CHECK FINAL POSITION FIX – DIFFERENTIAL GPS

Job Description:	Survey
Job Number:	3502A3
Thales Surveyor:	S.Schonknecht
Client:	BHPBilliton
Client Representative:	Lewis Kemp
Sampling started:	28 Jan 2003 14:47:38
Sampling end:	28 Jan 2003 14:57:35

Sedco 702

Intended datum location

Datum: AGD84 (ANS)

Latitude:	38°42'28.063"S	Longitude:	142°57'28.046"E

Projection: AMG Zone 54

Easting:	670231.50 m	Northing:	5713814.81 m

Final Antenna Position (T1 Thales UKOOA):

Sample size: 90 fixes used out of a total of 120.

Antenna offset

X:	1.92m	Y:	35.30m	Z:	0.00m
Range:	35.35m	Rel Brg from datum to antenna:			3.1°

Datum:	WGS 84				
Latitude:	38°42'24.323"S	Longitude:	142°57'32.303"E	Spheroidal Ht:	19.77m
Datum:	AGD84 (ANS)				
Latitude:	38°42'29.640"S	Longitude:	142°57'27.359"E	Spheroidal Ht:	36.50m
Projection:	AMG Zone 54				
Easting:	670213.87	Northing:	5713766.57	Spheroidal Ht:	36.50m

Standard deviations

Long or E:	0.56m
Lat or N:	0.53m
Height:	2.77m
Position:	0.77m

Final Datum Position

Datum: **AGD84 (ANS)**

Latitude:	38°42'28.627"S	Longitude:	142°57'28.045"E

Projection: **AMG Zone 54**

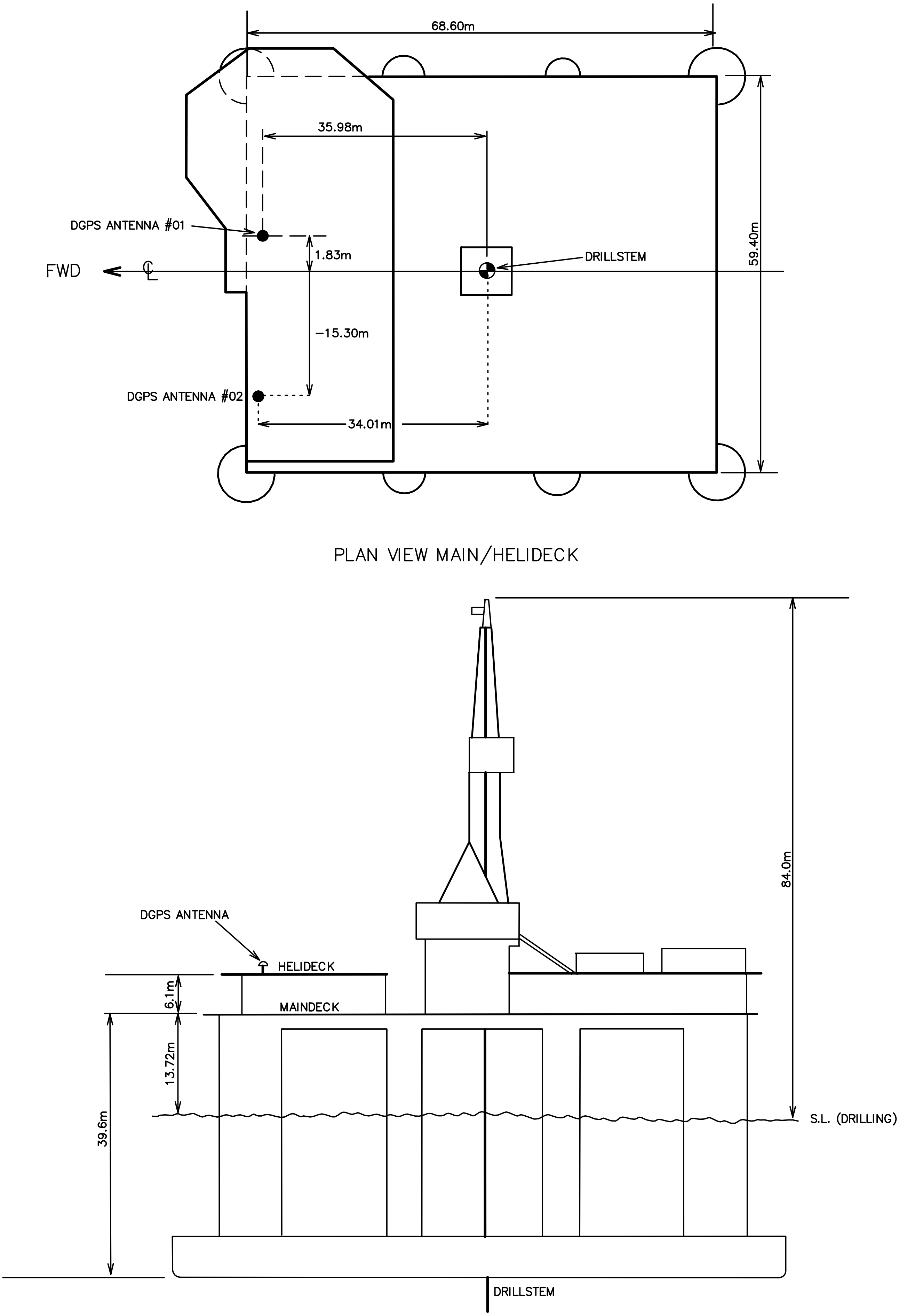
Easting:	670231.10 m	Northing:	5713797.44 m

Mean corrected heading:	204.8°T
SD heading:	0.6°T
Intended heading:	200.0°T
Difference from intended:	4.8°
Gyro C-O:	0.6°
Convergence:	-1.22°

Final Datum Position is 17.37m on a bearing of 180.1°T (181.3°G) from the intended location.

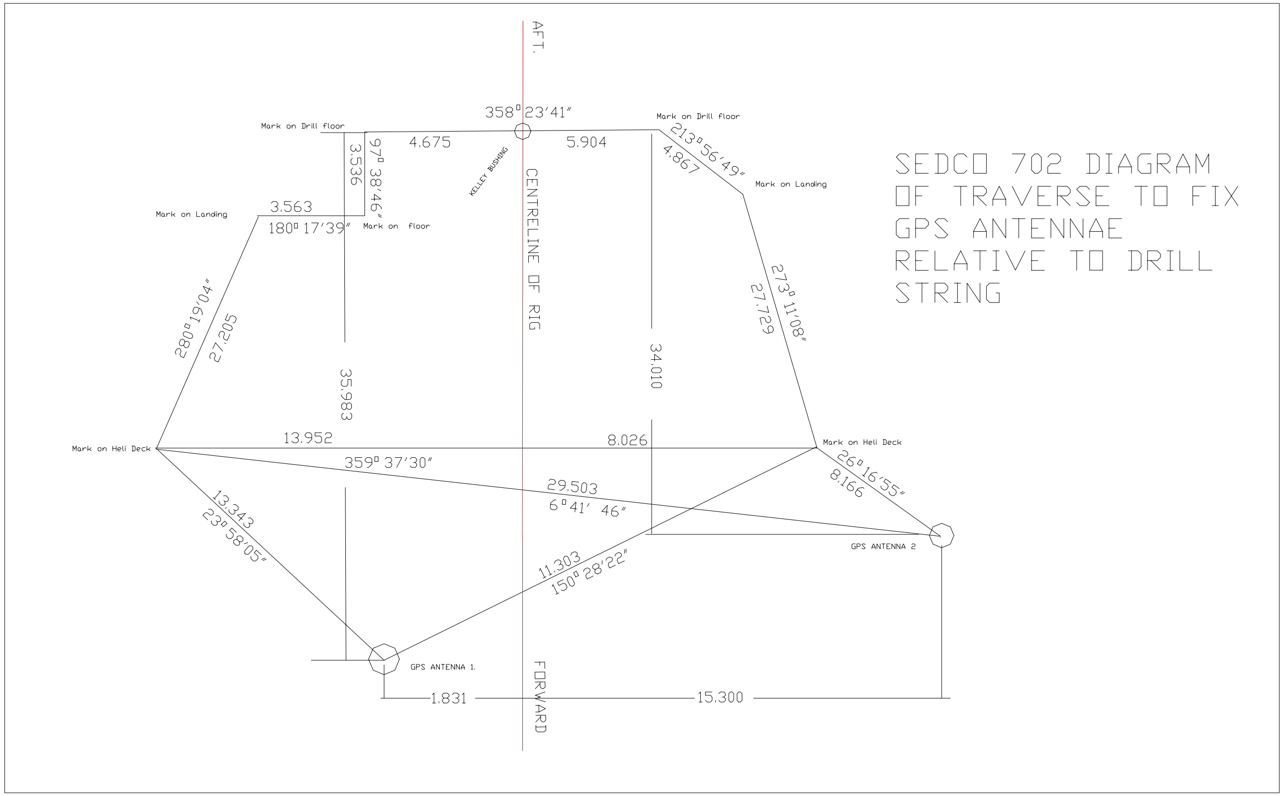
APPENDIX H

SEDCO 702 OFFSET DIAGRAM AND OFFSET TRAVERSE CALCULATIONS



SEDCO 702 - OFFSET DIAGRAM

(NOT TO SCALE)



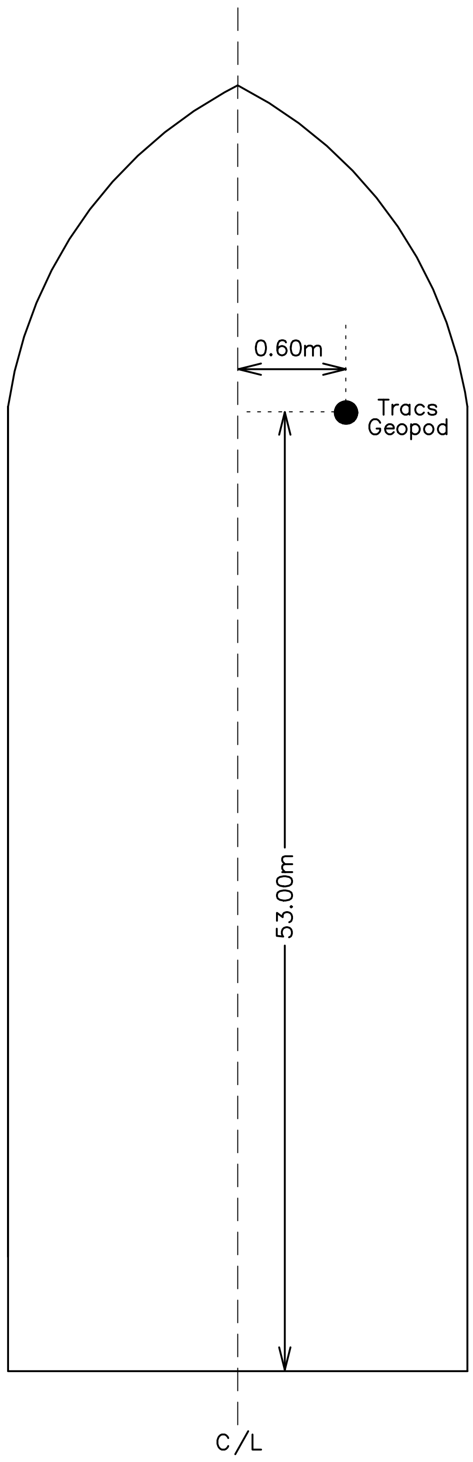
SEDCO 702 DIAGRAM OF TRAVERSE TO FIX GPS ANTENNAE RELATIVE TO DRILL STRING
AFT.
FORWARD
CENTRELINE OF RIG
KELLEY BUSHING
358° 23'41"
Mark on Drill floor
Mark on Drill floor
4.675
5.904
3.536
97° 38'46"
Mark on floor
Mark on Landing
Mark on Landing
3.563
180° 17'39"
213° 56'49"
4.867
280° 19'04"
27.205
273° 11'08"
27.729
35.983
34.010
Mark on Heli Deck
Mark on Heli Deck
13.952
8.026
359° 37'30"
29.503
6° 41' 46"
26° 16'55"
8.166
13.343
23° 58'05"
11.303
150° 28'22"
GPS ANTENNA 1.
GPS ANTENNA 2
1.831
15.300

APPENDIX I

PACIFIC FRONTIER AND PACIFIC CHALLENGER OFFSET DIAGRAMS

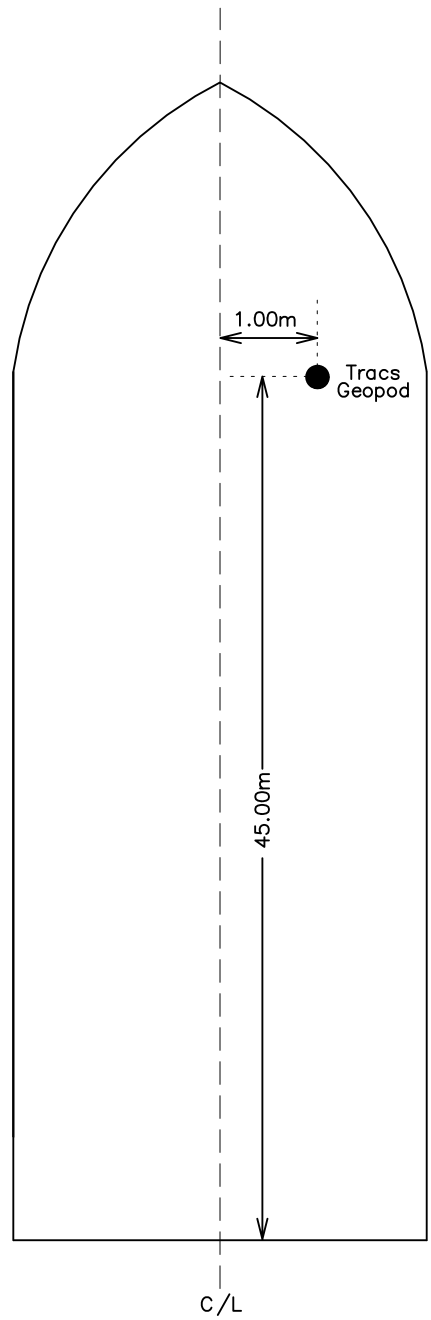
PACIFIC CHALLENGER

(NOT TO SCALE)



PACIFIC FRONTIER

(NOT TO SCALE)



APPENDIX J

GNS2 CONFIGURATION FILE PRINTOUT

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

JOB DETAILS

Job Number	:	3498A3
Job Description	:	Rig Move
Company	:	Thales GeoSolutions Group Ltd
Client	:	Esso Australia Pty Ltd.
Time Zone	:	GMT +9:00

WORKING SPHEROID

GDA94 (GRS80)

Semi-major	:	6378137.000 m
e Squared	:	0.006694380023

WORKING PROJECTION

MGA94 Zone 55

Lat of Origin	:	00°00'00.000"N
Long of Origin	:	147°00'00.000"E
False Easting	:	500000.00
False Northing	:	10000000.00
Scale Factor	:	0.999600
Units	:	Metres

GPS TRANSFORMATION

From : WGS 84

Semi-major	:	6378137.000 m
e Squared	:	0.006694380067

To : GDA94 (GRS80)

Dx	:	0.000 m
Dy	:	0.000 m
Dz	:	0.000 m
Rot x	:	0.0000 secs
Rot y	:	0.0000 secs
Rot z	:	0.0000 secs
Scale	:	0.0000 ppm

WAYPOINTS

Minerva-3	E:	148591.04	N:	5708056.65	Ht:	0.00 m	Horz Toll:	50.00 m
anc1	E:	149313.00	N:	5707463.00	Ht:	0.00 m		
anc2	E:	148681.91	N:	5707214.70	Ht:	0.00 m		
anc3	E:	148000.00	N:	5707367.00	Ht:	0.00 m		
anc4	E:	147696.00	N:	5707920.00	Ht:	0.00 m		
anc5	E:	147909.00	N:	5708635.00	Ht:	0.00 m		
anc6	E:	148458.00	N:	5708936.00	Ht:	0.00 m		
anc7	E:	149224.00	N:	5708807.00	Ht:	0.00 m		
anc8	E:	149496.00	N:	5708192.00	Ht:	0.00 m		
Minerva-1	E:	148189.87	N:	5708525.00	Ht:	0.00 m		
Minerva-2a	E:	148465.68	N:	5706924.00	Ht:	0.00 m		
Minerva-4	E:	148918.00	N:	5706691.00	Ht:	0.00 m		
P1	E:	148668.00	N:	5708034.00	Ht:	0.00 m		
Scallop-1	E:	639316.00	N:	5769300.00	Ht:	0.00 m	Horz Toll:	5.00 m
wp2	E:	428128.37	N:	5651449.91	Ht:	0.00 m		
wp1	E:	197031.78	N:	5673692.65	Ht:	0.00 m		
wp3	E:	461477.00	N:	5651685.77	Ht:	0.00 m		
wp4	E:	500000.00	N:	5668612.06	Ht:	0.00 m		

Verified by: (sign) ____________ (print) H.T. ARROWSMITH

wp5	E:	606225.78	N:	5693607.27	Ht:	0.00	m
wp6	E:	642790.58	N:	5717084.54	Ht:	0.00	m
wp7	E:	645222.30	N:	5771619.20	Ht:	0.00	m
wp8	E:	643083.93	N:	5772201.68	Ht:	0.00	m
wp8 new	E:	646732.42	N:	5775052.19	Ht:	0.00	m
wp7 new	E:	650436.42	N:	5775052.19	Ht:	0.00	m

TRACK GUIDANCE
tow route latest

SOL	E:	148591.05	N:	5708056.65	HT:	0.00	KP:	0.000
EOL	E:	197031.78	N:	5673692.65	HT:	0.00	KP:	59.337
SOL	E:	197031.78	N:	5673692.65	HT:	0.00	KP:	59.337
EOL	E:	428128.37	N:	5651449.91	HT:	0.00	KP:	291.481
SOL	E:	428128.37	N:	5651449.91	HT:	0.00	KP:	291.481
EOL	E:	461477.00	N:	5651685.77	HT:	0.00	KP:	324.843
SOL	E:	461477.00	N:	5651685.77	HT:	0.00	KP:	324.843
EOL	E:	500000.00	N:	5668612.06	HT:	0.00	KP:	366.937
SOL	E:	500000.00	N:	5668612.06	HT:	0.00	KP:	366.937
EOL	E:	606225.78	N:	5693607.27	HT:	0.00	KP:	476.102
SOL	E:	606225.78	N:	5693607.27	HT:	0.00	KP:	476.102
EOL	E:	642790.58	N:	5717084.54	HT:	0.00	KP:	519.564
SOL	E:	642790.58	N:	5717084.54	HT:	0.00	KP:	519.564
EOL	E:	650436.42	N:	5775052.19	HT:	0.00	KP:	578.042
SOL	E:	650436.42	N:	5775052.19	HT:	0.00	KP:	578.042
EOL	E:	646732.42	N:	5775052.19	HT:	0.00	KP:	581.746
SOL	E:	646732.42	N:	5775052.19	HT:	0.00	KP:	581.746
EOL	E:	640084.76	N:	5769878.82	HT:	0.00	KP:	590.171
SOL	E:	640084.76	N:	5769878.82	HT:	0.00	KP:	590.171
EOL	E:	639316.00	N:	5769300.00	HT:	0.00	KP:	591.133
SOL	E:	639316.00	N:	5769300.00	HT:	0.00	KP:	591.133
EOL	E:	638345.00	N:	5768595.00	HT:	0.00	KP:	592.333

MOBILES
Sedco 702 (semi-sub rig)
  Shape Definition: Sedco702
  Ellipse:-
    Centre X: -29.72 m Y: 34.29 m
    Hor Radius: 4.57 m Ver Radius: 4.57 m
  Ellipse:-
    Centre X: -29.72 m Y: 11.43 m
    Hor Radius: 2.74 m Ver Radius: 2.74 m
  Ellipse:-
    Centre X: -29.72 m Y: -11.43 m
    Hor Radius: 2.74 m Ver Radius: 2.74 m
  Ellipse:-
    Centre X: -29.72 m Y: -34.29 m
    Hor Radius: 4.57 m Ver Radius: 4.57 m
  Ellipse:-
    Centre X: 29.72 m Y: 34.29 m
    Hor Radius: 4.57 m Ver Radius: 4.57 m

Verified by: (sign) [signature] (print) H.T ARROWSMITH

```
Ellipse:-
  Centre X:  29.72 m  Y:  11.43 m
  Hor Radius:   2.74 m  Ver Radius:   2.74 m
Ellipse:-
  Centre X:  29.72 m  Y: -11.43 m
  Hor Radius:   2.74 m  Ver Radius:   2.74 m
Ellipse:-
  Centre X:  29.72 m  Y: -34.29 m
  Hor Radius:   4.57 m  Ver Radius:   4.57 m
 Line:-
  X: -22.10 m  Y:  34.29 m
  X: -22.10 m  Y: -34.29 m
  X: -25.15 m  Y: -44.96 m
  X: -34.29 m  Y: -44.96 m
  X: -37.34 m  Y: -34.29 m
  X: -37.34 m  Y:  34.29 m
  X: -34.29 m  Y:  44.96 m
  X: -29.72 m  Y:  48.00 m
  X: -25.15 m  Y:  44.96 m
  X: -22.10 m  Y:  34.29 m
 Line:-
  X:  22.10 m  Y:  34.29 m
  X:  22.10 m  Y: -34.29 m
  X:  25.15 m  Y: -44.96 m
  X:  34.29 m  Y: -44.96 m
  X:  37.34 m  Y: -34.29 m
  X:  37.34 m  Y:  34.29 m
  X:  34.29 m  Y:  44.96 m
  X:  29.72 m  Y:  48.00 m
  X:  25.15 m  Y:  44.96 m
  X:  22.10 m  Y:  34.29 m
 Line:-
  X: -27.43 m  Y:  12.95 m
  X: -27.43 m  Y:  32.00 m
  X:  -1.22 m  Y:  32.00 m
  X:  -1.22 m  Y:  34.29 m
  X:  11.20 m  Y:  34.29 m
  X:  16.69 m  Y:  40.39 m
  X:  27.43 m  Y:  40.39 m
  X:  33.53 m  Y:  34.29 m
  X:  33.53 m  Y:  19.05 m
  X:  27.43 m  Y:  12.95 m
  X: -27.43 m  Y:  12.95 m
 Line:-
  X: -25.15 m  Y:  34.29 m
  X:  -1.22 m  Y:  34.29 m
 Line:-
  X:  29.72 m  Y:  29.72 m
  X:  29.72 m  Y: -29.72 m
 Line:-
  X:  25.15 m  Y: -34.29 m
  X: -25.15 m  Y: -34.29 m
 Line:-
  X: -29.72 m  Y: -29.72 m
```

Verified by: (sign) [signature] (print) H.T. [illegible]

```
    X: -29.72 m  Y:  29.72 m
   Line:-
    X: -16.69 m  Y: -34.29 m
    X: -16.69 m  Y: -11.43 m
    X:  -3.96 m  Y: -11.43 m
    X:  -3.96 m  Y:  -8.38 m
    X: -13.72 m  Y:  -8.38 m
    X: -13.72 m  Y:  10.67 m
    X:  13.72 m  Y:  10.67 m
    X:  13.72 m  Y:  -8.38 m
    X:   3.96 m  Y:  -8.38 m
    X:   3.96 m  Y: -11.43 m
    X:  16.69 m  Y: -11.43 m
    X:  16.69 m  Y: -34.29 m
   Line:-
    X:  11.20 m  Y:  34.29 m
    X:  25.15 m  Y:  34.29 m

  Tracking Point       : Datum
  Pitch and Roll Centre: Datum

  Selected Sources:-
   Primary Position : T1 Thales UKOOA (Using Antenna Offset : New GPS)
   Backup Position  : T2 Thales UKOOA (Using Antenna Offset : New GPS)
   Primary Heading  : N1 Navigat 2100
   Backup Heading   : S1 SGB 1000S
   Primary Height   : T1 Thales UKOOA
   Backup Height    : T2 Thales UKOOA
   Pitch and Roll   : Manual
   Soundings        : Manual
   Speed            : Position Filter
   Course Made Good : Posn Filter CMG

  Equipment:-
   T1 Thales UKOOA
    Status:  ON   Interface: COM3
    Antenna Offset Selected: New GPS
     X:    1.83 m Y:   35.98 m Z:    0.00 m Rng:   36.03 m Brg:  2.9°
    Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht S
    Update posn only when diff corrected
    Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
    Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

   T2 Thales UKOOA
    Status:  ON   Interface: COM4
    Antenna Offset Selected: New GPS
     X:    1.83 m Y:   35.98 m Z:    0.00 m Rng:   36.03 m Brg:  2.9°
    Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht S
    Update posn regardless of whether diff corrected
    Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
    Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

   N1 Navigat 2100
    Status:  ON   Interface: COM5
```

Verified by: (sign) ____ (print) H.T. Arrowsmith

```
    C-O:  -0.7 degs  Stale Time: 5.0 s  SD: 0.1 degs
     Filter: Off  Gate: Off  Time Constant: 5.0 s  Sample Dwell: 0.5 s
    Pitch C-O:   0.0 degs  Roll C-O:   0.0 degs  Stale Time: 0.2 s

   T3 Tracs TDMA Master
    Status:  ON   Interface: COM6
    Antenna Offset Selected: GPS
     X:     1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°

   N2 NMEA
    Status:  OFF  Interface: COM2
    Antenna Offset Selected: GPS
     X:     1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°
    Position        : GGA
     Apply Pitch Roll: Instantaneous  Stale Time: 5.0 s  Posn SD: 3.0 m  Ht
    Filter: Off  Time Constant:60.0 s  Sample Dwell: 0.5 s
    Gate: Off  Gate Width: 9.0 xSD  Minimum Gate: 0.0 m

   S1 SGB 1000S
    Status:  ON   Interface: COM7
    C-O:  -1.8 degs  Stale Time: 5.0 s  SD: 0.1 degs
     Filter: Off  Gate: Off  Time Constant: 5.0 s  Sample Dwell: 0.5 s

  Defined Offsets:-
   Datum
    X:    0.00 m Y:    0.00 m Z:    0.00 m Rng:    0.00 m Brg:  0.0°
   GPS
    X:    1.85 m Y:   35.79 m Z:    0.00 m Rng:   35.83 m Brg:  3.0°
   Fairlead 7
    X:  -33.00 m Y:  -38.00 m Z:    0.00 m Rng:   50.33 m Brg:221.0°
   GPS2
    X:  -15.30 m Y:   34.04 m Z:    0.00 m Rng:   37.32 m Brg:335.8°
   New GPS
    X:    1.83 m Y:   35.98 m Z:    0.00 m Rng:   36.03 m Brg:  2.9°
   New SSE
    X:  -15.30 m Y:   34.01 m Z:    0.00 m Rng:   37.29 m Brg:335.8°

P. Challenger (tug)
  Shape Definition: P_Challenger
   Line:-
    X:  -6.50 m  Y:   0.00 m
    X:  -6.50 m  Y:  50.00 m
    X:   0.00 m  Y:  63.00 m
    X:   6.50 m  Y:  50.00 m
    X:   6.50 m  Y:   0.00 m
    X:  -6.50 m  Y:   0.00 m

  Tracking Point        : Datum
  Pitch and Roll Centre: Datum

  Selected Sources:-
   Primary Position : T4 Tracs TDMA Remote (Using Antenna Offset : SK8 Geopc
   Primary Heading  : T4 Tracs TDMA Remote
   Primary Height   : Datum Displacement
```

Verified by: (sign) ____ (print) H.V. Akronsbaid

```
   Pitch and Roll    : Manual
   Soundings         : Manual
   Speed             : Position Filter
   Course Made Good  : Posn Filter CMG

  Equipment:-
   T4 Tracs TDMA Remote
    Status:  ON   Interface: Not defined
    Antenna Offset Selected: SK8 Geopod
     X:    0.60 m Y:   53.00 m Z:    0.00 m Rng:   53.00 m Brg:  0.6°

  Defined Offsets:-
   Datum
    X:    0.00 m Y:    0.00 m Z:    0.00 m Rng:    0.00 m Brg:  0.0°
   SK8 Geopod
    X:    0.60 m Y:   53.00 m Z:    0.00 m Rng:   53.00 m Brg:  0.6°

P. Frontier (tug)
  Shape Definition: P_Frontier
   Line:-
    X:  -7.50 m   Y:   0.00 m
    X:  -7.50 m   Y:  50.00 m
    X:   0.00 m   Y:  65.00 m
    X:   7.50 m   Y:  50.00 m
    X:   7.50 m   Y:   0.00 m
    X:  -7.50 m   Y:   0.00 m

  Tracking Point        : Datum
  Pitch and Roll Centre: Datum

  Selected Sources:-
   Primary Position  : T5 Tracs TDMA Remote (Using Antenna Offset : SK8 Geopc
   Primary Heading   : Manual
   Primary Height    : Datum Displacement
   Pitch and Roll    : Manual
   Soundings         : Manual
   Speed             : Position Filter
   Course Made Good  : Posn Filter CMG

  Equipment:-
   T5 Tracs TDMA Remote
    Status:  ON   Interface: Not defined
    Antenna Offset Selected: SK8 Geopod
     X:    1.00 m Y:   45.00 m Z:    0.00 m Rng:   45.01 m Brg:  1.3°

  Defined Offsets:-
   Datum
    X:    0.00 m Y:    0.00 m Z:    0.00 m Rng:    0.00 m Brg:  0.0°
   SK8 Geopod
    X:    1.00 m Y:   45.00 m Z:    0.00 m Rng:   45.01 m Brg:  1.3°
```

Verified by: (sign) ______ (print) H.T. Arrowsmith

GNS II CONFIGURATION FILE C:\3498A3 Esso Scallop-1\scallop-1 .gns

ANCHORS

Sedco 702

Fairleads:-

Name	X	Y	Z	Rng	Brg
Fairlead 1	-35.00 m	35.00 m	0.00 m	49.50 m	315.0°
Fairlead 2	-33.00 m	38.00 m	0.00 m	50.33 m	319.0°
Fairlead 3	33.00 m	38.00 m	0.00 m	50.33 m	41.0°
Fairlead 4	35.00 m	35.00 m	0.00 m	49.50 m	45.0°
Fairlead 5	35.00 m	-35.00 m	0.00 m	49.50 m	135.0°
Fairlead 6	33.00 m	-38.00 m	0.00 m	50.33 m	139.0°
Fairlead 7	-33.00 m	-38.00 m	0.00 m	50.33 m	221.0°
Fairlead 8	-35.00 m	-35.00 m	0.00 m	49.50 m	225.0°

Main Intended Positions:-

Name	Easting	Northing	Depth	Tolerance
Anchor 1	639891.22	5768531.07	0.00 m	50.00 m
Anchor 2	639213.23	5768342.41	0.00 m	50.00 m
Anchor 3	638547.25	5768721.17	0.00 m	50.00 m
Anchor 4	638359.95	5769399.50	0.00 m	50.00 m
Anchor 5	638740.77	5770068.93	0.00 m	50.00 m
Anchor 6	639418.76	5770257.59	0.00 m	50.00 m
Anchor 7	640084.76	5769878.83	0.00 m	50.00 m
Anchor 8	640272.05	5769200.49	0.00 m	50.00 m

Main Actual Positions:-

Name	Easting	Northing	Depth	Tolerance
Anchor 1	639937.04	5768500.67	109.90 m	50.00 m
Anchor 2	639219.97	5768378.78	109.93 m	50.00 m
Anchor 3	638579.13	5768721.84	109.90 m	50.00 m
Anchor 4	638295.72	5769365.24	109.90 m	50.00 m
Anchor 5	638737.18	5770082.68	109.90 m	50.00 m
Anchor 6	639394.83	5770174.27	109.90 m	50.00 m
Anchor 7	640040.83	5769843.49	109.90 m	50.00 m
Anchor 8	640316.80	5769201.56	109.90 m	50.00 m

Verified by: (sign) (print) H.T. Harrison

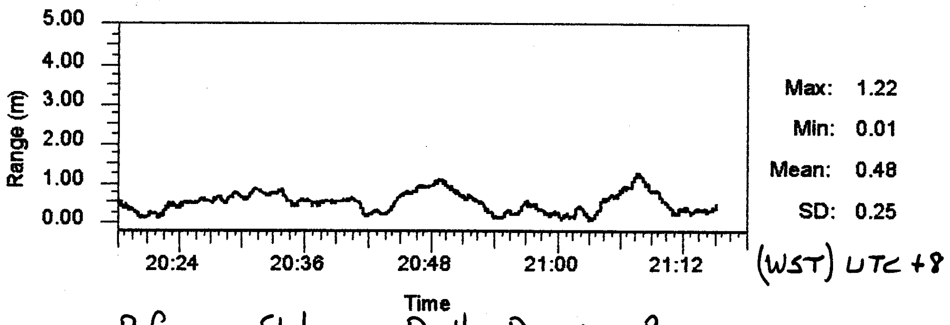
APPENDIX K

DIFFERENTIAL GPS SHORE BASED MONITORING

Skyfix/SkyFix Spot Monitoring

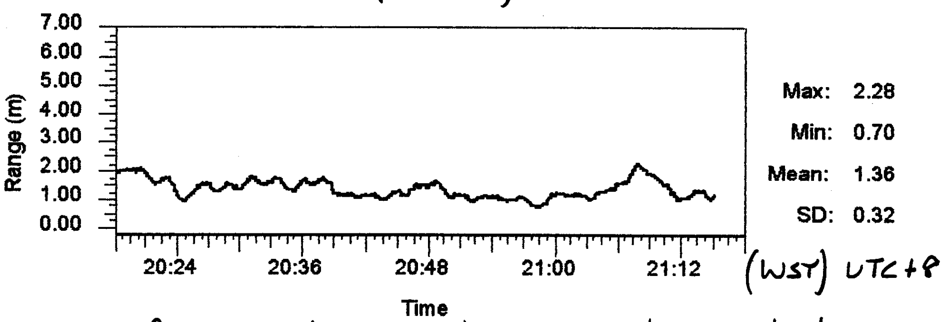
Graphs @ 21:15:12 2 Feb 2003

MFX3-SkyFix (at TGA)

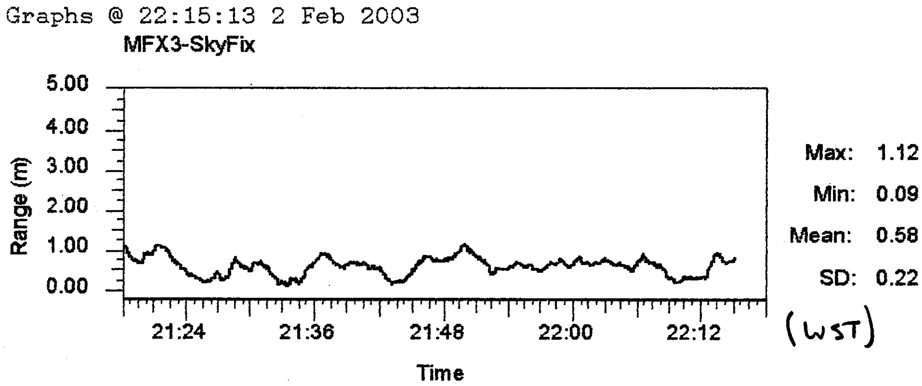


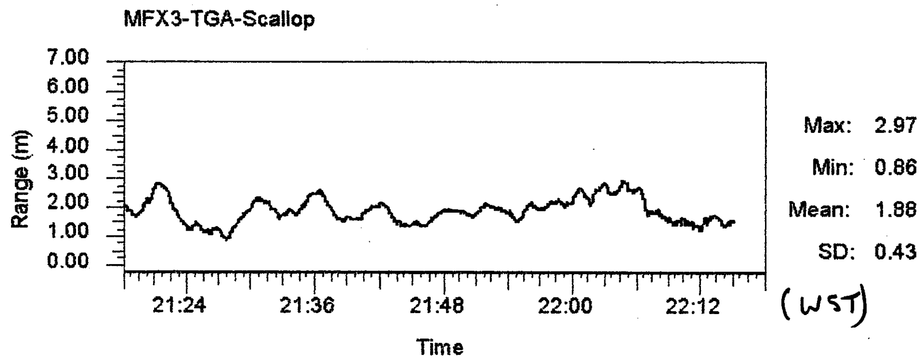
Reference Stations: Perth - Dampier - Broome
Adelaide - Darwin

MFX3-TGA-Scallop (at TGA)

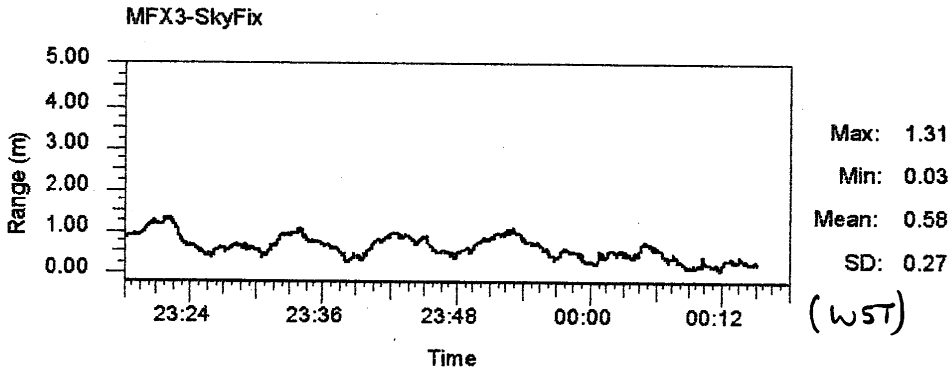


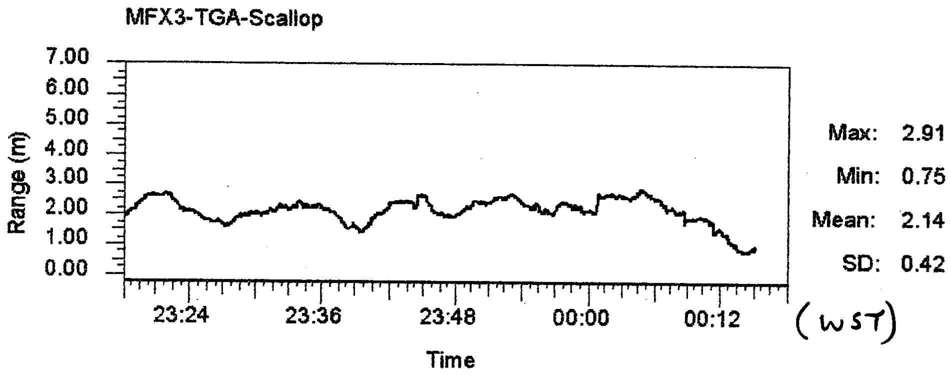
Reference Stations: Melbourne - Sydney - Adelaide


Graphs @ 22:15:13 2 Feb 2003
MFX3-SkyFix
Range (m)
5.00
4.00
3.00
2.00
1.00
0.00
21:24
21:36
21:48
22:00
22:12
Time
Max: 1.12
Min: 0.09
Mean: 0.58
SD: 0.22
(WST)

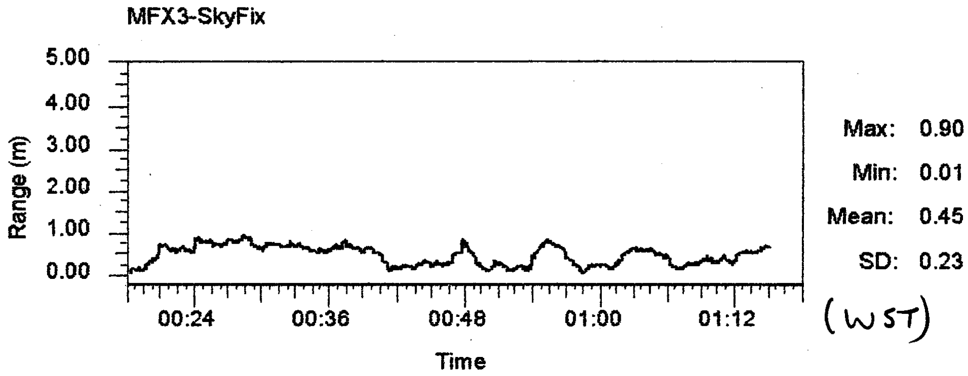

MFX3-TGA-Scallop
Range (m)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
21:24
21:36
21:48
22:00
22:12
Time
Max: 2.97
Min: 0.86
Mean: 1.88
SD: 0.43
(WST)

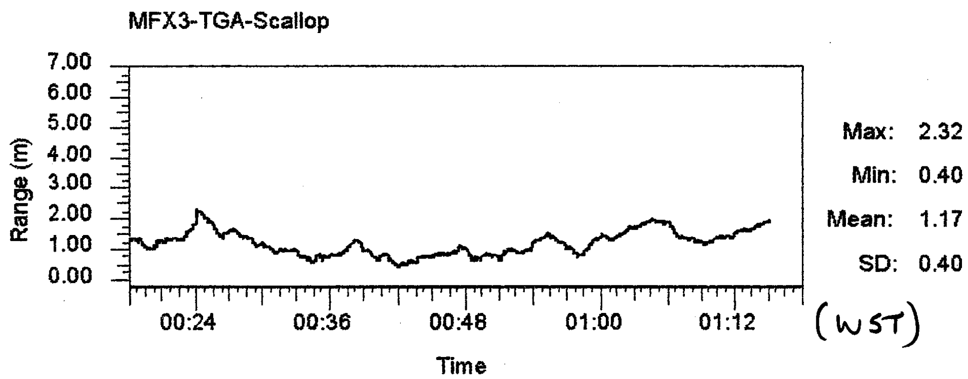
Graphs @ 00:15:14 3 Feb 2003



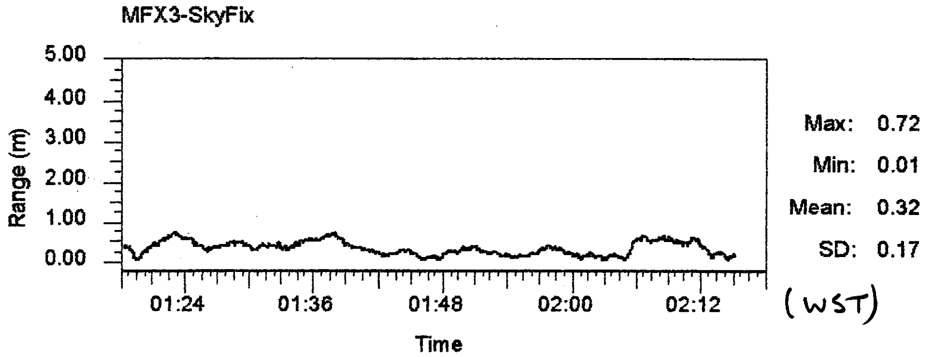


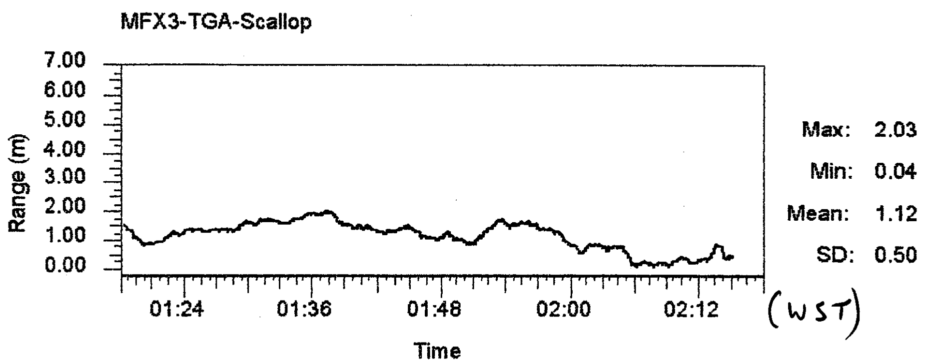
Graphs @ 01:15:15 3 Feb 2003



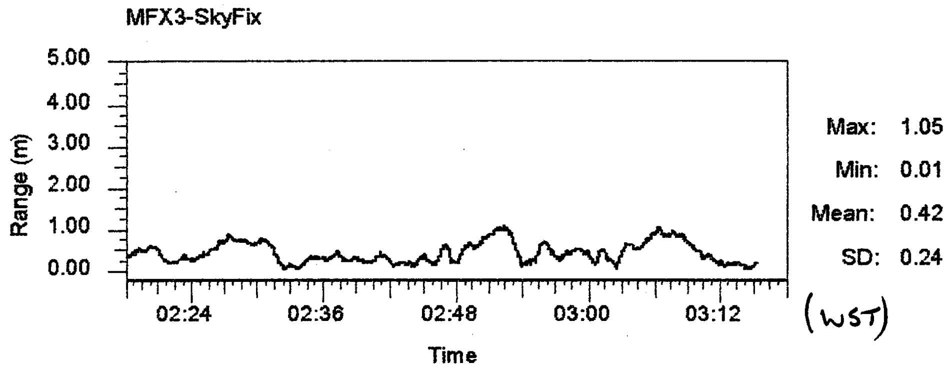


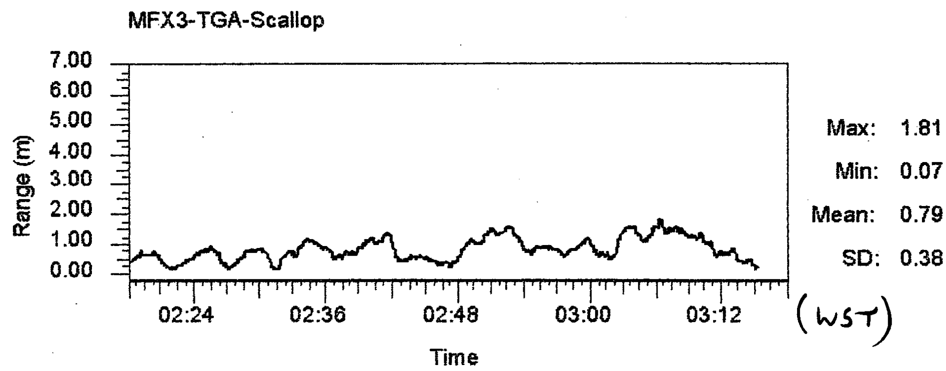
Graphs @ 02:15:16 3 Feb 2003



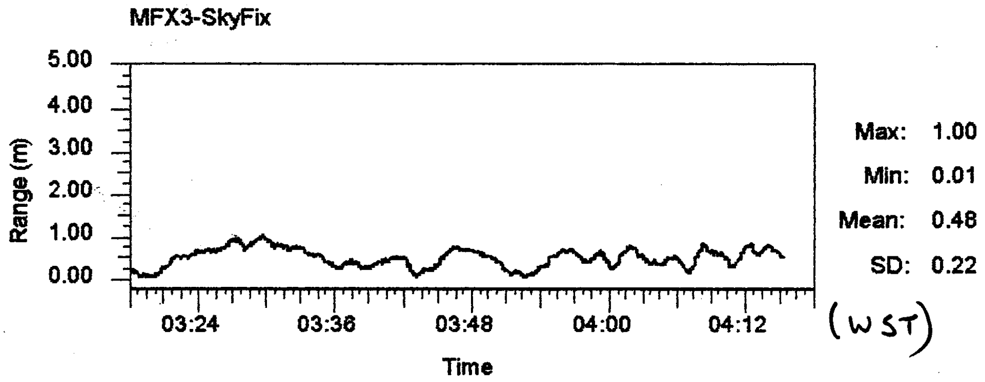


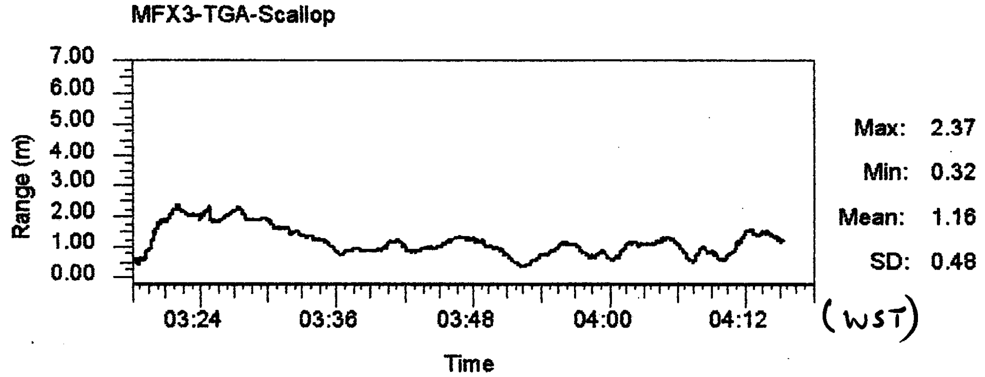
Graphs @ 03:15:17 3 Feb 2003



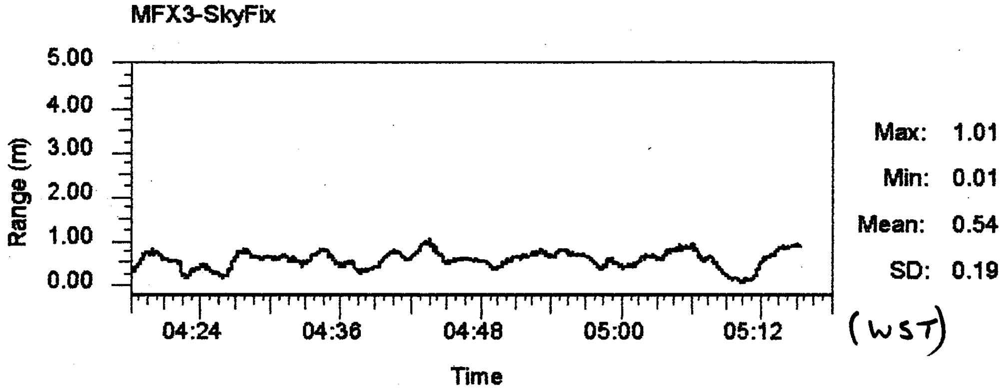


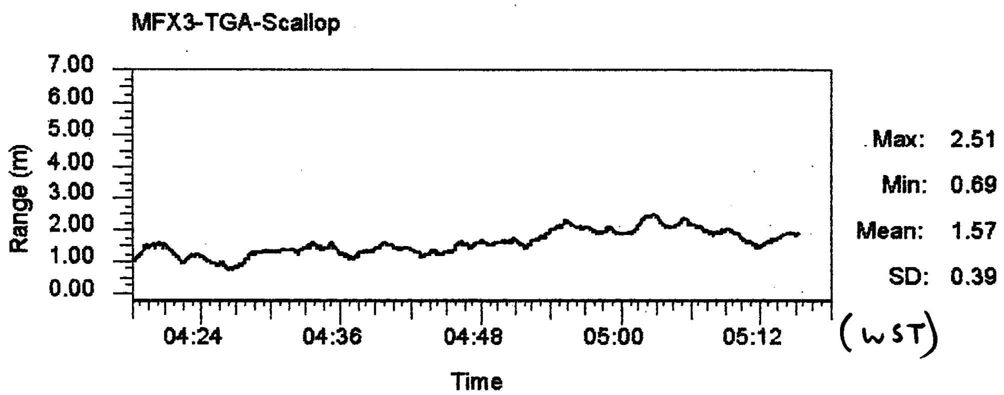
Graphs @ 04:15:18 3 Feb 2003





Graphs @ 05:15:18 3 Feb 2003





APPENDIX L

MULTIPATH AUDIT RESULTS

Multipath audit for the Melbourne SkyFix DGPS reference station

Signals / 225

3 January 2003

Prepared by Mat Kellett

5. RESULTS

5.1 Multipath

The effect of multipath on integrated Doppler measurements is virtually negligible, so the code-carrier differences reflect multipath directly. Strong multipath has a regular short-term pattern, and can be modelled within the code-carrier filter, being 3 to 5 metres above the existing noise in the receiver.

From the processed data at the Melbourne station possible instances of multipath interference could be seen. This was to be expected as it is very difficult to design a reference station antenna site that will be completely free of sources of multipath. Generally, the magnitude of the multipath was small. From the *PR-ID Correlation vs Time* graphing, there are occasions when the peaks of the satellite colour plots are greater than +0.5. However, multipath is usually detected at +0.75 or greater for longer periods, and during this audit there were only a few occasions where this occurred.

The satellites that showed a correlation of +0.75 for a longer period were further investigated using the *Pseudo-range - Integrated Doppler* (PR-ΔPPR.ΔT) graph. Possible multipath is distinguished by an increased amplitude of the curve (along the distance axis) of a particular satellite, over a period of 2-5 minutes, before decreasing back to the normal spread of around 2 metres. The following table lists the satellites were shown to have some level of multipath, together with the period and the amplitude of the possible multipath.

PRN	Period	Multipath	Remarks
18	0100 – 0155	-	Rising (25° - 50°), thermal noise
26	0115 – 0145	-	Rising (20° - 30°), low elevation noise
30	0115 – 0200	-	Setting (25° - 10°), low elevation noise
06	0130 – 0255	-	Setting (70° - 35°), thermal noise
06	0315 – 0355	-	Setting (20° - 10°), low elevation noise
14	0315 – 0500	-	Rising (10° - 60°), thermal noise
17	0400 – 0515	-	Setting (40° - 15°), thermal noise
15	0505 – 0515	2.0	Setting (45° - 40°), low level multipath
15	0600 – 0620	-	Setting (20° - 15°), low elevation noise
03	0615 – 0645	-	Setting (25° - 15°), low elevation noise
25	0700 – 0820	1.0	Rising (35° - 70°), low level multipath
02	1025 – 1100	1.0	Rising (40° - 50°), low level multipath
20	1045 – 1200	-	Setting (75° - 40°), thermal noise
27	1115 – 1200	-	Rising (20° - 40°), thermal noise
01	1235 – 1400	1.0	Setting (55° - 25°), low level multipath
31	1300 – 1350	1.5	Rising (20° - 35°), low level multipath
13	1345 – 1445	1.0	Setting (70° - 45°), low level multipath
27	1555 – 1700	1.5	Setting (45° - 25°), low level multipath
07	1625 – 1735	0.5	Rising (45° - 75°), low level multipath
08	1715 – 1800	1.0	Setting (45° - 30°), low level multipath
28	1845 – 1935	1.0	Setting (30° - 15°), low level multipath
04	1845 – 1935	1.0	Rising (30° - 60°), low level multipath
24	1845 – 2000	0.5	Rising (40° - 60°), low level multipath
09	2110 – 2200	-	Setting (45° - 25°), thermal noise
10	2200 – 2250	1.0	Rising (25° - 45°), low level multipath
05	2230 – 0000	-	Setting (75° - 35°), thermal noise

Table 2. Overview of all satellites that were investigated on multipath

Table 2 shows information for all satellites that were investigated on multipath and noise. The results show that low levels of multipath appear to be present

Significant multipath that may affect the position performance usually exceeds the receiver noise level, showing 2-5 minute cycles of 3-5 metres. The multipath detected at the Melbourne is of a lower level and rarely exceeds the noise level of the GPS observations.

The level of multipath at the Melbourne reference station therefore is not expected to significantly affect the position performance of DGPS users.

5.2 Cycle Slips

The 48-hour of data appeared to be continuous and only a small number of cycle slips were noticed.

5.3 SNR values

The SNR values of all satellites at all elevations were representative. Only low elevation satellites showed varying SNR values, which is as expected.

Multipath audit for the Sydney SkyFix DGPS reference station

Signals / 227

8 January 2003

Prepared by Mat Kellett

5. RESULTS

5.1 Multipath

The effect of multipath on integrated Doppler measurements is virtually negligible, so the code-carrier differences reflect multipath directly. Strong multipath has a regular short-term pattern, and can be modelled within the code-carrier filter, being 3 to 5 metres above the existing noise in the receiver.

From the processed data at the Sydney station possible instances of multipath interference could be seen. This was to be expected as it is very difficult to design a reference station antenna site that will be completely free of sources of multipath. Generally, the magnitude of the multipath was small. From the *PR-ID Correlation vs Time* graphing, there are occasions when the peaks of the satellite colour plots are greater than +0.5. However, multipath is usually detected at +0.75 or greater for longer periods, and during this audit there were only a few occasions where this occurred.

The satellites that showed a correlation of +0.75 for a longer period were further investigated using the *Pseudo-range - Integrated Doppler* (PR-∆PPR.∆T) graph. Possible multipath is distinguished by increased amplitude of the curve (along the distance axis) of a particular satellite, over a period of 2-5 minutes, before decreasing back to the normal spread of around 2 metres.

PRN	Period	Multipath	Remarks
29	0055 – 0110	-	Rising, (15° - 20°), low elevation noise
26	0100 – 0115	-	Rising, (10° - 15°), low elevation noise
18	0105 – 0125	-	Rising, (10° - 20°), low elevation noise
05	0115 – 0200		Setting (25° - 10°), low elevation noise
30	0225 – 0300	-	Setting (20° - 10°), low elevation noise
06	0400 – 0455	-	Setting (35° - 10°), low elevation noise
14	0400 – 0510	1.0	Rising, (10° - 35°), low elevation multipath
25	0635 - 0655	-	Rising, (10° - 15°), low elevation noise

Table 2. Overview of all satellites that were investigated on multipath

Table 2 shows information for all satellites that were investigated on multipath and noise. The results show that multipath appears to be present, but that most investigated satellites showed to be examples of low elevation noise. The only indication of multipath is on PRN14 (1.0 metre) between 0400 and 0510.

Significant multipath that may affect the position performance usually exceeds the receiver noise level, showing 2-5 minute cycles of 3-5 metres. The multipath detected at the Sydney is of a lower level and rarely exceeds the noise level of the GPS observations.

The level of multipath at the Sydney reference station therefore is not expected to significantly affect the position performance of DGPS users.

5.2 Cycle Slips

The 48-hour of data appeared to be continuous and only a small number of cycle slips were noticed.

5.3 SNR values

The SNR values of all satellites at all elevations were representative. Only low elevation satellites showed varying SNR values, which is as expected.

Multipath audit for the Adelaide SkyFix DGPS reference station

THALES

Signals / 112

15 August 2001

Prepared by Matthew George
Reviewed by Pieter Toor

5. RESULTS

5.1 Multipath

The effect of multipath on integrated Doppler measurements is virtually negligible, so the code-carrier differences reflect multipath directly. Strong multipath has a regular short-term pattern, and can be modelled within the code-carrier filter, being 3 to 5 metres above the existing noise in the receiver.

From the processed data at the Adelaide station only one instance of multipath interference could be seen. The occasional occurrence of multipath can be expected as it is very difficult to design a reference station antenna site that will be completely free of sources of multipath. From the *PR-ID Correlation vs Time* graphing, there are occasions when the peaks of the satellite colour plots are greater than +0.5. However, multipath is usually detected at +0.75 or greater for longer periods, and during this audit there were only one occasion where this occurred.

The satellites that showed a correlation of +0.75 for a longer period were further investigated using the *Pseudo-range - Integrated Doppler* (PR-ΔPPR.ΔT) graph. Possible multipath is distinguished by an increased amplitude of the curve (along the distance axis) of a particular satellite, over a period of 2-5 minutes, before decreasing back to the normal spread of around 2 metres. The following table lists the satellites were shown to have some level of multipath, together with the period and the amplitude of the possible multipath.

SV	Period	Noise	Multipath	Remarks
25	20:15 - 20:35	0.3m	<1.5m	Setting (20º-10º), low level of multipath

Table 1. Overview of all satellites that were investigated for multipath

Significant multipath that may affect the position performance usually exceeds the receiver noise level, showing 2-5 minute cycles of 3-5 metres. Table 1 shows information for all satellites that were investigated on multipath and noise. The only indication of multipath is on PRN25 (at a low level of <1.5 metres) between 20:15 and 20:35 and did not exceed the typical noise level of the GPS observations.

The level of multipath at the Adelaide reference station therefore is not expected to significantly affect the position performance of DGPS users.

5.2 Cycle Slips

The 48-hour of data appeared to be continuous and only a small number of cycle slips was noticed. The RS4000R reference station software used contains a cycle slip detection and repair routine which corrects for these occasional cycle slips.

5.3 SNR values

The SNR values of all satellites at all elevations were representative, although there were a few fluctuations. These did not appear to cause a loss of lock or loss of data. Only low elevation satellites showed varying SNR values, which is as expected.

APPENDIX M

GPS CARRIER PHASE PROCESSING RESULTS AT SCALLOP-1

Sedco 702 to Scallop-1

Project:	Sedco 702 to Scallop 1 Rigmove
Supervisor:	S.Schonknecht
Date Created:	2/5/03 18:26
Date Last Accessed:	2/5/03 18:26
Project Directory:	C:\GPSURVEY\projects\Sedco_70
Antenna Type:	Compact L1/L2 w/Ground Plane
Antenna Measurement Method:	Measured to bottom of notch on ground plane
Antenna Group:	GPSurvey
Receiver Type:	4000SSE
Coordinate System:	Geographic
Zone:	WGS84
Linear Unit:	Meter
Timezone:	Greenwich Mean Time : 0:00
Number of Stations:	2
Number of Baselines:	1
No. of Continuous Kinematic Solns:	0

Sedco 702 to Scallop-1

Station Short Name	Station ID	**** Reference Coordinates **** Latitude	Longitude	Height	Station Quality
TID1	5010	35°23'57.15627" S	148°58'47.98425" E	665.44000	Fixed Control
2795	2795	38°12'49.84459" S	148°35'28.72097" E	25.66858	Baseline Solutions

Sedco 702 to Scallop-1

From Station Short Name	To Station Short Name	Solution Type	Slope	Ratio	Reference Variance	Entered Ant. Ht. (From)	Entered Ant. Ht. (To)
TID1	2795	Iono free float	314256.204		56.787	0.061	1.340

Sedco 702 to Scallop-1

From Station Short Name	To Station Short Name	Solution Type	Slope	Ratio	Reference Variance	Entered Ant. Ht. (From)	Entered Ant. Ht. (To)
TID1	2795	Iono free float	314256.204		56.787	0.061	1.340

Sedco 702 to Scallop-1

Ambiguity Summary (cycles):	SV	Ambiguity	Error
Iono free	04	6029091.036	± 1.597
	05	-626958.636	± 0.549
	05	22282179.197	± 0.661
	10	1412878.411	± 0.945
	15	5403279.657	± 0.755
	17	5000334.246	± 0.497
	18	2021310.866	± 0.624
	23	7606328.674	± 0.369
	24	19544402.963	± 1.166
	26	1702663.822	± 1.087
	26	-4653781.702	± 1.112
	29	1491785.496	± 1.116
	30	2905860.456	± 0.311

Sedco 702 to Scallop-1

Project Name:	Sedco 702 to Scallop 1 Rigmove	
Processed:	Wednesday, February 05, 2003 10:33	
	WAVE 2.35	
Solution Output File (SSF):	00000467.SSF	
From Station:	TID1	
Data file:	TID10330.RNX	
Antenna Height (meters):	0.061 True Vertical	
Position Quality:	Fixed Control	
WGS 84 Position:	35° 23' 57.156270" S	X -4460996.069
	148° 58' 47.984250" E	Y 2682557.144
	665.440	Z -3674443.874
To Station:	2795	
Data file:	27950330.DAT	
Antenna Height (meters):	1.340 True Vertical	
WGS 84 Position:	38° 12' 49.844590" S	X -4282551.491
	148° 35' 28.720970" E	Y 2614972.076
	25.669	Z -3924137.192

Start Time:	2/2/03 16:20:15.00 GPS	(1204 58815.00)
Stop Time:	2/2/03 19:34:15.00 GPS	(1204 70455.00)
Occupation Time Meas. Interval (seconds):	03:14:00.00	30.00
Solution Type:	Iono free float double difference	
Solution Acceptability:	Acceptable	
Ephemeris:	Broadcast	
Met Data:	Standard	
Baseline Slope Distance Std. Dev. (meters):	314256.204	0.012685

	Forward	Backward
Normal Section Azimuth:	186° 13' 14.150967"	6° 27' 12.715549"
Vertical Angle:	-1° 31' 57.395485"	-1° 17' 57.006391"

Baseline Components (meters):	dx	178444.579	dy	-67585.069	dz	-249693.318
Standard Deviations (meters):		0.031169		0.043831		0.027144
	dn	-312294.129	de	-34039.596	du	-8405.065
		0.013077		0.028788		0.051280
					dh	-639.771
						0.051058

Aposteriori Covariance Matrix:	9.714977E-004		
	-9.512156E-004	1.921144E-003	
	6.844449E-004	-9.393539E-004	7.367697E-004

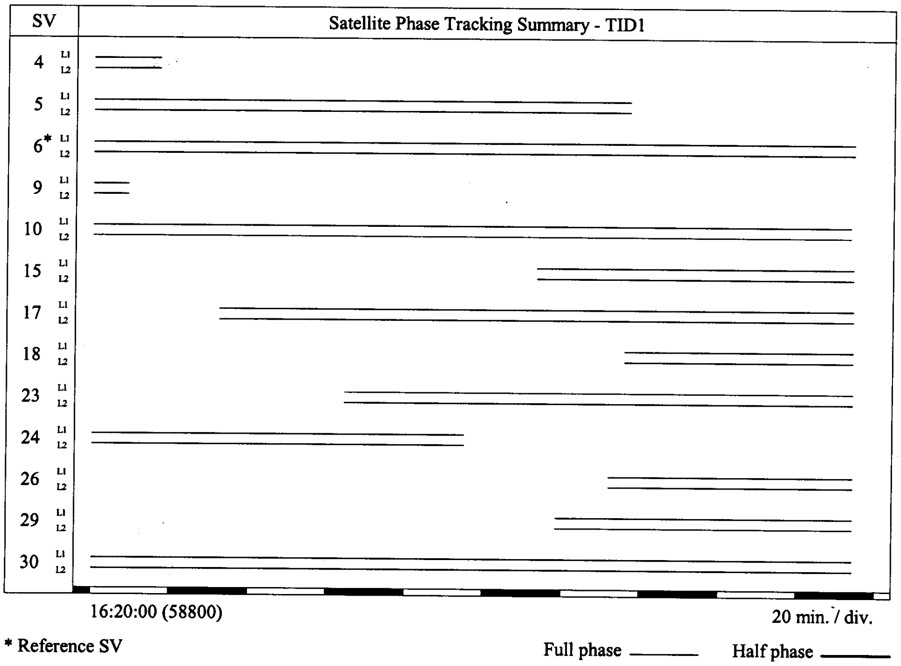
Reference Variance: 56.787

Observable Count/Rejected RMS:	Iono free phase	2099/31	0.080

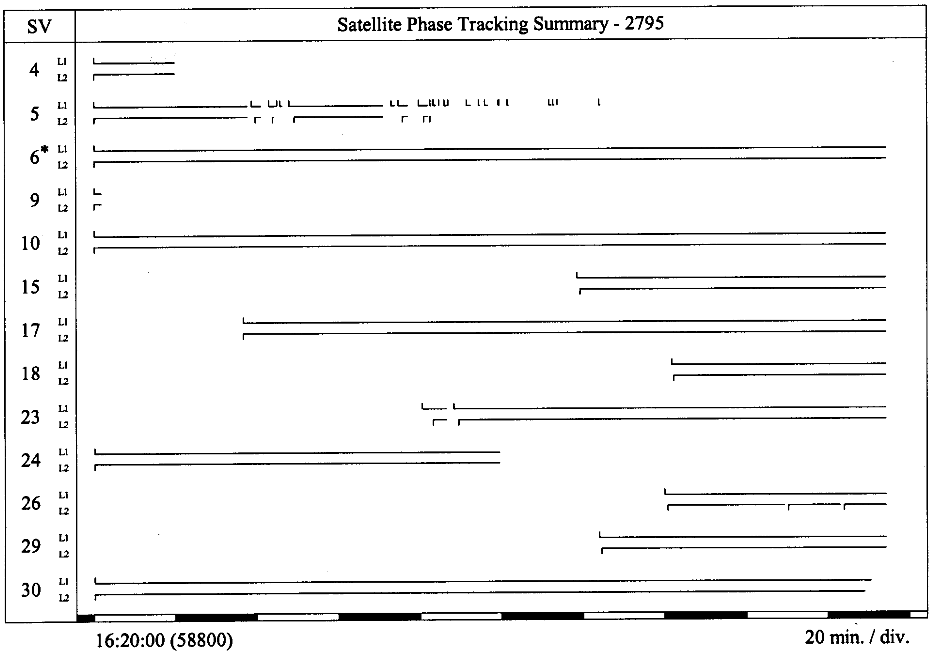
Sedco 702 to Scallop-1
Processor Controls:

[General]		
Process start time:	2/2/03 00:00:00 GPS	(1204 0)
Process stop time:	2/2/03 23:59:30 GPS	(1204 86370)
Elevation mask:	15 degrees	
Maximum iterations:	10	
Maximum fixable cycle slip:	600 seconds	
Ephemeris:	Broadcast	
Residuals:	Disabled	
Antenna phase correction:	Enabled	
[Observables]		
L1 phase	Enabled	
L2 phase	Enabled	
L1 P code	Enabled	
L2 P code	Enabled	
L1 C/A code	Enabled	
L2 code (encrypted)	Enabled	
[Static Network]		
Baseline generation:	All baselines	
Min baseline observation time	120 seconds	
[Quality]		
Observation editing:	Edit multiplier	3.5
Ratio test:	Cutoff	1.5
Reference variance test:	Disabled	
[Tropo Correction]		
Model:	Hopfield	
Estimated zenith delay interval:	2 hours	
Use observed mets:	Enabled	
[Iono Correction]	Ambiguity Pass	Final Pass
Correction:	Iono free	Iono free
Applied to:	Static, Kinematic	Static, Kinematic
Application threshold:	10 kilometers	5 kilometers
[Final Solution]		
Final solution type:	L1 Fixed	
[Satellites]		
Disabled:		

Sedco 702 to Scallop-1



Sedco 702 to Scallop-1



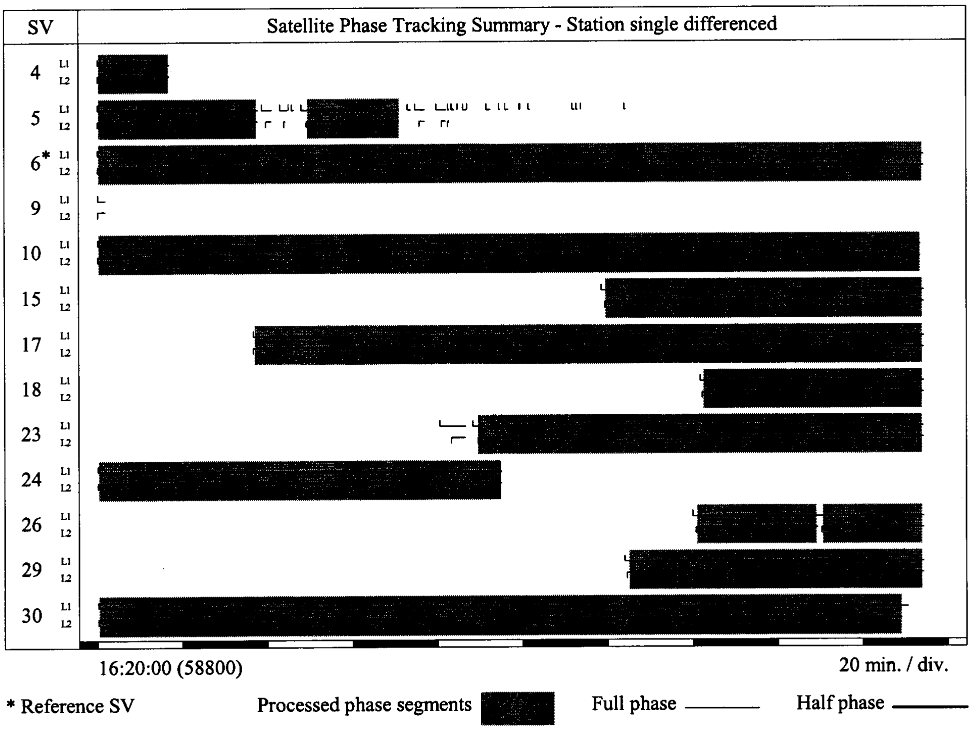
* Reference SV

Full phase

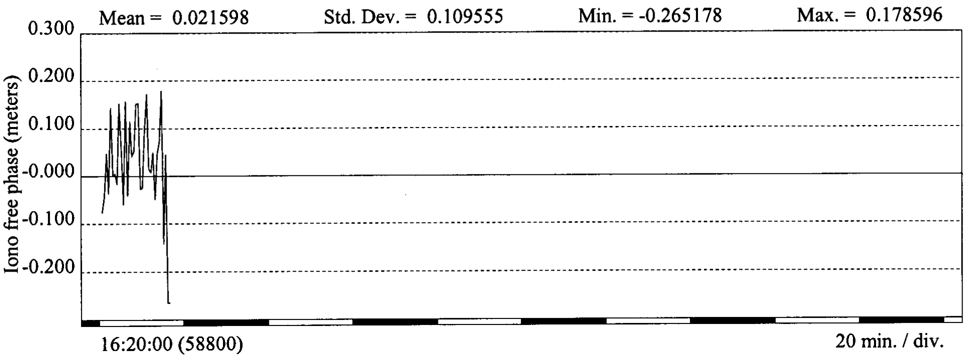
Half phase

9

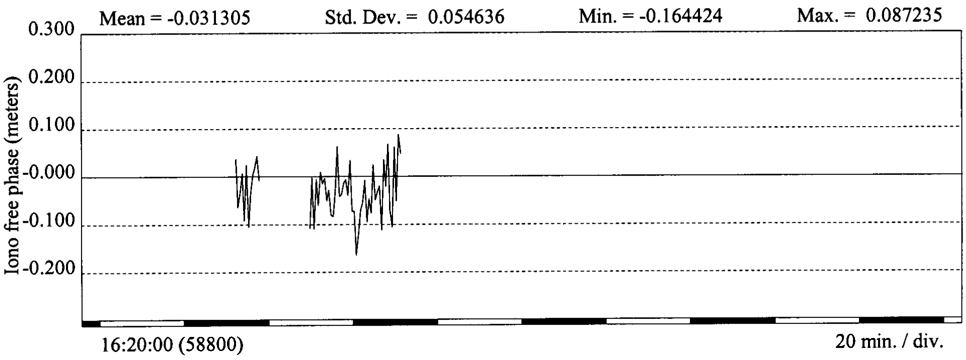
Sedco 702 to Scallop-1



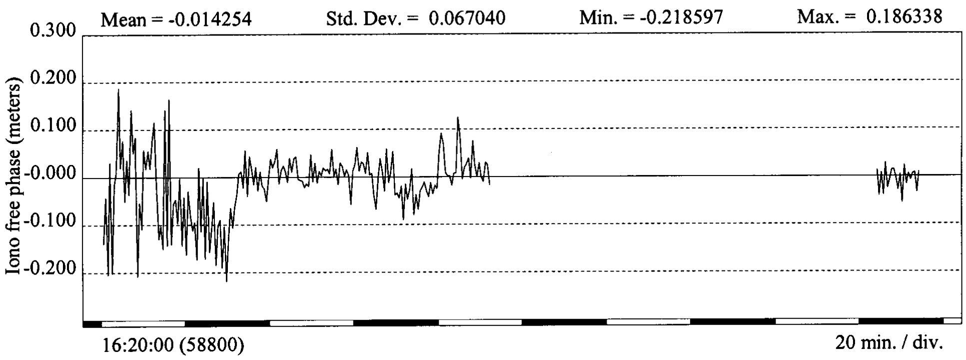
Sedco 702 to Scallop-1



Residuals - SV 4

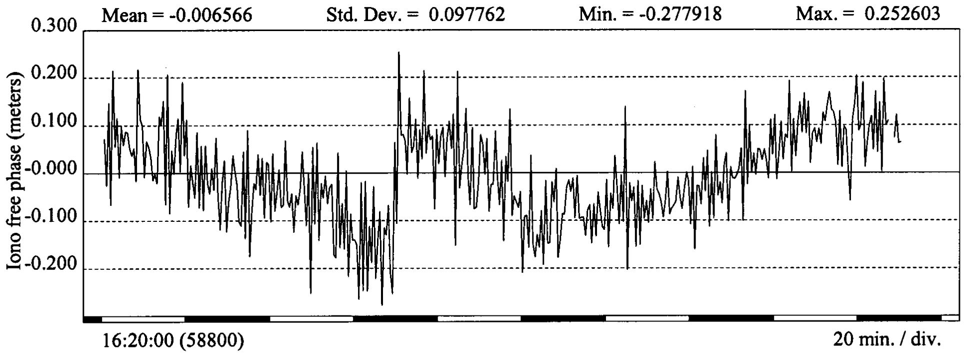


Residuals - SV 5

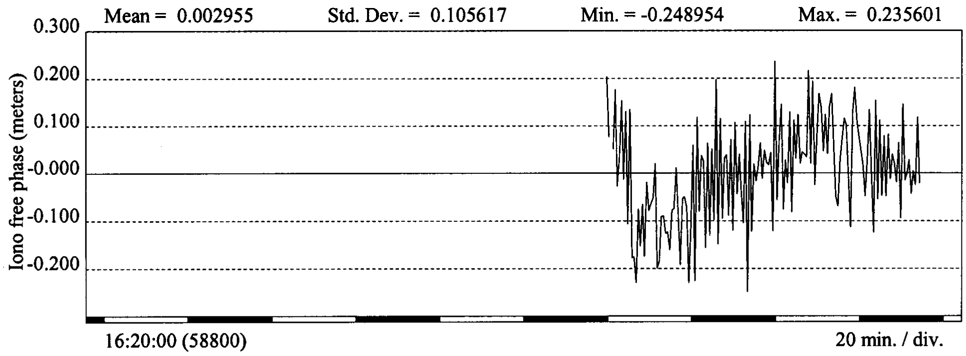


Residuals - SV 6

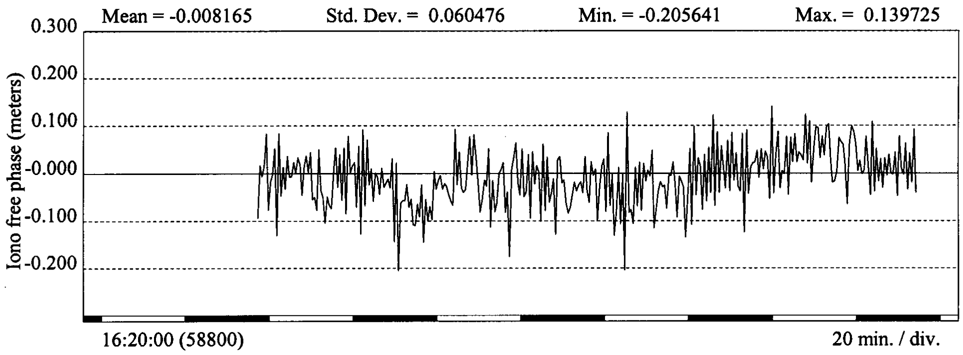
Sedco 702 to Scallop-1



Residuals - SV 10

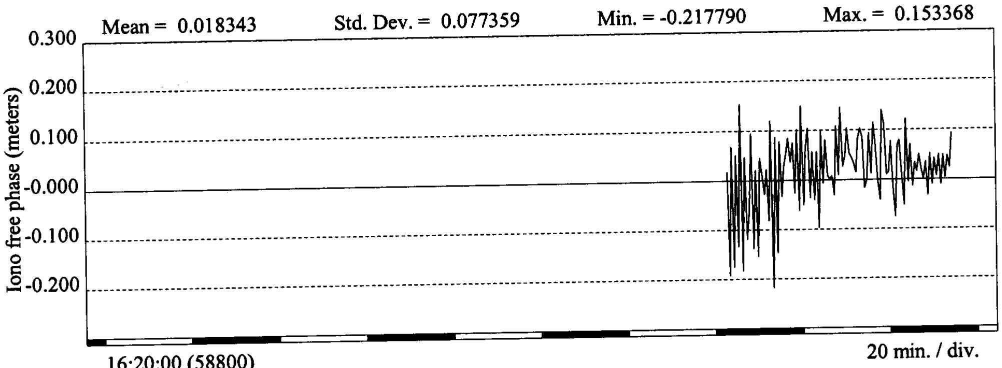


Residuals - SV 15

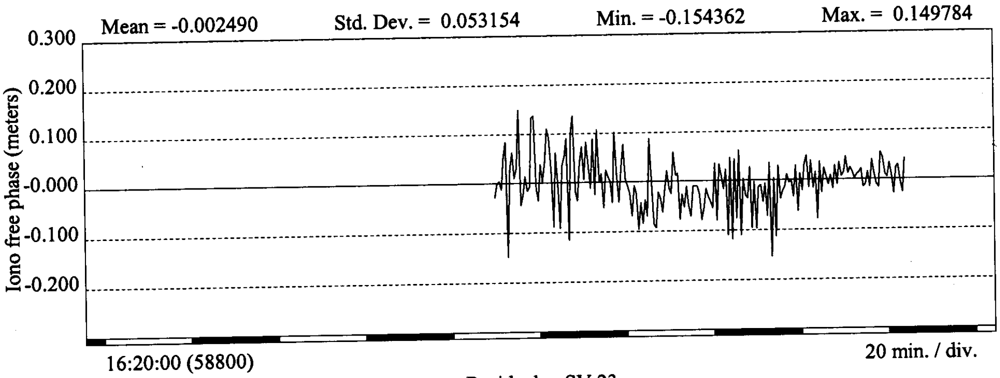


Residuals - SV 17

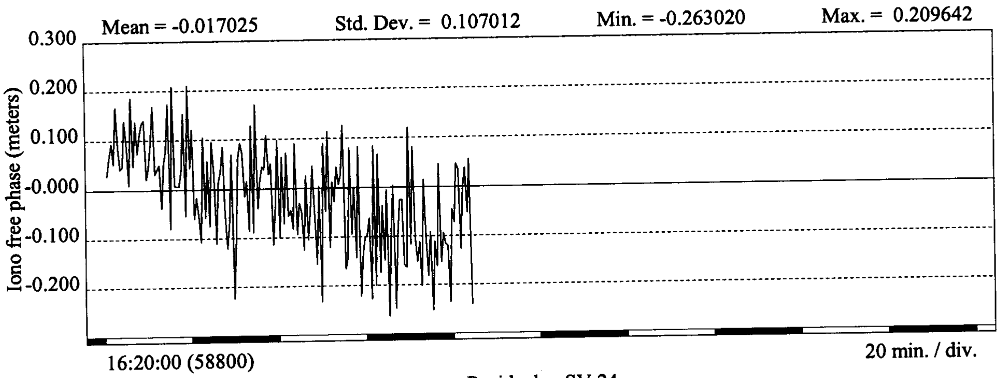
Sedco 702 to Scallop-1



Residuals - SV 18

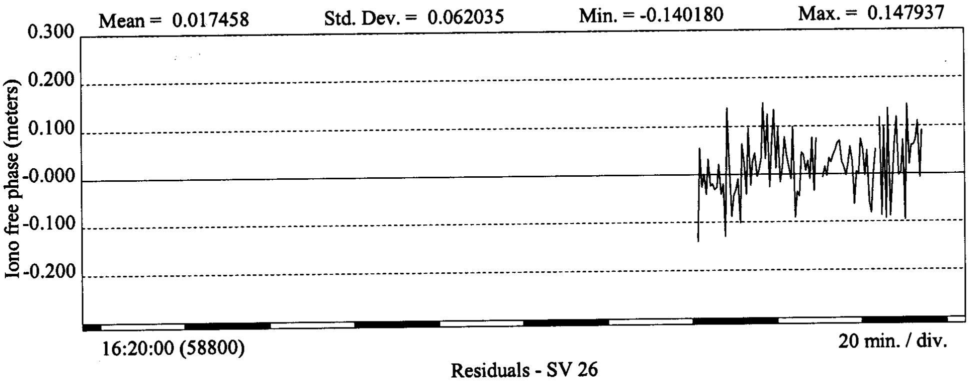


Residuals - SV 23

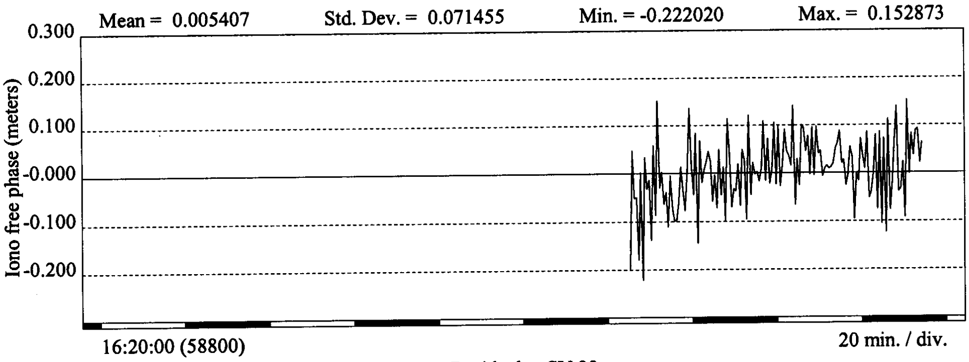


Residuals - SV 24

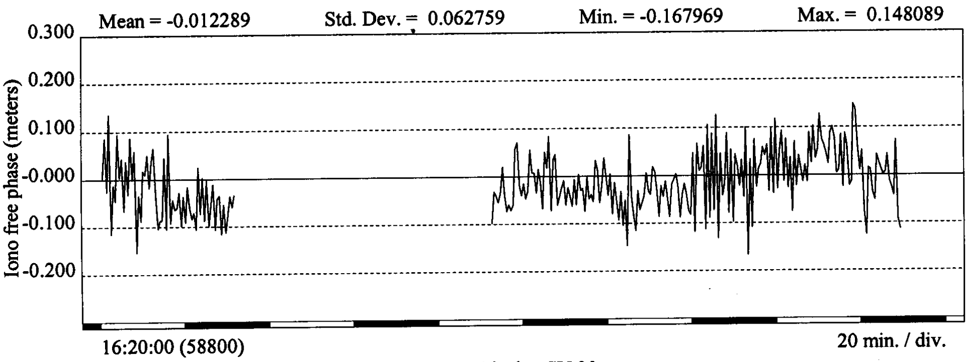
Sedco 702 to Scallop-1



Residuals - SV 26



Residuals - SV 29



Residuals - SV 30

***** End of Report *****

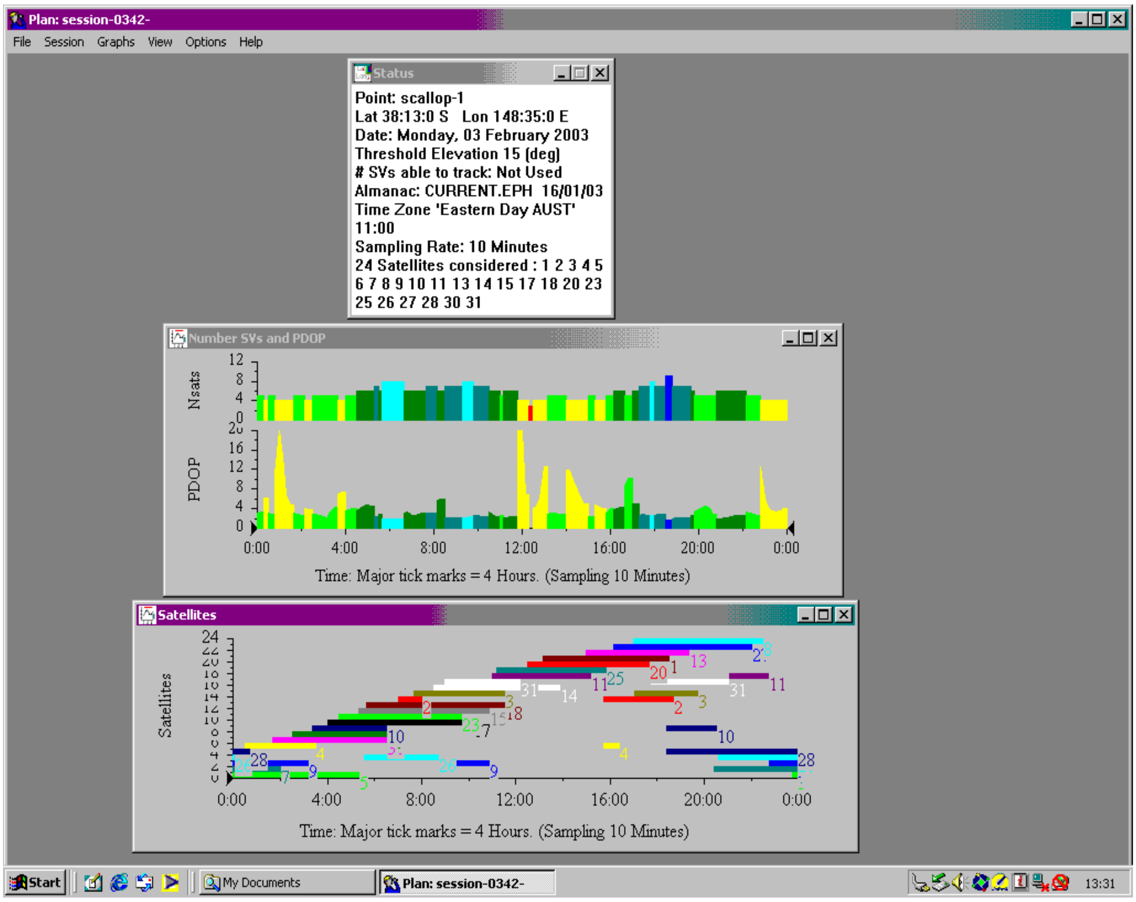
APPENDIX N

SATELLITE AVAILABILITY AND PDOP PREDICTION GRAPHS

Thales GeoSolutions (Australasia) Limited

Project: Scallop-1 Positioning Report of the Sedco 702
Client: ESSO Australia Pty Ltd

Satellite Availability and PDOP Predictions at Time of Final Fix of Sedco 702 at Scallop-1



APPENDIX O

REFERENCE STATION DESCRIPTIONS

GEOSCIENCE AUSTRALIA

Updated: 17 October 2002

Australian Regional GPS Network

Station Identification

Station Name	TIDBINBILLA	**Station Number**	AU017
4 Character ID	TID1	**DOMES Number**	50103M108

Station Coordinates

Datum	GDA 94 (ITRF92 - Epoch of 1994.0)		
Latitude	S35 23 57.15627	**Longitude**	E148 58 47.98425
Observed Ellipsoid Height	665.440 metres	**Grid Zone**	55
X	-4460996.069	**Y**	2682557.144
Z	-3674443.874		
Grid System	UTM - MGA	**Grid Zone**	55
Easting	0679807.853	**Northing**	6080884.469
Geoid Separation (AUSGeoid98)	19.283 metres	AHD Height	646.322 metres

Site Information

TID1 station mark is a stainless steel plate with centred drill hole mounted on top of a 0.6 metre diameter concrete pillar, 0.5 metres high. The station is located approximately 30 km south of Canberra within the Tidbinbilla Deep Space Tracking Station.

Station Equipment

Receiver TurboRogue® ICS-4000Z ACT

Antenna AOA Dorne Margolin T

Station Information

Data Quality & Availability
Station Photographs
Station Log
ARGN News

[back to top]

SPATIAL INFORMATION FOR THE NATION

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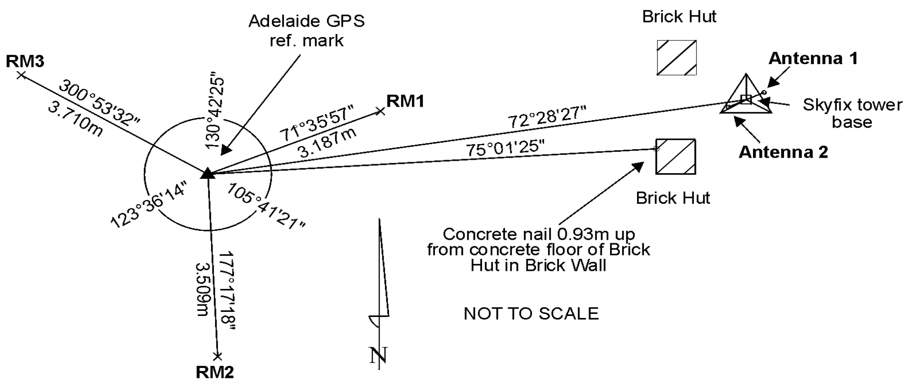
SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	ADELAIDE SYSTEM 1		ANTENNA
Area Region: SOUTH AUSTRALIA		**Additional Names:** ALD1	
SkyFix ID No: 0205	**Co-ordinates System 1**	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	35° 17' 30.12666" S		**East**
Longitude	138° 34' 50.58201" E		**North**
Spheroidal Height	400.039m		**Height**
X	-3908511.418m		
Y	3448154.827m		
Z	-3664560.347m		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Jul-99	**Date of Latest Revision** April 2001	
Source of Co-ordinates	Australia 2001a Adjustment		
Description of Station Mark	L1 Phase centre of antenna		

STATION DIAGRAM

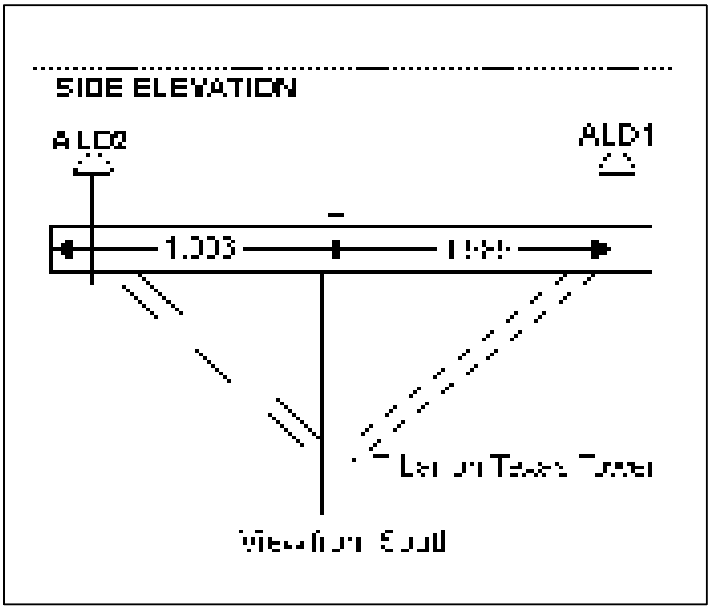


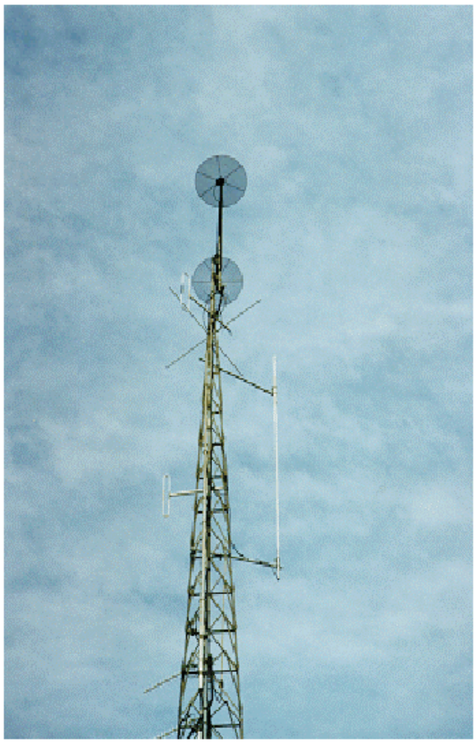
Surveyor	S Hunter	**Checked**	T Just

SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	ADELAIDE SYSTEM 2		ANTENNA
Area Region: SOUTH AUSTRALIA		**Additional Names:** ALD2	
SkyFix ID No: 0205	**Co-ordinates System 1**	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	35° 17' 30.14358" S		**East**
Longitude	138° 34' 50.50571" E		**North**
Spheroidal Height	400.019m		**Height**
X	-3908509.904m		
Y	3448156.063m		
Z	-3664560.761m		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Jul-99	**Date of Latest Revision** April 2001	
Source of Co-ordinates	Australia 2001a Adjustment		
Description of Station Mark	L1 Phase centre of antenna		

STATION DIAGRAM



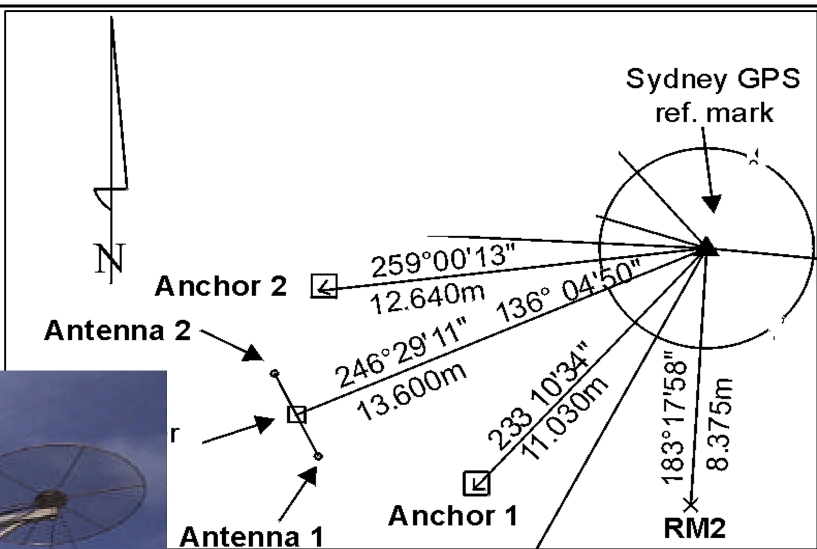


Surveyor	S Hunter	**Checked**	T Just

SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	SYDNEY SYSTEM 1		ANTENNA
Area Region: NEW SOUTH WALES		**Additional Names:** SYD1	
SkyFix ID No: 0206	**Co-ordinates System 1**	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	33° 59' 12.47855" S		**East**
Longitude	151° 14' 24.22195" E		**North**
Spheroidal Height	74.958m		**Height**
X	-4641071.658m		
Y	2547226.526m		
Z	-3545274.479m		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Jul-99	**Date of Latest Revision** April 2001	
Source of Co-ordinates	Australia 2001a Adjustment		
Description of Station Mark	L1 Phase centre of antenna		

STATION DIAGRAM

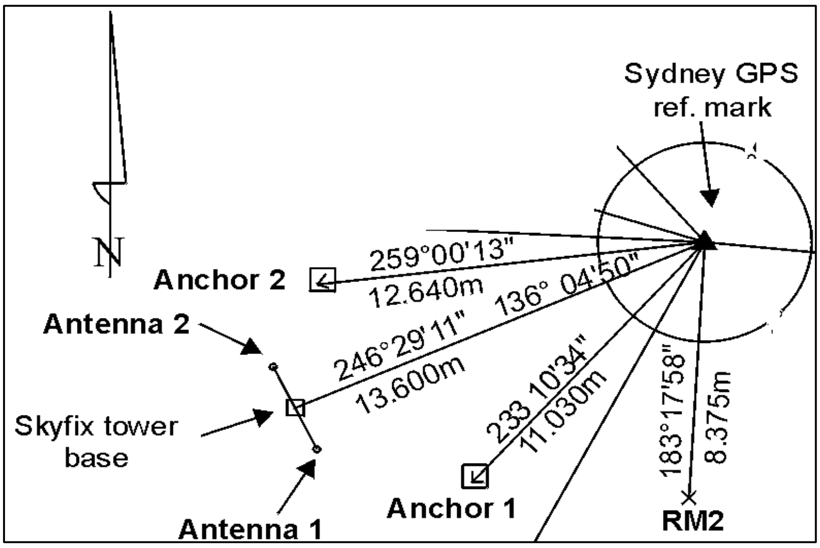


Surveyor	A Kerr	**Checked**	P Shardlow

SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	SYDNEY SYSTEM 2		ANTENNA
Area Region: NEW SOUTH WALES		**Additional Names:** SYD2	
SkyFix ID No: 0206	**Co-ordinates System 1**	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	33° 59' 12.56651" S		**East**
Longitude	151° 14' 24.27199" E		**North**
Spheroidal Height	74.907m		**Height**
X	-4641070.911m		
Y	2547224.651m		
Z	-3545276.697m		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Jul-99	**Date of Latest Revision** April 2001	
Source of Co-ordinates	Australia 2001a Adjustment		
Description of Station Mark	L1 Phase centre of antenna		

STATION DIAGRAM



Surveyor	S Hunter	**Checked**	T Just

SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	MELBOURNE		GEODETIC
Area Region: VICTORIA		**Additional Names:**	MEL3
	Co-ordinates System 1	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	37° 53' 47.94396" S		**East**
Longitude	145° 07' 56.68847" E		**North**
Spheroidal Height	113.236m		**Height**
X	-4134845.721		
Y	2881032.149		
Z	-3896467.679		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Sep-02	**Date of Latest Rev:**	Sep-02
Source of Co-ordinates	5991_TJ-Melbourne - provisional.doc		
Description of Station Mark	Base of antenna		

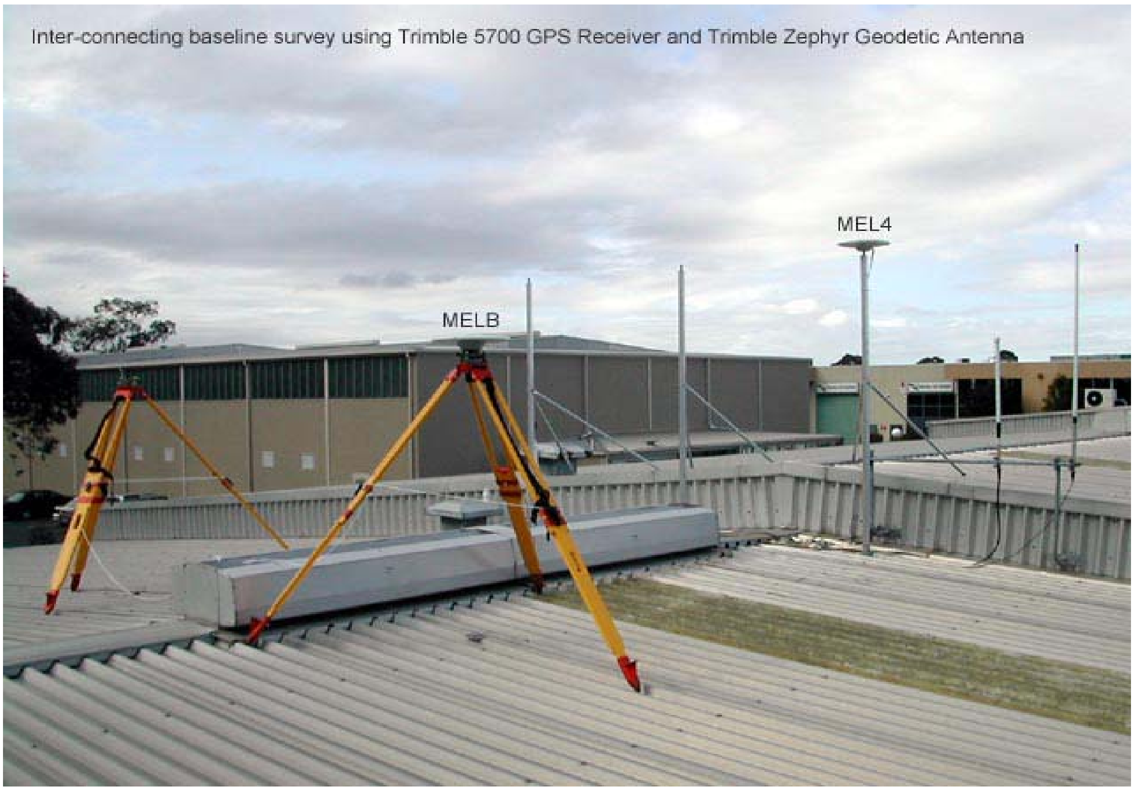
STATION DIAGRAM

Surveyor	John Teo	**Checked**	Mat Kellett

SURVEY STATION DESCRIPTION

COUNTRY	STATION NAME		STATION TYPE
AUSTRALIA	MELBOURNE		ANTENNA
Area Region: VICTORIA		**Additional Names:**	MEL4
	Co-ordinates System 1	**Co-ordinates System 2**	**Grid Co-ordinates System 2**
Datum	ITRF2000(epoch 1997.0)		**Proj/Grid**
Spheroid	WGS84		
Latitude	37° 53' 47.92954" S		**East**
Longitude	145° 07' 56.56674" E		**North**
Spheroidal Height	113.234m		**Height**
X	-4134844.244		
Y	2881034.744		
Z	-3896467.327		
Geoid Separation			**Geoid Model**
Elevation			
Date of Survey	Sep-02	**Date of Latest Rev:**	Sep-02
Source of Co-ordinates	5991_TJ-Melbourne - provisional.doc		
Description of Station Mark	Base of antenna		

STATION DIAGRAM



Surveyor	John Teo	**Checked**	Mat Kellett

APPENDIX P

DAILY REPORT SHEETS

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **27 January 2003** Client: **BHPB** Job No.: **498A3**
Vessel:**Sedco 702** Location: **Scallop-1**

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIAR OF OPERATIONS

TIME	Time Zone = UTC + 8.0 **Monday 27th January, 2003**
0750	Thales presonnel SS and AB depart Perth.
1410	Arrive in Melbourne. Check in at Holiday Inn. (UTC +11.0)

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **28 January 2003**	Client: **BHPB**	JobNo.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **<u>Tuesday 28th January, 2003</u>**
0800	Thales personnel SS and AB check out of Holiday Inn. Depart for Essendon airport.
1000	Depart Essendon airport by helicopter for Sedco 702.
1055	Thales personnel SS and AB arrive on Sedco 702. AB attends orientation and induction.
1430	All equipment on Sedco 702 operational.
1505	Check Fix done at Minerva-3 (AGD84 Zone 54). 17.37m bearing 180.1 deg. True from intended.
2011	Check Fix done at Minerva-3 (GDA94 Zone 55). 15.80m bearing 199.5 deg. True from intended.
2027	Check Fix done at Minerva-3 (AGD84 Zone 54). 15.61m bearing 200.0 deg. True from intended.
	Standing by for anchor recovery.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **29 January 2003**	Client: **BHPB**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Wednesday 29th January, 2003**
0415	Pacific Frontier starts chasing to anchor 4.
0437	Anchor 4 off the bottom.
0528	#4 PCC handed back to rig.
0530	Anchor 8 assigned to Pacific Frontier.
O547	Pacific Frontier starts chasing to anchor 8.
0609	Anchor 8 off the bottom.
0630	Rig ballasted to 60 feet draft
0714	#8 PCC handed back to rig.
0738	Pacific Frontier starts chasing to anchor 1.
0802	Anchor 1 off the bottom.
0858	#1 PCC handed back to rig.
0926	Pacific Frontier starts chasing to anchor 5.
0942	Anchor 5 off the bottom.
1030	Power spike tripped all navigation computers
1035	Navigation online OK
1048	#5 PCC handed back to rig.
1141	Moving rig to P1 location
1150	Rig all stop on P1 location, clear of Minerva 3 location, stand by until Pacific Challenger arrives
1247	Anchor 6 off the bottom. Stand by while vessel replacing anchor and jewellery
1425	Hauling in on #6
1450	Pacific Challenger arrives at Rig, TDMA OK
1634	#6 PCC handed back to rig.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **29 January 2003 cont**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up	Equipment	Op	B/up	Thales Personnel
GPS	✔		Echo Sounder			S.Schonknecht
SkyFix Premier	✔		Sidescan			A. Brekinridge
SkyFix Spot	✔		Pinger			
SGB Gyro	✔		Boomer			
Meridien Gyro	✔		Heave Comp			
GNS 2	✔		Velocity Probe			
MultiFix 3	✔		CODA			
GNS Remote	✔					Client Personnel
						Lewis Kemp

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Wednesday 29th January, 2003 continued**
1700	Pre move meeting held with Esso, Sedco Forex ,BHP, and AHV's masters.
1810	Pacific Challenger chasing to anchor 2.
1820	Anchor 2 off the bottom. Pacific Challenger chasing back to rig. Stop at 600 feet from rig.
1847	Pacific Frontier takes #3 PCC. Starts chasing to anchor.
2015	Anchor 2 passed back to rig.
2102	Anchor 3 off the bottom.
2200	Rig starts to haul in on Anchor 7. Start de-ballasting rig to 21 feet.
2250	Anchor 7 off the bottom. Tow started to Scallop-1.
2300	Rig handed over to Esso.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **30 January 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell	3m.			
Sea				
Wind	20 knots			
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Thursday 30th January, 2003**
0100	On tow to Scallop-1. New configuration loaded. GDA94 Zone 55
0530	Waypoint #1 reached.
1630	Reconnaissance done for antenna offset traverse to be carried out.
	Unable to do Sun Azimuth gyro calibration due to rig being too unstable during tow.
	Monitor equipment performance and position while under tow. No incidents this day.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **31 January 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell	3-4m.			
Sea	rough			
Wind	35 knots			
Bar				
Temp				

DIAIRY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Friday 31st January, 2003**
0000	Continue on tow to Scallop-1.
0055	Rig reaches Waypoint 2.
0130	Anchor chain #3 jumped over bolster on starboard bow column. Approx. position of rig 435910 E. 5651774 N.
0335	Rig passing 775 m. south of Waypoint 3
0641	Rig passes Waypoint 4
1514	Rig passes Waypoint 5
1900	Offset traverse done to determine antenna offsets. GPS1 X +1.83, Y +35.98: GPS2 X –15.30, Y +34.40
2400	Continue monitoring rigs postion.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **01 February 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Saturday 01st February, 2003**
0015	Rig reaches Waypoint 7. Shortens up on chain length.
0100	Anchor assignment tested with both AHVs. Working well.
0150	Rig reaches WP 8 (5 N.M. from location).
0315	Rig 2 N.M. from Anchor 7 intended drop location.
0345	Rig 1 N.M. from Anchor 7 intended drop location.
0419	Anchor 7 on the bottom.
0450	Rig over location, Scallop-1.
0621	Anchor 3 on the bottom. Pacific Frontier.
0649	#3 Chaser passed to Rig
0733	#6 Anchor passed to P. Frontier
0818	P. Challenger set to run Anchor 2
0824	Anchor 6 on the bottom.
0857	#6 Chaser passed to Rig
0909	Anchor 2 on the bottom.
0933	#5 Anchor passed to P. Frontier
0936	#2 Chaser passed to Rig
1014	Anchor 5 on Bottom, anchor run out to 3300 feet.
1041	#5 Chaser passed to Rig
1220	#4 Anchor passed to P. Frontier
1312	Anchor 4 on Bottom, anchor run out to 3300 feet.
1336	#4 Chaser passed to Rig
1443	#8 Anchor passed to P. Frontier
1530	Anchor 8 on Bottom, anchor run out to 3300 feet.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________ SURVEYOR

Signature ______________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **01 February 2003** Vessel:**Sedco 702**	Client: **Esso Australia** Location: **Scallop-1**	Job No.:**3498A3**

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIAR OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Saturday 01st February, 2003 continued**
1558	#8 Chaser passed to Rig
1624	#1 Anchor passed to P. Frontier
1713	Anchor 1 on Bottom, anchor run out to 3300 feet.
1740	#1 Chaser passed to Rig
1855	Gyro calibration carried out by sun azimuth observations. C-O Navigat FOG –0.71 deg. (Applied to GNS).
	C-O Meridian –1.81 deg. (Applied to GNS).
2043	Rig moved over location and pre-tensioned.
	Standing by for drill floor operations.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **2 February 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Sunday 2nd February, 2003**
	Standing by to do Final Fix.
0730	AB transfers to Pacific Frontier to demobilise TRACS navigation equipment.
1000	AB returns to Rig with all navigation equipment.
1200	Commence spud in operations
2400	Standing by for 30 inch casing to be run.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

Signature ______________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **3 February 2003** Vessel:**Sedco 702**	Client: **Esso Australia** Location: **Scallop-1**	Job No.:**3498A3**

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **Monday 3rd February, 2003**
	Standing by for suitable satellite geometry window for Final Fix. Specs of PDOP<8 and minimum 5 satellites.
0317	Start Final Fix, streaming and logging in GNS and Multifix.
0318	Start carrier phase GPS logging on Trimble receiver. Session No.2795-033-0.
0618	Final Fix completed. Logging stopped.
1030	Reports completed. Prelim report faxed to D.Barrs in Houston and copy to Thales Perth.
	Unable to access Internet to download Auslig data for post processing of carrier phase data. To be done from Perth.
1100	All equipment packed up and manifested.
1510	SS departs rig for Sale/ Melbourne/Perth/. AB remains to demob Pacific Challenger.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ____________________ SURVEYOR

Signature ____________________ CLIENT REPRESENTATIVE

THALES GEOSOLUTIONS (AUSTRALASIA) LIMITED
DAILY RECORD SHEET

Date: **4 February 2003**	Client: **Esso Australia**	Job No.:**3498A3**
Vessel:**Sedco 702**	Location: **Scallop-1**	

Equipment	Op	B/up
GPS	✔	
SkyFix Premier	✔	
SkyFix Spot	✔	
SGB Gyro	✔	
Meridien Gyro	✔	
GNS 2	✔	
MultiFix 3	✔	
GNS Remote	✔	

Equipment	Op	B/up
Echo Sounder		
Sidescan		
Pinger		
Boomer		
Heave Comp		
Velocity Probe		
CODA		

Thales Personnel
S.Schonknecht
A. Breckenridge
Client Personnel
Harry Arrowsmith

	0600	1200	1800	2400
Swell				
Sea				
Wind				
Bar				
Temp				

DIARY OF OPERATIONS

TIME	Time Zone = UTC + 11.0 **<u>Tuesday 4th February, 2003</u>**
0600	AB demobs Pacific Challenger.
1155	SS depart Melbourne for Perth. Arrive Perth 1300 local time.
0130	AB departs Sedco 702 for Sale.
2115	AB departs Melbourne for Perth. Arrive Perth 2300 local time.

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Signature ______________________ SURVEYOR

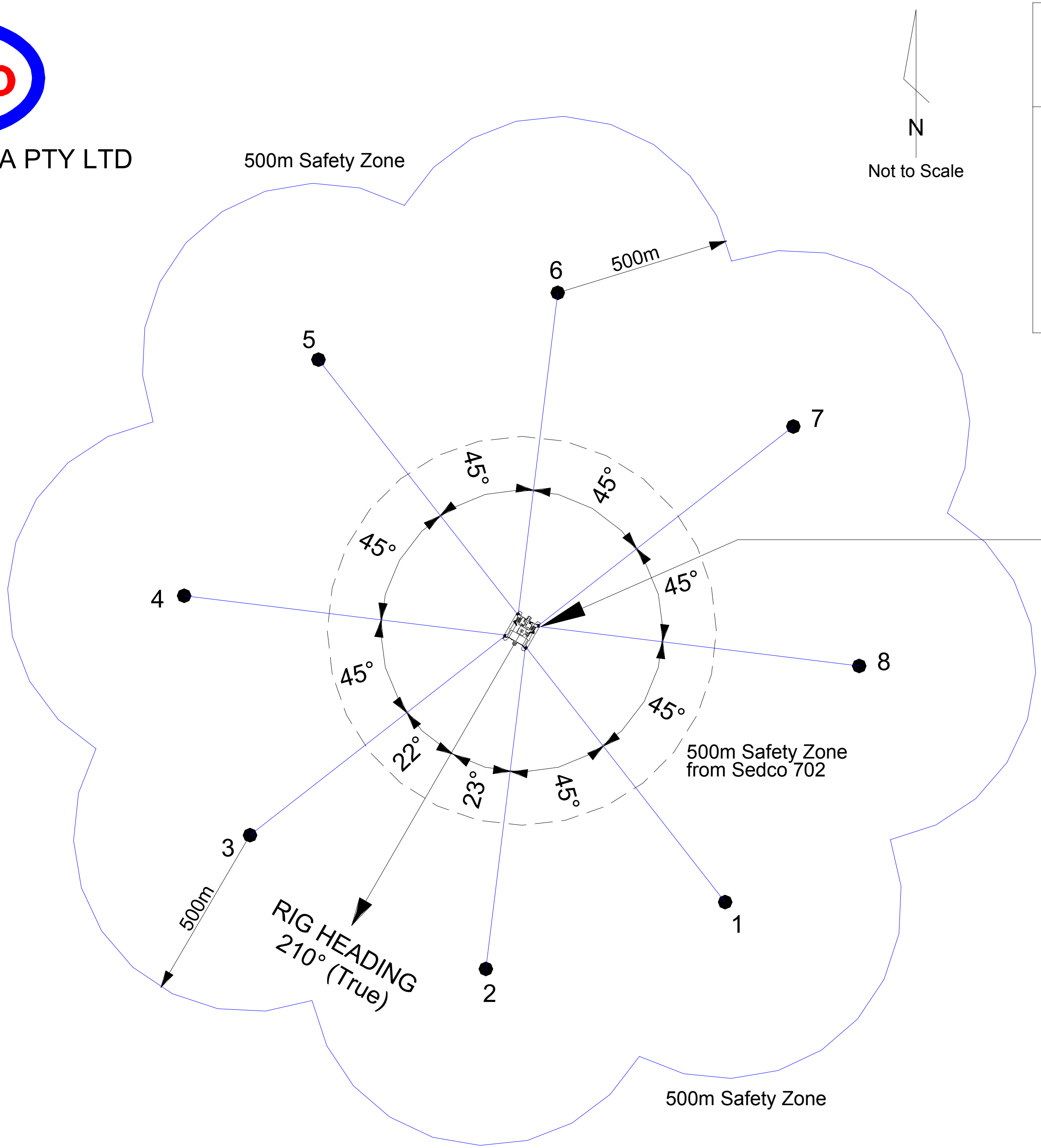
Signature ______________________ CLIENT REPRESENTATIVE

ESSO AUSTRALIA PTY LTD

SEDCO 702 MOORING PLAN FOR SCALLOP-1

Thales GeoSolutions (Australasia) Limited
Hydrographic House, 4 Ledgar Road, BALCATTA WA 6021
Telephone: +61 (0) 8 9344 7166 Fax: +61 (0) 8 9344 8783
ABN 82 000 601 909

DRAWING No: 3498A3-A01
REVISION: 2
DATE: 24 January 2003



Proposed Scallop-1 Location
Datum: GDA 1994
Latitude 38° 12' 48.577" South
Longitude 148° 35' 28.921" East

Projection: MGA Zone 55
Easting 639 316.00m
Northing 5 769 300.00m

ANCHOR	HEADING	DISTANCE (ft)
1	142°	3 000
2	187°	3 000
3	232°	3 000
4	277°	3 000
5	322°	3 000
6	007°	3 000
7	052°	3 000
8	097°	3 000

Stan A Christman

31/01/03 08:17

To: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil@xom
cc:
Subject: Re: Scallop-1 - Riser Analysis for Sedco 702 - Questions

Rudolf, my responses and comments below. Also, I have attached my spreadsheet with riser API stability calculations - it agrees with Transocean calculations.

Regards, Stan Christman -- ExxonMobil Development Company, Drilling -- Technical
16945 Northchase Drive, Houston 77060
Greenspoint 4 building, room 736
PO Box 4876, Houston, Texas 77210-4876
Phone 281-654-4509
Cell Phone: 281-382-1863
Fax 281-654-4646
Rudolf M Furchtenicht

Rudolf M Furchtenicht

01/29/03 07:02 PM

To: Stan A Christman/U-Houston/ExxonMobil@xom
cc:
Subject: Scallop-1 - Riser Analysis for Sedco 702 - Questions

Stan,

Hoping that you might be able to give me some direction. I have read the reference made in the Floater Drilling School and the relevant sections of API 16Q and have attempted to perform the riser tensioning calculations with mixed results. Basically, I have Sedco's numbers (based on API 16Q), those based on the calculations from the Floater manual and a copy of Diamond Offshore's Riser Tensioning program. Each one has a different number. Sedco's numbers appear higher than that I get using the Floater manual formula and the disparity get greater with the higher the mud weight. I have checked my calculations and have not spotted any glaring error. Diamond's program makes different asssumptions which I have adjusted for but still they are not similar to those for Sedco.

Questions therefore,
(a) should I just use the higher number of all three calculations?,

They should reasonable agree; if they don't, the process is to find the reason they do not and reconcile.

(b) is there a down side of pulling too much tension - 40 to 60kips difference between various calculations (thinking that we only have 361ft of Riser in the water so really, we are not at the limit of the tensioners),

There are some downside aspects of pulling too much tension, but usually are not significant in shallow water:

(1) wear and tear on tensioner ropes (adds to ton-cycles --> by the way, suggest that you ask Transocean for the ton-cycle record for the current tensioner wires and what their criteria is for cut-and-slip or replacement is)

(2) additional tension winds up as additional bending load on the wellhead and structural casing in the event of large offset, i.e., mooring line failure

(c) it would appear that some of the discrepancies may be in the components that make up the Riser (looking at how API 16Q details the components to perform the calculation and what is provided by Sedco. Sounds like we need a lot of info from Sedco before we can start, like a standard XOM spreadsheet of what info they need to supply us). For example, we take into account the C&K lines but I could not cross reference this to check if Sedco had done this.

Mud in C&K lines (and boost line, if there is one, but apparently not on this riser) should be considered and they are in the attached spreadsheet.

(d) Is it common for there to be differences between numbers generated by the Contractor and ExxonMobil. Are they generally higher for XOM? and what do we generally do in those cases, who do we go with?

Our API stability calculations should match if using the same steel overweight and buoyancy degradation factors -- often contractor has established accurate riser weights

that enable use of factors closer to 1.0. Note that this is only the stability check, which is very important to agree upon because loss of stability almost certainly will damage the riser. Actual recommended tensions for operations (by contractor and us) are often higher than the stability tension as they are based on range of rig motion offsets and impact of current side loading with the objective of keeping the flex joint angles low (within allow DP rotation without wearing grooves in FJ, etc. Often, we will recommend even higher tensions than the contractor for this purpose because our software considers more of the real riser deflection effects than most industry software. In the end, drill team and contractor work something out, with the real operational check being monitoring of the riser lower flex joint angle via instrumentation plus confirmation by periodic observation of bubble plates mounted on the flex joint.

The rig should be equipped with the riser Lower FJ angle instrument and it needs to be working and monitored. We had a case a few years back in Australia Bass Strait (Ocean Bounty, I think) where this instrument was broken (operations accepted this), and the structural casing was slightly off angle too. At the end of the well, the BOP was found to have several wear damage, and we had to pay a fair amount of damage money. If we had insisted on repairing the angle indicator (it was in the contract), we either would have avoided the damage, or if they didn't fix it anyway, I think would have been able to place more of the damages on their account.

Regards, Stan

Regards,
Rudolf M Fürchtenicht
Drilling Engineer
ExxonMobil Development Company
Tel: (+61 3) 9270-3612,   Fax: (+61 3) 9270-3546
E-mail: rudolf.m.furchtenicht@exxonmobil.com
Mail: Esso Australia Pty Ltd
12 Riverside Quay, Southbank
Victoria, Australia, 3006

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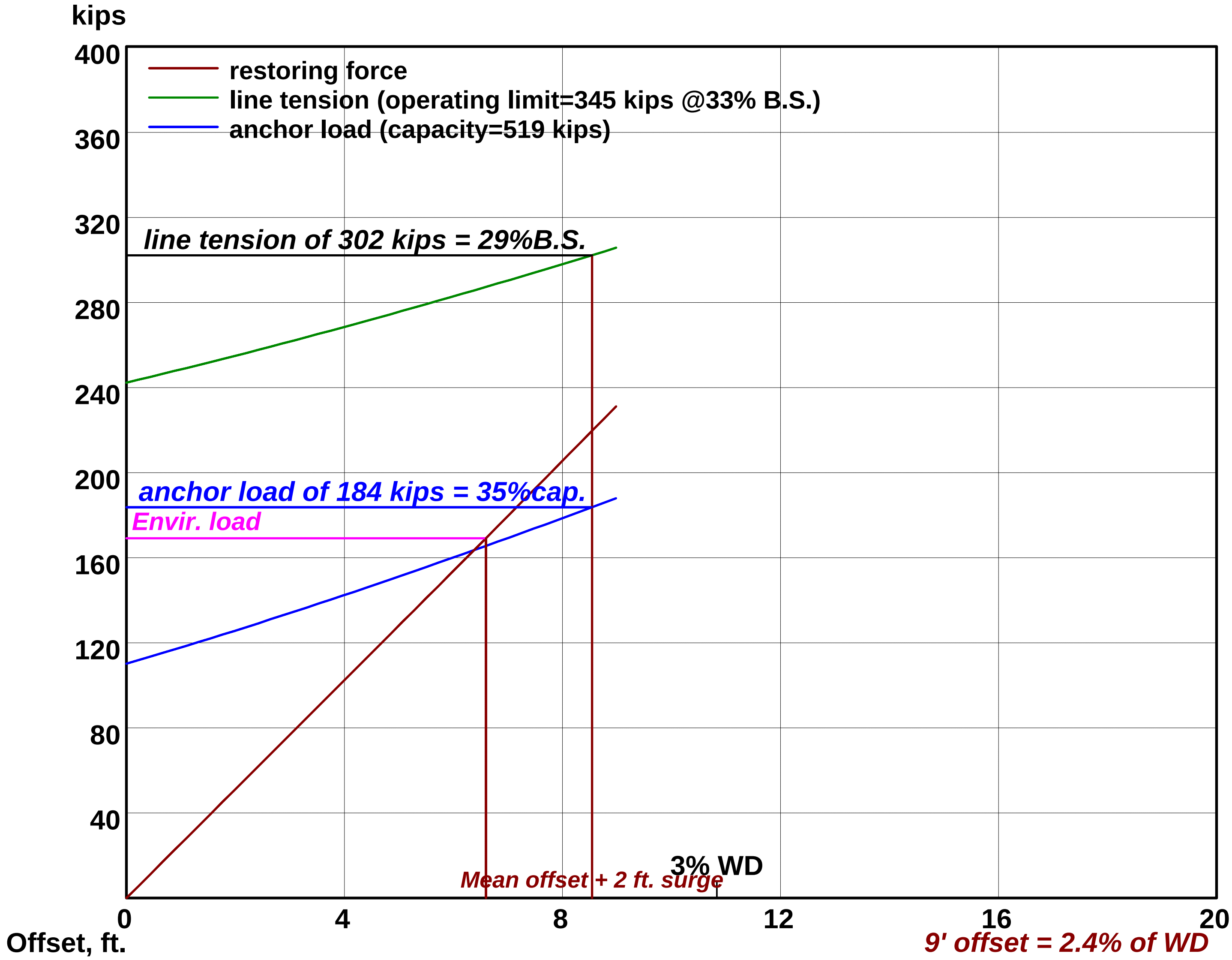
Mooring Response Curves

Scallop-1 Extreme Current, Sedco 702 - Operating Condition



Environment: Quartering

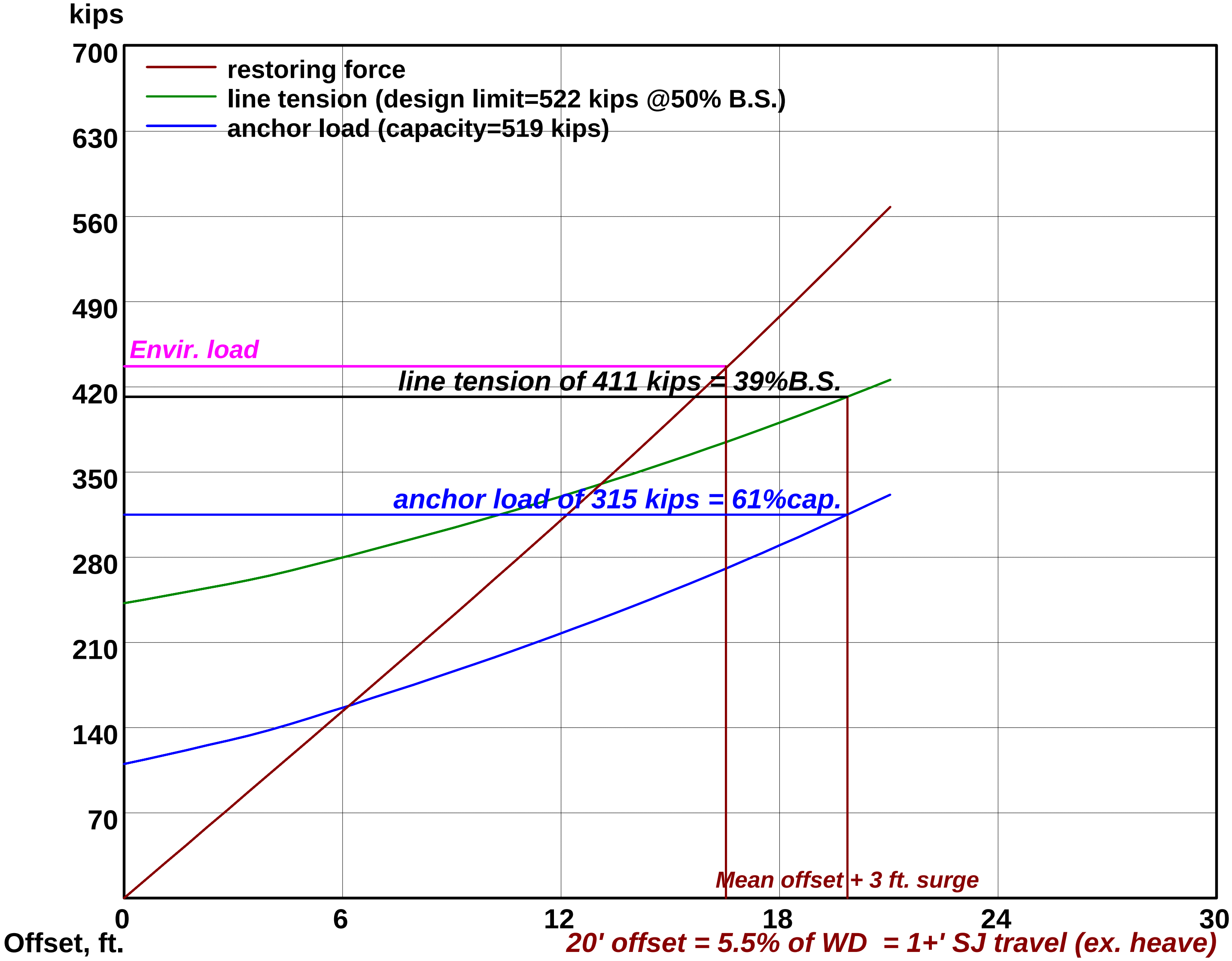
Wind speed, knots	33	(79 kips)
Current, knots	1.3	(66 kips)
Sig. wave hgt., ft.	11	(26 kips)
Weather heading	255°	
Rig heading	210°	
Net heading	45°	
Load heading	257°	(169 kips)
Offset from	257°	

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

Mooring Response Curves

Scallop-1 Extreme Current, Sedco 702 - Other Design Condition



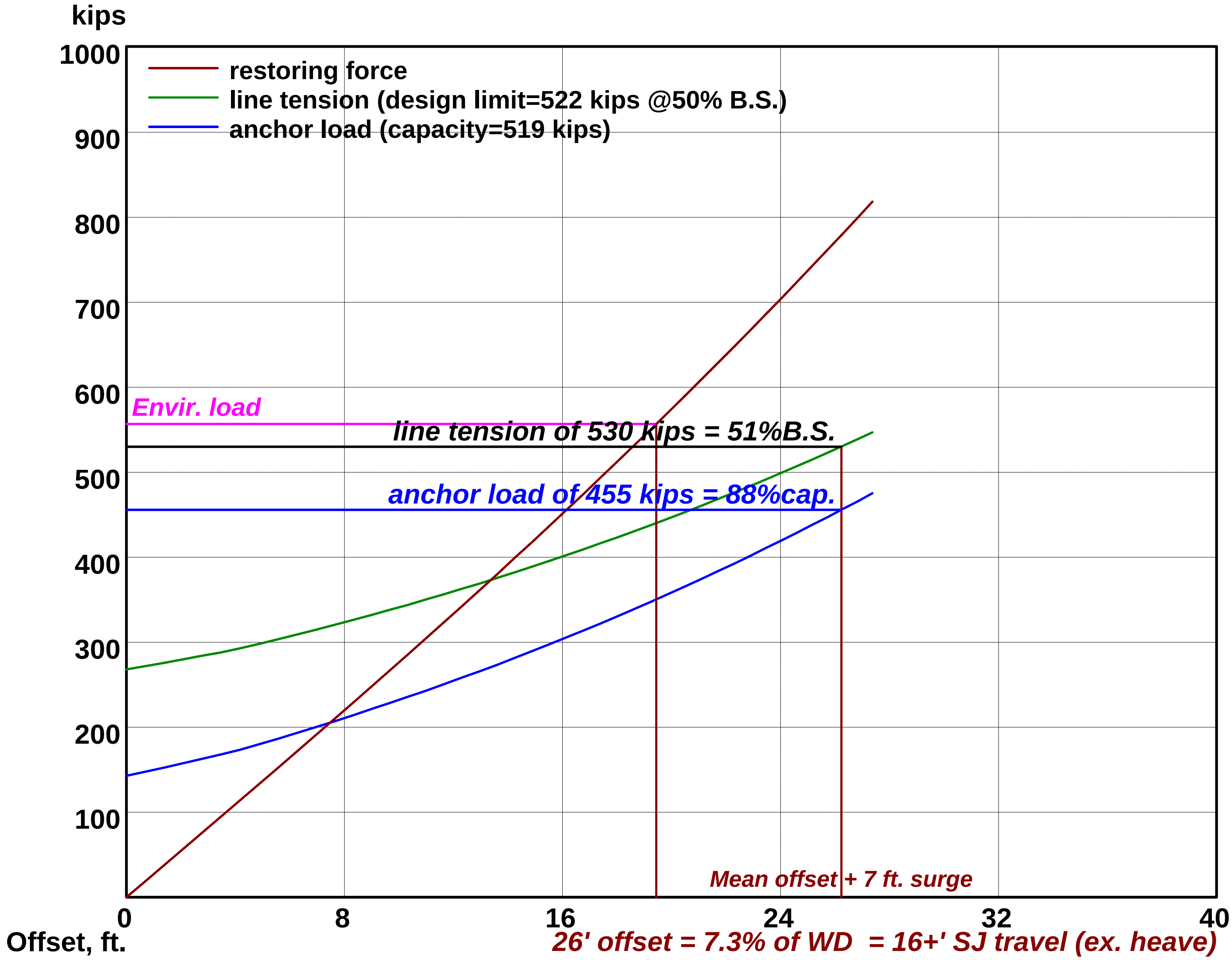
Environment: Beam			Pretension: 240 kips (avg.)	
Wind speed, knots	51	(154 kips)	Mooring Line Out: 2906 feet (avg.)	
Current, knots	2.4	(248 kips)		
Sig. wave hgt., ft.	13	(35 kips)		
Weather heading	135°			
Rig heading	210°			
Net heading	285°			
Load heading	133°	(436 kips)		
Offset from	133°			

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

scallop-1_mooring_analysis_calc_extcurrent.mor (1:38 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Current, Sedco 702 - Max. Design Condition



Environment: Beam		
Wind speed, knots	55	(244 kips)
Current, knots	2.8	(266 kips)
Sig. wave hgt., ft.	18	(48 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	133°	(556 kips)
Offset from	133°	
EPR motion curves: Group 9 (Aker H3.2, Sedco 700)		

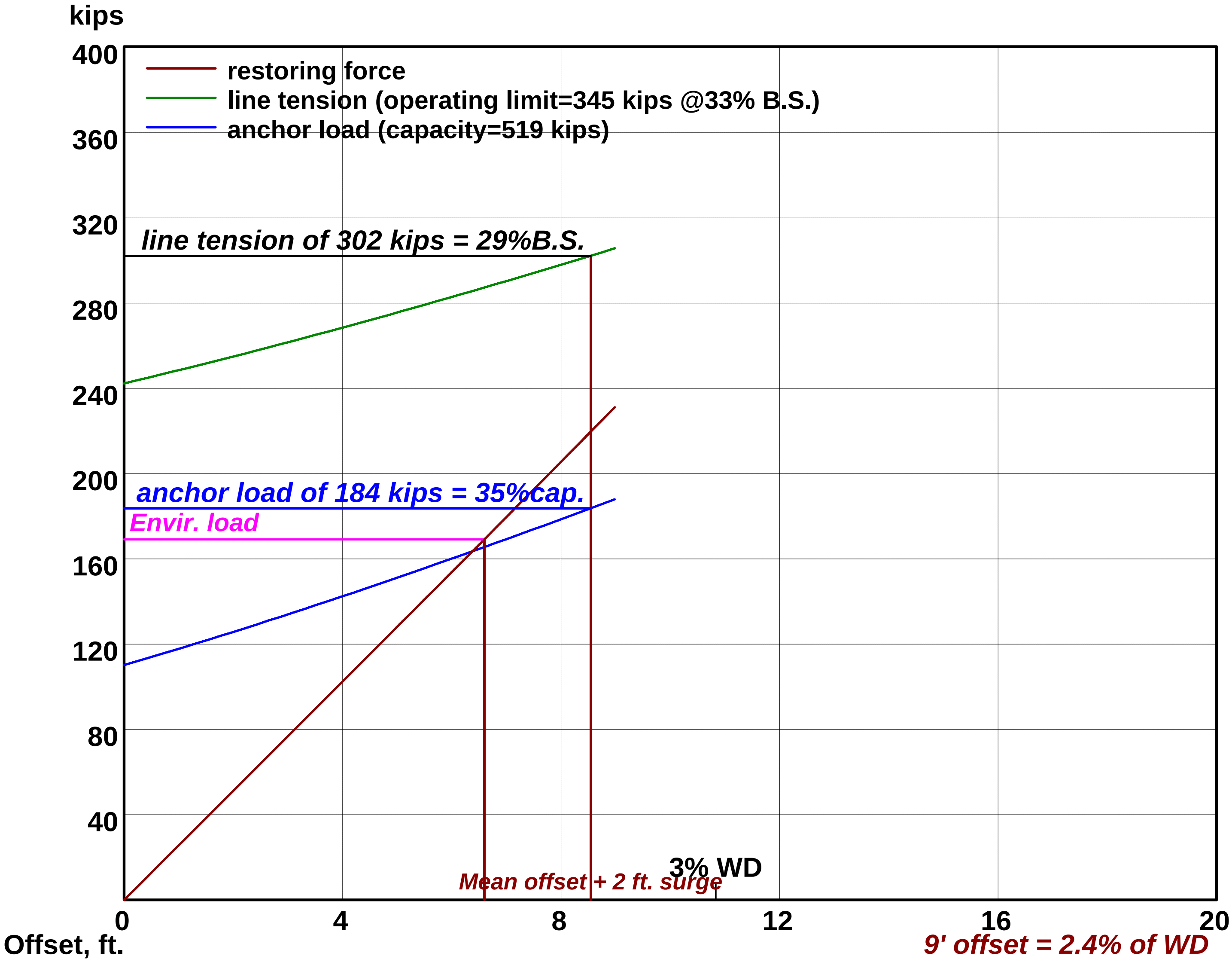
Pretension: 240 kips (avg.)

Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_extcurrent.mor (1:39 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Operating Condition



Environment: Quartering

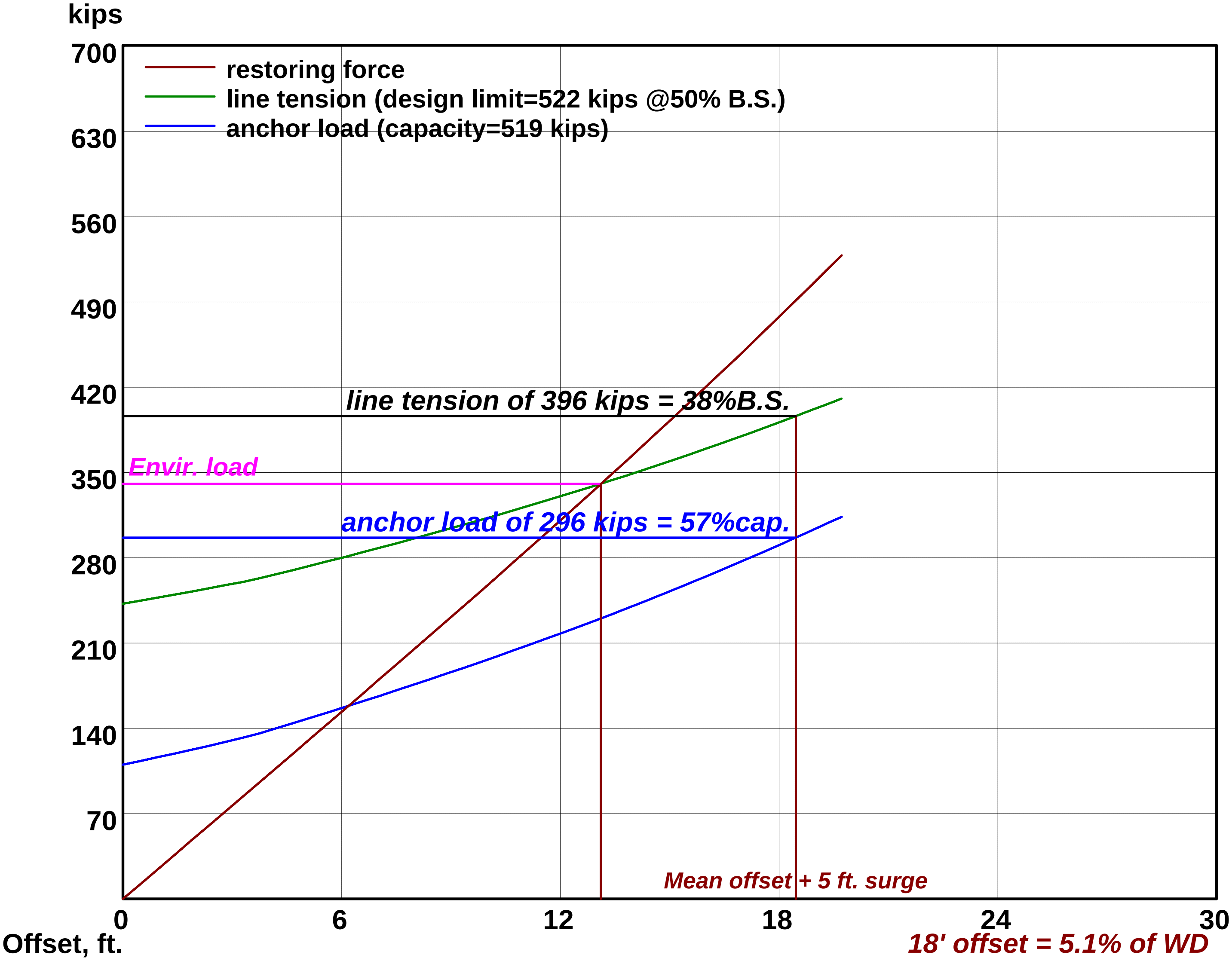
Wind speed, knots	33	(79 kips)
Current, knots	1.3	(66 kips)
Sig. wave hgt., ft.	11	(26 kips)
Weather heading	255°	
Rig heading	210°	
Net heading	45°	
Load heading	257°	(169 kips)
Offset from	257°	

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Other Design Condition



Environment: Beam

Wind speed, knots	51	(154 kips)
Current, knots	1.8	(139 kips)
Sig. wave hgt., ft.	17	(47 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	134°	(340 kips)
Offset from	134°	

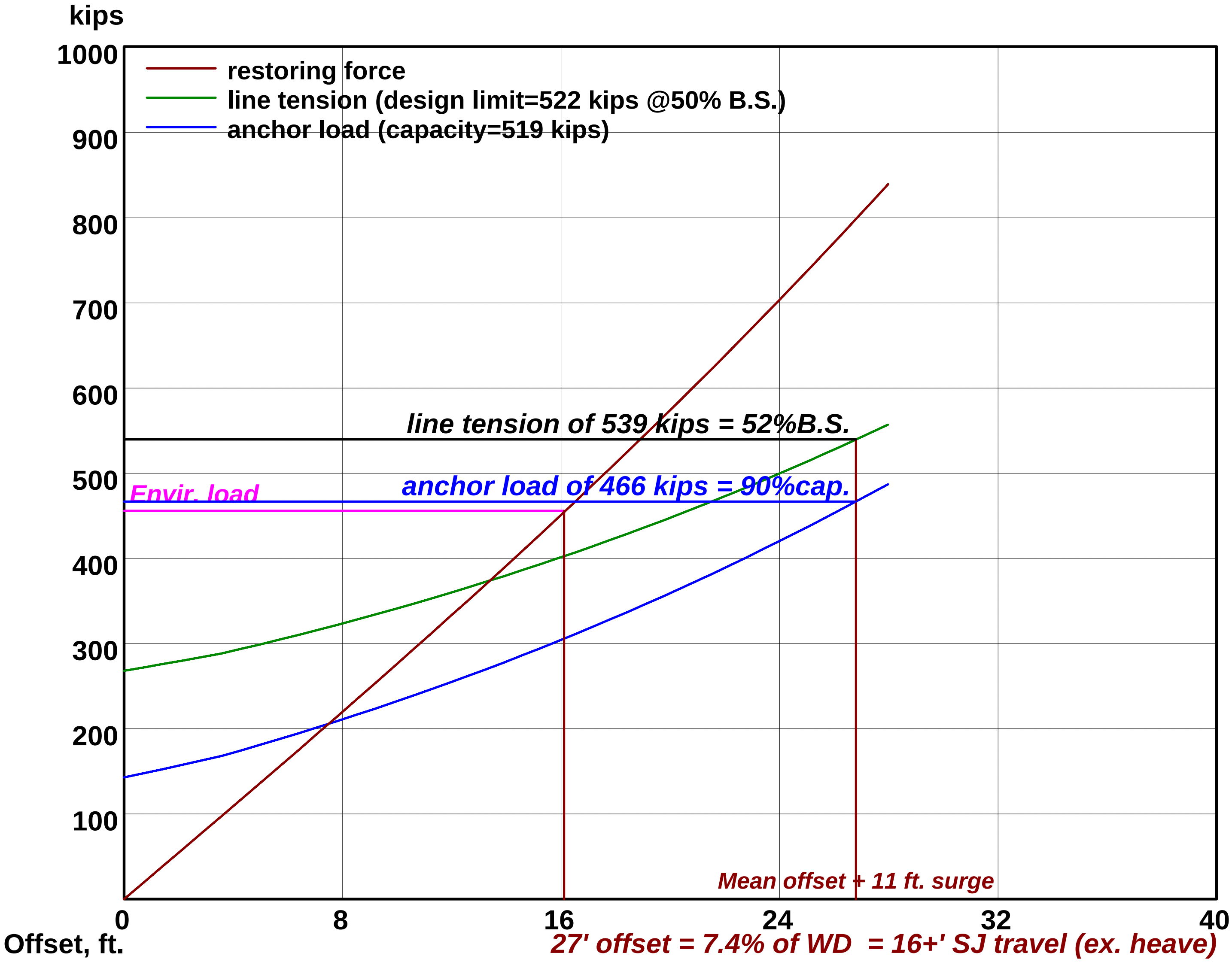
EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_10yr_extwave.mor (12:58 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Max. Design Condition



Environment: Beam

Wind speed, knots	55	(244 kips)
Current, knots	2.1	(150 kips)
Sig. wave hgt., ft.	24	(63 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	134°	(455 kips)
Offset from	134°	

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_10yr_extwave.mor (1:02 PM 28-Jan-03)

Riser Stability worksheet Rig: **Sedco 702**

Riser OD: **21** aux mw area 10.82 si Total area **317.02**

C&K ID/OD: **2.625** **0.1875** Hydro ID: **0** Number 0

Boost ID/OD: **0** **0** Int area 0.00 si

Water Depth: **361 ft**

Sea Water Pressure Column **317 ft** **wgt @1**

Drilling Fluid Pressure Column **390 ft** **buoy @1**

modules: **8**

lower BOP **303,000**

Section	Length	Wall thick.	Wgt Wet/ft	Wgt Dry/ft	Int. Area, si	# of joints	length	Depth From	Depth To	Buoy. Dia	Buoy Comp. %	Est. Length	Bouy Density
LMRP/BOP/FJ	44					1	44	361	317				
FJ	6	0.625	0.0	0.0	306.20	1	6	317	311				
Bare	50	0.625	232.5	267.2	306.20	2	100	311	211				
Buoy 1500	50	0.625	38.8	387.2	306.20	3	150	211	61	43	83.3%	38.2	24.5
Bare	50	0.625	232.5	267.2	306.20	0	0	61	61				
Fill Valve	20	0.625	699.4	804.0	306.20	0	0	61	61				
Bare	50	0.625	421.6	484.6	306.20	0	0	61	61				
pup	35	0.625	251.3	288.9	306.20	1	35	61	26				
pup	10	0.625	284.1	326.5	306.20	0	0	26	26				
TJ OB	65	0.75	553.8	553.8	298.50	1	65	26	-39				
MUX	1	0.0	1345.5	1950.0	*#DIV/0!*	0	0						*3.98*
Overpull							400						
						5	**full joints**						

Section	Dry weights per joint Riser	Buoyancy	Total	Wet Weights, each Riser	Buoyancy	Total	Totals Riser	Buoyancy	Total	Total Wgt. Dry	Total Wgt. Wet	Total internal Area, si	Section Volume, cf	buoy Volume	cf per module			
LMRP/BOP/FJ	262100		262100	228027		228027	228027		228027	262,100	228,027							
FJ	0		0	0		0	0		0	0	0	317.02	13			6	283.6	1701.6
Bare	13360		13360	11623		11623	23246		23246	26,720	23,246	317.02	213			100	283.6	28360
Buoy 1500	13360	6000	19360	11623	-9682	1941	34870	-29046	5823	58,080	5,823	317.02	319	245.0	30.6	150	33.96	5094
Bare	13360		13360	11623		11623	0		0	0	0	317.02	0			0	283.6	0
Fill Valve	16079		16079	13989		13989	0		0	0	0	317.02	0			0		
Bare	24229		24229	21079	0	21079	0		0	0	0	317.02	0			0	283.6	0
pup	10110		10110	8796		8796	8796		8796	10,110	8,796	317.02	74			35		0
pup	3265		3265	2841		2841	0		0	0	0	317.02	0			0		0
TJ OB	36000		36000	36000		36000	36000		36000	36,000	36,000	298.50	135			65	688	44720
MUX	1950		1950	1346		1346	1346		1346	1,950	1,346					1	1000	1000
Overpull			0	0		0	0		0	0	0							
							104,257	-29,046	75,211	132,860	**75,211**		**754 cf**					**80,876**
									Ex. Opull	132,860	**75,211**							
									Total hang wgt		**606,238**							

Tensioners:	Number: **8**	Capacity ea.:	**80** kips	Total:	**640** kips	**At DTL:**	**576** kips
	# Failed: **2**	Factor: 1.333		DTL limit	**90%**		
Mud returns:	**73** ft.	Fleet/Mech:	**0.94**	riser yield, ksi:	**52**	stress limit:	**34.8** ksi

Mud Density ppg	MW above SW, kips	*Riser Wet x **1.05**	Buoy x **0.96**	TSRmin	**Tmin**	**Tmin + SF**
8.55	10	107.6	-27.9	90	128	**148**
9	13	107.6	-27.9	93	132	**152**
10	20	107.6	-27.9	99	141	**161**
11	26	107.6	-27.9	106	150	**170**
12	32	107.6	-27.9	112	159	**179**
13	39	107.6	-27.9	119	168	**188**
14	45	107.6	-27.9	125	177	**197**
15	52	107.6	-27.9	131	186	**206**
16	58	107.6	-27.9	138	195	**215**
17	65	107.6	-27.9	144	205	**225**
18	71	107.6	-27.9	151	214	**234**
18	71	107.6	-27.9	151	214	**234**

Max. Design Mud Weight

Limited by: not

Collapse Analysis

void depth:	191 ft.	SW head:	84 psi
		Collapse Rating:	946 psi
		OK?	**Yes**

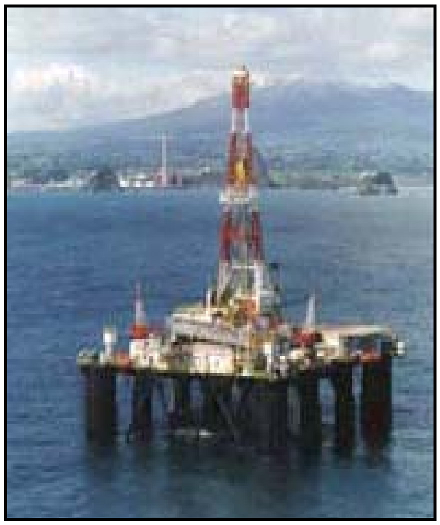
Without Safety Factors on riser weight and buoyancy loss

27.12 771.907
56.7865
136.5

Transocean

Transocean Offshore Deepwater Drilling, Inc.
Engineering & Construction Department
Marine and Structual Engineering

Sedco 702
Moored Semisubmersible



Riser and Mooring Analysis
361 ft (110 m) Water Depth in Bass Strait Australia

Rig No.	Group		Subgroup	REA / Project		
0526	AA		014	0526-003-H001		
0	First Release			24 Jan 03	L. Malm	D. Pelly
Rev No.	**Description**			**Date**	**Author**	**Check By**

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report documents the riser analysis and mooring analysis for the Sedco 702 semisubmersible operating in 361-ft (110-m) water depth in the Bass Strait, Australia. The following sections of this report will outline:

- Riser spaceout
- API Tension versus Mud Weight
- Mooring pattern
- Mooring performance

Review Conclusions and Recommendations

Mooring

The rig should be moored heading into the direction of the worst weather, South, based on the weather data provided.

For the 1-year weather criteria provided the mooring system will be nearing the upper and lower flex joint angle limits. As the weather increases, constant monitoring of the riser angle will be required and the rig will require winching as needed to maintain necessary flex joint angles at the 1-yr weather criteria. In addition, the leeward mooring lines may need to be slack to maintain safety factors for line loading on the weather side of the rig.

The proposed mooring system also has adequate strength to meet API 10-yr intact and damaged conditions for the survival scenario for both the extreme wave and current conditions. However it is assumed that the rig is in a disconnected mode with the riser wholly or partially retrieved. The hanging performance of the riser in the axial direction is not addressed in the current study.

Riser

In the absence of a required mud weight for this report, a general riser analysis was completed for a range of mud weights and the minimum riser tension required for each is presented. Careful monitoring of the riser angle my require tensions above the minimum tension to reduce the riser angle.

The stability tension versus mud weight values are calculated according to API RP 16Q using the following assumptions:

1) 2 tensioners subject to failure
2) 90% max dynamic tension limit (DTL) rating
3) Friction and fleet losses = 5%
4) 20 kips overpull at bottom
5) Riser wet weight factor = 1.05, Buoyancy Reduction Factor = 0.96

2. SEDCO 702 GENERAL DESCRIPTION

2.1. Rig Dimensions

The Sedco 702 is a rectangular, twin hull semi submersible of the Earl & Wright design with 8 circular columns. Its principal particulars are as follows.

Length overall	295 ft
Width overall	245 ft
Depth	130 ft
Lower Hull (two)	
Length	295 ft
Height	21 ft
Breadth	50 ft
Stability Columns	
Four Corners	30 ft dia.
Four intermediates	18 ft dia.
Main Deck	
Length overall	231 ft
Width overall	197 ft
Normal drafts	
Operating	83.5 ft
Survival	55 to 70 ft

2.2. Present Mooring System

The present mooring system is composed as follows.

Line number :	8
Chain type :	3” diameter, ORQ grade
Chain breaking load :	473 tonnes
Average length per leg :	1300 m (1230 m can be paid out)
Anchors :	12 t Stevpris MK 5 on each mooring line. Holding capacity in very soft clay: 280 t

3. ENVRONMENTAL DATA

The environmental data supplied are summarized in table below.

For both the 10yr and 1yr data, extreme wave and extreme current data were provided.

Only three sets of directional heads were supplied, SW, S, SE. For this analysis, the worst environment was used and applied to the rig on the head, beam and quartering headings.

Case	Wind Speed (m/s)	Wave Height Hs (m)	Wave Period Tp (s)	Current speed (m/s)
10 Year Return Extreme Waves	27.9	7.3	14	1.07
10 Year Return Extreme Current	27.9	5.5	11	1.43
1 Year Return Extreme Waves	26.1	5.2	12	0.93
1 Year Return Extreme Current	26.1	3.9	11	1.24

4. MOORING ANALYSIS

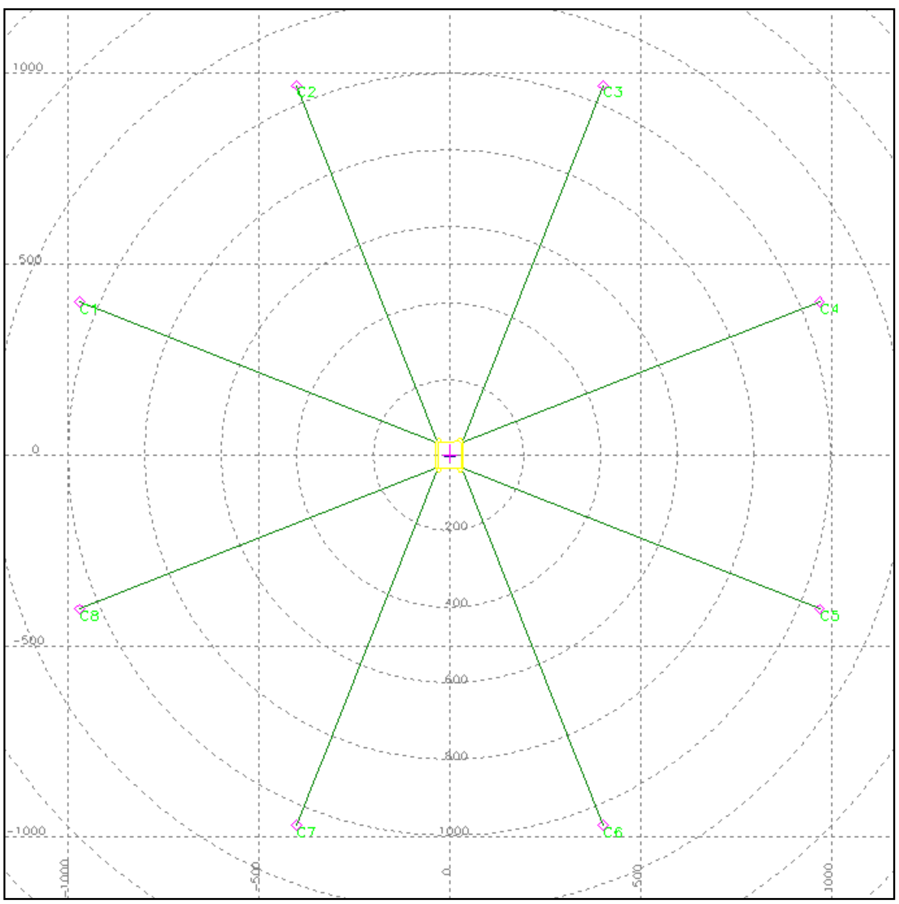
For this analysis the following assumptions were made: Flat bottom, No obstructions.

4.1. Mooring System Layout

Case	Pretension [t]	Paid Out Length [m]
Operating	160	1013
Survival	50	1029

Line No.	Anchor Bearing to Rig Axis [deg]	Anchor Range Relative to vessel From Vessel Centre [m]
C1	292.5	1050
C2	337.5	1050
C3	022.5	1050
C4	067.5	1050
C5	112.5	1050
C6	157.5	1050
C7	202.5	1050
C8	247.5	1050

Notes: Anchor bearings are wrt to the SEDCO 702's bow (positive clockwise)



4.2. Seamoor 2000 Program

The mooring system was analysed using the mooring program SEAMOOR 2000, where peak line tensions are predicted using a quasi static approach for intact or damaged system and a dynamic analysis to simulate transient response of the system after a sudden line failure. Initially, this program computes load-extension characteristics of each line. The static loads resulting from wind, wave and current are then applied to the mooring system. From this, the program computes the equilibrium position of the unit. The maximum dynamic first order excursions resulting from waves are then applied to the system. From the new equilibrium position, the maximum line tensions are computed.

4.3. Mooring criteria & assumptions

Mooring Line Stress Criteria

The assessment of the mooring was based on the API RP 2 SK safety factors for line tension as follows:

	Operating & Survival
Intact	2.00 (50 % of B.L.)
Damage case	1.43 (70 % of B.L.)

Anchor Holding Capacity & Anchor Uplift

No uplift forces should be experienced at the maximum computed line and the maximum anchor load should not exceed the anchor holding capacity in intact conditions.

Vessel Offset

In survival condition, no offset limit as the drilling riser is disconnected.

The following offsets were checked for riser angle. A distance of flex joint to flex joint was used to calculate these offsets in accordance with API 16Q (107m)

	Normal Operations		Connected Not Drilling	
Flex Joint Angle	2 deg. (Drilling mean flex joint angle).	4 deg. (Drilling Max flex joint angle).	6 deg. (Drill pipe in hole Max flex joint angle).	9 deg. (One mooring lime damaged, Max flex joint angle).
Max allowable rig offset	3.73 m	7.48 m	11 m	16 m

Winching Policy

In accordance with API Rules, simulation assuming active modification of the mooring arrangement using winching, only in intact case, could be undertaken.

Weather heading

The wind, current and waves have been assumed collinear and superposed. The mooring system has been checked for the three following conditions: head, quartering and beam environment. This allows a very conservative approach.

4.4. Mooring system performance Survival

MOORING ANALYSIS RESULTS SUMMARY 10 YEAR RETURN PERIOD EXTREME WAVES AT SURVIVAL DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***		**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	140t	30 %	***50 %***	14.7 m max	62t	no
	Damage	NO	220t	46 %	***70 %***	24.7 m max	160t	no
Quartering	Intact.	NO	172t	36 %	***50 %***	17.2 m max	103t	no
	Damage	NO	261t	55 %	***70 %***	27.9 m max	207t	no
Beam	Intact.	NO	147t	31 %	***50 %***	15.2 m max	72t	no
	Damage	NO	228t	48 %	***70 %***	25.6 m max	168t	no

Initial tension 50 tones

MOORING ANALYSIS RESULTS SUMMARY 10 YEAR RETURN PERIOD EXTREME CURRENT AT SURVIVAL DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***		**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	135t	28 %	***50 %***	14.2 m max	58t	no
	Damage	NO	212t	45 %	***70 %***	24.6 m max	150t	no
Quartering	Intact.	NO	173t	37 %	***50 %***	17.0 m max	104t	no
	Damage	NO	260t	55 %	***70 %***	27.8 m max	206t	no
Beam	Intact.	NO	154t	33 %	***50 %***	15.8 m max	82t	no
	Damage	NO	243t	51 %	***70 %***	27.0 m max	187t	no

Initial tension 50 tones

4.5. Mooring system performance Survival

MOORING ANALYSIS RESULTS SUMMARY 1 YEAR RETURN PERIOD EXTREME WAVES AT OPERATING DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***	**meters**	**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	231t	49 %	***50 %***	2.1m static 1.9 m 1-order max	173t	no
	Damage	NO	296t	62 %	***70 %***	8.8 m max	248t	no
Quartering	Intact.	NO	224t	47 %	***50 %***	2.7m static 1.9 m 1-order max	164t	no
	Damage	NO	288t	61 %	***70 %***	8.8 m max	239t	no
Beam	Intact.	NO	233t	49 %	***50 %***	2.2m static 1.9 m 1-order max	175t	no
	Damage	NO	297t	63 %	***70 %***	9.1 m max	249t	no

Initial tension 160 tonnes
Quartering heading required slacking of leeward lines to reduce weather mooring wire tensions.

MOORING ANALYSIS RESULTS SUMMARY 1 YEAR RETURN PERIOD EXTREME CURRENT AT OPERATING DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***	**meters**	**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	226t	48 %	***50 %***	2.5 m static 1.3 m 1-order max	167t	no
	Damage	NO	294t	62 %	***70 %***	8.8 m max	246t	no
Quartering	Intact.	NO	235t	49 %	50 %	3.5 m static 1.3 m 1-order max	177t	no
	Damage	NO	303t	64 %	70 %	9.6 m max	256t	no
Beam	Intact.	NO	235t	49 %	***50 %***	3.0 m static 1.2 m 1-order max	177t	no
	Damage	NO	306t	65 %	***70 %***	9.7 m max	260t	no

Initial tension 160 tonnes
Quartering heading required slacking of leeward lines to reduce weather mooring wire tensions.

5. RISER ANALYSIS

Riser space-out and tension stability calculation using API RP 16Q methodology

5.1. Riser Space Out

Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit:	**Moored Semisubmersible MODU**	**Draft:**	83.5	feet
Region of Operation:	**South Australia - Bass Strait**	**Wellhead Ht:**	10.0	feet
Name of Operator:		**RKB-Wellhead:**		feet
Well No.:	Scallop #1	☑ Check to use Auto RKB-Wellhead Distance		
REA No.:	0526 003 H001			
Riser Length Discrepancy	**0.0** feet	☑ Check to use Riser Stretch Estimate		
WATER DEPTH:	361.0 feet	**RKB-to-Wellhead:**	**437.5**	feet

INSTRUCTIONS

Only the blue-text cells require editing.

The table at right shows the remaining available joints of each type onboard.

Enter the joint type to be run in the left-most column of each row. The same type can be run in multiple columns if necessary.

The joint description will appear corresponding to the type entered. Enter the quantity of joints to run in the third column of each row.

The total string length should equal RKB-wellhead. Adjustment of the TJ stroke is possible by altering stroke in feet under the Unit Length Column.

The user can decide whether to add riser stretch estimates and whether to auto-calculate RKB-Wellhead from rig constants by checking the boxes at right.

Type	Description	Remaining Onboard
1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	14
2	Not in Use	
3	Not in Use	
4	Not in Use	
5	Not in Use	
6	Not in Use	
7	Buoy Jt. 1500-ft x 21 in. x 0.625 in. x 50 ft.	14
8	Not in Use	
9	Not in Use	
10	Riser Fill Valve	1
11	Not in Use	
12	Slick Pup 21 in. x 0.625 in. x 40 ft.	2
13	Slick Pup 21 in. x 0.625 in. x 35 ft.	0
14	Slick Pup 21 in. x 0.625 in. x 25 ft.	3
15	Slick Pup 21 in. x 0.625 in. x 10 ft.	2

Proposed Riser Configuration

Joint Type	Description	Quantity	Unit Length (feet)	Section Length (feet)	Distance, RKB to T.O. Riser (feet)	Distance, Datum to T.O. Riser (feet)
	RKB-to-Wellhead				**437.5**	10.0
	BOP Stack	1	27.08	27.08	410.4	37.1
	Lower Marine Riser Package	1	23.51	23.51	386.9	60.6
			0.00	0.00	386.9	60.6
1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	2	50.00	100.00	286.9	160.6
			0.00	0.00	286.9	160.6
			0.00	0.00	286.9	160.6
7	Buoy Jt. 1500-ft x 21 in. x 0.625 in. x 50 ft.	3	50.00	150.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
13	Slick Pup 21 in. x 0.625 in. x 35 ft.	1	35.00	35.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
	Telescopic Joint	1	65.00	65.00	36.9	410.6
	Telescopic Joint Stroke		22.7	22.70	14.2	433.3
	Diverter Housing/UFJ	1	10.50	10.50	3.7	443.8
	RKB - Diverter		3.30	3.30	0.4	447.1
	Riser Stretch			0.44	0.0	447.5
	TOTAL STRING LENGTH:			**437.5** feet		

5.2. Riser Tension vs Mud Weight

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Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

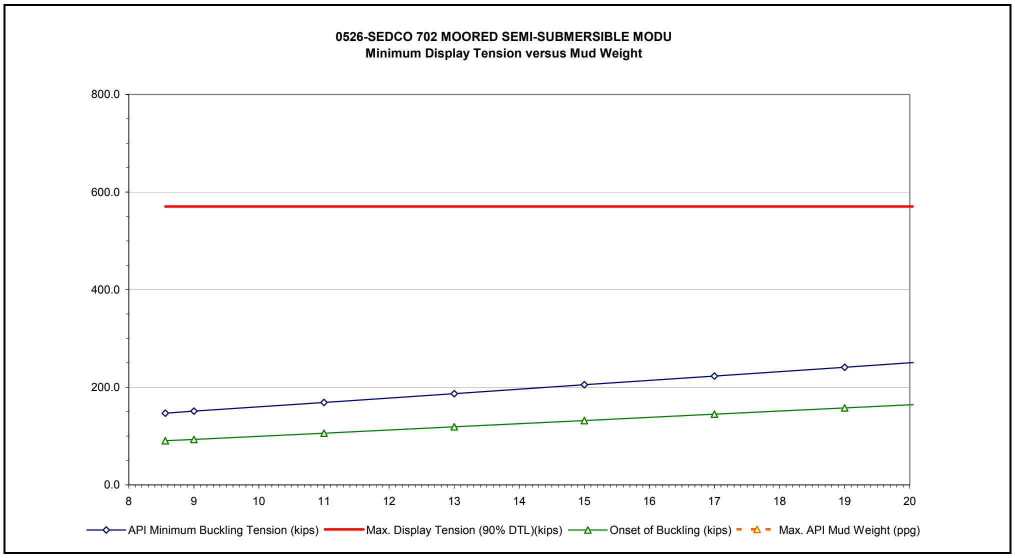
Type of Unit:	Moored Semisubmersible MODU
Region of Operation:	South Australia - Bass Strait
Name of Operator:	0
Well No.:	
REA No.:	

WATER DEPTH:	**361.0** feet	**MAX MUD WEIGHT:**	**55.5** ppg
Available Top Tension	**570.4** kips	**RKB-to-Wellhead:**	**437.5** feet

Tensioner Fleet Angle	8.00 degrees
Tensioner Friction/Efficiency Factor	0.95
Mudweight Increment	2.00 ppg

Mud Weight	Mud Fluid Density	Total Mud Weight	Minimum Slip Ring Tension	Minimum Display Tension				
				8 Tensioners	7 Tensioners	6 Tensioners	5 Tensioners	4 Tensioners
(ppg)	(lbs/cu-ft)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
8.56	64.0	10.2	90.4	146.9	172.3	210.3	273.8	400.6
9.00	67.3	13.1	93.2	150.9	177.0	216.3	281.7	412.6
11.00	82.3	25.9	106.1	168.9	198.7	243.4	317.8	466.7
13.00	97.2	38.8	119.0	187.0	220.3	270.4	353.9	520.9
15.00	112.2	51.7	131.8	205.0	242.0	297.5	390.0	575.0
17.00	127.2	64.5	144.7	223.1	263.7	324.6	426.1	629.2
19.00	142.1	77.4	157.5	241.1	285.3	351.6	462.2	683.3
21.00	157.1	90.2	170.4	259.1	307.0	378.7	498.3	737.4
23.00	172.1	103.1	183.3	277.2	328.6	405.8	534.4	791.6
25.00	187.0	116.0	196.1	295.2	350.3	432.9	570.5	845.7
27.00	202.0	128.8	209.0	313.3	372.0	459.9	606.6	899.9
29.00	216.9	141.7	221.8	331.3	393.6	487.0	642.7	954.0
31.00	231.9	154.5	234.7	349.4	415.3	514.1	678.8	1008.2
33.00	246.9	167.4	247.6	367.4	436.9	541.2	714.9	1062.3
35.00	261.8	180.3	260.4	385.5	458.6	568.2	751.0	1116.5
37.00	276.8	193.1	273.3	403.5	480.3	595.3	787.1	1170.6
39.00	291.7	206.0	286.1	421.6	501.9	622.4	823.2	1224.8
41.00	306.7	218.8	299.0	439.6	523.6	649.5	859.3	1278.9
43.00	321.7	231.7	311.9	457.7	545.2	676.5	895.4	1333.1
45.00	336.6	244.6	324.7	475.7	566.9	703.6	931.5	1387.2
47.00	351.6	257.4	337.6	493.8	588.6	730.7	967.6	1441.4
49.00	366.5	270.3	350.4	511.8	610.2	757.8	1003.7	1495.5
51.00	381.5	283.1	363.3	529.9	631.9	784.8	1039.8	1549.7
53.00	396.5	296.0	376.2	547.9	653.5	811.9	1075.9	1603.8
55.00	411.4	308.9	389.0	566.0	675.2	839.0	1112.0	1658.0
57.00	426.4	321.7	401.9	584.0	696.8	866.1	1148.1	1712.1
59.00	441.4	334.6	414.7	602.1	718.5	893.1	1184.2	1766.3
61.00	456.3	347.4	427.6	620.1	740.2	920.2	1220.3	1820.4
63.00	471.3	360.3	440.5	638.2	761.8	947.3	1256.4	1874.6
65.00	486.2	373.2	453.3	656.2	783.5	974.4	1292.5	1928.7
67.00	501.2	386.0	466.2	674.3	805.1	1001.4	1328.6	1982.9
69.00	516.2	398.9	479.0	692.3	826.8	1028.5	1364.7	2037.0
71.00	531.1	411.7	491.9	710.4	848.5	1055.6	1400.8	2091.2
MAXIMUM MUD WEIGHT:				**55.5**	**38.7**	**24.6**	**13.1**	**#N/A**

5.3. Riser Configuration



Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit: Moored Semisubmersible MODU
Region of Operation: South Australia - Bass Strait
Name of Operator: 0
Well No.:
REA No.:

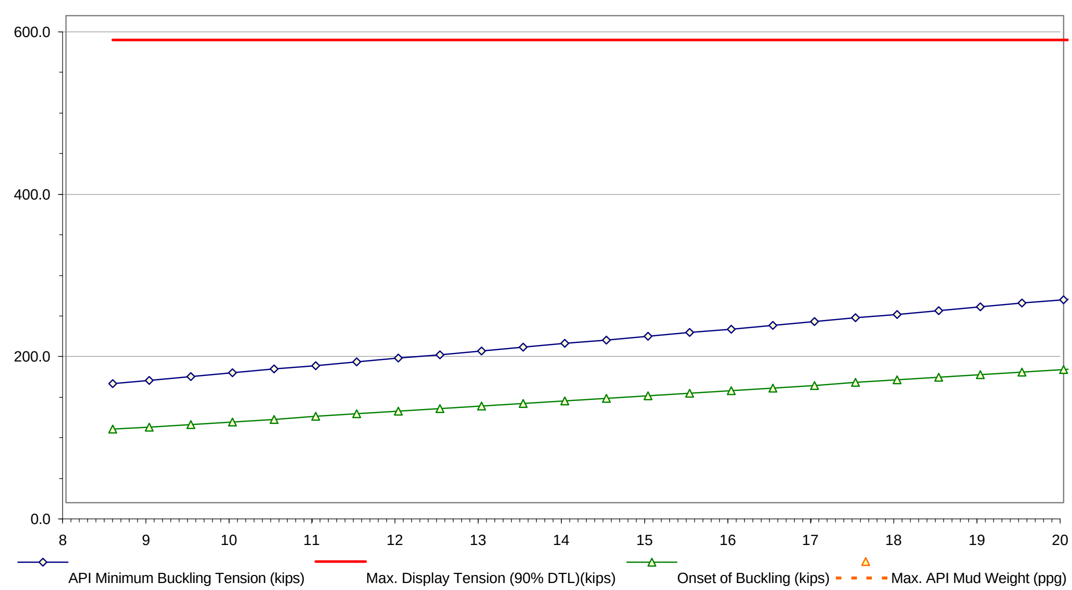
WATER DEPTH: 361.0 feet **MAX MUD WEIGHT:** #DIV/0! ppg

Available Top Tension 570.4 kips **RKB-to-Wellhead:** 437.5 feet

Tensioner Fleet Angle 8.00 degrees
Tensioner Friction/Efficiency Factor 0.95
Mudweight Increment 0.50 ppg

Mud Weight	Mud Fluid Density	Total Mud Weight	Minimum Slip Ring Tension	Minimum Display Tension: 8 Tensioners	7 Tensioners	6 Tensioners	5 Tensioners	4 Tensioners
(ppg)	(lbs/cu-ft)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
8.56	64.0	10.2	90.4	146.9	172.3	210.3	273.8	400.6
9.00	67.3	13.1	93.2	150.9	177.0	216.3	281.7	412.6
9.50	71.1	16.3	96.4	155.4	182.4	223.0	290.7	426.1
10.00	74.8	19.5	99.7	159.9	187.9	229.8	299.8	439.6
10.50	78.5	22.7	102.9	164.4	193.3	236.6	308.8	453.2
11.00	82.3	25.9	106.1	168.9	198.7	243.4	317.8	466.7
11.50	86.0	29.2	109.3	173.4	204.1	250.1	326.8	480.2
12.00	89.8	32.4	112.5	177.9	209.5	256.9	335.9	493.8
12.50	93.5	35.6	115.7	182.4	214.9	263.7	344.9	507.3
13.00	97.2	38.8	119.0	187.0	220.3	270.4	353.9	520.9
13.50	101.0	42.0	122.2	191.5	225.8	277.2	362.9	534.4
14.00	104.7	45.2	125.4	196.0	231.2	284.0	372.0	547.9
14.50	108.5	48.4	128.6	200.5	236.6	290.7	381.0	561.5
15.00	112.2	51.7	131.8	205.0	242.0	297.5	390.0	575.0
15.50	115.9	54.9	135.0	209.5	247.4	304.3	399.0	588.5
16.00	119.7	58.1	138.2	214.0	252.8	311.0	408.1	602.1
16.50	123.4	61.3	141.5	218.5	258.2	317.8	417.1	615.6
17.00	127.2	64.5	144.7	223.1	263.7	324.6	426.1	629.2
17.50	130.9	67.7	147.9	227.6	269.1	331.3	435.1	642.7
18.00	134.6	70.9	151.1	232.1	274.5	338.1	444.2	656.2
18.50	138.4	74.2	154.3	236.6	279.9	344.9	453.2	669.8
19.00	142.1	77.4	157.5	241.1	285.3	351.6	462.2	683.3
19.50	145.9	80.6	160.7	245.6	290.7	358.4	471.2	696.8
20.00	149.6	83.8	164.0	250.1	296.1	365.2	480.2	710.4
20.50	153.4	87.0	167.2	254.6	301.6	372.0	489.3	723.9
21.00	157.1	90.2	170.4	259.1	307.0	378.7	498.3	737.4
21.50	160.8	93.5	173.6	263.7	312.4	385.5	507.3	751.0
22.00	164.6	96.7	176.8	268.2	317.8	392.3	516.3	764.5
22.50	168.3	99.9	180.0	272.7	323.2	399.0	525.4	778.1
23.00	172.1	103.1	183.3	277.2	328.6	405.8	534.4	791.6
23.50	175.8	106.3	186.5	281.7	334.1	412.6	543.4	805.1
24.00	179.5	109.5	189.7	286.2	339.5	419.3	552.4	818.7
24.50	183.3	112.7	192.9	290.7	344.9	426.1	561.5	832.2
MAXIMUM MUD WEIGHT:				#DIV/0!	#DIV/0!	#DIV/0!	13.1	#N/A

0526-SEDCO 702 MOORED SEMI-SUBMERSIBLE MODU
Minimum Display Tension versus Mud Weight



Transocean

Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit:	Moored Semisubmersible MODU	No. of Tensioners:	8.0	each	fws =	1.05	
Region of Operation:	South Australia - Bass Strait	Capacity, each:	80.0	kips	fwb =	0.96	
Name of Operator:		Subj to Fail (n):	2	each			
Well No.:	Scallop #1	Max (%) DTL Limit	90%	percent			
REA No.:	0526 003 H001	Avail. Display Tension:	576.0	kips			
WATER DEPTH:	361.0 feet	Riser Section Area:	2.21	sq-feet			
RKB-to-Wellhead:	437.5 feet	LMRP Overpull (If Req'd):	20.0	kips			

Section	Type	Description	Section Length (feet)	Dry Unit Weight (kips/joint)	Wet Unit Weight (kips/joint)	Dry Section Weight (kips)	Wet Section Weight (kips)	Wet/Dry Ratio with BOP	Wet/Dry Ratio LMRP Only	Wet Steel Weight (pounds)	Ws x fs (pounds)	Bn (pounds)	Bn x fb (pounds)	Mud Volume (cu-feet)
1		RKB-to-Wellhead												
2		BOP Stack	27.08	156.30	135.98	156.30	135.98	87.0%						
3		Lower Marine Riser Package	17.02	105.80	92.04	105.80	92.04	87.0%	87.0%					
4		Lower Flex Joint	6.49	0.00	0.00	0.00	0.00	87.0%	87.0%					
5			0.00			0.00	0.00	87.0%	87.0%					
6	1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	100.00	13.36	11.62	26.72	23.25	87.0%	87.0%	23246.4	24408.7	0.0	0.0	220.9
7			0.00			0.00	0.00	87.0%	87.0%					
8			0.00			0.00	0.00	87.0%	87.0%					
9	7	Buoy Jt. 1500-ft x 21 in. x 0.625 in	150.00	19.36	1.94	58.08	5.81	74.1%	63.5%	34869.6	36613.0	29061.6	27899.1	331.3
10			0.00			0.00	0.00	74.1%	63.5%					
11			0.00			0.00	0.00	74.1%	63.5%					
12			0.00			0.00	0.00	74.1%	63.5%					
13			0.00			0.00	0.00	74.1%	63.5%					
14			0.00			0.00	0.00	74.1%	63.5%					
15			0.00			0.00	0.00	74.1%	63.5%					
16	13	Slick Pup 21 in. x 0.625 in. x 35 ft.	35.00	10.11	8.79	10.11	8.79	74.5%	64.7%	8793.9	9233.6	0.0	0.0	77.3
17			0.00			0.00	0.00	74.5%	64.7%					
18			0.00			0.00	0.00	74.5%	64.7%					
19			0.00			0.00	0.00	74.5%	64.7%					
20			0.00			0.00	0.00	74.5%	64.7%					
21			0.00			0.00	0.00	74.5%	64.7%					
22			0.00			0.00	0.00	74.5%	64.7%					
23		Telescopic Joint	65.00	36.00	31.32	36.00	36.00	76.8%	70.1%	36000.0	37800.0	0.0	0.0	143.6
24		Telescopic Joint Stroke	22.70											50.1
25		Diverter Housing/UFJ	10.50											
26		RKB - Diverter	3.30											
27		Riser Stretch	0.44											
28		Tensioner Ring	0.00	0.00	0.00	0.00	0.00			0.0	0.0			
29		MUX Cable (2-each)	423.29			1.95	1.35							

Total Dry Weight, Drilling Riser and LMRP	**238.7**	kips
Total Dry Weight, Drilling Riser, LMRP and BOP:	**395.0**	kips
Total Wet Weight, Drilling Riser without LMRP/BOP	**75.2**	kips
Total Wet Weight, Drilling Riser and LMRP	**167.2**	kips
Total Wet Weight, Drilling Riser, LMRP and BOP:	**303.2**	kips
Riser Steel Wet Weight Excluding LMRP x 1.05:	**108.1**	kips
Riser Steel Wet Weight Including LMRP x 1.05:	**204.7**	kips
Riser Buoyancy x 0.96:	**-27.9**	kips

Minimum Ratios

74.1%	63.5%
with BOP	LMRP Only

Total Mud Volume:	**146.61**	barrels
SW Column Height to center, LFJ:	**316.90**	feet
SW Pressure Column (dwHw):	**20281.6**	lb/sqft
Drilling Fluid Pressure Column:	**389.19**	feet

Esso Australia Pty Ltd

FINAL WELL REPORT

SCALLOP-1

JANUARY to MARCH 2003

VOLUME 2 of 4

Mud Summary Report

ESSO AUSTRALIA PTY LTD
BAROID DRILLING FLUID RECAP
SCALLOP-1
BASS STRAIT, VICTORIA.

Prepared by : Tony Kowalski, Gerald Lange
Justin Lewis

Date : February/March 2003

Table Of Contents

1. WELL SUMMARY

1.1 Well Data

Well Name	:	Scallop-1
Operator	:	Esso Australia Pty Ltd.
Well Type	:	Vertical Exploration
Bottom Hole Temperature	:	85 °C
Location	:	Vic/RL2, Bass Strait, Victoria.
Contractor / Rig	:	Sedco 702
Start Date (Rig)	:	29/02/03
Start Date (Baroid)	:	30/02/03
Spud Date	:	02/02/03
RKB to Seabed	:	135.5 m
Total Depth	:	3174 m
Date TD Reached	:	22/02/03 (09:45 hrs)
Total Days Actual Drilling	:	16 Days
Date Released	:	02/03/03
Total Days on Well (Baroid)		32 Days

1.2 Formation Tops

Formation	Programmed TVDSS (m)	Actual MDRT/TVDRT (m)
RKB to Sea Level	26	25.9
Gippsland Limestone	136	135.5
Lakes Entrance Formation	1338	1325.0
Latrobe Group	1709	1720.0
KTFS Marker	2234	2203.0
Top T.lill	2537	2546.0
Top Volcanics	2561	2610.0
Base Volcanics / Top S1	2781	2836.0
Top Intra-Volcanics	2822	
Base Intra-Volcanics	2872	2937.0
Top 1st Volcanics	3010	3020.0
Base 1st Volcanics	3060	3090.5
Total Depth	3126	3174.0

1.3 Casing Program

30”	Conductor	@	179 m TVDRT
13 3/8”	Surface casing	@	900.7 m TVDRT
12 ¼”	Plug and Abandon	@	3174 m TVDRT

1.4 Personnel

Drilling Supervisors	:	Tommy Vestal George Sharkey	Tony Basset Murray Jackson	
Baroid Field Service Reps.	:	Tony Kowalski	Gerald Lange	Justin Lewis

2. COST SUMMARY

2.1 Drilling Fluid Costs

	Drilling Fluid	Hole Size	MD From	MD To	Cost USD $
1.	Seawater/Hi-Vis Sweeps	36”	135.5 m	179 m	17,170.20
2.	Seawater/Hi-Vis Sweeps	17 ½”	179 m	917 m	33,951.96
3.	KCl/PHPA/Polymer/Glycol-CP	12 ¼”	917 m	3174 m	224,012.62
Mud Materials Used For Drilling				**Total USD $**	**275,134.78**
Materials Used for Cementing:				**USD $**	209.60
P & A:				**USD $**	3,224.75
Total Materials:				**USD $**	**278,569.13**

Note: At the conclusion of the well the following material was dumped overboard:

Product		**Cost: USD$**
Bulk Bentonite:	581 x 100 lb sacks	$8883.49
*Bulk Barite :	1386 x 100 lb sacks	$12,293.82

*Esso stock

Approximately 1640 sacks of barite were returned to the barite pods at BBMT.

2.2 Engineering Costs

Service Representatives	From (date)	To (date)		Days
Tony Kowalski	30/01/03	28/02/03		30
Gerald Lange	01/02/03	16/02/03		16
Justin Lewis	17/02/03	02/03/03		14
Total Days:				
Service Cost @ AUD $ 865			@ USD $ 475	**28,500.00**

Total Cost of Drilling Material & Engineering: USD $ **307,069**

3. PERFORMANCE SUMMARY

3.1 Comments

- The Scallop-1 well was successfully drilled to 13 3/8" casing depth with hi-vis bentonite sweeps supplemented with guar gum sweeps. A KCl/PHPA/Polymer/Glycol fluid was used to successfully drill to TD at 3174 m, with no hole or mud-related problems and with the mud bill within budget. An extensive logging program was carried out with logs reaching bottom and indicating a good gauge hole, after which the well was plugged and abandoned.

3.2 Performance Indicators

	Program	Actual	Achieved (± 10 %)
Interval 1. Seawater + Hi-Vis Sweeps			
36" Hole, 135.5 m - 179 m			
• Drilled, m	48	43.5	Yes
• Volume Used, bbl	1100	2242	No
• Consumption Rate, bbl/m	22.9	51.54	No
• Mud Cost/bbl	4.14	7.66	No
• Mud Cost/m, US$	94.96	394.72	No
• Interval Mud Cost, $US	4,558.02	17,170.20	No
Interval 2. Seawater + Hi-Vis Sweeps			
17 ½ " Hole, 179 m – 917 m			
• Drilled, m	716	738	Yes
• Volume Used, bbl	7200	3466	Yes
• Consumption Rate, bbl/m	10.1	4.25	Yes
• Mud Cost/bbl, US$	7.46	9.80	No
• Mud Cost/m, US$	74.98	46.01	Yes
• Interval Mud Cost, US$	53,688.13	33,951.96	Yes
Interval 3. KCl/Polymer/PHPA/Glycol			
12 ¼" Hole, 917 m – 3174 m			
• Drilled, m	2226	2257	Yes
• Volume Used, bbl	5578	5201	Yes
• Dilution Rate, bbl/m	1.55	1.25	Yes
• Consumption Rate, bbl/m	2.51	4.25	No
• Mud Cost/bbl, $US	40.83	43.07	Yes
• Mud Cost/m, $US	102.31	99.25	Yes
• Interval Mud Cost, $US	227,746.52	224,012.62	Yes
Plug & Abandon	-	3,224.75	N/A
Entire Well			
• Total Drilling Fluid Cost, USD$	285,992.67	278,359.53	Yes

3.3 Explanation of Non-Conformance

- **Interval 1.** All indicators were higher than programmed due to Esso's requirement for kill mud, pumping more hi-vis sweeps than programmed and not diluting and flocculating the pre-ydrated bentonite. Also contributing to the higher cost was the use of Guar Gum for hi-vis sweeps.
- **Interval 2.** Cost/bbl was higher due to the volume for the interval being significantly less than programmed as a result of the 1425 bbls salvaged from the 36" hole interval. Also, seawater dilution volume was reduced in order to ensure good rheological values for adequate hole cleaning.
- **Interval 3.** Consumption Rate was higher than programmed due to the 409 bbls of Reserve mud that was prepared at ESSO's request.

4. INTERVAL - 1

4.1 SUMMARY

36" Hole From 135.5 m To 179 m In 1 Day

Drilling Fluid Seawater / Hi-Vis Sweeps
Formations Gippsland LimeStone

Properties	Programmed		Actual (Typical)		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg			8.55	8.8	Yes
Viscosity, sec/qt	>100		138	156	Yes
Yield Point, lb/100 ft^2	>40		41	91	Yes

Explanation of Non-Conformance
- Properties confirmed to programmed specifications

Maintenance
- Prior to drilling, bentonite was pre-hydrated in drill water and allowed to yield for as long as possible prior to use. A total of 880 bbls, containing 40 ppb bentonite was mixed.
- A pit of 465 bbls of 12.0 ppg kill mud was prepared in the event of shallow gas. This was not required, and was subsequently used in the 17 ½" hole interval.
- A total of 379 bbls of Guar Gum hi-vis sweep fluid was also prepared.
- A total of eight 50 bbl hi-vis bentonite sweeps were pumped-50 bbls halfway down a stand and 50 bbls spotted on bottom prior to connections.
- At TD, an 87 bbl guar gum sweep was circulated around prior to a wiper trip.
- Following the wiper trip, the hole was displaced with 370 bbls of hi-vis bentonite with a further 100 bbls pumped 15 m BML.

4.2 EVALUATION

Comments

- Alternating between bentonite and guar gum proved to be the most time effective method of sweeping the hole. While drilling the 36" hole, mud mixing continued so as to be sure to have sufficient volume when drilling commenced on the 17 ½" interval.
- A total of 1425 bbls of fluid (including 465 bbls of 12.0 ppg kill mud) remained after running the 30" casing, and was subsequently used in the 17 ½" hole interval.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem None.
Cause
Action

Drilling Fluid

1) Problem None
Cause
Action

4.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- None.

Drilling Fluid

- None.

Solids Control and Mud Mixing Equipment.

- None

5. INTERVAL - 2

5.1 SUMMARY

17 1/2" Hole From 179 To 917 In 2 Days

Drilling Fluid Seawater / Hi-Vis Sweeps
Formations Gippsland Limestone

Properties	Programmed		Actual (Typical)		
	Min	Max	Min	Max	Conformance
Mud Weight, ppg	-	-	8.65	12.0	
Viscosity, sec/qt	100		113	180	Yes
Yield Point, lb/100 ft^2	40		51	100	Yes

Explanation of Non-Conformance

- Properties conformed to programmed specifications.

Maintenance

- Prior to drilling, an initial volume of 1745 bbls of mud was prepared. This mud consisted of: 418 bbls of Guar Gum and 1028 bbls of 40 ppb pre-hydrated bentonite which was subsequently diluted back with 299 bbls of seawater. In addition, 1425 bbls of mud was salvaged from the previous 36" hole interval, of which 465 bbls was hi-vis 12.0 ppg kill mud.
- For the upper portion of this interval, 25 bbl hi-vis Guar Gum sweeps were pumped half way down each stand, and 50 bbls of seawater diluted lime flocculated bentonite was spotted prior to connections.
- Guar Gum sweeps were discontinued in the lower section of the interval so that the tank could be utilized for mixing additional 12.0 ppg hi-vis bentonite. Flocculated hi-vis bentonite sweeps were used in place of the Guar Gum mid-stand.
- At interval TD, a 100 bbl flocculated bentonite hi-vis sweep was circulated, followed by 2000 bbls of seawater, after which the hole was displaced with 800 bbl of the same fluid prior to a wiper trip.
- Additional seawater and hi-vis sweeps were pumped when tight hole was experienced while running in after the wiper trip.
- When back on bottom, a 120 bbl hi vis sweep was pumped followed by 1500 bbls oof seawater.
- Prior to pulling out, the hole was displaced with 20 ppb undiluted 12.0 ppg pre-hydrated bentonite. At 167 m, the casing was topped up with additional 12.0 ppg fluid.

5.2 EVALUATION

Comments

- The hole was drilled and casing run without problem. However, although there was no excessive drag or problems pulling out on the wiper trip, reaming was required through tight spots between 237 m and 692 m.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem Tight spots between 237 m and 692 m which required reaming when running back in after wiper trip.
   Cause Unknown.
   Action Reamed with seawater and hi-vis sweeps.

Drilling Fluid

1) Problem None
   Cause
   Action

Solids Control and Mud Mixing Equipment

1) Problem None
   Cause
   Action

5.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- None.

Drilling Fluid

- None.

Solids Control and Mud Mixing Equipment

- None

6. INTERVAL - 3

6.1 SUMMARY

12 ¼" Hole From 917 m To 3174 m In 15 Days

Drilling Fluid 6% KCl / PHPA / Polymer / Glycol-CP
Formations Gippsland, Lakes Entrance, Latrobe, KTFS marker, Top T.lill, Top Volcanics, Base Volcanics/ Top S1, Top Intra-Volcanics, Base Intra-Volcanics, Top 1st Volcanics, Volcanics, Base 1st Volcanics

Properties	Programmed Min	Programmed Max	Actual (Typical) Min	Actual (Typical) Max	Conformance
Mud Weight, ppg	9.0	10.5	9.0	10.4	Yes
Yield Point, lb/100ft2	25	45	14	43	Yes
API Filtrate, ml/30 min		6.0	2.5	5.5	Yes
HPHT Filtrate @ 250°F, ml	12	15	8.8	15.6	No
pH	8.5	9.2	8.5	9.8	No
Low Gravity Solids, % vol		10	0.1	5.4	Yes
KCl Content, % wt	6	8	5.8	7.0	No
Sulfite Residual, ppm	100		80	170	No
Glycol Content, % vol	3	5	2.9	3.4	No

Explanation of Non-Conformance

- High HPHT filtrate was recorded on first mud check following displacement prior to sufficient drill solid fines being incorporated into the fluid to contribute to filter cake quality.
- High pH occurred after adding lime to treat for suspected carbonates.
- No explanation for low KCl % other than possibly a temporary disruption to premix addition.
- BARACOR 129 oxygen scavenger absorption was relatively high due to the suction being circulated for long periods of time for scavenger and barite additions, and as a result the residual would often drop below the required 100 ppm minimum. Also, oxygen scavenger can not be added at the same time as caustic.
- Due to the method of Glycol addition (gravity feed through the hopper), it could often not be added as necessary due to the hopper being used for other products. Requirements were approximately 1 tank (1500 lt) per 310 bbls of new premix added to the active. On some occasions the Glycol content was slightly lower than the programmed 3% and sometimes slightly higher.
- All other mud properties conformed to programmed specifications.

Maintenance

- A 6- 8% KCl/PHPA/Polymer/Glycol-CP was used to drill the 12 ¼" interval to provide good hole stability in the reactive claystones, prevent differential sticking in the sands, and provide maximum penetration rates.
- For the most part, the KCl % was kept in the range of 6 – 7%, which was justified by the absence of any hole problems.
- After drilling out the 13-3/8" casing shoe track to just above the shoe with seawater and hi-vis bentonite sweeps, a 100 bbl hi-vis sweep was pumped around. This was followed by 100 bbls of seawater and then the new KCl/PHPA/Polymer fluid.
- Drilling out the 13-3/8" casing with seawater and hi-vis bentonite sweeps rather than the new KCl/PHPA/Polymer fluid, meant that the new fluid did not have to be pre-treated to avoid contamination. This was important, as PHPA muds are sensitive to high pH and calcium.
- There were no initial displacement losses at the shakers other than 4 bbls of interface which was dumped.

Maintenance (Cont'd)

- An initial volume of 1496 bbls of displacement volume was prepared, plus 388 bbls of hi-vis bentonite used for sweeps while drilling out the casing. The volume built was fully specified except for PHPA concentrations, Glycol and oxygen scavenger. The PHPA was initially mixed at 0.55 ppb in order to avoid the problem of mud losses over the shakers on displacement. After displacement, PHPA concentrations were increased to program levels.
- The initial displacement volume of mud was weighted to 9.0 ppg with barite as required by the Esso drilling program.
- Three meters of new hole was drilled and a PIT performed to 16.5 EMW.
- Following displacement, Glycol-CP polyglycol was added to the active mud system and concentrations maintained in the 2.9 - 3.3%.range.
- Also after displacement, BARACOR 129 oxygen scavenger was added to the active system at an initial concentration of 0.65 ppb and residual sulphite levels subsequently maintained at 100 mg/l through regular product additions.
- Active mud weight followed the parameters as set by the Esso Mud Weight Curve. Prior to drilling the Lakes Entrance Formation at 1338 m, the entire circulation system was weighted to 9.5 ppg with barite.
- Immediately prior to drilling the top of the Latrobe Formation, the entire circulating system was pretreated with 5 ppb each of BARACARB (calcium carbonate) 25 and 50 plus 10 ppb BARACARB 100. These products act as pore throat bridging agents to reduce the likelihood of differential sticking and seepage losses in the high permeability sands. Regular additions of 2 x 25 kg sacks of BARACARB 100 and 1 x 25 kg sack of BARACARB 50 were added for every 10 m of new hole drilled to replace losses to the wall cake and over the shakers.
- One sack each of BARACARB 25, 50 and 100 were added for every complete active system circulation during which the desilter was operated.
- 5 ppb BARACARB 25 was added to premix volume prior to bleeding into the active system.
- Active system volume and required properties were maintained with premix additions formulated as per the active system requirements.
- Shaker screens were run as fine as practical based on screen availability. It was noted that the 145 mesh screens screened out a small percentage of the BARACARB 100.
- As mentioned elsewhere, shaker screen usage (due to both upper and lower mesh damage) was considered to be excessive.
- The desilter was run as required and worked very efficiently. The desander was not required.
- As the primary indicator of hole cleaning, the yield point was monitored and maintained in the 25-45 lb/100ft2 range, while the 6 RPM reading was maintained at 7 – 10.
- At 2440 m, as per Esso's request, 400 bbls of contingency 10.2 ppg reserve mud was prepared.
- The H_2S and CO_2 content were monitored with the Garrett Gas Train and HACH tests.
- There was no indication of H_2S in the 12 ¼" interval of Scallop-1.
- At approximately 2650 m, and again at about 2840 m, 2955 m, 2935 m, 3065m and 3140 m 0.1 ppb lime was added to the system to treat suspected carbonates.
- Prior to pulling out of the hole to log, the entire circulating system was treated with additional BARACIDE, BARACOR 129 and KOH to preserve the mud during extended logging operations.

Solids Control Equipment

- On displacement, the 3 Thule VSM-100 shakers were dressed with 10 mesh scalping screens and a combination of 52 and 84 mesh primary screens. Coarser screens were utilized in order to avoid losses of unsheared mud over the shakers.
- As the fluid sheared and mud properties allowed, finer screens (105 and 120 mesh) were fitted to the shakers. However, at approximately 959 m, excessive whole mud losses over the shakers was experienced, and coarser screens had to be temporarily reinstalled.
- As drilling progressed, a few 145 mesh screens were installed at the back of one or two of the shakers.
- When the circulating rate was reduced on the second bit run, it was found that only 2 shakers were required, with the third shaker used as a backup when replacing damaged screens on the other two.
- Where practical, previously used screens were utilized and torn screens patched for later use. A number of previously used 180 and 200 mesh screens were also utilized, after which only new ESSO owned screens were used.
- Shaker screen usage was considered excessive, especially considering that damaged screens were silicon patched as many as 3 times.
- **New** screens (both SEDCO's and ESSO's) utilized in the 12 ¼" interval consisted of:

84 Mesh	-	12
105 Mesh	-	30
110 Mesh	-	3
120 Mesh	-	10
145 Mesh	-	28
165 Mesh	-	17
180 Mesh	-	8
Total	**-**	**108**

- The Sweco S3-12 Desander was not utilized.
- The Sweco T16-4 Desilter was operated as required on an irregular basis depending upon the mud weight, solids content, and the amount of BARACARB in the underflow.
- In all, it was operated for a total of 119 hours with an average underflow weight of 14.1 ppg at 7.4 bbl/h.

6.2 EVALUATION

Comments

- This interval of 2257 m was drilled without problem in 15 days and within budget. There were no hole or mud related problems. Wireline logs reached bottom and the caliper log indicated a good gauge hole. The programmed 6-8% KCl/PHPA/Polymer/Glycol drilling fluid was easy to formulate and maintain, and all specified properties remained within their acceptable ranges.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem None
Cause
Action

Drilling Fluid

1) Problem Mud loss over shakers.
Cause 2 sacks of PHPA was added to the active system over one hour to start increasing the concentration 1.5 ppb from 0.5 ppb. When the mud returned to the surface, the shaker screens became blinded, causing hole mud to overflow at the end of the shaker screens.
Action Reduced pump rate, installed coarser screens, and circulated to further shear the mud.

Solids Control and Mud Mixing Equipment

1) Problem Mud losses over shakers (later, and in addition to above).
Cause Combination of 24 bbl/hr circulating rate, relatively high rheology, questionable shaker efficiency, and possibly the effect of the coarser calcium carbonate.
Action Experimented with coarser shaker screen combinations until arriving at the finest practical configuration.

2) Problem Excessive shaker screen usage due to upper and coarse lower mesh damage. In numerous instances, one or two panels (fine mesh and backing mesh) wore completely away. This was always in the same location on the screens- approximately in the middle of the screen and where the front and rear screens abutted together. This problem occurred equally on all 3 shakers.
Cause Combination of possible shaker inefficiency and the use of metal “squeegies” to scrape off the cuttings which often were not being “thrown” forward as linear motion shakers are designed to do.
Action Discontinued using the metal “squeegies” which reduced top mesh damage but did nothing to reduce the number of instances where both screens wore through.

3) Problem Rising mud weight.
Cause Drilled solids
Action The mud weight was easily controlled by running the desilter and shaker screen selection. It was observed that the weight could be reduced by running mesh sizes at, or above, 140 while running the desilter.

6.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- If downhole losses suspected (once all other additions and losses-including any over shaker losses-have been accounted for, and including initial spurt losses), attempt to quantify the losses to the hole.

Drilling Fluid

- Delay adding PHPA to required concentration following displacement until satisfied that the new fluid has been adequately sheared through the bit.
- Also, do not downsize shaker screens until all required PHPA has been added to the active system.

Solids Control and Mud Mixing Equipment.

- Have a Thule shakers representative check out the shakers to try and determine the reason for the excessive screen damage.
- Repair/service desander should it be required on future wells.

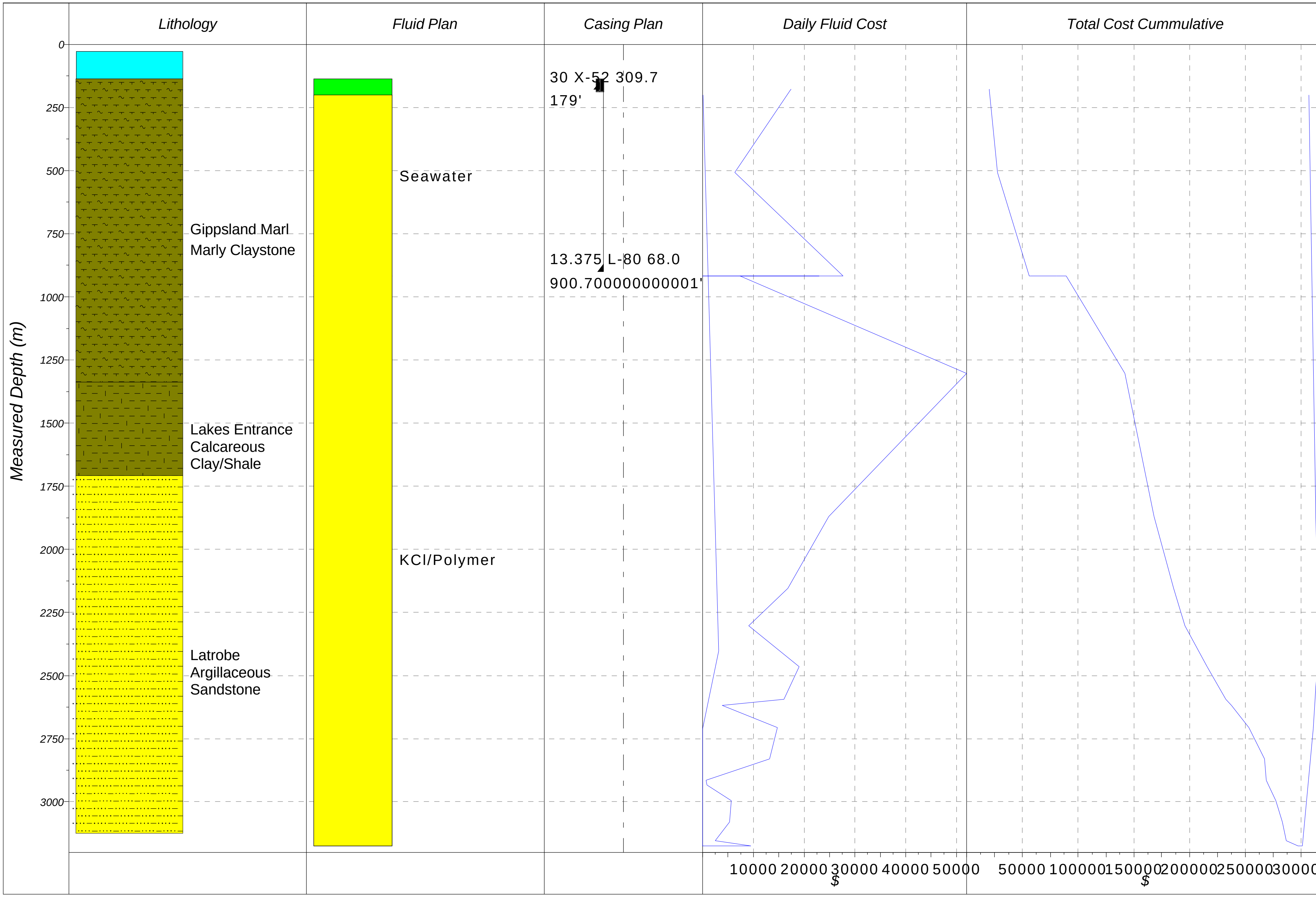
7. PLUGGING AND ABANDONMENT

Following an extensive wireline logging programme, the well was plugged and abandoned. A five-stage plug was set from TD to 2403 m. A bridge plug was set on wireline at 895 m, with cement pumped on either side of the bridge plug from 850 m to 930 m. The well was displaced to inhibited mud and an additional bridge plug was set by wireline at 200 m, with a cement plug set above to 155 m. The well was then displaced to sea water prior to rigging down.

Daily Costs vs Depth

Well : Scallop-1

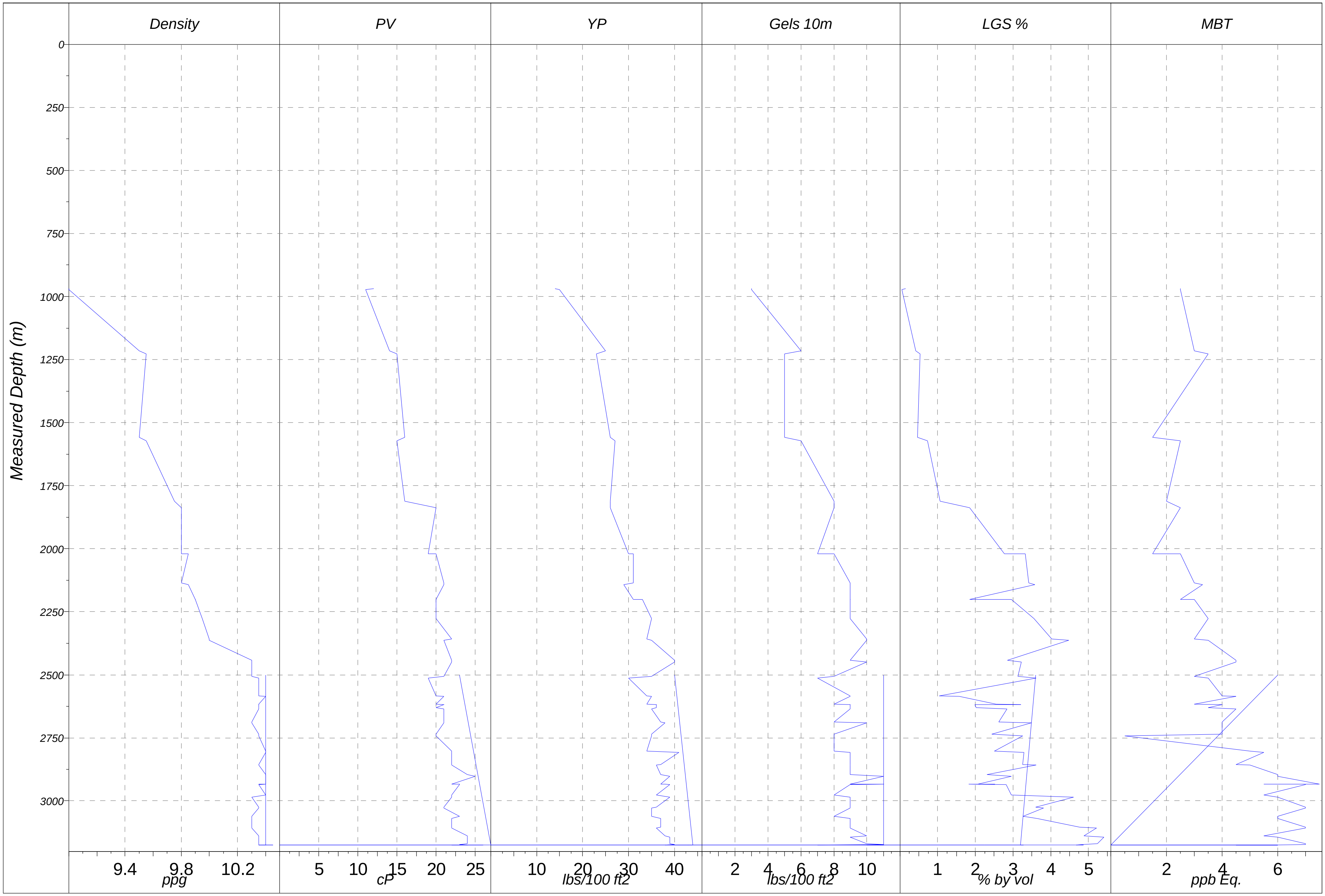
Operator : Esso Australia Pty Ltd



Recap Properties Water Based vs Depth Set 1

Well : Scallop-1

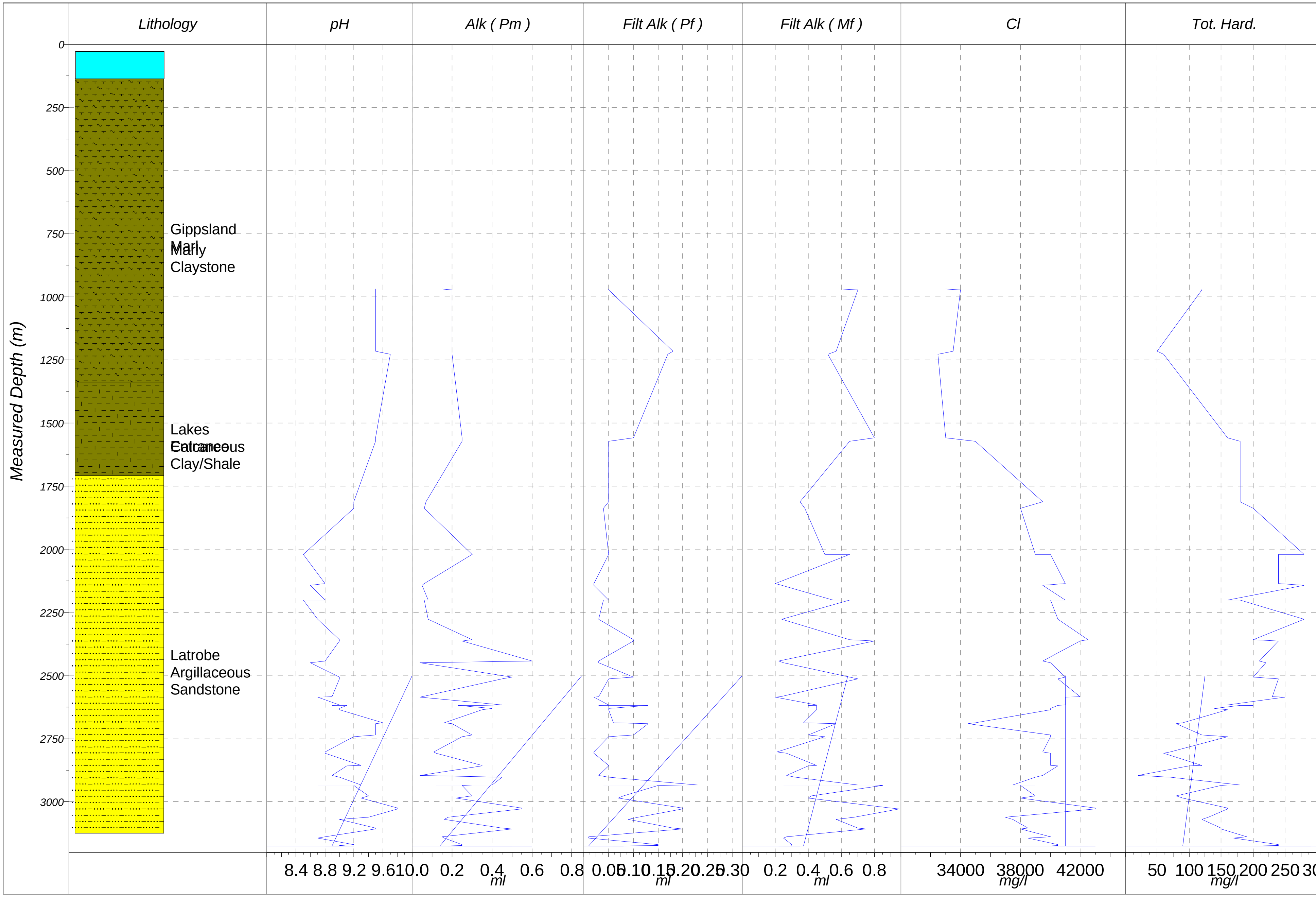
Operator : Esso Australia Pty Ltd



Recap Properties Water Based vs Depth Set 2

Well : Scallop-1

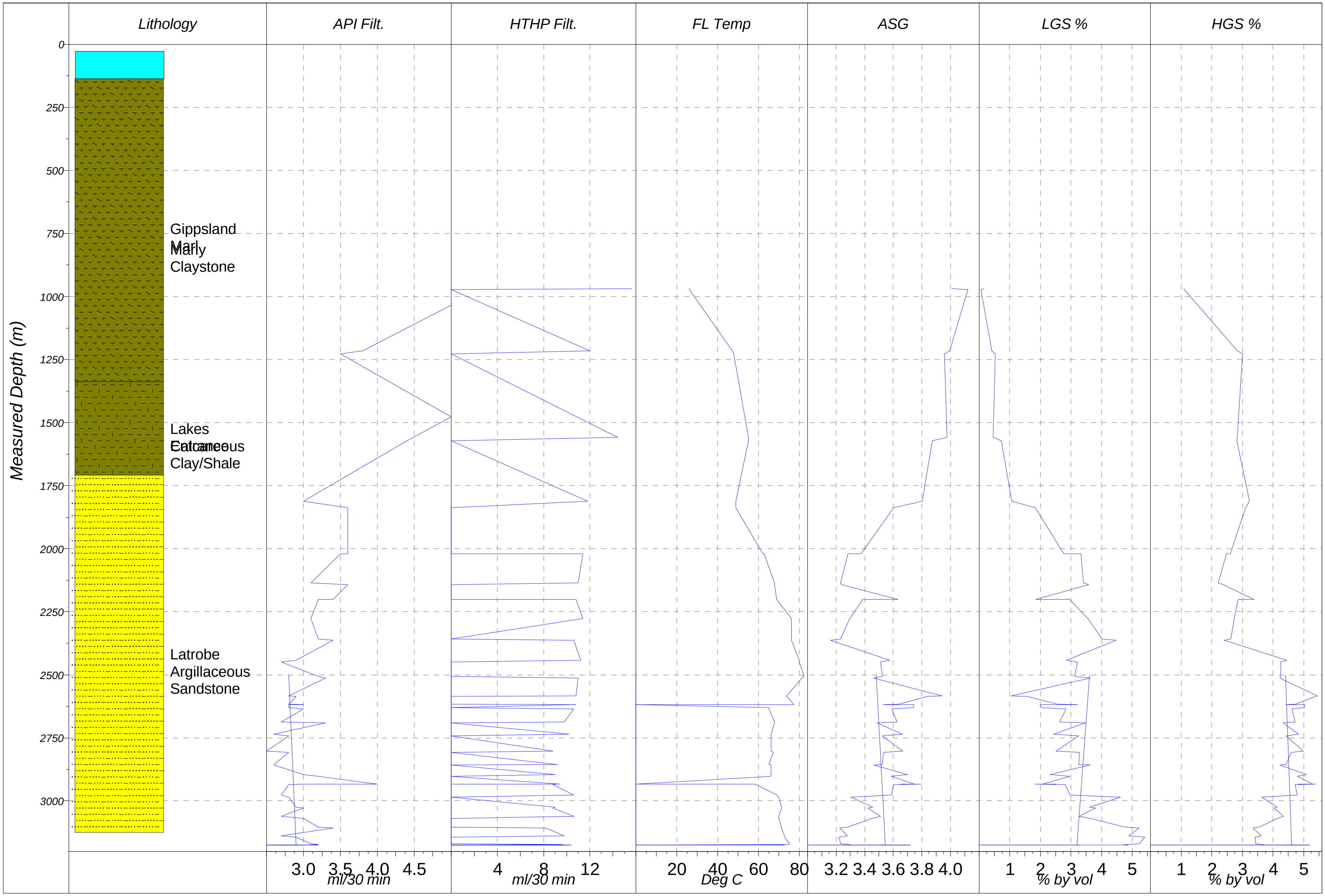
Operator : Esso Australia Pty Ltd



Recap Properties Water Based vs Depth Set 3

Well : Scallop-1

Operator : Esso Australia Pty Ltd



Well Summary

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Well Data

Spud Date		Feb/02/03	Products/Fluids Drilling Cost		$275,134.78
TD Date		Feb/22/03	Products/Fluids Completion Cost		$0.00
Project		Scallop	Solids Control/ Waste Management Cost		$0.00
Days on Well		27	Products/Fluids Cementing Cost		$1,670.72
From Date		Feb/02/03	Products Lost/Damaged Cost		$20.96
To Date		Mar/1/03	Engineering Services Cost		$28,500.00
Drilling Days		18	Equipment Cost		$0.00
Rotating Hours		321.75	Transport / Packaging		$0.00
Average ROP	m/hr	0.2	Other Cost		$1,742.67
Maximum Density	ppg	12.00	Total Well Cost		$307,069.13
Total Measured Depth	m	200.0	Planned Cost		$0.00
True Vertical Depth	m	3,174.0	Cost per Fluid Volume	$ / bbl	27.38
Distance Drilled	m	3,038.5	Cost per m Drilled	$ / m	101.06
Maximum Deviation	degrees	0.60	Cost / Volume of Hole Drilled	$ / bbl	170.61
Maximum Horiz. Displacement	m	4.1	Fluid Volume / Hole Volume	bbl / bbl	6.231
Bottom Hole Temperature	Deg C	85.00	Fluid Volume / Length Drilled	bbl/m	3.690

Casing Design

Casing Description	Set Date and Time	Top MD m	Top TVD m	End MD m	End TVD m	Csg OD in	Csg ID in	Hole Size in	Hole MD m	Hole TVD m
30 X-52 309.7	02/02/2003 23:30	135.5	135.5	179.0	179.0	30.000	28.000	36.000	179.0	179.0
13.375 L-80 68.0	02/04/2003 21:30	135.5	135.5	900.7	900.7	13.375	12.415	17.500	917.0	917.0

Mud Program

Interval #	Mud Type	Interval Days	BHT Deg C	Max. Dens ppg	Planned Fluid Cost	Actual Fluids and Products Cost	Variance
01	Weighted Hi-Vis Bentonite	1		12.00	$ 0.00	$ 8,275.60	$ 8,275.60
01	Seawater	1		12.00	$ 0.00	$ 0.00	$ 0.00
01	Guar Gum Sweep	1		12.00	$ 0.00	$ 1,475.76	$ 1,475.76
01	Hi-Vis Bentonite Sweep	1		12.00	$ 0.00	$ 7,418.84	$ 7,418.84
02	Hi-Vis Bentonite Sweep	3		12.00	$ 0.00	$ 8,482.10	$ 8,482.10
02	Seawater	3		12.00	$ 0.00	$ 0.00	$ 0.00
02	Guar Gum Sweep	3		12.00	$ 0.00	$ 2,415.92	$ 2,415.92
02	Weighted Hi-Vis Bentonite	3		12.00	$ 0.00	$ 23,053.94	$ 23,053.94
03	Hi-Vis Bentonite Sweep	20	85	10.45	$ 0.00	$ 1,911.84	$ 1,911.84
03	KCl/Polymer/Glycol-CP	20	85	10.45	$ 0.00	$ 169,119.92	$ 169,119.92
03	Seawater	20	85	10.45	$ 0.00	$ 0.00	$ 0.00
03	KCl/Polymer Premix	20	85	10.45	$ 0.00	$ 52,980.86	$ 52,980.86
04	KCl/Polymer/Glycol-CP	4	85	10.45	$ 0.00	$ 0.00	$ 0.00

Total Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	60.00	$ 28,500.00
		Subtotal	**$ 28,500.00**
Lost/Damaged			
calcium chloride flake 74%	25 Kg bag	2.00	$ 20.96
		Subtotal	**$ 20.96**
Other			
Baracide	25 Kg can	3.00	$ 953.91
BARACOR 129	25 Kg can	5.00	$ 227.00
BARAFILM	205 l drum	1.00	$ 496.32
potassium hydroxide	20 Kg pail	2.00	$ 65.44
		Subtotal	**$ 1,742.67**
Prod/Fluids : Cementing			
barite	100 lb bulk	160.00	$ 1,419.20
calcium chloride flake 74%	25 Kg bag	24.00	$ 251.52
		Subtotal	**$ 1,670.72**
Prod/Fluids : Drilling			
BARACARB 100	1200 Kg bulk	6.00	$ 3,000.30
BARACARB 100	25 Kg bag	259.00	$ 2,698.78
BARACARB 25	1200 Kg bulk	5.00	$ 1,983.45
BARACARB 25	25 Kg bag	229.00	$ 1,891.54
BARACARB 50	1200 Kg bag	3.00	$ 1,152.00
BARACARB 50	25 Kg sack	220.00	$ 1,760.00
Baracide	25 Kg can	16.00	$ 5,087.52
BARACOR 129	25 Kg can	139.00	$ 6,310.60
BARAZAN D	25 Kg bag	36.00	$ 10,129.68
barite	100 lb bulk	5,117.00	$ 45,387.79
barite	25 Kg bag	136.00	$ 663.68
bentonite	100 lb bulk	1,342.00	$ 20,344.72
caustic soda	25 Kg pail	25.00	$ 800.00
DEXTRID LT	25 Kg bag	275.00	$ 10,837.75
Glycol CP	1500 l bulk	18.00	$ 78,962.94
guar gum	25 Kg bag	68.00	$ 3,859.68
KCL Tech. Bulk	1000 Kg bag	74.00	$ 25,830.44
lime	20 Kg bag	44.00	$ 262.24
PAC-L	25 Kg bag	85.00	$ 9,421.40
phpa	25 Kg bag	169.00	$ 16,063.45
potassium hydroxide	20 Kg pail	69.00	$ 2,257.68
soda ash	25 Kg bag	22.00	$ 234.74
XCD Polymer	25 Kg bag	80.00	$ 26,194.40
		Subtotal	**$ 275,134.78**
		Total Well Cost	**$ 307,069.13**

Net Well Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Cost Breakdown I $	Interval 01	Interval 02	Interval 03	Interval 04	Total
Fluids/Products : Drilling	17,170.20	33,951.96	224,012.62		275,134.78
Fluids Products : Comp/Filtration					
Solids Control/Waste Managment					
Fluids/Products : Cementing	209.60			1,461.12	1,670.72
Engineering Services	2,850.00	2,850.00	19,000.00	3,800.00	28,500.00
Fluids/Products : Lost Damaged				20.96	20.96
Other Cost				1,742.67	1,742.67
Equipment cost					
Transport / Packaging Cost					
Total Cost	20,229.80	36,801.96	243,012.62	7,024.75	307,069.13

Cost Breakdown II $	Interval 01	Interval 02	Interval 03	Interval 04	Total
Total Products Cost	17,379.80	33,951.96	224,012.62	3,224.75	278,569.13
Total Fluids Cost					
Total Charges Cost	2,850.00	2,850.00	19,000.00	3,800.00	28,500.00
Total Cost	20,229.80	36,801.96	243,012.62	7,024.75	307,069.13
Planned Cost					
Variance	20,229.80	36,801.96	243,012.62	7,024.75	**307,069.13**

Volumes Breakdown bbl	Interval 01	Interval 02	Interval 03	Interval 04	Total
Total Base Fluids Additions					
Total Chemical Additions	66.4	83.3	601.6		751.3
Total Barite Additions	52.7	154.4	145.9		353.0
Total Water Additions	2,217.6	2,905.3	4,953.1	35.0	10,111.0
Total Fluid Built	**2,336.7**	**3,143.0**	**5,700.6**	**35.0**	11,215.3
Total Fluids Received					
Total Mixing Additions					
Total Influx Additions					
Total Other Additions			168.4		168.4
Total Fluid Volume	**2,336.7**	**3,143.0**	**5,700.6**	**35.0**	11,215.3

Interval Summary

Well : **Scallop-1**
Operator: **Esso Australia Pty Ltd**

Interval #	01	Bit Size	0.000 in	Hole Size Average / Maximum	0.000 / 0.00 in

Interval Start Date		Feb/02/2003	Planned Cost	$	0.00
Interval End Date		Feb/02/2003	Total Interval Cost	$	20,229.80
Interval TD Date		Feb/02/2003	Programmed Variance	$	20,229.80
Drilling Days		1.00	Total Products Cost	$	17,379.80
Rotating Hours		2.00	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	135.5/ 135.5	Total Charges Cost	$	2,850.00
End of Int. MD/TVD	m	179.0/ 179.0	Total Cementing Cost	$	209.60
Footage	m	43.5	Fluid Cost per Vol unit	$/bbl	8.66
Average ROP	m/hr	70.54	Fluid Cost / Hole Drilled	$/m	465.05
Max. Hole Angle	degrees		Fluid Cost / Vol Drilled	$/bbl	0.00
Casing Size/Type	in		Total Fluid Volume	bbl	2,336.70
Casing Shoe MD	m	179.0	Vol Fluid / Vol Drilled	bbl/bbl	0.00
Casing Length	m	43.5	Vol Fluid / Hole Drilled	bbl/m	53.72
Bottom Hole Temp.	Deg C	85	Fluid Loss / Vol Drilled	bbl/bbl	0.00
Max. Fluid Density	ppg	12.00	Fluid Loss / Hole Drilled	bbl/m	18.46

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Quantity Used	Product Cost	
Alkalinity Control				
caustic soda	Seawater	6.00	$	192.00
soda ash	Seawater	5.00	$	53.35
	Total of Alkalinity Control		**$**	**245.35**
Filtration Control				
PAC-L	Seawater	2.00	$	221.68
	Total of Filtration Control		**$**	**221.68**
Viscosifier/Suspension Agent				
guar gum	Seawater	26.00	$	1,475.76
bentonite	Seawater	551.00	$	8,353.16
	Total of Viscosifier/Suspension Agent		**$**	**9,828.92**
Weighting Material				
calcium chloride flake 74%	No Fluid	20.00	$	209.60
barite	Seawater	775.00	$	6,874.25
	Total of Weighting Material		**$**	**7,083.85**
	Total Products and Base Fluids Cost		**$**	**17,379.80**

Interval Summary

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	02	Bit Size	17.500 in	Hole Size Average / Maximum	17.500 / 17.50 in

Interval Start Date		Feb/03/2003	Planned Cost	$	0.00
Interval End Date		Feb/05/2003	Total Interval Cost	$	36,801.96
Interval TD Date		Feb/04/2003	Programmed Variance	$	36,801.96
Drilling Days		2.00	Total Products Cost	$	33,951.96
Rotating Hours		25.00	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	179.0/ 179.0	Total Charges Cost	$	2,850.00
End of Int. MD/TVD	m	917.0/ 917.0	Total Cementing Cost	$	0.00
Footage	m	738.0	Fluid Cost per Vol unit	$/bbl	11.71
Average ROP	m/hr	115.30	Fluid Cost / Hole Drilled	$/m	49.87
Max. Hole Angle	degrees	0.47	Fluid Cost / Vol Drilled	$/bbl	51.09
Casing Size/Type	in		Total Fluid Volume	bbl	3,143.00
Casing Shoe MD	m	900.7	Vol Fluid / Vol Drilled	bbl/bbl	4.36
Casing Length	m	765.2	Vol Fluid / Hole Drilled	bbl/m	4.26
Bottom Hole Temp.	Deg C	85	Fluid Loss / Vol Drilled	bbl/bbl	6.55
Max. Fluid Density	ppg	12.00	Fluid Loss / Hole Drilled	bbl/m	6.40

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Quantity Used	Product Cost
Alkalinity Control			
soda ash	Seawater	3.00	$ 32.01
lime	Seawater	24.00	$ 143.04
caustic soda	Seawater	18.00	$ 576.00
	Total of Alkalinity Control		**$ 751.05**
Filtration Control			
PAC-L	Seawater	5.00	$ 554.20
	Total of Filtration Control		**$ 554.20**
Viscosifier/Suspension Agent			
bentonite	Seawater	667.00	$ 10,111.72
guar gum	Seawater	42.00	$ 2,383.92
	Total of Viscosifier/Suspension Agent		**$ 12,495.64**
Weighting Material			
barite	Seawater	2,333.00	$ 20,151.07
	Total of Weighting Material		**$ 20,151.07**
	Total Products and Base Fluids Cost		**$ 33,951.96**

Interval Summary

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	03	Bit Size	16.197 in	Hole Size Average / Maximum	12.250 / 12.25 in

Interval Start Date		Feb/06/2003	Planned Cost	$	0.00
Interval End Date		Feb/25/2003	Total Interval Cost	$	243,012.62
Interval TD Date		Feb/22/2003	Programmed Variance	$	243,012.62
Drilling Days		15.00	Total Products Cost	$	224,012.62
Rotating Hours		294.75	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	917.0/ 916.9	Total Charges Cost	$	19,000.00
End of Int. MD/TVD	m	3,174.0/ 3,173.6	Total Cementing Cost	$	0.00
Footage	m	2,257.0	Fluid Cost per Vol unit	$/bbl	42.63
Average ROP	m/hr	25.23	Fluid Cost / Hole Drilled	$/m	107.67
Max. Hole Angle	degrees	2.00	Fluid Cost / Vol Drilled	$/bbl	225.13
Casing Size/Type	in		Total Fluid Volume	bbl	5,700.60
Casing Shoe MD	m	900.7	Vol Fluid / Vol Drilled	bbl/bbl	5.28
Casing Length	m	765.2	Vol Fluid / Hole Drilled	bbl/m	2.53
Bottom Hole Temp.	Deg C	85	Fluid Loss / Vol Drilled	bbl/bbl	3.45
Max. Fluid Density	ppg	10.45	Fluid Loss / Hole Drilled	bbl/m	1.65

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Quantity Used		Product Cost
Alkalinity Control				
lime	Seawater	0.00	$	0.00
soda ash	Seawater	0.00	$	0.00
caustic soda	Seawater	1.00	$	32.00
lime	KCl/Polymer	20.00	$	119.20
potassium hydroxide	KCl/Polymer	69.00	$	2,257.68
soda ash	KCl/Polymer	14.00	$	149.38
	Total of Alkalinity Control		**$**	**2,558.26**
Bactericides				
Baracide	KCl/Polymer	16.00	$	5,087.52
	Total of Bactericides		**$**	**5,087.52**
Filtration Control				
DEXTRID LT	KCl/Polymer	275.00	$	10,837.75
PAC-L	KCl/Polymer	78.00	$	8,645.52
	Total of Filtration Control		**$**	**19,483.27**
Lost Circulation/Bridging Agent				
BARACARB 50	KCl/Polymer	223.00	$	2,912.00
BARACARB 25	KCl/Polymer	234.00	$	3,874.99
BARACARB 100	KCl/Polymer	265.00	$	5,699.08
	Total of Lost Circulation/Bridging Agent		**$**	**12,486.07**
Shale Control				
Glycol CP	KCl/Polymer	18.00	$	78,962.94
KCL Tech. Bulk	KCl/Polymer	74.00	$	25,830.44
phpa	KCl/Polymer	169.00	$	16,063.45
	Total of Shale Control		**$**	**120,856.83**
Viscosifier/Suspension Agent				
XCD Polymer	KCl/Polymer	80.00	$	26,194.40
BARAZAN D	KCl/Polymer	36.00	$	10,129.68
bentonite	Seawater	124.00	$	1,879.84
	Total of Viscosifier/Suspension Agent		**$**	**38,203.92**
Weighting Material				
barite	KCl/Polymer	2,145.00	$	19,026.15

Interval Summary

Interval #	03	Bit Size	16.197 in	Hole Size Average / Maximum	12.250 / 12.25 in

	Total of Weighting Material		$	19,026.15
Corrosion Inhibitor				
BARACOR 129	KCl/Polymer	139.00	$	6,310.60
	Total of Corrosion Inhibitor		$	6,310.60
	Total Products and Base Fluids Cost		$	224,012.62

Interval Summary

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	04	Bit Size	16.000 in	Hole Size Average / Maximum	0.000 / 12.25 in

Interval Start Date		Feb/26/2003	Planned Cost	$	0.00
Interval End Date		Mar/01/2003	Total Interval Cost	$	7,024.75
Interval TD Date			Programmed Variance	$	7,024.75
Drilling Days		0.00	Total Products Cost	$	3,224.75
Rotating Hours		0.00	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	3,174.0/ 3,173.6	Total Charges Cost	$	3,800.00
End of Int. MD/TVD	m	200.0/ 200.0	Total Cementing Cost	$	1,461.12
Footage	m	0.0	Fluid Cost per Vol unit	$/bbl	200.71
Average ROP	m/hr	0.00	Fluid Cost / Hole Drilled	$/m	0.00
Max. Hole Angle	degrees		Fluid Cost / Vol Drilled	$/bbl	0.00
Casing Size/Type	in		Total Fluid Volume	bbl	35.00
Casing Shoe MD	m	179.0	Vol Fluid / Vol Drilled	bbl/bbl	0.00
Casing Length	m	43.5	Vol Fluid / Hole Drilled	bbl/m	0.00
Bottom Hole Temp.	Deg C	85	Fluid Loss / Vol Drilled	bbl/bbl	0.00
Max. Fluid Density	ppg	10.45	Fluid Loss / Hole Drilled	bbl/m	0.00

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Drilling Fluid	Quantity Used	Product Cost	
Alkalinity Control				
potassium hydroxide	KCl/Polymer	0.00	$	0.00
potassium hydroxide	No Fluid	2.00	$	65.44
lime	KCl/Polymer	0.00	$	0.00
soda ash	KCl/Polymer	0.00	$	0.00
	Total of Alkalinity Control		**$**	**65.44**
Bactericides				
Baracide	KCl/Polymer	0.00	$	0.00
Baracide	No Fluid	3.00	$	953.91
	Total of Bactericides		**$**	**953.91**
Filtration Control				
DEXTRID LT	KCl/Polymer	0.00	$	0.00
PAC-L	KCl/Polymer	0.00	$	0.00
	Total of Filtration Control		**$**	**0.00**
Lost Circulation/Bridging Agent				
BARACARB 100	KCl/Polymer	0.00	$	0.00
BARACARB 50	KCl/Polymer	0.00	$	0.00
BARACARB 25	KCl/Polymer	0.00	$	0.00
	Total of Lost Circulation/Bridging Agent		**$**	**0.00**
Shale Control				
KCL Tech. Bulk	KCl/Polymer	0.00	$	0.00
Glycol CP	KCl/Polymer	0.00	$	0.00
phpa	KCl/Polymer	0.00	$	0.00
	Total of Shale Control		**$**	**0.00**
Viscosifier/Suspension Agent				
XCD Polymer	KCl/Polymer	0.00	$	0.00
BARAZAN D	KCl/Polymer	0.00	$	0.00
	Total of Viscosifier/Suspension Agent		**$**	**0.00**
Weighting Material				
barite	No Fluid	160.00	$	1,419.20
barite	KCl/Polymer	0.00	$	0.00
calcium chloride flake 74%	No Fluid	6.00	$	62.88

Well : Scallop-1

Operator: Esso Australia Pty Ltd

Interval Summary

Interval #	04	Bit Size	16.000 in	Hole Size Average / Maximum	0.000 / 12.25 in

	Total of Weighting Material		**$**	**1,482.08**
Corrosion Inhibitor				
BARAFILM	No Fluid	1.00	$	496.32
BARACOR 129	No Fluid	5.00	$	227.00
BARACOR 129	KCl/Polymer	0.00	$	0.00
	Total of Corrosion Inhibitor		**$**	**723.32**
	Total Products and Base Fluids Cost		**$**	**3,224.75**

Interval Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	01	**From Report Date**	2/02/2003	**Top of Interval**	136.0	m
Hole Size	0.000 in	**To Report Date**	2/02/2003	**Bottom of Interval**	179.0	m

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	6.00	$ 2,850.00
		Subtotal	**$ 2,850.00**
Prod/Fluids : Cementing			
calcium chloride flake 74%	25 Kg bag	20.00	$ 209.60
		Subtotal	**$ 209.60**
Prod/Fluids : Drilling			
barite	100 lb bulk	775.00	$ 6,874.25
bentonite	100 lb bulk	551.00	$ 8,353.16
caustic soda	25 Kg pail	6.00	$ 192.00
guar gum	25 Kg bag	26.00	$ 1,475.76
PAC-L	25 Kg bag	2.00	$ 221.68
soda ash	25 Kg bag	5.00	$ 53.35
		Subtotal	**$ 17,170.20**
		Interval Cost	**$ 20,229.80**
		Programmed Cost	**$ 0.00**
		Programmed Variance	**$ 20,229.80**

Interval Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	02	**From Report Date**	3/02/2003	**Top of Interval**	179.0 m
Hole Size	17.500 in	**To Report Date**	5/02/2003	**Bottom of Interval**	917.0 m

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	Day(s)	6.00	$	2,850.00
		Subtotal	**$**	**2,850.00**
Prod/Fluids : Drilling				
barite	100 lb bulk	2,197.00	$	19,487.39
barite	25 Kg bag	136.00	$	663.68
bentonite	100 lb bulk	667.00	$	10,111.72
caustic soda	25 Kg pail	18.00	$	576.00
guar gum	25 Kg bag	42.00	$	2,383.92
lime	20 Kg bag	24.00	$	143.04
PAC-L	25 Kg bag	5.00	$	554.20
soda ash	25 Kg bag	3.00	$	32.01
		Subtotal	**$**	**33,951.96**
		Interval Cost	**$**	**36,801.96**
		Programmed Cost	**$**	**0.00**
		Programmed Variance	**$**	**36,801.96**

Interval Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval # 03	**From Report Date** 6/02/2003	**Top of Interval** 917.0 m			
Hole Size 16.200 in	**To Report Date** 25/02/2003	**Bottom of Interval** 3,174.0 m			

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	Day(s)	40.00	$	19,000.00
		Subtotal	**$**	**19,000.00**
Prod/Fluids : Drilling				
BARACARB 100	1200 Kg bulk	6.00	$	3,000.30
BARACARB 100	25 Kg bag	259.00	$	2,698.78
BARACARB 25	1200 Kg bulk	5.00	$	1,983.45
BARACARB 25	25 Kg bag	229.00	$	1,891.54
BARACARB 50	1200 Kg bag	3.00	$	1,152.00
BARACARB 50	25 Kg sack	220.00	$	1,760.00
Baracide	25 Kg can	16.00	$	5,087.52
BARACOR 129	25 Kg can	139.00	$	6,310.60
BARAZAN D	25 Kg bag	36.00	$	10,129.68
barite	100 lb bulk	2,145.00	$	19,026.15
bentonite	100 lb bulk	124.00	$	1,879.84
caustic soda	25 Kg pail	1.00	$	32.00
DEXTRID LT	25 Kg bag	275.00	$	10,837.75
Glycol CP	1500 l bulk	18.00	$	78,962.94
KCL Tech. Bulk	1000 Kg bag	74.00	$	25,830.44
lime	20 Kg bag	20.00	$	119.20
PAC-L	25 Kg bag	78.00	$	8,645.52
phpa	25 Kg bag	169.00	$	16,063.45
potassium hydroxide	20 Kg pail	69.00	$	2,257.68
soda ash	25 Kg bag	14.00	$	149.38
XCD Polymer	25 Kg bag	80.00	$	26,194.40
		Subtotal	**$**	**224,012.62**
		Interval Cost	**$**	**243,012.62**
		Programmed Cost	**$**	**0.00**
		Programmed Variance	**$**	**243,012.62**

Interval Cost Breakdown

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	04	From Report Date	26/02/2003	Top of Interval	3,174.0 m
Hole Size	16.000 in	To Report Date	1/03/2003	Bottom of Interval	200.0 m

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	8.00	$ 3,800.00
		Subtotal	**$ 3,800.00**
Lost/Damaged			
calcium chloride flake 74%	25 Kg bag	2.00	$ 20.96
		Subtotal	**$ 20.96**
Other			
Baracide	25 Kg can	3.00	$ 953.91
BARACOR 129	25 Kg can	5.00	$ 227.00
BARAFILM	205 l drum	1.00	$ 496.32
potassium hydroxide	20 Kg pail	2.00	$ 65.44
		Subtotal	**$ 1,742.67**
Prod/Fluids : Cementing			
barite	100 lb bulk	160.00	$ 1,419.20
calcium chloride flake 74%	25 Kg bag	4.00	$ 41.92
		Subtotal	**$ 1,461.12**
		Interval Cost	**$ 7,024.75**
		Programmed Cost	**$ 0.00**
		Programmed Variance	**$ 7,024.75**

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	01	From Report Date	2/02/2003	Top of Interval	135.5 m
Hole Size	0.000 in	To Report Date	2/02/2003	Bottom of Interval	179.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABLOK	50 lb bag						
BARACARB 100	1200 Kg bulk						
BARACARB 100	25 Kg bag						
BARACARB 25	1200 Kg bulk						
BARACARB 25	25 Kg bag						
BARACARB 50	1200 Kg bag						
BARACARB 50	25 Kg sack						
Baracide	25 Kg can						
BARACOR 129	25 Kg can						
BARA-DEFOAM W300	25 l can						
BARAFILM	205 l drum						
BARAZAN D	25 Kg bag						
barite	100 lb bulk		4,038.00	775.00		3,263.00	326,300.0
barite	25 Kg bag		136.00			136.00	7,495.6
BAROFIBRE	25 lb bag						
bentonite	100 lb bulk		1,923.00	551.00		1,372.00	137,200.0
calcium chloride flake 74%	25 Kg bag		42.00	20.00		22.00	1,212.5
caustic soda	25 Kg pail		32.00	6.00		26.00	1,433.0
citric acid	25 Kg bag						
DEXTRID LT	25 Kg bag						
DRILLZAN-D	25 Kg bag						
EZ-SPOT	55 gal drum						
Glycol CP	1500 l bulk						
guar gum	25 Kg bag		120.00	26.00		94.00	5,180.8
Hme Energizer	5 gal can						
KCl - Tech.	25 Kg bag						
KCL Tech. Bulk	1000 Kg bag						
lime	20 Kg bag		84.00			84.00	3,703.7
NO-SULF	17 Kg pail						
NO-SULF	25 Kg bag						
NO-SULF	50 lb bag						
PAC-L	25 Kg bag		40.00	2.00		38.00	2,094.4
phpa	25 Kg bag						
potassium hydroxide	20 Kg pail						
soda ash	25 Kg bag		36.00	5.00		31.00	1,708.6
sodium bicarbonate	25 Kg bag						
XCD Polymer	25 Kg bag						

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	01	**From Report Date**	2/02/2003	**Top of Interval**	135.5 m
Hole Size	0.000 in	**To Report Date**	2/02/2003	**Bottom of Interval**	179.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
						Total Weight of Products in Stock, lb	486,328.6
						Total Weight of Products in Stock, Metric Tons	220.60

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	02	**From Report Date**	3/02/2003	**Top of Interval**	179.0	m
Hole Size	17.500 in	**To Report Date**	5/02/2003	**Bottom of Interval**	917.0	m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABLOK	50 lb bag						
BARACARB 100	1200 Kg bulk		2.00			2.00	5,291.0
BARACARB 100	25 Kg bag						
BARACARB 25	1200 Kg bulk		1.00			1.00	2,645.5
BARACARB 25	25 Kg bag						
BARACARB 50	1200 Kg bag		2.00			2.00	5,291.0
BARACARB 50	25 Kg sack						
Baracide	25 Kg can						
BARACOR 129	25 Kg can		32.00			32.00	1,763.7
BARA-DEFOAM W300	25 l can						
BARAFILM	205 l drum		1.00			1.00	415.6
BARAZAN D	25 Kg bag						
barite	100 lb bulk	3,263.00		2,197.00		1,066.00	106,600.0
barite	25 Kg bag	136.00		136.00			
BAROFIBRE	25 lb bag		60.00			60.00	1,500.0
bentonite	100 lb bulk	1,372.00		667.00		705.00	70,500.0
calcium chloride flake 74%	25 Kg bag	22.00				22.00	1,212.5
caustic soda	25 Kg pail	26.00		18.00		8.00	440.9
citric acid	25 Kg bag						
DEXTRID LT	25 Kg bag		40.00			40.00	2,204.6
DRILLZAN-D	25 Kg bag						
EZ-SPOT	55 gal drum						
Glycol CP	1500 l bulk		3.00			3.00	10,113.7
guar gum	25 Kg bag	94.00		42.00		52.00	2,866.0
Hme Energizer	5 gal can						
KCl - Tech.	25 Kg bag						
KCL Tech. Bulk	1000 Kg bag		15.00			15.00	33,069.0
lime	20 Kg bag	84.00		24.00		60.00	2,645.5
NO-SULF	17 Kg pail		32.00			32.00	1,199.3
NO-SULF	25 Kg bag						
NO-SULF	50 lb bag						
PAC-L	25 Kg bag	38.00		5.00		33.00	1,818.8
phpa	25 Kg bag		40.00			40.00	2,204.6
potassium hydroxide	20 Kg pail		32.00			32.00	1,410.9
soda ash	25 Kg bag	31.00		3.00		28.00	1,543.2
sodium bicarbonate	25 Kg bag						
XCD Polymer	25 Kg bag		40.00			40.00	2,204.6

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	02	From Report Date	3/02/2003	Top of Interval	179.0	m
Hole Size	17.500 in	To Report Date	5/02/2003	Bottom of Interval	917.0	m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
						Total Weight of Products in Stock, lb	256,940.4
						Total Weight of Products in Stock, Metric Tons	116.55

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	03	**From Report Date**	6/02/2003	**Top of Interval**	917.0 m
Hole Size	16.200 in	**To Report Date**	25/02/2003	**Bottom of Interval**	3,174.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABLOK	50 lb bag		120.00		120.00		
BARACARB 100	1200 Kg bulk	2.00	8.00	6.00	3.00	1.00	2,645.5
BARACARB 100	25 Kg bag		288.00	259.00		29.00	1,598.3
BARACARB 25	1200 Kg bulk	1.00	6.00	5.00	1.00	1.00	2,645.5
BARACARB 25	25 Kg bag		240.00	229.00		11.00	606.3
BARACARB 50	1200 Kg bag	2.00	5.00	3.00	3.00	1.00	2,645.5
BARACARB 50	25 Kg sack		240.00	220.00		20.00	1,102.3
Baracide	25 Kg can		32.00	16.00		16.00	881.8
BARACOR 129	25 Kg can	32.00	128.00	139.00		21.00	1,157.4
BARA-DEFOAM W300	25 l can						
BARAFILM	205 l drum	1.00				1.00	415.6
BARAZAN D	25 Kg bag		80.00	36.00		44.00	2,425.1
barite	100 lb bulk	1,066.00	4,278.00	2,145.00	13.00	3,186.00	318,600.0
barite	25 Kg bag						
BAROFIBRE	25 lb bag	60.00	60.00		120.00		
bentonite	100 lb bulk	705.00		124.00		581.00	58,100.0
calcium chloride flake 74%	25 Kg bag	22.00				22.00	1,212.5
caustic soda	25 Kg pail	8.00		1.00	7.00		
citric acid	25 Kg bag		20.00			20.00	1,102.3
DEXTRID LT	25 Kg bag	40.00	320.00	280.00	40.00	40.00	2,204.6
DRILLZAN-D	25 Kg bag						
EZ-SPOT	55 gal drum		4.00			4.00	4,220.0
Glycol CP	1500 l bulk	3.00	25.00	18.00	9.00	1.00	3,371.2
guar gum	25 Kg bag	52.00			52.00		
Hme Energizer	5 gal can		2.00		2.00		
KCl - Tech.	25 Kg bag		164.00		164.00		
KCL Tech. Bulk	1000 Kg bag	15.00	72.00	74.00	11.00	2.00	4,409.2
lime	20 Kg bag	60.00		20.00	30.00	10.00	440.9
NO-SULF	17 Kg pail	32.00				32.00	1,199.3
NO-SULF	25 Kg bag		39.00		39.00		
NO-SULF	50 lb bag						
PAC-L	25 Kg bag	33.00	120.00	78.00	40.00	35.00	1,929.0
phpa	25 Kg bag	40.00	200.00	169.00	39.00	32.00	1,763.7
potassium hydroxide	20 Kg pail	32.00	96.00	69.00	32.00	27.00	1,190.5
soda ash	25 Kg bag	28.00		14.00		14.00	771.6
sodium bicarbonate	25 Kg bag		20.00			20.00	1,102.3
XCD Polymer	25 Kg bag	40.00	40.00	80.00			

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	03	From Report Date	6/02/2003	Top of Interval	917.0 m
Hole Size	16.200 in	To Report Date	25/02/2003	Bottom of Interval	3,174.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
						Total Weight of Products in Stock, lb	417,740.4
						Total Weight of Products in Stock, Metric Tons	189.48

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	04	**From Report Date**	26/02/2003	**Top of Interval**	3,174.0 m
Hole Size	16.000 in	**To Report Date**	1/03/2003	**Bottom of Interval**	200.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
BARABLOK	50 lb bag						
BARACARB 100	1200 Kg bulk	1.00			1.00		
BARACARB 100	25 Kg bag	29.00			29.00		
BARACARB 25	1200 Kg bulk	1.00			1.00		
BARACARB 25	25 Kg bag	11.00			11.00		
BARACARB 50	1200 Kg bag	1.00			1.00		
BARACARB 50	25 Kg sack	20.00			20.00		
Baracide	25 Kg can	16.00		3.00	13.00		
BARACOR 129	25 Kg can	21.00		5.00	16.00		
BARA-DEFOAM W300	25 l can						
BARAFILM	205 l drum	1.00		1.00			
BARAZAN D	25 Kg bag	44.00			44.00		
barite	100 lb bulk	3,186.00		160.00	3,026.00		
barite	25 Kg bag						
BAROFIBRE	25 lb bag						
bentonite	100 lb bulk	581.00			581.00		
calcium chloride flake 74%	25 Kg bag	22.00		6.00	16.00		
caustic soda	25 Kg pail						
citric acid	25 Kg bag	20.00			20.00		
DEXTRID LT	25 Kg bag	40.00			40.00		
DRILLZAN-D	25 Kg bag						
EZ-SPOT	55 gal drum	4.00			4.00		
Glycol CP	1500 l bulk	1.00			1.00		
guar gum	25 Kg bag						
Hme Energizer	5 gal can						
KCl - Tech.	25 Kg bag						
KCL Tech. Bulk	1000 Kg bag	2.00			2.00		
lime	20 Kg bag	10.00			10.00		
NO-SULF	17 Kg pail	32.00			32.00		
NO-SULF	25 Kg bag						
NO-SULF	50 lb bag						
PAC-L	25 Kg bag	35.00			35.00		
phpa	25 Kg bag	32.00			32.00		
potassium hydroxide	20 Kg pail	27.00		2.00	25.00		
soda ash	25 Kg bag	14.00			14.00		
sodium bicarbonate	25 Kg bag	20.00			20.00		
XCD Polymer	25 Kg bag						

Interval Inventory Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	04	From Report Date	26/02/2003	Top of Interval	3,174.0 m
Hole Size	16.000 in	To Report Date	1/03/2003	Bottom of Interval	200.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight lb
						Total Weight of Products in Stock, lb	0.0
						Total Weight of Products in Stock, Metric Tons	0.00

Fluid Volume Record

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval # 01

Fluid Name: Seawater

Rpt #	Rpt Date	Initial Volume (bbl)	ADDITIONS (bbl) Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	LOSSES (bbl) SCE	Down Hole	Misc	Returned & Mixed	Daily Total	VOLUMES (bbl) Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
001	2/02/2003		623.0		108.7				731.7			623.0		623.0	108.7			108.7
Cummulative Volumes:			623.0		108.7				731.7			623.0		623.0				

Fluid Name: Hi-Vis Bentonite Sweep

Rpt #	Rpt Date	Initial Volume (bbl)	ADDITIONS (bbl) Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	LOSSES (bbl) SCE	Down Hole	Misc	Returned & Mixed	Daily Total	VOLUMES (bbl) Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
001	2/02/2003				1,318.0		55.0		1,373.0			180.0	525.0	705.0			668.0	668.0
Cummulative Volumes:					1,318.0		55.0		1,373.0			180.0	525.0	705.0				

Fluid Name: Guar Gum Sweep

Rpt #	Rpt Date	Initial Volume (bbl)	ADDITIONS (bbl) Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	LOSSES (bbl) SCE	Down Hole	Misc	Returned & Mixed	Daily Total	VOLUMES (bbl) Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
001	2/02/2003				387.6		2.4		390.0				98.0	98.0			292.0	292.0
Cummulative Volumes:					387.6		2.4		390.0				98.0	98.0				

Fluid Name: Weighted Hi-Vis Bentonite

Rpt #	Rpt Date	Initial Volume (bbl)	ADDITIONS (bbl) Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	LOSSES (bbl) SCE	Down Hole	Misc	Returned & Mixed	Daily Total	VOLUMES (bbl) Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
001	2/02/2003				403.3	52.7	9.0		465.0								465.0	465.0
Cummulative Volumes:					403.3	52.7	9.0		465.0									

Fluid Volume Record

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval # 02

Rpt #	Rpt Date	Initial Volume (bbl)	ADDITIONS (bbl): Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	LOSSES (bbl): SCE	Down Hole	Misc	Returned & Mixed	Daily Total	VOLUMES (bbl): Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume

Fluid Name: Seawater

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
002	3/02/2003	108.7	845.5									546.2	0.1	546.3	407.9			407.9
003	4/02/2003	407.9	1,330.4									1,374.6		1,374.6	799.9			799.9
004	5/02/2003	799.9	620.0									1,028.0		1,028.0	391.8			391.8
	Cummulative Volumes:		2,795.9									2,948.8	0.1	2,948.9				

Fluid Name: Hi-Vis Bentonite Sweep

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
002	3/02/2003	668.0			791.0		29.2		820.2				441.2	441.2			1,047.0	1,047.0
003	4/02/2003	1,047.0			581.0		32.3		613.3			520.2	916.1	1,436.3			224.0	224.0
004	5/02/2003	224.0										102.0	122.0	224.0				
	Cummulative Volumes:				1,372.0		61.5		1,433.5			622.2	1,479.3	2,101.5				

Fluid Name: Guar Gum Sweep

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
002	3/02/2003	292.0	0.1		414.2		4.0		418.3				404.3	404.3			306.0	306.0
003	4/02/2003	306.0			183.3				183.3			75.0	414.3	489.3				
	Cummulative Volumes:		0.1		597.5		4.0		601.6			75.0	818.6	893.6				

Fluid Name: Weighted Hi-Vis Bentonite

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
002	3/02/2003	465.0										15.0		15.0			450.0	450.0
003	4/02/2003	450.0			935.8	154.4	17.8		1,108.0								1,558.0	1,558.0
004	5/02/2003	1,558.0										1,060.0	498.0	1,558.0				
	Cummulative Volumes:				935.8	154.4	17.8		1,108.0			1,075.0	498.0	1,573.0				

Fluid Volume Record

BAROID

Well : **Scallop-1**
Operator: **Esso Australia Pty Ltd**

Interval # **03**

		bbl	ADDITIONS					bbl		LOSSES			bbl		VOLUMES		bbl	
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume

Fluid Name: **Seawater**

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
005	5/02/2003	391.8										15.8		15.8	560.3			560.3
006	7/02/2003	560.3										560.2		560.2				
	Cummulative Volumes:											576.0		576.0				

Fluid Name: **Hi-Vis Bentonite Sweep**

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
006	7/02/2003				374.2		14.3		388.5			264.5		264.5			124.0	124.0
007	3/02/2003	124.0										124.0		124.0				
	Cummulative Volumes:				374.2		14.3		388.5			388.5		388.5				

Fluid Name: **KCl/Polymer/Glycol-CP**

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
005	5/02/2003				1,218.8	13.0	78.2		1,310.0								1,310.0	1,310.0
006	7/02/2003	1,310.0			178.8		7.2		186.0			20.0		20.0	507.9		968.0	1,475.9
007	3/02/2003	1,475.9	237.8			36.2	97.9		371.9	345.9		35.0		380.9	700.0	759.0	8.0	1,467.0
008	9/02/2003	1,467.0	544.0				58.9		602.9	233.0		73.0		306.0	949.9	814.0		1,763.9
009	0/02/2003	1,763.9	211.0				17.0		228.0	185.5		8.0		193.5	1,079.4	712.0	7.0	1,798.4
010	1/02/2003	1,798.4	269.0			5.0	13.0		287.0	180.1		3.0		183.1	1,147.3	748.0	7.0	1,902.3
011	2/02/2003	1,902.3	488.0			52.7	24.9		565.6	178.7		5.0		183.7	1,221.2	759.0	304.0	2,284.2
012	3/02/2003	2,284.2	378.0			13.9	17.5		409.4	215.2		7.0		222.2	1,280.5	782.0	409.0	2,471.5
013	4/02/2003	2,471.5	41.1			6.0	1.4		48.5	42.0		39.2	0.1	81.3	1,365.7	642.0	431.0	2,438.7
014	5/02/2003	2,438.7	176.0				35.2		211.2	113.2		53.0		166.2	1,318.6	731.0	434.0	2,483.6
015	5/02/2003	2,483.6	158.2				17.4		175.6	94.0		4.0		98.0	1,375.2	773.0	413.0	2,561.2
016	7/02/2003	2,561.2	191.0				3.1		194.1	169.8		6.0		175.8	1,413.5	769.0	397.0	2,579.5
017	3/02/2003	2,579.5	80.0			2.6	1.5		84.1	64.0		31.2		95.2	1,516.3	630.0	422.0	2,568.3
018	9/02/2003	2,568.3	157.5				15.3		172.8	72.0		24.6		96.6	1,448.6	766.0	430.0	2,644.6
019	0/02/2003	2,644.6	186.0				13.8		199.8	145.5		6.0		151.5	1,485.8	776.0	431.0	2,692.8
020	1/02/2003	2,692.8	161.5				10.8		172.3	149.5		7.0		156.5	1,519.6	764.0	425.0	2,708.6

Fluid Volume Record

Well : Scallop-1
Operator: Esso Australia Pty Ltd

021	2/02/2003	2,708.6	51.0			11.1	14.6		76.7	119.7		12.0		131.7	1,533.6	846.0	274.0	2,653.6
022	3/02/2003	2,653.6										101.0		101.0	1,631.6	675.0	246.0	2,552.6
023	4/02/2003	2,552.6										14.0		14.0	1,631.6	662.0	245.0	2,538.6
024	5/02/2003	2,538.6										2.0		2.0	1,631.6	650.0	255.0	2,536.6
	Cummulative Volumes:		3,330.1		1,397.6	140.5	427.7		5,295.9	2,308.1		451.0	0.1	2,759.2				

Fluid Name: KCl/Polymer Premix

007	3/02/2003				677.0	5.4	12.4		694.8				237.8	237.8			457.0	457.0
008	9/02/2003	457.0			391.0		22.0		413.0				544.0	544.0			326.0	326.0
009	0/02/2003	326.0			386.3		35.7		422.0				211.0	211.0			537.0	537.0
010	1/02/2003	537.0			218.7		4.3		223.0				269.0	269.0			491.0	491.0
011	2/02/2003	491.0			383.2		17.8		401.0				488.0	488.0			404.0	404.0
012	3/02/2003	404.0			558.0		36.0		594.0				378.0	378.0			620.0	620.0
013	4/02/2003	620.0	0.1		178.8		7.2		186.1				41.1	41.1			765.0	765.0
014	5/02/2003	765.0											176.0	176.0			589.0	589.0
015	6/02/2003	589.0			388.3		22.9		411.2				158.2	158.2			842.0	842.0
016	7/02/2003	842.0											191.0	191.0			651.0	651.0
017	8/02/2003	651.0											80.0	80.0			571.0	571.0
018	9/02/2003	571.0					0.5		0.5				157.5	157.5			414.0	414.0
019	0/02/2003	414.0											186.0	186.0			228.0	228.0
020	1/02/2003	228.0					0.5		0.5				161.5	161.5			67.0	67.0
021	2/02/2003	67.0											51.0	51.0			16.0	16.0
	Cummulative Volumes:		0.1		3,181.3	5.4	159.3		3,346.1				3,330.1	3,330.1				

Fluid Volume Record

Well : **Scallop-1**
Operator: **Esso Australia Pty Ltd**

Interval # 04

		bbl	ADDITIONS					bbl		LOSSES			bbl		VOLUMES		bbl	
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume

Fluid Name: KCl/Polymer/Glycol-CP

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
025	6/02/2003	2,536.6										40.0		40.0	1,631.6	627.0	238.0	2,496.6
026	7/02/2003	2,496.6										2.5		2.5	1,351.1	724.0	419.0	2,494.1
027	8/02/2003	2,494.1			35.0				35.0			32.0		32.0	1,236.1	721.0	540.0	2,497.1
028	1/03/2003	2,497.1										2,497.1		2,497.1				
Cummulative Volumes:					35.0				35.0			2,571.6		2,571.6				

Fluid Name: KCl/Polymer Premix

Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
028	1/03/2003	16.0										16.0		16.0				
Cummulative Volumes:												16.0		16.0				

Interval Chemical Concentrations

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	01	**From Report Date**	2/02/2003	**Top of Interval**	136.0 m
Hole Size	0.000 in	**To Report Date**	2/02/2003	**Bottom of Interval**	179.0 m

Fluid Name: Guar Gum Sweep

Material	Average ppb	Minimum ppb	Maximum ppb
guar gum	3.67	3.67	3.67

Fluid Name: Hi-Vis Bentonite Sweep

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	34.67	34.67	34.67
caustic soda	0.20	0.20	0.20
soda ash	0.16	0.16	0.16

Fluid Name: Seawater

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	24.88	24.88	24.88
caustic soda	0.14	0.14	0.14
guar gum	0.49	0.49	0.49
soda ash	0.12	0.12	0.12

Fluid Name: Weighted Hi-Vis Bentonite

Material	Average ppb	Minimum ppb	Maximum ppb
barite	166.67	166.67	166.67
bentonite	16.13	16.13	16.13
caustic soda	0.12	0.12	0.12
PAC-L	0.24	0.24	0.24
soda ash	0.12	0.12	0.12

Interval Chemical Concentrations

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	02	From Report Date	3/02/2003	Top of Interval	179.0 m
Hole Size	17.500 in	To Report Date	5/02/2003	Bottom of Interval	917.0 m

Fluid Name: Guar Gum Sweep

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	0.00	0.00	0.00
caustic soda	0.07	0.05	0.08
guar gum	3.88	2.98	4.77
soda ash	0.00	0.00	0.00

Fluid Name: Hi-Vis Bentonite Sweep

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	47.81	33.99	54.72
caustic soda	0.58	0.17	0.79
lime	0.65	0.36	0.79
soda ash	0.15	0.12	0.16

Fluid Name: Seawater

Material	Average ppb	Minimum ppb	Maximum ppb
barite	66.34	66.34	66.34
bentonite	46.55	17.78	71.73
caustic soda	0.58	0.10	0.98
guar gum	1.74	1.32	2.34
lime	0.75	0.58	0.91
PAC-L	0.09	0.09	0.09
soda ash	0.15	0.08	0.22

Fluid Name: Weighted Hi-Vis Bentonite

Material	Average ppb	Minimum ppb	Maximum ppb
barite	181.66	166.67	189.15
bentonite	14.90	14.29	16.13
caustic soda	0.11	0.10	0.12
PAC-L	0.25	0.24	0.25
soda ash	0.09	0.07	0.12

Interval Chemical Concentrations

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	03	**From Report Date**	6/02/2003	**Top of Interval**	917.0 m
Hole Size	16.197 in	**To Report Date**	25/02/2003	**Bottom of Interval**	3,174.0 m

Fluid Name: Hi-Vis Bentonite Sweep

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	31.94	31.92	31.96
caustic soda	0.14	0.14	0.14
lime	0.79	0.79	0.79
soda ash	0.16	0.16	0.16

Fluid Name: KCl/Polymer Premix

Material	Average ppb	Minimum ppb	Maximum ppb
BARACARB 100	0.00	0.00	0.00
BARACARB 25	3.09	1.93	5.08
BARACARB 50	0.00	0.00	0.00
Baracide	0.10	0.06	0.11
BARACOR 129	0.00	0.00	0.00
BARAZAN D	0.42	0.29	0.74
barite	1.07	0.14	8.48
DEXTRID LT	2.46	1.73	3.15
Glycol CP	0.00	0.00	0.00
KCL Tech. Bulk	23.21	12.67	29.10
PAC-L	0.69	0.59	0.83
phpa	2.15	1.43	2.85
potassium hydroxide	0.12	0.01	0.16
soda ash	0.08	0.05	0.15
XCD Polymer	0.18	0.03	1.03

Fluid Name: KCl/Polymer/Glycol-CP

Material	Average ppb	Minimum ppb	Maximum ppb
BARACARB 100	3.12	0.80	7.67
BARACARB 25	2.59	0.70	5.11
BARACARB 50	2.04	0.40	3.83
Baracide	0.13	0.09	0.22
BARACOR 129	1.35	0.40	1.78
BARAZAN D	0.41	0.11	0.54
barite	38.89	12.77	54.78
DEXTRID LT	2.87	2.61	3.57
Glycol CP	11.27	9.09	12.65
KCL Tech. Bulk	31.27	29.47	39.44
lime	0.19	0.06	0.27

Interval Chemical Concentrations

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval #	03	From Report Date	6/02/2003	Top of Interval	917.0 m
Hole Size	16.197 in	To Report Date	25/02/2003	Bottom of Interval	3,174.0 m

PAC-L	0.79	0.69	0.99
phpa	1.56	0.50	1.78
potassium hydroxide	0.50	0.01	0.77
soda ash	0.14	0.02	0.23
XCD Polymer	0.90	0.58	1.56

Fluid Name: Seawater

Material	Average ppb	Minimum ppb	Maximum ppb
barite	46.40	46.40	46.40
bentonite	35.06	35.05	35.06
caustic soda	0.46	0.46	0.46
guar gum	0.92	0.92	0.92
lime	0.40	0.40	0.40
PAC-L	0.06	0.06	0.06
soda ash	0.11	0.11	0.11

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Interval Chemical Concentrations

Interval #	04	From Report Date	26/02/2003	Top of Interval	3,174.0 m
Hole Size	16.000 in	To Report Date	1/03/2003	Bottom of Interval	200.0 m

Fluid Name: KCl/Polymer Premix

Material	Average ppb	Minimum ppb	Maximum ppb
BARACARB 100	0.00	0.00	0.00
BARACARB 25	2.90	1.93	3.87
BARACARB 50	0.00	0.00	0.00
Baracide	0.10	0.10	0.10
BARACOR 129	0.00	0.00	0.00
BARAZAN D	0.29	0.29	0.29
barite	0.14	0.14	0.14
DEXTRID LT	2.43	2.43	2.43
Glycol CP	0.00	0.00	0.00
KCL Tech. Bulk	23.84	23.84	23.84
PAC-L	0.65	0.65	0.65
phpa	2.85	2.85	2.85
potassium hydroxide	0.16	0.16	0.16
soda ash	0.06	0.06	0.06
XCD Polymer	0.03	0.03	0.03

Fluid Name: KCl/Polymer/Glycol-CP

Material	Average ppb	Minimum ppb	Maximum ppb
BARACARB 100	2.87	2.28	3.46
BARACARB 25	2.73	2.24	3.22
BARACARB 50	2.04	1.14	2.93
Baracide	0.22	0.22	0.22
BARACOR 129	1.77	1.76	1.78
BARAZAN D	0.48	0.47	0.48
barite	40.60	40.23	40.79
DEXTRID LT	2.60	2.58	2.61
Glycol CP	12.34	12.23	12.40
KCL Tech. Bulk	30.26	29.98	30.40
lime	0.26	0.26	0.26
PAC-L	0.79	0.78	0.79
phpa	1.77	1.76	1.78
potassium hydroxide	0.76	0.75	0.77
soda ash	0.16	0.16	0.16
XCD Polymer	0.58	0.57	0.58

Fluid Property Recap:Water-Based Fluid

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 120F					Filtration					Filtrate Analysis						Sand	Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels lbs/100 ft2			API ml/30 min	HTHP ml/30 min	Cake 32nd in		Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l	Sand % by Vol	Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water% by Vol							
	m	Deg C	ppg	sec/qt	cP		10s	10m	30m			API	HTHP	Deg C												ppb Eq.	600	300	200	100	6	3
02/02/03	0.0		8.90	156	10	69	41	52							9.00				0	0		0.0	0.0		0.1	0.0	89	79	75	71	57	71
02/02/03	0.0		12.00	143	15	41	21	33							9.50				0	0		0.0	0.0		0.1	0.0	71	56	47	40	30	27
02/02/03	0.0		8.80	138	22	91	33	34							7.50				0	0		0.0	0.0		0.1	0.0	135	113	102	87	42	33
02/03/03	179.0		8.80	172	9	62	48	52							10.00				0	0		0.0	0.0		0.1	0.0	80	71	68	64	59	58
02/03/03	179.0		12.00	180	6	100	98	98							8.00				0	0		0.0	0.0		0.1	0.0	112	106	101	95	86	85
02/03/03	179.0		8.80	128	24	80									8.00				0	0		0.0	0.0		0.1	0.0	128	104	96	82	38	29
02/03/03	474.0		8.70	113	9	58	14	32							10.50				0	0		0.0	0.0		0.1	0.0	76	67	62	55	20	12
02/04/03	640.0		8.80	150	16	82	31	43							11.00				0	0		0.0	0.0	0.1	0.0	0.0	114	98	89	81	32	28
02/04/03	881.0		12.00	134	19	68	42	63							9.70				0	0		0.0	0.0		0.1	0.0	106	87	80	74	37	29
02/04/03	917.0		8.90	132	14	61	36	49							9.00				0	0		0.0	0.0		0.1	0.0	89	75	66	55	41	32
02/04/03	917.0		12.00	143	19	51	42	61							9.00				0	0		0.0	0.0		0.1	0.0	89	70	63	52	38	35
02/07/03	917.0		8.80	109	9	47	31	46							9.50				0	0		0.0	0.0		0.1	0.0	65	56	50	41	33	29
02/08/03	968.0	26	9.00	59	12	14	3	3		5.2	15.6	1	2	67	9.50	0.15	0.05	0.60	33,000	120	0.15	1.2	0.1		96.0	2.5	38	26	21	14	3	3
02/08/03	973.0	26	9.00	45	11	15	3	3		5.4		1		67	9.50	0.20	0.05	0.70	34,000	120	0.25	1.2	0.1		96.0	2.5	37	26	20	14	3	2
02/08/03	1,216.0	47	9.50	51	14	25	4	6		3.8	12.0	1	2	67	9.50	0.20	0.18	0.57	33,500	50	0.30	3.3	0.4		94.0	3.0	53	39	30	21	7	4
02/08/03	1,228.0	48	9.60	51	15	23	4	5		3.5		1		67	9.70	0.20	0.17	0.52	32,500	60	0.35	3.5	0.5		93.8	3.5	53	38	31	22	6	4
02/09/03	1,559.0	55	9.50	54	16	26	5	5		5.5	14.4	1	2	67	9.50	0.25	0.10	0.80	33,000	160	0.25	3.3	0.5		94.0	1.5	58	42	33	22	8	5
02/09/03	1,573.0	55	9.60	50	15	27	6	6		4.4		1		67	9.50	0.25	0.05	0.65	35,000	180	0.30	3.5	0.7		93.6	2.5	57	42	33	23	7	4
02/09/03	1,812.0	49	9.80	59	16	26	6	8		3.0	11.8	1	2	67	9.20	0.07	0.05	0.35	39,500	180	0.45	4.3	1.1		92.5	2.0	58	42	34	25	8	6
02/09/03	1,838.0	49	9.80	56	20	26	6	8		3.6		1		67	9.20	0.06	0.04	0.38	38,000	200	0.70	4.9	1.8		92.0	2.5	66	46	38	28	9	6
02/10/03	2,019.0	62	9.80	52	19	30	7	7		3.6		1		67	8.50	0.30	0.05	0.50	39,000	280	0.25	5.4	2.8		91.5	1.5	68	49	40	28	8	6
02/10/03	2,019.0	63	9.90	54	20	31	8	8		3.5	11.4	1	2	67	8.50	0.30	0.05	0.65	40,000	240	0.25	5.8	3.3		91.0	2.5	71	51	42	30	9	7
02/10/03	2,136.0	68	9.80	55	21	31	8	9		3.1	11.0	1	2	67	8.80	0.06	0.02	0.20	41,000	240	0.25	5.6	3.4		91.1	3.0	73	52	43	31	10	7
02/10/03	2,143.0	68	9.90	57	21	29	7	9		3.6		1		67	8.60	0.05	0.02	0.24	39,500	280	0.40	6.0	3.6		90.9	3.3	71	50	42	29	9	7
02/11/03	2,201.0	69	9.90	57	20	31	7	9		3.4		1		67	8.80	0.08	0.05	0.55	41,000	160	0.25	5.2	1.8		91.5	2.5	71	51	42	30	8	6
02/11/03	2,201.0	69	9.90	53	20	33	8	9		3.2	10.8	1	2	67	8.50	0.06	0.04	0.65	40,000	180	0.25	5.8	3.0		91.0	3.0	73	53	43	31	8	6
02/11/03	2,276.0	76	10.00	53	20	35	8	9		3.1	11.4	1	2	67	8.70	0.08	0.03	0.24	40,500	280	0.20	6.3	3.6		90.5	3.5	75	55	46	32	10	8
02/11/03	2,280.0	77	10.00	55	21	34	8	9		3.3		1			8.50	0.03	0.01	0.13	40,000	290	0.35	6.5	3.6		90.3	4.0	76	55	45	32	11	8
02/12/03	2,357.0	76	10.00	56	22	34	8	10		3.2		1		67	9.00	0.30	0.10	0.65	42,500	200	0.25	6.6	4.0		90.0	3.0	78	56	46	33	9	7
02/12/03	2,363.0	76	10.00	53	21	35	8	10		3.4	10.6	1	2	67	9.00	0.25	0.10	0.80	42,000	240	0.30	6.9	4.5		89.8	3.5	77	56	46	33	9	7
02/12/03	2,443.0	80	10.30	57	22	40	8	9		2.9	11.2	1	2	67	8.80	0.60	0.03	0.22	39,500	210	0.25	7.3	2.9		89.6	4.5	84	62	51	37	11	8
02/12/03	2,449.0	80	10.30	58	22	40	8	10		2.7		1		67	8.60	0.04	0.03	0.25	40,000	220	0.35	7.5	3.2		89.4	4.5	84	62	52	37	12	8
02/13/03	2,506.0	82	10.30	53	21	35	7	8		3.2		1		67	9.00	0.50	0.10	0.65	41,000	200	0.25	7.4	3.1		89.4	3.0	77	56	46	38	9	7

Fluid Property Recap:Water-Based Fluid

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 120F					Filtration					Filtrate Analysis						Sand	Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels lbs/100 ft2			API ml/30 min	HTHP ml/30 min	Cake 32nd in		Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l	% by Vol	Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water% by Vol							
	m	Deg C	ppg	sec/qt	cP		10s	10m	30m			API	HTHP	Deg C												ppb Eq.	600	300	200	100	6	3
02/13/03	2,513.0	81	10.40	55	19	30	6	7		3.3	11.0	1	2	67	9.00	0.45	0.05	0.70	40,500	240	0.30	7.8	3.6		89.0	3.5	68	49	41	29	8	6
02/13/03	2,584.0	74	10.40	50	20	34	8	9		2.8	10.8	1	2	67	8.90	0.05	0.03	0.23	42,000	230	0.20	6.5	1.0		90.2	4.0	74	54	44	32	10	7
02/13/03	2,586.0	74	10.40	50	21	35	8	9		2.9		1		67	8.70	0.04	0.02	0.20	41,000	250	0.30	7.0	1.6		89.8	4.5	77	56	47	23	10	8
02/14/03	2,616.0	77	10.40	51	20	34	7	8		2.8		1		67	9.00	0.45	0.05	0.45	41,000	160	0.30	7.3	2.6		89.5	3.0	74	54	44	31	8	6
02/14/03	2,618.0	77	10.40	52	21	36	8	9		3.0	10.8	1	2	67	8.90	0.35	0.03	0.40	40,500	200	0.40	7.6	3.2		89.2	4.0	78	57	48	35	9	7
02/14/03	2,618.0		10.40	56	21	36	8	9		2.8	10.6	1	2	67	9.10	0.23	0.13	0.45	40,500	180	0.15	7.0	2.0		89.8	4.0	78	57	48	35	11	8
02/15/03	2,630.0	65	10.40	55	20	36	8	9		2.8		1		67	9.00	0.40	0.05	0.45	40,000	140	0.30	7.1	2.0		89.8	3.5	76	56	46	33	9	7
02/15/03	2,635.0	65	10.40	53	21	35	8	9		3.0	10.6	1	2	67	9.00	0.35	0.05	0.45	40,000	160	0.40	7.5	2.8		89.4	4.5	77	56	47	34	10	8
02/15/03	2,687.0	68	10.30	53	21	37	7	8		2.7	9.8	1	2	67	9.60	0.16	0.06	0.37	35,000	90	0.20	7.4	2.6		89.9	4.0	79	58	48	34	10	7
02/15/03	2,691.0	68	10.30	52	21	38	8	10		3.3		1		67	9.50	0.20	0.13	0.57	34,500	80	0.25	7.8	3.5		89.5	4.0	80	59	49	35	10	7
02/16/03	2,735.0	66	10.40	54	20	35	7	8		2.6	10.2	1	2	67	9.50	0.30	0.10	0.40	40,000	120	0.25	7.3	2.4		89.6	4.0	75	55	45	32	8	6
02/16/03	2,742.0	66	10.40	54	20	35	8	8		2.8		1	2	67	9.20	0.25	0.05	0.50	40,000	160	0.30	7.7	3.3		89.2	0.5	75	55	45	33	9	7
02/16/03	2,803.0	66	10.40	55	22	34	7	8		2.5	8.8	1	2	67	8.80	0.11	0.02	0.21	39,500	70	0.25	7.5	2.5		89.4	5.0	78	56	46	23	10	7
02/16/03	2,808.0	67	10.40	54	22	41	8	9		2.8		1		67	8.80	0.12	0.02	0.27	40,000	60	0.65	7.9	3.3		89.0	5.5	85	63	53	37	11	8
02/17/03	2,855.0	65	10.40	56	22	37	7	9		2.6	9.2	1	2	67	9.30	0.35	0.05	0.45	40,000	120	0.30	7.7	3.3		89.2	4.5	81	59	49	35	9	7
02/17/03	2,858.0	66	10.40	56	22	36	7	9		2.6		1		67	9.10	0.35	0.05	0.40	40,500	100	0.40	7.8	3.6		89.0	5.0	80	58	48	35	9	7
02/17/03	2,896.0	66	10.40	57	24	37	8	9		3.0	9.0	1	2	67	8.90	0.04	0.03	0.27	39,500	20	0.10	7.4	2.3		89.5	6.0	85	61	50	38	10	8
02/17/03	2,902.0	66	10.40	56	25	39	8	11		3.2		1		67	9.00	0.45	0.05	0.32	39,000	70	0.20	7.8	3.0		89.2	6.0	89	64	58	39	11	8
02/18/03	2,933.0		10.40	56	22	37	7	9		4.0	9.4	1	2	67	9.30	0.40	0.23	0.70	37,500	180	0.25	7.4	2.1		89.7	7.5	81	59	49	35	9	7
02/18/03	2,933.0		10.40	61	23	38	8	11		3.3		1		67	8.70	0.12	0.04	0.25	39,000	160	0.10	7.3	2.5		89.6	5.5	84	61	50	36	11	7
02/19/03	2,934.0	58	10.40	61	23	38	8	11		3.0	9.0	1	2	67	9.20	0.30	0.20	0.80	38,000	160	0.10	7.2	1.8		89.8	7.0	84	61	50	36	11	7
02/19/03	2,936.0	59	10.40	60	23	39	8	9		2.8	8.8	1	2	67	9.20	0.25	0.15	0.85	38,000	150	0.20	7.5	2.8		89.5	7.0	85	62	51	37	10	7
02/19/03	2,976.0	69	10.40	57	22	36	7	8		2.7	10.6	1	2	67	9.40	0.30	0.08	0.42	39,000	80	0.15	7.8	3.0		89.2	5.5	80	58	47	34	9	7
02/19/03	2,985.0	70	10.30	56	22	39	8	9		2.8		1		67	9.30	0.22	0.07	0.40	38,000	90	0.30	8.2	4.6		88.8	6.0	83	61	51	37	11	8
02/20/03	3,024.0	71	10.40	55	21	36	8	9		2.9	9.0	1	2	67	9.80	0.55	0.20	0.90	43,000	160	0.20	7.7	3.6		88.9	7.0	78	57	49	33	9	7
02/20/03	3,029.0	71	10.40	55	21	35	7	9		3.0	8.8	1	2	67	9.80	0.55	0.20	0.95	43,000	160	0.25	7.8	3.8		88.8	7.0	77	56	46	33	8	6
02/20/03	3,060.0	70	10.30	54	23	35	7	8		2.7	10.6	1	2	67	9.40	0.18	0.11	0.68	37,000	130	0.10	7.6	3.3		89.5	6.0	81	58	47	33	9	6
02/20/03	3,070.0	70	10.30	53	22	37	8	9		3.0		1		67	9.00	0.16	0.09	0.57	37,500	120	0.15	7.8	3.6		89.3	6.0	81	59	49	35	9	7
02/21/03	3,104.0	71	10.30	56	22	37	8	9		3.2		1	2	67	9.50	0.45	0.18	0.70	38,500	150	0.15	8.3	4.8		88.7	7.0	81	59	49	35	9	7
02/21/03	3,108.0	71	10.30	56	22	36	7	9		3.4	8.2	1	2	67	9.50	0.50	0.20	0.75	38,000	150	0.20	8.6	5.2		88.5	7.0	80	58	48	34	8	6
02/21/03	3,139.0	73	10.40	55	24	38	7	10		2.7	9.8	1	1	67	8.80	0.15	0.01	0.27	40,000	190	0.05	8.5	4.9		88.4	5.5	86	62	51	36	10	7
02/21/03	3,144.0	73	10.40	55	24	39	7	9		2.9		1		67	8.70	0.16	0.01	0.25	38,500	170	0.15	8.8	5.4		88.2	6.0	87	63	52	37	7	9
02/22/03	3,170.0	75	10.40	55	24	39	7	10		3.1		1		67	9.20	0.25	0.15	0.30	40,500	240	0.10	8.7	5.2		88.2	7.0	87	63	52	37	9	7

Fluid Property Recap:Water-Based Fluid

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 120F					Filtration					Filtrate Analysis						Sand	Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels lbs/100 ft2			API ml/30 min	HTHP ml/30 min	Cake API/HTHP		Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l	Sand % by Vol	Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water% by Vol							
	m	Deg C	ppg	sec/qt	cP		10s	10m	30m			32nd in		Deg C												ppb Eq.	600	300	200	100	6	3
02/22/03	3,173.0	75	10.40	55	23	40	7	11		3.2	9.6	1	2	67	9.00	0.25	0.15	0.30	40,500	240	0.20	8.5	4.8		88.4	7.0	86	63	51	37	9	6
02/22/03	3,174.0		10.40	54	24	38	9	7		3.0		1		67	9.10	0.18	0.08	0.30	40,000	210	0.10	8.4	4.7		88.5	6.0	86	62	50	35	9	7
02/22/03	3,174.0	73	10.40	54	24	43	8	11		2.6	10.2	1	2	67	8.90	0.19	0.03	0.22	42,000	200	0.05	8.3	4.7		88.4	5.0	91	67	55	39	10	7
02/23/03	3,174.0		10.40	55	22	46	8	10		3.0	10.2	1	2	67	8.80	0.20	0.03	0.22	42,000	200	0.10	8.3	4.7		88.4	6.0	90	68	55	39	9	7
02/23/03	3,174.0		10.40	68	25	44	8	11		2.5		1		67	8.90	0.23	0.01	0.24	40,500	290	0.05	8.7	4.9		88.2	4.5	94	69	55	41	11	7
02/24/03	3,174.0		10.40	64	25	43	9	12		3.2		1		67	9.20	0.60	0.08	0.35	43,000	100	0.10	8.5	4.7		88.2	6.0	93	68	57	41	11	8
02/24/03	3,174.0		10.50	72	26	43	8	11		2.7	10.0	1	2	67	8.90	0.26	0.06	0.35	42,000	310	0.05	7.5	2.3		89.2	4.5	95	69	57	41	11	8
02/25/03	3,174.0		10.50	70	24	42	8	11		2.8	9.8	1	2	67	9.20	0.60	0.08	0.35	43,000	100	0.10	7.4	2.2		89.2	6.0	90	66	54	39	10	7
02/25/03	3,174.0		10.50	76										67					0	0		0.0	0.0		0.1	0.0						
02/26/03	3,174.0		10.50	61	23	40	8	10		2.8		1		67	9.20	0.60	0.08	0.35	43,000	100	0.10	7.4	2.2		89.2	6.0	86	63	52	37	10	7
02/26/03	3,174.0		10.40	73	26	41	8	11		2.7	10.4	1	2	67	8.90	0.26	0.06	0.25	42,000	90	0.05	7.6	3.3		89.1	4.5	93	67	55	40	11	8
02/27/03	3,174.0		10.40	63	26	41	8	11		2.8	10.0	1	2	67	9.00	0.50	0.06	0.25	42,500	100	0.10	7.8	3.3		88.9	6.0	93	67	55	40	11	8
02/27/03	3,174.0		10.40	72	27	44	8	11		2.9		1		67	8.90	0.14	0.01	0.37	41,000	90	0.05	7.8	3.2		89.0	0.0	98	71	61	44	9	13
02/28/03	2,500.0		10.40	58	23	40	8	11		2.8		1		67	10.00	0.85	0.32	0.64	41,000	125	0.10	8.0	3.6		88.8	6.0	86	63	52	38	10	7

Australia
Bass Strait

Vic/RL2
Victoria

Halliburton Australia Pty Ltd

Printed:13/03/2003

Fluid Program Exceptions Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
002	02/03/03	08:00	179	Funnel Viscosity	sec/qt	172	High	100	
002	02/03/03	08:00	179	Density	ppg	8.80	High	8.55	8.60
002	02/03/03	08:00	179	Yield Point	lbs/100 ft2	62	High	40	
002	02/03/03	09:00	179	Density	ppg	12.00	High	8.55	8.60
002	02/03/03	09:00	179	Funnel Viscosity	sec/qt	180	High	100	
002	02/03/03	09:00	179	Yield Point	lbs/100 ft2	100	High	40	
002	02/03/03	09:30	179	Yield Point	lbs/100 ft2	80	High	40	
002	02/03/03	09:30	179	Funnel Viscosity	sec/qt	128	High	100	
002	02/03/03	09:30	179	Density	ppg	8.80	High	8.55	8.60
002	02/03/03	22:45	474	Funnel Viscosity	sec/qt	113	High	100	
002	02/03/03	22:45	474	Yield Point	lbs/100 ft2	58	High	40	
003	02/04/03	05:00	640	Funnel Viscosity	sec/qt	150	High	100	
003	02/04/03	05:00	640	Yield Point	lbs/100 ft2	82	High	40	
003	02/04/03	10:35	881	Yield Point	lbs/100 ft2	68	High	40	
003	02/04/03	10:35	881	Funnel Viscosity	sec/qt	134	High	100	
003	02/04/03	19:00	917	Density	ppg	8.85	Low	9.00	10.50
003	02/04/03	19:00	917	Yield Point	lbs/100 ft2	61	High	25	45
003	02/04/03	20:30	917	Yield Point	lbs/100 ft2	51	High	25	45
003	02/04/03	20:30	917	Density	ppg	12.00	High	9.00	10.50
006	02/07/03	16:45	917	pH	-	9.50	High	8.50	9.20
006	02/07/03	16:45	917	Density	ppg	8.80	Low	9.00	10.50
006	02/07/03	16:45	917	Yield Point	lbs/100 ft2	47	High	25	45
007	02/08/03	10:05	968	Sulfite residual	mg/l	120	High	100	
007	02/08/03	10:05	968	pH	-	9.50	High	8.50	9.20
007	02/08/03	10:05	968	Yield Point	lbs/100 ft2	14	Low	25	45
007	02/08/03	10:25	973	Yield Point	lbs/100 ft2	15	Low	25	45
007	02/08/03	10:25	973	pH	-	9.50	High	8.50	9.20
007	02/08/03	10:25	973	Sulfite residual	mg/l	120	High	100	
007	02/08/03	20:30	1,216	pH	-	9.50	High	8.50	9.20
007	02/08/03	20:30	1,216	Sulfite residual	mg/l	120	High	100	
007	02/08/03	21:15	1,228	Sulfite residual	mg/l	110	High	100	
007	02/08/03	21:15	1,228	Yield Point	lbs/100 ft2	23	Low	25	45
007	02/08/03	21:15	1,228	pH	-	9.70	High	8.50	9.20
008	02/09/03	08:57	1,559	pH	-	9.50	High	8.50	9.20
008	02/09/03	08:57	1,559	Sulfite residual	mg/l	160	High	100	
008	02/09/03	09:28	1,573	Sulfite residual	mg/l	160	High	100	
008	02/09/03	09:28	1,573	pH	-	9.50	High	8.50	9.20
008	02/09/03	21:30	1,812	Sulfite residual	mg/l	100	High	100	
008	02/09/03	22:25	1,838	Sulfite residual	mg/l	80	Low	100	
009	02/10/03	07:55	2,019	Sulfite residual	mg/l	120	High	100	
009	02/10/03	08:34	2,019	Sulfite residual	mg/l	120	High	100	

Fluid Program Exceptions Report

Well : Scallop-1

Operator: Esso Australia Pty Ltd

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
009	02/10/03	21:15	2,136	Sulfite residual	mg/l	110	High	100	
009	02/10/03	22:00	2,143	Sulfite residual	mg/l	90	Low	100	
010	02/11/03	08:40	2,201	Sulfite residual	mg/l	120	High	100	
010	02/11/03	09:20	2,201	Glycol Content	% by vol	2.9	Low	3.0	5.0
010	02/11/03	09:20	2,201	Sulfite residual	mg/l	100	High	100	
010	02/11/03	19:40	2,276	Sulfite residual	mg/l	80	Low	100	
010	02/11/03	20:30	2,280	Sulfite residual	mg/l	80	Low	100	
011	02/12/03	07:50	2,357	Sulfite residual	mg/l	120	High	100	
011	02/12/03	08:36	2,363	Sulfite residual	mg/l	95	Low	100	
011	02/12/03	08:36	2,363	Glycol Content	% by vol	2.9	Low	3.0	5.0
011	02/12/03	19:45	2,443	Sulfite residual	mg/l	110	High	100	
011	02/12/03	20:30	2,449	Sulfite residual	mg/l	90	Low	100	
012	02/13/03	07:40	2,506	Sulfite residual	mg/l	120	High	100	
012	02/13/03	08:26	2,513	Sulfite residual	mg/l	100	High	100	
012	02/13/03	19:45	2,584	Sulfite residual	mg/l	120	High	100	
012	02/13/03	20:30	2,586	Sulfite residual	mg/l	100	High	100	
013	02/14/03	07:35	2,616	Sulfite residual	mg/l	120	High	100	
013	02/14/03	08:25	2,618	Sulfite residual	mg/l	100	High	100	
013	02/14/03	19:00	2,618	Sulfite residual	mg/l	170	High	100	
013	02/14/03	19:00	2,618	Glycol Content	% by vol	2.9	Low	3.0	5.0
014	02/15/03	07:50	2,630	Sulfite residual	mg/l	140	High	100	
014	02/15/03	08:54	2,635	Sulfite residual	mg/l	120	High	100	
014	02/15/03	19:00	2,687	Sulfite residual	mg/l	130	High	100	
014	02/15/03	19:00	2,687	pH	-	9.60	High	8.50	9.20
014	02/15/03	20:10	2,691	Sulfite residual	mg/l	120	High	100	
014	02/15/03	20:10	2,691	pH	-	9.50	High	8.50	9.20
015	02/16/03	06:15	2,735	Sulfite residual	mg/l	160	High	100	
015	02/16/03	06:15	2,735	pH	-	9.50	High	8.50	9.20
015	02/16/03	07:18	2,742	Sulfite residual	mg/l	140	High	100	
015	02/16/03	19:00	2,803	Sulfite residual	mg/l	110	High	100	
015	02/16/03	20:20	2,808	Sulfite residual	mg/l	100	High	100	
016	02/17/03	06:15	2,855	pH	-	9.30	High	8.50	9.20
016	02/17/03	06:15	2,855	Sulfite residual	mg/l	120	High	100	
016	02/17/03	07:20	2,858	Sulfite residual	mg/l	100	High	100	
016	02/17/03	19:30	2,896	Sulfite residual	mg/l	100	High	100	
016	02/17/03	20:45	2,902	Sulfite residual	mg/l	100	High	100	
017	02/18/03	08:30	2,933	pH	-	9.30	High	8.50	9.20
017	02/18/03	08:30	2,933	Sulfite residual	mg/l	100	High	100	
017	02/18/03	16:30	2,933	Sulfite residual	mg/l	70	Low	100	
017	02/18/03	16:30	2,933	Glycol Content	% by vol	2.9	Low	3.0	5.0
018	02/19/03	08:00	2,934	Sulfite residual	mg/l	80	Low	100	

Fluid Program Exceptions Report

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
018	02/19/03	08:00	2,934	Glycol Content	% by vol	2.9	Low	3.0	5.0
018	02/19/03	09:05	2,936	Sulfite residual	mg/l	80	Low	100	
018	02/19/03	09:05	2,936	Glycol Content	% by vol	2.9	Low	3.0	5.0
018	02/19/03	19:30	2,976	pH	-	9.40	High	8.50	9.20
018	02/19/03	19:30	2,976	Sulfite residual	mg/l	130	High	100	
018	02/19/03	20:35	2,985	pH	-	9.30	High	8.50	9.20
018	02/19/03	20:35	2,985	Sulfite residual	mg/l	120	High	100	
019	02/20/03	07:30	3,024	pH	-	9.80	High	8.50	9.20
019	02/20/03	07:30	3,024	Sulfite residual	mg/l	140	High	100	
019	02/20/03	08:35	3,029	pH	-	9.80	High	8.50	9.20
019	02/20/03	08:35	3,029	Sulfite residual	mg/l	140	High	100	
019	02/20/03	19:00	3,060	Sulfite residual	mg/l	130	High	100	
019	02/20/03	19:00	3,060	pH	-	9.40	High	8.50	9.20
019	02/20/03	20:40	3,070	Sulfite residual	mg/l	120	High	100	
020	02/21/03	07:30	3,104	Sulfite residual	mg/l	80	Low	100	
020	02/21/03	07:30	3,104	pH	-	9.50	High	8.50	9.20
020	02/21/03	08:40	3,108	Sulfite residual	mg/l	100	High	100	
020	02/21/03	08:40	3,108	pH	-	9.50	High	8.50	9.20
027	02/28/03	08:00	2,500	Sulfite residual	mg/l	100	High	100	
027	02/28/03	08:00	2,500	pH	-	10.00	High	8.50	9.20

Operations Log Recap

For report #001A on 2/02/2003	Operation at depth(m) 179
Activity	Wait on cement
Rig Activity	Rig was under tow to Scallop-1 location for 2 days. Ran anchors. Pressure tested surface equipment. Received bulk material Commenced mixing mud. Carried out drawworks repairs. Picked up tubulars. Spudded Scallop-1 at 12:00 hours on Feb 2, 2003 with a 26" bit/36" hole opener. Drilled with seawater from mudline at 135.5 m and hi-vis sweeps to 179 m. Surveyed. Circulated a hi-vis gel sweep and made wiper trip to 155 m. Ran back in (hole OK), circulated and displaced hole with 380 bbls hi-vis gel. Pulled up to 15 m BML and pumped another 100 bbls of hi-vis gel. Pulled out and rigged to run 30" casing and PBG. Ran 30" casing and cemented at 179 m. WOC.
Fluid Treatments	Note that 6 Engineering Days charged on this report. Prior to spud, the following mud was prepared: Undiluted 40 ppb Bentonite = 880 bbls Guar Gum in Seawater = 379 bbls 12.0 ppg 20 ppb Bentonite Kill Mud = 465 bbls Kill Mud dilution fluid (to reduce kill mud weight to 9.6 ppg) = 255 bbls Total fluid = 1929 bbls. Mixed another 313 bbls while drilling. Pumped 8x50 bbl hi-vis sweeps while drilling and 87bbl guar gum sweep prior to wiper trip. Displaced hole after wiper trip with 370 bbls hi-vis and another 100 bbls at 15 m BML. Cacl2 for cement job.
For report #002A on 3/02/2003	**Operation at depth(m) 506**
Activity	Drilling 17 1/2" hole
Rig Activity	WOC. Mixed mud. Retrieved wellhead running tool and stinger. Made up 17 1/2" BHA. Ran in and tagged TOC at 173 m. Drilled out cement and commenced drilling 17 1/2" hole with seawater and hi-vis sweeps. Surveyed each stand. Drilling at 506 m at midnight.
Fluid Treatments	Mixed today: 418 bbls of Guar Gum and 1028 bbls of prehydrated gel. 299 bbls of seawater used to dilute prehydrated gel prior to floccing with caustic soda and lime. Mixed a total of 1745 bbls of new volume today. Note that a total of 1425 bbls of mud was salvaged from the 36" hole interval. Pumped 25 bbl Guar Gum sweeps every 1/2 stand and spotted 50 bbls of flocculated bentonite prior to connections.
For report #003A on 4/02/2003	**Operation at depth(m) 917**
Activity	Wiper trip
Rig Activity	Continued drilling to casing depth at 917 m, sweeping the hole with 25 bbls Hi-Vis at the mid stand and 50 bbls on connections. Circulated a 100 bbl hi-vis sweep and pump 2000 bbls of seawater, then displaced the hole with 800 bbls of hi-vis gel. Made a wiper trip to shoe. Hole good, no excess drag. Ran back in. Stood up at 273 m. Wash and ream tight spots at 237, 274, 290, 340, 498 m. Ream to 518 m, wiper trip back to shoe. Hole good. Run in to 519 m and stood up, wash/ream to bottom. 3.5 m fill. Tight at 519, 553, 572, 584, 692 m. Pumped 150 bbl sweep and circulate with 1500 bbls of seawater. Made wiper trip to 518 m at report time. Hole good, no excess drag.
Fluid Treatments	While drilling, continued mixing and prehydrating gel, transferred to suction pit and flocculated with seawater, caustic and lime. Discontinued Guar Gum sweeps and mixed additional 12.0 ppg hi-vis mud. Mixed additional unweighted hi-vis gel as a contingency and for sweeping hole after the wiper trip. Volume mixed: 613 bbls of unweighted hi-vis and 1108 bbls of 12.0 ppg hi-vis. Total for today = 1721 bbls Total for 171/2 " interval = 3466 bbls Received products as per inventory. Remainder still on boat.
For report #004A on 5/02/2003	**Operation at depth(m) 917**
Activity	POOH with landing string
Rig Activity	POOH to 479 m, hole good no drag. RIH to 917 m, hole in good condition. 1 m fill on bottom .Pumped 120 bbls hi-vis gel and swept sweep out of the hole with 1500 bbls sea water. Displaced hole with 12.0 ppg hi-vis bentonite mud. Ran gyro following displacement. POOH, topping up casing with 12.0 ppg hi-vis bentonite mud at 167 m. Continued POOH. Rigged up to run 13 3/8" casing. Ran and cemented 13 3/8" casing. Back out running tool, POOH with landing string at report time.
Fluid Treatments	Consolidated all the 12.0 ppg hi-vis mud into one tank and retained 102 bbls of unweighted hi-vis fluid.This was all later dumped and tanks cleaned. Received mud chemicals from "Challenger" as per inventory. Still offloading at report time. Also commencing to mix KCl brine at report time.
For report #005A on 6/02/2003	**Operation at depth(m) 917**
Activity	Pick up tubulars
Rig Activity	Service break and laydown 18 3/4" R/T. Rig up BOP-riser handling equipment. Skid BOP over moon pool. Test BOP. Ran BOP and riser. Pressure tested. Ran wear bushing. Changed mud pump liners to 5 1/2". Mixed new mud. Picking up tubulars.

Operations Log Recap

For report #005A on 6/02/2003	Operation at depth(m) 917
Fluid Treatments	Mixed a total of 1083 bbls of KCl/Polymer fluid and weighted up to 9.0 ppg. Another 227 bbls of KCl brine still requires polymers to be added. Fluid is presently shearing through the guns. Fluid currently contains only 0.55 ppb PHPA. This will be increased as per program following displacement. Also at that time, 3% Glycol will be added along with oxygen scavenger. Transferred new mud from Pit #4 to the Desander, Degasser and two Sand Trap pits. Mixing additional concentrated fluid in Pit #4. Total fluid mixed today = 1310 bbls
For report #006A on 7/02/2003	**Operation at depth(m) 917**
Activity	Displaced to KCl/Polymer mud
Rig Activity	Picked up tubulars, laid down 17 1/2" BHA. Made up 12 1/4" drilling assembly. Performed drills and pressure tested. Finished changing pump liners to 5 1/2". Continued to mix mud. Ran in and tagged TOC at 843.6 m. Drilled cement, float collar and cement with seawater and h-vis bentonite sweeps to shoe. Displacing to KCl/PHPA/Polymer mud at report time.
Fluid Treatments	Mixed 186 bbls of concentrated polymer for bleeding into the active system following the displacement. Also mixed 388 bbls of hi-vis bentonite for use as sweeps when drilling out cement. Total mud mixed to-date for 12 1/4" interval = 1884 bbls. Drilled out cement with seawater (returns over shakers and then overboard) and hi-vis bentonite sweeps. Sweeps averaged 25 bbls. Pumped a 100 bbl sweep at the shoe followed by 100 bbls of seawater and the new KCl/PHPA/Polymer fluid. Dumped 4 bbls of contaminated interface.
For report #007A on 8/02/2003	**Operation at depth(m) 1303**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued displacing to KCl/PHPA/Polymer mud system. Took SCR's and CLFL readings plus trip tank flowback. Drilled out shoe, rat hole and new hole to 920 m. Circulated bottoms up and pulled up to 892 m. Pressure tested. Carried out PIT to an EMW of 16.5 ppg. Ran back to 920 m and resumed drilling 12 1/4" hole. Survey on connections. Lost mud over shakers at 959 m. Halted drilling and circulated to shear mud. Resumed drilling after installing coarser screens. Drilling at 1303 m at midnight.
Fluid Treatments	Mixed 771 bbls of KCl/PHPA/Polymer Premix. Mixed Glycol CP to the active system to increase the concentration to 3%. Added BARACOR 129 to increase the residual sulfites to above 100 mg/l. Mixed PHPA to increase the concentration to 1.5 ppb in the active system. Maintained volume with premix additions treated as per active system requirements. Added barite to increase mud weight as per Mud Weight Curve. Downsized shaker screens as practical. Used 3 NEW 120 mesh shaker screens. Volume mixed today = 829 bbls Total volume for 12 1/4" interval = 2713 bbls
Issues	Mixed 2 sx of PHPA to the active system at 25 minutes per sx. When the treated mud returned to surface, blinded the shaker screens and lost mud over the screens. Reduced the pump rate, circulate and replaced shaker screens to 52 mesh screens. Circulate and sheared the mud. Increased pump rate until full rate established with no losses over the screens. Continued drilling.
For report #008A on 9/02/2003	**Operation at depth(m) 1870**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued to drill 12 1/4" hole. Survey on each stand down. Check for flow on connections at 1776 m, 1788 m and at 1803 m, well static. Drilling at 1870 m at report time.
Fluid Treatments	Mixed 472 bbls of new volume.. Added BARACOR 129 to increase sulfites. Mixed XCD Polymer to increase the Yield Point to 30 and 6 RPM to 8. Added Glycol CP to maintain concentration of 3% by volume.Downsized shaker screens. Used NEW 2 x 120 and 2 x 105 mesh screens. Prior to entering the Latrobe, added to system: 5 ppb each of BARACARB 25 and 50 plus 10 ppb BARACARB 100. Then added per 10 m drilled: 2 x 25 kg sacks of BARACARB 100 and 1 x 25 sack of BARACARB 50. Total volume for 12 1/4" interval = 3185 bbls. Reported mud weight taken with pressurized balance. Drillwater: Cl=1000 ppm, Calcium=30 ppm GGT Sulfides = Nil
For report #009A on 10/02/2003	**Operation at depth(m) 2154**
Activity	Drilling
Rig Activity	Continued drilling 12 1/4" hole to 2154 m at report time.

Operations Log Recap

For report #009A on 10/02/2003	Operation at depth(m) 2154
Fluid Treatments	Mixed 439 bbls of new volume with 5 ppb of BARACARB 25. Added one container of Glycol CP to maintain concentration. Maintained volume and properties based on active system requirements. Total volume for 12 1/4" interval = 3624 bbls Desilter underflow: 14.5 ppg @ 5.8 bph Desander underflow: 9.85 ppg @ 10.9 bph. Inefficient-shut down. Shaker screen usage high. Used NEW shaker screens: 6 x 105, 3 x 110 and 5 x 120 mesh screens. HPHT @ 120 C, Pit, 2143 m = 11.0 cc GGT Sulfides, Flowline, 2019 m = Nil Hach, Flowline, 2143 m = Nil
For report #010A on 11/02/2003	**Operation at depth(m) 2303**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 2303 m at report time.
Fluid Treatments	Mixed 241 bbls new volume to maintain active volume and required properties. Total volume for 12 1/4" interval = 3865 bbls. Dusted in barite to gradually increase mud weight to 10.0 ppg using pressurised mud balance. Downsized one shaker to 145 mesh screens, shaker flooded, lost mud, changed screens to 105 mesh. Currently running a combination of 84 and 105 mesh screens. Used NEW shaker screens ESSO: 4 x 105 mesh. SEDCO: 4 x 145 mesh. Desilter underflow: 12.6 ppg @ 3.8 bph. HACH Flowline @ 09:20 = 0, GGT Flowline @ 20:30 = 0 HTHP: Flowline @ 09:20 = 10.8 cc, Pit #2 Suction @ 19:40 = 11.4 cc
Issues	Whole mud losses over shakers with screen combinations running from 105 to 145 mesh. No ROP or formation change. Pump rate was 24 bph and YP and 6 RPM had been increased as per operator's request. Mud contained BARACARB 25, 50 and 100.
For report #011A on 12/02/2003	**Operation at depth(m) 2465**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 2465 m at report time.
Fluid Treatments	Mixed 479 bbls of new volume. Total volume for 12 1/4" interval = 3865 bbl Maintained volume and required properties with premix additions. Slowly increased mud weight with barite additions to 10.3 ppg with pressurised balance at report time. Also building up 10.2 ppg reserve mud in Pit #3 and presently have 297 bbls. Used NEW shaker screens ESSO: 6 x 105 mesh. Many shaker screens holed midway where front and back screens meet. Remainder of screen still usable-will attempt to patch. Desilter Underflow: 14.8 ppg @ 8.9 bph. GGT Sulfides flowline @ 08:36 = 0, HACH Sulfides flowline @ 20:30 =0 HPHT: Flowline @ 08:36 = 10.8 cc, Flowline @ 20:30 = 11.2 cc
For report #012A on 13/02/2003	**Operation at depth(m) 2595**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 2595 m at report time.
Fluid Treatments	Mixed 612 bbls of new volume. Total volume for 12 1/4" interval = 4477 bbl Maintained the active volume and properties with premix additions. Built up 409 bbls of 10.2 ppg reserve mud in pit # 3. Used NEW shaker screens ESSO :1 x 105 mesh. Inventory submitted. Desilter underflow : 16.4 ppg @ 10.9 bph. GGT Sulfides Flowline @ 2513 = 0, HACH Sulfides Flowline @ 2586 =0 HPHT : Flowline @ 2513 =11.0 cc, Flowline @ 2584 = 10.8 cc Note that reported mud weights were done with pressurised mud balance
For report #013A on 14/02/2003	**Operation at depth(m) 2618**
Activity	Run in hole with new bit
Rig Activity	Continued drilling 12-1/4" hole to 2618 m. Circulated until shakers clean and pumped out of the hole to the casing. Pumped a slug and finished pulling out of the hole. Made up new bit (tri-cone) and picking up 9 more drill collars for a new BHA at report time.
Fluid Treatments	Mixed 186 bbls of new volume. Total volume for 12 1/4" interval = 4663 bbls. Maintained the active volume and properties with premix additions. Cleaned out possum belly and shaker beds. Replaced damaged shaker screens on trip using patched screens were possible and repairing reusable ones. Only 3 reusable ones remaining.
	Used NEW shaker screens ESSO: 3 x 105 mesh. Desilter underflow :16.1 ppg @ 8.0 bph. HACH Sulfides Flowline @ 2618 = 0 HPHT : Flowline @ 2618 m =10.8 cc.

Operations Log Recap

For report #014A on 15/02/2003	Operation at depth(m) 2706
Activity	Drilling 12 1/4" hole
Rig Activity	Pick up new BHA. Ran in hole. Took weight from2609-2610 m and 2615-2616 m. Precautionary washed/reamed from 2578 to to bottom at 2618 m Hole tight at 2614 m. Resumed drilling 12 1/4" hole to 2706 m at report time.
Fluid Treatments	Mixed 35 bbls of new volume. Total volume for 12 1/4" interval = 4698 bbls. Maintained active volume and properties with premix additions. Added 0.1 ppb lime to active system to treat suspected carbonates. Used NEW shaker screens ESSO: 3 x 105 mesh, SEDCO: 1 x 84 Presently only running two shakers (#2 & #3) Desilter underflow : 15.4 ppg @ 9.9 bph. HACH Sulfides Flowline @ 2687 = 0, GGT @ 2635 m = 0 HPHT : Flowline @ 2635 m = 10.6 cc.
For report #015A on 16/02/2003	**Operation at depth(m) 2830**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 2830 m at report time.
Fluid Treatments	Mixed 429 bbls of new volume. Total volume for 12 1/4" interval = 5127 bbls. Maintained active volume and properties with premix additions. Blended reserve mud into active for a circulation and then back to reserve pit #3. Halted additions and desilter operation at 2775 m (above possible reservoir). Mud weight increased to 10.4 ppg during this time. Resumed bleeding in premix and operating desilter at 2807 m. Used NEW shaker screens ESSO: 2 x 145 mesh, 2 x 105 mesh. Desilter underflow : 14.8 ppg @ 10.1 bpm. GGT Flowline @ 2742 m = 0, HACH Sulfides Flowline @ 2893 m = 0 HPHT : Suction @ 2735 m =10.2 cc, Flowline @ 2803 m = 8.8 cc
For report #016A on 17/02/2003	**Operation at depth(m) 2914**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 2914 m at report time.
Fluid Treatments	Mixed 3 bbls new volume. Total volume for 12 1/4" interval = 5130 bbls. Maintained active volume and properties with premix additions when able. Ran desilter as required but shut down when approaching suspected reservoir sands. Desilter underflow: 13.4 ppg @ 7.8 bph. Used NEW shaker screens ESSO: 2 x 145, 2 x 105, and 1 x 84 mesh Flowline GGT Sulfides @ 2858 m = 0, HACH Sulfides @ 2902 m = 0 HPHT : Suction @ 2855 m = 9.2 cc, Suction @ 2896 m = 9.0 cc
For report #017A on 18/02/2003	**Operation at depth(m) 2933**
Activity	Running in with new bit
Rig Activity	Continue to drill ahead to 2578 m. Circulated clean and pumped out to old hole. Pumped slug and continued out of hole. Made up new bit, BHA and MWD. Running back in hole at report time.
Fluid Treatments	Mixed 4 bbls new volume. Total volume for 12 1/4" interval = 5134 bbls Bled premix into active to maintain mud properties and and help control mud weight. Also ran desilter to control mud weight. Desilter underflow: 13.0 ppg @ 7.6 bph. Mixed slug for trip out of hole. Used NEW shaker screen ESSO: 1 x 105 mesh. HPHT: Suction @ 2933 m = 9.4 cc.
For report #018A on 19/02/2003	**Operation at depth(m) 2996**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued to run in hole.. Slipped and cut drill line at shoe. Resumed running in the hole logging with LWD. Precautionary washed last 2 stands to bottom. Drilling 12 1/4" hole at 2996 m at report time.
Fluid Treatments	Mixed 16 bbls new volume. Total volume for 12 1/4" interval = 5150 bbls Added PHPA to premix mud to maintain concentration in active system. Added 1 pod Glycol to maintain concentration. Added Caustic Potash to maintain alkalinity. Continuing with regular additions of BARACAOR 129 oxygen scavenger and BARACARB 25, 50 AND 100 to replace losses to wall cake and desilter. Used NEW shaker screens ESSO: 2 x 145 mesh, 1 x 84 and 2 x 165 mesh. Used old SEDCO 180 and 200 mesh screens. HPHT @ 2934 m = 9.0 cc. HPH T @ 2976 m = 10.6 cc. Flowline: GGT Sulfides @ 2936 m = 0, HACH Sulfides @ 2985 m = 0
	Desilter underflow: 12.9 ppg @ 3.2 bph
For report #019A on 20/02/2003	**Operation at depth(m) 3080**
Activity	Drilling 12 1/4" hole
Rig Activity	Continued drilling 12 1/4" hole to 3080 m at report time.

Operations Log Recap

For report #019A on 20/02/2003	**Operation at depth(m) 3080**
Fluid Treatments	Mixed 14 bbls new volume. Total volume for 12 1/4" interval = 5164 bbls Transferred remaining premix to Pit #1. Will try and utilize reserve mud. Added Caustic Potash and Lime to maintain alkalinity. Continuing to make regular additions of Baracarb bridging agent to maintain system concentration. Have now utilized all pre-used SEDCO 180 & 200 mesh shaker screens. Used NEW shaker screens ESSO: 145 x 4, 165 x 5. HPHT @ 3029 m = 8.8 cc, HPHT @ 3065 m = 10.6 cc. Flowline: GGT Sulfides @ 3029 m = 0, HACH Sulfides @ 3070 m = 0 Desilter underflow: 12.3 ppg @ 3.8 bph.
For report #020A on 21/02/2003	**Operation at depth(m) 3154**
Activity	Drilling 12 1/4" hole
Rig Activity	Continue drilling 12 1/4" hole to 3154 m ar report time.
Fluid Treatments	Mixed 11 bbls of new volume. Total volume for 12 1/4" interval = 5175 bbls. Added Dextrid to premix for filtration control. Added PHPA to premix to maintain system concentration. Continued with regular additions of Baracor 129 and Baracarb to maintain concentrations. K+ low-added 2 bulk bags KCl to active via Pit #2 salt chute. Used NEW shaker screens ESSO: 5 x 165, 4 x 145, 5 x 84. Utilizing ESSO screens only. HPHT at 3108 m = 8.2 m, HPHT @ 3139 m = 9.8 cc. Flowline: HACH Sulphides at 3108 m = 0, HACH Sulphides @ 3144 m = 0 Desilter underflow: 12.2 ppg @ 5.9 bph. Backloaded chemicals as per inventory. Transferred remains of last slug into reserve Pit #3.
For report #021A on 22/02/2003	**Operation at depth(m) 3174**
Activity	Pull out of hole to log
Rig Activity	Continue to drill ahead to 3174 m (TD). Circulated clean and pulled 10 stands. Slightly tight from 3160-3165 m. Pumped slug and made wiper trip to 13 3/8" casing shoe. Ran back to bottom. Tight at 3170 m. No fill.Pumped 100 bbl hi-vis sweep and boosted riser. Continued circulating for two full bottoms up. Little noticeable increase in cuttings when hi-vis returned. Shakers clean after hi-vis returned. Spotted 240 bbls of inhibited mud in bottom 500 m of hole. Pulled 10 stands and pumped slug. Pulling out of hole to run wireline logs at report time.
Fluid Treatments	Mixed 26 bbls new volume. Total volume for 12 1/4" interval = 5201 bbls. Prepared 100 bbls (pumpable) Hi-Vis using Barazan. Added Caustic Potash to maintain alkalinity. Prepared 240 pumpable barrels of inhibited fluid and mixed two slugs. Used NEW shaker screens SEDCO: 4 x 180, 4 x 145 Flowline: HACH Sulphides at 3173 m = 0, HACH Sulphides @ 3174 m = 0 Desilter underflow: 11.8 ppg @ 5 .0 bph. Backloaded mud chemicals as per inventory.
For report #022A on 23/02/2003	**Operation at depth(m) 3174**
Activity	Wireline logging
Rig Activity	Continued to pull out of the hole . Laid out LWD and BHA . Pressure tested surface equipment. Ran in and recovered flex joint wear bushing. Ran test tool and commenced pressure testing BOP's. Completed testing and re-ran wear bushing. Rigged up to run wireline logs.
Fluid Treatments	No new volume mixed today. Total volume for 12 1/4" interval = 5201 bbls. Possible slight downhole losses: 0.75 bph. Continued backloading mud chemicals as per inventory.
For report #023A on 24/02/2003	**Operation at depth(m) 3174**
Activity	Wireline logging
Rig Activity	Continued to run wireline logs.
Fluid Treatments	No treatments. Total volume for 12 1/4" interval still = 5201 bbls. Hole appearing to take approximately 0.5 bph during wireline logging operations. Logging tools got to bottom without problem. Caliper good except for a few washed out areas.
For report #024A on 25/02/2003	**Operation at depth(m) 3174**
Activity	Wireline logging
Rig Activity	Continued to run wireline logs.

Operations Log Recap

For report #024A on 25/02/2003	**Operation at depth(m) 3174**
Fluid Treatments	No treatments. Total volume for 12 1/4" interval still = 5201 bbls. No evening mud check-PertoLab processing MDT samples in mud lab. Slight downhole seepage losses during wireline logging operations. 13 sacks of bulk barite blown back to "Challenger"-entered as "returned" on inventory. Will continue to blow off additional barite tomorrow, but will retain at least enough barite to increase entire active system mud weight by 1.0 ppg (1500+ sacks).
For report #025A on 26/02/2003	**Operation at depth(m) 3174**
Activity	Wireline logging
Rig Activity	Continued to run wireline logs.
Fluid Treatments	No treatments. Total volume for 12 1/4" interval still = 5201 bbls. Backloaded 1409 sacks of barite onto the "Challenger". Balance of 1777 sacks of barite still onboard Sedco 702. Added the remaining 581 sacks (100 lbs) of bulk bentonite to seawater in the slug pit and dumped overboard. Cost will not be to the current 12 1/4" hole interval, but rather as an "other" (P & A) cost. Still experiencing downhole seepage losses during wireline logging operations.
For report #026A on 27/02/2003	**Operation at depth(m) 2710**
Activity	Plug & Abandon operations
Rig Activity	Continued to run wireline logs (guns). Pulled out of hole with sidewall guns and rigged down wireline. Made up 3 1/2" cement stinger and ran in hole on drill pipe to bottom. Washed down-no fill. Circulated gas free. Commenced plug and abandon operations. Set P&A cement plug #1A from 3174-3014 m. Pulled up to 3014 m and circulated. No noticeable water or cement upon circulating 2000 strokes past bottoms up. Set cement plug #1B from 3014-2857 m. Pulled up to 2857 m and circulated. No noticeable water or cement 2500 strokes past bottoms up. Set cement plug #1C from 2857-2710 m. Pulled up to 2710 m and circulating at report time.
Fluid Treatments	Backloaded chemicals onboard "Frontier" as per inventory and submitted backload list. Transferred excess mud from active system during P&A operations over into Pit #3 for inhibiting later for use in 13 3/8" casing between cement plug 2B and the EZSV. BARAFILM on floor for treating tubulars later.
For report #027A on 28/02/2003	**Operation at depth(m) 2403**
Activity	Plug & Abandon operations
Rig Activity	Continue to circulate above cement plug #1C, with slight indication of water spacer and no cement seen at surface. Set cement plug #1D from 2673 m to 2626 m and circulate above with slight indication of water spacer and no cement seen at surface. Set cement plug #1E from 2626 m to 2500 m, circulating above with slight indication of water spacer and no cement returns. Continue to circulate while raising mud weight to 10.4 ppg. Lay out 5" drill pipe while WOC. RIH and tag cement at 2403 m. POOH and RIH wireline to set bridge plug.
Fluid Treatments	Added barite to weight up system above bottom plugs to 10.4 ppg. Prepared pumpable 357 bbls inhibited mud for placement between the two top plugs.
For report #028A on 1/03/2003	**Operation at depth(m) 200**
Activity	Rig down
Rig Activity	Continue plug and abandon operations as per programme. Set cement plug above bottom bridge plug, dumping 12 bbls mud slightly contaminated with cement on reverse circulating above plug. Displace well with 325 bbls inhibited mud. Well displaced to sea water after running top bridge plug on wireline, and top cement plug set at 200 m, with 10 bbls slightly contaminated returns.
Fluid Treatments	Note: 2 Engineering days charged to today's report to include tomorrow's cost. 4 Calcium Chloride charged to cementing, 2 damaged. Preparing backload of mud laboratory equipment and remaining mud chemicals. Note: Remaining barite dumped. (Shown as "Returned" due to zero cost)

Deviation Actual

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
2/02/2003	157.8	157.8	0.00	0.0	
3/02/2003	212.5	212.5	0.35	350.7	
3/02/2003	296.4	296.4	0.35	357.9	0.3
3/02/2003	383.2	383.2	0.28	341.3	0.8
4/02/2003	528.3	528.3	0.29	341.2	1.4
4/02/2003	615.2	615.1	0.44	352.0	1.9
4/02/2003	702.1	702.0	0.47	355.1	2.6
4/02/2003	818.2	818.1	0.41	301.7	3.5
4/02/2003	907.8	907.7	0.39	329.9	4.1
8/02/2003	1,015.0	1,015.0	0.50	0.0	
8/02/2003	1,075.0	1,075.0	0.50	0.0	
8/02/2003	1,131.0	1,131.0	0.50	0.0	
8/02/2003	1,218.0	1,218.0	0.00	0.0	
8/02/2003	1,275.0	1,275.0	0.50	0.0	
9/02/2003	1,335.3	1,335.3	0.00	0.0	
9/02/2003	1,393.0	1,393.0	0.00	0.0	
9/02/2003	1,451.3	1,451.3	0.00	0.0	
9/02/2003	1,509.5	1,509.5	0.00	0.0	
9/02/2003	1,538.6	1,538.6	0.50	0.0	
9/02/2003	1,596.7	1,596.7	0.00	0.0	
9/02/2003	1,625.7	1,625.7	0.50	0.0	
9/02/2003	1,654.8	1,654.8	1.00	0.0	
9/02/2003	1,654.0	1,654.0	1.00	0.0	
9/02/2003	1,710.0	1,710.0	1.50	0.0	
9/02/2003	1,797.0	1,797.0	1.50	0.0	
10/02/2003	1,857.0	1,857.0	1.00	0.0	
10/02/2003	1,914.0	1,914.0	1.00	0.0	
10/02/2003	2,002.0	2,002.0	1.00	0.0	
10/02/2003	2,060.0	2,060.0	1.50	0.0	
10/02/2003	2,117.0	2,117.0	2.00	0.0	
10/02/2003	2,146.0	2,146.0	1.50	0.0	
11/02/2003	2,205.0	2,205.0	1.00	0.0	
11/02/2003	2,261.0	2,261.0	1.50	0.0	
12/02/2003	2,320.0	2,320.0	1.00	0.0	
12/02/2003	2,350.0	2,350.0	1.50	0.0	
12/02/2003	2,379.0	2,379.0	1.00	0.0	
13/02/2003	2,523.0	2,523.0	1.00	0.0	
13/02/2003	2,494.0	2,494.0	1.00	0.0	
13/02/2003	2,581.0	2,581.0	1.00	0.0	
14/02/2003	2,608.0	2,607.7	1.00	0.0	
15/02/2003	2,635.0	2,635.0	1.50	0.0	

Deviation Actual

Well : Scallop-1
Operator: Esso Australia Pty Ltd

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
15/02/2003	2,693.0	2,693.0	1.50	0.0	
16/02/2003	2,722.0	2,722.0	1.50	0.0	
16/02/2003	2,751.0	2,751.0	2.00	0.0	
16/02/2003	2,780.0	2,780.0	1.50	0.0	
17/02/2003	2,838.0	2,838.0	1.50	0.0	
17/02/2003	2,867.0	2,867.0	1.50	0.0	
17/02/2003	2,896.0	2,896.0	2.00	0.0	
18/02/2003	2,925.0	2,925.0	2.00	329.9	
19/02/2003	2,963.0	2,935.1	1.36	325.1	
20/02/2003	3,022.6	3,022.2	1.56	335.5	
21/02/2003	3,080.6	3,080.2	1.55	331.2	
22/02/2003	3,138.2	3,137.8	1.52	333.5	

Bit Record

Well : Scallop-1

Operator: Esso Australia Pty Ltd

Run No	Bit No	Bit Size in	Bit Manufacturer	Bit Type	Bit Style	IADC Code	Serial No	Jet or TFA	Depth Out m	Run Length m	ROP m / hr	WOB lb	Bit RPM	Pump Pres psi	Pump Output gpm	Fluid Type	Fluid Density ppg	Dev Angle	Bit Grading	Reason Pulled
1	1	26.000	RTC	Y11	MT	111	660478	3x18|1x20	179.0	44.0	22.0	2.0	90	2,800.0	1,204	Seawater	8.60	0.25	1-1-PN-A-0-NO-TD	TD - Total/Casing Depth
2	2	17.500	HYC	DS34H	FC	S223	244002	8x14	917.0	738.0	33.9	5.8	142	2,500.0	1,128	Seawater	8.60	0.39	1-1-WT-S-X-ER-TD	TD - Total/Casing Depth
3	3	12.250	SII	MA89PXX	FC		JT 0152	7x14	2,618.0	1,701.0	13.3	10.0	120	3,150.0	980	KCl/Polymer	10.40	1.00	2-4-CT-S-X-I-BT-PR	PR - Penetration Rate
4	4	12.250	HTC	MX-20D	IN	517	6007902	3x20	2,933.0	315.0	4.5	45.0	98	3,050.0	801	KCl/Polymer	10.40	2.00	2-4-BT-S-SE-1-WT-TR	TQ - Torque
5	5	12.250	HTC	MX-20D	IN	517	W42DV	3x18	3,174.0	241.0	3.5	47.0	99	3,160.0	755	KCl/Polymer	10.40	1.52	3-7-BT-S-E-1/8-RG-TD	TD - Total/Casing Depth
6	6	3.500	DUMMY	Open-Ended	OT			6	0.0	0.0	0.0	0.0	0	2,490.0	830	KCl/Polymer	10.40	1.50		

ExxonMobil

Integrity Test Data

Well	Scallop 1
Csg Size (in)	13.375
Rig	Sedco 702
RKB (AMSL, m)	25.9m
Water Depth (m)	109.6m
Field	Gippsland
Country	Australia

Final Interpretation				
Test	**Depth (m)**	**Integ (ppg)**	**Type**	**MS (ppg)**
Test 1	900.8	16.5	LOT	
Test 2	900.8	16.1	LOT	
Test 3				

Data input = BLUE   Calculated value = RED

Casing Test		Integrity Test 1		Integrity Test 2		Integrity Test 3	
Date	07-Feb-03	**Date**	08-Feb-03	**Date**		**Date**	
Last Csg (in)	13.375	**Last Casing Set (in)**	900.810	**Last Casing Set (in)**		**Last Casing Set (in)**	
TOC in Csg	843.6	**Test Depth (m TVD)**	900.8	**Test Depth (m TVD)**		**Test Depth (m TVD)**	
Mud Density	8.5	**Well Depth (m MD)**	920.0	**Well Depth (m MD)**		**Well Depth (m MD)**	
Mud Type	WBM	**Mud Density (ppg)**	9.0	**Mud Density (ppg)**		**Mud Density (ppg)**	
Pump Rate	0.50	**Mud Type**	WBM	**Mud Type**		**Mud Type**	
		Pump Rate (bbl/min)	0.50	**Pump Rate (bbl/min)**		**Pump Rate (bbl/min)**	
		Req'd EMW (ppg)	17.0	**Req'd EMW (ppg)**		**Req'd EMW (ppg)**	
		Req'd Test Press (psi)	1,228	**Req'd Test Press (psi)**	0	**Req'd Test Press (psi)**	0

Casing Test Pumping		Integrity Test 1 Pumping		Integrity Test 1 Shut in		Integrity Test 2 Pumping		Integrity Test 2 Shut in		Integrity Test 3 Pumping			
V (bbl)	**P (psi)**	**V (bbl)**	**P (psi)**	**t (min)**	**P (psi)**	**V (bbl)**	**P (psi)**	**t (min)**	**P (psi)**	**V (bbl)**	**P (psi)**		
0.00	0	0.00	0	0.00	732								
0.50	400	0.25	45	1.00	718								
1.00	800	0.50	160	2.00	718								
1.50	1,200	0.75	360	3.00	713								
2.00	1,550	1.00	512	4.00	713								
2.50	2,000	1.25	730	5.00	713								
3.00	2,225	1.50	875	6.00	709								
3.50		1.75	1,085	7.00	709								
4.00		1.90	1,148	8.00	709								
				9.00	709								
				10.00	709								
				11.00	709								
				12.00	709								
				13.00	709								

File Location: Scallop-1_13.375in_Surface_Csg_LOT.xls
Tab Reference: Input

ExxonMobil

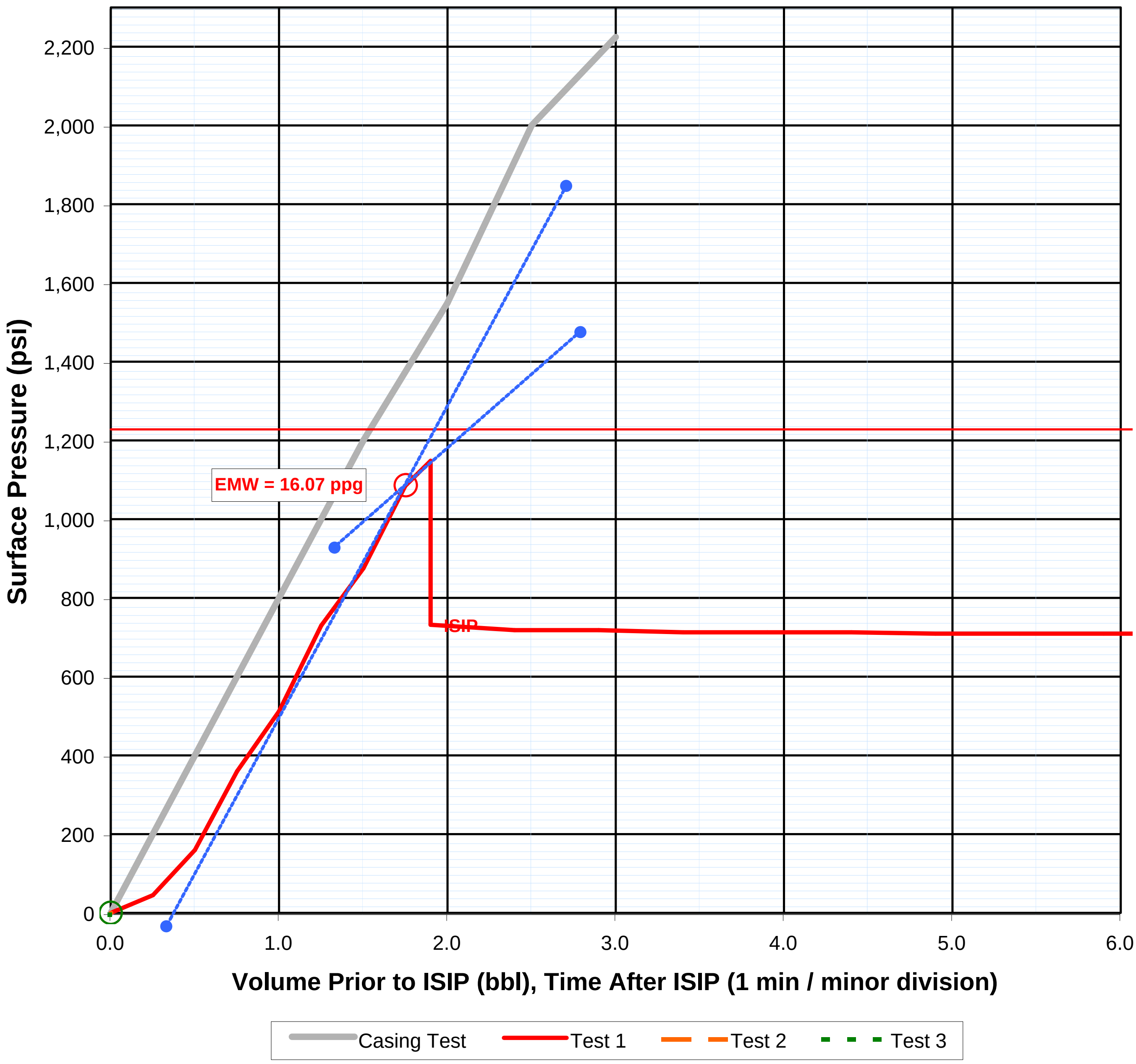
Integrity Test Plot

Well	Scallop 1
Csg Size (in)	13.375
Rig	Sedco 702
RKB (AMSL, m)	25.9m
Water Depth (m)	109.6m
Field	Gippsland
Country	Australia

Test and interpretation comments...

* Pumped 1.90 bbls, and bled back same.
* At End of Well, recalculated LOT realising that original LOT was based on last pressure reading taken rather than last point along straight line plot before deviation. Recalcuation of **True LOT = 16.1ppg EMW** @ 1,085psi w/ 9.0 ppg MW & Csg Shoe @ 900.79mTVD

Final Interpretation				
Test	**Depth (m)**	**Integ (ppg)**	**Type**	**MS (ppg)**
Test 1	900.8	16.5	LOT	
Test 2	900.8	16.1	LOT	
Test 3				



File Location: Scallop-1_13.375in_Surface_Csg_LOT.xls
Tab Reference: Output

ExxonMobil

Well Name: Scallop-1

Bit Report

Well ID	Tool Size	Tool Code	Tool No	Run No	Make	Type	Serial	IADC Code	Date Run	Time Run	Date Pulled	Time Pulled
SCALLOP_1	26.000	BT	1	1	RRB	Y11	660478	111	2-Feb-03	6:00 AM	2-Feb-03	5:00 PM
SCALLOP_1	17.500	BT	2	1	NLH	DS34HF	24400Z		3-Feb-03	12:00 PM	6-Feb-03	6:30 AM
SCALLOP_1	12.250	BT	3	1	STC	MA89PX	JT0152	M223	7-Feb-03	1:15 PM	14-Feb-03	6:30 PM
SCALLOP_1	12.250	BT	4	1	HC	MX20DD	6007902	517	14-Feb-03	8:30 PM	18-Feb-03	7:00 PM
SCALLOP_1	12.250	BT	5	1	HC	MX20DX	W42DV	517	18-Feb-03	8:15 PM	23-Feb-03	9:00 AM

Well ID	Tool Size	Min WOB	Max WOB	Min RPM	Max RPM	Min Torque	Max Torque	Min Flow Rate	Max Flow Rate	Min Pump Pressure	Max Pump Pressure	TFA
SCALLOP_1	26.000	0	5	60	90	2,000	3,000	1,204	1,204	2,800	3,000	1.05
SCALLOP_1	17.500	2	10	110	150	2,000	11,000	1,100	1,200	2,200	2,800	1.20
SCALLOP_1	12.250	2	20	80	150	2,000	12,000	800	1,014	1,000	3,300	1.05
SCALLOP_1	12.250	45	50	90	120	5,000	6,000	820	830	2,800	3,000	0.92
SCALLOP_1	12.250	35	55	75	131	5,000	7,000	750	825	3,400	3,500	0.75

Well ID	Tool Size	Nozzles	Depth In	Depth Out	Length Cut	Hours	Length/ Hour	Dull Grade
SCALLOP_1	26.000	1 x 20, 3 x 18	136	179	44	2.0	21.8	1 - 1 - PN - A - 1 - 1 - RR - TD
SCALLOP_1	17.500	8 x 14	179	917	738	21.0	35.1	1 - 1 - ER - T - X - 1 - NO - TD
SCALLOP_1	12.250	7 x 14	917	2,618	1,701	145.3	11.7	2 - 4 - CT - S - X - 0 - BT - PR
SCALLOP_1	12.250	3 x 20	2,618	2,933	315	73.5	4.3	4 - 7 - BT - S - E - 1 - WT - TQ
SCALLOP_1	12.250	3 x 18	2,933	3,174	241	75.0	3.2	3 - 7 - BT - S - E - 2 - RG - TD

Well ID	Tool Size	Billing	Cost	Rig Rate	Cost/ Length
SCALLOP_1	26.000	R	9,808	360,000	270.16
SCALLOP_1	17.500	R	31,154	360,000	152.49
SCALLOP_1	12.250	P	10,146	360,000	407.81
SCALLOP_1	12.250	P	65,192	360,000	1,262.05
SCALLOP_1	12.250	P	45,500	360,000	1,670.42

ExxonMobil

Well Name: Scallop-1

Bit Performance

Sum of Cost			
Tool Size	Make	Type	Total
12.25	HC	MX20DD	65,192
		MX20DX	45,500
	STC	MA89PX	10,146
17.5	NLH	DS34HF	31,154
26	RRB	Y11	9,808
Grand Total			161,800

Sum of Length Cut			
Tool Size	Make	Type	Total
12.25	HC	MX20DD	315
		MX20DX	241
	STC	MA89PX	1,701
17.5	NLH	DS34HF	738
26	RRB	Y11	44
Grand Total			3,039

Average of Cost / Length			
Tool Size	Make	Type	Total
12.25	HC	MX20DD	1,262.05
		MX20DX	1,670.42
	STC	MA89PX	407.81
17.5	NLH	DS34HF	152.49
26	RRB	Y11	270.16
Grand Total			752.59

Average of Length / Hour			
Tool Size	Make	Type	Total
12.25	HC	MX20DD	4.3
		MX20DX	3.2
	STC	MA89PX	11.7
17.5	NLH	DS34HF	35.1
26	RRB	Y11	21.8
Grand Total			15.2

SCALLOP-1 - BIT PHOTOS

Figure #1 - Run #1, 26" Hycalog Y11 (IADC 111)

Figure #2 - Run #2, 17-1/2" Hycalog DS34HF
Note: *Bit is painted after use but has not been refurbished as it came out in near excellent condition.*

Figure #3 - Run #2, 17-1/2" Hycalog DS34HF

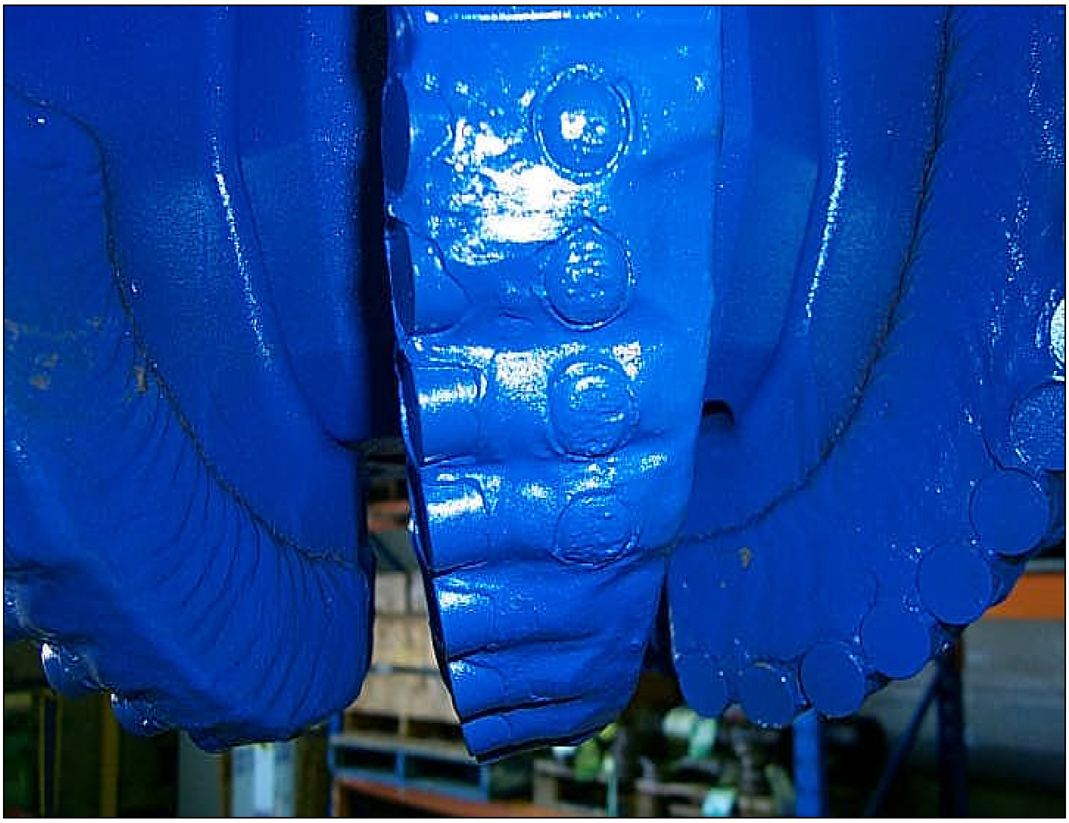


Figure #4 - Run #2, 17-1/2" Hycalog DS34HF

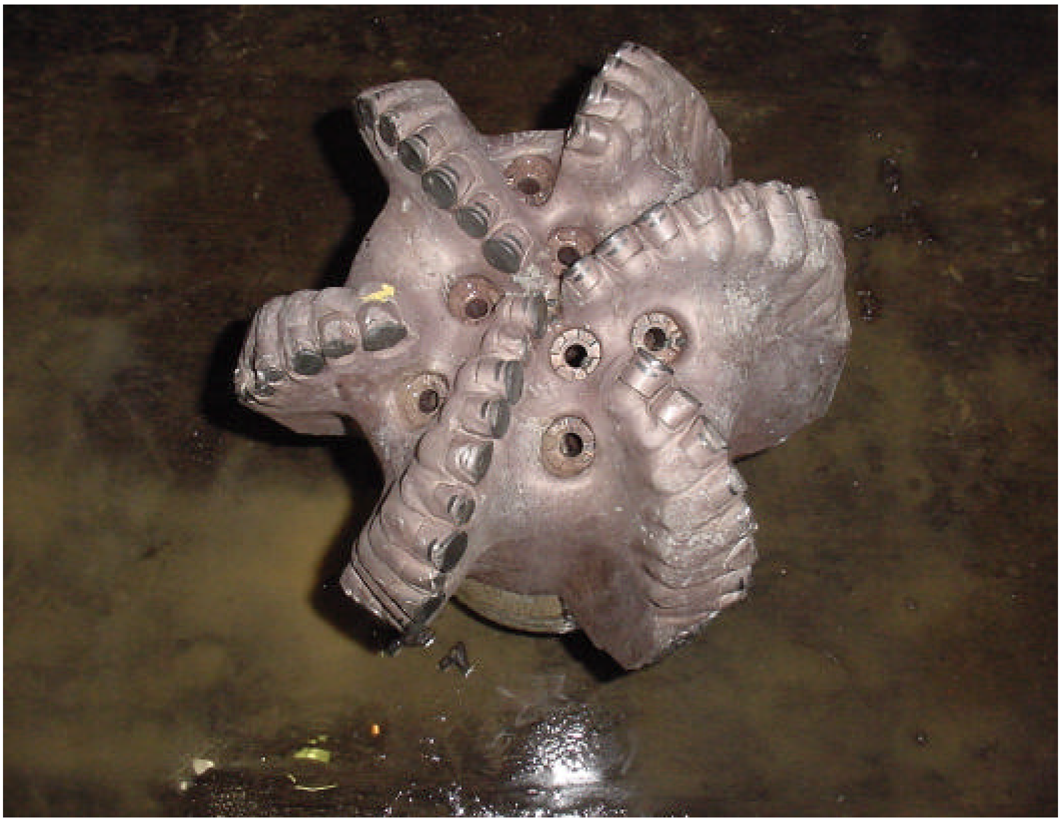


Figure #5 - Run #3, 12-1/4" Smith MA89PXX (M223)

Figure #6 - Run #3, 12-1/4" Smith MA89PXX (M223)

Figure #7 - Run #3, 12-1/4" Smith MA89PXX (M223)

Figure #8 - Run #3, 12-1/4" Smith MA89PXX (M223)

Figure #9 - Run #3, 12-1/4" Smith MA89PXX (M223)

Figure #10 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

Figure #11 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

Figure #12 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

Figure #13 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

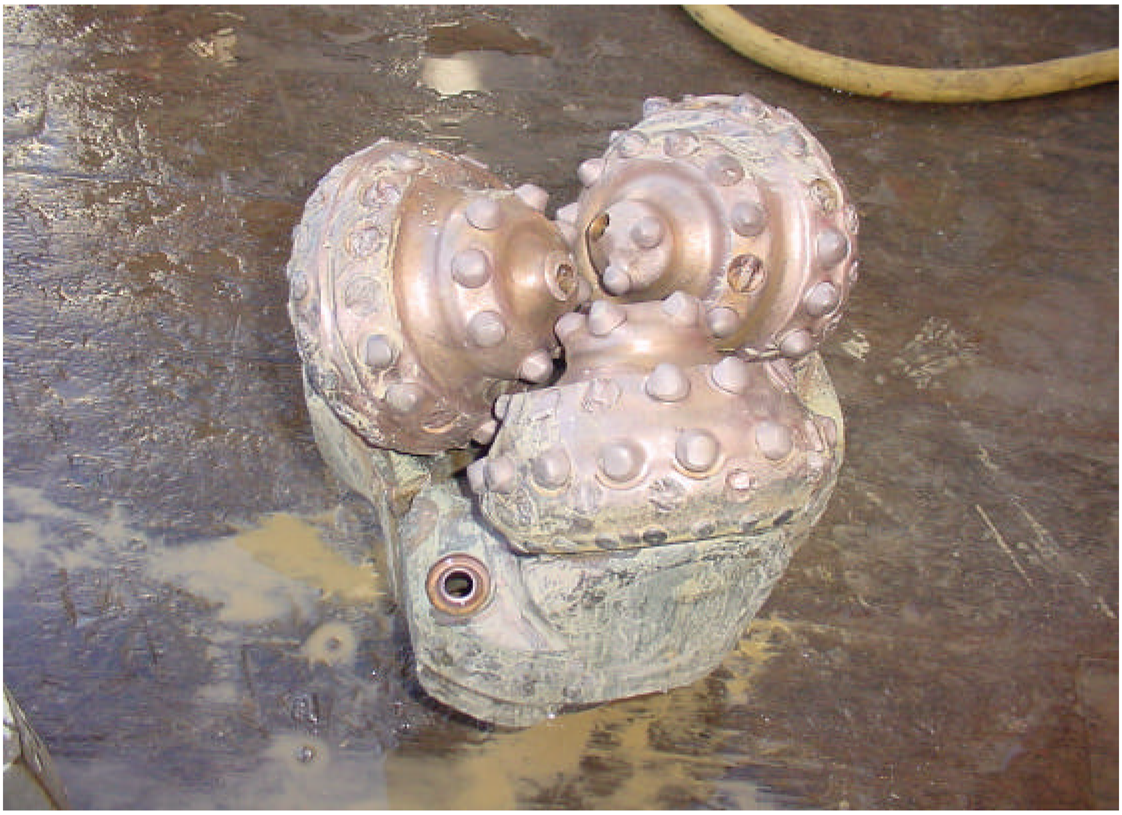


Figure #14 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

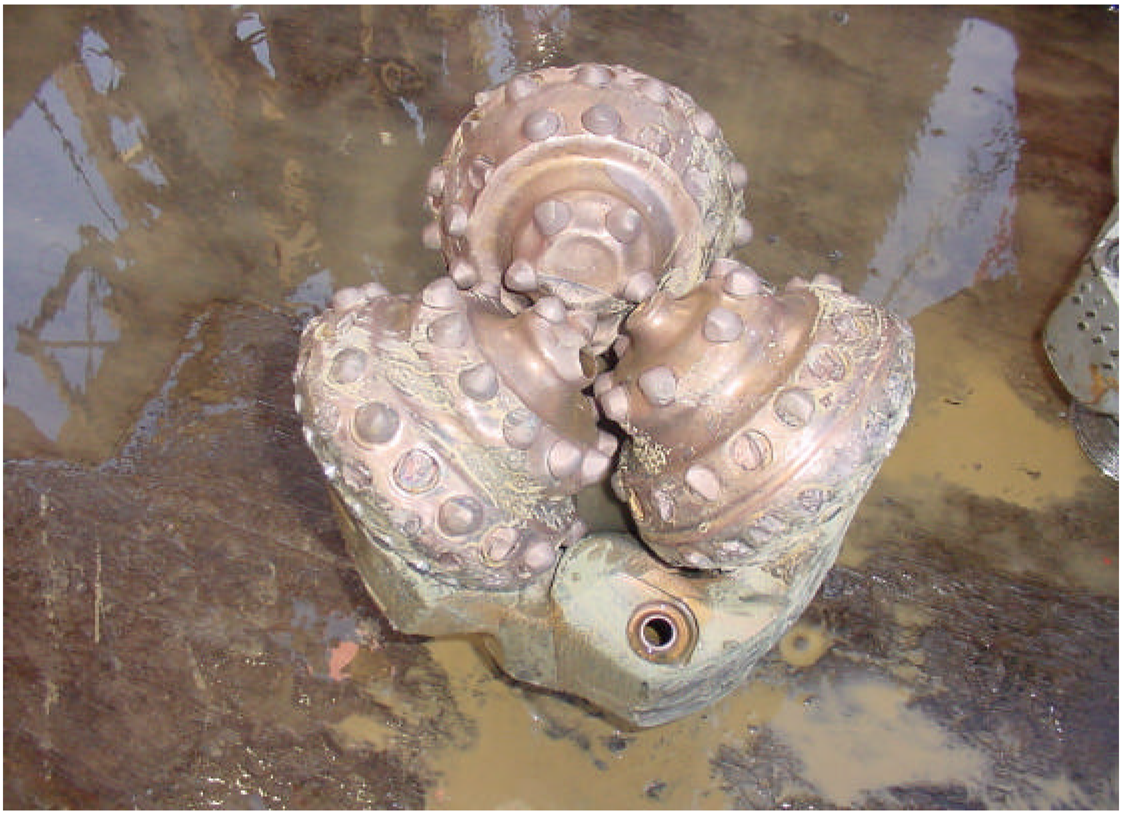


Figure #15 - Run #4, 12-1/4" Hughes MX20DDT (IADC 517)

Figure #16 - Run #5, 12-1/4" Hughes MX20DX (IADC 517)

Figure #17 - Run #5, 12-1/4" Hughes MX20DX (IADC 517)

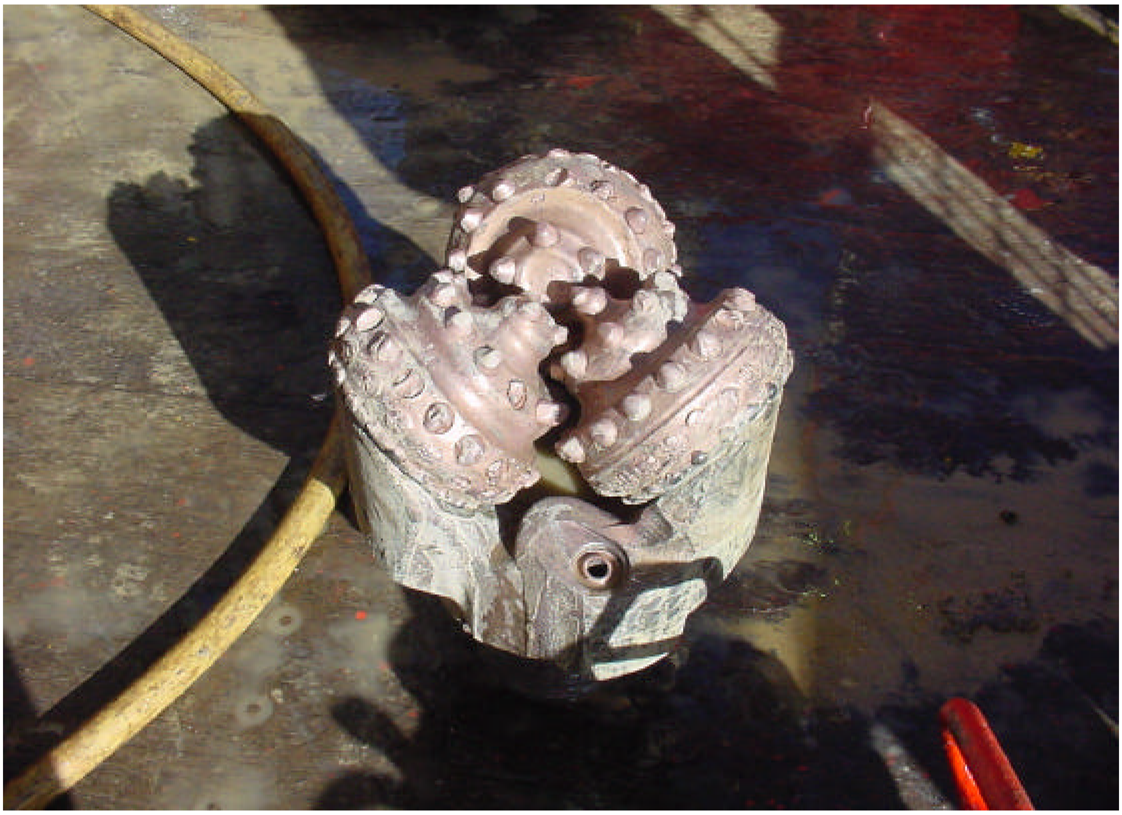


Figure #18 - Run #5, 12-1/4" Hughes MX20DX (IADC 517)

Figure #19 - Run #5, 12-1/4" Hughes MX20DX (IADC 517)

SCALLOP-1 - DRILL STRING REPORT

36" HOLE INTERVAL - BHA #1

17-1/2" HOLE INTERVAL - BHA #2

12-1/4" HOLE INTERVAL - BHA #3

12-1/4" HOLE INTERVAL - BHA #4

12-1/4" HOLE INTERVAL - BHA #5

SCALLOP-1 - CASING SUMMARY

Size (inches)	Weight (ppf)	Grade	Connection	Interval (meters)
30"	457	X52	W/head Housing x HD90	132.69m - 144.65m
30"	457	X52	HD90 x SF60	144.65m - 156.14m
30"	310	X52	SF60 x SF60	156.14m - 167.82m
30"	310	X52	SF60 x Weld	167.82m - 169.70m
30" x 20"	--	--	Xover/Swedge	169.70m - 170.70m
20"	130	X56	Weld x Float Shoe	170.70m - 179.00m
18-3/4" x 20"	--	--	18-3/4" W/head	131.85m - 133.33m
20"	203	X56	W/Head Extension	133.33m - 139.12m
20" x 13-3/8"	--	--	Xover/Swedge	139.12m - 139.44m
13-3/8"	72	L80	Welded Pup Joint	139.44m - 142.67m
13-3/8"	68	L80	No-cross Coupling Jt	142.67m - 155.52m
13-3/8"	68	L80	BTC	155.52m - 900.81m

SCALLOP-1 - CASING REPORT

CONDUCTOR/STRUCTURAL CASING

================================ Setting Depths ================================

=========================== Casing String Limitations ===========================

=============================== Casing (Top Down) ===============================

=============================== Casing Equipment ===============================

==================================== Remarks ====================================

SURFACE CASING

================================ Setting Depths ================================

=========================== Casing String Limitations ===========================

=============================== Casing (Top Down) ==============================

=============================== Casing Equipment ===============================

==================================== Remarks ====================================

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30" Final Casing Tally

WELL: Scallop #1 **DATE:** 03-Feb-03
RIG: Transocean 702 **By:** Vestal/Bassett

Pipe Size:	30" x 20"	**Block Wt:**	110 M#	**Thd Loss:**	0.00 in	**PBTD:**	179.00 m
Weight:	457ppf, 310ppf & 129ppf			**MW:**	8.50 ppg	**End of Pipe:**	179.00 m
Grade:	X52 & X56			**BF:**	0.870	**Rat Hole:**	0.00 m
Connection:	HD90 & SF60						

Joint Count		Joint #	Joint Length (m)	Joint In/Out	Total Length (m)	Depth of Top Of Joint (m)	Est. String Weight (M#)	Comments
						179.00		**Shoe Depth**
1		**Shoe**	0.64	**IN**	0.64	178.36		
		20 " pup	7.66	**IN**	8.30	170.70		
		XO Jt	1.00	**IN**	9.30	169.70		M/U Torque
		30" pup	1.88	**IN**	11.18	167.82		50k
2		**30"**	11.68	**IN**	22.86	156.14		
3		**XO Jt**	11.49	**IN**	34.35	144.65		
4		**WH JT.**	11.96	**IN**	46.31	132.69		Top of 30" WH
		RT	0.45	**IN**	46.76	132.24		**Above WH**
		XO	0.61	**IN**	47.37	131.63		XO
		1	29.05	**IN**	76.42	102.58		5" DP
		2	29.03	**IN**	105.45	73.55		"
		3	29.01	**IN**	134.46	44.54		"
		4	28.92	**IN**	163.38	15.62		"
		pup jt	3.06	**IN**	166.44	12.56		"
		Cmt Std	19.22	**IN**	185.66	-6.66		"

File Location: Scallop-1_30in_Final_Casing_Tally.xls
Tab Reference: 30in Final Casing Tally

ExxonMobil

13-3/8" Final Casing Tally

WELL: Scallop #1 **DATE:** 05-Feb-03
RIG: Transocean 702 **By:** Vestal/Bassett

Pipe Size: 20" x 13-3/8" **Block Wt:** 110 M# **Thd Loss:** 0.00 in **PBTD:** 900.81 m
Weight: 203ppf, 72ppf & 68ppf **MW:** 12.00 ppg **End of Pipe:** 900.81 m
Grade: X56 & L80 **BF:** 0.817 **Rat Hole:** 15.00 m
Connection: Weld & BTC

Joint Count		Joint #	Joint Length (m)	Joint In/Out	Total Length (m)	Depth of Top Of Joint (m)	Est. String Weight (M#)	Comments
						900.81		**Shoe Depth**
		Shoe B	0.55	IN	0.55	900.26		
1		**Shoe Jt**	12.40	IN	12.95	887.86		x2 Centralisers
2		**Inter A**	12.72	IN	25.67	875.14		x2 Centralisers
		Float Collar	0.54	IN	26.21	874.60		x2 Centralisers
3		**FC Jt**	12.68	IN	38.89	861.92		x2 Centralisers
4		**67**	12.81	IN	51.70	849.11		x2 Centralisers
5		**66**	12.85	IN	64.55	836.26		x2 Centralisers
6		**65**	12.85	IN	77.40	823.41		x2 Centralisers
7		**64**	12.85	IN	90.25	810.56		x2 Centralisers
8		**63**	12.85	IN	103.10	797.71		x2 Centralisers
9		**62**	12.80	IN	115.90	784.91		x2 Centralisers
10		**61**	12.71	IN	128.61	772.20		x2 Centralisers
11		**60**	12.82	IN	141.43	759.38		x2 Cent. **Ent WH**
12		**59**	12.86	IN	154.29	746.52		
13		**58**	12.72	IN	167.01	733.80		
14		**57**	12.68	IN	179.69	721.12		**Open Hole**
15		**56**	12.77	IN	192.46	708.35		M/U Torque
16		**55**	12.81	IN	205.27	695.54		8,950 ft/lb
17		**54**	12.70	IN	217.97	682.84		15,200 ft/lb
18		**53**	12.05	IN	230.02	670.79		
19		**52**	12.05	IN	242.07	658.74		
20		**51**	12.05	IN	254.12	646.69		
21		**50**	12.05	IN	266.17	634.64		
22		**49**	12.05	IN	278.22	622.59		
23		**48**	12.72	IN	290.94	609.87		
24		**47**	12.05	IN	302.99	597.82		
25		**46**	12.02	IN	315.01	585.80		
26		**45**	11.92	IN	326.93	573.88		
27		**44**	12.72	IN	339.65	561.16		
28		**43**	12.06	IN	351.71	549.10		
29		**42**	12.05	IN	363.76	537.05		
30		**41**	12.85	IN	376.61	524.20		
31		**40**	12.70	IN	389.31	511.50		
32		**39**	12.87	IN	402.18	498.63		
33		**38**	12.42	IN	414.60	486.21		
34		**37**	12.80	IN	427.40	473.41		
35		**36**	12.84	IN	440.24	460.57		
36		**35**	12.79	IN	453.03	447.78		
37		**34**	12.78	IN	465.81	435.00		
38		**33**	12.64	IN	478.45	422.36		
39		**32**	12.84	IN	491.29	409.52		
40		**31**	12.05	IN	503.34	397.47		
41		**30**	12.83	IN	516.17	384.64		
42		**29**	12.05	IN	528.22	372.59		

ExxonMobil

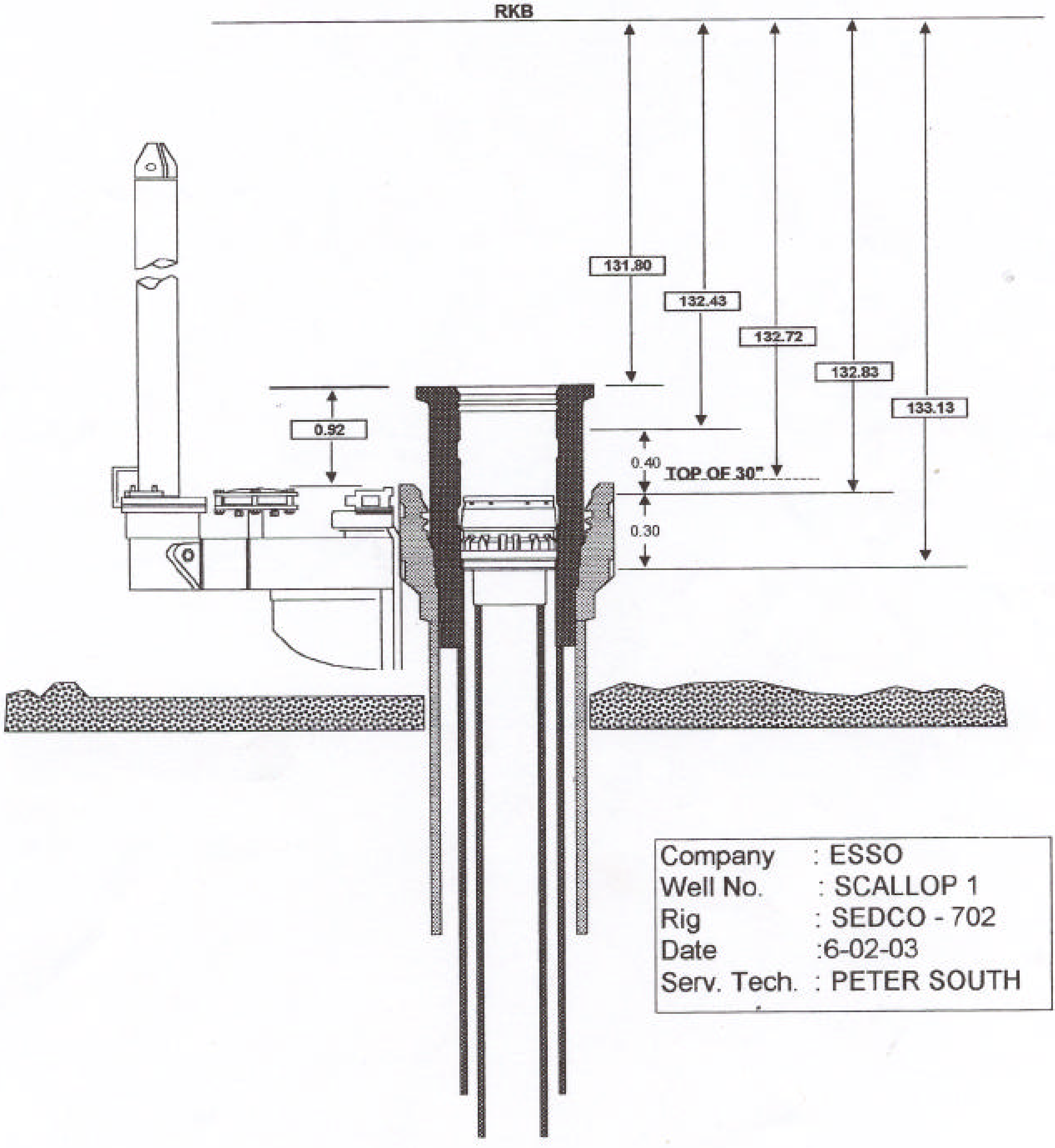
13-3/8" Final Casing Tally

Joint Count		Joint #	Joint Length (m)	Joint In/Out	Total Length (m)	Depth of Top Of Joint (m)	Est. String Weight (M#)	Comments
43		**28**	12.82	IN	541.04	359.77		
44		**27**	12.80	IN	553.84	346.97		
45		**26**	12.77	IN	566.61	334.20		
46		**25**	12.64	IN	579.25	321.56		
47		**24**	12.79	IN	592.04	308.77		
48		**23**	12.83	IN	604.87	295.94		
49		**22**	12.82	IN	617.69	283.12		
50		**21**	12.83	IN	630.52	270.29		
51		**20**	12.67	IN	643.19	257.62		
52		**19**	12.78	IN	655.97	244.84		
53		**18**	12.78	IN	668.75	232.06		
54		**17**	12.82	IN	681.57	219.24		
55		**16**	12.74	IN	694.31	206.50		
56		**15**	12.82	IN	707.13	193.68		
57		**14**	12.64	IN	719.77	181.04		
58		**13**	12.70	IN	732.47	168.34		
59		**12**	12.82	IN	745.29	155.52		
60		**11**	12.82	OUT	745.29	155.52		
61		**10**	12.83	OUT	745.29	155.52		
62		**9**	12.73	OUT	745.29	155.52		
63		**8**	12.83	OUT	745.29	155.52		
64		**7**	12.77	OUT	745.29	155.52		
65		**6**	12.80	OUT	745.29	155.52		
66		**5**	12.79	OUT	745.29	155.52		
67		**4**	12.71	OUT	745.29	155.52		
68		**3**	12.81	OUT	745.29	155.52		
69		**2**	12.72	OUT	745.29	155.52		
70		**1**	12.72	OUT	745.29	155.52		
71		**No-X Cpl Jt**	12.85	IN	758.14	142.67		No-Cross Coupling Jt
72		**WH Extension**	9.90	IN	768.04	132.77		Xover Jt
73		**Wellhead**	0.92	IN	768.96	131.85		**Top of WH**
		Run Tool	0.45	IN	769.41	131.40		
		Xover	0.85	IN	770.26	130.55		
		Pup	4.60	IN	774.86	125.95		
		1	28.84	IN	803.70	97.11		
		2	29.00	IN	832.70	68.11		
		3	29.05	IN	861.75	39.06		
		4	28.83	IN	890.58	10.23		
		Cmt Std	**18.62**	IN	909.20	-8.39		
			TIW					
			Side Entry					
			Jt					

DRIL-QUIP AUSTRALIA

Copy of well specific stack-up

18 3/4" WELLHEAD=	131.80
RKB-30" WELL HEAD=	132.72
TOP OF HANGER IN THE 1ST POSSITION	132.83
PRIMARY SHOULDER=	133.13

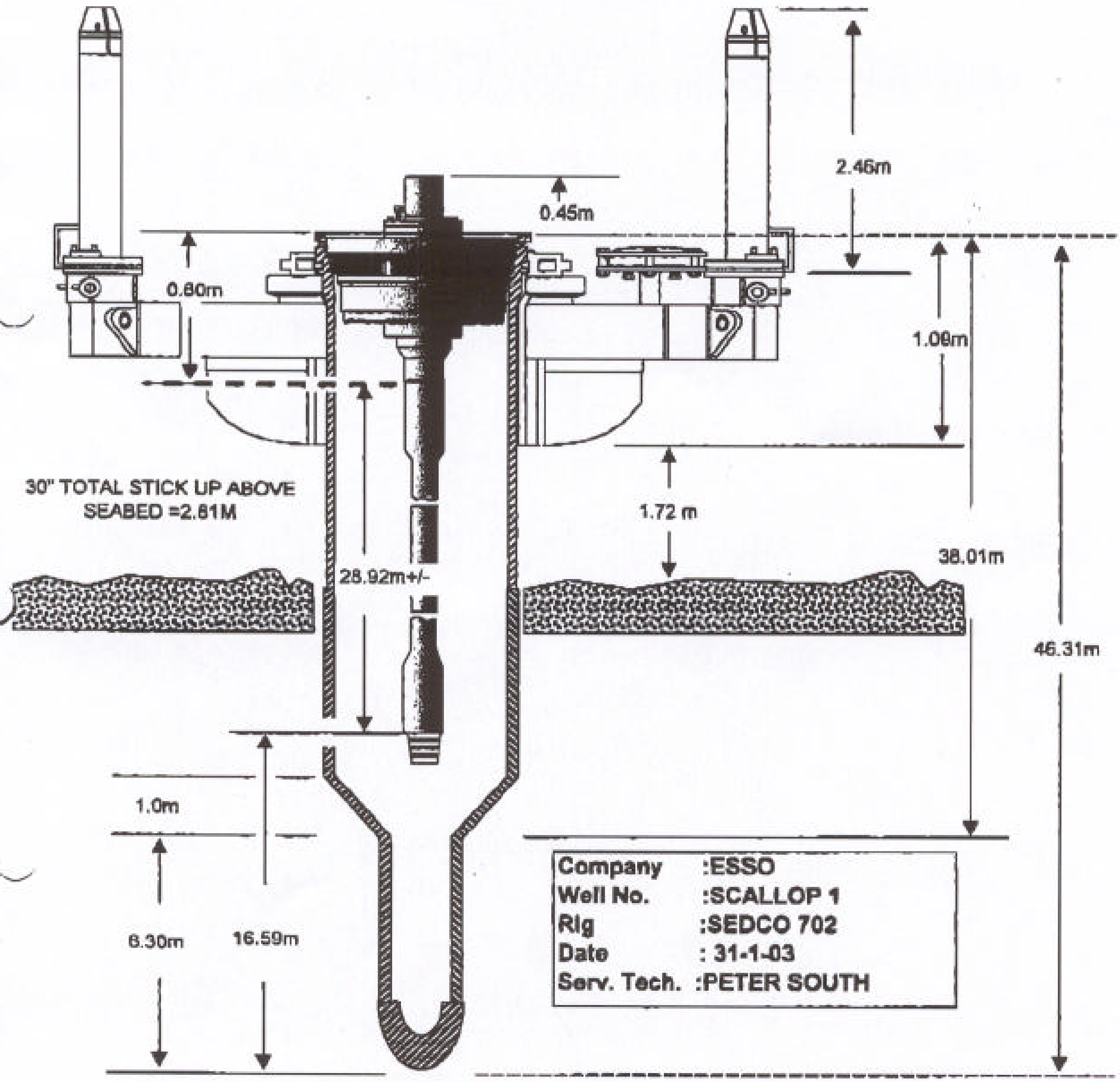


Company : ESSO
Well No. : SCALLOP 1
Rig : SEDCO - 702
Date :6-02-03
Serv. Tech. : PETER SOUTH

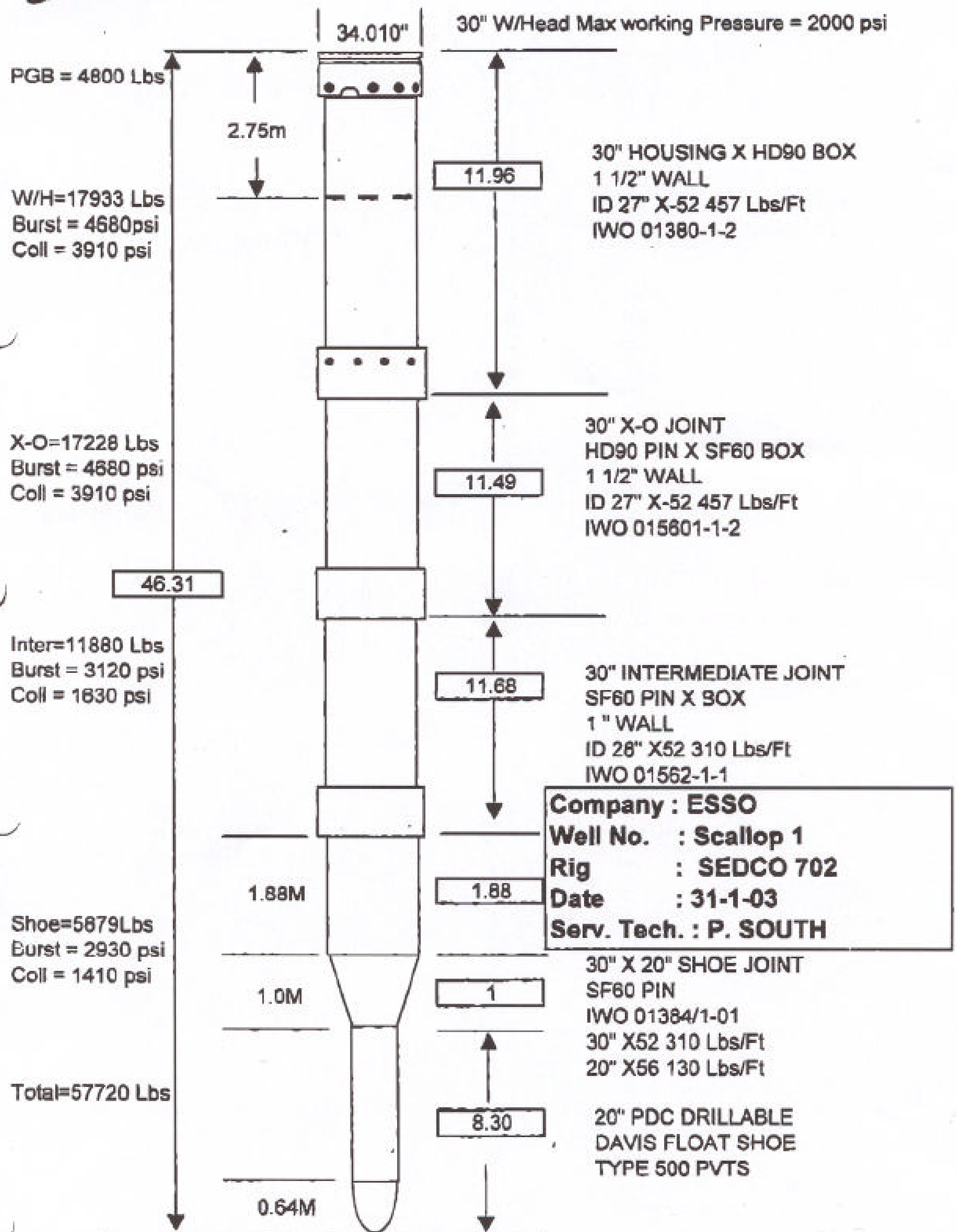
51 422769

Dril-Quip Australia

PGB with 30" R/Tool & Stinger



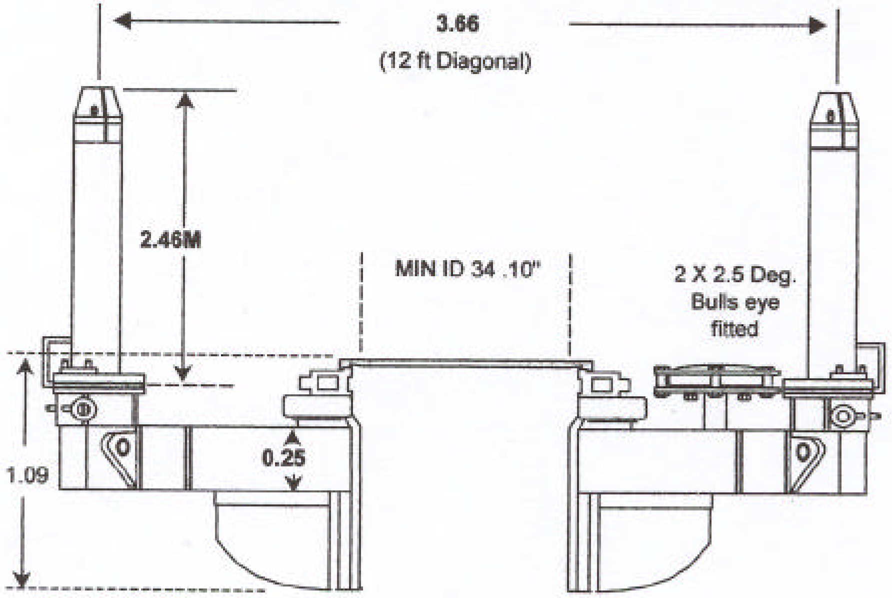
DRIL-QUIP AUSTRALIA



Company : ESSO
Well No. : Scallop 1
Rig : SEDCO 702
Date : 31-1-03
Serv. Tech. : P. SOUTH

Dril-Quip Australia

PERMENENT GUIDE BASE / RETRIEVABLE



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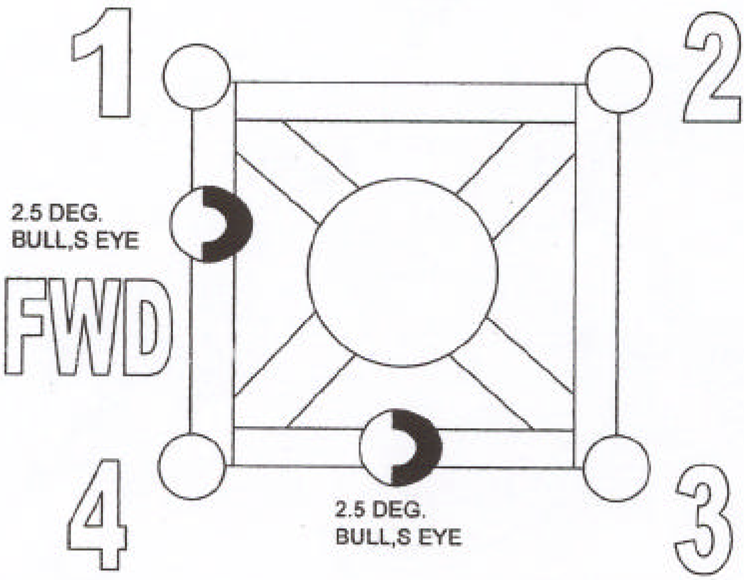
S/NO	IWO 4345-01



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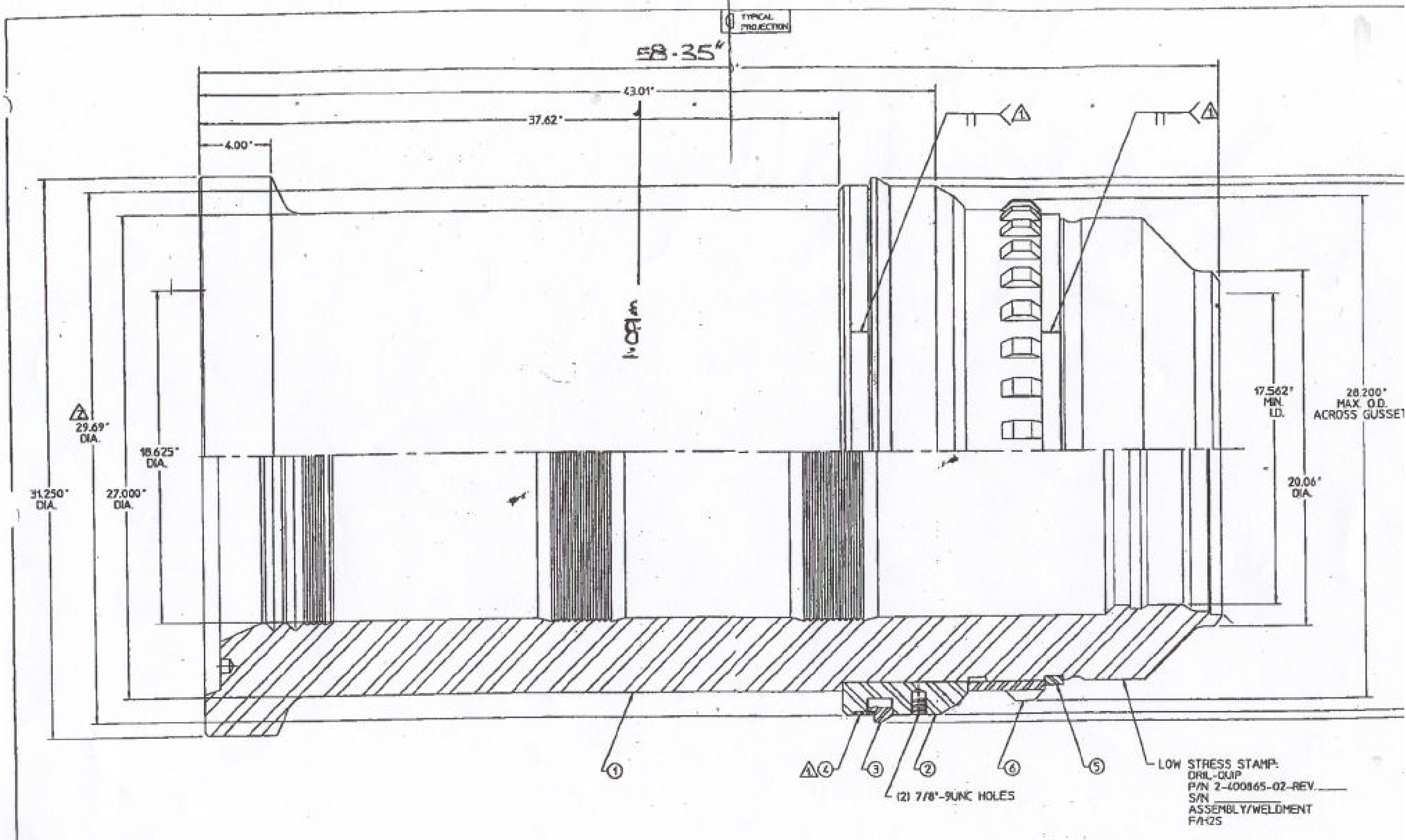
Well No. : SCALLOP 1
Rig : SEDCO 702
Date : 31-1-03
Serv. Tech. : PETER SOUTH



NOTES:

2. AFTER WELDING, O.D. SHOULD NOT EXCEED DIMENSION SHOWN.

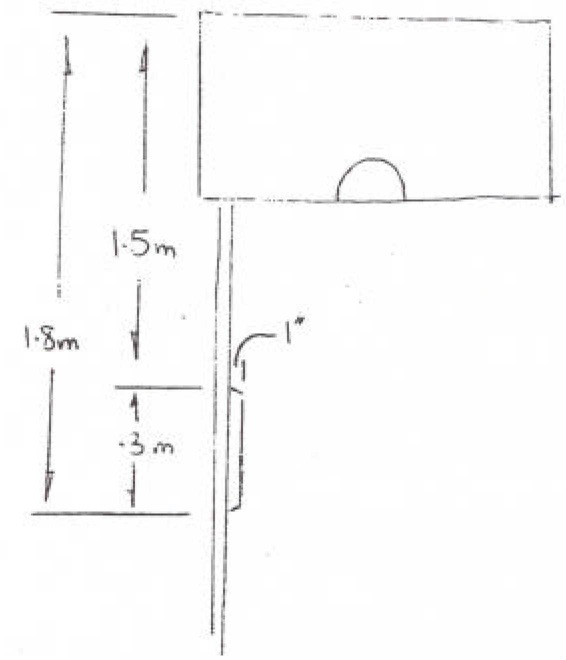
1. INSTALL ITEMS 4 & 5 AS SHOWN. REMOVE EXCESS LENGTH AND WELD EN[illegible] TOGETHER PER WPS 1010 & 1011.

REV.	DATE	CHKD.	APP.	REL.

SUBSEA WELLHEAD SYSTEMS
18-3/4" 10,000 PSI WELLHEAD HOUSING
CONNECTOR (SPECIAL, W/PSL-3 HOUSING),
BUTTWELD PREP DOWN, F/USE W/30" 53-100
API 17D, U, DD, PSL-3,
ASSEMBLY/WELDMENT

DRIL-QUIP
DWG SIZE: D
PART 2-40

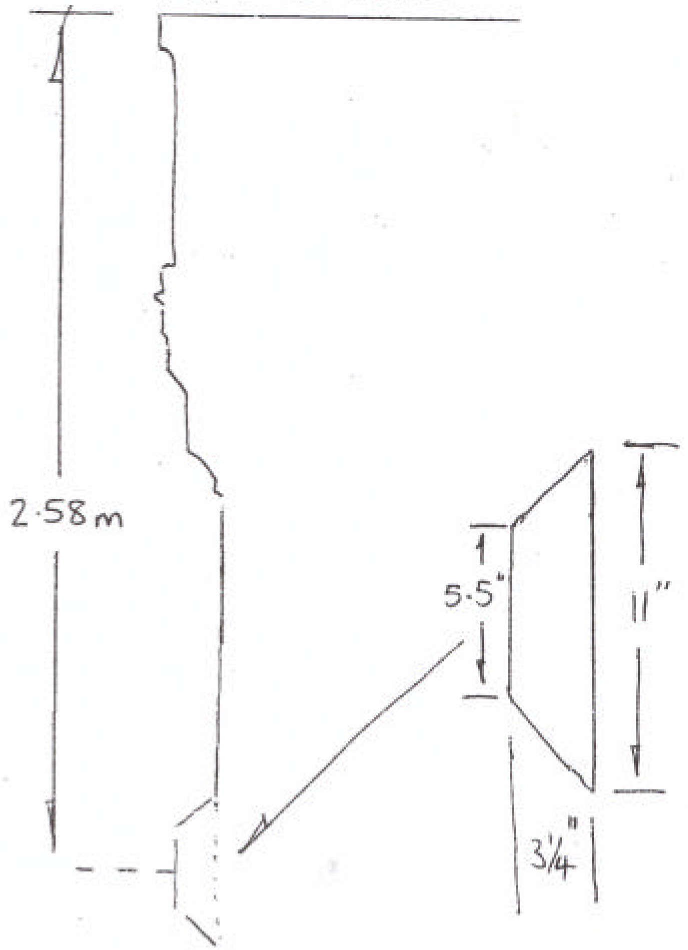
30" W-HEAD

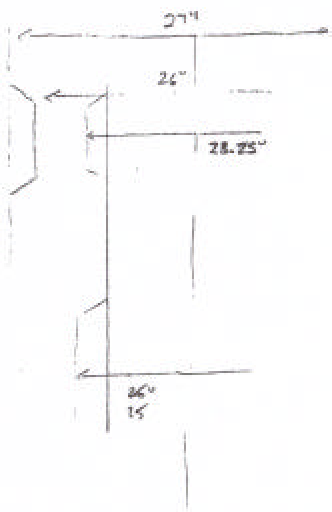


RUDOLPH

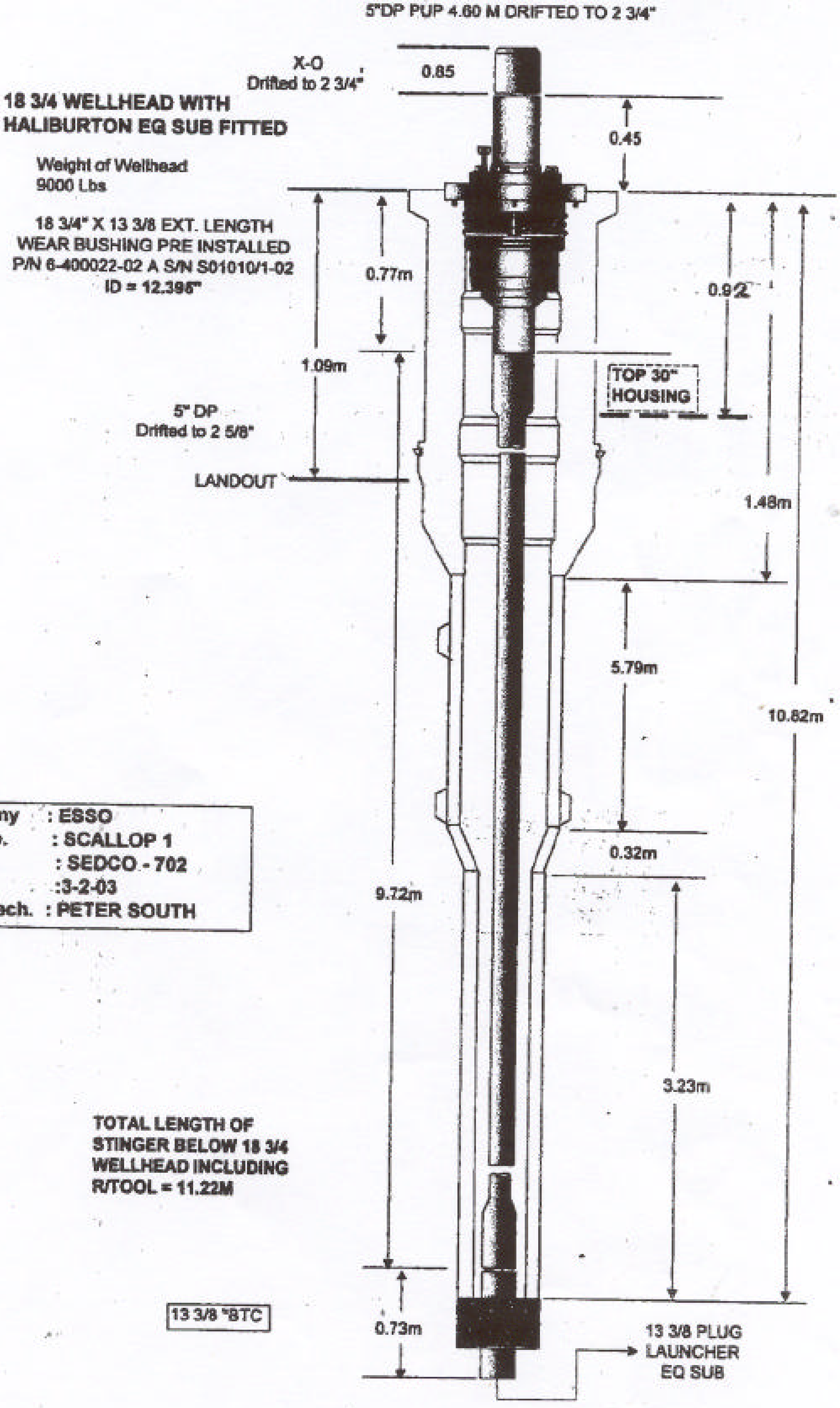
HERE ARE THE DIMENSIONS OF OUR ANTI ROTATION FIN'S ON THE 30" & 18 3/4" WELL HEAD.

18 3/4" W-HEAD





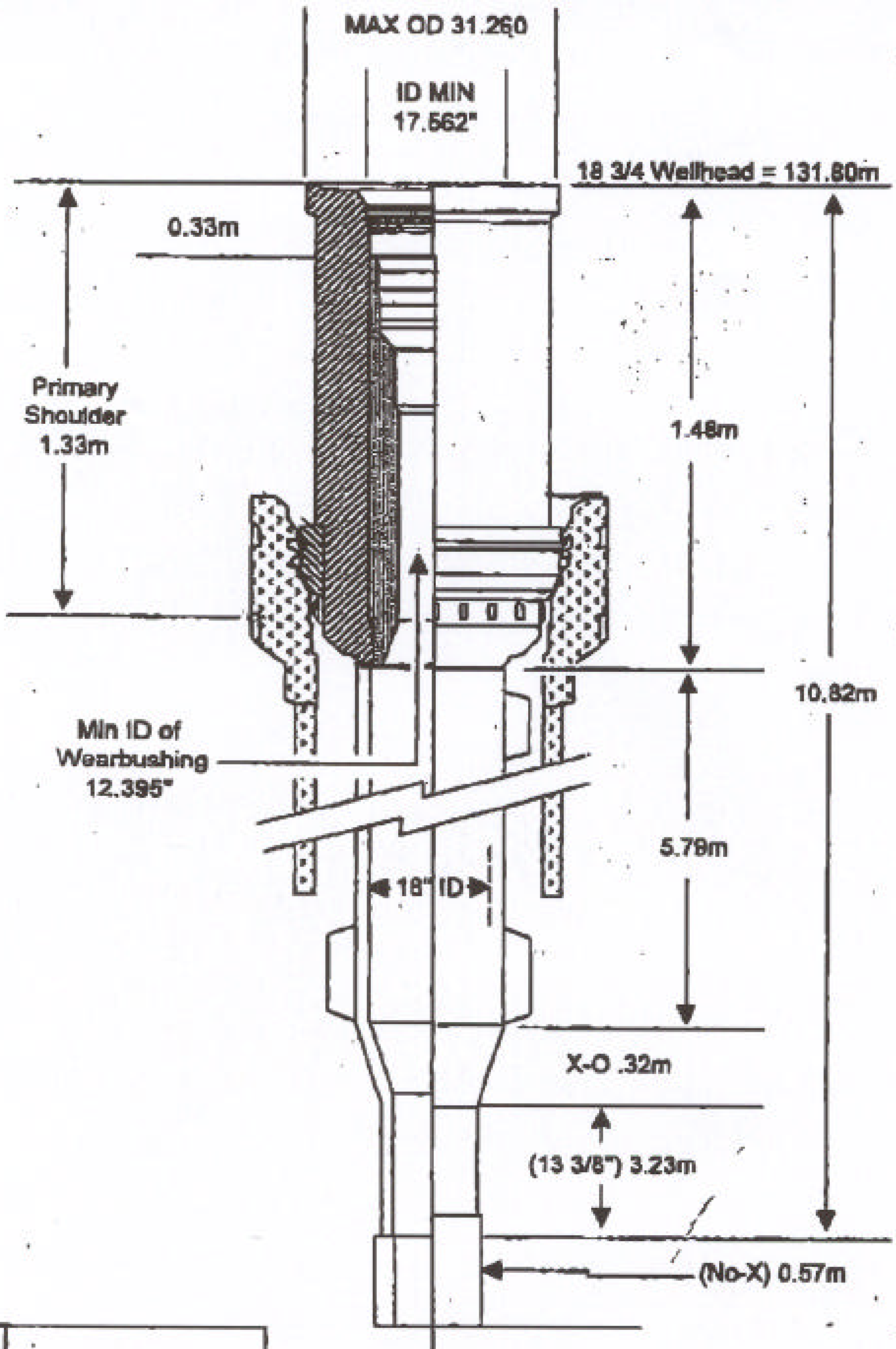
DRIL-QUIP AUSTRALIA



Company	: ESSO
Well No.	: SCALLOP 1
Rig	: SEDCO - 702
Date	:3-2-03
Serv. Tech.	: PETER SOUTH

DRIL-QUIP Dril-Quip Australia	Customer:	ESSO	Well:	Scallop 1
	Rig:	Sedco 702	Date:	February 3, 2003

ID / OD and Length of Wellhead



Rep:	P.SOUTH

EMLRFD CASING ANALYSIS REPORT
(For ExxonMobil Use Only)

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PAL/CTP Summary for Current Casing String
Casing Type: Cond

PAL Report

Sect	From (m)	To (m)	OD (in)	Weight (lbs/ft)	Grade	PAL	Load Cond	Temp (°C)	H2S (psia)	PAL Table Values PAL1 (psi)	PAL2 (psi)	PAL3 (psi)

CTP Report

Sect.	Type	Plat. (in)	OS/Std	G/L	CTP	OD	CTP Values CTP1 (psi)	CTP2 (psi)	CTP3 (psi)

Wellbore Casing Summary

(m)

Type	From (m)	To (m)	Length (m)	OD (in)	Weight (lbs/ft)	ID (in)	Grade	Conn. Type

API Rating

OD (in)	Wt. (lbs/ft)	Grade	P.B. Tension (lbf)	P.B. Burst (psi)	P.B. Collapse (psi)	Conn. Type	Conn. Tension (lbf)

Tubular Weights

Type	Length (m)	OD (in)	Weight (lbs/ft)	Air Wt. (lbs)	Buoyed Wt. (lbs)

Setting Mud Weight

Cement

Top MD (m)	Bottom MD (m)	Type	Weight (ppg)

LRFD/RFD Analysis Summary Results

DCE	Load Combination	Max Load	@ Depth (m)	Max UF	@ Depth (m)

Safety Factor Analysis Summary

DCE	Load Combination	Max Load	@ Depth (m)	Min SF	@ Depth (m)

Detailed Analysis Results

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Real Tension (lbf)	P.B. Rating (lbf)	Conn. Rating (lbf)	P.B. S.F.	Conn. S.F.

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

RFD Pressure and Tension Summary, Cement Column Collapse

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Well Data

Pore Pressure Curve

MD (m)	Pore Pressure (ppg)	Frac Pressure (ppg)

Survey

MD (m)	TVD (m)

Temperature Profiles

MD (m)	Temp (°C)

MD (m)	Temp (°C)

MD (m)	Temp (°C)

Casing Wear

MD (m)	Casing Wear % of Wall Thickness

EMLRFD CASING ANALYSIS REPORT
(For ExxonMobil Use Only)

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PAL/CTP Summary for Current Casing String
Casing Type: Surface

PAL Report

Sect	From (m)	To (m)	OD (in)	Weight (lbs/ft)	Grade	PAL	Load Cond	Temp (°C)	H2S (psia)	PAL Table Values PAL1 (psi)	PAL2 (psi)	PAL3 (psi)

CTP Report

Sect.	Type	Plat. (in)	OS/Std	G/L	CTP	OD	CTP Values CTP1 (psi)	CTP2 (psi)	CTP3 (psi)

Wellbore Casing Summary

(m)

Type	From (m)	To (m)	Length (m)	OD (in)	Weight (lbs/ft)	ID (in)	Grade	Conn. Type

API Rating

OD (in)	Wt. (lbs/ft)	Grade	P.B. Tension (lbf)	P.B. Burst (psi)	P.B. Collapse (psi)	Conn. Type	Conn. Tension (lbf)

Tubular Weights

Type	Length (m)	OD (in)	Weight (lbs/ft)	Air Wt. (lbs)	Buoyed Wt. (lbs)

Setting Mud Weight

Cement

Top MD (m)	Bottom MD (m)	Type	Weight (ppg)

LRFD/RFD Analysis Summary Results

DCE	Load Combination	Max Load	@ Depth (m)	Max UF	@ Depth (m)

Safety Factor Analysis Summary

DCE	Load Combination	Max Load	@ Depth (m)	Min SF	@ Depth (m)

Detailed Analysis Results

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Kick

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Kick

Csg. Sect. No.	Depth (m)	Int. * Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Real Tension (lbf)	P.B. Rating (lbf)	Conn. Rating (lbf)	P.B. S.F.	Conn. S.F.

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (lbf)	Unf. Resistance (lbf)	Factored Load (lbf)	Factored Resistance (lbf)	UF

LRFD Pressure and Tension Summary, Green Cmt Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Green Cmt Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

RFD Pressure and Tension Summary, Cement Column Collapse

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Well Data

Pore Pressure Curve

MD (m)	Pore Pressure (ppg)	Frac Pressure (ppg)

Survey

MD (m)	TVD (m)

Temperature Profiles

MD (m)	Temp (°C)

MD (m)	Temp (°C)

MD (m)	Temp (°C)

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PAL/CTP Summary for Current Casing String
Casing Type: Prod

PAL Report

Sect	From (m)	To (m)	OD (in)	Weight (lbs/ft)	Grade	PAL	Load Cond	Temp (°C)	H2S (psia)	PAL Table Values PAL1 (psi)	PAL2 (psi)	PAL3 (psi)

CTP Report

Sect.	Type	Plat. (in)	OS/Std	G/L	CTP	OD	CTP Values CTP1 (psi)	CTP2 (psi)	CTP3 (psi)

Wellbore Casing Summary

(m)

Type	From (m)	To (m)	Length (m)	OD (in)	Weight (lbs/ft)	ID (in)	Grade	Conn. Type

API Rating

OD (in)	Wt. (lbs/ft)	Grade	P.B. Tension (lbf)	P.B. Burst (psi)	P.B. Collapse (psi)	Conn. Type	Conn. Tension (lbf)

Tubular Weights

Type	Length (m)	OD (in)	Weight (lbs/ft)	Air Wt. (lbs)	Buoyed Wt. (lbs)

Setting Mud Weight

Cement

Top MD (m)	Bottom MD (m)	Type	Weight (ppg)

Packer Information

LRFD/RFD Analysis Summary Results

DCE	Load Combination	Max Load	@ Depth (m)	Max UF	@ Depth (m)

Safety Factor Analysis Summary

DCE	Load Combination	Max Load	@ Depth (m)	Min SF	@ Depth (m)

Detailed Analysis Results

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Tubing Leak

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Tubing Leak

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Thru Tubing Stimulation

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)	Temp (°C)

No.	(m)	(psi)	(psi)	(lbf)	(lbf)	(°C)

vonMises Design Check, Thru Tubing Stimulation

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Casing Frac/Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)	Temp (°C)

vonMises Design Check, Casing Frac/Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Real Tension (lbf)	P.B. Rating (lbf)	Conn. Rating (lbf)	P.B. S.F.	Conn. S.F.

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (lbf)	Unf. Resistance (lbf)	Factored Load (lbf)	Factored Resistance (lbf)	UF

LRFD Pressure and Tension Summary, Green Cmt Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Green Cmt Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Pressure and Tension Summary, Buckling Check

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

RFD Pressure and Tension Summary, Evacuation Collapse

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Well Data

Pore Pressure Curve

MD (m)	Pore Pressure (ppg)	Frac Pressure (ppg)

Survey

MD (m)	TVD (m)

Temperature Profiles

MD (m)	Temp (°C)

MD (m)	Temp (°C)

MD (m)	Temp (°C)

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PAL/CTP Summary for Current Casing String
Casing Type: Prod

PAL Report

Sect	From (m)	To (m)	OD (in)	Weight (lbs/ft)	Grade	PAL	Load Cond	Temp (°C)	H2S (psia)	PAL Table Values PAL1 (psi)	PAL2 (psi)	PAL3 (psi)

CTP Report

Sect.	Type	Plat. (in)	OS/Std	G/L	CTP	OD	CTP Values CTP1 (psi)	CTP2 (psi)	CTP3 (psi)

Wellbore Casing Summary

(m)

Type	From (m)	To (m)	Length (m)	OD (in)	Weight (lbs/ft)	ID (in)	Grade	Conn. Type

API Rating

OD (in)	Wt. (lbs/ft)	Grade	P.B. Tension (lbf)	P.B. Burst (psi)	P.B. Collapse (psi)	Conn. Type	Conn. Tension (lbf)

Tubular Weights

Type	Length (m)	OD (in)	Weight (lbs/ft)	Air Wt. (lbs)	Buoyed Wt. (lbs)

Setting Mud Weight

Cement

Top MD (m)	Bottom MD (m)	Type	Weight (ppg)

Packer Information

LRFD/RFD Analysis Summary Results

DCE	Load Combination	Max Load	@ Depth (m)	Max UF	@ Depth (m)

Safety Factor Analysis Summary

DCE	Load Combination	Max Load	@ Depth (m)	Min SF	@ Depth (m)

Detailed Analysis Results

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Tubing Leak

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Tubing Leak

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Thru Tubing Stimulation

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)	Temp (°C)

vonMises Design Check, Thru Tubing Stimulation

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (psi)	Unf. * Resistance (psi)	Factored Load (psi)	Factored Resistance (psi)	UF

LRFD Pressure and Tension Summary, Casing Frac/Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)	Temp (°C)

vonMises Design Check, Casing Frac/Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Casing Real P.B Conn P.B Conn

Casing Section No.	Depth (m)	Real Tension (lbf)	P.B. Rating (lbf)	Conn. Rating (lbf)	P.B. S.F.	Conn. S.F.

Design Check Equation:
Load Combination:

Casing Section No.	Depth (m)	Lf	Rf	Unf. Load (lbf)	Unf. Resistance (lbf)	Factored Load (lbf)	Factored Resistance (lbf)	UF

LRFD Pressure and Tension Summary, Green Cmt Pressure Test

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

vonMises Design Check, Green Cmt Pressure Test

Csg. Sect. No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	VME Stress (psi)	Derated Strength (psi)	Derated Triaxial S.F.	Geo. Temp (°C)

Design Check Equation:
Load Combination:

Pressure and Tension Summary, Buckling Check

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Design Check Equation:
Load Combination:

Casing Section	Depth	Lf	Rf	Unf. Load	Unf. Resistance	Factored Load	Factored Resistance	UF

No.	(m)	(psi)	(psi)	(psi)	(psi)

RFD Pressure and Tension Summary, Evacuation Collapse

Casing Section No.	Depth (m)	Int. Press (psi)	Ext. Press (psi)	Real Tension (lbf)	Eff. Tension (lbf)

Well Data

Pore Pressure Curve

MD (m)	Pore Pressure (ppg)	Frac Pressure (ppg)

Survey

MD (m)	TVD (m)

Temperature Profiles

MD (m)	Temp (°C)

MD (m)	Temp (°C)

MD (m)	Temp (°C)

SCALLOP-1 - CEMENTING SUMMARY

		30" Cond	**13-3/8" Surface Lead**	**13-3/8" Surface Tail**	**P&A Plug 1A**	**P&A Plug 1B**	**P&A Plug 1C**	**P&A Plug 1D**	**P&A Plug 1E**	**P&A Plug 2A**	**P&A Plug 2B**	**P&A Plug 3**
Hole Depth	[mMD]	179.0	917.0	917.0	3,174.0	3,174.0	3,174.0	3,174.0	3,174.0	3,174.0	3,174.0	3,174.0
Casing Setting Depth	[mMD]	179.0	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8
Hole Size	[in]	36.0	17.5	17.5	12.25	12.25	12.25	12.25	12.25	12.25	12.415	12.415
Open Hole Excess	[%]	250	100	100	0	0	0	0	0	0	0	0
Base of Cement	[mMD]	179.0	767.0	917.0	3,174	3,014	2,857	2,710	2,560	930	895	200
Top of Cement	[mMD]	135.5	135.5	767.0	3,014	2,857	2,710	2,560	2,403	895	850	155
Cement Interval	[m]	43.5	631.5	150.0	160.0	157.0	147.0	150.0	157.0	35.0	45.0	45.0
Tagged Top of Cement	[mMD]	--	--	--	--	--	--	--	2,403.7	--	--	--
Tagged Weight on Cement	[klbs]	--	--	--	--	--	--	--	15.0	--	--	--
Tagged Top of EZSV	[mMD]	--	--	--	--	--	--	--	--	--	895	200
Tagged Weight on EZSV	[klbs]	--	--	--	--	--	--	--	--	--	30.0	10.0
Pressure Test Cement Plug/ EZSV	[psi]	--	--	--	--	--	--	--	--	--	1,000	1,000
Cement Type		Cl 'G'	Cl 'G'	Cl 'G'	HTB	HTB	HTB	HTB	HTB	Cl 'G'	Cl 'G'	Cl 'G'
Density	[ppg]	15.9	12.5	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.9
Yield	[ft^3/sx]	1.17	2.21	1.16	1.13	1.13	1.13	1.13	1.13	1.16	1.16	1.18
Total Mixing Fluid	[gal/ sack]	5.15	12.99	5.15	4.75	4.75	4.75	4.75	4.74	5.15	5.15	5.16
Mix Water Type		SW	SW	DW	DW	DW	DW	DW	DW	DW	DW	SW
Mix Water	[gal/ sack]	5.15	12.54	5.15	4.35	4.35	4.35	4.35	4.35	5.15	5.15	5.16
Defoamer (NF-5)	[gal/10 bbls]	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
(Econolite Liquid)	[gal/10 bbls]	--	14.6	--	--	--	--	--	--	--	--	--
(HR-6L)	[gal/10 bbls]	--	2.0	--	--	--	--	--	--	--	--	--
(Halad-413L)	[gal/10 bbls]	--	--	--	32.0	32.0	32.0	32.0	32.0	--	--	--
(SCR-100L)	[gal/10 bbls]	--	--	--	3.0	3.0	3.0	3.0	1.0	--	--	--
Calcium Chloride	[% BWOC]	1.0	--	--	--	--	--	--	--	--	--	2.0

ExxonMobil

Cement Fluid Worksheet

Well Name: Scallop-1

Well ID	Start Timestamp	End Timestamp	Job Type	Plug Reference	Casing Outside Diameter	Casing Setting Depth	Fluid Type	Density	Volume	Average Pump Rate	Maximum Pump Pressure	Composition	Cement Class	Amount Used	Yield	Water Requirement
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage		30.000	179.00	Flush	8.58	20.0	6.0	400	Seawater				
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage	30 in	30.000	179.00	Tail	15.90	240.0	6.0	400	Class G. 1% BWOC CaCl2, 0.003 gal/sk NF-5	G	1149	1.17	5.15
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage		30.000	179.00	Displacement	8.58	35.0	6.0	200	Seawater				
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage		13.375	900.81	Flush	8.58	50.0	6.6	170	10 bbls SW w/Floricine, 40 bbls SW				
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage		13.375	900.81	Lead	12.50	535.0	6.1	370	0.0452 gal/sk Econolite Liquid, 0.062 gal/sk HR-6L, 0.003 gal/sx NF-5	G	1358	2.21	12.54
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage	13-3/8 in	13.375	900.81	Tail	15.80	150.0	5.1	500	0.003 gal/sx NF-5	G	726	1.16	5.15
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage		13.375	900.81	Postflush	8.60	25.0	4.0	80	Seawater				
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage		13.375	900.81	Displacement	8.60	340.0	10.0	650	Seawater				
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon		13.375	900.81	Preflush	8.33	21.1	1.7	340	Drillwater				
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon	Plug #1A	13.375	900.81	Tail	15.80	75.4	4.9	760	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L	G	375	1.13	4.35
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon		13.375	900.81	Postflush	8.33	1.3	2.0	100	Drillwater				
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon		13.375	900.81	Displacement	10.40	171.1	5.3	650	active mud				
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon		13.375	900.81	Preflush	8.33	21.6	1.8	350	Drillwater				
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon	Plug #1B	13.375	900.81	Tail	15.80	75.3	5.1	790	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L	G	374	1.13	4.35
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon		13.375	900.81	Postflush	8.33	1.3	2.0	70	Drillwater				
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon		13.375	900.81	Displacement	10.40	159.2	5.3	670	active mud				
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon		13.375	900.81	Preflush	8.33	22.0	1.5	315	Drillwater				
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon	Plug #1C	13.375	900.81	Tail	15.80	73.3	5.2	851	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L	G	364	1.13	4.35
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon		13.375	900.81	Postflush	8.33	1.3	2.0	86	Drillwater				
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon		13.375	900.81	Displacement	10.40	149.1	5.4	626	active mud				
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon		13.375	900.81	Preflush	8.33	22.1	1.8	280	Drillwater				
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon	Plug #1D	13.375	900.81	Tail	15.80	74.1	5.3	820	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L	G	368	1.13	4.35
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon		13.375	900.81	Postflush	8.33	1.3	2.0	80	Drillwater				
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon		13.375	900.81	Displacement	10.40	140.1	6.2	580	active mud				
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon		13.375	900.81	Preflush	8.33	22.0	1.8	230	Drillwater				
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon	Plug #1E	13.375	900.81	Tail	15.80	75.0	6.0	940	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.011 gal/skSCR-100L	G	373	1.13	4.35
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon		13.375	900.81	Postflush	8.33	1.3	2.0	70	Drillwater				
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon		13.375	900.81	Displacement	10.30	130.2	6.3	500	active mud				
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon		13.375	900.81	Preflush	8.58	64.8	5.0	535	Seawater				
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon	Plug #2	13.375	900.81	Tail	15.80	50.0	5.0	480	Class G cmt, 0.003 gal/sk NF-5	G	242	1.16	5.15
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon		13.375	900.81	Postflush	8.58	1.5	2.0	480	Seawater				
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon		13.375	900.81	Displacement	10.30	30.1	6.3	480	active mud				
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon		13.375	900.81	Preflush	8.58	10.0	5.0	105	Seawater				
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon	Plug #3	13.375	900.81	Tail	15.90	24.0	5.0	240	Class G cmt, 0.003 gal/sk NF-5, 2% CaCl2 BWOC	G	115	1.18	5.16
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon		13.375	900.81	Displacement	8.58	9.0	2.5	40	Seawater				

ExxonMobil

Cement Fluid Worksheet

Well Name: Scallop-1

Well ID	Start Timestamp	End Timestamp	Job Type	Plug Reference	Mix Water Type	Thickening Time	12-Hour Compressive Strength	24-Hour Compressive Strength	Free Water Percentage	Fluid Loss	Rheometry Temperature	Plastic Viscosity	Yield Point
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage										
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage	30 in	Seawater	4:00:00	700	1200	0	0			
SCALLOP_1	02/02/03 23:00	02/02/03 23:59	Primary Single Stage										
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage										
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage		Seawater	4:09:00	40	158	0	0			
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage	13-3/8 in	Freshwater	2:21:00	2300	2700	0	0			
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage										
SCALLOP_1	05/02/03 19:00	05/02/03 22:45	Primary Single Stage										
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon										
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon	Plug #1A	Freshwater	2:27:00	2000	2300	0	0			
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon										
SCALLOP_1	27/02/03 14:00	27/02/03 15:45	Plug and Abandon								45	23	40
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon										
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon	Plug #1B	Freshwater	2:27:00	2000	2300	0	0			
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon										
SCALLOP_1	27/02/03 17:45	27/02/03 19:00	Plug and Abandon								45	23	40
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon										
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon	Plug #1C	Freshwater	2:27:00	2000	2300	0	0			
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon										
SCALLOP_1	27/02/03 21:00	27/02/03 22:30	Plug and Abandon								45	23	40
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon										
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon	Plug #1D	Freshwater	2:24:00	2000	2300	0	0			
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon										
SCALLOP_1	28/02/03 0:30	28/02/03 1:45	Plug and Abandon								45	23	40
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon										
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon	Plug #1E	Freshwater	2:24:00	1580	2670	0	72			
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon										
SCALLOP_1	28/02/03 3:45	28/02/03 5:00	Plug and Abandon								45	23	40
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon										
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon	Plug #2	Freshwater	2:30:00	2380	2700	4	0			
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon										
SCALLOP_1	01/03/03 3:00	01/03/03 4:00	Plug and Abandon								45	23	40
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon										
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon	Plug #3	Seawater	2:00:00	1050	2000	4	0			
SCALLOP_1	01/03/03 13:00	01/03/03 13:45	Plug and Abandon										

SCALLOP-1 - CEMENTING REPORT

CONDUCTOR/STRUCTURAL CASING CEMENTING

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================ Job Procedure ================================

================================== Post Job ==================================

============================ Remarks and Problems ============================

SURFACE CASING CEMENTING

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================ Job Procedure ================================

================================== Post Job ==================================

============================ Remarks and Problems ============================

OPEN HOLE PLUG & ABANDONMENT PLUG #1A

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================= Job Procedure =================================

==================================== Post Job ====================================

============================= Remarks and Problems =============================

OPEN HOLE PLUG & ABANDONMENT PLUG #1B

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================ Job Procedure ================================

================================== Post Job ==================================

============================ Remarks and Problems ============================

OPEN HOLE PLUG & ABANDONMENT PLUG #1C

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

=========================== Postflush and Displacement ===========================

================================= Job Procedure =================================

=================================== Post Job ===================================

============================= Remarks and Problems =============================

OPEN HOLE PLUG & ABANDONMENT PLUG #1D

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================= Postflush and Displacement =========================

================================= Job Procedure ================================

=================================== Post Job ===================================

============================= Remarks and Problems =============================

OPEN HOLE PLUG & ABANDONMENT PLUG #1E

================================== Mud Data ==================================

============================ Mud Flush and Spacer ============================

=============================== Cement Slurries ===============================

========================= Postflush and Displacement =========================

================================= Job Procedure ================================

=================================== Post Job ===================================

============================= Remarks and Problems =============================

OPEN HOLE & CASED HOLE PLUG & ABANDONMENT PLUG #2

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================ Job Procedure ================================

=================================== Post Job ===================================

============================= Remarks and Problems ==============================

CASED HOLE PLUG & ABANDONMENT PLUG #3

=================================== Mud Data ===================================

============================= Mud Flush and Spacer =============================

================================ Cement Slurries ================================

========================== Postflush and Displacement ==========================

================================= Job Procedure =================================

=================================== Post Job ===================================

============================= Remarks and Problems =============================

Esso Australia Pty Ltd
12 Riverside Quay
Southbank, VIC 3006

Scallop-1

Rig: Sedco-702
Offshore, Bass Strait

Date: March 2003

CEMENTING

END OF WELL REPORT

HALLIBURTON

HALLIBURTON

HALLIBURTON AUSTRALIA PTY LTD

90 Talinga Road, Cheltenham, Vic 3192 Tel: +61 3 9583 7522 Fax: +61 3 9583 7588

7-March-2003

Chris Meakin / Rudolf Furchtenicht
Esso
12, Riverside Quay,
Southbank,
Vic 3001

Dear Rudolf,

Subject: **Cementing Post Well Report**
Sedco-702: Scallop-1

Included for your review is a copy of the report from the Bass Strait well from January to February 2003 with the rig Sedco-702. Every effort has been made to make this report as comprehensive as possible.

The PWR details an operations summary of events, and reports from each casing, and plug cementation.

This exploration well was drilled with programmed 30" and 13 3/8" casings with the option of running 9 5/8" casing complete / suspend or Abandonment plugs. The post well report details the cement jobs for the 30", 13 3/8" casings and the Abandonment plugs. However, for future reference the 9 5/8" casing program is included.

I trust this PWR meets with the requirements of Esso Australia Ltd and provides sufficient detail as a reference for future work in that area.

On behalf of Halliburton we wish you good fortune on your future drilling programme and hope that Halliburton can provide future solutions to Esso Australia Ltd's needs.

Yours sincerely,

Jim Collins
Senior Technical Professional

Checked by:

Mr J. Collins

____

Esso Australia Ltd
12,Riverside Quay, Southbank, Vic 3001

Sedco-702: Scallop-1

Bass Strait

Post Well Report

Prepared for:
Chris Meakin / Rudolf Furchtenicht
7-March-2003
Version: 1

Submitted by:
Jim Collins
90 Talinga Road
Cheltenham
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HALLIBURTON

30” Conductor Casing

The 30” casing was set on the 2nd January in 36” OH at 179m MD 179m TVD. 20 bbls of sea water was pumped ahead of the cement to provide cement/mud separation. The 15.9 ppg tail slurry was mixed with seawater. The seawater displacement was pumped with the cement unit. Operations went well with the average pump rate at approximately 6bpm.

HS&E:

- The operation was carried out in a safe and careful manner with no health, safety, or environmental incidents.

Observations & Lessons Learnt:

- This was the first cement job with a Dowell unit, Dowell cementer and Halliburton Cementer, it must be noted that the Halliburton and Dowell reps worked well together.

13 3/8” Surface Casing

The 13 38” casing was set on the 7th February in 17 ½” OH at 915m MD / 915m TVD. 10 bbls of seawater with Dye was pumped and the lines were pressure tested to 3000psi. A further 40 bbls of seawater was pumped ahead of the cement to provide cement/mud separation. 535 bbls of lead slurry was pumped at 12.5ppg followed by 149 bbls of 15.8ppg tail slurry. The lead slurry was mixed with 14.6gal/10bbl MW of Econolite for extending and 2gal/10bbl MW of HR-6L (retarder) to achieve the required pump time. The dart was dropped to launch the top plug. The well was on vacuum and hence no dart shear was observed. The rig displaced the top plug but purposely under displaced so as not to risk a wet shoe. The unit was lined back up and flowed back to the displacement tank, 1.5 bbls bled back and the floats held.

HS&E:

- The operation was carried out in a safe and careful manner with no health, safety, or environmental incidents.

Observations & Lessons Learnt:

- The Opticem graphs in the appendix show that the well is on Vacuum, prior to and during the initial stages of the displacement. This is indicated in black on the Opticem graphs. From the following drill out information and successful casing pressure test it can be assumed that the plug launched on time, as it was tagged on top of the firm cement.

Cement tagged @ 843.6m soft contaminated
Plug tagged @ 849.6m - 90 minutes drill out as was spinning on hard cement, WOB 5000lbs, 64rpm, 700-1060psi pump pressure
Hard cement drill out to float collar - float tagged 22:15 Feb 7th, drilled out in 7 minutes
Shoe joint was 26 m - based on this we under displaced by approximately 12 bbl.

Abandonment Plugs

It was planned to set a total of seven abandonment plugs to isolate Scallop-1 well in the abandonment program.

From 27/02/03 until the 03/01/03 seven abandonment cement Plugs were set in the Scallop-1 well.

Balanced Plugs 1a-1d were set in 8 ½"open hole with 3 ½" Stinger run on 5" drill pipe. The plugs were between 71 bbls and 75 bbls each the equivalent of 137m in 8 ½" hole using 10% excess. The cement design used for these plugs was 15.8ppg HTB cement with SCR-100L to control thickening times and Halad-413L to control fluid loss and provide some rhelogical control. 25 bbls of water was used in front of each plug to provide some separation between the cement and the 10.2 ppg PHPA mud. These plugs were pumped to isolate the formation from 3174-2626m MD. The cement jobs went successfully with out any safety or mechanical incidents.

Balanced Plugs 1e was set in 8 ½"open hole with 3 ½" Stinger run on 5" drill pipe. The plug was between 75 bbls the equivalent of 137m long using 10% excess. The cement design used for this plug was 15.8ppg HTB cement with SCR-100L to control thickening times and Halad-413L to control fluid loss and provide some rhelogical control. Plug 1e had to be tagged in the open hole. Therefore, with the lower temperature at this depth and the short initial set time required, less SCR-100L was used to minimise WOC. This enabled just enough pump time and a short set time to 50 and 500psi. 25 bbls of water was used in front of the plug to provide some separation between the cement and the 10.2 ppg PHPA mud. Plug 1e was pumped to isolate the formation from 2626-2500m MD. The cement jobs went successfully with out any safety or mechanical incidents.

HS&E:

- The interval in which these plugs were set covered all hydrocarbon bearing zones by at least 30m.

An **EZSV** was then run into the 13 3/8" casing on wire line and set at 895m inside the 13 3/8" casing. The casing pressure tested to 5000psi. An injection test was then performed by stinging into the EZSV and pumping 40bbls at 480psi.

Plug 2 was set by running 3 ½" stinger on drill pipe. 42 bbls of Class G cement and no additives was mixed at 15.8ppg. Plug 2 was circulated to with in 12 bbls of the ESZV and the EZSV was stung into. 20bbls were then pumped through the EZSV, the stinger removed and 22 bbls pumped on top of the EZSV. The plug was displaced with mud and the stinger POOHed. No problems were encountered.

A **Second EZSV** was set in the 13 3/8" at 200m on wire line. A cement stinger was then run into the hole and a surface cement **Plug 7** was set upto 155m, equivalent of 22 bbls of cement. The cement job went successfully with out any safety or mechanical incidents.

HS&E:

- The operation was carried out in a safe and careful manner with no health, safety, or environmental incidents.

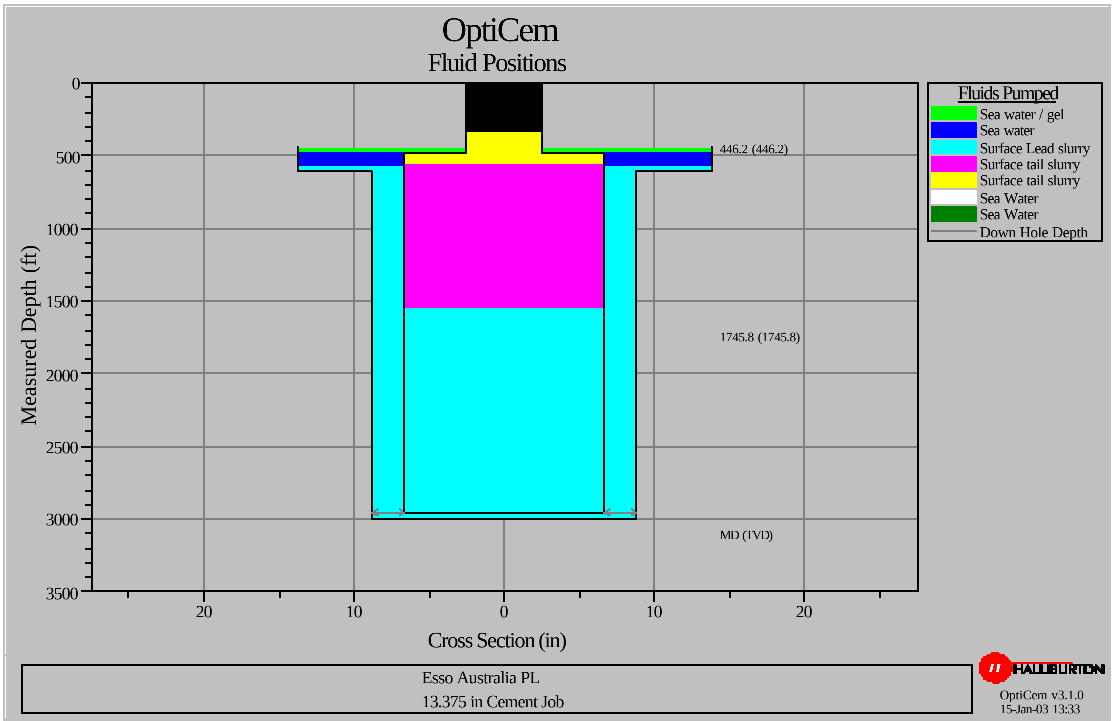
Observations & Lessons Learnt:

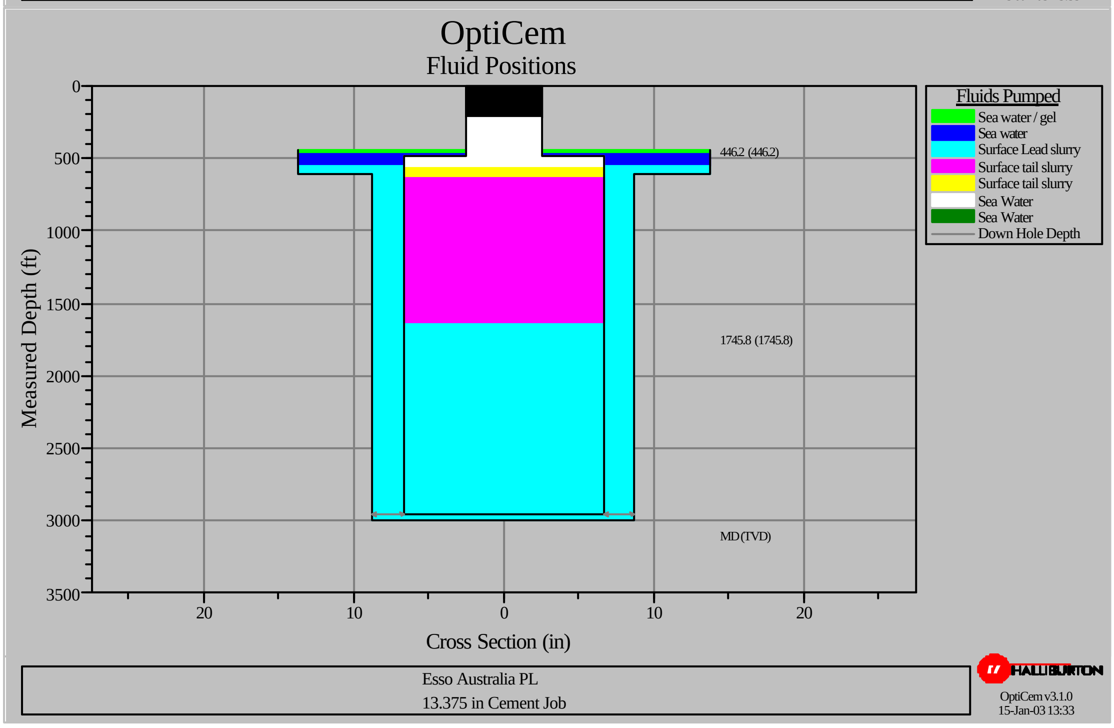
- The tubing release tool was ordered for this well, it was concluded before the job that it may not be a cost effective solution for this well. This will be assessed on future work, on a well by well base.
- It was noted that the slurry density of 15.8ppg was hard to achieve with the HTB slurry. When the slurry got to above 15.5ppg it was extremely thick in consistency and the batch mixer used struggled to shear the slurry. This could have been aided by the use of a dispersant. Currently the dispersant we are using is CFR-3L, this will be noted for future work.
- The likelihood of achieving good cement plugs can be greatly increased by following a number of the points contained in Halliburton's plug setting recommendations.

1. A 3½" cement stinger **was used** to minimise stripping of the plug when POOH.
2. A perforated mule shoe at the end of the cement stinger **can be used** to provide the desired changed in flow direction from downwards to outwards. This greatly reduces the chances of contamination by minimising intermixing of the cement, spacer, and mud.
3. Water Spacer **was** pumped ahead of the cement plug. However, it should be noted the use of a viscosified spacer greatly improves displacement and hole cleaned.
4. A Nodeco SSR cement head **can be used** for rotation of the cementing string. This has been shown to greatly enhance well fluid displacement when cement enters the annulus.

13 3/8" Opticem graphs:

These graphs indicate cement free fall inside the casing at the time of the dart launch, therefore the well is on vacuum.





Esso Australia Ltd
12 Riverside Quay
Southbank, 3006

Scallop

Bass Strait

Cementing Program

Revision 0

Prepared for: Chris Meakin

15/ 01 / 03

Prepared by:
Jim Collins

Halliburton Energy Services

90 Talinga Rd

Cheltenham, 3192

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HALLIBURTON

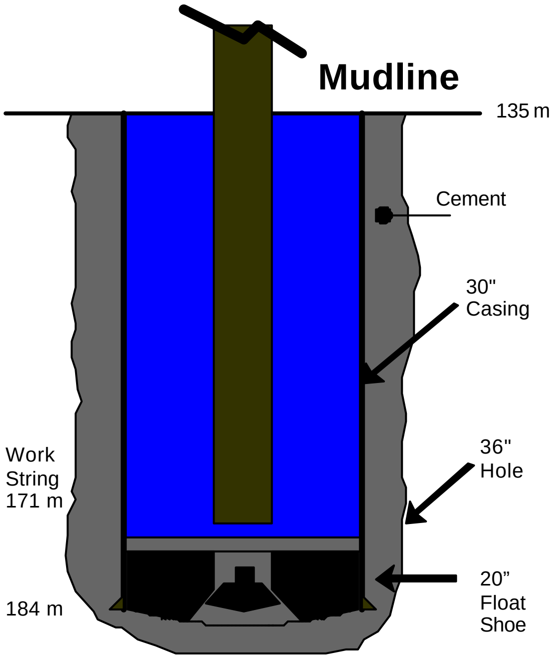
The Future Is Working Together.

Well Information

30” Casing

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	184 m
Casing O.D.	30”
Casing I.D.	28.5 & 29”
Casing weight	457 & 310 ppf
Hole size	36”
Mud type	Sea Water
Mud weight	8.55 ppg
BHST	13 °C
BHCT	13 °C
Excess	250% on OH

Note: The last 7.6m shoe joint will be 20” casing.



Calculations

SEA WATER: (Spacer)

		= 20 bbls
TOTAL SEA WATER		= 20 bbls

CEMENT SLURRY:

36” hole by 30” Casing	40.4 m * 1.262 bbls/m * 250 % excess	= 178.44 bbls
36” hole by 20” Casing	6.64 m * 2.856 bbls/m * 250 % excess	= 66.4 bbls
26” hole by 20” Casing	0.96 m * 0.8796 bbls/m * 250 % excess	= 2.944 bbls
ANNULAR SLURRY VOL.		= 247.78 bbls

SHOE JOINT VOLUME: (4 m fill)

20” Casing	4 m * 1.165 bbl/m	= 4.8 bbls
TOTAL TAIL SLURRY PLUS SHOE JOINT		= 252.6 bbls

TOTAL DISPLACEMENT VOLUME:

5” Drill pipe, 19.5ppf, S-135	171m * 0.05827 bbl/m	= 9.96 bbls
30” Casing	7m * 2.4986 bbl/m	= 17.5 bbls
Add 1.5 bbls surface volume		+ 1.5 bbls
		= 29 bbls

OPERATING TIME CALCULATIONS:

Cement Pump Time	= 253 / 5 = 51 mins
Displacement Pump Time	= 29 / 10 = 3 mins
Contingency Time	= 60 mins
Total Operating Time	= 114 mins or 1 hr 54 mins

THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 114 mins = 154 mins or 2 hrs 17 mins
Maximum Thickening Time	= 1.4 * 114 mins = 160 mins or 2 hrs 40 mins

Conductor Casing

Job Recommendation

FLUID 1: SEA WATER

	Fluid Volume:	20 bbls

FLUID 2: CEMENT SLURRY

Cement slurry	Fluid Weight:	15.90 lb/gal
1%BWOC Calcuim Chloride (Accelerator)	Fluid Yield:	1.17 ft^3/sk
	Fluid Ratio:	5.15 gal/sk
Mixed with Sea Water	Total Mixing Fluid:	149 bbls
	Top of Fluid:	Mudline
	Calculated Fill:	48 m
	Fluid Volume:	253 bbls
	Total Volume:	1214 sks

FLUID 3: DISPLACEMENT

	Total Displacement Volume:	29 bbls

CEMENT SLURRY CRITERIA:

Cement Slurry	
Thickening time (hrs:mins)	2:16 plus
Free water	< 1%
24 hr Compressive Strength	2000 @ 26 deg C and 2000 psi

HALLIBURTON

Conductor Casing

Job Procedure

1. Pressure test cement line to 2000 psi
2. Pump 20 bbls of sea water spacer and monitor returns at sea bed.
3. Mix and pump 253 bbls of cement slurry. Take samples and check density.
4. Pump the theoretical displacement volume of 29 bbls of displacement fluid
5. Displace cement at maximum pump rate wellbore conditions can tolerate.
6. Reciprocate casing throughout job if well conditions allow.
7. Wait on cement.

Chemical Requirements

Description	Spacer	Slurry	Total	Units
ABC CLASS 'G'		1214	1214	SK
Ca Cl2		1141	1141	IB
NF 5		2	2	GAL
SEA WATER	20	149	169	BBL

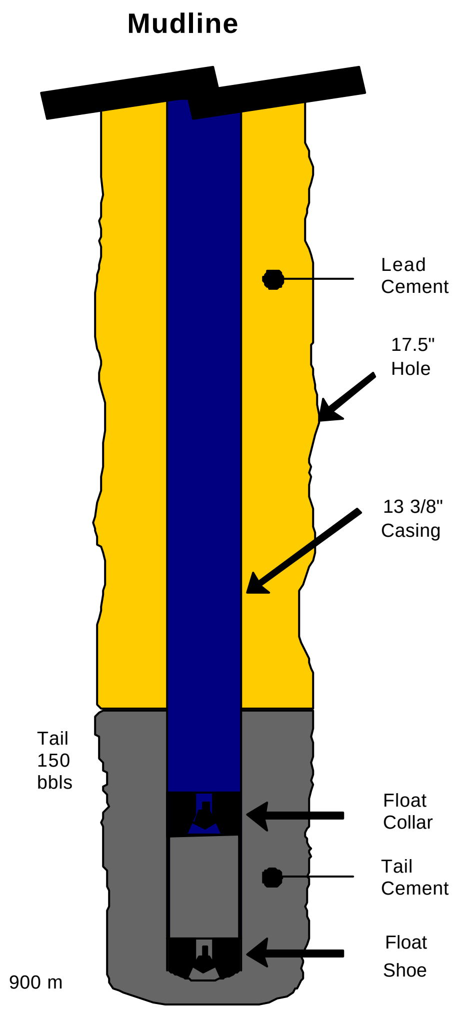
==

NOTE: 1. Service Location – BBMT
2. Baroid to supply CaCl
3. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

13 3/8” Casing

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	900 m
Vertical depth (TVD)	900 m
Casing O.D.	13 3/8”
Casing I.D.	12.415”
Casing weight	68 ppf
Hole size	17.5”
Mud type	Sea Water
Mud weight	8.6 ppg
BHST	56 degC
BHCT	34 degC
Excess	100% on OH



Calculations

TOTAL HOLE VOLUME		
30" x 13 3/8 " Casing	35 m * 2.11 bbls/m * 0 %	= 74 bbls
17.5" x 13 3/8" Casing	716 m * 0.4059 bbls/m * 100 %	= 581 bbls
SHOE JOINT VOLUME: (24 m fill)		
24 m * 0.491 bbl/m		= 11.8 bbls
TOTAL SLURRY		= 667 bbls
TAIL SLURRY:		**= 150 bbls**
LEAD SLURRY:	**667 – 150 bbls**	**= 517 bbls**
TOTAL DISPLACEMENT VOLUME: (148 m Drill Pipe, 716 m casing)		
148m * 0.0245 bbl/m		= 3.63 bbls
716m * 0.49767 bbl/m		= 369 bbls
		= 372.9 bbls

LEAD OPERATING TIME CALCULATIONS:

Cement Pump Time	= 517 / 5 + 150 / 5 = 133 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 373 / 8 = 47 mins
Contingency Time	= 60 mins
Total Operating Time	= 250 mins or 4 hrs 10 mins

LEAD THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 250 mins = 283 mins or 4 hrs 43 mins
Maximum Thickening Time	= 1.4 * 250 mins = 330 mins or 5 hrs 30 mins

TAIL OPERATING TIME CALCULATIONS:

Cement Pump Time	= 150 / 5 = 30 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 373 / 10 = 47 mins
Contingency Time	= 60 mins
Total Operating Time	= 147 mins or 2 hr 27 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 147 mins = 176 mins or 2 hrs 56 mins
Maximum Thickening Time	= 1.4 * 147 mins = 206 mins or 3 hrs 26 mins

HALLIBURTON

Cement Surface Casing

Job Recommendation

FLUID 1: SEA WATER		
Sea water	Calculated Fill:	Circulated out
	Fluid Volume:	50 bbls
FLUID 2: LEAD SLURRY		
Lead slurry	Fluid Weight:	12.5 lb/gal
14.6 gal/10bbls ECONOLITE Liquid (drum) (Extender)	Fluid Yield:	2.21 ft^3/sk
0.25 gal/10bbls NF-5 (Defoamer)	Fluid Ratio:	12.99 gal/sk
Mixed With Sea Water	Water Ratio	12.54 gal/sk
	Total Mix Water:	406 bbls
	Fluid Volume:	517 bbls
	Total Volume:	1313 sks
FLUID 3: TAIL SLURRY		
Tail slurry	Fluid Weight:	15.90 lb/gal
0.25 gal/10bbls NF-5 (Defoamer)	Fluid Yield:	1.16 ft^3/sk
Mixed With Fresh Water	Fluid Ratio:	5.15 gal/sk
	Total Mix Water:	89 bbls
	Fluid Volume:	150 bbls
	Total Volume:	726 sks
FLUID 4: DISPLACEMENT		
	Total Displacement Volume:	373 bbls

CEMENT SLURRY CRITERIA:

Lead Slurry	
Thickening time (hrs:mins)	5:00+
Free water	< 1.4%
24 hr Compressive Strength	400 psi @ 34 degC and 2000 psi
Tail Slurry	
Thickening time (hrs:mins)	3:15
Free water	< 1.0%
24 hr Compressive Strength	2500 @ 34 degC and 2000 psi

HALLIBURTON

Cement Surface Casing

Job Procedure

1. Run casing on D/P (with D/P stinger, swivel equiliser and SSR top plug set below the running tool such that the SSR top plug set is inside the top joint of 13 -3/8" casing) and land in subsea wellhead.

2. Pressure test cement line to 3000 psi.

3. Pump 50 bbls sea water and monitor returns at sea bed.

4. Mix and pump 517 bbls of lead cement slurry. Take samples and check density

5. Mix and pump 150 bbls of tail cement slurry. Take samples and check density

6. Release top Drillpipe wiper dart.

7. Displace D/P with seawater (slowing down while releasing top plug), then the casing until the SSR top plug lands.

8. Bump the plug to 500 psi over the final differential pressure.

9. Bleed off pressure and check floats.

10. Unlatch running tool and withdraw swivel equaliser assembly washing excess cement clear of mudline suspension system.

11. Wait on cement.

Chemical Requirements

Description	Spacer	Lead	Tail	Total	Units
ABC CLASS 'G'		1313	726	2039	SK
ECONOLITE LIQUID		593		593	IB
NF 5		5	6	11	GAL
SEA WATER	50	406	89	545	BBL

NOTE: 1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

HALLIBURTON

CEMENT SLURRY REPORT

Customer	:	Esso		Date	:	17-Jan-03
Well Name	:	Scallop		Reference	:	R01/SDCO/SLP/CC/M02
Casing Size	:	30	in.			
Job Type	:	Conductor Casing				
Slurry Type	:	NA				
Time to Temp	:	NA				

RKB to Mudline	:						
Depth(MD from RKB)	:	184	Meters	**Depth(TVD from RKB)**	:	184	Meters
Surface Temperature	:	27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	:	13	Deg.C.	**BHCT (per API Spec 10)**	:	13	Deg.C.
Mud Weight	:	8.55	PPG	**Water Source**	:	Seawater	

ABC Class 'G'	:	94.00	Lbs.	From Yard
NF-5	:	0.003	Gals/Sk	0.25 gal/10bbl of Mix Fluid
Calcium Chloride		1.0	% BWOC	

Slurry Weight (Surface)	:	15.90	PPG	**Slurry Yield (Surface)**	:	1.17	CuFt/Sack
Mixing Water	:	5.15	Gals/Sack	**Total Mixing Fluid**	:	5.15	Gals/Sack

Thickening Time (Hrs:Mins)	:	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
		0	4:00	4:08	4:18	13	Deg.C.

Fann Readings (RPM)	:	**300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	:	116	96	85	47	34	46.5	70

500 psi Compressive Strength @ 2000 psi and 13 Deg.C. 9:00

Notes	:	The test was conducted to the specifications provided
	:	
Lab Technician	:	Matthew Siegman
Approved	:	Jim Collins

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

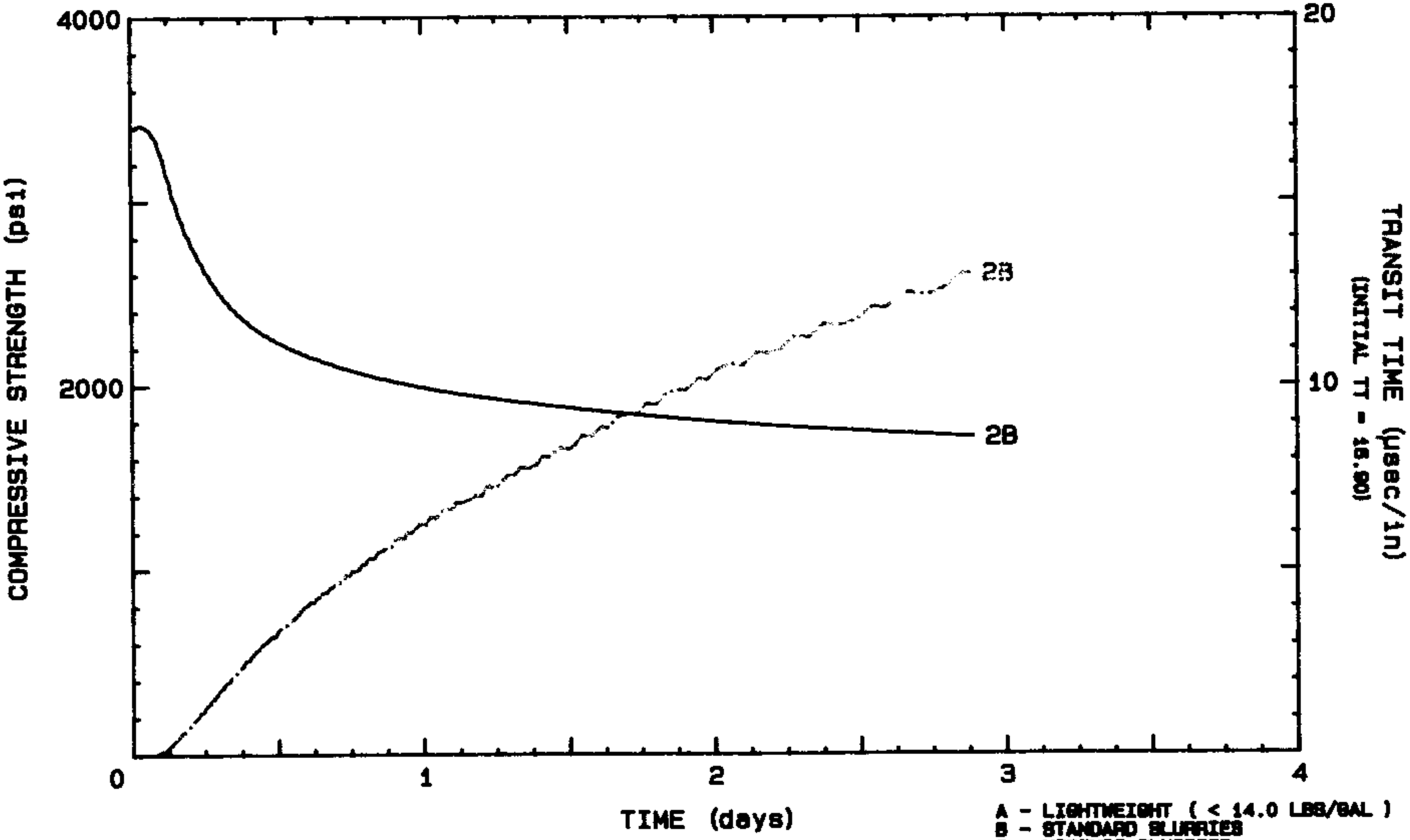
SDCO-SLP - 30 inch conductor casing

PROJECT NO.: BQ SDCO SLP CC MC2
DATE: 17/01/03
PRESSURE: 2000 psi
TEMPERATURE: 13°C

ULTRASONIC CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET:	50	@	3: 02
STRENGTH 1 :	500	@	9: 11
STRENGTH 2 :	19999		
CURR. STR. :	0	@	69: 23

CEMENT: API "G", Sea water, Density => 15.9 ppg, Yield => 1.16 ft³/sk
CaCl₂ (1% bwoc), water req => 5.15 gal/sk, Fluid req => 5.15 gal/sk



A - LIGHTWEIGHT (< 14.0 LBS/GAL)
B - STANDARD SLURRIES
C - HIDENSE SLURRIES

HALLIBURTON

CEMENT SLURRY REPORT

Customer	:	Esso		Date	:	4-Feb-03
Well Name	:	Scallop		Reference	:	R02/SDCO/SLP/SC/M02
Casing Size	:	13 3/8 in.				
Job Type	:	Surface casing				
Slurry Type	:	Lead				
Time to Temp	:	21min				

RKB to Mudline	:						
Depth(MD from RKB)	:	900	Meters	**Depth(TVD from RKB)**	:	900	Meters
Surface Temperature	:	27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	:	56	Deg.C.	**BHCT (per API Spec 10)**	:	34	Deg.C.
Mud Weight	:	8.6	PPG	**Water Source**	:	Sea water	

ABC Class 'G'	:	94.00	Lbs.	From Yard
NF-5	:		Gals/Sk	0.25 gal/10bbl of Mix Fluid
Econolite Liquid		0.452	Gals/Sk	14.6 gal/10bbl of Mix Fluid
HR-6L		0.062	Gals/Sk	2.00 gal/10bbl of Mix Fluid

Slurry Weight (Surface)	:	12.50	PPG	**Slurry Yield (Surface)**	:	2.21	CuFt/Sack
Mixing Water	:	12.54	Gals/Sack	**Total Mixing Fluid**	:	12.99	Gals/Sack

Thickening Time (Hrs:Mins)	:	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300 psi
		0	4:15	5:16	5:16	34 Deg.C.

Fann Readings (RPM)	:	**300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	:	30	26	23	19	18	10.5	20

400 psi Compressive Strength @ 2000 psi and 56 Deg.C. 72:00:00

Notes : The test was conducted to the specifications provided
:

Lab Technician : Matthew Siegman

Approved : Jim Collins

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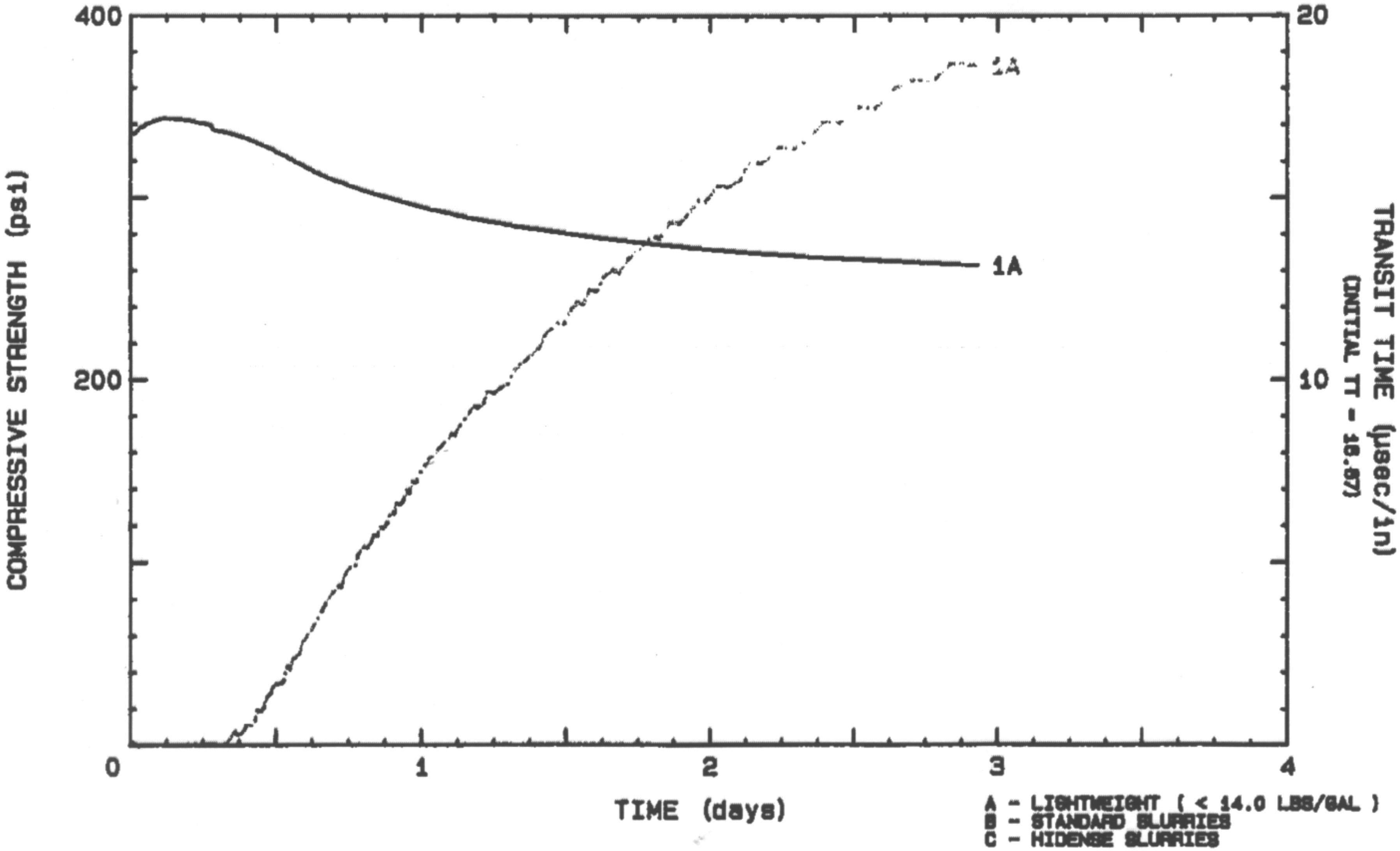
PROJECT NO.: RCL/SDCO/SLP,CC/MOZ
DATE: 3/02/03
PRESSURE: 2000 psi
TEMPERATURE: 1°6 °C

ULTRASONIC CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET: 50 @ 13:57
STRENGTH 1 : 500
STRENGTH 2 : 19999
CURR. STR. : 388 @ 70:41

CEMENT: ABC "G", Sea water, econolite liquid (14.6gal/10bbls), HR-6L (1gal/10bbls)
Fluid weight => 12.5lb/gal, yield => 2.21ft³/sk, fluid ratio => 12.99, water => 12.54gal/sk



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CEMENT SLURRY REPORT

Customer	:	Esso		Date	:	3-Feb-03
Well Name	:	Scallop		Reference	:	R03/SDCO/SLP/SC/M02
Casing Size	:	13 3/8 in.				
Job Type	:	Surface casing				
Slurry Type	:	Tail				
Time to Temp	:	21min				

RKB to Mudline	:						
Depth(MD from RKB)	:	900	Meters	**Depth(TVD from RKB)**	:	900	Meters
Surface Temperature	:	27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	:	56	Deg.C.	**BHCT (per API Spec 10)**	:	34	Deg.C.
Mud Weight	:	8.6	PPG	**Water Source**	:	Drillwater	

ABC Class 'G'	:	94.00	Lbs.	From Yard
NF-5	:	0.003	Gals/Sk	0.25 gal/10bbl of Mix Fluid

Slurry Weight (Surface)	:	15.80	PPG	**Slurry Yield (Surface)**	:	1.16	CuFt/Sack
Mixing Water	:	5.15	Gals/Sack	**Total Mixing Fluid**	:	5.15	Gals/Sack

Thickening Time (Hrs:Mins)	:	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
		0	2:35	3:05	3:05	34	Deg.C.

Fann Readings (RPM)	:	**300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	:	94	80	62	31	24	48	46

500 psi Compressive Strength @ 2000 psi and 56 Deg.C. 3:49

Notes : The test was conducted to the specifications provided
:

Lab Technician : Matthew Siegman

Approved : Jim Collins

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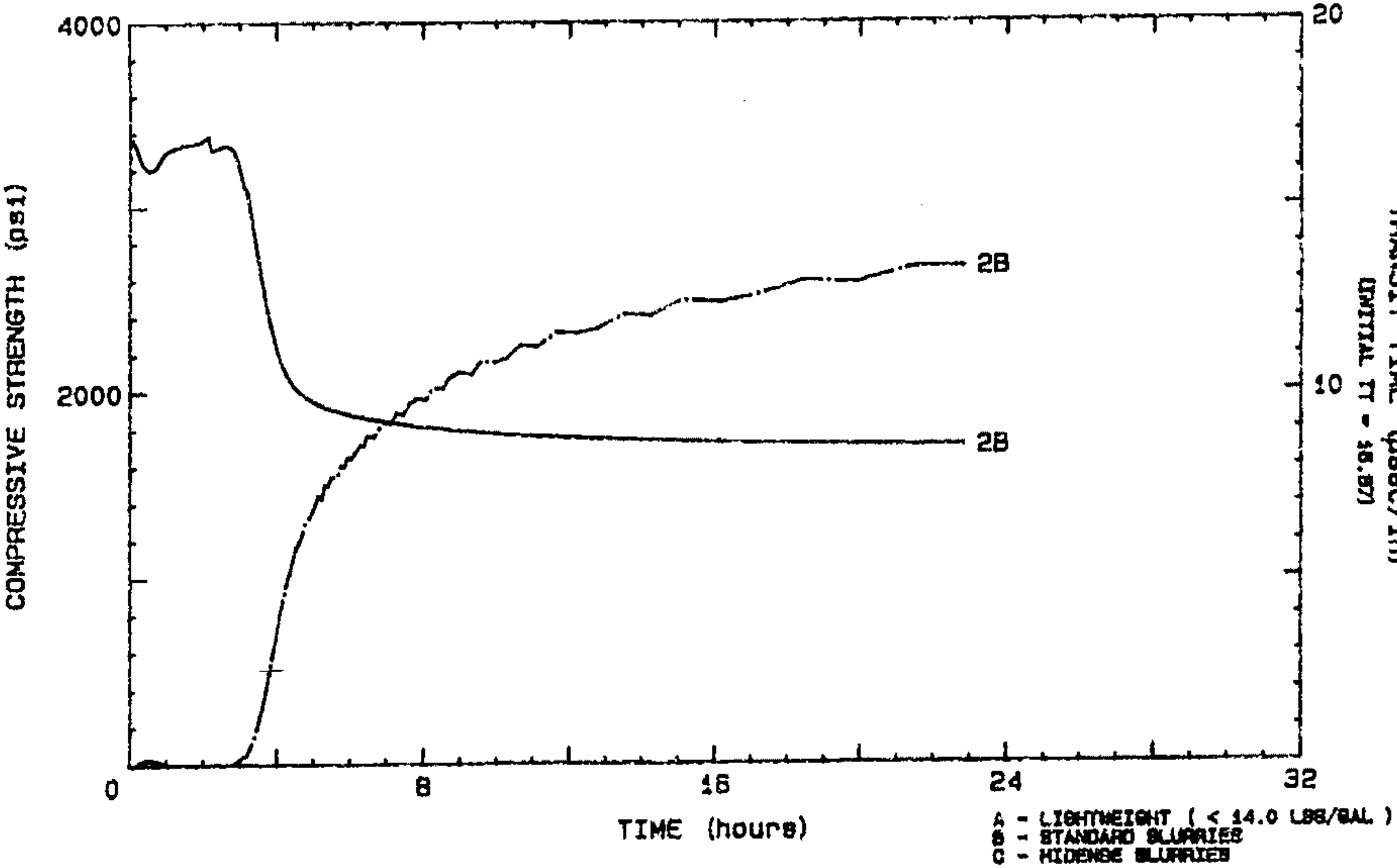
SDCO-SLP-13 3/8 inch tail surface casing

PROJECT NO.: 203/SDCO/SLP/SC IMO2
DATE: 03/02/03
PRESSURE: 2500 Psi
TEMPERATURE: 56 C °F

ULTRASONIC CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET: 50 @ 3:06
STRENGTH 1 : 500 @ 3:49
STRENGTH 2 : 19999
CURR. STR. : 2676 @ 22:56

CEMENT: AB Class G Cement + Drillwater
Wt. 15.3 ppg Yield 1.16 cuft/sx Fluid Ratio 5.15 gal/sx



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SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Cement 30 ins Conductor	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
23.00 Hrs 2 Jan 03	179 M	36 ins				

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
00.30 hrs 3 Jan 03	Sea Water				

Conductor Size	Depth	Type	Wt.	Sea Bed	20 X 30" 30 ins Well Hd.	X Over	PREVIOUS CASING Size	Depth	Wt.
30" X 20 ins	179 M			135.5 M	132.69	170.2 M			

DRILL PIPE Size	Depth	Type	Wt.	Volume	PACKER Type	Depth	BRIDGE PLUG Type	Depth	TAIL PIPE Type	Depth
5"	132.69 M	S 135	19.5 #						5"	162.41

CASING EQUIPMENT USED: SHOE (Float / Stab)	COLLAR (Float / Stab)	PLUGS (Top / Bottom)	CENT. (Qty. / Type)	CEMENT HEAD	MUD CIRCULATION PRIOR TO JOB: Time - Min.	Vol. BBLS	Press - PSI
X					20		

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
8.6	20										239 bbl	141 bbl	

EQUIPMENT				Pump Unit S/No.	DURING JOB WAS PIPE	PARAMETERS RECORDED: ON: PRISM*	MUD RETURNS LOST DURING JOB BBLS
LAS	X Pump Unit	Batch Mixer	Compressor	4062913261	Rotated N	X Press X Rate X Vol X Dty	
X LPJ			X RCM		Reciprocated N		

LEAD SLURRY	TAIL SLURRY	MATERIALS USED
	1149 S x. G Class Cement in Sea water with 1% calcium Chloride	1150 Sx G Cement 20 Sx Calcium Chloride 5 Gal NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
						To Cement 30 ins Conductor
23.00		2000				Test Surface lines
			20			Sea Water Ahead
23.20			239			Mix and pump cement slurry @ 15.9 PPG 141 Bbl Mix Water
3 Jan						
00.03		250	35			Displace Sea Water
00.10						Completed

No. OF DS PERSONNEL ON JOB	STEM1 DONE? YES X NO	TOTAL LOST TIME H	TOTAL OPERATING TIME 1.5 H
SUP · S.S 1 MECH F.E. HEL	CUSTOMER COMMENTS		DS REPRESENTATIVE D. Johnson

QUALITY OF SERVICE GOOD ☐ SATISFACTORY ☐ POOR ☐

CUSTOMER REPRESENTATIVE

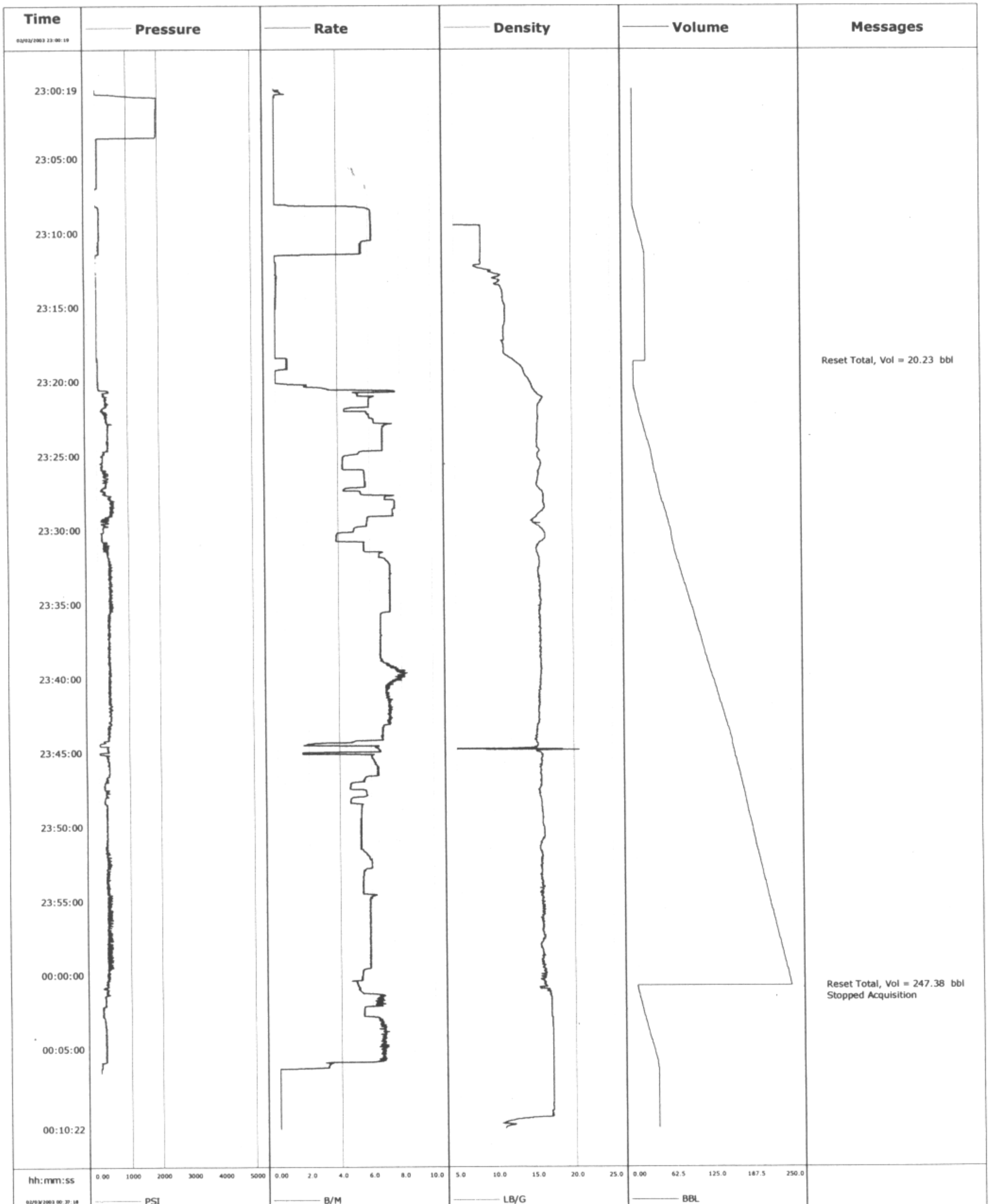
T. Vestal / T. Basset

Schlumberger

Cementing Job Report

CemCAT v1.0

Well	Scallop # 1	**Client**	ESSO Australia Pty. Ltd
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	Cement 30 ins Conductor
Country	Australia	**Job Date**	01-30-2003



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Company	Esso Australia pty Ltd
SS	D. Johnson / W. Harrison
Well	Scallop- 1

Rig	Sedco 702
Date	7-Feb-03

START WELL	30-Jan-03
END WELL	

Chemical	Unit	Pkg size	Starting Stock	Recv	Used	Stock location Loose	Las "dip"	LAS gal	Final Stock
Cement G	sxs		0	5361	3386				1975
Blend cement	cu.ft.			0	0				0
				0	0				0
				0	0				0
				0	0				0
NF 5	gal	5	0	45	10				15
				0	0				0
Econolite	gal	53	0	1060	689	371	0	0	371
HR-6	gal.	5	0	160	87	60	2	13	73
				0	0				0
				0	0				0
				0	0				0
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				0	0				0

RECEIVED (date) 29/1	4/2	6/2	7/2		USED (Job) 30 "	133/8"				BACK LOAD
0	1861	2500	1000		1150	2236				
45					5	5				
	1060					689				
	100	60				87				

Note : HT blend cement bulk yield 1.4717 cuft/sxs cmt; 86 lbs / cuft : Stock shown in Ft3 of Blend

JIM COLLINS

I have some drill out information for SCALLOP 13.375 Casing cement job. Cement was tagged at 843.6 m there was soft contaminated cement for 6 m and the plug was tagged at 849.6 m drilling time for plug set was 90 minutes as the plug was spinning on a base of firm cement. Weight on bit was 5000 lbs and rotation 64 rpm pump pressure 1060 psi which was varied down to 700 psi at times to prevent the hydraulic affect. The Float Collar was tagged at 10.15 pm FEB 7 using same drill parameters as above collar drilled in 7 minutes. The shoe joint measured 26 meters when this was completed the hole was displaced to mud prior to drilling out. Based on these numbers the cement was under displaced by around 12 bbl this is something we have no control over. At surface the Nodeco cement head worked fine although it should be noted that installation of the drill pipe wiper dart is extremely tight and is driven in using a sledge hammer. Pressure recording equipment on the cementing unit and rig floor was operating as to the reason we did not see any indication of the plug release those with greater knowledge than mine will have to ponder.

Gary Sisely

Schlumberger

SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Cement 13 3/8" Casing	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
18:48 Feb. 5 2003	915	17.5			34	

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
21:39 Feb. 5 2003	Sea water	8.5			

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at
13 3/8	901		68	363		874.52

PREVIOUS Conductor

Size	Depth	Wt.
30 X 20 "	143	

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	131 M	s-135	19.5	8.1

PACKER Type	PACKER Depth	BRIDGE PLUG Type	BRIDGE PLUG Depth	TAIL PIPE Type	TAIL PIPE Depth

CASING EQUIPMENT USED

SHOE Float	SHOE Stab	COLLAR Float	COLLAR Stab	PLUGS Top	PLUGS Bottom	CENT. Qty.	CENT. Type
X		x		x		20	

CEMENT HEAD: D.P. Sub Sea Release

MUD CIRCULATION PRIOR TO JOB

Time - Min.	Vol. BBLS	Press - PSI
1. HR.	600	

WASH Wt.	WASH Vol. BBLS	WASH Fill	SPACER Wt.	SPACER Vol. BBLS	SPACER Fill	LEAD SLURRY Wt.	LEAD SLURRY Vol.	LEAD SLURRY Mix Water	LEAD SLURRY Fill	TAIL SLURRY WT.	TAIL SLURRY Vol.	TAIL SLURRY Mix Water	TAIL SLURRY Fill
8.5	50					12.5	535	420	601	15.8	149	89	168.8

EQUIPMENT

X LAS, X Pump Unit, Batch Mixer, Compressor
X LPJ, X RCM

4062913261 Pump Unit S/No.

DURING JOB WAS PIPE	
Rotated	N
Reciprocated	N

PARAMETERS RECORDED: Press	Rate	Vol	Dty	ON:
X	X	X	X	PRISM*

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY	TAIL SLURRY	MATERIALS USED
1365 Sks. Cement and Sea Water	721 Sks. Cement and Drill water	HR-6
14.6 Gal 10/Bbl Econolite	.25 Gal 10/Bbl. NF-5	
2 Gal. /10 Bbl. HR.6		Econolite
.25 Gal./ 10 Bbl. NF 5		NF-5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	FINISH TIME	RECORD OF SERVICE
18:48		63	10	4.1	18:52	Pump 10 Bb. Sea Water and DYE
18:53		3000			18:59	Pressure test Cement line
19:04		168	40	6.6	19:11	Pump 40 Bbl. Sea Water
19:22		240	535	6.5	20:54	Pump Lead Cement @ 12.5 PPG
19:54		320	149	5	21:24	Pump Tail Cement @ 15.8 PPG
21:24					21:26	Drop Dart
21:26		0	25	1.7	21:39	Displace Dart with NO indication of picking up Csg. Plug
21:39						Rig Displace (Did not Bump Plug)
22:50	0	500			22:55	Flowed back to Dowell Unit to Check Floats (floats Held) 1.5BBls Bled Back
			759			TOTAL BARRELS PUMPED DURING JOB WAS (759)

No. OF DS PERSONNEL ON JOB: SUP | S.S 1 | MECH | F.E. | HEL

STEM1 DONE? YES X NO | TOTAL LOST TIME H | TOTAL OPERATING TIME 2.5 H

CUSTOMER COMMENTS

DS REPRESENTATIVE
Wes. Harrison

QUALITY OF SERVICE GOOD ☐ SATISFACTORY ☐ POOR ☐

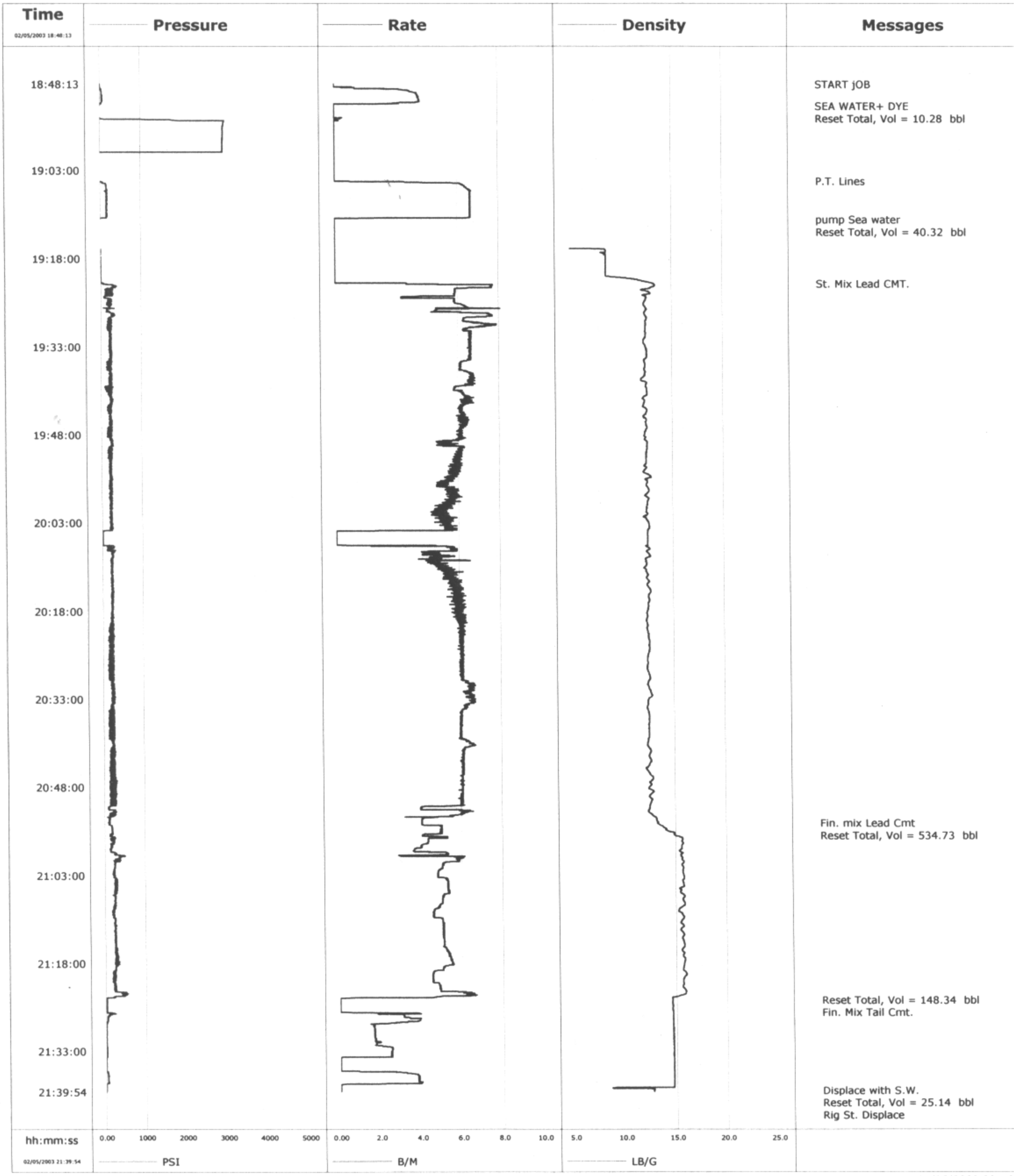
CUSTOMER REPRESENTATIVE
T. Vestal / T. Basset

Schlumberger

Cementing Job Report

CemCAT v1.(

Well	Scallop # 1	**Client**	ESSO
Field		**SIR No.**	
Engineer		**Job Type**	13 3/8
Country	Australia	**Job Date**	02-05-2003



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Schlumberger

Job Date: 02-05-2003

Customer: ESSO
District:
Representative: Tommy
DS Supervisor: Wes
Well: Scallop # 1

13 3/8" CMT. JOB

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi	CMT DENS lb/gal
02:05:2003:18:48:13	0.0	0.0	4	-0.01
02:05:2003:18:48:17	START jOB			
02:05:2003:18:48:17	0.0	0.0	4	-0.01
02:05:2003:18:48:58	1.0	0.1	8	-0.01
02:05:2003:18:49:43	3.9	2.5	59	-0.01
02:05:2003:18:50:28	4.1	5.6	63	-0.01
02:05:2003:18:51:13	4.2	8.7	63	-0.01
02:05:2003:18:51:58	SEA WATER+ DYE			
02:05:2003:18:51:58	0.0	10.3	-1	-0.01
02:05:2003:18:52:36	Reset Total, Vol = 10.28 bbl			
02:05:2003:18:52:36	0.0	10.3	-1	-0.01
02:05:2003:18:52:43	0.0	0.0	-1	-0.01
02:05:2003:18:53:28	0.0	0.0	-1	-0.01
02:05:2003:18:54:13	0.3	0.0	146	-0.01
02:05:2003:18:54:58	0.0	0.1	3034	-0.01
02:05:2003:18:55:43	0.0	0.1	3025	-0.01
02:05:2003:18:56:28	0.0	0.1	3020	-0.01
02:05:2003:18:57:14	0.0	0.1	3016	-0.01
02:05:2003:18:57:59	0.0	0.1	3011	-0.01
02:05:2003:18:58:44	0.0	0.1	3011	-0.01
02:05:2003:18:59:29	0.0	0.1	3011	-0.01
02:05:2003:19:00:14	0.0	0.1	-1	-0.01
02:05:2003:19:00:59	0.0	0.1	-1	-0.01
02:05:2003:19:01:44	0.0	0.1	-1	-0.01
02:05:2003:19:02:29	0.0	0.1	-1	-0.01
02:05:2003:19:03:14	0.0	0.1	-1	-0.01
02:05:2003:19:03:59	0.0	0.1	-1	-0.01
02:05:2003:19:04:44	P.T. Lines			
02:05:2003:19:04:44	0.0	0.1	-1	-0.01
02:05:2003:19:05:29	6.3	3.3	155	-0.01
02:05:2003:19:06:14	6.6	8.2	168	-0.01
02:05:2003:19:06:59	6.6	13.1	173	-0.01
02:05:2003:19:07:44	6.6	18.1	173	-0.01
02:05:2003:19:08:30	6.6	23.2	168	-0.01
02:05:2003:19:09:15	6.6	28.1	173	-0.01
02:05:2003:19:10:00	6.6	33.1	168	-0.01
02:05:2003:19:10:45	6.6	38.1	168	-0.01
02:05:2003:19:11:14	pump Sea water			
02:05:2003:19:11:14	0.0	40.3	-1	-0.01
02:05:2003:19:11:16	Reset Total, Vol = 40.32 bbl			
02:05:2003:19:11:16	0.0	40.3	-1	-0.01
02:05:2003:19:11:30	0.0	0.0	-1	-0.01
02:05:2003:19:12:15	0.0	0.0	-1	-0.01
02:05:2003:19:13:00	0.0	0.0	-1	-0.01
02:05:2003:19:13:45	0.0	0.0	-1	-0.01
02:05:2003:19:14:30	0.0	0.0	-1	-0.01
02:05:2003:19:15:15	0.0	0.0	-1	-0.01
02:05:2003:19:16:00	0.0	0.0	-1	-0.01
02:05:2003:19:16:45	0.0	0.0	4	8.57
02:05:2003:19:17:30	0.0	0.0	-1	8.58
02:05:2003:19:18:15	0.0	0.0	-1	8.58
02:05:2003:19:19:00	0.0	0.0	4	8.57
02:05:2003:19:19:45	0.0	0.0	-1	8.57
02:05:2003:19:20:31	0.0	0.0	4	8.57
02:05:2003:19:21:16	0.0	0.0	4	10.20
02:05:2003:19:22:01	0.0	0.0	8	12.75
02:05:2003:19:22:10	St. Mix Lead CMT.			
02:05:2003:19:22:10	2.4	0.0	72	13.09
02:05:2003:19:22:46	7.6	3.6	365	13.27
02:05:2003:19:23:31	5.9	8.4	200	12.51
02:05:2003:19:24:16	5.9	12.8	109	12.24
02:05:2003:19:25:01	5.9	16.4	242	12.45
02:05:2003:19:25:46	6.2	20.9	274	12.27
02:05:2003:19:26:31	6.9	25.7	283	12.49
02:05:2003:19:27:16	7.1	29.7	315	12.31
02:05:2003:19:28:01	6.4	35.3	205	12.56
02:05:2003:19:28:46	6.5	40.0	187	12.40
02:05:2003:19:29:31	7.3	45.5	205	12.44
02:05:2003:19:30:16	6.3	50.4	200	12.43
02:05:2003:19:31:01	6.6	55.3	260	12.43
02:05:2003:19:31:47	6.6	60.4	246	12.24
02:05:2003:19:32:32	6.6	65.3	237	12.30
02:05:2003:19:33:17	6.6	70.3	223	12.50
02:05:2003:19:34:02	6.6	75.2	255	12.53
02:05:2003:19:34:47	6.6	80.2	269	12.52
02:05:2003:19:35:32	6.2	85.0	210	12.30
02:05:2003:19:36:17	6.1	89.6	205	12.37
02:05:2003:19:37:02	6.3	94.2	242	12.31
02:05:2003:19:37:47	6.8	99.1	223	12.37
02:05:2003:19:38:32	6.8	104.1	205	11.95
02:05:2003:19:39:17	6.8	109.1	269	12.47
02:05:2003:19:40:02	5.8	113.7	200	12.50
02:05:2003:19:40:47	6.2	118.2	182	12.55
02:05:2003:19:41:32	6.5	122.9	265	12.23
02:05:2003:19:42:17	6.5	127.8	228	12.32
02:05:2003:19:43:02	6.1	132.5	214	12.16
02:05:2003:19:43:48	6.1	137.2	214	12.50
02:05:2003:19:44:33	6.1	141.8	223	12.30
02:05:2003:19:45:18	6.1	146.5	260	12.47
02:05:2003:19:46:03	6.3	151.2	265	12.43
02:05:2003:19:46:48	6.2	155.8	214	12.53
02:05:2003:19:47:33	6.1	160.4	223	12.33
02:05:2003:19:48:18	6.1	165.0	182	12.33
02:05:2003:19:49:03	5.2	169.5	242	12.50
02:05:2003:19:49:48	5.5	173.5	297	12.51
02:05:2003:19:50:33	6.0	178.0	178	12.48
02:05:2003:19:51:18	5.9	182.6	251	12.43
02:05:2003:19:52:03	6.0	187.1	205	12.43
02:05:2003:19:52:48	5.9	191.5	223	12.42
02:05:2003:19:53:33	6.0	195.9	205	12.46

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi	CMT DENS lb/gal
02:05:2003:19:55:04	5.4	204.7	237	12.89
02:05:2003:19:55:49	5.6	208.9	223	12.52
02:05:2003:19:56:34	5.1	212.8	255	12.40
02:05:2003:19:57:19	5.3	216.9	205	12.65
02:05:2003:19:58:04	5.8	221.2	233	12.40
02:05:2003:19:58:49	5.7	225.4	205	12.66
02:05:2003:19:59:34	5.3	229.6	223	12.52
02:05:2003:20:00:19	5.0	233.7	233	12.46
02:05:2003:20:01:04	5.1	237.5	251	12.40
02:05:2003:20:01:49	5.2	241.4	237	12.19
02:05:2003:20:02:34	5.5	245.3	214	12.50
02:05:2003:20:03:19	5.5	249.4	242	12.66
02:05:2003:20:04:04	5.8	253.5	242	12.61
02:05:2003:20:04:49	0.0	254.9	22	12.52
02:05:2003:20:05:34	0.0	254.9	22	12.52
02:05:2003:20:06:19	0.0	254.9	22	12.53
02:05:2003:20:07:05	5.8	256.2	168	12.55
02:05:2003:20:07:50	4.5	260.4	237	12.39
02:05:2003:20:08:35	5.3	263.9	237	12.76
02:05:2003:20:09:20	6.3	267.6	214	12.34
02:05:2003:20:10:05	4.9	271.3	228	12.40
02:05:2003:20:10:50	5.3	275.2	214	12.32
02:05:2003:20:11:35	5.5	279.2	214	12.47
02:05:2003:20:12:20	5.8	283.4	242	12.37
02:05:2003:20:13:05	5.8	287.7	210	12.58
02:05:2003:20:13:50	5.8	292.0	223	12.56
02:05:2003:20:14:35	5.9	296.4	265	12.76
02:05:2003:20:15:20	5.9	300.9	242	12.59
02:05:2003:20:16:05	6.0	305.3	242	12.64
02:05:2003:20:16:50	5.5	309.8	242	12.52
02:05:2003:20:17:35	6.0	314.3	242	12.49
02:05:2003:20:18:21	5.8	318.8	237	12.38
02:05:2003:20:19:06	6.1	323.3	210	12.43
02:05:2003:20:19:51	6.1	327.9	251	12.37
02:05:2003:20:20:36	6.0	332.4	260	12.44
02:05:2003:20:21:21	6.2	337.0	251	12.46
02:05:2003:20:22:06	6.1	341.6	173	12.55
02:05:2003:20:22:51	6.1	346.1	223	12.60
02:05:2003:20:23:36	6.1	350.7	205	12.60
02:05:2003:20:24:21	6.1	355.2	219	12.62
02:05:2003:20:25:06	6.1	359.8	251	12.55
02:05:2003:20:25:51	6.1	364.4	237	12.43
02:05:2003:20:26:36	6.1	368.9	205	12.44
02:05:2003:20:27:21	6.2	373.5	136	12.39
02:05:2003:20:28:06	6.1	378.1	173	12.41
02:05:2003:20:28:51	6.1	382.6	155	12.60
02:05:2003:20:29:37	6.1	387.3	168	12.62
02:05:2003:20:30:22	6.6	392.0	210	12.43
02:05:2003:20:31:07	6.6	396.9	237	12.56
02:05:2003:20:31:52	6.3	401.8	233	12.73
02:05:2003:20:32:37	6.3	406.7	246	12.75
02:05:2003:20:33:22	6.7	411.6	219	12.45
02:05:2003:20:34:07	6.3	416.4	205	12.40
02:05:2003:20:34:52	6.1	421.1	168	12.43
02:05:2003:20:35:37	6.0	425.7	187	12.55
02:05:2003:20:36:22	6.0	430.2	200	12.56
02:05:2003:20:37:07	6.0	434.7	132	12.53
02:05:2003:20:37:52	6.0	439.2	274	12.52
02:05:2003:20:38:37	6.0	443.7	255	12.51
02:05:2003:20:39:22	6.0	448.2	191	12.52
02:05:2003:20:40:07	6.3	452.8	210	12.43
02:05:2003:20:40:52	6.7	457.7	228	12.35
02:05:2003:20:41:38	6.2	462.5	223	12.63
02:05:2003:20:42:23	6.1	467.1	287	12.56
02:05:2003:20:43:08	6.1	471.7	173	12.63
02:05:2003:20:43:53	6.1	476.3	159	12.59
02:05:2003:20:44:38	6.1	480.9	164	12.23
02:05:2003:20:45:23	6.1	485.4	205	12.43
02:05:2003:20:46:08	6.1	490.0	182	12.82
02:05:2003:20:46:53	6.1	494.6	269	12.72
02:05:2003:20:47:38	6.1	499.1	297	12.70
02:05:2003:20:48:23	6.1	503.7	205	12.62
02:05:2003:20:49:08	6.1	508.2	228	12.69
02:05:2003:20:49:53	6.0	512.8	191	12.66
02:05:2003:20:50:38	6.1	517.3	159	12.63
02:05:2003:20:51:23	4.0	521.5	118	12.52
02:05:2003:20:52:08	6.2	525.0	251	12.40
02:05:2003:20:52:54	5.5	529.6	205	12.83
02:05:2003:20:53:39	4.0	532.9	123	13.18
02:05:2003:20:54:03	Fin. mix Lead Cmt			
02:05:2003:20:54:03	4.0	534.5	127	13.30
02:05:2003:20:54:06	Reset Total, Vol = 534.73 bbl			
02:05:2003:20:54:06	4.0	534.7	114	13.26
02:05:2003:20:54:24	4.0	1.2	127	13.48
02:05:2003:20:55:09	5.0	4.9	187	14.16
02:05:2003:20:55:54	5.0	8.7	205	14.92
02:05:2003:20:56:39	5.3	12.1	274	15.69
02:05:2003:20:57:24	4.3	15.4	233	15.70
02:05:2003:20:58:09	4.0	18.5	191	15.61
02:05:2003:20:58:54	3.6	21.3	150	15.35
02:05:2003:20:59:39	3.1	24.9	516	15.55
02:05:2003:21:00:24	5.8	29.0	297	15.65
02:05:2003:21:01:09	5.1	33.1	260	15.61
02:05:2003:21:01:54	5.0	36.8	242	15.73
02:05:2003:21:02:39	4.8	40.5	251	15.72
02:05:2003:21:03:24	4.8	44.1	237	15.82
02:05:2003:21:04:09	5.3	48.0	251	15.69
02:05:2003:21:04:55	5.3	52.1	306	15.81
02:05:2003:21:05:40	5.3	56.1	255	15.49
02:05:2003:21:06:25	5.1	60.1	196	15.81
02:05:2003:21:07:10	5.1	63.9	260	15.65
02:05:2003:21:07:55	5.0	67.6	242	15.88
02:05:2003:21:08:40	4.8	71.3	219	15.40
02:05:2003:21:09:25	4.6	74.8	223	15.51
02:05:2003:21:10:10	4.6	78.2	214	15.82
02:05:2003:21:10:55	5.1	82.0	242	15.51

Well: Scallop # 1

Job Date: 02-05-2003

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi	CMT DENS lb/gal
02:05:2003:21:11:40	5.1	85.8	246	15.77
02:05:2003:21:12:25	5.1	89.6	251	15.46
02:05:2003:21:13:10	5.1	93.4	237	15.79
02:05:2003:21:13:55	5.1	97.2	246	15.65
02:05:2003:21:14:40	5.1	101.0	265	15.79
02:05:2003:21:15:25	5.2	104.8	255	15.71
02:05:2003:21:16:11	5.3	108.9	287	15.74
02:05:2003:21:16:56	5.4	112.9	320	15.72
02:05:2003:21:17:41	5.5	117.0	255	15.81
02:05:2003:21:18:26	5.2	121.1	265	15.74
02:05:2003:21:19:11	5.1	124.9	251	15.67
02:05:2003:21:19:56	4.5	128.4	196	16.00
02:05:2003:21:20:41	4.5	131.8	191	15.70
02:05:2003:21:21:26	4.8	135.2	233	15.67
02:05:2003:21:22:11	4.9	138.8	228	15.67
02:05:2003:21:22:56	6.0	142.5	498	15.93
02:05:2003:21:23:41	5.0	147.3	251	15.18
02:05:2003:21:24:17	Reset Total, Vol = 148.34 bbl			
02:05:2003:21:24:17	0.0	148.3	27	14.59
02:05:2003:21:24:18	Fin. Mix Tail Cmt.			
02:05:2003:21:24:18	0.0	0.0	27	14.58
02:05:2003:21:24:26	0.0	0.0	27	14.57
02:05:2003:21:25:11	0.0	0.0	27	14.62
02:05:2003:21:25:56	0.0	0.0	31	14.60
02:05:2003:21:26:41	2.8	0.7	95	14.64
02:05:2003:21:27:26	3.8	3.0	49	14.65
02:05:2003:21:28:12	2.7	5.8	27	14.66
02:05:2003:21:28:57	1.7	7.1	8	14.67
02:05:2003:21:29:42	1.7	8.4	13	14.67
02:05:2003:21:30:27	1.7	9.6	13	14.67
02:05:2003:21:31:12	1.7	10.9	13	14.68
02:05:2003:21:31:57	1.7	12.2	13	14.68
02:05:2003:21:32:42	2.5	13.9	22	14.68
02:05:2003:21:33:27	2.5	15.8	22	14.68
02:05:2003:21:34:12	0.0	17.3	4	14.69
02:05:2003:21:34:57	0.0	17.3	4	14.70
02:05:2003:21:35:42	0.0	17.3	4	14.69
02:05:2003:21:36:27	0.8	17.4	8	14.69
02:05:2003:21:37:12	3.8	19.8	59	14.70
02:05:2003:21:37:57	3.8	22.6	59	14.69
02:05:2003:21:38:42	0.0	25.1	4	14.69
02:05:2003:21:39:28	0.0	25.1	4	12.46
02:05:2003:21:39:43	Displace with S.W.			
02:05:2003:21:39:43	0.0	25.1	4	12.73
02:05:2003:21:39:45	Reset Total, Vol = 25.14 bbl			
02:05:2003:21:39:45	0.0	25.1	4	12.72
02:05:2003:21:39:54	Rig St. Displace			
02:05:2003:21:39:54	0.0	0.0	4	12.71

Scallop #1 13 3/8" Cement Work Plan

1 Land Csg and confirm latch with 30K over pull.
-Slack off only 30 to 50K while cementing.

2 Line up Rig pumps and pump 600 bbls minimum.

3 Hole pre job safety meeting while circulating.

4 Start mud pumps @3 BPM and gradually increase to 10 BPM,
Do not go over 1000# on Mud Pump.

5 Line up dowell, pump 10 bbls of sea water and test lines to 2500#
- add floricine to the 10 bbls of sea water.

6 Close IBOP and place 500# on TDS.

7 Pump 40 bbls of sea water with dowell.

8 Mix and pump 535 bbls (1358 sks) of classG cement @ 12.5 ppg
- Mix with seawater
- 420 bbls of total mix fluid (42 tanks)
- 614 gals of Econolite (14.6gal/10bbl)
- 11 gals of NF-5 (.25gal/10bbl)
- 84 Gals of Retarder.(2gal/10bbl)

Followed by
- 150 bbls (726 sks)of class G cement @ 15.8 ppg Mixed with FRESH WATER.
- 89 bbls of total mix fluid(9 tanks)
- 5 gal of NF-5.(.25gal/10bbl)

9 Drop Dart and pump 15 BBLS of sea water with Dowell
–DP volume = 7.5bbls + 2 bbls for lines = 9.5 BBLS to latch dart.

10 Switch to rig pumps.
- have stroke counters ZEROED.

11 Pump 3002 sks @ 10 bpm with rig pumps.
- 97% total displace358.5 bbls; (364 + 9.5=373.5-15 by cement pump=358.5bbls.)

- 96% = 3035 sks
- ½ the flt equipment = 55stks

PUMP A MAX of 3060 sks to bump plug.

12 Bled off floats, if OK

13 Slack off csg weight, check bullseye and well head height with the ROV
If OK,

14 Release Running Tool and POOH

15 L/D Running tool and cement stand
-ROV to clean Well Head prior to coming out of water, install trash cap..

16 Rig up to Run BOP'S; Move rig 15M off location.

Esso Australia Ltd
12 Riverside Quay
Southbank, 3006

Scallop

Bass Strait

9 5/8” Cementing Program

Revision 1

Prepared for: Rudolf Furchtenicht

20/ 02 / 03

Prepared by:
Jim Collins

Halliburton Energy Services

90 Talinga Rd

Cheltenham, 3192

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HALLIBURTON

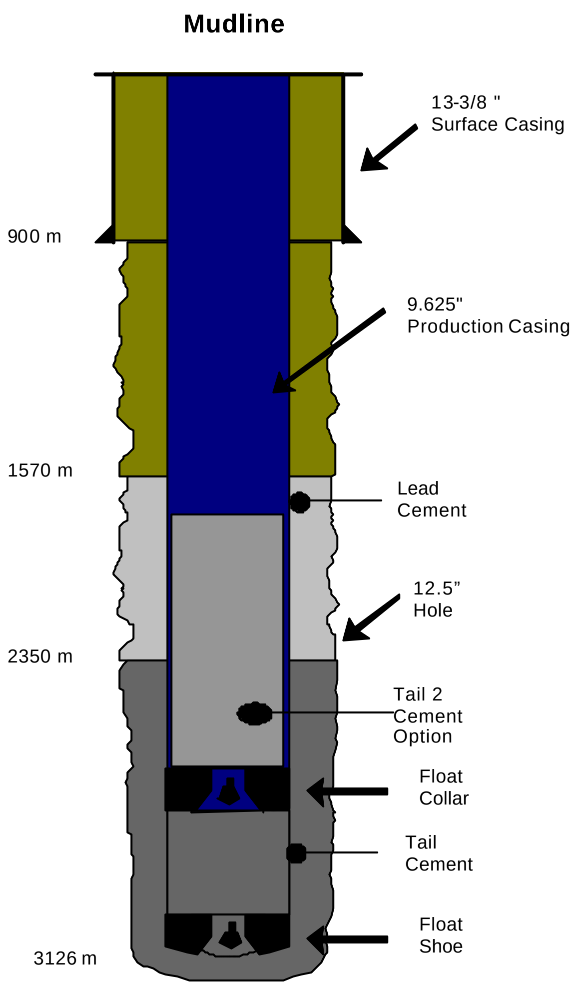
The Future Is Working Together.

Well Information

9 5/8" Casing

Measured depth (MD)	3126 m
Vertical depth (TVD)	3126 m
Casing O.D.	9.625"
Casing I.D.	8.681" & 8.525"
Casing weight	47 & 53.5 ppf
Hole size	12.25"
Mud type	PHPA KCl / Glycol
Mud weight	10.0 ppg
BHST	141 °C
BHCT	117 °C
RT to Mean Sea Level	26 m
Water depth	110 m
Surface temp	27 °C
Excess	20% on OH
Top Of Latrobe	1709 m
Top of Lead class G Cement	1570 m
Top of Tail 2 inside casing	2480 m

Note: If the tail 2 option is utilized then the float collar will be moved to 2480m. This will cover the top of the Tillie formation by 50m. This will be done to protect the casing from high C02 levels.



Calculations

LEAD SLURRY: (780 m fill)

12 ½ " Hole by 9 5/8" Casing	(2350m-1570m) * 0.20282 bbls/m	= 158.2 bbls
	20% excess on OH	= 31.6 bbls
		= 190.0 bbls

TAIL SLURRY: (776 m fill)

12 ½ " Hole by 9 5/8" Casing	(3126m-2350m) * 0.20282 bbls/m	= 157.4 bbls
	20% excess on OH	= 31.5 bbls
Shoe Volume	26 m * 0.23692 bbls/m	= 6.16 bbls
		= 195.0 bbls

TOTAL DISPLACEMENT VOLUME:

5" Drill Pipe, heavy weight (used to set hanger)	135 m * 0.02870 bbls/m	= 3.9 bbls
9 5/8" Casing, 47ppg, L-80	(2400m-135m) * 0.24245 bbls/m	= 549.1 bbls
9 5/8" Casing, 53.5ppg, L-80	(3100m-2400m) * 0.23692 bbls/m	= 165.8 bbls
		= 718.8 bbls

LEAD OPERATING TIME CALCULATIONS:

Cement Pump Time	= 190 / 5 + 195 / 5 = 77 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 719 / 8 = 90 mins
Contingency Time	= 60 mins
Total Operating Time	= 237 mins or 3 hrs 57 mins

LEAD THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 237 mins = 284 mins or 4 hrs 45 mins
Maximum Thickening Time	= 1.4 * 237 mins = 332 mins or 5 hrs 32 mins

TAIL OPERATING TIME CALCULATIONS:

Cement Pump Time	= 195 / 5 = 39 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 719 / 8 = 90 mins
Contingency Time	= 60 mins
Total Operating Time	= 199 mins or 3 hrs 19 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 199 mins = 239 mins or 3 hrs 59 mins
Maximum Thickening Time	= 1.4 * 199 mins = 279 mins or 4 hrs 39 mins

TAIL SLURRY 2 (Contingency 620m inside the casing for protection against high C0 2.)

Shoe Volume	(3100m-2480m) * 0.23692 bbls/m	= 146.9 bbls bbls

TOTAL DISPLACEMENT VOLUME:

5" Drill Pipe, HWDP 50ppf	135 m * 0.02810 bbls/m	= 3.9 bbls
9 5/8" Casing, 47ppg, L-80	(2400m-135m) * 0.24245 bbls/m	= 549.1 bbls
9 5/8" Casing, 53.5ppg, L-80	(2480m-2400m) * 0.23692 bbls/m	= 18.6 bbls
		= 571.6 bbls

LEAD OPERATING TIME CALCULATIONS:

Cement Pump Time	= 190 / 5 + 195 / 5 + 147 / 5 = 107 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 572 / 8 = 72 mins
Contingency Time	= 60 mins
Total Operating Time	= 249 mins or 4 hrs 09 mins

LEAD THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 249 mins = 299 mins or 4 hrs 59 mins
Maximum Thickening Time	= 1.4 * 249 mins = 349 mins or 5 hrs 49 mins

TAIL OPERATING TIME CALCULATIONS:

Cement Pump Time	= 195 / 5 + 149 / 5 = 69 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 572 / 8 = 72 mins
Contingency Time	= 60 mins
Total Operating Time	= 211 mins or 3hrs 31 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 211 mins = 310 mins or 4hrs 14 mins
Maximum Thickening Time	= 1.4 * 211 mins = 296 mins or 4 hrs 56 mins

TAIL 2 OPERATING TIME CALCULATIONS:

Cement Pump Time	= 147 / 5 = 30 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 572 / 8 = 72 mins
Contingency Time	= 60 mins
Total Operating Time	= 172 mins or 2hrs 52 mins

TAIL 2 THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 172 mins = 207 mins or 3hrs 27 mins
Maximum Thickening Time	= 1.4 * 172 mins = 241 mins or 4hrs 01 mins

Job Recommendation

FLUID 1: SPACER/FLUSH
Sea water

Calculated Fill:	327.9m
Fluid Volume:	60 bbls

FLUID 2: SPACER/FLUSH
Dual Spacer

Calculated Fill:	327.9m
Fluid Volume:	60 bbls

FLUID 3: LEAD SLURRY
lead slurry HTB
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)
5 gal/10bbls SCR 100L (Retarder)
0.25 gal/10bbls NF-5 (Defoamer)
Mixed With Drill Water

Fluid Weight:	15.80 lb/gal
Fluid Yield:	1.13 ft³/sk
Fluid Ratio:	4.75 gal/sk
Water Ratio:	4.32 gal/sk
Total Mixing Fluid:	106.8 bbls
Top of Fluid:	1570 m
Calculated Fill:	780 m
Fluid Volume:	190.0 bbls
Proposed Volume:	944 sks

FLUID 4: TAIL SLURRY
Tail slurry HTB
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)
4 gal/10bbls SCR 100L (Retarder)
0.25 gal/10bbls NF-5 (Defoamer)
Mixed With Drill Water

Fluid Weight:	15.80 lb/gal
Fluid Yield:	1.13 ft³/sk
Fluid Ratio:	4.75 gal/sk
Water Ratio:	4.32 gal/sk
Total Mixing Fluid:	110 bbls
Top of Fluid:	2350 m
Calculated Fill:	776 m
Fluid Volume:	195.0 bbls
Proposed Volume:	969 sks

FLUID 4: TAIL 2 CONTINGENCY SLURRY
Tail slurry HTB
30 gal/10bbls Gascon 469 (Extender)
5 gal/10bbls SCR 100L (Retarder)
5 gal/10bbls CFR 3L (Dispersant)
0.25 gal/10bbls NF-5 (Defoamer)
Mixed With Drill Water

Fluid Weight:	14.50 lb/gal
Fluid Yield:	1.38 ft³/sk
Fluid Ratio:	6.57 gal/sk
Water Ratio:	5.93 gal/sk
Total Mixing Fluid:	93.6 bbls
Top of Fluid:	2480 m
Calculated Fill:	620 m
Fluid Volume:	147 bbls
Proposed Volume:	598 sks

FLUID 5: DISPLACEMENT
Drilling Mud

Total Displacement Volume:	719.0 bbls

CEMENT SLURRY CRITERIA:

Lead Slurry	
Thickening time (hrs:mins)	5:20
Free water	<1.4%
24 hr Compressive Strength	2000 @ 141°C and 2000 psi
Tail Slurry	
Thickening time (hrs:mins)	4:30
Free water	<1.0%
24 hr Compressive Strength	3000 @ 141°C and 2000 psi
Tail 2 Slurry	
Thickening time (hrs:mins)	4:50
Free water	<1.0%
24 hr Compressive Strength	1500 @ 141°C and 2000 psi

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Cement production Casing

Job Procedure

1. Run casing on D/P (with D/P stinger, swivel equiliser and SSR plug set below the running tool such that the SSR plug set is inside the top joint of 9-5/8" casing) and land in subsea wellhead.

2. Prior to the cementing operation circulate well at maximum practical rate until drilling fluid properties and circulating pressure are both constant or a minimum of 2 times bottoms up.

3. Pressure test cement line to 3000 psi.

4. Pump 60bbls of sea water spacer.

5. Pump 60bbls of weighted Dual spacer flush.

6. Drop ball to release Bottom wiper plug.

7. Mix and pump 190 bbls of lead cement slurry. Take samples and check density.

8. Mix and pump 195 bbls of tail cement slurry. Take samples and check density.

Note: Mix and pump 147 bbls contingency tail 2 slurry if we are suspending and high C0-2 has been recorded.

9. Release top Drill pipe wiper dart.

10. Displace Drill Pipe, slowing down while releasing top plug (after approx 7.9bbls), then the casing until the SSR top plug lands. Pump the theoretical displacement volume of 719.0 bbls of displacement fluid and if plug has not bumped, over displace by no more than half the shoe track volume

11. Displace cement at as high a rate as well conditions will allow.

12. Bump the plug to 500 psi over the final differential pressure.

13. Bleed off pressure and check floats.

14. Unlatch running tool and withdraw swivel equaliser assembly washing excess cement clear of mudline suspension system.

15. Wait on cement.

HALLIBURTON

Cement production Casing

Material Requirements

Description	Spacer	Lead	Tail	Tail 2 (contingency)	Units	Total
HTB CLASS 'G'		969	964	598	Sk	2511
HALAD 413L		352	352		Gals	704
SCR-100L		55	44	49	Gals	148
NF-5		3	3	3	Gals	9
GASCON 469				281	Gals	281
CFR-3L				49	Gals	49
FRESH WATER		100	100	84	BBLS	284
DUAL SPACER	3600				Lbs	3600
DSMA	6				Gals	5
MUSOL A	20				Gals	20
SEM-7	20				Gals	20

NOTE: 1. Service Location - Barry's Beach
2. Volumes calculated do not include tanks bottoms.

Esso Australia Ltd
12 Riverside Quay
Southbank, 3006

Scallop

Bass Strait

P&A
Individual Plugs
Cementing
Program

Revision 2

Prepared for: Chris Meakin / Rudolf Furchtenicht

25/ 02 / 03

Prepared by:
Jim Collins

Halliburton Energy Services

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Cheltenham, 3192

Ph: (03) 9581 7513 Fax: (03) 9583 7588

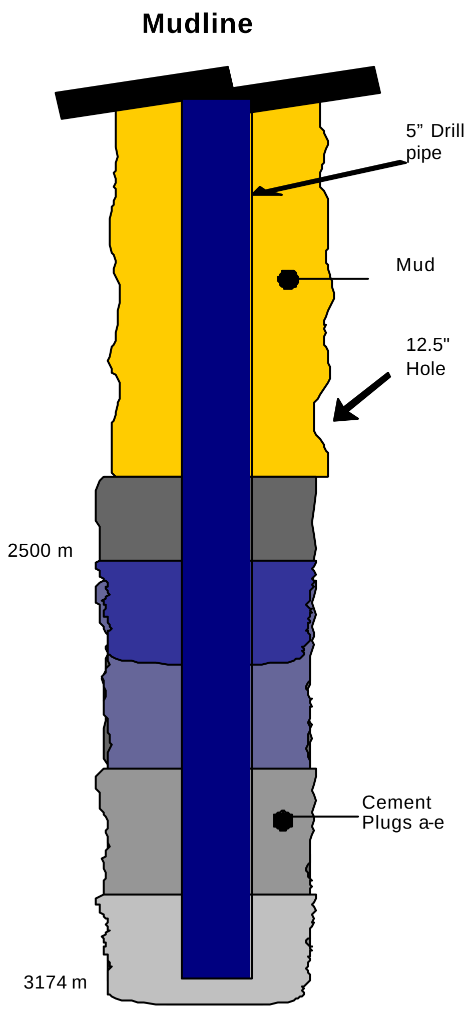
The Future Is Working Together.

Well Information

Plug 1a,b,c,d and e

Open Hole Stacked Cement Plugs

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	3174 m
Vertical depth (TVD)	3174 m
Casing O.D.	13 3/8”
Casing I.D.	12.5006”
Casing weight	68 ppf
Hole size	12 ½”
Mud type	PHPA
Mud weight	10.0 ppg
BHST	143 degC
BHCT	119 degC
TOC Plug	2500 m
EXCESS	10 %



Calculations

TOTAL HOLE VOLUME (3174-2500m)

12 ½" open hole 10% excess

Plug a	(3174-3037m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug b	(3037-2900m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug c	(2900-2763m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug d	(2763-2626m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug e	(2626-2500m) 126 m * 0.49821 bbls/m x 1.1	= 69.0 bbls
		= 369.42 bbls

TOTAL DISPLACEMENT VOLUME:

3 ½" Stinger	(3174-2974) 200 m * 0.02435 bbls/m	= 4.87 bbls
5" Drillpipe	(2974-0) 2974 m * 0.05830 bbls/m	= 173.38 bbls
		= 178.25 bbls

Note: Plug 1a has been used to calculate the displacement and hence thickening times for plugs 1a-d as it will have the longest displacement.

PLUGS 1a-d OPERATING TIME CALCULATIONS:

Cement Pump Time	= 75 / 5 = 15 mins
Displacement Pump Time	= 178 /5 = 36 mins
Contingency Time	= 60 mins
Total Operating Time	= 111 mins or 1 hr 51 mins

PLUGS 1a-d THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 111 mins = 133 mins or 2 hrs 13 mins
Maximum Thickening Time	= 1.4 * 111 mins = 155 mins or 2 hrs 35 mins

TOTAL DISPLACEMENT VOLUME PLUG 1e:

3 ½" Stinger	(2626-2426)200 m * 0.02435 bbls/m	= 4.9 bbls
5" Drillpipe	(2426-0)2426 m * 0.05830 bbls/m	= 141.44 bbls
		= 146.34

PLUG 1e OPERATING TIME CALCULATIONS:

Cement Pump Time	= 69 / 5 = 14 mins
Displacement Pump Time	= 146 /5 = 30 mins
Contingency Time	= 60 mins
Total Operating Time	= 104 mins or 1 hr 44 mins

PLUG 1e THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 104 mins = 125 mins or 2 hrs 04 mins
Maximum Thickening Time	= 1.4 * 104 mins = 146 mins or 2 hrs 26 mins

P&A INDIVIDUALCEMENT PROGRAM

Job Recommendation

FLUID 1: SPACER		
Fresh Water	Calculated Fill:	50m
FLUID 2: TAIL SLURRY		
DESIGN FOR PLUGS 1a-d	Fluid Weight:	15.80 lb/gal
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)	Fluid Yield:	1.13 ft³/sk
3 gal/10bbls SCR 100L (Retarder)	Fluid Ratio:	4.75 gal/sk
0.25 gal/10bbls NF-5 (Defoamer)	Water Ratio:	4.35 gal/sk
Mixed With Drill Water	Total Mixing Fluid:	169 bbls
	Top of Fluid:	2626 m
	Calculated Fill:	548 m
	Fluid Volume:	300 bbls
	Proposed Volume:	1490 sks
PLUG 1e	Fluid Weight:	15.80 lb/gal
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)	Fluid Yield:	1.13 ft³/sk
2 gal/10bbls SCR 100L (Retarder)	Fluid Ratio:	4.74 gal/sk
0.25 gal/10bbls NF-5 (Defoamer)	Water Ratio:	4.35 gal/sk
Mixed With Drill Water	Total Mixing Fluid:	39 bbls
	Top of Fluid:	2500 m
	Calculated Fill:	126 m
	Fluid Volume:	69 bbls
	Proposed Volume:	343 sks

FLUID 3: DISPLACEMENT

Total Displacement Volume will change for each plug from: 178-146 bbls bbls

CEMENT SLURRY CRITERIA:

Plug Slurry 1a-d	
Thickening time (hrs:mins)	2:30
Free water	< 1.0%
24 hr Compressive Strength	500 @ 143 degC @ 8 HRS
Plug Slurry 1e	
Thickening time (hrs:mins)	2:00
Free water	< 1.0%
24 hr Compressive Strength	500 @ 122 degC @ 4-6 HRS

Job Procedure ___

1. Run in hole with diverter sub, 200m of 3 ½” cement stinger on 5” drillpipe.
2. Pressure test cement line to 3000 psi.
3. Pump spacer and monitor returns.
4. Mix and pump the plug cement slurry. Take samples and check density.
5. Displace D/P with seawater at 5-6 bpm to create a balanced plug.
6. POOH above TOC and reverse circulate clean. Wiper balls can be dropped to clean drill string if pumping the long way round.
7. Stay in hole and prepare for pumping plug 1b-e.

Chemical Requirements

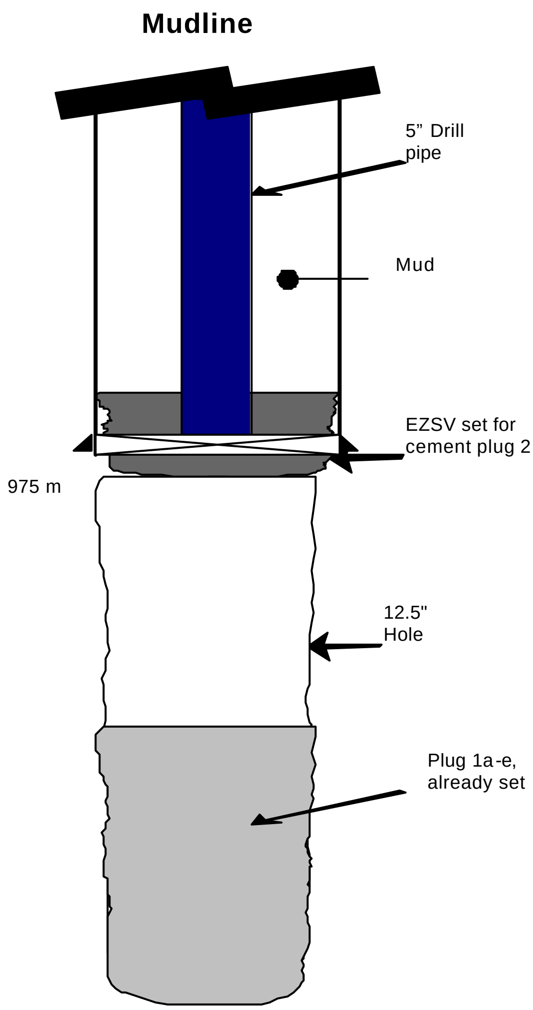
Description	Spacer	Plugs a-e	Plug d	Units	Total
HTB CLASS 'G'		1491	343	Sk	1834
HALAD 413L		541	125	Gals	666
SCR-100L		51	8	Gals	59
NF-5		5	1	Gals	6
FRESH WATER		154	36	BBLS	190
DUAL SPACER	3600			Lbs	3600
DSMA	6			Gals	5
MUSOL A	20			Gals	20
SEM-7	20			Gals	20

NOTE:
1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

Plug 2

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	930 m
Vertical depth (TVD)	930 m
Casing O.D.	13 3/8”
Casing I.D.	12.5006”
Casing weight	68 ppf
Hole size	12 ½”
Mud type	PHPA
Mud weight	10.0 ppg
BHST	56 degC
BHCT	35 degC



Calculations

TOTAL HOLE VOLUME (930-850m)

Plug 2
12 ½" Open hole x 13 3/8" Casing balanced plug

12 ½" Open hole with 10% excess	35 m * 0.49821 bbls/m * 1.1	= 19.2 bbls
13 3/8" Casing plug	45 m * 0.49826 bbls/m	= 22.4 bbls
Total		= 41.6 bbls

TOTAL DISPLACEMENT VOLUME:

5" Drillpipe	850 m * 0.05827 bbls/m	= 49.53 bbls

PLUG OPERATING TIME CALCULATIONS:

Cement Pump Time	= 42 / 5 = 9 mins
Unsting from Plug plug	= 10 mins
Displacement Pump Time	= 50 / 5= 10 mins
Contingency Time	= 60 mins
Total Operating Time	= 89 mins or 1 hr 29 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 89 mins = 107 mins or 1 hrs 47 mins
Maximum Thickening Time	= 1.4 * 89 mins = 126 mins or 2 hrs 06 mins

HALLIBURTON

P&A INDIVIDUALCEMENT PROGRAM

Job Recommendation

FLUID 1: SPACER
Fresh Water

FLUID 2: TAIL SLURRY

Tail slurry		Fluid Weight:	15.80 lb/gal
0.25 gal/10bbls NF-5 (Defoamer)		Fluid Yield:	1.16 ft³/sk
Mixed With Fresh Water		Fluid Ratio:	5.15 gal/sk
		Total Mix Water:	25 bbls
		Fluid Volume:	42 bbls
		Total Volume:	203.3 sks

FLUID 3: DISPLACEMENT

Total Displacement Volume: 50 bbls

CEMENT SLURRY CRITERIA:

Tail Slurry	
Thickening time (hrs:mins)	3:00
Free water	< 1.0%
24 hr Compressive Strength	500 psi @ 57 degC @ 6 hours

Job Procedure

1. RIH with 13 3/8" EZSV to 900m and set, unsting establish circulation.
2. Pressure test cement line to 3000 psi / casing if required.
3. Sting back into EZSV and squeeze 20 bbls through EZSV.
4. Sting out of EZSV and pump remaining 22 bbls on top of EZSV as balanced plug.
5. Displace D/P with 2 bbls of fresh and then seawater at 6bpm to create a balanced plug.
6. Pooh at least 50 M above TOC and reverse circulate.
7. POOH.

Chemical Requirements

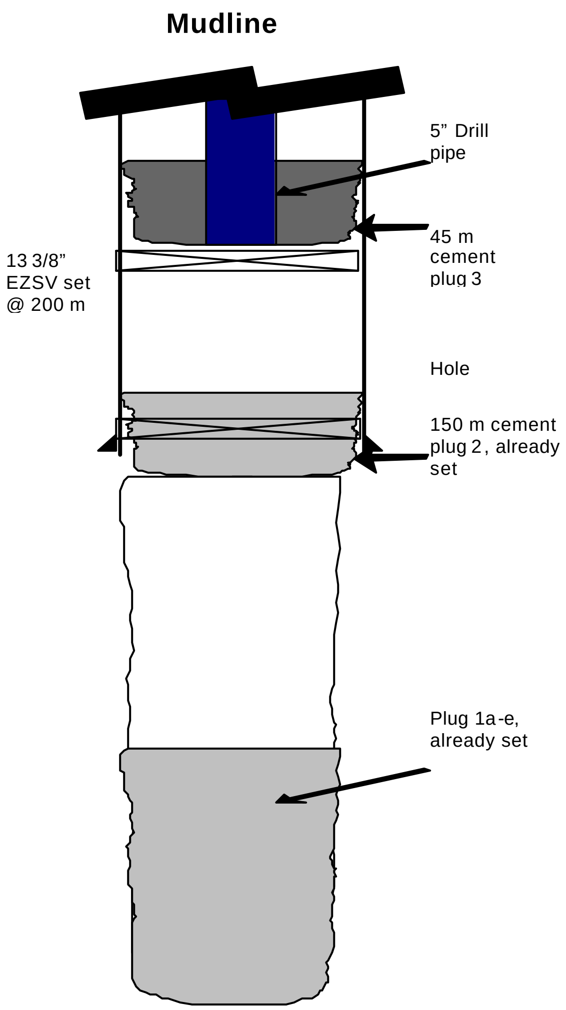
Description	Spacer	Tail	Units
CLASS 'G'		203	SK
NF-5		3	GAL
FRESH WATER	50	25	BBL

NOTE: 1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

Plug 3

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	200 m
Vertical depth (TVD)	200 m
Casing O.D.	13 3/8"
Casing I.D.	12.5006"
Casing weight	68 ppf
Mud type	PHPA
Mud weight	10.0 ppg
BHST	15 degC
BHCT	15 degC



Calculations

TOTAL HOLE VOLUME (975-825m)

Plug 3
13 3/8" Casing balanced plug on top of EZSV

13 3/8" Casing plug	45 m * 0.49826 bbls/m	= 22.4 bbls
Total		= 22.4 bbls

TOTAL DISPLACEMENT VOLUME: (to create balanced plug with 5" drill pipe (factor 0.6095 bbl/m approx 36m))

5" Drillpipe	200m * 0.05827 bbls/m	= 11.7 bbls

PLUG OPERATING TIME CALCULATIONS:

Cement Pump Time	= 23 / 5 = 5 mins
Displacement Pump Time	= 12 / 5 = 3 mins
Contingency Time	= 78 mins
Total Operating Time	= 78 mins or 1 hr 18 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 78 mins = 94 mins or 1 hrs 32 mins
Maximum Thickening Time	= 1.4 * 78 mins = 110 mins or 1 hrs 50 mins

HALLIBURTON

P&A INDIVIDUALCEMENT PROGRAM

Job Recommendation ___

FLUID 1: SPACER
Fresh Water

FLUID 2: CEMENT SLURRY

Cement slurry		Fluid Weight:	15.90 lb/gal
2%BWOC Calcuim Chloride (Accelerator)		Fluid Yield:	1.17 ft^3/sk
		Fluid Ratio:	5.15 gal/sk
Mixed with Sea Water		Total Mixing Fluid:	13 bbls
		Top of Fluid:	155 m
		Calculated Fill:	45 m
		Fluid Volume:	22 bbls
		Total Volume:	106 sks

FLUID 3: DISPLACEMENT

Total Displacement Volume:	9.5 bbls

CEMENT SLURRY CRITERIA:

Tail Slurry	
Thickening time (hrs:mins)	4:00
Free water	< 1.0%
24 hr Compressive Strength	500 psi @ 15 degC @ 9 hours

Job Procedure

1. RIH to 200 m with the EZSV on 5” drillpipe.
2. Pressure test cement line to 3000 psi.
3. Pump spacer and monitor returns.
4. Mix and pump 22 bbls of tail cement slurry. Take samples and check density
5. Displace D/P with approximately 9.5 bbls of seawater at 6bpm to create a balanced plug.
6. Pooh at least 50 M above TOC and reverse circulate.
7. POOH.

Chemical Requirements

Description	Spacer	Tail	Units
CLASS 'G'		106	SK
CACL		200	LBS
NF-5		3	GAL
FRESH WATER	50	44	BBL

NOTE: 1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

HALLIBURTON

CEMENT SLURRY REPORT

Customer	: Esso		Date	:	26-Feb-03
Well Name	: Scallop		Reference	:	R01/SDCO/SLP/PLUG/M02
Casing Size	: 12 1/2	in.			
Job Type	: Plug				
Slurry Type	: Single				
Time to Temp	: 25min				

RKB to Mudline	:				
Depth(MD from RKB)	: 3174	Meters	**Depth(TVD from RKB)**	: 3174	Meters
Surface Temperature	: 27	Deg.C.	**Temperature Gradient**	:	Deg.C./100M
BHST	: 143	Deg.C.	**BHCT (per API Spec 10)**	: 119	Deg.C.
Mud Weight	: 9.50	PPG	**Water Source**	: Drillwater	

ABC Class 'G' in HTB	: 69.60	Lbs.	From Yard	
NF-5	: 0.003	Gals/Sk	0.25	gal/10bbl of Mix Fluid
Halad-413L	: 0.362	Gals/Sk	32	gal/10bbl of Mix Fluid
SCR-100L	0.034	Gals/Sk	3.00	gal/10bbl of Mix Fluid

Slurry Weight (Surface)	: 15.80	PPG	**Slurry Yield (Surface)**	: 1.13	CuFt/Sack
Mixing Water	: 4.35	Gals/Sack	**Total Mixing Fluid**	: 4.75	Gals/Sack

Thickening Time (Hrs:Mins) :	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
	32	n/a	2:45	2:48	119	Deg.C.

Free Water	: 0.0	%	Vertical				
Fluid Loss	: 68	cc/30 mins.	@ 119	Deg.C.	and	1,000	psi

Fann Readings (RPM)	: **300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	: 221	155	87	12	8	201	20

500 psi Compressive Strength @ 2000 psi and 143 Deg.C. 3:50

Notes : The test was conducted to the specifications provided
:

Lab Technician : Matthew Siegman

Approved : Jim Collins

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

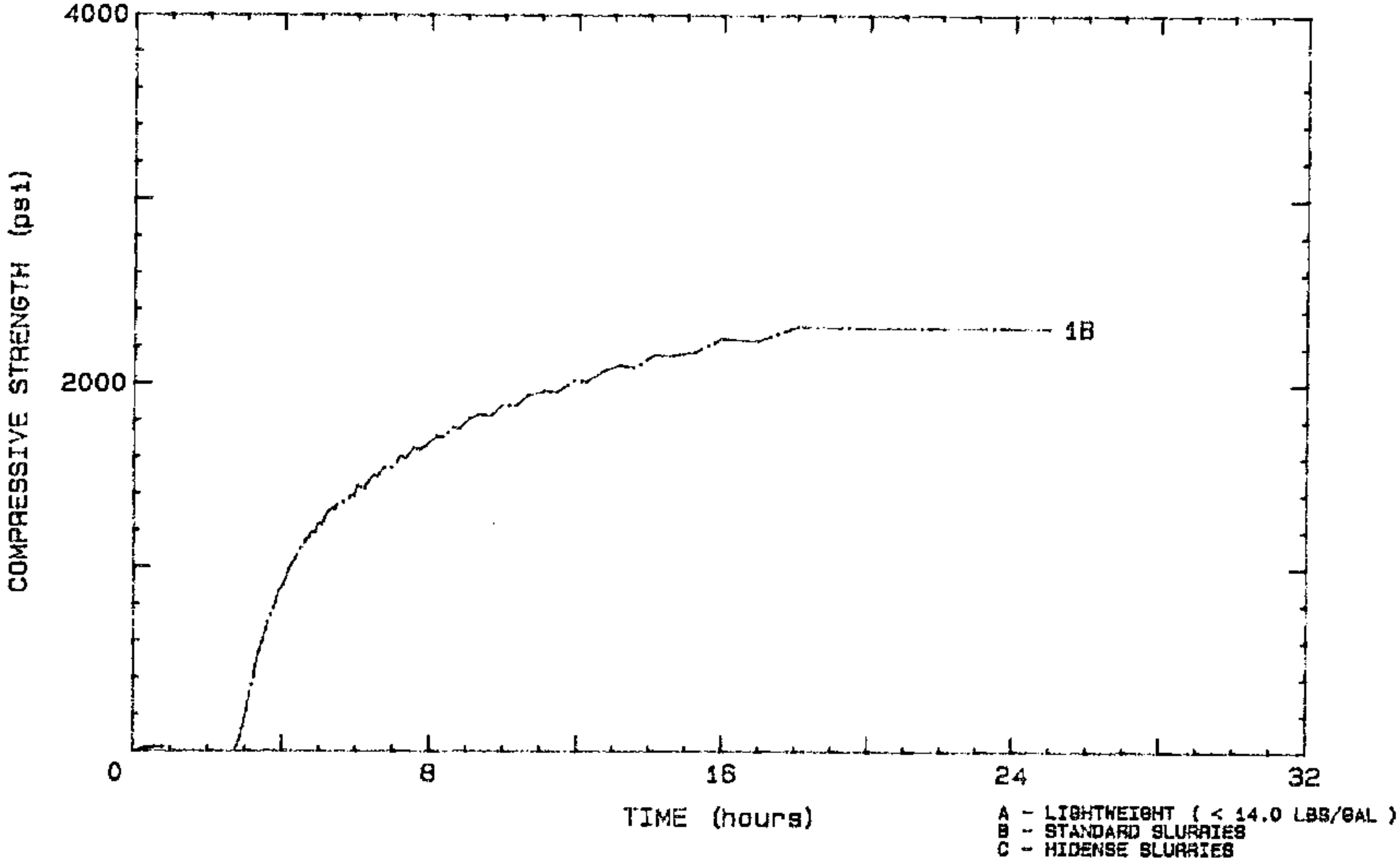
REQUEST FROM

PROJECT NO.: MATTHEW SIEGMAN
DATE: 21/2/03
PRESSURE: 3000 psi
TEMPERATURE: 246°F

ULTRASONIC
CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET: 50 @ 2:49
STRENGTH 1 : 500 @ 3:20
STRENGTH 2 : 19999
CURR. STR. : 2310 @ 25:04

CEMENT: DEMIN WATER + HTB CEMENT + HALAD 413L 32 gal/10bbl + SCR-100L 3 gal/10bbl + D-AIR 3000L 0.25 gal/10bbl.
DENSITY 15.8 lb/gal, YIELD 1.3 cuft/sk, WATER 4.35 gal/sk, Total Fluid 4.75 gal/sk



HALLIBURTON

CEMENT SLURRY REPORT

Customer	:	Esso		Date	:	26-Feb-03	
Well Name	:	Scallop		Reference	:	R01/SDCO/SLP/PLUG/M02	
Casing Size	:	12 1/2	in.				
Job Type	:	Plug					
Slurry Type	:	Single					
Time to Temp	:	25min					

RKB to Mudline	:						
Depth(MD from RKB)	:	2626	Meters	**Depth(TVD from RKB)**	:	2626	Meters
Surface Temperature	:	27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	:	122	Deg.C.	**BHCT (per API Spec 10)**	:	99	Deg.C.
Mud Weight	:	9.50	PPG	**Water Source**	:	Drillwater	

ABC Class 'G' in HTB	:	69.60	Lbs.	From Yard	
NF-5	:	0.003	Gals/Sk	0.25	gal/10bbl of Mix Fluid
Halad-413L	:	0.361	Gals/Sk	32	gal/10bbl of Mix Fluid
SCR-100L		0.011	Gals/Sk	1.00	gal/10bbl of Mix Fluid

Slurry Weight (Surface)	:	15.80	PPG	**Slurry Yield (Surface)**	:	1.13	CuFt/Sack
Mixing Water	:	4.35	Gals/Sack	**Total Mixing Fluid**	:	4.74	Gals/Sack

Thickening Time (Hrs:Mins)	:	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
		39	n/a	2:40	2:43	99	Deg.C.

Free Water	:	0.0	%	Vertical				
Fluid Loss	:	72	cc/30 mins.	@ 99	Deg.C.	and	1,000	psi

Fann Readings (RPM)	:	**300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	:	190	140	95	15	10	142.5	48

500 psi Compressive Strength @ 2000 psi and 122 Deg.C. 6:14

Notes : The test was conducted to the specifications provided
:

Lab Technician : Matthew Siegman

Approved : Jim Collins

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

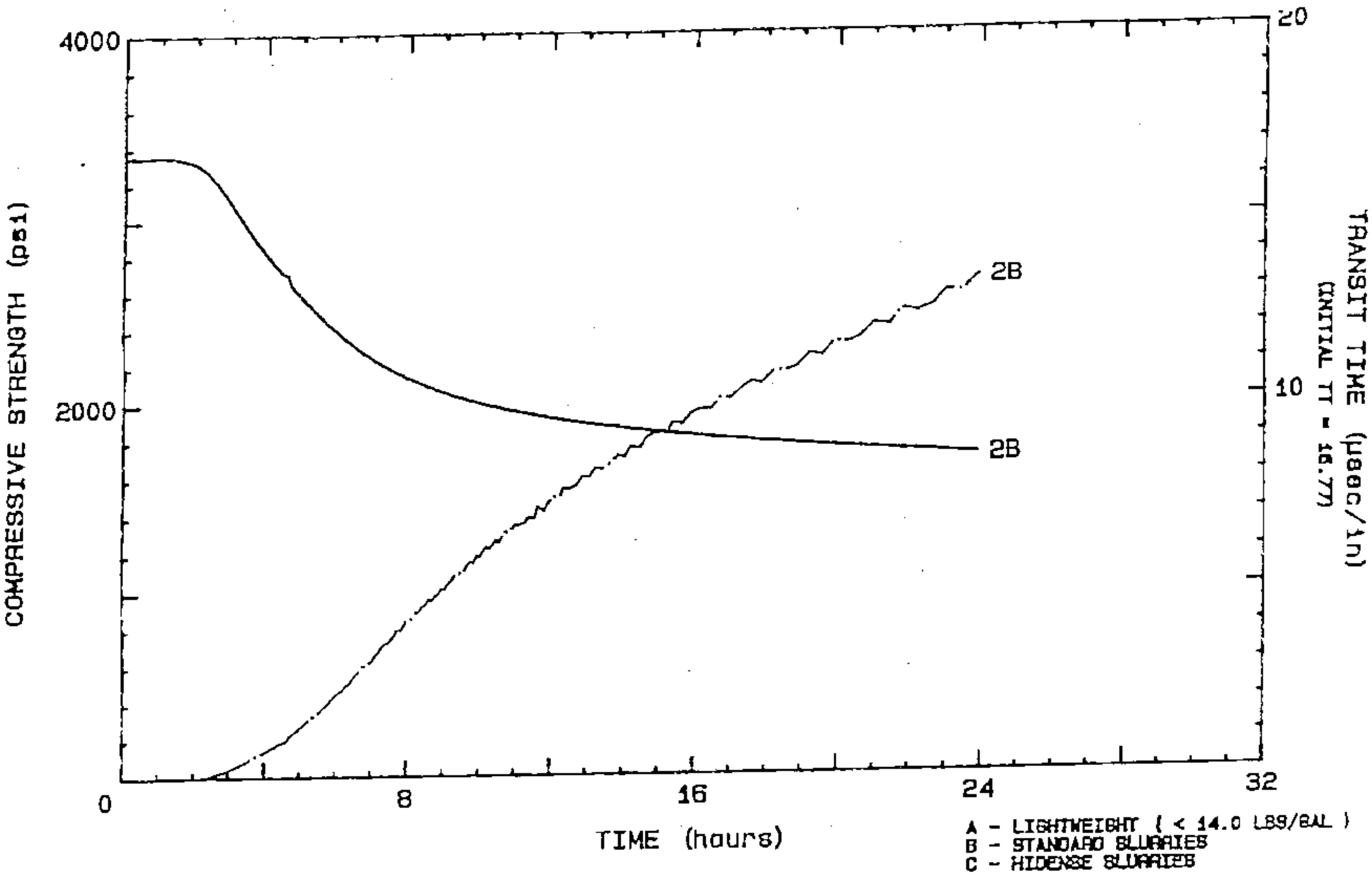
27/02 '03 THU 13:01 [TX/RX NO 6401] 001

PROJECT NO.: MATT SIGGMAN
DATE: 27/02/03
PRESSURE: 2000 PSI
TEMPERATURE: 252°F

ULTRASONIC CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET:	50	@	2:58
STRENGTH 1 :	500	@	6:14
STRENGTH 2 :	19999		
CURR. STR. :	2674	@	23:59

CEMENT: D WATER + HTB CEMENT + HALAD 413L 32 GAL/10BBL + SCR-100L 1 GAL/10BBL + D AIR 300L 0.25 GAL/10BBL
DENSITY 15.8 LB/GAL, YIELD 1.13 FT³/SK, WATER 4.35 GALS/SK, TOTAL FLUID 4.75 GALS/SK



HALLIBURTON

CEMENT SLURRY REPORT

Customer	:	Esso		Date	:	26-Feb-03
Well Name	:	Scallop		Reference	:	R03/SDCO/SLP/PLUG/M02
Casing Size	:	12 1/2	in.			
Job Type	:	Plug				
Slurry Type	:	Single				
Time to Temp	:	7min				

RKB to Mudline	:						
Depth(MD from RKB)	:	895	Meters	**Depth(TVD from RKB)**	:	895	Meters
Surface Temperature	:	27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	:	57	Deg.C.	**BHCT (per API Spec 10)**	:	35	Deg.C.
Mud Weight	:	9.5	PPG	**Water Source**	:	Drillwater	

ABC Class 'G'	:	94.00	Lbs.	From Yard
NF-5	:	0.003	Gals/Sk	0.25 gal/10bbl of Mix Fluid

Slurry Weight (Surface)	:	15.80	PPG	**Slurry Yield (Surface)**	:	1.16	CuFt/Sack
Mixing Water	:	5.15	Gals/Sack	**Total Mixing Fluid**	:	5.15	Gals/Sack

Thickening Time (Hrs:Mins)	:	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
		0	2:50	2:59	2:57	35	Deg.C.

Free Water	:	4.0	%		Vertical			
Fluid Loss	:	NA	Not Measured	@ 35	Deg.C.	and	1,000	psi

Fann Readings (RPM)	:	**300**	**200**	**100**	**6**	**3**	**PV**	**YP**
80 Deg F	:	94	80	62	31	24	48	46

500 psi Compressive Strength @ 2000 psi and 57 Deg.C. 3:52

Notes	:	The test was conducted to the specifications provided
	:	
Lab Technician	:	Matthew Siegman
Approved	:	Jim Collins

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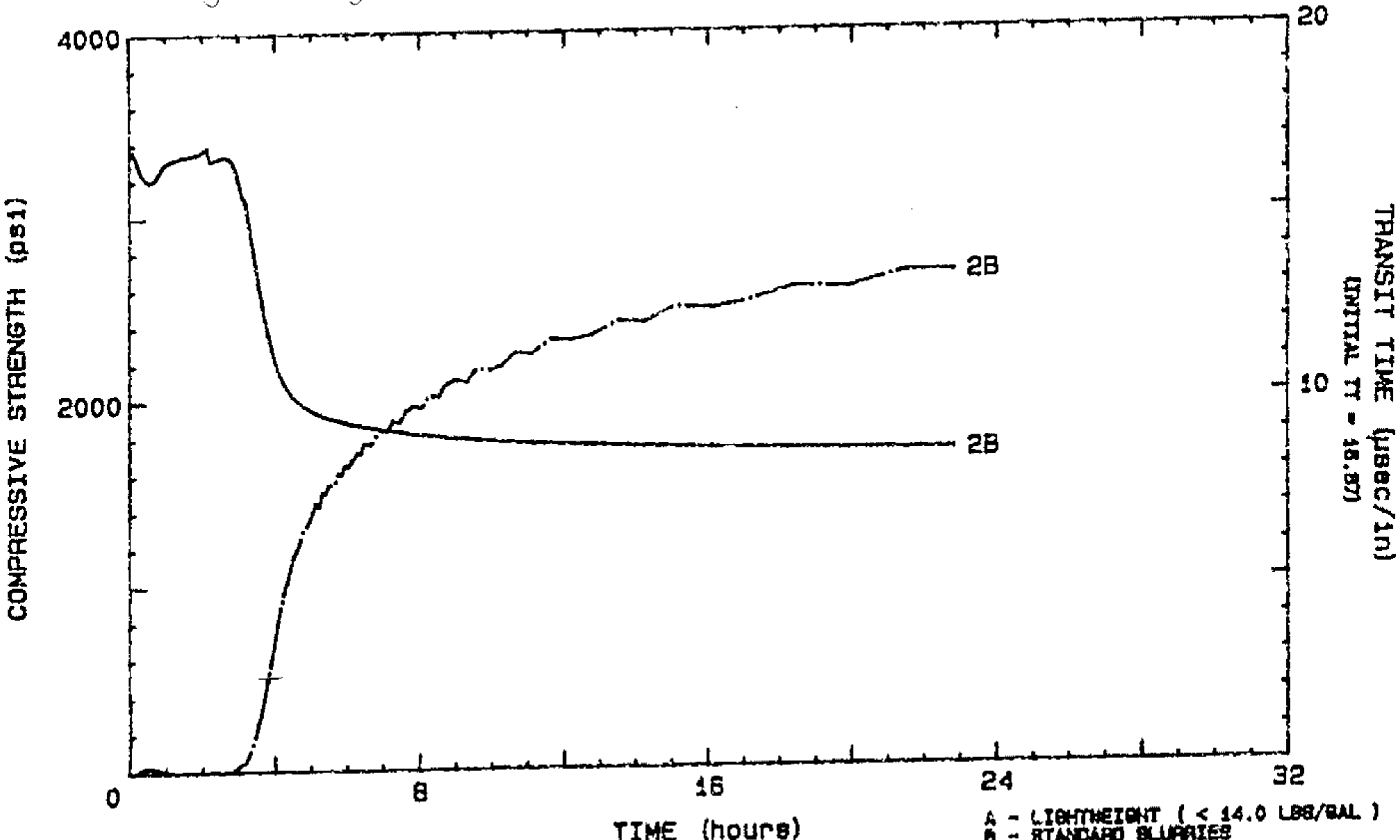
SDCO-SLP - Shoe Plug (12 5in)

PROJECT NO.: R03/SDCO/PLUG/M02
DATE: 26/02/03
PRESSURE: 3000 psi
TEMPERATURE: 35°C

ULTRASONIC
CEMENT ANALYZER
HALLIBURTON SERVICES

TIAL SET:	50	@	3:06
STRENGTH 1 :	500	@	3:49
STRENGTH 2 :	19999		
CURR. STR. :	2676	@	22:56

CEMENT: ABC 'G', Drill water, NF-5 (0.25 gl/10bbl),
Density 15.8 lb/gal, yield 1.16 ft³/sk, Fluid ratio 5.15



A - LIGHTWEIGHT (< 14.0 LBS/GAL)
B - STANDARD SLURRIES
C - HIDENSE SLURRIES

HALLIBURTON

CEMENT SLURRY REPORT

Customer	: Esso		Date	:	26-Feb-03	
Well Name	: Scallop		Reference	:	R04/SDCO/SLP/PLUG/M02	
Casing Size	: 12 1/2	in.				
Job Type	: Plug					
Slurry Type	: Single					
Time to Temp	: 1min					

RKB to Mudline	:					
Depth(MD from RKB)	: 200	Meters	**Depth(TVD from RKB)**	:	200	Meters
Surface Temperature	: 27	Deg.C.	**Temperature Gradient**	:		Deg.C./100M
BHST	: 15	Deg.C.	**BHCT (per API Spec 10)**	:	15	Deg.C.
Mud Weight	: 9.50	PPG	**Water Source**	:	Seawater	

ABC Class 'G'	: 94.00	Lbs.	From Yard
NF-5	: 0.003	Gals/Sk	0.25 gal/10bbl of Mix Fluid
Calcium Chloride	2.0	% BWOC	

Slurry Weight (Surface)	: 15.90	PPG	**Slurry Yield (Surface)**	:	1.18	CuFt/Sack
Mixing Water	: 5.16	Gals/Sack	**Total Mixing Fluid**	:	5.16	Gals/Sack

Thickening Time (Hrs:Mins) :	**Initial BC**	**30 BC**	**50 BC**	**70 BC**	300	psi
	0	0:00	2:00	2:11	15	Deg.C.

Free Water	: 4.0	%	Vertical				
Fluid Loss	: NA	Not Measured	@ 15	Deg.C.	and	1,000	psi

500 psi Compressive Strength @ 2000 psi and 15 Deg.C. 7:20

Notes : The test was conducted to the specifications provided
:

Lab Technician : Matthew Siegman

Approved : Jim Collins

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

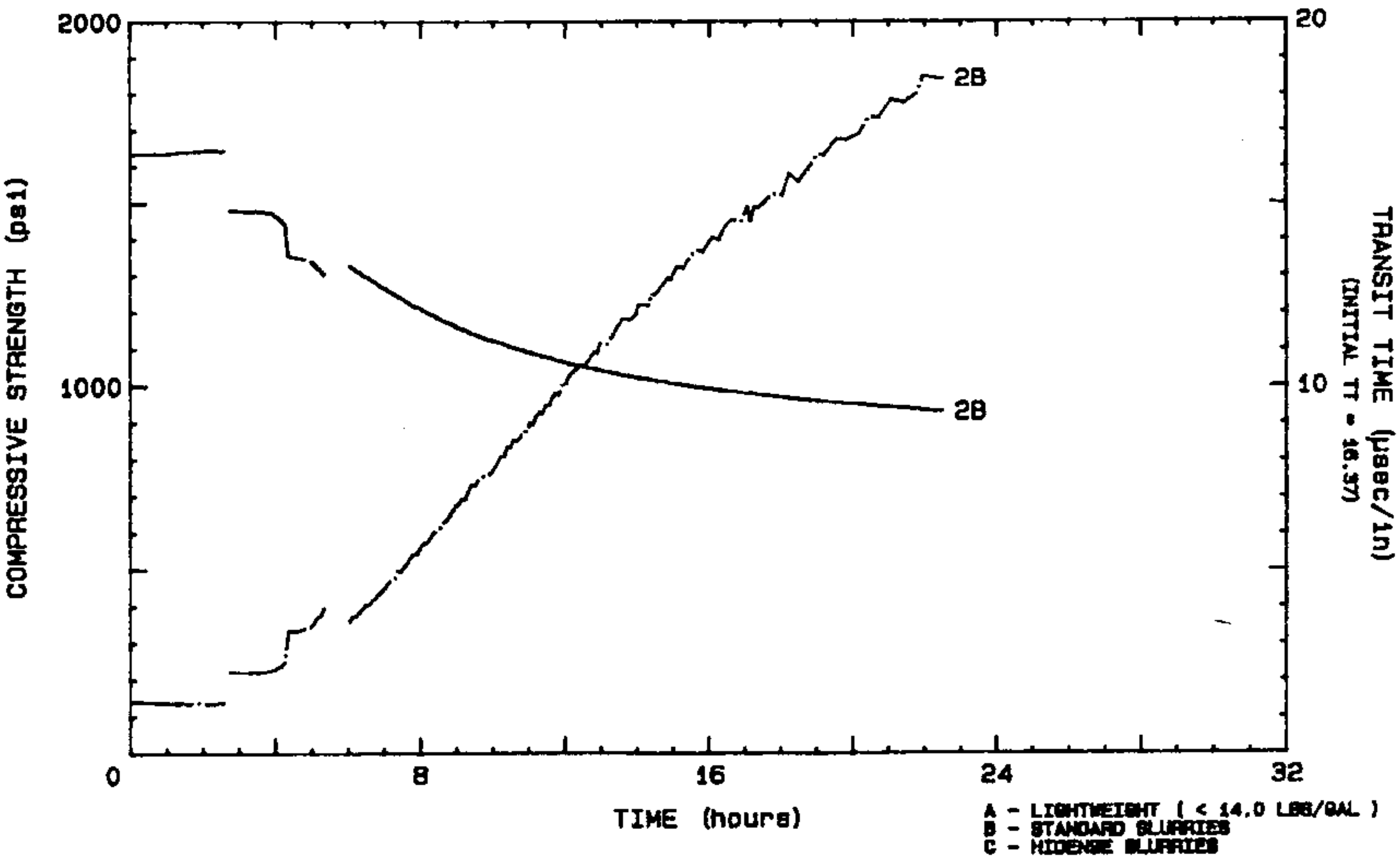
SDCO-SLP - Plug 3 - Surface

PROJECT NO.: R04/SDCO/SLP/M02
DATE: 26/02/03
PRESSURE: 2000 psi
TEMPERATURE: 15°C

ULTRASONIC CEMENT ANALYZER
HALLIBURTON SERVICES

INITIAL SET:	50	@	:00
STRENGTH 1 :	500	@	7:27
STRENGTH 2 :	19999		
CURR. STR. :	1842	@	22:35

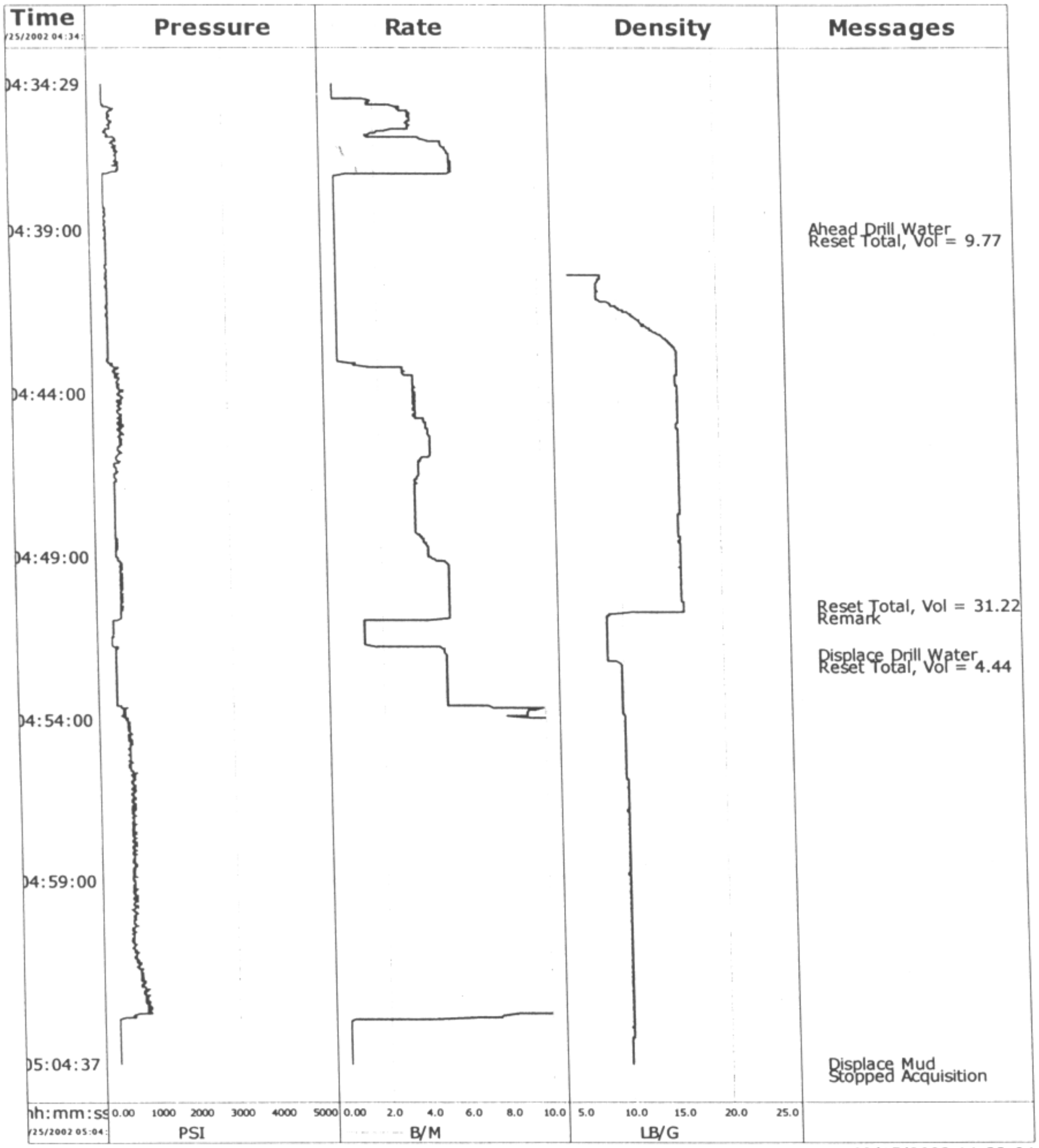
CEMENT: ABC 'G', Sea water, Calcium Chloride (2% BWOC)
Fluid weight 15.9 lb/gal, yield 1.17 ft³/sk, fluid ratio => 5.15 gal/sk



Schlumberger # Job Report

CemCAT v1.0

Well	**Client**
Field	**SIR No.**
Engineer	**Job Type** P+A 1
Country Australia	**Job Date** 10-25-2002



02/15/2003 14:33:04

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:27:2003:14:16:26	0.0	0.0	-15
02:27:2003:14:16:30	Pump Water Ahead		
02:27:2003:14:16:30	0.0	0.0	-15
02:27:2003:14:16:56	0.8	0.2	-1
02:27:2003:14:17:26	1.4	0.8	265
02:27:2003:14:17:56	1.4	1.5	233
02:27:2003:14:18:26	1.4	2.2	214
02:27:2003:14:18:57	1.4	2.9	228
02:27:2003:14:19:27	1.4	3.7	223
02:27:2003:14:19:57	1.4	4.4	228
02:27:2003:14:20:27	0.0	4.8	40
02:27:2003:14:20:57	0.0	4.8	40
02:27:2003:14:21:11	Pressure Test line		
02:27:2003:14:21:11	0.0	4.8	40
02:27:2003:14:21:27	0.0	4.8	45
02:27:2003:14:21:57	0.0	4.8	45
02:27:2003:14:22:27	0.0	4.8	2013
02:27:2003:14:22:57	0.0	4.8	2013
02:27:2003:14:23:27	0.0	4.8	2013
02:27:2003:14:23:57	0.0	4.8	-5
02:27:2003:14:24:13	Pump Water Ahead		
02:27:2003:14:24:13	0.0	4.8	-5
02:27:2003:14:24:27	0.0	4.8	-5
02:27:2003:14:24:57	0.0	4.8	-5
02:27:2003:14:25:27	0.0	4.8	-5
02:27:2003:14:25:57	0.0	4.8	17
02:27:2003:14:26:27	1.3	5.1	274
02:27:2003:14:26:57	1.6	5.9	237
02:27:2003:14:27:27	1.8	6.7	278
02:27:2003:14:27:57	1.8	7.6	278
02:27:2003:14:28:27	1.8	8.5	287
02:27:2003:14:28:57	1.8	9.4	292
02:27:2003:14:29:27	1.8	10.3	301
02:27:2003:14:29:57	1.8	11.2	297
02:27:2003:14:30:27	1.8	12.1	301
02:27:2003:14:30:58	1.8	13.0	324
02:27:2003:14:31:28	1.8	13.9	306
02:27:2003:14:31:58	1.8	14.8	329
02:27:2003:14:32:28	1.8	15.7	315
02:27:2003:14:32:58	1.8	16.6	329
02:27:2003:14:33:28	1.8	17.5	333
02:27:2003:14:33:58	1.8	18.4	320
02:27:2003:14:34:28	1.8	19.3	333
02:27:2003:14:34:58	1.8	20.2	338
02:27:2003:14:35:28	Reset Total, Vol = 21.06 bbl		
02:27:2003:14:35:28	0.3	21.1	164
02:27:2003:14:35:30	Pump Cement Slurry @ 15.8 ppg		
02:27:2003:14:35:30	0.0	0.0	109
02:27:2003:14:35:58	3.7	0.8	507
02:27:2003:14:36:28	4.8	3.1	768
02:27:2003:14:36:58	4.8	5.4	750
02:27:2003:14:37:28	4.8	7.8	745
02:27:2003:14:37:58	4.8	10.2	727
02:27:2003:14:38:28	4.8	12.6	695
02:27:2003:14:38:58	4.9	15.0	649
02:27:2003:14:39:28	4.9	17.4	612
02:27:2003:14:39:58	4.9	19.9	567
02:27:2003:14:40:28	4.8	22.3	521
02:27:2003:14:40:58	4.8	24.7	471

02:27:2003:14:41:28	4.9	27.1	452
02:27:2003:14:41:59	4.9	29.6	457
02:27:2003:14:42:29	4.9	32.1	425
02:27:2003:14:42:59	4.9	34.5	374
02:27:2003:14:43:29	4.9	37.0	320
02:27:2003:14:43:59	4.9	39.4	315
02:27:2003:14:44:29	4.9	41.9	315
02:27:2003:14:44:59	4.9	44.4	306
02:27:2003:14:45:29	4.9	46.8	301
02:27:2003:14:45:59	5.0	49.3	278
02:27:2003:14:46:29	5.0	51.8	292
02:27:2003:14:46:59	4.9	54.2	292
02:27:2003:14:47:29	5.0	56.7	287
02:27:2003:14:47:59	5.0	59.2	274
02:27:2003:14:48:29	5.0	61.6	269
02:27:2003:14:48:59	5.0	64.1	287
02:27:2003:14:49:29	5.0	66.6	287
02:27:2003:14:49:59	5.0	69.1	297
02:27:2003:14:50:29	5.0	71.6	297
02:27:2003:14:50:59	5.0	74.1	283
02:27:2003:14:51:29	Reset Total, Vol = 75.36 bbl		
02:27:2003:14:51:29	0.0	75.4	27
02:27:2003:14:51:59	0.0	0.0	27
02:27:2003:14:52:29	0.0	0.0	27
02:27:2003:14:52:52	Pump Water Behind		
02:27:2003:14:52:52	0.0	0.0	27
02:27:2003:14:52:59	0.0	0.0	27
02:27:2003:14:53:30	2.6	0.7	100
02:27:2003:14:53:45	Displace with Mud		
02:27:2003:14:53:45	1.8	1.3	36
02:27:2003:14:53:46	Reset Total, Vol = 1.34 bbl		
02:27:2003:14:53:46	0.9	1.3	8
02:27:2003:14:54:00	4.5	0.4	182
02:27:2003:14:54:30	4.8	2.8	95
02:27:2003:14:55:00	5.2	5.3	123
02:27:2003:14:55:30	4.0	7.6	59
02:27:2003:14:56:00	5.3	10.0	132
02:27:2003:14:56:30	5.3	12.6	146
02:27:2003:14:57:00	5.6	15.3	141
02:27:2003:14:57:30	6.5	18.4	118
02:27:2003:14:58:00	5.5	21.5	127
02:27:2003:14:58:30	5.3	24.2	127
02:27:2003:14:59:00	5.4	26.9	146
02:27:2003:14:59:30	5.3	29.5	155
02:27:2003:15:00:00	5.3	32.2	127
02:27:2003:15:00:30	5.3	34.9	127
02:27:2003:15:01:00	5.3	37.5	136
02:27:2003:15:01:30	5.3	40.2	136
02:27:2003:15:02:00	5.3	42.9	127
02:27:2003:15:02:30	5.3	45.5	127
02:27:2003:15:03:00	5.3	48.2	132
02:27:2003:15:03:30	5.3	50.9	127
02:27:2003:15:04:00	5.3	53.6	150
02:27:2003:15:04:30	5.3	56.2	132
02:27:2003:15:05:00	5.4	58.9	159
02:27:2003:15:05:31	5.3	61.7	127
02:27:2003:15:06:01	5.4	64.3	123
02:27:2003:15:06:31	5.3	67.0	127
02:27:2003:15:07:01	5.3	69.7	146
02:27:2003:15:07:31	5.3	72.3	155
02:27:2003:15:08:01	5.4	75.0	141
02:27:2003:15:08:31	5.3	77.7	150
02:27:2003:15:09:01	5.3	80.4	132

			P&A 1
02:27:2003:15:09:31	5.3	83.0	132
02:27:2003:15:10:01	5.3	85.7	155
02:27:2003:15:10:31	5.3	88.4	155
02:27:2003:15:11:01	5.3	91.0	127
02:27:2003:15:11:31	5.4	93.7	127
02:27:2003:15:12:01	5.3	96.4	127
02:27:2003:15:12:31	5.3	99.0	118
02:27:2003:15:13:01	5.3	101.7	155
02:27:2003:15:13:31	5.3	104.4	159
02:27:2003:15:14:01	5.3	107.0	136
02:27:2003:15:14:31	5.3	109.7	150
02:27:2003:15:15:01	5.3	112.4	159
02:27:2003:15:15:31	5.3	115.0	136
02:27:2003:15:16:01	5.3	117.7	146
02:27:2003:15:16:31	5.3	120.4	159
02:27:2003:15:17:02	5.3	123.1	127
02:27:2003:15:17:32	5.3	125.8	123
02:27:2003:15:18:02	5.3	128.4	123
02:27:2003:15:18:32	5.3	131.1	150
02:27:2003:15:19:02	5.4	133.8	150
02:27:2003:15:19:32	5.3	136.4	114
02:27:2003:15:20:02	0.0	138.8	4
02:27:2003:15:20:32	4.9	140.6	127
02:27:2003:15:21:02	5.1	143.1	123
02:27:2003:15:21:32	5.2	145.7	127
02:27:2003:15:22:02	5.1	148.3	127
02:27:2003:15:22:32	5.1	150.8	365
02:27:2003:15:23:02	5.0	153.4	356
02:27:2003:15:23:32	5.0	155.9	452
02:27:2003:15:24:02	5.1	158.4	498
02:27:2003:15:24:32	5.1	161.0	553
02:27:2003:15:25:02	5.1	163.5	617
02:27:2003:15:25:32	5.1	166.0	649
02:27:2003:15:26:02	5.1	168.6	635
02:27:2003:15:26:32	4.1	171.1	507
02:27:2003:15:27:02	0.0	171.2	-10
02:27:2003:15:27:32	0.0	171.2	-15
02:27:2003:15:28:02	0.0	171.2	-19
02:27:2003:15:28:33	0.0	171.2	-19
02:27:2003:15:29:03	0.0	171.2	-19
02:27:2003:15:29:33	0.0	171.2	-19
02:27:2003:15:30:03	0.0	171.2	-19
02:27:2003:15:30:33	0.0	171.2	-19
02:27:2003:15:31:03	0.0	171.2	-19
02:27:2003:15:31:33	0.0	171.2	-19
02:27:2003:15:32:03	0.0	171.2	-19
02:27:2003:15:32:33	0.0	171.2	-19
02:27:2003:15:33:03	0.0	171.2	-19
02:27:2003:15:33:33	0.0	171.2	-19
02:27:2003:15:34:01	Check for Flow Back		
02:27:2003:15:34:01	0.0	171.2	-19

DISTRICT	STATION	TYPE SERVICE	COMPANY	
CAS	PAS	Plug & Abandon # 1	ESSO Australia Pty Ltd	**Schlumberger**

RIG	TYPE OF WELL	FIELD	WELL No.	
Sedco 702	Oil Exploration	Scallop	1	SERVICE REPORT

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
2/27/03 2:16 PM	3174	12.25	0		85 C	

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
2/27/03 3:34 PM	WBM	10.2	56		

CASING Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at	PREVIOUS CASING Size	Depth	Wt.
							13 3/8	917	72

DRILL PIPE Size	Depth	Type	Wt.	Volume	PACKER Type	Depth	BRIDGE PLUG Type	Depth	TAIL PIPE Type	Depth
5"	2931	G	19.5	171					3.5 DP	3174

CASING EQUIPMENT USED: SHOE Float Stab	COLLAR Float Stab	PLUGS Top Bottom	CENT. Qty. Type	CEMENT HEAD	MUD CIRCULATION PRIOR TO JOB Time - Min.	Vol. BBLS	Press - PSI

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
			8.3	22						15.8	75	40	179

EQUIPMENT: LAS [ ] LPJ; Pump Unit [1]; Batch Mixer [1]; Compressor [ ] RCM; Pump Unit S/No. 4062913261
DURING JOB WAS PIPE: Rotated N; Reciprocated N
PARAMETERS RECORDED: X Press X Rate X Vol Dty ON: CemCAT
MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY	TAIL SLURRY	MATERIALS USED	
	75 BBLS 15.8 ppg - Batch Mixed	12 Gals	SCR 100
		135 Gals	Halad 413
		1 Gal	NF 5

TIME	PRESSURE Low	High	VOLUME BBL	BPM	LT MIN	RECORD OF SERVICE
14:16			5	1.4		Pump Water
14:21		2000				Pressure test Lines
14:24			17	1.8		Pump Water
14:36			75	4.9		Pump Cement
14:52			1.2	0.7		Pump Water
14:53			149	5.3		Displace with Mud
15:34						Check Flow Back - OK
15:35						Finish Job

No. OF DS PERSONNEL ON JOB: SUP [ ] MECH [ ] S.S [2] F.E [ ] HEL [1]

STEM1 DONE? YES X NO | TOTAL LOST TIME H | TOTAL OPERATING TIME H 1.2

CUSTOMER COMMENTS

DS REPRESENTATIVE: P.Jennings / D. Johnson

QUALITY OF SERVICE GOOD [X] SATISFACTORY [ ] POOR [ ]

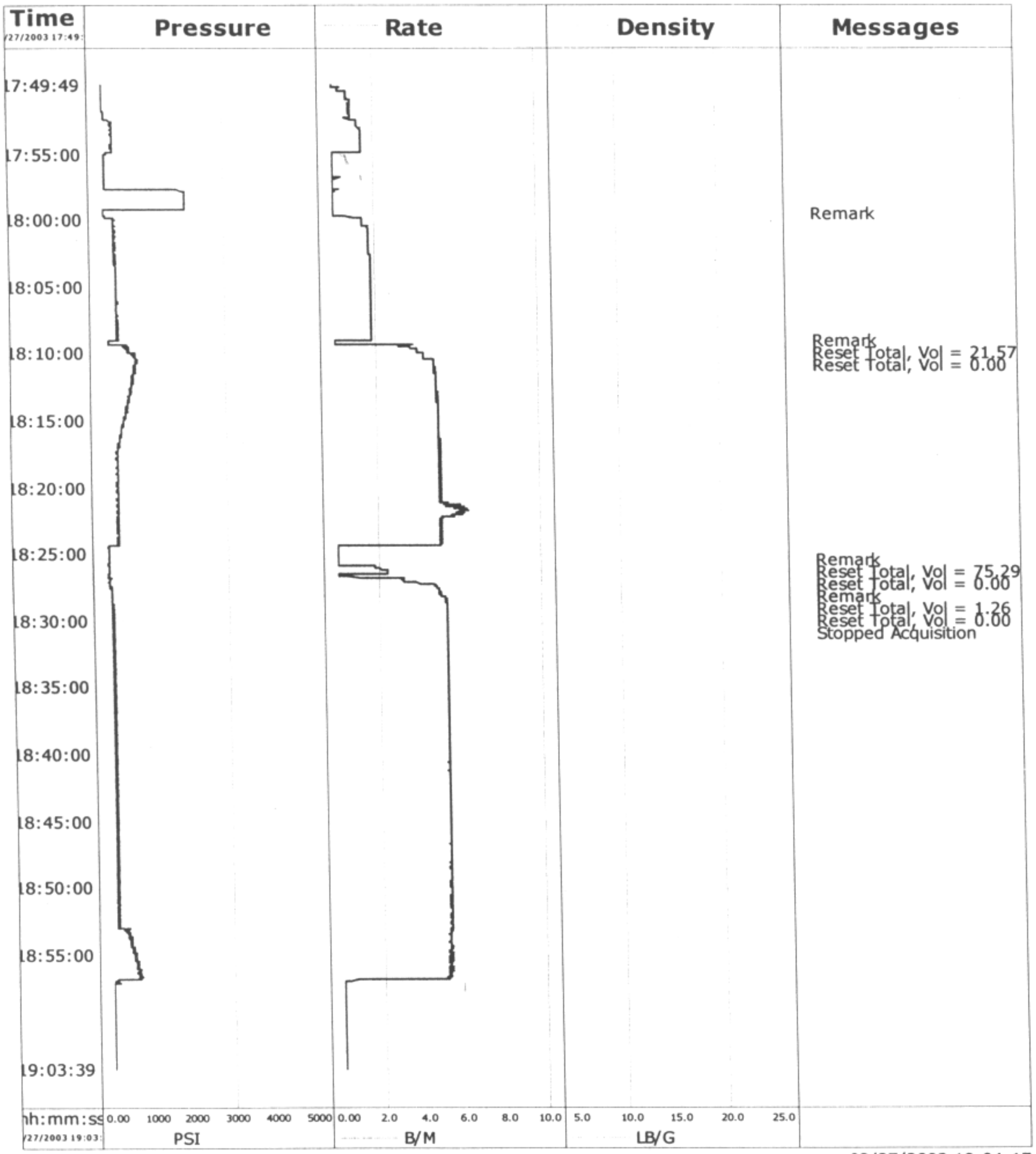
CUSTOMER REPRESENTATIVE: George Sharkey

Schlumberger

Job Report

CemCAT v1.0

Well	**Client**
Field	**SIR No.**
Engineer	**Job Type** P+A 2
Country Australia	**Job Date** 02-27-2003



02/27/2003 19:04:17

P&A 2

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:27:2003:17:49:49	0.0	0.0	-15
02:27:2003:17:50:09	0.3	0.1	-5
02:27:2003:17:50:29	0.6	0.2	-1
02:27:2003:17:50:49	0.7	0.4	-1
02:27:2003:17:51:09	0.9	0.7	-1
02:27:2003:17:51:29	0.8	1.0	-5
02:27:2003:17:51:49	0.8	1.3	17
02:27:2003:17:52:09	0.9	1.5	36
02:27:2003:17:52:29	1.1	1.8	150
02:27:2003:17:52:49	1.2	2.2	223
02:27:2003:17:53:09	1.4	2.7	242
02:27:2003:17:53:29	1.4	3.1	242
02:27:2003:17:53:49	1.4	3.6	228
02:27:2003:17:54:09	1.4	4.0	228
02:27:2003:17:54:29	1.4	4.5	228
02:27:2003:17:54:50	1.4	5.0	228
02:27:2003:17:55:10	0.0	5.0	63
02:27:2003:17:55:30	0.0	5.0	54
02:27:2003:17:55:50	0.0	5.0	49
02:27:2003:17:56:10	0.0	5.0	49
02:27:2003:17:56:30	0.0	5.0	49
02:27:2003:17:56:50	0.0	5.1	59
02:27:2003:17:57:10	0.0	5.1	54
02:27:2003:17:57:30	0.0	5.1	54
02:27:2003:17:57:50	0.0	5.1	2032
02:27:2003:17:58:10	0.0	5.1	2027
02:27:2003:17:58:30	0.0	5.1	2027
02:27:2003:17:58:50	0.0	5.1	2022
02:27:2003:17:59:10	0.0	5.1	1551
02:27:2003:17:59:30	Pump Water Ahead		
02:27:2003:17:59:30	0.0	5.1	-10
02:27:2003:17:59:50	1.4	5.2	146
02:27:2003:18:00:10	1.4	5.7	246
02:27:2003:18:00:30	1.7	6.2	260
02:27:2003:18:00:50	1.7	6.8	251
02:27:2003:18:01:10	1.7	7.3	265
02:27:2003:18:01:30	1.7	7.9	260
02:27:2003:18:01:50	1.7	8.5	292
02:27:2003:18:02:10	1.7	9.0	260
02:27:2003:18:02:30	1.8	9.6	287
02:27:2003:18:02:50	1.8	10.2	292
02:27:2003:18:03:10	1.8	10.8	274
02:27:2003:18:03:30	1.8	11.4	297
02:27:2003:18:03:50	1.8	12.0	292
02:27:2003:18:04:10	1.8	12.6	310
02:27:2003:18:04:30	1.8	13.2	297
02:27:2003:18:04:50	1.8	13.9	301
02:27:2003:18:05:10	1.8	14.5	301
02:27:2003:18:05:30	1.8	15.1	297
02:27:2003:18:05:31	Pressure Test Lines		
02:27:2003:18:05:31	1.8	15.1	306
02:27:2003:18:05:50	1.8	15.7	320
02:27:2003:18:06:11	1.8	16.3	292
02:27:2003:18:06:31	1.8	17.0	320
02:27:2003:18:06:51	1.8	17.6	329
02:27:2003:18:07:11	1.8	18.2	310
02:27:2003:18:07:31	1.8	18.8	320
02:27:2003:18:07:51	1.8	19.4	329
02:27:2003:18:08:11	1.8	20.0	329

02:27:2003:18:08:31	1.8	20.6	324
02:27:2003:18:08:51	1.8	21.3	347
02:27:2003:18:09:02	Pump Water Ahead		
02:27:2003:18:09:02	0.3	21.6	187
02:27:2003:18:09:04	Reset Total, Vol = 21.57 bbl		
02:27:2003:18:09:04	0.0	21.6	104
02:27:2003:18:09:11	0.0	0.0	114
02:27:2003:18:09:31	3.6	0.7	484
02:27:2003:18:09:51	4.0	2.0	617
02:27:2003:18:10:11	4.3	3.4	773
02:27:2003:18:10:31	4.8	5.0	791
02:27:2003:18:10:51	4.9	6.6	773
02:27:2003:18:11:11	4.9	8.2	754
02:27:2003:18:11:31	4.9	9.8	736
02:27:2003:18:11:51	4.9	11.5	718
02:27:2003:18:12:11	4.9	13.1	677
02:27:2003:18:12:31	5.0	14.8	658
02:27:2003:18:12:51	5.0	16.4	608
02:27:2003:18:13:11	5.0	18.1	612
02:27:2003:18:13:31	5.0	19.7	567
02:27:2003:18:13:51	5.0	21.4	558
02:27:2003:18:14:11	5.0	23.1	516
02:27:2003:18:14:31	5.0	24.7	521
02:27:2003:18:14:51	5.0	26.4	484
02:27:2003:18:15:11	5.1	28.1	461
02:27:2003:18:15:31	5.1	29.8	429
02:27:2003:18:15:51	5.1	31.5	388
02:27:2003:18:16:11	5.1	33.1	393
02:27:2003:18:16:31	5.1	34.8	333
02:27:2003:18:16:51	5.1	36.5	333
02:27:2003:18:17:11	5.1	38.2	287
02:27:2003:18:17:31	5.1	39.9	297
02:27:2003:18:17:51	5.1	41.6	329
02:27:2003:18:18:12	5.1	43.4	292
02:27:2003:18:18:32	5.1	45.1	315
02:27:2003:18:18:52	5.1	46.8	292
02:27:2003:18:19:12	5.1	48.5	306
02:27:2003:18:19:32	5.1	50.1	292
02:27:2003:18:19:52	5.1	51.8	301
02:27:2003:18:20:12	5.1	53.5	301
02:27:2003:18:20:32	5.1	55.2	315
02:27:2003:18:20:52	5.1	56.9	292
02:27:2003:18:21:12	5.2	58.6	283
02:27:2003:18:21:32	6.1	60.5	297
02:27:2003:18:21:52	6.1	62.5	265
02:27:2003:18:22:12	5.3	64.5	310
02:27:2003:18:22:32	5.1	66.2	292
02:27:2003:18:22:52	5.1	67.9	292
02:27:2003:18:23:12	5.1	69.6	297
02:27:2003:18:23:32	5.1	71.3	287
02:27:2003:18:23:52	5.1	73.0	297
02:27:2003:18:24:12	5.1	74.7	283
02:27:2003:18:24:32	0.0	75.3	36
02:27:2003:18:24:52	0.0	75.3	31
02:27:2003:18:25:12	0.0	75.3	31
02:27:2003:18:25:23	Pump Cement at 15.8 ppg		
02:27:2003:18:25:23	0.0	75.3	36
02:27:2003:18:25:25	Reset Total, Vol = 75.29 bbl		
02:27:2003:18:25:25	0.0	75.3	31
02:27:2003:18:25:32	0.0	0.0	31
02:27:2003:18:25:52	0.0	0.0	22
02:27:2003:18:26:12	2.4	0.6	68
02:27:2003:18:26:32	Pump Water Behind		

02:27:2003:18:26:32	0.0	1.3	27
02:27:2003:18:26:33	Reset Total, Vol = 1.26 bbl		
02:27:2003:18:26:33	0.0	1.3	8
02:27:2003:18:26:34	Displace with Mud		
02:27:2003:18:26:34	0.0	0.0	17
02:27:2003:18:26:52	3.2	0.4	68
02:27:2003:18:27:12	4.0	1.5	40
02:27:2003:18:27:32	4.9	3.0	68
02:27:2003:18:27:52	5.0	4.7	100
02:27:2003:18:28:12	5.2	6.3	118
02:27:2003:18:28:32	5.3	8.1	123
02:27:2003:18:28:52	5.3	9.9	118
02:27:2003:18:29:12	5.3	11.6	109
02:27:2003:18:29:33	5.3	13.5	132
02:27:2003:18:29:53	5.3	15.3	132
02:27:2003:18:30:13	5.3	17.1	109
02:27:2003:18:30:33	5.3	18.8	114
02:27:2003:18:30:53	5.3	20.6	132
02:27:2003:18:31:13	5.4	22.4	114
02:27:2003:18:31:33	5.3	24.2	132
02:27:2003:18:31:53	5.4	26.0	132
02:27:2003:18:32:13	5.3	27.8	118
02:27:2003:18:32:33	5.3	29.5	132
02:27:2003:18:32:53	5.4	31.3	118
02:27:2003:18:33:13	5.3	33.1	118
02:27:2003:18:33:33	5.4	34.9	118
02:27:2003:18:33:53	5.4	36.7	141
02:27:2003:18:34:13	5.3	38.5	123
02:27:2003:18:34:33	5.3	40.2	118
02:27:2003:18:34:53	5.3	42.0	132
02:27:2003:18:35:13	5.3	43.8	141
02:27:2003:18:35:33	5.3	45.6	127
02:27:2003:18:35:53	5.3	47.4	127
02:27:2003:18:36:13	5.3	49.1	123
02:27:2003:18:36:33	5.4	50.9	132
02:27:2003:18:36:53	5.3	52.7	132
02:27:2003:18:37:13	5.3	54.5	123
02:27:2003:18:37:33	5.3	56.3	132
02:27:2003:18:37:53	5.3	58.1	123
02:27:2003:18:38:13	5.3	59.8	136
02:27:2003:18:38:33	5.3	61.6	132
02:27:2003:18:38:53	5.3	63.4	132
02:27:2003:18:39:13	5.3	65.2	118
02:27:2003:18:39:33	5.3	66.9	136
02:27:2003:18:39:53	5.3	68.7	127
02:27:2003:18:40:13	5.3	70.5	136
02:27:2003:18:40:33	5.3	72.3	132
02:27:2003:18:40:54	5.3	74.2	132
02:27:2003:18:41:13	5.3	75.8	127
02:27:2003:18:41:34	5.3	77.7	132
02:27:2003:18:41:54	5.3	79.5	136
02:27:2003:18:42:14	5.3	81.3	136
02:27:2003:18:42:34	5.3	83.1	141
02:27:2003:18:42:54	5.3	84.8	132
02:27:2003:18:43:14	5.3	86.6	123
02:27:2003:18:43:34	5.3	88.4	123
02:27:2003:18:43:54	5.3	90.2	123
02:27:2003:18:44:14	5.3	91.9	123
02:27:2003:18:44:34	5.3	93.7	132
02:27:2003:18:44:54	5.3	95.5	127
02:27:2003:18:45:14	5.4	97.3	136
02:27:2003:18:45:34	5.3	99.1	123
02:27:2003:18:45:54	5.3	100.8	136

02:27:2003:18:46:14	5.3	102.6	123
02:27:2003:18:46:34	5.3	104.4	123
02:27:2003:18:46:54	5.3	106.2	132
02:27:2003:18:47:14	5.3	107.9	123
02:27:2003:18:47:34	5.3	109.7	127
02:27:2003:18:47:54	5.3	111.5	123
02:27:2003:18:48:14	5.3	113.3	141
02:27:2003:18:48:34	5.3	115.1	127
02:27:2003:18:48:54	5.3	116.8	136
02:27:2003:18:49:14	5.3	118.6	123
02:27:2003:18:49:34	5.3	120.4	118
02:27:2003:18:49:54	5.3	122.2	123
02:27:2003:18:50:14	5.3	123.9	136
02:27:2003:18:50:34	5.3	125.7	127
02:27:2003:18:50:54	5.3	127.5	141
02:27:2003:18:51:14	5.3	129.2	132
02:27:2003:18:51:34	5.3	131.0	123
02:27:2003:18:51:54	5.3	132.8	123
02:27:2003:18:52:14	5.3	134.6	118
02:27:2003:18:52:35	5.3	136.4	127
02:27:2003:18:52:55	5.3	138.2	127
02:27:2003:18:53:15	5.3	140.0	342
02:27:2003:18:53:35	5.3	141.7	365
02:27:2003:18:53:55	5.2	143.5	388
02:27:2003:18:54:15	5.2	145.2	434
02:27:2003:18:54:35	5.2	146.9	484
02:27:2003:18:54:55	5.3	148.7	507
02:27:2003:18:55:15	5.3	150.4	553
02:27:2003:18:55:35	5.3	152.2	599
02:27:2003:18:55:55	5.3	153.9	608
02:27:2003:18:56:15	5.2	155.7	617
02:27:2003:18:56:35	5.2	157.4	672
02:27:2003:18:56:55	4.4	159.1	489
02:27:2003:18:57:15	0.0	159.2	-1
02:27:2003:18:57:35	0.0	159.2	-5
02:27:2003:18:57:55	0.0	159.2	-5
02:27:2003:18:58:15	0.0	159.2	-10
02:27:2003:18:58:35	0.0	159.2	-10
02:27:2003:18:58:55	0.0	159.2	-15
02:27:2003:18:59:15	0.0	159.2	-15
02:27:2003:18:59:35	0.0	159.2	-15
02:27:2003:18:59:55	0.0	159.2	-15
02:27:2003:19:00:15	0.0	159.2	-15
02:27:2003:19:00:35	0.0	159.2	-19
02:27:2003:19:00:55	0.0	159.2	-19
02:27:2003:19:01:15	0.0	159.2	-19
02:27:2003:19:01:35	0.0	159.2	-19
02:27:2003:19:01:55	0.0	159.2	-19
02:27:2003:19:02:15	0.0	159.2	-19
02:27:2003:19:02:35	0.0	159.2	-19
02:27:2003:19:02:55	0.0	159.2	-19
02:27:2003:19:03:15	0.0	159.2	-19
02:27:2003:19:03:35	0.0	159.2	-19
02:27:2003:19:03:39	Check Flow Back		
02:27:2003:19:03:39	0.0	159.2	-19

DISTRICT	STATION	TYPE SERVICE	COMPANY	Schlumberger
CAS	PAS	Plug & Abandon # 2	ESSO Australia Pty Ltd	

SERVICE REPORT

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
2/27/03 5:50 PM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
2/27/03 7:05 PM	WBM	10.2	56		

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at

PREVIOUS CASING

Size	Depth	Wt.
13 3/8	917	72

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	2772	G	19.5	161

PACKER

Type	Depth

BRIDGE PLUG

Type	Depth

TAIL PIPE

Type	Depth
3.5 DP	3015

CASING EQUIPMENT USED

SHOE Float	Stab	COLLAR Float	Stab	PLUGS Top	Bottom	CENT. Qty.	Type

CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB

Time - Min.	Vol. BBLS	Press - PSI

	WASH			SPACER			LEAD SLURRY				TAIL SLURRY			
Wt.	Vol. BBLS	Fill	Wt.	Vol. BBLS	Fill	Wt.	Vol.	Mix Water	Fill	Wt.	Vol.	Mix Water	Fill
										15.8	75	40	176

EQUIPMENT: LAS / LPJ [ ] · Pump Unit [1] · Batch Mixer [1] · Compressor / RCM [ ] · Pump Unit S/No. 4062913261

DURING JOB WAS PIPE: Rotated N · Reciprocated N

PARAMETERS RECORDED: ON: PRISM* — Press X · Rate X · Vol X · Dty

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY

TAIL SLURRY
75 BBLS 15.8 ppg - Batch Mixed

MATERIALS USED	
12 Gals	SCR 100
135 Gals	Halad 413
1 Gal	NF 5

TIME	PRESSURE Low	High	VOLUME BBL	BPM	LT MIN	RECORD OF SERVICE
17:50			5	1.4		Pump Water
17:57		2000				Pressure test Lines
17:59			17	1.8		Pump Water
18:09			75	5.1		Pump Cement
18:26			1.2	0.7		Pump Water
18:26			159.5	5.3		Displace with Mud
19:03						Check Flow Back - OK
19:05						Finish Job
			257.7			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB: SUP [ ] · MECH [ ] · S.S [2] · F.E. [ ] · HEL [1]

STEM1 DONE? YES X NO · TOTAL LOST TIME H · TOTAL OPERATING TIME 1.25 H

CUSTOMER COMMENTS

DS REPRESENTATIVE
P.Jennings / D. Johnson

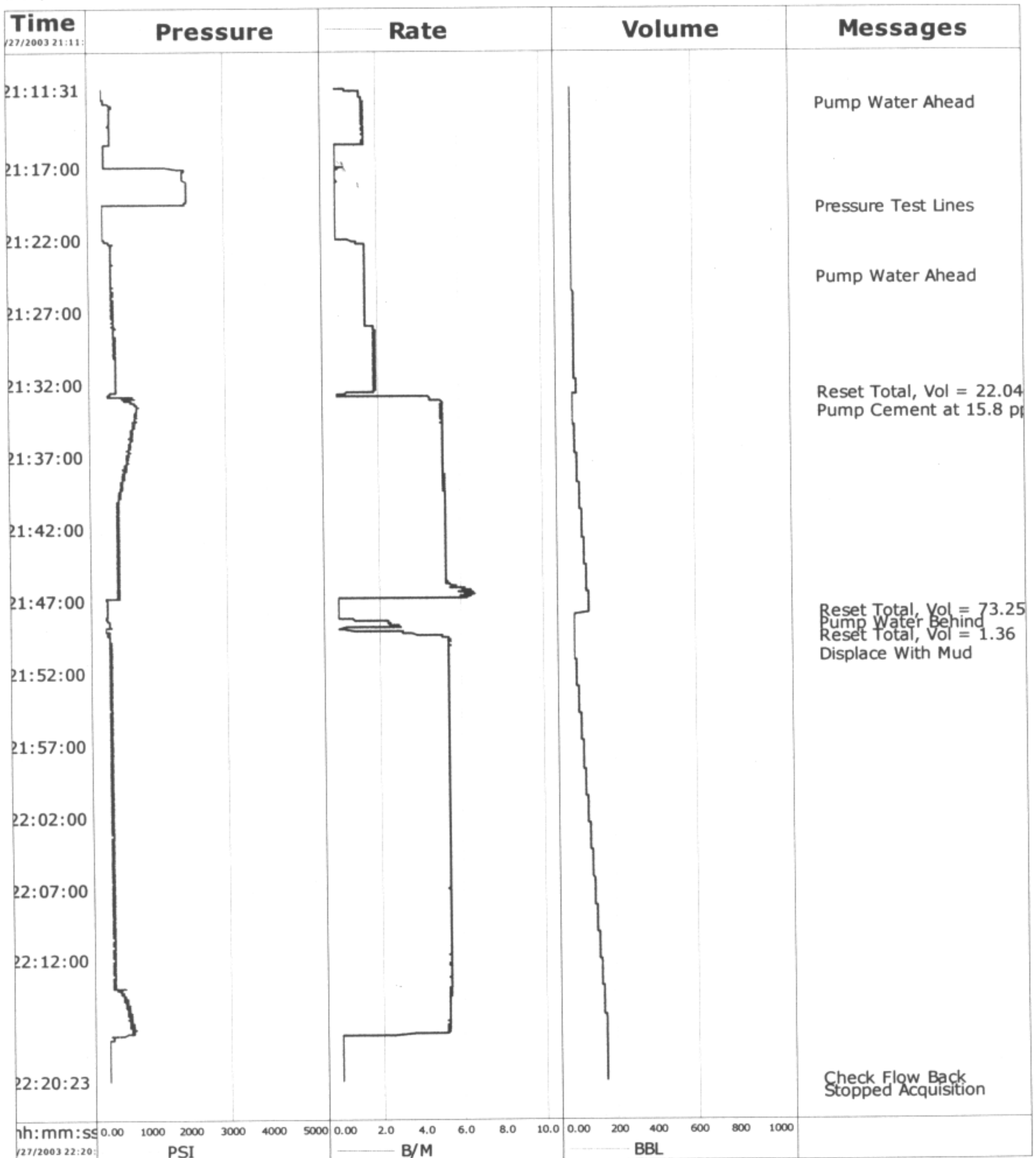
QUALITY OF SERVICE: GOOD [X] · SATISFACTORY [ ] · POOR [ ]

CUSTOMER REPRESENTATIVE
George Sharkey

Schlumberger # Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 3
Country	Australia	**Job Date**	02-27-2003



02/28/2003 16:14:22

P&A 3

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:27:2003:21:11:31	0.0	0.0	-19
02:27:2003:21:11:51	1.2	0.3	-10
02:27:2003:21:12:12	1.3	0.7	27
02:27:2003:21:12:32	1.4	1.1	95
02:27:2003:21:12:37	Pump Water Ahead		
02:27:2003:21:12:37	1.3	1.3	205
02:27:2003:21:12:52	1.4	1.6	214
02:27:2003:21:13:12	1.3	2.0	191
02:27:2003:21:13:32	1.4	2.5	196
02:27:2003:21:13:52	1.4	3.0	191
02:27:2003:21:14:12	1.4	3.4	191
02:27:2003:21:14:32	1.4	3.9	187
02:27:2003:21:14:52	1.4	4.3	196
02:27:2003:21:15:12	1.4	4.8	182
02:27:2003:21:15:32	0.0	5.0	40
02:27:2003:21:15:52	0.0	5.0	31
02:27:2003:21:16:12	0.0	5.0	31
02:27:2003:21:16:32	0.0	5.0	31
02:27:2003:21:16:52	0.0	5.0	31
02:27:2003:21:17:12	0.0	5.1	2009
02:27:2003:21:17:32	0.0	5.1	1958
02:27:2003:21:17:52	0.0	5.1	1958
02:27:2003:21:18:12	0.0	5.1	2077
02:27:2003:21:18:32	0.0	5.1	2077
02:27:2003:21:18:52	0.0	5.1	2077
02:27:2003:21:19:12	0.0	5.1	2077
02:27:2003:21:19:32	0.0	5.1	1469
02:27:2003:21:19:51	Pressure Test Lines		
02:27:2003:21:19:51	0.0	5.1	-5
02:27:2003:21:19:52	0.0	5.1	-10
02:27:2003:21:20:12	0.0	5.1	-5
02:27:2003:21:20:32	0.0	5.1	-5
02:27:2003:21:20:52	0.0	5.1	13
02:27:2003:21:21:12	0.0	5.1	13
02:27:2003:21:21:32	0.0	5.1	13
02:27:2003:21:21:52	0.0	5.1	13
02:27:2003:21:22:12	1.0	5.3	178
02:27:2003:21:22:32	1.4	5.7	210
02:27:2003:21:22:52	1.4	6.2	210
02:27:2003:21:23:12	1.4	6.7	205
02:27:2003:21:23:33	1.4	7.2	196
02:27:2003:21:23:53	1.4	7.6	210
02:27:2003:21:24:13	1.4	8.1	214
02:27:2003:21:24:33	1.4	8.6	214
02:27:2003:21:24:40	Pump Water Ahead		
02:27:2003:21:24:40	1.4	8.8	219
02:27:2003:21:24:53	1.4	9.1	223
02:27:2003:21:25:13	1.4	9.5	214
02:27:2003:21:25:33	1.4	10.0	219
02:27:2003:21:25:53	1.4	10.5	223
02:27:2003:21:26:13	1.4	11.0	219
02:27:2003:21:26:33	1.4	11.4	228
02:27:2003:21:26:53	1.4	11.9	228
02:27:2003:21:27:13	1.4	12.4	228
02:27:2003:21:27:33	1.4	12.9	242
02:27:2003:21:27:53	1.4	13.4	237
02:27:2003:21:28:13	1.8	13.9	260
02:27:2003:21:28:33	1.8	14.5	269
02:27:2003:21:28:53	1.8	15.1	292
02:27:2003:21:29:13	1.8	15.7	269

02:27:2003:21:29:33	1.9	16.4	283
02:27:2003:21:29:53	1.8	17.0	278
02:27:2003:21:30:13	1.8	17.6	287
02:27:2003:21:30:33	1.8	18.2	297
02:27:2003:21:30:53	1.8	18.8	297
02:27:2003:21:31:13	1.9	19.4	297
02:27:2003:21:31:33	1.8	20.1	297
02:27:2003:21:31:53	1.8	20.7	310
02:27:2003:21:32:13	1.8	21.3	315
02:27:2003:21:32:33	1.8	21.9	301
02:27:2003:21:32:41	Reset Total, Vol = 22.04 bbl		
02:27:2003:21:32:41	0.0	22.0	100
02:27:2003:21:32:53	4.1	0.1	411
02:27:2003:21:33:13	5.1	1.7	709
02:27:2003:21:33:33	5.1	3.4	851
02:27:2003:21:33:53	5.1	5.1	814
02:27:2003:21:33:59	Pump Cement at 15.8 ppg		
02:27:2003:21:33:59	5.1	5.6	818
02:27:2003:21:34:13	5.1	6.8	773
02:27:2003:21:34:33	5.1	8.5	745
02:27:2003:21:34:53	5.1	10.2	718
02:27:2003:21:35:14	5.1	11.9	709
02:27:2003:21:35:34	5.1	13.6	704
02:27:2003:21:35:54	5.1	15.4	649
02:27:2003:21:36:14	5.1	17.1	649
02:27:2003:21:36:34	5.1	18.8	590
02:27:2003:21:36:54	5.2	20.5	594
02:27:2003:21:37:14	5.1	22.2	548
02:27:2003:21:37:34	5.2	23.9	521
02:27:2003:21:37:54	5.2	25.6	503
02:27:2003:21:38:14	5.2	27.4	489
02:27:2003:21:38:34	5.2	29.1	475
02:27:2003:21:38:54	5.2	30.8	457
02:27:2003:21:39:14	5.2	32.5	406
02:27:2003:21:39:34	5.2	34.3	374
02:27:2003:21:39:54	5.2	36.0	388
02:27:2003:21:40:14	5.2	37.7	338
02:27:2003:21:40:34	5.2	39.5	361
02:27:2003:21:40:54	5.2	41.2	365
02:27:2003:21:41:14	5.2	43.0	342
02:27:2003:21:41:34	5.2	44.7	310
02:27:2003:21:41:54	5.2	46.4	324
02:27:2003:21:42:14	5.2	48.2	320
02:27:2003:21:42:34	5.2	49.9	333
02:27:2003:21:42:54	5.2	51.6	338
02:27:2003:21:43:14	5.2	53.4	370
02:27:2003:21:43:34	5.2	55.1	324
02:27:2003:21:43:54	5.2	56.9	361
02:27:2003:21:44:14	5.2	58.6	356
02:27:2003:21:44:34	5.2	60.3	352
02:27:2003:21:44:54	5.2	62.1	329
02:27:2003:21:45:14	5.2	63.8	306
02:27:2003:21:45:34	5.2	65.5	320
02:27:2003:21:45:54	5.4	67.3	306
02:27:2003:21:46:14	6.0	69.2	324
02:27:2003:21:46:34	6.6	71.3	333
02:27:2003:21:46:55	0.6	73.2	31
02:27:2003:21:47:15	0.0	73.3	31
02:27:2003:21:47:35	0.0	73.3	31
02:27:2003:21:47:55	Reset Total, Vol = 73.25 bbl		
02:27:2003:21:47:55	0.0	73.3	31
02:27:2003:21:47:56	Pump Water Behind		
02:27:2003:21:47:56	0.0	0.0	31

02:27:2003:21:48:15	0.0	0.0	22
02:27:2003:21:48:35	2.4	0.4	86
02:27:2003:21:48:55	1.5	1.3	31
02:27:2003:21:48:58	Reset Total, Vol = 1.36 bbl		
02:27:2003:21:48:58	0.0	1.4	22
02:27:2003:21:49:15	3.1	0.4	86
02:27:2003:21:49:35	5.0	1.7	81
02:27:2003:21:49:55	5.4	3.5	104
02:27:2003:21:50:15	5.4	5.3	123
02:27:2003:21:50:35	5.4	7.1	136
02:27:2003:21:50:55	5.4	8.9	132
02:27:2003:21:50:57	Displace With Mud		
02:27:2003:21:50:57	5.4	9.1	127
02:27:2003:21:51:15	5.4	10.7	146
02:27:2003:21:51:35	5.4	12.5	123
02:27:2003:21:51:55	5.4	14.2	132
02:27:2003:21:52:15	5.3	16.0	118
02:27:2003:21:52:35	5.3	17.8	127
02:27:2003:21:52:55	5.4	19.6	141
02:27:2003:21:53:15	5.4	21.4	136
02:27:2003:21:53:35	5.4	23.2	141
02:27:2003:21:53:55	5.4	25.0	123
02:27:2003:21:54:15	5.3	26.8	146
02:27:2003:21:54:35	5.3	28.6	132
02:27:2003:21:54:55	5.4	30.3	127
02:27:2003:21:55:15	5.4	32.1	132
02:27:2003:21:55:35	5.4	33.9	136
02:27:2003:21:55:55	5.4	35.7	146
02:27:2003:21:56:15	5.3	37.5	132
02:27:2003:21:56:35	5.4	39.3	118
02:27:2003:21:56:55	5.4	41.1	127
02:27:2003:21:57:15	5.3	42.9	132
02:27:2003:21:57:35	5.4	44.6	141
02:27:2003:21:57:55	5.4	46.4	118
02:27:2003:21:58:16	5.3	48.3	127
02:27:2003:21:58:36	5.4	50.1	127
02:27:2003:21:58:56	5.3	51.9	118
02:27:2003:21:59:16	5.3	53.7	127
02:27:2003:21:59:36	5.4	55.5	118
02:27:2003:21:59:56	5.3	57.2	127
02:27:2003:22:00:16	5.3	59.0	127
02:27:2003:22:00:36	5.3	60.8	146
02:27:2003:22:00:56	5.4	62.6	123
02:27:2003:22:01:16	5.4	64.4	118
02:27:2003:22:01:36	5.4	66.2	132
02:27:2003:22:01:56	5.3	67.9	146
02:27:2003:22:02:16	5.4	69.7	141
02:27:2003:22:02:36	5.3	71.5	141
02:27:2003:22:02:56	5.3	73.3	146
02:27:2003:22:03:16	5.3	75.1	136
02:27:2003:22:03:36	5.3	76.9	118
02:27:2003:22:03:56	5.4	78.7	146
02:27:2003:22:04:16	5.4	80.4	141
02:27:2003:22:04:36	5.3	82.2	123
02:27:2003:22:04:56	5.3	84.0	123
02:27:2003:22:05:16	5.4	85.8	118
02:27:2003:22:05:36	5.3	87.6	123
02:27:2003:22:05:56	5.3	89.4	123
02:27:2003:22:06:16	5.3	91.1	141
02:27:2003:22:06:36	5.4	92.9	136
02:27:2003:22:06:56	5.3	94.7	146
02:27:2003:22:07:16	5.3	96.5	141
02:27:2003:22:07:36	5.4	98.3	123

02:27:2003:22:07:56	5.3	100.0	141
02:27:2003:22:08:16	5.3	101.8	118
02:27:2003:22:08:36	5.3	103.6	132
02:27:2003:22:08:56	5.3	105.4	127
02:27:2003:22:09:16	5.3	107.2	123
02:27:2003:22:09:36	5.3	109.0	136
02:27:2003:22:09:56	5.3	110.7	136
02:27:2003:22:10:17	5.3	112.6	123
02:27:2003:22:10:37	5.3	114.4	127
02:27:2003:22:10:57	5.3	116.2	127
02:27:2003:22:11:17	5.3	118.0	123
02:27:2003:22:11:37	5.3	119.7	127
02:27:2003:22:11:57	5.3	121.5	132
02:27:2003:22:12:17	5.3	123.3	127
02:27:2003:22:12:37	5.3	125.1	132
02:27:2003:22:12:57	5.3	126.9	127
02:27:2003:22:13:17	5.3	128.6	127
02:27:2003:22:13:37	5.3	130.4	146
02:27:2003:22:13:57	5.3	132.2	310
02:27:2003:22:14:17	5.3	134.0	320
02:27:2003:22:14:37	5.3	135.7	365
02:27:2003:22:14:57	5.3	137.5	475
02:27:2003:22:15:17	5.3	139.2	503
02:27:2003:22:15:37	5.2	141.0	493
02:27:2003:22:15:57	5.2	142.7	553
02:27:2003:22:16:17	5.2	144.5	526
02:27:2003:22:16:37	5.2	146.2	585
02:27:2003:22:16:57	5.2	147.9	626
02:27:2003:22:17:17	0.0	149.1	68
02:27:2003:22:17:37	0.0	149.1	-5
02:27:2003:22:17:57	0.0	149.1	-10
02:27:2003:22:18:17	0.0	149.1	-10
02:27:2003:22:18:37	0.0	149.1	-15
02:27:2003:22:18:57	0.0	149.1	-15
02:27:2003:22:19:17	0.0	149.1	-19
02:27:2003:22:19:37	0.0	149.1	-19
02:27:2003:22:19:57	0.0	149.1	-19
02:27:2003:22:20:17	0.0	149.1	-19
02:27:2003:22:20:23	Check Flow Back		
02:27:2003:22:20:23	0.0	149.1	-19

02:27:2003:22:07:56	5.3	100.0	141
02:27:2003:22:08:16	5.3	101.8	118
02:27:2003:22:08:36	5.3	103.6	132
02:27:2003:22:08:56	5.3	105.4	127
02:27:2003:22:09:16	5.3	107.2	123
02:27:2003:22:09:36	5.3	109.0	136
02:27:2003:22:09:56	5.3	110.7	136
02:27:2003:22:10:17	5.3	112.6	123
02:27:2003:22:10:37	5.3	114.4	127
02:27:2003:22:10:57	5.3	116.2	127
02:27:2003:22:11:17	5.3	118.0	123
02:27:2003:22:11:37	5.3	119.7	127
02:27:2003:22:11:57	5.3	121.5	132
02:27:2003:22:12:17	5.3	123.3	127
02:27:2003:22:12:37	5.3	125.1	132
02:27:2003:22:12:57	5.3	126.9	127
02:27:2003:22:13:17	5.3	128.6	127
02:27:2003:22:13:37	5.3	130.4	146
02:27:2003:22:13:57	5.3	132.2	310
02:27:2003:22:14:17	5.3	134.0	320
02:27:2003:22:14:37	5.3	135.7	365
02:27:2003:22:14:57	5.3	137.5	475
02:27:2003:22:15:17	5.3	139.2	503
02:27:2003:22:15:37	5.2	141.0	493
02:27:2003:22:15:57	5.2	142.7	553
02:27:2003:22:16:17	5.2	144.5	526
02:27:2003:22:16:37	5.2	146.2	585
02:27:2003:22:16:57	5.2	147.9	626
02:27:2003:22:17:17	0.0	149.1	68
02:27:2003:22:17:37	0.0	149.1	-5
02:27:2003:22:17:57	0.0	149.1	-10
02:27:2003:22:18:17	0.0	149.1	-10
02:27:2003:22:18:37	0.0	149.1	-15
02:27:2003:22:18:57	0.0	149.1	-15
02:27:2003:22:19:17	0.0	149.1	-19
02:27:2003:22:19:37	0.0	149.1	-19
02:27:2003:22:19:57	0.0	149.1	-19
02:27:2003:22:20:17	0.0	149.1	-19
02:27:2003:22:20:23	Check Flow Back		
02:27:2003:22:20:23	0.0	149.1	-19

Schlumberger

SERVICE REPORT

DISTRICT: CAS
STATION: PAS
TYPE SERVICE: Plug & Abandon # 3
COMPANY: ESSO Australia Pty Ltd

RIG: Sedco 702
TYPE OF WELL: Oil Exploration
FIELD: Scallop
WELL No.: 1

TIME AND DATE JOB STARTED: 2/27/03 9:11 PM
TOTAL DEPTH: 3174
SIZE HOLE: 12.25
DEVIATION: 0
BHST:
BHCT:
INVOICE NUMBER:

TIME & DATE JOB COMPLETED: 2/27/03 10:20 PM
DRILL FLUID: WBM Type, 10.2 Wt., 56 Vis
FORMATION:
SIR NUMBER:

CASING: Size / Depth / Type / Wt. / Volume / Allowable Press. / Collar at

PREVIOUS CASING: 13 3/8 Size, 917 Depth, 72 Wt.

DRILL PIPE: 5" Size, 2615 Depth, G Type, 19.5 Wt., 149 Volume

PACKER: Type / Depth

BRIDGE PLUG: Type / Depth

TAIL PIPE: 3.5 DP Type, 2858 Depth

CASING EQUIPMENT USED: SHOE Float Stab / COLLAR Float Stab / PLUGS Top Bottom / CENT. Qty. Type

CEMENT HEAD:

MUD CIRCULATION PRIOR TO JOB: Time - Min. / Vol. BBLS / Press - PSI

WASH: Wt. / Vol. BBLS / Fill

SPACER: Wt. / Vol. BBLS / Fill

LEAD SLURRY: Wt. / Vol. / Mix Water / Fill

TAIL SLURRY: 15.8 Wt., 75 Vol., 40 Mix Water, 170 Fill

EQUIPMENT: LAS / LPJ; 1 Pump Unit; 1 Batch Mixer; Compressor / RCM; 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: X Press, X Rate, X Vol, Dty; ON: PRISM*

MUD RETURNS LOST DURING JOB BBLS:

LEAD SLURRY:

TAIL SLURRY: 71 BBLS 15.8 ppg - Batch Mixed

MATERIALS USED

12 Gals	SCR 100
135 Gals	Halad 413
1 Gal	NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
21:12			5	1.4		Pump Water
21:19		2000				Pressure test Lines
21:24			17	1.8		Pump Water
21:33			71	5.2		Pump Cement
21:47			1.2	1.5		Pump Water
21:50			149	5.4		Displace with Mud
22:20						Check Flow Back - OK
22:20						Finish Job
			243.2			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB: SUP / MECH / S.S 2 / F.E. / HEL 1

STEM1 DONE? YES X NO

TOTAL LOST TIME H

TOTAL OPERATING TIME 1 H

CUSTOMER COMMENTS

DS REPRESENTATIVE: P.Jennings / D. Johnson

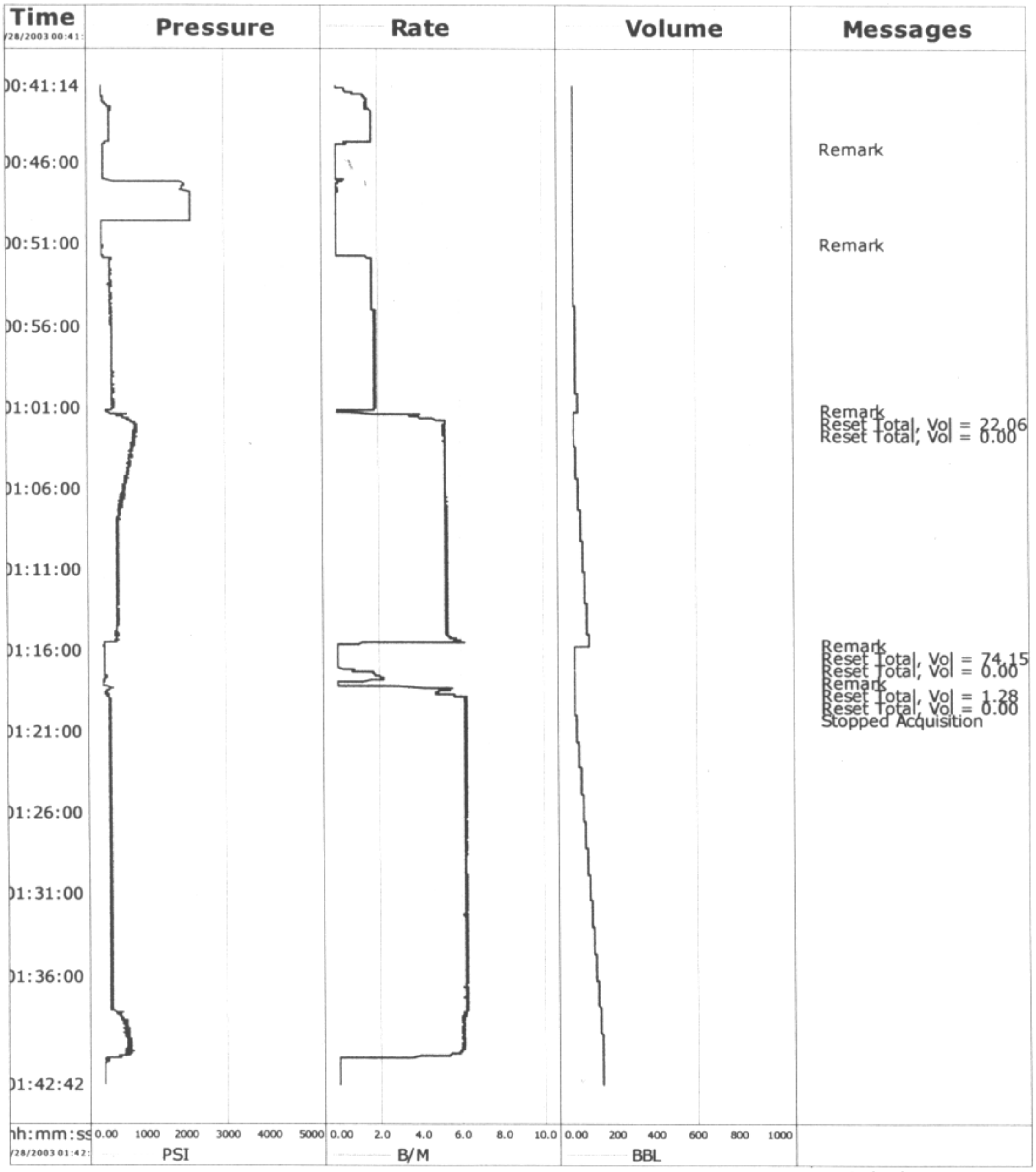
QUALITY OF SERVICE: GOOD X / SATISFACTORY / POOR

CUSTOMER REPRESENTATIVE: George Sharkey

Schlumberger Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 4
Country	Australia	**Job Date**	02-27-2003



02/28/2003 01:43:16

P&A 4

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:28:2003:00:41:14	0.0	0.0	-15
02:28:2003:00:41:34	0.4	0.1	-5
02:28:2003:00:41:54	1.4	0.4	22
02:28:2003:00:42:14	1.5	0.9	63
02:28:2003:00:42:34	1.4	1.4	228
02:28:2003:00:42:54	1.7	1.9	191
02:28:2003:00:43:14	1.7	2.5	210
02:28:2003:00:43:34	1.7	3.0	205
02:28:2003:00:43:54	1.7	3.6	196
02:28:2003:00:44:14	1.7	4.2	196
02:28:2003:00:44:35	1.7	4.8	191
02:28:2003:00:44:55	0.0	5.0	45
02:28:2003:00:45:06	Pump Water Ahead		
02:28:2003:00:45:06	0.0	5.0	36
02:28:2003:00:45:15	0.0	5.0	31
02:28:2003:00:45:35	0.0	5.0	31
02:28:2003:00:45:55	0.0	5.0	27
02:28:2003:00:46:15	0.0	5.0	27
02:28:2003:00:46:35	0.0	5.0	27
02:28:2003:00:46:55	0.0	5.0	27
02:28:2003:00:47:15	0.0	5.0	2018
02:28:2003:00:47:35	0.0	5.0	1963
02:28:2003:00:47:55	0.0	5.0	2192
02:28:2003:00:48:15	0.0	5.0	2192
02:28:2003:00:48:35	0.0	5.0	2192
02:28:2003:00:48:55	0.0	5.0	2192
02:28:2003:00:49:15	0.0	5.0	2187
02:28:2003:00:49:35	0.0	5.0	-5
02:28:2003:00:49:55	0.0	5.0	-5
02:28:2003:00:50:15	0.0	5.0	-5
02:28:2003:00:50:35	0.0	5.0	-5
02:28:2003:00:50:55	0.0	5.0	-5
02:28:2003:00:50:58	Pressure Test Lines		
02:28:2003:00:50:58	0.0	5.0	-5
02:28:2003:00:51:15	0.0	5.0	17
02:28:2003:00:51:35	0.0	5.0	22
02:28:2003:00:51:55	1.7	5.4	242
02:28:2003:00:52:15	1.7	5.9	196
02:28:2003:00:52:35	1.7	6.5	228
02:28:2003:00:52:55	1.7	7.1	205
02:28:2003:00:53:15	1.7	7.6	191
02:28:2003:00:53:35	1.7	8.2	233
02:28:2003:00:53:55	1.7	8.8	200
02:28:2003:00:54:15	1.7	9.3	205
02:28:2003:00:54:35	1.7	9.9	205
02:28:2003:00:54:55	1.7	10.4	233
02:28:2003:00:55:15	1.9	11.1	219
02:28:2003:00:55:35	1.9	11.7	237
02:28:2003:00:55:55	1.9	12.3	237
02:28:2003:00:56:16	1.9	12.9	246
02:28:2003:00:56:36	1.9	13.6	251
02:28:2003:00:56:56	1.8	14.2	251
02:28:2003:00:57:16	1.9	14.8	260
02:28:2003:00:57:36	1.8	15.4	251
02:28:2003:00:57:56	1.9	16.0	246
02:28:2003:00:58:16	1.8	16.7	260
02:28:2003:00:58:36	1.9	17.3	255
02:28:2003:00:58:56	1.9	17.9	274
02:28:2003:00:59:16	1.9	18.5	260
02:28:2003:00:59:36	1.9	19.1	265

02:28:2003:00:59:56	1.9	19.8	269
02:28:2003:01:00:16	1.8	20.4	278
02:28:2003:01:00:36	1.9	21.0	278
02:28:2003:01:00:56	1.9	21.6	283
02:28:2003:01:01:12	Pump Water Ahead		
02:28:2003:01:01:12	0.0	22.1	104
02:28:2003:01:01:13	Reset Total, Vol = 22.06 bbl		
02:28:2003:01:01:13	0.0	22.1	100
02:28:2003:01:01:16	0.0	0.0	91
02:28:2003:01:01:36	3.9	0.9	512
02:28:2003:01:01:56	5.2	2.4	736
02:28:2003:01:02:16	5.2	4.2	818
02:28:2003:01:02:36	5.2	5.9	782
02:28:2003:01:02:56	5.2	7.6	782
02:28:2003:01:03:16	5.2	9.4	759
02:28:2003:01:03:36	5.2	11.1	732
02:28:2003:01:03:56	5.2	12.8	722
02:28:2003:01:04:16	5.2	14.6	645
02:28:2003:01:04:36	5.2	16.3	640
02:28:2003:01:04:56	5.2	18.1	640
02:28:2003:01:05:16	5.2	19.8	603
02:28:2003:01:05:36	5.2	21.6	594
02:28:2003:01:05:56	5.3	23.3	526
02:28:2003:01:06:16	5.2	25.1	562
02:28:2003:01:06:36	5.3	26.8	448
02:28:2003:01:06:56	5.3	28.6	448
02:28:2003:01:07:16	5.3	30.3	443
02:28:2003:01:07:37	5.3	32.2	439
02:28:2003:01:07:57	5.3	33.9	393
02:28:2003:01:08:17	5.3	35.7	397
02:28:2003:01:08:37	5.3	37.5	356
02:28:2003:01:08:57	5.3	39.2	365
02:28:2003:01:09:17	5.3	41.0	347
02:28:2003:01:09:37	5.3	42.8	384
02:28:2003:01:09:57	5.3	44.5	384
02:28:2003:01:10:17	5.3	46.3	384
02:28:2003:01:10:37	5.3	48.1	374
02:28:2003:01:10:57	5.3	49.8	374
02:28:2003:01:11:17	5.3	51.6	361
02:28:2003:01:11:37	5.3	53.4	388
02:28:2003:01:11:57	5.3	55.1	356
02:28:2003:01:12:17	5.3	56.9	342
02:28:2003:01:12:37	5.3	58.6	393
02:28:2003:01:12:57	5.3	60.4	352
02:28:2003:01:13:17	5.3	62.2	365
02:28:2003:01:13:37	5.3	63.9	352
02:28:2003:01:13:57	5.3	65.7	352
02:28:2003:01:14:17	5.3	67.5	393
02:28:2003:01:14:37	5.3	69.2	347
02:28:2003:01:14:57	5.3	71.0	384
02:28:2003:01:15:17	5.7	72.8	356
02:28:2003:01:15:37	0.0	74.1	36
02:28:2003:01:15:39	Pump cement at 15.8 ppg		
02:28:2003:01:15:39	0.0	74.1	36
02:28:2003:01:15:40	Reset Total, Vol = 74.15 bbl		
02:28:2003:01:15:40	0.0	74.1	36
02:28:2003:01:15:41	Pump Water Behind		
02:28:2003:01:15:41	0.0	0.0	17
02:28:2003:01:15:57	0.0	0.0	27
02:28:2003:01:16:17	0.0	0.0	27
02:28:2003:01:16:37	0.0	0.0	27
02:28:2003:01:16:57	0.0	0.0	27
02:28:2003:01:17:17	1.7	0.2	54

02:28:2003:01:17:37	2.1	0.8	77
02:28:2003:01:17:53	Reset Total, Vol = 1.28 bbl		
02:28:2003:01:17:53	0.0	1.3	13
02:28:2003:01:17:54	Displace with Mud		
02:28:2003:01:17:54	0.0	0.0	17
02:28:2003:01:17:57	0.0	0.0	17
02:28:2003:01:18:17	5.5	0.4	228
02:28:2003:01:18:37	4.8	2.1	81
02:28:2003:01:18:57	6.2	4.0	164
02:28:2003:01:19:18	6.2	6.2	155
02:28:2003:01:19:37	6.2	8.1	164
02:28:2003:01:19:58	6.2	10.3	173
02:28:2003:01:20:18	6.3	12.4	173
02:28:2003:01:20:38	6.2	14.5	159
02:28:2003:01:20:58	6.2	16.5	164
02:28:2003:01:21:18	6.2	18.6	187
02:28:2003:01:21:38	6.2	20.7	187
02:28:2003:01:21:58	6.2	22.7	168
02:28:2003:01:22:18	6.2	24.8	168
02:28:2003:01:22:38	6.2	26.9	182
02:28:2003:01:22:58	6.2	28.9	155
02:28:2003:01:23:18	6.3	31.0	168
02:28:2003:01:23:38	6.2	33.1	168
02:28:2003:01:23:58	6.2	35.1	182
02:28:2003:01:24:18	6.2	37.2	168
02:28:2003:01:24:38	6.2	39.3	164
02:28:2003:01:24:58	6.2	41.3	164
02:28:2003:01:25:18	6.2	43.4	159
02:28:2003:01:25:38	6.2	45.5	178
02:28:2003:01:25:58	6.2	47.5	164
02:28:2003:01:26:18	6.1	49.6	173
02:28:2003:01:26:38	6.2	51.7	178
02:28:2003:01:26:58	6.2	53.8	178
02:28:2003:01:27:18	6.2	55.8	178
02:28:2003:01:27:38	6.2	57.9	173
02:28:2003:01:27:58	6.2	59.9	182
02:28:2003:01:28:18	6.2	62.0	187
02:28:2003:01:28:38	6.2	64.1	159
02:28:2003:01:28:58	6.2	66.1	178
02:28:2003:01:29:18	6.2	68.2	164
02:28:2003:01:29:38	6.2	70.3	168
02:28:2003:01:29:58	6.2	72.3	178
02:28:2003:01:30:18	6.2	74.4	182
02:28:2003:01:30:38	6.2	76.5	178
02:28:2003:01:30:59	6.2	78.6	173
02:28:2003:01:31:19	6.2	80.7	173
02:28:2003:01:31:39	6.2	82.8	187
02:28:2003:01:31:59	6.2	84.8	187
02:28:2003:01:32:19	6.2	86.9	168
02:28:2003:01:32:39	6.2	89.0	187
02:28:2003:01:32:59	6.2	91.0	168
02:28:2003:01:33:19	6.2	93.1	173
02:28:2003:01:33:39	6.2	95.2	173
02:28:2003:01:33:59	6.2	97.2	173
02:28:2003:01:34:19	6.2	99.3	173
02:28:2003:01:34:39	6.2	101.4	187
02:28:2003:01:34:59	6.2	103.4	168
02:28:2003:01:35:19	6.3	105.5	182
02:28:2003:01:35:39	6.2	107.6	173
02:28:2003:01:35:59	6.2	109.6	173
02:28:2003:01:36:19	6.2	111.7	187
02:28:2003:01:36:39	6.2	113.8	187
02:28:2003:01:36:59	6.2	115.8	191

02:28:2003:01:37:19	6.2	117.9	178
02:28:2003:01:37:39	6.3	119.9	168
02:28:2003:01:37:59	6.2	122.0	178
02:28:2003:01:38:19	6.1	124.1	333
02:28:2003:01:38:39	6.1	126.1	425
02:28:2003:01:38:59	6.0	128.1	448
02:28:2003:01:39:19	6.0	130.1	580
02:28:2003:01:39:39	6.1	132.1	576
02:28:2003:01:39:59	6.1	134.1	558
02:28:2003:01:40:19	6.0	136.1	544
02:28:2003:01:40:39	5.9	138.1	507
02:28:2003:01:40:59	3.5	139.9	384
02:28:2003:01:41:19	0.0	140.1	91
02:28:2003:01:41:39	0.0	140.1	-10
02:28:2003:01:41:59	0.0	140.1	-10
02:28:2003:01:42:20	0.0	140.1	-15
02:28:2003:01:42:40	0.0	140.1	-15
02:28:2003:01:42:42	Check Flow Back		
02:28:2003:01:42:42	0.0	140.1	-15

DISTRICT	STATION	TYPE SERVICE	COMPANY	**Schlumberger**
CAS	PAS	Plug & Abandon # 4	ESSO Australia Pty Ltd	

RIG	TYPE OF WELL	FIELD	WELL No.	SERVICE REPORT
Sedco 702	Oil Exploration	Scallop	1	

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
2/28/03 12:40 AM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
2/28/03 1:45 AM	WBM	10.2	56		

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at

PREVIOUS CASING

Size	Depth	Wt.
13 3/8	917	72

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	2464	G	19.5	144

PACKER: Type / Depth

BRIDGE PLUG: Type / Depth

TAIL PIPE

Type	Depth
3.5 DP	2707

CASING EQUIPMENT USED: SHOE (Float Stab) / COLLAR (Float Stab) / PLUGS (Top Bottom) / CENT. (Qty. Type)

CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB: Time - Min. / Vol. BBLS / Press - PSI

WASH: Wt. / Vol. BBLS / Fill

SPACER: Wt. / Vol. BBLS / Fill

LEAD SLURRY: Wt. / Vol. / Mix Water / Fill

TAIL SLURRY

Wt.	Vol.	Mix Water	Fill
15.8	75	40	161

EQUIPMENT: LAS / LPJ; 1 Pump Unit; 1 Batch Mixer; Compressor / RCM; 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: ON: X Press X Rate X Vol Dty PRISM*

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY

TAIL SLURRY
73 BBLS 15.8 ppg - Batch Mixed

MATERIALS USED

12 Gals	SCR 100
135 Gals	Halad 413
1 Gal	NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
0:40			5	1.7		Pump Water
0:45		2000				Pressure test Lines
00:50			17	1.9		Pump Water
01:01			73	5.2		Pump Cement
01:15			1.2	1.7		Pump Water
01:17			140	6.2		Displace with Mud
01:42						Check Flow Back - OK
01:45						Finish Job
			236.2			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB: SUP / MECH; S.S 2; F.E.; HEL 1

STEM1 DONE? YES X NO

TOTAL LOST TIME H

TOTAL OPERATING TIME 1 H

CUSTOMER COMMENTS

DS REPRESENTATIVE
P.Jennings / D. Johnson

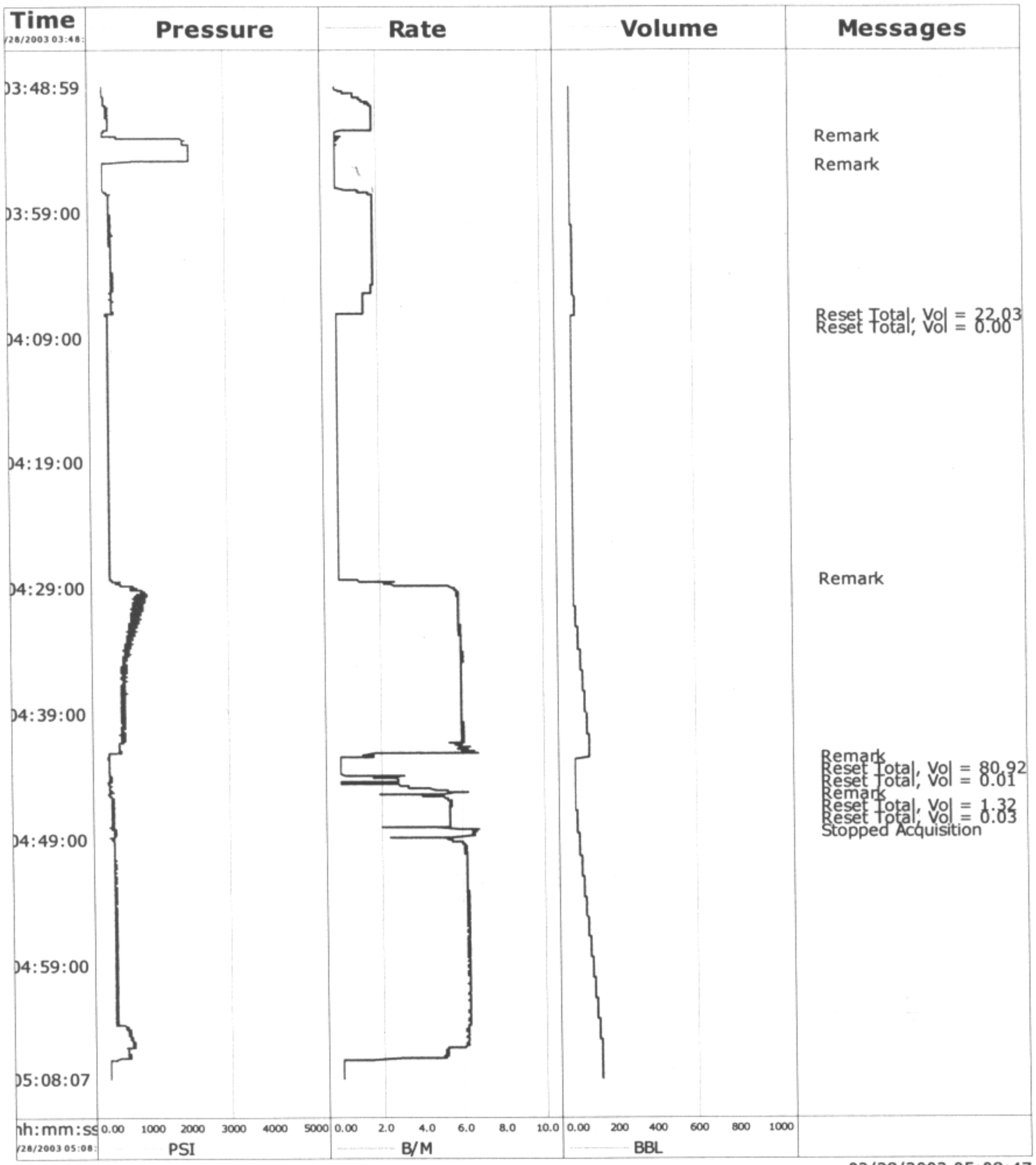
QUALITY OF SERVICE GOOD [X] SATISFACTORY [ ] POOR [ ]

CUSTOMER REPRESENTATIVE
George Sharkey

Schlumberger Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 5
Country	Australia	**Job Date**	02-28-2003



02/28/2003 05:08:47

P&A 5

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:28:2003:03:48:59	0.0	0.0	-10
02:28:2003:03:49:19	0.3	0.0	-1
02:28:2003:03:49:22	Pump Water Ahead		
02:28:2003:03:49:22	0.3	0.0	-1
02:28:2003:03:49:39	0.9	0.2	17
02:28:2003:03:49:59	1.3	0.6	31
02:28:2003:03:50:19	1.6	1.1	36
02:28:2003:03:50:39	1.8	1.7	159
02:28:2003:03:50:59	1.8	2.3	159
02:28:2003:03:51:19	1.8	2.9	146
02:28:2003:03:51:39	1.8	3.5	136
02:28:2003:03:51:59	1.8	4.1	146
02:28:2003:03:52:19	1.8	4.7	146
02:28:2003:03:52:39	0.0	5.0	13
02:28:2003:03:52:59	Pressure Test Lines		
02:28:2003:03:52:59	0.3	5.0	164
02:28:2003:03:53:19	0.0	5.1	2004
02:28:2003:03:53:39	0.0	5.1	2105
02:28:2003:03:54:00	0.0	5.1	2105
02:28:2003:03:54:20	0.0	5.1	2109
02:28:2003:03:54:40	0.0	5.1	2109
02:28:2003:03:55:00	0.0	5.1	77
02:28:2003:03:55:13	Pump Water Ahead		
02:28:2003:03:55:13	0.0	5.1	-5
02:28:2003:03:55:20	0.0	5.1	-5
02:28:2003:03:55:40	0.0	5.1	-5
02:28:2003:03:56:00	0.0	5.1	-5
02:28:2003:03:56:20	0.0	5.1	-1
02:28:2003:03:56:40	0.0	5.1	-1
02:28:2003:03:57:00	0.0	5.1	4
02:28:2003:03:57:20	1.4	5.2	31
02:28:2003:03:57:40	1.8	5.8	150
02:28:2003:03:58:00	1.8	6.4	164
02:28:2003:03:58:20	1.8	7.0	150
02:28:2003:03:58:40	1.8	7.6	150
02:28:2003:03:59:00	1.8	8.2	173
02:28:2003:03:59:20	1.8	8.8	164
02:28:2003:03:59:40	1.8	9.4	196
02:28:2003:04:00:00	1.8	10.1	159
02:28:2003:04:00:20	1.8	10.7	196
02:28:2003:04:00:40	1.8	11.3	155
02:28:2003:04:01:00	1.8	11.9	196
02:28:2003:04:01:20	1.8	12.5	187
02:28:2003:04:01:40	1.8	13.1	191
02:28:2003:04:02:00	1.8	13.7	196
02:28:2003:04:02:20	1.8	14.3	196
02:28:2003:04:02:40	1.8	14.9	200
02:28:2003:04:03:00	1.8	15.6	219
02:28:2003:04:03:20	1.8	16.2	205
02:28:2003:04:03:40	1.8	16.8	191
02:28:2003:04:04:00	1.8	17.4	228
02:28:2003:04:04:20	1.8	18.0	196
02:28:2003:04:04:40	1.8	18.6	228
02:28:2003:04:05:00	1.7	19.2	228
02:28:2003:04:05:21	1.7	19.8	223
02:28:2003:04:05:40	1.3	20.2	196
02:28:2003:04:06:01	1.3	20.7	210
02:28:2003:04:06:21	1.3	21.1	196
02:28:2003:04:06:41	1.3	21.5	200
02:28:2003:04:07:01	1.3	22.0	233

P&A 5

02:28:2003:04:07:15	Reset Total, Vol = 22.03 bbl		
02:28:2003:04:07:15	0.0	22.0	91
02:28:2003:04:07:21	0.0	0.0	86
02:28:2003:04:07:41	0.0	0.0	86
02:28:2003:04:08:01	0.0	0.0	91
02:28:2003:04:08:21	0.0	0.0	86
02:28:2003:04:08:41	0.0	0.0	86
02:28:2003:04:09:01	0.0	0.0	91
02:28:2003:04:09:21	0.0	0.0	91
02:28:2003:04:09:41	0.0	0.0	81
02:28:2003:04:10:01	0.0	0.0	95
02:28:2003:04:10:21	0.0	0.0	86
02:28:2003:04:10:41	0.0	0.0	91
02:28:2003:04:11:01	0.0	0.0	91
02:28:2003:04:11:21	0.0	0.0	86
02:28:2003:04:11:41	0.0	0.0	91
02:28:2003:04:12:01	0.0	0.0	95
02:28:2003:04:12:21	0.0	0.0	86
02:28:2003:04:12:41	0.0	0.0	95
02:28:2003:04:13:01	0.0	0.0	91
02:28:2003:04:13:21	0.0	0.0	91
02:28:2003:04:13:41	0.0	0.0	91
02:28:2003:04:14:01	0.0	0.0	91
02:28:2003:04:14:21	0.0	0.0	91
02:28:2003:04:14:41	0.0	0.0	86
02:28:2003:04:15:01	0.0	0.0	91
02:28:2003:04:15:21	0.0	0.0	86
02:28:2003:04:15:41	0.0	0.0	91
02:28:2003:04:16:01	0.0	0.0	91
02:28:2003:04:16:21	0.0	0.0	91
02:28:2003:04:16:41	0.0	0.0	91
02:28:2003:04:17:01	0.0	0.0	91
02:28:2003:04:17:22	0.0	0.0	86
02:28:2003:04:17:42	0.0	0.0	91
02:28:2003:04:18:02	0.0	0.0	95
02:28:2003:04:18:22	0.0	0.0	91
02:28:2003:04:18:42	0.0	0.0	95
02:28:2003:04:19:02	0.0	0.0	95
02:28:2003:04:19:22	0.0	0.0	95
02:28:2003:04:19:42	0.0	0.0	91
02:28:2003:04:20:02	0.0	0.0	91
02:28:2003:04:20:22	0.0	0.0	95
02:28:2003:04:20:42	0.0	0.0	91
02:28:2003:04:21:02	0.0	0.0	95
02:28:2003:04:21:22	0.0	0.0	81
02:28:2003:04:21:42	0.0	0.0	91
02:28:2003:04:22:02	0.0	0.0	91
02:28:2003:04:22:22	0.0	0.0	91
02:28:2003:04:22:42	0.0	0.0	91
02:28:2003:04:23:02	0.0	0.0	95
02:28:2003:04:23:22	0.0	0.0	95
02:28:2003:04:23:42	0.0	0.0	95
02:28:2003:04:24:02	0.0	0.0	91
02:28:2003:04:24:22	0.0	0.0	91
02:28:2003:04:24:42	0.0	0.0	95
02:28:2003:04:25:02	0.0	0.0	91
02:28:2003:04:25:22	0.0	0.0	95
02:28:2003:04:25:42	0.0	0.0	95
02:28:2003:04:26:02	0.0	0.0	95
02:28:2003:04:26:22	0.0	0.0	91
02:28:2003:04:26:42	0.0	0.0	91
02:28:2003:04:27:02	0.0	0.0	95
02:28:2003:04:27:22	0.0	0.0	95

02:28:2003:04:27:42	0.0	0.0	95
02:28:2003:04:28:02	0.0	0.0	91
02:28:2003:04:28:16	Pump Cement at 15.8 ppg		
02:28:2003:04:28:16	0.0	0.0	91
02:28:2003:04:28:23	0.9	0.0	155
02:28:2003:04:28:43	2.7	0.7	347
02:28:2003:04:29:03	5.6	2.3	626
02:28:2003:04:29:23	5.8	4.2	937
02:28:2003:04:29:43	5.8	6.2	851
02:28:2003:04:30:03	5.8	8.1	704
02:28:2003:04:30:23	5.9	10.1	851
02:28:2003:04:30:43	5.9	12.0	786
02:28:2003:04:31:03	5.9	14.0	796
02:28:2003:04:31:23	5.9	15.9	782
02:28:2003:04:31:43	5.9	17.9	576
02:28:2003:04:32:03	5.9	19.8	722
02:28:2003:04:32:23	5.9	21.8	640
02:28:2003:04:32:43	5.9	23.8	608
02:28:2003:04:33:03	5.9	25.8	608
02:28:2003:04:33:23	5.9	27.7	585
02:28:2003:04:33:43	6.0	29.7	452
02:28:2003:04:34:03	6.0	31.7	493
02:28:2003:04:34:23	6.0	33.7	526
02:28:2003:04:34:43	6.0	35.7	402
02:28:2003:04:35:03	6.0	37.7	448
02:28:2003:04:35:23	6.0	39.7	471
02:28:2003:04:35:43	6.0	41.7	475
02:28:2003:04:36:03	6.0	43.7	466
02:28:2003:04:36:23	6.0	45.7	489
02:28:2003:04:36:43	6.0	47.7	361
02:28:2003:04:37:03	6.0	49.7	457
02:28:2003:04:37:23	6.0	51.6	429
02:28:2003:04:37:43	6.0	53.6	352
02:28:2003:04:38:03	6.0	55.6	457
02:28:2003:04:38:23	6.0	57.6	347
02:28:2003:04:38:43	6.0	59.6	425
02:28:2003:04:39:03	6.0	61.6	448
02:28:2003:04:39:23	6.0	63.6	443
02:28:2003:04:39:43	6.0	65.6	452
02:28:2003:04:40:04	6.0	67.7	434
02:28:2003:04:40:24	6.0	69.7	439
02:28:2003:04:40:44	6.0	71.7	425
02:28:2003:04:41:04	6.0	73.7	388
02:28:2003:04:41:24	5.7	75.7	310
02:28:2003:04:41:44	5.8	77.6	306
02:28:2003:04:42:04	6.3	79.7	347
02:28:2003:04:42:24	1.6	80.7	59
02:28:2003:04:42:31	Reset Total, Vol = 80.92 bbl		
02:28:2003:04:42:31	0.6	80.9	45
02:28:2003:04:42:44	0.0	0.0	27
02:28:2003:04:43:04	0.0	0.0	27
02:28:2003:04:43:24	0.0	0.0	27
02:28:2003:04:43:44	0.0	0.0	27
02:28:2003:04:44:04	2.1	0.4	59
02:28:2003:04:44:24	2.6	1.2	31
02:28:2003:04:44:25	Pump Water Behind		
02:28:2003:04:44:25	2.0	1.3	31
02:28:2003:04:44:26	Reset Total, Vol = 1.32 bbl		
02:28:2003:04:44:26	2.1	1.3	49
02:28:2003:04:44:27	Displace With Mud		
02:28:2003:04:44:27	0.9	0.0	-10
02:28:2003:04:44:44	3.0	0.4	63
02:28:2003:04:45:04	4.9	1.6	72

02:28:2003:04:45:24	3.0	3.3	36
02:28:2003:04:45:44	5.2	4.7	127
02:28:2003:04:46:04	5.4	6.5	141
02:28:2003:04:46:24	5.4	8.3	127
02:28:2003:04:46:44	5.4	10.1	127
02:28:2003:04:47:04	5.4	11.9	136
02:28:2003:04:47:24	5.4	13.7	127
02:28:2003:04:47:44	5.4	15.5	141
02:28:2003:04:48:04	4.7	17.2	114
02:28:2003:04:48:24	6.5	19.2	178
02:28:2003:04:48:44	6.5	21.4	168
02:28:2003:04:49:04	5.3	23.0	100
02:28:2003:04:49:24	6.1	25.0	155
02:28:2003:04:49:44	6.1	27.0	150
02:28:2003:04:50:04	6.1	29.0	168
02:28:2003:04:50:24	6.1	31.1	150
02:28:2003:04:50:44	6.1	33.1	155
02:28:2003:04:51:04	6.1	35.1	150
02:28:2003:04:51:24	6.1	37.2	182
02:28:2003:04:51:45	6.1	39.3	168
02:28:2003:04:52:05	6.1	41.4	178
02:28:2003:04:52:25	6.2	43.4	168
02:28:2003:04:52:45	6.2	45.5	173
02:28:2003:04:53:05	6.2	47.6	164
02:28:2003:04:53:25	6.2	49.6	164
02:28:2003:04:53:45	6.2	51.7	168
02:28:2003:04:54:05	6.2	53.8	155
02:28:2003:04:54:25	6.2	55.8	155
02:28:2003:04:54:45	6.2	57.9	168
02:28:2003:04:55:05	6.2	60.0	191
02:28:2003:04:55:25	6.2	62.1	168
02:28:2003:04:55:45	6.2	64.1	187
02:28:2003:04:56:05	6.2	66.2	164
02:28:2003:04:56:25	6.2	68.3	164
02:28:2003:04:56:45	6.3	70.4	168
02:28:2003:04:57:05	6.2	72.5	178
02:28:2003:04:57:25	6.2	74.5	173
02:28:2003:04:57:45	6.3	76.6	164
02:28:2003:04:58:05	6.2	78.7	164
02:28:2003:04:58:25	6.2	80.8	187
02:28:2003:04:58:45	6.3	82.8	159
02:28:2003:04:59:05	6.2	84.9	173
02:28:2003:04:59:25	6.2	87.0	159
02:28:2003:04:59:45	6.2	89.1	178
02:28:2003:05:00:05	6.3	91.2	182
02:28:2003:05:00:25	6.3	93.2	178
02:28:2003:05:00:45	6.2	95.3	155
02:28:2003:05:01:05	6.3	97.4	168
02:28:2003:05:01:25	6.3	99.5	159
02:28:2003:05:01:45	6.2	101.6	164
02:28:2003:05:02:05	6.3	103.6	159
02:28:2003:05:02:25	6.3	105.7	182
02:28:2003:05:02:45	6.3	107.8	178
02:28:2003:05:03:05	6.3	109.9	159
02:28:2003:05:03:25	6.2	112.0	182
02:28:2003:05:03:46	6.3	114.1	168
02:28:2003:05:04:06	6.1	116.2	429
02:28:2003:05:04:26	6.1	118.2	498
02:28:2003:05:04:46	6.1	120.3	535
02:28:2003:05:05:06	6.1	122.3	548
02:28:2003:05:05:26	6.1	124.4	562
02:28:2003:05:05:46	5.1	126.2	448
02:28:2003:05:06:06	5.1	127.9	489

02:28:2003:05:06:26	5.1	129.6	503
02:28:2003:05:06:46	0.0	130.2	4
02:28:2003:05:07:06	0.0	130.2	-15
02:28:2003:05:07:26	0.0	130.2	-19
02:28:2003:05:07:46	0.0	130.2	-19
02:28:2003:05:08:06	0.0	130.2	-19
02:28:2003:05:08:07	Check Flow Back		
02:28:2003:05:08:07	0.0	130.2	-19

DISTRICT	STATION	TYPE SERVICE	COMPANY	
CAS	PAS	Plug & Abandon # 5	ESSO Australia Pty Ltd	**Schlumberger**

RIG	TYPE OF WELL	FIELD	WELL No.	SERVICE REPORT
Sedco 702	Oil Exploration	Scallop	1	

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
2/28/03 3:48 AM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	DRILL FLUID Wt.	DRILL FLUID Vis	FORMATION	SIR NUMBER
2/28/03 5:10 AM	WBM	10.2	56		

CASING Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at	PREVIOUS CASING Size	Depth	Wt.
							13 3/8	917	72

DRILL PIPE Size	Depth	Type	Wt.	Volume	PACKER Type	Depth	BRIDGE PLUG Type	Depth	TAIL PIPE Type	Depth
5"	2321	G	19.5	135					3.5 DP	2564

CASING EQUIPMENT USED: SHOE Float Stab	COLLAR Float Stab	PLUGS Top	Bottom	CENT. Qty.	Type	CEMENT HEAD	MUD CIRCULATION PRIOR TO JOB Time - Min.	Vol. BBLS	Press - PSI

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
										15.8	75	40	183

EQUIPMENT				Pump Unit S/No.	DURING JOB WAS PIPE	PARAMETERS RECORDED: ON:	MUD RETURNS
LAS / LPJ	1 Pump Unit	1 Batch Mixer	Compressor / RCM	4062913261	Rotated N / Reciprocated N	X Press X Rate X Vol Dty PRISM*	LOST DURING JOB BBLS

LEAD SLURRY	TAIL SLURRY	MATERIALS USED	
	75 BBLS 15.8 ppg - Batch Mixed	8 Gals	SCR 100
		135 Gals	Halad 413
		1 Gal	NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
3:48			5	1.8		Pump Water
3:25		2000				Pressure test Lines
03:55			17	1.8		Pump Water
04:28			75	6		Pump Cement
04:44			1.2	2		Pump Water
04:44			130	6.2		Displace with Mud
05:08						Check Flow Back - OK
05:10						Finish Job
			228.2			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB	STEM1 DONE? YES X NO	TOTAL LOST TIME H	TOTAL OPERATING TIME 1.2 H
SUP [ ] S.S 2 / MECH [ ] F.E. [ ] HEL 1	CUSTOMER COMMENTS		DS REPRESENTATIVE P.Jennings / D. Johnson

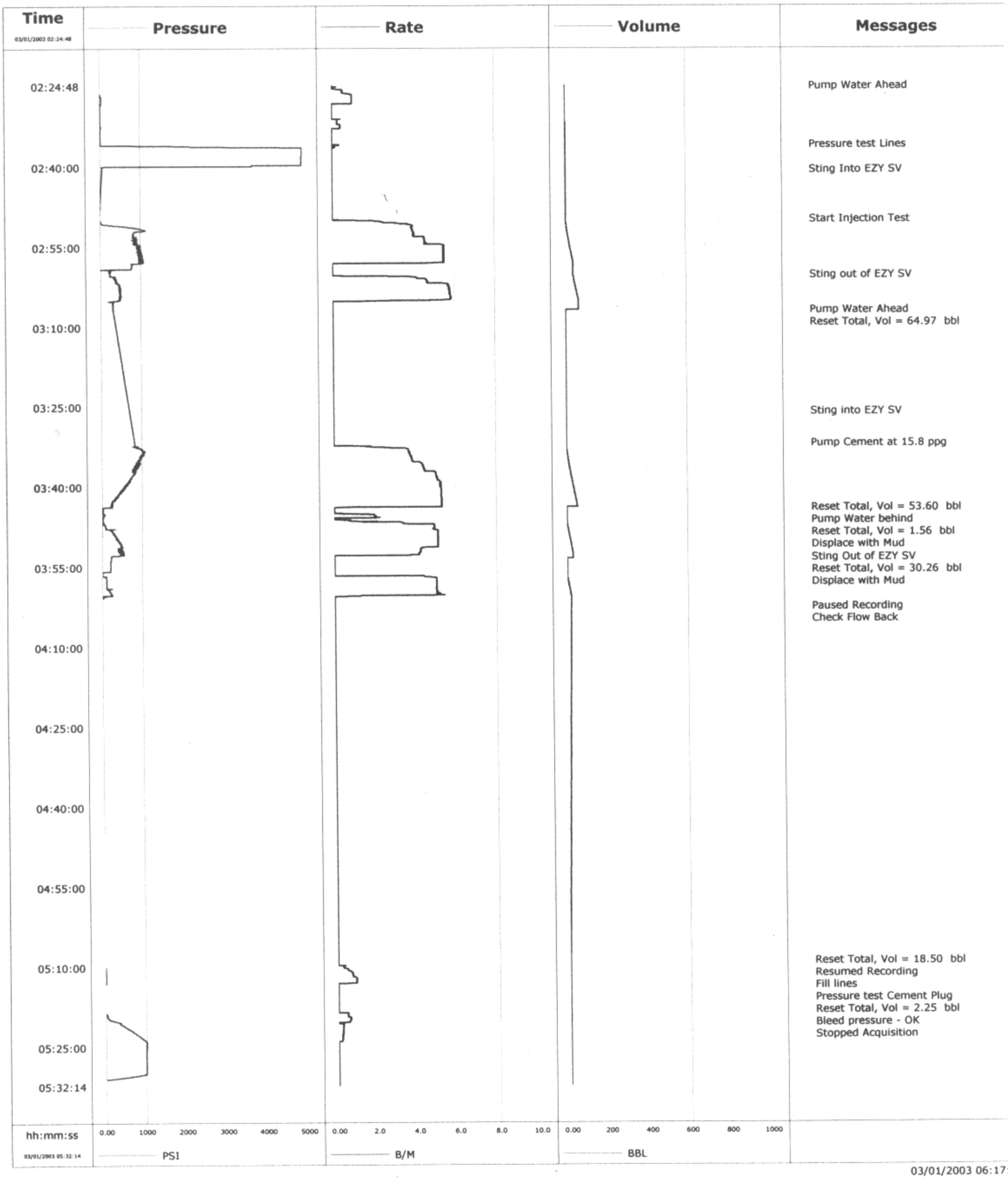
QUALITY OF SERVICE GOOD [X] SATISFACTORY [ ] POOR [ ]

CUSTOMER REPRESENTATIVE George Sharkey

Schlumberger — Cementing Job Report

CemCAT v1.(

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 6
Country	Australia	**Job Date**	03-01-2003



03/01/2003 06:17:

Schlumberger

SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Plug & Abandon # 6	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
1/3/03 2:24 AM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	DRILL FLUID Wt.	DRILL FLUID Vis	FORMATION	SIR NUMBER
1/3/03 5:31 AM	WBM	10.2	56		

CASING Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at	PREVIOUS CASING Size	Depth	Wt.
							13 3/8	917	72

DRILL PIPE Size	Depth	Type	Wt.	Volume	PACKER Type	Depth	BRIDGE PLUG Type	Depth	TAIL PIPE Type	Depth
5"	895	G	19.5	52	Ezi SV	895				

CASING EQUIPMENT USED: SHOE Float Stab; COLLAR Float Stab; PLUGS Top Bottom; CENT. Qty. Type

CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB: Time - Min. | Vol. BBLS | Press - PSI

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
										15.8	75	40	

EQUIPMENT: LAS / LPJ; 1 Pump Unit; 1 Batch Mixer; Compressor / RCM; 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: X Press X Rate X Vol Dty — ON: PRISM*

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY

TAIL SLURRY
50 BBLS 15.8 ppg - Batch Mixed

MATERIALS USED	
1 Gal	NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
2:24			3	0.3		Pump Water
2:35		5000				Pressure test Lines
02:40						Sting Into EZY SV
02:49		480	40	5.9		Start Injection Test
03:00						Sting out of EZY SV
03:00		480	25	5.8		Pump Water
03:25						Sting Into EZY SV
03:31		750	50	5.3		Pump cement at 15.8 ppg
03:43			1.5	0.5		Pump Water Behind
03:46			30.1			Displace with Mud
03:53						Sting out of EZY SV
03:56			18.5			Displace with Mud
04:02						Check Flow Back - OK
05:09			2.3	0.3		Fill Lines
05:18		1000	1.7	0.2		Test Cement Plug - OK
05:31						Finish Job
			172.1			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB: SUP; MECH; S.S 2; F.E.; HEL

STEM1 DONE? YES X NO — TOTAL LOST TIME H — TOTAL OPERATING TIME 3 H

CUSTOMER COMMENTS

DS REPRESENTATIVE: P.Jennings / D. Johnson

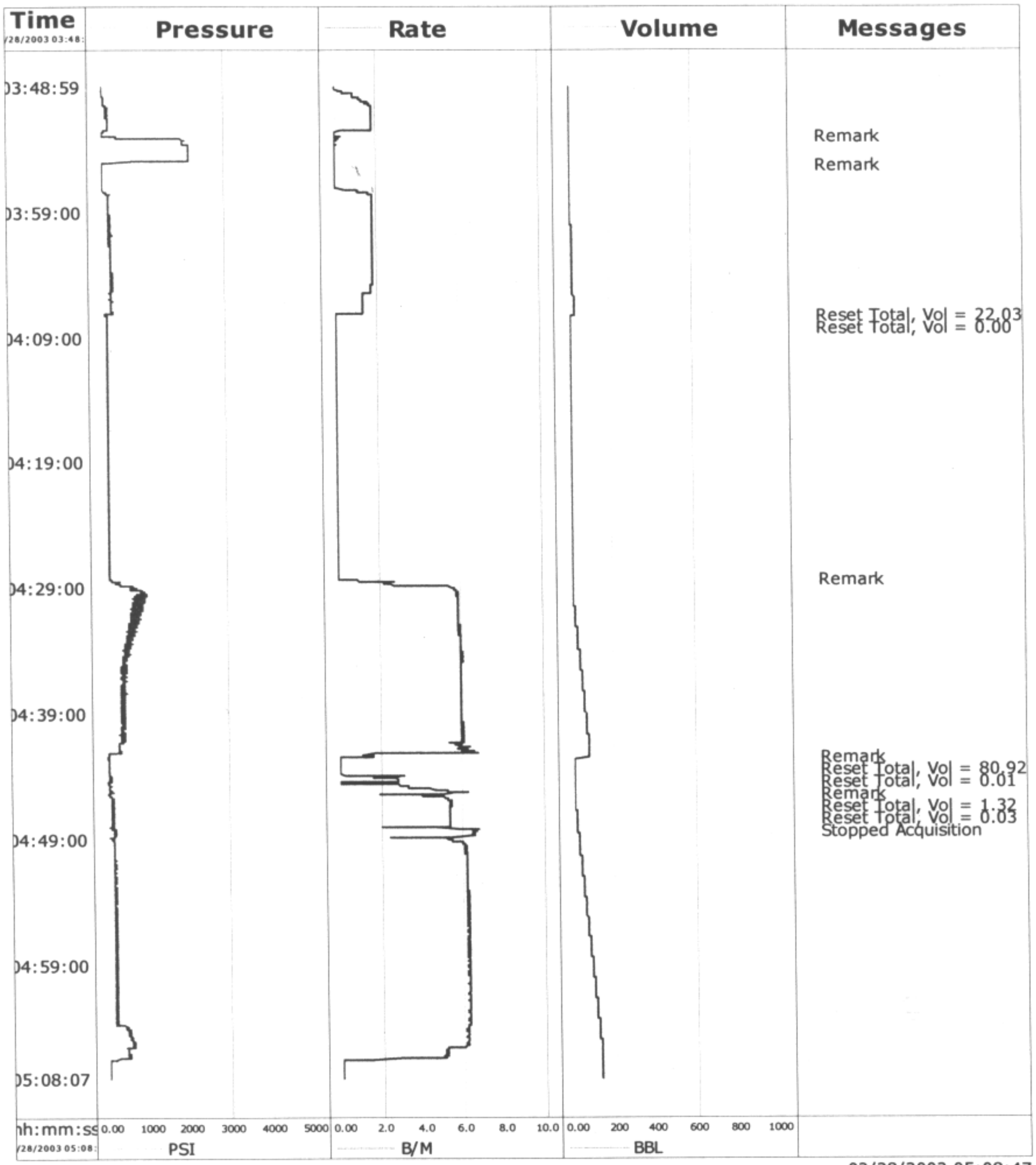
QUALITY OF SERVICE: GOOD X SATISFACTORY POOR

CUSTOMER REPRESENTATIVE: George Sharkey

Schlumberger Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 5
Country	Australia	**Job Date**	02-28-2003



02/28/2003 05:08:47

P&A 5

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
02:28:2003:03:48:59	0.0	0.0	-10
02:28:2003:03:49:19	0.3	0.0	-1
02:28:2003:03:49:22	Pump Water Ahead		
02:28:2003:03:49:22	0.3	0.0	-1
02:28:2003:03:49:39	0.9	0.2	17
02:28:2003:03:49:59	1.3	0.6	31
02:28:2003:03:50:19	1.6	1.1	36
02:28:2003:03:50:39	1.8	1.7	159
02:28:2003:03:50:59	1.8	2.3	159
02:28:2003:03:51:19	1.8	2.9	146
02:28:2003:03:51:39	1.8	3.5	136
02:28:2003:03:51:59	1.8	4.1	146
02:28:2003:03:52:19	1.8	4.7	146
02:28:2003:03:52:39	0.0	5.0	13
02:28:2003:03:52:59	Pressure Test Lines		
02:28:2003:03:52:59	0.3	5.0	164
02:28:2003:03:53:19	0.0	5.1	2004
02:28:2003:03:53:39	0.0	5.1	2105
02:28:2003:03:54:00	0.0	5.1	2105
02:28:2003:03:54:20	0.0	5.1	2109
02:28:2003:03:54:40	0.0	5.1	2109
02:28:2003:03:55:00	0.0	5.1	77
02:28:2003:03:55:13	Pump Water Ahead		
02:28:2003:03:55:13	0.0	5.1	-5
02:28:2003:03:55:20	0.0	5.1	-5
02:28:2003:03:55:40	0.0	5.1	-5
02:28:2003:03:56:00	0.0	5.1	-5
02:28:2003:03:56:20	0.0	5.1	-1
02:28:2003:03:56:40	0.0	5.1	-1
02:28:2003:03:57:00	0.0	5.1	4
02:28:2003:03:57:20	1.4	5.2	31
02:28:2003:03:57:40	1.8	5.8	150
02:28:2003:03:58:00	1.8	6.4	164
02:28:2003:03:58:20	1.8	7.0	150
02:28:2003:03:58:40	1.8	7.6	150
02:28:2003:03:59:00	1.8	8.2	173
02:28:2003:03:59:20	1.8	8.8	164
02:28:2003:03:59:40	1.8	9.4	196
02:28:2003:04:00:00	1.8	10.1	159
02:28:2003:04:00:20	1.8	10.7	196
02:28:2003:04:00:40	1.8	11.3	155
02:28:2003:04:01:00	1.8	11.9	196
02:28:2003:04:01:20	1.8	12.5	187
02:28:2003:04:01:40	1.8	13.1	191
02:28:2003:04:02:00	1.8	13.7	196
02:28:2003:04:02:20	1.8	14.3	196
02:28:2003:04:02:40	1.8	14.9	200
02:28:2003:04:03:00	1.8	15.6	219
02:28:2003:04:03:20	1.8	16.2	205
02:28:2003:04:03:40	1.8	16.8	191
02:28:2003:04:04:00	1.8	17.4	228
02:28:2003:04:04:20	1.8	18.0	196
02:28:2003:04:04:40	1.8	18.6	228
02:28:2003:04:05:00	1.7	19.2	228
02:28:2003:04:05:21	1.7	19.8	223
02:28:2003:04:05:40	1.3	20.2	196
02:28:2003:04:06:01	1.3	20.7	210
02:28:2003:04:06:21	1.3	21.1	196
02:28:2003:04:06:41	1.3	21.5	200
02:28:2003:04:07:01	1.3	22.0	233

02:28:2003:04:07:15	Reset Total, Vol = 22.03 bbl		
02:28:2003:04:07:15	0.0	22.0	91
02:28:2003:04:07:21	0.0	0.0	86
02:28:2003:04:07:41	0.0	0.0	86
02:28:2003:04:08:01	0.0	0.0	91
02:28:2003:04:08:21	0.0	0.0	86
02:28:2003:04:08:41	0.0	0.0	86
02:28:2003:04:09:01	0.0	0.0	91
02:28:2003:04:09:21	0.0	0.0	91
02:28:2003:04:09:41	0.0	0.0	81
02:28:2003:04:10:01	0.0	0.0	95
02:28:2003:04:10:21	0.0	0.0	86
02:28:2003:04:10:41	0.0	0.0	91
02:28:2003:04:11:01	0.0	0.0	91
02:28:2003:04:11:21	0.0	0.0	86
02:28:2003:04:11:41	0.0	0.0	91
02:28:2003:04:12:01	0.0	0.0	95
02:28:2003:04:12:21	0.0	0.0	86
02:28:2003:04:12:41	0.0	0.0	95
02:28:2003:04:13:01	0.0	0.0	91
02:28:2003:04:13:21	0.0	0.0	91
02:28:2003:04:13:41	0.0	0.0	91
02:28:2003:04:14:01	0.0	0.0	91
02:28:2003:04:14:21	0.0	0.0	91
02:28:2003:04:14:41	0.0	0.0	86
02:28:2003:04:15:01	0.0	0.0	91
02:28:2003:04:15:21	0.0	0.0	86
02:28:2003:04:15:41	0.0	0.0	91
02:28:2003:04:16:01	0.0	0.0	91
02:28:2003:04:16:21	0.0	0.0	91
02:28:2003:04:16:41	0.0	0.0	91
02:28:2003:04:17:01	0.0	0.0	91
02:28:2003:04:17:22	0.0	0.0	86
02:28:2003:04:17:42	0.0	0.0	91
02:28:2003:04:18:02	0.0	0.0	95
02:28:2003:04:18:22	0.0	0.0	91
02:28:2003:04:18:42	0.0	0.0	95
02:28:2003:04:19:02	0.0	0.0	95
02:28:2003:04:19:22	0.0	0.0	95
02:28:2003:04:19:42	0.0	0.0	91
02:28:2003:04:20:02	0.0	0.0	91
02:28:2003:04:20:22	0.0	0.0	95
02:28:2003:04:20:42	0.0	0.0	91
02:28:2003:04:21:02	0.0	0.0	95
02:28:2003:04:21:22	0.0	0.0	81
02:28:2003:04:21:42	0.0	0.0	91
02:28:2003:04:22:02	0.0	0.0	91
02:28:2003:04:22:22	0.0	0.0	91
02:28:2003:04:22:42	0.0	0.0	91
02:28:2003:04:23:02	0.0	0.0	95
02:28:2003:04:23:22	0.0	0.0	95
02:28:2003:04:23:42	0.0	0.0	95
02:28:2003:04:24:02	0.0	0.0	91
02:28:2003:04:24:22	0.0	0.0	91
02:28:2003:04:24:42	0.0	0.0	95
02:28:2003:04:25:02	0.0	0.0	91
02:28:2003:04:25:22	0.0	0.0	95
02:28:2003:04:25:42	0.0	0.0	95
02:28:2003:04:26:02	0.0	0.0	95
02:28:2003:04:26:22	0.0	0.0	91
02:28:2003:04:26:42	0.0	0.0	91
02:28:2003:04:27:02	0.0	0.0	95
02:28:2003:04:27:22	0.0	0.0	95

02:28:2003:04:27:42	0.0	0.0	95
02:28:2003:04:28:02	0.0	0.0	91
02:28:2003:04:28:16	Pump Cement at 15.8 ppg		
02:28:2003:04:28:16	0.0	0.0	91
02:28:2003:04:28:23	0.9	0.0	155
02:28:2003:04:28:43	2.7	0.7	347
02:28:2003:04:29:03	5.6	2.3	626
02:28:2003:04:29:23	5.8	4.2	937
02:28:2003:04:29:43	5.8	6.2	851
02:28:2003:04:30:03	5.8	8.1	704
02:28:2003:04:30:23	5.9	10.1	851
02:28:2003:04:30:43	5.9	12.0	786
02:28:2003:04:31:03	5.9	14.0	796
02:28:2003:04:31:23	5.9	15.9	782
02:28:2003:04:31:43	5.9	17.9	576
02:28:2003:04:32:03	5.9	19.8	722
02:28:2003:04:32:23	5.9	21.8	640
02:28:2003:04:32:43	5.9	23.8	608
02:28:2003:04:33:03	5.9	25.8	608
02:28:2003:04:33:23	5.9	27.7	585
02:28:2003:04:33:43	6.0	29.7	452
02:28:2003:04:34:03	6.0	31.7	493
02:28:2003:04:34:23	6.0	33.7	526
02:28:2003:04:34:43	6.0	35.7	402
02:28:2003:04:35:03	6.0	37.7	448
02:28:2003:04:35:23	6.0	39.7	471
02:28:2003:04:35:43	6.0	41.7	475
02:28:2003:04:36:03	6.0	43.7	466
02:28:2003:04:36:23	6.0	45.7	489
02:28:2003:04:36:43	6.0	47.7	361
02:28:2003:04:37:03	6.0	49.7	457
02:28:2003:04:37:23	6.0	51.6	429
02:28:2003:04:37:43	6.0	53.6	352
02:28:2003:04:38:03	6.0	55.6	457
02:28:2003:04:38:23	6.0	57.6	347
02:28:2003:04:38:43	6.0	59.6	425
02:28:2003:04:39:03	6.0	61.6	448
02:28:2003:04:39:23	6.0	63.6	443
02:28:2003:04:39:43	6.0	65.6	452
02:28:2003:04:40:04	6.0	67.7	434
02:28:2003:04:40:24	6.0	69.7	439
02:28:2003:04:40:44	6.0	71.7	425
02:28:2003:04:41:04	6.0	73.7	388
02:28:2003:04:41:24	5.7	75.7	310
02:28:2003:04:41:44	5.8	77.6	306
02:28:2003:04:42:04	6.3	79.7	347
02:28:2003:04:42:24	1.6	80.7	59
02:28:2003:04:42:31	Reset Total, Vol = 80.92 bbl		
02:28:2003:04:42:31	0.6	80.9	45
02:28:2003:04:42:44	0.0	0.0	27
02:28:2003:04:43:04	0.0	0.0	27
02:28:2003:04:43:24	0.0	0.0	27
02:28:2003:04:43:44	0.0	0.0	27
02:28:2003:04:44:04	2.1	0.4	59
02:28:2003:04:44:24	2.6	1.2	31
02:28:2003:04:44:25	Pump Water Behind		
02:28:2003:04:44:25	2.0	1.3	31
02:28:2003:04:44:26	Reset Total, Vol = 1.32 bbl		
02:28:2003:04:44:26	2.1	1.3	49
02:28:2003:04:44:27	Displace With Mud		
02:28:2003:04:44:27	0.9	0.0	-10
02:28:2003:04:44:44	3.0	0.4	63
02:28:2003:04:45:04	4.9	1.6	72

02:28:2003:04:45:24	3.0	3.3	36
02:28:2003:04:45:44	5.2	4.7	127
02:28:2003:04:46:04	5.4	6.5	141
02:28:2003:04:46:24	5.4	8.3	127
02:28:2003:04:46:44	5.4	10.1	127
02:28:2003:04:47:04	5.4	11.9	136
02:28:2003:04:47:24	5.4	13.7	127
02:28:2003:04:47:44	5.4	15.5	141
02:28:2003:04:48:04	4.7	17.2	114
02:28:2003:04:48:24	6.5	19.2	178
02:28:2003:04:48:44	6.5	21.4	168
02:28:2003:04:49:04	5.3	23.0	100
02:28:2003:04:49:24	6.1	25.0	155
02:28:2003:04:49:44	6.1	27.0	150
02:28:2003:04:50:04	6.1	29.0	168
02:28:2003:04:50:24	6.1	31.1	150
02:28:2003:04:50:44	6.1	33.1	155
02:28:2003:04:51:04	6.1	35.1	150
02:28:2003:04:51:24	6.1	37.2	182
02:28:2003:04:51:45	6.1	39.3	168
02:28:2003:04:52:05	6.1	41.4	178
02:28:2003:04:52:25	6.2	43.4	168
02:28:2003:04:52:45	6.2	45.5	173
02:28:2003:04:53:05	6.2	47.6	164
02:28:2003:04:53:25	6.2	49.6	164
02:28:2003:04:53:45	6.2	51.7	168
02:28:2003:04:54:05	6.2	53.8	155
02:28:2003:04:54:25	6.2	55.8	155
02:28:2003:04:54:45	6.2	57.9	168
02:28:2003:04:55:05	6.2	60.0	191
02:28:2003:04:55:25	6.2	62.1	168
02:28:2003:04:55:45	6.2	64.1	187
02:28:2003:04:56:05	6.2	66.2	164
02:28:2003:04:56:25	6.2	68.3	164
02:28:2003:04:56:45	6.3	70.4	168
02:28:2003:04:57:05	6.2	72.5	178
02:28:2003:04:57:25	6.2	74.5	173
02:28:2003:04:57:45	6.3	76.6	164
02:28:2003:04:58:05	6.2	78.7	164
02:28:2003:04:58:25	6.2	80.8	187
02:28:2003:04:58:45	6.3	82.8	159
02:28:2003:04:59:05	6.2	84.9	173
02:28:2003:04:59:25	6.2	87.0	159
02:28:2003:04:59:45	6.2	89.1	178
02:28:2003:05:00:05	6.3	91.2	182
02:28:2003:05:00:25	6.3	93.2	178
02:28:2003:05:00:45	6.2	95.3	155
02:28:2003:05:01:05	6.3	97.4	168
02:28:2003:05:01:25	6.3	99.5	159
02:28:2003:05:01:45	6.2	101.6	164
02:28:2003:05:02:05	6.3	103.6	159
02:28:2003:05:02:25	6.3	105.7	182
02:28:2003:05:02:45	6.3	107.8	178
02:28:2003:05:03:05	6.3	109.9	159
02:28:2003:05:03:25	6.2	112.0	182
02:28:2003:05:03:46	6.3	114.1	168
02:28:2003:05:04:06	6.1	116.2	429
02:28:2003:05:04:26	6.1	118.2	498
02:28:2003:05:04:46	6.1	120.3	535
02:28:2003:05:05:06	6.1	122.3	548
02:28:2003:05:05:26	6.1	124.4	562
02:28:2003:05:05:46	5.1	126.2	448
02:28:2003:05:06:06	5.1	127.9	489

02:28:2003:05:06:26	5.1	129.6	503
02:28:2003:05:06:46	0.0	130.2	4
02:28:2003:05:07:06	0.0	130.2	-15
02:28:2003:05:07:26	0.0	130.2	-19
02:28:2003:05:07:46	0.0	130.2	-19
02:28:2003:05:08:06	0.0	130.2	-19
02:28:2003:05:08:07	Check Flow Back		
02:28:2003:05:08:07	0.0	130.2	-19

Schlumberger

SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Plug & Abandon # 5	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
2/28/03 3:48 AM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
2/28/03 5:10 AM	WBM	10.2	56		

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at

PREVIOUS CASING

Size	Depth	Wt.
13 3/8	917	72

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	2321	G	19.5	135

PACKER: Type / Depth

BRIDGE PLUG: Type / Depth

TAIL PIPE

Type	Depth
3.5 DP	2564

CASING EQUIPMENT USED: SHOE Float Stab; COLLAR Float Stab; PLUGS Top Bottom; CENT. Qty. Type

CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB: Time - Min. / Vol. BBLS / Press - PSI

WASH: Wt. / Vol. BBLS / Fill

SPACER: Wt. / Vol. BBLS / Fill

LEAD SLURRY: Wt. / Vol. / Mix Water / Fill

TAIL SLURRY

Wt.	Vol.	Mix Water	Fill
15.8	75	40	183

EQUIPMENT: LAS / LPJ; 1 Pump Unit; 1 Batch Mixer; Compressor / RCM; 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: X Press, X Rate, X Vol, Dty ON: PRISM*

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY

TAIL SLURRY
75 BBLS 15.8 ppg - Batch Mixed

MATERIALS USED

8 Gals	SCR 100
135 Gals	Halad 413
1 Gal	NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
3:48			5	1.8		Pump Water
3:25		2000				Pressure test Lines
03:55			17	1.8		Pump Water
04:28			75	6		Pump Cement
04:44			1.2	2		Pump Water
04:44			130	6.2		Displace with Mud
05:08						Check Flow Back - OK
05:10						Finish Job
			228.2			TOTAL PUMPED

No. OF DS PERSONNEL ON JOB: SUP ; S.S 2; MECH ; F.E. ; HEL 1

STEM1 DONE? YES X NO | TOTAL LOST TIME H | TOTAL OPERATING TIME 1.2 H

CUSTOMER COMMENTS

DS REPRESENTATIVE: P.Jennings / D. Johnson

QUALITY OF SERVICE: GOOD X SATISFACTORY POOR

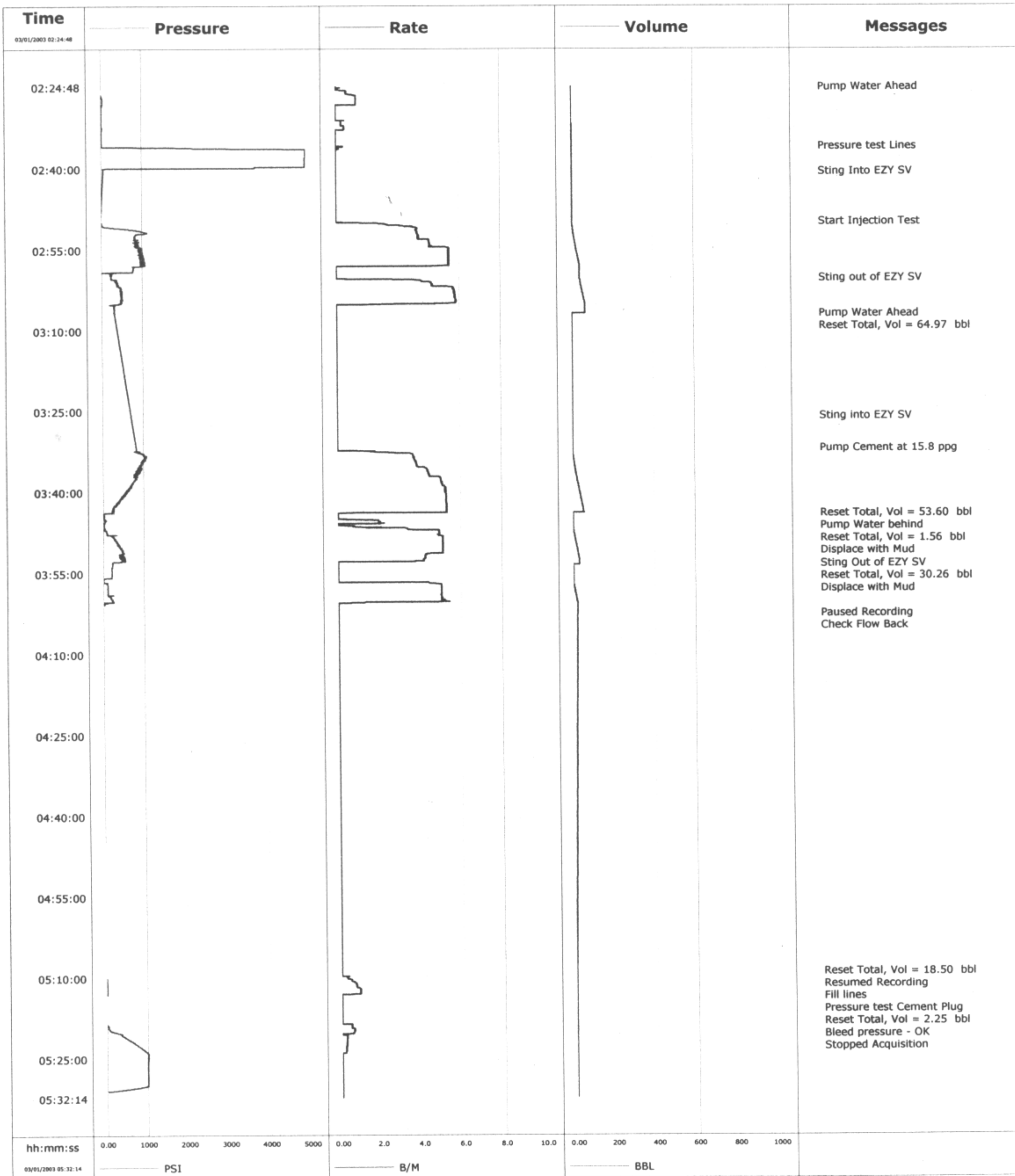
CUSTOMER REPRESENTATIVE: George Sharkey

Schlumberger

Cementing Job Report

CemCAT v1.(

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 6
Country	Australia	**Job Date**	03-01-2003



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Schlumberger

SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Plug & Abandon # 6	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
1/3/03 2:24 AM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
1/3/03 5:31 AM	WBM	10.2	56		

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at

PREVIOUS CASING

Size	Depth	Wt.
13 3/8	917	72

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	895	G	19.5	52

PACKER

Type	Depth
Ezi SV	895

BRIDGE PLUG Type	Depth	TAIL PIPE Type	Depth

CASING EQUIPMENT USED

SHOE Float Stab	COLLAR Float Stab	PLUGS Top Bottom	CENT. Qty. Type	CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB

Time - Min.	Vol. BBLS	Press - PSI

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
										15.8	75	40	

EQUIPMENT

LAS / LPJ: | 1 Pump Unit | 1 Batch Mixer | Compressor / RCM | 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: Press X, Rate X, Vol X, Dty — ON: PRISM*

MUD RETURNS / LOST DURING JOB / BBLS

LEAD SLURRY	TAIL SLURRY	MATERIALS USED
	50 BBLS 15.8 ppg - Batch Mixed	1 Gal NF 5

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
2:24			3	0.3		Pump Water
2:35		5000				Pressure test Lines
02:40						Sting Into EZY SV
02:49		480	40	5.9		Start Injection Test
03:00						Sting out of EZY SV
03:00		480	25	5.8		Pump Water
03:25						Sting Into EZY SV
03:31		750	50	5.3		Pump cement at 15.8 ppg
03:43			1.5	0.5		Pump Water Behind
03:46			30.1			Displace with Mud
03:53						Sting out of EZY SV
03:56			18.5			Displace with Mud
04:02						Check Flow Back - OK
05:09			2.3	0.3		Fill Lines
05:18		1000	1.7	0.2		Test Cement Plug - OK
05:31						Finish Job
			172.1			**TOTAL PUMPED**

No. OF DS PERSONNEL ON JOB: SUP | S.S 2 | MECH | F.E. | HEL

STEM1 DONE? YES X NO | TOTAL LOST TIME H | TOTAL OPERATING TIME 3 H

CUSTOMER COMMENTS

DS REPRESENTATIVE: P.Jennings / D. Johnson

QUALITY OF SERVICE: GOOD X SATISFACTORY POOR

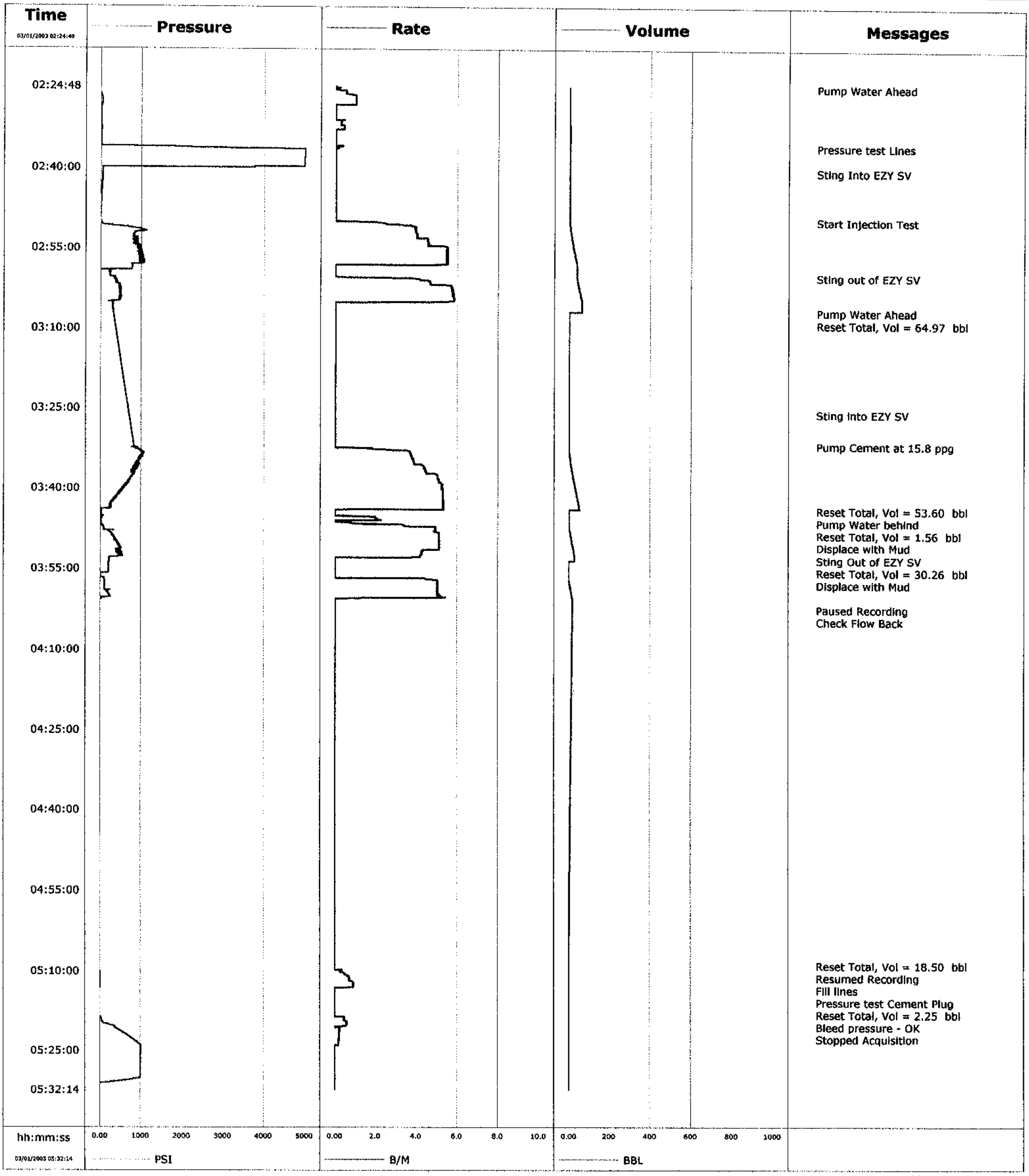
CUSTOMER REPRESENTATIVE: George Sharkey

Schlumberger

Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 6
Country	Australia	**Job Date**	03-01-2003



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Schlumberger	Customer: Esso
	District:
	Representative:
	DS Supervisor:
Job Date: 03-01-2003	Well: Scallop 1

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:02:24:48	Pump Water Ahead		
03:01:2003:02:24:48	0.0	0.0	-19
03:01:2003:02:25:18	0.0	0.0	-15
03:01:2003:02:25:48	0.5	0.2	-5
03:01:2003:02:26:18	0.8	0.5	-1
03:01:2003:02:26:48	1.0	0.9	31
03:01:2003:02:27:19	1.0	1.5	45
03:01:2003:02:27:49	1.0	2.0	45
03:01:2003:02:28:19	0.0	2.3	27
03:01:2003:02:28:49	0.0	2.3	22
03:01:2003:02:29:19	0.0	2.3	17
03:01:2003:02:29:49	0.0	2.3	17
03:01:2003:02:30:19	0.0	2.3	17
03:01:2003:02:30:49	0.0	2.3	17
03:01:2003:02:31:19	0.3	2.4	17
03:01:2003:02:31:49	0.3	2.6	22
03:01:2003:02:32:19	0.4	2.7	22
03:01:2003:02:32:49	0.3	2.9	27
03:01:2003:02:33:19	0.0	2.9	17
03:01:2003:02:33:49	0.0	2.9	17
03:01:2003:02:34:19	0.0	2.9	17
03:01:2003:02:34:49	0.0	2.9	17
03:01:2003:02:35:19	0.0	2.9	17
03:01:2003:02:35:49	0.0	2.9	17
03:01:2003:02:35:51	Pressure test Lines		
03:01:2003:02:35:51	0.0	2.9	17
03:01:2003:02:36:19	0.1	3.0	2723
03:01:2003:02:36:49	0.0	3.0	5002
03:01:2003:02:37:19	0.0	3.0	4993
03:01:2003:02:37:49	0.0	3.0	4989
03:01:2003:02:38:19	0.0	3.0	4984
03:01:2003:02:38:49	0.0	3.0	4980
03:01:2003:02:39:20	0.0	3.0	4980
03:01:2003:02:39:50	0.0	3.0	3757
03:01:2003:02:40:20	0.0	3.0	59
03:01:2003:02:40:29	Sting Into EZY SV		
03:01:2003:02:40:29	0.0	3.0	59
03:01:2003:02:50:07	1.4	3.1	17
03:01:2003:02:50:37	3.2	4.3	27
03:01:2003:02:50:47	Start Injection Test		
03:01:2003:02:50:47	3.8	4.9	100
03:01:2003:02:51:08	4.0	6.3	558
03:01:2003:02:51:38	3.9	8.2	997
03:01:2003:02:52:08	4.0	10.2	873
03:01:2003:02:52:38	4.0	12.2	823
03:01:2003:02:53:08	4.5	14.2	901
03:01:2003:02:53:38	4.5	16.5	860
03:01:2003:02:54:08	4.6	18.7	869
03:01:2003:02:54:38	5.4	21.1	956
03:01:2003:02:55:08	5.5	23.8	905
03:01:2003:02:55:38	5.5	26.6	970
03:01:2003:02:56:08	5.5	29.3	1015

Well: Scallop 1

Job Date: 03-01-2003

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:02:57:08	5.5	34.8	960
03:01:2003:02:57:38	5.5	37.6	1011
03:01:2003:02:58:08	1.1	40.2	791
03:01:2003:02:58:38	0.0	40.2	773
03:01:2003:02:59:08	0.0	40.2	764
03:01:2003:02:59:38	0.0	40.2	242
03:01:2003:03:00:08	0.0	40.2	237
03:01:2003:03:00:14	Sting out of EZY SV		
03:01:2003:03:00:14	0.0	40.2	233
03:01:2003:03:00:38	3.3	40.5	306
03:01:2003:03:00:49	Pump Water Ahead		
03:01:2003:03:00:49	4.1	41.3	347
03:01:2003:03:01:08	4.6	42.6	379
03:01:2003:03:01:38	4.6	44.9	416
03:01:2003:03:02:08	5.7	47.5	452
03:01:2003:03:02:39	5.7	50.5	471
03:01:2003:03:03:09	5.8	53.4	475
03:01:2003:03:03:39	5.8	56.2	498
03:01:2003:03:04:09	5.8	59.1	480
03:01:2003:03:04:39	5.8	62.0	475
03:01:2003:03:05:09	3.9	64.8	388
03:01:2003:03:05:39	0.0	65.0	306
03:01:2003:03:06:09	0.0	65.0	306
03:01:2003:03:06:39	0.0	65.0	306
03:01:2003:03:06:52	Reset Total, Vol = 64.97 bbl		
03:01:2003:03:06:52	0.0	65.0	320
03:01:2003:03:25:42	Sting into EZY SV		
03:01:2003:03:31:44	Pump Cement at 15.8 ppg		
03:01:2003:03:31:44	0.0	0.0	814
03:01:2003:03:31:58	0.0	0.0	814
03:01:2003:03:32:28	1.6	0.3	860
03:01:2003:03:32:58	3.7	1.8	1002
03:01:2003:03:33:28	3.7	3.6	1034
03:01:2003:03:33:58	3.8	5.5	1038
03:01:2003:03:34:28	3.8	7.4	974
03:01:2003:03:34:58	3.9	9.3	892
03:01:2003:03:35:28	4.3	11.3	947
03:01:2003:03:35:58	4.4	13.5	837
03:01:2003:03:36:28	4.4	15.7	773
03:01:2003:03:36:59	4.5	18.0	823
03:01:2003:03:37:29	5.0	20.4	800
03:01:2003:03:37:59	5.1	23.0	750
03:01:2003:03:38:29	5.1	25.5	695
03:01:2003:03:38:59	5.2	28.1	677
03:01:2003:03:39:29	5.3	30.7	594
03:01:2003:03:39:59	5.3	33.3	548
03:01:2003:03:40:29	5.3	36.0	530
03:01:2003:03:40:59	5.3	38.6	443
03:01:2003:03:41:29	5.3	41.3	388
03:01:2003:03:41:59	5.3	43.9	370
03:01:2003:03:42:29	5.3	46.6	310
03:01:2003:03:42:59	5.3	49.2	237
03:01:2003:03:43:29	5.3	51.9	251
03:01:2003:03:43:49	Reset Total, Vol = 53.60 bbl		
03:01:2003:03:43:49	1.9	53.6	36
03:01:2003:03:43:51	Pump Water behind		
03:01:2003:03:43:51	0.8	0.0	40
03:01:2003:03:43:59	0.0	0.0	31

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:03:44:29	0.0	0.0	31
03:01:2003:03:44:59	0.3	0.0	22
03:01:2003:03:45:29	2.1	0.8	40
03:01:2003:03:45:58	Reset Total, Vol = 1.56 bbl		
03:01:2003:03:45:58	0.0	1.6	13
03:01:2003:03:45:59	0.0	0.0	13
03:01:2003:03:46:29	1.5	0.3	13
03:01:2003:03:46:53	Displace with Mud		
03:01:2003:03:46:53	3.4	1.4	27
03:01:2003:03:46:59	4.4	1.8	68
03:01:2003:03:47:29	4.9	4.3	100
03:01:2003:03:47:59	4.9	6.7	223
03:01:2003:03:48:29	5.1	9.3	278
03:01:2003:03:49:00	5.1	11.9	320
03:01:2003:03:49:30	5.1	14.5	352
03:01:2003:03:50:00	5.1	17.0	402
03:01:2003:03:50:30	5.1	19.6	448
03:01:2003:03:51:00	5.1	22.2	489
03:01:2003:03:51:30	4.3	24.6	434
03:01:2003:03:52:00	4.3	26.7	439
03:01:2003:03:52:30	4.2	28.8	493
03:01:2003:03:53:00	0.0	30.3	228
03:01:2003:03:53:05	Sting Out of EZY SV		
03:01:2003:03:53:05	0.0	30.3	228
03:01:2003:03:53:24	Reset Total, Vol = 30.26 bbl		
03:01:2003:03:53:24	0.0	30.3	223
03:01:2003:03:53:30	0.0	0.0	219
03:01:2003:03:54:00	0.0	0.0	214
03:01:2003:03:54:30	0.0	0.0	214
03:01:2003:03:55:00	0.0	0.0	210
03:01:2003:03:55:30	0.0	0.0	205
03:01:2003:03:56:00	0.0	0.0	4
03:01:2003:03:56:30	0.0	0.0	4
03:01:2003:03:56:46	Displace with Mud		
03:01:2003:03:56:46	4.5	0.4	91
03:01:2003:03:57:00	5.0	1.5	109
03:01:2003:03:57:30	5.1	4.0	109
03:01:2003:03:58:00	5.0	6.5	114
03:01:2003:03:58:30	5.1	9.0	109
03:01:2003:03:59:00	5.0	11.6	242
03:01:2003:03:59:30	5.0	14.1	191
03:01:2003:04:00:01	5.2	16.7	233
03:01:2003:04:00:30	0.1	18.5	45
03:01:2003:04:01:01	0.0	18.5	-10
03:01:2003:04:01:31	0.0	18.5	-19
03:01:2003:04:02:01	0.0	18.5	-24
03:01:2003:04:02:21	Paused Recording		
03:01:2003:04:02:21	0.0	18.5	-24
03:01:2003:04:02:26	Check Flow Back		
03:01:2003:05:08:57	Reset Total, Vol = 18.50 bbl		
03:01:2003:05:09:36	Resumed Recording		
03:01:2003:05:09:36	Fill lines		
03:01:2003:05:09:36	0.0	0.0	-10
03:01:2003:05:09:46	0.1	0.0	-1
03:01:2003:05:10:16	0.3	0.1	4
03:01:2003:05:10:46	0.6	0.4	8
03:01:2003:05:11:16	0.7	0.7	13
03:01:2003:05:11:46	0.7	1.1	8

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:05:12:16	0.9	1.5	13
03:01:2003:05:12:46	0.9	2.0	13
03:01:2003:05:13:16	0.0	2.3	-1
03:01:2003:05:13:25	Reset Total, Vol = 2.25 bbl		
03:01:2003:05:13:25	0.0	2.3	-1
03:01:2003:05:13:46	0.0	0.0	-1
03:01:2003:05:14:16	0.0	0.0	-1
03:01:2003:05:14:46	0.0	0.0	-1
03:01:2003:05:15:16	0.0	0.0	-1
03:01:2003:05:15:46	0.0	0.0	-1
03:01:2003:05:16:16	0.0	0.0	-1
03:01:2003:05:16:46	0.0	0.0	-1
03:01:2003:05:17:16	0.0	0.0	-1
03:01:2003:05:17:46	0.0	0.0	-1
03:01:2003:05:18:16	0.0	0.0	-1
03:01:2003:05:18:27	Pressure test Cement Plug		
03:01:2003:05:18:27	0.0	0.0	-1
03:01:2003:05:18:46	0.5	0.1	27
03:01:2003:05:19:16	0.5	0.3	49
03:01:2003:05:19:46	0.6	0.6	86
03:01:2003:05:20:16	0.6	0.9	301
03:01:2003:05:20:46	0.3	1.0	393
03:01:2003:05:21:16	0.3	1.1	503
03:01:2003:05:21:47	0.2	1.3	608
03:01:2003:05:22:17	0.2	1.4	709
03:01:2003:05:22:47	0.2	1.5	796
03:01:2003:05:23:17	0.2	1.6	887
03:01:2003:05:23:47	0.2	1.7	970
03:01:2003:05:24:17	0.0	1.7	1002
03:01:2003:05:24:47	0.0	1.7	1002
03:01:2003:05:25:17	0.0	1.7	997
03:01:2003:05:25:47	0.0	1.7	997
03:01:2003:05:26:17	0.0	1.7	997
03:01:2003:05:26:47	0.0	1.7	997
03:01:2003:05:27:17	0.0	1.7	997
03:01:2003:05:27:47	0.0	1.7	997
03:01:2003:05:28:17	0.0	1.7	997
03:01:2003:05:28:47	0.0	1.7	997
03:01:2003:05:29:17	0.0	1.7	997
03:01:2003:05:29:47	0.0	1.7	997
03:01:2003:05:30:17	0.0	1.7	837
03:01:2003:05:30:40	Bleed pressure - OK		
03:01:2003:05:30:40	0.0	1.7	498
03:01:2003:05:30:47	0.0	1.7	365
03:01:2003:05:31:17	0.0	1.7	-19
03:01:2003:05:31:47	0.0	1.7	-24

Schlumberger

SERVICE REPORT

DISTRICT	STATION	TYPE SERVICE	COMPANY
CAS	PAS	Plug & Abandon # 7	ESSO Australia Pty Ltd

RIG	TYPE OF WELL	FIELD	WELL No.
Sedco 702	Oil Exploration	Scallop	1

TIME AND DATE JOB STARTED	TOTAL DEPTH	SIZE HOLE	DEVIATION	BHST	BHCT	INVOICE NUMBER
1/3/03 1:00 PM	3174	12.25	0			

TIME & DATE JOB COMPLETED	DRILL FLUID Type	Wt.	Vis	FORMATION	SIR NUMBER
1/3/03 3:05 PM	WBM	10.2	56		

CASING

Size	Depth	Type	Wt.	Volume	Allowable Press.	Collar at

PREVIOUS CASING

Size	Depth	Wt.
13 3/8	917	72

DRILL PIPE

Size	Depth	Type	Wt.	Volume
5"	200	G	19.5	3

PACKER

Type	Depth

BRIDGE PLUG / TAIL PIPE

Bridge Plug Type	Bridge Plug Depth	Tail Pipe Type	Tail Pipe Depth
EZY SV	200		

CASING EQUIPMENT USED

SHOE Float Stab | COLLAR Float Stab | PLUGS Top Bottom | CENT. Qty. Type

CEMENT HEAD

MUD CIRCULATION PRIOR TO JOB: Time - Min. | Vol. BBLS | Press - PSI

WASH Wt.	Vol. BBLS	Fill	SPACER Wt.	Vol. BBLS	Fill	LEAD SLURRY Wt.	Vol.	Mix Water	Fill	TAIL SLURRY Wt.	Vol.	Mix Water	Fill
										15.8	75	40	47

EQUIPMENT: LAS / LPJ [ ] | Pump Unit [1] | Batch Mixer [1] | Compressor / RCM [ ] | 4062913261 Pump Unit S/No.

DURING JOB WAS PIPE: Rotated N; Reciprocated N

PARAMETERS RECORDED: X Press, X Rate, X Vol, Dty — ON: PRISM*

MUD RETURNS LOST DURING JOB BBLS

LEAD SLURRY

TAIL SLURRY
24 BBLS 15.9 ppg - Batch Mixed

MATERIALS USED

1	NF 5
200 LBS	CaCl

TIME	PRESSURE Low	PRESSURE High	VOLUME BBL	VOLUME BPM	LT MIN	RECORD OF SERVICE
13:00			7	1.1		Pump Water to flush line and fill
13:16		2000				Pressure Test Lines
13:18			9.6	1.4		Pump Water
13:24			24	4.9		Pump Cement
13:31			9	3.8		Displace with Water
13:39						Check Flow Back - OK
14:44			9			Fill Lines
14:53		1000				Pressure Test Cement Job
15:05						Bleed - Finish Job
			58.6			**TOTAL PUMPED**

No. OF DS PERSONNEL ON JOB: SUP [ ] S.S [2] MECH [ ] F.E. [ ] HEL [ ]

STEM1 DONE? YES X NO | TOTAL LOST TIME H | TOTAL OPERATING TIME 2 H

CUSTOMER COMMENTS

DS REPRESENTATIVE
P.Jennings / D. Johnson

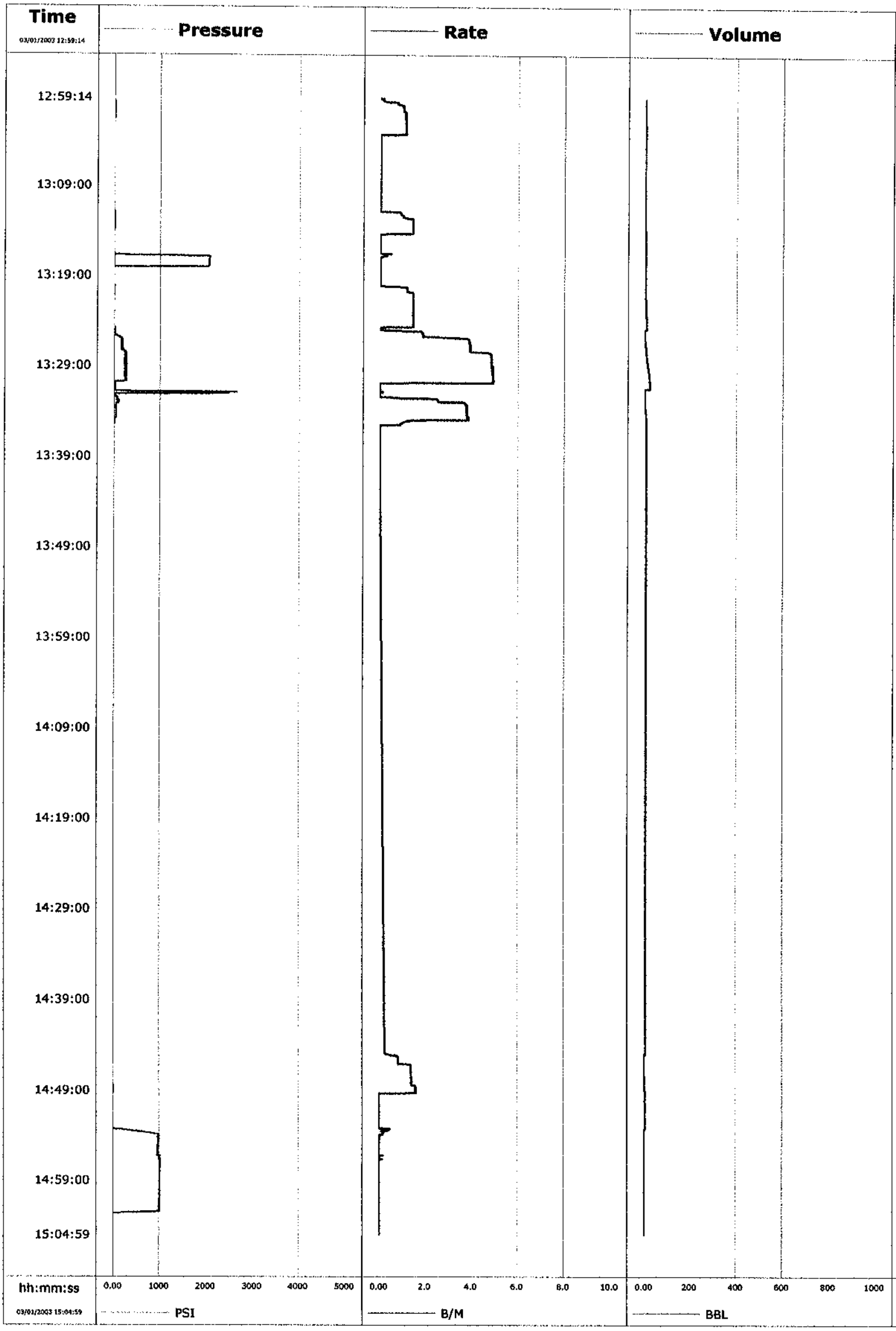
QUALITY OF SERVICE GOOD [X] SATISFACTORY [ ] POOR [ ]

CUSTOMER REPRESENTATIVE
G.K. Sharkey
George Sharkey

Schlumberger — Cementing Job Report

CemCAT v1.0

Well	Scallop 1	**Client**	Esso
Field	Scallop	**SIR No.**	
Engineer		**Job Type**	PA 7
Country	Australia	**Job Date**	03-01-2003



Messages

Pump Water to Flush Lines

Reset Total, Vol = 3.80 bbl

Pump Water to Fill Lines
Pressure Test

Reset Total, Vol = 9.59 bbl

Pump Cement at 15.9 ppg
Reset Total, Vol = 24.17 bbl

Displace with Water
Check for Flow Back - None

Resumed Recording
Fill Lines to test Cement Plug
Reset Total, Vol = 9.03 bbl

Pressure test Cement Plug - OK
Reset Total, Vol = 5.67 bbl
Finish Job

03/01/2003 15:42:47

Schlumberger	Customer: Esso
	District:
	Representative:
	DS Supervisor:
Job Date: 03-01-2003	Well: Scallop 1

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:12:59:14	Pump Water to Flush Lines		
03:01:2003:12:59:14	0.0	0.0	-10
03:01:2003:12:59:44	0.7	0.1	8
03:01:2003:13:00:14	1.0	0.5	17
03:01:2003:13:00:44	1.0	1.0	13
03:01:2003:13:01:14	1.1	1.5	4
03:01:2003:13:01:44	1.1	2.1	-1
03:01:2003:13:02:14	1.1	2.6	-5
03:01:2003:13:02:44	1.1	3.2	-5
03:01:2003:13:03:14	1.1	3.7	-1
03:01:2003:13:03:44	0.0	0.0	-5
03:01:2003:13:03:46	Reset Total, Vol = 3.80 bbl		
03:01:2003:13:03:46	0.0	0.0	-5
03:01:2003:13:04:14	0.0	0.0	-5
03:01:2003:13:04:44	0.0	0.0	-5
03:01:2003:13:05:14	0.0	0.0	-5
03:01:2003:13:05:44	0.0	0.0	-5
03:01:2003:13:06:14	0.0	0.0	-5
03:01:2003:13:06:45	0.0	0.0	-5
03:01:2003:13:07:15	0.0	0.0	-5
03:01:2003:13:07:45	0.0	0.0	-5
03:01:2003:13:08:15	0.0	0.0	-5
03:01:2003:13:08:45	0.0	0.0	-5
03:01:2003:13:09:15	0.0	0.0	-5
03:01:2003:13:09:45	0.0	0.0	-5
03:01:2003:13:10:15	0.0	0.0	-5
03:01:2003:13:10:45	0.0	0.0	-5
03:01:2003:13:11:15	0.0	0.0	-5
03:01:2003:13:11:45	0.0	0.0	-5
03:01:2003:13:12:15	1.0	0.4	8
03:01:2003:13:12:45	1.4	0.9	4
03:01:2003:13:13:15	1.4	1.7	4
03:01:2003:13:13:45	1.4	2.4	-1
03:01:2003:13:14:15	1.4	3.1	-1
03:01:2003:13:14:45	0.0	3.2	-5
03:01:2003:13:15:15	0.0	3.2	-5
03:01:2003:13:15:45	0.0	3.2	-5
03:01:2003:13:16:15	0.0	3.2	-5
03:01:2003:13:16:25	Pressure Test Lines		
03:01:2003:13:16:25	0.0	3.2	-5
03:01:2003:13:16:45	0.3	3.2	4
03:01:2003:13:17:15	0.0	3.2	2050
03:01:2003:13:17:45	0.0	3.2	2045
03:01:2003:13:18:15	0.0	3.2	-10
03:01:2003:13:18:46	0.0	3.2	-5
03:01:2003:13:18:57	Pump Water		
03:01:2003:13:18:57	0.0	3.2	-10
03:01:2003:13:19:16	0.0	3.2	-10
03:01:2003:13:19:46	0.0	3.2	-5
03:01:2003:13:20:16	1.1	3.4	4
03:01:2003:13:20:46	1.2	3.9	-1
03:01:2003:13:21:16	1.4	4.7	-1

Well: Scallop 1 Job Date: 03-01-2003

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:13:22:16	1.4	6.1	-1
03:01:2003:13:22:46	1.4	6.8	-1
03:01:2003:13:23:16	1.4	7.5	-1
03:01:2003:13:23:46	1.5	8.3	-1
03:01:2003:13:24:16	1.4	9.0	-1
03:01:2003:13:24:46	0.0	9.6	-5
03:01:2003:13:24:48	Reset Total, Vol = 9.59 bbl		
03:01:2003:13:24:48	0.0	9.6	13
03:01:2003:13:25:16	Pump Cement at 15.9 ppg		
03:01:2003:13:25:16	1.9	0.3	17
03:01:2003:13:25:46	2.7	1.3	63
03:01:2003:13:26:16	3.9	3.1	182
03:01:2003:13:26:46	3.9	5.1	164
03:01:2003:13:27:16	3.9	7.0	178
03:01:2003:13:27:46	4.8	9.3	237
03:01:2003:13:28:16	4.8	11.7	251
03:01:2003:13:28:46	4.8	14.1	260
03:01:2003:13:29:16	4.9	16.5	260
03:01:2003:13:29:47	4.9	19.1	251
03:01:2003:13:30:17	4.9	21.5	251
03:01:2003:13:30:47	4.9	24.0	269
03:01:2003:13:31:17	0.0	24.2	31
03:01:2003:13:31:23	Reset Total, Vol = 24.17 bbl		
03:01:2003:13:31:23	0.0	24.2	31
03:01:2003:13:31:26	Displace with Water		
03:01:2003:13:31:26	0.0	0.0	31
03:01:2003:13:31:47	0.0	0.0	31
03:01:2003:13:32:17	0.0	0.0	17
03:01:2003:13:32:47	2.5	0.6	77
03:01:2003:13:33:17	3.8	2.3	49
03:01:2003:13:33:47	3.8	4.2	45
03:01:2003:13:34:17	3.8	6.1	40
03:01:2003:13:34:47	3.8	8.0	40
03:01:2003:13:35:17	0.9	8.8	4
03:01:2003:13:35:47	0.0	9.0	-15
03:01:2003:13:36:17	0.0	9.0	-24
03:01:2003:13:36:47	0.0	9.0	-24
03:01:2003:13:37:17	0.0	9.0	-24
03:01:2003:13:39:00	Check for Flow Back - None		
03:01:2003:14:38:50	Reset Total, Vol = 9.03 bbl		
03:01:2003:14:44:56	Resumed Recording		
03:01:2003:14:44:57	0.3	9.0	-15
03:01:2003:14:45:08	Fill Lines to test Cement Plug		
03:01:2003:14:45:08	0.5	0.1	-15
03:01:2003:14:45:38	0.9	0.5	-15
03:01:2003:14:46:08	1.2	0.9	-10
03:01:2003:14:46:38	1.4	1.6	-5
03:01:2003:14:47:08	1.4	2.3	-5
03:01:2003:14:47:38	1.4	3.0	-5
03:01:2003:14:48:08	1.4	3.7	-5
03:01:2003:14:48:38	1.6	4.4	4
03:01:2003:14:49:08	1.6	5.2	4
03:01:2003:14:49:38	0.0	5.6	-10
03:01:2003:14:50:08	0.0	5.6	-15
03:01:2003:14:50:38	0.0	5.6	-19
03:01:2003:14:51:09	0.0	5.6	-19
03:01:2003:14:51:39	0.0	5.6	-15
03:01:2003:14:52:09	0.0	5.6	-19

Well: Scallop 1

Job Date: 03-01-2003

Time mm:dd:yyyy:hh:mm:ss	CMT RATE bbl/min	CMT STG VOL bbl	CMT TREAT PRES psi
03:01:2003:14:52:39	0.0	5.6	-19
03:01:2003:14:53:09	0.0	5.6	-15
03:01:2003:14:53:24	Pressure test Cement Plug		
03:01:2003:14:53:24	Reset Total, Vol = 5.67 bbl		
03:01:2003:14:53:24	0.5	5.7	86
03:01:2003:14:53:39	0.2	0.1	576
03:01:2003:14:54:09	0.0	0.1	979
03:01:2003:14:54:39	0.0	0.2	983
03:01:2003:14:55:09	0.0	0.2	979
03:01:2003:14:55:39	0.0	0.2	979
03:01:2003:14:56:09	0.0	0.2	974
03:01:2003:14:56:39	0.0	0.2	992
03:01:2003:14:57:09	0.0	0.2	1015
03:01:2003:14:57:39	0.0	0.2	1015
03:01:2003:14:58:09	0.0	0.2	1011
03:01:2003:14:58:39	0.0	0.2	1006
03:01:2003:14:59:09	0.0	0.2	1006
03:01:2003:14:59:39	0.0	0.2	1006
03:01:2003:15:00:09	0.0	0.2	1006
03:01:2003:15:00:39	0.0	0.2	997
03:01:2003:15:01:09	0.0	0.2	1002
03:01:2003:15:01:39	0.0	0.2	997
03:01:2003:15:02:09	0.0	0.2	997
03:01:2003:15:02:40	0.0	0.2	150
03:01:2003:15:03:10	0.0	0.2	-24
03:01:2003:15:03:40	0.0	0.2	-28
03:01:2003:15:04:10	0.0	0.2	-24
03:01:2003:15:04:40	0.0	0.2	-28

Schlumberger

Dowell Schlumberger (Western) S.A.
ARBN 009 473 385

PAS

SERVICE INSTRUCTION REPORT

No.

CUSTOMER Esso Australia Pty Ltd	CONTRACT No.	DATE 2 March 03
ADDRESS	LOCATION JOB No.	CUSTOMER CODE
		WELL Scallop # 1
	ORDER No.	RIG Sedco 702
SERVICE REQUESTED Personel and Equipment 24th February - 2 March 03		LOCATION LAND ☐ OFFSHORE ☑

REFERENCE	QUANTITY	UNIT PRICE	UNIT	DESCRIPTION			AMOUNT
	7	600.00	Day	Cementer 24 Feb 03 to 2 March 03			USD 4,200.00
	7	840.00	Day	Cementing Equipment 24 Feb 03 to 2 March 03			USD 5,880.00
	8	600.00	Day	Additional. Cementor 23 Feb 03 to 2 March 03			USD 4,800.00
				Volume pumping Charge for Plugs as Follows			
	10382.4	0.15	Gal	Plug # 1	247.2	BBLS	USD 1,557.36
	10823.4	0.15	Gal	Plug # 2	257.7	BBLS	USD 1,623.51
	10214.4	0.15	Gal	Plug # 3	243.2	BBLS	USD 1,532.16
	9920.4	0.15	Gal	Plug # 4	236.2	BBLS	USD 1,488.06
	9584.4	0.15	Gal	Plug # 5	228.2	BBLS	USD 1,437.66
	7228.2	0.15	Gal	Plug # 6	172.1	BBLS	USD 1,084.23
	2461.2	0.15	Gal	Plug # 7	58.6	BBLS	USD 369.18
						TOTAL	USD 23,972.16

"Declaration of End Use"
Good are for use in exploration / developement of petroleum wells to the stage where the well head assembly is attached
☑ YES ☐ NO
Please initial as appriate
"Customer agrees that unless declaration is (YES), duties payable on the materials will be met by Customer at the rates set out in the current DS Product Price List

G. K. Sharkey
CUSTOMER SIGNATURE

P. Jennings
DOWELL SIGNATURE

CUSTOME NAME AND TITLE	QUALITY	DS ENGINEER	PERSONNEL CODE
Mr George Sharkey	GOOD 1 ☑ SATISFACTORY 2 ☐ POOR 3	Peter Jennings	

TYPE OF SERVICE

CEMENTING PRIMARY	0101 ☐	NITROGEN	0510 ☐		
CEMENTING REMEDIAL	0102 ☐	CT CEMENTING	0601 ☐		
CEMENT PLUG	0103 ☑	CT PUMPING FLUIDS	0602 ☐		
GROUTING	0104 ☐	CT N2 (LIFT/FOAM)	0603 ☐		
HANDLING	0105 ☐	CT MATRIX	0604 ☐		
CEMENTING MATERIAL SALES	0106 ☐	CT SAND CONTROL	0605 ☐		
CEMENTING TOOLS	0107 ☐	CT DOWNHOLE TOOL	0606 ☐		
CMT. TOOL PERM PACKER	0108 ☐	CT LOGGING	0607 ☐		
CMT. TOOL HARDWARE	0109 ☐	CT DRILLING	0608 ☐		
PUMPING - CEMENT	0201 ☐	CT OTHERS	0609 ☐		
PUMPING OTHERS	0202 ☐	SC PUMPING	0701 ☐		
WELL KILL	0203 ☐	CRAVEL PACK TOOL	0702 ☐		
OIL FRACTURING	0301 ☐	SC FLUID	0703 ☐		
ACID FRACTURING	0302 ☐	MISC. TOOLS	1001 ☐		
WATER FRACTURING	0303 ☐	MISC. RTV PACKER	1006 ☐		
MATRIX TRESTMENT	0304 ☐	MISC PERM PACKER	1007 ☐		
STIMULATION MATERIAL SALES	0305 ☐	MISC TOOL OTHER	1008 ☐		
STIMULATION TOOLS	0306 ☐	DIRECT SALES	1101 ☐		
STIM. TOOL PERM PACKER	0307 ☐	DEBIT NOTES	8888 ☐		
STIM. TOOL TREE SAVER	0308 ☐	CREDIT NOTES	8889 ☐		
WATER CONTROL	0402 ☐	DISCOUNTS	9901 ☐		
MOBILITY CONTROL	0403 ☐	REBILLING	9902 ☐		
COMPLETION FLUID OTHERS	0404 ☐	RECHARGES	9903 ☐		
INDUSTRIAL	0405 ☐				
PIPELINE	0406 ☐				
MUD MATERIALS	0408 ☐				

WELL NEW ☑ OLD ☐

RIG TYPE: EXPL. 1 ☑ DEV. 2 ☐ WORK OVI 3 ☐ RIG LESS 4 ☐

FAILURE CODE

JOB RECORDED YES ☑ NO ☐

STEM 1 YES ☑ NO ☐

TIME	
TOTAL	N/A
OPERT.	N/A
LOST	N/A

ENGINEER	UNIT	JV	CODE	COEFF.	VOUCHER
D. Johnson	4378913252	353	02		

		ACCOUNT	AMOUNT	DR
P. Jennings				
		TOTAL JOB		

ExxonMobil

Scallop-1 : Bulk Fuel, Bentonite, Barite & Cement Quantities Supplied

Description	Loadout No	Quantity	Unit	Location	Comments
Diesel	3	160,020	litres	ex BBMT	
	5	115,000	litres	ex BBMT	
	6	40,000	litres	ex BBMT	
	7	100,000	litres	ex BBMT	
	8	150,000	litres	ex BBMT	
	9	100,000	litres	ex BBMT	
	10	400,000	litres	ex BBMT	
	11	565,000	litres	ex BBMT	
	Total	1,630,020	litres		

Description	Loadout No	Quantity	Unit	Location	Comments
Bentonite	1	1772	sx	ex Portland	loaded ex Baroid Portland
	2	529	sx	ex BBMT	
	Total	2301	sx		

Description	Loadout No	Quantity	Unit	Location	Comments
Barite	1	2351	sx	ex S/Vessels	left on PF 1381sx, PC 970 sx ex BHP
	2	1000	sx	ex BBMT	
	4	3000	sx	ex BBMT	
	6	1800	sx	ex BBMT	
	Total	8151	sx		PF = Pacifc Frontier

Note: *1760 sx returned to Baroid BBMT stock for credit. Refer docket no 1480*

PC = Pacific Challenger

Description	Loadout No	Quantity	Unit	Location	Comments
Cement Class G	1	1146	sx	ex Portland	ex BHPB
	2	1000	sx	ex BBMT	
	3	2500	sx	ex BBMT	
	5	1000	sx	ex BBMT	
	9	2600	sx	ex BBMT	blended with 35% Silca Flour
	10	600	sx	ex BBMT	blended with 35% Silca Flour
	Total	8846	sx		

Note: *600 sx returned to Halliburton BBMT stock for credit. Refer docket no 1483*

ExxonMobil

Onhire Statement of Fact 29 Jan 03

	Bulk Cement	Bulk Bentonite	Bulk Barite
Sedco 702	zero	zero	zero
Pacific Challenger	zero	820 sx	970 sx
Pacific Frontier	1146 sx	952 sx	1381 sx
Totals	**1146 sx**	**1772 sx**	**2351 sx**

Offhire Statement of Fact 03 Mar 03

	Bulk Cement	Bulk Bentonite	Bulk Barite
Sedco 702	zero	zero	zero
Pacific Challenger	zero	zero	zero
Pacific Frontier	zero	zero	zero
Totals	**zero**	**zero**	**zero**

Bentonite	1342 sx	used
usage info gathered fro	581 sx	dumped
Scallop Baroid Drilling	**1923 sx**	**total**
Recap	2301 sx	sent to 702
	378 sx	unaccounted for

Barite	5117 sx	used drilling
usage info gathered fro	160 sx	used cementing
Scallop Baroid Drilling	5277 sx	sub total
Recap	1386 sx	dumped
	6663 sx	sub total
	1760 sx	returned BBMT
	8423 sx	**total**
	8151 sx	sent to 702
	272 sx	over / excess

Cement	1149 sx	30" Tail	Class"G"
	1358 sx	13 3/8" Lead	Class"G"
	726 sx	13 3/8" Tail	Class"G"
	375 sx	Plug 1 A	Blend
	374 sx	Plug 1 B	Blend
	364 sx	Plug 1 C	Blend
	368 sx	Plug 1 D	Blend
	373 sx	Plug 1 E	Blend
	242 sx	Plug 2	Class "G"
	115 sx	Plug 3	Class "G"
	600 sx	returned BBMT	Blend
Total "G" used	3590 sx		
Total "blend"	2454 sx	1854 sx used; 600 sx returned BBMT	
Total Cement	**6044 sx**	**used or accounted for**	
Total sent ex BBMT	8846 sx		
Total blown over	*2056 sx*	*"G"*	
Total blown over	*746 sx*	*Blend*	

Sedco 702 **Minerva # 3A** **Date: 29/01/03**

Statement of Fact.

SUBJECT: **Statement of fact at time of last anchor off the bottom.**

Time: 22:50 hrs

Pacific Frontier:			**Pacific Challenger:**		
Fuel Oil	333,300	litres	Fuel Oil	349,000	litres
Lube Oil	27,413	litres	Lube Oil	20,288	litres
Drill Water	200,000	litres	Drill Water	290,000	litres
Pot Water	465,000	litres	Pot Water	190,000	litres
Gel	952	sx	Gel	820	sx
Cement	1,146	sx	Cement	0	sx
Blend Cem	0	ft^3	Blend Cem	0	ft^3
Barytes	1,381	sx	Barytes	970	sx
Brine (NaCl)	0	m^3	Brine (NaCl)	0	m^3
Brine (KCL)	0	m^3	Brine (KCL)	0	m^3

Sedco 702

Fuel Oil	309,019	litres
Lube Oil	5,678	litres
Drill Water	397,000	litres
Pot Water	108,000	litres
Cement	0	sx
Blended	0	ft^3
Barytes	0	sx
Gel	0	sx
Brine (KCL)	0	m^3
Heli-Fuel	0	litres

Signed:	Signed:	Signed:	Signed:
BHPB Drilling Supvsr	ESSO Drilling Supvsr	Sedco 702 OIM	Sedco 702 Master

FAXED
3/2/03

Sedco 702 **Scallop #1** **Date: 1/02/03**

Statement of Fact.

SUBJECT: **Statement of fact at time of 1st anchor on bottom.**

Time: 0419 hrs

Pacific Frontier:

Fuel Oil	288,600	litres
Lube Oil	27,309	litres
Drill Water	200,000	litres
Pot Water	454,000	litres
Gel	952	sx
Cement	1,146	sx
Blend	0	Ft^3
Barytes	1,381	sx
Brine (NaCl)	0	M^3

Pacific Challenger:

Fuel Oil	287,500	litres
Lube Oil	20,226	litres
Drill Water	290,000	litres
Pot Water	175,000	litres
Gel	820	sx
Cement	0	sx
Blend	0	Ft^3
Barytes	970	sx
Brine (NaCl)	0	M^3

Sedco 702

Fuel Oil	286,551	litres
Lube Oil	5,224	litres
Drill Water	402,000	litres
Pot Water	102,798	litres
Cement	0	sx
Blend	0	Ft^3
Barytes	0	sx
Gel	0	sx
Brine (KCL)	0	M^3
Heli-Fuel	0	litres

Signed: [signature]
Esso Drilling Supervisor

Signed: [signature]
Sedco 702 OIM

Signed: [signature]
Sedco 702 Master

Sedco 702 **Scallop #1** **Date: 03/03/03**

Statement of Fact.

SUBJECT: **Statement of fact at time of last anchor off the bottom.**

Time: 24:00hrs

Pacific Frontier:

Fuel Oil	796,800	litres
Lube Oil	28,736	litres
Drill Water	80,000	litres
Pot Water	315,000	litres
Gel		sx
Cement		sx
Blend Cem		ft^3
Barytes		sx
Brine (NaCl)		m^3
Brine (KCL)		m^3

Pacific Challenger:

Fuel Oil	699,400	litres
Lube Oil	24,736	litres
Drill Water	80,000	litres
Pot Water	192,000	litres
Gel		sx
Cement		sx
Blend Cem		ft^3
Barytes		sx
Brine (NaCl)		m^3
Brine (KCL)		m^3

Sedco 702

Fuel Oil	441,156	litres
Lube Oil	8,170	litres
Drill Water	486,000	litres
Pot Water	100,419	litres
Cement		sx
Blended		ft^3
Barytes		sx
Gel		sx
Brine (KCL)		m^3
Heli-Fuel		litres

Signed: ____________ Signed: ____________ Signed: ____________

ESSO Drilling Supvsr Sedco 702 OIM Sedco 702 Master

Sedco 702 **Date: 22/03/03**

Statement of Fact.

SUBJECT: Statement of fact Last Anchor on bottom at Dampier 03.

Time: 19:25 Date: 22/03/03

Pacific Frontier:

Fuel Oil	454,300	litres
Lube Oil	29,219	litres
Drill Water		litres
Pot Water	290,000	litres
Gel		sx
Cement		sx
Blend		Ft^3
Barytes		sx
PBM		M^3
Paraffin Oil		M^3
Brine		M^3

Pacific Challenger:

Fuel Oil	334,000	litres
Lube Oil	19,262	litres
Drill Water		litres
Pot Water	165,000	litres
Gel		sx
Cement		sx
Blend		Ft^3
Barytes		sx
PBM		M^3
Paraffin Oil		M^3
Brine		M^3

Sedco 702

Fuel Oil	287,197	litres
Drill Water	400,000	litres
Lube Oil	6,435	litres
Pot Water	97,500	litres
Cement		sx
Blend		Ft^3
Barytes		sx
Gel		sx
PBM		M^3
Paraffin Oil		M^3
Brine		M^3

Signed:________ Signed:________

Sedco 702 OIM Sedco 702 Master

SENTOSA Mail65 Message Number: M1666418
FROM: frontier1@ln.mail65.com.sg
SUBJECT: sitrep

x.x+61894307849

subject+sitrep

attn SJP, CMD, JN
fm FRO
date 23/03/03
re Sitrep 0800 (WST)

v/l at anchor Dampier

Vessel off hire to Esso arrival supply vessel anchorage 22/2106

Figures: FO 453.2 m3 / Lub Oil 29219 lt / Pot-w 290m3

Bulk tanks: #1, 2, 3, clean, #4 100sx cement to clean

Mud tanks : all empty, FO residue

regards

SEN Ref#614846 sent on 22-MAR-03 22:18gmt

===================================
MESSAGE SENT VIA SENTOSA LES MAIL65
===================================

SENTOSA Mail65 Message Number: M1666158
FROM: challenger2@ln.mail65.com.sg
SUBJECT: SEN Ref#613380 sent on 22-MAR-03 13:48

raX+61894307849

File Ref : CHR
To : SPO FREO
Attn : SJP
From : Pacific Challenger
Date : 22th Mar 03
Subj : Statement of Facts

Morning Sam, off hire for ESSO as follows.
Last anchor at 1925 hrs
Fuel 334.0 m3 Lube oils 19262 ltrs Pot water 165,000 ltrs

Vessel at Supply vessel anchorage 2055 hrs Fuel 333.5 m3

Br ke down of lubes in next mail bag on hard copy.

Rgds Johnno

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MESSAGE SENT VIA SENTOSA LES MAIL65
====================================

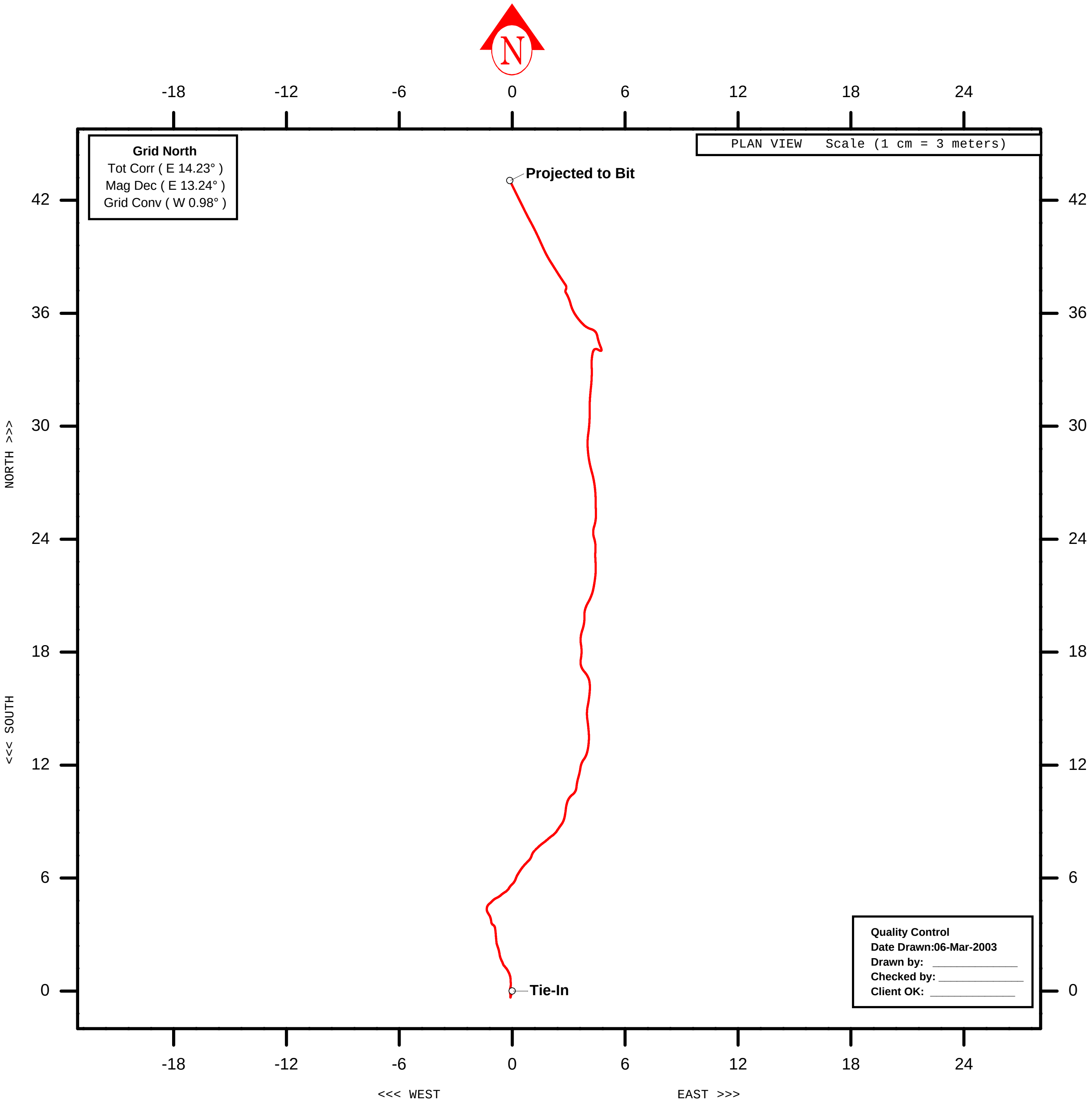
Directional Survey
Plots & Data

Schlumberger **Esso Australia Ltd** Esso

WELL Scallop 1	FIELD Scallop	STRUCTURE Scallop
Magnetic Parameters Model: BGGM 2002 Dip: -68.663° Mag Dec: 13.243° Date: February 21, 2003 FS: 59987.7 nT	Surface Location Lat: S38 12 48.615 Lon: E148 35 28.879 North: 5769298.84 m East: 639314.95 m Grid Conv: -0.9846° Scale Fact:0.9998	Miscellaneous Slot: Sedco 702 Plan# : Scallop 1 Final Elev Ref: Rotary Table(25.90m above MSL) Date Drawn: 12:17:19PM 06-Mar-2003

Surface Location: North:5769298.84 m, East:639314.95 m GDA94/MGA94 Zone 55

Target Name	Grid Coord N(+)/S(-) m	Grid Coord E(+)/W(-) m	TVD m	VSEC m	Local Cooord N(+)/S(-) m	Local Cooord E(+)/W(-) m	Shape	Major Axis
Scallop 1 Target	5769300.00	639316.00	3125.90	1.16	1.16	1.05	Rect	150.0



ExxonMobil

Schlumberger

Survey Report - Geodetic

Report Date:	14-Apr-2003	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	Esso Australia Pty Ltd	**Vertical Section Azimuth:**	0.000°
Field:	Scallop	**Vertical Section Origin:**	N 0.000 m, E 0.000 m
Structure / Slot:	Scallop / Sedco 702	**TVD Reference Datum:**	Rotary Table
Well:	Scallop 1	**TVD Reference Elevation:**	25.900 m relative to MSL
Borehole:	Scallop 1	**Sea Bed / Ground Level Elevation:**	109.600 m relative to MSL
UWI/API#:		**Magnetic Declination:**	+13.243°
Survey Name / Date:	Scallop 1 Final / February 21, 2003	**Total Field Strength:**	59987.689 nT
Tort / AHD / DDI / ERD ratio:	33.014° / 48.32 m / 3.719 / 0.015	**Magnetic Dip:**	-68.663°
Grid Coordinate System:	GDA94/MGA94 Zone 55	**Declination Date:**	February 21, 2003
Location Lat/Long:	S 38 12 48.615, E 148 35 28.879	**Magnetic Declination Model:**	BGGM 2002
Location Grid N/E Y/X:	N 5769298.855 m, E 639314.948 m	**North Reference:**	Grid North
Grid Convergence Angle:	-0.98456042°	**Total Corr Mag North -> Grid North:**	+14.228°
Grid Scale Factor:	0.99983903	**Local Coordinates Referenced To:**	Well Head

									Grid Coordinates		Geographic Coordinates	
Station ID	**MD (m)**	**Incl (°)**	**Azim (°)**	**TVD (m)**	**VSec (m)**	**N/-S (m)**	**E/-W (m)**	**DLS (°/30m)**	**Northing (m)**	**Easting (m)**	**Latitude**	**Longitude**
Tie-In	-	0.00	0.00	-	0.00	0.00	0.00		5,769,298.86	639,314.95	S 38 12 48.615	E 148 35 28.879
	157.80	0.25	195.26	157.80	-0.33	-0.33	-0.09	0.05	5,769,298.52	639,314.86	S 38 12 48.626	E 148 35 28.875
	185.10	0.37	2.83	185.10	-0.30	-0.30	-0.10	0.68	5,769,298.55	639,314.85	S 38 12 48.625	E 148 35 28.875
	212.50	0.35	350.71	212.50	-0.13	-0.13	-0.11	0.09	5,769,298.72	639,314.84	S 38 12 48.619	E 148 35 28.875
	239.90	0.32	1.45	239.90	0.03	0.03	-0.12	0.08	5,769,298.88	639,314.83	S 38 12 48.614	E 148 35 28.874
	267.50	0.35	15.59	267.50	0.19	0.19	-0.10	0.10	5,769,299.04	639,314.85	S 38 12 48.609	E 148 35 28.875
	296.40	0.35	357.50	296.40	0.36	0.36	-0.08	0.11	5,769,299.21	639,314.87	S 38 12 48.603	E 148 35 28.876
	325.40	0.35	358.93	325.40	0.54	0.54	-0.08	0.01	5,769,299.39	639,314.86	S 38 12 48.598	E 148 35 28.875
	354.40	0.31	351.16	354.40	0.70	0.70	-0.10	0.06	5,769,299.56	639,314.85	S 38 12 48.592	E 148 35 28.874
	383.20	0.28	341.33	383.20	0.85	0.85	-0.13	0.06	5,769,299.70	639,314.82	S 38 12 48.588	E 148 35 28.873
	412.20	0.28	333.71	412.20	0.98	0.98	-0.19	0.04	5,769,299.83	639,314.76	S 38 12 48.583	E 148 35 28.871
	441.30	0.30	330.59	441.30	1.11	1.11	-0.25	0.03	5,769,299.96	639,314.69	S 38 12 48.579	E 148 35 28.868
	470.30	0.26	319.95	470.29	1.22	1.22	-0.33	0.07	5,769,300.08	639,314.61	S 38 12 48.576	E 148 35 28.864
	499.30	0.27	316.67	499.29	1.32	1.32	-0.42	0.02	5,769,300.18	639,314.52	S 38 12 48.572	E 148 35 28.861
	528.30	0.29	341.21	528.29	1.44	1.44	-0.49	0.12	5,769,300.30	639,314.45	S 38 12 48.568	E 148 35 28.858
	557.30	0.35	334.17	557.29	1.59	1.59	-0.56	0.07	5,769,300.45	639,314.39	S 38 12 48.564	E 148 35 28.855
	586.30	0.37	339.92	586.29	1.76	1.76	-0.63	0.04	5,769,300.61	639,314.32	S 38 12 48.558	E 148 35 28.852
	615.20	0.44	352.04	615.19	1.96	1.96	-0.67	0.11	5,769,300.81	639,314.27	S 38 12 48.552	E 148 35 28.850
	644.20	0.44	344.86	644.19	2.18	2.18	-0.72	0.06	5,769,301.03	639,314.23	S 38 12 48.545	E 148 35 28.848
	673.10	0.48	339.40	673.09	2.40	2.40	-0.79	0.06	5,769,301.25	639,314.16	S 38 12 48.538	E 148 35 28.845
	702.10	0.47	355.15	702.09	2.63	2.63	-0.84	0.14	5,769,301.48	639,314.10	S 38 12 48.530	E 148 35 28.842
	731.10	0.49	354.85	731.09	2.87	2.87	-0.86	0.02	5,769,301.72	639,314.08	S 38 12 48.522	E 148 35 28.841
	760.10	0.46	355.22	760.09	3.11	3.11	-0.89	0.03	5,769,301.96	639,314.06	S 38 12 48.515	E 148 35 28.840
	789.10	0.46	350.78	789.09	3.34	3.34	-0.91	0.04	5,769,302.20	639,314.03	S 38 12 48.507	E 148 35 28.839
	818.20	0.41	301.70	818.19	3.51	3.51	-1.02	0.38	5,769,302.36	639,313.93	S 38 12 48.502	E 148 35 28.835
	847.20	0.51	355.47	847.19	3.69	3.69	-1.12	0.44	5,769,302.55	639,313.83	S 38 12 48.496	E 148 35 28.830
	876.20	0.53	338.22	876.18	3.95	3.95	-1.18	0.16	5,769,302.80	639,313.77	S 38 12 48.488	E 148 35 28.828
	885.80	0.51	327.67	885.78	4.02	4.02	-1.22	0.31	5,769,302.88	639,313.73	S 38 12 48.485	E 148 35 28.826
	907.80	0.39	329.98	907.78	4.17	4.17	-1.31	0.17	5,769,303.03	639,313.64	S 38 12 48.480	E 148 35 28.822
	945.50	0.45	10.33	945.48	4.43	4.43	-1.35	0.23	5,769,303.28	639,313.60	S 38 12 48.472	E 148 35 28.821
	974.40	0.51	49.51	974.38	4.62	4.62	-1.23	0.34	5,769,303.48	639,313.72	S 38 12 48.466	E 148 35 28.825
	1,003.20	0.50	44.10	1,003.18	4.80	4.80	-1.04	0.05	5,769,303.65	639,313.90	S 38 12 48.460	E 148 35 28.833
	1,032.10	0.56	65.45	1,032.08	4.95	4.95	-0.83	0.21	5,769,303.80	639,314.12	S 38 12 48.455	E 148 35 28.841
	1,060.90	0.53	47.97	1,060.88	5.09	5.09	-0.60	0.18	5,769,303.95	639,314.35	S 38 12 48.450	E 148 35 28.851
	1,089.80	0.58	59.57	1,089.78	5.26	5.26	-0.37	0.13	5,769,304.11	639,314.57	S 38 12 48.445	E 148 35 28.860
	1,118.70	0.56	29.96	1,118.67	5.45	5.45	-0.18	0.30	5,769,304.31	639,314.77	S 38 12 48.438	E 148 35 28.868
	1,147.60	0.64	46.68	1,147.57	5.69	5.69	0.01	0.20	5,769,304.54	639,314.96	S 38 12 48.431	E 148 35 28.875
	1,176.50	0.62	19.17	1,176.47	5.95	5.95	0.18	0.31	5,769,304.80	639,315.13	S 38 12 48.422	E 148 35 28.882
	1,205.30	0.56	31.60	1,205.27	6.21	6.21	0.30	0.15	5,769,305.07	639,315.25	S 38 12 48.413	E 148 35 28.887
	1,234.10	0.58	34.13	1,234.07	6.45	6.45	0.46	0.03	5,769,305.31	639,315.41	S 38 12 48.405	E 148 35 28.893
	1,263.00	0.64	42.47	1,262.97	6.69	6.69	0.65	0.11	5,769,305.55	639,315.60	S 38 12 48.398	E 148 35 28.901
	1,291.90	0.64	44.73	1,291.87	6.93	6.93	0.87	0.03	5,769,305.78	639,315.82	S 38 12 48.390	E 148 35 28.910
	1,321.00	0.60	16.43	1,320.96	7.19	7.19	1.03	0.32	5,769,306.04	639,315.98	S 38 12 48.381	E 148 35 28.916
	1,350.10	0.60	43.77	1,350.06	7.44	7.44	1.18	0.29	5,769,306.30	639,316.13	S 38 12 48.373	E 148 35 28.922
	1,378.90	0.63	46.82	1,378.86	7.66	7.66	1.40	0.05	5,769,306.52	639,316.35	S 38 12 48.366	E 148 35 28.931
	1,407.60	0.65	54.20	1,407.56	7.87	7.87	1.65	0.09	5,769,306.72	639,316.59	S 38 12 48.359	E 148 35 28.941
	1,436.50	0.63	47.67	1,436.46	8.07	8.07	1.90	0.08	5,769,306.92	639,316.84	S 38 12 48.352	E 148 35 28.951
	1,465.30	0.64	55.52	1,465.26	8.27	8.27	2.15	0.09	5,769,307.12	639,317.09	S 38 12 48.346	E 148 35 28.961
	1,494.50	0.73	32.93	1,494.45	8.51	8.51	2.38	0.29	5,769,307.37	639,317.33	S 38 12 48.338	E 148 35 28.971
	1,523.60	0.83	36.39	1,523.55	8.84	8.84	2.61	0.11	5,769,307.69	639,317.55	S 38 12 48.327	E 148 35 28.980
	1,552.70	0.85	12.09	1,552.65	9.22	9.22	2.78	0.37	5,769,308.07	639,317.72	S 38 12 48.314	E 148 35 28.987
	1,581.80	0.88	5.86	1,581.74	9.65	9.65	2.85	0.10	5,769,308.51	639,317.79	S 38 12 48.300	E 148 35 28.989
	1,610.80	0.84	19.01	1,610.74	10.08	10.08	2.94	0.21	5,769,308.93	639,317.88	S 38 12 48.287	E 148 35 28.993
	1,639.90	0.96	51.87	1,639.84	10.43	10.43	3.20	0.54	5,769,309.28	639,318.15	S 38 12 48.275	E 148 35 29.003
	1,668.90	0.99	5.30	1,668.83	10.83	10.83	3.41	0.80	5,769,309.68	639,318.36	S 38 12 48.262	E 148 35 29.012
	1,698.00	1.05	16.09	1,697.93	11.33	11.33	3.51	0.21	5,769,310.19	639,318.46	S 38 12 48.246	E 148 35 29.015
	1,727.10	1.07	8.49	1,727.02	11.86	11.86	3.62	0.15	5,769,310.71	639,318.57	S 38 12 48.228	E 148 35 29.020
	1,756.10	0.97	37.88	1,756.02	12.32	12.32	3.81	0.54	5,769,311.17	639,318.76	S 38 12 48.213	E 148 35 29.027

	1,785.10	1.64	8.97	1,785.01	12.92	12.92	4.03	0.95	5,769,311.78	639,318.98	S 38 12 48.194	E 148 35 29.035
	1,814.20	1.49	355.64	1,814.10	13.71	13.71	4.07	0.40	5,769,312.57	639,319.01	S 38 12 48.168	E 148 35 29.036
	1,843.10	1.39	352.07	1,842.99	14.43	14.43	3.99	0.14	5,769,313.29	639,318.94	S 38 12 48.145	E 148 35 29.033
	1,871.80	1.36	10.96	1,871.68	15.11	15.11	4.01	0.47	5,769,313.97	639,318.95	S 38 12 48.123	E 148 35 29.033
	1,900.90	1.42	5.91	1,900.78	15.81	15.81	4.11	0.14	5,769,314.66	639,319.06	S 38 12 48.100	E 148 35 29.037
	1,930.10	1.06	350.75	1,929.97	16.44	16.44	4.10	0.50	5,769,315.29	639,319.05	S 38 12 48.080	E 148 35 29.036
	1,959.10	1.45	318.73	1,958.96	16.98	16.98	3.82	0.81	5,769,315.83	639,318.76	S 38 12 48.062	E 148 35 29.024
	1,988.20	1.54	10.39	1,988.05	17.64	17.64	3.65	1.35	5,769,316.49	639,318.59	S 38 12 48.041	E 148 35 29.016
	2,017.30	1.50	350.44	2,017.14	18.40	18.40	3.65	0.54	5,769,317.25	639,318.60	S 38 12 48.016	E 148 35 29.016
	2,046.20	1.62	18.76	2,046.03	19.16	19.16	3.72	0.80	5,769,318.01	639,318.67	S 38 12 47.992	E 148 35 29.018
	2,075.30	1.40	356.86	2,075.12	19.90	19.90	3.83	0.63	5,769,318.76	639,318.78	S 38 12 47.967	E 148 35 29.022
	2,104.30	1.68	29.66	2,104.11	20.63	20.63	4.02	0.94	5,769,319.48	639,318.97	S 38 12 47.944	E 148 35 29.030
	2,133.10	1.45	11.55	2,132.90	21.35	21.35	4.31	0.56	5,769,320.20	639,319.25	S 38 12 47.920	E 148 35 29.041
	2,162.10	1.41	6.00	2,161.89	22.07	22.07	4.42	0.15	5,769,320.92	639,319.36	S 38 12 47.897	E 148 35 29.045
	2,191.20	1.38	355.52	2,190.99	22.77	22.77	4.43	0.26	5,769,321.62	639,319.37	S 38 12 47.874	E 148 35 29.045
	2,220.20	1.25	3.94	2,219.98	23.44	23.44	4.42	0.24	5,769,322.29	639,319.37	S 38 12 47.853	E 148 35 29.044
	2,249.30	1.27	342.71	2,249.07	24.06	24.06	4.35	0.48	5,769,322.91	639,319.30	S 38 12 47.832	E 148 35 29.041
	2,278.20	1.32	17.85	2,277.96	24.68	24.68	4.35	0.81	5,769,323.53	639,319.30	S 38 12 47.812	E 148 35 29.041
	2,307.20	1.42	358.33	2,306.96	25.36	25.36	4.45	0.49	5,769,324.21	639,319.39	S 38 12 47.790	E 148 35 29.044
	2,336.30	1.52	359.27	2,336.05	26.11	26.11	4.43	0.11	5,769,324.96	639,319.38	S 38 12 47.766	E 148 35 29.043
	2,365.40	1.49	352.09	2,365.14	26.87	26.87	4.37	0.20	5,769,325.72	639,319.32	S 38 12 47.741	E 148 35 29.040
	2,394.50	1.39	344.11	2,394.23	27.58	27.58	4.23	0.23	5,769,326.43	639,319.17	S 38 12 47.718	E 148 35 29.033
	2,423.40	1.31	350.73	2,423.12	28.24	28.24	4.08	0.18	5,769,327.09	639,319.02	S 38 12 47.697	E 148 35 29.027
	2,452.40	1.36	357.28	2,452.11	28.91	28.91	4.01	0.17	5,769,327.76	639,318.95	S 38 12 47.675	E 148 35 29.023
	2,481.20	1.28	8.12	2,480.90	29.57	29.57	4.04	0.27	5,769,328.42	639,318.98	S 38 12 47.654	E 148 35 29.024
	2,510.20	1.31	3.41	2,509.90	30.23	30.23	4.10	0.11	5,769,329.08	639,319.05	S 38 12 47.633	E 148 35 29.026
	2,539.10	1.30	359.16	2,538.79	30.88	30.88	4.12	0.10	5,769,329.73	639,319.06	S 38 12 47.611	E 148 35 29.026
	2,568.10	1.17	4.09	2,567.78	31.51	31.51	4.13	0.17	5,769,330.36	639,319.08	S 38 12 47.591	E 148 35 29.027
	2,597.10	1.09	6.25	2,596.78	32.08	32.08	4.18	0.09	5,769,330.93	639,319.13	S 38 12 47.572	E 148 35 29.028
	2,626.20	1.14	1.74	2,625.87	32.64	32.64	4.22	0.10	5,769,331.49	639,319.17	S 38 12 47.554	E 148 35 29.029
	2,655.20	1.19	357.56	2,654.86	33.23	33.23	4.22	0.10	5,769,332.08	639,319.17	S 38 12 47.535	E 148 35 29.029
	2,684.20	1.36	10.59	2,683.86	33.87	33.87	4.27	0.35	5,769,332.72	639,319.22	S 38 12 47.514	E 148 35 29.031
	2,713.10	1.15	121.25	2,712.75	34.06	34.06	4.58	2.15	5,769,332.91	639,319.53	S 38 12 47.508	E 148 35 29.043
	2,742.10	1.26	336.84	2,741.75	34.20	34.20	4.70	2.37	5,769,333.05	639,319.65	S 38 12 47.503	E 148 35 29.048
	2,771.10	1.18	349.21	2,770.74	34.79	34.79	4.52	0.28	5,769,333.63	639,319.47	S 38 12 47.484	E 148 35 29.040
	2,800.10	1.12	286.24	2,799.74	35.16	35.16	4.19	1.24	5,769,334.01	639,319.14	S 38 12 47.473	E 148 35 29.027
	2,829.00	1.30	317.47	2,828.63	35.48	35.48	3.70	0.70	5,769,334.33	639,318.65	S 38 12 47.462	E 148 35 29.006
	2,858.00	1.13	327.90	2,857.63	35.96	35.96	3.33	0.29	5,769,334.81	639,318.27	S 38 12 47.447	E 148 35 28.990
	2,887.00	1.27	345.20	2,886.62	36.52	36.52	3.09	0.40	5,769,335.37	639,318.04	S 38 12 47.429	E 148 35 28.980
	2,916.00	1.29	328.73	2,915.61	37.11	37.11	2.84	0.38	5,769,335.96	639,317.79	S 38 12 47.410	E 148 35 28.970
	2,923.00	1.35	28.95	2,922.61	37.25	37.25	2.84	5.68	5,769,336.09	639,317.79	S 38 12 47.406	E 148 35 28.969
	2,936.30	1.36	325.18	2,935.91	37.51	37.51	2.83	3.23	5,769,336.36	639,317.77	S 38 12 47.397	E 148 35 28.969
	2,964.01	1.45	327.72	2,963.61	38.08	38.08	2.45	0.12	5,769,336.93	639,317.40	S 38 12 47.379	E 148 35 28.953
	2,993.09	1.51	327.61	2,992.68	38.71	38.71	2.05	0.06	5,769,337.56	639,317.00	S 38 12 47.358	E 148 35 28.936
	3,023.62	1.56	335.57	3,023.20	39.43	39.43	1.66	0.22	5,769,338.28	639,316.61	S 38 12 47.335	E 148 35 28.919
	3,051.74	1.55	335.18	3,051.31	40.13	40.13	1.34	0.02	5,769,338.97	639,316.29	S 38 12 47.313	E 148 35 28.906
	3,080.66	1.55	331.24	3,080.22	40.82	40.82	0.99	0.11	5,769,339.67	639,315.94	S 38 12 47.291	E 148 35 28.891
	3,110.84	1.52	333.82	3,110.39	41.54	41.54	0.62	0.07	5,769,340.39	639,315.57	S 38 12 47.268	E 148 35 28.875
	3,138.26	1.52	333.59	3,137.80	42.19	42.19	0.30	0.01	5,769,341.04	639,315.24	S 38 12 47.247	E 148 35 28.861
Projected to Bit	3,174.00	1.52	333.59	3,173.53	43.04	43.04	-0.13	0.00	5,769,341.89	639,314.82	S 38 12 47.219	E 148 35 28.843

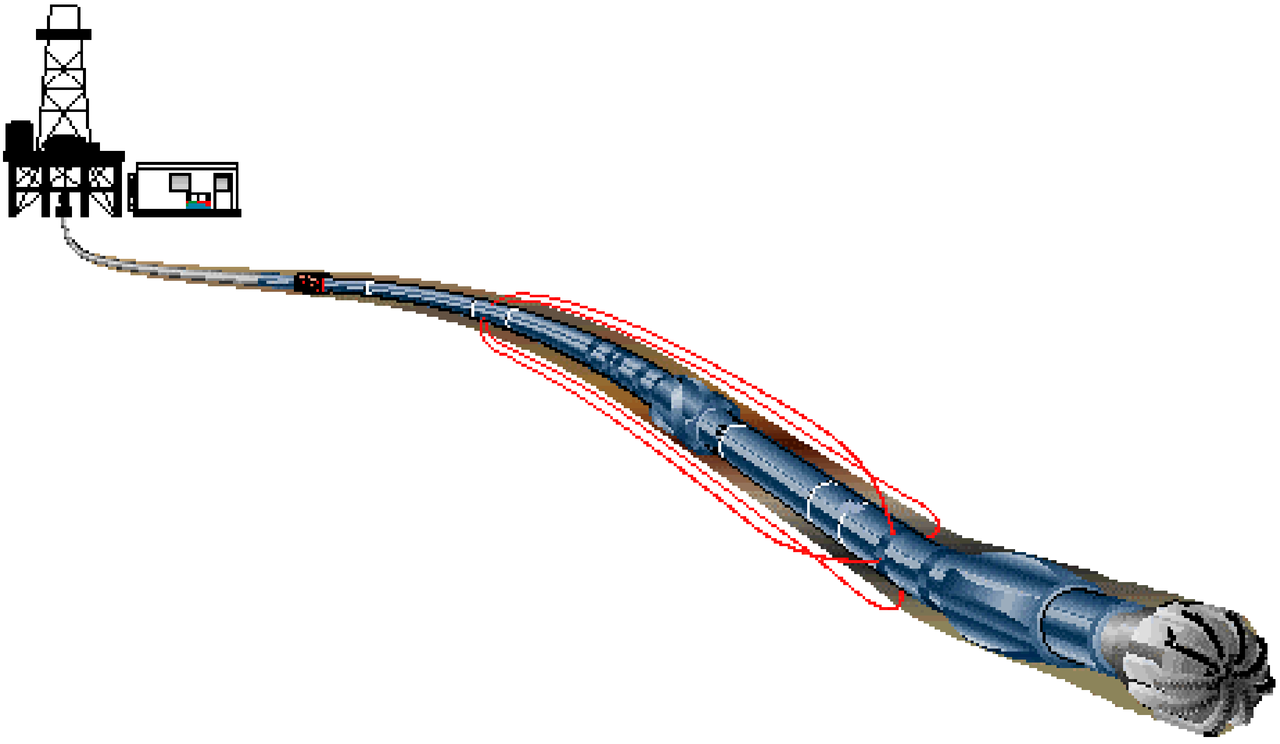
Survey Error Model: **Wolff & deWardt 2.0000 sigma**

Surveying Programme:

MD From (m)	MD To (m)	EOU Freq	Survey Tool Type
0.00	2923.00	Act-Stns	Rate Gyro
2923.00	3174.00	Act-Stns	Anadrill MWD

Scallop-1

MWD - LWD End of Well Report



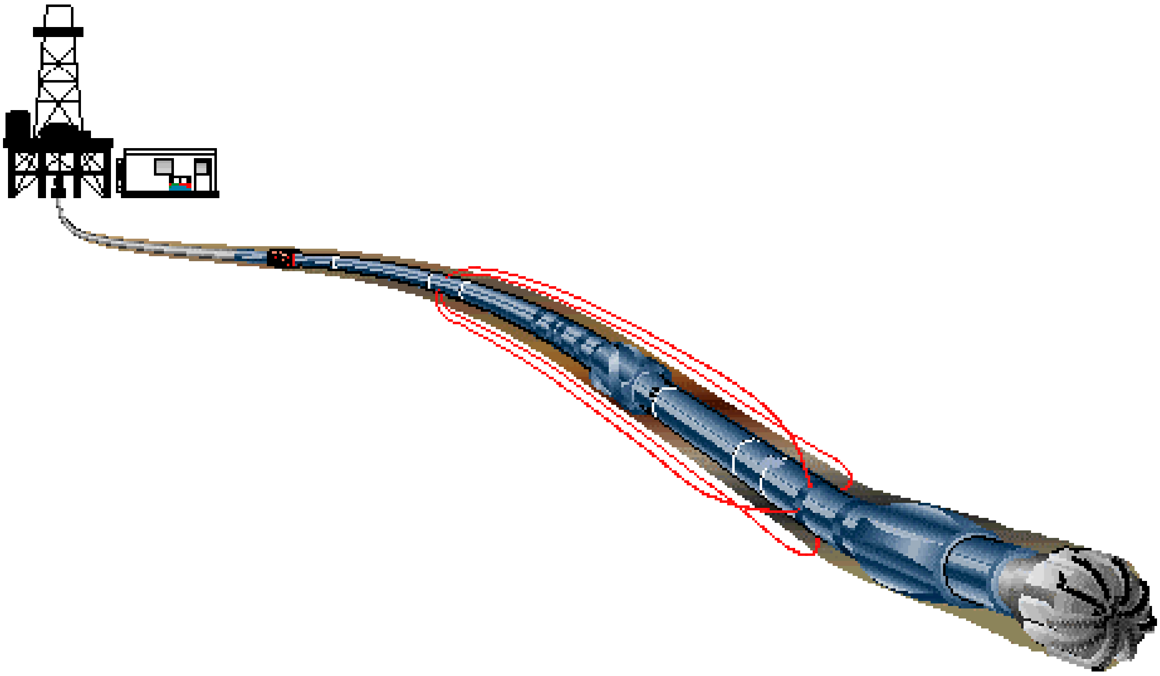
Report complied by: ______________________

Report checked by: ______________________

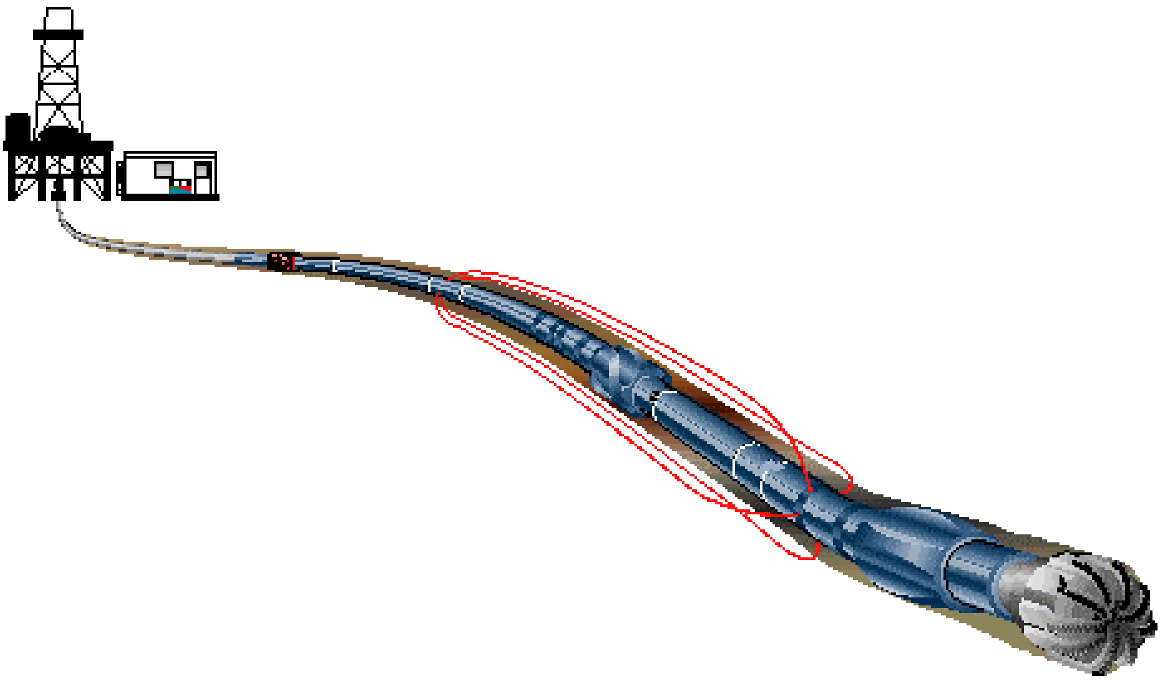
End of Well Report for Scallop-1

Contents

- General Information
- Logging While Drilling Overview
- Geomagnetic and Survey Reference Criteria
- Survey Report
- Bit Run Summary

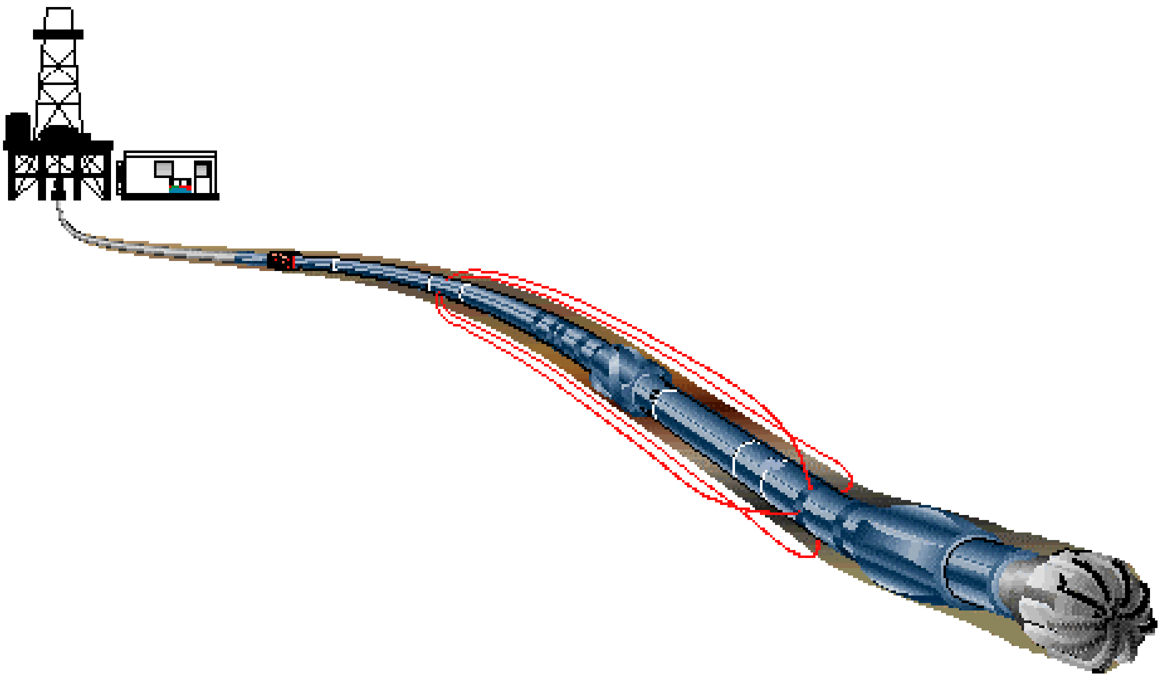


General Information

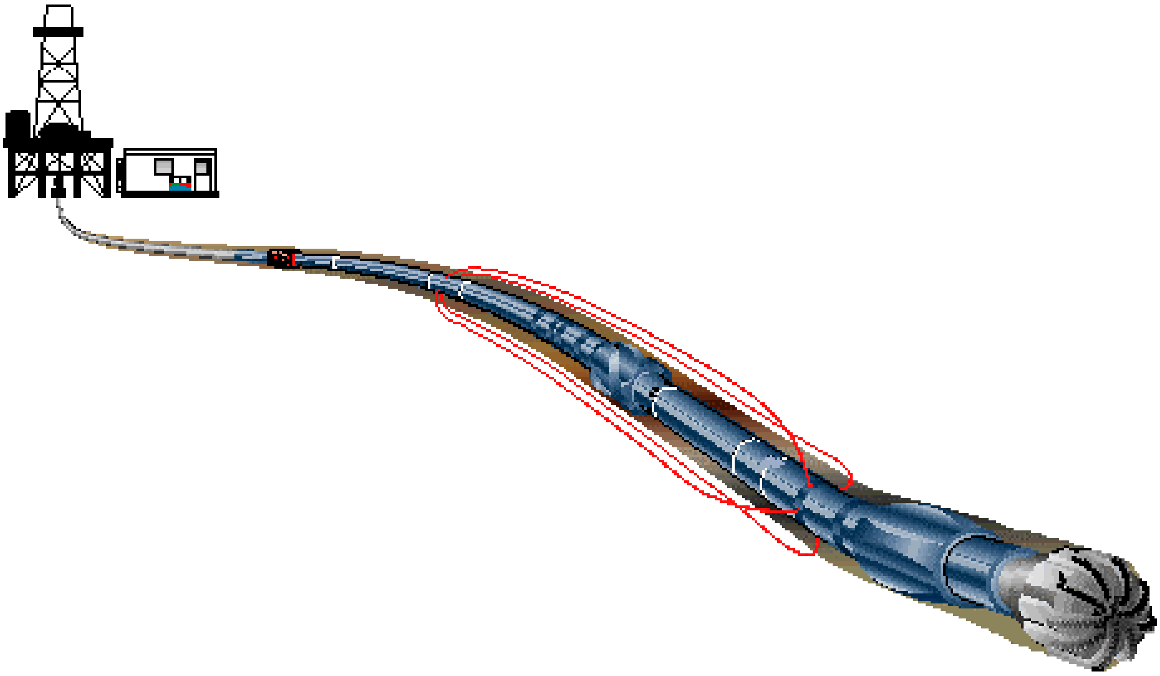


General Information

Well Name:	Scallop-1
Rig:	TransOcean Sedco Forex 702
Field:	Exploration / Permit VIC / RL2
Location:	Gippsland Basin, Offshore Victoria
Country:	Australia
Cell Members:	Luis Bon – Cell Manager Kym Handley – LWD/MWD Engineer
Town Contacts:	Justin Walta – Location Manager - ASQ David de Freitas – ESSO Co-Ordinator - ASQ
Company Representatives:	George Sharkey / Murray Jackson



Logging While Drilling Overview



Logging While Drilling Overview

Anadrill provided a RAB8* Logging While Drilling service on Scallop-1 which provided the following measurements in recorded mode and real-time:

- Gamma Ray
- Ring Resistivity
- Deep Button Resistivity
- Medium Button Resistivity
- Shallow Button Resistivity
- MWD Surveys

The following Anadrill LWD tools were used to provide the above measurements:

- PowerPulse*.
- Resistivity-at-Bit (RAB8*)

The logging tools performed to specification and provided real-time data for the duration of the well. Low rates of penetration and high sampling rates of the tools meant that the recorded and real-time data density exceeded 2 samples per foot.

12-1/4" Hole Section

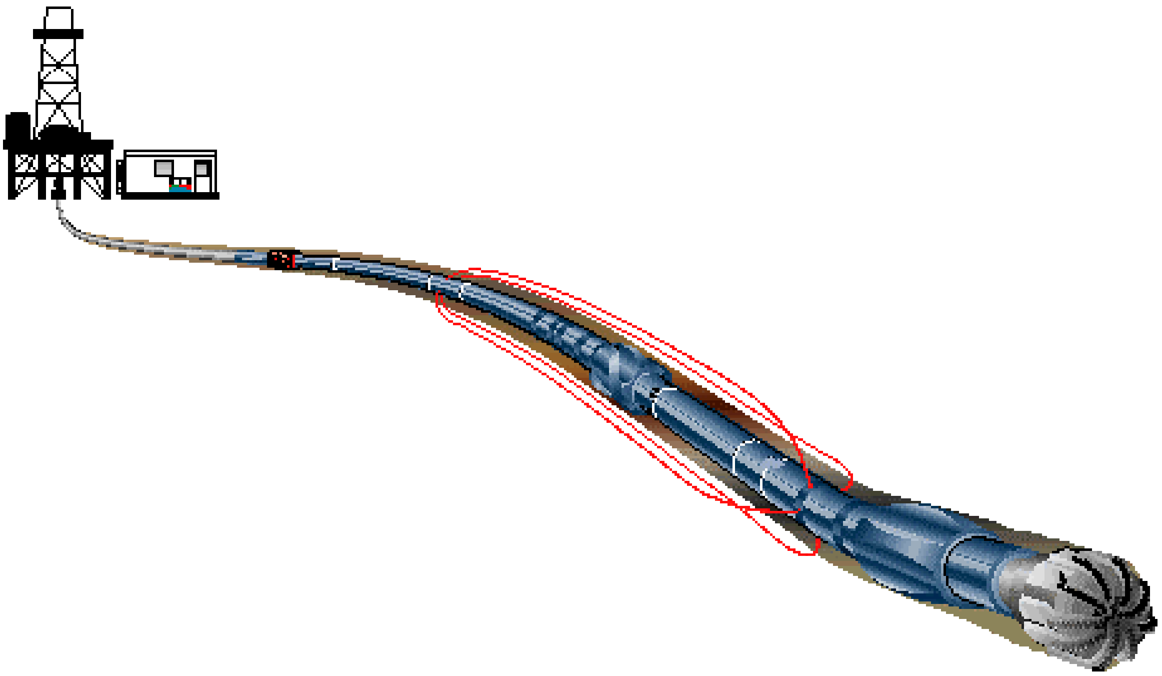
The 12-1/4 inch hole section utilised a GeoVISION Resistivity* service composed of the RAB8*, and PowerPulse*. This combination of tools provided surveys in Real-Time, gamma ray and resistivity data in real time and recorded mode. Schlumberger Drilling and Measurements provided MWD services using the PowerPulse tool in the 12¼" section of Scallop-1. Surveys were taken at each connection.

The MWD real-time shock data indicated little or no shocks were present while drilling the 12 1/4" section. The PowerPulse MWD tool performed well throughout the 12¼" section, and no problems were encountered.

Schlumberger

IDEAL

Geomagnetic and Survey Reference Criteria



Schlumberger

IDEAL

Geomagnetic and Survey Reference Criteria

Geomagnetic Data

Magnetic Model:	BGGM Version 2002
Magnetic Date:	13th February 2003
Magnetic Field Strength:	1199.66 HCNT
Magnetic Declination:	13.241°
Magnetic Dip:	-68.66°

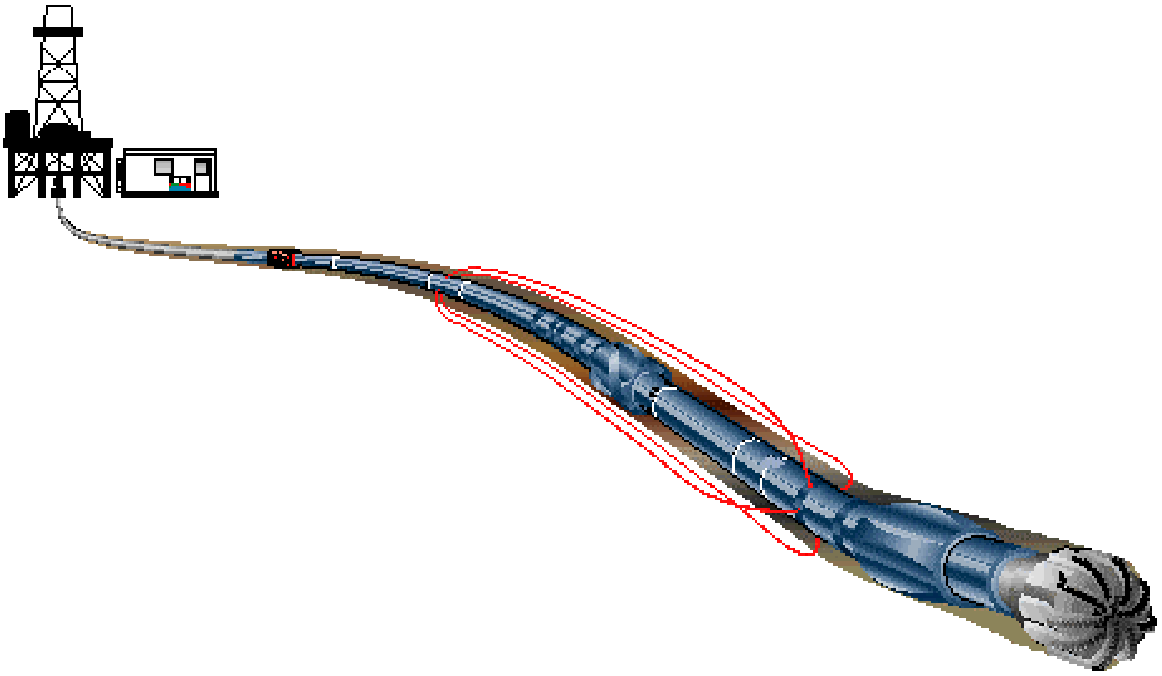
Survey Reference Criteria

Reference G:	1000.025 mgal
Reference H:	1199.66 HCNT
Reference Dip:	-68.66°
G value Tolerance:	2.50 mgal
H value Tolerance:	6.00 HCNT
Dip Tolerance:	0.45 degrees

Survey Corrections Applied

Magnetic Declination:	13.241°
Grid Convergence:	-0.98°
Total Azimuth Correction:	14.22°

Survey Report



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Survey Report - Standard

Report Date:	03-Mar-2003	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	Esso Australia Ltd	**Vertical Section Azimuth:**	0.000°
Field:	Scallop	**Vertical Section Origin:**	N 0.000 m, E 0.000 m
Structure / Slot:	Scallop / Sedco 702	**TVD Reference Datum:**	Rotary Table
Well:	Scallop 1	**TVD Reference Elevation:**	25.900 m relative to MSL
Borehole:	Scallop 1	**Sea Bed / Ground Level Elevation:**	109.600 m relative to MSL
UWI / API#:		**Magnetic Declination:**	+13.243°
Survey Name / Date:	Scallop 1 Final / February 21, 2003	**Total Field Strength:**	59987.689 nT
Tort / AHD / DDI / ERD ratio:	33.014° / 48.32 m / 3.719 / 0.015	**Magnetic Dip:**	-68.663°
Grid Coordinate System:	GDA94/MGA94 Zone 55	**Declination Date:**	February 21, 2003
Location Lat / Long:	S 38 12 48.615, E 148 35 28.879	**Magnetic Declination Model:**	BGGM 2002
Location Grid N/E Y/X:	N 5769298.855 m, E 639314.948 m	**North Reference:**	Grid North
Grid Convergence Angle:	-0.98456042°	**Total Corr Mag North -> Grid North:**	+14.228°
Grid Scale Factor:	0.99983903	**Local Coordinates Referenced To:**	Well Head

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		-164.7 M
	157.80	0.25	195.26	157.80	-0.33	-0.33	-0.09	0.34	195.26	0.05	2.8 M
	185.10	0.37	2.83	185.10	-0.30	-0.30	-0.10	0.32	198.68	0.68	-9.3 M
	212.50	0.35	350.71	212.50	-0.13	-0.13	-0.11	0.17	220.38	0.09	1.5 M
	239.90	0.32	1.45	239.90	0.03	0.03	-0.12	0.13	283.08	0.08	15.6 M
	267.50	0.35	15.59	267.50	0.19	0.19	-0.10	0.21	332.30	0.10	-2.5 M
	296.40	0.35	357.50	296.40	0.36	0.36	-0.08	0.37	347.75	0.11	-1.1 M
	325.40	0.35	358.93	325.40	0.54	0.54	-0.08	0.54	351.14	0.01	-8.8 M
	354.40	0.31	351.16	354.40	0.70	0.70	-0.10	0.71	352.11	0.06	-18.7 M
	383.20	0.28	341.33	383.20	0.85	0.85	-0.13	0.86	351.15	0.06	-26.3 M
	412.20	0.28	333.71	412.20	0.98	0.98	-0.19	0.99	349.23	0.04	-29.4 M
	441.30	0.30	330.59	441.30	1.11	1.11	-0.25	1.14	347.04	0.03	-40.0 M
	470.30	0.26	319.95	470.29	1.22	1.22	-0.33	1.27	344.72	0.07	-43.3 M
	499.30	0.27	316.67	499.29	1.32	1.32	-0.42	1.39	342.25	0.02	-18.8 M
	528.30	0.29	341.21	528.29	1.44	1.44	-0.49	1.53	341.10	0.12	-25.8 M
	557.30	0.35	334.17	557.29	1.59	1.59	-0.56	1.69	340.74	0.07	-20.1 M
	586.30	0.37	339.92	586.29	1.76	1.76	-0.63	1.87	340.39	0.04	-8.0 M
	615.20	0.44	352.04	615.19	1.96	1.96	-0.67	2.07	340.99	0.11	-15.1 M
	644.20	0.44	344.86	644.19	2.18	2.18	-0.72	2.29	341.71	0.06	-20.6 M
	673.10	0.48	339.40	673.09	2.40	2.40	-0.79	2.52	341.74	0.06	-4.9 M
	702.10	0.47	355.15	702.09	2.63	2.63	-0.84	2.76	342.21	0.14	-5.1 M
	731.10	0.49	354.85	731.09	2.87	2.87	-0.86	3.00	343.23	0.02	-4.8 M
	760.10	0.46	355.22	760.09	3.11	3.11	-0.89	3.23	344.10	0.03	-9.2 M
	789.10	0.46	350.78	789.09	3.34	3.34	-0.91	3.46	344.70	0.04	-58.3 M
	818.20	0.41	301.70	818.19	3.51	3.51	-1.02	3.66	343.78	0.38	-4.5 M
	847.20	0.51	355.47	847.19	3.69	3.69	-1.12	3.86	343.14	0.44	-21.8 M
	876.20	0.53	338.22	876.18	3.95	3.95	-1.18	4.12	343.36	0.16	-32.3 M
	885.80	0.51	327.67	885.78	4.02	4.02	-1.22	4.20	343.15	0.31	-30.0 M
	907.80	0.39	329.98	907.78	4.17	4.17	-1.31	4.37	342.58	0.17	10.3 M
	945.50	0.45	10.33	945.48	4.43	4.43	-1.35	4.63	343.09	0.23	49.5 M
	974.40	0.51	49.51	974.38	4.62	4.62	-1.23	4.78	345.12	0.34	44.1 M
	1003.20	0.50	44.10	1003.18	4.80	4.80	-1.04	4.91	347.73	0.05	65.4 M
	1032.10	0.56	65.45	1032.08	4.95	4.95	-0.83	5.02	350.51	0.21	48.0 M

1060.90	0.53	47.97	1060.88	5.09	5.09	-0.60	5.13	353.28	0.18	59.6 M
1089.80	0.58	59.57	1089.78	5.26	5.26	-0.37	5.27	355.92	0.13	30.0 M
1118.70	0.56	29.96	1118.67	5.45	5.45	-0.18	5.46	358.13	0.30	46.7 M
1147.60	0.64	46.68	1147.57	5.69	5.69	0.01	5.69	0.10	0.20	19.2 M
1176.50	0.62	19.17	1176.47	5.95	5.95	0.18	5.95	1.72	0.31	31.6 M
1205.30	0.56	31.60	1205.27	6.21	6.21	0.30	6.22	2.80	0.15	34.1 M
1234.10	0.58	34.13	1234.07	6.45	6.45	0.46	6.47	4.07	0.03	42.5 M
1263.00	0.64	42.47	1262.97	6.69	6.69	0.65	6.72	5.55	0.11	44.7 M
1291.90	0.64	44.73	1291.87	6.93	6.93	0.87	6.98	7.18	0.03	16.4 M
1321.00	0.60	16.43	1320.96	7.19	7.19	1.03	7.26	8.16	0.32	43.8 M
1350.10	0.60	43.77	1350.06	7.44	7.44	1.18	7.54	9.00	0.29	46.8 M
1378.90	0.63	46.82	1378.86	7.66	7.66	1.40	7.79	10.34	0.05	54.2 M
1407.60	0.65	54.20	1407.56	7.87	7.87	1.65	8.04	11.82	0.09	47.7 M
1436.50	0.63	47.67	1436.46	8.07	8.07	1.90	8.29	13.22	0.08	55.5 M
1465.30	0.64	55.52	1465.26	8.27	8.27	2.15	8.54	14.55	0.09	32.9 M
1494.50	0.73	32.93	1494.45	8.51	8.51	2.38	8.84	15.62	0.29	36.4 M
1523.60	0.83	36.39	1523.55	8.84	8.84	2.61	9.22	16.43	0.11	12.1 M
1552.70	0.85	12.09	1552.65	9.22	9.22	2.78	9.63	16.76	0.37	5.9 M
1581.80	0.88	5.86	1581.74	9.65	9.65	2.85	10.06	16.42	0.10	19.0 M
1610.80	0.84	19.01	1610.74	10.08	10.08	2.94	10.50	16.25	0.21	51.9 M
1639.90	0.96	51.87	1639.84	10.43	10.43	3.20	10.91	17.05	0.54	5.3 M
1668.90	0.99	5.30	1668.83	10.83	10.83	3.41	11.35	17.49	0.80	16.1 M
1698.00	1.05	16.09	1697.93	11.33	11.33	3.51	11.87	17.21	0.21	8.5 M
1727.10	1.07	8.49	1727.02	11.86	11.86	3.62	12.40	16.99	0.15	37.9 M
1756.10	0.97	37.88	1756.02	12.32	12.32	3.81	12.90	17.20	0.54	9.0 M
1785.10	1.64	8.97	1785.01	12.92	12.92	4.03	13.54	17.32	0.95	-4.4 M
1814.20	1.49	355.64	1814.10	13.71	13.71	4.07	14.30	16.52	0.40	-7.9 M
1843.10	1.39	352.07	1842.99	14.43	14.43	3.99	14.98	15.45	0.14	11.0 M
1871.80	1.36	10.96	1871.68	15.11	15.11	4.01	15.64	14.84	0.47	5.9 M
1900.90	1.42	5.91	1900.78	15.81	15.81	4.11	16.34	14.57	0.14	-9.3 M
1930.10	1.06	350.75	1929.97	16.44	16.44	4.10	16.94	14.01	0.50	-41.3 M
1959.10	1.45	318.73	1958.96	16.98	16.98	3.82	17.40	12.67	0.81	10.4 M
1988.20	1.54	10.39	1988.05	17.64	17.64	3.65	18.01	11.68	1.35	-9.6 M
2017.30	1.50	350.44	2017.14	18.40	18.40	3.65	18.76	11.23	0.54	18.8 M
2046.20	1.62	18.76	2046.03	19.16	19.16	3.72	19.52	10.99	0.80	-3.1 M
2075.30	1.40	356.86	2075.12	19.90	19.90	3.83	20.27	10.90	0.63	29.7 M
2104.30	1.68	29.66	2104.11	20.63	20.63	4.02	21.02	11.04	0.94	11.6 M
2133.10	1.45	11.55	2132.90	21.35	21.35	4.31	21.78	11.40	0.56	6.0 M
2162.10	1.41	6.00	2161.89	22.07	22.07	4.42	22.50	11.32	0.15	-4.5 M
2191.20	1.38	355.52	2190.99	22.77	22.77	4.43	23.20	11.00	0.26	3.9 M
2220.20	1.25	3.94	2219.98	23.44	23.44	4.42	23.85	10.69	0.24	-17.3 M
2249.30	1.27	342.71	2249.07	24.06	24.06	4.35	24.45	10.24	0.48	17.9 M
2278.20	1.32	17.85	2277.96	24.68	24.68	4.35	25.06	10.01	0.81	-1.7 M
2307.20	1.42	358.33	2306.96	25.36	25.36	4.45	25.75	9.95	0.49	-0.7 M
2336.30	1.52	359.27	2336.05	26.11	26.11	4.43	26.48	9.63	0.11	-7.9 M
2365.40	1.49	352.09	2365.14	26.87	26.87	4.37	27.22	9.25	0.20	-15.9 M
2394.50	1.39	344.11	2394.23	27.58	27.58	4.23	27.90	8.71	0.23	-9.3 M
2423.40	1.31	350.73	2423.12	28.24	28.24	4.08	28.54	8.21	0.18	-2.7 M
2452.40	1.36	357.28	2452.11	28.91	28.91	4.01	29.19	7.89	0.17	8.1 M
2481.20	1.28	8.12	2480.90	29.57	29.57	4.04	29.85	7.77	0.27	3.4 M
2510.20	1.31	3.41	2509.90	30.23	30.23	4.10	30.50	7.73	0.11	-0.8 M
2539.10	1.30	359.16	2538.79	30.88	30.88	4.12	31.16	7.59	0.10	4.1 M
2568.10	1.17	4.09	2567.78	31.51	31.51	4.13	31.78	7.47	0.17	6.3 M

	2597.10	1.09	6.25	2596.78	32.08	32.08	4.18	32.35	7.43	0.09	1.7 M
	2626.20	1.14	1.74	2625.87	32.64	32.64	4.22	32.91	7.37	0.10	-2.4 M
	2655.20	1.19	357.56	2654.86	33.23	33.23	4.22	33.50	7.23	0.10	10.6 M
	2684.20	1.36	10.59	2683.86	33.87	33.87	4.27	34.14	7.18	0.35	121.3 M
	2713.10	1.15	121.25	2712.75	34.06	34.06	4.58	34.36	7.66	2.15	-23.2 M
	2742.10	1.26	336.84	2741.75	34.20	34.20	4.70	34.52	7.83	2.37	-10.8 M
	2771.10	1.18	349.21	2770.74	34.79	34.79	4.52	35.08	7.41	0.28	-73.8 M
	2800.10	1.12	286.24	2799.74	35.16	35.16	4.19	35.41	6.80	1.24	-42.5 M
	2829.00	1.30	317.47	2828.63	35.48	35.48	3.70	35.67	5.96	0.70	-32.1 M
	2858.00	1.13	327.90	2857.63	35.96	35.96	3.33	36.12	5.29	0.29	-14.8 M
	2887.00	1.27	345.20	2886.62	36.52	36.52	3.09	36.65	4.84	0.40	-31.3 M
	2916.00	1.29	328.73	2915.61	37.11	37.11	2.84	37.21	4.38	0.38	29.0 M
	2923.00	1.35	28.95	2922.61	37.25	37.25	2.84	37.35	4.36	5.68	-34.8 M
	2936.30	1.36	325.18	2935.91	37.51	37.51	2.83	37.62	4.31	3.23	-32.3 M
	2964.01	1.45	327.72	2963.61	38.08	38.08	2.45	38.16	3.68	0.12	-32.4 M
	2993.09	1.51	327.61	2992.68	38.71	38.71	2.05	38.77	3.03	0.06	-24.4 M
	3023.62	1.56	335.57	3023.20	39.43	39.43	1.66	39.47	2.41	0.22	-24.8 M
	3051.74	1.55	335.18	3051.31	40.13	40.13	1.34	40.15	1.92	0.02	-28.8 M
	3080.66	1.55	331.24	3080.22	40.82	40.82	0.99	40.83	1.39	0.11	-26.2 M
	3110.84	1.52	333.82	3110.39	41.54	41.54	0.62	41.54	0.85	0.07	-26.4 M
	3138.26	1.52	333.59	3137.80	42.19	42.19	0.30	42.19	0.40	0.01	-26.4 M
Projected to Bit	3174.00	1.52	333.59	3173.53	43.04	43.04	-0.13	43.04	359.83	0.00	---

Survey Error Model: **Wolff & deWardt 2.0000 sigma**

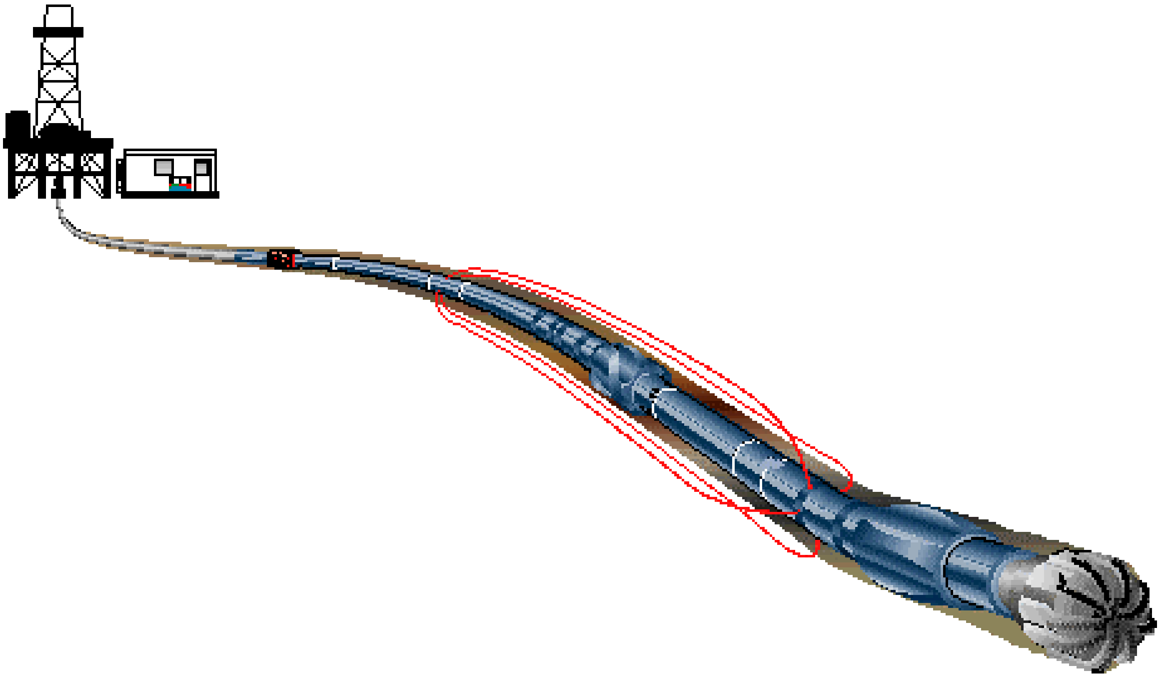
Surveying Programme:

MD From (m)	MD To (m)	EOU Freq	Survey Tool Type
0.00	2923.00	Act-Stns	Rate Gyro
2923.00	3174.00	Act-Stns	Anadrill MWD

Schlumberger

IDEAL

Bit Run Summary



Schlumberger DRILLING & MEASUREMENTS - RUN SUMMARY

RUN INFORMATION

Job Number: ASQ-03-02	Company Rep.: G.Sharkey	Date In: 18-Feb-03	Date Out: 23-Feb-03	D&M Run Number: 1	Rig Run Number: 5
Company: Esso Australia Ltd	Grid Corr: -0.98	Brief Run Summary: Good Run		Bit Run Number: 1	Cell Manager: Luis Bon
Rig Name: TSF 702					
Well Name: Scallop-1	Tot Corr: 14.22	Hole Depth From: 2933 m	To: 3174.00 m	D&M Crew: Kym Handley	
Location: Bass Strait					
Mapfile: BGGM 2002	Mag Dec: 13.24 / PP Slot ID:	Inclination (Drift) From: 1.35 deg	To: 1.52 deg	Pumping Hours: 77.90 hrs.	Below Rotary Tbl Hrs: 112.00 hrs.
BPS: 6.4	Frequency: 16 / Mod Type: QPSK	Azimuth From: 28.95 deg	To: 333.59 deg	Rotary Hours: 69.09 hrs.	Rotary Distance: 241.00 m
Pump Type: Oil Well PT 1700	Pump Output: 0.09 / Pump Strk Len.: 12.00	True Vertical Depth From: 2932.20 m	To: 3173.52 m	Slide Hours: 0.00 hrs.	Slide Distance: 0.00 m
Pump Liner ID: 5.50	Min DLS: 0.00 / Max DLS: 0.00	Hole Size: 12.25 in / Water Depth: 110 m	Air Gap: 25.9 m	Drilling Hours: 69.09 hrs.	Drilling Distance: 241.00 m
Bent Sub Angle: 0 deg	Bent HSG Ang: 0 deg / Depth Max DLS: m	RKB Height: 25.9 m / Ground Elev.: -110 m	Mod Gap: 0.14 in	Reaming Hours: 0.25 hrs.	Reaming Distance: 13.00 m
Pulse Ht Thresh:	Min Pulse Wdt: / Max Pulse Wdt:	Digit Time: / T/F Arc: 0 in	T/F Angle: 0 deg	On Bottom Hours: 69.09 hrs.	Service: GeoVISION Resistivity
Conn Phase Ang: 0 deg	Rise Const: / Fall Const:	H2S In Well: ☐ / Damp Press: 850.00 psi	Signal Streng.: 10.00	Last Casing Size: 13.375 in	Depth: 900 m
Directional Driller(s):		Turbine RPM @ Min Flow Rate RPM: 2083.00	FR: 600 gpm	Turbine RPM @ Max Flow Rate RPM: 4166.00	FR: 1200 gpm

Run Objective: Drill to TD, Find S1 Sand.

EQUIPMENT DATA

Equipment Code	Pump Hrs Start	Pump Hrs Cum	SW Vers	Tool Size	Equipment Code	Pump Hrs Start	Pump Hrs Cum	SW Vers	Tool Size	Sensors Code	Real Time Hrs	Real Time Fail	Real Time Drilled	Recorded Time Hrs	Recorded Time Fail	Recorded Time Drilled
MDC-DC-M805	0	78	6.1C00	8.25						MDC-DC-M805	77.9		241	112		241
RBDC-CA-010	0	78	5.0B14	8.25						RBDC-CA-010	77.9		241	112		241

Surface Sys	IDEAL/SPM	IDEAL/SPM
Version	ID8_0C_07	HSPM8_0C_13

DH MOTOR

Manufacturer		Stage Length	m	Bit to Bend Dist.	m	Bearing Gap In	
Type		Rubber		RSS Mfr		Bearing Gap Out	
Size		Sleeve Position		RSS Type		Radial Bearing Play	
Serial Number		Sleeve Size	in	RSS Size		Thrust Bearing Play	
Lobe Config.		Motor Fail	☐	RSS SN			

OPERATING COND.

Max Circ Temp	84.00 C	Avg ROP	3.49 m/hr	Min Actl FlowRt	814.00 gpm	Max Shock Dur	0.21 sec.
Min Circ Temp	72.00 C	Max ROP	5.00 m/hr	Avg PmpPres	3495.97 psi	Total DH Shocks (k)	10.24 k
End Mud Wt	10.35 lb/gal	Avg Surf RPM	90.00	PmpPres On Bot	psi	CHECK SHOT	
End Funnel Vis	55.00 CPS	Min RPM	80.00	PmpPres Off Bot	psi	Type	
End Plastic Vis	24.00 CPS	Max RPM	106.00	Avg Surf WOB	50.00 klbs	Depth	m
End Yield Point	39.00 CPS	Avg FlowRate	810.00 gpm	Avg Surf Torq	5000.00 ft-lbs	Inclination	deg
End Mud Resist	0.11	Max Actl FlowRt	833.00 gpm	Max Shock Lev	131.00	Azimuth	deg

MUD

Company	Baroid	PH	8.70	Percent Sand	0.15 %	Additives	None
Brand	Generic	Chlorides	38500.00	Percent Solids	8.80 %	Clean	☐
Type	KCl/Polymer/Gly	Other		Percent Oil	0.00 %		
LCM Type				LCM Size		LCM Concentation	

BHA

BHA Type	Packed Hole	Tur Rotor Prt #		Turbine Config		Surface Screen	☐
Int TF Offset		Stator Prt #		Pulser Config		DFS Used	☐
Low Oil Flag	☐	Hrs @ Low Oil	hrs.	Stab Spacing	in	Formation	
DD Objectives Achieved	☐	If not, why?					

BIT

Bit Type		Other					
Manufacturer	Model	IADC Code	No. of Jets	Size of Jets	Bit TFA	Total Revs	Stick/Slip
HTC	MX-20D		3	18	0.75		
Inner Row	Outer Row	Dull Char	Location	Brng/Seals	Gauge (1/16")	Other Char	Reason Pulled
3	7	BT	S	E	IN	RG	TD

FAILURE

Trans Fail	☐	Jamming	☐	Client Inconv.	☐	Surface Noise	☐
Pres Incr @ Fail	☐	Jamming Time	hrs.	Lost Time	hrs.	Down Hole Noise	☐
D&M Trip	☐	Sync Hours	hrs.	Surface Vib	☐	Surface Sys Failure	☐

SUMMARY

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Schlumberger

DRILLING & MEASUREMENTS - BHA DATA

Job Number	ASQ-03-02
Run Number	1
BHA Number	5

Item	Description	Vendor	Material	Serial Number	Fishing Neck OD	Fishing Neck Length	Stab OD	OD	ID	Bot Connection Size	Bot Connection Type	Top Connection Size	Top Connection Type	Len	Cum Len
UNITS					in	m	in	in	in					m	m
1	TCI Bit			W42DV	12.25							6.63	Reg-B	0.33	0.33
2	Near Bit Stabiliser			GU2191	12.25					6.63	Reg-B	6.63	Reg-B	2.45	2.78
3	Pony Drill Collar			502A7	8.00					6.63	Reg-P	6.63	Reg-B	2.92	5.70
4	IB Stabiliser			207A31	12.25					6.63	Reg-P	6.63	Reg-B	1.44	7.14
5	Drill Collar			93081	8.25					6.63	Reg-P	6.63	Reg-B	9.33	16.47
6	IB Stabiliser			207A190	12.25					6.63	Reg-P	6.63	Reg-B	1.80	18.27
7	XO	SLB								6.63	Reg-P	6.63	Reg-P	0.31	18.58
8	RAB8	SLB	Non-Mag	010	8.25					6.63	Reg-B	6.63	FH-B	3.82	22.40
9	PowerPulse	SLB	Non-Mag	M805	8.25					6.63	FH-P	6.63	Reg-B	8.44	30.84
10	12 x Drill Collars				8.25					6.63	Reg-P	6.63	Reg-B	109.23	140.07
11	XO			MS0275	8.00					6.63	Reg-P	4.50	IF-B	0.61	140.68
12	2 x HWDP				5.00					4.50	IF-P	4.50	IF-B	18.51	159.19
13	Dailey Jar			14161590	6.50					4.50	IF-P	4.50	IF-B	9.77	168.96
14	24 x HWDP				5.00					4.50	IF-P	4.50	IF-B	219.83	388.79
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															

TIME/DEPTH DETAILS	1	2	3	4	5
Date/Time	19/02/2003	20/02/2003	20/02/2003	21/02/2003	
Field Engineer	KH	LB	KH	KH	
Depth	2979.00	3004.83	3067.00	3147.50	
Average ROP	3.95	3.00	3.95	3.69	
Avg. Std. Pres.	3628.00	3500.00	3628.00	3550.00	
Desurger 1	850.00	850.00	850.00	850.00	
Desurger 2	840.00	840.00	840.00	840.00	
Tur. RPM @ FR	2890.00	2850.00	2812.50	2812.50	
FR @ Tur. RPM	833.00	820.00	819.00	814.00	
Avg. RPM	80.00	100.00	106.00	90.00	
Max RPM	80.00				
Total Shocks	0.00		0.00	10.07	
Max Shock	0.00		0.00		
Avg. Surf. WOB	50.14	50.00	34.98	51.08	
Max Surf. WOB					
Avg. DH WOB					
Max DH WOB					
Avg. Surf. Torq.	6.60	5.00	4.00	5.29	
Max Surf. Torq.					
Avg. DH Torq.					
Max DH Torq.					
Formation Type	Shale		Claystone	Claystone	
Friction					
Drag Up					
Drag Down					
Mud Weight	10.20	10.20	10.20	10.20	
Funnel Vis.	57.00	57.00	53.00		
Plastic Vis.	22.00	22.00	22.00		
Circ. Temp	72.00	78.00	80.78	83.14	
Signal Strength	11.30	12.00	9.60	10.20	
Bit Deviation	86.00	90.00	94.00	91.00	
Differential Pres.					

PREDICTED BHA TENDENCY

Hookload		lbs	Wt. Below Jars	66800.00	lbs
Pickup Wt.		lbs	Wt. Above Jars	37730.00	lbs
Slack Wt.	110000.00	lbs	Total Air Wt.		lbs

Stabilizer Description	Mid Pt To Bit	BLADE Type	BLADE Length	BLADE Width	GAUGE Length	GAUGE In	GAUGE Out
UNITS	m		in	in	in	in	in
NB	1.60	Reamer	2.45	12.25			
String	6.42	Spiral	1.44	12.25			
String	17.37	Spiral	1.80	12.25			

Bit To Read Out Port			Bit To Measurement Port		
RAB	19.37	m	GR LWD	19.40	m
PPL	24.18	m	RES LWD	19.66	m
		m	D&I PPL	26.53	m
		m			m
		m			m
		m			m
		m			m

BATTERY Tool	Unloaded (V) Before	Unloaded (V) After	Loaded (V) Before	Loaded (V) After	Run Hrs BOT	Run Hrs AMP	Cum Hrs BOT	Cum Hrs AMP

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DRILLING & MEASUREMENTS - TIME/DEPTH COMMENTS

Schlumberger

Job Number:	ASQ-03-02
Run Number:	1

Date	Time	Depth	Operating Details
18-Feb-03	18:40	0.00	Initilise RAB8 on pipdeck
	19:00	0.00	Make up BHA
	19:45	0.00	Pick up PowerPulse and RAB8
	20:30	0.00	SHT, 700 gpm
19-Feb-03	0:35	935.00	Test BOP, Slip and Cut line
	7:30	2933.00	Tag bottom and drill ahead according to well plan
	12:26	2951.90	Run Auto Back-Up on IDEAL
	14:15	2959.00	Mud Sample: Rmf= 0.1006 @ 16.4ºC; Rm= 0.1227 @ 18ºC; Rmc= 0.412 (?) @ 22.1ºC
	17:04	2969.37	Hole depth jumped ahead by about 3.7m (decreased hole depth from 2973.07 to 2969.37)
	20:23	2983.00	Mud Sample: Rmf= 0.1057 @ 20.5ºC; Rm= 0.1240 @ 20.6ºC; Rmc= 0.223 @ 21.5ºC
	22:35	2993.00	Run Auto Back-Up on IDEAL
20-Feb-03	0:00	3039.00	Mud Sample: Rmf= 0.0938 @ 19.7ºC; Rm= 0.1106 @ 20.9ºC; Rmc= 0.309 @ 23.1ºC
	14:34	3051.00	Run Auto Back-Up on IDEAL
	17:12	3060.00	Mud Sample: Rmf= 0.0898 @ 23.1ºC; Rm= 0.1144 @ 21.2ºC; Rmc= 0.279 @ 21.3ºC
21-Feb-03	1:20	3081.00	GTE disconnected and greased, line was not retracting properly. Connected back shortly thereafter.
	2:08	3084.00	Restarted IDEAL, got locked up.
	10:00	3110.00	Mud Sample: Rmf= 0.0954 @ 22.5ºC; Rm= 0.1133 @ 22.9ºC; Rmc= Gone with the wind
	14:20	3127.60	Mud Sample: Rmf= 0.0921 @ 19.8ºC; Rm= 0.1193 @ 20.4ºC; Rmc= 0.293 @ 20.6 deg
	19:10	3137.37	Survey No. 23 was accepted after 3 other attempts, Tool G was good, but MWDstat 4
22-Feb-03	3:30	3163.00	Pressure Drop, 500 psi due to decrease in flow rate from 830 gpm to 770 gpm.
	4:13	3164.00	Lost unit power. Override Purge and continue, need to check Purge system in town, also gusty winds
			on rig might have had an effect.
	9:25	3174.00	Mud Sample: Rmf= 0.0914 @ 21ºC; Rm= 0.1089 @ 22.3ºC; Rmc= 0.309 @ 24.3ºC
	10:00	3174.00	TD. -0.1 Tide
	11:00	900.00	Pull up to casing shoe
	17:30	900.00	Wiper Trip
	21:00	3174.00	CBU
	23:00	3174.00	POOH
23-Feb-03	7:30	0.00	TART
	11:00	0.00	Dump RAB8

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A
Scientific Drilling International Report
of a Drop Keeper Gyro Survey

For

ESSO AUSTRALIA LTD

Well : Scallop-1
Location : Sedco 702, Bass Strait
Latitude : -38.214 degrees
Date : 5th February 2003

Job Number : 87K0203011

TABLE OF CONTENTS

Report Compiled by:______________________________ **Date:**________________

Report Checked by:_______________________________ **Date:**________________

All interpretations are opinions based on inferences from electrical or other measurements and Scientific Drilling cannot and does not guarantee the accuracy or correctness of any interpretations, and Scientific Drilling shall not, except in the case of gross negligence or wilful conduct on Scientific Drilling's part, be liable or responsible for any loss, cost, damage or expense incurred or sustained by anyone resulting from any interpretations made by any of Scientific Drilling's officers, agents or employees. These interpretations are also subject to Scientific Drilling's General Terms and Conditions set out in Scientific Drilling's current Price Schedule.

1.

GENERAL SUMMARY

Scientific Drilling

JOB CHRONOLOGY

02nd February 2003

10:00 SDI Engineer Martin Milne travels from Sale to Sedco 702
12:00 Carry out rig/safety induction
13:00 Meet with Co.man and locate equipment.
14:00 Rig-up surface equip. and running gear.
17:00 Carry out pre job checks (OK).

03rd February

06:00 Stand-by for drop gyro. Re-check gyro system

04th February

. 06:00 Stand-by for drop gyro. Re-check gyro system

05th February

01:00 Stand by for drop gyro.
02:00 Hold JSA, make up and pick up gyro.
02:20 Release gyro in drill string and pump tool to bottom.
02:22 Pump 60 stks/min for5 minutes and displace to Kill mud..
03:01 Trip OOH with drill string taking gyro survey's at each connection.
06:30 Retrieve gyro at surface.
07:30 Down load, process and submit survey.
08:00 Rig down equipment.
16:30 Depart rig.

Post Survey Discussion

Objective:

The objective of the gyro was to obtain a definitive well bore survey from mud line to the 17 1/2" T.D at approximately 916 mtrs. MWD tools were not used during the drilling phase of this section however an Anderdrift inclination only tool was run. The survey was performed with the SDI Keeper gyro run in drop memory configuration with depth referenced to the Sedco 702 RKB.(RKB to mudline 136 mtrs.) The tool was powered by a lithium battery pack and contained within running gear that incorporated a parachute to slow its descent in the drill pipe whilst being pumped to bottom. Two landing shocks were used to absorb the impact when the tool landed in the totco ring. All survey data was taken in continuous gyrocompass mode.

Summary:

The gyro results showed a maximum inc. of 0.53 degrees at 876.20 mtrs. The horizontal displacement at 907.80 mtrs. was 4.37 mtrs. bearing 342.58 degrees. No tool or operational problems were encountered on this run.

It is significant to note that the only rig time spent in running this survey was at the surface when releasing and retrieving the tool. All survey stations could be taken with the string in the slips, with a minute at each station being obtained without the need to slow down the trip.

2.

SURVEY REPORT

Scientific Drilling

Scientific Drilling (Australia)
Survey Report

Company:	Esso Australia Limited	**Date:** 15/04/2003 **Time:** 10:36:21	**Page:** 1
Field:	Bass Strait	**Co-ordinate(NE) Reference:**	Site: Scallop, Grid North
Site:	Scallop	**Vertical (TVD) Reference:**	System: Mean Sea Level
Well:	Scallop-1	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)
Wellpath:	Scallop 1	**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Field: Bass Strait
Victoria
Australia

Map System: Universal Transverse Mercator
Geo Datum: GDA94 - Australia (GRS80)
Sys Datum: Mean Sea Level
Map Zone: UTM Zone 55, South 144E to 150E
Coordinate System: Site Centre
Geomagnetic Model: igrf2000

Site: Scallop

Bass Strait

Site Position:
From: Geographic
Position Uncertainty: 0.00 m
Water Depth: 110.00 m
Northing: 5769298.86 m
Easting: 639314.95 m
Latitude: 38 12 48.615 S
Longitude: 148 35 28.879 E
North Reference: Grid
Grid Convergence: -0.98 deg

Well: Scallop-1
Exploration well
Slot Name:

Well Position: +N/-S 0.00 m **Northing:** 5769298.86 m **Latitude:** 38 12 48.615 S
+E/-W 0.00 m **Easting :** 639314.95 m **Longitude:** 148 35 28.879 E
Position Uncertainty: 0.00 m

Wellpath: Scallop 1
Exploration Well
Current Datum: Sedco 702 RT **Height** 25.90 m
Magnetic Data: 12/02/2003
Field Strength: 59954 **nT**
Drilled From: Surface
Tie-on Depth: 0.00 m
Above System Datum: Mean Sea Level
Declination: 13.27 deg
Mag Dip Angle: -68.67 deg

Vertical Section:	Depth From (TVD) m	+N/-S m	+E/-W m	Direction deg
	-25.90	0.00	0.00	0.00

Survey: Outrun Survey (Definitive)
Keeper drop gyrocompass survey
Company: Scientific Drilling Australia
Tool: Keeper,Keeper Standard Rate Gyro
Start Date: 5/02/2003
Engineer: Martin Milne
Tied-to: User Defined

Survey: Outrun Survey (Definitive)

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper
157.80	0.25	195.26	157.80	-0.33	-0.09	-0.33	0.05	0.05	0.00	Keeper
185.10	0.37	2.83	185.10	-0.30	-0.10	-0.30	0.69	0.13	187.09	Keeper
212.50	0.35	350.71	212.50	-0.13	-0.11	-0.13	0.09	-0.02	-13.48	Keeper
239.90	0.32	1.45	239.90	0.03	-0.12	0.03	0.08	-0.03	11.95	Keeper
267.50	0.35	15.59	267.50	0.19	-0.10	0.19	0.10	0.03	15.62	Keeper
296.40	0.35	357.50	296.40	0.36	-0.08	0.36	0.12	0.00	-19.08	Keeper
325.40	0.35	358.93	325.40	0.54	-0.08	0.54	0.01	0.00	1.50	Keeper
354.40	0.31	351.16	354.40	0.70	-0.10	0.70	0.06	-0.04	-8.17	Keeper
383.20	0.28	341.33	383.20	0.85	-0.13	0.85	0.06	-0.03	-10.40	Keeper
412.20	0.28	333.71	412.20	0.98	-0.19	0.98	0.04	0.00	-8.01	Keeper
441.30	0.30	330.59	441.30	1.11	-0.25	1.11	0.03	0.02	-3.27	Keeper
470.30	0.26	319.95	470.29	1.22	-0.33	1.22	0.07	-0.04	-11.18	Keeper
499.30	0.27	316.67	499.29	1.32	-0.42	1.32	0.02	0.01	-3.45	Keeper
528.30	0.29	341.21	528.29	1.44	-0.49	1.44	0.13	0.02	25.79	Keeper
557.30	0.35	334.17	557.29	1.59	-0.56	1.59	0.08	0.06	-7.40	Keeper
586.30	0.37	339.92	586.29	1.76	-0.63	1.76	0.04	0.02	6.04	Keeper
615.20	0.44	352.04	615.19	1.96	-0.67	1.96	0.12	0.07	12.78	Keeper
644.20	0.44	344.86	644.19	2.18	-0.72	2.18	0.06	0.00	-7.55	Keeper
673.10	0.48	339.40	673.09	2.40	-0.79	2.40	0.06	0.04	-5.76	Keeper
702.10	0.47	355.15	702.09	2.63	-0.84	2.63	0.14	-0.01	16.55	Keeper
731.10	0.49	354.85	731.09	2.87	-0.86	2.87	0.02	0.02	-0.32	Keeper
760.10	0.46	355.22	760.09	3.11	-0.89	3.11	0.03	-0.03	0.39	Keeper
789.10	0.46	350.78	789.09	3.34	-0.91	3.34	0.04	0.00	-4.67	Keeper
818.20	0.41	301.70	818.19	3.51	-1.02	3.51	0.38	-0.05	-51.41	Keeper
847.20	0.51	355.47	847.19	3.69	-1.12	3.69	0.45	0.11	56.51	Keeper
876.20	0.53	338.22	876.18	3.95	-1.18	3.95	0.17	0.02	-18.13	Keeper
885.80	0.51	327.67	885.78	4.02	-1.22	4.02	0.31	-0.06	-33.50	Keeper
907.80	0.39	329.98	907.78	4.17	-1.31	4.17	0.17	-0.17	3.20	Keeper

3.

QUALITY ASSURANCE

Scientific Drilling

Scientific Drilling (Australia) **Keeper #:** 042.

KEEPER ACCEPTANCE

New Tool arrived from ATA 3rd Feb 2003.

Customer: Esso Australia Ltd.	Location: Scallop-1, Sedco 702.
Keeper Checked by: S. Garantini	Date: 1st February 2003
Wireline Type: n/a	Wireline Company: n/a Drop Gyro.
Survey Inclination Range: nom Vertical	Azimuth at 15 degrees: n/a

Job Type:(tick boxes)

Casing Survey ☐ Drillpipe/Tubing Survey ☑ Steering ☐ Single Shot ☐

Power Supply #: 28589	Test Stand#: 007	MSI #: 124	File Name: 04201030.bin

Field Cal Offsets (Previous or rig calibration)
DI = 0.05 DS = -0.29 ASF = 0.0008 St.SF= 0.0083 St.Bias 0.0029 Temp = 118.f

Field Cal Offsets (Post Calibration)
DI = -0.02 DS = 0.15 ASF = 0.0004 St.SF = -0.0048 St.Bias = -0.0017 Temp = 106.5

Results of Tests Done

Wireline Comms Test	YES / NO	PASS / FAIL	Max. Ohms =
CCL Test	YES / NO	PASS / FAIL	n/a
Gamma Test	YES / NO	PASS / FAIL	n/a

Low Angle Continuous Mode

Start Inclination = 0.49° Initialisation data in specification: YES / NO. GTF SDM : 0.04

Max inclination error through run: = +0.017° Azimuth error at 15 degrees: +0.032°

High Speed Mode

N/A.

Start Azimuth = ________ Final Azimuth = ________

Inclination Range from:: ________ to ________ Max error = ________ at ________ deg.

Azimuth range from: : ________ to ________ Max error = ________

Comments: Tool new from ATA.
Reserved for Scallop DG.

Keeper Checked By (signature):

This Keeper is within / outwith (*) specification and is acceptable for the job. If outwith specification, and the tool is to be used, a concession for use must be raised before shipping.

Manager/or his delegate **(signature)**: Date: 1 Feb 2003

* delete as applicable

Firmware Version 46336505. *KCAL Version* 1.25.28T

Scientific Drilling QTF32/Rev.02

KEEPER POST JOB VERIFICATION

SECTION A – TO BE COMPLETED BY SUPERVISOR OR SURVEY ENGINEER

Customer: Esso Australia Ltd. Location: Sedco 702 Well Name: Scallop - 1

Keeper No: 042 Max Inc on Job: < 2° Job No: 87KO203011

Azimuth at 20 deg: n/a. Max. gyro temp on job: 140°f Surveyor on job: Milne

Field Cal on job : Di = -0·02 Ds = 0·15 ASF = 0·0004 StSF = -0·0048 Sbias = -0·0017 Temp = 106·5°

Comments:

Initialisation Data: Gyro Temp: n/a Inclination: Azimuth:

Gyro toolface: Drop Gyro C. No. of Readings: Settle/Fetch time:

SECTION B – TO BE COMPLETED BY THE PERSON INSPECTING KEEPER GYRO

Field cal -: Di = 0·06 Ds = -0·11 ASF = 0·0001 StSF = -0·0011 Sbias = -0·0010 Temp = 111·9°

Low Angle Mode: (initialise Keeper at same position as used for job)

Gyro Temp: 112°f Inclination: 0·45° Azimuth: 266·79° Gyro Toolface: 265·62° GTF SdM : 0·11

Inclination check:	OK: ☑	Fail : ☐	Max error:	+0·019°
Azimuth check:	OK: ☑	Fail : ☐	Az error at 20 deg point:	-0·168°
Drift Tuning:	OK: ☑	Faulty : ☐	Gyro Temp Start = 112·0	End = 112·1°f

Comments:

Tool meets all post job Q.C.

h Speed Mode:

Inclination check:	OK: ☑	Fail : ☐	Max error:	-0·04°
Azimuth check:	OK: ☑	Fail : ☐	Max error:	+0·042°
Drift Tuning:	OK: ☑	Faulty : ☐	Gyro Temp Start = 109·8	End = 111·0°f

Comments:

KEEPER POST JOB CHECK

Pass : ☑ Fail : ☐ Signed: Date: 13 Feb 2003.

Scientific Drilling

QSF32

KEEPER SURVEY Q.A. SUMMARY

Client:	Esso Australia Pty. Ltd.	Location:	Bass Strait
Job Number:	87K0203011	Personnel:	Martin Milne
Date:	05 Feb 2003	Latitude:	-38.214
Well Number:	Sedco 702	Grid correction:	+0.98
Keeper Number:	KPR042 & Mem 065	Slot coord N:	0.00
Survey Interval:	0-907.8 mtrs.	E:	0.00

Field Calibration data:

	Office Calibration	Pre survey Cal.	Difference	Accept(Yes/No)
Accel Scale Factor	0.0004	N/a	N/a	Yes
St Accel Scale Factor	-0.0048	N/a	N/a	Yes

Continuous Navigation Initialization Data: N/A – DROP GYRO

Measured Depth:	Inclination	Time	Number of readings
Computed ERH	GTF sample mean SD:	Gyro Temperature	Accept(Yes or No)

Tie in Data:

Survey Type	MD	TVD	Inclination	Azimuth	Latitude	Departure
Surface Co-ord	0	0	0	0	0	0

Inrun vs Outrun Position Comparison at TD: No in run survey – Drop Gyro

	North/South	East/West	True Vertical Depth	Accept (Yes or No)
Inrun:				
Outrun:				
Difference:				

Depth Control:

Wireline Company:	CCL Used (Yes/No):	CCL Correction applied:
Wireline size/type:	Rezero:	Accept (Yes/No)

Survey Run time:

Release tool:	02:20
Complete pumping:	02:33
Begin survey:	03:01
End survey:	04:52
Lay down tool:	07:30

Survey Final Report :

Is Final report Different than the field report? No Yes → Why?

No

Comments / Problems:

No job or operational problems were encountered.

Scientific Drilling

KEEPER DATABASE SUMMARY

Well Details:

Client:	Esso Australia Pty. Ltd.	Location:	Bass Strait
Job Number:	87K0203011	Personnel:	M. Milne
Date:	05th Feb 2003	Depth datum:	Sedco RKB (MSL to RKB 25.90m)
Well Number:	Scallop-1	Water depth:	110 mtrs.
Rig:	Sedco 702	Latitude:	38 deg 12' 48.615" S
Keeper Number:	KPR #042, Mem #065	Longtitude:	147 deg 35' 28.879" E
Survey Interval:	0-907.8 mtrs.	Grid correction:	0.98
Mud weight:	12.ppg	Slot coord N:	0.0m
Hole & DP size:	17.5 / 5.5"	E:	0.0m

Wireline Details: N/A **Tool Details:**

Wireline Company:		Tool length:	8.0m
W/L Insulation(Mohms)		Max tool O.D.:	1 75"
W/L Resistance (ohms)		Gyro-zero point length:	3.0m
Wireline size/type:		Approx. Tool wt:	180lb

BHA / DP Details:

DP Size:	5 "
BHA Length:	276.72 mtrs.
Bit-Totco ring:	5.22
Bit-UBHO sub:	N/A
Bit-Top of Jars:	84.32 mtrs.
Minimum BHA ID:	2 .3/4"

Bench Test Details:

Primary tool:	KPR #042/MEM#065	Backup Tool:	KPR#015
Voltage:	N/A	Voltage:	
Current:	N/A	Current:	
Slew Voltage:	N/A	Slew Voltage:	
Slew Current:	N/A	Slew Current:	
Gyro temp (F):		Gyro temp (F):	

Equipment Details:

Computer:	Compaq	Computer (2):	PERSONNEL
Power Supply:	Direct	Power Supply (2):	
MSI:		MSI (2):	
Heatshield:		Heatshield:	
Transformer:	110V	Rig power supply (v):	240V
Tool Run Time:	4.20 hours		

Comments / Problems:

No job or operational problems were encounted.

Scientific Drilling

SURVEY PRE-JOB CHECKLIST

Client:	Esso Australia Pty. Ltd.	Location:	Secdo 702Bass Strait
Job Number:	87K0203011	Personnel:	Martin Milne
Date:	05th Feb 2003	Latitude:	-38.214

Job Checklist: (tick appropriate boxes)

- Pre-job Preparation ☐
- Function test tool & Field cal. ☐
- Clients Well Program ☐
- Pre-Spud Meeting Changes ☐
- Pre Job Safety Meeting held ☐
- Keeper Database Summary ☐
- Keeper Survey QA Summary ☐
- Raw Data Printout ☐
- Comparison (MWD) survey data / BHA listing ☐
- Keeper Post Job Calibration check ☐
- Copy of Work Order / Job Ticket ☐
- Client end of well report completed ☐

Data Archiving:

- Master and Working Disks Filed ☐
- Report Files copied to Hard drive ☐
- Definitive Survey Archived ☐
- Disk Files copied to Hard drive ☐

Disk Labels Used

- Inrun or outrun presented : n/a____________________________
- Master disk label:
- Client disk label:

Scientific Drilling

A
Scientific Drilling International Report
of a Drop Keeper Gyro Survey

For

ESSO AUSTRALIA LTD

Well : Scallop-1
Location : Sedco 702, Bass Strait
Latitude : -38.214 degrees
Date : 18th February 2003

Job Number : 87K0203013

TABLE OF CONTENTS

Report Compiled by:____________________________ **Date:**_______________

Report Checked by:____________________________ **Date:**_______________

All interpretations are opinions based on inferences from electrical or other measurements and Scientific Drilling cannot and does not guarantee the accuracy or correctness of any interpretations, and Scientific Drilling shall not, except in the case of gross negligence or wilful conduct on Scientific Drilling's part, be liable or responsible for any loss, cost, damage or expense incurred or sustained by anyone resulting from any interpretations made by any of Scientific Drilling's officers, agents or employees. These interpretations are also subject to Scientific Drilling's General Terms and Conditions set out in Scientific Drilling's current Price Schedule.

Scientific Drilling

1.

GENERAL SUMMARY

Scientific Drilling

JOB CHRONOLOGY

13nd *February 2003*

13:00 SDI Engineer Martin Milne travels from Sale to Sedco 702
14:00 Carry out rig/safety induction
15:00 Meet with Co.man and locate equipment.
15:30 Rig-up surface equip. and running gear.
16:00 Carry out pre job checks (OK).

14th February

06:00 Stand-by for drop gyro. Re-check gyro system

15th February

. 06:00 Stand-by for drop gyro. Re-check gyro system

16th February

. 06:00 Stand-by for drop gyro. Re-check gyro system

17th February

. 06:00 Stand-by for drop gyro. Re-check gyro system

18th February

08:40 Stand by for drop gyro.
08:45 Hold JSA, make up and pick up gyro.
08:49 Release gyro in drill string and pump tool to bottom.
08:51 Pump 60 stks/min for 23 minutes and 40 stks for 16 minutes.
09:30 Trip OOH with drill string taking gyro survey's at each connection.
17:30 Retrieve gyro at surface.
19:30 Down load, process and submit survey.
20:00 Rig down equipment.
.

19th February

16:30 Depart rig

Scientific Drilling

Post Survey Discussion

Objective:

The objective of the gyro was to obtain a definitive well bore survey from the 13 3/8” casing shoe to the 12 1/4” T.D at approximately 2932 mtrs. MWD tools were not used during the drilling phase of this section however an Anderdrift inclination only tool was run. The survey was performed with the SDI Keeper gyro run in drop memory configuration with depth referenced to the Sedco 702 RKB.(RKB to mudline 136 mtrs.) The tool was powered by a lithium battery pack and contained within running gear that incorporated a parachute to slow its descent in the drill pipe whilst being pumped to bottom. Two landing shocks were used to absorb the impact when the tool landed in the totco ring. All survey data was taken in continuous gyrocompass mode.

Summary:

The gyro results showed a maximum inc. of 1.68 degrees at 2104.30 mtrs. The horizontal displacement at 2923.00 mtrs. was 37.35 mtrs. bearing 4.36 degrees. No tool or operational problems were encountered on this run.

It is significant to note that the only rig time spent in running this survey was at the surface when releasing and retrieving the tool. All survey stations could be taken with the string in the slips, with a minute at each station being obtained without the need to slow down the trip.

2.

SURVEY REPORT

Scientific Drilling

Scientific Drilling (Australia)
Survey Report

Company:	Esso Australia Limited	**Date:** 15/04/2003 **Time:** 14:33:17	**Page:** 1
Field:	Bass Strait	**Co-ordinate(NE) Reference:**	Well: Scallop-1, Grid North
Site:	Scallop	**Vertical (TVD) Reference:**	Sedco 702 RT 25.9
Well:	Scallop-1	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)
Wellpath:	Scallop 1	**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Field: Bass Strait
Victoria
Australia
Map System: Universal Transverse Mercator
Geo Datum: GDA94 - Australia (GRS80)
Sys Datum: Mean Sea Level
Map Zone: UTM Zone 55, South 144E to 150E
Coordinate System: Well Centre
Geomagnetic Model: igrf2000

Site: Scallop

Bass Strait
Site Position:
From: Geographic
Position Uncertainty: 0.00 m
Water Depth: 110.00 m
Northing: 5769298.86 m
Easting: 639314.95 m
Latitude: 38 12 48.615 S
Longitude: 148 35 28.879 E
North Reference: Grid
Grid Convergence: -0.98 deg

Well: Scallop-1
Exploration well
Well Position: +N/-S 0.00 m **Northing:** 5769298.86 m
+E/-W 0.00 m **Easting :** 639314.95 m
Position Uncertainty: 0.00 m
Slot Name:
Latitude: 38 12 48.615 S
Longitude: 148 35 28.879 E

Wellpath: Scallop 1
Exploration Well
Current Datum: Sedco 702 RT **Height** 25.90 m
Magnetic Data: 12/02/2003
Field Strength: 59954 **nT**
Drilled From: Surface
Tie-on Depth: 0.00 m
Above System Datum: Mean Sea Level
Declination: 13.27 deg
Mag Dip Angle: -68.67 deg

Vertical Section:	Depth From (TVD) m	+N/-S m	+E/-W m	Direction deg
	0.00	0.00	0.00	0.00

Survey: Outrun 12-1/4" hole
Keeper Drop Gyro inside 5" DP
Company: Scientific Drilling Australia
Tool: Keeper Drop MultiShot,Keeper Drop Multishot Rate Gyr
Start Date: 18/02/2003
Engineer: Milne
Tied-to: User Defined

Survey: Outrun 12-1/4" hole

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
907.80	0.39	329.98	907.78	4.17	-1.31	4.17	0.00	0.00	0.00	Keeper Drop MultiShot
945.50	0.45	10.33	945.48	4.43	-1.35	4.43	0.24	0.05	32.62	Keeper Drop MultiShot
974.40	0.51	49.51	974.38	4.62	-1.23	4.62	0.34	0.06	41.32	Keeper Drop MultiShot
1003.20	0.50	44.10	1003.18	4.80	-1.04	4.80	0.05	-0.01	-5.73	Keeper Drop MultiShot
1032.10	0.56	65.45	1032.08	4.94	-0.83	4.94	0.22	0.06	22.52	Keeper Drop MultiShot
1060.90	0.53	47.97	1060.87	5.09	-0.60	5.09	0.18	-0.03	-18.50	Keeper Drop MultiShot
1089.80	0.58	59.57	1089.77	5.26	-0.38	5.26	0.13	0.05	12.23	Keeper Drop MultiShot
1118.70	0.56	29.96	1118.67	5.45	-0.18	5.45	0.31	-0.02	-31.23	Keeper Drop MultiShot
1147.60	0.64	46.68	1147.57	5.69	0.01	5.69	0.20	0.08	17.63	Keeper Drop MultiShot
1176.50	0.62	19.17	1176.47	5.94	0.18	5.94	0.32	-0.02	-29.01	Keeper Drop MultiShot
1205.30	0.56	31.60	1205.27	6.21	0.30	6.21	0.15	-0.06	13.16	Keeper Drop MultiShot
1234.10	0.58	34.13	1234.07	6.45	0.46	6.45	0.03	0.02	2.68	Keeper Drop MultiShot
1263.00	0.64	42.47	1262.96	6.69	0.65	6.69	0.11	0.06	8.80	Keeper Drop MultiShot
1291.90	0.64	44.73	1291.86	6.93	0.87	6.93	0.03	0.00	2.38	Keeper Drop MultiShot
1321.00	0.60	16.43	1320.96	7.19	1.03	7.19	0.32	-0.04	-29.64	Keeper Drop MultiShot
1350.10	0.60	43.77	1350.06	7.44	1.18	7.44	0.30	0.00	28.64	Keeper Drop MultiShot
1378.90	0.63	46.82	1378.86	7.66	1.40	7.66	0.05	0.03	3.23	Keeper Drop MultiShot
1407.60	0.65	54.20	1407.56	7.86	1.64	7.86	0.09	0.02	7.84	Keeper Drop MultiShot
1436.50	0.63	47.67	1436.45	8.07	1.89	8.07	0.08	-0.02	-6.89	Keeper Drop MultiShot
1465.30	0.64	55.52	1465.25	8.26	2.14	8.26	0.09	0.01	8.31	Keeper Drop MultiShot
1494.50	0.73	32.93	1494.45	8.51	2.38	8.51	0.29	0.09	-23.58	Keeper Drop MultiShot
1523.60	0.83	36.39	1523.55	8.84	2.61	8.84	0.12	0.10	3.62	Keeper Drop MultiShot
1552.70	0.85	12.09	1552.64	9.22	2.78	9.22	0.37	0.02	-25.45	Keeper Drop MultiShot
1581.80	0.88	5.86	1581.74	9.65	2.84	9.65	0.10	0.03	-6.53	Keeper Drop MultiShot
1610.80	0.84	19.01	1610.74	10.07	2.94	10.07	0.21	-0.04	13.82	Keeper Drop MultiShot
1639.90	0.96	51.87	1639.83	10.43	3.20	10.43	0.55	0.13	34.42	Keeper Drop MultiShot
1668.90	0.99	5.30	1668.83	10.83	3.41	10.83	0.81	0.03	-48.95	Keeper Drop MultiShot
1698.00	1.05	16.09	1697.93	11.33	3.51	11.33	0.21	0.06	11.30	Keeper Drop MultiShot
1727.10	1.07	8.49	1727.02	11.86	3.62	11.86	0.15	0.02	-7.96	Keeper Drop MultiShot

Scientific Drilling (Australia)
Survey Report

Company:	Esso Australia Limited	**Date:** 15/04/2003	**Time:** 14:33:17	**Page:**	2
Field:	Bass Strait	**Co-ordinate(NE) Reference:**	Well: Scallop-1, Grid North		
Site:	Scallop	**Vertical (TVD) Reference:**	Sedco 702 RT 25.9		
Well:	Scallop-1	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	Scallop 1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey: Outrun 12-1/4" hole

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	VS m	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1756.10	0.97	37.88	1756.02	12.32	3.81	12.32	0.55	-0.11	30.89	Keeper Drop MultiShot
1785.10	1.64	8.97	1785.01	12.92	4.03	12.92	0.97	0.70	-30.39	Keeper Drop MultiShot
1814.20	1.49	355.64	1814.10	13.71	4.06	13.71	0.41	-0.16	-13.96	Keeper Drop MultiShot
1843.10	1.39	352.07	1842.99	14.43	3.99	14.43	0.14	-0.11	-3.77	Keeper Drop MultiShot
1871.80	1.36	10.96	1871.68	15.11	4.00	15.11	0.48	-0.03	20.06	Keeper Drop MultiShot
1900.90	1.42	5.91	1900.77	15.81	4.11	15.81	0.14	0.06	-5.29	Keeper Drop MultiShot
1930.10	1.06	350.75	1929.97	16.44	4.10	16.44	0.51	-0.38	-15.82	Keeper Drop MultiShot
1959.10	1.45	318.73	1958.96	16.98	3.82	16.98	0.83	0.41	-33.65	Keeper Drop MultiShot
1988.20	1.54	10.39	1988.05	17.64	3.64	17.64	1.37	0.09	54.11	Keeper Drop MultiShot
2017.30	1.50	350.44	2017.14	18.40	3.65	18.40	0.55	-0.04	-20.90	Keeper Drop MultiShot
2046.20	1.62	18.76	2046.03	19.16	3.72	19.16	0.81	0.13	29.87	Keeper Drop MultiShot
2075.30	1.40	356.86	2075.12	19.90	3.83	19.90	0.64	-0.23	-22.94	Keeper Drop MultiShot
2104.30	1.68	29.66	2104.11	20.63	4.02	20.63	0.96	0.29	34.47	Keeper Drop MultiShot
2133.10	1.45	11.55	2132.90	21.35	4.31	21.35	0.57	-0.24	-19.17	Keeper Drop MultiShot
2162.10	1.41	6.00	2161.89	22.06	4.42	22.06	0.15	-0.04	-5.83	Keeper Drop MultiShot
2191.20	1.38	355.52	2190.98	22.77	4.43	22.77	0.27	-0.03	-10.98	Keeper Drop MultiShot
2220.20	1.25	3.94	2219.97	23.43	4.42	23.43	0.24	-0.14	8.85	Keeper Drop MultiShot
2249.30	1.27	342.71	2249.07	24.06	4.35	24.06	0.49	0.02	-22.24	Keeper Drop MultiShot
2278.20	1.32	17.85	2277.96	24.68	4.35	24.68	0.83	0.05	37.06	Keeper Drop MultiShot
2307.20	1.42	358.33	2306.95	25.36	4.45	25.36	0.50	0.11	-20.52	Keeper Drop MultiShot
2336.30	1.52	359.27	2336.04	26.10	4.43	26.10	0.11	0.10	0.98	Keeper Drop MultiShot
2365.40	1.49	352.09	2365.13	26.86	4.37	26.86	0.20	-0.03	-7.52	Keeper Drop MultiShot
2394.50	1.39	344.11	2394.22	27.58	4.22	27.58	0.23	-0.10	-8.36	Keeper Drop MultiShot
2423.40	1.31	350.73	2423.12	28.24	4.08	28.24	0.18	-0.08	6.98	Keeper Drop MultiShot
2452.40	1.36	357.28	2452.11	28.91	4.01	28.91	0.17	0.05	6.88	Keeper Drop MultiShot
2481.20	1.28	8.12	2480.90	29.57	4.03	29.57	0.28	-0.08	11.47	Keeper Drop MultiShot
2510.20	1.31	3.41	2509.89	30.22	4.10	30.22	0.12	0.03	-4.95	Keeper Drop MultiShot
2539.10	1.30	359.16	2538.79	30.88	4.11	30.88	0.10	-0.01	-4.48	Keeper Drop MultiShot
2568.10	1.17	4.09	2567.78	31.51	4.13	31.51	0.18	-0.14	5.18	Keeper Drop MultiShot
2597.10	1.09	6.25	2596.77	32.08	4.18	32.08	0.10	-0.08	2.27	Keeper Drop MultiShot
2626.20	1.14	1.74	2625.87	32.64	4.22	32.64	0.11	0.05	-4.72	Keeper Drop MultiShot
2655.20	1.19	357.56	2654.86	33.23	4.22	33.23	0.10	0.05	-4.39	Keeper Drop MultiShot
2684.20	1.36	10.59	2683.85	33.87	4.27	33.87	0.35	0.18	13.69	Keeper Drop MultiShot
2713.10	1.15	121.25	2712.75	34.06	4.58	34.06	2.18	-0.22	116.71	Keeper Drop MultiShot
2742.10	1.26	336.84	2741.75	34.20	4.70	34.20	2.41	0.12	-151.78	Keeper Drop MultiShot
2771.10	1.18	349.21	2770.74	34.78	4.52	34.78	0.29	-0.08	13.00	Keeper Drop MultiShot
2800.10	1.12	286.24	2799.74	35.16	4.19	35.16	1.26	-0.06	-66.18	Keeper Drop MultiShot
2829.00	1.30	317.47	2828.63	35.48	3.70	35.48	0.71	0.19	32.94	Keeper Drop MultiShot
2858.00	1.13	327.90	2857.62	35.96	3.33	35.96	0.29	-0.18	10.96	Keeper Drop MultiShot
2887.00	1.27	345.20	2886.62	36.51	3.09	36.51	0.41	0.15	18.18	Keeper Drop MultiShot
2916.00	1.29	328.73	2915.61	37.10	2.84	37.10	0.39	0.02	-17.31	Keeper Drop MultiShot
2923.00	1.35	28.95	2922.61	37.24	2.84	37.24	5.77	0.26	262.22	Keeper Drop MultiShot

3.

QUALITY ASSURANCE

Scientific Drilling

KEEPER POST JOB VERIFICATION

SECTION A – TO BE COMPLETED BY SUPERVISOR OR SURVEY ENGINEER

Customer: Esso Australia Ltd. Location: Sedco 702 Well Name: Scallop-1

Keeper No: 015. Max Inc on Job: <2° Job No: 87K0203013

Azimuth at 20 deg: n/a Max. gyro temp on job: 184°f Surveyor on job: M. Milne

Field Cal on job : Di = −0.24 Ds = −0.32 ASF = −0.0009 StSF = −0.0012 Sbias = −0.0006 Temp = 100.7

Comments:

Initialisation Data: Gyro Temp: n/a Inclination: Azimuth:

Gyro toolface: Drop Keeper. No. of Readings: Settle/Fetch time:

SECTION B – TO BE COMPLETED BY THE PERSON INSPECTING KEEPER GYRO

Field cal -: Di = −0.16 Ds = −0.25 ASF = −0.0003 StSF = 0.0010 Sbias = −0.0064 Temp = 103.7°

Low Angle Mode: (initialise Keeper at same position as used for job)

Gyro Temp: 106.1°f Inclination: 0.48° Azimuth: 270.38 Gyro Toolface: 262.54 GTF SdM : 0.04

Inclination check:	OK: ☑	Fail : ☐	Max error: +0.046°
Azimuth check:	OK: ☑	Fail : ☐	Az error at 20 deg point: +0.070°
Drift Tuning:	OK: ☑	Faulty : ☐	Gyro Temp Start = 106.7° End = 102.5°

Comments:

Meets all post job Q.C.

High Speed Mode:

Inclination check:	OK: ☑	Fail : ☐	Max error: ±0.02°
Azimuth check:	OK: ☑	Fail : ☐	Max error: +0.130°
Drift Tuning:	OK: ☑	Faulty : ☐	Gyro Temp Start = 112.50° End = 111.9°

Comments:

KEEPER POST JOB CHECK

Pass : ☑ Fail : ☐ Signed: Date: 20th Feb 2003.

Scientific Drilling

QSF32

Scientific Drilling (Australia)

Keeper #: 015

KEEPER ACCEPTANCE

New Tool from ATA arrived on 2nd Feb 2003

Customer: Esso Australia Ltd.	Location: Scallop-1, Sedco 702.
Keeper Checked by: Simon Garantini	Date: 13th Feb 2003
Wireline Type: n/a – Drop Gyro	Wireline Company: n/a
Survey Inclination Range: nom 0°	Azimuth at 15 degrees: n/a

Job Type:(tick boxes)

Casing Survey ☐ Drillpipe/Tubing Survey ☑ Steering ☐ Single Shot ☐

Power Supply #: 23589	Test Stand#: 007	MSI #: 124	File Name: 0150214.bin

Field Cal Offsets (Previous or rig calibration)

DI = -0.02 DS = -0.06 ASF = -0.0016 St.SF= 0.0000 St.Bias = -0.0046 Temp = 109.9°

Field Cal Offsets (Post Calibration)

DI = -0.24 DS = -0.32 ASF = -0.0009 St.SF = -0.0012 St.Bias = -0.0006 Temp = 100.7

Results of Tests Done

Wireline Comms Test	YES / NO	PASS / FAIL	Max. Ohms =
CCL Test	YES / NO	PASS / FAIL	n/a
Gamma Test	YES / NO	PASS / FAIL	n/a

Low Angle Continuous Mode

Start Inclination = 0.51 Initialisation data in specification: YES / NO. GTF SDM : 0.10°

Max inclination error through run: = -0.042° Azimuth error at 15 degrees: +0.241°

High Speed Mode

Start Azimuth = 270.000 Final Azimuth = 270.114

Inclination Range from:: 20 to 90 Max error = -0.04 at 35° deg.

Azimuth range from: : 240 to 300 Max error = +0.114°

Comments: Tool reserved for Esso DG.

Keeper Checked By (signature):

This Keeper is within / outwith (*) specification and is acceptable for the job. If outwith specification, and the tool is to be used, a concession for use must be raised before shipping.

Manager/or his delegate (**signature**): Date: 13th Feb 2003

* delete as applicable

Firmware Version 4633650S *KCAL Version* 1.25.28T

Scientific Drilling

QTF32/Rev.02

KEEPER SURVEY Q.A. SUMMARY

Client:	Esso Australia Pty. Ltd.	Location:	Bass Strait
Job Number:	87K0203013	Personnel:	Martin Milne
Date:	18 Feb 2003	Latitude:	-38.214 deg
Well Number:	Sedco 702	Grid correction:	+0.98 deg
Keeper Number:	KPR015 & Mem 034	Slot coord N:	0.00m
Survey Interval:	907.8-2922 mtrs.	E:	0.00m

Field Calibration data:

	Office Calibration	Pre survey Cal.	Difference	Accept(Yes/No)
Accel Scale Factor	-0.0009	N/a	N/a	Yes
St Accel Scale Factor	-0.0012	N/a	N/a	Yes

Continuous Navigation Initialization Data: N/A – DROP GYRO

Measured Depth:	Inclination	Time	Number of readings
Computed ERH	GTF sample mean SD:	Gyro Temperature	Accept(Yes or No)

Tie in Data:

Survey Type	MD	TVD	Inclination	Azimuth	Latitude	Departure
Keeper gyro	907.8m	907.78m	0.39 deg	329.98	4.17 m	-1.31 m

Inrun vs Outrun Position Comparison at TD: No in run survey, drop Keeper gyro

	North/South	East/West	True Vertical Depth	Accept (Yes or No)
Inrun:				
Outrun:				
Difference:				

Depth Control:

Wireline Company:	CCL Used (Yes/No):	CCL Correction applied:
Wireline size/type:	Rezero:	Accept (Yes/No)

Survey Run time:

Release tool:	08:49
Complete pumping:	09:23
Begin survey:	09:25
End survey:	15:34
Lay down tool:	17:30

Survey Final Report :

Is Final report Different than the field report? No Yes → Why?

No

Comments / Problems:

No job or operational problems were encountered.

Scientific Drilling

KEEPER DATABASE SUMMARY

Well Details:

Client:	Esso Australia Pty. Ltd.	Location:	Bass Strait
Job Number:	87K0203013	Personnel:	M. Milne
Date:	18th Feb 2003	Depth datum:	Sedco RKB (MSL to RKB 25.90m)
Well Number:	Scallop-1	Water depth:	110 mtrs.
Rig:	Sedco 702	Latitude:	38 deg 12' 48.615" S
Keeper Number:	KPR #015, Mem #034	Longtitude:	147 deg 35' 28.879" E
Survey Interval:	907.8-2922 mtrs.	Grid correction:	0.98
Mud weight:	10.3 ppg	Slot coord N:	0.0m
Hole & DP size:	12 ¼"/ 5.5"	E:	0.0m

Wireline Details: N/A **Tool Details:**

Wireline Company:		Tool length:	8.0m
W/L Insulation(Mohms)		Max tool O.D.:	1 75"
W/L Resistance (ohms)		Gyro-zero point length:	3.0m
Wireline size/type:		Approx. Tool wt:	180lb

BHA / DP Details:

DP Size:	5 "
BHA Length:	377.28 mtrs.
Bit-Totco ring:	5.78
Bit-UBHO sub:	N/A
Bit-Top of Jars:	157.45 mtrs.
Minimum BHA ID:	2 .3/4"

Bench Test Details:

Primary tool:	KPR #015/MEM#034	Backup Tool:	KPR#042
Voltage:	N/A	Voltage:	
Current:	N/A	Current:	
Slew Voltage:	N/A	Slew Voltage:	
Slew Current:	N/A	Slew Current:	
Gyro temp (F):		Gyro temp (F):	

Equipment Details:

Computer:	Compaq	Computer (2):	PERSONNEL
Power Supply:	Direct	Power Supply (2):	
MSI:		MSI (2):	
Heatshield:		Heatshield:	
Transformer:	110V	Rig power supply (v):	240V
Tool Run Time:	9.50 hours		

Comments / Problems:

No job or operational problems were encountered.

Scientific Drilling

SURVEY PRE-JOB CHECKLIST

Client:	Esso Australia Ltd	Location:	Sedco 702, Bass Strait
Job Number:	87K0203013	Personnel:	M.Milne
Date:	18th February 2003	Latitude:	-38.214 deg

Job Checklist: (tick appropriate boxes)

- Pre-job Preparation [X]
- Function test tool & Field cal. [X]
- Clients Well Program [X]
- Pre-Spud Meeting Changes [ ]
- Pre Job Safety Meeting held [X]
- Keeper Database Summary [X]
- Keeper Survey QA Summary [X]
- Raw Data Printout [X]
- Comparison (MWD) survey data / BHA listing [X]
- Keeper Post Job Calibration check [X]
- Copy of Work Order / Job Ticket [X]
- Client end of well report completed [X]

Data Archiving:

- Master and Working Disks Filed [X]
- Report Files copied to Hard drive [X]
- Definitive Survey Archived [X]
- Disk Files copied to Hard drive [X]

Disk Labels Used

- Inrun or outrun presented : Outrun (DKG)

-Master disk label : Scallop.*

- Client disk label :

Scientific Drilling

Environmental Performance Indicators Report

ExxonMobil Development

Well:	Scallop-1	**Country:**	Australia
Rig:	Sedco 702	**On Location Date:**	01/02/2003 @ 03:30 hrs
Offshore or Onshore:	Offshore		* From last Location to dropping of First Anchor.

Emissions Data

Rig Fuel Consumption 5,144 gallons (U.S.)

* Excludes fuel used by supporting vessels (AHSV)

Environmental Regulatory Compliance Data

Exceedances reported to regulatory authorities*

No. to Air	Nil	No. to Water	Nil	No. of NOV's	Nil
No. to Land	Nil	Other	Nil		
No. R.Q. Exceedances	Nil			No. Fines	Nil
Total Exceedances	Nil			Fines Amount ($US)	Nil

Oil Spills* > 1 bbl.

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Chemical Spills* > 100 kg.

No. to Land	Nil	Vol. to Land	Nil	kgs.
No. to Water	Nil	Vol. to Water	Nil	kgs.

[Vol.(gal.)*Specific Gravity *(8.3 lbs./1 gal)*(1kg/2.2 lbs.)] =Mass(kg)

Drilling Fluid Spills* > 1 bbl.
(Indicate Water-Based or NAF)

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Report Water-Based Drilling Fluid Spills, regardless of volume, if reportable to a regulatory authority.

*Please send all spill (form D-020) or exceedance reports to Drilling Environmental Coordinator fax 281-654-4337

Waste Data

Drilling Fluid Type: Water-Based or *Non-Aqueous Fluid (**NAF**) --

*If NAF please indicate type (oil/mineral/synthetic) and trade name --

Drill Cuttings (Only complete for NAF drill cuttings discharged to sea)

NAF Drill Cuttings disposed at sea Vol. -- bbls. (use gauge hole volume) -- Wet Wt% NAF on Cuttings

Hazardous Waste (classified as Hazardous Waste by regulatory authorities)
Please see Instructions for more detail and examples.

Net Generated (lbs.)	Nil	External Recycled (lbs.)	Nil
Waste Type	Nil	Waste Type	Nil

Engineer: Rudolf M Fürchtenicht Eng. Manager: Colin Johancsik

Send completed copy to EMDC Drilling Environmental Coordinator and include copy in Final Well Report

ExxonMobil Development

Environmental Performance Indicators Report

Well:	Scallop-1	**Country:**	Australia
Rig:	Sedco 702	**FRR Date:**	04/03/2003 @ 00:00 hrs
Offshore or Onshore:	Offshore		* From First Anchor to Final Rig Release from Well Location.

Emissions Data Rig Fuel Consumption 138,098 gallons (U.S.)

* Excludes fuel used by supporting vessels (AHSV)

Environmental Regulatory Compliance Data

Exceedances reported to regulatory authorities*

No. to Air	Nil	No. to Water	Nil	No. of NOV's	Nil
No. to Land	Nil	Other	Nil		
No. R.Q. Exceedances	Nil			No. Fines	Nil
Total Exceedances	Nil			Fines Amount ($US)	Nil

Oil Spills* > 1 bbl.

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Chemical Spills* > 100 kg.

No. to Land	Nil	Vol. to Land	Nil	kgs.
No. to Water	Nil	Vol. to Water	Nil	kgs.

[Vol.(gal.)*Specific Gravity *(8.3 lbs./1 gal)*(1kg/2.2 lbs.)] =Mass(kg)

Drilling Fluid Spills* > 1 bbl.
(Indicate Water-Based or NAF)

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Report Water-Based Drilling Fluid Spills, regardless of volume, if reportable to a regulatory authority.

*Please send all spill (form D-020) or exceedance reports to Drilling Environmental Coordinator fax 281-654-4337

Waste Data

Drilling Fluid Type: Water-Based or *Non-Aqueous Fluid (**NAF**) Water Based

*If NAF please indicate type (oil/mineral/synthetic) and trade name --

Drill Cuttings (Only complete for NAF drill cuttings discharged to sea)

NAF Drill Cuttings disposed at sea Vol. -- bbls. (use gauge hole volume)

Wet Wt% NAF on Cuttings --

Hazardous Waste (classified as Hazardous Waste by regulatory authorities)
Please see Instructions for more detail and examples.

Net Generated (lbs.)	Nil	External Recycled (lbs.)	Nil
Waste Type	Nil	Waste Type	Nil

Engineer: Rudolf M Fürchtenicht Eng. Manager: Colin Johancsik

Send completed copy to EMDC Drilling Environmental Coordinator and include copy in Final Well Report

ExxonMobil Development

Environmental Performance Indicators Report

Well:	Scallop-1	**Country:**	Australia
Rig:	Sedco 702	**Off Hire Date:**	22/03/2003 @ 19:25 hrs
Offshore or Onshore:	Offshore		* From FRR to Demobilisation Point

Emissions Data — Rig Fuel Consumption: 40,672 gallons (U.S.)
* Excludes fuel used by supporting vessels (AHSV)

Environmental Regulatory Compliance Data

Exceedances reported to regulatory authorities*

No. to Air	Nil	No. to Water	Nil	No. of NOV's	Nil
No. to Land	Nil	Other	Nil		
No. R.Q. Exceedances	Nil			No. Fines	Nil
Total Exceedances	Nil			Fines Amount ($US)	Nil

Oil Spills* > 1 bbl.

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Chemical Spills* > 100 kg.

No. to Land	Nil	Vol. to Land	Nil	kgs.
No. to Water	Nil	Vol. to Water	Nil	kgs.

[Vol.(gal.)*Specific Gravity *(8.3 lbs./1 gal)*(1kg/2.2 lbs.)] =Mass(kg)

Drilling Fluid Spills* > 1 bbl.
(Indicate Water-Based or NAF)

No. to Land	Nil	Vol. to Land	Nil	bbls.
No. to Water	Nil	Vol. to Water	Nil	bbls.

Report Water-Based Drilling Fluid Spills, regardless of volume, if reportable to a regulatory authority.

*Please send all spill (form D-020) or exceedance reports to Drilling Environmental Coordinator fax 281-654-4337

Waste Data

Drilling Fluid Type: Water-Based or *Non-Aqueous Fluid (**NAF**) --
*If NAF please indicate type (oil/mineral/synthetic) and trade name --

Drill Cuttings (Only complete for NAF drill cuttings discharged to sea)

NAF Drill Cuttings disposed at sea Vol. -- bbls. (use gauge hole volume) -- Wet Wt% NAF on Cuttings

Hazardous Waste (classified as Hazardous Waste by regulatory authorities)
Please see Instructions for more detail and examples.

Net Generated (lbs.)	Nil	External Recycled (lbs.)	Nil
Waste Type	Nil	Waste Type	Nil

Engineer: Rudolf M Fürchtenicht   Eng. Manager: Colin Johancsik

Send completed copy to EMDC Drilling Environmental Coordinator and include copy in Final Well Report

ExxonMobil
Management of Change Summary

Well: Scallop-1
Country: Australia

MOC Number	Description & Reason for Change	Risk Mitigation Measures Implemented	Approved By	Date
1	Scallop-1 OIMS Bridging Document	N/A	D.L. Whiteman & G. A. Nash	31-Jan-03
2	Accepted use of a single compartment 26 bbl trip tank - exception to EMDC standard.	No additional risk mitigation measures implemented. Refer to MOC.	D. L. Whiteman	04-Feb-03
3	Deepening of TD to 3,230mMD as objective had not been encountered.	No additional risk mitigation measures implemented.	D. Schwebel	20-Feb-03
4	Approval to extend time between BOP Stack tests by 2 days.	No additional risk mitigation measures implemented.	D. L. Whiteman	22-Feb-03
5	Exemption from Goverment to continue with Logging Operations before Plugging & Abandoning the well due to Kill Line Failure on Subsea BOP Stack.	No additional risk mitigation measures implemented.	D. L. Whiteman	24-Feb-03

Recommendations for future drilling programs:

None.

Recommendations to upgrade the MOC system:

None.

Exceptions to ExxonMobil guidelines taken:

Regarding	Exception	Justification

ExxonMobil Development

DRILLING

DATE: January 31, 2003

Our Ref: DD:6953 CPM

TO: Glen Nash
Simon Grope
Andy Mills
Kummar Kuttan
Paul Owen
Frank Kratzer
Rudolf Furchtenicht
Colin Johancsik
Brent Levey

File: Scallop-1 File 2.4

CC: Daniel L. Whiteman

FROM: Chris Meakin

SUBJECT: Scallop-1 OIMS Bridging Document

Attached for reference is a copy of the approved Operations Integrity Management System (OIMS) Bridging Document for the Scallop-1 Exploration well.

Chris Meakin 31-Jan-2003

Chris Meakin

/Attach.

OPERATIONS INTEGRITY MANAGEMENT SYSTEM
BRIDGING DOCUMENT

SCALLOP-1

The objectives of this document are to:

- Specify organisational roles and responsibilities for Scallop-1;
- Document OIMS implementation for the program.

Table 1 defines the agreed roles and responsibilities for all activities involved in the project for each organisation involved.

The Operation Integrity Management System of the organisation responsible for taking the lead role in the activity will be the OIMS implemented.

For EMDC Drilling, Australia Offshore this will be the ExxonMobil Development Drilling Drilling OIMS Manual (latest edition);

For EMEC, Australia this will be the Esso Australia Pty Ltd OIMS Management System manual (latest edition), except for areas where this manual is silent, for example geoscience, where the ExxonMobil Australia Exploration OIMS Implementation Manual (latest edition) will apply.

Approved by: Daniel L. Whiteman Date: 30/1/2013

Daniel L. Whiteman
EMDC Field Drilling Manager

Approved by: G. A. Nash Date: 31/1/03

G.A. Nash
Gippsland Geoscience Manager

TABLE 1. Scallop-1 Roles and Responsibilities

Activity	EMEC Australia	EMDC Drilling Australia	EAPL Crisis Management Team	Other Groups (Law, Controllers, Tax, Public Affairs, SRO etc.)
P&B PLANNING & PROJECT BUDGET				
- Preliminary Timing & Cost Estimates	***Lead***	*S*		*S (RSG)*
DRILL WELL PROJECT				
- Project Assessment				
+ Geological Risk & Probabilistic Assessment	***Lead***			
+ Assess economic viability	***Lead***	*S*		*S (RSG,RT,Ops Tech,Planning)*
- Project Planning				
+ Exploration Well - Gate I review	***Lead***	*S*		
+ Exploration Well - Gate 2 review	***S***	***Lead***		
+ Project Description and Objectives	***Lead***	*S*		
o Prepare/submit *Exploration Well Team Charter*	***Lead***	*S*		*S as needed*
o Identify Primary Well Objectives / Scope of Operations (ie. Well Logging program)	***Lead***	*S (cost estimates, well design issues)*		*S as needed*
o Identify potential Contingent Operations (ie. Coring, Well Testing, Geological Sidetrack)	***Lead***	*S (cost estimates, well design issues)*		*S as needed*
+ Prepare/submit Exploration *Well Planning Checklist*	***Lead***			
- Drill Well Design				
+ Offset well review	*S*	***Lead***		
+ Drilling well design (i.e. casing, mud, BHA, drill string, hydraulics, bits)	*S*	***Lead***		
+ Drilling program	*S*	***Lead***		
+ AFE preparation	*S*	***Lead***		
+ AFE approval	***Lead***	*S*		
+ Material procurement	*S*	***Lead***		*S (Procurement)*
- Obtain necessary ExxonMobil & Joint Venture technical & budget approvals	***Lead***	*S*		

Lead = Lead Responsibility
O = Oversight
S = Support Role

TABLE 1. Scallop-1 Roles and Responsibilities

Activity	EMEC Australia	EMDC Drilling Australia	EAPL Crisis Management Team	Other Groups (Law, Controllers, Tax, Public Affairs, SRO etc.)
DRILL WELL OPERATIONS - SHE, OIMS & REGULATORY COMPLIANCE				
- Drilling SHE / OIMS				
+ Conduct Risk Assessment	*S*	***Lead***		
+ Prepare/submit *OIMS bridging document* (between EMEC, EMPC, EMDC & in country CMT as necessary for project)	*S*	***Lead***		
+ Prepare/submit Regulatory Plan.	***Lead***	*S*		*S as needed (SRO)*
+ Prepare/submit Environment Plan.	*S*	***Lead***		*S as needed (SRO)*
+ Prepare/submit Community Awareness Plan.	***Lead***	*S*		*S as needed (Public Affairs)*
+ Prepare/submit Final Well Report.	*S*	***Lead***		*S as needed*
+ Prepare/submit *Change Management Authority document - for EMEC Australia lead activities.*	***Lead***	*S*		*S as needed*
+ Prepare/submit *Change Management Authority document - for EMDC Drilling Australia lead activities.*	*S*	***Lead***		*S as needed*
- Regulatory Compliance / Permitting / Environmental Impact Assessment				
+ Identify Appropriate In-Country Regulations / Permits	***Lead***	*S*		
o Prepare/submit *Notice of Referral* to EA (as per EPBC)	*S*	***Lead***		*S (SRO)*
o Prepare/submit *Environmental Plan* (per PSLA)	*S*	***Lead***		*S (SRO)*
o Prepare/submit *Authorisation to Drill document*	***Lead***	*S*		
o Prepare/submit *Safety Case bridging document* (per PSLA) including bridging Emergency Response Plan	*S*	***Lead***		
o Prepare/submit *Application to Use MODU* (per PSLA)	*S*	***Lead***		
o Prepare/submit *Application to Move MODU* (per PSLA)	*S*	***Lead***		
o Prepare/submit *Approval to Drill letter, Drilling Program and Drilling Operations Manual (per PSLA)*	*S*	***Lead***		

Lead = Lead Responsibility
O = Oversight
S = Support Role

TABLE 1. Scallop-1 Roles and Responsibilities

Activity	EMEC Australia	EMDC Drilling Australia	EAPL Crisis Management Team	Other Groups (Law, Controllers, Tax, Public Affairs, SRO etc.)
o Prepare/submit *Application to P&A or C&S*	*S*	***Lead***		
o Prepare/submit *post-drill Well Completion report* (per PSLA)	***Lead***	*S*		
+ Obtain all necessary permits	***Lead***	*S*		
+ Regulatory / Permit Compliance during Operations	*S*	***Lead***		
+ Identify Procedures for Damage Compensation	*S*	*S*		***Lead***
o Compensation / Gov't Relations	*S*	*S*		***Lead***
- Drill Well Operations				
- Rig & 3rd Party Contracts (except as noted below[1])				
+ Funding Approval	***Lead***	*S*		
+ Contract Plan (SEQREQ) Development and Approval.	*S*	***Lead***		*S* *(Procurement)*
+ Technical Specification Preparation, Review and Approval.	*S*	***Lead***		*S*
+ Tender Planning, Preparation, Review and Approval.	*S*	*S*		***Lead (Procurement)***
+ Contract Development and Approval.	*S*	*S*		***Lead (Procurement)***
- Pre-Mobilization Planning	*S*	***Lead***		*S as needed*
+ Rig Operating Strategies	*S*	***Lead***		*S as needed*
- Field Operations	*S*	***Lead***		
+ Drilling & 3rd Party Contractor Management	*S*	***Lead***		*S as needed (Procurement)*
+ Incident Management including ERP	*S*	***Lead***	*S as needed*	*S as needed*
+ Project Schedule & AFE Stewardship	*O / S*	***Lead***		*S as needed*
- Invoice Processing				
+ Receive Invoice	*S*	*S*		***Lead (Accounts)***
+ Verify Prices	*S*	*S*		***Lead***

[1] For Mud Logging and Petrolab contracts EMDC will take the lead for Contract Administration but EMA Australia will provide the technical support. For the ACS and AIPC contracts EMA Australia will take the lead for both Contract Administration and technical support. EMA = ExxonMobil Australia Exploration group.

Lead = Lead Responsibility
O = Oversight
S = Support Role

TABLE 1. Scallop-1 Roles and Responsibilities

Activity	EMEC Australia	EMDC Drilling Australia	EAPL Crisis Management Team	Other Groups (Law, Controllers, Tax, Public Affairs, SRO etc.)
				(Accounts)
+ Verify Services Received	*S*	***Lead***		*S (Accounts)*
+ Process / Approve Invoice	*S*	*S*		***Lead (Accounts)***
- Post Drill Close Out (*Final Well Report)*	*S*	***Lead***		
IN-COUNTRY SERVICES EXCLUDING DRILLING ACTIVITIES (AVIATION, SECURITY, MEDICAL, PERMITTING, TECHNICAL DATA ACQUISITION, ETC.)				
- Contracting, EMEC lead activities	***Lead***	*S*		*S as needed (Procurement)*
- Contractor Management, EMEC lead activities	***Lead***	*S*		*S as needed (Procurement)*
- Technical Issues / Data Quality (EMEC Contractors)	***Lead***	*S*		*S as needed (Procurement)*
- Contracting, EMDC lead activities	*S*	***Lead***		*S as needed (Procurement)*
- Contractor Management, EMDC lead activities	*S*	***Lead***		*S as needed (Procurement)*
- Technical Issues / Data Quality (EMDC Contractors)	*S*	***Lead***		*S as needed (Procurement)*
INTERFACING (GOVERNMENT / PARTNERS / PRODUCTION)				
- Enhancing Government Relations	***Lead***	*S*		*S as needed (SRO)*
- Co-Venturer / Partner Relations	***Lead***	*S*	*S as needed*	*S as needed (SRO)*
- Community Relations	***Lead***	*S*	*S as needed*	*S as needed (Public Affairs)*
+ Community Awareness for Drilling Project (i.e. Fishing Community)	*S*	***Lead***		*S as needed (Public Affairs)*
- External Communications (Emergency)	*S*	*S*	***Lead***	
- Contribution Budget	***Lead***			

Lead = Lead Responsibility
O = Oversight
S = Support Role

Change Worksheet

WELL: Scallop-1 Exploration Well	**COUNTRY:** AUSTRALIA
RIG: TRANSOCEAN SEDCO 702 SEMISUBMERSIBLE	**DATE INITIATED:** 29/JANUARY/2003

TYPE OF CHANGE (CHECK ONE):

☐ **WELL DESIGN**	☐ **PERSONNEL**
☐ **DRILLING PROGRAM/PROCEDURE**	☐ **OPERATIONS MANUAL PROCEDURE**
☑ **CRITICAL EQUIPMENT/EQUIPMENT O&M**	☐ **RISK ASSESSMENT FOLLOW-UP**
☐ **RESPONSE TO UNEXPECTED EVENTS**	☐ **SPECIFICATION/STANDARD**

DESCRIPTION/REASON FOR CHANGE:

TRIP TANK

To use the Sedco 702 trip tank which has a single 26-bbl tank compartment and a single centrifugal pump with a pumping capacity of 3.3bpm. The trip tank has neither a 2" fill line or a direct return line to the mud tanks with the current setup (but the flow can be redirected while running into the well via the return flow line). This arrangement does not comply with the EMDC's Surface Blowout Prevention & Well Control Equipment Manual, Version July 2000, Section 7.0 standard's requirements as detailed below:

- The trip tank *shall* have a minimum capacity of 40 barrels divided into two compartments.
- Two centrifugal pumps, each capable of pumping 4 bpm of freshwater against a 30ft head, *shall* be installed in the trip tank suction manifold. One pump *shall* run continuously while pulling out of the hole.
- A 2" fill line *shall* be connected from the rig pumps or the rig centrifugal pumps to the trip tank with provisions for selective filling of tank compartments.
- A return line to the mud tanks *shall* be provided to permit selectively emptying of the trip tanks to facilitate measurement of fluid while going in the hole.

Scallop-1 is expected to take 31.0 days of which, approx. 27 days will be with the BOP Stacked nippled up. Sedco's Tripping procedures (keeping hole full at all times and monitoring & recording the trip tank on trips in/out of the hole), all zones are normally pressured. Any modification to the rig would be a significant cost and there are time constraints with having the modifications in place prior to drilling out the surface casing shoe.

NO CHANGE IS PROPOSED FOR THE USE OF THE RIG FOR THE SCALLOP-1 EXPLORATION WELL.

AS PER PAGE 3-24 OF THE EMDC DRILLING OIMS MANUAL (JANUARY, 2002) EXCEPTION **APPROVAL AUTHORITY FOR ALL OTHER BOP EQUIPMENT EXCEPTIONS:** FIELD DRILLING MANAGER.

RISK ASSESSMENT SUMMARY (USE RISK MATRIX - SEE ELEMENT 2 IN DRILLING OIMS MANUAL):

PROBABILITY: A ☐ B ☐ C ☐ D ☒ E ☐ **CONSEQUENCE:** I ☐ II ☐ III ☒ IV ☐

This change has been evaluated on the basis of "an influx into the wellbore". The use of a single compartment trip tank has the potential to marginally increase the probability of an influx (risked from E to D), but the existing preventative measures/mitigating plans for handling an influx have not changed/increased the consequence.

RISK MITIGATION MEASURES (PRESCRIBED PROGRAM LIMITS):

No additional risk mitigation measures are proposed.

TRAINING/COMMUNICATION REQUIRED TO IMPLEMENT CHANGE? ☑ **NO** ☐ **YES (DESCRIBE)**

No additional documentation is proposed.

PERMIT NOTIFICATIONS REQUIRED TO IMPLEMENT CHANGE? ☑**NO** ☐ **YES (DESCRIBE)**

NOTE: THIS IS AN EXCEPTION APPROVAL, NOT A SIGNIFICANT CHANGE INCREASING RISK.

EFFECTIVE **DATE:** 01/FEB/2003 **TIME:** 0000 HRS	**DURATION:** UNTIL 1/MAY/2003
INITIATED BY: RUDOLF M FÜRCHTENICHT	**REVIEWED BY:** FRANK W. KRATZER
APPROVED BY: DANIEL L. WHITEMAN	**DATE APPROVED:** ***ORIGINAL SIGNED BY DANIEL L. WHITEMAN***

INSTRUCTIONS:

This form may be used to document significant drilling and operating plan changes. A significant change is one that increases health, safety, public, environmental, or major financial risk; for example any change that will increase the probability of occurrence or increase the severity of consequences for a given risk scenario is considered significant. The individual initiating a change has responsibility for describing the change, assessing risks, ensuring mitigation measures are implemented and obtaining the necessary approvals. For additional information, see Element 7 - Management of Change in the Drilling OIMS Manual.

ExxonMobil Development

Drilling

SURFACE BLOWOUT PREVENTION AND WELL CONTROL EQUIPMENT MANUAL

July 2000

Click Anywhere on Page for Table of Contents

FOR COMPANY USE ONLY

Houston, Texas U.S.A.

7.0 TRIP TANK SPECIFICATIONS

7.1 GENERAL

In the past, most blowouts occurred due to swabbing or not keeping the hole filled while tripping the drill string out of the hole. To provide more exact fluid measurements for pipe displacement, trip tanks were developed to accurately measure within ± ½ barrel the fluid gain or loss from the wellbore. As the drill string is pulled from the hole, the mud level can drop due to the volume of metal being removed. If mud is not added to the hole as pipe is pulled, it is possible to reduce hydrostatic pressure to less than formation pressure. When this happens, a kick can occur. Swabbing can occur when pipe is pulled too fast, and friction between the pipe and the mud column causes a reduction in hydrostatic pressure to a value less than formation pressure.

To prevent loss of hydrostatic pressure, it is **required** to keep the hole full continuously, using a trip tank and to keep track of the fluid volume **required**. The metal volume of the pipe being pulled can be calculated, but mud additions necessary to replace hole seepage losses due to filtration effects can only be predicted by comparison to the mud volumes needed to keep the hole properly filled on previous trips. For this reason, it is **required** that a record of mud volume needed versus number of stands pulled be maintained on the rig in a trip book for every trip made.

It is **required** practice when using the pump-fill trip tank to accurately measure mud volume which flows from the well as the drill string is run back in the hole. In some instances, partial lost returns or swabbed-in gas have resulted in kicks while going in the hole. Also, plugged pipe which unplugs while going in the hole can result in a drop in the annular fluid level which allows the well to come in.

Use of a trip tank is **required** on all ExxonMobil wells. The trip tank **must** be operable prior to spud. The drilling program **will** specify whether ExxonMobil or the Contractor **will** furnish and maintain the trip tank for use on each well. Correct installation of the trip tank prior to spudding the well **shall** be verified by the ExxonMobil Drilling Supervisor.

There are two types of trip tank installations: the pump-fill trip tank and the gravity-fill trip tank.

7.2 PUMP-FILL TRIP TANK

Pump-fill trip tanks **must** be used on **all wells**. As illustrated in Figure 7-A, centrifugal pumps take suction from the trip tank and fill the hole through a line into the bell nipple. The pump runs constantly while the drill string is pulled from the hole. The hole stays full as each stand of pipe is pulled and excess mud returns to the trip tank through an outlet on the main flow line. A valve **must** be installed in the flow line downstream of this outlet to block all flow to the shale shakers while making a trip. This closed circulation system can be monitored with a float system and a digital readout in ½-barrel increments on the driller's console.

Component Description for Typical Pump-Fill Trip Tank (Figure 7-A)

1. The trip tank ***shall*** have a minimum capacity of 40 barrels divided into two compartments.
2. Each compartment ***shall*** be equipped with a float and a barrel marker (See Figure 7-C).
3. A pit level ***shall*** be installed with a recorder located near the driller.

4. Two centrifugal pumps, each capable of pumping 4 BPM of freshwater (8.33 ppg) against a 30 foot head, ***shall*** be installed in the trip tank suction manifold. One pump ***shall*** run continuously while pulling out of the hole.
5. A 3" minimum size line with full opening valves and a minimum working pressure of 125 psi ***shall*** be used as the fill line to the bell nipple.
6. A 4" or larger rubber hose or pipe ***shall*** be used for the return line from the bell nipple to the trip tank.
7. A 2" fill line ***shall*** be connected from rig pumps or rig centrifugal pumps to the trip tank with provisions for selective filling of tank compartments.
8. A return line to the mud tanks ***shall*** be provided to permit selectively emptying trip tanks to facilitate measurement of fluid while going in hole.
9. A 2" minimum size steel return line ***shall*** be installed from the downstream side of the choke manifold and also from the standpipe choke to the trip tank.

7.3 GRAVITY-FILL TRIP TANKS

The gravity-fill trip tank (Figure 7-B) **must** be located at an elevation where the bottom of the tank is above the kill line outlet on the BOP stack. **Using a gravity-fill trip tank on any well *requires* an exception approval.** While pulling out of the hole, drilling fluid flows, due to gravity, from the tank through the kill line to fill the hole.

Generally, a gravity-fill trip tank can only be installed on land rigs where the equipment can be properly located for gravity flow. This system may be inaccurate when used with high viscosity muds and due to solids which may plug the lines. Mud **must *never*** come out of the flow line on trips out of the hole unless the hole is swabbing or the well is flowing. Gravity fill trip tanks **shall** be periodically timed to determine the time **required** to drain two (2) barrels. This can be done each time the mud weight is changed. To insure that the trip tank fills the hole with mud at the same rate that steel volume (drill pipe and drill collars) is removed from the hole on trips, monitor fill to determine maximum pipe pulling speeds and verify on first trip out of the hole.

"Sedco 702 OIM" <sedco702@perth.deepwater.com>

30/01/03 20:15

To: <rudolf.m.furchtenicht@exxonmobil.com>
cc: "Blue O'Shea" <bo'shea@perth.deepwater.com>
Subject: Fw: Scallop-1 - Sedco 702 Trip Tanks

Trip tank is single compartment, circular design. Capacity 26bbl.

Is equipped.

Is installed.

One pump shall run continuously while pulling out of the hole.
One pump installed. Capacity 140 gpm
Pump is run continuously while POOH.

Confirmed.

Return line is flow line.

No.

No.

Confirm.

ExxonMobil

Exploration Change Management Form

Initiation

Date: 20-Feb-2003 Request No. 1/2003 (no/year)

Project: Scallop-1 Wildcat Well Location: Gippsland Basin, Victoria, Australia

Type of Change

- [x] Permanent
- [ ] Emergency
- [ ] Minor
- [ ] Urgent
- [ ] Temporary (Removal Date: N/A)

Nature of Change

- [x] Operations
- [ ] Equipment
- [ ] Haz. Material
- [ ] Personnel
- [ ] Procedures
- [ ] Parameters
- [ ] Regulatory/Permits
- [ ] Other

Description of change (Include current process):

Change of base case TD of 3,126m MD to an extended TD of 3,230m MD as outlined in letter to DPI dated 20th February, 2003 and email to VIC/RL2 JV 19th February

Currently, we are drilling ahead at approximately 3,035m MD. Our current interpretation is that we are at least 25m low to prognosis in relation to the top of our lowermost potential sealing volcanic/intrusive unit (ie the horizon '1st Volcanic' was expected to be intersected at 3,010m MD but has not yet been intersected. This will enable us to effectively test the prospective section beneath the base of the 1st Volcanic horizon.

NOTE:

If we encounter water wet sands between the base of 1st Volcanic and 3,126m MD we will **not** deepen the well beyond 3,126m MD. Similarly, if we deepen the well beyond 3,126m and only encounter water wet sands then the well will not be drilled all the way to 3,230m MD ie TD will be somewhere between 3,126m MD and 3,230m MD.

	Name (Print)	Signature	Date
Originated By:	Andy Zannetos	[signature]	20-Feb-03
Endorsed by:	Glen A. Nash	[signature]	20-Feb-03

Evaluation

Justification for change:

Adequately test prospective section beneath bse ist Volcanic horizon

Potential Consequences of Change (Positive and Negative):

Will allow definitive test of Scallop trap and seal

Cost impact - extra day to drill and possible bit trip = 2 days

Based on offset wells and mudlog/drilling parameters to date don't expect significant and sudden increase in pore pressure

Mitigation Steps and Special Precautions:

Pressure engineer on board and pressure log kept up to date

Training Required: [ ] Yes [x] No

If Yes, Describe:

Cost: AUS$700K gross AUS$175K EMNI (incremental cost above original dry hole program)

Does change increase risk? [ ] Yes [x] No (If Yes, attach copy of risk assessment)

Comments: refer Drilling Risk Assessment

ExxonMobil

Exploration Change Management Form

Approvals

	Name (Print)	Signature	Date:	Title/Company
Proposed By:	Andy Zannetos		20-Feb-03	Geoscientist Gippsland Geoscience EMEC Australia
Reviewed By:	Glen Nash		20-Feb-03	Project Manager Gippsland Geoscience EMEC Australia
Reviewed By:	Frank Kratzer		20-Feb-03	Drilling Operations Superintendent EMA Australia - Offshore Drilling
Endorsed By:	Dan Whiteman		20-Feb-03	Drilling Manager EMA Australia - Offshore Drilling
Approved By:	Doug Schwebel		20-Feb-03	Area Geoscience Manager EMEC Australia

Implementation

Change communicated to all parties involved: Initial: GAN Date: 21/2/03

Describe method of communication:

- Wellsite Geologist informed of change by Operations Geologist
- Company Man informed of change by Wellsite Geologist
- Drilling Superintendent informed of change by Operations Geologist

- Project Manager informed of change by Operations Geologist
- Area Geoscience Manager informed of change by Project Manager

Documentation changes completed: Initial: Date:

List documents changed: NONE

Training requirements completed: Initial: Date:

List training conducted: N/A

Regulatory/Permit requirements completed: Initial: Date:

Describe requirements: N/A

Proprietary

Close-Out

Temporary change completed: N/A		Initial:		Date:	
Return to Normal Operation	Date:				
Change Implementations Completed:		Initial:	JAN	Date:	23/2/03
Summary of Lesson Learned Completed:		Initial:		Date:	
List lessons learned:					

Note: Share Lessons Learned with Contractor and Client as appropriate.
Update Change Management Log.

Change Request Form Closed: Signature: JAN Date: 25/2/03

ESSO AUSTRALIA PTY LTD

TD Criteria Document

SCALLOP-1

PREPARED BY :

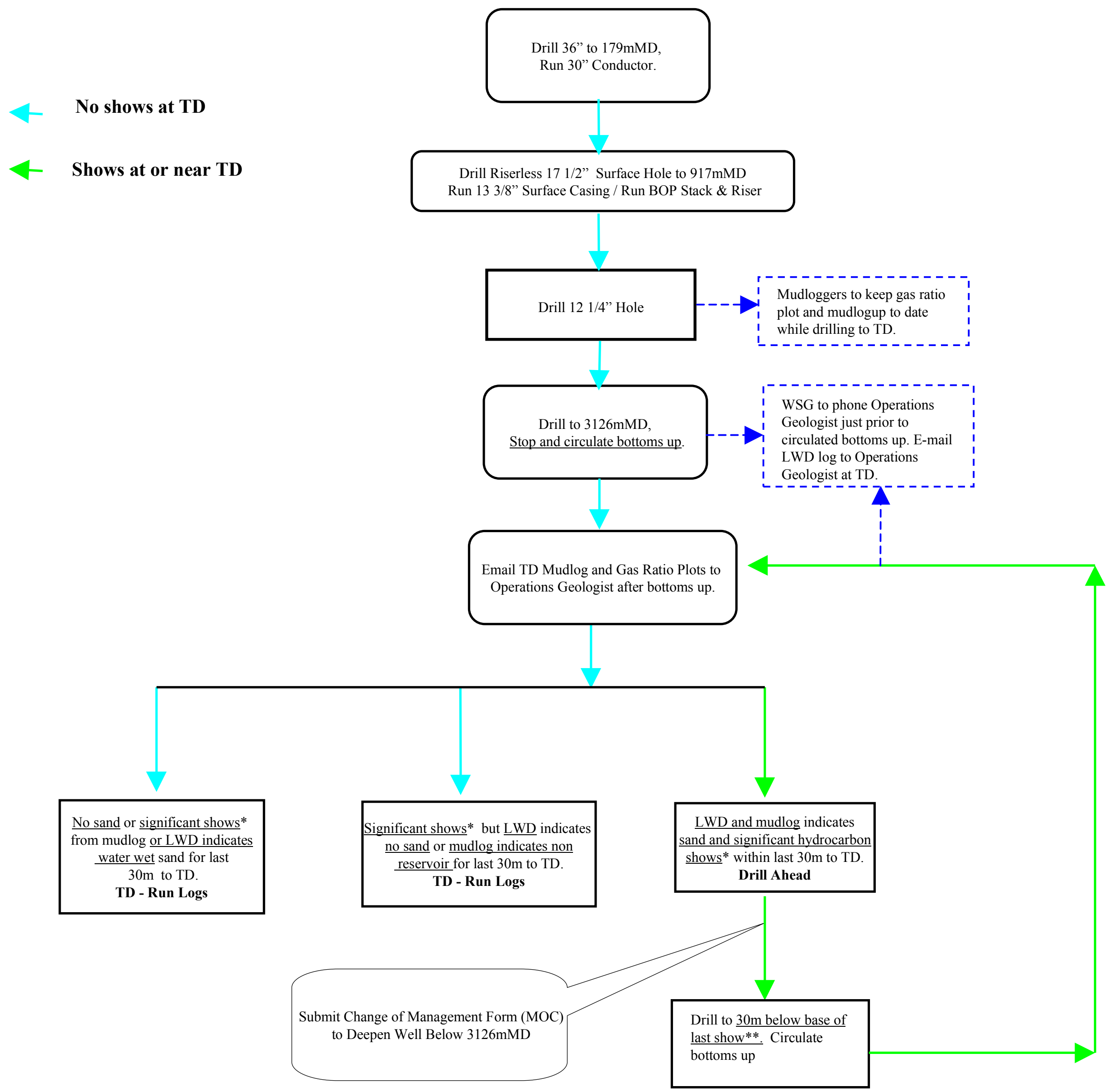
	S. Grope - Drillwell Coordinator
	G. Nash - Project Geologist
	K. Kuttan - Petrophysicist
	A. Hodgson - Operations Geologist

ENDORSED BY:

	D.A. Schwebel - Area Geoscience Manager
	G. A. Nash - Project Manager

TD at +/-3126mMD

Production
PM = Project Manager (G. Nash)
DWC = Drill Well Coordinator (S. Grope)
WSG = Wellsite Geologist



***Definition Of Significant Mudlog Shows:**
Gas reading 5 times or more over background.

**** Maximum of 60m to be drilled below T.D. before running logs.**

Approved: D.A Schwebel
Area Geoscience Manager

Daniel L Whiteman

22/02/03 11:51

To: George K Sharkey/U-Houston/ExxonMobil@xom
cc: Carla Santamaria/U-SouthPacific/ExxonMobil@xom, Frank W Kratzer/U-SouthPacific/ExxonMobil@xom, Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil@xom
Subject: Scallop-1 - DLW Approval for BOP Testing Extension

George .... you have my approval to extend the test period for BOP's on the Sedco 702 until midnight on 23rd of February. This would be an extension of 2 days. Also ok to go over the 300 hr BHA limit as required to prepare the well for logging and P&A. Thanks.

Dan Whiteman
EAPL Drilling Manager
Phone (613) 9270-3422; Fax (613) 9270-3546

"This message and any attachments may contain proprietary or confidential information. If you are not the intended recipient or you received the message in error, you must not use or distribute the message. Please notify the sender immediately and destroy the original message. Thank you."

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

24th February, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Dear Sir,

Subject: SCALLOP-1 : CONTINUING OF LOGGING & ABANDONMENT OPERATIONS WITH FAILED KILL LINE ON THE BOP STACK

Pursuant to the Petroleum (Submerged Lands) Act Clause 506 (1), Esso Australia Pty Ltd request dispensation from repairing the deficiency found when pressure testing the blowout prevention equipment on the Transocean semi-submersible "Sedco 702". With permission, we propose to continue with the planned logging and abandonment operations while in the process of sourcing the replacement parts to repair the failed kill line on the Lower Marine Riser Package (LMRP). Note that continued operations without repair would only apply to logging and P&A activity.

The primary functions of the kill line are to provide (i) a method of monitoring pressure below the Master Rams (lowest pipe rams) and (ii) a back up to the choke line.

Factors supporting this request for continued operations:

(a) A Task Risk Assessment (TRA) has been performed for the continued planned operations. This has been communicated and agreed to by all personnel offshore and by management.

(b) Planned open hole wireline and P&A operations would not present an increase in risk relative to the alternative of monitoring the well while sourcing the replacement parts.

(c) During logging operations, the shear rams would be used to shut-in (versus the Master Rams), so monitoring via the kill line would not be required.

(d) If there is a request to drill deeper or run casing, operations would NOT recommence until the kill line is fully functional and has been pressure tested.

(e) All the other BOP components were successfully pressure tested, including the two valves on the kill line side which were tested below the leak.

(f) The well has reached anticipated total depth.

(g) With 10.4 ppg mud in the well, the estimated overbalance is at least 850 psi (with 8.8 ppg pore pressure).

(h) Gas was not observed during the last wiper trip prior to the failure.

A sketch of the location of the failed kill line is attached for your reference.

Please contact Frank Kratzer on (03) 9270-3540 (e-mail: frank.w.kratzer@exxonmobil.com) if you require any further information.

Yours faithfully,
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Signature on file

Daniel L. Whiteman
Drilling Manager

bcc: D. Tyler (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

DLW
FWK
CAJ
EMF
File

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

24 February 2003
Our Ref: No; PE/16/0018

Mr Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
Melbourne 3001

SCALLOP - 1: APPROVAL TO CONTINUE LOGGING AND ABANDONMENT OPERATIONS WITH FAILED KILL LINE

I refer to your fax letter dated 24 February 2003 requesting the Designated Authority's approval to continue with the planned logging and abandonment operations while sourcing parts to repair the failed kill line on the lower marine riser package.

Under the provision of Clause 506 of the *Petroleum (Submerged Lands) Act, Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production in Waters under Commonwealth Jurisdiction-1997*, I hereby approve your proposal to continue with the planned operations.

Yours sincerely

HORACIO HAAG
Manager, Petroleum Operations Safety and Environment

Sedco 702 Barge Control Morning Report

Report No:	1	Location:	On Tow to Scallop #1	TRIR	1.64	Date:	29/01/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location		Towing Rig	Towing Rig
En route to	Scallop #1		
ETA			

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	M^3	989	307.9	0.0	0.4	348.0		1.0	333.0		0.3
Drill Water	M^3	887	397	0	0	290			200		
Pot Water	M^3	761	106	0	0	190			465		
Brine KCL	M^3	0	0	0	0	0			0		
NaCl	M^3	159	0	0	0	0			159		
Gel	SX	1772	0	0	0	820			952		
Cement	SX	1146	0	0	0	0			1146		
Barytes	SX	2351	0	0	0	970			1381		
Blend	FT3	0	0	0	0	0			0		
S.B.M	M^3	0	0.0	0.0	0.0	0.0			0.0		
Iso-Teq	M^3	0	0.0	0.0	0.0	0.0			0.0		
Heli Fuel	Ltrs	0	0	0	0	0.0			0.0		

P. Challenger		Metric
	Gel	37.2 T
	Cement	0.0 T
	Barytes	44.0 T
	Blend	0.0 T

Bulk Conversion

P. Frontier		Metric
	Gel	43.2 T
	Cement	48.3 T
	Barytes	62.6 T
	Blend	0.0 T

Rig				
Draft	M	6.4		
Deckload	M.T	1251		
DKLM 85 ft draft	M.T	-47		
Pitch	Deg	2.0°	x	10 secs
Roll	Deg	3.0°	x	9 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Dir(To)	Riser Ang	Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	0	Anchor # 5	0
Anchor # 2	0	Anchor # 6	0
Anchor # 3	0	Anchor # 7	0
Anchor # 4	0	Anchor # 8	0

Wind Direction	Deg	010°
Wind Speed	Knts	35
Max Wind Spd	Knts	35
Sea Direction	Deg	010°
Sea Height	Mtrs	3
Max Sea Height	Mtrs	3.0
Sea Period	Secs	5

Weather		Rain
Temp	°C	14° - 22°
Baro	hPa	998
Visibility	N.M	3
Swell Dir	Deg	220°
Swell Ht	Mtr	1.5
Max Ht	Mtr	1.5

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	8	1	9
Start Tours	3	1	4
LSIC	78	1	79

Drills	
Fire Drill	12-Jan-03
Abandon Rig	28-Jan-03
H2S Drill	01-Dec-02
Safety Meeting	19-Jan-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	40
Client	5
Total Marine	14
Service	7
Catering	9
Total	75

Helicopters	Times	On	Off

Various	
BOP Test	10-Jan-03
Rig Heading	131°
DKLM 70' draft	563 m.t
DKLM 60' draft	1316 m.t
Max Sea Period	5 secs

Comments: (1) Last anchor off the bottom was at 22:50 hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	2	Location:	On Tow to Scallop #1	TRIR	1.64	Date:	29/01/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location		Towing Rig	Towing Rig
En route to	Scallop #1		
ETA			

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	5860	1887	0	49	2006		131	1966		128
Drill Water	bbls	5465	2383	131	246	1824			1258		
Pot Water	bbls	4664	607	0	60	1164			2893		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	1772	0	0	0	820			952		
Cement	SX	1146	0	0	0	0			1146		
Barytes	SX	2351	0	0	0	970			1381		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Conversions	M^3	bbls
	20.8	131
	20.4	128

P. Frontier		M^3
	Fuel	312.6
	DW	200.0
	PW	460.0
	Brine	0.0

P. Challenger		M^3
	Fuel	319.0
	DW	290.0
	FW	185.0
	Brine	0.0

Rig				
Draft	Mtr	6.4		
Deckload	M.T	1212		
DKLM this draft	M.T	-9		
Pitch	Deg	1.5°	x	10 secs
Roll	Deg	1.0°	x	9 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	0	Anchor # 5	0
Anchor # 2	0	Anchor # 6	0
Anchor # 3	0	Anchor # 7	0
Anchor # 4	0	Anchor # 8	0

Wind Direction	Deg	270°
Wind Speed	Knts	30
Max Wind Spd	Knts	35
Sea Direction	Deg	270°
Sea Height	Mtrs	2.5
Max Sea Height	Mtrs	2.5
Sea Period	Secs	5

Weather		Fine
Temp	°C	16° - 21°
Baro	hPa	1004
Visibility	N.M	12
Swell Dir	Deg	225°
Swell Ht	Mtr	1.5
Max Ht	Mtr	1.5

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	9	1	10
Start Tours	4	1	5
LSIC	79	1	80

Drills	
Fire Drill	12-Jan-03
Abandon Rig	28-Jan-03
H2S Drill	01-Dec-02
Safety Meeting	19-Jan-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	41
Client	4
Total Marine	15
Service	12
Catering	9
Total	81

Helicopters	Times	On	Off
LAH	1140 / 1146	5	4
LAH	1540 / 1551	5	0

Various	
BOP Test	10-Jan-03
Rig Heading	095°
DKLM 70' draft	602 m.t
DKLM 60' draft	1355 m.t
Max Sea Period	5 secs

Comments: (1) For information only - Remaining on board is 3686 litres of Heli Fuel.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	3	Location:	On Tow to Scallop #1	TRIR	1.64	Date:	31/01/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location		Towing Rig	Towing Rig
En route to	Scallop #1		
ETA			

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	5520	1821	0	66	1852		154	1846		120
Drill Water	bbls	5288	2206	0	177	1824			1258		
Pot Water	bbls	4621	627	126	106	1132			2862		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	1772	0	0	0	820			952		
Cement	SX	1146	0	0	0	0			1146		
Barytes	SX	2351	0	0	0	970			1381		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Conversions	M^3	bbls

P. Frontier		M^3
	Fuel	293.5
	DW	200.0
	PW	455.0
	Brine	0.0

P. Challenger		M^3
	Fuel	294.5
	DW	290.0
	FW	180.0
	Brine	0.0

Rig				
Draft	Mtr	6.4		
Deckload	M.T	1212		
DKLM this draft	M.T	-9		
Pitch	Deg	1.0°	x	9 secs
Roll	Deg	2.0°	x	10 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	0	Anchor # 5	0
Anchor # 2	0	Anchor # 6	0
Anchor # 3	0	Anchor # 7	0
Anchor # 4	0	Anchor # 8	0

Wind Direction	Deg	260°
Wind Speed	Knts	25
Max Wind Spd	Knts	45
Sea Direction	Deg	260°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	3.0
Sea Period	Secs	5

Weather		Fine
Temp	°C	16° - 21°
Baro	hPa	1015
Visibility	N.M	12
Swell Dir	Deg	260°
Swell Ht	Mtr	2.0
Max Ht	Mtr	2.5

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	10	1	11
Start Tours	5	1	6
LSIC	80	1	81

Drills	
Fire Drill	12-Jan-03
Abandon Rig	28-Jan-03
H2S Drill	01-Dec-02
Safety Meeting	26-Jan-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	41
Client	4
Total Marine	15
Service	12
Catering	9
Total	81

Helicopters	Times	On	Off

Various	
BOP Test	10-Jan-03
Rig Heading	006°
DKLM 70' draft	602 m.t
DKLM 60' draft	1355 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	4	Location:	Scallop #1	TRIR	1.64	Date:	01/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location		At rig	At rig
En route to	Scallop #1		
ETA			

Lady Karri Ann	On hand	Disch.
Bar	0 sx	1752 sx
Gel	0 sx	541 sx
Cem	1000 sx	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5276	1787	0	34	1748		104	1740		106
Drill Water	bbls	3286	2531	1823	1497	0	1823		755		
Pot Water	bbls	4578	647	126	106	1101			2830		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	1843	891	1252	361	0	711		952		
Cement	SX	1146	0	0	0	0			1146		
Barytes	SX	3944	2563	2563	0	0	811		1381		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	276.7
	DW	120.0
	PW	450.0
	Brine	0.0

P. Challenger		M^3
	Fuel	277.9
	DW	0.0
	FW	175.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1689		
DKLM this draft	M.T	1408		
Pitch	Deg	0.3°	x	4 secs
Roll	Deg	0.3°	x	4 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	240
Anchor # 2	240	Anchor # 6	240
Anchor # 3	250	Anchor # 7	240
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	085°
Wind Speed	Knts	5
Max Wind Spd	Knts	18
Sea Direction	Deg	085°
Sea Height	Mtrs	0.2
Max Sea Height	Mtrs	2.2
Sea Period	Secs	2

Weather		Fine
Temp	°C	15° - 20°
Baro	hPa	1023
Visibility	N.M	12
Swell Dir	Deg	220°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	11	1	12
Start Tours	6	1	7
LSIC	81	1	82

Drills	
Fire Drill	12-Jan-03
Abandon Rig	28-Jan-03
H2S Drill	01-Dec-02
Safety Meeting	26-Jan-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	40
Client	4
Total Marine	15
Service	18
Catering	9
Total	86

Helicopters	Times	On	Off
EXZ	1148 / 1430	1	6

Various	
BOP Test	10-Jan-03
Rig Heading	006°
DKLM 70' draft	125 m.t
DKLM 60' draft	878 m.t
Max Sea Period	5 secs

Comments:

(1) Completed running anchors at 17:40 hrs.

(2) Pretensioned all anchors to 350 kips.

(3) Rig on location and tensions balanced at 20:43.

(4) First anchor down at 04:19 hrs

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 5	**Location:** Scallop #1	**TRIR** 1.64	**Date:** 02/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location		Barrys Beach	At rig
En route to	Scallop #1		
ETA		No Report	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5104	1686	0	102	1748			1671		69
Drill Water	bbls	6994	6994	4531	69	0			0	755	
Pot Water	bbls	2030	647	126	126	1101			283	2516	
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	1388	1388	671	174	0			0	671.0	
Cement	SX	711	711	1861	1150	0			0	1050	
Barytes	SX	3263	3263	1475	775	0			0	1475	
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Lady Karri Ann	On hand	Disch.
Cem	0 sx	811 sx
DW	600 T	200 T

P. Frontier	M^3
Fuel	265.6
DW	0.0
PW	45.0
Brine	0.0

P. Challenger	M^3
Fuel	277.9
DW	0.0
FW	175.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1887		
DKLM this draft	M.T	1246		
Pitch	Deg	0.3°	x	4 secs
Roll	Deg	0.3°	x	4 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	230	Anchor # 6	240
Anchor # 3	240	Anchor # 7	240
Anchor # 4	230	Anchor # 8	250

Wind Direction	Deg	075°
Wind Speed	Knts	30
Max Wind Spd	Knts	35
Sea Direction	Deg	075°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	3.0
Sea Period	Secs	4

Weather		Fine
Temp	°C	17° - 19°
Baro	hPa	1019
Visibility	N.M	12
Swell Dir	Deg	260°
Swell Ht	Mtr	0.6
Max Ht	Mtr	0.6

Personnel — This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	12	1	13
Start Tours	7	1	8
LSIC	82	1	83

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	40
Client	6
Total Marine	15
Service	21
Catering	9
Total	91

Helicopters	Times	On	Off
EXZ	1047 / 1059	7	2
EXZ	1540 / 1543	0	1

Various	
BOP Test	10-Jan-03
Rig Heading	209°
DKLM 70' draft	-73 m.t
DKLM 60' draft	680 m.t
Max Sea Period	4 secs

Comments: (1) Lady Karri Ann departed rig at 17:30 hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	6	Location:	Scallop #1	TRIR	1.64	Date:	03/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At rig
En route to		Sedco 702	
ETA		04:00 hrs / 4 th	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	4887	1528	0	158	1748			1611		60
Drill Water	bbls	5714	5714	0	1280	0			0		
Pot Water	bbls	2019	667	126	106	1101			252		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	1123	1123	0	265	0			0		
Cement	SX	711	711	0	0	0			0		
Barytes	SX	3263	3263	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	256.1
DW	0.0
PW	40.0
Brine	0.0

P. Challenger	M^3
Fuel	277.9
DW	0.0
FW	175.0
Brine	0.0

Rig			
Draft	Mtr	25.91	
Deckload	M.T	1976	
DKLM this draft	M.T	1142	
Pitch	Deg	0.3°	x 7 secs
Roll	Deg	0.3°	x 7 secs
Heave	Mtr	n/a	x 0 secs
Riser Tension	Kips	0	

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	230	Anchor # 6	250
Anchor # 3	240	Anchor # 7	250
Anchor # 4	230	Anchor # 8	260

Wind Direction	Deg	055°
Wind Speed	Knts	32
Max Wind Spd	Knts	35
Sea Direction	Deg	055°
Sea Height	Mtrs	3
Max Sea Height	Mtrs	3.0
Sea Period	Secs	5

Weather		Fine
Temp	°C	19° - 26°
Baro	hPa	1021
Visibility	N.M	12
Swell Dir	Deg	240°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel — This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	0	1	1
Start Tours	0	1	1
LSIC	83	1	84

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	39
Client	5
Total Marine	14
Service	22
Catering	9
Total	89

Helicopters	Times	On	Off
EXZ	1400 / 1410	8	8
EXZ	1610 / 1619	2	4

Various	
BOP Test	10-Jan-03
Rig Heading	209°
DKLM 70' draft	-162 m.t
DKLM 60' draft	591 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	7	Location:	Scallop #1	TRIR	1.64	Date:	04/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5628	1382	0	147	2635		119	1611		
Drill Water	bbls	6047	3846	0	1869	2201			0		
Pot Water	bbls	2196	686	132	112	1258			252		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	705	705	0	418	0			0		
Cement	SX	2982	2982	2271	0	0			0		
Barytes	SX	1066	1066	0	2197	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	256.1
DW	0.0
PW	40.0
Brine	0.0

P. Challenger	M^3
Fuel	419.0
DW	350.0
FW	200.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1994		
DKLM this draft	M.T	1108		
Pitch	Deg	0.3°	x	7 secs
Roll	Deg	0.3°	x	7 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	225	Anchor # 6	250
Anchor # 3	230	Anchor # 7	260
Anchor # 4	230	Anchor # 8	260

Wind Direction	Deg	030°
Wind Speed	Knts	22
Max Wind Spd	Knts	35
Sea Direction	Deg	030°
Sea Height	Mtrs	1
Max Sea Height	Mtrs	2.5
Sea Period	Secs	4

Weather		Fine
Temp	°C	00° - 19°
Baro	hPa	1014
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	0.5
Max Ht	Mtr	0.5

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	1	1	2
Start Tours	1	1	2
LSIC	84	1	85

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	39
Client	5
Total Marine	14
Service	21
Catering	9
Total	88

Helicopters	Times	On	Off
EXZ	1305 / 1308	0	1

Various	
BOP Test	10-Jan-03
Rig Heading	209°
DKLM 70' draft	-180 m.t
DKLM 60' draft	573 m.t
Max Sea Period	5 secs

Comments:

(1) Pacific Challenger arrived at rig at 04:40 hrs.

(2) Pacific Frontier departed rig at 10:00 hrs. ETA BBMT 22:00 hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 8	Location: Scallop #1	TRIR 1.64	Date: 05/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier	
Location	Scallop #1	At rig	At rig	
En route to				
ETA				

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5404	2293	944	33	1638	944	54	1474		187
Drill Water	bbls	6972	5337	2200	709	0	2200		1635		
Pot Water	bbls	4009	706	113	93	1227			2076		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	705	705	0	0	0			0		
Cement	SX	884	884	0	2098	0			0		
Barytes	SX	4066	1066	0	0	0			3000		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	234.3
	DW	260.0
	PW	330.0
	Brine	0.0

P. Challenger		M^3
	Fuel	260.4
	DW	0.0
	FW	195.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1778		
DKLM this draft	M.T	1275		
Pitch	Deg	0.3°	x	7 secs
Roll	Deg	0.3°	x	7 secs
Heave	Mtr	n/a	x	0 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	n/a	n/a	n/a	n/a
24:00	n/a	n/a	n/a	n/a

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	240
Anchor # 2	230	Anchor # 6	240
Anchor # 3	240	Anchor # 7	240
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	210°
Wind Speed	Knts	3
Max Wind Spd	Knts	15
Sea Direction	Deg	210°
Sea Height	Mtrs	0.2
Max Sea Height	Mtrs	0.5
Sea Period	Secs	2

Weather		Hazy
Temp	°C	19° - 25°
Baro	hPa	1017
Visibility	N.M	2
Swell Dir	Deg	225°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	2	1	3
Start Tours	2	1	3
LSIC	85	1	86

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	27-Dec-02
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	39
Client	5
Total Marine	14
Service	19
Catering	9
Total	86

Helicopters	Times	On	Off
EXZ	1537 / 1543	0	2

Various	
BOP Test	10-Jan-03
Rig Heading	209°
DKLM 70' draft	36 m.t
DKLM 60' draft	789 m.t
Max Sea Period	3 secs

Comments: (1) Pacific Frontier arrived at rig at 23:59 hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	9	Location:	Scallop #1	TRIR	1.64	Date:	06/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	
En route to			BBMT
ETA			0800 hrs / 7 th

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	P. Challenger On Hand	P. Challenger Disch	P. Challenger Used	P. Frontier On Hand	P. Frontier Disch	P. Frontier Used
Fuel	bbls	5257	2239	0	54	1609		29	1409		65
Drill Water	bbls	6720	6720	3080	1697	0			0	1633	
Pot Water	bbls	2491	667	113	153	1195			629	1447	
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	705	705	0	0	0			0		
Cement	SX	884	884	0	0	0			0		
Barytes	SX	3630	3630	2755	191	0			0	2755	
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	224.0
DW	0.0
PW	100.0
Brine	0.0

P. Challenger	M^3
Fuel	255.8
DW	0.0
FW	190.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1906		
DKLM this draft	M.T	1197		
Pitch	Deg	0.2°	x	5 secs
Roll	Deg	0.2°	x	5 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	n/a	n/a	n/a	n/a
08:00	n/a	n/a	n/a	n/a
12:00	n/a	n/a	n/a	n/a
16:00	n/a	n/a	n/a	n/a
20:00	1.30 m	134 °	0.9 °	226 °
24:00	1.40 m	180 °	1.0 °	215 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	250
Anchor # 2	240	Anchor # 6	240
Anchor # 3	260	Anchor # 7	260
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	060°
Wind Speed	Knts	30
Max Wind Spd	Knts	35
Sea Direction	Deg	060°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	2.5
Sea Period	Secs	5

Weather		Fine
Temp	°C	20° - 24°
Baro	hPa	1015
Visibility	N.M	10
Swell Dir	Deg	045°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel: This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	3	1	4
Start Tours	3	1	4
LSIC	86	1	87

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	8
Total Marine	15
Service	18
Catering	9
Total	87

Helicopters	Times	On	Off
EXZ	1056 / 1100	1	0
EXZ	1309 / 1315	5	6
EXZ	1325 / 1331	5	7
EXZ	1553 / 1559	4	1

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-92 m.t
DKLM 60' draft	661 m.t
Max Sea Period	5 secs

Comments:

(1) Pacific Frontier departed rig at 22:07 hrs. ETA BBMT 08:00 hrs / 7th.

(2) Lifeboats #1 and #2 launched and taken for test run.

(3) Man overboard Drill conducted today. Pacific Frontier FRC used for rescue.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	10	Location:	Scallop #1	TRIR	1.64	Date:	07/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	No report
En route to			Sedco 702
ETA			03:00 hrs / 8 th

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5165	2181	0	58	1575		34	1409		
Drill Water	bbls	5880	5880	0	840	0			0		
Pot Water	bbls	2459	667	113	113	1164			629		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	124	0			0		
Cement	SX	884	884	0	0	0			0		
Barytes	SX	3630	3630	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	224.0
	DW	0.0
	PW	100.0
	Brine	0.0

P. Challenger		M^3
	Fuel	250.4
	DW	0.0
	FW	185.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1855		
DKLM this draft	M.T	1212		
Pitch	Deg	0.2°	x	5 secs
Roll	Deg	0.2°	x	5 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.30 m	175 °	1.0 °	208 °
08:00	1.30 m	131 °	0.8 °	171 °
12:00	1.30 m	142 °	0.5 °	225 °
16:00	0.90 m	128 °	0.9 °	230 °
20:00	0.50 m	204 °	0.8 °	161 °
24:00	0.60 m	060 °	0.9 °	202 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	240	Anchor # 6	250
Anchor # 3	260	Anchor # 7	250
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	260°
Wind Speed	Knts	20
Max Wind Spd	Knts	20
Sea Direction	Deg	260°
Sea Height	Mtrs	0.8
Max Sea Height	Mtrs	0.8
Sea Period	Secs	4

Weather		Overcast
Temp	°C	19° - 22°
Baro	hPa	1016
Visibility	N.M	12
Swell Dir	Deg	225°
Swell Ht	Mtr	1.0
Max Ht	Mtr	2.0

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	4	1	5
Start Tours	4	1	5
LSIC	87	1	88

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	19
Catering	9
Total	85

Helicopters	Times	On	Off
EXZ	1530 / 1542	6	8
EXZ	1705 / 1711	6	6

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-41 m.t
DKLM 60' draft	712 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	11	Location:	Scallop #1	TRIR	1.64	Date:	08/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At rig
En route to		BBMT	
ETA		1100 hrs / 9 th	

Calculator		
M3	to	bbls
	=	
400	=	**2516 bbls**
	=	

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	5620	2081	0	101	1538		37	2001		
Drill Water	bbls	7137	7137	2514	1257	0			0	2514	
Pot Water	bbls	3643	686	107	87	1132			1824		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	940	0	0			0	940	
Barytes	SX	3018	3018	0	612	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	318.1
	DW	0.0
	PW	290.0
	Brine	0.0

P. Challenger		M^3
	Fuel	244.6
	DW	0.0
	FW	180.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1888		
DKLM this draft	M.T	1168		
Pitch	Deg	0.2°	x	5 secs
Roll	Deg	0.2°	x	6 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Dir(To)	Riser Ang	Dir
04:00	1.20 m	132 °	0.5 °	134 °
08:00	0.70 m	150 °	0.6 °	298 °
12:00	0.80 m	150 °	0.5 °	202 °
16:00	1.50 m	216 °	1.0 °	211 °
20:00	1.60 m	191 °	0.9 °	132 °
24:00	1.00 m	180 °	1.1 °	241 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	240	Anchor # 6	250
Anchor # 3	240	Anchor # 7	240
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	090°
Wind Speed	Knts	25
Max Wind Spd	Knts	25
Sea Direction	Deg	090°
Sea Height	Mtrs	1.8
Max Sea Height	Mtrs	1.8
Sea Period	Secs	4

Weather		Rain
Temp	°C	16° - 23°
Baro	hPa	1017
Visibility	N.M	6
Swell Dir	Deg	160°
Swell Ht	Mtr	2.0
Max Ht	Mtr	2.0

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	5	7	12
Start Tours	5	1	6
LSIC	88	1	89

Drills	
Fire Drill	12-Jan-03
Abandon Rig	02-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	02-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	15
Catering	9
Total	81

Helicopters	Times	On	Off
EXK	1530 / 1535	0	4

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-74 m.t
DKLM 60' draft	679 m.t
Max Sea Period	5 secs

Comments:

(1) Pacific Challenger departed rig at 2305 hrs. ETA BBMT 1100 hrs / 9 th

(2) No Fuel usage for P. Frontier as how much loaded not known. Will get figure tomorrow.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	12	Location:	Scallop #1	TRIR	1.64	Date:	09/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	BBMT	At rig
En route to			
ETA		No Report	

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5459	1926	0	154	1538			1994		7
Drill Water	bbls	6246	6246	0	891	0			0		
Pot Water	bbls	3631	706	113	93	1132			1793		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3018	3018	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	317.1
	DW	0.0
	PW	285.0
	Brine	0.0

P. Challenger		M^3
	Fuel	244.6
	DW	0.0
	FW	180.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1766		
DKLM this draft	M.T	1294		
Pitch	Deg	0.2°	x	4 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	10 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	2.00 m	201 °	0.8 °	220 °
08:00	1.50 m	214 °	1.0 °	209 °
12:00	1.60 m	204 °	0.9 °	239 °
16:00	0.90 m	216 °	0.6 °	174 °
20:00	0.60 m	138 °	0.6 °	248 °
24:00	0.40 m	120 °	0.5 °	197 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	250
Anchor # 2	240	Anchor # 6	240
Anchor # 3	270	Anchor # 7	250
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	195°
Wind Speed	Knts	12
Max Wind Spd	Knts	25
Sea Direction	Deg	195°
Sea Height	Mtrs	0.5
Max Sea Height	Mtrs	2.0
Sea Period	Secs	3

Weather		Fine
Temp	°C	18° - 23°
Baro	hPa	1013
Visibility	N.M	4
Swell Dir	Deg	260°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.5

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	12	12	24
Start Tours	6	1	7
LSIC	89	1	90

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	15
Catering	9
Total	81

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	48 m.t
DKLM 60' draft	801 m.t
Max Sea Period	5 secs

Comments: (1) Drills conducted today were, Heli Deck Fire, Emergency Ballast Control, Abandon Rig Drill and Fire Drill.

(2) Pacific Frontier used 113 bbls of F.O yesterday 8th.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	14	Location:	Scallop #1	TRIR	1.64	Date:	10/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At rig
En route to		Sedco 702	
ETA		0300 hrs / 11 th	

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5266	1755	0	171	1538			1972		22
Drill Water	bbls	6269	6269	1257	1234	0			0		
Pot Water	bbls	2342	706	120	120	1132			503		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3018	3018	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	313.6
	DW	0.0
	PW	80.0
	Brine	0.0

P. Challenger		M^3
	Fuel	244.6
	DW	0.0
	FW	180.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1762		
DKLM this draft	M.T	1304		
Pitch	Deg	0.2°	x	4 secs
Roll	Deg	0.2°	x	5 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.70 m	173 °	0.5 °	207 °
08:00	1.30 m	166 °	0.6 °	236 °
12:00	0.50 m	194 °	0.4 °	210 °
16:00	0.80 m	160 °	0.2 °	130 °
20:00	0.70 m	145 °	0.4 °	100 °
24:00	1.00 m	203 °	0.1 °	078 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	260°
Wind Speed	Knts	10
Max Wind Spd	Knts	20
Sea Direction	Deg	260°
Sea Height	Mtrs	0.3
Max Sea Height	Mtrs	0.8
Sea Period	Secs	3

Weather		Cloudy
Temp	°C	16° - 19°
Baro	hPa	1016
Visibility	N.M	12
Swell Dir	Deg	240°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	24	0	24
Start Tours	7	1	8
LSIC	90	1	91

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	5
Total Marine	15
Service	13
Catering	9
Total	80

Helicopters	Times	On	Off
EXN	1316 / 1321	10	6
EXW	1325 / 1332	0	5

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	52 m.t
DKLM 60' draft	805 m.t
Max Sea Period	4 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	15	Location:	Scallop #1	TRIR	1.64	Date:	11/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	
En route to			BBMT
ETA			0800 hrs / 12 th

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5248	1615	0	141	1661		192	1972		
Drill Water	bbls	7722	5206	0	1063	2516			0		
Pot Water	bbls	2413	746	126	86	1164			503		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	4745	2945	0	73	1800			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	313.6
	DW	0.0
	PW	80.0
	Brine	0.0

P. Challenger		M^3
	Fuel	264.0
	DW	400.0
	FW	185.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1828		
DKLM this draft	M.T	1243		
Pitch	Deg	0.2°	x	4 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.70 m	286 °	0.3 °	205 °
08:00	0.50 m	123 °	1.0 °	241 °
12:00	1.10 m	184 °	0.6 °	223 °
16:00	1.20 m	170 °	0.9 °	222 °
20:00	0.70 m	180 °	0.8 °	255 °
24:00	1.00 m	225 °	0.7 °	235 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	250

Wind Direction	Deg	110°
Wind Speed	Knts	10
Max Wind Spd	Knts	15
Sea Direction	Deg	110°
Sea Height	Mtrs	0.3
Max Sea Height	Mtrs	0.5
Sea Period	Secs	3

Weather		Fine
Temp	°C	19° - 21°
Baro	hPa	1013
Visibility	N.M	12
Swell Dir	Deg	225°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	24	8	32
Start Tours	8	1	9
LSIC	91	1	92

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	5
Total Marine	15
Service	13
Catering	9
Total	80

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-14 m.t
DKLM 60' draft	739 m.t
Max Sea Period	3 secs

Comments:

(1) Pacific Challenger arrived at rig at 03:00 hrs.

(2) Pacific Frontier departed rig for BBMT at 17:55. ETA 08:00 hrs / 12 th.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 16	Location: Scallop #1	TRIR 1.64	Date: 12/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	5059	1453	0	161	1633		28	1972		
Drill Water	bbls	5886	5886	2514	1834	0	2514		0		
Pot Water	bbls	2422	786	138	98	1132			503		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3970	2170	0	775	1800			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	313.6
	DW	0.0
	PW	80.0
	Brine	0.0

P. Challenger		M^3
	Fuel	259.6
	DW	0.0
	FW	180.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1877		
DKLM this draft	M.T	1209		
Pitch	Deg	0.2°	x	4 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Dir(To)	Riser Ang	Dir
04:00	1.10 m	166 °	0.7 °	226 °
08:00	1.00 m	131 °	0.6 °	209 °
12:00	0.80 m	131 °	0.9 °	212 °
16:00	1.20 m	148 °	0.7 °	205 °
20:00	1.60 m	154 °	0.7 °	220 °
24:00	1.80 m	150 °	0.9 °	219 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	250
Anchor # 2	240	Anchor # 6	240
Anchor # 3	270	Anchor # 7	250
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	320°
Wind Speed	Knts	10
Max Wind Spd	Knts	12
Sea Direction	Deg	320°
Sea Height	Mtrs	0.3
Max Sea Height	Mtrs	0.5
Sea Period	Secs	3

Weather		Fine
Temp	°C	18° - 22°
Baro	hPa	1012
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	32	8	40
Start Tours	9	1	10
LSIC	92	1	93

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	5
Total Marine	15
Service	13
Catering	9
Total	80

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-63 m.t
DKLM 60' draft	690 m.t
Max Sea Period	3 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	17	Location:	Scallop #1	TRIR	1.64	Date:	13/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	4863	1304	0	150	1587		46	1972		
Drill Water	bbls	4126	4126	0	1760	0			0		
Pot Water	bbls	2285	826	132	92	956			503		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3766	1966	0	204	1800			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	313.6
	DW	0.0
	PW	80.0
	Brine	0.0

P. Challenger		M^3
	Fuel	252.3
	DW	0.0
	FW	152.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1850		
DKLM this draft	M.T	1230		
Pitch	Deg	0.3°	x	6 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	11 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.10 m	175 °	0.5 °	161 °
08:00	0.70 m	125 °	0.5 °	172 °
12:00	1.30 m	142 °	0.4 °	201 °
16:00	1.00 m	135 °	0.4 °	306 °
20:00	0.20 m	127 °	0.7 °	280 °
24:00	0.90 m	178 °	0.7 °	201 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	230°
Wind Speed	Knts	8
Max Wind Spd	Knts	25
Sea Direction	Deg	230°
Sea Height	Mtrs	0.5
Max Sea Height	Mtrs	2.5
Sea Period	Secs	3

Weather		Fine
Temp	°C	00° - 16°
Baro	hPa	1016
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	40	5	45
Start Tours	10	1	11
LSIC	93	1	94

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	7
Total Marine	15
Service	12
Catering	9
Total	81

Helicopters	Times	On	Off
EXW	1327 / 1337	7	6
EXZ	1339 / 1346	6	6

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-36 m.t
DKLM 60' draft	717 m.t
Max Sea Period	3 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	18	Location:	Scallop #1	TRIR	1.64	Date:	14/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	
En route to			Sedco 702
ETA			06:00 hrs / 15 th

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5224	1144	0	160	1581		6	2498		84
Drill Water	bbls	5075	3251	0	874	0			1824		
Pot Water	bbls	4244	866	126	86	925			2453		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3400	3400	1523	89	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier	M^3
Fuel	397.2
DW	290.0
PW	390.0
Brine	0.0

P. Challenger	M^3
Fuel	251.4
DW	0.0
FW	147.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1923		
DKLM this draft	M.T	1158		
Pitch	Deg	0.2°	x	5 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	10 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.60 m	132 °	0.6 °	220 °
08:00	0.50 m	156 °	0.8 °	222 °
12:00	0.80 m	141 °	0.2 °	208 °
16:00	0.70 m	255 °	0.7 °	224 °
20:00	1.30 m	176 °	1.0 °	222 °
24:00	1.00 m	180 °	1.1 °	234 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	250
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	200°
Wind Speed	Knts	12
Max Wind Spd	Knts	12
Sea Direction	Deg	200°
Sea Height	Mtrs	0.3
Max Sea Height	Mtrs	0.5
Sea Period	Secs	3

Weather		Overcast
Temp	°C	19° - 24°
Baro	hPa	1013
Visibility	N.M	12
Swell Dir	Deg	220°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	45	1	46
Start Tours	11	1	12
LSIC	94	1	95

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	16
Catering	9
Total	82

Helicopters	Times	On	Off
EXN	0822 / 0825	0	2
EXN	1303 / 1310	5	4
EXU	1312 / 1316	5	3

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-109 m.t
DKLM 60' draft	644 m.t
Max Sea Period	3 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	19	Location:	Scallop #1	TRIR	1.64	Date:	15/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	No Report
En route to			BBMT
ETA			07:00 hrs / 16 th

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5133	2024	944	64	1555		26	1554	944	n/a
Drill Water	bbls	6669	6669	3583	166	0			0	2640	
Pot Water	bbls	2641	868	132	130	893			881	943	
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3400	3400	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M3
	Fuel	247.0
	DW	0.0
	PW	140.0
	Brine	0.0

P. Challenger		M3
	Fuel	247.2
	DW	0.0
	FW	142.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1934		
DKLM this draft	M.T	1152		
Pitch	Deg	0.2°	x	6 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.90 m	174 °	0.6 °	213 °
08:00	0.90 m	175 °	0.3 °	209 °
12:00	1.00 m	146 °	0.6 °	263 °
16:00	0.40 m	231 °	0.7 °	220 °
20:00	0.30 m	228 °	0.8 °	220 °
24:00	1.10 m	164 °	0.9 °	223 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	250
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	200°
Wind Speed	Knts	5
Max Wind Spd	Knts	15
Sea Direction	Deg	200°
Sea Height	Mtrs	0.2
Max Sea Height	Mtrs	0.5
Sea Period	Secs	2

Weather		Cloudy
Temp	°C	18° - 21°
Baro	hPa	1012
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	46	1	47
Start Tours	12	1	13
LSIC	95	1	96

Drills	
Fire Drill	09-Feb-03
Abandon Rig	09-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	09-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	16
Catering	9
Total	82

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-120 m.t
DKLM 60' draft	633 m.t
Max Sea Period	3 secs

Comments: (1) Pacific Frontier arrived rig at 06.20 hrs and departed at 17:00 hrs. ETA BBMT 07:00 hrs / 16 th.

S.B.M Totals	M3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 20	Location: Scallop #1	TRIR 1.64	Date: 16/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	4979	1877	0	148	1549		6	1554		
Drill Water	bbls	5846	5846	0	823	0			0		
Pot Water	bbls	2674	926	138	80	868			881		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3400	3400	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	247.0
	DW	0.0
	PW	140.0
	Brine	0.0

P. Challenger		M^3
	Fuel	246.3
	DW	0.0
	FW	138.0
	Brine	0.0

Rig			
Draft	Mtr	25.91	
Deckload	M.T	1934	
DKLM this draft	M.T	1152	
Pitch	Deg	0.2°	x 6 secs
Roll	Deg	0.2°	x 4 secs
Heave	Mtr	0.3	x 12 secs
Riser Tension	Kips	352	

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.70 m	135 °	0.8 °	253 °
08:00	0.60 m	147 °	0.8 °	220 °
12:00	1.60 m	123 °	0.8 °	219 °
16:00	0.80 m	131 °	0.6 °	217 °
20:00	1.20 m	140 °	0.6 °	251 °
24:00	0.70 m	115 °	0.5 °	195 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	220°
Wind Speed	Knts	23
Max Wind Spd	Knts	25
Sea Direction	Deg	220°
Sea Height	Mtrs	1.5
Max Sea Height	Mtrs	2.0
Sea Period	Secs	5

Weather		Overcast
Temp	°C	18° - 20°
Baro	hPa	1013
Visibility	N.M	8
Swell Dir	Deg	060°
Swell Ht	Mtr	1.0
Max Ht	Mtr	1.0

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	47	10	57
Start Tours	13	1	14
LSIC	96	1	97

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	5
Total Marine	15
Service	16
Catering	9
Total	82

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-120 m.t
DKLM 60' draft	633 m.t
Max Sea Period	3 secs

Comments:

(1) Helicopter crash drill held today.

(2) Fire and Abandon Rig Drill held today.

(3) Pacific Challenger on mobile standby steaming to weather.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	21	Location:	Scallop #1	TRIR	1.65	Date:	17/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	4859	1756	0	121	1549		?	1554		
Drill Water	bbls	5503	5503	0	343	0			0		
Pot Water	bbls	2657	946	126	106	830			881		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3400	3400	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	247.0
	DW	0.0
	PW	140.0
	Brine	0.0

P. Challenger		M^3
	Fuel	246.3
	DW	0.0
	FW	132.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1950		
DKLM this draft	M.T	1144		
Pitch	Deg	0.3°	x	7 secs
Roll	Deg	0.2°	x	4 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	344		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.20 m	120 °	0.4 °	175 °
08:00	0.30 m	090 °	0.2 °	167 °
12:00	0.30 m	090 °	0.4 °	224 °
16:00	0.20 m	090 °	0.4 °	270 °
20:00	0.60 m	161 °	0.3 °	262 °
24:00	0.80 m	187 °	1.0 °	239 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	250	Anchor # 6	240
Anchor # 3	270	Anchor # 7	250
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	260°
Wind Speed	Knts	8
Max Wind Spd	Knts	35
Sea Direction	Deg	260°
Sea Height	Mtrs	0.5
Max Sea Height	Mtrs	2.5
Sea Period	Secs	3

Weather		Fine
Temp	°C	15° - 18°
Baro	hPa	1019
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	1.5
Max Ht	Mtr	2.0

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	57	18	75
Start Tours	14	1	15
LSIC	97	1	98

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	36
Client	8
Total Marine	15
Service	16
Catering	9
Total	84

Helicopters	Times	On	Off
EXN	1106 / 1111	3	2
EXW	1326 / 1333	8	9
EXZ	1435 / 1441	5	3

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-136 m.t
DKLM 60' draft	617 m.t
Max Sea Period	5 secs

Comments: (1) No fuel figure reported by Pacific Challenger tonight.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	22	Location:	Scallop #1	TRIR	1.65	Date:	18/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At Rig
En route to		BBMT	
ETA		No Report	

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5464	1649	0	107	1520			2295		203
Drill Water	bbls	7324	5223	0	280	0			2101		
Pot Water	bbls	4198	946	82	82	830			2422		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3362	3362	0	38	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	364.9
DW	334.0
PW	385.0
Brine	0.0

P. Challenger	M^3
Fuel	241.6
DW	0.0
FW	132.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1980		
DKLM this draft	M.T	1102		
Pitch	Deg	0.3°	x	7 secs
Roll	Deg	0.2°	x	6 secs
Heave	Mtr	0.3	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.80 m	190 °	0.9 °	246 °
08:00	1.20 m	114 °	0.6 °	221 °
12:00	1.70 m	168 °	0.6 °	201 °
16:00	0.40 m	120 °	0.6 °	236 °
20:00	0.20 m	318 °	0.7 °	232 °
24:00	0.30 m	120 °	0.7 °	219 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	240
Anchor # 2	250	Anchor # 6	235
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	250°
Wind Speed	Knts	25
Max Wind Spd	Knts	27
Sea Direction	Deg	250°
Sea Height	Mtrs	1.5
Max Sea Height	Mtrs	2.0
Sea Period	Secs	5

Weather		Fine
Temp	°C	16° - 18°
Baro	hPa	1014
Visibility	N.M	12
Swell Dir	Deg	230°
Swell Ht	Mtr	2.0
Max Ht	Mtr	2.0
Period	sec	7

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	75	7	82
Start Tours	15	1	16
LSIC	98	1	99

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	36
Client	8
Total Marine	15
Service	16
Catering	9
Total	84

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-166 m.t
DKLM 60' draft	587 m.t
Max Sea Period	5 secs

Comments:

(1) Pacific Challenger used 30 bbls Fuel on the 17-02-03. No Report Tonight.

(2) Pacific Frontier arrived at rig at 19:30 hrs.Completely unloaded by 23:20 hrs.

(3) Pacific Challenger departed rig for BBMT at 21:07 hrs. ETA 08:00 hrs / 19 th.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	23	Location:	Scallop #1	TRIR	1.65	Date:	19/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At Rig
En route to		BBMT	
ETA		No Report	

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	P. Challenger On Hand	P. Challenger Disch	P. Challenger Used	P. Frontier On Hand	P. Frontier Disch	P. Frontier Used
Fuel	bbls	5297	2395	883	137	1520			1383	881	31
Drill Water	bbls	6987	4886	0	337	0			2101		
Pot Water	bbls	4261	1040	201	107	830			2390		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3362	3362	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	219.9
DW	334.0
PW	380.0
Brine	0.0

P. Challenger	M^3
Fuel	241.6
DW	0.0
FW	132.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1943		
DKLM this draft	M.T	1151		
Pitch	Deg	0.3°	x	7 secs
Roll	Deg	0.5°	x	9 secs
Heave	Mtr	0.5	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.50 m	090 °	0.6 °	195 °
08:00	0.80 m	172 °	0.2 °	246 °
12:00	1.20 m	175 °	0.8 °	213 °
16:00	1.20 m	225 °	1.2 °	225 °
20:00	1.80 m	193 °	1.2 °	230 °
24:00	1.30 m	202 °	0.9 °	232 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	240
Anchor # 2	250	Anchor # 6	235
Anchor # 3	270	Anchor # 7	240
Anchor # 4	240	Anchor # 8	240

Wind Direction	Deg	090°
Wind Speed	Knts	25
Max Wind Spd	Knts	25
Sea Direction	Deg	090°
Sea Height	Mtrs	1.5
Max Sea Height	Mtrs	1.5
Sea Period	Secs	5

Weather		Overcast
Temp	°C	15° - 19°
Baro	hPa	1016
Visibility	N.M	12
Swell Dir	Deg	140°
Swell Ht	Mtr	3.0
Max Ht	Mtr	3.0
Period	sec	9

Personnel: This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	25	1	26
Start Tours	2	1	3
LSIC	98	1	99

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	36
Client	8
Total Marine	15
Service	18
Catering	9
Total	86

Helicopters	Times	On	Off
EXU	1309 / 1314	3	1

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-129 m.t
DKLM 60' draft	624 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	24	Location:	Scallop #1	TRIR	1.65	Date:	20/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1		At Rig
En route to		BBMT	
ETA		No Report	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	5129	2253	0	142	1520			1357		26
Drill Water	bbls	6587	4486	0	400	0			2101		
Pot Water	bbls	4293	1104	271	207	830			2359		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3362	3362	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier	M3
Fuel	215.7
DW	334.0
PW	375.0
Brine	0.0

P. Challenger	M3
Fuel	241.6
DW	0.0
FW	132.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1924		
DKLM this draft	M.T	1168		
Pitch	Deg	0.3°	x	5 secs
Roll	Deg	0.5°	x	7 secs
Heave	Mtr	1.0	x	13 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.50 m	184 °	1.1 °	240 °
08:00	1.60 m	218 °	1.2 °	228 °
12:00	2.20 m	201 °	1.2 °	243 °
16:00	2.60 m	199 °	1.8 °	236 °
20:00	1.80 m	206 °	1.9 °	223 °
24:00	0.50 m	150 °	1.2 °	220 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	220	Anchor # 6	260
Anchor # 3	235	Anchor # 7	275
Anchor # 4	210	Anchor # 8	265

Wind Direction	Deg	065°
Wind Speed	Knts	30
Max Wind Spd	Knts	37
Sea Direction	Deg	065°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	2.5
Sea Period	Secs	6

Weather		Overcast
Temp	°C	20° - 22°
Baro	hPa	1013
Visibility	N.M	10
Swell Dir	Deg	050°
Swell Ht	Mtr	1.5
Max Ht	Mtr	2.5
Period	sec	9

Personnel: This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	26	2	28
Start Tours	3	1	4
LSIC	99	1	100

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	37
Client	8
Total Marine	15
Service	20
Catering	9
Total	89

Helicopters	Times	On	Off
EXU	1317 / 1328	10	7

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-110 m.t
DKLM 60' draft	643 m.t
Max Sea Period	5 secs

Comments: (1) Pacific Frontier on mobile standby. Steaming to weather.

S.B.M Totals	M3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	**25**	**Location:**	**Scallop #1**	**TRIR**	**1.65**	**Date:**	**21/02/03**

Vessel	**Sedco 702**	**Pacific Challenger**	**Pacific Frontier**
Location	Scallop #1	No Report	At Rig
En route to		Sedco 702	
ETA		03:00 hrs 22 nd	

Products		**Available**	**On Hand**	**Rc'd**	**Used**	**On Hand**	**Disch**	**Used**	**On Hand**	**Disch**	**Used**
Fuel	**bbls**	4941	2124	0	129	1520			1297		60
Drill Water	**bbls**	6469	5840	1474	120	0			629	1474	
Pot Water	**bbls**	4381	1223	271	153	830			2327		
Brine KCL	**bbls**	0	0	0	0	0			0		
Gel	**SX**	581	581	0	0	0			0		
Cement	**SX**	1824	1824	0	0	0			0		
Barytes	**SX**	3362	3362	0	0	0			0		
Blend	**FT3**	0	0	0	0	0			0		
S.B.M	**bbls**	0	0	0	0	0			0		
Iso-Teq	**bbls**	0	0	0	0	0			0		
Heli Fuel	**Ltrs**	0	0	0	0	0			0		

Calculator		
M3	**to**	**bbls**
	=	
	=	
	=	

P. Frontier		**M^3**
	Fuel	206.2
	DW	100.0
	PW	370.0
	Brine	0.0

P. Challenger		**M^3**
	Fuel	241.6
	DW	0.0
	FW	132.0
	Brine	0.0

Rig				
Draft	**Mtr**	25.91		
Deckload	**M.T**	1875		
DKLM this draft	**M.T**	1216		
Pitch	**Deg**	0.3°	**x**	5 secs
Roll	**Deg**	0.3°	**x**	5 secs
Heave	**Mtr**	0.5	**x**	11 secs
Riser Tension	**Kips**	352		

Hole	**Position**		**Riser**	
	Mtrs	**Dir(To)**	**Ang**	**Dir**
04:00	1.80 m	217 °	1.2 °	220 °
08:00	1.50 m	221 °	0.9 °	173 °
12:00	2.10 m	211 °	1.5 °	230 °
16:00	3.10 m	204 °	1.6 °	237 °
20:00	2.00 m	207 °	1.3 °	204 °
24:00	1.60 m	176 °	1.3 °	228 °

Chain Tensions (Kips)			
Anchor # 1	240	**Anchor # 5**	240
Anchor # 2	230	**Anchor # 6**	250
Anchor # 3	250	**Anchor # 7**	260
Anchor # 4	230	**Anchor # 8**	260

Wind Direction	**Deg**	065°
Wind Speed	**Knts**	30
Max Wind Spd	**Knts**	40
Sea Direction	**Deg**	065°
Sea Height	**Mtrs**	2
Max Sea Height	**Mtrs**	3.0
Sea Period	**Secs**	5

Weather		Rain
Temp	**°C**	18° - 23°
Baro	**hPa**	1012
Visibility	**N.M**	3
Swell Dir	**Deg**	070°
Swell Ht	**Mtr**	2.0
Max Ht	**Mtr**	2.0
Period	**sec**	10

Personnel			
This Week Only	**Past**	**Today**	**Total**
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	28	2	30
Start Tours	4	1	5
LSIC	100	1	101

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	8
Total Marine	15
Service	25
Catering	9
Total	95

Helicopters	**Times**	**On**	**Off**
EXU	1304 / 1308	6	0
EXU	1314 / 1320	6	5
EXU	1613 / 1616	0	1

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-61 m.t
DKLM 60' draft	692 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	**M^3**
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 26	Location: Scallop #1	TRIR 1.65	Date: 22/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	5111	2013	0	111	1801		348	1297		
Drill Water	bbls	8871	5914	251	177	2327			629		
Pot Water	bbls	4504	1095	0	128	1082			2327		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	3199	0	163	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M³
	Fuel	206.2
	DW	100.0
	PW	370.0
	Brine	0.0

P. Challenger		M³
	Fuel	286.3
	DW	370.0
	FW	172.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1906		
DKLM this draft	M.T	1163		
Pitch	Deg	0.3°	x	5 secs
Roll	Deg	0.3°	x	5 secs
Heave	Mtr	0.8	x	13 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	2.10 m	212 °	1.5 °	223 °
08:00	1.70 m	192 °	1.9 °	226 °
12:00	1.70 m	204 °	1.1 °	218 °
16:00	1.70 m	226 °	1.5 °	224 °
20:00	1.40 m	188 °	0.9 °	242 °
24:00	1.70 m	203 °	1.5 °	221 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	230	Anchor # 6	250
Anchor # 3	250	Anchor # 7	250
Anchor # 4	230	Anchor # 8	250

Wind Direction	Deg	080°
Wind Speed	Knts	27
Max Wind Spd	Knts	35
Sea Direction	Deg	080°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	2.5
Sea Period	Secs	5

Weather		Rain
Temp	°C	18° - 21°
Baro	hPa	1013
Visibility	N.M	3
Swell Dir	Deg	060°
Swell Ht	Mtr	2.0
Max Ht	Mtr	2.0
Period	sec	8

Personnel: This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	30	2	32
Start Tours	5	1	6
LSIC	101	1	102

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	16-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	8
Total Marine	15
Service	25
Catering	9
Total	95

Helicopters	Times	On	Off

Various	
BOP Test	06-Feb-03
Rig Heading	209°
DKLM 70' draft	-92 m.t
DKLM 60' draft	661 m.t
Max Sea Period	5 secs

Comments:

(1) Pacific Challenger arrived at rig at 05:55 hrs.

(2) Pacific Frontier departed rig at 07:10 hrs. ETA BBMT 19:00 hrs / 22 nd.

S.B.M Totals	M³
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	27	Location:	Scallop #1	TRIR	1.65	Date:	23/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	4986	1928	0	85	1761		40	1297		
Drill Water	bbls	8951	5994	206	126	2327			629		
Pot Water	bbls	4278	894	0	201	1057			2327		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	3199	0	0	0			0		
Blend	FT3	2600	1307	1307	0	1293	1,307		0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	206.2
	DW	100.0
	PW	370.0
	Brine	0.0

P. Challenger		M^3
	Fuel	280.0
	DW	370.0
	FW	168.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1852		
DKLM this draft	M.T	1207		
Pitch	Deg	0.2°	x	6 secs
Roll	Deg	0.3°	x	6 secs
Heave	Mtr	0.3	x	10 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	2.20 m	216 °	1.6 °	231 °
08:00	2.00 m	197 °	1.4 °	208 °
12:00	2.30 m	170 °	1.6 °	203 °
16:00	2.40 m	193 °	1.6 °	225 °
20:00	3.50 m	198 °	2.4 °	223 °
24:00	2.50 m	200 °	1.5 °	225 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	240
Anchor # 2	230	Anchor # 6	260
Anchor # 3	240	Anchor # 7	270
Anchor # 4	220	Anchor # 8	260

Wind Direction	Deg	065°
Wind Speed	Knts	32
Max Wind Spd	Knts	35
Sea Direction	Deg	065°
Sea Height	Mtrs	2
Max Sea Height	Mtrs	2.5
Sea Period	Secs	5

Weather		Cloudy
Temp	°C	19° - 22°
Baro	hPa	1012
Visibility	N.M	12
Swell Dir	Deg	060°
Swell Ht	Mtr	2.0
Max Ht	Mtr	2.0
Period	sec	8

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	32	0	32
Start Tours	6	1	7

LSIC	102	1	103

Drills	
Fire Drill	16-Feb-03
Abandon Rig	16-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	8
Total Marine	15
Service	25
Catering	9
Total	95

Helicopters	Times	On	Off

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	-38 m.t
DKLM 60' draft	715 m.t
Max Sea Period	5 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No: 28	Location: Scallop #1	TRIR 1.65	Date: 24/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	4870	1840	0	88	1733		40	1297		
Drill Water	bbls	8684	7017	1291	269	1038			629		
Pot Water	bbls	4249	884	62	72	1038			2327		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	3199	0	0	0			0		
Blend	FT3	2577	2577	1270	0	0	1,270		0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	206.2
DW	100.0
PW	370.0
Brine	0.0

P. Challenger	M^3
Fuel	275.5
DW	165.0
FW	165.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1869		
DKLM this draft	M.T	1167		
Pitch	Deg	0.2°	x	6 secs
Roll	Deg	0.3°	x	5 secs
Heave	Mtr	0.5	x	9 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	2.10 m	195 °	1.4 °	217 °
08:00	1.60 m	176 °	1.2 °	217 °
12:00	1.40 m	184 °	1.3 °	216 °
16:00	2.30 m	196 °	1.2 °	222 °
20:00	1.00 m	143 °	1.7 °	224 °
24:00	1.60 m	165 °	1.2 °	208 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	230	Anchor # 6	250
Anchor # 3	250	Anchor # 7	240
Anchor # 4	230	Anchor # 8	240

Wind Direction	Deg	350°
Wind Speed	Knts	14
Max Wind Spd	Knts	16
Sea Direction	Deg	350°
Sea Height	Mtrs	1
Max Sea Height	Mtrs	1.5
Sea Period	Secs	6

Weather		Cloudy
Temp	°C	20° - 22°
Baro	hPa	1009
Visibility	N.M	10
Swell Dir	Deg	060°
Swell Ht	Mtr	1.8
Max Ht	Mtr	2.0
Period	sec	8

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	32	2	34
Start Tours	7	1	8
LSIC	103	1	104

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	7
Total Marine	15
Service	24
Catering	9
Total	93

Helicopters	Times	On	Off
EXZ	1304 / 1309	6	7
EXW	1325 / 1333	6	7

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	-55 m.t
DKLM 60' draft	698 m.t
Max Sea Period	8 secs

Comments: (1) Fire & Abandon Rig drills held tonight 2200hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	29	Location:	Scallop #1	TRIR	1.65	Date:	25/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At rig	BBMT
En route to			
ETA			No Report

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	4792	2432	639	46	1063	638	31	1297		
Drill Water	bbls	8406	7274	537	280	503	535		629		
Pot Water	bbls	4166	833	243	294	1006			2327		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	581	581	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	3186	0	13	13			0		
Blend	FT3	2577	2577	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	206.2
DW	100.0
PW	370.0
Brine	0.0

P. Challenger	M^3
Fuel	169.0
DW	80.0
FW	160.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1883		
DKLM this draft	M.T	1180		
Pitch	Deg	0.2°	x	6 secs
Roll	Deg	0.2°	x	6 secs
Heave	Mtr	0.5	x	10 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.40 m	150 °	1.0 °	216 °
08:00	0.70 m	163 °	0.8 °	219 °
12:00	0.80 m	186 °	0.7 °	204 °
16:00	1.80 m	206 °	19.0 °	234 °
20:00	1.80 m	173 °	1.2 °	227 °
24:00	1.60 m	172 °	0.7 °	224 °

Chain Tensions (Kips)			
Anchor # 1	245	Anchor # 5	250
Anchor # 2	230	Anchor # 6	250
Anchor # 3	255	Anchor # 7	240
Anchor # 4	230	Anchor # 8	235

Wind Direction	Deg	000°
Wind Speed	Knts	0
Max Wind Spd	Knts	0
Sea Direction	Deg	000°
Sea Height	Mtrs	0
Max Sea Height	Mtrs	0.0
Sea Period	Secs	0

Weather		Cloudy
Temp	°C	20° - 22°
Baro	hPa	1012.5
Visibility	N.M	10
Swell Dir	Deg	060°
Swell Ht	Mtr	0.8
Max Ht	Mtr	1.0
Period	sec	8

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	0	2	2
Start Tours	0	1	1
LSIC	104	1	105

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	06-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	7
Total Marine	15
Service	24
Catering	9
Total	93

Helicopters	Times	On	Off
EXW	1307 / 1309		

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	-69 m.t
DKLM 60' draft	684 m.t
Max Sea Period	8 secs

Comments:

(1) 1 x Helicopter with freight.

(2) Weather is Light airs & calm seas.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	30	Location:	Scallop #1	TRIR	1.65	Date:	26/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	BBMT	At Rig
En route to			
ETA		No Report	

Products		Available	Sedco 702 On Hand	Rc'd	Used	P. Challenger On Hand	Disch	Used	P. Frontier On Hand	Disch	Used
Fuel	bbls	7131	2384	0	48	1063			3683		130
Drill Water	bbls	8672	7263	0	11	503			906		
Pot Water	bbls	3758	613	252	472	1006			2139		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	0	0	0	581	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	1777	0	1409	1422			0		
Blend	FT3	3177	2577	0	0	0			600		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	585.6
	DW	144.0
	PW	340.0
	Brine	0.0

P. Challenger		M^3
	Fuel	169.0
	DW	80.0
	FW	160.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1748		
DKLM this draft	M.T	1270		
Pitch	Deg	0.2°	x	7 secs
Roll	Deg	0.2°	x	7 secs
Heave	Mtr	0.5	x	10 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.30 m	117 °	1.0 °	233 °
08:00	0.80 m	221 °	1.0 °	225 °
12:00	0.80 m	192 °	0.7 °	195 °
16:00	0.80 m	158 °	1.0 °	218 °
20:00	1.00 m	143 °	0.9 °	219 °
24:00	0.80 m	158 °	1.0 °	219 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	250
Anchor # 2	240	Anchor # 6	245
Anchor # 3	260	Anchor # 7	240
Anchor # 4	230	Anchor # 8	240

Wind Direction	Deg	040°
Wind Speed	Knts	3
Max Wind Spd	Knts	4
Sea Direction	Deg	040°
Sea Height	Mtrs	0
Max Sea Height	Mtrs	0.0
Sea Period	Secs	0

Weather		Cloudy
Temp	°C	20° - 22°
Baro	hPa	1008
Visibility	N.M	10
Swell Dir	Deg	060°
Swell Ht	Mtr	0.8
Max Ht	Mtr	1.0
Period	sec	8

Personnel

This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	2	3	5
Start Tours	1	1	2
LSIC	105	1	106

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	26-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	7
Total Marine	15
Service	24
Catering	9
Total	93

Helicopters	Times	On	Off

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	66 m.t
DKLM 60' draft	819 m.t
Max Sea Period	8 secs

Comments:

(1) Helicopter crash drill held @ 09:30hrs.

(2) Rig went on Radio Silence @ 22:30hrs.

(3) P. Frontier arrive on location @ 18:35hrs./ P. Challenger depart for BBMT @ 18:35hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	31	Location:	Scallop #1	TRIR	1.65	Date:	27/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	BBMT	At Rig
En route to			
ETA		No Report	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	7042	2335	0	50	1063			3644		39
Drill Water	bbls	8232	6823	0	440	503			906		
Pot Water	bbls	3669	555	231	289	1006			2107		31
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	0	0	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	3199	1777	0	0	1422			0		
Blend	FT3	3177	2577	0	0	0			600		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

Calculator		
M3	to	bbls
	=	
	=	
	=	

P. Frontier		M^3
	Fuel	579.4
	DW	144.0
	PW	335.0
	Brine	0.0

P. Challenger		M^3
	Fuel	169.0
	DW	80.0
	FW	160.0
	Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1698		
DKLM this draft	M.T	1341		
Pitch	Deg	0.3°	x	6 secs
Roll	Deg	0.2°	x	6 secs
Heave	Mtr	0.5	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	2.00 m	197 °	0.8 °	221 °
08:00	1.20 m	204 °	0.8 °	215 °
12:00	1.30 m	176 °	0.8 °	208 °
16:00	0.90 m	131 °	0.5 °	181 °
20:00	0.80 m	202 °	0.8 °	226 °
24:00	1.00 m	162 °	1.0 °	228 °

Chain Tensions (Kips)			
Anchor # 1	250	Anchor # 5	250
Anchor # 2	240	Anchor # 6	230
Anchor # 3	215	Anchor # 7	235
Anchor # 4	235	Anchor # 8	230

Wind Direction	Deg	215°
Wind Speed	Knts	13
Max Wind Spd	Knts	14
Sea Direction	Deg	215°
Sea Height	Mtrs	0.4
Max Sea Height	Mtrs	0.6
Sea Period	Secs	5

Weather		Cloudy
Temp	°C	20° - 22°
Baro	hPa	1003
Visibility	N.M	5
Swell Dir	Deg	060°
Swell Ht	Mtr	0.8
Max Ht	Mtr	1.0
Period	sec	8

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	5	1	6
Start Tours	2	1	3
LSIC	106	1	107

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	26-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	39
Client	6
Total Marine	15
Service	23
Catering	9
Total	92

Helicopters	Times	On	Off
EXK	16:14 / 16:25	7	8
EXW	16:46 / 17:00	2	2

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	116 m.t
DKLM 60' draft	869 m.t
Max Sea Period	7 secs

Comments:

(1) P Frontier responded to "PAN PAN" call from vessel Barefoot Bound. Departed 18:10hrs
approx. 8 nm East of location.
Arrived back on location @ 20:00hrs.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	32	Location:	Scallop #1	TRIR	1.65	Date:	28/02/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	No Report	
En route to		Sedco 702	BBMT
ETA		04:00hrs 01/03/03	No Report

Calculator		
M3	to	bbls
108	=	679 bbls
	=	
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	6999	2971	679	43	1063			2965	679	
Drill Water	bbls	7672	6263	0	560	503			906		
Pot Water	bbls	3787	673	210	92	1006			2107		
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	0	0	0	0	0			0		
Cement	SX	1824	1824	0	0	0			0		
Barytes	SX	2945	1523	0	254	1422			0		
Blend	FT3	1145	545	0	2032	0			600		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier	M^3
Fuel	471.4
DW	144.0
PW	335.0
Brine	0.0

P. Challenger	M^3
Fuel	169.0
DW	80.0
FW	160.0
Brine	0.0

Rig				
Draft	Mtr	25.91		
Deckload	M.T	1671		
DKLM this draft	M.T	1419		
Pitch	Deg	0.6°	x	5 secs
Roll	Deg	0.4°	x	5 secs
Heave	Mtr	0.8	x	12 secs
Riser Tension	Kips	352		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	1.30 m	184 °	0.7 °	211 °
08:00	0.50 m	127 °	0.8 °	215 °
12:00	0.60 m	160 °	0.7 °	200 °
16:00	0.90 m	214 °	0.2 °	199 °
20:00	1.10 m	153 °	0.4 °	245 °
24:00	0.70 m	134 °	0.3 °	239 °

Chain Tensions (Kips)			
Anchor # 1	240	Anchor # 5	250
Anchor # 2	240	Anchor # 6	235
Anchor # 3	220	Anchor # 7	220
Anchor # 4	245	Anchor # 8	230

Wind Direction	Deg	215°
Wind Speed	Knts	13
Max Wind Spd	Knts	14
Sea Direction	Deg	215°
Sea Height	Mtrs	0.4
Max Sea Height	Mtrs	0.6
Sea Period	Secs	5

Weather		Cloudy
Temp	°C	16° - 18°
Baro	hPa	1000.5
Visibility	N.M	10
Swell Dir	Deg	230°
Swell Ht	Mtr	1.5
Max Ht	Mtr	2.0
Period	sec	8

Personnel: This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	6	1	7
Start Tours	3	1	4
LSIC	107	1	108

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	26-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	4
Total Marine	15
Service	18
Catering	9
Total	84

Helicopters	Times	On	Off
EXX	13:02 / 13:09	7	8
EXK	13:21 / 13:26	0	7

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	143 m.t
DKLM 60' draft	896 m.t
Max Sea Period	8 secs

Comments:

(1) P Frontier depart rig for BBMT @ 17:45hrs.

(2) P Challenger ETA rig, 04:00hrs 01/03/03.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	33	Location:	Scallop#1	TRIR	Date:	01/03/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At Rig	At Rig
En route to			
ETA			

Calculator		
M3	to	bbls
	=	
	=	
	=	

Products		Available	On Hand	Rc'd	Used	On Hand	Disch	Used	On Hand	Disch	Used
Fuel	bbls										
Drill Water	bbls										
Pot Water	bbls										
Brine KCL	bbls										
Gel	SX										
Cement	SX										
Barytes	SX										
Blend	FT3										
S.B.M	bbls										
Iso-Teq	bbls										
Heli Fuel	Ltrs										

P. Frontier	M^3
Fuel	
DW	
PW	
Brine	

P. Challenger	M^3
Fuel	
DW	
PW	
Brine	

Barge Report **NOT** available for this day

Rig	
Draft	
Deckload	
DKLM this draft	
Pitch	
Roll	
Heave	
Riser Tension	

Anchor # 5	
Anchor # 6	
Anchor # 7	
Anchor # 8	

Wind Direction	Deg	240°
Wind Speed	Knts	26
Max Wind Spd	Knts	30
Sea Direction	Deg	240°
Sea Height	Mtrs	2.5
Max Sea Height	Mtrs	3.0
Sea Period	Secs	5

Weather		
Temp	°C	
Baro	hPa	
Visibility	N.M	
Swell Dir	Deg	
Swell Ht	Mtr	
Max Ht	Mtr	
Period	sec	

Personnel This Week Only	Past	Today	Total
MTC			
Incident Reports			
Start Cards			
Start Tours			
LSIC			

Drills	
Fire Drill	
Abandon Rig	
H2S Drill	
Safety Meeting	
Man Overboard	
Winch Off Drill	

P.O.B	
Transocean	
Client	
Total Marine	
Service	
Catering	
Total	

Helicopters	Times	On Off

Various	
BOP Test	
Rig Heading	
DKLM 70' draft	
DKLM 60' draft	
Max Sea Period	

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	34	Location:	Scallop #1	TRIR	0.85	Date:	02/03/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At Rig	At Rig
En route to			
ETA			

Calculator		
M3	to	bbls
19.1	=	120 bbls
25.4	=	160 bbls
	=	

Products		Available	Sedco 702 On Hand	Rc'd	Used	Pacific Challenger On Hand	Disch	Used	Pacific Frontier On Hand	Disch	Used
Fuel	bbls	12388	2825	0	78	4462		120	5101		160
Drill Water	bbls	6572	5566	0	166	503			503		
Pot Water	bbls	4007	768	221	167	1227		31	2013		94
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	0	0	0	0	0			0		
Cement	SX	0	0	0	0	0			0		
Barytes	SX	0	0	0	0	0			0		
Blend	FT3	600	0	0	0	0			600		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	811.0
	DW	80.0
	PW	320.0
	Brine	0.0

P. Challenger		M^3
	Fuel	709.4
	DW	80.0
	PW	195.0
	Brine	0.0

Rig				
Draft	Mtr	19.8		
Deckload	M.T	1246		
DKLM this draft	M.T	1054		
Pitch	Deg	2.2°	x	8 secs
Roll	Deg	1.8°	x	7 secs
Heave	Mtr	1.8	x	12 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Dir(To)	Riser Ang	Dir
04:00	0.00 m	000 °	0.0 °	000 °
08:00	0.00 m	000 °	0.0 °	000 °
12:00	0.00 m	000 °	0.0 °	000 °
16:00	0.00 m	000 °	0.0 °	000 °
20:00	0.00 m	000 °	0.0 °	000 °
24:00	0.00 m	000 °	0.0 °	000 °

Chain Tensions (Kips)			
Anchor # 1	270	Anchor # 5	275
Anchor # 2	275	Anchor # 6	250
Anchor # 3	250	Anchor # 7	235
Anchor # 4	270	Anchor # 8	250

Wind Direction	Deg	240°
Wind Speed	Knts	26
Max Wind Spd	Knts	30
Sea Direction	Deg	240°
Sea Height	Mtrs	2.5
Max Sea Height	Mtrs	3.0
Sea Period	Secs	5

Weather		Cloudy
Temp	°C	16° - 18°
Baro	hPa	1011.5
Visibility	N.M	10
Swell Dir	Deg	250°
Swell Ht	Mtr	4.0
Max Ht	Mtr	5.0
Period	sec	6

Personnel This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	9	2	11
Start Tours	5	1	6
LSIC	109	1	110

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	26-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	38
Client	3
Total Marine	15
Service	5
Catering	9
Total	70

Helicopters	Times	On	Off
EXK	13:15 / 13:25	0	8

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	568 m.t
DKLM 60' draft	1321 m.t
Max Sea Period	8 secs

Comments:

(1) P Frontier arrived on location @ 08:00hrs.

(2) Rig waiting on weather.

S.B.M Totals	M^3
Received	
Backloaded	

Sedco 702 Barge Control Morning Report

Report No:	35	Location:	Scallop #1	TRIR	0.85	Date:	03/03/03

Vessel	Sedco 702	Pacific Challenger	Pacific Frontier
Location	Scallop #1	At Rig	At Rig
En route to			
ETA			

Calculator		
M3	to	bbls
10	=	63 bbls
14.2	=	89 bbls
	=	

Products		Available	Sedco 702 On Hand	Sedco 702 Rc'd	Sedco 702 Used	Pacific Challenger On Hand	Pacific Challenger Disch	Pacific Challenger Used	Pacific Frontier On Hand	Pacific Frontier Disch	Pacific Frontier Used
Fuel	bbls	12186	2775	0	50	4399		63	5012		89
Drill Water	bbls	4075	3069	0	2497	503			503		
Pot Water	bbls	3822	633	231	366	1208		19	1981		31
Brine KCL	bbls	0	0	0	0	0			0		
Gel	SX	0	0	0	0	0			0		
Cement	SX	0	0	0	0	0			0		
Barytes	SX	0	0	0	0	0			0		
Blend	FT3	0	0	0	0	0			0		
S.B.M	bbls	0	0	0	0	0			0		
Iso-Teq	bbls	0	0	0	0	0			0		
Heli Fuel	Ltrs	0	0	0	0	0			0		

P. Frontier		M^3
	Fuel	796.8
	DW	80.0
	PW	315.0
	Brine	0.0

P. Challenger		M^3
	Fuel	699.4
	DW	80.0
	PW	192.0
	Brine	0.0

Rig				
Draft	Mtr	6.4		
Deckload	M.T	1168		
DKLM this draft	M.T	15		
Pitch	Deg	2.0°	x	6 secs
Roll	Deg	3.0°	x	5 secs
Heave	Mtr	0.6	x	10 secs
Riser Tension	Kips	0		

Hole	Position Mtrs	Position Dir(To)	Riser Ang	Riser Dir
04:00	0.00 m	000 °	0.0 °	000 °
08:00	0.00 m	000 °	0.0 °	000 °
12:00	0.00 m	000 °	0.0 °	000 °
16:00	0.00 m	000 °	0.0 °	000 °
20:00	0.00 m	000 °	0.0 °	000 °
24:00	0.00 m	000 °	0.0 °	000 °

Chain Tensions (Kips)			
Anchor # 1	0	Anchor # 5	0
Anchor # 2	0	Anchor # 6	0
Anchor # 3	0	Anchor # 7	0
Anchor # 4	0	Anchor # 8	0

Wind Direction	Deg	250°
Wind Speed	Knts	13
Max Wind Spd	Knts	16
Sea Direction	Deg	250°
Sea Height	Mtrs	0.8
Max Sea Height	Mtrs	1.0
Sea Period	Secs	5

Weather		Cloudy
Temp	°C	16° - 18°
Baro	hPa	1012
Visibility	N.M	15
Swell Dir	Deg	250°
Swell Ht	Mtr	0.8
Max Ht	Mtr	1.0
Period	sec	8

Personnel			
This Week Only	Past	Today	Total
MTC	0	0	0
Incident Reports	0	0	0
Start Cards	11	2	13
Start Tours	6	1	7
LSIC	110	1	111

Drills	
Fire Drill	24-Feb-03
Abandon Rig	24-Feb-03
H2S Drill	01-Dec-02
Safety Meeting	23-Feb-03
Man Overboard	26-Feb-03
Winch Off Drill	17-Oct-02

P.O.B	
Transocean	29
Client	3
Total Marine	16
Service	0
Catering	7
Total	55

Helicopters	Times	On	Off
EXW	10:41 / 10:46	0	7
EXK	10:49 / 10:54	0	7
EXK	13:07 / 13:12	4	5

Various	
BOP Test	23-Feb-03
Rig Heading	209°
DKLM 70' draft	646 m.t
DKLM 60' draft	1399 m.t
Max Sea Period	8 secs

Comments:

S.B.M Totals	M^3
Received	
Backloaded	

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Well Name: Scallop-1

Weather Information

Well ID	Date and Time	Current Barometric Pressure	Maximum Barometric Pressure	Current Heave	Maximum Heave	Current Pitch	Maximum Pitch	Current Roll	Maximum Roll	Current Wind Speed	Maximum Wind Speed	Current Wind Direction	Wind Direction at Maximum Speed
		mm	mm	meters	meters	degree	degree	degrees	degrees	knot	knot	degrees	degrees
SCALLOP_1	30/01/03 23:59	1004	0	0.0	0.0	0.00	0.00	0.0	0.0	30	0	270	0
SCALLOP_1	31/01/03 23:59	1015	0	0.0	0.0	0.00	0.00	0.0	0.0	22	45	260	0
SCALLOP_1	01/02/03 23:59	1023	0	0.0	0.0	0.09	0.00	0.3	0.0	5	0	85	0
SCALLOP_1	02/02/03 23:59	1019	0	0.0	0.0	0.09	0.00	0.3	0.0	35	0	75	0
SCALLOP_1	03/02/03 23:59	1021	0	0.0	0.0	0.09	0.00	0.3	0.0	32	35	55	0
SCALLOP_1	04/02/03 23:59	1014	0	0.0	0.0	0.09	0.00	0.3	0.0	35	0	30	0
SCALLOP_1	05/02/03 23:59	1017	0	0.0	0.0	0.09	0.00	0.3	0.0	3	0	210	0
SCALLOP_1	06/02/03 23:59	1015	0	0.0	0.0	0.06	0.00	0.2	0.0	30	0	60	0
SCALLOP_1	07/02/03 23:59	1016	0	0.3	0.0	0.06	0.00	0.2	0.0	20	0	260	0
SCALLOP_1	08/02/03 23:59	1017	0	0.3	0.0	0.06	0.00	0.2	0.0	25	0	90	0
SCALLOP_1	09/02/03 23:59	1013	0	0.3	0.0	0.06	0.00	0.2	0.0	12	0	195	0
SCALLOP_1	10/02/03 23:59	1016	0	0.3	0.0	0.06	0.00	0.2	0.0	10	0	260	0
SCALLOP_1	11/02/03 23:59	1013	0	0.3	0.0	0.06	0.00	0.2	0.0	10	0	110	0
SCALLOP_1	12/02/03 23:59	1012	0	0.3	0.0	0.06	0.00	0.2	0.0	10	0	320	0
SCALLOP_1	13/02/03 23:59	1016	0	0.3	0.0	0.09	0.00	0.2	0.0	8	0	230	0
SCALLOP_1	14/02/03 23:59	1013	0	0.3	0.0	0.06	0.00	0.2	0.0	12	0	200	0
SCALLOP_1	15/02/03 23:59	1012	0	0.3	0.0	0.06	0.00	0.2	0.0	5	0	200	0
SCALLOP_1	16/02/03 23:59	1013	0	0.3	0.0	0.06	0.00	0.2	0.0	25	0	220	0
SCALLOP_1	17/02/03 23:59	1019	0	0.3	0.0	0.09	0.00	0.2	0.0	8	35	260	0
SCALLOP_1	18/02/03 23:59	1014	0	0.3	0.0	0.09	0.00	0.2	0.0	25	0	250	0
SCALLOP_1	19/02/03 23:59	1016	0	0.5	0.0	0.09	0.00	0.5	0.0	25	0	90	0
SCALLOP_1	20/02/03 23:59	1013	0	1.0	0.0	0.09	0.00	0.5	0.0	30	37	65	0
SCALLOP_1	21/02/03 23:59	1012	0	0.5	0.0	0.09	0.00	0.3	0.0	30	40	65	65
SCALLOP_1	22/02/03 23:59	1013	0	0.8	0.0	0.09	0.00	0.3	0.0	27	35	80	0
SCALLOP_1	23/02/03 23:59	1012	0	0.3	0.0	0.06	0.00	0.3	0.0	32	0	65	0
SCALLOP_1	24/02/03 23:59	1009	0	0.5	0.0	0.06	0.00	0.3	0.0	14	0	350	0
SCALLOP_1	25/02/03 23:59	1012	0	0.5	0.0	0.06	0.00	0.2	0.0	0	0	0	0
SCALLOP_1	26/02/03 23:59	1008	0	0.5	0.0	0.06	0.00	0.2	0.0	4	0	40	0
SCALLOP_1	27/02/03 23:59	1003	0	0.5	0.0	0.09	0.00	0.2	0.0	13	0	215	0
SCALLOP_1	28/02/03 23:59	1000	0	0.8	0.0	0.18	0.00	0.4	0.0	13	0	215	0
SCALLOP_1	01/03/03 23:59	1006	0	0.9	0.0	0.27	0.00	0.6	0.0	39	48	275	0
SCALLOP_1	02/03/03 23:59	1012	0	1.8	1.8	0.67	0.67	1.8	1.8	30	55	240	240
SCALLOP_1	03/03/03 23:59	1012	0	0.6	0.0	0.61	0.00	3.0	0.0	13	0	250	0

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Weather Information

Well Name: Scallop-1

Well ID	Date and Time	Current Swell Height	Maximum Swell Height	Current Swell Period	Maximum Swell Period	Current Swell Direction	Swell Direction at Maximum Swell	Current Wave Height	Maximum Wave Height	Current Wave Period	Maximum Wave Period	Current Wave Direction	Wave Direction at Maximum Height
		meters	meters	seconds	seconds	degrees	degrees	meters	meters	seconds	seconds	degrees	degrees
SCALLOP_1	30/01/03 23:59	1.5	0.0	5	0	270	0	0.0	0.0	0	0	0	0
SCALLOP_1	31/01/03 23:59	2.0	3.0	5	5	260	260	2.5	0.0	5	5	260	0
SCALLOP_1	01/02/03 23:59	0.2	0.0	5	0	85	0	0.2	0.0	5	0	85	0
SCALLOP_1	02/02/03 23:59	2.0	0.0	4	0	75	0	2.0	0.0	4	0	75	0
SCALLOP_1	03/02/03 23:59	3.0	0.0	5	0	55	0	3.0	0.0	5	0	55	0
SCALLOP_1	04/02/03 23:59	2.5	0.0	4	0	230	0	1.0	2.5	40	0	30	0
SCALLOP_1	05/02/03 23:59	1.0	0.0	2	0	210	0	0.2	0.0	2	0	210	0
SCALLOP_1	06/02/03 23:59	1.0	0.0	5	0	45	0	2.0	0.0	5	0	60	0
SCALLOP_1	07/02/03 23:59	0.8	0.0	4	0	260	0	0.2	0.0	4	0	260	0
SCALLOP_1	08/02/03 23:59	2.0	0.0	4	0	160	0	1.8	0.0	4	0	90	0
SCALLOP_1	09/02/03 23:59	1.0	0.0	1	0	260	0	2.0	0.0	3	0	195	0
SCALLOP_1	10/02/03 23:59	1.0	0.0	3	0	240	0	0.3	0.0	3	0	260	0
SCALLOP_1	11/02/03 23:59	1.0	0.0	3	0	225	0	0.5	0.0	3	0	110	0
SCALLOP_1	12/02/03 23:59	1.0	0.0	3	0	230	0	0.5	0.0	3	0	320	0
SCALLOP_1	13/02/03 23:59	1.0	0.0	3	0	230	0	0.5	0.0	3	0	230	0
SCALLOP_1	14/02/03 23:59	1.0	0.0	3	0	220	0	0.3	0.0	3	0	200	0
SCALLOP_1	15/02/03 23:59	1.0	0.0	3	0	230	0	0.2	0.0	2	0	200	0
SCALLOP_1	16/02/03 23:59	1.0	0.0	5	0	60	0	1.5	0.0	3	0	220	0
SCALLOP_1	17/02/03 23:59	1.5	2.0	7	0	230	0	0.5	2.5	3	0	260	0
SCALLOP_1	18/02/03 23:59	2.0	0.0	7	0	230	0	1.5	0.0	5	0	250	0
SCALLOP_1	19/02/03 23:59	3.0	0.0	9	0	140	0	1.5	0.0	5	0	90	0
SCALLOP_1	20/02/03 23:59	1.5	0.0	9	0	50	0	2.5	0.0	6	0	65	0
SCALLOP_1	21/02/03 23:59	2.0	0.0	10	0	70	0	2.0	0.0	5	0	65	0
SCALLOP_1	22/02/03 23:59	2.0	0.0	8	0	60	0	2.0	0.0	5	0	80	0
SCALLOP_1	23/02/03 23:59	2.0	0.0	8	0	60	0	2.0	0.0	5	0	65	0
SCALLOP_1	24/02/03 23:59	1.8	0.0	8	0	60	0	1.0	0.0	6	0	350	0
SCALLOP_1	25/02/03 23:59	0.8	0.0	8	0	60	0	0.0	0.0	0	0	0	0
SCALLOP_1	26/02/03 23:59	0.8	0.0	8	0	60	0	0.0	0.0	0	0	40	0
SCALLOP_1	27/02/03 23:59	0.8	0.0	8	0	60	0	0.4	0.0	5	0	215	0
SCALLOP_1	28/02/03 23:59	1.5	0.0	8	0	230	0	0.4	0.0	5	0	215	0
SCALLOP_1	01/03/03 23:59	3.0	0.0	8	0	230	0	2.5	0.0	4	0	275	0
SCALLOP_1	02/03/03 23:59	4.0	0.0	6	6	250	250	3.0	4.0	6	6	240	240
SCALLOP_1	03/03/03 23:59	0.8	0.0	8	0	250	0	0.8	0.0	5	0	250	0

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Weather Information

Well Name: Scallop-1

Well ID	Date and Time	Current Visibility	Maximum Visibility	Current Air Temperature	Maximum Air Temperature	Current Sea Temperature	Maximum Sea Temperature	Current Cloud Cover	Maximum Cloud Cover
		km	km	deg C	deg C	deg C	deg C		
SCALLOP_1	30/01/03 23:59	12	0	16	0	20	0	0	0
SCALLOP_1	31/01/03 23:59	20	15	14	20	16	16	0	0
SCALLOP_1	01/02/03 23:59	20	0	15	20	16	0	0	0
SCALLOP_1	02/02/03 23:59	20	0	17	0	16	0	0	0
SCALLOP_1	03/02/03 23:59	20	0	19	0	16	0	0	0
SCALLOP_1	04/02/03 23:59	19	0	19	0	16	0	0	0
SCALLOP_1	05/02/03 23:59	3	0	19	0	16	0	10	0
SCALLOP_1	06/02/03 23:59	16	0	20	0	16	0	0	0
SCALLOP_1	07/02/03 23:59	18	0	19	0	16	0	0	0
SCALLOP_1	08/02/03 23:59	10	0	16	0	16	0	0	0
SCALLOP_1	09/02/03 23:59	6	0	18	0	16	0	0	0
SCALLOP_1	10/02/03 23:59	18	0	19	0	16	0	0	0
SCALLOP_1	11/02/03 23:59	18	0	19	0	16	0	0	0
SCALLOP_1	12/02/03 23:59	18	0	18	0	16	0	0	0
SCALLOP_1	13/02/03 23:59	18	0	16	0	16	0	0	0
SCALLOP_1	14/02/03 23:59	18	0	19	0	0	0	0	0
SCALLOP_1	15/02/03 23:59	18	0	18	0	0	0	0	0
SCALLOP_1	16/02/03 23:59	12	0	18	0	0	0	0	0
SCALLOP_1	17/02/03 23:59	18	0	15	0	0	0	0	0
SCALLOP_1	18/02/03 23:59	18	0	16	0	0	0	0	0
SCALLOP_1	19/02/03 23:59	18	0	15	0	0	0	0	0
SCALLOP_1	20/02/03 23:59	16	0	20	0	0	0	0	0
SCALLOP_1	21/02/03 23:59	4.8	0	18	0	0	0	0	0
SCALLOP_1	22/02/03 23:59	4.5	0	18	0	0	0	0	0
SCALLOP_1	23/02/03 23:59	18	0	19	0	0	0	0	0
SCALLOP_1	24/02/03 23:59	16	0	20	0	0	0	0	0
SCALLOP_1	25/02/03 23:59	16	0	20	0	0	0	0	0
SCALLOP_1	26/02/03 23:59	16	0	20	0	0	0	0	0
SCALLOP_1	27/02/03 23:59	8	0	20	0	0	0	0	0
SCALLOP_1	28/02/03 23:59	16	0	16	0	0	0	0	0
SCALLOP_1	01/03/03 23:59	16	0	14	0	0	0	0	0
SCALLOP_1	02/03/03 23:59	10	16	16	18	16	16	0	0
SCALLOP_1	03/03/03 23:59	20	0	18	0	16	0	0	0

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Well Name: Scallop-1

Floater Worksheet

Well ID	Date and Time	Riser Tension	Riser Angle	Flex Joint Rotation	Hole Position (Offset)	Rig Heading	Hole Position (Angle)	Current Tension Anchor 1	Max. Tension Anchor 1	Current Tension Anchor 2	Max. Tension Anchor 2	Current Tension Anchor 3
		kips	degrees	degrees	meters	degrees	degrees	kips	kips	kips	kips	kips
SCALLOP_1	01/02/02 23:59	0	0.0	0.0	0.0	209	0	240	350	240	350	240
SCALLOP_1	02/02/03 23:59	0	0.0	0.0	0.0	209	0	250		230		240
SCALLOP_1	03/02/03 23:59	0	0.0	0.0	0.0	210	0	250		230		240
SCALLOP_1	04/02/03 23:59	0	0.0	0.0	0.0	210	0	250		225		230
SCALLOP_1	05/02/03 23:59	0	0.0	0.0	0.0	210	0	240		230		240
SCALLOP_1	06/02/03 23:59	352	1.0	0.0	1.4	210	180	250		240		260
SCALLOP_1	07/02/03 23:59	352	0.9	0.0	0.6	210	60	250		240		260
SCALLOP_1	08/02/03 23:59	352	1.1	0.0	1.0	210	180	250		240		240
SCALLOP_1	09/02/03 23:59	352	0.5	0.0	0.4	210	120	250		240		270
SCALLOP_1	10/02/03 23:59	352	0.1	0.1	1.0	210	78	240		250		270
SCALLOP_1	11/02/03 23:59	352	0.7	0.0	1.0	210	225	240		250		270
SCALLOP_1	12/02/03 23:59	352	0.9	0.0	1.8	210	219	250		240		270
SCALLOP_1	13/02/03 23:59	352	0.7	0.0	0.9	210	178	240		250		270
SCALLOP_1	14/02/03 23:59	352	1.1	0.0	1.0	210	180	240		250		270
SCALLOP_1	15/02/03 23:59	352	0.9	0.0	1.1	210	164	240		250		270
SCALLOP_1	16/02/03 23:59	352	0.5	0.0	0.7	210	115	240		250		270
SCALLOP_1	17/02/03 23:59	344	1.0	0.0	0.8	210	187	240		250		270
SCALLOP_1	18/02/03 23:59	352	0.7	0.0	0.3	210	120	240		250		270
SCALLOP_1	19/02/03 23:59	352	0.9	0.0	1.3	210	202	240		250		270
SCALLOP_1	20/02/03 23:59	352	1.2	0.0	1.5	210	184	250		220		235
SCALLOP_1	21/02/03 23:59	352	1.3	0.0	1.6	210	176	240		230		250
SCALLOP_1	22/02/03 23:59	352	1.5	0.0	1.7	210	203	240		230		250
SCALLOP_1	23/02/03 23:59	352	1.5	0.0	2.5	210	200	250		230		240
SCALLOP_1	24/02/03 23:59	352	1.2	0.0	1.6	210	165	240		230		250
SCALLOP_1	25/02/03 23:59	352	0.7	0.0	1.6	210	172	245		230		255
SCALLOP_1	26/02/03 23:59	352	1.0	0.0	0.8	210	158	250		240		260
SCALLOP_1	27/02/03 23:59	352	1.0	0.0	1.0	210	162	250		240		215
SCALLOP_1	28/02/03 23:59	352	0.3	0.0	0.7	210	134	240		240		220
SCALLOP_1	01/03/03 23:59	0	0.0	0.0	1.0	210	78	230		250		225
SCALLOP_1	02/03/03 23:59	0	0.0	0.0	0.0	210	0	270		275		250

ExxonMobil

Well Name: Scallop-1

Floater Worksheet

Well ID	Date and Time	Max. Tension Anchor 3 kips	Current Tension Anchor 4 kips	Max. Tension Anchor 4 kips	Current Tension Anchor 5 kips	Max. Tension Anchor 5 kips	Current Tension Anchor 6 kips	Max. Tension Anchor 6 kips	Current Tension Anchor 7 kips	Max. Tension Anchor 7 kips	Current Tension Anchor 8 kips	Max. Tension Anchor 8 kips
SCALLOP_1	01/02/02 23:59	350	240	350	240	350	240	350	240	350	240	350
SCALLOP_1	02/02/03 23:59		230		240		240		240		250	
SCALLOP_1	03/02/03 23:59		230		240		250		250		260	
SCALLOP_1	04/02/03 23:59		230		240		250		250		260	
SCALLOP_1	05/02/03 23:59		240		240		240		240		250	
SCALLOP_1	06/02/03 23:59		240		250		240		260		250	
SCALLOP_1	07/02/03 23:59		240		240		250		250		250	
SCALLOP_1	08/02/03 23:59		240		240		250		240		250	
SCALLOP_1	09/02/03 23:59		240		250		240		250		250	
SCALLOP_1	10/02/03 23:59		240		250		240		240		250	
SCALLOP_1	11/02/03 23:59		240		250		240		240		250	
SCALLOP_1	12/02/03 23:59		240		250		240		250		240	
SCALLOP_1	13/02/03 23:59		240		250		240		240		240	
SCALLOP_1	14/02/03 23:59		240		250		240		250		240	
SCALLOP_1	15/02/03 23:59		240		250		240		250		240	
SCALLOP_1	16/02/03 23:59		240		250		240		240		240	
SCALLOP_1	17/02/03 23:59		240		250		240		250		240	
SCALLOP_1	18/02/03 23:59		240		240		235		240		240	
SCALLOP_1	19/02/03 23:59		240		240		235		240		240	
SCALLOP_1	20/02/03 23:59		210		240		260		275		265	
SCALLOP_1	21/02/03 23:59		230		240		250		260		260	
SCALLOP_1	22/02/03 23:59		230		250		250		250		250	
SCALLOP_1	23/02/03 23:59		220		240		260		270		260	
SCALLOP_1	24/02/03 23:59		230		250		250		240		240	
SCALLOP_1	25/02/03 23:59		230		250		250		240		235	
SCALLOP_1	26/02/03 23:59		230		250		245		240		240	
SCALLOP_1	27/02/03 23:59		265		250		230		235		230	
SCALLOP_1	28/02/03 23:59		245		250		235		220		230	
SCALLOP_1	01/03/03 23:59		250		260		230		220		220	
SCALLOP_1	02/03/03 23:59		270		275		250		235		250	

Esso Australia Pty Ltd

FINAL WELL REPORT

SCALLOP-1

JANUARY to MARCH 2003

VOLUME 3 of 4

Bcc.
M. C. Greenwood
G. A. Nash
D. A. Schwebel (w/o attachements)
D. C Tyler (SRO Files)
D. L. Whiteman

CA5 / file

Chris

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

FAXED 2/01/03 10:3

January 2, 2003

Environment Australia
Environment Assessment & Approvals Branch
Referrals Section
GPO Box 787
CANBERRA 2601

Attention: **Mr. Steve Mercer**
Director, Referrals Section

Dear Sir,

Re: EPBC Referral Application

Pursuant to the requirements of the Environment Protection and Biodiversity Conservation Act 1999, we respectfully submit for your review a Notice of Referral relating to the proposed Scallop-1 Drilling Program in Bass Strait.

Detail of the activity, targeted to commence in late January or early February 2003, subject to approvals and drilling rig availability, is provided in the attached form.

Should you have any queries on the matters contained herein, please contact me on (03) 9270 3919 or Mr Michael Greenwood, Environmental Adviser on (03) 9270 3955.

Yours faithfully,

G. A. Nash
Gippsland Geoscience Manager

FAXED

Environment Protection and Biodiversity Conservation Act 1999

Referral Form

Please complete this form then print it out, get any signatures required, attach the necessary map/s or other information and send the completed referral to Environment Australia. Please read the guide accompanying this form carefully and ensure that the completed referral meets the requirements of the Regulations, as outlined in the guide, in terms of length, format and content.

1.1 Person making the referral

Note: This must be either the person proposing to take the action, their agent (e.g. a consultant), or a State, Territory or Commonwealth agency making the referral in relation to an action to be taken by another person.

(Include name, postal address, telephone, fax, email)

Esso Australia Pty Ltd
12 Riverside Quay
Southbank, VIC 3006
Phone – 03 9270 3919
Fax – 03 9270 3895

1.2 Corporation or individual(s) proposing to take an action.

Note: If the person proposing to take the action is the same as the person making the referral, write 'as above'.

(Include name of corporation or individual(s) proposing to take the action, postal address, telephone, fax, email)

Mr Glen Nash
Gippsland Geoscience Manager

Esso Australia Pty Ltd
12 Riverside Quay
Southbank, VIC 3006

Phone: 03 9270 3919
Fax: 03 9270 3895
E-mail: glen.a.nash@exxonmobil.com.au

If a corporation is proposing to take the action, please also provide the name of a contact officer for this matter.

1.3 Corporation or individual(s) proposed as proponent for the action

Note: If the person proposed as proponent is the same as the person proposing to take the action, write 'as above'.
If the proponent is different from the person proposing to take the action, the signature of both is required (at Section 4).

(Include name(s) of corporation or individual(s) proposed as proponent for the action, postal address, telephone, fax, email..)

As above

If a corporation is the proponent for the action, please also provide the name of a contact officer for this matter.

2. Description of the proposal

2.1 Provide a summary description of the action

Esso Australia Pty Ltd (Esso) proposes to drill one exploration well from a semi-submersible mobile offshore drilling unit (MODU). Scallop - 1 well is proposed as a vertical oil well to be drilled in approximately 110 m of water to a depth of 3240m MDRT.

2.2 details of the location of the project area
Where the project is of less than 1 km^2 in size, provide the location as a single pair of latitude and longitude references

Locality:

Latitude:	38	Degrees	12	minutes	48.6	seconds South
Longitude:	148	degrees	35	minutes	28.9	seconds East

The general location of the proposed drilling activity is displayed in Figure 1 Scallop 1 is located in (Vic/RL2) approximately 45 km south from the Victorian coast, 15 km east of Esso's Tuna platform and 3 km south of Esso's undeveloped Kipper gas field.

Attach an A4 size map showing the location and approximately boundaries of the area in which the project is to occur (This map, or a second attached map, should also show features mentioned in responses to questions in part 3 of this referral).

2.3 The timeframe in which the action is proposed to occur. (Include start and finish dates where applicable)

Drilling is scheduled for a period between late January, 2003 and April 2003. The exact timing is not know at this stage and would be dependent upon MODU availability and approval timing. The drilling duration is approximately 40 days.

2.4 Provide details of the action including activities proposed to be carried out as part of the proposed action.

Esso proposes to drill one exploration well from a semi-submersible mobile offshore drilling unit (MODU). Scallop 1 well is proposed as a vertical oil well to be drilled in 110 m of water to a depth of 3240m MDRT.

The preferred drilling fluid scheme for East-Pilchard is a Water Based Mud (WBM). Synthetic based mud is not proposed for the well. The location of the well is described in Section 2.2.

The MODU to be contracted is expected to be the Transocean Sedco 702 semi-submersible rig

The drilling program for Scallop - 1 will include a conventional 2 string casing design. A 36-inch hole will be drilled riserless with seawater and bentonite gel sweeps to about 180m MDRT and 30" structural casing will be set and cemented. This casing is used to support the 30" wellhead housing. A 17-1/2" surface hole will be drilled riserless with seawater and bentonite gel sweeps to about 850m MDRT and the 18-

3/4" high pressure wellhead housing with one joint of 20" below swaged to 13-3/8" casing will be set and cemented.

Cuttings and drilling fluid will be returned to the seafloor while drilling riserless. A BOP stack and riser will be nippled up on the high-pressure housing. A 12-1/4" hole will be drilled using water-based KCL/PHPA/Glycol/Polymer mud system to evaluate the primary and secondary targets from 2647m to 3170m MDRT. If oil is discovered, 9-5/8" production casing will be set and cemented. If the well is dry, cement plugs will be run to abandon the well.

Drilled cuttings will be continuously discharged overboard after separation from recirculated drilling fluid by vibrating screens (shale-shakers) and to a lesser extent, centrifuges, de-sanders and desilters. Cuttings discharged can be expected to range from very fine to very coarse (<1 cm) particle/sediment size. The volume of cuttings discharged will be in the order of 380 m^3.

2.5 provide an explanation of the context in which the action is proposed to take place, including any relevant planning framework, in which the action is proposed

An Environment Plan (EP) is to be prepared for the well, as required under the *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999.* This plan will address the drilling program from a risk based context and will include an implementation plan, containing agreed performance objectives, defined roles and responsibilities and reporting and auditing requirements. Well drilling design and execution will be conducted under the framework of the Esso Operations Integrity Management System including the Environmental Management System, which will ensure that all potential hazards to the environment are identified, assessed and either avoided or managed to an acceptable level.

Oil spill risks associated with well drilling activities will be managed in accordance with Esso's approved Bass Strait Emergency Response Manual that includes an Oil Spill Contingency Plan.

2.6 Indicate whether, and in what way, the action is related to other actions or proposals in the region.

The proposed drilling program will be undertaken in the Gippsland Basin in the Commonwealth waters of Bass Strait off the south east Victorian coastline. The objective for the Scallop -1 exploration well is to discover feasible oil, condensate or gas deposits that can be economically developed and contribute to existing developments in the Bass Strait.

Historically, this area has undergone significant petroleum exploration and is one of the largest oil and gas production regions in Australia. Esso Australia Pty Ltd is a wholly owned subsidiary of Esso Australia Resources Pty Ltd, the Operator of joint ventures with other companies for exploration and production of oil and gas in Bass Strait.

Principally, Esso Australia Pty Ltd operates 21 oil and gas facilities within Bass Strait, on behalf of the Esso Australia Resources Ltd and BHP Billiton (Bass Strait) Petroleum Pty Ltd Joint Venture. The existing operations comprise staffed and not normally staffed production platforms, monotowers and subsea completions.

The Longford plants receive Bass Strait production by pipeline and are located about 20 km south east of Sale and 12 km from the coast in the Gippsland region of Victoria. Gas processing and crude oil stabilisation operations take place at Longford.

3. Nature and extent of the likely impacts of the action

3.1 Describe the affected area, referring as appropriate to attached maps. In particular indicate the location of any of the following features: World Heritage properties, Ramsar wetlands, listed threatened species or communities and/or known habitat for these species or communities, listed migratory species and/or known habitat for these species, Commonwealth marine areas and Commonwealth land.

(Note - show relevant features on an attached map)

The general location of the proposed activity is displayed in Figure 1. The proposed Scallop - 1 well location and drilling activities are explained in Sections 2.2 and 2.4.

There are no significant seabed features in the vicinity of the proposed well site.

Although specific seabed surveys have not been conducted at the proposed well site, various studies have been undertaken in eastern Bass Strait by Esso. These studies show the seabed material is likely to be predominantly calcium carbonate comprised of calcarenites, marls and marine shales. Sediment particle sizes in the vicinity of the well are likely to be similar in size to sand (0.25 – 0.5 mm).

Benthic sampling in the Bass Strait has consistently shown a highly diverse array of invertebrate groups with several polychaete families, pycnogonids, paricarid crustaceans, opisthobranch molluscs, bryozoans and brachiopods being the most species rich.

There are no marine reserves, World Heritage properties, or areas listed or nominated on the Register of the National Estate, or listed Ramsar wetlands in the vicinity of the Scallop -1well location. The closest reserve area is the Ninety Mile Beach Marine Park, which lies approximately 140 km south west of the proposed well location.

Species that are listed under the EPBC Act may migrate or move through the proposed drilling area. However, none of the species listed are dependent upon the area for food or reproduction.

The Humpback Whale occurs regularly in the region while migrating to and from the north-eastern Australian coast from the sub-antarctic, but it does not feed in the Bass Strait. Low numbers of sightings have been made of the other whale species mentioned above, along the eastern Bass Strait coastline. Like the Humpback Whale, the Blue, Southern Right and Fin whale all use the Bass Strait to migrate between feeding grounds in the antarctic and breeding grounds to the north. From sighting recorded by Esso, most whale movements occur in the Bass Strait during winter and spring, which is outside of the proposed drilling period of autumn.

Great White Sharks are uncommon but are generally known to frequent waters around seal colonies. There are known Australian fur seal colonies at Wilson's Promontory, over 200 km to the south west of the proposed drilling location. The seals use Esso's Bass Strait platforms as resting-places.

Migratory seabirds, some of which will be protected by international agreements (Bonn Convention, JAMBA and CAMBA) may pass through or near to the well location on their way to islands in the Bass Strait and/or Tasmania. Foraging groups of seabirds are also sighted, sporadically, in the eastern Bass Strait area.

Drilling activities are considered unlikely to have any significant impact on the movements of migratory species.

There are no known EPBC Act listed marine species or ecological communities that may be affected by the drilling activity.

Any support vessels mobilised to site from overseas are required to comply with the AQIS Australian Ballast Water Guidelines to minimise the potential for any introduction of exotic marine organisms. In addition, the water depth and distance from the coast will effectively further reduce the risks of exotic introductions.

Disturbance to the Commonwealth marine area will be limited to smothering of sediment dwelling fauna over a very localised area (within 100-200 m radius) and the effects of water based drilling fluid causing temporary localised effects on benthic fauna. According to Hinwood *et al.* (1994) the plume created by a discharge of drill cuttings can be expected to dilute by a factor of at least 10,000 within 100 m of the point of discharge.

The drilling program is unlikely to have any significant, long lasting effects on benthic communities due to the water depth (110 m) and current regime. The extensive nature of the habitat and nature of the seabed indicates a high potential for recovery of fauna from physical disturbance.

3.2 Describe the nature and extent of likely impacts on the following matters protected by the EPBC Act (to the extent that each is relevant to the action and the affected area):

- the world heritage values of a declared World Heritage property, or
- the ecological character of a declared Ramsar wetland, or
- the members of a listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat;
- the members of a listed migratory species or their habitat, or
- part of the Commonwealth marine area
- Commonwealth land

There will be no impacts from the drilling activity on World Heritage property, Ramsar wetlands, listed migratory species or their habitats or threatened ecological communities, or Commonwealth land and it is considered highly unlikely that any threatened species will be impacted by the drilling activities.

As stated in Section 3.1, most whale movements through the region are in winter and spring. The drilling operations are planned for summer through early autumn 2003, thus avoiding the main whale migration period. Should the drilling program move to later in the year because of MODU availability, the potential effects on migrating whales from drilling activities are largely restricted to the movement of vessels to and from the Project area. The eastern Bass Strait region contains 21 oil and gas installation with their corresponding support vessel. It also supports a significant portion of the community through commercial fishing activities. The small increase in support vessel movements (approximately 1 vessel movement per day) in the region are unlikely to have any significant impact on whale migrating behaviour.

3.3 Indicate whether the action is a nuclear action or an action by the Commonwealth or by a Commonwealth agency

The action is not a nuclear action or an action conducted by the Commonwealth or a Commonwealth agency.

3.4 Provide a description of important features of the **project area** and the **affected area**, including (if relevant to the project area or affected area) information about:

(a) soil and vegetation characteristics;

(b) water flows, including rivers, creeks and impoundments;

(c) the presence of outstanding natural features, including caves;

(d) gradient;

(e) any buildings or other infrastructure;

(f) any marine areas;

(g) kinds of fauna in the area; and

(h) the current state of the environment in the area, including information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

(Note - show relevant features on an attached map)

The general location of the proposed activity is displayed in Figure 1. The proposed Scallop 1 well is located approximately 45 km south of the Victorian coast, in Vic/L4 production licence area. The area is entirely within Commonwealth waters.

Scallop -1 is located on the continental shelf in approximately 110 m of water. There are no significant seabed features in the vicinity.

A description of the environment at the proposed well location is provided in Section 3.1.

3.5 Whether the **project area** is held under freehold, leasehold or any other tenure.

The proposed Scallop -1 well is located within the production licence Vic/RL2. The Permits are operated by Esso Australia Pty Ltd on behalf of its Joint Venture Partners and is administered by the Victorian Department of Natural Resources and Environment, Minerals Petroleum Victoria division as the Designated Authority.

3.6 Current or proposed land uses for the **project area**.

The broader project area is used for the production and transport of oil and gas. Project activity will take place in the above-mentioned Production Licence area.

3.7 For information given in this referral

(a) the source of the information; and

(b) how recent the information is; and

(c) how the reliability of the information was tested; and

(d) what uncertainties (if any) are in the information.

Bannister, JL; Kemper, CM and Warneke, RM (1999) "The Action Plan for Australian Cetaceans" Wildlife Australia, Environment Australia, Canberra

Environment Conservation Council (1999) "Marine Coastal & Estuarine Investigation – Draft Report for Public Comment" Environment Conservation Council, East Melbourne

Environment Australia (2000) "Draft Recovery Plan for Great White Sharks *Carcharodon carcharias* in Australia" Environment Australia, Canberra

Esso Australia (2000) Whale sighting data 1987 to 2000.

Esso Australia (1997) "Blackback Environment Plan"

Shaughnessy, P. D. (1999) "The Action Plan for Australian Seals" Natural Heritage Trust, Environment Australia, Canberra

Seabed information, including sediments and infauna descriptions, were collected by the Museum of Victoria and Esso Australia during the years 1979 to 1993. Whale species distribution was obtained from observations made from Esso platforms, vessels and helicopters. Knowledge on the distribution and abundance of seabirds in the Bass Strait is limited.

4. Signatures and Declarations

1. Signature of person making the referral

I, Glen A. Nash, for and on behalf of Esso Australia Pty Ltd, declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature Gla. N&L

Glen Nash
Gippsland Geoscience Manager
Esso Australia Pty Ltd

Date 2/1/03

2. Statement by person making this referral on whether or not they believe the referred action to be a controlled action and nomination of relevant controlling provisions (note: this Section must be completed in *all cases* except where the referral is made by a State or Territory or a Commonwealth agency in relation to an action to be taken by another person.)

I, Glen A. Nash, for and on behalf of Esso Australia Pty Ltd, being the person making this referral and the person proposing to take the action (or agent acting on behalf of the person), believe that the action described in this referral **is not** a controlled action.

Briefly provide reasons why you believe the action to be controlled or not controlled:

The proposed activity has no significant impact on matters of National Environmental Significance. There will be no impacts from the project on World Heritage property, Ramsar wetlands, listed migratory species or their habitats or threatened ecological communities, or Commonwealth land and it is considered highly unlikely that any threatened species will be significantly impacted by the project activity.

Disturbance to the Commonwealth marine area will be limited to the effects of water based drilling mud and cuttings causing temporary localised effects on benthic fauna. According to Hinwood *et al.* (1994) the plume created by a discharge of drill cuttings can be expected to dilute by a factor of at least 10,000 within 100 m of the point of discharge.

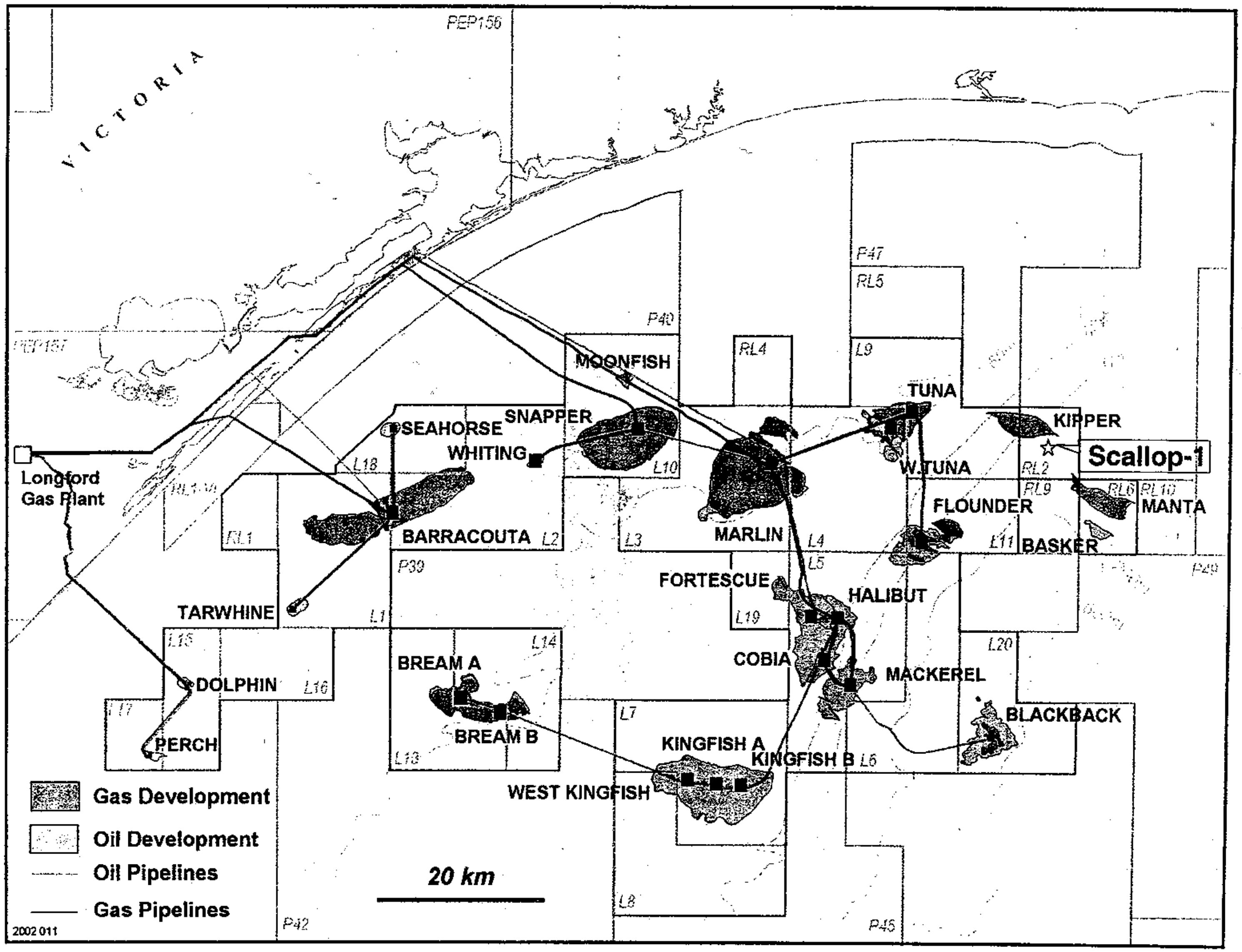
The drilling program is unlikely to have any significant, long lasting effects on benthic communities due to the water depth (100 m) and current regime. The extensive nature of the habitat and nature of the seabed indicates a high potential for recovery of fauna from any physical disturbance.

Signature

Date 2/1/03

END OF FORM

Figure 1. Scallop 1 - Location Map



Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

21 January, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Attention: Mr Terry McKinley

Dear Sir,

Subject: Changes to SCALLOP-1 Environment Plan

Please find attached changes to the Scallop - 1 Environmental Plan. The attached pages are intended to replace pages of the same number from the Environmental Plan that was submitted on 16 January.

Please contact Colin Johancsik on 9270-3534 (E-mail: colin.a.johancsik@exxonmobil.com) if you require any further information.

Yours faithfully
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman
Drilling Manager

bcc: D. Tyler (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

5. ENVIRONMENTAL RISKS AND EFFECTS

5.1 General

This Section assesses the risk to the environment of the proposed drilling program.

The stages of the assessment of environmental risks in this EP are:

Risk identification;

Risk analysis;

Risk evaluation; and

Risk treatment.

5.2 Risk identification

Risk identification involves identifying the sources of risk i.e., those activities or incidents that could result in an environmental impact. Risks are categorised into those arising from routine and non routine operations and these are presented below in Table 5.2. Further details regarding the assessment of the environmental effects associated with drilling in Bass Strait are provided within Appendix C of the Bass Strait EP 2001.

5.3 Risk analysis

Risk analysis involves determining the likelihood of an activity or event occurring, and the consequences of that activity or event on the environment shows the risk assessment matrix that has been used to analyse the levels of each risk identified.

5.4 Risk evaluation

Risk evaluation involves ranking the risks i.e., determining if the risk of an activity or incident is acceptably low, or if management actions are required to reduce the risk to as low as reasonably practicable (ALARP). The results of the risk evaluation are summarised in Table 5.2.

5.5 Risk treatment

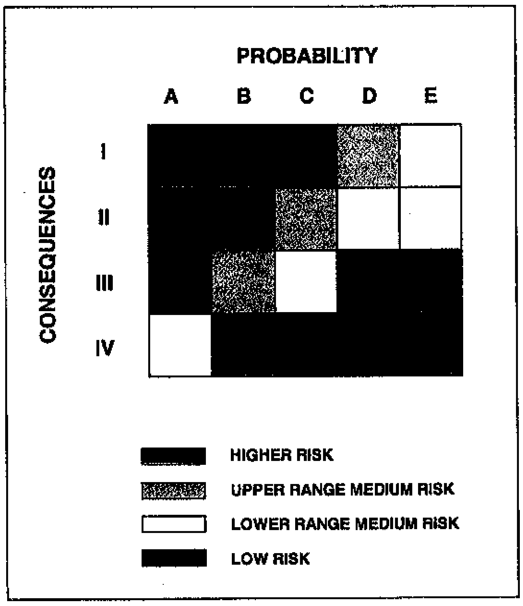
Management actions to reduce the risks are incorporated into Table 5.1 and Table 5.2. The risk analysis rating includes the influence of risk reduction actions.

5.6 Risk Assessment Methodology

The risk assessment process for the proposed Scallop-1 well was undertaken primarily through a brainstorming session involving Drilling and Environmental Engineers. This brainstorming session developed risk scenarios and was aided via the review of previous documentation for similar drilling programs. Once potential risk scenarios were established, the drilling and environmental team developed risk treatment measures based on appropriate codes of practice and established industry best practice.

After the development of risk scenarios, potential consequences and safeguards/mitigation methods, each scenario was assessed using the risk assessment matrix indicated in Table 5.1. For each scenario the probability of such an event occurring (given the implementation of the risk treatment measures) was first identified and then the consequences of such an event occurring were determined. The risk matrix was then used to determine the risk ranking for each scenario. During the probability and consequence analysis, documented historical data of both the frequency and severity of incidents was used, where available. After the primary risk assessment determination process was completed, the results were recorded and reviewed by a larger team of environmental and drilling specialists. Where the review process produced conflicting results, they were further assessed and where conflicting assessments could not be resolved, the most conservative result was recorded (i.e. the higher probability/consequence category was recorded).

Table 5.1 Risk Matrix



PROBABILITY CATEGORY	DEFINITION
A	POSSIBILITY OF REPEATED INCIDENTS
B	POSSIBILITY OF ISOLATED INCIDENTS
C	POSSIBILITY OF OCCURRING SOMETIME
D	NOT LIKELY TO OCCUR
E	PRACTICALLY IMPOSSIBLE

CONSEQUENCE CATEGORY	CONSIDERATIONS	
	PUBLIC DISRUPTION	ENVIRONMENTAL IMPACT
I	Large community	Major / extended duration / full scale response (tier 3 equivalent spill)
II	Small community	Serious / significant resource commitment (tier 2 equivalent spill)
III	Minor	Moderate / limited response of short duration (tier 1 equivalent spill)
IV	Minor to none	Minor / little or no response needed

6. ENVIRONMENTAL PERFORMANCE

6.1 Introduction

This section summarises EAPL's environmental performance objectives for the Scallop-1 drilling operation. The performance objectives are directly linked with the identified risks and effects discussed in Section 5.

This section also identifies the standards governing the operation i.e., those acts of legislation or industry guidelines and codes of practice by which operations should be carried out to achieve the stated environmental objective, consistent with industry's best practice. Performance criteria by which Esso will measure its environmental performance are also presented. The performance criteria are measurable and relate directly to the environmental objectives. The criteria provide an overview to the commitments for environmental management detailed in the Implementation Strategy in Section 7.

6.2 Environmental Objectives, Standards and Criteria

The environmental objectives, standards and measurement criteria for drilling the proposed Scallop-1 well are shown in Table 6.1.

Table 6.1 Summary of Environmental Objectives, Standards and Performance Criteria

Objectives	Standards	Criteria
Communicate EAPL's environmental policy and procedures	EAPL's Environmental Policy	Pre-drilling induction of personnel.
Minimise quarantine risks	AQIS Australian Ballast Water Guidelines, P(SL)A 1967	No reports of introduced pests from ballast water
Minimise the effects of drilling cuttings and fluids on the environment		Discharge of drilling cuttings and fluids is in accordance with Environmental Plan. Water based drilling fluids used.
Minimise effects of MODU and support vessel wastes including: deck drainage and oily wastes kitchen and domestic wastes solid wastes	AMSA OSV Code, IMO standards, P(SL)A 1967.	Management of wastes is in accordance with EP's Implementation Strategy
Minimise risks and effects of spills, including during fuel transfer operations.	EAPL Oil Spill Contingency Plan AMOS Plan, AMOSC AMSA National Plan to combat pollution of the sea by oil and other noxious and hazardous substances AMSA OSV Code EAPL refuelling procedures	Approved OSCP in place. Compliance with Implementation Strategy

Original: Mike Greenwood
copy (Chris Meakin
{ Glen Nash

Environment Australia

Department of the Environment and Heritage

cc Scallop-1 Final Well Report
Scallop-1 Surveillance Binder

G. A. NASH
06 FEB 2003

Mr Glen Nash
Gippsland Geoscience Manager
Esso Australia Pty Ltd
12 Riverside Quay
SOUTHBANK VIC 3006

File 2.3 Regulatory

Dear Mr Nash

Esso Australia Pty Ltd/Mining/Bass Strait/Commonwealth Marine/ Drilling of Scallop-1 Exploration Well (EPBC Reference: 2003/917)

Thank you for the above referral, received on 3 January 2003, for decision whether or not approval is needed under Chapter 4 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The referral has now been considered under the EPBC Act and I have decided that the action is not a controlled action. Approval is therefore not needed under Part 9 of the Act before the action can proceed. A copy of the document recording my decision is attached for your information.

Chapter 5 of the EPBC Act states that it is an offence to take, kill, injure, move, trade or keep a member of a listed migratory species, listed threatened species or ecological community, listed marine species, or a cetacean, in a Commonwealth area (terrestrial or marine). It is necessary to make a separate application for a permit if the above circumstances are likely to apply to a proposed action. Further information may be obtained by calling 1800 803 772 or visiting Environment Australia's web site (http://www.ea.gov.au/epbc/).

Yours sincerely

for Mark Flanigan
Assistant Secretary
Policy and Compliance Branch

31 January 2003

COMMONWEALTH OF AUSTRALIA

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

DECISION THAT ACTION IS NOT A CONTROLLED ACTION

Pursuant to section 75 of the *Environment Protection and Biodiversity Conservation Act 1999*, I, MARK FLANIGAN, Assistant Secretary, Policy and Compliance Branch, Environment Australia, decide that the proposed action, set out in the Schedule, is not a controlled action.

SCHEDULE

The proposed action by Esso Australia Pty Ltd to drill one exploration well (known as Scallop-1) in the Gippsland Basin off Bass Strait, within Permit Area Vic /RL2, approximately 45 km off the Victorian coast, and as described in the referral received under the Act on 3 January 2003 (EPBC 2002/917).

Dated this 31 day of JANUARY 2003

....

ASSISTANT SECRETARY
POLICY AND COMPLIANCE BRANCH
ENVIRONMENT AUSTRALIA

Facsimile

Drilling

Bcc:
D. Tyler (SRO)
S. Grope
Drilling Supervisors - Scallop-1
F.W. Kratzer
Scallop-1 FWR
Scallop-1 Well Planning & Surveillance
File: Scallop-1 2.3 (Regulatory)

If this message has been received by other than the party to whom it is addressed, please notify us immediately at the telephone number below. The message may contain material which is proprietary or confidential, and it should not be copied or distributed. Confidentiality is not waived by reason of loss or mistaken delivery. If transmission is incomplete or illegible, please phone .

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay, Southbank VIC 3006
GPO Box 400C, Melbourne VIC 3001
Telephone: 61 3 9270 3333

An **ExxonMobil** Subsidiary

Facsimile

Drilling

To	Mr Rob King, Manager, Mineral & Petroleum Operations Manager - Marine Operations & Personnel Australian Maritime Safety Authority	Pages	Cover + 1 page
Fax	9412 5152 (DNRE) (02) 6279 5966 (AMSA)	Date	16 January 2003
From	Daniel L. Whiteman	CC	Distribution
Re	Sedco 702 Rig Move from Minerva-3 Location to Scallop-1 Location, VIC/RL2.		

Distribution:

Maritime Rescue Co-ordination Centre, Canberra (02) 6230 6868
The Officer in Charge, MRCC

DOT Canberra (02) 6274 6699
The Officer in Charge DOT

Sedco Forex International
Mr Blue O'Shea - Sedco 702 Rig Manager

Pursuant to Clauses 302(2) and 302(3) of the Petroleum (Submerged Lands) Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production, Esso Australia Pty. Ltd. hereby request your approval to move the Semisubmersible Drilling Rig "SEDCO 702" from BHP Billiton's Minerva-3 location at VIC/L22 in the Otway Basin to Esso Australia's Scallop-1 location at VIC/RL2 in Bass Strait on or about 24th January 2003 as set out below.

If this message has been received by other than the party to whom it is addressed, please notify us immediately at the telephone number below. The message may contain material which is proprietary or confidential, and it should not be copied or distributed. Confidentiality is not waived by reason of loss or mistaken delivery. If transmission is incomplete or illegible, please phone .

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Facsimile

Drilling

Departing Location:	Minerva-3 (VIC/L22, Otway Basin)
	Latitude 38° 42' 28.063"S
	Longitude 142° 57' 28.046"E
Arriving Location:	Scallop-1 (VIC/RL2, Bass Strait)
	Latitude 38° 12' 48.6"S
	Longitude 148° 35' 28.9"E
Distance of Tow:	Approximately 324 nautical miles
Anticipated Commencement Date:	24th January 2003
Anticipated Duration:	± 3 days
Towing Vessel(s):	"Pacific Frontier" & "Pacific Challenger"
Towing Arrangement:	As per Sedco 702's Rig Move Procedure
Person in charge during Tow:	Sedco 702 OIM

Number Personnel on Board during Tow: 65 - 70.

The actual commencement of the tow will be advised direct from the rig immediately prior to commencing the rig move.

Yours faithfully
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

for

Daniel L. Whiteman
Drilling Manager

If this message has been received by other than the party to whom it is addressed, please notify us immediately at the telephone number below. The message may contain material which is proprietary or confidential, and it should not be copied or distributed. Confidentiality is not waived by reason of loss or mistaken delivery. If transmission is incomplete or illegible, please phone .

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay, Southbank VIC 3006
GPO Box 400C, Melbourne VIC 3001
Telephone: 61 3 9270 3333

An **ExxonMobil** Subsidiary

BHP Billiton Petroleum Pty Ltd
Level 42, 152 – 158 St Georges Tce
Perth WA 6000 Australia
PO Box J668
Pert WA 6000 Australia
+61 8 9278 4888 Fax +61 8 9278 4899
bhpbilliton.com

bhpbilliton
Worldwide Drilling

Registered Office: 600 Bourke Street
Melbourne Victoria 3000 Australia
ABN 97 006 918 832
Registered in Australia

Facsimile Communication

Date 13 January 2003

To / cc	**Attention**	**Fax Number**
Dept of Natural Resources and Environment	Bruce Armour	03 9412-5152
Rescue Co-Ordination Centre	The Shipping Clerk	02-6230-6868
Transocean	Blue O'Shea	08-9213-3777
BHP Minerva Project Melbourne	Ed Pinceratto	03-9609 3912
Sedco 702	BHPB Drilling Supervisor	08-9278-4655
Esso Australia / Mobil Exploration	Frank W. Kratzer	03 9270-3593

From Ed Lintott **Our Ref**

No. Pages 2 including this page

If there are any problems with this transmission please telephone + 61 8 9278 4855
Our Facsimile number is Perth 9278 4620

Notification of Sedco 702 rig move.

Please see attached

Yours sincerely,

Ed Lintott
Drilling Superintendent

Att Formal notification of rig move

bhpbilliton

Worldwide Drilling

BHP Petroleum Pty Ltd
ABN 97 006 918 832
Level 42, 152-158 St Georges Tce
Perth WA 6001 Australia
GPO BOXJ668
Perth WA 6001 Australia
Tel +61 8 9278 4888 Fax +61 8 9278 4899
bhpbilliton.com

13 January 2003

Manager – Petroleum Operation, Safety & Environment, Minerals & Petroleum Regulation
Department of Natural Resources & Environment
Level 8
250 Victoria Parade
East Melbourne VIC 2002

Attn: **Bruce Armour**

Dear Sir,

RIG MOVE FROM VIC/L22: MINERVA-3 TO Esso's SCALLOP-1

BHP Billiton Petroleum Pty Ltd hereby advise that the Semi-submersible drilling rig "SEDCO 702" will move off the "Minerva-3" location on or after 18th January 2003. The rig will move to Esso's "Scallop-1" location as set out below.

Departing Location:	**VIC/L22 Minerva-3** Latitude 38° 42' 28.063" S Longitude 142° 57' 28.046" E
Arriving Location:	**Scallop-1** Latitude 38° 12' 48.6" S Longitude 148° 35' 28.9" E
Distance of Tow:	325 nautical miles
Anticipated Start of Tow:	On or after 18th January 2003
Anticipated Duration:	3 days (at 4.5 knots)
Towing Vessel(s):	"Pacific Frontier" "Pacific Challenger"
Towing Arrangement:	As per Sedco 702 Rig Move Procedure 702-RMP-101
Person in charge during Tow:	Transocean OIM
Personnel Assisting:	Transocean Marine Supervisor

The imminent commencement of the tow will be advised direct from the rig immediately prior to the start of the tow.

Yours sincerely,

Ed Lintott
Drilling Superintendent- Perth Drilling

File Path/Location: G:\DRILLING\02 Campaign Planning\Post 2000 Campaigns\2002 VicRL8 Minerva Development\01 Campaign Planning\05 Govt Correspondence\NotificationLetterToDNRE-Move Minerva-3 to Scallop-1.doc

A member of the BHP Billiton group which is headquartered in Australia
Registered Office: 600 Bourke Street Melbourne Victoria 3000 Australia
ABN 49 004 028 077
Registered in Australia

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

20 January 2003
Our Ref: No; PE/16/0018

Mr Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
Melbourne 3001

MODU SEDCO 702
RIG MOVE INTO THE ADJACENT AREA
PROVISIONAL ACCEPTANCE OF SAFETY CASE BRIDGING DOCUMENT

I refer to your letters dated 16 January 2003 regarding the above subjects.

Under the provisions of Clause 302 of the *Petroleum (Submerged Lands) Act - 1967 Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production 1997*, I hereby approve your request to move the MODU "Sedco 702" into the adjacent area to the Scallop- 1 location with the following coordinates:

Latitude 038^0 14' 48.6" South, Longitude 148^0 35' 28.9" East.

This consent also applies to movement of the Rig within and out of the adjacent area, subject to the following conditions:

- That moves to be notified to the maritime rescue co-ordination centre; and
- That the intended movement of the rig into, within and out of the adjacent area be notified to the area fishing co-operative and all operators within the area. In particular please consult with the South East Trawl Fishery Industry Association and with commercial fishers operating from the ports of Eden and Lakes Entrance. The location of any caps or other debris left on the sea floor should also be communicated to these fishers so that entanglement with fishing gear can be avoided in the future.

Failure to notify the Department of all moves in writing will be considered a breach of the Legislation.

I also hereby accept the Esso Australia Pty Ltd MODU Safety Case Bridging Document Rev_0 dated 16 January 2003 and Bridging Emergency Response Plan Document Rev_0 dated 16 January 2003 in accordance with the *Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996.*

Victoria
The Place To Be

Acceptance given is not an advice that the use of the Sedco 702 in accordance with the Bridging Documents will, in fact, be safe. Whilst health and safety are matters considered in making the relevant decision under the regulations, the responsibility for the safe operation of the MODU remains at all times with Esso Australia Pty Ltd and Sedco Forex International Inc.

Approval to drill the Scallop - 1 well, in accordance with Clause 501 of the *Petroleum (Submerged Lands) Act - 1967 Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production 1997,* will be separately advised.

Yours sincerely

BRUCE ARMOUR
Acting Manager Petroleum Operations Safety and Environment

Copy To: Manager - Marine Operations & Personnel
Australian Maritime Safety Authority
(02) 6279 5966

Australian Maritime Safety Authority

AUSTRALIAN MARITIME SAFETY AUTHORITY

Organisation :	Esso Australia P/L	From :	James Bond Ship Operations
Attention :	Daniel Whiteman		
Phone :		Phone :	02 6279 5672
Fax :		Fax :	02 6279 5056
No of Pages :	1	Date :	20/01/03
Your Ref :		AMSA Ref :	

Sedco 702 Rig Move

Move is approved by AMSA.

The rig master on Sedco 702 will certainly keep the MRCC informed of the rig's movements. When he does so could he please include details of the route to be used as the MRCC will probably wish to issue an Auscoast Warning for areas of shipping density.

James Bond

For

Manager Ship Operations& Qualifications

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

16 January, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Dear Sir,

Subject: SCALLOP-1 CONSENTS & APPROVALS

Pursuant to the Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulation 5, we hereby request your consent to use the vessel Sedco 702 to drill the Scallop-1 exploration well in VIC/RL2.

Pursuant to the Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulation 7, we hereby submit for acceptance the **MODU Safety Case Bridging Document, Scallop-1** for VIC/RL2.

The Sedco 702 Vessel Safety Case was submitted to WAMPR on 29th August 2001 and accepted on 26th September 2001.

We also include as part of the Safety Case bridging submission the **Scallop-1 Bridging Emergency Response Plan.**

Pursuant to the Petroleum (Submerged Lands) (Management of Environment) Regulation 9, we hereby submit for acceptance the **Scallop-1 Environment Plan.**

Pursuant to the Petroleum (Submerged Lands) Act Clause 501(1) we hereby request your approval to drill the Scallop-1 exploration well in VIC/RL2. Enclosed are two copies of the drilling program and two copies of the **Drilling Operations Manual - Floating Drilling.** Two copies of the **Scallop-1 Authorisation to Drill** (Geological Prognosis) were sent to DPI on December 20th, 2002. The spud date for Scallop-1 is anticipated to be between January 26th 2003 and February 1st, 2003.

Please contact Colin Johancsik on 9270-3534 (E-mail: colin.a.johancsik@exxonmobil.com) if you require any further information.

Yours faithfully
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman
Drilling Manager

An ExxonMobil Subsidiary

bcc: D. Tyler (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

COMMONWEALTH OF AUSTRALIA

Petroleum (Submerged Lands) Act 1967

Prohibition of Entry into Safety Zone Scallop – 1 Exploration Well

Pursuant to the power conferred by Section 119 of the **Petroleum (Submerged Lands) Act 1967**, all vessels are prohibited, other than vessels engaged in or in connection with the petroleum exploration and/or production operations authorised under that Act, from entering or remaining in the safety zone specified in the schedule, without my consent in writing.

SCHEDULE

(1) The area within a distance of 500 metres measured from each point of the outer edge of the drilling vessel known as Sedco 702.

(2) The area or areas within a distance of 500 metres measured from each point of the outer edge of any anchor buoys or other equipment deployed from that drilling vessel.

while the vessel is engaged in operations associated with drilling of the Scallop – 1 exploration well situated at or about the point of Latitude 38° 12' South, Longitude 148° 35' East over the period from late January 2003 until mid February 2003.

Made under the **Petroleum (Submerged Lands) Act 1967** of the Commonwealth of Australia.

Dated 8 January 2003

HORACIO HAAG
Manager, Petroleum Operations
Safety and Environment
as a delegate of the Designated Authority,
pursuant to delegation dated 28 September 2000
under Section 15 of the
Petroleum (Submerged Lands) Act 1967

Subordinate Legislation Act 1994

POLICE REGULATIONS 2003

Notice of Decision under Section 12

The proposed Police Regulations 2003 and Regulatory Impact Statement have been advertised for public comment and a number of submissions were received.

Following consideration of the submissions, I now give notice of my intention to proceed with the making of the proposed Regulations, subject to some amendments.

ANDRÉ HAERMEYER
Minister for Police
and Emergency Services

Subordinate Legislation Act 1994

NOTICE OF DECISION

Land Conservation (Vehicle Control) Regulations 2003

I, John Thwaites, Minister for Environment and Minister responsible for the administration of the **Land Conservation (Vehicle Control) Act 1972**, give notice under section 12 of the **Subordinate Legislation Act 1994**, as follows:

A Regulatory Impact Statement (RIS) was prepared in relation to the proposed Land Conservation (Vehicle Control) Regulations 2003 to regulate the use of motor vehicles on public land. The RIS was advertised seeking public comment and a total of 92 submissions were received.

After considering these submissions, I have decided that the proposed Land Conservation (Vehicle Control) Regulations 2003 should be made with amendments.

Dated 6 January 2003

JOHN THWAITES
Minister for Environment

Private Agents Act 1966

NOTICE OF RECEIPT OF APPLICATIONS FOR LICENCES UNDER THE PROVISIONS OF THE **PRIVATE AGENTS ACT 1966**

I, the undersigned, being the Registrar of the Magistrates' Court at Horsham hereby give notice that an application, as under, has been lodged for hearing by the said Court on the date specified.

Any person desiring to object to any of such applications must:–

(a) lodge with me a notice in the prescribed form of his objection and of the grounds thereof;

2MF → EPM extra copy

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

22 January 2003
Our Ref: No; PE/16/0018

Mr Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
Melbourne 3001

CONSENT TO DRILL SCALLOP - 1 EXPLORATION WELL IN VIC/RL2

I refer to the following Esso Australia Pty Ltd correspondence and documentation regarding the above subject.

1. Application to drill dated 20 December 2002
2. Scallop - 1 Environment Plan, Rev -1, January 2003
3. Well proposal for Scallop - 1, December 2002
4. Scallop - 1 Drilling Programme, Rev 0, January 2003
5. MODU Safety Case Bridging Document for Sedco 702, Rev 0, January 2001
6. Bridging Emergency Response Plan, Rev 0, January 2003
7. Drilling Operations Manual, Floating Drilling, October 1999

In accordance with Provisions of Clauses 501 and 512 of the *Petroleum (Submerged Lands) Act, Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production in Waters Under Commonwealth Jurisdiction 1997* and the *Petroleum (Submerged Lands) (Management of Environment) Regulations, 1991*, I hereby;

1. consent to the use of the Sedco Forex International MODU Sedco 702 to drill the Scallop- 1 exploration well in Vic/RL2
2. approve drilling of Scallop - 1 well in accordance with Esso Australia Pty Ltd's Well Proposal and Drilling Programme
3. approve the Esso Australia Pty Ltd Environmental Plan for drilling of Scallop -1

The commencement of drilling operation and its continuation is subject to Esso Australia Pty Ltd and its contractor's adherence to the above approved or accepted procedures, manuals, safety case, drilling programme and APPEA's Code of Environmental Practice.

In addition:

- A seabed survey of the well location must be carried out prior to the rig move from the drilling site.
- A preliminary analysis of the logs is to be provided to the Department before approval can be granted for suspension, or plug and abandonment.

Yours sincerely

BRUCE ARMOUR
Acting Manager, Petroleum Operations Safety and Environment

Sonsub

Eni Saipem

Memo

FAXED
3/2/03

To	:Tommy Vestal	Date :01.02.03
From	:Colin Murray	
Copy to	:	
Subject	:Pre-spud Seabed Survey	

Sonsub performed a seabed survey of the Scallop-1 spud in area on 01.02.03

The survey was performed both visually and with the aid of sonar targeting to a radius of 100 meters in all axis of the compass, North, South, East and West.

The purpose of this survey was to identify any items on the seabed that may cause problems spudding in the well, and to act as a baseline to indicate the impact of drilling operations. The survey had the following results:

The seabed to a radius of 100 metres from the spud in area was found to be flat and featureless. The sonar targeting and visual survey failed to locate any recordable items that may hinder the drilling of the Scallop-1 well.

Colin Murray

ROV Supervisor
Sonsub International

Rudolph Furchtenicht - Drilling

Esso Australia Resources Pty Ltd
ABN 62 091 829 819
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone
61 3 9270 3895 Fax

FAXED 20/2/03

February 20, 2003

Department of Primary Industries
PO Box 500
EAST MELBOURNE VIC 3002

Attention : Mr. H. Haag
Manager, Petroleum Operations, Safety and Environment

Dear Sir,

Re: Deepening of Scallop-1 Exploration Well, VIC/RL2

As you are aware, we are currently drilling the VIC/RL2 Scallop-1 exploration well using the semi-submersible drilling rig Sedco 702. As stated in our Application to Drill (December 2002) and Drilling Program (January 2003) the proposed TD for this well was 3,126m MD (3,100m TVDSS). However, we also flagged that there was the potential to deepen the well if required.

Currently, we are drilling ahead at approximately 3,035m MD. Our current interpretation is that we are at least 25m low to prognosis in relation to the top of our lowermost potential sealing volcanic/intrusive unit (ie the horizon '1st Volcanic' was expected to be intersected at 3,010m MD but has not yet been intersected). **Esso, on behalf of the VIC/RL2 JV, requests pre-approval to deepen the well beyond the current proposed TD of 3,126m MD to a new TD of 3,230m MD.** This will enable us to effectively test the prospective section beneath the base of the 1st Volcanic horizon.

Note that if we encounter water wet sands between the base of 1st Volcanic and 3,126m MD we will not deepen the well beyond 3,126m MD. Similarly, if we deepen the well beyond 3,126m and only encounter water wet sands then the well will not be drilled all the way to 3,230m MD ie TD will be somewhere between 3,126m MD and 3,230m MD.

If you require any additional information with regard to drilling plans for the Scallop-1 well please contact Glen Nash on (03) 9270-3919 or by mobile phone on 0418-356-392.

Yours sincerely

Douglas A. Schwebel
Exploration Director

.cc *Dave Beenie - VIC/RL2 Chairman*
Giovanni DiTorro - Woodside
Steven Hoyle - Santos
Rick Smith - BHPB

cc: GAN / Dan

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

RECEIVED 20/2/03

February 20, 2003
Our Ref: PE/16/0018
Correspondence N°. 2582

Mr Douglas A. Schwebel
Exploration Director
Esso Australia Resources Pty Ltd
GPO Box 400C
MELBOURNE VIC 3001

RECEIVED
20 FEB 2003
D L WHITEMAN

SRO Group
cc RF Well file

Dear Mr Schwebel,

CONSENT TO DEEPEN SCALLOP-1 EXPLORATION WELL IN VIC/RL2

With reference to your facsimile of February 20, 2003, and our approval letter of January 22, 2003, I hereby approve the deepening of the Scallop-1 exploration well to a new depth of 3,230 m MD.

Yours sincerely,

H Haag

HORACIO HAAG
Manager, Petroleum Operations, Safety and Environment

Victoria
The Place To Be

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

24th February, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Dear Sir,

Subject: SCALLOP-1 : CONTINUING OF LOGGING & ABANDONMENT OPERATIONS WITH FAILED KILL LINE ON THE BOP STACK

Pursuant to the Petroleum (Submerged Lands) Act Clause 506 (1), Esso Australia Pty Ltd request dispensation from repairing the deficiency found when pressure testing the blowout prevention equipment on the Transocean semi-submersible "Sedco 702". With permission, we propose to continue with the planned logging and abandonment operations while in the process of sourcing the replacement parts to repair the failed kill line on the Lower Marine Riser Package (LMRP). Note that continued operations without repair would only apply to logging and P&A activity.

The primary functions of the kill line are to provide (i) a method of monitoring pressure below the Master Rams (lowest pipe rams) and (ii) a back up to the choke line.

Factors supporting this request for continued operations:

(a) A Task Risk Assessment (TRA) has been performed for the continued planned operations. This has been communicated and agreed to by all personnel offshore and by management.

(b) Planned open hole wireline and P&A operations would not present an increase in risk relative to the alternative of monitoring the well while sourcing the replacement parts.

(c) During logging operations, the shear rams would be used to shut-in (versus the Master Rams), so monitoring via the kill line would not be required.

(d) If there is a request to drill deeper or run casing, operations would NOT recommence until the kill line is fully functional and has been pressure tested.

(e) All the other BOP components were successfully pressure tested, including the two valves on the kill line side which were tested below the leak.

(f) The well has reached anticipated total depth.

(g) With 10.4 ppg mud in the well, the estimated overbalance is at least 850 psi (with 8.8 ppg pore pressure).

(h) Gas was not observed during the last wiper trip prior to the failure.

A sketch of the location of the failed kill line is attached for your reference.

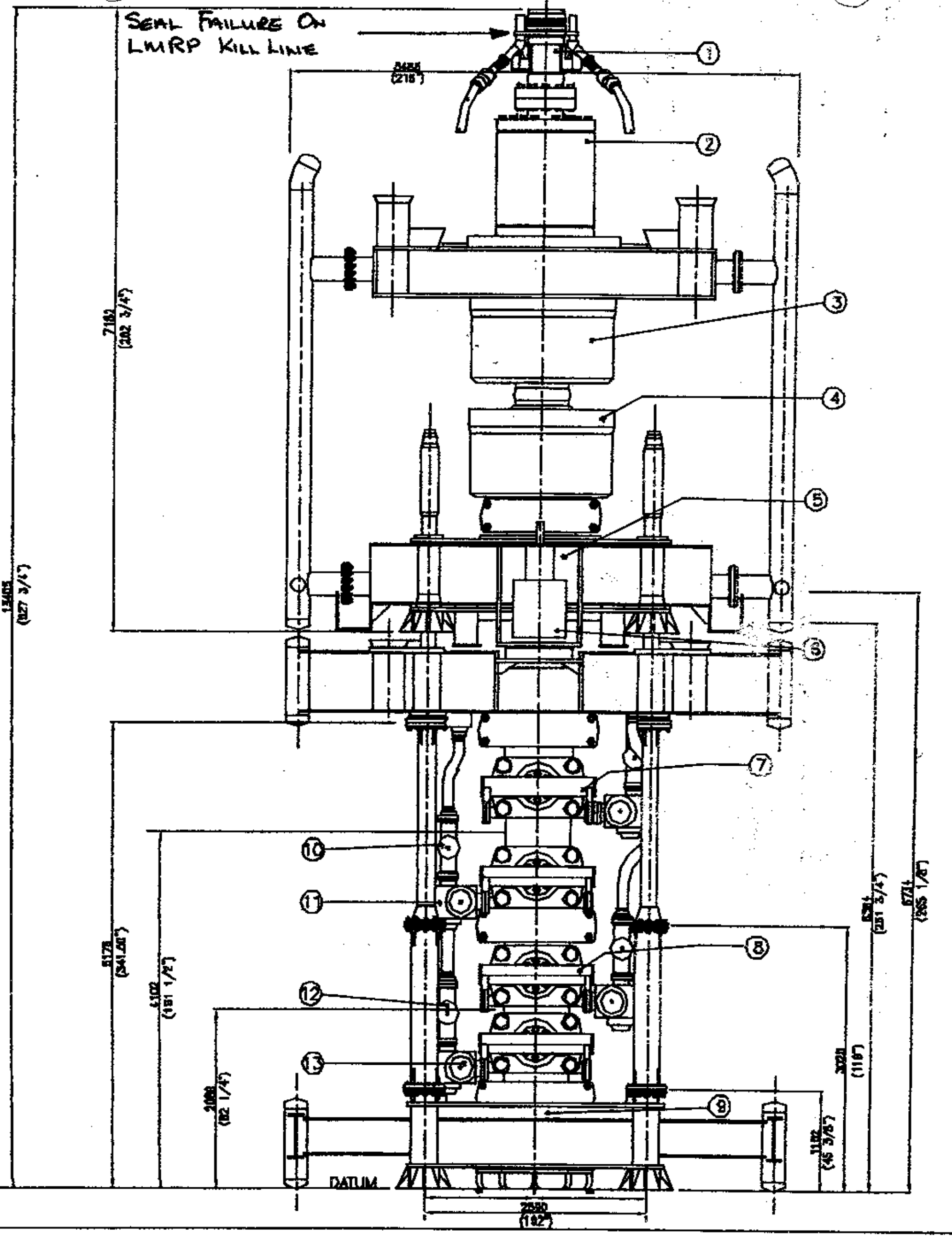
Please contact Frank Kratzer on (03) 9270-3540 (e-mail: frank.w.kratzer@exxonmobil.com) if you require any further information.

Yours faithfully,
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman
Drilling Manager

An ExxonMobil Subsidiary

bcc: D. Tyler (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)



NOTES

① RISER ADAPTER
FOR REGAN FD 8 RISER
LOWER CONNECTION: BX 163 FLANGE

② FLEX JOINT
OIL STATES " DIVERTER II "
UPPER CONNECTION: BX 163 FLANGE
LOWER CONNECTION: BX 163 FLANGE

③ UPPER ANNULAR
SHAFFER 18-3/4", 5000 PSI
UPPER CONNECTION: BX 163 STUDDED TOP
LOWER CONNECTION: BX 164 FLANGE

HOSE: COFLEXIP 10000 PSI

④ LOWER ANNULAR
SHAFFER 18-3/4", 5000 PSI
UPPER CONNECTION: BX 164 STUDDED TOP
LOWER CONNECTION: BX 164 HUB

⑤ RISER CONNECTOR
LMRP CONNECTOR: CAMERON COLLET CONNECTOR
MODEL 70 18-3/4", 10000 PSI
UPPER CONNECTION: BX 164 HUB

⑥ MANDREL
BOP ADAPTER FOR CAMERON MODEL 70 CONNECTOR

⑦ RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4", 10000 PSI
RAMS FITTED: SHEAR/ BLIND
' SHEAR RAMS '
RAMS FITTED WITH LARGE OPERATING PISTONS AND
EXTENDED BODY TO ALLOW PIPE SHEARING

RAMS FITTED: 5" PIPE
' UPPER RAMS '
EXTENDED BODY TO ALLOW PIPE SHEARING

⑧ RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4", 10000 PSI
RAMS FITTED: VARIABLE
'MIDDLE RAMS '

RAMS FITTED: 5" PIPE
' LOWER RAMS '

⑨ WELLHEAD CONNECTOR
CAMERON COLLET CONNECTOR
MODEL 70 18-3/4", 10000 PSI
UPPER CONNECTION: BX 184 HUB

⑩ FAILSAFE VALVES
TO ' CAMERON ' 3-1/16" (8 EACH)
⑬

B	15 FEB 02	ISSUED FOR APPROVAL	S.B.	R.T.	R.T.	
A	15 FEB 02	ISSUED FOR COMMENT	S.B.	R.T.	R.T.	
REV	DATE	DESCRIPTION	BY	CHKD	APPD	

REVISIONS

REFERENCE DRAWINGS

Transocean SedcoForex — SEDCO FOREX INTERNATIONAL INC. LEVEL 8, 250 ST GEORGE'S TERRACE PERTH WA 6000 AUSTRALIA TEL (08) 9270 3900 FAX (08) 9322 3277

INSTALLATION: SEDCO 702
PROJECT: 18 3/4" 10K B.O.P.
DRAWING TITLE: FORWARD / AFT ELEVATION

HAMPCO [redacted]

ORIGINATED	S. BABB	CHECKED	R.TYTLER
DRAWN	S. BABB	APPROVED	R.TYTLER
DATE	15 FEB 02	SCALE	1:25
CLIENT No.	-	DRAWING SIZE	A1

DRAWING No. A-C-3253-M-GA-002-1F REV 0

FILE No. A-C-3253-M-GA-002-1F DRAWING SIZE A1

K DLW
FWK
CAJ
EMF
File

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

24 February 2003
Our Ref: No; PE/16/0018

Mr Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
Melbourne 3001

SCALLOP - 1: APPROVAL TO CONTINUE LOGGING AND ABANDONMENT OPERATIONS WITH FAILED KILL LINE

I refer to your fax letter dated 24 February 2003 requesting the Designated Authority's approval to continue with the planned logging and abandonment operations while sourcing parts to repair the failed kill line on the lower marine riser package.

Under the provision of Clause 506 of the *Petroleum (Submerged Lands) Act, Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production in Waters under Commonwealth Jurisdiction-1997*, I hereby approve your proposal to continue with the planned operations.

Yours sincerely

HORACIO HAAG
Manager, Petroleum Operations Safety and Environment

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

26th February, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Reference: DD/6963/RMF

Dear Sir,

Subject: SCALLOP-1 : REQUEST FOR APPROVAL TO ABANDON WELL

On February 20th, Esso Australia Pty. Ltd. requested approval to deepen the Scallop-1 exploration well beyond the initial total depth of 3,126m to 3,230mMD. Approval to deepen was granted by DPI. Subsequently, the well was drilled to a total depth of 3,174mMD to allow evaluation of the sub-volcanic reservoir section. A combination of poor quality reservoir, small column heights and water wet sands do not justify either additional deepening or suspension of the well.

Pursuant to the Petroleum (Submerged Lands) Act - Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production - Clause 513(1), Esso Australia Pty. Ltd. hereby request your approval to abandon the Scallop-1 wildcat well in VIC/RL2. We plan to Plug & Abandon this well as follows:

1. Spot a continuous 674m balanced cement plug from 3,174m to 2,500mMD, in five stages, to isolate all "Significant" hydrocarbon intervals in the wellbore.
2. Wait on cement before tagging to ensure the location and integrity of Plug #1.
3. POOH, M/U, RIH and set an EZ Drill SV Squeeze Packer at 895mMD on wireline.
4. M/U, RIH and stab into the EZ Drill SV Squeeze Packer with a cementing stinger run on DP; tag to confirm location and integrity.
5. Squeeze cement below the Squeeze Packer from 930m to 895mMD, unsting and place a balanced cement plug from 895m to 850mMD. Pull above the plug and conduct a pressure test to 1,000 psi to confirm integrity of Plug #2.
6. Displace the mud in the surface casing with inhibited mud (bactericide, oxygen scavenger and pH > 10).
7. POOH, M/U, RIH and set an EZ Drill SV Bridge Plug at 200mMD; tag to confirm location and integrity.
8. Spot a balanced surface cement plug from 200m to 155mMD. Pull above the plug and conduct a pressure test to 1,000 psi to confirm integrity of Plug #3.
9. Recover the Drilling Riser & Subsea BOP Stack.
10. Cut the surface casing and conductor casing at least 1.5m below the mud line (subject to DPI approval) with a Weatherford MOST tool and casing cutters. Retrieve the wellhead, casing stubs and permanent guide base.

11. Conduct a seafloor survey with the ROV unit.
12. Recover the anchors and release the rig.

A Wellbore Sketch of the proposed P&A is attached for your reference.

Esso Australia Pty Ltd specifically requests dispensation from P(SL)A Clause 514(10) regarding severing the casing at least 5 metres below the mud line. In the above procedure we propose to cut the surface casing and conductor at least 1.5m below the mud line. Our concern is that that, if we cut at 5 metres below mudline, we may not be able to recover the 30" stub which was cemented into 36" hole or excessive force may be required in the recovery operation.

We believe a cut at least 1.5m below the mud line is adequate. Scouring below 1.5m is assessed to be highly unlikely due to sediment composition and because this location is deeper (110m) and is well away from regions of wave generated influence. The seafloor consists of fine to medium, loose, slightly gravelly, shelly (carbonate) sands (Scallop-1 Site Survey Report, 2003). Black *et al.* (1992)[1] observed that at water depth of about 42-45 m and deeper well defined wave-generated parallel bedforms no longer occur (this is one of the major features of the bedform patterns in eastern Bass Strait). Furthermore, the 42 to 45m limit coincides with a continental mud depositional limit discussed by Jones and Davies (1983)[2].

The proposed P&A is not expected to impact fishing in the area and the Lakes Entrance fish co-operatives will be notified of the location and depth of the P&A well.

Please contact Colin Johancsik on (03) 9270-3534 (e-mail: colin.a.johancsik@exxonmobil.com) if you require any further information.

Yours faithfully,
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman

Daniel L. Whiteman
Drilling Manager

[1] Black, K., Rosenberg, M., Symonds, G., Simons, R., Pattiaratchi, C., Nielsen, P., (1992) Measurements of wave, current and sea level dynamics of an exposed coastal site. In: International Biennial Conference on Physics of Estuaries and Coastal Seas (in press).
[2] Jones, H.A. and Davies, P.J. (1983). Surficial Sediments of the Tasmanian Continental Shelf and Part of Bass Strait. Bureau Mineral Resources, Geology and Geophysics Bulletin 218, Australian Government Publication, ACT, 25 p.

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bcc: R. Reinten (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

ATTACHMENT 1

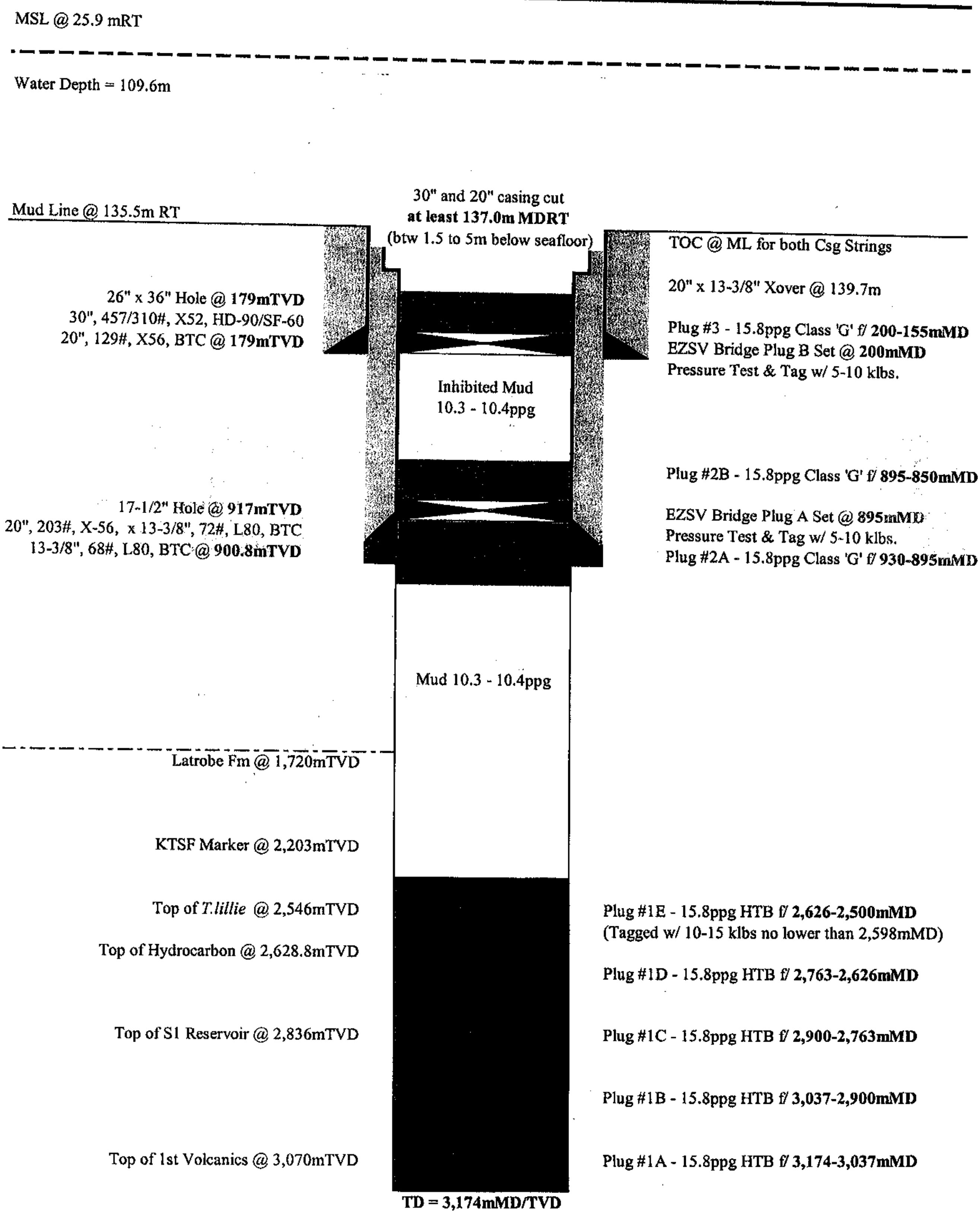
PROPOSED PLUG & ABANDONMENT WELLBORE SKETCH

TRANSOCEAN "SEDCO 702"

SCALLOP-1

Location: GDA 1994, Latitude 38° 12' 48.615" S, Longitude 148° 35' 28.879" E.
MGA 94 Zone 55, Easting 639,314.95m, Northing 5,769,298.84m.

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)



x S Beer SRO.
C. Johansen.
R. Furchtenicht
File. 2.1.3

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

27 February 2003
Your Ref. No: DD6963/RMF
Our Ref. No: PE/16/0018

Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
MELBOURNE VIC 3001

Dear Mr Whiteman

CONSENT TO PLUG AND ABANDON SCALLOP - 1 EXPLORATION WELL

I refer to your letter of 26 February 2003 requesting the Designated Authority's approval to plug and abandon the Scallop-1 exploration well in Vic/RL2, and seeking dispensation to cut the surface casing and conductor only 1.5m below the mudline.

In accordance with Provisions of Clause 513 of the *Petroleum (Submerged Lands) Act, Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production in Waters under Commonwealth Jurisdiction 1997*, I hereby approve your request to plug and abandon the Scallop-1 exploration well according to your proposed procedure.

In view of the seafloor conditions you describe at the site, I also grant a dispensation to Clause 514(10) of the *Petroleum (Submerged Lands) Act, Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production in Waters under Commonwealth Jurisdiction 1997* - provided that the surface casing and conductor are severed at least 1.5m below the seafloor.

A seabed survey of the well location must be carried out prior to the rig move from the drilling site and copies of logs and other test data shall be provided to the Department.

Yours sincerely

BRUCE ARMOUR
Acting Manager Petroleum Operations Safety and Environment

Victoria
The Place To Be

Facsimile

Drilling

To	Mr Horacio Haag, Manager, Petroleum Operations, Safety and Environment Manager - Marine Operations & Personnel Australian Maritime Safety Authority	**Pages**	Cover + 2 page
Fax	9412 5152 (DPI) (02) 6279 5966 (AMSA)	**Date**	26 February, 2003
From	Daniel L. Whiteman	**CC**	Distribution
Re	Rig Move From Scallop-1 Location, Vic/RL2 to Port Dampier, Western Australia		

Distribution:

Maritime Rescue Co-ordination Centre, Canberra The Officer in Charge, MRCC	(02) 6230 6868
DOT Canberra The Officer in Charge DOT	(02) 6274 6699
Department of Industry & Resources (DOIR) Mr Stephen Walsh	(08) 9222-3515
Sedco Forex International Mr Blue O'Shea - Sedco 702 Rig Manager	(08) 9213-3777
Semi-Submersibel "Sedco 702" Drilling Supervisor	(03) 5142-2755

Notification of planned rig move of Transocean semi-submersible "Sedco 702" from Scallop-1 location, VIC/RL2 to Port Dampier, Western Australia. Please refer to attach letter.

Yours faithfully
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman
Drilling Manager

If this message has been received by other than the party to whom it is addressed, please notify us immediately at the telephone number below. The message may contain material which is proprietary or confidential, and it should not be copied or distributed. Confidentiality is not waived by reason of loss or mistaken delivery. If transmission is incomplete or illegible, please phone 03-9270-3422.

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GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

26th February, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Reference: DD/6966/RMF

Dear Sir,

Subject: SCALLOP-1 : RIG MOVE FROM SCALLOP-1 LOCATION, VIC/RL2 TO PORT DAMPIER, WESTERN AUSTRALIA

Pursuant to the Petroleum (Submerged Lands) Act - Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production - Clauses 302(2) and 302(3), Esso Australia Pty. Ltd. hereby request your approval to move the Transocean semi-submersible drilling rig "Sedco 702" from Esso's Scallop-1 location at VIC/RL2 in the Bass Strait to Port Dampier in Western Australia on or about 03rd March 2003 as set out below.

Departing Location:	Scallop-1 (VIC/RL2, Bass Strait) Latitude 38° 12' 48.615"South Longitude 148° 35' 28.879"East
Arriving Location:	Port Dampier (Western Australia) Latitude 20° 31' 93"South Longitude 116° 40' 85"East
Distance of Tow:	Approximately 2,737.5 nautical miles
Anticipated Commencement Date:	03rd March, 2003
Anticipated Duration:	± 28.5 days @ 4.0 nm, ± 22.8 days @ 5.0 nm, ± 19.0 days @ 6.0 nm
Towing Vessel(s):	Pacific Frontier & Pacific Challenger
Towing Arrangement:	As per Sedco 702's Rig Move Procedure
Person in charge during Tow:	Sedco 702 OIM
Number Personnel on Board during Tow:	± 37

The actual commencement of the tow will be advised direct from the rig immediately prior to commencing the rig move.

Please contact Frank Kratzer on (03) 9270-3540 (e-mail: frank.w.kratzer@exxonmobil.com) if you require any further information.

Yours faithfully,
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman

Daniel L. Whiteman
Drilling Manager

bcc: Ron Reinten (SRO)
Simon Grope (Geology)
Drilling Supervisors - Scallop-1
Frank W. Kratzer (Drilling Superintendent)
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

x J. Beer JRO
C. Johancsik
R. Fuchtenricht
PLU 2.1.3

Department of Primary Industries

240 Victoria Parade
PO Box 500 East Melbourne
Victoria 3002 Australia
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803
ABN 90 719 052 204
DX 210099

27 February 2003
Our Ref: No; PE/16/0018

Mr Daniel L. Whiteman
Drilling Manager
Esso Australia Pty Ltd
GPO Box 400C
Melbourne 3001

MODU SEDCO 702
RIG MOVE OUT OF THE ADJACENT AREA

I refer to your letters dated 26 February 2003 regarding the above subjects.

Under the provisions of Clause 302 of the *Petroleum (Submerged Lands) Act - 1967 Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production 1997*, I hereby approve your request to move the MODU "Sedco 702" out of the adjacent area.

Yours sincerely

BRUCE ARMOUR
Acting Manager Petroleum Operations Safety and Environment

Copy To: Manager - Marine Operations & Personnel
Australian Maritime Safety Authority
(02) 6279 5966

Victoria
The Place To Be

FAXED 3/3/03 1700

To	Dept Natural Resources and Environment 03 9412 5152
attn	Bruce Armour
cc	ESSO Melbourne
attn	Frank Kratzer
cc	RCC Canberra 02 6230 6868
cc	Transocean
attn	Blue O'Shea 03 9270 3593
cc	ESSO Operations, Longford
From	SEDCO 702/ELNO5

Subject: Rig move- Bass Strait to Dampier W.A. via Fremantle

Please be advised that the MODU Sedco 702/ELN05 expects to depart present location, Scallop 1 at approx. 2100 hrs. 3rd March. (031000utc)

Estimated time of arrival Fremantle is 18th March.
Towing vessels will be the Pacific Frontier/Pacific Challenger.

Regards,

Tim Phipps
Master, Sedco 702

Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay
Southbank, Victoria 3006
GPO Box 400C
Melbourne, Victoria 3001
61 3 9270 3333 Telephone

23rd March, 2003

Mr Horacio Haag
Manager, Petroleum Operations, Safety and Environment
Department of Primary Industries
240 Victoria Parade
EAST MELBOURNE VIC 3002

Reference: DD/6973/RMF

Dear Sir,

Subject: SCALLOP-1 : ACTUAL PLUG & ABANDONMENT DETAILS

On February 26th, Esso Australia Pty. Ltd. requested approval to Plug and Abandon the Scallop-1 exploration well. Approval to P&A was granted by DPI (ref: PE/16/0018).

Pursuant to the Petroleum (Submerged Lands) Act - Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production - Clause 553, Esso Australia Pty. Ltd. hereby provides details regarding the actual plug and abandonment of the Scallop-1 wildcat well in VIC/RL2. A Wellbore Sketch of the actual P&A is attached for your reference.

We have also attach the results of the seabed survey carried out prior to the rig move from the drilling location.

Please contact Colin Johancsik on (03) 9270-3534 (e-mail: colin.a.johancsik@exxonmobil.com) if you require any further information.

Yours faithfully,
Esso Australia Pty Ltd
(for and on behalf of
Esso Resources Pty Ltd
ACN 091 829 819)

Daniel L. Whiteman

Daniel L. Whiteman
Drilling Manager

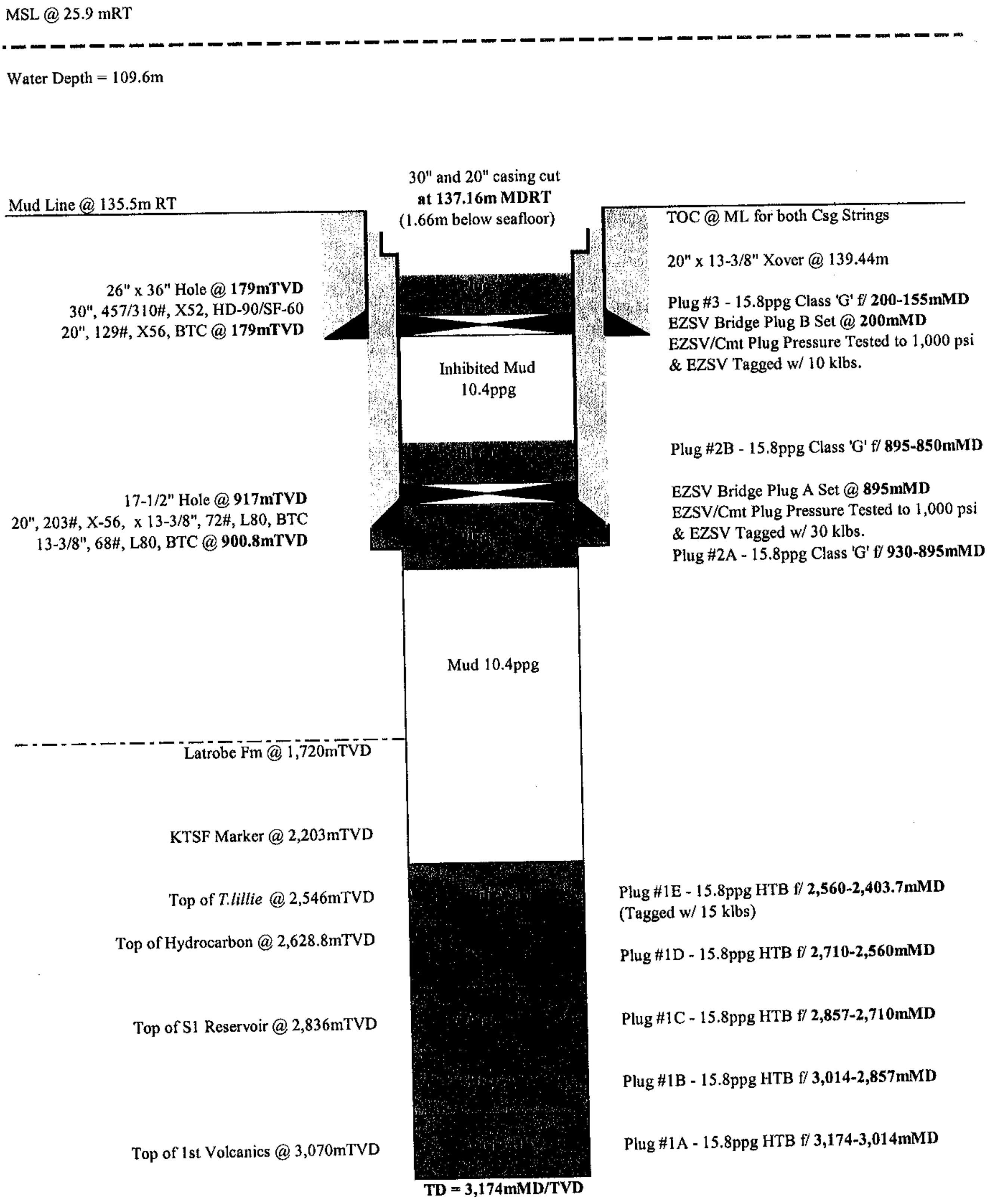
bcc: R. Reinten (SRO)
Simon Grope
Scallop-1 Final Well Report
Scallop-1 Well Planning & Surveillance File
File: Scallop-1 2.3 (Regulatory)

ATTACHMENT 1

ACTUAL PLUG & ABANDONMENT WELLBORE SKETCH
TRANSOCEAN "SEDCO 702"
SCALLOP-1

Final Location: GDA 1994. Latitude 38° 12' 48.615" S, Longitude 148° 35' 28.879" E.
MGA 94 Zone 55 CM 147deg E, Easting 639,314.95m, Northing 5,769,298.84m

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)



Sonsub

Eni | Saipem

Memo

To : George Sharkey

From : Colin Murray

Copy to :

Subject : Post Well Seabed Survey

Date : 02.03.03

Sonsub performed a seabed survey of the Scallop-1 well site area on 02.03.03

The survey was performed both visually and with the aid of sonar targeting to a radius of 100 meters in all axis of the compass, North, South, East and West.

The purpose of this survey was to identify any items on the seabed that may have been the result of the drilling operations. The survey had the following results:

The seabed to a radius of 100 metres from the well site area was found to be flat and featureless. The sonar targeting and visual survey failed to locate any recordable items that may have been caused by the Scallop-1 well program.

Colin Murray

C. Murray

ROV Supervisor
Sonsub International

Facsimile

Public Affairs Department

To	Max Pendle (DNRE Fisheries Lakes Entrance) Jeff North (Lakes Entrance Fisherman's Coop) Gail Richey (South-East Trawl Fishery) Arno Blank (Bass Strait Central Zone Scallop Fishery) Ross Hodge (Seafood Industry) Locky Marshall (Twofold Bay Fishing Coop)	Re	**Scallop-1 - EAPL Exploration Well - Actual Well Plug & Abandonment Status**
Fax	(03) 5155 3137 (03) 5155 2859 (03) 6428 7755 (03) 5156 2744 (03) 9824 0755 (02) 6496 3401	Pages	4 pages incl Cover
From	**Chris Welberry** Esso Australia Pty Ltd	CC	
Date	March 21st, 2003		

Ref: DD/6974/RMF

Scallop-1 Exploration Well - Actual Well P&A Status

I am writing to advise that Esso's exploration well, Scallop-1, in Bass Strait has been plugged and abandoned, and the drilling rig "Sedco 702" was released on the 04th of March, 2003 for tow back to the Port of Dampier in Western Australia.

The Scallop-1 well was located at:

Datum: **GDA94**
Latitude: 38° 12' 48.615" S
Longitude: 147° 35' 28.879" E

Projection:MGA Zone55, CM 147° East
Easting: 639,314.95m
Northing: 5,769,298.84m

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Esso Australia Pty Ltd
ABN 49 000 018 566
12 Riverside Quay, Southbank, Victoria 3006
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61 3 9270 3333 Telephone

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All the casing has been removed from this well to a depth of 1.66m below the seafloor. Attached is a schematic of the plugged and abandoned well and a copy of seafloor survey made immediately before the rig departed the location.

Please feel free to contact me on (03) 9270-3443 if you require further information.

Yours faithfully

Chris Welberry
Public Affairs

Cc: Final Well Report
Surveillance File
File: Scallop 2.03

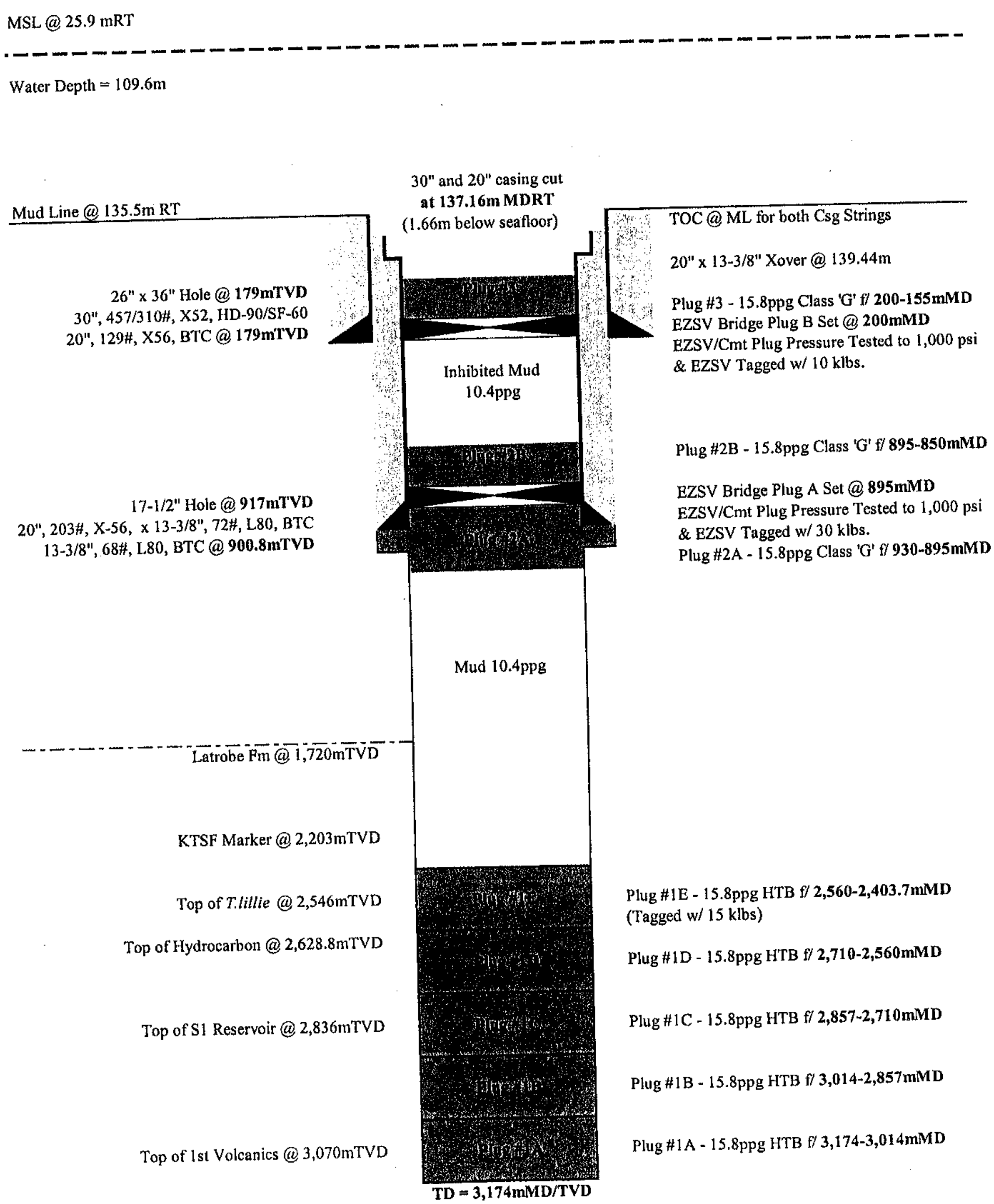
I:\EMDC Drilling\EMDC Exploration\Scallop-1\02.0 Control Documents\2.03 Regulatory\Approval_to_P&A\Scallop-1_Fax_Notice_to_Fishermen_on_Actual_P&A.doc

ATTACHMENT 1

ACTUAL PLUG & ABANDONMENT WELLBORE SKETCH
TRANSOCEAN "SEDCO 702"
SCALLOP-1

Final Location: GDA 1994. Latitude 38° 12' 48.615" S, Longitude 148° 35' 28.879" E,
MGA 94 Zone 55 CM 147deg E, Easting 639,314.95m, Northing 5,769,298.84m

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)



Sonsub

Saipem

Memo

To : George Sharkey

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Copy to :

Subject : Post Well Seabed Survey

Date : 02.03.03

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The survey was performed both visually and with the aid of sonar targeting to a radius of 100 meters in all axis of the compass, North, South, East and West.

The purpose of this survey was to identify any items on the seabed that may have been the result of the drilling operations. The survey had the following results:

The seabed to a radius of 100 metres from the well site area was found to be flat and featureless. The sonar targeting and visual survey failed to locate any recordable items that may have been caused by the Scallop-1 well program.

Colin Murray

C. Murray

ROV Supervisor
Sonsub International

SPECIAL ENGINEERING
REPORTS

REPORT OF SURVEY

Semi-submersible rig SEDCO 702

Prepared for

ESSO AUSTRALIA PTY LTD

Melbourne, Australia

By

MODUSPEC INTERNATIONAL (L) LTD.

Inspection dates: 22 January – 08 February 2003

1.0 TABLE OF CONTENTS

NOTE: The numbering system in this report corresponds with the ModuSpec survey programme and numbers which are omitted apply to equipment which was not reviewed during this survey.

Page

Page

ModuSpec

2.0 INTRODUCTION

2.1 Rig Data

Vessel	:	SEDCO 702
Owner	:	Transocean
Type	:	Semi-submersible, eight columns, self-propelled.
Built	:	1973
Class	:	ABS
Classification	:	ABS, A1 EM column stabilized drilling unit
Performance	:	Water depth 1,640 ft Drilling depth 25,000 ft
Location	:	Bass Strait, Australia
Inspection dates	:	22 – 29 January 2003 29 January – 8 February 2003
References	:	PV/PdR/ct/jf – L1037.1

2.2 Survey Workscope

In accordance with the instructions received, we attended on board the SEDCO 702 to complete a condition survey of the primary drilling equipment, mud system, well control equipment, marine equipment, power plant, electrical equipment, safety equipment, maintenance system and spare parts.

Additional client-supplied checklists were used to produce a Marine Safety Report, and a Rig Acceptance Report. These have been included as appendices.

The aim of this survey was to determine the present general condition and state of maintenance of equipment, in order to minimize downtime caused by mechanical breakdown during drilling operations and to ensure that the equipment is kept in safe working order.

The audit was conducted in good faith, but the inspection of individual items of equipment was subjected to time and operational constraints imposed by the time of the survey.

ModuSpec

2.3 Applicable Standards

The inspection criteria that have been used as reference during this inspection are internationally recognized standards, client's safety and operating standards, the original equipment manufacturer's maintenance and operating specifications and accepted oilfield operating and safety practices.

2.4 ModuSpec Equipment Rating

The ModuSpec Equipment Rating (MER) is a unique system to:

- Measure the condition of an individual rig,
- Compare the inspection results of an individual rig with the industry average for this particular type of rig, worldwide or in a specific area,
- Visualize the strengths and weaknesses of an individual rig,
- Benchmark the safety and maintenance standards of an individual rig against other rigs or against the results of previous inspections,
- Use as a risk analysis tool to proactively prevent accidents and downtime.

The added value of the MER system is that it *visualizes* and *measures* the present condition of a rig and its equipment. The MER allows a direct *comparison* of a rig with other rigs of the same type (jack-ups with jack-ups etc.) located in a predefined area or worldwide.

A series of bar charts representing the inspection results of the rig is included in the final inspection report. These bar charts are only applicable to the scope of work as stated in Section 2.2.

The MER is presented as an average figure for the entire rig (Chart 1) and for each individual section of the inspection programme (Chart 3).

A low MER is an indication that certain steps must be taken, for instance:

1. To address the recommendations made in the report,
2. To effect structural improvements to the maintenance management system,
3. To conduct a recheck after the recommendations made in the report have been addressed.

The following charts are included in the inspection report:

Chart 1: Rig Average Inspection Rating
In comparison with an industry average, this chart shows:

- The percentage of the ModuSpec inspection programme which was completed for the rig,
- The average MER for the entire rig.

Chart 2: Percentage Inspected
This chart shows the percentage inspected for each section of the rig in comparison with the average coverage during an inspection.

Chart 3: Detailed MER Results
This chart indicates how the rig is rated from a maintenance and safety-qualitative point of view, in comparison with an industry average for this type of rig for each individual section of the inspection.

Chart 4: Detailed Critical Rating
This chart shows the percentage of critical non-conformances identified for each section of the inspection programme in comparison with the industry average. This chart is an important indication of the risk to encounter a fatality or serious accident on the rig, and the possibility of environmental damage caused by the rig.

Chart 5: Detailed Major Rating
This chart shows the percentage of major non-conformances identified for each section of the inspection programme in comparison with the industry average. It is an important indication of the risk to encounter major equipment damage and/or operational downtime of the rig.

Chart 6: Detailed Minor Rating
This chart shows the percentage of minor non-conformances identified for each section of the inspection programme in comparison with the industry average. It is an important indication of the risk of lost-time incidents and it visualizes the overall safety and maintenance standards on the rig.

Note*: Charts 4, 5 and 6 indicate the probability for the rig to encounter accidents and operational downtime measured against the industry average. These charts are very important indicators to establish whether or not the rig is capable of operating in a safe and reliable manner.*

Validity of the MER

The MER is valid for the duration of one year after completion of the initial inspection.

If a recheck is conducted and completed within four months after the completion of the initial inspection, only the non-satisfactory and non-inspected items will be checked again. The MER is then valid for all equipment items that were inspected and found satisfactory during the initial inspection as well as during the recheck.

Revalidation of the MER must be completed within a year after completion of the initial inspection. An extension is possible for a maximum of three months after the expiry date so as to establish the revalidation of the MER, provided that:

- The inspection is completed within this three-month period,
- The inspection is requested prior to the initial expiry date.

3.0 EXECUTIVE SUMMARY

The SEDCO 702 was inspected while completing the drilling programme for its previous client, and the subsequent move to and spud in at the new location for our client.

The rig was generally in good working condition, even though it was 30 years old. The upkeep of the structure and systems had been at a level to cope with the deterioration expected due to its age.

The safety culture on the rig was ingrained, although a couple of recent minor incidents had tarnished its image. The use of posters, drills, in-house audits, and the work permit system all contributed to the operation of a safe workplace.

Overall, the supervisors and crew had a very positive attitude versus our survey, and assistance was given when and where possible.

The rig had a good maintenance system, CAMM, in place that was run by a dedicated PMS supervisor.

In spite of this system, a number of discrepancies had shown up, which would need to be addressed in the very near future to perform a reliable drilling operation for its clients. The "rig" had alerted management, but apparently due to ongoing operations, no opportunities were made available to rectify main items.

Main items to be addressed in order for the rig to continue to perform in a safe, reliable and efficient manner were:

- The valve at the sea inlet chest for the port side seawater service pumps was a manual (local control only) valve. Having a locally manual controlled valve at a sea inlet chest inside the pump room did not allow for a quick response if the pump room began flooding due to a line or valve failure.
- The mooring winches had a limited capacity to emergency release the anchor chains under blackout conditions. The blackout release system should be tested and documented.
- The fendering at the columns below the cranes was in need of renewal.
- The recorded insulation value of several critical drilling motors was unacceptably low. These were the rotary table, drawworks, and Top Drive.

- The rig was not fitted with residual current circuit breakers (RCCBs) to power outlet circuits for personnel protection. (RCCBs would trip if a leakage current to earth had been detected of 30 mA for 30 m.sec.)
- One lifeboat was out of service awaiting a load test of the davits. The five life-rafts were unsuitable for the transit stowage height, and four were fitted in locations that would damage the rafts by impact on the pontoons, should launching be attempted. The net result of this would be that whilst under tow, there would be insufficient redundancy available. This issue would need to be considered, and addressed to maintain the required level of safety for personnel.
- The lower BOP double should be replaced with a reconditioned unit. Currently, its cavity dimensions were out of specification, and neither was it certified to OEM standards.
- The LMRP connector's reserve stroke was in excess of minimal acceptable. With the connector being only two years installed after having been purchased as a reconditioned unit, this connector would need to be removed and overhauled. This short usage period was mainly due to an oversight of the Transocean management who bought this connector as well as rig personnel.
- Several main bearings of the mud pumps would require replacement (Pump1+3). Their readings were in excess of field-accepted practices, and far in excess of the pump manufacturer maximum readings. It should be noted that although bearing evaluation is a difficult subject, our standards are based on field proven experience data of major pump manufacturers. Worn drive chain to be replaced on pump No.3.
- Clearance on equalizer bar of drawworks to be eliminated.
- Standpipe manifold valve with wash-out to be replaced (valve No.1).

In view of the above-mentioned deficiencies, we recommend our client to accept the rig only until these items have been rectified.

We would like to thank the supervisors and rig crew for their helpful assistance during our survey, despite their demanding workload due to the ongoing operations.

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4.0 LIST OF RECOMMENDATIONS

The recommendations in this report are defined as follows:

Critical Recommendations
Critical recommendations are based on shortcomings that may lead to loss of life, a serious injury or environmental damage as a result of inadequate use and/or failure of equipment.

Major Recommendations
Major recommendations are based on shortcomings that may lead to damage to essential equipment or have a detrimental effect on the drilling operation as a result of inadequate use and/or failure of equipment.

Minor Recommendations
Minor recommendations are based on shortcomings that may lead to a situation that contributes to an incident or to circumstances in which the required standards of operation are not met.

5.0 Drilling Equipment

5.1.1 Drawworks:

Major:

1. Adjust the excessive clearance on the drive chain of motor A. Presently at a mid-span clearance of 10", but should be no more than 2". (3% of distance between top of sprockets.) API Spec 7F
2. Test the available battery backup power by lowering the blocks and stopping them using the Elmagco only. Apply full braking power and maintain until the system switches off or batteries deplete.
3. Repair/replace the mounting pad of the equalizer bar, as the bar rocks back and forth when the brake is applied.

Minor:

4. Replace the worn sprocket on the lube oil pump drive.
5. Install a start/stop switch at the driller's stand, so brake cooling water pumps can be started from there.
6. Clean out the brake cooling water tank.

5.2.1 Rotary Table:

Major:

1. Replace the worn 17" No.2 inserts with the backup set.

5.7.1 Crown Block:

Minor:

1. Clean load of tar from sheaves.

5.10.1 Drilling Instrumentation:

Major:

1. Ensure that the Flo-sho mounting is rated for 500 psi.

Minor:

2. Install a safety clamp direct on the drilling line, behind the fixed deadline clamp.

5.11.1 Derrick:

Minor:

1. Use steel cotter pins or stainless wire to lock shackle pins as no welding rods should be used.

5.12.1 Casing Stabbing Board:

Minor:

1. Replace corroded retractable springs on locking dogs of the board.
2. Ensure locking fingers' movement to be regularly greased.

5.13.1 Tuggers And Sheaves/Man-Riding Winches:

Critical:

1. Replace the crushed wire rope on the port side after tugger, near V-door.

Minor:

2. Repair leak on cylinder head of port side after tugger.

5.14.1 Survey Line:

Critical:

1. Install a protective screen for the operator.

6.0 Mud System

6.1.1 Mud Pumps:

Major:

1. Replace left-hand main bearing pump No.3 as it was in excess clearance of 0.017".
2. Replace drive chain, left-hand, pump No.3. (Sloppy chain, worn rollers including cracked roller.)
3. Remove top guide plate and cross-head of left-hand on pump No.3 (grooved/scratched). Attempt to redress, possibly to be replaced.
4. Replace at next scheduled maintenance the main bearings of pump No.1.

Minor:

5. Correct the cross-head guide top clearance, too small, on middle cross head of pump No.2.
6. Adjust minor misalignment between sprockets on left hand chain drive pump No.1.

6.2.1 Shale Shaker:

Minor:

1. Permanently attach the steel strip seen loose under the pneumo-seal on the centre shaker. This should be attached below the screen if required for clearance adjustment.

6.9.1 Mud-Mixing System:

Major:

1. Ensure that the PVT float level sensors are operable over the full range of tank volumes.

Minor:

2. Expedite the delivery of the sensor parts required for No. 3 mud pit level indication.

6.10.1 Standpipe Manifold And Rotary Hoses:

Major:

1. Replace the body of the standpipe valve No.1, as it shows a serious wash-out next to the sealing area.

7.0 Well Control Equipment

7.1.1 Ram-Type BOPs:

Major:

1. Lower double body to be returned to OEM approved facility for recertification. (Maximum of five years as per API RP 53 Section 18.10.3.)
2. Cavity measurements on lower double to be returned to CIW standards.

Minor:

3. Remove excess of plates, gates, pins on BOP frame guide posts that are supposed to keep the guide lines in. A solid 1" pin on bottom and the locking inserts at the top are sufficient. (Clumsy operation while installing guideline wires.)

7.7.1 BOP Hydraulic Power Unit:

Minor:

1. Note that there is a shortage of 39 gallons when applying client's volumetric standard regarding remaining pressure during drawdown test.

7.8.1 Diverter System:

Major:

1. Return diverter control system to original, no unauthorized modifications allowed.
2. Replace worn diverter insert. Diameter measures 11-1/2", normally 10". Marking on insert rubber and steel body showed that it had obviously been closed while drilling.

Minor:

3. Replace the seriously corroded actuating cylinder of starboard overboard diverter line.

7.9.1 BOP Control System:

Major:

1. Replace the worn-out sprocket on the blue reel drive.
2. Replace corroded female receptacles on top of the BOP package. Serious pitting and corrosion at the flow ports. This replacement to include the mounting springs.

Minor:

3. Repair band brakes on the hose reels.
4. Service four-way valves on blue reel control panel, difficult to move.
5. Consider installing a disc brake on these heavy hose reels.
6. Service pressure sensor of middle rams "open", as "block" light is continuously activated.

7.14.1 Wellhead/Riser Connector:

Major:

1. Replace LMRP connector as hardly any reserve stroke, pre-load, is left on the LMRP connector (installed in February 2001). Only the actuator ring will most likely need to be replaced.

Minor:

2. Note that pilot operated check valves in the closing circuit of connectors are only required when the connector suffers from back driving. (Determined by the manufacturer.)

7.15.1 Riser Tensioners:

Minor:

1. Replace corroded studs/nuts on the low pressure APVs retaining the shut-off valve. (Approximately 8" long studs.)

7.16.1 Guideline And Podline Tensioners:

Minor:

1. Note that rig maximum operational water depth is currently only 1,100 ft due to length of guideline wires.

8.0 Marine Equipment

8.1.1 Ballast And Bilge System:

Major:

1. Fit a remote closure device to the EMD sea suction in the port pump room as planned.

8.2.1 Overflow And Vent Checks:

Minor:

1. Clearly identify the remaining overflow vents by stencilling the tank designations on them. Colour coding here would improve the recognition process.

8.3.1 Watertight Integrity Of Horizontal Tubulars:

Major:

1. Provide means to check for water inside the chain lockers (and ideally, a system that would enable the water to be removed from the chain lockers during normal operations). This would enable more accurate rig stability assessment.

8.4.1 Mooring System:

Critical:

1. Ensure that the windlass clutches are left out during drilling operations where shallow gas is expected.
2. Provide an automatic water spray system to prevent the chain sparking on the wildcats and fairleads, for use when shallow gas is expected.

Major:

3. Replace the mooring chain sections found to be out of specifications after performing a complete mooring chain inspection to API RP 2I standards.
4. Test the emergency mooring release system in the configuration that would be used when shallow gas is expected. This test should be documented.

8.7.1 General Operation:

Minor:

1. Lower the lifeboats to the water at least at three-month intervals.
2. Improve the fendering arrangements on the columns, and provide some contrast to the black paint to improve the visibility of the columns during bad weather.

9.0 Power Plant

9.3.1 Air Compressors/Air System:

Major:

1. Perform an internal inspection of the medium/low pressure air pressure vessels on a five yearly basis, unless an alternative interval is determined by the classification society.

9.4.1 Refrigerating and Air-Conditioning:

Minor:

1. Repair or replace the general use fridge in the galley, noted to be out of service.

9.6.1 Crane And Power System:

Major:

1. Repair the load indication system seen working incorrectly on the starboard crane.
2. Repair the hydraulic leaks noted on the port crane.

Minor:

3. Provide a re-sized lower window for the starboard crane, or relocate the frame upwards as on the port crane. This is to close off the opening between the two frames.

10.0 Electrical Equipment

10.3.1 Main Transformer:

Minor:

1. Expedite installation of additional cooling to the transformers, identified as being required in the thermal survey done in April 2002.

10.7.1 DC Motors:

Major:

1. Raise the insulation resistance value of the drawworks, rotary table, and Top Drive motors as soon as possible.

10.10.1 Lighting System (Main):

Critical:

1. Repair or replace the light fitting above the door at the 21' level on the port aft column.
2. Source and refit the protective glass covers on the two engine room flood lights between engines No.2 and No.3.

10.12.1 Electrical Outlets:

Critical:

1. Fit residual current circuit breakers to all power outlets in the workshops and accommodation.

10.14.1 Batteries, Chargers And UPS:

Major:

1. Clean the corrosion product from the batteries fitted for the fire alarm system.

10.20.1 Hazardous Areas:

Major:

1. Seal the unused openings in the instrumentation junction box above the starboard drill floor access (adjacent the Elmagco brake).
2. Reinstate the doors to the pit room such that they are self-closing and gas-tight. This includes the replacement of the missing door handle to the pump room, and making provision that the dogs for the watertight doors do not impede the closure.

11.0 Safety Equipment

11.1.1.1 Automatic Fire Detection System:

Minor:

1. Separate the engine room fire detection system to two loops or zones, to allow for redundancy (client requirement).

11.1.2.1 CO_2/Halon System For Fire Control:

Minor:

1. Fit a fixed fire suppression system to the cementing unit space. The total contained horsepower is in excess of 500 bhp, and thus requires a suppression system according to SOLAS.

11.1.4.1 Portable Extinguishers And Fire-Fighting Equipment:

Major:

1. Replace the two CO_2 extinguishers in the accommodation areas adjacent and inside the training room with dry powder types. This is required to reduce the risk of asphyxiation should they be used in the confined space of a cabin.

Minor:

2. Provide a 45-litre foam extinguisher near the cement unit, and an additional 4.5 kg dry powder extinguisher at the sack room entrance to the space. This is to meet the requirements for portable fire extinguishing in machinery spaces of Category A (SOLAS).

11.2.1.1 Lifeboats:

Critical:

1. Provide sufficient redundancy in life-saving equipment such that there is 200% capacity for the number of personnel on board during the transit to the next location. This would involve the temporary relocation of two of the life rafts to the aft end of the rig to maintain sufficient separation between locations. This statement is made with the knowledge that the lifeboat No.3, and the four port and starboard rafts would be unusable due to their location above the pontoons.
2. Re-locate the No.3 and No.4 lifeboats such that they can be launched at transit draft without impacting on the pontoons. Their stowage location should comply with SOLAS requirements. That is, they should be able to be successfully launched with the specified the list and trim on the rig.

Major:

3. Re-secure the engine covers on the lifeboats No.3 and No.4. These could become dangerous in heavy weather a rollover situation.

Minor:

4. Clean the oil out of the bilges in the No.4 boat.
5. Replace the expired items noted in the first-aid kits.
6. Replace the compass light sticks in boats No.3 and No.4.

11.2.2.1 Life-Raft Stations:

Critical:

1. Provide clear instructions that the life-rafts are not to be used whilst at transit draft. This is due to their location above the pontoons, and the likelihood of damage to the raft if a launch was attempted.
2. Relocate the rafts to a position where they could be practically launched whilst at transit draft, replacing them with rafts suitable for 36 m stowage height at that time.

11.2.3.1 Life Buoys:

Minor:

1. Clean the light lens on the smoke unit fitted to the forward port life ring.
2. Re-draw the smoke float fitted life buoys on the safety plan as **not** being fitted with 30 m retrieval lines.
3. Replace the two 30 m lifelines fitted to the life rings with lines of at least 50 m. Their length should be at least 1-1/2 times the their stowage height at transit draft.

11.11.1 Housekeeping:

Critical:

1. Fit 4” toe boards to the second level walkways around the accommodation and SCR room where items could be kicked down on to personnel below.

12.0 Maintenance System

12.5.1 Organization Drilling Department:

Major:

1. Measure and record the rotary main bearing clearance on a periodical basis.

12.9.1 Organization Power Plant:

Critical:

1. Expedite the supply of the replacement relief valve for the engine room engine start air receiver. This valve was overdue for testing or replacement by nine months over a two-year cycle.

12.11.1 Organization Safety Department:

Critical:

1. Inspect the inner clutch on each of the lifeboat winches for cracking.

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13.0 Spare Parts

13.1.1 Drilling Equipment:

Major:

1. A spare service loop for the Top Drive should be available within 24 hours.
2. A spare Top Drive motor should be available within 24 hours.
3. Spare Top Drive hydraulic pump.
4. Deadline load sensor diaphragm.
5. Crown sheave bearing.
6. Crown sheave bearing seal kit.
7. Travelling block sheave bearing seal kit.
8. Travelling block sheave bearing.
9. Spring for self-centring handle on the utility tuggers.
10. Ezy-Torq pulling cable.

13.2.1 Mud System:

Major:

1. Parts for the degasser compressor.
2. Three-way valve for the degasser.
3. Shaft seals for the agitator gearboxes.
4. Spare paddle for the agitator.

13.3.1 Well Control Equipment:

Major:

1. Drill string compensator chains.
2. Piston and shaft seals for the drill string compensator.
3. Underwater TV cable.

13.5.1 Power Plant:

Major:

1. Starter motor overhaul kit for the main engine.
2. Crane wire sheave and bearing for all sizes in use.
3. Air-conditioning compressor.
4. Refrigeration plant compressor.
5. Parts for the seawater service pump.

13.7.1 Safety Equipment:

Major:

1. Fire main valves.
2. Fire pump parts.
3. Breathing Apparatus compressor spares, including filters.

5.0 DRILLING EQUIPMENT

5.1 Drawworks

The rig's Oilwell E-3000 model drawworks was driven via two GE 752 electric motors. The unit was rated for 2,000 horsepower input power.

It had been planned to check the power end first. The equalizing bar, brake bands and attached adjusting bolts and pins were to be MPI inspected at the same time.

The brake rims were in good condition, although some heat cracks showed on the brake rim surface. This was normal on this type of drawworks. Some grooving was visible on the brake surface.

The depth from the brake flange to surface was measured. This was 3/8", which was very good. The brake band blocks measured 1-1/8".

Both brake bands were MPI inspected. Inspection of the adjusting bolts showed one of these to be cracked. The equalizer bar and associated components were found without defects. As another bolt was required on short-term notice, there was one delivered via a sister rig.

There was a spare set of inspected brake bands on board.

The drive sprockets were in good condition, although the drive chain of drive motor A showed quite some stretch. It was found that it was not enough to remove a half link, but would need to be monitored.

The chain had a mid-span movement of 10". As per API spec 7F, this should be no more than 3% of the distance between the sprockets, which for this case meant a maximum movement of 2".

There was obvious wear on the sprocket teeth of the drive of the lube oil pump.
A new one should be installed.

The oil nozzles were seen to be in open and clean condition, and the chains were well lubricated. Oil pressure was approximately 45 psi when the drawworks were run, with 20 psi in idle mode.

The splined teeth clutch between the high and low mode showed some damage over the first 1/2" of each coupling side.

The drawworks were run in all clutch modes. This was High/High, High/Low, Low/Low and Low/High.

No excessive noise was heard from the dolly tracks when the blocks were run. No air leaks were noted on the high and low clutch sides.

The capacity of the drawworks with 12 lines was:
- In Low/Low mode : 1,140,000 lbs
- In Low/High mode : 650,000 lbs
- In High/High mode : 255,000 lbs
- In High/Low mode : 450,000 lbs

The equalizer bar showed quite some movement on the mounting pin. It rocked back and forth. The hole in the base-mounting pad had most likely become oval, and this should be addressed.

It was noted that the 1-1/2" diameter drilling line was spooled on correctly. The spool was recently installed and would last for the upcoming campaign.

We suggested removing the line spooler completely as this was an inheritance of the kelly drilling days, when insufficient weight was available to keep the drilling line tight. This was followed up and the rig superintendent was very satisfied.

The Crown-O-Matic was tested and it functioned as it was supposed to. The brake was applied and the clutch disengaged. The wall thickness of the 100-litre air vessel mounted behind the Crown-O-Matic was taken as per our request. This was measured as 0.217" up to 0.249".

In the event of an electrical power failure, a battery backup system was installed. This system also activated the Elmagco when the blocks came too close to the Raised Back-up System, when this tool was being used.

The RBS protection was tested and the response was immediate. We were not able to test the available battery power capacity. This was done by stopping the blocks with the Elmagco and applying full braking power and maintained this till the system switched off or simply depleted.

The backup rollers were correctly adjusted. The kickback rollers were free to move.

The make-up and break-out cathead were tested for pulling power. The make-up cathead easily pulled 8,000 lbs, and the break-out cathead pulled over 15,000 lbs.

The Lebus grooving system was in use. It was seen to be in good condition with sufficient spacing between the line wraps. 12 wraps of line were on the drum with the elevators near the rotary.

The cooling water pumps were located in the mud pump room forward. They circulated the cooling water via a plate type heat exchanger from the tank to the drawworks and Elmagco. Pressure was 55 psi. The volume measured was 360 litres/minute.

A pressure gauge installed sounded an alarm when the pump was turned off. Normal temperature gauges were fitted. The pumps could not be started from the drill floor, which was rather unusual.

The return line of the Elmagco was an open line.

The pumps could only be started in the pump room. No remote control was available.

Indication that the pump ran, at the driller's stand, was by a pressure gauge only.

5.1.1 Drawworks Recommendations:

Major:

1. Adjust the excessive clearance on the drive chain of motor A. Presently at a mid-span clearance of 10", but should be no more than 2". (3% of distance between top of sprockets.) API Spec 7F
2. Test the available battery backup power by lowering the blocks and stopping them using the Elmagco only. Apply full braking power and maintain until the system switches off or batteries deplete.
3. Repair/replace the mounting pad of the equalizer bar, as the bar rocks back and forth when the brake is applied.

Minor:

4. Replace the worn sprocket on the lube oil pump drive.
5. Install a start/stop switch at the driller's stand, so brake cooling water pumps can be started from there.
6. Clean out the brake cooling water tank.

5.2 Rotary Table

The rotary was an Oilwell 49-5. Its main usage was during the handling of BHAs and bit installation.

The rotary was run in both directions and functioned without any problem.

The gearbox showed the teeth to be in good condition. The air flex brake was tested and easily kept the shaft from turning while applying 350A to the drive motor.

The manual lock was tested in both directions and this gave no problems.

The Size 2 insert bushings were measured and the throat was over maximum allowable. When new this was 10.125, with maximum being 10.875. However, our measurements were slightly over 11”. A spare set was available in the heavy tool store and measured as 10.500”. This set was moved to the floor and put back in use.

5.2.1 Rotary Table Recommendation:

Major:

1. Replace the worn 17” No.2 inserts with the backup set.

5.3 **Top Drive System**

The rig used a Varco TDS 4S Top Drive.

The unit was driven via a GE 752 shunt motor. This motor had a maximum power of 1,130 horsepower.

The continuous torque in low gear was 45,500 ft-lbs at 130 RPM, and in high gear 29,100 ft-lbs at 205 rpm. The maximum intermittent value was 50,100 for a maximum period of seven seconds. The PH-85 pipe handler had a break-out capacity of 85,000 ft-lbs.

The last major inspection as per API RP 8B had been performed in May 2002. Reports were sighted.

We observed the Top Drive making up and breaking out pipe, which went smoothly.

The upper IBOP was mechanically activated, and the lower was manually functioned. The IBOPs had been pressure tested to 5,000 psi.

A camera was mounted at monkeyboard level to give the driller an overview of the Top Drive making connections.

5.4 **Swivel**

The swivel was integrated with the Top Drive. It had been MPI inspected at the same time as the Top Drive in May 2002.

5.5 **Kelly Spinner**

Not applicable.

5.6 **Kelly And Kelly Drive Bushing**

Not applicable.

5.7 Crown Block

The Lee C Moore 500 ton crown block had 7ea 60" sheaves consisting of a cluster of six and a separate fastline sheave.

A set of new sheaves and bearings was installed in December 1999. The pin was MPI inspected and found in good order, so it was reused.

While the block was hung off, we checked the sheaves for wear and wobble.

The sheave grooves were checked with an API gauge and found to be in good order. A lot of tar was sticking to the sheaves. It was noted that the sheaves were well greased. The wobble was tested but there were no indications of worn bearings.

There were 3ea jumper bars fitted over the sheaves to prevent the drilling line from jumping off the sheaves in case of a sudden weight loss.

5.7.1 Crown Block Recommendation:

Minor:

1. Clean load of tar from sheaves.

5.8 Travelling Block

The travelling block was replaced with a reconditioned unit in October 1999. There was little information available, as the CAMM system on board had crashed at the time. National had originally overhauled the block in January 1999.

MPI had been performed in July 2002, on the Beckett clamp and pins. We checked the sheaves for wobble, and there was none noted. The grooves were checked with an API sheave gauge, and this was in good order as well.

5.9 Hook

Not applicable, a Beckett clamp was in use.

5.10 Drilling Instrumentation

An Autolec instrument panel provided the driller with the normally required drilling data. These were the pressures and volumes from pumps and pits including strokes and rpms, ROP and main weight indicator.

A Geolograph was installed in the doghouse. A seven pen, Geolograph "Drilling Recorder" showing penetration, torque, pump pressure, hook load, pump speed with dual recording via separate pens and rpm.

The National deadline anchor was visually inspected and showed no obvious defects. The clamp was still in good condition. The deadline anchor had received normal regular NDT inspections as per API RP 8B. The last records were dated October 2002. CORE had performed a full inspection with pin removal in May 2002.

The electricians who also calibrated the equipment that was applicable maintained the instrumentation. A lot of data arrived via magnetic pick-ups that hardly required any maintenance, as they either did or did not function. This department maintained the PVT system as well.

The Flo-sho mounted in the flow line, just under the drill floor was manually tested for 0 and 100%. The instrument cover was bolted tight. However, we doubt that it would hold 500 psi, being part of the possibly closed in diverter circuit.

5.10.1 Drilling Instrumentation Recommendations:

Major:

1. Ensure that the Flo-sho mounting is rated for 500 psi.

Minor:

2. Install a safety clamp direct on the drilling line, behind the fixed deadline clamp.

5.11 Derrick

The rig had a Lee C Moore mast with API S/No.T3674. Dreco had extended this mast to 185 ft in 1992.

The mast height was 185 ft, and the static hook load with 12 lines to the travelling block was 1,000,000 lbs.

The crown platform was fitted with bumpers, made of wood.

No damage was noted on the platform, the handrails and toe boards were in place. Handrails complied with API RP 9.3.18, being 42" high. The crown frame and support beams were checked for bent beam flanges and cracked welds. They complied with API RP 4G Section 2.1

All sheaves under the water-table had been fitted with proper safety slings. This was generally correct throughout the mast. The work platform under the main crown had a rope installed inboard of the walkway, which was later replaced with a fixed railing.

The ladder going up the mast was fitted with a safety line. The person going up the mast would have to wear a safety harness to which the fall arrester was connected. A safety cage was in use as well.

During our attendance, the top section of the ladder had a fixed safety line installed as well. Previously, a fall arrester was in use on that section. The fall arrester set up complied with API RP 54 9.3.7. The ladder climbed easily.

Lighting could be excellent. The mast would need the lights to be cleaned up. Neon tubes lose 30-40% of their capacity within a year, and should be replaced once a year. According to the electrician, this was done.

All lights were of the explosion-proof type, and safety slings were attached to all. A large number of flood lights were installed on top of the doghouse and mast lower main beams, so the working area was highly visible at night.

There was an escape device for the derrickman on the monkeyboard. It was located at the same side as the ladder. It was presently recommended to install the escape opposite of the ladder.

The substructure and mast main structure were in good condition. No major distortion to any of the beams was noted. The pin connections in the base were all well within the maximum clearances.

The drill floor could be reached via 3ea sets of stairways and a ladder. The V-door was protected with a single chain.

5.11.1 Derrick Recommendation:

Minor:

1. Use steel cotter pins or stainless wire to lock shackle pins as no welding rods should be used.

5.12 Casing Stabbing Board

The stabbing board was mounted on the port side of the Top Drive track.

It could be swung into place when needed. An air piston was installed under the main board section, which moved the forward section of the platform. The stabber could then easily reach the casing. This section was retrievable as the blocks might otherwise hit the platform.

An airhorn was mounted to give warning signals to the driller. A camera was also used to enable the driller to see the stabber's activity. A talkback system was used for verbal communication.

The required locking devices were installed, but they were found difficult to move. Some extensive greasing was required to get the dogs going again. The board was NDT inspected in October 2002. It was found without any cracks at the time. The required safety equipment was installed.

Prior to a casing job and also upon completion, the stabber should review a checklist to ensure as safe an operation as possible.

5.12.1 Casing Stabbing Board Recommendations:

Minor:

1. Replace corroded retractable springs on locking dogs of the board.
2. Ensure locking fingers' movement to be regularly greased.

5.13 Tuggers And Sheaves/Man-Riding Winches

The tuggers and sheaves were generally found in good order with the normally used safety features such as drum guard, hand spooler, quick shut-off valve.
The SWL was clearly visible on the tuggers.

Several man riders were available, although capacities as 1,400 lbs seemed rather high for the average crew member. There was one tugger rated for 150 kg, which was presently the accepted standard.

5.13.1 Tuggers And Sheaves/Man-Riding Winches Recommendations:

Critical:

1. Replace the crushed wire rope on the port side after tugger, near V-door.

Minor:

2. Repair leak on cylinder head of port side after tugger.

5.14 **Survey Line**

A Mathey wire line unit was installed on the starboard after side of the drill floor.
This was a hydraulic unit. The reel was driven via a hydraulic motor. A test run showed all to be in working order. The overshot and retrieval tool were all in good condition.

The length of the slick line was approximately 19,000 feet. The wire was in good condition. The guide sheaves and counter were functional.

We were informed that it had been planned to have the unit installed on top of the doghouse.

5.14.1 Survey Line Recommendation:

Critical:

1. Install a protective screen for the operator.

5.15 **Pipe-Spinning Wrench**

A spare pipe spinner stored outside of the drill floor was available. This was a Varco SSW-30. The unit was still maintained.

5.16 **Ezy-Torq**

A Varco HC-26 unit was installed as an Ezy-Torq.

A function test was performed and the system was pressured up to an equivalent pulling force of 20,000 lbs. No leakage showed in the hydraulic system or past the piston rod.

The pulling wire was in good condition, as was the return spring. The mounting base had been MPI inspected.

5.17 **Pipe-Handling Equipment**

Tongs:
The pipe tongs were checked. The dies were found to have excess play in the jaws and jaws from spare tongs replaced these. The tongs in use were NDT inspected prior to the start of the well.

Slips And Dog Collars:
All slips and collars were checked and noted to be in good condition. As per request of our client, a set of handling equipment, which was to be used, was NDT inspected.

Elevators:
Elevators had been checked prior to our attendance. The bails had been MPI inspected in November 2001 and prior to the start of the current job. These included the 3-1/2" and 4-1/2" links.

There was also a mud bucket available, and the seals were seen to be in good condition.

5.18 Iron Roughneck

The Varco Iron roughneck was observed in action. This was a model AR 3200, "Big Foot" (AR=Auto Roughneck). It could handle tubulars in the range of 3-1/2" up to 9-3/4".

It had a SSW-50 pipe spinner and a TW-102 torque wrench assembly. The unit could be used in manual mode and in auto mode.

The maximum operating pressure in automode was 2,000 psi. In manual mode, it could be set to 2,500 psi. This last pressure was only needed for drill collars.

The unit ran on a track in front of the drawworks.

The torque applied could be seen by the driller, on a separate gauge at the driller's stand.

The load bearing areas were inspected as recommended by the manufacturer. This was completed in October 2002.

5.19 Pipe-Racking System

Not applicable.

5.20 Drill String

Available tubulars, owned by the 702 were:

Size	Rig	Yard
DC 4.75	0 ea	26 ea
DC 6.5	6 ea	29 ea
DC 8.25	15 ea	16 ea
DC 9.5	3 ea	5 ea
Hevi-Wate 5"	15 ea	15 ea
Drill Pipe 5" S-135	220 ea	347 ea
D.P 3-1/2" G-105	0 ea	91 ea

All tubulars had been inspected.

5.21 Drilling Subs

The various drilling subs were all stored on the starboard side of the pipe deck.
They had been inspected, based on their usage in the string.

5.22 Fishing Tools

The rig's fishing tools were neatly stored in the heavy tool store. They were rated for the tubular sizes owned by the rig. When special tools were needed, they were sent out with the fishing company.

Tools had been NDT inspected, after their usage.

5.23 Power Tong

The rig was not equipped with a power tong to run casing. Normally a specialised company, such as Weatherford or Frank's, came on board to do this. They would bring their equipment for the job to be performed.

5.24 Well-Testing Equipment

No testing equipment was on board. The rig had a fixed valve and piping set up for testers to connect their equipment to. These lines ran to the flare booms on the port side and starboard side after.

6.0 MUD SYSTEM

6.1 Mud Pumps

There were three Oilwell A-1700 PT installed. The third pump had been installed in December 1995. This was a reconditioned pump from Oilwell USA.

The pumps were fitted with liner cooling pumps and chain lubricating pumps.
The safety valves were all of the Retsco C type, with flanged connections. The pumps were hydraulically pressure tested and set to the required pop-off value prior to mounting.

We performed an inspection on the power ends of the pumps and while changing liners for the next hole section, also on the fluid ends.

Due to the ongoing operations, it was stated that the main covers of the power ends could not be removed. We removed the cross-head inspection covers, main bearing left-hand covers and smaller inspection cover on the main cover of each pump.

This gave no access to the right-hand pinion bearing, and only with difficulty could the right-hand main bearing be measured.

Mud Pump No. 1:

Rig records: The July 2002 yearly inspection noted chains and sprockets on both the drive and the oil pump required replacement. Main bearings were recorded at 0.014″ clearance.

We checked the chains, sprockets and noted some misalignment between the sprockets of the left-hand chain drive.

Cross-head measurements showed the left-hand cross-head to be lifted off the bottom guide plate, and sitting cocked. This was most likely due to the installation of the new liner and reconnecting to the pony rod. The chief engineer who would take action was informed.

Main Bearing		Pinion Shaft Bearing		Cross-Head Slides Clearance		
Left	Right	Left	Right	Left	Middle	Right
0.013″	0.015″	0.009″				
Fluid-End Side				0.021″	0.017″	0.015″
Power-End Side				-0.014″	0.017″	0.025″

The left-hand cross-head, after end, was actually lifted from the bottom guide to 0.014″

Mud Pump No. 2:

Rig records: The July 2002 yearly inspection recorded no deficiencies. This pump had been overhauled with new main and pinion bearings fitted in June 2001. Also, the pinion shaft was newly installed at the time.

Chains were inspected, and these were in acceptable condition. However, the sprockets showed normal wear. The lube oil for power end and chain cases was in clean condition.

The bull gear and pinion gear showed no serious damage. Cross-head guide plates were in good condition.

Main Bearing		Pinion Shaft Bearing		Cross-Head Slides Clearance		
Left	Right	Left	Right	Left	Middle	Right
0.012″	0.012″	0.009″				
Fluid-End Side				0.024″	0.017″	0.025″
Power-End Side				0.024″	0.010″	0.025″

The clearance of the main bearings was rather high for newly installed equipment. Bearings that are obtained from reputable companies normally measure between 0.004″ and 0.005″ (installed in June 2001).

Below is a list of bearing clearance readings clarification as had come up from proven field experience from a leading pump manufacturer.

- 0.008″ – 0.010″ : Okay to run until next annual inspection.
- 0.011″ – 0.013″ : Replace at next scheduled maintenance.
- 0.014″ – 0.016″ : Replace at first break in the drilling operation.
- 0.017″ and above : Replace immediately.

Mud Pump No. 3:

Rig records: Recorded data from the previous yearly inspection were reviewed. This had been performed on 8 January 2003. Some items of concern were noted, namely a main bearing clearance of 0.017”, and a comment stating that one roller was cracked on the pinion shaft bearing.

The left-hand chain drive was listed as having a cracked roller. This was definitely cause for replacement.

We measured the main bearings with the following results.

Main Bearing		Pinion Shaft Bearing		Cross-Head Slides Clearance		
Left	Right	Left	Right	Left	Middle	Right
0.017”	0.012”	0.009”				
Fluid-End Side				0.024”	0.018”	0.020”
Power-End Side				0.018”	0.018”	0.020”

We did not sight the mentioned cracked roller on the pinion shaft.

The drive chain inspection showed that the left-hand chain was simply worn out, and sloppy with worn rollers including a damaged/cracked one.

The left-hand cross-head upper guide plate showed quite serious scratches and grooves. The measured clearance was within manufacturers given tolerances. However, the measurements were most likely the distance between the grooves and actual clearance was bigger.

There were “ridges” felt with the long feeler gauges, but the guide and cross-head would have to be removed for a closer inspection, and possibly be replaced.

6.1.1 Mud Pumps Recommendations:

Major:

1. Replace left-hand main bearing pump No.3 as it was in excess clearance of 0.017”.
2. Replace drive chain, left-hand, pump No.3. (Sloppy chain, worn rollers including cracked roller.)
3. Remove top guide plate and cross-head of left-hand on pump No.3 (grooved/scratched). Attempt to redress, possibly to be replaced.
4. Replace at next scheduled maintenance the main bearings of pump No.1.

Minor:

5. Correct the cross-head guide top clearance, too small, on middle cross head of pump No.2.
6. Adjust minor misalignment between sprockets on left hand chain drive pump No.1.

6.2 Shale Shaker

Three Thule VSM-100 dual deck shakers were fitted in the mud pit room. These were in acceptable operating condition. The air tube clamps for the screens were intact.

The header box for these shakers was fitted with two dumping gates, which allowed contaminated mud to pass directly to the cuttings dump chute.

The centre shaker unit needed some minor repair, where a steel strip had been placed on top of the screen under the air clamp. This should be fitted to the support frame permanently if required, to maintain the clearance at the clamp strip.

6.2.1 Shale Shaker Recommendation:

Minor:

1. Permanently attach the steel strip seen loose under the pneumo-seal on the centre shaker. This should be attached below the screen if required for clearance adjustment.

6.3 Mud Cleaner

No mud cleaner was fitted.

6.4 Desilter

A Pioneer T16-4 16-cone desilter was installed in the pit room. This was not operated for our inspection.

6.5 Desander

A Pioneer desander was fitted, with three 12″ cones. It was, in theory, capable of 1,500 gpm. However, it was only fitted with a 6″ supply line, indicating that 1,000 gpm would be more realistic. This unit was not operated during our inspection.

6.6 Degasser

A Swaco G-1180 vacuum degasser was installed in the pit room. This was tested and found to generate acceptable vacuum.

The main vent line had a check valve in it and terminated at the poorboy degasser derrick vent. A second line was teed off this, which passed through to below the hull. This line was fitted with a valve, which was open.

6.7 Centrifugal Pumps

All centrifugal pumps were Mission Magnums with mechanical seals. All were seen running during the period of inspection. None were found to have faults. Motors ran cool, with sufficient and appropriate delivery head pressure. These were unable to be individually checked for their performance.

The pump/motor mountings were in good condition, the motors had earth bonding straps and fan guards. The couplings were in good condition and had covers.

Pump specifications were as follows:

Centrifugal Pump	Size	Impeller	horsepower	RPM
No.1 Charge	8 x 6	13″	60	1,175
No.2 Charge	8 x 6	13″	60	1,175
No.3 Charge	8 x 6	13″	60	1,175
Grey Mixing	8 x 6	11″	100	1,750
Black Mixing	8 x 6	11″	150	1,750
Degasser/Desilter	8 x 6	11″	100	1,750
Desander	8 x 6	13″	100	1,750
Hole Fill	3 x 2		25	1,750

6.8 Mud Agitators

Lightnin 20 horsepower agitators were fitted to each of the four active and reserve mud pits. All were run for inspection, with no problems noted. Gearbox and motor noise and vibration were minimal, and the shaft movement was acceptable.

6.9 Mud-Mixing System

The mud system tank volumes were as follows.

Pit	Volume, bbl	Pit	Volume, bbl
Sand Trap No.1	116	Active No.1	496
Sand Trap No.1	116	Active No.2	467
Degasser No.1	133	Reserve No.1	467
Degasser No.2	133	Reserve No.2	496
Slug	58.4	**Total**	2486.4

The dump manifold was fitted with a master valve below deck.

A starboard fuel oil tank of 3,264 bbl capacity could be used for storing base oil. A dedicated base oil transfer pump was available.

The mixing area was provided with two centrifugal mixing pumps. One, a 150 horsepower unit and the other a 100 horsepower pump. The piping and valve arrangement of these pumps would allow a variety of configurations. This made it a versatile arrangement.

Two mixing hoppers that were supplied from the single surge tank (swivel outlet) were installed. A dust extraction fan duct was installed close to the mixing hoppers. The barite surge tank had been fitted with a safety valve to prevent over-pressurising.

The barite surge tank was fitted with a Martin Decker weight indicator system.

An emergency shower, safety locker, eyewash station and sufficient warning signs on how to handle dangerous chemicals were available in the sack room and mixing area.

The PVT system was not well set-up. The drill floor indications were in cubic metres, requiring a conversion to barrels by hand-held calculator. The pit No.3 level sensor was not working due to the float having sunk.

This had been on order for some four months. The other sensors were reading incorrectly at the time of inspection due to the high levels in the tanks, and the limitations of the float sensor travel. The third-party mud logging system had not been set-up.

The trip tank was a single tank of 26 barrels. It was fitted with a float and wire type level indicator, but no recording equipment. Third-party (mud loggers) had fitted logging sensors as required by the client.

Testing the trip tank gave following results:

- Fill up from mixing pump : 30 seconds
- Pump out via trip tank pump : 4-1/2 minutes

6.9.1 Mud-Mixing System Recommendations:

Major:

1. Ensure that the PVT float level sensors are operable over the full range of tank volumes.

Minor:

2. Expedite the delivery of the sensor parts required for No. 3 mud pit level indication.

6.10 Standpipe Manifold And Rotary Hoses

The standpipe manifold was constructed without threaded fittings. The mud pump discharge strainers were fitted immediately below the drill floor on the manifold inlets.

This dual standpipe manifold was built-up with Demco valves. All connections on the manifold were welded. The pressure sensors were connected via FMC couplings.

We requested a valve to be opened up on the after standpipe for inspection of the gate and body. (Valve No.1.)

The gate needed to be replaced, although the insert was in relatively good condition. Only on the bottom side of the body, near the valve opening sealing area, showed a serious wash-out, just 3/8″ out of the edge of the insert seating area.

The standpipe manifold was pressure tested to 5,000 psi between the drill floor and mud pump manifold valves. Several gates and inserts were replaced.

The rotary hose in use was tested to 5,000 psi as well as the various drill floor safety valves and upper and lower IBOPs. Last ones were tested from the bottom side.

The forward rotary hose was installed in May 2000, and attached to the gooseneck, but kept as a spare. The 3-1/2″ rotary hose in use was newly installed in January 2001. Certification was verified for this Copperstate 87 ft long hose.

The cement standpipe, next to the standpipe manifold, had FMC valves fitted. These were plug type valves rated for 10,000 psi.

Wall thickness records of this manifold and piping down to the pumps showed an average of 22 mm. This was acceptable for a 5" line and 5,000 psi operation.

6.10.1 Standpipe Manifold And Rotary Hoses Recommendation:

Major:

1. Replace the body of the standpipe valve No.1, as it shows a serious wash-out next to the sealing area.

6.11 Bulk Air System And Tanks

The bulk system on the rig comprised eight 1,900 cu. ft tanks, separated to two manifolds of four tanks. Four were dedicated for cement, with no cross connection to the other barite and gel system.

Tanks were inspected and found to be clean and free of solidified deposits. The aeration system was a spider type. Air was supplied via a reducing station, fitted after the main air dryer.

Air for the bulk system was provided from the rig air system via an air dryer and via a dual air reducing station to a bulk air vessel in the mud pump room.

It took 20 to 25 minutes to pressure one tank up to 36 psi. While pressurising one bulk tank, all three rotary rig air compressors started running due to pressure drop in the rig air system.

After three to five minutes, the third compressor would stop and settle into standby mode whilst the other two compressors kept running until the bulk air supply was closed. There was no dedicated bulk air compressor on this rig.

6.12 Centrifuge

No centrifuge was installed.

6.13 Cementing Unit

The Dowell cementing unit was engine driven, using two GM8V71 engines. It was installed in a dedicated space aft with openings to the sack room and the main deck.

The unit was in good condition, and was maintained and operated by third-party personnel. Safety devices were fitted as appropriate to the pumps and the engines.

The pumps had internal burst discs.

7.0 WELL CONTROL EQUIPMENT

7.1 Ram-Type BOPs

The rig was equipped with a Cameron 18-3/4″ BOP type U, rated for 10,000 psi.

The upper double was of the extended type, installed in February 1999, and a regular double at the lower section. The lower double had been installed in 1992.

No identity plate with serial number was seen on either of the doubles.

The bonnets had been opened up for inspection. We measured all the heights of the cavities and found the lower double cavities out of specification.

In particular, the middle ram cavity measurements were in excess of Cameron maximum allowable dimensions. Maximum as per CIW for cavity heights was 12.060″. We measured 12.073 to 12.100″. Deep grooving was sighted in the bottom of the BOP.

The upper double was measured and showed good results. We measured 12.025″ to 12.037″. The cavities were in good condition.

Bonnet seal areas, piston rods and ram change pistons were in good condition. The bonnet seals were replaced as per request of our client. All ram shaft buttons were inspected with MPI. These buttons were all of the replaceable type.

The ram bodies were also inspected with MPI.

The rams were reinstalled upon completion of all inspections. From the top down: Shear rams – Variable rams – 5″ rams – 5″ rams.

The BOP was tested to 250 and 10,000 psi versus the shear rams and fail-safe valves.

The pipe rams were tested to 250 and 5,000 psi. All tests were held for 10 minutes each.

The fail-safe valves were also tested from the topside, inner and outer valves.
All tests were good.

Prior to running of the BOP, new AX rings were installed in both the connectors.

The LMRP hoses were tested to 5,000 psi during running of the riser.

Upon landing on the wellhead, the BOP was tested to 2,200 psi versus shear rams and wellhead. This test lasted 30 minutes.

The LMRP connector was later tested versus the annular to 2,200 psi.

7.1.1 Ram-Type BOPs Recommendations:

Major:

1. Lower double body to be returned to OEM approved facility for recertification. (Maximum of five years as per API RP 53 Section 18.10.3.)
2. Cavity measurements on lower double to be returned to CIW standards.

Minor:

3. Remove excess of plates, gates, pins on BOP frame guide posts that are supposed to keep the guide lines in. A solid 1" pin on bottom and the locking inserts at the top are sufficient. (Clumsy operation while installing guideline wires.)

7.2 Annular-Type BOPs

Two Shaffer 5K annulars were installed. These were two single bodies.

The elements, including all seals on piston and adapter ring had been replaced.
For the lower annular, this was on 28 May 2002, and for the upper on 29 June 2002.

The lower annular BOP had been installed in March 1997 upon having been serviced in Singapore, while the upper annular was installed in December 1999 upon having been serviced in Australia.

The annulars were function tested and both closed in 45 seconds. API Spec 16D 2.2.2.1 allows 60 seconds.

The opening showed that 95% was reached within 60 seconds and the remaining in approximately five minutes. Allowable is 15 minutes as per API Spec 16A Section 7.5.8.4.

Each annular had a surge bottle connected to the closing side. The bottles were charged for the water depth.

We visually inspected the elements with the annulars closed, which showed to be in good condition. In particular, the bottom side did not show any anomaly.

Both annulars were pressure tested to 250 and 3,500 psi, with no problems noted.

7.3 Gate Valves

The fail-safe gate valves were CIW valves. A pressure assist was installed. The valves were tested during the BOP test to 10,000 psi and no leakage was found. They were also tested from the topside without any problem.

It had been planned to install all-new fail-safe valves, manufactured by W.O.M after this well.

Also, double bolt CIW No.5 clamps would then be installed on the body outlet plugs and all valve connections. The spool pieces and Y-block would be replaced as well.

7.4 Choke And Kill Manifold

The 10,000-psi WP choke manifold was equipped with Cameron type FC gate valves, two type H2 hydraulic chokes and two manual chokes. There was only one isolation valve immediately upstream of each choke.

Any well flow, whether from the choke or kill line, must pass through a single central line in order to be directed at any choke, making a risk of single point failure in this area.

All four chokes were opened up for inspection. They were noted to be in good condition, as were the seats. There were spare cones and seats available for both the manual and hydraulic choke.

The hydraulic chokes were controlled from a Cameron unit. There was hydraulic backup in the form of a small manual pump. Backup air supply was also available from the high pressure APVs.

The poorboy was rather small, mounted above the trip tank. Mud seal height was measured as 15 ft. The vent to the crown measured 10”.

There was an LED pressure read-back indicator (for the poorboy shell pressure) above the remote choke control panel.

The wall thickness measurements of the 3”lines coming from the moonpool to the drill floor were on average 20 mm. The manifold piping itself was on average 22 mm (7/8”).

The manifold was flushed through with the cement pump and then pressure tested. The tests were 10,000 psi upstream of the chokes and 5,000 psi downstream of them. All tests were good.

7.5 Cameron-Style Hub Clamps

All main No.27 clamps on the BOP bodies and connectors were of the dual thru-bolt type. The previously used swing bolt type clamps had all been replaced.

A total of 4ea clamps was in use, 3ea on the BOP and lea on the LMRP.

The fail-safe valves and side outlet plugs were still fitted with single bolt type No. 5 clamps. New dual bolt No.5 clamps were available. It was scheduled for these to be installed when the new fail-safe valves and spools are mounted.

7.6 BOP-Handling Equipment

The BOPs were moved via two hydraulic Lee C Moore bridge cranes. They were rated for 65 tons. We saw the cranes daily in action, used on the handling of BOP related components, and later during running of the BOPs.

The wire ropes were replaced on a yearly basis. This had been done in August and October 2002.

The cranes were load tested to 64 ton in July 2002. Certificate was sighted.

7.7 BOP Hydraulic Power Unit

The hydraulic power supply for the BOP functions was delivered via a standard Koomey unit.

There were two electric pumps and two air driven pumps installed. The manifold and annular regulators were of the TR-5 type that could be manually controlled and via an air driven motor. The regulators could be remotely controlled from the drill floor.

A large number of accumulator bottles were available:

- On surface : 63ea 11 gallon bottles and 10 ea 15 gallon bottles.
- On the stack: 25ea 11gallon bottles.

The bottles were divided over a number of bottle banks, with a maximum of 16 bottles as the largest bank. All banks had a pressure gauge, isolation valve and bleed valve installed.

Safety valves were mounted on the accumulator banks set for 3,300 psi. The banks could be individually locked as per TSF policy. Unfortunately, due to vibrations, the locks all got damaged and it became a major job to close a bank.

The start and stop pressures of the pumps were verified. These were:

- Lead pump : 2,750 – 3,050 psi
- Slave pump : 2,500 – 2,850 psi
- Air pumps : 2,300 – 2,700 psi.

The precharge for the surface bottles was set to 1,000 psi and for the subsea bottles at 1,150 psi, this for the given water depth.

Available fluid volume calculations:

API Spec 16D 2.2.2.5.1.requirement is:

1. Open and close all rams and one annular with 50% reserve.

Or:

2. The pressure of the remaining stored accumulator volume shall exceed the calculated minimum system operating pressure, after opening and closing all rams and one annular.

To close this BOP at full well bore pressure 10,000:7.4 = 1,350 psi required.
7.4 would be the closing ratio for a Cameron 18-3/4 ram.

Operating volumes BOP rams and annulars:

- Shaffer 18-3/4 5K Annular – Open : 37.6 gallon
- Shaffer 18-3/4 5K Annnular – Close : 48.2 gallon

- CIW 18-3/4 10K Ram – Open : 21.2
- CIW 18-3/4 10K Ram – Close : 23.1

Large bore shear ram

- CIW 18-3/4 10K – Open : 29.7
- CIW 18-3/4 10K – Close : 32.2

Calculations as per API:

1.
Required volume to close is:
[3 x 23.1] (pipe rams) + [1 x 32.2] + [1 x 48.16] = 149.7 gallons. (150)
To open:
[3 x 21.2] + [1 x 29.7] + [1 x 37.6] = 130.9 gallons. (130)
Volume with 50% reserve is: 280 x 1.5 = 420 gallons

An 11-gallon bottle produces five gallons when depleted from 3,000 to 1,200 psi. A 15-gallon bottle produces seven gallons when depleted to the same pressure. Available usable volume is [88 x 5] + [10 x 7] = 510 gallons.

This shows that the remaining usable volume would be 510 – 420 = 90 gallons in the accumulator bottles, when drawn down to 1,200 psi. (Note: In this calculation, the volume of the rubber accumulator bag had been considered to be as one gallon, as per accepted practice.)

2.
Required volume:
[3 x (23.1 + 21.2)] + [1 x (32.2 + 29.7)] + [1 x (48.16 + 37.6)] = 280 gallons.

When an 11-gallon accumulator bottle is depleted from 3,000 to 1,350 psi, it effectively produces 4.1 gallons. A 15-gallon bottle produces 5.6 gallons at this remaining pressure. Available is 88 x 4.1 = 360.8 gallons. (+ 10 x 5.6 = 416.8 gallons). Required would only be 280 gallon.

The rig complies with all API specifications.

Client's Requirements:
Calculation 1:
All rams and all annulars open/close.
Close total : 150 + 48.2 = 198.2
Open total : 130 + 37.6 = 167.6
Add 50% : 1.5 x (198 + 168) = 549 gallons.
Available would be 510 gallons, so a shortage of 39 gallons.

Calculation 2:
Total volume to close and open all functions, and keep rams closed versus highest well bore pressure.
198 + 168 = 366 gallons required.
Available would be 416 gallon, so complies.

An accumulator drawdown test was performed with the BOP on bottom.
Start pressure: 3,000 psi

Function	Gallons	Time	Pressure Remaining
Upper Ann. C	34	23 sec.	2,550 psi
Upper Ann. O	25	26 sec	2,300 psi
Lower Ann. C	35	25 sec	2,050 psi
Lower Ann. O	25	25 sec	1,925 psi
Upper Rams C	12	10 sec.	1,850 psi
Upper Rams O	11	11 sec.	1,800 psi
Middle Rams C	12	12 sec.	1,725 psi
Middle Rams O	12	11 sec.	1,650 psi
Lower Rams C	12	13 sec	1,600 psi
Lower Rams O	12	14 sec	1,570 psi
Upper Rams C	11	14 sec	1,500 psi
Middle Rams C	11	14 sec	1,490 psi

The remaining pressure was slightly below the 1,500-psi requirement as per our client. Recharging time to 3,000 psi, with all pumps running, was nine minutes.

Timing was based on the return action of the read-back gauges of the manifold and annular regulator. Flow meter had possibly worn gears in the lower numbers, as the meter was reset all the time to zero.

Upper and middle rams were closed to substitute for the shear ram function.

7.7.1 BOP Hydraulic Power Unit Recommendation:

Minor:

1. Note that there is a shortage of 39 gallons when applying client’s volumetric standard regarding remaining pressure during drawdown test.

7.8 **Diverter System**

The rig used a Regan KFDS diverter system, rated for 500 psi. The 12” diverter line connected to the 14” flow line on the main deck on the starboard side of the V-door.

The diverter seals were checked and found in acceptable condition. The fluid supply was via a block that was bolted onto the diverter body, once this was installed.

The main panel was located on the mezzanine deck next to the hydraulic power unit of the bridge cranes.

The valve system functioned "automatically" once the diverter and its insert were installed.

When the diverter was closed, the flow line valve closed and diverter valve opened. The valves were of the knife gate type.

The diverter insert, or commonly called "bag", opening diameter was 11-1/2". This was normally 10", hence the measured dimension showed that the insert suffered from some serious wear. The increased diameter decreased the contact area when required to be closed on any tubular.

The diverter line ran to the after side of the rig where a small manifold with two valves was located. Here, the flow could be directed to either the port side or starboard side of the rig, depending on the wind direction.

7.8.1 Diverter System Recommendations:

Major:

1. Return diverter control system to original, no unauthorized modifications allowed.
2. Replace worn diverter insert. Diameter measures 11-1/2", normally 10". Marking on insert rubber and steel body showed that it had obviously been closed while drilling.

Minor:

3. Replace the seriously corroded actuating cylinder of starboard overboard diverter line.

7.9 BOP Control System

The pods were of the retrievable type. This was in case of an unexpected malfunctioning of an SPM valve or regulator.

The regulators in the pods had all been overhauled. The SPM valves were being changed-out, on a rotational basis. There were ample spares available.

The female receptacles and male pod intermediate receptacles were checked for corrosion at the flow openings. The ones mounted on the LMRP were not too bad but the ones on top of the BOP showed quite some corrosion. This was still within the sealing area of the rubber packer rings, but would need to be addressed in the near future.

The 1" pod hoses and the pilot lines had been fitted with stainless fittings. Bend limiters were installed on both pods.

The hose reels had different length and size of Synflex hose spooled on.

The "Blue" hose was 2,235 ft long and had 50 pilot lines installed. Actually, there were more than that but these were only there to be able to create a "round" hose. The "Yellow" hose was 1,800 ft long and had 44 pilot lines.

The Blue hose was very heavy and bulky, and new supports had been welded under the old frame, as more space was required for the longer hose.

The drive sprocket of the air drive motor was worn out but the weld on chain was still in acceptable condition. On both reels, the simple manual brake was in poor condition, and should be repaired. For this type of heavy reels, a disc brake would be recommended.

Both reels had a small manifold fitted with four-way valves. A number of BOP functions could be applied via them, without having the RBQ plate connected as in normal drilling mode. Most of these valves on the blue reel were very difficult to move. It was scheduled for these to be serviced.

Two remote control stations were available – one on the drill floor and one in the rig superintendent's office. Both were function tested, and gave no problems.

Prior to running the BOP, a complete function test was performed again in the moonpool.

Upon running the BOP and latching to the wellhead, the RBQ plates were installed. On the middle ram function, the block light came on, as a memory of the open function, and most likely the pressure switch would need to be serviced.

Function	Gallons	Time	Theor.Volume
Lower Rams C	17	11 sec.	23.1
Lower Rams O	16.1	10 sec.	21.2
Middle Rams C	18.6	10 sec.	23.1
Middle Rams O	16.5	12 sec.	21.2
Upper Rams C	17.5	11 sec.	23.1
Upper Rams O	16	8 sec.	21.2
Shear Rams C	28.4	11 sec.	32.2
Shear Rams O	26.6	12 sec.	29.7
Lower Ann. C	49	24 sec.	48.2
Lower Ann. O	38	22 sec.	37.6
Upper Ann. C	50.5	24 sec.	48.2
Upper Ann. O	39.8	18 sec.	37.6

Timing was based on the return action of the read-back gauges of the manifold and annular regulator. Flow meter possibly had worn gears in the lower numbers, as the meter was reset all the time to zero.

7.9.1 BOP Control System Recommendations:

Major:

1. Replace the worn-out sprocket on the blue reel drive.
2. Replace corroded female receptacles on top of the BOP package. Serious pitting and corrosion at the flow ports. This replacement to include the mounting springs.

Minor:

3. Repair band brakes on the hose reels.
4. Service four-way valves on blue reel control panel, difficult to move.
5. Consider installing a disc brake on these heavy hose reels.
6. Service pressure sensor of middle rams "open", as "block" light is continuously activated.

7.10 **Marine Riser System**

The riser and slip joint in use were the old Regan FD-8 type, with 6ea vertical locking bolts.

There were only a limited number of risers on board due to the shallow water depth in this area. No floatation was installed on them.

In end September and October 2002, the riser was inspected with MPI and the following joints were inspected:

- Pup joints : 10-3, 25-1, 35-1, 40-1.
- 50-ft joints : 50-24, 50-18, 50-25, 50-10, 50-9, 50-23, 50-7 and the slip joint.

Inspection was performed on the load ring, pin and box welds, pocket welds
All results were good. The pins and clevises for the attachment of the riser tensioner cables were included in the slip joint inspection. The riser adapter, mounted on the LMRP flex joint, was also checked.

The 4ea riser handling tools had been dismantled and MPI inspected in October 2002.

The wall thickness was recorded on the riser tube and choke lines. Tube wall thickness was on average at 17.5 mm. The average on choke lines was 18.2 mm.

The slip joint had a dual packer. The pressure required to keep the packer from leaking was 75 psi, which indicated that the packer was approximately 55 % through its usable life.

The lip seals and poly pack seals were checked and found in good condition. Pins were without scratches or serious damage.

7.11 Flex Joint/Ball Joint On LMRP

On both ends of the riser string, a flex joint was in use. These were mounted under the diverter and on top of the annular.

The flexibility of both flex joints was based on a special rubber compound ring, reinforced with steel internal fins. No external damage was sighted to the rubber elements.

Under the diverter, an Oil-States flex joint was installed. It was rated for 400,000 lbs, the model was "Diverter 2", and could handle up to 15 degree deflection.

A model 25311 Vetco flex joint was mounted on the LMRP annular. It was rated for 1,500,000 lbs. The deflection was 10 degrees. This flex joint had a wear bushing installed, which would need to be retrieved prior to running any wellhead tool/equipment.

The wear bushing running tool was in good order, and it received a monthly PMS.

7.12 Choke And Kill Stabs

We checked the male and female stabs for scoring or other visible damage and none was found.

The male stabs, mounted under the LMRP, had the poly pack seals installed. These were seen to be in good order. The female pockets showed no damage either.

7.13 Flexible High-Pressure Hoses

All hoses in uses were Coflexip, wrapped with stainless steel protective outer layer.

The kill hose was newly installed in August 2002. Coflexip certificate No.2001431. The hose length was 65 ft.

The previous kill hose was sent in for testing, and would be fitted upon return instead of the present choke line. This choke hose, with S/No.46601, was installed in January 1998.

Goosenecks were in good condition. The poly pack seals were replaced, checked and the thread of the sliding nut was found in good condition. The nut would only need to be made up hand tight when the gooseneck was stabbed into the slip joint choke and kill lines.

The hoses on the LMRP were also Coflexips. They measured 15 ft.

The kill side hose, S/No.48095, was installed in December 2001. Its test report was sighted. The choke line side, S/No.42451-003, was fitted in August 2001. Its test report was also sighted. A tested spare 15 ft hose was on board.

7.14 Wellhead/Riser Connector

Both connectors were 18-3/4" Cameron Collet type 70 connectors, rated for 10,000 psi.

The LMRP connector had been installed in February 2001, and the wellhead connector had been fitted in February 2000.

Both connectors were pressure tested on the operating side prior to the actual BOP and annular test. All operating chambers, on open and close side were tested to 3,000 psi, and the tests were good.

The reserve stroke was measured on both (pre-load). This was done by measuring from the top of the manual override rod to the connector top plate.

Two measurements would need to be taken to establish the reserve stroke – one measurement while locking onto the stump, and one reading while locking without the stump.

The difference between the two readings was the reserve stroke. Note: Locking hydraulic pressure for both tests the same, not higher then normal manifold pressure of 1,500 psi.

The Cameron manuals did not clearly state what this reserve stroke should be when a connector was new.

From field experience data, personal experience and data from overhaul reports by OEM approved facilities, it could be stated that the reserve stroke ranged between 0.750" to 1.125"on reconditioned connectors or when a new actuator ring was installed.

This reserve stroke showed to be 1.125" for the wellhead connector, but only 0.208" for the LMRP connector.

The LMRP connector was installed in February 2001, a few days upon arrival on board. The number was 110-381.

A quality documentation package was available, from Cooper Cameron Singapore who stated that they had the connector repaired and remanufactured in accordance with Cooper Cameron procedures and requirements.

Metalock/Singapore had performed the actual job in December 2000 and January 2001. (Q.A. package was dated March 2001.)

Unfortunately, the report did not state what the reserve stroke was at the time.
We sighted several other data packages from Cooper Oil Tools Australia regarding overhauls on previous connectors used on this rig. In all of these, the reserve stroke was mentioned (0.750").

The rig's maintenance records showed that when the LMRP connector was installed, the measured reserve stroke was only 0.3125" (February 2001).

The stroke of these connectors, actuated by cylinders, was 9.750".
Transocean PMS sheet for this type of connectors described that when a stroke was measured at 9.500", a reserve stoke would be at 0.250". This was the maximum allowable, and connector would need to be overhauled.

With a reserve stroke at currently only 0.208", this normally indicated that the actuator ring was very close to being worn, as usually little wear can be found on the locking fingers.

It was unfortunate that at the time of installation on board, the significance of this lack of reserve stroke was overlooked.

It would need to be pointed out however, that it was highly unlikely that Cameron Singapore had proper reserve stroke measurements taken, this in view of the fact that the rig after only two years of usage, basically appeared as a "worn" connector.

The actual operating of the connectors was very smooth. The AX ring sealing areas were in good condition. All AX ring retaining pins, hydraulically retracted and spring closed, were in place and functional.

The AX seal rings could be replaced on both connectors without having to retrieve the BOP to surface.

7.14.1 Wellhead/Riser Connector Recommendations:

Major:

1. Replace LMRP connector as hardly any reserve stroke, pre-load, is left on the LMRP connector (installed in February 2001). Only the actuator ring will most likely need to be replaced.

Minor:

2. Note that pilot operated check valves in the closing circuit of connectors are only required when the connector suffers from back driving. (Determined by the manufacturer.)

7.15 Riser Tensioners

There were 8ea NL Shaffer riser tensioners installed model 80K, with 1-3/4" wire rope.

The effective stroke of the tensioners was 12.5 ft. As there were double sheaves on top and bottom, this gave a travel of 50 ft.

The wedge sockets that connected to the riser tensioner ring had been inspected with MPI in October 2002.

300 ft length sections: Change approximately 6,000-ton days.

The pressure relieve valves had been tested and set to 2,200 psi. These had been sent ashore for recertification by a third party. This job was completed in July 2002. A few valves were replaced.

The 24ea high-pressure air vessels of the system, including those for the motion compensator and guideline tensioners, were borescope inspected in March 2001.

The internals were found in good condition. Wall thickness was between 42 and 44 mm on the vessels with the worst corrosion appearance. According to manufacturer specification, the wall thickness when new was 41.4 mm.

The bleed valves and 2" isolation valves were overhauled and refitted. All 2" studded flanges were fitted with new ring seals, R 24.

7.15.1 Riser Tensioners Recommendation:

Minor:

1. Replace corroded studs/nuts on the low pressure APVs retaining the shut-off valve. (Approximately 8" long studs.)

7.16 Guideline And Podline Tensioners

The guideline winches as well as the podline units were all newly installed in April 2000. These were for local control only.

There were three winches on each side, two for the guideline tensioners, and one for the retrievable pod. The SWL for the guideline winches was 7,800 lbs and this was 12600 lbs for the pod winches, as per the manufacturer.

The tensioner piston rods showed to be without serious damage or pitting. The wire rope was in good condition. The length however differed considerably.

Current available figures were:
- Guideline No.1: 1,641 ft – Starboard forward.
- Guideline No.2: 1,166 ft – Starboard after.
- Guideline No.3: 1,770 ft – Port side after.
- Guideline No.4: 1,496 ft – Port side forward.

- Wire rope length Y-pod: 1,294 ft
- Wire rope length B-pod: 1,562 ft.

7.16.1 Guideline And Podline Tensioners Recommendation:
Minor:
1. Note that rig maximum operational water depth is currently only 1,100 ft due to length of guideline wires.

7.17 Drill String/Crown Block Compensator

The motion compensator was a Rucker Shaffer with a 18 ft stroke and had a dynamic capacity of 400,000 lbs.

The high pressure air relieve valves were tested and set at 2,400 psi. A third party recertified valves. This was done in July 2002.

The low-pressure vessels were correctly filled. We sighted the level via the sight gauges on the vessels with the pistons fully stroked out.

Lockbar hoses were in good condition. The tension on the 6ea chains was correct. The air pressure control manifold on the starboard side of the drill floor had been serviced in July 2002, some seats and two valves had to be replaced on this standpipe manifold. Also 5ea hose sections were replaced.

Each of the four hoses had two sections. A stainless steel safety cable ran through the inside. At each end of the hose, on the compensator and the derrick manifold, a set of canisters containing flow control valves was installed.

In case a hose burst, the speed of the airflow would close the internal “check” valve. The manual ball valves could then be closed and the hose replaced.

7.18 **Underwater TV System**

We tested the Hydro camera system. The Panasonic camera gave no problems. The focusing and the pan and tilt system worked well.

The two lights had to be replaced as they had burnt out. They were most likely left on too long when out of the water.

The TV winch could be remote controlled from the drill floor.

The length of wire on the reel was not known.

8.0 MARINE EQUIPMENT

8.1 Ballast And Bilge System

Four ballast pumps were provided, with a maximum capacity of 2,500 gpm each. Two pumps were situated in each hull pump room. These pump rooms were in the pontoons at the base of the after columns.

Elevators were the primary means of access. These elevators were supplied from the emergency bus.

Each pump room was fitted with a seawater service pump for the EMD main engine cooling.

Another general seawater service pump was designated as the general service pump and was located outside the watertight compartment of the pump room at the lower part of the lift well.

The second sea water service pump supplied water to all other seawater needs like the sanitary system, air compressors, air-conditioning, drawworks brake plate cooler, fire-fighting pumps, and mud mixing system.

The port side pump was supplied from the emergency bus, as it was required to supply water feed to the fire pumps. No buffer tank was fitted on this rig for emergency use.

The pump rooms were inspected and found to be exceptionally clean and tidy, with evidence of recent painting. No water leaks from any component were noted.

Only the ballast system sea inlet chest in each of the two pump rooms was of the fail-safe type. It was air operated to open and close, using an electric solenoid valve for control.

The air for this task was contained in a small air receiver fitted locally. This unit was supplied from the rig air, through a non-return valve in order that it could maintain pressure on loss of rig air.

The sea suctions for the EMD cooling were not fail-safe. One was not fitted with an actuator at all, and the other with an electric ballast valve actuator, that remained in the original position on loss of power.

All other ballast valves were electrically operated. Manual override was available on each valve as required. All valves were labelled and a ballast plan was posted in the space.

The panel in the control room was straightforward. The layout was in a simplified plan view of the system as fitted. This would make identification easier in an emergency.

The valves were operated and pumps ran from this panel, with all operating satisfactorily. The panel was fitted with tank level and draft gauges.

The sea suction valves and overboard valves were tested for leakage by lining them up with a mostly empty tank and checking the tank level after 20 minutes.

Should two or more valves leak, there would be the possibility of free flowing between tanks. This was known to have occurred, and the ballast operators were vigilant in checking the tank volumes at regular intervals.

Each hull had 12 ballast tanks. Valves separated the two pumps such that they each operated only in one section of the manifold. To open the crossover required the opening of padlocked valves. The key for this task was held in the ballast control room. The two pontoons were completely isolated from each other regarding the ballast system.

A telephone in each pump room and thruster space provided communication with the control room. The system was operational and would still be functional on emergency power.

A secondary ballast system was fitted, operating on tanks No.3 port and starboard, and No.9 port and starboard. This arrangement consisted of a submersible pump in each tank that could discharge directly overboard.

This would only be used in an emergency situation to discharge ballast. One pump at a time could be selected from the control panel in the ballast control room, and would operate from the emergency bus.

Tanks No.3 and No.9 were normally kept full so that they could be used for emergency deballasting. This system was tested satisfactorily.

Stability calculations were carried out every day. Manual tank soundings were taken at least weekly and compared with the digital remote read-out of each tank.

Some discrepancies existed, but they were minor, and known to the operators. We were informed that there were several blocked sounding tubes, and personnel were waiting on time to access the tanks to rectify them.

Each pump room was fitted with a bilge pump and an emergency suction from the ballast pumps. Three alarms were fitted, a low and high bilge alarm, and a separate flooding alarm, fitted higher than the bilge alarms.

The bilge pumps were fitted with automatic starting, dependent on the level indicated by the switches. These were tested satisfactorily. The bilges were found to be clean and dry at the time of the inspection.

8.1.1 Ballast And Bilge System Recommendation:

Major:

1. Fit a remote closure device to the EMD sea suction in the port pump room as planned.

8.2 Overflow And Vent Checks

The overflows and vents were in good condition throughout the rig. The vents were not colour coded and only some were identified as to the tank they serve. This should be improved to enable quick identification of the origin of any overflow.

Save-all wells were installed around the fuel tank vents and fine mesh was fitted. A coarser mesh was fitted to all the water tank vents.

8.2.1 Overflow And Vent Checks Recommendation:

Minor:

1. Clearly identify the remaining overflow vents by stencilling the tank designations on them. Colour coding here would improve the recognition process.

8.3 Watertight Integrity Of Horizontal Tubulars

The horizontal tubulars could be checked for water ingress by means of sounding pipes and the diagonal tubulars could be checked for water ingress by opening drainage cocks at the 21 ft level. No water detection system was fitted.

The chain lockers were fitted with sliding seals to stop them from becoming flooded from above. These were hydraulically operated and closed around the chain to prevent rainwater ingress.

No provisions for sounding were available. Water inside the chain lockers could only be drained by opening a lower manhole of the chain locker. The drainage valve fitted was below the waterline at drilling draft, and thus not usable.

The rig practice was to calculate the daily stability, and if discrepancies were identified, to go looking for water in the tubulars or chain lockers.

8.3.1 Watertight Integrity Of Horizontal Tubulars Recommendation:

Major:

1. Provide means to check for water inside the chain lockers (and ideally, a system that would enable the water to be removed from the chain lockers during normal operations). This would enable more accurate rig stability assessment.

8.4 Mooring System

Eight Baylor 350 series anchor winches were fitted. Each was driven by a D79 DC motor. The winches were rated to a maximum haul-in capacity of 500,000 lbs. Brake capacity was 1,000,000lbs. Haul-in speed would be a maximum of 45 ft/min., at 90,000lbs pull.

Notices were displayed at the control stations to not exceed a pay-out rate of 100 ft/min. This was to prevent overspeed of the electric motor.

The winches were capable of controlled pay-out, using the DC motor as a generator, feeding back power to air cooled resistor banks located in the SCR room. Each winch had an air operated band brake, with a manual adjustment handle. All brake bands were seen in acceptable condition.

An air operated, fail-safe, disk brake was fitted to the DC motor input shaft at the gearbox. This brake required air pressure to release. There were two load cells fitted per winch to determine the winch load, and therefore the chain tension.

Emergency pay-out of the anchor chains was only possible by taking the motor coupling out, and then releasing the band brake. This operation would normally require power to achieve, as the coupling would be unlikely to release, given the inherent torque in the system.

Emergency anchor release under blackout conditions was only possible if the winches were prepared by having the splined couplings out in preparation, and holding the chain with the band brake only.

No records of this system being tested were found. Drills were regularly done for manual emergency “drive off”. This required two people at each local winch station.

If a loss of rig air were to occur, the band brakes could only be released locally at each winch by using the manual handwheel.

There was no sprinkler system fitted at the wildcats of the winches. In a shallow gas situation, the pay-out of the chains was thought to be an ignition risk due to the sparking of the chain around the wildcats.

The eight anchors fitted were 12 ton Stevpris, with approximately 4,000 ft of 3” chain in each locker.

Servtech carried out the last major inspection of the anchor chains in November 1999. A surveyor from Trident Offshore made a limited inspection in November as the anchors were being pulled leaving location. This comprised measurements at approximately 500 ft intervals.

As a result of measurements taken in November 2002, which showed sections of six chains to be out of specification when inspected to API RP 2I standards, two chain sections were swapped around.

This was to obtain a more reliable spread at anchor positions 1 through 4 as the up-weather anchors. The swap involved removing 1,400 m from No.8 chain and inserting it to No.1 chain, and the reverse.

API RP 2I gives guidelines for rejecting chain when it has a cross-sectional area reduction of 10%, or any one dimension is 10% less than nominal. A 10% reduction in cross-sectional area gives an average diameter of 72 mm, and a 10% reduction in one dimension is 68 mm approximately.

Chain Nos.1, 4, 5, 6, 7 and 8 all showed sections of less than 72 mm average diameter, with No.7 showing 68 mm average diameter over a significant length. This was a 20% cross-sectional area loss.

This history of each chain section was well documented. Certificates of all components were held. The installation of new forged “Ramfor” joining links was completed towards the end of 2000. The length of chain from the end in the chain locker to the fairlead was 220 ft.

8.4.1 Mooring System Recommendations:

Critical:

1. Ensure that the windlass clutches are left out during drilling operations where shallow gas is expected.
2. Provide an automatic water spray system to prevent the chain sparking on the wildcats and fairleads, for use when shallow gas is expected.

Major:

3. Replace the mooring chain sections found to be out of specifications after performing a complete mooring chain inspection to API RP 2I standards.
4. Test the emergency mooring release system in the configuration that would be used when shallow gas is expected. This test should be documented.

8.5 **Registration And Classification General Requirements**

The following registration, class, and statutory documents for the rig were inspected.

	Issue Date	Renewal Due
Certificate Of Registration	29 September 1994	Open
Certificate For Classification Of Hull And Machinery	04 April 2002	31 January 2007
International Load Line Certificate	09 May 2002	31 January 2007
International Tonnage Certificate	29 July 1994	Open
I.O.P.P. Certificate	09 May 2002	31 January 2007
MODU Certification Safety	09 May 2002	31 January 2007
MODU Certification Safety (Annual)	05 November 2002	05 April 2003
Radio Licence Liberian (Port Of Register)	26 July 2001	30 June 2005
Radio Station Licence (For Australia)	14 February 2002	01 March 2003
Cargo Gear Certificate Cranes (Load Test)	03 March 1999	03 March 2003
Cargo Gear Certificate Cranes (Annual)	30 January 2002	30 January 2003
Cargo Gear Certificate Elevators (Annual)	18 August 2002	18 August 2003
GMDSS Check By ABS (Annual Maintenance Agreement.)	15 April 2002	15 April 2003
Annual Fire Fighting Equipment	19 March 2002	19 March 2003

The certificates found on board repeatedly point to the declaration that the rig was not self-propelled, and this was why the ISM code safety management certificate was not issued. The minimum safe manning certificate was specified for a non-self propelled unit.

8.6 **Communication Equipment**

The communications equipment was inspected and in good condition. The rig had full GMDSS capability. A full time radio operator was on the rig. The radio equipment and lighting was supplied via the emergency switchboard and by batteries as required.

Equipment included Inmarsat B (Fax, data and telephone), Sat C (telex) and Inmarsat M (local telephone). Weather fax was by Inmarsat fax and by company e-mail.

There was a helicopter beacon fitted. Two Aero VHF headsets for communication between the Helicopter Landing Officer (HLO) and helicopter pilots were available.

Six hand-held waterproof VHF radios were kept fully charged as dedicated emergency radios for the lifeboats and life rafts. These were supplied with additional emergency lithium batteries (single use types).

An EPIRB with float-free attachment was fitted outside the ballast control room. Two SARTs were fitted in the ballast control room. Each of the four lifeboats was equipped with a SART and EPIRB.

8.7 **General Operation**

It was noted that almost none of the original wooden boat fenders were still in place. It had been planned in the past to have synthetic fender buffers installed. This had not occurred.

The black painted legs, with no contrast sections, would make proximity identification difficult for the supply boat personnel in poor weather or darkness. This, in combination with the lack of fendering, was an invitation to impact damage on the columns.

The water-loading hoses were seen to be in acceptable condition. Floats were fitted at various points of the hose to keep them on the surface of the water, and prevent them being drawn in to the supply boat propellers.

The base oil/brine hose was not in particularly good condition, with a number of chafed sections and minor damage. This hose should be pressure tested prior to every use, and a spare hose kept on board for immediate replacement if required.

8.7.1 General Operation Recommendations:

Minor:

1. Lower the lifeboats to the water at least at three-month intervals.
2. Improve the fendering arrangements on the columns, and provide some contrast to the black paint to improve the visibility of the columns during bad weather.

9.0 POWER PLANT

9.1 Diesel Engine

There were three main engines, each coupled to a single generator. Each was an EMD L-16-645-E9 turbo charged diesel rated at 2,875 bhp. These were V-16 two-stroke engines.

Engine hours as of 23 January 2003 were:

	Running Hours Total	Running Hours At Last Major Overhaul
Engine No.1	127,374	126,400
Engine No.2	139,370	120,621
Engine No.3	135,766	133,273

The main engines were well maintained. The engines were found to be in a clean and tidy condition throughout, with all gauges and fittings well mounted and in good operating order.

During this inspection, the top deck, scavenge ports, and piston rings were inspected at random. No defects were found.

Checks of the planned maintenance history for the engines showed that all servicing had been done as required. All shutdowns and alarms were regularly tested and recorded in the PMS system.

The overspeed, oil pressure and crankcase pressure shutdowns were tested on all engines, with all operating at the designed set point.

Remote shutdown controls for the main engines were fitted at the control room, and outside the engine room. The control room actuation points had only been fitted recently. The only test done on these was during the commissioning, and no regular testing occurred.

These operated by closing off the air supply to the engines. The air shut-off device was not linked to any other engine shutdown, such as the overspeed trip. The device fitted for engine No.2 was tested and found to operate correctly from both operating locations.

9.2 Emergency Generator Set

The rig was fitted with a Detroit 16V71 diesel engine emergency generator, providing 350kW. It was located in a purpose-built locker aft, fitted with CO_2 flooding. The space was in a clean and tidy condition. The space was also fitted with several MCC panels that were not part of the emergency systems.

The emergency generator was in acceptable condition. The engine pre-heaters were working. Two independent electric starter motors were fitted. The battery banks for each motor were maintained independently. It was creditable to note that the flexible fuel lines on the unit were relatively newly approved flameproof, diesel compatible type hoses.

A blackout was simulated to test the starting arrangements for the engine. All worked satisfactorily. Manual starting was possible, and three starts on the same starting system were demonstrated.

The engine safety devices such as overspeed, lube oil low pressure shutdown, and over temperature were not initially part of the planned maintenance system. Once this was identified, the testing was immediately added to the yearly task instructions.

No recorded testing of these devices had occurred. These were tested satisfactorily for our inspection.

The emergency generator was run weekly as a part of the planned maintenance system. All services necessary to comply with the 1979 MODU Code were provided for on the emergency switchboard.

The emergency switch panel supplied power to the following:

- No.2 main fire pump
- Emergency air compressor
- Port and starboard bilge pumps
- Port side salt water service pump
- No.1 Koomey pump
- No.2 fuel oil service pump
- Port fuel oil transfer pump
- Port drillwater pump
- Mud pits ventilation
- Emergency lighting
- General alarm battery charger
- Emergency generator battery charger
- Radio room power and navigational aids panel
- Port and starboard pump room ballast valves
- Secondary deballasting system
- Four elevators

9.3 Air Compressors/Air System

The rig was equipped with three rotary screw compressors. There were two 100 horsepower screw type, and a 250 horsepower screw type compressor. All were manufactured by Gardner Denver.

The two smaller units were water-cooled, and the larger one air-cooled. These were operating satisfactorily during the survey.

Rig air was supplied through a Hankison PR1600 refrigerated air dryer. This unit was operating satisfactorily.

A hand-cranked, diesel driven cold start air compressor was fitted in the engine room. This was tested satisfactorily, starting easily and capable of pumping to 200 psi.

Two Price W3 reciprocating compressors were fitted for high-pressure air used in the tensioner system. Both compressors were visually inspected and seen to be in acceptable condition. No adverse findings were noted whilst in operation.

All air pressure vessels were found to be fitted with recently overhauled or replaced pressure relief valves. Safe working pressures were displayed, and gauges were in good condition on all tanks.

No planned maintenance task was found, nor records to indicate that the pressure vessels had been inspected internally. This was normally a five-yearly classification society programmed task.

No dedicated bulk air system was fitted. This system was supplied from the main rig air system via a reducing station.

9.3.1 Air Compressors/Air System Recommendation:

Major:

1. Perform an internal inspection of the medium/low pressure air pressure vessels on a five yearly basis, unless an alternative interval is determined by the classification society.

9.4 Refrigerating And Air-Conditioning

Two Carrier air conditioning units were installed in the engine room to supply the accommodation. These were in good condition, with pressures and temperatures as appropriate for R22.

The accommodation temperature was maintained at a satisfactory level. The ambient temperature, however, was not excessive at the time of survey.

A regular dose of an airborne biocide was used in the system, operated using a timer. A measured dose of “Bactigas” was injected into the air stream at regular intervals. Sufficient spare bottles of the gas were available.

Two Carrier 5F40-1209 units were fitted for the main domestic refrigeration systems. The compressors were in good condition with normal pressures and temperatures. The freezer room was at 0°F, -18°C, and the chiller at 41°F, 5°C. These were appropriate temperatures for the long-term storage of foodstuffs.

The galley fridge, seen out of order, should be repaired, as the use of this unit would reduce the number of accesses required to the main chiller and freezer by keeping stock at hand for the day. This would in turn lower the load on the main refrigeration units.

9.4.1 Refrigerating and Air-Conditioning Recommendation:

Minor:

1. Repair or replace the general use fridge in the galley, noted to be out of service.

9.5 **Seawater Service Pump And Piping System**

The port and starboard seawater service pumps and the piping around the rig were inspected and found to be in acceptable condition.

The seawater pumps in the lower pump rooms were secure and free from noise and vibration. The pump discharge pressures were approximately 90 psi. It was noted that the port sea suction valve was not fitted with remote control.

There was a requirement to maintain the port seawater service pump in good condition, as this pump supplied the fire pumps, and was powered from the emergency bus.

Piping colour codes were in use for the majority of piping. This coding was displayed in appropriate areas.

9.6 Crane And Power System

The rig was fitted with two National OS-435 cranes, both diesel driven.

All the limit switches on both cranes were tested successfully. Crane controls were seen to be in acceptable working condition. The load watch was seen to operate satisfactorily on the port crane. The starboard unit was not operating correctly.

The wire replacement policy was that of yearly renewal of running wires, and two-yearly renewal of static pennants.

The wires were last changed as follows.

Wire	Port Crane	Starboard Crane
Whip Line	16 December 2002	29 June 2002
Main Block	18 March 2002	04 December 2002
Boom Hoist	16 December 2002	08 October 2001
Boom Pennants	16 June 2002	20 October 2002

The boom hoist wire on the starboard crane was due to be replaced during the tow to the next location, i.e. within a few days.

Two VMW hydraulic cranes were installed at port and starboard forward corners of the rig, to handle the two forward pennant wires during anchor handling. Note that these were not provided with any limit switches, and must not be used for personnel lifting operations.

9.6.1 Crane And Power System Recommendations:

Major:

1. Repair the load indication system seen working incorrectly on the starboard crane.
2. Repair the hydraulic leaks noted on the port crane.

Minor:

3. Provide a re-sized lower window for the starboard crane, or relocate the frame upwards as on the port crane. This is to close off the opening between the two frames.

9.7 Watermaker

Two Alfa Laval watermakers were fitted. Both were design-capable of 40 tons per day. Only one was in operation, with the second unit awaiting parts for repair. The low engine loading during the fishing operation provided reduced waste heat for their operation.

The systems were seen to operate correctly with a good quality water output of only 1.5 ppm chlorides. The normal operating output of each machine, dependent on engine load, was between 20 and 25 tons per day.

This was in excess of consumption through the potable water system. Excess water was directed to the drillwater tanks.

9.8 Boiler

No boiler was fitted.

9.9 Reduction Gearbox

No gearboxes were fitted for the propulsion.

9.10 Thruster Unit

The rig was fitted with four Azimuth thrusters, one at each corner, mounted below the pontoons. The thrusters were not retractable and extended 10 ft 7" below the bottom of the pontoons.

1,600 horsepower DC motors that provided a maximum thrust of 37,600 lb to each thruster drove the thrusters. These were not operated during the survey.

The certificates for the rig listed it as NON self-propelled. This appeared to be arranged as such to avoid the requirement to comply with the ISM (International Safety Management) system. Additional manning would likely be required should the rig be declared as self-propelled.

9.11 DP System

Dynamic Positioning was not installed on the rig.

10.0 ELECTRICAL EQUIPMENT

10.1 Elmagco Brake

The Elmagco brake was a Dretech 7838W.

The planned maintenance system showed that regular air gap and insulation resistance measurements were taken. The breather elements were cleaned during the same regular PM task.

Access was not available for intrusive inspection of this unit. Its operation was tested satisfactorily in the normal mode.

The measurements were taken on 18 January 2003.

Position	Driller's Side	Off Driller's Side
Rotary Side	0.060"	0.058"
Back	0.067"	0.053"
Top	0.055"	0.051"

These measurements were acceptable, given that a new brake would be 0.055".

Cooling water supply was from a 2,000-gallon tank in the pump room. Nalcool 2000 was the coolant in use. Two pumps were fitted. There was a low-pressure alarm on the discharge of the pumps, which was activated in the driller's shack.

A high temperature alarm was installed in the brake cooling water outlet. A large capacity plate heat exchanger was installed with seawater cooling.

A battery backup system was fitted, and this was tested as part of the planned maintenance system. No drawdown test of the batteries was performed. This testing was not performed as part of any inspection.

The batteries fitted were lead-acid types, and reported to last only 12-18 months in this service, with their replacement being determined by the charge rate.

10.2 Main Generator

There were three EMD type A-20 generators, each rated for 2,100kW at 900 rpm. These were observed whilst running, with no abnormal vibration or noise. There was no sign of overheating inside the units.

Unit	Field	Stator
No.1	15	150
No.2	0	45
No.3	220	250
Emergency	999	233

Note that the rotor for machine No.2 showed a poor insulation resistance. This was re-checked and found to be at 0.98 Mohm. The exciter too was down at 0.25 Mohm. The stator was 30 Mohm.

These values were very low for having been recently run. Part of this was due to one of the two heaters fitted having failed. The spare heater was reported to be on order.

The history of the readings was obtained from the planned maintenance system, and although the trend was downward, there was no cause for immediate concern.

10.3 Main Transformer

One main 4,160V – 480V transformer, rated at 2,500kVA and manufactured by Westinghouse was fitted. This unit showed signs of excess heat when last inspected using thermography in April 2002.

The core was measured at 228° whilst under normal load. The recommendation was to provide additional cooling to the unit. This had not been installed, but was reportedly budgeted for 2003.

There were six other large transformers fitted, rated at 2,000kVA, 4,160V – 600V. These were fitted to the THYRIG Baylor SCR set-up. These were clean inside with no signs of localised overheating.

The transformer feeding the SCR for the Top Drive was in a similar condition to the 480V unit. The core was at a higher than recommended temperature at 240°. Additional cooling was to be supplied for this unit also.

10.3.1 Main Transformer Recommendation:

Minor:

1. Expedite installation of additional cooling to the transformers, identified as being required in the thermal survey done in April 2002.

10.4 Converters (SCR And Variable Frequency)

Nine SCR outputs were available from the six main control units. Six transformers were fitted to reduce the 4,160V generated to the required 600V.

The bays were inspected internally and found to be relatively clean. Sufficient cooling was available for the SCR units with the space being adequately air-conditioned.

No extended testing of the interlocks and permissives was undertaken. No problems were reported in operation. Adequate spares were held for normal operations.

10.5 Main Switchboard

The main switchboard was located in the SCR room. All breakers as originally fitted were capable of being locked-out for maintenance.

Rubber matting was fitted throughout the SCR room, and emergency equipment such as a shepherds crook, insulated gloves, insulated cable cutters and voltage tester were present.

A full current injection test to prove the overload and trip settings had been done in 1999. Thermal imaging of this board and all other parts of the distribution network was performed in April 2002. A number of hot points were found, and all (except the transformer cores) had been rectified.

10.6 Emergency Switchboard

The emergency switchboard was fitted in the emergency generator house aft, along with a number of the drilling MCCs.

The boards were inspected internally, with no excessive build-up of dust noted. Thermal imaging had been performed less than 12 months previously, and a current injection test of the breaker trip setting was done in 1999.

ModuSpec

10.7 DC Motors

The owner's policy on DC motors was to overhaul them at five-yearly intervals. All DC motors, which were inspected, were in good condition.

There was a comprehensive planned maintenance system for the DC motors and all insulation tests had been carried out as required. Motor couplings were also checked during regular planned maintenance.

The rig carried a spare GE D79 DC motor.

The standby heaters in the DC motors for the winches, drawworks and mud pumps were checked and all were found to be operational when the motors were not assigned.

The heaters in the hazardous areas should be suitable, and rated, for hazardous atmospheres. This was because their operation was when the purge system of the motors was off.

The heater units in the drawworks and the rotary table motors would need to be replaced with units that were certified. The cabling and fittings should be suitable for hazardous zones also. The currently fitted plug connections were unsuitable.

During this survey, the records of all DC motors insulation testing were sighted and the following areas of concern were noted:

Motor	Insulation (Mohms)
Drawworks A	1
Drawworks B	0
Rotary	2
Top Drive	0
Windlass 3	4
Windlass 4	1
Windlass 6	2

Readings had been taken after an extended idle period. The historical trend showed that the motors were normally well above this level. The readings would indicate that the heating system in the rotary, Top Drive, and drawworks motors was not maintaining them as dry as required.

10.7.1 DC Motors Recommendation:

Major:

1. Raise the insulation resistance value of the drawworks, rotary table, and Top Drive motors as soon as possible.

10.8 **AC Motors**

The AC motors were inspected and found to be in good condition. Most were clean, well secured and fitted with earth bonding strips.

Coupling guards were in position on all motors.

Regular megger readings were taken for the planned maintenance system. The fire pumps and ballast pumps were checked during our inspection and found to be acceptable.

10.9 **Motor Control Centres**

Two main motor control centres were present, in the SCR room, and the emergency generator room. These boards were clean internally, and reasonably labelled. Rubber matting was present in front of the board, and lock-out facilities were available.

10.10 **Lighting System (Main)**

The main lighting system provided adequate lighting for all the working areas of the rig. The majority of lighting fittings were in good condition.

Exceptions were a broken diffuser at the 21′ level of the port aft column at the elevator door, and two floods in the engine room without the protective glass seen fitted to all other similar lamps.

10.10.1 Lighting System (Main) Recommendations:

Critical:

1. Repair or replace the light fitting above the door at the 21′ level on the port aft column.
2. Source and refit the protective glass covers on the two engine room flood lights between engines No.2 and No.3.

10.11 **Lighting System (Emergency)**

Sufficient lighting supplied from the emergency generator circuit, supplemented by battery lighting at appropriate points was available. Emergency lighting was clearly identified.

Battery operated lighting was tested individually and all found operable. No assessment of the lighting battery duration was made.

10.12 **Electrical Outlets**

The electrical power outlets around the rig were not fitted with residual current circuit breakers.

10.12.1 Electrical Outlets Recommendation:

Critical:

1. Fit residual current circuit breakers to all power outlets in the workshops and accommodation.

10.13 **Cables And Cable Trays**

The fitment of steel cable ties over walkways and accesses where the cables were not fully supported by cable tray was an ABS requirement. This was to prevent a fire or radiant heat from melting the plastic ties and creating an entanglement hazard for personnel.

Third parties need to be encouraged to comply with this requirement.

The majority of rig cabling was properly restrained. However, there was room for improvement.

10.14 **Batteries, Chargers And UPS**

Three main battery lockers were fitted. One was aft, next to the emergency generator space, and the other two were stand-alone boxes outside the radio room.

The after locker was satisfactorily stowed and properly signposted as to the hazardous contents. One of the forward lockers was satisfactory. The locker with the fire alarm batteries fitted needed to be cleaned out.

Corrosion product was evident on the tops of many of the batteries in this space, and appeared to be partly due to leakage from those batteries on the upper shelf.

Planned maintenance checks had been performed on a regular basis.

10.14.1 Batteries, Chargers And UPS Recommendation:

Major:

1. Clean the corrosion product from the batteries fitted for the fire alarm system.

10.15 Alarm Systems: Fire, Gas, General, Flooding

The general alarm and fire alarm systems were clearly audible throughout the rig.

10.16 Navigation Lights And Foghorns

All lights and the foghorn were found to be in satisfactory condition. A lamp failure alarm was fitted.

10.17 Communication: Telephone And PA System

The telephone system was checked and found to work satisfactorily. It was connected to the public address system by dialling 99, or directly to another space by dialling the number of that phone.

A secondary public address amplifier was fitted in the control room, such that a single point failure would not render the entire system unusable.

10.18 Electric Welding

The welder’s workshop was neat tidy and well kept. The fittings, machines, and cables were all in good condition. The controls for the welding machine were legible.

Fixed cabling was fitted to the fur columns and other strategic locations. None of the outlets were in hazardous areas, and were only powered if the network was plugged in at the welders shop.

All cabling, fittings and hand pieces were in good condition.

10.19 Earthing And Earth Bonding

All motors were seen to be fitted with an appropriately sized grounding conductor cable. The inspection of these cables, including verification of their electrical continuity was done as part of the regular planned maintenance routines on the electric motors.

10.20 Hazardous Areas

The mud pit room was designated as a Zone 1 area. That is, flammable gasses would be present for short periods under normal operations. The zoning was due to the presence of the shale shakers within the enclosed space.

The doors to the pit room required repairs. These doors would need to be gas-tight and self-closing on both sides of the airlock in order that the sack room and mud pump room remained non-hazardous.

Loose locking dogs prevented the proper closure and the holdback wires should not be fitted. The pump room outer door was also unable to be classed as gas-tight as the door latch was missing.

10.20.1 Hazardous Areas Recommendations:

Major:

1. Seal the unused openings in the instrumentation junction box above the starboard drill floor access (adjacent the Elmagco brake).
2. Reinstate the doors to the pit room such that they are self-closing and gas-tight. This includes the replacement of the missing door handle to the pump room, and making provision that the dogs for the watertight doors do not impede the closure.

10.21 **Miscellaneous Items**

Other areas inspected included the forklift, portable equipment, and general electrical installations. No problems were identified.

11.0 SAFETY EQUIPMENT

11.1 Fire Control

11.1.1 Automatic Fire Detection System

The rig was fitted with a Cerberus fire detection system with the main control and display unit fitted in the ballast control room. All areas of the rig were covered by the system, including the accommodation.

The system monitored for faults automatically, and a fault in one zone would not prevent the activation of that zone in a fire situation. Multiple zones were capable of alarming simultaneously. Two detector heads in the same zone would not register two alarms, as the heads were not individually addressable.

19 zones were clearly identified on the alarm panel. Only one zone covered the engine room, which did not allow for the client-specified redundancy in this area.

Actuation of a fire alarm would set off an audible and visual alarm in the control room. This would, after a time delay, relay to a general alarm unless the ballast operator acknowledged the alarm.

Power was supplied from the 120V emergency switchboard, transformed and rectified to the required 24V DC. Should main and emergency power fail, the system had battery back-up for 24 hours (fire).

We witnessed the testing of a selection of fire detection sensors and the display in the ballast control room. A complete test of every detector head had been completed on 19 January, and was repeated on a monthly basis.

11.1.1.1 Automatic Fire Detection System Recommendation:

Minor:

1. Separate the engine room fire detection system to two loops or zones, to allow for redundancy (client requirement).

11.1.2 CO2/Halon System For Fire Control

The following areas were covered by fixed CO_2 systems
- Engine room
- Paint locker
- Thruster rooms
- Galley
- Emergency generator room

We noted that the enclosed space where the diesel driven cement unit was fitted did not have any fixed fire extinguishing system. The engines fitted were in excess of the SOLAS specified 500 bhp, and thus required a fixed extinguishing system and treatment as a "Category A" machinery space.

ABS had not upgraded their requirements and required systems in place only for 1,000 bhp or greater. It would be in the interest of the rig personnel safety to fit a fixed flooding system to this area.

There were no Halon extinguishing systems and portable extinguishers on the rig

11.1.2.1 CO2/Halon System For Fire Control Recommendation:

Minor:

1. Fit a fixed fire suppression system to the cementing unit space. The total contained horsepower is in excess of 500 bhp, and thus requires a suppression system according to SOLAS.

11.1.3 Fixed Fire-Extinguishing Systems

All fire hoses nozzles and hydrants were of a high standard. Fire stations were well marked and suitably equipped.

There were three separately located fire pumps available. All could be started locally and from the ballast control room. All these pumps required the seawater service pumps to be operational, as they supplied the suction manifold for the pumps. No seawater buffer tank was available on this rig.

The fire pumps were located in the engine room, the mud pump room, and the mud pit room. International shore connections were available at each side of the rig.

The spray system at the test booms, and the helideck foam system, were the only fixed deluge or foam systems fitted.

11.1.4 Portable Extinguishers And Fire-Fighting Equipment

All extinguishers had a number and checklist and were included in the PMS system for inspections and certification. A third party carried out all testing and certification. This was last done on 19 March 2002, and would come due in approximately five weeks.

The correct fire extinguishers were generally fitted in all areas. The fitting of two CO_2 extinguishers in the training room and the alleyway adjacent should be re-considered.

This is because they were the closest to a number of accommodation spaces, and should one be used in such a confined area, asphyxiation could occur.

The four firemen’s suits were contained in one box on the starboard side of the accommodation, main deck level. They were in good condition, being stowed with all the appropriate tools and spares. Each had a B.A. set and spare bottle, a safety lamp and a harness, axe and safety lifeline.

One fire plan was posted in the accommodation and two plans were stored in watertight pipes outside the accommodation.

The number of portable extinguishers fitted to the cement unit space was not in compliance with the SOLAS requirements for a machinery space of Category A. That is, a wheeled foam extinguisher of 45 litres, and at least two portable dry powder extinguishers.

At the time of survey, there was only one portable 4.5 kg dry powder fitted in the vicinity.

11.1.4.1 Portable Extinguishers And Fire-Fighting Equipment Recommendations:

Major:

1. Replace the two CO_2 extinguishers in the accommodation areas adjacent and inside the training room with dry powder types. This is required to reduce the risk of asphyxiation should they be used in the confined space of a cabin.

Minor:

2. Provide a 45-litre foam extinguisher near the cement unit, and an additional 4.5 kg dry powder extinguisher at the sack room entrance to the space. This is to meet the requirements for portable fire extinguishing in machinery spaces of Category A (SOLAS).

ModuSpec

11.1.5 Foam System For Helideck

There was a fixed foam fire extinguisher system for the helideck. The pump was tested on a regular basis according to the planned maintenance system.

The tank volume was not listed, but was observed to hold at least 600 litres. The minimum amount of foam required for the size of the helideck would be 384 litres, and the storage capacity was therefore sufficient.

There were three monitors that could discharge both foam and water. They were in good condition mechanically, well greased and easy to operate. Alternating between foam and water required the manual alteration of three valves on the tank in the engine room.

Foam samples were tested yearly and the foam system was regularly tested as per the PMS procedures. The last foam sample was tested in February 2002, and would be due again. The last result was satisfactory.

11.2 Survival And Life Saving

11.2.1 Lifeboats

The lifeboats fitted were two Whittaker 50-man capsules at the bow, and two Watercraft 58 man lifeboats – one located each side of the accommodation. Clear launching procedures were posted at the lifeboat stations.

There was a planned maintenance program in place for the lifeboats. A five-yearly ABS inspection was last performed in November 2000. The boats were clean and appeared well looked after.

Seat belts were secured and in good condition. All engines had two means of starting and the steering equipment was free and well lubricated. The bilge pumps were in good order and the sprinkler pumps were easy to activate.

All boats were entered for inspection. None of the boats were launched, as the sea state precluded this operation. The two forward boats were lowered from the stops and raised again, proving the operation of the winch and limit switches.

Note that boat No. 4 was sitting on the helideck level, waiting on ABS re-certification of the davits. The rig was deemed to have sufficient life-saving capacity for 120 persons with this boat out of service. Only 107 bunks were available.

The following points were noted on the various boats.
No.1 and No.2:

- No defects were discovered.

No.3:

- The fibreglass engine covers on boat No.3 required re-securing, as the hinges and catches had been broken.
- These items could become cause for injury should the occupied boat encounter heavy weather or roll over.
- Other loose equipment stowed aft could pose a hazard, but was in a more protected location.

No.4:

- The fibreglass engine covers on boat No.4 required re-securing, as the hinges and catches had been broken in the same manner as No.3.
- The air breathing system should be reinstated as soon as possible. The bottles were ashore for hydrostatic testing, and the replacement bottles fitted had incompatible fittings for the regulators.
- The first-aid kit was noted with some expired contents.
- The bilges would need cleaning, as they were full of engine oil.
- The compass light stick needed renewal.

The boats were not fitted with radios; relying instead on personnel taking one of the six emergency hand-held VHF radios and spare batteries to the boat from the radio room.

The life-rafts, as discussed below, were unsuitable for use at transit draft. As a further point for consideration, the two Watercraft boats would be unable to be launched at the SOLAS designated list and trim angles, when at transit draft, as they would contact the pontoons. They would be in a position to contact the pontoons even at no list or trim.

This would become an issue with the redundancy of life-saving equipment for the number of personnel on board. There should be 200% capacity available in the form of boats or rafts, located at diverse locations such that the loss of one area does not lose more than half the total.

This could be achieved by relocating two of the rafts to the after part of the rig, and would require the number of personnel on board to be maintained at a reduced level whilst at transit draft. This arrangement would allow for 75 persons in transit. The fitting of four rafts total aft would allow for 100 persons.

The recommended solution would be to relocate the port and starboard boats to an after launching station, similar to that fitted on a sister rig.

11.2.1.1 Lifeboats Recommendations:

Critical:

1. Provide sufficient redundancy in life-saving equipment such that there is 200% capacity for the number of personnel on board during the transit to the next location. This would involve the temporary relocation of two of the life rafts to the aft end of the rig to maintain sufficient separation between locations. This statement is made with the knowledge that the lifeboat No.3, and the four port and starboard rafts would be unusable due to their location above the pontoons.
2. Re-locate the No.3 and No.4 lifeboats such that they can be launched at transit draft without impacting on the pontoons. Their stowage location should comply with SOLAS requirements. That is, they should be able to be successfully launched with the specified the list and trim on the rig.

Major:

3. Re-secure the engine covers on the lifeboats No.3 and No.4. These could become dangerous in heavy weather a rollover situation.

Minor:

4. Clean the oil out of the bilges in the No.4 boat.
5. Replace the expired items noted in the first-aid kits.
6. Replace the compass light sticks in boats No.3 and No.4.

11.2.2 Life-Raft Stations

Five 25-man rafts were fitted, two at each side of the accommodation, and one aft. Although the rafts were arranged for throw-over operation, their listed maximum stowage height was 25 m.

Whilst on tow, the deck height would be in excess of 34 m. That is, the structure of the rafts might not be strong enough to survive a drop from that height. The rafts should be replaced with those listed for stowage of 36 m above the waterline.

This point was brought up previously, with the reply from the owner that the rafts would hit the pontoons from their current stowage locations, and could not be used at transit draft for this reason.

Therefore, it is obvious that the location would require changing, as well as the replacement of the rafts.

11.2.2.1 Life-Raft Stations Recommendations:

Critical:

1. Provide clear instructions that the life-rafts are not to be used whilst at transit draft. This is due to their location above the pontoons, and the likelihood of damage to the raft if a launch was attempted.
2. Relocate the rafts to a position where they could be practically launched whilst at transit draft, replacing them with rafts suitable for 36 m stowage height at that time.

11.2.3 Life Buoys

All life buoys were in good condition. The port forward smoke and light float unit was found to have paint overspray obscuring the light lens. This should be cleaned off.

The four smoke float fitted rings on the corners of the unit were incorrectly listed on the emergency plan as being fitted with 30 m lifelines. None were fitted, nor were they required, with these lines. The safety plan should be adjusted at its next revision to reflect this.

These safety lines should be approximately 50 m, as the SOLAS requirement was for 30 m or 1-1/2 times the distance to the water. In this case, the transit draft deck height was 34 m.

11.2.3.1 Life Buoys Recommendations:

Minor:

1. Clean the light lens on the smoke unit fitted to the forward port life ring.
2. Re-draw the smoke float fitted life buoys on the safety plan as **not** being fitted with 30 m retrieval lines.
3. Replace the two 30 m lifelines fitted to the life rings with lines of at least 50 m. Their length should be at least 1-1/2 times the their stowage height at transit draft.

11.2.4 Life Jackets

The majority of life jackets on board were of the Kapok-filled waistcoat type. There were a total of 255 jackets, with one stored in the cabins for each bunk, suitable numbers at workplaces, and sufficient at the forward boat stations for all personnel.

The lights were SOLAS acceptable manually activated torch types.

11.2.5 Escape Routes

Escape routes were painted on the main deck in the form of pathways, although there were no arrows marking the preferred escape route.

A number of methods of reaching the waterline were available, with a steel ladder at each corner column, rope ladders at the life raft stations port and starboard, and a scramble net aft.

There were multiple exits from the accommodation, which were clearly marked using photo-luminescent strip and reflective arrows. There was no battery lighting fitted at the doorways leading to the outside. The light fitted immediately adjacent the doorway was supplied from the emergency bus.

11.2.6 Breathing-Apparatus Sets

The rig had been recently supplied with Sabre breathing apparatus sets for fire fighting and general use.

Four of these, with four spare bottles were fitted in a locker on the starboard side of the rig accommodation on the main deck. The compressor was portable, and stowed in the near vicinity, with three more breathing sets complete in the locker.

The breathing sets were in as-new condition.

Ten Elsa 10-minute escape packs were located strategically in columns and pump rooms.

A smoke hood was provided, with a flashlight, for each bunk on the rig. These were located immediately adjacent the bunks.

11.3 Flammable-Gas Detection

There was a CH_4 and H_2S gas detection console in the control room, which was incorporated with the Cerberus fire alarm panel. It had audible and visible alarms and was self-monitoring for faults.

The system cards displayed %LEL of CH_4 and the ppm of H_2S. Recalibration and testing was carried out monthly. This recalibration was done during our inspection. Alarm levels were set at 20 and 40% LEL for the CH_4, and at 10 and 20ppm for the H_2S.

The CH_4 sensors were located at the following areas:

- Scalping shakers
- Pit room, forward
- Pit room, centre
- Pit room, port aft
- Quarters air inlet
- Mud pump room
- Welding shop
- Moonpool
- Paint locker
- Pit room at shakers
- Lifeboat No.3
- Lifeboat No.4
- Two plug-in sensor locations at the well test area

H_2S gas sensors were located at the following areas:

- Quarters air intake
- Moonpool
- Scalping shaker
- Bell nipple
- Drill floor
- Mud Pit room
- Life boat No.3
- Life boat No.4
- Two plug in sensor locations at the well test area.

Three portable $HC/H_2S/O_2$ gas detectors were on board. These units were in regular use, being used to measure oxygen content in the tanks before entry. These units were calibrated at regular intervals.

11.4 Helicopter Operations

Several helicopter landings took place during the survey period. The Helicopter Landing Officer handled each one competently.

The helideck markings were clearly adequate, although not completely in compliance with CAP437 UK helicopter rules, which were the basis for Australian regulation. The helideck was rated at 22 m, although the physical area was quite large.

The obstruction free sector was only 185°, less than the recommended 210°, but still acceptable. The three foam monitors were equally spaced around the perimeter of the helideck, and were all found to be free and capable of a full range of movement.

Sufficient operator protection was available in the form of a plate shield on the most exposed monitor.

A skid-mounted helicopter refuelling system was fitted. This had been tested and re-certified in October 2002 by a third party. All fittings and equipment were seen to be in good operational condition.

11.5 **Drilling Facilities Safety**

The mud mix area was fitted with a PPE locker and the emergency wash/shower station. Also located at the mixing area was an MSDS notice indicating the required personal protective equipment for each chemical type.

Chemicals were stored separately in an orderly manner. There were warning notices of the dangers involved in handling these chemicals and PPE and wash stations were available if needed.

Regular pit drills were carried out and a logbook of the dates and actions kept.

There was only a single chain across the V-door during our survey. The removable gate panel was available, but was not used due to the amount of cabling passing through the V-door.

A properly hinged gate would be an improvement, and increase the likelihood of the gate being regularly used.

Dangerous substances were stored away from the accommodation, aft, on a jettison rack. The entrance doors to hazardous and dangerous areas were sign-posted.

11.6 **First Aid And Sickbay**

The sickbay was a well-stocked and well-kept space on the lower after accommodation level.

The medic was well trained, being a Registered Nurse, with over 10 years experience in remote area industrial medicine. His training included paramedic experience.

The hospital was used as a medic’s cabin, although this was not seen to be a problem due to the amount of space available. There were several people, other than the medic, trained in basic first aid, and a few with advanced first-aid skills. The safety officer was previously a medic.

Records of all accidents were kept. Company accident and incident forms were required to be filled in for any event requiring first aid or greater attention.

The rig had a record of only two months since the previous first-aid case.

11.7 Emergency Procedures Manual

The emergency procedure manual was comprehensive, covering most likely events. The Australian safety case for this rig was compiled in 1996. No EERA (Escape, Evacuation, Rescue Analysis) document could be found.

Although the safety case was a similar document, there appeared to be a lack of consideration on the rig to the escape routes and life-saving equipment available from the rig when at transit draft.

The result of such an evacuation (if required due to an event other than sinking) would leave only the two forward boats to be of any use. The rafts, and boats No.3 and No.4, would all be likely damaged after contact with the pontoons, and the single after raft was not rated for the stowage height at this draft, potentially being damaged by the impact of launching.

The general alarm was of a standard type in the industry; details of all alarms were posted and the alarms were tested on a weekly basis.

The PA system was supplied by main and emergency power and was audible throughout the rig.

11.8 Lifting And Handling

A six-monthly program of on board lifting gear inspections took place. Yearly independent inspections were made, using a reputable third party. The items inspected were colour-coded after inspection. The lifting gear code was Yellow at the time of survey.

Certificates were held for all slings, shackles, and lifting equipment.

11.9 Accommodation

The accommodation was maintained in a clean and pleasant state, belying the age of the rig. The cabins had been re-fitted at some previous stage, but some of the bunks and other furniture were now in need of minor repairs.

Warnings of the dangers of asbestos in the bulkheads were posted. The bulkhead material was a sandwiched laminated material, where the central insulation material contained some asbestos.

The galley was clean and tidy, extraction hoods were fitted above the cooker, the filters were clean, and a fixed CO_2 extinguishing system was fitted. Two fire blankets and suitable portable fire extinguishers were available.

The galley was fitted with steel shutters to close off the mess room in case of fire.

11.10 Pollution Control

Rig floor drains could be directed to the oil/water separator or trip tank depending on the type of mud in use. Drill cuttings were not cleaned before disposal, with the shaker discharge hopper leading directly to the sea.

The dump valves for all mud tanks fed into a common dump line below the rig. A master dump valve fitted on the end of this common line could be locked. A blind flange was fitted for the duration of operations in the present location due to its environmentally sensitive nature.

A new oily water separator was fitted in October. This was a 15 ppm filter unit fitted with an obscurity type oil content monitor. It was located below the main deck with a holding tank and oil recovery tank.

The sewage system was in good operating condition.

11.11 Housekeeping

In general, the rig was a clean workspace. Some clutter was present due to the ongoing well test operations. None of this extended on to the walkways, which were always kept clear.

Storage of boxes and such were neat and unlikely to cause injury to personnel. The rig was well illuminated and all lights in the cranes and derrick were working.

Access to all areas of the rig was acceptable and surfaces were coated with non-skid paint. The walking paths around the rig were identified with black paint that was made particularly slip resistant.

11.11.1 Housekeeping Recommendation:

Critical:

1. Fit 4” toe boards to the second level walkways around the accommodation and SCR room where items could be kicked down on to personnel below.

ModuSpec

11.12 **General Safety Items**

The general level of safety awareness on the rig was high, with all personnel using the protective equipment provided. Safety glasses were always worn in working areas.

When high pressure testing, there was a general warning given over the PA system. The area was then roped off with signage as required. On completion, another announcement would be made advising all personnel of the fact.

A rotating light beacon was used in the moonpool area whenever testing was occurring in that space.

A comprehensive orientation program was given to everyone who visited the rig. Safety meetings were held regularly and toolbox meetings were held before every shift.

The four elevators were considered part of the lifting equipment and re-certified yearly. The previous inspection was on 18 August 2002, when the lifting wires were all renewed.

The engine room tank valves were fitted with extended spindles, which were operated from outside the engine space. Remote shut-off of the fuel to the cementing engines was not possible.

Oxygen and acetylene bottles were stored separately and secured in racks. The acetylene had been relocated temporarily for the duration of the well testing, in order that the bottles remained further away from the flare booms.

11.13 **Permit-To-Work System**

The company standard work permit system was in operation on the rig. It was very comprehensive, requiring personnel to do an in-house course and exam prior to being allowed to fill in a form.

All permits were signed on and off by the OIM. All permits were kept on file for the recommended period.

12.0 MAINTENANCE SYSTEM

12.1 Maintenance Organization

The rig followed the company wide standard maintenance program called CAMM. This rig had a full time planned maintenance supervisor, making the data entry to the system more consistent and accurate.

Manufacturers' updates were sent to the rig on a regular basis. Essential modifications were always done, but recommended upgrades and modifications were subject to head office approval.

12.2 Preventive Maintenance

The preventative maintenance on this rig was comprehensive, incorporating oil analysis on almost all machinery and thermal imaging of electrical components.

Good records were kept, and the maintenance system enabled easy historical tracking by providing graphical results for some recorded values.

The majority of PM tasks were completed within the allocated month when in normal operation. There were only a few outstanding tasks left at the end of the month during our inspection, and all could be justified by lack of machinery access due to the drilling program.

12.3 Analysis And Reporting

The maintenance system reports were regularly sent to the main office ashore. Feedback was given to the rig as required.

The history of the machinery maintenance was readily accessed and easy to track the course of events.

Any deferred tasks were listed in the overdue list, and were given a higher priority in the work planning. An excess of overdue work would be cause for query from the office.

12.4 Development Maintenance Organization

The training of personnel in the operation of the maintenance system was mostly on-the-job. The PM supervisor primarily performed this training.

Specialised training was available for personnel in areas such as hazardous area maintenance. This type of training would be available whilst people were on leave, making the voluntary attendance less likely. Personnel were nonetheless attending courses.

12.5 Organization Drilling Department

Specific tasks were investigated to verify that the maintenance system was indeed comprehensive. A couple of items were found to be missing from the system, either by not being required as a check, or not having been recorded in the past.

The rotary table main bearing clearance was one such item, with no records found.

The remaining inspections required on drilling equipment were performed as required by the various statutory bodies, or as determined by good oilfield practice. Records of all drill string, lifting gear and downhole tools were maintained and readily available.

12.5.1 Organization Drilling Department Recommendation:

Major:

1. Measure and record the rotary main bearing clearance on a periodical basis.

12.6 Organization Mud System

The mud system, including the pumps and pipework was well documented. Wall thickness surveys had been made of the high pressure piping, and pump maintenance was up-to-date.

12.7 Organization Well Control Department

The well control equipment was likewise up-to-date and documented. Full histories of the BOPs were available. Documented regular testing of the components occurred.

12.8 Organization Marine Department

The marine department maintenance records were adequate. The inspection of the mooring chains had taken place in 1999. A recent recheck by a third party of the chains found that the corrosion rates had been higher than expected. A full classification society witnessed chain inspection was recommended.

The documentation of the chains, wires and pennants was excellent, with no items in use found to be uncertified.

12.9 **Organization Power Plant**

Engine and crane maintenance was fully up-to-date. Good records were kept of all work.

No major work on the engines was due in the next year. The starboard crane was due for its yearly maintenance, and this would include the renewal of the main boom hoist wire.

One area that had been overlooked in the planned maintenance system was that of checking the engine safety devices on the emergency generator.

The overspeed, oil low pressure and over temperature alarms and shutdowns were tested for our survey. These items were immediately added to the yearly PM task for the unit.

12.9.1 Organization Power Plant Recommendation:

Critical:

1. Expedite the supply of the replacement relief valve for the engine room engine start air receiver. This valve was overdue for testing or replacement by nine months over a two-year cycle.

12.10 **Organization Electrical Department**

Major items on the electrical machinery list were appropriately covered by PMS tasks.

12.11 **Organization Safety Department**

A full time safety officer or "Safety Training Co-ordinator" was on board the rig. He oversaw the operation of the permit system, and performed much of the on-board safety training. He was not directly involved in the checking and maintenance of the safety equipment inventory.

The safety equipment was generally in good condition. As mentioned earlier, the lifeboats should be lowered more frequently than they were. SOLAS stipulates at least three monthly intervals, whereas the rig was lowering the boats only at approximately six-monthly intervals.

12.11.1 Organization Safety Department Recommendation:

Critical:

1. Inspect the inner clutch on each of the lifeboat winches for cracking.

13.0 SPARE PARTS

The warehouse on board was found to be well organised and in a very tidy condition.

Spares were neatly stored and locked away in closed cabinets. Current spare part value on board was approximately $950,000. This figure was still to be lowered as per management directives.

The following list of spare parts comprise those not on the rig and unavailable at short notice. It was recommended that they be carried to maintain minimal down time for the rig.

13.1.1 Drilling Equipment Recommendations:

Major:

1. A spare service loop for the Top Drive should be available within 24 hours.
2. A spare Top Drive motor should be available within 24 hours.
3. Spare Top Drive hydraulic pump.
4. Deadline load sensor diaphragm.
5. Crown sheave bearing.
6. Crown sheave bearing seal kit.
7. Travelling block sheave bearing seal kit.
8. Travelling block sheave bearing.
9. Spring for self-centring handle on the utility tuggers.
10. Ezy-Torq pulling cable.

13.2.1 Mud System Recommendations:

Major:

1. Parts for the degasser compressor.
2. Three-way valve for the degasser.
3. Shaft seals for the agitator gearboxes.
4. Spare paddle for the agitator.

13.3.1 Well Control Equipment Recommendations:

Major:

1. Drill string compensator chains.
2. Piston and shaft seals for the drill string compensator.
3. Underwater TV cable.

13.5.1 <u>Power Plant Recommendations:</u>

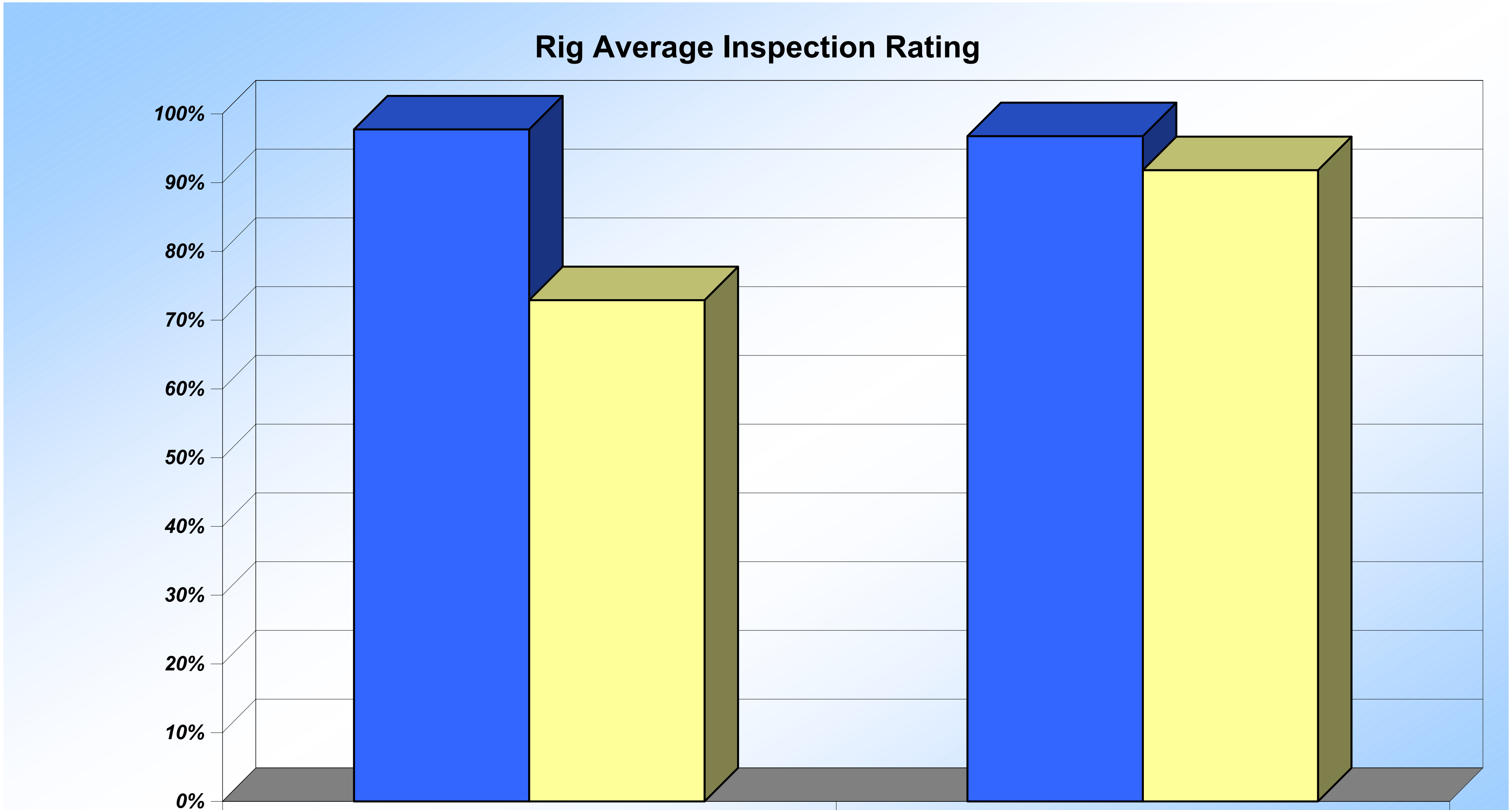
Major:

1. Starter motor overhaul kit for the main engine.
2. Crane wire sheave and bearing for all sizes in use.
3. Air-conditioning compressor.
4. Refrigeration plant compressor.
5. Parts for the seawater service pump.

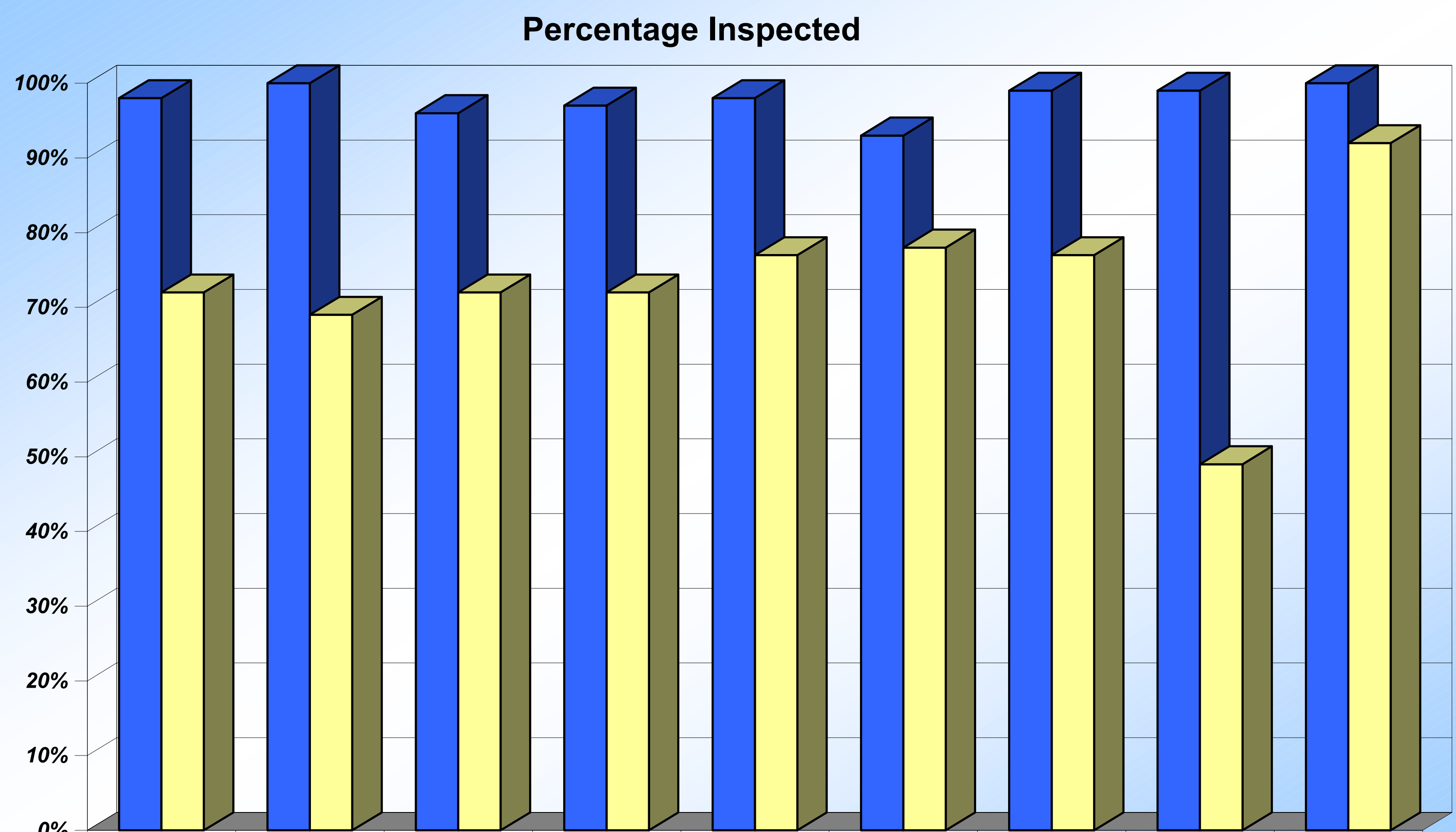
13.7.1 <u>Safety Equipment Recommendations:</u>

Major:

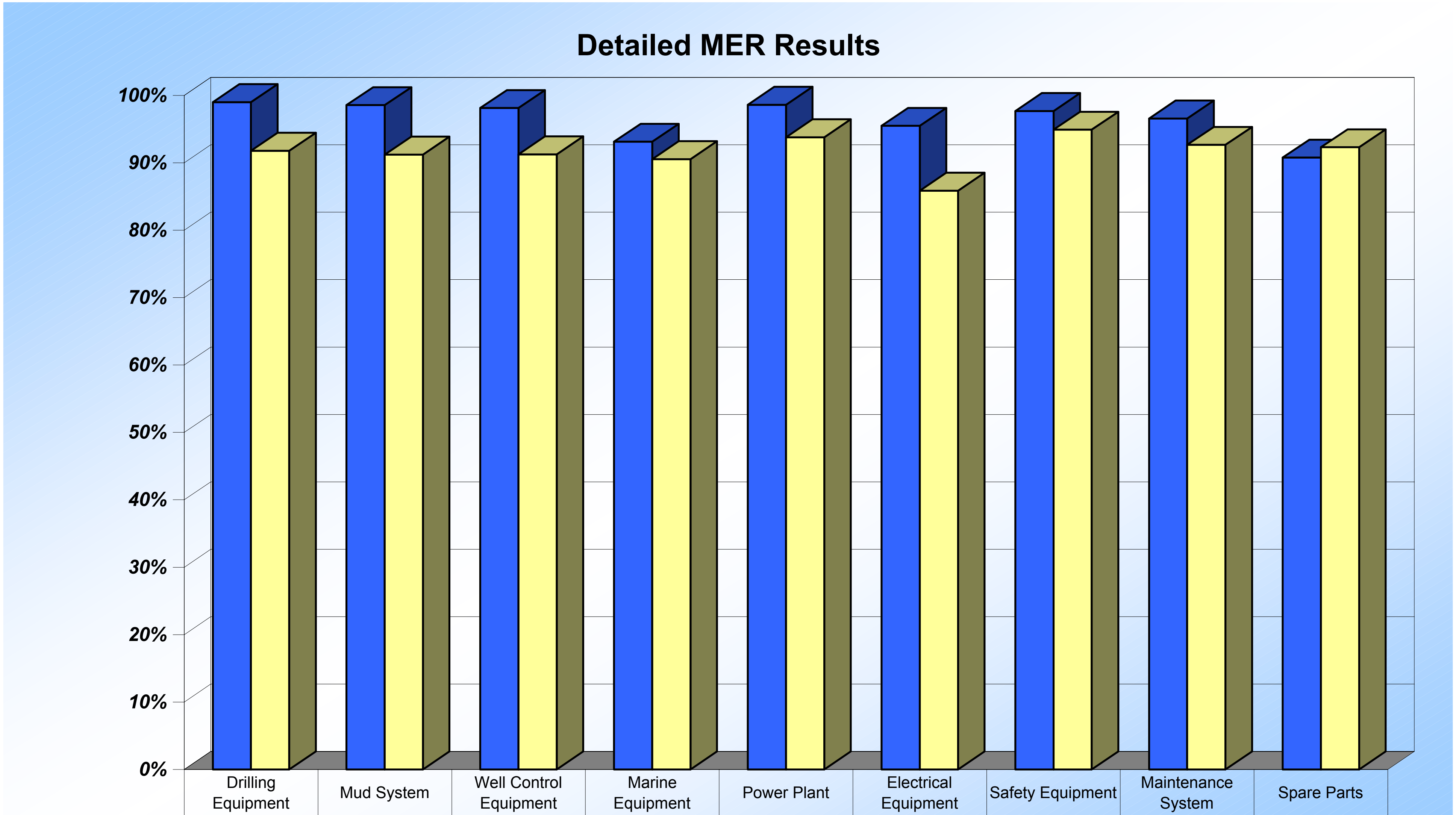
1. Fire main valves.
2. Fire pump parts.
3. Breathing Apparatus compressor spares, including filters.



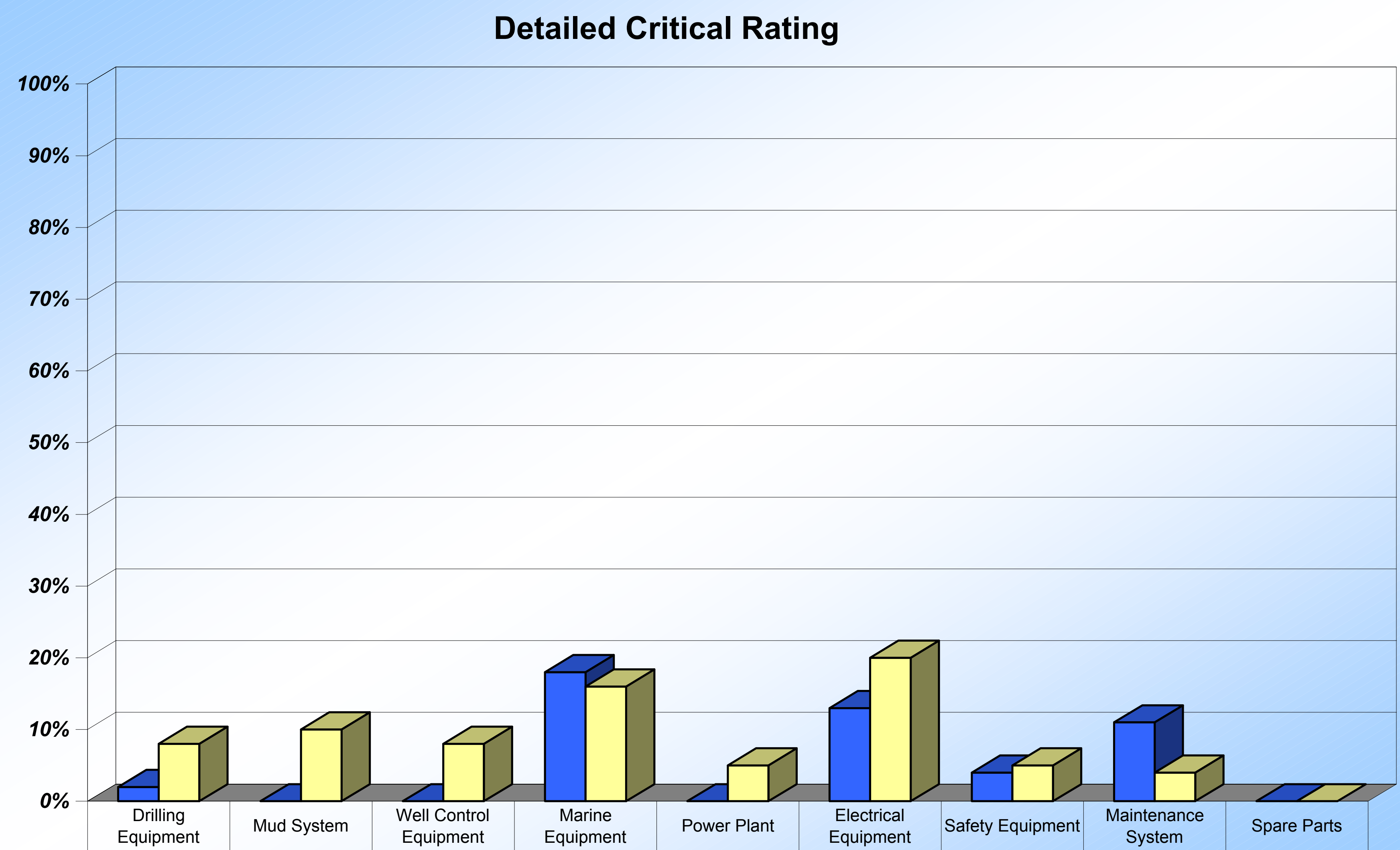
	Total Inspected	Average MER
SEDCO 702	98%	97%
Floaters Australia	73%	92%



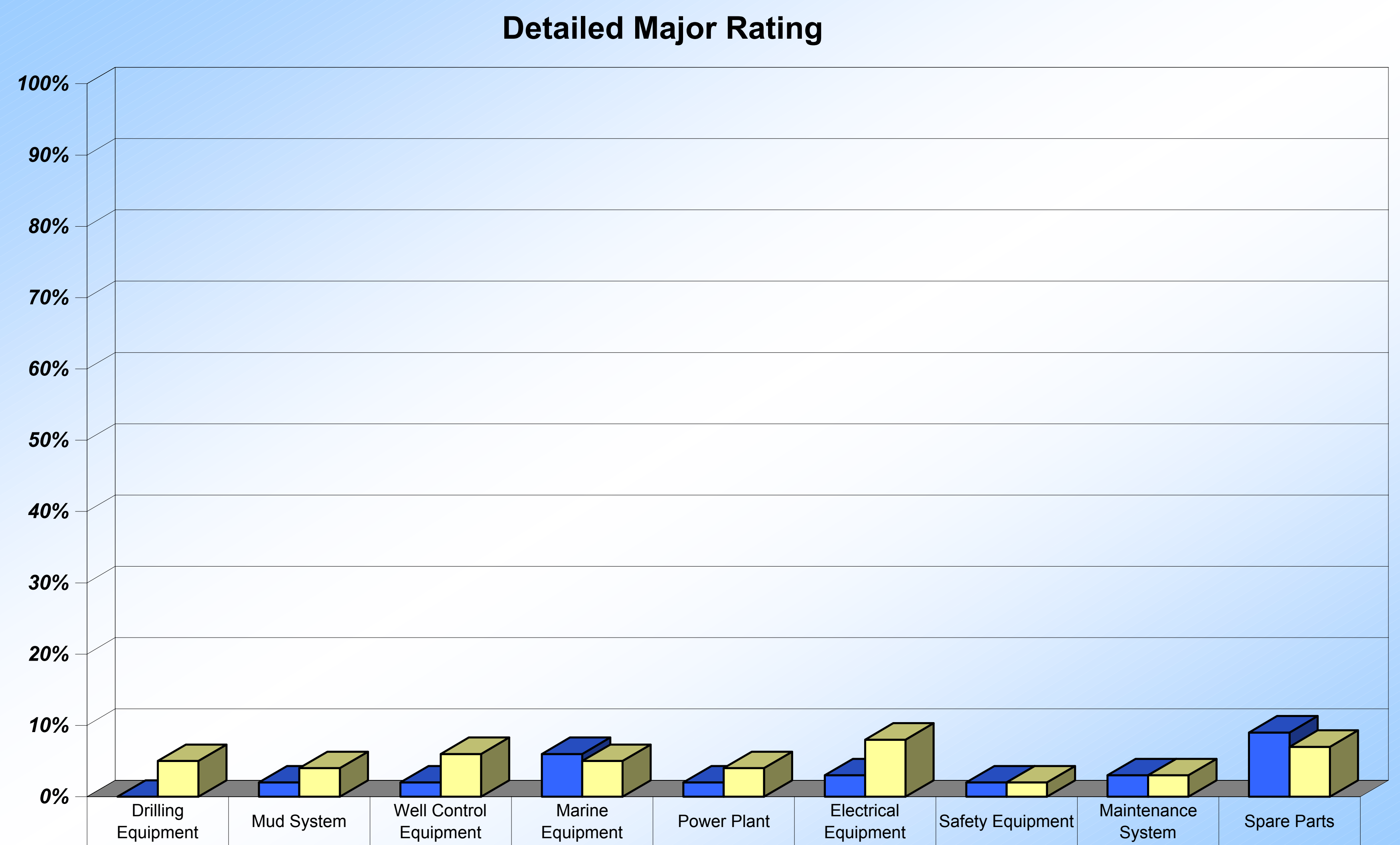
	Drilling Equipment	Mud System	Well Control Equipment	Marine Equipment	Power Plant	Electrical Equipment	Safety Equipment	Maintenance System	Spare Parts
SEDCO 702	98%	100%	96%	97%	98%	93%	99%	99%	100%
Floaters Australia	72%	69%	72%	72%	77%	78%	77%	49%	92%



	Drilling Equipment	Mud System	Well Control Equipment	Marine Equipment	Power Plant	Electrical Equipment	Safety Equipment	Maintenance System	Spare Parts
SEDCO 702	99%	99%	98%	93%	99%	95%	98%	97%	91%
Floaters Australia	92%	91%	91%	91%	94%	86%	95%	93%	92%

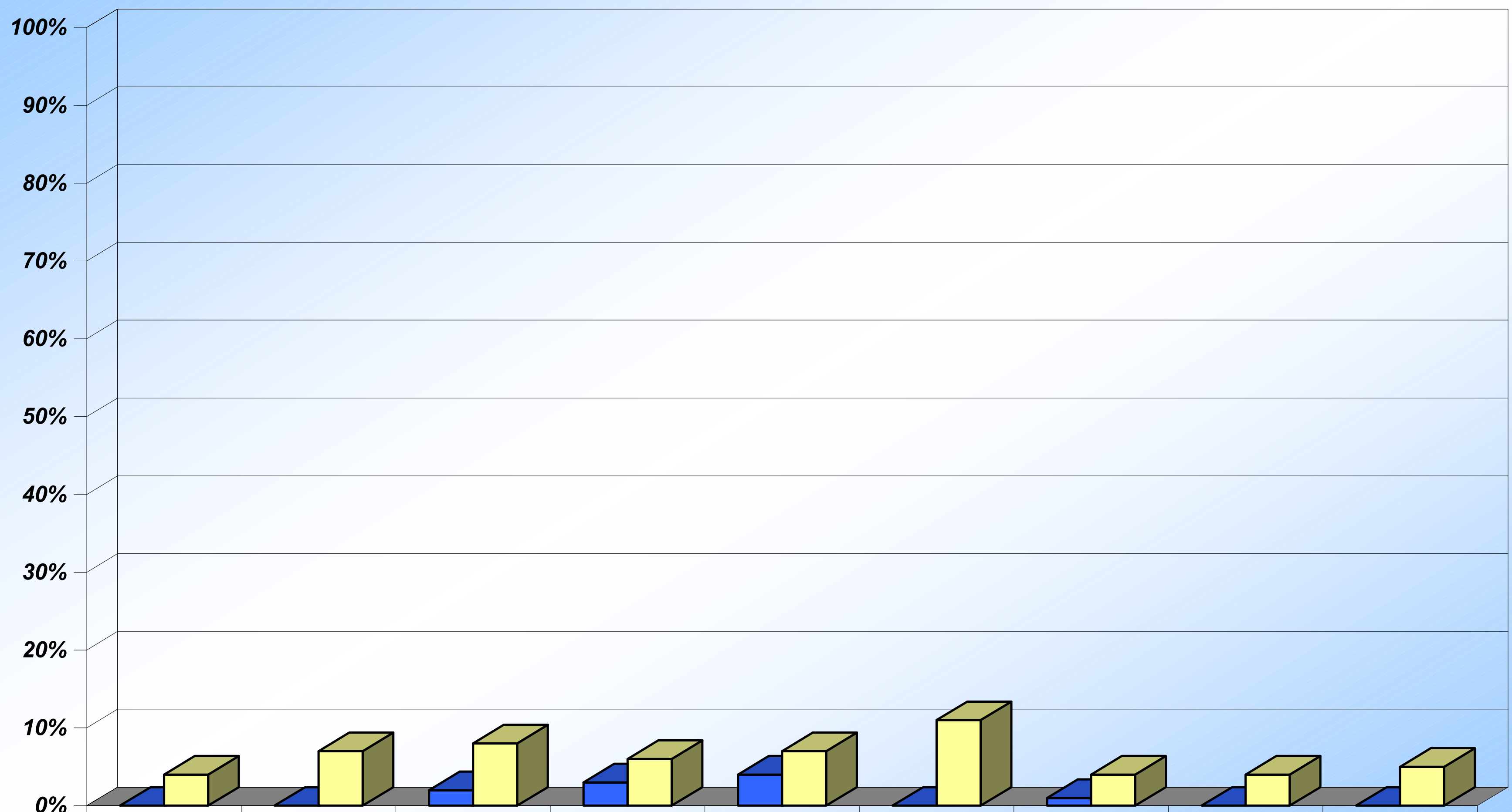


	Drilling Equipment	Mud System	Well Control Equipment	Marine Equipment	Power Plant	Electrical Equipment	Safety Equipment	Maintenance System	Spare Parts
SEDCO 702	2%	0%	0%	18%	0%	13%	4%	11%	0%
Floaters Australia	8%	10%	8%	16%	5%	20%	5%	4%	0%



	Drilling Equipment	Mud System	Well Control Equipment	Marine Equipment	Power Plant	Electrical Equipment	Safety Equipment	Maintenance System	Spare Parts
SEDCO 702	0%	2%	2%	6%	2%	3%	2%	3%	9%
Floaters Australia	5%	4%	6%	5%	4%	8%	2%	3%	7%

Detailed Minor Rating

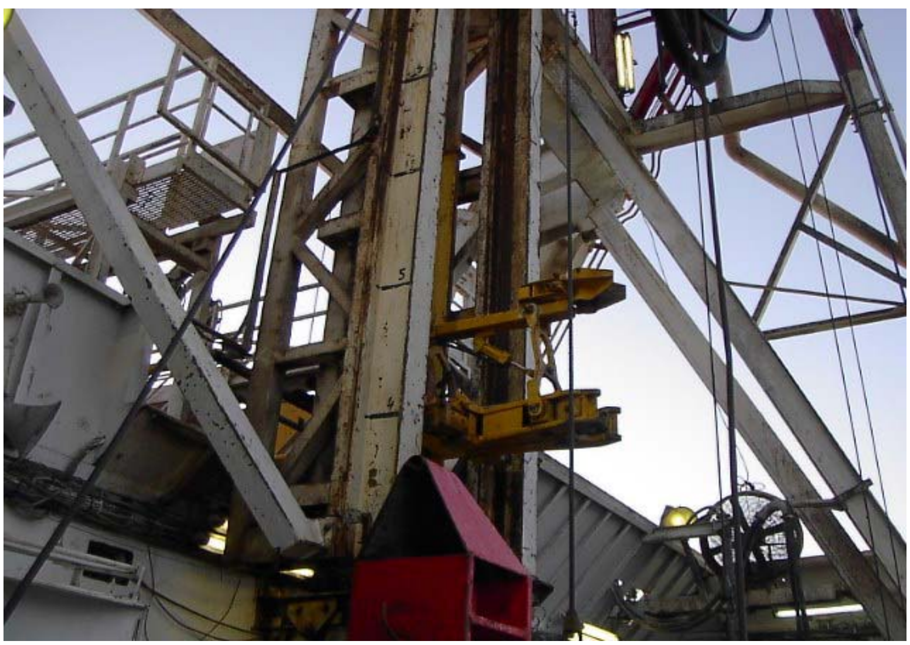


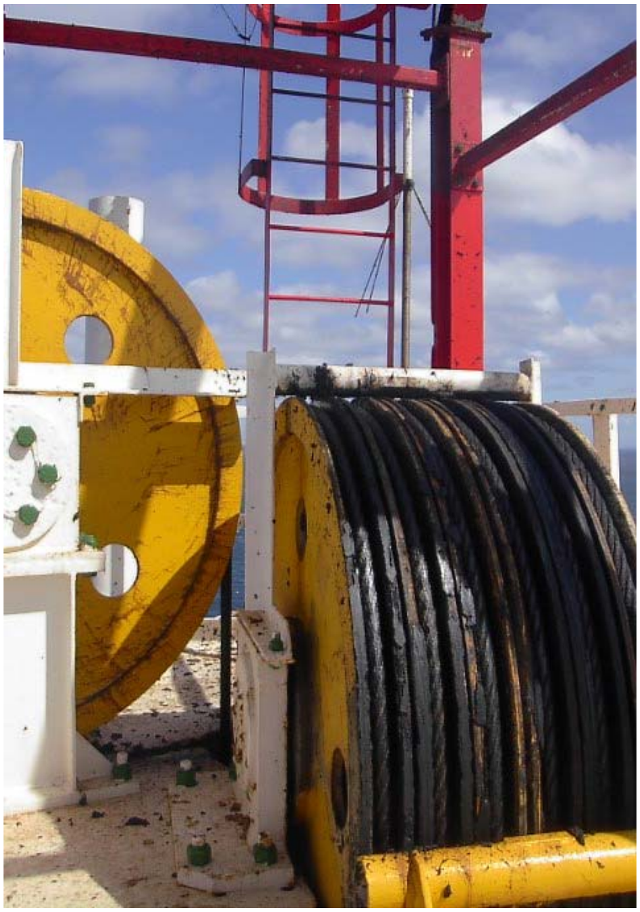
	Drilling Equipment	Mud System	Well Control Equipment	Marine Equipment	Power Plant	Electrical Equipment	Safety Equipment	Maintenance System	Spare Parts
SEDCO 702	0%	0%	2%	3%	4%	0%	1%	0%	0%
Floaters Australia	4%	7%	8%	6%	7%	11%	4%	4%	5%


5.1 - Crack at 10th thread from eye.


5.1 - Hi-Lo shifter damaged splines.


5.1 - MPI on adjusting bolts.


5.1 - RBS extended.


5.7 - Crown block.


5.11 - Overview of monkeyboard.


5.11 - Service platform under crown; rope was replaced.

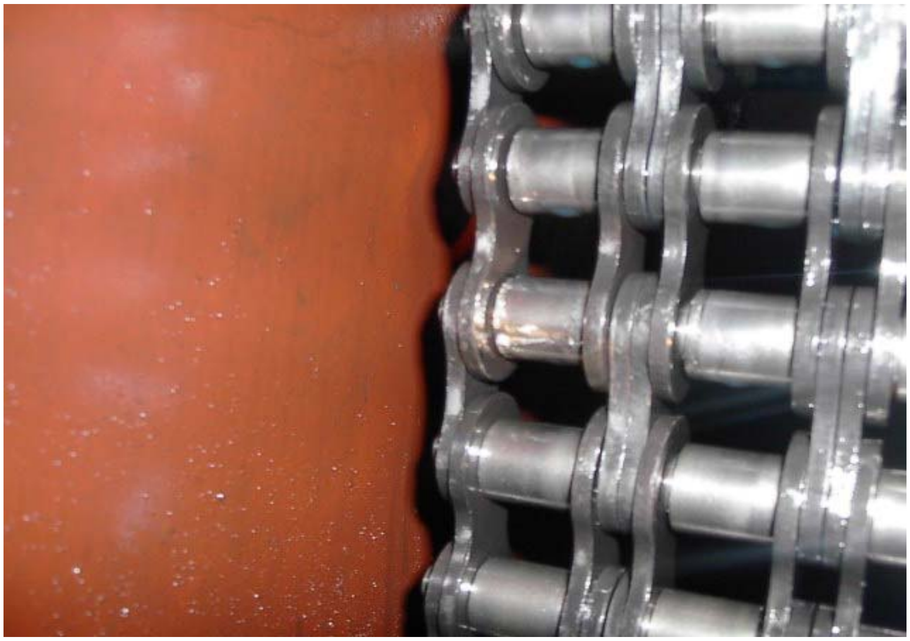

5.12 - Locking mechanism stabbing board.

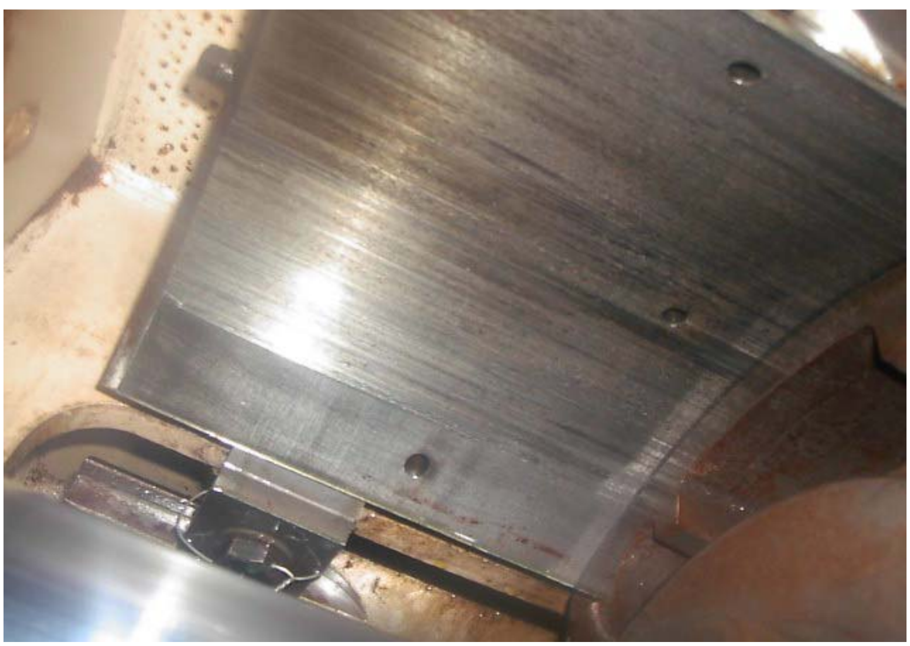

5.13 - Crushed wire on PS after tugger.


5.17 - Handling tools being checked.


6.1 - Bearing pump No. 1.

6.1 - Check on drive chain.

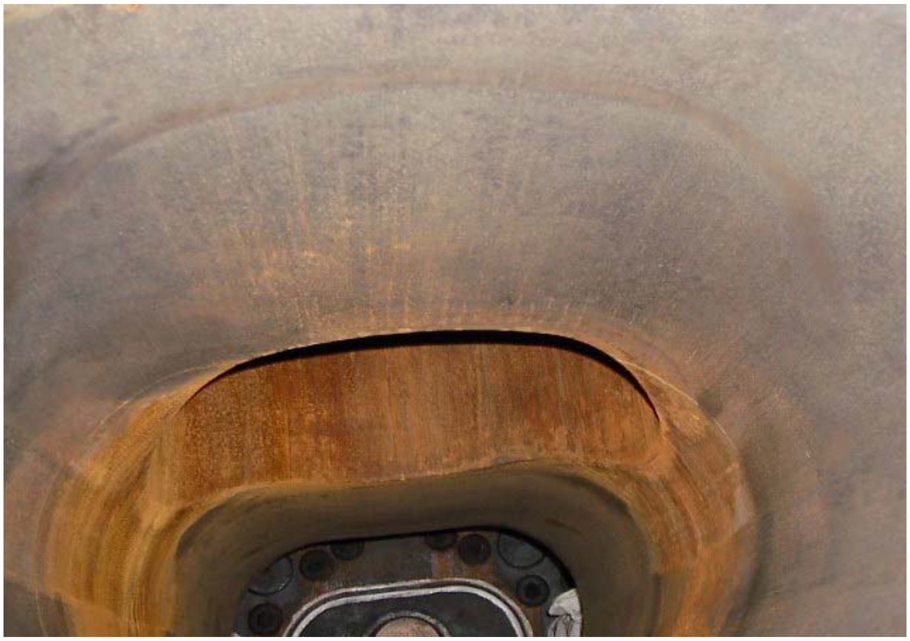

6.1 - Cracked roller pump No. 3.


6.1 - Damage to cross head guide top plate pump No. 3.


6.10 - Standpipe valve, wash near seat area.


7.1 - Cavity grooved.


7.1 - MPI inspection.

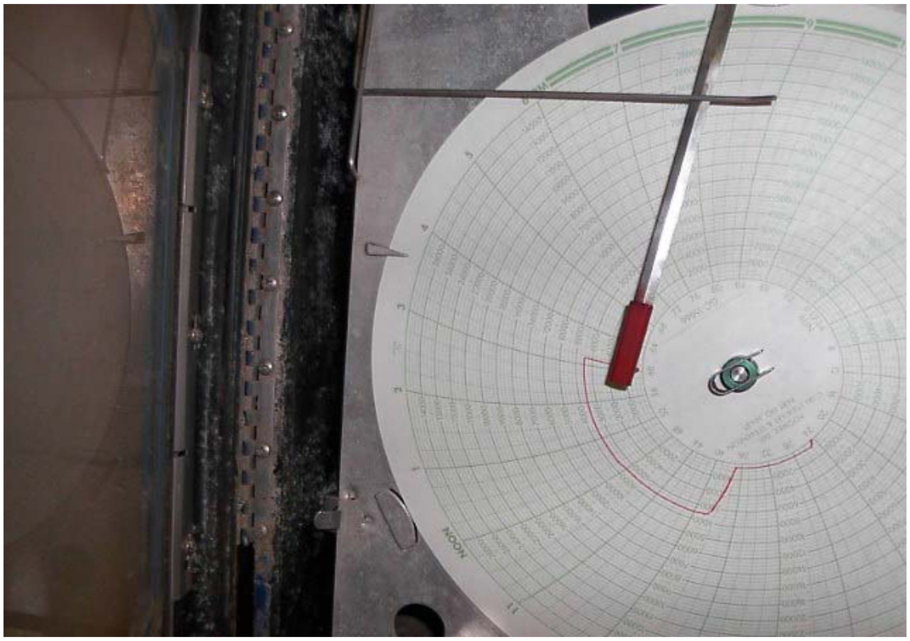


7.1 - Ram sealing area.

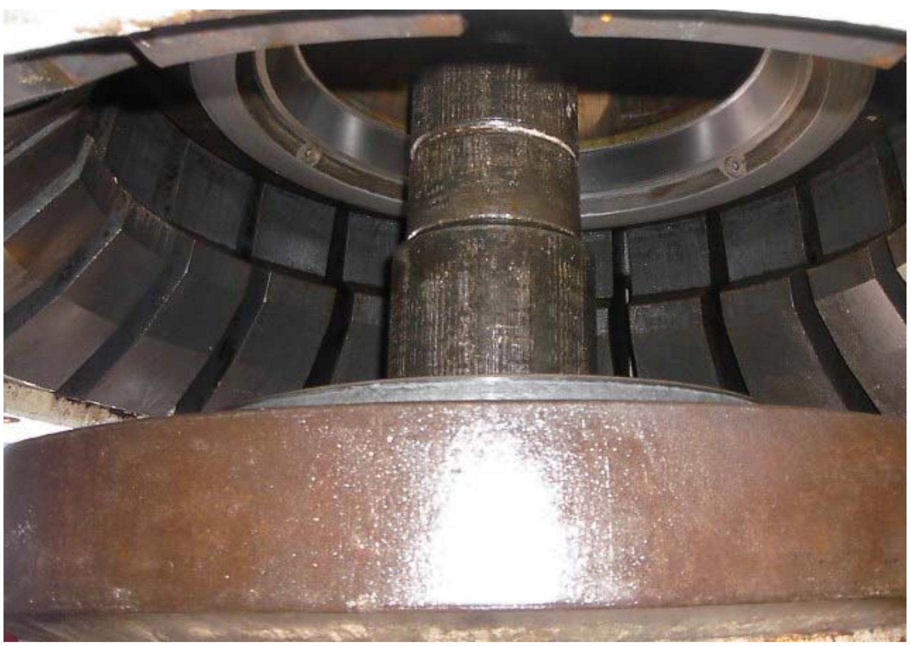
7.1 - Variable rams.


7.2 - Annular closed.


7.2 - No damage in LMRP bore.



7.2 - Test chart annular test.



7.2 - Test stump going into connector.

7.4 - Hydraulic choke forward.

7.4 - Manual choke.

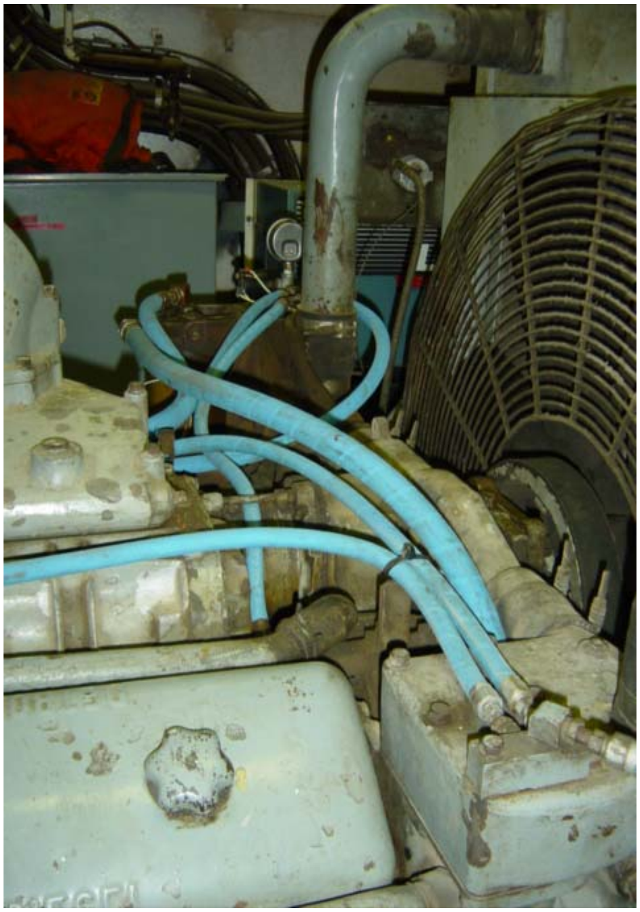

7.4 - Poorboy degasser.

7.8 - Corroded air cylinder PS diverter flow valve.

7.9 - Corroded seal areas; female receptacles.


7.9 - Worn out sprocket drive blue reel.


7.17 - Step for locking bar still sufficient.



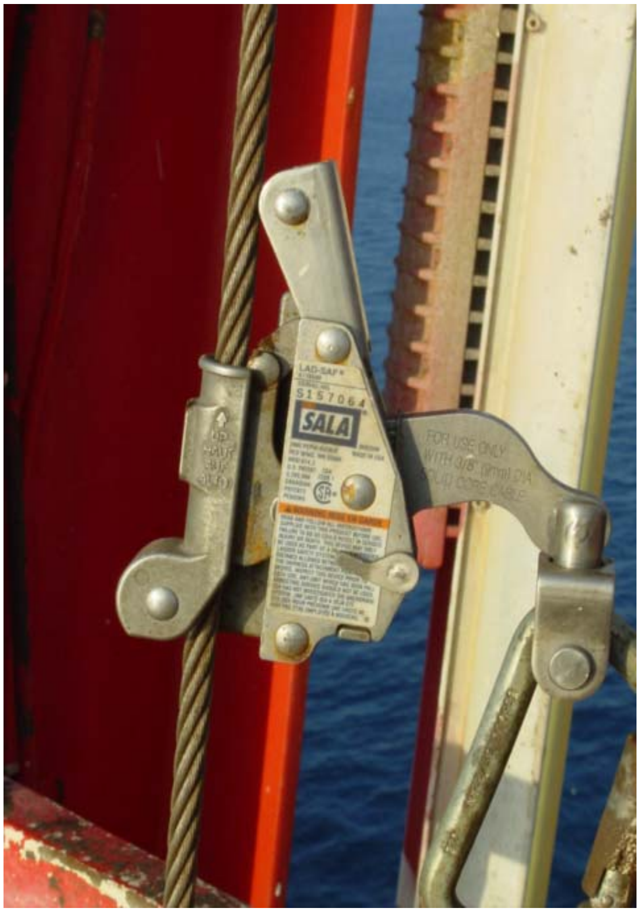
9.2 - Good use of flame proof fuel hose on the emergency generator.


9.6 - Oil leaks on the port crane needed repair, not a bucket.

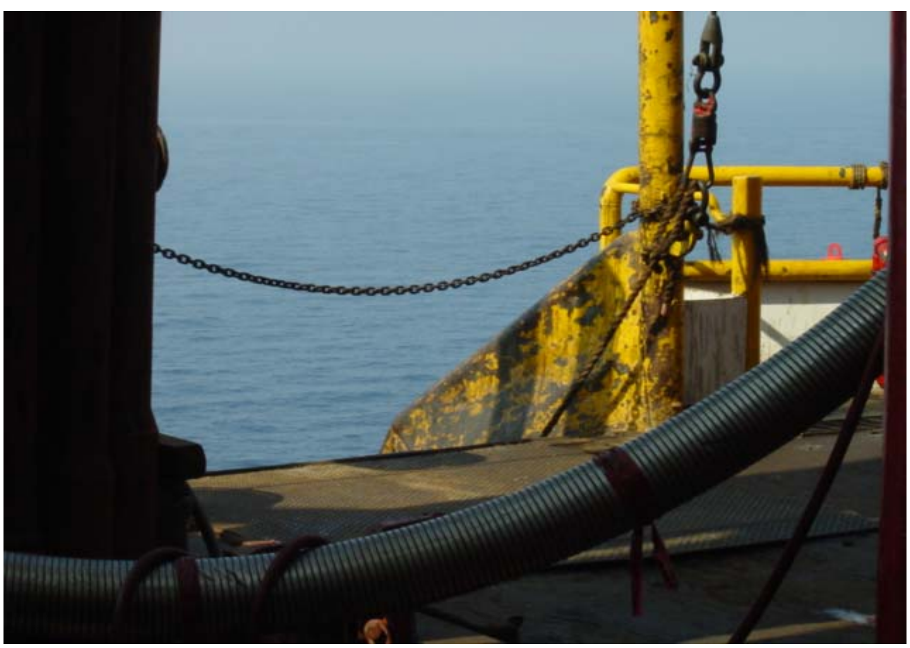

10.7 - Non-explosion proof heaters and connections for the drawworks.


10.21 - Hazardous area junction box with open glands was unsafe.

11.2.1 - Loose equipment could be a hazard in the lifeboats.



11.5 - Quality, simple ladder safety system installed.


11.5 - V door gate is not always used as required.


11.11 - Walkway adjacent the SCR room needed toe boards.

ModuSpec

REPORT OF SURVEY

Semi-submersible SEDCO 702

(Escape, Evacuation & Rescue Analysis)

Prepared for

ESSO AUSTRALIA PTY LTD

Melbourne, Australia

By

MODUSPEC INTERNATIONAL (L) LTD

Inspection dates: 07 – 14 February 2003

1.0 INTRODUCTION

Acting on instructions received, ModuSpec attended on board the Mobile Offshore Drilling Unit (MODU), SEDCO 702 to perform an Escape, Evacuation and Rescue Analysis (EERA).

The goal of the EERA was to ensure that the escape, evacuation and rescue strategy and plan enabled the mustering of personnel, abandonment of the installation, and subsequent rescue, if required, with the risk to personnel being reduced to as low as reasonably practical.

The EER system included escape ways, evacuation methods and devices, the emergency response organization (command and control), Station Bill, muster, emergency teams, and contingency plans.

The EERA was carried out according to the guidelines contained in Exxon Production Research document EPR.61PR.96, dated December 1996 entitled "Offshore Installation Escape, Evacuation and Rescue Analysis Assessment Guidelines – With Example Case".

The analysis reviewed the procedures as described in the MODU's documentation and observed the conditions and practices in place on the MODU, in addition to interviewing a number of crew members.

2.0 EERA METHODOLOGY

The EERA was carried out as a part of an ESSO Australia Rig Acceptance Checklist survey and in conjunction with elements of a ModuSpec Condition Assessment Survey.

The assessment was carried out principally by observing the actual conditions and practices on the MODU and by interviewing a range of personnel with operational responsibilities. The study was essentially an assessment of the practices followed on board, rather than an audit of the written procedures in the MODU's documentation.

Informal meetings with the OIM, and the ESSO Australia representative were conducted prior to the start of the EERA on board the SEDCO 702.

A number of informal interviews were conducted with crew members during the course of the assessment, in order to assess the practices and procedures on the MODU and to assess the manner in which the personnel carried out these practices and procedures.

3.0 MODU DESCRIPTION

The SEDCO 702 was a semi-submersible mobile offshore drilling rig classed by American Bureau of Shipping (ABS) as:

A_1, Column Stabilized Drilling Unit ✠ +PAS

The SEDCO 702 was built in 1973 by Avondale Shipyards, New Orleans (Hull No.2051) to a design by Earl & Wright of San Francisco. The MODU was outfitted for drilling in water depths of 1,500 ft (457 m), down to a maximum well depth of 25,000 ft (7,620 m).

The MODU was not winterised and the ABS approved lower design limit for the construction steel was -10°C. The MODU was approved for unrestricted worldwide service, outside of the ice line in both hemispheres.

The SEDCO 702 was constructed around two pontoons, each attached to four columns. The column tops were co-joined by a structural girder arrangement that was surmounted by the main deck, the various deck houses and the derrick structure.

The columns and pontoons were tied together by horizontal and crossbraced tubulars, to complete the main structure. There were two pump rooms, one at the base of the rear column on each pontoon.

Four fully azimuthing thrusters, each rated for 20 tons of thrust, were fitted, located at the forward and aft ends of each pontoon, under the respective corner columns. The thrusters were used for tow assist, positioning and station-keeping.

4.0 LOCATION AND ACTIVITIES

The analysis was carried out during the period 7 to 14 February 2003, whilst the SEDCO 702 was on location in Bass Strait, for ESSO Australia Pty Ltd.

5.0 EMERGENCY SCENARIOS

The analysis considered a total of eight emergency scenarios. The scenario relating to explosion or fire was further broken down into seven settings. It was anticipated that an in-depth review of the initial scenario would provide the majority of the information required for the analysis.

The review of other scenarios would focus on potential variations to Scenario 1, rather than repeat discussions already covered.

The scenarios considered were:

1. Blow-Out (Near or At Rig Floor)
2. Blow-Out (Subsea Level, Including Shallow Gas)
3. Explosion or Fire (Not as a Result of Blow-Out)
   a. Helicopter Crash
   b. Engine Room
   c. Galley/Accommodation
   d. Mud Pits/Pump Rooms
   e. Sack Room
   f. Helicopter Refuelling
   g. Well Test Related
4. Loss of Stability (Collision or Leak)
5. Man Overboard
6. Heavy Weather (Hurricane Procedures)
7. Major Well Control (Pre-Blow-Out)
8. Major Equipment Loss (E.G. Power)

6. FINDINGS

6.1 Scenario 1: Blow-Out (Near Or At Rig Floor)

(Q 2.3.1) Can all offshore personnel detect the alarm, which alerts them when an emergency is in progress?

Note: Throughout the remainder of this document, the reference(s) *(Q.2.3.1), etc,* refer to the specific questions as asked in the relevant sections of the guidance document, EPR.61PR.96.

Observations:

Audible emergency alarms were provided throughout the MODU in each normally manned and accessed area. They were normally powered by the main supply and backed up by the emergency generator. Emergency power would also be provided automatically by the general alarm battery system.

There were three types of emergency alarms:
- Intermittent Ringing : General Emergency Signal.
- Continuous Ringing : Abandonment Alarm.
- Whooping Alarm : Toxic Gas Release.

Audible alarms were supplemented by visual alarms in noisy areas and in the event of a gas release. Alarms could be activated manually by the operation of a manual alarm actuator or automatically via the fire and gas detection systems.

Alarms were normally supplemented by an announcement that provided additional information such as type of emergency and muster or boat details.

In addition to the general alarms and PA system, supplemental internal communications were as follows:
- The rig telephone system.
- Marine VHF sets in the radio room, ballast control room (BCR), cranes and pilot house.
- Hand-held VHF sets.
- Drilling rig floor PA.

Access to areas, which were not normally entered, was controlled under the work permit system. In the event of an emergency, a rescue team would be organized to retrieve personnel not accounted for.

Comments:

The rig PA and alarm system worked well. All personnel should be able to detect the alarm, which would alert them when an emergency was in progress.

(Q 2.3.2) Is there an adequate system to alert personnel to the emergency should the primary alarm fail or have been suppressed?

Observations:

Emergency power was automatically supplied to the public address and telephone systems from the emergency switchboard, with back-up from the general alarm battery system.

The suppression or isolation of alarms for maintenance purposes was subject to the controls of the Work Permit System and such work required authorisation by the OIM.

Emergency alarm systems that were subjected to repair or maintenance were checked and authorized by the Chief Engineer before they were brought back into service.

Should both backup power systems for emergency alarms fail, communications could be effected by:

- Sound powered telephones.
- Hand-held radios.
- Rig floor PA.
- Word of mouth.

Comments:

There were adequate contingency arrangements in place for emergency communications, should the primary alarms fail or be suppressed.

Crew members can become over-reliant on receiving instructions over the PA or from their direct supervisors during emergency scenarios and drills. Consideration should be given to including the failure of the PA system during some future emergency drills.

(Q2.3.3) Can all personnel escape from their location?

<u>Observations:</u>

An inspection of the MODU showed that there were two independent escape routes from most areas on the MODU, with the principle exception of the following locations:

<u>Derrick</u>

At the derrick head, there was only one means of escape down to the monkeyboard level and this was by the vertical steel ladder. The derrick head was not normally manned but was visited only for inspection or maintenance. This was therefore considered to be acceptable.

From the monkeyboard level however, which was normally manned during drilling operations, escape could be accomplished by either a vertical ladder which led to the drill floor or a controlled descent device (Geronimo Line) which led to the top of the main deckhouse, above the main switchboard room.

Also, the derrickman at the monkeyboard level was in regular drill floor PA contact with the driller.

<u>Main Columns</u>

There were two exit routes from each accessible column, being the elevator and a vertical ladder against the rear wall of the elevator shaft. Both routes occupied the same space, the elevator shaft.

These compartments were not normally manned and were usually visited for inspection and maintenance purposes only. The aft six-man elevators were fitted with telephones.

Access controls were in place with all personnel entering the columns (lower hulls) were required to report to the BCR before entering and upon leaving.

<u>Main Deck Cranes</u>

There was only a single escape route from cranes, via a single vertical ladder to the crane pedestal walkway and then via a single stairway to the main deck level. A single operator who had radio, telephone and PA contact with the control room intermittently manned the deck cranes.

Offices And Cabins

Most of the offices and cabins in the main accommodation had only one exit into the corridor, from which multiple escape routes were available to the weather decks and the muster stations.

Other Areas

A number of other compartments, such as the sewage treatment (Omnipure) room, had only one exit to the deck (a hatch inside the compartment leads out to a small maintenance platform under the main deck but the only option then would be to jump into the sea).

These compartments were normally unmanned and occasionally visited by small numbers of personnel and as such represent a minor risk. Access controls were in place, with all personnel entering this space required to report to the BCR before entering and upon leaving.

Comments:

Derrick

The escape arrangements from the derrick head area were considered acceptable, as this was not a normally manned area of the rig.

As there were two escape paths from the monkeyboard area, this area was considered to be acceptable.

Recommend that the controlled descent device from the monkeyboard be periodically tested with a man-weighted dummy to ensure that the system/unit was safe and functional.

Main Columns

Personnel who needed to enter the columns should receive clear instructions regarding emergency escape routes and procedures, due to the restricted means of egress.

Main Cranes

Due to the usual intermittent occupation by a single operator, the single egress route from the main cranes was considered acceptable.

Offices And Cabins

The single exit from offices and cabins were considered to be acceptable due to their debauchment into the main corridors of the accommodation.

Other Areas

Other areas with only a single means of escape were considered to be acceptable.

Overall, the existing escape routes on board the MODU were considered to be of a good standard and acceptable.

(Q 2.3.4) Are exit widths and distances of contained areas suitable for the personnel exiting?

Observations:

Accommodation Module

Luminous signs showing escape routes and exit signs had been provided at both the upper and lower levels in the accommodation module. The luminous signs were placed low to the floor so that they would remain visible with heavy smoke in the corridors.

The emergency battery pack lights were fitted to illuminate the corridors during a blackout. These were not observed in operation due to ongoing drilling operations.

However, their distribution inside the accommodation appeared adequate and suggested that adequate emergency lighting would be widely available in the accommodation during a blackout.

All emergency lighting in the accommodation was in good condition, with their 'power available' indicator lights burning brightly.

Corridors and stairways within the accommodation module were generously proportioned. There were no exceptionally long corridors, and egress routes were generally direct and intuitive.

Engine Room

The engine room was a large, well laid-out, well-preserved compartment, which extended approximately half the width of the rig at the port forward corner. It was provided with exit doors, which were within sight of each other at both the port and starboard sides.

The starboard door provided access into the lower level of the accommodation, adjacent to the change rooms. The portside door exited through a small flat directly to the main deck at the port lifeboat station.

There was also one weathertight door at the aft inboard end of the space, which exited to the main deck level at the aft edge of the accommodation module.

There was also a large, electrically operated “rolladoor“ style opening at the aft outboard end of the space. The engine room deck was painted grey throughout and was not overlaid with black and yellow escape route floor markings, with white directional arrows.

The escape route to the aft inboard exit door had been largely obscured by the installation of an additional (Hankinson) bulk air compressor and would be difficult to find in the dark or in thick smoke.

The location of the “rolladoor” would not be obvious to all personnel, either in thick smoke or in the dark. Due also in part to its being electrically powered to open and shut, it should not be relied upon as an escape exit from the engine room.

The luminous exit signs on all three of the doors from the engine room had been placed at eye level and would quickly become obscured by smoke in the event of a fire.

Doorways In General - Including Emergency Exits

Emergency exit doors around the inside of spaces to the weather decks, were generally well provided with appropriate signs on the inside, indicating their purpose.

Most doors around the rig however, when viewed from the outside, did not indicate the name of the compartment inside the door, despite many of the doors being well covered with safety signage.

Example: The emergency generator room (and the emergency generator battery compartment just outside it) were well signed as “Hazardous Compartments” with a number of other safety signs in place (noise danger, hard hats, corrosives, etc), but neither compartment was labelled as to its purpose.

External Escape Routes

External escape routes around the main and upper deck levels of the MODU were well marked with black painted walkways bounded on either side with yellow lines. However, there was a lack of directional arrows within the walkways showing the direction to the nearest muster station.

Directional arrows showing the way to the muster stations were only observed at some of the intersections of the fore and aft pathways and the main athwartships pathways. Frequent directional arrows should be painted in, each within sight of each other in the dark or in heavy smoke conditions.

The floor route markings also provided clear guidance for where not to stow gear on deck, ensuring that escape routes were normally kept free of obstructions.

Emergency Escape Route Drawings

Emergency escape route drawings were not used on board on the MODU.

The Station Bill showed the exits from the accommodation but did not give the external escape routes around the rig.

The Fire and Safety plans showed the escape routes marked by arrows but copies of these plans were only found to be displayed at the upper and lower levels of the accommodation.

Comments:

Accommodation Module

Exit widths and corridor distances throughout the Accommodation Module were, in general, acceptable and appropriate to the hazards and number of personnel involved.

Fire team personnel wearing BA sets and fire clothing would take up extra space in the corridors, but these were unlikely to cause delays for other personnel attempting to get to the muster stations, given the size and number of escape routes available on board.

Engine Room

Paint escape route marking pathways on the deck of the engine room, in black paint, bounded by yellow and with directional arrows in white luminous paint, as per the recommendations for the external walkways.

Relocate the luminous exit signs on the starboard side engine room exit door to a lower level so that they can be seen for a longer period in thick smoke conditions.

Doorways In General - Including Emergency Exits

Clearly label the external side of all compartment doors with the name of the compartment inside.

External Escape Routes

The existing escape route markings around the upper deck should be painted with large arrows in white photo-luminescent paint at frequent intervals (within sight of each other) to direct personnel to the nearest lifeboat station. The arrows could also indicate the number of the lifeboat station (painted inside the body of the arrow, in black).

Escape route markings (as indicated above) should be painted on the deck in the engine room.

Emergency Escape Route Drawings

Place compartment-specific escape route drawings on the inside of each exit door from all normally manned and frequently used compartments throughout the MODU, showing all possible escape routes to the upper deck from that compartment.

(Q 2.3.5) Are there tenable routes to the muster stations? Are routes impaired by hydrocarbon release, jet fire, pool fire, smoke or debris? Are routes (including stairs and other restrictions) wide enough and tenable for personnel to move to their muster station within the target time.

<u>Observations:</u>

The primary muster station was at the Nos.1 and 2 lifeboat station, which were located adjacent to each other, at the forward end of the MODU, amidships at the main deck level and just below the pilot house. This muster station was clearly marked on the Fire and Safety plan.

The alternative muster stations were at the No.3 and No.4 lifeboat stations, which were located on the starboard and port sides (respectively), just forward of midships. As per the Fire and Safety plan, yet another muster station was located in the crew recreation room, starboard side upper level of the accommodation.

These alternate muster stations were shown on the Fire and Safety plan but were not marked as alternate muster stations on the Station Bill.

There were numerous and diverse escape routes on the MODU, both external and internal. These could lead, via various routes, from the various accommodation, office and forward working areas, to the primary muster station, as well as to the alternate muster stations on the port and starboard sides, where protection could be provided in the event of a blow-out at well centre.

Gas sensors for CH_4 and H_2S were installed at the three lifeboat muster stations. In the event of a Toxic Gas Emergency (as per the information on the Fire and Safety plan), the Barge Control would advise all personnel which muster station to proceed to.

As per discussions with the OIM, the accommodation unit would form the primary Temporary Refuge (TR) if required. The helideck could form another such location, in certain circumstances involving toxic gas.

Although the rig floor was not provided with a deluge system, it was well provided with access stairways. There were numerous escape paths available leading both forward and aft from the drill floor, in the event of a blow-out and fire. The choice of a ladder to the drill floor or a Geronimo line to the top of the SCR room (forward) was also available from the monkeyboard area.

The MODU did not have a protected route available, which would allow personnel to move to the muster stations and TR from those work areas, which were aft of the moonpool area.

Personnel proceeding to the muster stations from the aft end of the MODU must move along the main deck on either the port or starboard sides. In doing so, they must pass by the relatively open deck areas amidships, either side of the moonpool and the BOP set down areas.

The major risks to personnel passing by this area whilst attempting to escape forward from the aft work stations, from a blow-out and fire at the well centre, would be radiant heat, toxic smoke/gas and possibly direct flame impingement.

During such a blow-out and fire scenario, there would be little or no protection for personnel attempting to cross this area whilst making their way forward from their normal work stations aft. Transit of this area once the fire was established would probably not be possible.

The number of personnel working aft of the moonpool during routine operations was not large, possibly eight to 12 persons, at most times. It would include roustabouts, dogman, mud engineer, pump man, mud loggers and geologist and possibly wireline operators. Some maintenance workers may also be back aft at any given time.

Given the absence of permanent protective measures to allow personnel to proceed forward past a fire at the well centre, an ‘on occurrence’ strategy might be adopted.

This would entail using a fire team from the fire and rescue base (forward) to walk aft from the accommodation with their hoses set to form a protective water wall, the second team covering the first.

Which side of the rig to use would have to be decided based on the wind direction, fire intensity, amount of cargo/drill pipe on deck, etc.

Those personnel who were trapped aft would need to be aware to keep out of the heat/flame path and be on the lookout (either side of the MODU) for the hose teams. This awareness should come from the establishment of a procedure and from positive reinforcement during emergency drills.

The evacuees could then be sheltered behind the water wall generated by the fire hose teams and walked forward, past the danger point, to the muster stations or TR.

This procedure would not be foolproof and can be easily seen to be subject to many variables, not the least of which could be if the fire intensity prevented the establishment of a viable water wall in the first instance. It does however provide a possible solution in a situation where a viable alternative might prove difficult to implement.

Comments:

Tenable escape routes were available to personnel from work locations at the forward end of the MODU, to reach the primary and secondary muster points, in the event of a blow-out and fire at the well centre.

Tenable escape routes from work locations at the aft end of the MODU, to the primary and secondary muster points up forward would not exist, in the event of an blow-out and fire at the well centre. A procedural alternative might be implemented to provide some capacity to overcome this deficiency.

(Q 2.3.6) What protection is afforded personnel moving toward a muster station?

Observations:

The MODU has a number of protected routes available, to allow personnel who were already forward of the moonpool area, to make their way to the muster stations. Those personnel proceeding to the muster stations from work locations at the aft end of the MODU were much less likely to be adequately protected.

To reach the forward muster stations, personnel from aft would have to pass by the relatively open deck areas amidships, either side of the moonpool and the BOP set down areas. The major risks to personnel passing by this area would be radiant heat, toxic smoke and possibly direct flame impingement.

During a blow-out and fire scenario, there would be little or no protection for personnel attempting to cross this area whilst making their way forward from their normal work stations aft. See also the comments at Q 2.3.5 above in relation to this issue.

The only available course of action for personnel aft of the well centre might be to retreat back to the aft end of the MODU. Since the majority of the aft deck compartments were related to the mud systems, there was little likelihood of personnel being able to be safely sheltered in these places, especially in the event of a blow-out and fire.

In this event, the presence of dissolved gases in the mud system and their relative proximity to the rig floor and moonpool areas would make it reasonable to assume that these spaces would rapidly be involved in the conflagration. They could not be relied upon to remain unaffected in the face of a large fire due to a blow-out at the well centre. Additionally, none of these compartments were designed to A60 fire rating standards.

The cement unit room however, was a relatively large compartment at the aft end of the MODU. It had a direct access door to the main deck walkway across the MODU's stern and a second external style watertight, dogged door with a rubber door seal, leads forward into the sack store.

It also had telephone communications to the command centre. It was separated by at least one other compartment (the sack store and the mud pit room) from the source of a blow-out fire at the well centre. It would provide the best available option for a temporary refuge at the aft end of the MODU, for those personnel who could not move forward due to smoke, heat or flame.

There were however, a number of drain holes in the deck leading directly to sea underneath the MODU and smoke/gas could enter the compartment through these openings. Similarly, on the inboard bulkhead, there were a number of small holes where old fixtures had been removed.

A large ventilation fan was mounted in the aft bulkhead and was fitted with an approved closure flap on the outside. With relatively little effort, this space could be rendered at least smoke proof but probably not gas tight.

The mud pump room was larger and could also perform this temporary refuge function but was a less satisfactory alternative. It had direct access doors to the moonpool area and to the mud pit room, which could become part of the conflagration. Further, the bulkhead structure was not A60 rated on the side facing the fire source. It does however, have communications via telephone.

Failing the adoption of the above options, the only remaining alternatives left to those personnel remaining aft, would be to take what shelter they could find at the stern of the MODU. Some shelter could be found in the anchor winch deckhouses, and perhaps on the open walkways at main deck level across the stern, smoke and gas permitting.

Personnel could also descend via the lifts into the aft thruster and pump rooms, where communications with the command centre could be found.

Some degree of isolation would also exist from the smoke, gas and heat for a reasonably large number of men. They would risk becoming trapped in the lower columns however, should power failure occur to the column lifts.

The emergency ascent ladder from the columns was located inside the cylindrical lift shaft, behind the lift. This means of egress was a very restricted affair, only allowing personnel to ascend the 100 plus foot high ladder in a single file.

Personnel sheltering in the aft columns would also run the risk of the column itself becoming filled with smoke or toxic gas whilst the main deck lift access doors were open to allow personnel to descend into the pump room.

Personnel could move through the watertight door from the pump room into the thruster room to get away from smoke and gas but once there, they would be trapped until external assistance could rescue them.

Obviously in a blow-out fire scenario, this would be far from guaranteed, as abandonment of the MODU could result, leaving those in the columns trapped. All things considered, descent into the columns would not represent a practical or eminently survivable option and should be discouraged.

In extremis, the last remaining option for personnel isolated at the aft of the MODU would be to launch the single 25-man life-raft which was mounted amidships across the stern walkway and take to the sea via the ‘descent to sea’ ladders on the aft pontoons.

Alternatively, they could descend into the sea via the single 150 ft scrambling net adjacent to the life-raft stowage, aided by whatever life jackets they could obtain from the aft life jacket stowage adjacent to the life-raft stowage.

In a blow-out situation involving a ‘fire on the sea’ scenario however, or where flame and smoke was issuing from below the main deck level, even that option might be untenable. Survival in this circumstance would depend upon access to a TEMPSC capability, which was not fitted at the stern of this MODU.

It can be seen from the above discussion that a means of allowing personnel to transit forward to the muster stations and temporary refuge was required on the MODU.

Whilst flame walls and deluge sprays would deal with direct flame impingement and radiant heat issues, the question of the protection of personnel from toxic smoke/gas whilst they were transiting forward should also be considered.

A small number of SCBA's and escape breathing sets were currently installed in the mud pit and mud engineer's rooms, as well as at the rig floor. Escape breathing sets were also located in the pump rooms in each aft column, as well as at the 21 ft flat in the columns above the pump rooms.

These numbers of breathing devices took into account the specific minimum work tasks performed in these locations but did not make provision for other transitory personnel who might be working in or around the aft areas of the rig, as operational needs dictate.

An upwards revision of the quantities of escape breathing sets fitted in the aft end of the MODU would provide a greater probability of survivability for personnel attempting to get forward to the muster stations and principal temporary refuge.

A number of service company office/workshop containers were also located adjacent to or aft of the moonpool area, notably the mud logger's shack and the wireline unit.

Comments:

In order to provide adequate protection for personnel from aft making for the muster stations forward, in the event of a blow-out and fire at the well centre, consideration should be given to installing an arrangement which could provide protection from direct flame impingement, radiant heat and toxic smoke/gas.

Consideration should be given to nominating a Temporary Refuge in the cement unit room and equipping that space appropriately. Locations and quantities for additional escape breathing units should also be determined at the aft end of the MODU.

Consideration should be given to locating a TEMPSC capability at the stern of the MODU so that 'escape to sea' would be a more assuredly survivable option during a blow-out fire at the well centre, resulting in a 'fire on the sea' scenario.

(Q 2.3.7) Are personnel knowledgeable about the route to their muster station?

Observations:

Personnel boarding the MODU for the first time, or those who had not been on board for more than six months, were required to attend the Transocean safety induction briefing on arrival.

This comprehensive safety induction briefing, which included a rig specific video, was given by the MODU's Safety and Training Coordinator, after an introduction by the OIM.

It included a discussion of the appropriate responses that should be taken in the event of an emergency and also included a walk around to see the escape routes and muster stations. This induction was followed by a second safety brief given by the ESSO Australia staff.

Various scenarios were employed during muster drills, which utilized both primary and secondary muster points.

Comments:

Crew knowledge regarding muster station routes was assessed to be adequate.

To expand on the existing competency level of the crew regarding diverse routes to the muster stations, recommend that emergency drills be occasionally carried out which include blocked route and casualty stretcher party scenarios.

(Q 2.3.8) Can personnel find designated muster stations using signs and other direction aids and lighting?

Observations:

An emergency lighting system was provided throughout the MODU, fed from the emergency switchboard and also backed-up by continuously trickle charged, battery back-ups inside the lights. The emergency lighting fixtures around the MODU, inside and out, were in a good state of repair.

In emergency situations, as far as practically possible, the OIM would provide information over the PA system, regarding the nature of the emergency, location of fires, etc. escape routes to be taken and muster stations to be reached. Hand-held radios were also available for emergency team members.

Escape route markings on deck were well in evidence but directional arrows on these routes were infrequent (see Q 2.3.4 under 'Comments' section).

Escape route signs showing the shortest route to the open deck and the muster stations, were not provided throughout the MODU, at the exit from each compartment.

Comments:

The routes to the principal muster stations were provided with adequate signs and emergency lighting. Personnel with emergency duties were provided with hand-held radio sets.

(Q2.3.9) Are routes (including stairs and other restrictions) wide enough for personnel to move to muster station within the target time?

Refer to Q 2.3.4.

(Q 2.3.10) Can injured personnel be moved to the muster stations?

Observations:

The MODU was well provided with equipment to assist in the movement of injured personnel, including half body, lightweight, backboard and scoop type stretchers, vacuum stretchers and two sets of vertical rescue tripod equipment.

The MODU's medic ran awareness-training sessions in casualty handling for the cabin stewards, who formed the emergency medical party on board. These personnel were familiar with the use of the equipment. However, the movement of real personnel was only exercised occasionally, due to the risk potential to otherwise healthy candidates.

Comments:

Adequate material arrangements were in place for the safe and timely evacuation of injured personnel and the medical party personnel were trained in its use. More frequent 'stretcher case' exercises might be undertaken, perhaps with a weighted dummy instead of live a volunteer.

(Q 3.4.1) Can available muster stations/TRs accommodate all people on board (POB)?

Observations:

Muster Stations

The current Safety Case for the MODU (approved by DOME in September 2001) gave the primary muster station to be the forward lifeboats area. The secondary muster stations were designated as the port and starboard lifeboat stations.

During H_2S emergencies, the helideck was also nominated in the Safety Case as the muster station. The Station Bill however, only identified the primary muster station at lifeboats one and two, which were located amidships at the forward end of the MODU.

The lifeboat stations three and four (starboard and port sides, forward of midships) were not designated as such on the Station Bill, nor was the crew recreation room in the upper accommodation, starboard side, despite these three extra muster stations being shown on the Fire and Safety plans.

Note: The Fire and Safety plans on display at the upper and lower levels of the accommodation were Transocean generated CAD drawings. They did not bear the usual red inked approval stamps and signatures from the MODU's Classification Society, as was normally case. This was also the case for the Fire and Safety plans copies that were included in the Marine Operations Manual and in the current Safety Case document.

The total approved POB for the MODU vide the Flag State and Classification Rules was 108 persons. As per the Safety Case, Transocean's company policy requires prior approval from the District Manager when it was intended to embark more than 100 persons.

The POB during this assessment period was between 80 and 85 persons and represented a 'normal' POB level for drilling operations. As per discussions with the OIM, POB into the high 90's only occurs during well testing operations.

In circumstances where direct shelter from fire, smoke or toxic gas was not required, there was adequate exposed deck area adjacent to, or within a reasonable distance from each muster station/lifeboat boarding area, to permit the mustering of personnel, up to the maximum allowable POB.

Temporary Refuge (TR)

A Temporary Refuge was not identified in the MODU's current safety case, nor was it shown on the Station Bill or the Fire and Safety plans. Discussion with the OIM showed that the TR was designated as the main accommodation module.

As the four lifeboat stations were located adjacent to the main accommodation, numerous direct egress routes were available from the temporary refuge to the lifeboats from a number of exits at both the upper and lower levels of the accommodation.

Exit through the engine room and/or SCR room, which were contiguous to the accommodation house at the port side, would provide direct access to lifeboat station No.4.

There was no nominated location for a TR at the stern of the MODU.

The cement unit room would represent the best possibility for a TR at the stern (see the discussion under Q 2.3.6 for further details) and possibly the mud pump room.

A number of other locations could provide some shelter, such as the anchor winch deck houses and possibly the pump rooms or thruster rooms at the bottoms of the stern columns. Most of these spaces were either small or congested with equipment and could not hold the maximum POB, with the probable exception of the mud pump room.

The cement room in particular could however, hold 40 or more persons, which would be well more than the number of personnel who might reasonably be expected to be working at the aft end of the MODU under most circumstances.

Personnel could take shelter in the spaces identified above but in most scenarios involving fire, toxic smoke or gas, these spaces would almost certainly be compromised. Co-ordination and communication between these locations would be difficult, although the pump room telephones could be used.

It could be seen from the above analysis that the main accommodation in conjunction with lifeboat stations No.1 and No.2 would represent the best possible combination of protection and facilities in event of most emergencies involving well blow-out scenarios.

None of the areas listed above were formally described on the Station Bill as TRs, nor were they marked as such.

Comments:

<u>Muster Stations</u>

There were adequate arrangements in place for the maximum number of POB to be accommodated at the three designated muster points and at the lifeboat muster stations, in circumstances where direct shelter from fire, smoke or toxic gas was not required.

<u>Temporary Refuge (TR)</u>

A suitable Temporary Refuge exists at the forward end of the MODU.

No suitable Temporary Refuge currently exists at the aft end of the MODU. A Temporary Refuge should be nominated and outfitted as required.

(Q 3.4.2) Is there a system to identify and locate personnel unaccounted for?

<u>Observations:</u>

Muster lists were updated within a few hours of personnel arrivals/departures on the MODU and paper copies were distributed to each muster station, as well as to the pilot house, the OIM's office and the Company Man's office.

A "MagnoBar" magnetic name tally system was employed at the primary muster station forward. Personnel were trained during the safety induction, to shift their magnetic name tally to the relevant side of the muster board when they had arrived at the muster station.

A muster checker was appointed for the station. He was responsible for checking the magnetic name tallies against the POB listing, identifying the personnel at his muster station and informing the Emergency Control Center (ECC) of personnel accounted for, missing and injured.

Personnel who could not be accounted for were identified and if appropriate, a search and rescue team was organized.

This system was applied for each muster point: primary and secondary.

If the OIM decided to abandon the rig, a second confirmation muster was taken to clearly identify personnel who had boarded the lifeboats.

Comments:

The method of identifying people who were unaccounted for was assessed as adequate.

(Q 3.4.3) Is there communication between the OIM and mustered personnel and could it be maintained?

Observations:

In addition to the PA system, the additional internal communications methods available to the OIM were as follows:

- The rig telephone system.
- Marine VHF sets in the bridge control room above the primary muster station.
- Hand-held radio's .

Comments:

There were adequate arrangements to maintain communication between the OIM and the mustered personnel.

(Q 3.4.4) Will the muster stations/TRs remain tenable until the evacuation is completed or until the incident is under control?

Observations:

The forward lifeboat muster station was well shielded from the direct effects of a well blow-out fire. This location could be compromised by smoke or toxic gas if the wind was blowing from certain directions or indeed, if there was no wind blowing at all or just swirling gusts of breeze, in which case seeking temporary refuge (TR) in the accommodation would be the best course of action.

In fact, locating the TR in the accommodation module provided the best possible safe haven available on the MODU in its current configuration.

Depending on the wind direction and/or the size of the conflagration, the port and starboard lifeboat muster stations might provide adequate protection from a blow-out at the well centre, until it was time to board the life boats. They might possibly be compromised by radiant heat or more probably, smoke/toxic gas.

It would be a particularly ill wind that would render all three muster stations untenable at the same time but given their relative proximity to each other, at the forward end of the rig, it remained a conceivable possibility.

This might particularly be the case in light winds, when smoke and gas was caused to swirl about the MODU structure, rather than being blown clear away.

In this circumstance however, the TR in the accommodation still provided the best place to hold personnel pending the clearance of smoke or gas from any particular lifeboat station, prior to boarding.

The escape packs in each cabin would also be useful for allowing personnel to man their lifeboats during heavy smoke but of course these devices would not provide any benefit against a toxic gas cloud.

Comments:

Given the current configuration of muster stations and the TR, these arrangements would provide the best available protection on board until the evacuation of all personnel was completed from the forward end of the MODU.

(Q 3.4.5) Are there adequate control, communication and monitoring systems in the TR in cases where it has to act as the control centre?

Observations:

The pilot house, the adjacent radio room and the MODU offices were all located in the main accommodation area. All of these spaces were well equipped with communications and monitoring systems and could adequately cover the requirement for control, communication and monitoring systems.

Comments:

There were adequate communications available in the nominated TR.

(Q 3.4.6) Will personnel at the command point know if the environment in TR/muster station is deteriorating?

Observations:

The command centre was situated in the TR. Contact between the command centre and muster stations would be maintained using the rig telephones, walkie-talkies and PA system. The primary muster station was located directly below the pilot house windows and could be directly observed from there.

The muster stations could be monitored with the fixed gas detectors at those locations, in the event of a gas release. A portable gas detector was also carried on board.

Comments:

The communication and atmosphere monitoring arrangements between the TR, the muster stations and the command centre were satisfactory.

(Q 4.3.1) Does everyone on the installation receive the order to abandon, if given?

<u>Observations:</u>

The abandonment signal would be given along with an announcement from the OIM, requiring personnel to board their prescribed lifeboat. The abandonment signal was loudly and clearly heard in all areas of the MODU.

The actual instruction to abandon would be given verbally by the OIM to each lifeboat commander via radio and the PA system.

<u>Comments:</u>

The arrangements for the MODU abandonment signal were adequate.

(Q 4.3.2) Do off-installation authorities, including Company Crisis Management Team, know of the abandonment?

<u>Observations:</u>

The off-installation authorities would be informed immediately according to the MODU's and the Operator's Emergency Response Plans. This would occur by means of radio and/or satellite communications.

Testing and operation of external emergency communications was covered in the bridging documents specific to the work being performed for the operator at the location.

<u>Comments:</u>

The ranges of radio/satellite communications available were satisfactory to ensure that communications with off-installation authorities would occur.

(Q 4.3.3) Do personnel know where they are to abandon from and by what means?

<u>Observations:</u>

Information regarding abandonment options was provided to all personnel during the rig safety induction. All non-essential personnel were directed to muster at their assigned lifeboat station at the commencement of an emergency, from where further instructions would be issued.

The specific means to be adopted for abandonment would be dependent upon the actual emergency being experienced and would vary accordingly. Further discussion of alternative abandonment methods might be worked into emergency drills to reinforce the possibilities in people's minds.

The possible options available for abandonment from the MODU include:

- A reasonably controlled 'dry' evacuation by:
  - Helicopters to shore,
  - Helicopters to platforms nearby,
  - Helicopters to supply boat,
  - Basket transfers to supply boat, or
  - To sea in lifeboats.
- Or a less controlled 'wet' abandonment by:
  - Direct entry to the sea using life jackets and then into life rafts, or
  - Direct entry to the sea, just with life jackets.

Given the principal scenario under consideration, of a blow-out and fire at the well centre, abandonment by basket transfer to the standby supply boat could be problematical, at best.

The starboard crane would be the preferred crane to carry out this method of evacuation, as it would allow the evacuees to be mustered and despatched in the basket, from the helideck.

The port crane could also carry out the task but would need to muster and dispatch the evacuees from the main deck level near to the port side lifeboat station, as this crane cannot plumb the helideck.

In either event, both crane pedestals and the operator's cabs were located in a direct visual path from the moonpool/drill floor area and would thus be subject to radiant heat and possibly to direct flame impingement and/or toxic gases/smoke, in the event of a blow-out and fire at well centre.

The above scenario could, depending on the prevailing weather conditions, see flames, smoke and possibly pool fire issuing from under the moonpool area. This could render the sea surface adjacent to the MODU untenable for either the supply vessel or the evacuees descending in the baskets.

With the weather prevailing from most directions of the compass, only one side of the MODU should be obscured in this manner, leaving the other side clear for crane basket abandonment to the supply boat. However, when all factors were considered, this method could not be guaranteed in a blow-out and fire scenario and thus could not be considered as the primary means of abandonment.

Abandonment to supply boats via helicopter would be unlikely in the operating conditions at the location, due to the lack of helicopter landing decks on the supply boats attending the MODU. Also, the available helicopters were not configured for winch down operations.

Even if helicopters equipped with rescue winches could reach the location in sufficient time and numbers, lowering a large number of men onto the deck of a pitching supply boat, which may also be loaded with deck cargo would be a time consuming and dangerous task.

It would be far easier in the circumstances prevailing at this location to deliver the evacuees to the adjacent platforms. Given the relative availability of helicopters, the short flying time from their shore base and the close proximity of at least three fixed installations, helicopter evacuation to adjacent platforms would seem to present the best abandonment option at this location.

Abandonment by launching the forward lifeboats would not be possible if the MODU was experiencing heavy weather conditions from either right ahead or from relatively large angles on either side of the port or starboard bow.

In this circumstance, the wind and sea would tend to push the lifeboats back in under the MODU, which was where the fire and smoke/gas would be issuing from in a blow-out at well centre situation. Additionally, the lifeboats could be fouled, capsized, damaged or sunk by impact with the structural cross braces underneath the rig.

With the wind and swell coming at the MODU from relatively large angles on the bow (from say, fifty to eighty degrees relative, off either bow), it was most likely that three out of the four lifeboat stations would be afflicted by the same problem at the same time, with the survival craft being driven in under the MODU upon launching.

It was precisely for these reasons that lifeboat stations were usually configured at the bow and the stern of a MODU or along the port and starboard sides. When weather conditions rendered one side untenable, actually assist to move survival craft away from the MODU at the opposing end/side.

In relation to the above argument, it should also be noted that four of the five life-rafts fitted on board the MODU were located in pairs immediately adjacent to the port and starboard lifeboat stations. These fragile craft would suffer a similar fate, whilst being even less able than the lifeboats, to resist impact, smoke/toxic gas and direct exposure to fire.

For the duration of this inspection, the 58-man Watercraft lifeboat from the port lifeboat station (No.4) had been removed from its davits and was sitting on top of the SCR room deck head, in a cradle.

The lifeboat was awaiting inspection and load testing by an inspector from shore and had been demounted for approximately three weeks at that time. The survey and load test had not been carried out at the completion date of this survey.

It was noted that, as per the current MODU Safety Certificate, lifeboat No.4 was designated as the rescue boat and was not included in the approved total TEMPSC seating capacity.

Comments:

Abandonment scenarios, other than by lifeboat, should be included during emergency drills and exercises to ensure that the personnel were familiar with the full range of abandonment arrangements available to them.

In particular, abandonment scenarios from the stern of the MODU should be exercised, to make the crew aware of the importance of quickly making their way forward (if possible) during a blow-out and fire at well centre.

The priority of abandonment arrangements under a range of conditions should also be discussed and evaluated during emergency drills.

(Q 4.3.4) Can personnel get to the means of abandonment?

Observations:

The Temporary Refuge was provided with numerous protected means of getting to the lifeboat stations. Routes to the principal means of abandonment were generally adequate from and about the forward end of the MODU.

The issues relating to abandonment routes at the aft end of the MODU have been addressed at the responses to Q 2.3.4, Q 3.4.4 and Q 4.3.3 above.

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Comments:

Other than those issues noted at the responses to Q 2.3.4, Q 3.4.4 and Q 4.3.3, access to the means of abandonment were considered to be satisfactory, due to the duplication of abandonment points and the diversity of access routes.

(Q 4.3.5) What abandonment facilities and means are available?

Observations:

The possible options available for abandonment from the MODU include:

- A reasonably controlled 'dry' evacuation by:
  - Helicopters to shore,
  - Helicopters to platforms nearby,
  - Helicopters to supply boat,
  - Basket transfer direct to supply boat, or
  - To sea in lifeboats.
- Or a less controlled 'wet' abandonment by:
  - Direct entry to the sea using life jackets and then into life rafts, or
  - Direct entry to the sea, just with life jackets.

Since the 'dry' type abandonment methods had been discussed in a number of the sections above, they would not be re-visited here.

The 'wet' abandonment methods would be discussed hereunder.

Four 'escape to sea' ladders were installed on the MODU, one at each corner column on the MODU. The ladders descend all the way to the pontoons via caged ladders (backscratchers), with two staging platforms on the way down.

The heads of these ladders were painted black, in common with a number of the other such ladders heads around the edge of the deck. The other ladders however, only provided inspection access underneath the main deck and did not descend to the water level.

The single exception was the 'escape to sea' ladder head at the starboard aft column, which was painted red.

All four 'escape to sea' ladder heads should be painted a distinctive colour, which was different from the remaining below deck inspection ladder heads.

Consideration should be given to labelling all other over the side ladders as 'Not Escape to Sea' or similar wording, so that personnel do not inadvertently use the wrong ladder in an emergency.

The solid steel bar type rungs on the upper section of each 'escape to sea' ladder were showing signs of corrosion, some rungs appeared to be heavily encrusted with rust products, making objective assessment of the remaining solid metal difficult. The rungs should be de-scaled, assessed and either replaced or re-preserved, as necessary.

At the starboard aft corner of the MODU, the escape walkway deck marking (black with yellow stripes) would not take an evacuee to the 'escape to sea' ladder head. The walkway deck marking curves away forward about three meters from the ladder head. An extension to the walkway marking should be painted in to lead directly to the ladder head.

Each 'escape to sea' ladder had a tally plate adjacent to the ladder head, which indicated that it was an 'escape to sea' ladder. The tallies were held in steel brackets that were welded to the top of the guardrails next to the ladder head.

Due to their placement, the tallies were only readable when approaching the escape ladder from one direction. These would be more visible to personnel approaching the ladder from both directions if the tallies and their housing brackets were relocated to the outer perimeter of the backscratcher at the ladder head.

Knotted descent ropes in good condition were installed at the forward lifeboat muster station.

Pilot ladders (one each side) in good condition were installed at the secondary muster/lifeboat stations.

A woven black nylon or polypropylene rope scrambling net ('Billy Pugh' brand), approximately five feet wide and 150 ft long, was located amidships across the stern. The scrambling net was in good condition.

A single 25-man life-raft was located amidships across the stern, next to the scrambling net.

Note: The life-rafts fitted on board, were rated for a stowage height of 25 m, which made them adequate for drop deployment over the side when the MODU was ballasted down to drilling draft (as would be the case for this well blow-out and fire scenario). The life-raft casing could break up and destroy the contents, if it was deployed from the main deck when the MODU was at the transit draft. At that draft, the life-raft would be stowed between 31.6 m and 33.8 m above the water (depending on whether the transit draft was at the 19 ft minimum or the 26 ft maximum draft, per the Marine Operations Manual, Vol.1).

The emergency equipment on board the MODU was subject to regular inspection and maintenance. All of the escape and abandonment equipment observed on board the MODU was in good condition and ready for use, with the exception of the port lifeboat, as noted above at Q 4.3.3.

Abandonment would be considered from the following prioritised list:

- Helicopters,
- Transfer to supply boat,
- Lifeboats, and
- Ladders to the sea.

Consideration would be given to the escalation of the incident and the availability of helicopters and supply vessels before deciding on the method of abandonment. The weather and the sea state were other factors that would impact the method of abandonment.

Detailed inspections on all the lifeboats had been carried out during the performance of the recent Marine Safety Survey and ModuSpec condition assessment survey. They were referred to but were not repeated herein.

Comments:

All four ‘escape to sea’ ladder heads should be painted a distinctive colour, which was different from the remaining below deck inspection ladder heads.

Consideration should be given to labelling all other over the side ladders as ‘Not Escape to Sea’ or similar wording, so that personnel do not inadvertently use the wrong ladder in an emergency.

The solid steel bar type rungs on the upper section of each ‘escape to sea’ ladder were showing signs of corrosion, some rungs appeared to be heavily encrusted with rust products, making objective assessment of the remaining solid metal difficult. The rungs should be de-scaled, assessed and either replaced or re-preserved, as necessary.

At the starboard aft corner of the MODU, the escape walkway deck marking (black with yellow stripes) did not take an evacuee to the 'escape to sea' ladder head. The walkway deck marking curves away forward about three meters from the ladder head. An extension to the walkway marking should be painted in to lead directly to the ladder head.

Each escape to sea ladder had a tally plate adjacent to the ladder head, which indicated that it was an 'escape to sea' ladder. The tallies were held in steel brackets and were welded to the top of the guardrails next to the ladder head.

Due to their placement, the tallies were only readable when approaching the escape ladder from one direction. If the tallies and their housing brackets were relocated to the outer perimeter of the backscratcher at the ladder head, they would be more visible to personnel approaching the ladder from both directions.

Note: The life-rafts fitted on board, were rated for a stowage height of 25 m, which makes them adequate for drop deployment over the side when the MODU was ballasted down to drilling draft (as would be the case for this well blow-out and fire scenario). The life-raft casing could break up and destroy the contents, if it was deployed from the main deck when the MODU was at the transit draft. At that draft, the life-raft would be stowed between 31.6 and 33.8 m above the water (depending on whether the transit draft was at the 19 ft minimum or the 26 ft maximum draft, per the Marine Operations Manual, Vol.1).

(Q 4.3.6) Are helicopters a reasonable choice for abandonment?

Observations:

If a rapid evacuation of the rig was required, abandonment by helicopter might present a limited availability option in this scenario. This would depend, in some measure, upon the day of the week in question, as helicopters do not service the surrounding field installations or the MODU over the weekends.

The availability of sufficient aircrew and ground staff to man a number of helicopters for a rapid evacuation might therefore prove problematical over the weekend. The standby helicopter would be available to provide a first reaction capability however, and this might prove to be a useful, if not a fully conclusive, option.

The flying time from the helicopter base to location was approximately 35 minutes. Flying time to any of the three fixed installations, which were close to the location would be less than five minutes each.

Hover and landing times were observed to be approximately three minutes and take-off times about one minute. Based on observations of normal operations, the embarkation or disembarkation times for a full passenger load were estimated to be in the order of three minutes or less.

The Sikorsky S61N helicopters had a passenger capacity of 12 men each, plus two pilots. Local requirements limited the helicopters to carrying only 10 passengers during field servicing.

The helicopter response time might, in some cases, be shorter during periods of daylight on weekdays, if helicopters were already in the field servicing other installations. However, this could not be relied upon. The time required to complete an evacuation by helicopters could be significantly reduced by shuttling evacuees to any of the three manned platforms within close visual range of the location.

The location in Bass Strait was subject to extreme variations in local weather at all times of the year. Fierce, rapidly developing storms and extensive banks of sea fog were not unusual, even during the summer months.

The weather was also observed to swing around from three completely different directions, over five consecutive days. During the survey period in question, extensive bushfires in rural Victoria were propagating large clouds of wood smoke, which had an effect on helicopter flying conditions in the adjacent oilfield.

Comments:

Helicopters could possibly be used for rescue from the MODU for slowly developing or escalating incidents, which presented no immediate threat to life, such as the total loss of power or slowly sinking after a collision.

Helicopters could not however, be relied upon for a rapid abandonment of all personnel during a blow-out and fire at the well centre scenario.

(Q 4.3.7) Can personnel evacuate to another connected installation or be lifted to a support vessel?

Observations:

The MODU was working in stand-alone mode and was not connected to another installation. The nearest fixed installations were several miles away.

Two "Billy Pugh' personnel baskets were available on board for the transfer of personnel to supply vessels. Two supply vessels were in attendance on the MODU at the location.

One standby vessel was in constant attendance whilst the second vessel shuttled to shore at Barry's Beach with cargo and backloads. The one-way voyage duration was approximately 12 hours. See other observations at Q 4.3.3 above.

Comments:

Evacuation to a connected installation was not an option at the location.

Due to the constant presence of a standby vessel, the option of evacuating to a support vessel would be an available option. Rough weather however, would inhibit the use of support vessels. See comments at Q 4.3.3 above.

(Q 4.3.8) Is there sufficient lifeboat (TEMPSC) capacity available for all personnel under likely scenarios?

Observations:

There were a total of four lifeboats on the MODU. Two Whittaker 50-person lifeboats, No.1 and 2, were installed adjacent to each other on a common support platform along the forward edge of the MODU, amidships.

Two Watercraft 58-person life were installed, No.3 and 4, and were embarked, one on each side at the port and starboard lifeboat stations, located well forward of midships.

The MODU's Safety Case set the maximum POB to be 100 persons. Increases in the POB up to 108 persons (maximum number of berths) required the District Manager's permission.

The current MODU Safety Certificate for the SEDCO 702, issued by ABS Houston on behalf of the Liberian Flag State Administration and dated 15 February 2002, gave the following information:

- Three lifeboats for a total TEMPSC capacity of 158 persons,
- Life-saving appliances (life jackets) for 120 persons,
- Five life-rafts for a total of 120 persons,
- Lifeboat No.4 was designated as the rescue boat and not included in the number of TEMPSC seats available on board.

Notwithstanding the above Flag State Administration approval document, the scenarios as outlined at Q 4.3.3 should be borne in mind. Under certain credible scenarios as outlined, the MODU might not have sufficient TEMPSC available under likely emergency scenarios, due to the current equipment configuration.

Comments:

The TEMPSC (lifeboat) arrangements in place were adequate, save under the conditions as outlined at Q 4.3.3.

(Q 4.3.9) Are there specific factors that will affect the ability to launch the lifeboats or will increase risk in using them?

Observations:

As previously noted at Q 4.3.6 above, the prevailing sea state, wind and weather conditions in Bass Strait can vary daily or even several times within the course of a given day.

Accordingly, it would not be possible to predict with certainty whether the MODU would remain faced into the wind, for example, during the course of any given well drilling operation.

Particular shifts in wind and sea direction could easily combine to prevent the successful launching of some or all of the lifeboats, given the location of the TEMPSC on board this MODU, especially in the blow-out and fire at well centre scenario being considered here.

See also the discussion on this point at Q 4.3.3 above.

The accumulation of ice on the lifeboat falls and hook releases that might prevent the lifeboats from launching, was unlikely to occur at this location, even during the winter months.

Comments:

Specific factors that could affect the ability to launch the lifeboats or to increase the risk in using them could be present under certain defined circumstances (see the observations at Q 4.3.3 and Q 4.3.6 above), which could affect the ability to launch the lifeboats and/or would increase the risk in using them.

See also the specific comments at Q 4.3.3 and Q 4.3.6 above.

(Q 4.3.10) Are life-raft arrangements adequate for an abandonment (escape to the sea)?

Observations:

The MODU was fitted with five, 25-man life-rafts. The rafts were in good condition and in date for inspection. The rafts were mounted in two sets of two, adjacent to the port and starboard lifeboat stations.

A pilot ladder extending to the sea surface at transit draft was stowed next to each set of two life rafts. One single raft was mounted amidships across the stern, next to a 150-ft scramble net. The pilot ladders and the scramble net were in good condition.

Comments:

The life-raft arrangements were adequate for an 'escape to sea' abandonment from the drilling draft. However, see the observations and comments at Q 4.3.3 regarding the survivability of life-rafts during a well blow-out and fire scenario.

(Q 4.3.11) Can personnel, where there is no alternative, "safely" enter the sea directly?

Observations:

There were four 'escape to sea' ladders to the sea level from the main deck level, one fitted at each corner column of the rig.

Comments:

The arrangements for entering the sea directly, where no alternative was available, were considered to be adequate. However, see the other comments regarding the marking and maintenance of the 'escape to sea' ladders at Q 4.3.5.

(Q 4.3.12) Consider the effectiveness of the means of evacuation and escape to the sea.

<u>Observations:</u>

Given the scenario of a blow-out and fire at the well centre, an escape to the sea would represent the least preferred option for abandonment of the MODU.

The survival prospects of evacuees who were forced to enter the water without a buoyancy aid were virtually nil.

This would especially be the case if they evacuated by night, as finding them in the water without a pinpointing light from a lifejacket would be very difficult, as would be their prospects of staying afloat long enough to be found.

The Australian Maritime Safety Authority (AMSA) booklet "Survival at Sea" (Third edition, ISBN 0 644 24262 0) gives the predicted survival time of a person entering the water without a buoyancy aid to be less than 1.5 hours.

Evacuees equipped with a buoyancy vest would have a better chance of survival, both day and night, although their survival time in the water would be measured in hours in the Bass Strait, even in summer.

Those personnel who can safely descend into the sea and then enter a life-raft would have the best probability of survival, due to their facility for mutual support and their isolation from the effects of hypothermia inside the raft, until they could be found and picked up.

The major deficiency with abandoning the MODU by escape to sea in the blow-out and fire at well centre scenario however, lies with the fact that both individuals and life-rafts obey the laws of nature and drift downwind and down sea – as does smoke, toxic gas, and flames from burning pool fires on the sea surface.

Life-rafts and life jackets cannot provide any protection from these phenomena and if they were present, the evacuees survival prospects would reduce accordingly.

The most efficient course for survival in a blow-out and fire at well centre scenario was to evacuate to propelled craft which could stay upwind and/or at a distance from the side effects of the blow-out, This means of course helicopters, supply boats and/or TEMPSC.

Comments:

Evacuation and escape to the sea in life jackets and/or life-rafts represents the least effective means of survival after a blow-out and fire at the well centre, especially in the presence of smoke, gas and flames.

Evacuation and escape to the sea in TEMPSC represents a much more effective means of survival during such an incident.

Evacuation and escape from the MODU by helicopter or supply boat represents the most effective means of survival after a blowout and fire at the well centre.

(Q 5.3.1) What is the expected survival time of people entering the sea?

Observations:

Exposure suits were not carried on board the MODU. Personnel entering the water would wear life jackets and, most probably, whatever clothing they had on when the incident occurred.

The AMSA publication "Survival at Sea" gives the predicted survival time for an average person immersed in cold water at 5°C to be less than two hours. At 10°C, the survival time was between two and three hours. At 15°C, it was about four hours and at 20°C, the survival time was about eight hours.

These figures only account for hypothermic effects, not the incipient drowning effects due to wave break over or windborne spray; or the effects of inhalation or ingestion of smoke, oil or gas products. These factors were not quantifiable and were weather and scenario dependant.

The seawater temperature recorded by the MODU at the location was 13°C, which would give an in-water survival time estimate of between three and four hours. The in-water survival time in Bass Strait during winter has been variously estimated at less than two hours, even with an exposure suit.

Comments:

Given the water temperature recorded at the location, the in-water survival time at the location for the time of year would be less than four hours.

The use of exposure suits was recommended as it conveyed significant advantages in terms of in-water survival times, even during the summer months, and should be considered for drilling operations in southern Australian waters.

(Q 5.3.2) At what time do rescue craft arrive at the scene and begin the rescue operation?

Observations:

At the location, the SEDCO 702 had one supply vessel on standby at all times, which could be alongside the MODU in approximately 10 to 15 minutes. The second supply vessel could be as far away as the supply base at Barry's Beach, 12 hours steaming away.

Other supply vessels might also be available within reasonable steaming time, if they were operating in the area, servicing the fixed installations. Supply vessels would be fitted with life-support stores for survivors and for personnel rescue and support in cold water.

Comments:

Rescue craft support was assessed as adequate for this project. At least one supply vessel could be alongside the MODU within 15 minutes, the second boat could be as far as 12 hours steaming away.

There was also the possibility of other vessels being in the area, which could provide assistance in the rescue operations.

(Q 5.3.3) Can all personnel be located?

Observations:

The MODU's life jackets were SOLAS approved and provided with a strobe light, retro-reflective tape and a whistle.

The SOLAS approved life-rafts were equipped with an aircraft locator beacon and marine day and night flares.

The SOLAS approved TEMPSC lifeboats were equipped with a strobe light, as well as an Emergency Position Indicating Radio Beacon (EPIRB) and marine day and night flares.

The MODU was also equipped with six GMDSS marine emergency radios in the radio room and two SART radar transponders in the pilot house, all of which could be taken to any of the survival craft at abandon ship.

Note here the restrictions on passing aft by the moonpool area to the aft life-raft station. It might not be possible to get any of these communications devices to that raft. See information at Q 2.3.5, Q 2.3.6 and Q 4.3.3.

The supply boats and their fast rescue craft were fitted with searchlights that would aid their search for personnel in the water, life-rafts and lifeboats during the night hours. Calm weather would assist their visual searching during daylight and night hours and foul weather would retard such efforts.

Helicopters would be most useful to locate survivors during the daytime, in weather conditions suitable for flying. Rescue-equipped helicopters, if available, could recover small numbers of individuals from the water but otherwise their primary value would be in directing surface forces to the site.

Helicopters would be much less useful at night, unless they were fitted with passive night vision equipment or preferably with Forward Looking Infra Red (FLIR) pods. Such equipment was usually only fitted in military or specialist rescue helicopters.

A copy of the MODU's muster list would be carried in each lifeboat to provide a record of rescued/missing personnel or at least those who had embarked in the lifeboats.

Personnel rescued by helicopter would be subject to individual accounting. Those personnel entering the water directly would only be accounted for on recovery.

A full accounting for all POB could not be guaranteed during the rescue operations and might not resolved for some time after the abandonment has been completed.

Comments:

The arrangements for survival craft to alert searchers to their presence in the water were adequate and in line with international standards.

The arrangements for search craft, including supply vessels and helicopters, to locate survivors were adequate and in line with international requirements.

The arrangements for locating all survivors during an emergency evacuation were considered to be adequate.

(Q 5.3.4) Can the rescue craft get to the personnel?

Observations:

The offshore supply vessels were fitted with appropriate rescue equipment, including fast rescue boats, with which personnel could be recovered from the sea and with which life-rafts could be towed to a safe area, for recovery on board the supply vessel.

The MODU's lifeboats were provided with quoits and lifelines, with which to assist in the recovery of survivors from the water.

Comments:

The attending standby supply vessel would provide the most effective and safe means for rescue from the sea.

Other vessels were unlikely to have suitable rescue equipment, such as a fast rescue craft (Zodiac), rescue zone nets and survivor first aid stores, on board.

(Q 5.3.5) How long could rescue craft stay at the scene?

Observations:

Supply vessels would be able to remain at the scene for as long as was reasonably necessary. Other supply vessels could be mobilized to the site within 12 hours at the outside, depending on how many were available at the supply base.

Helicopters would have a more limited rescue operation time over the location. The loiter capability of helicopters would need to be considered and might be extended by utilising any refuelling support facilities available at nearby fixed installations.

The flight time for helicopters returning to base for refuelling was not excessive and a useful presence should be able to be kept in or over the field for as long as was necessary. Further aircraft and crew would be readily available from Melbourne, about 1.5 hours flight time away.

Comments:

Rescue craft would be able to keep an adequate presence at the scene for as long as was necessary.

(Q 5.3.6) Can all personnel be picked-up before exposure time exceeds the survival time?

Observations:

The answer to this question involves two issues, the survival of natural weather related hazards such as hypothermia and drowning, as well as the survival of emergency induced hazards, including smoke, gas and heat/flame impingement.

Personnel entering the sea directly would have a low probability of survival, especially in extreme surface weather conditions, such as darkness, high wind/wave conditions and heavy rain. They would also face perils from smoke, toxic gas and/or flames issuing from the blow-out fire. See the previous discussions at Q 5.3.1.

Personnel entering the water in lifeboats should have a much better probability of survival, all other factors being equal, provided that the lifeboat was not swept in under the MODU.

In the event that wind and swell swept a lifeboat under the MODU, its survival would depend upon getting itself clear before direct heat or flame impingement destroyed it or collision with the MODU structure breached its shell.

All SOLAS approved TEMPSC lifeboats were designed to provide enclosed atmosphere life support and external fire suppression protection for long enough to get clear of any smoke, gas or flame arising from the incident.

They were not however, designed to remain at the centre of a major inferno arising from a blow-out for any period of time. Once the lifeboat made its way into clear waters, it would be capable of heaving to and awaiting recovery by the first available supply vessel or even of making for the nearby fixed installations.

Significant injuries to survivors could be expected when personnel attempted to disembark from the lifeboats into the rescue vessel, unless fortuitous weather conditions were available. With this in mind, it was not unusual for lifeboats to be towed to sheltered waters and then hoisted on deck.

This would allow survivors to disembark once the boat has been landed on the deck of a suitable vessel (or wharf), providing that the necessary craneage was available, either on the receiving vessel or on a fixed installation or even once back alongside a wharf.

It would be extremely difficult to transfer casualties from one vessel to another without special equipment and well-trained personnel. The best course of action in this case would be to remain in the lifeboats until weather conditions improved.

Ultimately, survivors who were airlifted and dropped onto the nearby fixed installations would have the best possible chances of survival in this sort of scenario, all other factors being equal.

Comments:

The survival prospects of personnel who enter the water directly would be extremely limited.

Personnel who evacuate in lifeboats would have good prospects of survival, provided their lifeboat was not swept in under the MODU.

Personnel who were airlifted off the platform would have the best survival probability of all, all other factors being equal.

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(Q 5.3.7) What facilities are immediately available for the aftercare of survivors?

Observations:

Some aftercare facilities might be available on supply vessels. However, space would be limited, and passageways and stairs narrow and difficult to move casualties through.

The aftercare facilities on the fixed installations in the area would be more adequate to the task, provided survivors were recovered from the water and transferred there.

Evacuees who had been airlifted from the MODU in the first instance might not be in need of extensive medical attention once they were on the adjacent installations and could assist with the treatment of their less fortunate colleagues.

Once initial recovery of the in-water or lifeboat survivors had taken place to either the supply boats or to the fixed installations in the field, medical personnel could start to assess the casualties.

Medical triage and aero-medical evacuation could then start to ferry the most affected cases to shore for further treatment. The remaining survivors could then be ferried ashore on the supply boats if necessary.

The availability of facilities on other vessels in the area to assist in the recovery of survivors would be a matter of chance and likely to be of limited usefulness.

Comments:

The immediate provision of aftercare equipment at the location would be by supply vessels taking part in the rescue operations and fixed installations in the immediate area.

Specialist medical resources would be limited to the offshore medics and first-aid trained persons initially but trained personnel from shore, advice from specialists via radio and satellite links or could soon supplement this by evacuating the survivors to shore facilities.

To facilitate the aftercare of survivors, the provision of aftercare equipment from the supply base ashore should be considered so that equipment was immediately available for use by vessels taking part in rescue operations.

Such equipment would include, but not be limited to, dry clothing, blankets, food and drink, etc.

(Q 5.3.8) What reception facilities are available onshore?

Observations:

Survivor aftercare facilities onshore should be adequate and quickly available, as similar contingencies have been established and exercised/used by the operator at the location, which was in a long established oilfield.

The relative proximity to the greater resources available in Melbourne would also prove useful should more in-depth resources be required.

Comments:

The identification and mobilization of shore reception facilities for the specific area of operations was considered to be adequate.

6.2 Scenario 2: Blow-Out (Subsea Level, Including Shallow Gas)

Observations:

Drilling operations performed prior to the fitting of the BOP stack were closely supervised and CCTV was used to monitor the subsea wellhead area/surface hole entrance for the appearance of well fluids, particularly gas bubbles.

Standard well control measures would initially be employed. If the control measures failed, the main concern was the migration of substantial amounts of gas to the surface of the sea directly below the MODU.

Fundamentally, the appearance of gas below the MODU presents similar hazards to those considered in Scenario 1 and many of the same comments apply.

The basic emergency strategy was as follows:

- Attempt to control the well,
- If the gas remained unignited, muster in the TR,
- If attempts at well control fail, pull away using anchor tension, and thrusters,
- If unable to pull away, apply standard emergency procedures as discussed at Scenario 1.

A further consideration in this scenario was the reduction in density of the seawater around the MODU, due to the flow of gas bubbles, which might have an effect on the buoyancy of the MODU.

These effects were not considered to be significant and would be mitigated by the upward pressure on the MODU created by the flow of gas and the MODU's inherent buoyancy.

The water depth at the location was approximately 110 m. In such shallow water depths, the MODU might experience problems in pulling clear of the well head, due to the limited distance that they would be able to pull away on relatively short anchor chain mooring lengths.

The MODU was fitted with Propulsion Assist thrusters however, which could be used to assist in pulling off the well head if required.

Comments:

The hazards associated with this scenario were similar to those for Scenario 1, which should be referred to.

6.3 Scenario 3a: Explosion Or Fire - Helicopter Crash

Observations:

For the purpose of this assessment, it was assumed that a helicopter crash had occurred on the helideck, as a helicopter took off again after delivering passengers to the rig, with at least fifty percent of its fuel remaining on board.

Due to the location's relatively close proximity to land and to the ESSO heliport at Longford during this drilling operation, no helideck refuelling system was embarked on the MODU.

The above scenario was therefore considered to be the maximum credible event, which might be experienced during this operation. In this circumstance, other than any initial damage to the rig structure caused by the crash, a helifuel fire on deck would represent the greatest danger to the MODU.

The helideck was provided with a pressurised foam fire-fighting system fitted with three manually operated foam monitors, which were located at almost equi-distant positions around the helideck perimeter.

There was also a helicopter crash rescue kit available and a full outfit of portable helideck fire-fighting equipment.

The helideck was located partly above the deck head of the accommodation module at the starboard forward corner of the MODU. It was fitted with a helideck drain system around its perimeter, with drainage from the helideck directed overboard. This would include the drainage of any spilled aviation fuel in the event of a crash on deck.

Helicopter landings on the MODU were attended by a two-man crash and fire-fighting team and were controlled by a trained Helicopter Landing Officer. A further two trained baggage handlers rounded out the helicopter landing team.

The crash team had received training in helicopter rescue and fire-fighting techniques. The HLO and his assistants were also trained in their duties. The crew on board handled the helicopter operations very professionally.

Comments:

The arrangements for dealing with a helicopter crash on the helideck were considered to be satisfactory. If the incident escalated beyond a fire on the helideck, the observations and comments for Scenario 1 would generally apply.

The possibility of a helicopter crash elsewhere on the MODU was considered to have been generally addressed in the assessment of other fire and explosion scenarios.

6.3 Scenario 3b: Explosion Or Fire - Engine/SCR Room

Observations:

The engine room was protected by a fixed, manually operated CO_2 flooding system that required authorization by the OIM to be operated.

The engine room was provided with three emergency exits, and was normally unmanned. However, the watchkeeping personnel could be found in the adjacent engineer's office or working around the space.

The SCR room was above the aft end of the engine room and served as the emergency muster point for the chief electrician, while the chief engineer mustered in the engine room. If required, an engine shutdown would be considered, taking into account the drilling requirements.

The switchboard room had an internal entrance into the upper level of the accommodation.

The engine room and SCR ventilation fan isolation flaps were all in good condition with good seals and working screw down bolts. They were located on the walkway at the front of the engine room and on top of the engine room house. They would not prove difficult to seal off before dumping the CO_2 but would require a number of men to accomplish the task quickly.

The housekeeping in both the engine room and the SCR room was of an exceptionally high standard. Both spaces were kept scrupulously clean and well painted. The probability of a fire occurring in these spaces due to anything other than a major equipment failure (engine crankcase explosion, switchboard fire) were assessed as remote.

As the root causes of these types of failures would usually be traced back to poor maintenance standards and bad housekeeping, even these eventualities were seen to be slight on board the MODU, due to the high standards maintained in these spaces. Nonetheless, the MODU was 30 years old and such failures could occur in aging equipment.

Should such an event occur however, the portable fire-fighting equipment in the spaces was plentiful and well situated for fighting the fire. The CO_2 system should prove conclusive, if the portable equipment was unable to deal with a fire.

ModuSpec

Comments:

The arrangements for dealing with a fire in the engine room or the SCR room were considered to be adequate. A large number of the common causal factors for engine room and switchboard fires were observed to be absent from the spaces on board this MODU.

6.3 Scenario 3c: Explosion Or Fire - Galley/Accommodation

Observations:

The two level accommodation module was spacious, clean, well appointed and well lit, despite the MODU being 30 years old. It was equipped with smoke and fire detection systems. A sprinkler system was not fitted in the accommodation.

The accommodation was kept clean and tidy at all times by the catering staff. Luminescent escape route arrows were provided at low level in corridors, which were accessed directly from cabins.

Smoking was permitted only in two designated areas in the accommodation and was prohibited in the cabins. Smoking out on deck was prohibited. The accommodation contained the ECC, radio room, pilot house and was the primary TR.

There was an adequate provision of portable fire extinguishers and fire hydrants/hoses throughout the accommodation.

In the event of an emergency, one galley crew/steward would carry out a check of cabins to ensure that personnel had evacuated. They were trained to check for, and not to enter, smoke-filled cabins. The remainder of the catering staff reported directly to the hospital, to form the medical party.

The laundry was spacious and well laid-out. The danger of fires occurring in or behind the clothes driers was well understood and lint build-up was kept under control.

The galley was clean and well equipped. The storerooms were well stowed and uncluttered. The galley was fitted with a CO_2 extinguisher system that could be remote activated from outside the galley. This system would also automatically shut the galley exhaust fan ventilation trunking flap. A separate manual ventilation shut-off flap could be shut from outside of the galley.

The electrical isolation switches for the galley equipment were located inside the galley, at the corner furthest from the access doors. The 240V and 120V electrical distribution boxes for the galley equipment were located in the passageway outside the PMS office, behind the galley.

Electrical isolations could be performed at the distribution boxes, if necessary, or directly from the breakers in the SCR, which was also located off the PMS passageway.

In spite of the proximity of these electrical isolation options, a single emergency master isolation switch close by the CO_2 actuation lever outside the galley would be a preferable option.

A fire blanket was present in the galley and the A60 rated steel shutters and door into the mess room were in good working order.

Comments:

The arrangements for fighting a fire in the accommodation and the main galley were adequate and in good order, with the exception of the main galley electrical isolation switches.

Despite the proximity of other electrical isolation means for the galley equipment, a separate master isolation switch should be installed outside of the galley to allow electrical isolation from outside the compartment, in the event of a fire.

6.3 Scenario 3d: Explosion Or Fire - Mud Pit/Mud Pump Room

Observations:

The mud pit room was located between the mud pump room and the sack room. The mud pit room operated under a negative pressure and was fitted with airlock entries from both the mud pump and sack store sides.

A further weathertight door opened from the forward end of the mud pit room, onto the mezzanine level of the moonpool. Fire extinguishers and hoses were fitted in the space, as well as two escape breathing sets.

The mud pump room had three exits that led to the weather deck. One door opened to the port side main deck, next to the P-tanks. One exited from the forward bulkhead onto the moonpool at main deck level and one exit to the aft walkway across the stern, near the aft life-raft stowage. Fire hoses and extinguishers were fitted in the space.

Comments:

The emergency arrangements for dealing with a fire or explosion in the mud pump or mud pit rooms, were assessed as adequate. See Scenario 1 for further information on the implications of fires in this area.

6.3 Scenario 3e: Explosion Or Fire - Sack Room

Observations:

The roofed-over sack room was enclosed across the stern and along both sides but it was open to the moonpool area at the forward end, for forklift access.

The sack room was provided with three exits. One exit led to the moonpool cellar deck area via a large "rolladoor" and one led up into the mud pit room via a set of airlock doors. The third route led from the aft end of the sack room, through a door into the cement unit room.

The sack room had adequate ventilation, gas and fire detection sensors and fire hydrants/equipment.

Comments:

The precautions for the prevention or control of fire or explosion in the sack room were considered to be adequate.

6.3 Scenario 3f: Explosion Or Fire - Helicopter Refuelling

Observations:

Due to the close proximity to shore at this location, the portable helicopter refuelling facility had been removed from the MODU. No permanent elements of this system were still on board during the survey.

Comments:

No further comment recorded.

6.3 Scenario 3g: Explosion Or Fire - Well Test Related

Observations:

The MODU management recognised well testing as being a potentially hazardous operation. Consequently, personnel were on a high state of alert for the period of testing which normally lasted for between seven and 10 days.

Third-party contractors carried out well testing operations when required.

The well testing plan was developed initially by the operator and subjected to review and concurrence by the drilling contractor's and the MODU's management, as well as those on board, before implementation.

Bridging documents were developed and agreed to cover the operation and, once approved, were subject to shore management and operator approvals before any amendments were made.

Flare booms and some permanent pipework were installed on the MODU for well testing. Additional equipment would be embarked when required and located on the decks.

This could include such items as a separator unit and temporarily connected hoses utilizing chiksan joints. Isolation valves were provided at strategic locations around the installed equipment.

A high-heat flux would be created at the flare boom and a deluge system was employed to reduce the radiated heat to local equipment. Portable multi-gas detectors were installed at critical locations and tied into the MODU's alarm system, and fire hoses were run out in readiness for emergencies.

However, the additional equipment introduced on board, particularly hoses, had the potential to compromise the emergency escape routes, especially towards the stern of the MODU. Accordingly, additional care was taken in sighting the add-on equipment and the hoses.

Comments:

The MODU's Management were fully aware of the hazards associated with well testing operations.

The arrangements for well testing operations were considered to be adequate.

6.4 Scenario 4: Loss Of Stability

Observations:

The SEDCO 702 was designed as a semi-submersible mobile offshore drilling unit by Earl & Wright and was built by Avondale Shipyards, New Orleans in 1973. The MODU most recently underwent a major upgrade in Singapore in 1991 to 1992.

The MODU was classed by ABS and had the class notation:
＋A1Ⓜ Column Stabilized Drilling Unit ✠ ＋PAS

The MODU was outfitted for drilling in water depths of 1,500 ft (457 m), down to a maximum well depth of 25,000 ft (7,620 m).

The MODU was not winterised and the ABS approved lower design limit for the construction steel was -10°C. The MODU was approved for unrestricted worldwide ocean service, outside of the ice line in both hemispheres.

The SEDCO 702 was constructed around two pontoons, each attached to four columns. The column tops were co-joined by a structural girder arrangement that was surmounted by the main deck, the various deck houses and the derrick structure.

The columns and pontoons were tied together by horizontal and crossbraced tubulars, to complete the main structure. There were two pump rooms, one at the base of the rear column on each pontoon.

Four fully azimuthing thrusters, each rated for 20 tons (18.1 tons) of thrust, were fitted, located at the forward and aft ends of each pontoon, under the respective corner columns. The thrusters were used for tow-assist, positioning and station-keeping.

The mooring system was based around eight anchor windlasses located in pairs at the four corners of the main deck. A separate vertical tubular chain locker in the column underneath served each windlass.

The windlasses had both a band and a back stopping brake, that were rated to a maximum static load capacity of 1,000,000 lbs (454,000 kgs). Each windlass was outfitted with typically 4,300 ft (1,310 m) of three inch (76 mm) anchor chain, connected to a 12-tonne Stevpris high holding power anchor.

The main ballast system consisted of 12 designated ballast tanks in each pontoon. The tanks were interconnected via a piping and manifold system located in each pump room. The valving included a fail-safe sea inlet valve and a manual separation valve (forward tanks from aft tanks).

Each pump room was fitted with two ballast pumps rated at 2,500 gpm at 90 ft head (9.5 m^3/min at 27.4 m head).

Within each pump room, both ballast pumps were physically located in the same compartment and would be susceptible to the same dangers of fire or flooding. Hence, there could not be any guarantee that damage to one pump would not result in damage to the adjacent pump.

This was a design feature of the rig that had been there since built and it was recommended that this potential limitation be accepted as it was.

Each pump room operated independently of the other, servicing only its own ballast tanks and could not be cross-connected. The system was controlled from the control room, with local control in each pump room.

The MODU was also fitted with a Secondary De-Ballasting System (SDBS), consisting of four submersible pumps installed in ballast tanks No.3 (fwd) and No.9 (aft) of each pontoon, which were the largest ballast tanks on board. Each pump was rated at 1,200 gpm at 150 ft head (4.58 m^3/min at 45.7 m head).

The secondary deballasting system was designed to augment the main ballast system in the event that nay of the following occurred:

- Partial loss of buoyancy due to column damage or loss of buoyancy in a single tank,
- Lost suction on the main ballast pumps due to inclined angles,
- Pump room damage due to flooding, cable damage, fire or other incidents.

The SDBS was supplied from the main and the emergency switchboards. However, during a loss of main power, only one submersible pump could be operated at a time.

A bilge system was fitted in each pump room, also operating independently of the other pontoon. Bilge suctions in each watertight compartment were fitted with reach rods for remote operation and flood detection was incorporated into the bilge system.

ModuSpec

The MODU was designed with sufficient buoyancy and stability to withstand the flooding of any one watertight compartment at or below the water level, in all modes of operation.

Stability calculations were performed daily on the computer-based stability program, and a qualified ballast control operator continuously manned the ballast control room.

The need to abandon ship as a result of a lack of stability was considered to be a relatively remote possibility that would only occur following major structural damage. Such damage was considered to be most likely to arise from either a collision or possibly from a structural failure of a pontoon or a column element.

Structural failure of the pontoons or columns was most likely to occur as the result or either fatigue or mechanical damage. Alternatively, it could arise from the blast and/or heat effects of a major well fire (see Scenario 1 for further information).

The MODU was subject to Continuous Hull & Machinery Survey by ABS and was in date for inspections, with no outstanding conditions of Class relating to the main structural members of the hull.

The extensive records of the numerous inspections and surveys were well stored and indexed by the MODU's Planned Maintenance Co-ordinator and were readily available for review.

In the light of these facts and despite the hull being 30 years old, the probability of major or catastrophic structural hull failure was assessed as low. Hulls in that era were manufactured from low carbon mild steels, which still exhibit good fatigue strength and corrosion resistance.

Catastrophic fatigue failures were more likely to occur in vessels manufactured from the higher stress alloy steels, which were developed and widely used in the 1980's and 1990's.

Also, the advances in computer-aided design technology (in particular, finite element analysis techniques) have led to the optimisation of designs through the minimization of scantling sizes, based on analytical results.

The demands for more cost efficient designs have also resulted in an inordinate amount of pressure being applied to designers to use these new optimisation (read: cost reduction) techniques to the maximum extent possible.

The more empirical design approaches used in the 1970's (and before) resulted in greater 'factors of ignorance' being applied to design calculations, resulting in heavier scantling sizes which have proven their ability to stand the test of time.

Although the possibility of fatigue cracking always remained present in marine structures, due to the never ending cyclic loads to which they were subjected, the prospects of such an incident causing a catastrophic failure to this MODU's structure was assessed as slight.

In such an event, it was assessed that adequate arrangements were in place for the mustering of personnel while the damage was being quantified and for the abandonment of the MODU, if required. See further information at Scenario 1 regarding abandonment issues.

If the MODU was listed at a severe angle, emergency escape via vertical ladders and heavy doors and hatches could be impeded.

The Barge Master controlled the close approach of other vessels inside the 500 m exclusion zone around the MODU when on location. Supply vessels were the most likely vessel to enter this exclusion zone, when discharging or back loading cargo.

The MODU was configured with two bulk and fluid loading stations along either side, which were located between the corner columns and the intermediate columns, respectively.

The intermediate columns were protected around the drilling draft waterline with fendering arrangements consisting of vertically mounted baulks of hardwood timber (approximately 12 inches square and 20 ft long) held in steel mounting frames, around the outboard radius of the intermediate columns.

Most of the timber baulks at all four fendering locations were missing from their support frames. Several large tractor tyres, slung from chains attached to the main deck, were positioned in their place.

The current overall fendering arrangements would not be effective in the event of a collision with a supply vessel and should be refurbished.

Comments:

An external event such as a vessel collision might cause damage to the MODU that could lead to serious loss of stability and structural integrity.

Following such events, an assessment of structural damage should be carried out, in addition to assessing the MODU's stability before deciding on further action.

The MODU was in date for its ABS Continuous Hull & Machinery Survey, with no outstanding conditions of Class regarding the structure. The prospect of structural failure due to fatigue or other mechanical means was assessed as slight but nonetheless always possible in a 30-year-old hull.

The MODU's arrangements for dealing with a loss of stability were assessed as adequate.

The fendering arrangements on the intermediate columns should be refurbished.

6.5 Scenario 5: Man Overboard

Observations:

The man overboard procedure was described on the Station Bill and was covered during the safety induction briefing.

A total of 14 life buoys, all in good condition and variously fitted with smoke floats, lights and/or life lines, were available around the main deck. They were held in ready use stowages at the guardrails, to provide immediate support for persons observed to have fallen overboard and to help identify their location in the water.

The MODU was not equipped with a fast rescue boat to facilitate safer recovery of a man overboard casualty. The installation of an FRB was not mandatory. The Flag State Administration designated lifeboat No.4 as the rescue boat as per the current MODU Safety Certificate issued.

The rescue of a person falling overboard could be achieved on board the MODU by the use of the designated rescue boat or possibly via the crane and personnel basket.

The standby supply vessel, utilising the fast rescue boat embarked in the supply vessel, could provide external assistance.

The guardrails around all levels of the MODU were of adequate height and in good condition.

All personnel working over the side or at any height above two meters were required to get an approved work permit, as well as the appropriate PPE, in place prior starting the job.

Man overboard drills were presently undertaken at least once every 60 days.

Comments:

The arrangements to deal with man overboard situations were assessed as satisfactory.

More frequent man overboard drills should be undertaken to practice personnel rescue techniques.

6.6 Scenario 6: Heavy Weather (Hurricane Procedures)

Observations:

A comprehensive set of alert, tracking and abandonment procedures in the event of a cyclone was described in the Transocean Emergency Response Manual.

The extant procedure on board considered specifically cyclone conditions as they pertained to operations in North Western Australia, referring for example, to specific areas of operations and evacuation ports in that region.

This point was minor and the specific nature of the procedure was quite reasonable, as the MODU normally operated in that area of Australia. The overall guidance and advice given by the procedure however, was well orchestrated and could be used without any problem to address an extreme weather event at any location, including the current location.

A concise, detailed Heavy Weather Event plan, specific to the weather conditions at the location, had been developed and agreed between ESSO and Transocean and was contained in the ESSO Bridging Emergency Response Plan for the drilling campaign.

Comments:

The procedures for dealing with heavy weather were assessed to be satisfactory.

Consideration should be given to creating a generic heavy weather procedure for the MODU, which was not specifically related to cyclones or Northern Australian waters.

Note: The ESSO Safety Case Bridging Document for the drilling campaign at the location notes under the heading “Metocean Conditions” at Paragraph 2.2 that “the principal meteorological risk at the drilling location is from the presence of ocean storms”.

This subject however, was not assessed in the Formal Safety Assessment at Section 4 of the same document.

6.7 Scenario 7: Major Well Control (Pre-Blow-Out)

Observations:

The OIM had overall control of the rig and would become involved in the drilling operations, along with the Rig Superintendent (Senior Toolpusher) when a problem arose, that could compromise the safety of either personnel or MODU.

Emergency actions that were required would be discussed with the company representative. The OIM had the final decision for initiating emergency procedures should he consider that personnel (or the MODU) might be put in danger by the drilling activities.

The OIM had received formal training in well control techniques, as had the Rig Superintendent, the Drillers and Assistant Drillers.

The procedures, including well control procedures, for drilling at the location had been developed and agreed between ESSO and Transocean prior to the commencement of the drilling campaign.

This information was contained in a number of documents, including:

- The Bridging Emergency Response Plan,
- The EMDC Floating Drilling Operations Manual, and
- The Drilling Program.

Comments:

The arrangements for well control operations on board the MODU during the drilling campaign were assessed as adequate.

6.8 Scenario 8: Major Equipment Loss

Observations:

The impact of the loss of major equipment on the continued safe operation of the MODU would be assessed in the light of the operational and technical knowledge and experience of the MODU's crew, as well as any relevant third-party specialists who were embarked at the time.

Appropriate action would then be taken in conjunction with weather reports, ongoing drilling activities and other relevant factors.

Comments:

The actions to be taken on board the MODU following major equipment loss, although not specifically documented, were assessed as adequate to ensure that a consistent, safe approach was adopted and all appropriate legislation was complied with.

This conclusion was reached based on an assessment of the overall quality of the management systems in place and on the observed professionalism and knowledge of the crew.

6.8 Emergency Drill

Observations:

One emergency drill was observed during the visit to the MODU. The emergency drill scenario was based on a fire in the sack room. After exercising of the emergency fire was completed, an abandon rig drill was carried out.

The following was noted during the drill:

- The fire alarm/emergency was initiated and additional information was provided via the PA system, including the location of the fire and the selected muster stations.
- Two fire and rescue teams mustered and attacked the fire location using the correct fire fighting equipment.
- The two lead hose men on each team were outfitted in full firemen's outfits and were wearing SCBA.
- The other members of the teams were similarly dressed.
- The injured person was located by the rescue teams, and was then attended to by the casualty team, which was led by the medic. The injured person was given first aid and examination. The stretcher party then took him to the sickbay for further treatment.

Other personnel assembled at their muster stations and nominated muster checkers, utilising the 'Magnoboard' muster indicators and the POB lists. The muster checker mustered the non-essential personnel and provided details of the muster to the Control Center.

As the fire progressed, the OIM gave the signal to prepare to abandon the MODU from the primary muster station and lifeboats Nos.1 and 2. Personnel at the boat station wore life jackets.

The lifeboats were not entered, and thus the time for boarding could not be established.

Comments:

The observed drill was carried out in a calm and professional manner by all hands and the procedures for carrying out emergency drills on board the MODU were assessed as adequate.

The following comments should be considered as areas for improvement concerning the drill scenarios. Consider including the following elements in the emergency drills:

- Disablement of the PA system at the start of the drill and the use of alternative means of communications to alert all personnel and carry out the drill,
- Include the non-availability of the primary muster station and the use of an alternative muster station.
- Conduct an abandonment exercise based on the lifeboats not being available (see Scenario 1, Q 4.4.3 for further information), including a detailed discussion of what alternatives were available, forward and aft.
- Include stretcher-borne casualties in lifeboat boarding drills.
- Test the arrangements for finding and recovering personnel working in not normally accessed locations during an emergency drill.

6.9 Documentation And Training Review

Observations:

Documentation

The MODU's range and depth of documentation was extensive and generally impressive. The management systems put in place via these documentation systems were observed to be effective and comprehensive.

Some issues and discrepancies relating to the status of the Fire and Safety Plans, the Station Bill, the Hazardous Area Plans and the Marine Operations Manual were observed and were noted in the comments section below.

Training

The OIM and his alternate both held OIM licenses and well control subsea certificates. The Barge Master and his alternate both held Master Class 4 licenses. The Chief Engineer and his alternate both held Chief Engineers licenses. The Ballast Control Operators held ballast control licenses. The Integrated Ratings of the marine crew all held coxswain licenses.

All members of the crew were in date for a basic sea survival certificate or approved equivalent and a HUET qualification.

The MODU's Safety and Training Co-ordinator maintained records of the compulsory and non-compulsory training courses, which were both undertaken by and available to, Transocean employees.

Transocean places a great deal of reliance on 'On the Job Training' (OJT) and a significant amount of training material was available on board. The material was available in printed, video and computer based formats.

It covered a broad range of subjects, ranging from safety and technical, to interpersonal relationships, as well as covering both general and company specific outlooks.

Members of the crew actively attended the training programs on board. All of the training material was available to third-party personnel on board and they were encouraged to participate.

Comments

Documentation

The MODU's documentation was assessed as adequate, noting only the discrepancies observed during the assessment, as shown below:

- The Fire and Safety Plans posted in the accommodation were outdated and understood to be under revision by the Transocean shore management office.
- The Fire and Safety Plans posted in the accommodation were observed to be a series of five, plasticised A3 size CAD drawings, showing separate views of the various areas of the MODU and the Fire and Safety symbol sheets. It was more usual to find all of the Fire and Safety Plan drawn onto one A1 or A0 sheet.
- The Fire and Safety Plans posted in the accommodation had not been stamped (in red ink) and signed by the Flag State Administration (or the Classification, on behalf of the Flag State), as was the usual requirement.
- The Fire and Safety Plans located on deck in the red tubular Fire Plan holders were plasticised A1 size drawing sheets which were of a much earlier revision status that the current (unapproved) Fire and Safety Plans in the accommodation. All copies of the Fire and Safety Plans would require bringing into line for content and approval status.
- The Station Bill was outdated and was understood to be under revision by the Transocean shore management office.
- The Hazardous Area Plan consisted of five A3 CAD drawing sheets, marked as Drawings 10A to 10E. None of the copies observed on board were stamped (in red ink) and signed by the Classification, as was required by the ABS Rules. Hazardous Area Plans were on the mandatory list of plans to be presented to the Classification at build and at each occasion of updating, for review and stamping as the current approved version. Those sighted included the copy displayed in the lower accommodation, the photocopies in the currently approved Safety Case, as well as those in the two copies of the Marine Operations Manual. The plans displayed in the lower accommodation, in the Safety Case and in one of the Marine Operations Manuals did not include the sheet entitled Drawing 10E, which was understood to be a recent amendment.
- The Hazardous Area Plan showed the emergency generator battery locker, located outside the emergency generator house, but did not identify it (with cross hatching) as a Zone 1 compartment. API RP 500, Section 11.4.3.1 refers.

- The Hazardous Area Plan did not show the two battery lockers for the radio room, located on the walkway outside the pilot house, port side forward, nor did it identify these lockers as Zone 1 compartments. API RP 500, Section 11.4.3.1 refers.
- Both copies of the Marine Operations Manual would require updating, as they were out of step with each other and also had some drawings missing from each copy.

<u>Training</u>

The review of the training records and first hand observation of the crew at work over the assessment period of seven days, showed that the crew was well trained and aware of their duties and responsibilities.

7. RECOMMENDATIONS

7.1 (See Q 2.3.2)

Crew members can become over-reliant on receiving instructions over the PA or from their direct supervisors during emergency scenarios and drills. Consideration should be given to include the failure of the PA system during some future emergency drills.

7.2 (See Q 2.3.3)

Overall, the existing escape routes on board the MODU were considered to be of a good standard and acceptable.

Recommend that the controlled descent device from the monkeyboard be periodically tested with a man-weighted dummy to ensure that the system/unit is safe and functional.

Personnel who need to enter the columns should receive clear instructions regarding emergency escape routes and procedures, due to the restricted means of egress.

7.3 (See Q 2.3.4)

Paint escape route marking pathways on the deck of the engine room, in black paint, bounded by yellow and with directional arrows in white luminous paint, as per the recommendations for the external walkways.

Relocate the luminous exit signs on the starboard side engine room exit door to a lower level so that they can be seen for a longer period in thick smoke conditions.

Clearly label the external side of all compartment doors with the name of the compartment inside.

The existing escape route markings around the upper deck should be painted with large arrows in white photo-luminescent paint at frequent intervals (within sight of each other) to direct personnel to the nearest lifeboat station. The arrows could also indicate the number of the lifeboat station (painted inside the body of the arrow, in black).

Escape route markings (as indicated above) should be painted on the deck in the engine room.

Place compartment-specific escape route drawings on the inside of each exit door from all normally manned and frequently used compartments throughout the MODU, showing all possible escape routes to the upper deck from that compartment.

7.4 (See Q 2.3.5)

Tenable escape routes from work locations at the aft end of the MODU, to the primary and secondary muster points up forward would not exist, in the event of a blow-out and fire at the well centre. A procedural alternative might be implemented to provide some capacity to overcome this deficiency.

7.5 (See Q 2.3.6)

In order to provide adequate protection for personnel from aft making for the muster stations forward, in the event of a blow-out and fire at the well centre, consideration should be given to installing an arrangement which can provide protection from direct flame impingement, radiant heat and toxic smoke/gas.

Consideration should be given to nominating a Temporary Refuge in the cement unit room and equipping that space appropriately.

Locations and quantities for additional escape breathing units should also be determined at the aft end of the MODU.

Consideration should be given to locating a TEMPSC capability at the stern of the MODU so that 'escape to sea' would be a more assuredly survivable option during a blow-out fire at the well centre, resulting in a 'fire on the sea' scenario.

7.6 (See Q 2.3.7)

To expand on the existing competency level of the crew regarding diverse routes to the muster stations, recommend that emergency drills which include blocked route and casualty stretcher party scenarios be carried out occasionally.

7.7 (See Q 2.3.10)

Adequate material arrangements were in place for the safe and timely evacuation of injured personnel and the medical party personnel were trained in its use. More frequent 'stretcher case' exercises might be undertaken, perhaps with a weighted dummy instead of live a volunteer.

ModuSpec

7.8 (See Q 3.4.1)

No suitable Temporary Refuge currently exists at the aft end of the MODU. A Temporary Refuge should be nominated and outfitted as required.

7.9 (See Q 4.3.3)

Abandonment scenarios, other than by lifeboat, should be included during emergency drills and exercises to ensure that the personnel were familiar with the full range of abandonment arrangements available to them.

In particular, abandonment scenarios from the stern of the MODU should be exercised, to make the crew aware of the importance of quickly making their way forward (if possible) during a blow-out and fire at well centre.

The priority of abandonment arrangements under a range of conditions should also be discussed and evaluated during emergency drills.

7.10 (See Q 4.3.4)

Other than those issues noted at the responses to Q 2.3.4, Q 3.4.4 and Q 4.3.3, access to the means of abandonment were considered to be satisfactory, due to the duplication of abandonment points and the diversity of access routes.

7.11 (See Q 4.3.5)

All four 'escape to sea' ladder heads should be painted a distinctive colour, which was different from the remaining below deck inspection ladder heads.

Consideration should be given to labelling all other over the side ladders as 'Not Escape to Sea' or similar wording, so that personnel do not inadvertently use the wrong ladder in an emergency.

The solid steel bar type rungs on the upper section of each 'escape to sea' ladder were showing signs of corrosion, some rungs appeared to be heavily encrusted with rust products, making objective assessment of the remaining solid metal difficult. The rungs should be de-scaled, assessed and either replaced or re-preserved, as necessary.

At the starboard aft corner of the MODU, the escape walkway deck marking (black with yellow stripes) did not take an evacuee to the 'escape to sea' ladder head. The walkway deck marking curves away forward about three meters from the ladder head. An extension to the walkway marking should be painted in which leads directly to the ladder head.

Each 'escape to sea' ladder had a tally plate adjacent to the ladder head, which indicated that it was an 'escape to sea' ladder. The tallies were held in steel brackets that were welded to the top of the guardrails next to the ladder head.

Due to their placement, the tallies were only readable when approaching the escape ladder from one direction. If the tallies and their housing brackets were relocated to the outer perimeter of the backscratcher at the ladder head, they would be more visible to personnel approaching the ladder from both directions.

Note: The life-rafts fitted on board, were rated for a stowage height of 25 m, which makes them adequate for drop deployment over the side when the MODU was ballasted down to drilling draft (as would be the case for this well blow-out and fire scenario). The life-raft casing could break up and destroy the contents, if it was deployed from the main deck when the MODU was at the transit draft. At that draft, the life-raft would be stowed between 31.6 and 33.8 m above the water (depending on whether the transit draft was at the 19 ft minimum or the 26 ft maximum draft, per the Marine Operations Manual, Vol.1).

7.12 (See Q 4.3.8)

The TEMPSC (lifeboat) arrangements in place were adequate, save under the conditions as outlined at Q 4.3.3.

7.13 (See Q 4.3.9)

Specific factors that could affect the ability to launch the lifeboats or to increase the risk in using them could be present under certain defined circumstances (see the observations at Q 4.3.3 and Q 4.3.6 above), which could affect the ability to launch the lifeboats and/or would increase the risk in using them. See also the specific comments at Q 4.3.3 and Q 4.3.6 above.

7.14 (See Q 4.3.10)

The life-raft arrangements were adequate for an 'escape to sea' abandonment from the drilling draft. However, see the observations and comments at Q 4.3.3 regarding the survivability of life-rafts during a well blow-out and fire scenario.

7.15 (See Q 4.3.11)

The arrangements for entering the sea directly, where no alternative was available, were considered to be adequate. However, see the other comments regarding the marking and maintenance of the 'escape to sea' ladders at Q 4.3.5.

7.16 (See Q 4.3.12)

Evacuation and escape to the sea in life jackets and/or life-rafts represents the least effective means of survival after a blow-out and fire at the well centre, especially in the presence of smoke, gas and flames.

Evacuation and escape to the sea in TEMPSC represents a much more effective means of survival during such an incident.

Evacuation and escape from the MODU by helicopter or supply boat represents the most effective means of survival after a blow-out and fire at the well centre.

7.17 (See Q 5.3.1)

Given the water temperature recorded at the location, the in-water survival time at the location for the time of year would be less than four hours.

The use of exposure suits was recommended as it conveys significant advantages in terms of in-water survival times, even during the summer months, and should be considered for drilling operations in southern Australian waters.

7.18 (See Q 5.3.7)

To facilitate the aftercare of survivors, the provision of aftercare equipment from the supply base ashore should be considered so that equipment was immediately available for use by vessels taking part in rescue operations.

Such equipment would include, but not be limited to, dry clothing, blankets, food and drink, etc.

7.19 (See Scenario 3 C)

The arrangements for fighting a fire in the accommodation and the main galley were adequate and in good order, with the exception of the main galley electrical isolation switches.

Despite the proximity of other electrical isolation means for the galley equipment, a separate master isolation switch should be installed outside of the galley to allow electrical isolation from outside the compartment, in the event of a fire.

7.20 (See Scenario 4)

An external event such as a vessel collision might cause damage to the MODU that could lead to serious loss of stability and structural integrity. Following such events, an assessment of structural damage should be carried out, in addition to assessing the MODU's stability before deciding on further action.

The MODU was in date for its ABS Continuous Hull & Machinery Survey, with no outstanding conditions of Class regarding the structure. The prospect of structural failure due to fatigue or other mechanical means was assessed as slight but nonetheless always possible in a 30 year old hull.

The MODU's arrangements for dealing with a loss of stability were assessed as adequate.

The fendering arrangements on the intermediate columns should be refurbished.

7.21 (See Scenario 5)

The arrangements to deal with man overboard situations were assessed as satisfactory.

More frequent man overboard drills should be undertaken to practice personnel rescue techniques.

7.22 (See Scenario 6)

Consideration should be given to creating a generic heavy weather procedure for the MODU, which was not specifically related to cyclones or Northern Australian waters.

ModuSpec

7.23 (See 6.8 Emergency Drill)

Consider including the following elements in the emergency drills:

- Disablement of the PA system at the start of the drill and the use of alternative means of communications to alert all personnel and carry out the drill,
- Include the non-availability of the primary muster station and the use of an alternative muster station.
- Conduct an abandonment exercise based on the lifeboats not being available (see Scenario 1, Q 4.4.3 for further information), including a detailed discussion of what alternatives were available, forward and aft.
- Include stretcher borne casualties in lifeboat boarding drills.
- Test the arrangements for finding and recovering personnel working in not normally accessed locations during an emergency drill.

7.24 (See 6.9 Document And Training Review)

The MODU's documentation was assessed as adequate, noting only the discrepancies observed, as shown below:

- The Fire and Safety Plans posted in the accommodation were outdated and understood to be under revision by the Transocean shore management office.
- The Fire and Safety Plans posted in the accommodation were observed to be a series of five, plasticised A3 size CAD drawings, showing separate views of the various areas of the MODU and the Fire and Safety symbol sheets. It was more usual to find all of the Fire and Safety Plan drawn onto one A1 or A0 sheet.
- The Fire and Safety Plans posted in the accommodation had not been stamped (in red ink) and signed by the Flag State Administration (or the Classification, on behalf of the Flag State), as was the usual requirement.
- The Fire and Safety Plans located on deck in the red tubular Fire Plan holders were plasticised A1 size drawing sheets which were of a much earlier revision status that the current (unapproved) Fire and Safety Plans in the accommodation. All copies of the Fire and Safety Plans would require bringing into line for content and approval status.
- The Station Bill was outdated and was understood to be under revision by the Transocean shore management office.

- The Hazardous Area Plan consists of five A3 CAD drawing sheets, marked as Drawings 10A to 10E. None of the copies observed on board were stamped (in red ink) and signed by the Classification, as was required by the ABS Rules. Hazardous Area Plans are on the mandatory list of plans to be presented to the Classification at build and at each occasion of updating, for review and stamping as the current approved version. Those sighted included the copy displayed in the lower accommodation, the photocopies in the currently approved Safety Case, as well as those in the two copies of the Marine Operations Manual. The plans displayed in the lower accommodation, in the Safety Case and in one of the Marine Operations Manuals did not include the sheet entitled Drawing 10E, which was a understood to be a recent amendment.
- The Hazardous Area Plan showed the emergency generator battery locker, located outside the emergency generator house, but did not identify it (with cross hatching) as a Zone 1 compartment. API RP 500, Section 11.4.3.1 refers.
- The Hazardous Area Plan did not show the two battery lockers for the radio room, located on the walkway outside the pilot house, port side forward, nor did it identify these lockers as Zone 1 compartments. API RP 500, Section 11.4.3.1 refers.
- Both copies of the Marine Operations Manual would require updating, as they were out of step with each other and also have some drawings missing from each copy.

8.0 CONCLUSIONS

The report included detailed observations and comments generated in response to the question sets contained in the EERA Guidelines document.

The observations and comments provide an explanation of, and a basis for, the recommendations for improvement that had been made herein.

The overall conclusion was that the emergency escape, evacuation and rescue arrangements in place on SEDCO 702 were satisfactory for its current operations and location, except as noted in the recommendations at Section 7.

Reports of this nature necessarily focus on the negative, in order to provide an objective assessment of certain aspects and capabilities of the MODU. Positive improvements are always the goal of this process. However, the reader can be left with a skewed impression of the MODU as a whole.

To restore some equilibrium, it should be noted that (although it was the scope of this assessment) the overall impression of the SEDCO 702 was of a well found and well maintained offshore drilling unit, which was manned and operated by a well trained, motivated and professional crew.

We wish to extend our thanks to the personnel of the SEDCO 702 for their high level of assistance, knowledge, professionalism and competency throughout this EERA assessment.

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ExxonMobil Development Company
Drilling

Service Vessel Inspection Checklist

Vessel:	**M.V. "Pacific Frontier"**
Our Job Ref.:	**850-038/03-45**
Inspection Date:	**5th February 2003**
Inspection Site:	**BARRY BEACH MARINE TERMINAL**
Surveyor(s):	**H. Emamjomeh**

Source file (LAN): i:\Emdc\Drilling\Technical\OIMS\forms\service vessel checklist.doc

Executive Summary

*The **Service Vessel Inspection Checklist** was prepared to provide:*
- *assistance in inspecting service vessels before and during charter hire periods, and*
- *a systematic basis for documenting the results of these surveys.*

This document also formalizes the inspections in accordance with Operating Integrity Management System (OIMS) objectives.

This booklet is divided into three sections:
- Vessel description and desired specifications
  The vessel description section provides an overall description of the vessel and its equipment. Where appropriate, example specifications are noted.
- Acceptance test inspection checklist
  The acceptance test inspection section identifies tests and verifications that should be considered prior to placing the vessel under charter.
- Periodic in-service inspection checklist
  The in-service inspection section provides an itemized checklist for use during inspections after the vessel is placed on hire.

The acceptance test and in-service inspection checklists are based on current industry practice so some of the items may not be applicable to every service vessel in the fleet because vessels only have to comply with Rules and Regulations in effect at the time of construction unless local authorities dictate otherwise. In addition, requirements for some marine safety equipment are based on vessel size and gross tonnage.

The Service Vessel Inspection Checklist booklet is intended to be a <u>guide</u>. The actual scope of the inspection should be based on the type service, length of the charter, the area of operation, and past experience. The final decision rests with the operating management.

Table of Contents

1. Introduction

The Service Vessel Inspection Checklist provides assistance in inspecting service vessels before and during charter hire periods.

This booklet is divided into three sections:

- *Vessel description and desired specifications*
- *Acceptance test inspection checklist*
- *Periodic in-service inspection checklist*

The vessel description section provides a place to enter a general description of the vessel and equipment for reference during the inspections. Desired specifications are also noted in the last column on every page. Particular attention should be paid to areas where the vessel fails to comply with specifications - both from an operational standpoint and from a documentation standpoint.

The Desired values listed in this section are an example. Vessel specifications will vary in other areas so appropriate changes should be made.

The acceptance test and in-service inspection checklists are intended to confirm that essential documentation is available on the vessel and that critical equipment is operational and properly maintained. The Checklists are based on current industry practice so some of the items may not be applicable to every service vessel in the fleet because vessels only have to comply with Rules and Regulations in effect at the time of construction unless local authorities dictate otherwise. Furthermore, requirements for some marine safety equipment are based on vessel size and gross tonnage (load carrying capacity). The Cargo Ship Safety Equipment Certificate for the vessel is intended to verify that the vessel's safety equipment meets applicable standards.

Note: The date of the next dry-docking inspection should be checked to determine if it falls within the Charter Period. If a scheduled inspection is due within the Charter Period, this subject should be addressed in the Charter Party.

2. General Vessel Description

Name of Vessel	M.V. PACIFIC FRONTIER
Type of Vessel	TUG AND SUPPLY VESSEL SF EO OILREC
Call Sign	HP 8709
Date Constructed	1987
Ship Yard	ULSTIEN HALLO, NORUEGA
Class	DNV – 1A1 Supply Vessel, SF, Tug, EO, Oilrec
Flag	PANAMA
Port of Registry	PANAMA
Owner	
Name	SHANGHAI BUREAU OF MARINE GEOLOGICAL SURVEY
Address	
Telephone No.	
Fax No.	
Agents	
Name	SWIRE PACIFIC OFFSHORE OPERATIONS PTE. LTD.
Address	300 BEACH ROAD # 12-01 THE CONCOURSE, SINGAPORE 199555
Telephone No.	6294 3088
Fax No.	6294 3211
Operator (If other than Owner)	
Name	______________________
Address	______________________
Telephone No.	______________________
Fax No.	______________________

Vessel Particulars

		Actual	**Desired**
Length, Overall, ft.		66.60 m	190 - 225
Between perpendiculars, ft.		56.40 m	
Beam, Overall, ft.		14.50 m	40 - 52
Molded, ft.		14.50 m	
Depth, ft.		7.40 m	16 - 24
Draft, ft	Winter Loadline	6.10 m	
	Summer Loadline	6.35 m	14 - 20
Freeboard, ft	Winter Loadline	1183 mm	
Summer Loadline		1051 mm	
Min. Stern Freeboard (@ maximum load condition), ft.		1.05 m	2
Displacement, MT		3566	
Lightship, MT		1705	
Total Deadweight, MT		1861	850 min.
Gross Tonnage		1597	
Net Tonnage		604	
Arrangements			
Stack Location		INA	
Engine Room Location		INA	
Winch Control Stations		Bridge Rear Console	
Cargo Deck Dimensions, ft. x ft.	(34.8m x 11.7m)	407.16 m^2	30 x 100
Double bottom tanks around:			
Engine Room		1. No. 2 Wing Tank 2. DB No. 4 3. DB No. 5 4. No. 7 Centre Tank	Req'd.
Bulk Cargo Tanks		No. 7 CentreTank	Req'd.
Steering Engine Space		-	Req'd.
Liquid Mud Tanks		1. No. 2 Wing Tank 2. DB No. 4(partially)	Req'd.
Accommodation	Crew/Passenger	10 x 1 Berth ,1 x 2 Berth, 2 x 6 Berth	

Propulsion

	Actual	Desired
Main Propulsion		
BHP Continuous -	2 x 6120 BHP @ Max. continuous RPM 750	6140
_ BHP Intermittent	INA	
Bollard Pull (at zero speed of advance)		
Ahead, Kips BP Continuous	147 T	165 T
Astern, Kips	INA	
Propellers		
Twin/Single Screw	Twin	Twin
Fixed/Controllable Pitch	2 x Ulstern variable pitch	
Kort Nozzle	Two	
Twin/Single Rudder –	2 x ConventionalSplit Operation	Twin
Speed		
Maximum, kts	16.0 Knots	
Cruising, kts	12.0 Knots	
Bow Thruster		
BHP Continuous -	1 x 800 BHP developing 10 tonne thrust	500
	1 x 600 BHP retractable,developing 6.6 tonne thrust	10
Thrust, kips	10T – 6T	
Fuel Consumption		
Maximum speed, Kts @ MT/Day	38 M/T	
Cruising, Kts @ MT/Day	12 M/T	
Standby (port/anchored on location), MT/Day	1 M/T	

Cargo Capacity

	Actual	Desired
Fuel (for drilling rig), gallons	962 m^2(Total)	75000 gal
Fuel (for own consumption), gallons	———	
Drill Water, Bbls.	596 m^3	3000 Bbl
Potable Water, Bbls.	528 m^3	1000 Bbl
Lube Oil, Bbls.	22480 Ltrs.	
Maximum Deck Load, MT	650	650 (Min.)
Max. Below Deck Load with Max. Deck Load, MT	INA (**See Note**)	
Bulk Capacity (total), ft^3.	8000 $Ft.^3$ in Four Pots	4000
No. Bulk	4	
Refrigerated Stores		
Cold Storage, ft^3. _Ship's use only	Freezer 8.4 m^3	200
Cool Storage, ft^3. – Ships use only	Cooler 8.6 m^3	200
Transfer Rates		
Fuel, Bbl/Hr. with 100 ft. head	1 x 250m^3/hr. @ 90m head	300
Potable Water, Bbl/Hr. with 100 ft. head	1 x 250m^3/hr. @ 90m head	300
Drill Water, Bbl/Hr. with 100 ft. head	1 x 200m^3/hr. @ 150m head	300
Bulk, cu. ft./hr.	1 x 100m^3	20

Hose/Coupling	Size, in.	Male/Female
Fuel	4 in.	Camlock/Female
Drill Water	4 in.	Camlock/Female
Portable Water	4 in.	Camlock/Female

Additional:

Mud Water	4 in.	Camlock/Female
Bulk	5 in.	Camlock/Female

Note:
Deck Load Density: **5 t per m^3**

Navigation - Communication Equipment

Navigation Equipment	Manufacturer	Desired
Magnetic Compass	JCK Rohn & Son AS	Req'd
Gyro Compass	Robertson AP 9	Req'd
Automatic Pilot	Robertson AP 9	Req'd
Radar	Furuno/FR 810 DA &Furuno FR 1510 Mk 2	Req'd
Direction Finder	Furuno FD 525	Req'd
Fathometer	Furuno FE-860	Req'd
Decca Navigator	N/A	
Wind Sensor	MK Mailing Kontrol	
Loran	N/A	
Communication Equipment		
Ship-to-shore Communications	SAILOR	Req'd
SSB	SAILOR	Req'd
VHF Radio	SAILOR	Req'd
Portable VHF Radios Number 3	Motorolla	Req'd 2
Internal Communication	Phonico	Req'd
Fax	Nil	
Communication	GMDSS	
Weather (fax)	Furuno Fax 208 Mk 2	
International Signal Flags	Yes	
Ship-to-Helicopter	Sailor	
Emergency Beacon	Kannad (See Note)	

<u>Note:</u>

Hydrostatic release unit expires at December 2003.

Anchor Handling System (Rig Mooring)

	Actual	Desired
Chain Lockers		
Number	2	
Capacity, ft.	122.0m^3	3000
Chain Size, in.	3 in.	3.25
Self Tiering	See note	Req'd
Chain Wildcats		
Chain Size, in.	3-3.25	3.25
Max. Pull, Kips	INA	
Max. Payout Load, Kips	INA	
Anchor Handling Winch	2	
Bare Drum Diameter, in.	INA	
Full Drum Diameter, in.	INA	
Width Between Flanges, in.	INA	
Drum Capacity, ft.	1100m	3000
Wire Rope Diameter, in.	74mm	3.0
Line Pull at stall		
Bare Drum, Kips	250	350
Mid Drum, Kips	INA	
Full Drum, Kips	INA	
Brake Capacity, Kips	375	
Brake Type(s)		
Drum	DRUM	
Disk	-	
Water	-	
Regenerative	-	

Note:

No mechanical means fitted for the purpose of tiering chain in chain locker.

Anchor Handling System (cont'd)

	Actual	Desired
Towing Winch	1	
Bare Drum Diameter, in.	INA	
Full Drum Diameter, in.	INA	
Width between Flanges, in.	INA	
Drum Capacity, ft.	1400m	3000
Wire Rope Diameter, in.	74mm	3.0
Line Pull at stall		
Bare Drum, Kips	250	200
Mid Drum, Kips	INA	
Full Drum, Kips	INA	
Brake Capacity, Kips	375	
Brake Type(s)		
Drum	DRUM	
Disk	INA	
Water	INA	
Regenerative	INA	

Anchor Handling System (cont'd)

	Actual	Desired
Third Winch (if applicable)	_____	
Bare Drum Diameter	_____	
Full Drum Diameter	_____	
Width between Flanges	________	
Drum Capacity. Ft.	_____	
Wire Rope Diameter	_____	
Line Pull at stall	_____	
Bare Drum, Kips	_____	
Mid Drum, Kips	_____	
Full Drum, Kips	_____	
Brake Capacity, Kips	_____	
Brake Type(s)	_____	
Drum	_____	
Disk	_____	
Water	_____	
Regenerative	_____	

Anchor Handling System (cont'd)

	Actual	Desired
Sharks Jaw/Karm Fork	2	Req'd
Pelican Hooks	2	Not permitted
Deck Tuggers		
Number	2	
Max. Pull, Kips	8T	
Pendant Line Storage Reels		
Number	2 X 6T	
Capacity, ea.	1000m	
Wire Rope Diameter, in.	70mm	
Stern Roller		
Length, ft.	3.66m	8
Diameter, ft.	2.5m	5 (Min.)
Powered	Not powered	
Towing Capability	INA	Req'd
Pop-Up Bollards/Guide Pins	4	Req'd

Service Vessel Mooring System

	Actual	Desired
Maximum Water Depth, ft.	Port 20/ Stbd 20 Shackles available	400
Mooring Line		
No. Lines	5 in use and 4 spare	
Type	Polypropylene plaited	
Diameter, in.	64 mm	
Length, ft.	Various	
Anchors		
Type	2 x Admiralty (Stockless)	
Weight, kips	1290 Kg	

Note:

Spare anchor weight : 1933 Kg.

Life Saving Equipment

The Desired values shown in the last column are based on requirements contained in the SOLAS 1974 Requirements and 1983 Amendments.

		Actual	Desired
Life Rafts: Number		1	2
Capacity, ea. (total = on-board complement)		20	
Manufacturer		Ulstein Halto 191 (Aug 1986)	
Totally/Partially Enclosed		Partially enclosed	
Type Release Hook			
	On-load		
	Off-load		
	On/Off-load	Yes	Req'd
Location	boat # 1	Starboard	
	boat # 2	N/A	
Life Rafts: Number (each side = on-board complement)		5	
Capacity, ea.			
Location	raft # 1 Stbd Fwd.	1 x 12 (Viking)	
	raft # 2 Port Aft. Lower	1 x 10 (Viking)	
	raft # 3 Port Fwd.	1 x 20 (Viking)	
	raft # 4 Port Aft. Upper	1 x 15 (Viking)	
	raft # 5 Stbd Aft.	1 x 12 (Viking)	
Scramble Net		2	Req'd
Man-Overboard Boat (Rescue Boat)			Req'd
Inflatable/Rigid		Rigid hull and foam buoyancy	
Davit/Crane launched?		Davit	
Life Buoys			
Number (total)		8	
(Total number depends on vessel length)			
Number with self-igniting lights		4	min. 50%
Number with self-activating smoke signals		2	min. 2
Survival (Exposure) Suits			
Number		3	min. 3 per lifeboat
Manufacturer		Crew Saver	

Type	<u>Survival suit</u>

Fire Fighting Equipment

	Actual	Desired
Number of fire pumps	3	
Location of pumps	2 in Engine Room & 1 (Emergency) in Steering gear space.	
Number and size of fire monitors	N/A	
Location of monitors	N/A	
Fire Detection and Alarm System	1	
Location of Fire Alarm Panel	Bridge	
Type of Extinguishing Medium (Halon/CO_2 /Water)	Halon	
Main Engine Room	Fixed Halon & Portable from fire ext.	
Steering gear space	Portable Dry Powder	
Accommodations	Portable Water, Dry Powder	
Paint Lockers	Portable CO_2, Dry Powder	
Galley	Portable Dry Powder & Fire Blanket	
Bridge	Portable CO_2	

Emergency Power System

Emergency generator capacity, kw	88 Kw
Physically separated from main generator	Yes
Location	"A" Deck (Below Bridge Deck)

Personnel

	Actual	Desired
Crew Complement (On-board)	10	
Master		
Name	Bill Reay	
Nationality	Australian	
Certificate of Competency for position	Master Class 2--AYO1807	
Experience in position, years	17 Years	
Mate		
Name	Darren Dix	
Nationality	Australian	
Certificate of Competency for position	Master Class 3 – AWOOO71	
Experience in position, years	6 Years	
Chief Engineer		
Name	Peter Isted	
Nationality	Australian	
Certificate of Competency for position	Engine – Class 1 - 3544	
Experience in position, years	13 Years	
Able-Bodied Seaman (A/B) – IR		
Name	Ronald Gulliford	
Nationality	Australian	
Certificate of Competency for position	AB - 7732	
Experience in position, years	8 Years	
2nd Engineer (1st Engineer)		
Name	Peter Caple	
Nationality	Australian	
Certificate of Competency for position	Engineer Class 2 – AYO 3474	
Experience in position, years	10 Years	

Personnel (Cont'd)

		Actual	*Desired*
Bosun			
	Name	________	
	Nationality	________	
	Certificate of Competency for position	________	
	Experience in position, years	________	
Assistant Engineer			
	Name	________	
	Nationality	________	
	Certificate of Competency for position	________	
	Experience in position, years	________	
Other	- 2nd Officer		
	Name	Darren Smith	
	Nationality	Australian	
	Certificate of Competency for position	Master Class 4 – AWOO154	
	Experience in position, years	6 Years	
Other	- (Cook)		
	Name	Dave Dixon	
	Nationality	Australian	
	Certificate of Competency for position	120067/87	
	Experience in position, years	4 Years	
Other	- (IR)		
	Name	Dave Baker	
	Nationality	Australian	
	Certificate of Competency for position	A 1001178	
	Experience in position, years	9 Years	

Personnel (Cont'd)

Other - (IR)	Actual	Desired
Name	Barry Willis	
Nationality	Australian	
Certificate of Competency for position	A 100478	
Experience in position, years	9 Years	

Other - (IR)		
Name	Laurie Sheridan	
Nationality	Australian	
Certificate of Competency for position	A 101072	
Experience in position, years	4 Years	

3. Service Vessel Acceptance Test Inspection Checklist

The following **Service Vessel Acceptance Test Inspection Checklists** are intended to provide a basis for evaluating the suitability of the service vessel for the intended service. Any deficiencies noted during this inspection should be discussed with the Contractor and a schedule should be agreed upon to remedy all outstanding items.

Check lists are provided for:

- Documentation
- Drawings
- Emergency Response Plans
- Stability
- Cargo Handling
- Anchor Handling Equipment
- Service Vessel Mooring System
- Life Saving Equipment
- Fire Fighting Equipment
- Emergency Power System
- Communication - Navigation Equipment
- Main Propulsion/Steering
- Bilge System
- Miscellaneous
- Personnel

The type service, length of service, area of operation and past experience all influence the level of the required inspection prior to initiating the vessel charter. The final decision rests with operating management.

Documentation

- *Confirm that the following documentation is on board. Where applicable, note the issuing authority and the expiration date.*

Certificates	Issued By	Expiry Date
Certificate of Registry	Marina Mercante Nacional – Panama	9-10-2004
SOLAS	INA	
International Loadline	Det Norske Veritas	14-02-2006
Bollard Pull	Det Norske Veritas	25-02-2006
Cargo Ship Safety Construction (Valid 5 years)	Det Norske Veritas	25-02-2006
Cargo Ship Safety Equipment (2 years)	Det Norske Veritas	20-08-2004
Cargo Ship Safety Radio Telephone (2 years)	Det Norske Veritas	10-10-2003
Cargo Gear Safety	As per owner's log	Various dates
Deratting	N/A	
Hull Insurance	Benfield Greig (P. No. 7658898 M5574.	18-08-2003
Fuel Meter Calibration	INA	
Certificate of Fitness	INA	
Booklets		
Minimum Safe Manning Document	DNV	
Intact Stability Booklet	DNV	
Stability Letter	INA	
Logs		
Company (Owner) Log		Yes
Engine and Deck Log		Yes
Masters Standing/Night Order Book		Yes
Oil Record Book		Yes
Weekly Fire/Boat Drill (if not entered in the Deck Log)		Yes

Additional:

IOPP	DNV	28-02-2006

Surveys	Issued By	Expiry Date
Annual Classifaction Survey Report	DNV	20-01-2003
Annual Load Line	DNV	20-01-2003
Hull & Equipment	INA	
Main Engine	INA	
Auxiliary Engine	INA	
Steering Engine	INA	
Propeller Shaft	INA	
Cranes	INA	
CO_2/Halon System	Amdac/Darwin	Issued on 25-08-2001
Portable Extinguishers	Amdac/Darwin	Issued on 25-08-2001
Navigation Systems	N/A	
Bridge Systems	N/A	
Date of Next Dry Docking		Last done July 2002
Are all certificates posted?		Yes

Drawings

- Verify that the following drawings are on board:

General Arrangement	
Profile	☑
Main Deck	☑
Hold Plan	☒
Tween Deck	☒
Bridge	☒
Tank Drawings	☑
Capacity Drawing	☑

Emergency Response Plans

- Verify that the following emergency response plans are available on the vessel:

Fire	☑
Abandon ship	☑
Damage/Collision	☑
Man-Overboard	☑
Oil Spill	☑

- Review emergency response plans for content and consistency with emergency response plans ☑
- Confirm that the Station Bill is Posted ☑
- Confirm that the Chain of Command is Posted and understood by the crew ☑

Stability

Review Stability Booklet	☑

All vessels will have a stability booklet, but U. S. Flag vessels also have a stability letter which states the maximum deck load, the maximum center of gravity of the deck load, and the maximum resulting below deck load. Often, the stability letter guidance is all that is used by Masters on these vessels and true stability calculations are not made on a routine basis.

Review the Lightship weight and center of gravity records in the Stability Booklet plus all changes to lightship. Do results appear reasonable and accurate?	☑
Confirm that a KG vs. draft or GM vs. draft curve is onboard	☑
Confirm that stability calculations are made prior to each loadout	☑
Review Stability Letter, if applicable	INA
Confirm Stability Letter posted, if applicable	INA
Verify that tank sensor readings compare with tank soundings (fuel, drill water, potable water, ballast, bulk material) ☐ - See note	
Check condition of coaming on all exterior doors, windows, and hatches	☑
Confirm coaming soft, pliable	* ☑
Confirm that coaming is not cracked	☑
Confirm that coaming has not been painted	* ☑
Verify that all hydraulic watertight doors operate properly and closure surfaces are free of paint	☑
Confirm that watertight doors and hatches are kept closed	** ☑
Verify that cross flooding instructions are available	☑
Confirm that damage/collision procedures are in place	☑

Note:

- Manual sounding is used for Fuel, Ballast and Bulk Material Tank.
- Sounding pipes are in the process of being fitted in Drill Water and Portable Water Tanks
*** A few of the rubbers were noted to be paint stained.**
**** Vessel in port and water tight doors were in open position.**

Cargo Handling

Confirm that all loading/discharge lines have blanking caps	☑
Confirm that loading/discharge line caps are in place	☑
Confirm that hose connections are quick release design (Camlock design)	☑
Verify that bulk system dryers (if required) are operational	**N/A**
Confirm that the vessel has suitable appliances and fittings for securing cargo; confirm that certificates are current	☑
Verify that a cargo handling, securing, and lifting manual is onboard	**N/A**
Confirm that procedures are in place for handling non-containerized cargo	**N/A**
Confirm that hazardous cargo procedures are in place	☑
Confirm that cargo decks and walk ways are covered with non-skid material	☒
Verify that rigging and lifting gear has been inspected and tested	☑

Determine transfer rates for:

Fuel	1 X 250m^3/hr. @ 90m head
Drill Water	1 X 200m^3/hr. @ 150m head
Potable Water	1 X 250m^3/hr. @ 90m head
Bulk	1 X 100m^3/hr

Anchor Handling Equipment (Rig Mooring)

Confirm that the winch control console is located so that operator has a clear, unobstructed view of the deck	☑
Spool out work wire and observe wire rope condition (number of broken wires, kinks, shackle damage, etc.)	☐
Operate lower winch drum (lower anchor over stern, recover anchor)	☐
Operate from primary winch control station and back-up control station	
Observe temperature and amperage to ensure that the winch is operating within design limits	
Operate upper winch drum (lower anchor over stern, recover anchor)	☐
Operate third winch drum (if applicable - lower anchor over stern, recover anchor)	☐
Determine length of work wire	☐
Confirm that the vessel has a Shark's jaw or Karm Fork	☑
Confirm that Pelican Hooks are not on board	***On Board*** - ☐
Raise and lower Shark's jaw/Karm Fork	☑
Confirm that the vessel has pop-up bollards/guide pins	☑
Raise and lower pop-up bollards/guide pins	☑
Determine if the stern roller is powered	***Not Powered*** - ☐
Operate stern roller, if applicable	***N/A*** - ☐
Confirm all shackles are forged	☑
Confirm chain lockers are self tiering by stowing chain -	***See Note*** ☑
Verify stated chain locker capacity	☐
Check condition of grapples, chain chasers	☑
Operate pendant reels (if available)	☐
Operate tuggers	☑

Note:

No mechanical means are used in Chain Locker for tiering.

Service Vessel Mooring System

Operate winch #1, lower anchor to the sea floor, recover anchor ☐

Operate winch #2, lower anchor to the sea floor, recover anchor ☐

Operate winch #3, lower anchor to the sea floor, recover anchor ☐

Observe condition of vessel's mooring lines ☑

Check to ensure that the clutch on the windlass can be engaged and disengaged without difficulty ☑

Life Saving Equipment

Life Boats ***One Life Boat on board***

Verify that one lifeboat is located on the port and starboard sides of the vessel ☐

Vessels less than 85 M in length may substitute life rafts for lifeboats

Verify/confirm that all life boats are:

Totally enclosed *Partially enclosed* ☐

Self-righting ☒

Fire-protected (with sprinkler system) ☒

Equipped with on-load release hooks or off-load release hooks with on-load backup (off-load release hooks with on-load backup) ☐

Motor propelled ☑

Equipped with emergency lighting inside and stroble light outside ☒

Equipped with radar transponder/EPIRB ☑

Equipped with a permanently installed VHF radio ☒

SOLAS requires 3 VHF radios onboard the service vessel if the gross tonnage is 500 tons or greater, 2 VHF radios if the gross tonnage is between 300 and 500 tons.

If radios are not permanently installed inside the lifeboats, the radios must be located at each lifeboat embarkation station

Equipped with a full tank of fuel ☑

Equipped with towing harness ☑

Equipped with signal flares, potable water, flashlight, first-aid kit, food, fire extinguisher and sea anchor ☑

Equipped with breathing air bottles charged to pressure specified in operating manual ☒

Equipped with a permanently installed trickle charger for the battery ☒

Properly maintained:

All above equipment is operational **N/A** ☒

Windows clean and not broken ☑

Door and window Gaskets intact and undamaged ☑
Placards with operating instructions located in each lifeboat ☑
Engine starts with primary means and with back-up procedure ☑
Steering wheel marked with proper centre and turns freely ☑
Engine pressure and temperature gauges functional and stable when lifeboat engine started N/A ☐
Falls operated and in good condition ☐
Sprinkler system functions and covers the entire boat N/A ☐
Bilge pump functional ☑
Steering system functions under power ☐
Lower each lifeboat down to water and recover

Life Rafts

Verify/confirm:

Current expiration date for each life raft ☑
Sufficient life rafts are located on each side of vessel to accommodate entire crew ☑
Sea painters are connected with weak link and hydrostatic tie-down releases ☑
Davit lines connected to rafts N/A ☐
No damage to life rafts ☑

Escape Routes

Verify that two escape routes are available from every normally manned space ☑

Survival (Exposure) Suits

Confirm that a suit is available for each member of the rescue boat crew***(See Note)*** ☑
Confirm that three suits are available for each member of the lifeboat crew ☑
Not required if lifeboats are totally enclosed, and
Not required if lifeboats were constructed before July 1, 1986
Confirm that suits are not damaged or torn ☑

Survival suits are kept individually in each cabin.

Life Jackets

Confirm that life jackets are placed near each bunk and abandonment stations ☑

Verify that expiration date for life jacket lights is current ☑

Life Buoys

Determine number of buoys onboard (Number ___8___) ☑

Vessel Length, M	*Min. Number*
<100	*8*
100 < 150	*10*
150 < 200	*12*
200 -	*14*

Determine number of buoys with lights (Number ___4___) ☑

Determine number of buoys with smoke generators (Number ____2___) ☑

Confirm expiration date on each buoy is current ☑

Confirm that at least one buoy has a retrieving line (Two) ☑

Man Overboard Boat (MOB)

Verify that MOB boat is operational ☑

Maintenance

Confirm that someone is assigned the responsibility for performing routine maintenance for all life-saving systems ☑

Verify that records indicate that routine maintenance of all lifesaving systems is being performed ☑

Fire Fighting Equipment

Verify number of independently powered fire pumps available for fire fighting. (Number of pumps (Two) ☑

- Two pumps required for vessels with gross tonnage >= 1000 tons
- One pump required for vessels with gross tonnage <= 1000 tons

Confirm one fire pump dedicated to fire fighting ☑

Determine primary service for back-up pump (if any):

- dedicated to fire fighting ☐
- sanitary pump ☐
- ballast pump ☑
- bilge pump ☐
- general service pump ☐

Confirm fire pumps are physically separated? ☑

Test each fire pump for output pressure with two hoses open ☐

- 40 psi required for vessels with gross tonnage >= 1000 tons ☑
- 35 psi required for vessels with gross tonnage < 1000 tons ☐

Main engine space protected by:

- inert gas system Halon ☑
- foam system ☐
- water spray (sprinkler) ☐

Verify that one portable foam unit is available in main engine space ☑

Identify areas protected by inert gas flooding system ☐

Main Engine 1 (291 kg. Halon)

Bow Thurster Room (67 kg Halon)

Confirm that all areas protected by an inert gas flooding system have alarms? ☑

Inspect each fire station ☑

- Confirm the following equipment is available and in good condition:

a) 50 ft of hose (minimum) in good condition ☑
b) Combination fog and straight stream nozzle ☑
c) Hose wrench, if applicable N/A

- Check hydrants for leaks ☑
- Verify equipment operation ☑
- Check nozzle gaskets for wear ☑
- Check hoses for leaks ☑
- Check performance of monitors N/A

Verify visible and audible alarms are located in high noise areas; test ☑

Verify two types of fire detectors are installed in machinery spaces ☑

Test all installed fire detectors and alarms Randomly checked ☑

Confirm that alarms go off automatically prior to the release of any fixed extinguishing medium ☑

Confirm fire detection and alarm system connected to the emergency switchboard ☒

Confirm that one fire pump is connected directly to the emergency switchboard N/A

Operate fire pump with the emergency generator (Diesel Pump) ☒

Verify that portable extinguishers are located near known fire hazards ☑

Inspect portable extinguishers (check date, charge, hoses and general condition of extinguisher) ☑

Determine number of portable fire extinguishers on board ☑

- Min. 5 on vessels with 1,000 tons gross tonnage or greater

Verify that at least two complete fireman's outfits are available ☑

- bunker coat
- helmet with face shield
- boots
- gloves
- self contained breathing apparatus
- flashlight
- spare SCBA bottles
- safety line and harness (one per team)

Verify that the fire station bill is posted ☑

Test the sprinkler system N/A

Locate fire main isolation valves ☑

Confirm that the fire main servicing the main engine space can be isolated ☑

<u>Note:</u>

Two complete sets were kept on the bridge and main deck.

Emergency Power System

Verify that emergency power is supplied directly to the following loads:

- Emergency lighting at muster and embarkation stations ☑
- Emergency lighting in all service areas and control areas ☑
- Emergency lighting in accommodation spaces, stairways and exits ☑
- Emergency lighting in the machinery spaces ☑
- Emergency lighting in the main power generation space ☑
- Emergency lighting on the bridge ☑
- Emergency lighting at the main and emergency switchboards ☑
- Emergency lighting for fire stations ☑
- Emergency lighting in the steering gear area ☑
- Emergency lighting at the fire pump ☑
- Emergency lighting at the sprinkler system booster pump ☒
- Emergency lighting at the emergency bilge pump ☒
- Navigation lighting ☑
- VHF radio ☑
- Internal communication equipment ☐
- Navigation equipment ☑
- Fire detection and alarm system ☑
- One fire pump, if electrically operated ☒
- Steering gear ☒

Identify which loads are connected to the emergency switchboard and which loads have an independent power source -

Verify that the emergency generator is capable of operating simultaneously all of the above loads tied directly to the emergency switchboard

Verify that the emergency generator starts automatically ☑

Confirm that the emergency generator is tested weekly under partial load (20-30% capacity, minimum); 30 minutes minimum ☑

Confirm that the emergency generator is tested annually under full load; 30 minutes minimum ☑

Operate the emergency generator under full load for 30 minutes; monitor temperature ☑

Verify that the emergency power system is physically separated from the main power system ☑

Confirm that the emergency power system will operate when inclined 22.5 degrees to port/starboard, 10 degrees fore/aft or any combination of these limits ☐

Verify that the emergency source of electrical power and the emergency switchboard are located above the uppermost continuous deck and are readily accessible from the main deck. ☑

Communications - Navigation Equipment

Verify proper operation of the following equipment:

- Magnetic compass ☑
- Gyro compass ☑
- Automatic pilot <u>Not tested</u> ☐
- Radar ☑
- Direction finder ☑
- Fathometer ☑
- Decca Navigator ☒
- Wind Sensor ☑
- Loran ☒
- Ship-to-Shore communications ☑
- SSB ☑
- VHF Radio ☑
- Portable VHF radios ☑

Main Propulsion/Steering

Main Propulsion

Conduct a one-hour speed run at maximum power and check for overheating and screw vibration. ☐

Stop and then back down in reverse to demonstrate maneuverability. ☐

Operate bow thruster in one direction and then the other at full power. ☐

Steering

Conduct a steering maneuver as follows:

- Move forward at cruising speed ☐
- Put rudder to full right and hold for 10 seconds ☐
- Put rudder to full left and hold for 10 seconds ☐
- Put rudder to full right and hold for 10 seconds ☐
- Put rudder at amidships and conclude steering test ☐

Bilge System

Confirm vessel has two independent bilge pumps? ☑

Are bilge pumps located in the same space? ☑

Are bilge pumps dedicated to bilge service, or ☑

Do bilge pumps also service:

sanitary ☒

ballast ☒

other ☒

Determine limiting vessel and trim angles for bilge pumps (pumps should be able to dewater any watertight compartment) ☐

Miscellaneous

Verify that a continuous crash barrier is fitted along each side of the vessel's working deck ☑

Verify that the **Rescue Zone** for personnel recovery is clearly defined (if applicable)
Not marked on ship's hull ☐

Check tail shafts for signs of leaking Not Checked ☐

Check main engine space for signs of oil leaks ☑

Assess overall house keeping, signs of rust, etc. ☑

Review equipment downtime record; note major problems **See Note** ☑

Confirm vessel has an electric welding machine ☑

Verify that vessel has oxy-acetylene equipment
(4 bottles Oxygen & 3 bottles Acetylene) ☑

Note:

At the time renewal of the Anchor Handling Winch, hydraulic pipes was in Progress.

Personnel

- Review personnel resumes for entire crew ☐
- Confirm licenses for each crew member are current ☐
- Confirm each crew member is qualified for assigned position ☐
- Confirm that all crew members have received the following minimum training:
  - Survival at Sea ☐
  - Basic seamanship and general service vessel operation ☐
- Confirm that at least two crew members possess a first aid at sea certificate ☐

4. Periodic In-service Inspection Checklist

The Periodic In-Service Inspection Checklists are designed to verify the operational status of equipment, to confirm that routine maintenance is being performed, and to check the preparedness of the crew to respond to emergencies.

The in-service checklists address:

- *Stability*
- *Cargo Handling*
- *Life Saving Equipment*
- *Fire Fighting Equipment*
- *Emergency Power System*
- *Anchor Handling System (Rig Mooring)*
- *Navigation - Communication Systems*
- *Bilge System*
- *General Maintenance*
- *Drills*

Certain parts of the stability and cargo handling sections should be addressed in port prior to the vessel departing for location. The other sections can be addressed at any time.

The check lists should also be supplemented by problem areas that have developed during the Charter Term.

Vessels should be inspected at least once every 3 months. Action items identified during these periodic inspections should be prioritized and followed up until fully closed.

Stability

Confirm that stability calculations are made prior to each cargo loadout ☑

Verify that stability calculations are checked to reflect actual loadout **(See Note)** ☐

Confirm that results appear complete and accurate

- correct value of lightship and center of gravity used ☐
- worksheet contains both the calculated displacement and the displacement determined from vessel draft ☐
- containerised cargo weight estimates are based on dockside scale measurements ☑

Verify that tank soundings are compared with sensor readings monthly (either manual or sensor readings) ☒

If a Stability Letter is available, confirm that the center of gravity of the deck load does not exceed Stability Letter guidelines ☒

Confirm that stability guidelines are satisfied during anchor handling operations **INA**

Check condition of coaming on all exterior doors, windows, and hatches ☑

Confirm coaming soft, pliable ☑

Confirm that coaming is not cracked ☑

Confirm that coaming has not been painted ☑

Verify that all hydraulic watertight doors operate properly and closure surfaces are free of paint ☑

Confirm that watertight doors and hatches are kept closed (At Sea) ☑

Note:

Stability calculation were carried out on computer programised format.

No approval letter on the said program was available.

Cargo Handling

- Confirm that cargo is containerized to extent possible ☑
- Verify that weights of heavy cargo are labeled on the cargo/container ☑
- Confirm that gas bottles (empty or full) are transferred in bottle racks ☑
- Confirm that casing is properly secured ☑
- Confirm that drill pipe is secured in bundles and pre-slung to permit easy lifts ☑
- Verify that an accurate cargo manifest is available ☑
- Confirm that a pre-arrival cargo transfer checklist is on board ☑
- Verify that cargo is secured to deck when not undergoing transfer ☑
- Confirm that safety zones are maintained on deck ☑
- Verify that pre-job safety meetings held before transferring cargo ☑
- Confirm that the Master or designated mate supervises cargo transfer operations ☑
- Confirm that the deck crew is in control of the cargo transfer rate ☑
- Verify that buoyant life/work vests are worn by all hands on deck ☑
- Confirm that vessel roll is minimized during cargo transfer operations ☑

Life Saving Equipment

Life boats **<u>One life boat on board</u>**

Verify/confirm the following:

- Lifeboat launching devices are visually inspected weekly ☑
- Fuel tank is full ☑
- Inventory list is posted in each lifeboat ☑
- Lifeboat equipment is checked monthly (i.e. signal flares, potable water flashlight, first-aid kit, food, fire extinguisher, sea anchor and rope ladder ☑
- Breathing air bottles are charged to pressure specified in the operating manual (**See Note)** ☒
- Windows are clean and not broken (Partially enclosed) ☑
- Door and window gaskets are intact and undamaged ☑
- Placards with operating instructions are in each lifeboat ☑
- Engine starts with primary means and with back-up procedure ☑
- Engine is run ahead and astern for at least 3 minutes each week ☑
- Engine pressure and temperature gauges functional and stable when lifeboat engine is started and run ☑
- Bilge pump is operational ☑
- Life boats are lowered down to the water and recovered monthly ☑
- Interior lights work ☐
- Trickle charge battery charger operation; check battery charge ☐
- Lifeboat launching areas are illuminated when main power is lost ☑
- Emergency transmitters operate properly EPIR B ☑

Note: One air bottle on main deck to be refilled.

Life Saving Equipment (Cont'd)

Life Rafts

Verify/confirm the following:

- Confirm life rate expiration date is current (renewal period – 12 months) ☑
- Hydrostatic release mechanism is serviced every 12 months ☑
- No visible damage ☑
- Life raft containers are marked in accordance with SOLAS, Chaper III, 39.7.3 ☑

  Davit lines connected to rafts **N/A**

Escape Routes

Verify that escape routes to life boats are free of obstructions ☑

Survival Suits

Verify that suits are not damaged or torn ☒

Life Jackets

Verify that expiration date for life jacket lights is current ☑

Confirm that life jackets are located near each bunk and abandonment stations ☑

Life Buoys

Confirm that the expiration date for each buoy is current ☑

Man Overboard Boat

Verify that man-overboard boat is operational ☑

Maintenance

Verify that periodic maintenance is being performed in accordance with manufactuer's guidelines ☑

Fire Fighting Equipment

Verify that fire pumps start ☑

Operate fire pump with the emergency generator (Diesel Fire Pump) ☒

Test each fire pump for output pressure with two hoses open

(Emergency Fire Pump Tested) ☐

Verify that portable extinguishers are in place ☑

Inspect each fire station:

- Confirm all equipment is available and in good condition ☑
- Confirm hydrants do not leak ☑

Operate the fire pump with the emergency generator ☑

Inspect portable extinguishers ☑

Confirm that one spare charge for each extinguisher is on board ☑

Verify that visible and audible alarms in high noise areas are operational ☑

Test all detectors and alarms (**See Note**) Randomly checked ☑

Confirm fireman's outfits are complete ☑

Note:

As per planned maintenance system, each head will be checked every 12 weeks. The last check was carried out on the 6th January 2003.

Emergency Power System

Verify that the emergency generator starts automatically ☑

Verify that a partial load (20-30% capacity, minimum) is applied to the emergency generator weekly ☑

Confirm that a full load (100% capacity) is applied to the emergency generator annually ☐

Operate the emergency generator under partial load for 30 minutes; monitor temperature and check for overheating ☐

Anchor Handling System (Rig Mooring)

Confirm that Pelican Hooks are not on board On Board ☐

Check condition of work wire (Checked whilst stowed on drum). ☑

Check condition of grapples, chain chasers ☑

Check condition of pendants ☑

Check condition of anchor buoys ☑

Communication - Navigation Equipment

Confirm that all navigation equipment is operational ☑

Confirm that all communication equipment is operational ☑

Bilge System

Confirm bilge pumps are operational (Two Bilge Pumps) ☑

Confirm that pumps do not have any leaks ☑

General Maintenance

Review maintenance logs

- Verify that routine maintenance is being performed ☑
- Confirm that outstanding items are being corrected in a timely manner ☑

Drills

Confirm that the following drills are conducted:

- Abandon ship ☑
- Fire ☑
- Loss of Engine Power ☑
- Man Overboard ☑
- Search and Rescue ☑
- Oil and Fuel Spills ☑

Fire and abandonment drills should be conducted prior to leaving port and at least weekly for voyages longer than a week. ☑

Verify that drills are varied with regard to day and time of day ☑

Confirm that drills are reviewed with the crew immediately after undertaking the drill. ☑

Confirm that scenario emergency drills are conducted periodically to test the overall field or offshore installation emergency response plan. Service vessels should take part in emergency drills of the offshore installation. (**See Note**) ☐

Observe a fire and abandonment drill ☐

Confirm that each member of the crew participates in at least one abandonment drill and one fire drill each month ☑

Note:

Last Emergency (scenario) carried out : Rescue a person from an enclosed space.

ExxonMobil Development Company
Drilling

Service Vessel Inspection Checklist

Vessel:	**M.V. "Pacific Challenger"**
Our Job Ref.:	**850-037/03-45**
Inspection Date:	**2nd February 2003**
Inspection Site:	**BARRY BEACH MARINE TERMINAL, Victoria**
Surveyor(s):	**H. Emamjomeh** **A. Sharrock**

Source file (LAN): i:\Emdc\Drilling\Technical\OIMS\forms\service vessel checklist.doc

Executive Summary

*The **Service Vessel Inspection Checklist** was prepared to provide:*

- *assistance in inspecting service vessels before and during charter hire periods, and*
- *a systematic basis for documenting the results of these surveys.*

This document also formalizes the inspections in accordance with Operating Integrity Management System (OIMS) objectives.

This booklet is divided into three sections:

- Vessel description and desired specifications

  The vessel description section provides an overall description of the vessel and its equipment. Where appropriate, example specifications are noted.
- Acceptance test inspection checklist

  The acceptance test inspection section identifies tests and verifications that should be considered prior to placing the vessel under charter.
- Periodic in-service inspection checklist

  The in-service inspection section provides an itemized checklist for use during inspections after the vessel is placed on hire.

The acceptance test and in-service inspection checklists are based on current industry practice so some of the items may not be applicable to every service vessel in the fleet because vessels only have to comply with Rules and Regulations in effect at the time of construction unless local authorities dictate otherwise. In addition, requirements for some marine safety equipment are based on vessel size and gross tonnage.

The Service Vessel Inspection Checklist booklet is intended to be a guide. The actual scope of the inspection should be based on the type service, length of the charter, the area of operation, and past experience. The final decision rests with the operating management.

Table of Contents

1. Introduction

The Service Vessel Inspection Checklist provides assistance in inspecting service vessels before and during charter hire periods.

This booklet is divided into three sections:

- *Vessel description and desired specifications*
- *Acceptance test inspection checklist*
- *Periodic in-service inspection checklist*

The vessel description section provides a place to enter a general description of the vessel and equipment for reference during the inspections. Desired specifications are also noted in the last column on every page. Particular attention should be paid to areas where the vessel fails to comply with specifications - both from an operational standpoint and from a documentation standpoint.

The Desired values listed in this section are an example. Vessel specifications will vary in other areas so appropriate changes should be made.

The acceptance test and in-service inspection checklists are intended to confirm that essential documentation is available on the vessel and that critical equipment is operational and properly maintained. The Checklists are based on current industry practice so some of the items may not be applicable to every service vessel in the fleet because vessels only have to comply with Rules and Regulations in effect at the time of construction unless local authorities dictate otherwise. Furthermore, requirements for some marine safety equipment are based on vessel size and gross tonnage (load carrying capacity). The Cargo Ship Safety Equipment Certificate for the vessel is intended to verify that the vessel's safety equipment meets applicable standards.

Note: The date of the next dry-docking inspection should be checked to determine if it falls within the Charter Period. If a scheduled inspection is due within the Charter Period, this subject should be addressed in the Charter Party.

2. General Vessel Description

Name of Vessel	PACIFIC CHALLENGER
Type of Vessel	STEEL TUG / SUPPLY VESSEL
Call Sign	9V5947
Date Constructed	1982
Ship Yard	NYA BRUCES VERKSTAD, SWEDEN
Class	1A1 TUG AND SUPPLY VESSEL EO
Flag	SINGAPORE
Port of Registry	SINGAPORE
Owner	
Name	SWIRE PACIFIC OFFSHORE OPERATIONS PTE LTD.
Address	300 BEACH ROAD # 12-01 THE CONCOURSE, SINGAPORE 199555
Telephone No.	6294 3088
Fax No.	6294 3211
Agents	
Name	SWIRE PACIFIC OFFSHORE OPERATIONS PTE LTD.
Address	300 BEACH ROAD # 12-01 THE CONCOURSE, SINGAPORE 199555
Telephone No.	6294 3088
Fax No.	6294 3211

Operator (If other than Owner)

Name	
Address	
Telephone No.	
Fax No.	

Vessel Particulars

	Actual	Desired
Length, Overall, ft.	64.40 m	190 - 225
Between perpendiculars, ft.	56.40 m	
Beam, Overall, ft.	13.80 m	40 - 52
Molded, ft.	N/A	
Depth, ft.	6.90 m	16 - 24
Draft, ft Winter Loadline	5.68 m	
Summer Loadline	5.80 m	14 - 20
Freeboard, ft Winter Loadline	670mm	
Summer Loadline	548mm	
Min. Stern Freeboard (@ maximum load condition), ft.	0.3 m	2
Displacement, MT	3214	
Lightship, MT	1354.5	
Total Deadweight, MT	1860	850 min.
Gross Tonnage	1330	
Net Tonnage	399	
Arrangements		
Stack Location	62 - 68	
Engine Room Location	27 - 68	
Winch Control Stations	Rear Bridge Console.	
Cargo Deck Dimensions, ft. x ft.	418 m^2	30 x 100
Double bottom tanks around:		
Engine Room	10 Tanks	Req'd.
Bulk Cargo Tanks	4 Tanks	Req'd.
Steering Engine Space	2	Req'd.
Liquid Mud Tanks	-	
Accommodations		
Crew	7 x 1 Berth & 3 x 2 Berth	
Passengers	1 x 6 Berth	

Propulsion

	Actual	Desired
Main Propulsion		
BHP Continuous	(2 x 4500 KW) = 9000 Kw	6140 Kw
BHP Intermittent	INA	
Bollard Pull (at zero speed of advance)		
Ahead, Kips	103 T	165 T
Astern, Kips	INA	
Propellers		
Twin/Single Screw	Twin	Twin
Fixed/Controllable Pitch	Fixed	
Kort Nozzle	ALPHA FD 3230	
Twin/Single Rudder	Twin	Twin
Speed		
Maximum, kts	15.6 Knots	
Cruising, kts	12.5 Knots	
Bow Thruster		
BHP Continuous	2 x 500 HP	500
Thrust, kips	11 Tonne	10
Fuel Consumption		
Maximum speed, Kts @ MT/Day	30.5 M/T	
Cruising, Kts @ MT/Day	12.5 M/T	
Standby (port/anchored on location), MT/Day	0.8 M/T	

Cargo Capacity

	Actual	Desired
Fuel (for drilling rig), gallons	817 m^3	75000 gal
Fuel (for own consumption), gallons	817 m^3	
Drill Water, Bbls.	777.5 m^3	3000 Bbl
Potable Water, Bbls.	250 m^3	1000 Bbl
Lube Oil, Bbls.	N/A	
Maximum Deck Load, MT (Min.)	700	650
Max. Below Deck Load with Max. Deck Load, MT	INA	
Bulk Capacity (total), ft^3.	170 m^3	4000
No. Bulk	4	
Refrigerated Stores		
Cold Storage, ft^3.	Own Use	200
Cool Storage, ft^3.	Own Use	200
Transfer Rates		
Fuel, Bbl/Hr. with 100 ft. head	1 x 110m^3 @ 70 m head	300
Potable Water, Bbl/Hr. with 100 ft. head	1 x 100m^3 @ 70 m head	300
Drill Water, Bbl/Hr. with 100 ft. head	1 x 100m^3 @ 70 m head	300
Bulk, cu. ft./hr.	15.6m^3	

Hose/Coupling	Size, in.	Male/Female
Fuel	4”	Camlock/Male
Drill Water	4”	Camlock/Male
Portable Water	4”	Camlock/Male

INA: Information Not Available

Navigation - Communication Equipment

	Manufacturer	Desired
Navigation Equipment		
Magnetic Compass	JCKROHN & SON AS	Req'd
Gyro Compass	ANSCHUTZ	Req'd
Automatic Pilot	ANSCHUTZ KIEL	Req'd
Radar	FURUNO/TOKIMEC	Req'd
Direction Finder	N/A	
Fathometer	FURUNO FE-881	
Decca Navigator	N/A	
Wind Sensor	RAYMARINE	
Loran	N/A	
Communication Equipment		
Ship-to-shore Communications	SAILOR	Req'd
SSB	SAILOR	Req'd
VHF Radio	SAILOR	Req'd
Portable VHF Radios Number 3	ICOM	Req'd 2
Internal Communication	PHONICO	Req'd
Fax	NIL	
Communication	SAILOR	
Weather (fax)	FURUNO/LO	
International Signal Flags	Yes	
Ship-to-Helicopter	SAILOR	
Emergency Beacon	PAIN'S WESSEX SAFETY SYSTEM	
- SART	GRASEBY NOVA	

- RADAR NO. 1 – FURUNO FR-1510 D
- RADAR NO. 2 – TOWMEC BR-1510
- FATHOMETER – FURONO FE-881

Anchor Handling System (Rig Mooring)

	Actual	Desired
Chain Lockers		
Number	2	
Capacity, ft.	$60m^3$	3000
Chain Size, in.	INA	3.25
Self Tiering	-	Req'd
Chain Wildcats		
Chain Size, in.	3.25	3.25
Max. Pull, Kips	INA	
Max. Payout Load, Kips	INA	
Anchor Handling Winch		
Bare Drum Diameter, in.	INA	
Full Drum Diameter, in.	1.80m	
Width Between Flanges, in.	1.70m	
Drum Capacity, ft.	120m	3000
Wire Rope Diameter, in.	64mm	3.0
Line Pull at stall		
Bare Drum, Kips	250T	350
Mid Drum, Kips	158T	
Full Drum, Kips	112T	
Brake Capacity, Kips	350T	
Brake Type(s)		
Drum	DRUM	
Disk	-	
Water	-	
Regenerative	-	

Anchor Handling System (cont'd)

	Actual	Desired
Towing Winch		
Bare Drum Diameter, in.	INA	
Full Drum Diameter, in.	INA	
Width Between Flanges, in.	INA	
Drum Capacity, ft.	1200m	3000
Wire Rope Diameter, in.	64mm	3.0
Line Pull at stall		
Bare Drum, Kips	250T	200
Mid Drum, Kips	158T	
Full Drum, Kips	112T	
Brake Capacity, Kips	350	
Brake Type(s)		
Drum	DRUM	
Disk	-	
Water	-	
Regenerative	-	

Anchor Handling System (cont'd)

	Actual	Desired
Third Winch (if applicable)		
Bare Drum Diameter	________	
Full Drum Diameter	________	
Width Between Flanges	________	
Drum Capacity, ft.	________	
Wire Rope Diameter, in.	________	
Line Pull at stall		
Bare Drum, Kips	________	
Mid Drum, Kips	________	
Full Drum, Kips	________	
Brake Capacity, Kips	________	
Brake Type(s)		
Drum	________	
Disk	________	
Water	________	
Regenerative	________	

Anchor Handling System (cont'd)

	Actual	Desired
Sharks Jaw/Karm Fork	1	Req'd
Pelican Hooks	2	not permitted
Deck Tuggers		
Number	2	
Max. Pull, Kips	10	
Pendant Line Storage Reels		
Number	2	
Capacity, ea.	1000m	
Wire Rope Diameter, in.	61mm	
Stern Roller		
Length, ft.	3.6m	8
Diameter, ft.	2.5m	5 (Min.)
Powered	Not Powered	
Towing Capability	INA	Req'd
Pop-Up Bollards/Guide Pins	2	Req'd

Service Vessel Mooring System

	Actual	Desired
Maximum Water Depth, ft.	15 Port/ 20 Stbd shackles available	400
Mooring Line		
No. Lines	4 in use & 4 spare	
Type	Polypropylene plaited	
Diameter, in.	64 mm	
Length, ft.	50 m	
Anchors		
Type	SPEK 1740 (Stockless)	
Weight, kips	2 x 1400 Kg	

Life Saving Equipment

The Desired values shown in the last column are based on requirements contained in the SOLAS 1974 Requirements and 1983 Amendments.

			Actual	Desired
Life Boats: Number			***No Life Boat On Board***	2
Capacity, ea. (total >= on-board complement)			___________	
Manufacturer			___________	
Totally/Partially Enclosed			___________	
Type Release Hook				
	On-load		___________	
	Off-load		___________	
	On/Off load		___________	Req'd
Location	boat #1		___________	
	boat #2			
Life Rafts: Number (each side >= on-board complement)			___________	
Capacity, ea.			___________	
Location	raft #1	Port Forward	1 x 20 persons	
	raft #2	Port Aft	1 x 20 persons	
	raft #3	Stbd Forward	1 x 20 persons	
	raft #4	Stbd Aft	1 x 20 persons	
Scramble Net			1	Req'd
Man-Overboard Boat (Rescue Boat)			1	Req'd
Inflatable/Rigid			FRC + Foam Buoyancy Sides	
Davit/Crane launched?			Crane (SWL 3T)	
Life Buoys				
Number (total)			8	
(Total number depends on vessel length)				
Number with self-igniting lights			4	min. 50%
Number with self-activating smoke signals			2	min 2
Survival (Exposure) Suits				
Number			17 – See note	min. 3 per lifeboat
Manufacturer			FITZWRIGHT	

Type 9700 FWP

Note:

Survival Suits were placed individually in each cabin.

Fire Fighting Equipment

	Actual	Desired
Number of fire pumps	2 + 1 (Emergency)	
Location of pumps	EIR & Thruster Room	
Number and size of fire monitors	None	
Location of monitors	N/A	
Fire Detection and Alarm System	1	
Location of Fire Alarm Panel	Bridge	
Type of Extinguishing Medium (Halon/CO_2 /Water)	CO_2	
Main Engine Room	Fixed CO_2, Foam Fire Ext.	
Steering gear space	Dry Powder Fire Ext.	
Accommodations	Dry Powder, Water Fire Ext.	
Paint Lockers	CO_2 Fire Ext.	
Galley	CO_2, Fire Blanket	
Bridge	CO_2 Fire Ext.	

Emergency Power System

Emergency generator capacity, kw	NONE
Physically separated from main generator	N/A
Location	N/A

Emergency generator not available, emergency power is supllied by batteries.

Personnel

	Actual	Desired
Crew Complement (On-board)	10	
Master		
Name	Colin Parker	
Nationality	Australian	
Certificate of Competency for position	Master Class 1-AY02838	
Experience in position, years	11 Years	
Mate		
Name	Dave Berends	
Nationality	Australian	
Certificate of Competency for position	First Mate Class 1–AY01889	
Experience in position, years	3 Years	
Chief Engineer		
Name	Tom Cousins	
Nationality	Australian	
Certificate of Competency for position	C/Eng Class 1-AYO 1252	
Experience in position, years	9 Years	
Able-Bodied Seaman (A/B) - IR		
Name	Kenneth Robertson	
Nationality	Australian	
Certificate of Competency for position	I-R A 100320	
Experience in position, years	22 Years	
1st Engineer		
Name	Dennis Rothe	
Nationality	Australian	
Certificate of Competency for position	Eng Class 2-AYO1552	
Experience in position, years	8 Years	

Personnel (Cont'd)

		Actual	Desired
Other	- 2nd Officer		
	Name	Martin Quirk	
	Nationality	Australian	
	Certificate of Competency for position	Master Class 4-WCO13145	
	Experience in position, years	8 Years	
Other			
	Name	Mark August	
	Nationality	Australian	
	Certificate of Competency for position	I.R. A 100275	
	Experience in position, years	10 Years	
Other			
	Name	Paul Turnbull	
	Nationality	Australian	
	Certificate of Competency for position	I.R. A 101374	
	Experience in position, years	10 Years	
Cook			
	Name	Barry Lang	
	Nationality	Australian	
	Certificate of Competency for position	Safety Training - AS 1058	
	Experience in position, years	3 Years	

Personnel (Cont'd)

Other

Name	Christopher Parmenter
Nationality	Australian
Certificate of Competency for position	I.R. A 100279
Experience in position, years	5 Years

3. Service Vessel Acceptance Test Inspection Checklist

The following **Service Vessel Acceptance Test Inspection Checklists** are intended to provide a basis for evaluating the suitability of the service vessel for the intended service. Any deficiencies noted during this inspection should be discussed with the Contractor and a schedule should be agreed upon to remedy all outstanding items.

Check lists are provided for:

- Documentation
- Drawings
- Emergency Response Plans
- Stability
- Cargo Handling
- Anchor Handling Equipment
- Service Vessel Mooring System
- Life Saving Equipment
- Fire Fighting Equipment
- Emergency Power System
- Communication - Navigation Equipment
- Main Propulsion/Steering
- Bilge System
- Miscellaneous
- Personnel

The type service, length of service, area of operation and past experience all influence the level of the required inspection prior to initiating the vessel charter. The final decision rests with operating management.

Documentation

- *Confirm that the following documentation is on board. Where applicable, note the issuing authority and the expiration date.*

Certificates	Issued By	Expiry Date
Certificate of Registry	MPA Singapore	13-02-2005
SOLAS	INA	______
International Loadline	DNV	28-02-2003
Bollard Pull	DNV	-
Cargo Ship Safety Construction (Valid 5 years)	DNV	28-02-2003
Cargo Ship Safety Equipment (2 years)	DNV	28-02-2003
Cargo Ship Safety Radio Telephone (2 years)	DNV	28-02-2003
Cargo Gear Safety	Freemantle Foundary	30-10-2005
Deratting	N/A	-
Hull Insurance	British Marine	
	Lukemborg S.A.	18-08-2003
Fuel Meter Calibration	INA	______
Certificate of Fitness	INA	______
Booklets		
Minimum Safe Manning Document	MPA	17-10-2003 (Issue Date)
Intact Stability Booklet	Seaforth Marine Services	24-6-1992
Stability Letter	DNV	05-01-2001 (Issue Date)
Logs		
Company (Owner) Log		Yes
Engine and Deck Log		Yes
Masters Standing/Night Order Book		Yes
Oil Record Book		Yes
Weekly Fire/Boat Drill (if not entered in the Deck Log)		N/A

Surveys	Issued By	Expiry Date
Annual Classification Survey Report	DNV	28-02-2003
Annual Load Line	DNV	28-02-2003
Hull & Equipment	DNV	CONTINUOUS
Main Engine	DNV	CONTINUOUS
Auxiliary Engine	DNV	CONTINUOUS
Steering Engine	DNV	CONTINUOUS
Propeller shaft	DNV	CONTINUOUS
Cranes	Freemantle Foundary	30-10-2005
CO_2/Halon System	Wiltrading	16-06-2004
Portable Extinguishers	Wiltrading	01-11-2003
Navigation Systems	N/A	_______
Bridge Systems	N/A	_______

Date of Next Dry Docking	May 2005
Are all certificates posted?	Yes

Drawings

- Verify that the following drawings are on board:

General Arrangement	
Profile	☑
Main Deck	☑
Hold Plan	☒
Tween Deck	☒
Bridge	☑
Tank Drawings	☑
Capacity Drawing	☑

Emergency Response Plans

- Verify that the following emergency response plans are available on the vessel:

Fire	☑
Abandon ship	☑
Damage/Collision	☑
Man-Overboard	☑
Oil Spill	☑

- Review emergency response plans for content and consistency with emergency response plans ☑
- Confirm that the Station Bill is Posted ☑
- Confirm that the Chain of Command is Posted and understood by the crew ☑

Stability

Review Stability Booklet ☑

All vessels will have a stability booklet, but U. S. Flag vessels also have a stability letter which states the maximum deck load, the maximum center of gravity of the deck load, and the maximum resulting below deck load. Often, the stability letter guidance is all that is used by Masters on these vessels and true stability calculations are not made on a routine basis.

Review the Lightship weight and center of gravity records in the Stability Booklet plus all changes to lightship. Do results appear reasonable and accurate? ☑

Confirm that a KG vs. draft or GM vs. draft curve is onboard ☑

Confirm that stability calculations are made prior to each loadout ☑

Review Stability Letter, if applicable ☑

Confirm Stability Letter posted, if applicable ☑

Verify that tank sensor readings compare with tank soundings (fuel, drill water, potable water, ballast, bulk material) ☐ - See note

Check condition of coaming on all exterior doors, windows, and hatches ☑

Confirm coaming soft, pliable ☑

Confirm that coaming is not cracked ☑

Confirm that coaming has not been painted ☑

Verify that all hydraulic watertight doors operate properly and closure surfaces are free of paint ☑

Confirm that watertight doors and hatches are kept closed ☑

Verify that cross flooding instructions are available ☑

Confirm that damage/collision procedures are in place ☑

Note:

- **Fuel, Drill Water tanks are sounded manually.**
- **Portable Water, Ballast, Bulk material tanks are not fitted with sounding pipe.**

Cargo Handling

Confirm that all loading/discharge lines have blanking caps		☑
Confirm that loading/discharge line caps are in place		☑
Confirm that hose connections are quick release design		☑
Verify that bulk system dryers (if required) are operational		☒
Confirm that the vessel has suitable appliances and fittings for securing cargo; confirm that certificates are current		☑
Verify that a cargo handling, securing, and lifting manual is onboard		☑
Confirm that procedures are in place for handling non-containerized cargo		☑
Confirm that hazardous cargo procedures are in place		☑
Confirm that cargo decks and walk ways are covered with non-skid material		☑
Verify that rigging and lifting gear has been inspected and tested		☑
Determine transfer rates for:		
Fuel	110m^3 per hour	☑
Drill Water	110m^3 per hour	☑
Potable Water	110m^3 per hour	☑
Bulk	30m^3 per hour	☑

Anchor Handling Equipment (Rig Mooring)

Confirm that the winch control console is located so that operator has a clear, unobstructed view of the deck ☑

Spool out work wire and observe wire rope condition (number of broken wires, kinks, shackle damage, etc.) ***Checked whilst stowed on the drum*** ☑

Operate lower winch drum (lower anchor over stern, recover anchor) ***N/A*** ☑

Operate from primary winch control station and back-up control station

Observe temperature and amperage to ensure that the winch is operating within design limits

Operate upper winch drum (lower anchor over stern, recover anchor) ☒

Operate third winch drum (if applicable - lower anchor over stern, recover anchor) ☒

Determine length of work wire ***Extract From Certificate*** ☒

Confirm that the vessel has a Shark's jaw or Karm Fork ☑

Confirm that Pelican Hooks are not on board *On Board -* ☐

Raise and lower Shark's jaw/Karm Fork ☑

Confirm that the vessel has pop-up bollards/guide pins ☑

Raise and lower pop-up bollards/guide pins ☑

Determine if the stern roller is powered *Not Powered -* ☐

Operate stern roller, if applicable *N/A -* ☐

Confirm all shackles are forged ☑

Confirm chain lockers are self tiering by stowing chain

– No mechanical means for tiering ☐

Verify stated chain locker capacity ***Extract From Records*** ☑

Check condition of grappels, chain chasers ☑

Operate pendant reels (if available) ☑

Operate tuggers ☑

Service Vessel Mooring System

Operate winch #1, lower anchor to the sea floor, recover anchor ☒

Operate winch #2, lower anchor to the sea floor, recover anchor ☒

Operate winch #3, lower anchor to the sea floor, recover anchor ☒

Observe condition of vessel's mooring lines ☑

Check to ensure that the clutch on the windlass can be engaged and disengaged without difficulty ☑

Life Saving Equipment

Life Boats ***No Life Boat On Board***

Verify that one lifeboat is located on the port and starboard sides of the vessel ☐

Vessels less than 85 M in length may substitute life rafts for lifeboats

Verify/confirm that all life boats are:

- *Totally enclosed* ☐
- *Self-righting* ☐
- *Fire-protected (with sprinkler system)* ☐
- *Equipped with on-load release hooks or off-load release hooks with on-load backup* ☐
- *Motor propelled* ☐
- *Equipped with emergency lighting inside and strobe light outside* ☐
- *Equipped with radar transponder/EPIRB* ☐
- *Equipped with a permanently installed VHF radio* ☐

SOLAS requires 3 VHF radios onboard the service vessel if the gross tonnage is 500 tons or greater; 2 VHF radios if the gross tonnage is between 300 and 500 tons

If radios are not permanently installed inside the lifeboats, the radios must be located at each lifeboat embarkation station

- *Equipped with a full tank of fuel* ☐
- *Equipped with towing harness* ☐
- *Equipped with signal flares, potable water, flashlight, first-aid kit, food, fire extinguisher, and sea anchor* ☐
- *Equipped with breathing air bottles charged to pressure specified in operating manual* ☐
- *Equipped with a permanently installed trickle charger for the battery* ☐

Properly maintained:

- *All above equipment is operational* ☐
- *Windows clean and not broken* ☐
- *Door and window gaskets intact and undamaged* ☐
- *Placards with operating instructions located in each lifeboat* ☐
- *Engine starts with primary means and with back-up procedure* ☐
- *Steering wheel marked with proper center and turns freely* ☐

Engine pressure and temperature gauges functional and stable when lifeboat engine started ☐

Falls operated and in good condition ☐

Sprinkler system functions and covers the entire boat ☐

Bilge pump functional ☐

Steering system functions under power ☐

Lower each lifeboat down to water and recover ☐

Life Rafts

Verify/confirm:

Current expiration date for each life raft ☑

Sufficient life rafts are located on each side of vessel to accommodate entire crew ☑

Sea painters are connected with weak link and hydrostatic tie-down releases ☑

Davit lines connected to rafts

No damage to life rafts *N/A -* ☐

Escape Routes

Verify that two escape routes are available from every normally manned space ☑

Survival (Exposure) Suits

Confirm that a suit is available for each member of the rescue boat crew ☒

Confirm that three suits are available for each member of the lifeboat crew ☒

Not required if lifeboats are totally enclosed, and

Not required if lifeboats were constructed before July 1, 1986

Confirm that suits are not damaged or torn ☑

Several suits are kept individually in each cabin.

Life Jackets

Confirm that life jackets are placed near each bunk and abandonment stations ☑

Verify that expiration date for life jacket lights is current **See Note** ☑

Life Buoys

Determine number of buoys onboard (Number _8_)

Vessel Length, M	*Min. Number*
<100	*8*
100 < 150	*10*
150 < 200	*12*
200 -	*14*

Determine number of buoys with lights (Number _4_) ☑

Determine number of buoys with smoke generators (Number _2_) ☑

Confirm expiration date on each buoy is current ☒

Confirm that at least one buoy has a retrieving line ☑

Man Overboard Boat (MOB)

Verify that MOB boat is operational ☑

Maintenance

Confirm that someone is assigned the responsibility for performing routine maintenance for all life-saving systems ☑

Verify that records indicate that routine maintenance of all lifesaving systems is being performed ☑

Note:

Life jacket light expiry date.	**-**	23 Nos.	Jan. 2004
.	**-**	6 Nos.	July 2004

Fire Fighting Equipment

Verify number of independently powered fire pumps available for fire fighting. (Number of pumps __3__) ☑
- Two pumps required for vessels with gross tonnage >= 1000 tons
- One pump required for vessels with gross tonnage < 1000 tons

Confirm one fire pump dedicated to fire fighting ☑

Determine primary service for back-up pump (if any):
- dedicated to fire fighting ☐
- sanitary pump ☐
- ballast pump ☑
- bilge pump ☐
- general service pump ☐

Confirm fire pumps are physically separated? ☑

Test each fire pump for output pressure with two hoses open ☑
- 40 psi required for vessels with gross tonnage >= 1000 tons ☐
- 35 psi required for vessels with gross tonnage < 1000 tons ☐

Main engine space protected by:
- inert gas system **CO_2** ☑
- foam system ☐
- water spray (sprinkler) ☐

Verify that one portable foam unit is available in main engine space ☑

Identify areas protected by inert gas flooding system ☐

Main Engine Room Space____ ______________________

______________________ ______________________

______________________ ______________________

Confirm that all areas protected by an inert gas flooding system have alarms? ☑

Inspect each fire station ☑

- Confirm the following equipment is available and in good condition:

a) 50 ft of hose (minimum) in good condition ☑
b) Combination fog and straight stream nozzle ☑
c) Hose wrench, if applicable ☑

- Check hydrants for leaks ☑
- Verify equipment operation ☑
- Check nozzle gaskets for wear ☑
- Check hoses for leaks ☑
- Check performance of monitors **N/A**

Verify visible and audible alarms are located in high noise areas; test ☑

Verify two types of fire detectors are installed in machinery spaces ☑

Test all installed fire detectors and alarms **See Note** ☑

Confirm that alarms go off automatically prior to the release of any fixed extinguishing medium ☑

Confirm fire detection and alarm system connected to the emergency Switchboard **N/A** ☐

Confirm that one fire pump is connected directly to the emergency switchboard **N/A** ☐

Operate fire pump with the emergency generator **N/A** ☐

Verify that portable extinguishers are located near known fire hazards ☑

Inspect portable extinguishers (check date, charge, hoses and general condition of extinguisher) ☑

Determine number of portable fire extinguishers on board ☑

- Min. 5 on vessels with 1,000 tons gross tonnage or greater

Verify that at least two complete fireman's outfits are available ☑

- bunker coat
- helmet with face shield
- boots
- gloves
- self contained breathing apparatus
- flashlight
- spare SCBA bottles
- safety line and harness (one per team)

Verify that the fire station bill is posted ☑

Test the sprinkler system **N/A** ☐

Locate fire main isolation valves ☑

Confirm that the fire main servicing the main engine space can be isolated ☑

<u>Note:</u>

Fire detectors checked randomly in Engine room and accommodation spaces.

Emergency Power System

Verify that emergency power is supplied directly to the following loads: **See Note**

- Emergency lighting at muster and embarkation stations ☑
- Emergency lighting in all service areas and control areas ☑
- Emergency lighting in accommodation spaces, stairways and exits ☑
- Emergency lighting in the machinery spaces ☑
- Emergency lighting in the main power generation space ☑
- Emergency lighting on the bridge ☑
- Emergency lighting at the main and emergency switchboards **N/A** ☐
- Emergency lighting for fire stations ☑
- Emergency lighting in the steering gear area ☑
- Emergency lighting at the fire pump ☑
- Emergency lighting at the sprinkler system booster pump **N/A** ☐
- Emergency lighting at the emergency bilge pump
- Navigation lighting
- VHF radio ☑
- Internal communication equipment
- Navigation equipment ☑
- Fire detection and alarm system ☑
- One fire pump, if electrically operated) **N/A** ☐
- Steering gear **N/A** ☐

Identify which loads are connected to the emergency switchboard and which loads have an independent power source **<u>No Emergency Generator on Board</u>**

Verify that the emergency generator is capable of operating simultaneously all of the above loads tied directly to the emergency switchboard

Verify that the emergency generator starts automatically **N/A** ☐

Confirm that the emergency generator is tested weekly under partial load (20-30% capacity, minimum); 30 minutes minimum **N/A** ☐

Confirm that the emergency generator is tested annually under full load; 30 minutes minimum **N/A** ☐

Operate the emergency generator under full load for 30 minutes; monitor temperature **N/A** ☐

Verify that the emergency power system is physically separated from the main power system **N/A** ☐

Confirm that the emergency power system will operate when inclined 22.5 degrees to port/starboard, 10 degrees fore/aft or any combination of these limits **N/A** ☐

Verify that the emergency source of electrical power and the emergency switchboard are located above the uppermost continuous deck and are readily accessible from the main deck. **N/A** ☐

Note:

No Emergency Generator on Board. Emergency power supplied by battery.

Communications - Navigation Equipment

Verify proper operation of the following equipment:

- Magnetic compass ☑
- Gyro compass ☑
- Automatic pilot ☑
- Radar ☑
- Direction finder **N/A** ☐
- Fathometer ☑
- Decca Navigator **N/A** ☐
- Wind Sensor ☑
- Loran **N/A** ☐
- Ship-to-Shore communications ☑
- SSB ☑
- VHF Radio ☑
- Portable VHF radios ☑

Main Propulsion/Steering

Main Propulsion

Conduct a one-hour speed run at maximum power and check for overheating and screw vibration. ☐

Stop and then back down in reverse to demonstrate maneuverability. ☐

Operate bow thruster in one direction and then the other at full power. ☐

Steering

Conduct a steering maneuver as follows:

- Move forward at cruising speed ☐
- Put rudder to full right and hold for 10 seconds ☐
- Put rudder to full left and hold for 10 seconds ☐
- Put rudder to full right and hold for 10 seconds ☐
- Put rudder at amidships and conclude steering test ☐

Bilge System

Confirm vessel has two independent bilge pumps? ☑

Are bilge pumps located in the same space? ☑

Are bilge pumps dedicated to bilge service, or ☑

Do bilge pumps also service:

sanitary ☒

ballast ☒

other ☒

Determine limiting vessel and trim angles for bilge pumps (pumps should be able to dewater any watertight compartment)

Miscellaneous

Verify that a continuous crash barrier is fitted along each side of the vessel's working deck ☑

Verify that the **Rescue Zone** for personnel recovery is clearly defined (if applicable) ☑

Check tail shafts for signs of leaking **Not Checked** ☐

Check main engine space for signs of oil leaks ☑

Assess overall house keeping, signs of rust, etc. ☑

Review equipment downtime record; note major problems ☑

Confirm vessel has an electric welding machine ☑

Verify that vessel has oxy-acetylene equipment ☑

Personnel

Review personnel resumes for entire crew ☑

Confirm licenses for each crew member are current ☑

Confirm each crew member is qualified for assigned position ☑

Confirm that all crew members have received the following minimum training:

- Survival at Sea ☑
- Basic seamanship and general service vessel operation ☑

Confirm that at least two crew members possess a first aid at sea certificate ☑

4. Periodic In-service Inspection Checklist

The Periodic In-Service Inspection Checklists are designed to verify the operational status of equipment, to confirm that routine maintenance is being performed, and to check the preparedness of the crew to respond to emergencies.

The in-service checklists address:

- *Stability*
- *Cargo Handling*
- *Life Saving Equipment*
- *Fire Fighting Equipment*
- *Emergency Power System*
- *Anchor Handling System (Rig Mooring)*
- *Navigation - Communication Systems*
- *Bilge System*
- *General Maintenance*
- *Drills*

Certain parts of the stability and cargo handling sections should be addressed in port prior to the vessel departing for location. The other sections can be addressed at any time.

The check lists should also be supplemented by problem areas that have developed during the Charter Term.

Vessels should be inspected at least once every 3 months. Action items identified during these periodic inspections should be prioritized and followed up until fully closed.

Stability

Confirm that stability calculations are made prior to each cargo loadout ☑

Verify that stability calculations are checked to reflect actual loadout ☑

Confirm that results appear complete and accurate

- correct value of lightship and center of gravity used ☑
- worksheet contains both the calculated displacement and the displacement determined from vessel draft ☑
- containerized cargo weight estimates are based on dockside scale measurements ☑

Verify that tank soundings are compared with sensor readings monthly **N/A**

If a Stability Letter is available, confirm that the center of gravity of the deck load does not exceed Stability Letter guidelines ☑

Confirm that stability guidelines are satisfied during anchor handling operations **INA**

Check condition of coaming on all exterior doors, windows, and hatches ☑

Confirm coaming soft, pliable ☑

Confirm that coaming is not cracked ☑

Confirm that coaming has not been painted ☑

Verify that all hydraulic watertight doors operate properly and closure surfaces are free of paint ☑

Confirm that watertight doors and hatches are kept closed ☑

Cargo Handling

- Confirm that cargo is containerized to extent possible ☑
- Verify that weights of heavy cargo are labeled on the cargo/container ☑
- Confirm that gas bottles (empty or full) are transferred in bottle racks ☑
- Confirm that casing is properly secured ☑
- Confirm that drill pipe is secured in bundles and pre-slung to permit easy lifts ☑
- Verify that an accurate cargo manifest is available ☑
- Confirm that a pre-arrival cargo transfer checklist is on board ☑
- Verify that cargo is secured to deck when not undergoing transfer ☑
- Confirm that safety zones are maintained on deck ☑
- Verify that pre-job safety meetings held before transferring cargo ☑
- Confirm that the Master or designated mate supervises cargo transfer operations ☑
- Confirm that the deck crew is in control of the cargo transfer rate ☑
- Verify that buoyant life/work vests are worn by all hands on deck ☑
- Confirm that vessel roll is minimized during cargo transfer operations ☑

Life Saving Equipment

Life boats ***No Life Boat On Board***

Verify/confirm the following:

- Lifeboat launching devices are visually inspected weekly ☐
- Fuel tank is full ☐
- Inventory list is posted in each lifeboat ☐
- Lifeboat equipment is checked monthly (i.e. signal flares, potable water, flashlight, first-aid it, food, fire extinguisher, sea anchor, and rope ladder) ☐
- Breathing air bottles are charged to pressure specified in the operating manual ☐
- Windows are clean and not broken ☐
- Door and window gaskets are intact and undamaged ☐
- Placards with operating instructions are in each lifeboat ☐
- Engine starts with primary means and with back-up procedure ☐
- Engine is run ahead and astern for at least 3 minutes each week ☐
- Engine pressure and temperature gauges functional and stable when lifeboat engine is started and run ☐
- Bilge pump is operational ☐
- Lifeboats are lowered down to the water and recovered monthly ☐
- Interior lights work ☐
- Trickle charge battery charger operational; check battery charge ☐
- Lifeboat launching areas are illuminated when main power is lost ☐
- Emergency transmitters operate properly ☐

Life Saving Equipment (cont'd)

Life rafts

Verify/confirm the following:

- Confirm life rate expiration date is current (renewal period - 12 months) ☑
- Hydrostatic release mechanism is serviced every 12 months ☑
- No visible damage ☑
- Life raft containers are marked in accordance with SOLAS, Chapter III, 39.7.3 ☑
- Davit lines connected to rafts **N/A**

Escape Routes

Verify that escape routes to life boats are free of obstructions ☑

Survival Suits

Verify that suits are not damaged or torn ☑

Life Jackets

Verify that expiration date for life jacket lights is current ☑

Confirm that life jackets are located near each bunk and abandonment stations ☑

Life Buoys

Confirm that the expiration date for each buoy is current ☑

Man Overboard Boat

Verify that man-overboard boat is operational **See Note** ☑

Maintenance

Verify that periodic maintenance is being performed in accordance with manufacturer's guidelines ☑

Note:

Three repair patches were noted on Rescue Boat,(Side Buoyancy Foam).

Fire Fighting Equipment

Verify that fire pumps start ☑

Operate fire pump with the emergency generator **N/A** ☐

Test each fire pump for output pressure with two hoses open ☑

Verify that portable extinguishers are in place ☑

Inspect each fire station:

- Confirm all equipment is available and in good condition ☑
- Confirm hydrants do not leak ☑

Operate the fire pump with the emergency generator **N/A** ☐

Inspect portable extinguishers ☑

Confirm that one spare charge for each extinguisher is on board ☑

Verify that visible and audible alarms in high noise areas are operational ☑

Test all detectors and alarms **Random Check** ☑

Confirm fireman's outfits are complete ☑

Emergency Power System

Verify that the emergency generator starts automatically **N/A** ☐

Verify that a partial load (20-30% capacity, minimum) is applied to the emergency generator weekly **N/A** ☐

Confirm that a full load (100% capacity) is applied to the emergency generator annually **N/A** ☐

Operate the emergency generator under partial load for 30 minutes; monitor temperature and check for overheating **N/A** ☐

Anchor Handling System (Rig Mooring)

Confirm that Pelican Hooks are not on board **On Board** ☐

Check condition of work wire **See Note** ☐

Check condition of grappels, chain chasers ☑

Check condition of pendants ☑

Check condition of anchor buoys ☑

<u>Note</u>;

Condition of wire checked, whilst stowed on drum and found to be in acondition consistent with age and use.

Communication - Navigation Equipment

Confirm that all navigation equipment is operational ☑

Confirm that all communication equipment is operational ☑

Bilge System

Confirm bilge pumps are operational ☑

Confirm that pumps do not have any leaks ☑

General Maintenance

Review maintenance logs

- Verify that routine maintenance is being performed ☑
- Confirm that outstanding items are being corrected in a timely manner ☑

Drills

Confirm that the following drills are conducted:

- Abandon ship ☑
- Fire ☑
- Loss of Engine Power ☑
- Man Overboard ☑
- Search and Rescue ☑
- Oil and Fuel Spills ☑

Fire and abandonment drills should be conducted prior to leaving port and at least weekly for voyages longer than a week. ☑

Verify that drills are varied with regard to day and time of day ☑

Confirm that drills are reviewed with the crew immediately after undertaking the drill. ☑

Confirm that scenario emergency drills are conducted periodically to test the overall field or offshore installation emergency response plan. Service vessels should take part in emergency drills of the offshore installation. ☒

Observe a fire and abandonment drill ☒

Confirm that each member of the crew participates in at least one abandonment drill and one fire drill each month ☑

Esso Australia Pty Ltd

FINAL WELL REPORT

SCALLOP-1

JANUARY to MARCH 2003

VOLUME 4 of 4

DRILLING PROGRAMMES &
SUPPLEMENTAL PROCEDURES

ESSO AUSTRALIA PTY LTD

SPECIFICATION FOR THE SCALLOP-1 SITE SURVEY

Revision 1 **January, 2003**

REV. NO.	ISSUE	Rev Date	Prepared By:	Signature:	Endorsed By:	Signature:
1	Issued for Contract	8-Jan-03	R. M. Fürchtenicht		Frank Kratzer	

TABLE OF CONTENTS

1 INTRODUCTION

This document outlines the scope of work and defines the minimum technical requirements for the equipment and procedures to be followed for the Scallop-1 Site Survey. Attachment 1 shows the location for Scallop-1.

Contractor shall supply all labour, materials, equipment, plant and inspections necessary for the performance of the Services, including the vessel, fuel and lubricants required for the work.

2 SCOPE AND GENERAL REQUIREMENTS & DEFINITIONS

2.1 Scope of work

Perform the site survey to acquire Bathymetric and Geophysical data over a 3 km x 3km area (in approx. 110 metres of water) centred on proposed drill rig location and oriented as shown in Attachment 2.

The survey will involve

- **Sidescan survey**
- **Echosounder/bathymetry survey**
- **Boomer sub-bottom profiler**

A **magnetometer survey** will not be required.

Interpret all acquired data and provide five (5) copies of detailed reports including detailed charts in paper and (1) one copy in electronic format (unprotected PDF).

2.2 General Requirements

Esso or its representative may witness any mobilisation, offshore survey and any demobilisation. The Contractor shall assist Esso or its representative, including providing access to office facilities and accommodation if required.

All survey equipment shall be maintained, shall provide the survey results in an efficient manner, and shall be suitable for use within the survey area.

If operating at any Esso site, Contractor shall comply with all Esso work management practices.

Contractor shall provide a Procedure Manual prior to commencement of survey for review and acceptance by Esso. The procedures shall detail the offshore survey programme, and include but not be limited to mobilisation and demobilisation (as applicable), seafastening calculations (if applicable), HSE (health, safety and environment) requirements, ERP (emergency response plan) and QA (Quality Assurance). Procedures shall include material safety data sheets (MSDS) and safety and handling procedures.

2.3 Schedule

Contractor shall advise Esso of the timing for the site survey at least two days prior to commencement. The site survey shall commence as soon as possible and no later than January 12, 2003, unless approved otherwise in writing by Esso.

3 DETAILED SCOPE OF WORK

3.1 General

The drilling rig site survey shall cover the area specified to identify any seafloor or near seafloor obstruction (such as pipelines, powerlines, telephone or telegraph cables, wellheads, wrecks, oil/gas seeps, surface faults etc.) which may impact the rig's anchor pattern or drilling location.

A side scan sonar used in conjunction with a precise navigation (positioning) system such as a differential Global Positioning System is the minimum requirement to accomplish this successfully.

3.2 Analysis of survey data

The analysis includes the following:

- A review of any seafloor and subsurface geological and man-made features and conditions which may have an adverse effect on the drilling operation.
- A discussion of risks and any special safety measures that would minimize the adverse effects of shallow hazards.
- A foundation evaluation for jack-up rigs, if applicable, which considers the jack-up footing configuration, environmental loads, jack-up pre-load capacity and soil conditions.

The analysis shall be reviewed and endorsed by Esso.

4 MOBILISATION & DEMOBILISATION

4.1 Equipment

Contractor shall, at its own expense, carry out all required vessel modifications and mobilise and install all necessary equipment onboard the vessel prior to commencement of the work, and de-install and demobilise all such equipment and make good and reinstate the vessel to its original condition after completion of the survey, as necessary.

4.2 Offshore Personnel

Contractor shall, at its own expense and timing, mobilise all necessary personnel to do the work, and demobilise such personnel on completion of the survey.

All personnel shall have the necessary training and experience to conduct the work to which they have been assigned.

If required Contractor shall supply Esso with details of the qualifications and experience of each person allocated to the Service

4.3 Field Acceptance Prior to Survey

Prior to commencing the survey calibration documentation may be inspected and/or some or all of the following checks may be made and endorsed by the Esso representative.

- Motion sensor and depth sounder field tested and checked.
- Gyro compass calibrated to a known datum
- DGPS Static calibration - MGA 55 datum comparison shall be undertaken to shore side geodetic control.
- Bar check to echo sounder transducer (to be repeated in the field)
- Test deployment and operation of all equipment
- Vessel certificates checked
- Occupational Health and Safety requirements reviewed.

As part of the acceptance trials for the tow fish system, test runs may be performed within the side scan range of a known datum position. At least two lines shall be run duplicating survey acquisition parameters in opposite directions. The co-ordinates determined from both runs should be within 15 metres of the datum position. Esso will advise subsea well locations that may be suitable for this check.

5 SURVEY AREA DETAILS

3 km x 3km area centred on following point:

E. 639,316m N. 5,769,300 m
Note: Co-ordinates to GDA 94

Latitude 38deg 12' 48.6" S
Longitude 148deg 35' 28.9" E

Area shall be crossed at minimum 100m line spacing. Tie line spacing shall be at the discretion of Survey Contractor. The survey is to obtain bathymetry and seabed surface features simultaneously along survey lines.

6 REPORTING REQUIREMENTS

6.1 Field Reports

Brief field reports are to be generated covering equipment calibration or other topics as requested.

A preliminary summary site survey report will be produced on board the survey vessel. The report will in addition to preliminary survey findings, highlight any anomalies, hazards, or any unusual features encountered on the survey. A copy of the field report shall be supplied in electronic format (unprotected PDF).

6.2 Final Reports

Contractor shall provide five (5) copies of a detailed report including detailed charts in paper and (1) one copy in electronic format (unprotected PDF).

The Final report shall be submitted to Esso no later than 14 days after the completion of the fieldwork. The report shall be comprehensive covering all aspects of the work including descriptions of all methods and equipment used together with discussions of the results.

Bathymetry shall be reduced to MSL (mean sea-level).

A complete set of survey drawings, equipment calibrations, test results, tidal correction factors, and data files also shall be provided to Esso.

6.3 Drawings

Charts shall be produced showing bathymetry, seabed features and depth contours (1m interval). Coordinates must be referenced to the GDA 94 and show tie in to control points.

All drawings shall contain a key plan to show the location of adjacent drawings.

6.4 Survey Records and Data

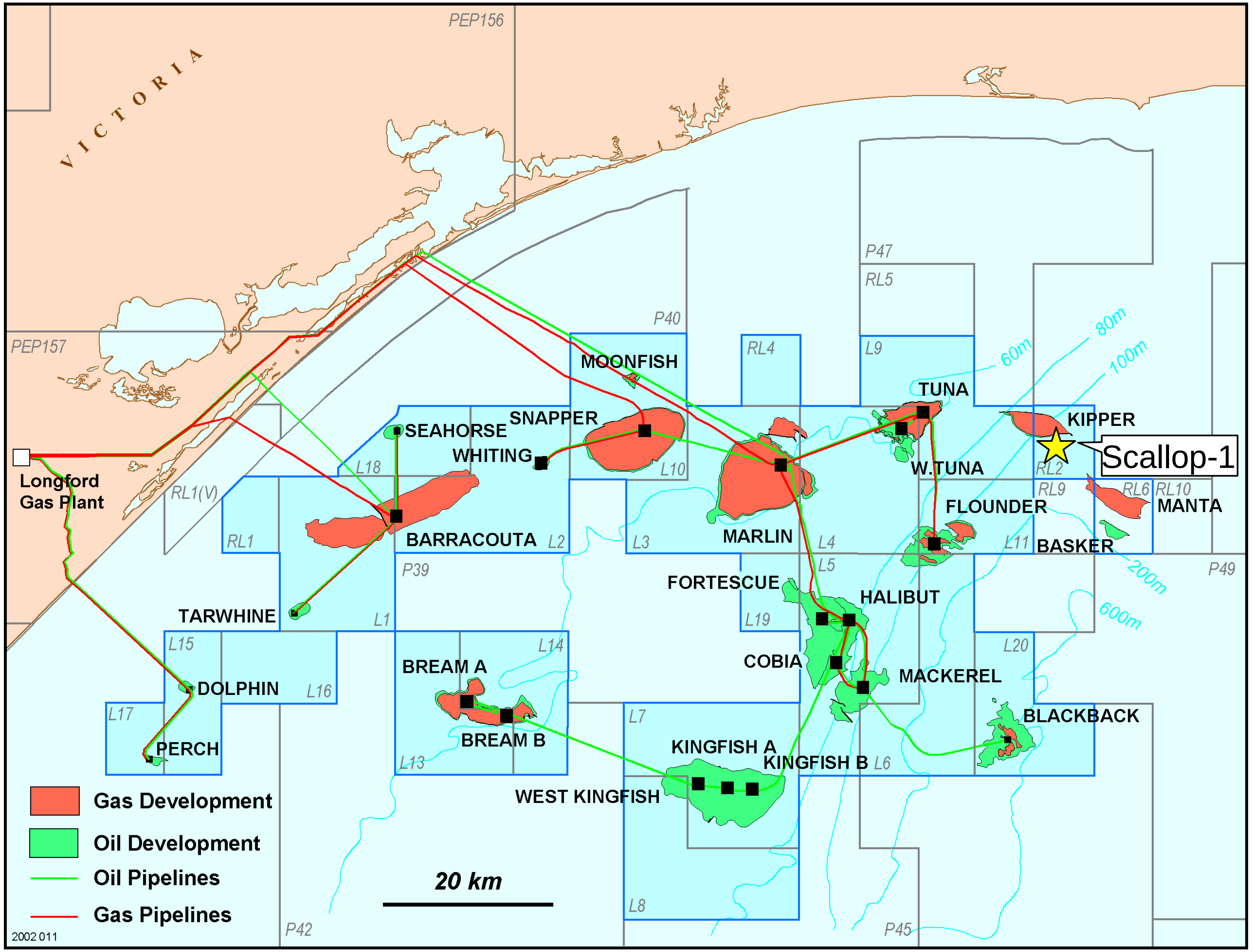
The following survey records and data shall be provided unless agreed otherwise by Esso in writing:

- Hard copy plot of the survey.
- A digital file in AutoCAD format of DXF interchange file format of each drawing sheet.
- A digital file AutoCAD format of DXF interchange file format showing seabed features and bathymetry contours.
- A listing of the reduced data and relevant survey summary in EXCEL (V5) format shall be supplied on a 3.5" floppy disk, 100mb zip disk or a CDROM disc (PC Format).
- Coordinates must be referenced to the GDA 94 and show tie in to control points.
- Boomer sub-bottom profile survey data in SEGY format.

Electronic drawings shall be compatible with AutoCADV14 and shall be issued in DWG format in addition to DXF format.

7 ATTACHMENT 1

Figure 1. Scallop 1 - Location Map



8 ATTACHMENT 2

DRILLING RECOMMENDATIONS

Name	:	Scallop-1		
Classification	:	Wildcat		
Location	:	Reservoir	:	S-1 (Sub-volcanic)
		Basin, Permit	:	Gippsland Basin, Vic/RL2
		Seismic Lines	:	Kipper G99A 3D Seismic Survey Inline-1025, Crossline-1330
		Latitude	:	38 12' 48.6" S
		Longitude	:	148 35' 28.9" E
		MGA94	:	X = 639316 m E Y = 5769300 m N
		Datum	:	**Geocentric Datum of Australia 1994 (GDA94)**
		Spheroid	:	Australian National Spheroid (ANS). UTM Zone 55 / **Map Grid of Australia 1994** Central Meridian (CM) **147 Degrees East.** False Easting 500,000.0 False Northing 10,000,000.0 Scale Factor at CM 0.9996.
		Projection	:	Universal Transverse Mercator (UTM).
		Tolerance	:	The drilling target at the depth of -3100m TVDSS should be intersected within a radius of 50 meters from the top hole location.

Location Verified by :

J.F. Moore
Acquisitions Geophysicist

Programmed T.D.	:	-3100m TVDSS (potential to deepen if required)		
Water Depth	:	110 m TVDSS		
Nearest Wells	:	East Pilchard-1	:	3.1 km to the northwest
		Kipper-1	:	4.3 km to the north-northeast
		Kipper-2	:	3.2 km to the northeast

Objectives : The Scallop-1 well will drill a lowside, fault-dependent trap in the sub-volcanic (Golden Beach) section on the Scallop fault block, and test the validity of two possible DHI's. The well will also be testing fault seal in this part of the pre-Latrobe section.

Assessed by :

S. J. Grope
Geophysicist

M. J. Ryan
Geologist

Recommended by : for

Glen. A. Nash
Project Manager - Gippsland Geoscience

Approved by : for

D.A. Schwebel
Exploration Area Geoscience Manager

ESSO AUSTRALIA PTY LTD

SPECIFICATION FOR THE
SCALLOP-1
RIG POSITIONING

Revision 1

January, 2003

REV. NO.	ISSUE	Rev Date	Prepared By:	Signature:	Endorsed By:	Signature:
1	Issued for Contract	23-Jan-03	R. M. Fürchtenicht	R Fürchtenicht	F.W. Kratzer	

ESSO AUSTRALIA PTY LTD

SPECIFICATION FOR THE
SCALLOP-1
RIG POSITIONING

Revision 1 **January, 2003**

REV. NO.	**ISSUE**	**Rev Date**	**Prepared By:**	**Signature:**	**Endorsed By:**	**Signature:**
1	Issued for Contract	23-Jan-03	R. M. Fürchtenicht		F.W. Kratzer	

TABLE OF CONTENTS

1 INTRODUCTION

This document outlines the scope of work and defines the minimum technical requirements for the equipment and procedures to be followed for the Scallop-1 Rig Positioning. Attachment 1 & 2 show the location and well details for Scallop-1 respectively.

Contractor shall supply all labour, materials, equipment, plant and inspections necessary for the performance of the Services.

2 SCOPE AND GENERAL REQUIREMENTS

2.1 Scope of work

Position the rig within a **5m-radius circle** centred on the proposed location below, on a heading of approximately **210°**.

Easting	:	639,316m
Northing	:	5,769,300 m
Latitude	:	38 deg 12' 48.6" South
Longitude	:	148deg 35' 28.9" East

Note 1: *Co-ordinates to GDA 94*

Note 2: *All reference of water depths to the MSL datum*

The work will include the following and it will be conducted as detailed in the attached ExxonMobil UTC "Well Location & Reporting Offshore RTDGPS (Semi-Submersible/DP) Requirements" & "Well Location & Reporting Offshore QA/QC Procedures":

- Preparation of Tow Route Plan and Mooring Plan drawings (four paper copies and one unprotected PDF file copy) to be provided to the local affiliate;
- Mobilisation and installation of all necessary equipment for rig positioning, prior to rig release from the preceding operator on both the rig and AHTV Vessels;
- Rig positioning monitoring and reporting during the tow and during mooring;
- Interpret all acquired data, provide seven paper copies and two unprotected PDF file copies of the detailed report of the move and final rig positioning, **including the position of each anchor (including piggy-back anchors if deployed)** as distributed as per ExxonMobil UTC requirements.

2.2 General Requirements

Esso or its representative may witness and review the rig positioning services to provide a quality check on the rig location. The Contractor shall assist Esso or its representative in providing this quality check.

All equipment shall be maintained to provide the rig positioning services in an efficient manner, and shall be suitable for use in the area.

Contractor shall comply with all Esso work management practices.

Contractor shall provide a Procedure Manual prior to commencement of work for review and acceptance by Esso. The procedures shall detail the rig positioning programme, and include but not be limited to mobilisation and demobilisation (as applicable), HSE (health, safety and environment) requirements if applicable, and QA (Quality Assurance). Procedures shall include material safety data sheets (MSDS) and safety and handling procedures if applicable.

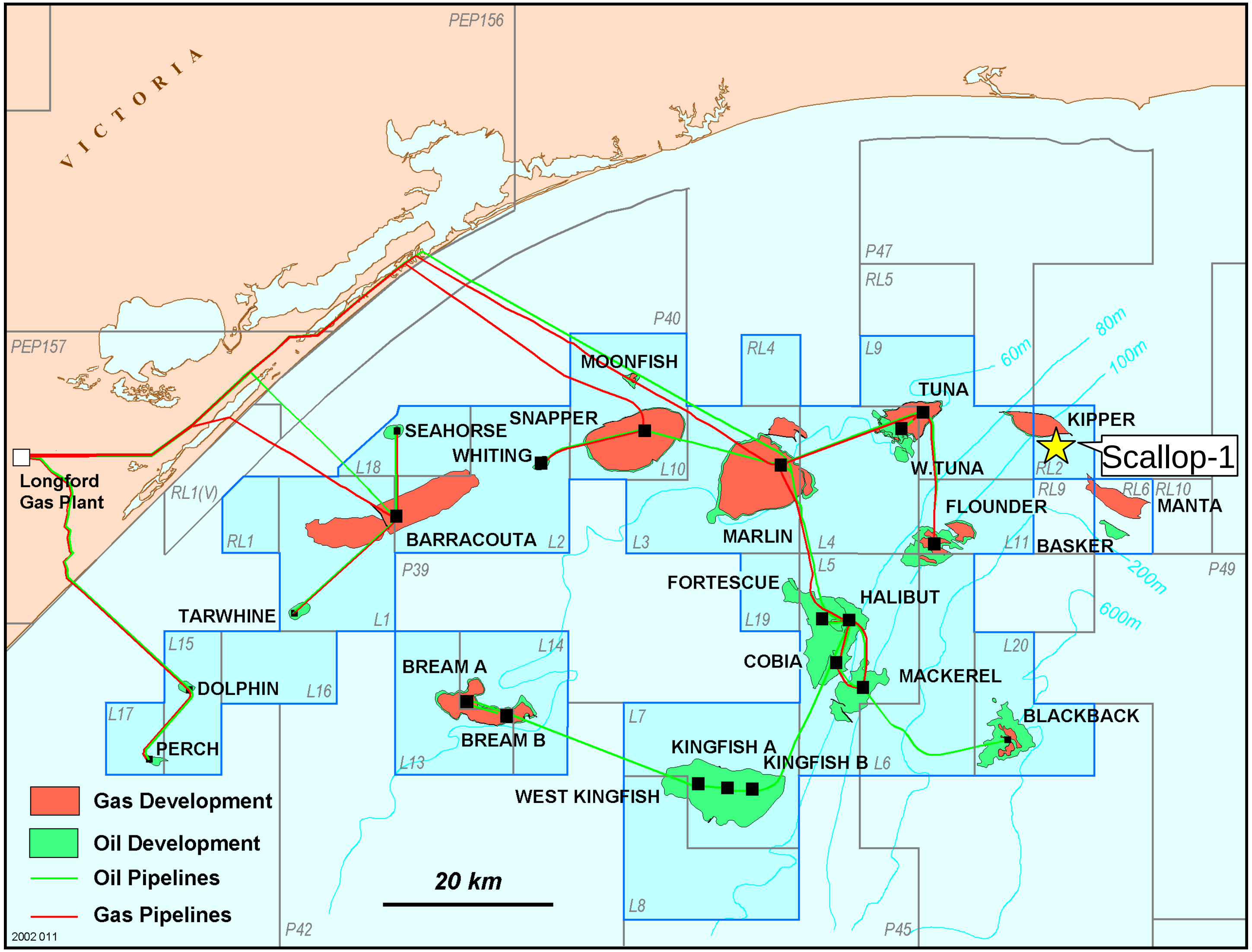
All personnel shall have the necessary training and experience to conduct the work to which they have been assigned. If required, the Contractor shall supply Esso with details of the qualifications and experience of each person allocated to the Service

2.3 Schedule

Esso shall advise the Contractor of the estimated time for the rig move at least two weeks prior to commencement.

3 ATTACHMENT 1 - LOCATION MAP

Figure 1. Scallop 1 - Location Map



4 ATTACHMENT 2 - WELL CO-ORDINATES

SCALLOP-1 CORRECTION TO A to D INFORMATION

The Scallop-1 A to D was issued with the following well location information-:

Location	:	Reservoir	:	S-1 (Sub-volcanic)
		Basin, Permit	:	Gippsland Basin, Vic/RL2
		Seismic Lines	:	Kipper G99A 3D Seismic Survey Inline-1025, Crossline-1330
		Latitude	:	38 12' 48.6" S
		Longitude	:	148 35' 28.9" E
		MGA94	:	X = 639316 m E Y = 5769300 m N
		Datum	:	**Geocentric Datum of Australia 1994 (GDA94)**
		Spheroid	:	Australian National Spheroid (ANS). UTM Zone 55 / **Map Grid of Australia 1994** Central Meridian (CM) **147 Degrees East.** False Easting 500,000.0 False Northing 10,000,000.0 Scale Factor at CM 0.9996.
		Projection	:	Universal Transverse Mercator (UTM).
		Tolerance	:	The drilling target at the depth of -3100m TVDSS should be intersected within a radius of 50 meters from the top hole location.

Subsequent work has resulted in two changes. The mapping spheroid has been corrected to Geodetic Reference System 1980 Spheroid (GRS80). The target tolerance has been defined as a 150 metre square centered on the surface location with a hard boundary to the north. The corrected well location information which appears in the Geological Program and the Drilling Program is given below-:

Location	:	Primary Target	:	S-1 (Sub-volcanic)
		Basin, Permit	:	Gippsland Basin, Vic/RL2
		Seismic Lines	:	Kipper G99A 3D Seismic Survey Inline-1025, Crossline-1330
		Latitude	:	38 12' 48.6" S
		Longitude	:	148 35' 28.9" E
		A.M.G.	:	X = 639,316 m E Y = 5,769,300 m N
Target Depth			:	3,126mMDRT (3,100mTVDSS)
Datum			:	**Geocentric Datum of Australia 1994 (GDA94)**
Spheroid			:	**Geodetic Reference System 1980 Ellipsoid (GRS80)** UTM Zone 55 / **Map Grid of Australia 1994** Central Meridian (CM) 147 Degrees East. False Easting 500,000.0 False Northing 10,000,000.0 Scale Factor at CM 0.9996.
Projection			:	Universal Transverse Mercator (UTM).

Prepared by Simon Grope, Gippsland North Technical Team Lead

Authorized by Glen Nash, Gippsland Geoscience Manager

5 ATTACHMENT 3 - "WELL LOCATION & REPORTING OFFSHORE RTDGPS REQUIREMENTS"

WELL LOCATION AND REPORTING
OFFSHORE RTDGPS.(Semi Submersible or DP) REQUIREMENTS.

ExxonMobil Exploration Company

ExxonMobil Upstream Technical Computing

Data Resource Management/Data Services

Geodetics And Cartography

VERSION 6.02 - 01 October , 2001.

The following are the **minimum** required technical procedures and specifications for locating offshore rigs on specified COMPANY locations. These specifications are prepared under the assumption that a pre-established, commercial, suitably Real Time Monitored, Real Time Differential Global Positioning System (RT DGPS) service is available in the area for creating and transmitting the differential corrections to the rig. A full list of equipment including firmware and software version numbers, methods to be used, CV's and copies of Survival Certificate(s) (ie HUET, etc) of proposed personel will be submitted to COMPANY at time of bid reply.

Positioning Contractor.

Contractor shall ensure that all work is carried out to the highest safety standards, and that the personnel selected to carry out the positioning work are fully trained in offshore working and emergency procedures.

The rig shall be positioned using Real Time Differential GPS (RT DGPS) technologies supplied by a contractor with proven hands-on positioning experience and knowledge of the area. The chosen contractor will have access to a pre-established net of RT DGPS reference and monitor stations in use in the area, and the reference station(s) used will be the same as that (those) used for the seismic surveys. If not, relationships between the two sets of aforementioned reference stations will be verified at Contractor's expense. Both Real Time Differential corrections and Real Time Monitor information will be received on the rig.

Contractor shall be capable of supplying both Dual Radio Frequency RT DGPS and Dual GPS frequency (L1 & L2) RT DGPS systems, as outlined below.

Contractor shall ensure that the Contractor's personnel carrying out the work have read and are fully conversant with these specifications.

Contractor Personnel.

Contractor shall supply two suitably qualified personnel. Contractor personnel shall consist of at least one professional surveyor-engineer experienced in both conventional surveying and marine positioning, satellite operations, and the fundamentals of classical and satellite geodesy. These persons will prove their ability to competently operate and maintain all the equipment specified, and will have suitable offshore survival training. COMPANY may request use of additional personnel to operate the Anchor Handling Tug systems (if required).

Location Geodetics.

Contracted personnel will verify all Geodetics relating to the both the location and the DGPS reference station(s) and monitor(s) to be used. This will include, but not be limited to multipath audits, datum shifts, projection information, azimuth computations and positioning tolerances. Proof of such verification, along with a detailed mode of operation will be submitted to the assigned COMPANY representative no later than **one week** prior to the date of the move.

GPS Survey Equipment.

Two independent methods of receiving corrections will be employed. One will be a satellite based system, the other one using dual radio frequencies to transmit the differential corrections. Both systems will employ real-time monitoring, with this monitor data being received on the rig. Contractor may also be asked to submit a separate quote for a satellite based dual GPS frequency (L1 & L2) RT DGPS system. The above configuration will be itemised and quoted in the bid reply, and will be considered a minimum specification. Contractor will submit in the proposal communication satellites and their frequencies to be used for the DGPS corrections, along with the line of sight azimuths from the work area. Contractor may submit alternate methods and equipment in the proposal. If these include dual satellite based correction systems, these systems will use different correction satellites.

Contractor will also itemise equipment and cost of a real time anchor handling tug positioning & monitoring system (to be used if required).

Survey equipment equivalent in specifications and procedures to that outlined below will be provided by Contractor. Sufficient spares and back-up equipment will be provided such that loss or damage of any one item or one set of differential corrections OR ANY PART of a corrections link will not prevent accurate positioning of the rig at the desired location. **Complete redundancy is essential**.

Contractor's choice of equipment and techniques will be chosen to mitigate as far as possible the effects of Solar Maximum Sunspot activities and their associated risks on the operation. Contractor shall itemise these mitigation procedures, as part of their bid reply.

Equipment to be provided.(Minimum Requirements).

- Three Geodetic type or Survey Grade GPS receivers capable of operating in real time differential mode, at least two of which will be **Dual Frequency, c/w Dual Frequency antennas,** low loss antenna cables and suitable amplifiers. The GPS units onboard the rig will utilize multi-path resistant antennas, will have latest manufacturer firmware, and the dual frequency units will be capable of logging at least 3 hours of 15-second raw GPS data for IGS differential post processing by COMPANY (or Contractor, if so requested by COMPANY). This dual frequency data will be downloaded and the autonomous position post processed by Contractor onboard the rig to verify the DGPS antenna location.
- Two independent telemetry sub-systems (ideally, HF and satellite based) and suitable spares for the RT DGPS corrections and Real Time Monitoring from the vendor and the GPS units being used.
- Theodolite equivalent to Wild T-1 with a suitable EDM, or Total Station survey instrument.
- Accessories for survey instruments, including sun shot filters, measuring tapes & compass.
- Necessary spares, consumables, batteries and computers.
- Calibrated Gyroscope, integrated with the navigation system, c/w dedicated UPS.
- Computer system and back-up, c/w remote display, **fully** protected by surge protector and dedicated UPS.
- Suitable navigation software, capable of receiving and comparing both sets of RT DGPS corrections and monitor data information, as well as gyro and offset information.
- DGPS corrected position output in standard GPS NMEA 0183 GGA and VTG format for QC laptop, c/w interface cable.
- GPS receiver downloading & post-processing software for onboard position verification.

All equipment should be properly checked out and tested over a test point, network or baseline prior to the survey observations. These results will be provided to COMPANY prior to the start of operations.

Offset Survey.

A conventional closed traverse shall be used to survey between the GPS satellite antenna location(s) and the "as drilled" location of the kelly bushing. These measurements will be checked against rig's plans, and verified as such. Azimuth control will be established from the gyroscope, by sun shot observations, by azimuths derived from Geodetic Type or Survey Grade GPS receivers, or by sighting other know structures.

Antenna Setup.

The height of the antenna phase center (or the base of the antenna if phase center is unknown) above sea level will be measured. The antenna location will be chosen to minimize the effects of multipath and obstructions.

Final Position Satellite Observations.

For the Final Fix, GPS techniques that minimize the effects of multipath and "Solar Maximum" disturbancies will be implemented. These techniques will include, but not be limited to, multiple antenna locations, multiple sessions, long observation periods, signal to noise ratio monitoring, etc.

- A minimum of five satellites are to be observed simultaneously. The minimum continuous data collection time, for both on-board and post-processed GPS values, should not be less than 3 hours. The maximum time interval between observations is 15 seconds.
- Satellite signals should be observed from a minimum of 3 quadrants. The minimum elevation angle for observations is 10 degrees. Satellites that will be obstructed by the derrick or other obstructions will be rejected. Max PDOP = 8. Max RT DGPS update rate = 12 secs.
- Computed positions will be graphically plotted and statistically analyzed to prove their freedom from positional biases, prior to equipment demobilization.
- A minimum of 3 hours of raw, dual-frequency data, at 5 sec or 15 sec epochs, will be collected in the Dual Frequency satellite receiver. This data will then be downloaded, processed by the Contractor onboard to verify the DGPS position & converted to RINEX format. A copy of both this RINEX data and the original raw data will be included with the final report on 3.5-inch IBM PC floppy disks and sent with the copies within **7 days** to Houston. This data will also be passed on to the COMPANY Positioning QC (if used).

Preliminary Report. (Final Value).

Upon completion of the RTD GPS work onboard the rig, after the 30 inch (or initial) casing has been set and prior to demobilisation, the surveyor-engineer will issue on board the rig to the Company drilling department, Positioning QC (if used) **AND directly send a fax of the Preliminary Report to COMPANY at:**

> **Fax # 1-281-654-7718.**
>
> ExxonMobil Exploration Co.
> ExxonMobil Upstream Technical Computing, Geodetics & Cartography Group,
> Houston TX, USA.
> Attn: B.D.Barrs.

This report will consist, at the minimum, of the following information:

- Rig Position in **GDA 94 Local** Datum, and projection values.
- Call or Desired Position.
- GPS antennas surveyed positions in **GDA 94 Local** Datum, and projections.
- Comments on any observed Solar Activity problems.
- Sketch of and description of rig, offsets, rig heading and gyro.
- Discrepancies/Comparisons/Verifications & Analysis.

Documents faxed <u>will not contain</u> any formatting or colors that would make them illegible.

> **<u>Unless instructed otherwise, this one position only will be issued on the rig, and clearly labled as final. Only in the event of a large movement resulting from bad weather or other problems will a new co-ordinate be issued.</u>**

Final Report.

After the Final Fix data has been checked in the office by Contractor, a final report (**minimum** of 7 copies) and two CD ROMs, will be submitted within **7 days** of **spudding** as follows:

* Two copies (one unbound) and one CD will be sent to the local in-country COMPANY affiliate office (with data in unprotected PDF format, in A4 paper size).

* Five copies (one unbound) and one CD will be sent **directly** to (with data in MS Word 97 .doc format in letter size or unformatted PDF format, in letter paper size).

ExxonMobil Exploration Co.,
ExxonMobil Upstream Technical Computing,
Data Services,
222 Benmar,
Houston TX 77060-21544, USA.
Attn.: B.D.Barrs, Geodetics & Cartography Group.
(tel:- 1- 281- 654 -7397)

The final report will consist of the following as a <u>minimum</u>:

- Summary of Events and techniques.
- Field diary.
- Statement of confidence of final position.
- Final Position. The previously established on-board position will be treated as final, and verified by the post-processed data.
- Call or Desired Position.
- Sketch, values of Rig and all GPS antenna locations in **GDA 94 Local** datum and projections.
- Satellite Positioning report, SV, PDOP, obstruction curtain graphs, plots and monitor information.
- Discrepancies/Comparisons of real time and post processed results.
- GPS data processing, verification results, listings and graphs.
- Rig Multipath Audits/investigations, comments.
- Rig heading.
- Maps and Sketches.
- Geodesy, datums shifts, datum and projection descriptions and parameters, etc.
- Survey Computations for offsets
- Comments on any observed Solar Activity problems.
- Printouts of Position & QC data listings direct from Navigation & Positioning system.
- Disks containing GPS files in Raw & Rinex format from Rig.
- Site diagram, co-ordinates, Multipath Audits and positioning report of reference station used by supplier of RT differential corrections, and Final Fix reference station.

The cover page of the report will contain the words:- "Well Positioning Report", followed by the Well Name and number (if applicable), Rig Name and type, Concession, Country, Contractor Report Number and Date.

<u>GPS Static Autonomous Survey.</u>

A Static GPS survey **will** be conducted to verify the final co-ordinates, as outlined above. Raw Dual-Frequency GPS data from at least one 3-hour session will be collected and processed on the rig for location verification. This raw data will be given to the COMPANY QC and included on a disc with the final report.

<u>GPS IGS Differential Data post-processing verification. (Option to be itemised).</u>

The COMPANY **may** request the Contractor to post process this static data against existing local or IGS reference stations, with the results avaliable within the 7 day period mentioned above and included with the final report. If this post mission processing shows a greater difference than that specified under the Accuracy & Reliability specifications listed below when local reference station(s) are used, the

COMPANY in Houston, TX will be notified immediately by fax as mentioned previously. The rig position may then have be re-observed at the positioning at the contractors expense, depending upon the reason for this difference.

Anchor HandlingTug Monitoring System. (Option to be itemised).

The COMPANY request the use of a real time, remote, Tug Monitoring system. Unless specified by the COMPANY, the Contractor's Tug Monitoring system will utilise technologies and software that does not require Contractor personnel to be onboard the tug to operate the system. This data will be made avaliable on a computer monitor onboard the rig at both the Navigation and Positioning contractors' location, and that of the rig's Rig Moving Crew, as well as onboard the Tug.

Multiple radio antennas should be employed onboard the rig to avoid masking problems caused by the rig's superstructure.

Dual Frequency DGPS System. (Option to be itemised).

The COMPANY may request use of a Dual Frequency DGPS system to mitigate effects of Solar Maximum activities.

Accuracy Specifications.

Reliability will remain as below:

* The spudded location will be no greater than 5 (five) meters from the target location.
* The reliability of the fix will be better than +\- 3 (three) meters with 95% confidence.

6 ATTACHMENT 4 - "WELL LOCATION & REPORTING OFFSHORE QA/QC PROCEDURE"

WELL LOCATION AND REPORTING
OFFSHORE QC/QA PROCEDURES

ExxonMobil Exploration Company

ExxonMobil Upstream Technical Computing

Geodetics & Cartography

VERSION 4.02 – 01 October 2001.

The following are the **minimum** recommended technical procedures and specifications for Quality Controlling the locating of offshore rigs on presently specified company locations. These specifications are prepared under the assumption that a pre-established, commercial Real Time Differential Global Positioning System (RT DGPS) service is available in the area for creating and transmitting the differential corrections to the rig.

QC/QA Contractor

The QC/QA contractor shall ensure that all his work is carried out to the highest safety standards, and that the personnel selected to carry out the positioning QC/QA work are fully trained in offshore working and survival and emergency procedures.

The rig shall be positioned using Real Time Differential GPS ((RTDGPS) technologies supplied by a positioning contractor with proven experience and knowledge of the area. The QC/QA contractor will have a proven record of providing "hands on" QC/QA services for similar projects. The QC/QA contractor will be responsible for verifying that the rig is located as per the specifications listed below or given to the positioning contractor. The QC/QA contractor shall liase between the COMPANY representative, the positioning contractor and the rig operators to ensure the positioning activities are carried out efficiently and to the highest standards.

QC/QA Contractor Personnel

Contracted QC/QA personnel shall consist of a professional surveyor-engineer experienced in both conventional surveying and marine QC positioning activities, satellite operations, and the fundamentals of classical and satellite geodesy. This person will have proven his ability to competently and safely operate and maintain all the equipment specified, and will have the appropiate survival training.

Location Geodetics

QC/QA Contracted personnel will verify all Geodetics relating to both the location and the reference station(s). This will include at the minimum, but not be limited to, multipath audits, datum shifts, projection information, azimuth and offset computations and positioning tolerances. Proof of such verification, along with a detailed method of operations, satellite coverages, etc., will be submitted to the assigned ExxonMobil representative. Verification of the positioning contractors check (if any) upon the reference stations used for the seismic work will also be carried out.

QC/QA Survey Equipment (minimum required).

Survey equipment equivalent in specifications and procedures to that outlined below will be provided. Sufficient spares and back-up equipment will be provided such that loss or damage of any one item will not prevent accurate evaluation of the positioning of the rig.

- Laptop Computer and portable printer.
- Sufficient cables to interface laptop with navigation contractor's equipment.
- Suitable QC and real-time positioning and GPS post-processing or verification software.
- Accessories including measuring tapes, compass and equipment necessary to measure and compute offsets.
- Necessary spares, consumables, batteries, calculators, camera, etc.

Note: QC contractor may provide or be asked by the COMPANY to provide other soft and hardware deemed necessary for the required work.

All equipment should be properly checked out and tested prior to the survey observations.

Drilling Contractor Positioning System (if used).

QC/QA Contractor shall verify that the drilling contractor's positioning and/or DP navigation system (if used) has the location correctly entered with respect to datums, projections, offsets, etc.

Offset Survey

QC/QA Contractor shall verify the survey between all the GPS satellite antenna location(s) and the "as drilled" location of the kelly bushing. Azimuth control will be established either from the gyroscope, by sun shot observations or from multiple GPS antennas by the Positioning Contractor.

Positioning Contractor RTDGPS Final Positioning

Once the offset survey has been completed and a kelly bushing offset determined, the QC/QA Contractor shall monitor and review the results of the average of 3 hours of RTDGPS data collected by the Positioning Contractor to verify the final coordinates. At the same time, RAW dual-frequency GPS data from at least one 3 hour session, longer if possible, will be collected at the rig location for post-mission verification. Data will be in one Julian day. If time constraints are imposed on the final fix operations, 2 hours of RTDGPS data (e.g., GGA, GLL etc) may be used for the final fix computation. However, a minimum of 3 hours of RAW dual frequency GPS data will still be collected. This data will be post processed by the QC/QA contractor.

Antenna Setup

The antenna location will be chosen to minimize the effects of multipath.

Antenna height to as-drilled sea level will be noted.

The antenna location co-ordinates will be compared to that of the derrick's to ensure correct input of antenna offsets in the Positioning Contractor's navigation system.

Satellite Observations

QC/QA Contractor shall verify and document that all GPS positioning and processing equipment and software is "1024 Rollover" and "Y2K" Compliant.

QC/QA Contractor shall also monitor and comment in the report on any Solar Maximum Disturbances observed.

GPS techniques that minimize the effects of multipath and Solar Maximum Disturbances will be implemented. These techniques will include, but not be limited to, multiple antenna locations, multiple sessions and long observation periods (> 24 hours), etc.

A minimum of five satellites are to be observed simultaneously. The minimum Raw Data collection observing span, that includes continuous and simultaneous observations to the same satellites, should not be less than 3 hours. The maximum time interval between observations is 15 seconds. The resulting RTDGPS positions will be averaged. If time constarints are imposed on the operations, a final fix may be computed after 2 hours. However, Dual frequency raw GPS data will still be recorded for a minimum of 3 hours, with epochs to include the minute and 1/2 minute mark.

Satellite signals should be observed from a minimum of 3 quadrants. The minimum elevation angle for observations is 10 degrees. Satellites that will be obstructed by the derrick or other obstructions will be rejected. Maximum PDOP will be 8. Maximum DGPS update rate will be 12 seconds.

GPS positions will be statistically analyzed to prove their freedom from positional biases and Datum shifted to Local Datum (if required) prior to equipment demobilization. QC\QA

Contractor will independently verify all Datum Shift Computations prior to demobilizing from rig.

QC/QA Contractor laptop shall interface with Positioning Contractor's Navigation System to download an independent set of positioning data for verification purposes.

QC/QA Contractor shall obtain copies of Positioning contractor's computer print-outs of positioning data and configuration files, and Raw GPS Data and GPS rinex files, and include these with his final report.

Preliminary On-Board QC/QA Report

Prior to issuing final well QC/QA report, and upon completion of the RT DGPS work onboard the rig, the QC/QA surveyor-engineer will "sign off" on the Positioning Contractor's position values. The data for the final fix will start to be collected near the end of the jetting or drilling of the initial (30 inch) casing, and issued after that has been set, but prior to cementing.

A preliminary report will be faxed directly by the QC/QA surveyor, immediately after setting of the initial casing to:-

ExxonMobil Exploration Co.
Upstream Technical Computing
Geodetics & Cartography Group
Houston TX. attn: B.D.Barrs.
FAX - (281) 654-7718. (TEL - (281) 654-7397).

This report will consist of the following:

- As-Cased Position. Positioning contractor AND QC/QA contractor positions. **GDA 94 Local** datum will be referenced.
- Target or Proposed Position.
- Sketch of and co-ordinates of rig, offsets, GPS antennas and surveyed derrick position.
- Discrepancies/Comparisons/Analysis.
- **Unless instructed otherwise, this one position only will be issued on the rig, and clearly labled as final. Only in the event of a large movement resulting from bad weather or other problems will a new coordinate be issued.**
- **Prior to departing the rig, the QC/QA surveyor shall obtain from the positioning contractor a disc containing the Raw GPS and RINEX data of the final positioning observations. A copy of this disc will be included in the QC\QA final report.**
- Documents used to prepare the above fax will not contain any formatting or colors that could result in making the faxed copy illegible.

Final QC/QA Report

After the Positioning Contractors raw data has been reviewed, and **within 7 days** of leaving the work area, a final report (Original and five (5) copies) will be submitted and sent to:

ExxonMobil Exploration Co.
Upstream Technical Computing, Data Services.
222 Benmar, Houston TX 77060-21544
Attn.: B.D.Barrs, Geodetics & Cartography Group

An additional two (2) copies will be sent to the local ExxonMobil affiliate.

The final report will consist of the following as a **minimum**:

- Summary of Events and Techniques.
- Field diary, notes and photos of antenna positions.
- Statement of confidence of final position.
- As-Cased location, positioning contractor and QC/QA contractor positions and all GPS Antenna Positions in **GDA 94 Local** Datum and Grid.
- Target or Proposed Position.
- Sketch of rig, GPS antennas and surveyed position, with offsets.
- Satellite Positioning report, graphs and plots.
- Discrepancies/Comparisons between positioning and QC/QA contractor.
- Autonomous GPS post processing verification analysis and results.
- Maps and Sketches and anchor drop locations.
- Geodesy, datums shifts, etc.
- Survey Computations for offsets, QC position, and Contractor Position.
- Nav system computer print outs and documentation supporting final location.
- Equipment lists.
- Diskettes containing Positioning Contractor's GPS Raw Data and Rinex format files.
- Reference Station Site diagram, co-ordinates, positioning report of reference station used by supplier of differential corrections.
- 1024 Rollover & Y2K Compliance comments on equipment and software.
- Comments on Solar Maximum activities.

<u>Post Processing of Positioning Contractor's Dual frequency GPS Data.</u>

QC/QA Contractor will post process, or at the very least, review and verify the integrity of the raw Autonomous GPS data before leaving the rig, and verify the Positioning Contractor's DGPS location.

QC Contractor may be asked to process the Dual Frequency data, using at least 3 nearest IGS /ITRF stations in a differential mode or Precise Ephemeris data, whichever enables this work to be completed soonest.

<u>Accuracy Specifications.(refer to specifications issued to positioning contractor).</u>

* The spudded location will be no greater than <u>5 (five)</u> meters from the target location.
* The reliability of the fix will be better than +\- <u>3 (three)</u> meters with 95% confidence.

MOVE & MOORING PROGRAMME		WELL: Scallop-1
AFE NO: TBA	RK ORDER: TBA	TYPE: Near Field Wildcat Well

1.0 MOVE & MOORING OBJECTIVES

Move the Transocean Sedco 702 from BHPP's Minerva-3 well location in the Otway Basin to the Scallop-1 well location (VIC/RL2) by towing with two boats at a transit draft of 21ft. The Pacific Frontier and Pacific Challenger will be used for the tow, with the vessels connected to anchor chains #2 and #3 on the port and starboard columns respectively.

Position the rig within a **5m-radius circle** centred on the proposed location on a heading of **210°**. The prevailing wind is from the South-West. By selecting a heading of 210°, the pipe and main aft deck work area will be protected providing safer crane operation. The drill floor is also less exposed and the boat loading station is oriented to allow a workboat to be pushed away from the rig in the event of a breakdown of the thruster.

Set 8 anchors in 110m of water in an asymmetrical pattern and test.

On the completion of the well, recover the anchors and move the Sedco 702 off location.

2.0 TABLE OF CONTENTS

Engineer	(R. M. Fürchtenicht)	R Fürchtenicht 24TH JAN, 2003.
Gippsland Geoscience Manger	(G. A. Nash)	G. Nash 24/1/03
Drilling Engineering Manger	(C. A. Johancsik)	Colin Johancsik 28/01/03
Operations Superintendent	(F. W. Kratzer)	F. Kratzer 24/1/03
Drilling Manager	(D. L. Whiteman)	Daniel L. Whiteman 24/1/2003

REV: 1

MOVE & MOORING PROGRAMME		WELL: Scallop-1
AFE NO: TBA	**RK ORDER:** TBA	**TYPE:** Near Field Wildcat Well

1.0 MOVE & MOORING OBJECTIVES

Move the Transocean Sedco 702 from BHPP's Minerva-3 well location in the Otway Basin to the Scallop-1 well location (VIC/RL2) by towing with two boats at a transit draft of 21ft. The Pacific Frontier and Pacific Challenger will be used for the tow, with the vessels connected to anchor chains #2 and #3 on the port and starboard columns respectively.

Position the rig within a **5m-radius circle** centred on the proposed location on a heading of **210°**. The prevailing wind is from the South-West. By selecting a heading of 210°, the pipe and main aft deck work area will be protected providing safer crane operation. The drill floor is also less exposed and the boat loading station is oriented to allow a workboat to be pushed away from the rig in the event of a breakdown of the thruster.

Set 8 anchors in 110m of water in an asymmetrical pattern and test.

On the completion of the well, recover the anchors and move the Sedco 702 off location.

2.0 TABLE OF CONTENTS

Engineer	(R. M. Fürchtenicht)	______________________
Gippsland Geoscience Manger	(G. A. Nash)	______________________
Drilling Engineering Manger	(C. A. Johancsik)	______________________
Operations Superintendent	(F. W. Kratzer)	______________________
Drilling Manager	(D. L. Whiteman)	______________________

REV: 1

3.0 MINERVA-3 & SCALLOP-1 WELL LOCATIONS

Minerva-3 Well Location:

Latitude	38° 42' 28.063"	South
Longitude	142° 57' 28.046"	East

Scallop-1 Well Location:

Latitude	38° 12' 48.600"	South
Longitude	148° 35' 28.900"	East

Northing (MGA94)	5,769,300 mN
Easting	639,316 mE

Basin, Permit	Gippsland Basin, Vic/RL2
Seismic Line	Kipper G99A 3D Seismic Survey, Inline-1025, Crossline-1330
Datum	**Geocentric Datum of Australia 1994 (GDA94)**
Ellipsoid	Geodatic Reference System (GRS80)
	UTM Zone 55 / MGA 1994
	Central Meridian (CM) 147 Degrees East
	False Easting 500,000.0
	False Northing 10,000,000.0
	Scale Factor at CM 0.9996
Projection	Universal Transverse Mercator (UTM).

4.0 BOTTOM CONDITIONS / HAZARDS & PRECAUTIONS

Both the Tuna and Flounder platforms are approximately 15.5 km and 17.6 km from the proposed Scallop-1 on a grid bearing of 285° and 227° respectively.

The following conclusions were made from the Scallop-1 Preliminary Site Survey Report:

Bathymetry

- The nearest observable water depth at the proposed Scallop-1 location is 109m MSL. Minimum and maximum water depths over the site are 99m MSL to the extreme West and 116m MSL to the extreme South of the proposed Scallop-1 location. Depths in the extreme North and East are 101m and 115m MSL respectively.
- The seabed across the Scallop-1 <u>surveyed area</u> is observed to shelve gently towards the South-SouthEast while the seabed <u>in the vicinity of</u> the proposed well location shelves very gently towards the South-East. No anomalous seabed gradients or ridges have been identified.

Seabed Features

- The seabed across the Scallop-1 <u>surveyed area</u> is compromised of homogenous fine sediments, comprised of slightly gravelly, fine to medium carbonate SAND with shell fragments. The majority of the surveyed area is essentially featureless with few minor patches identified as concentrations of coarser sediments such as surficial gravels and/or shelly material. Few, shallow trawl scars are observed across the site and these are generally orientated North-East/South-West.
- The seabed <u>in the vicinity of</u> the proposed well location is featureless. No significant natural or anthropogenic objects, or items of debris, that may be of constraint to anchor handling or drilling operations have been identified on the seabed within the surveyed area or at the proposed well location.

Shallow Geology

- Acoustic penetration was attained to a depth of approximately 15m below seabed across the majority of the surveyed area. Based on the sub-bottom profiler data, the sub-seabed geology across the site may be divided into three (3) general sedimentary units as described below:
- ***UNIT A:*** This acoustically opaque, surficial sedimentary unit is observed to extend across the entire site varying in thickness from a maximum of around 6m in the South-East thinning to around 2m in the extreme North. This unit is typically 4m to 5m thick across the majority of the surveyed area.

  Sediments within Unit A are interpreted to comprise of unconsolidated slightly gravely, carbonate SAND. The base of this unit is identified at approximately 5m below seabed <u>at the proposed well location</u>.
- ***UNIT B:*** Unit B extends below Unit A above across the entire site as a generally 3m thick coarse and/or variably indurated (cemented) sediments (Calcarenite). The base of this unit is observed at approximately 8m below seabed <u>at the proposed well location</u>.

  Due to the likelihood of indurated (cemented) material being present within the thin sedimentary sequence that makes up Unit B, <u>caution should be exercised while drilling at this level.</u> Any cementation of sediments is likely to be relatively weak to moderate compared to other areas of similar sub-seabed depth identified across the site.
- ***UNIT C:*** Unit C underlies Unit B above and extends across the entire site. The base of this unit is not always evident across the site particularly in areas where the reflectors of Unit B are acoustically strong. The base of Unit C is identified at approximately 15m below seabed <u>at the proposed well location.</u> Sediments within this unit are tentatively interpreted to comprise of unconsolidated carbonate SAND.

Top of Unit	Depth Below Seabed (m)	Unit Thickness (m)	Predicted Lithology
A	5	2 to 6	predominantly of unconsolidated carbonate SAND thinning toward the north.
B	8	3	variably indurated (cemented) material (Calcarenite).
C	15	5 to 7	unconsolidated carbonate SAND

- ***Grab Samples:*** Based on grab samples recovered from within the survey area, sediments within the upper surficial Unit A are expected to be non-cohesive and generally homogenous across the site. These sediments are not expected to pose any constraint on anchor handling operations. Although this unit thins to approximately 2m in the north, this unit is generally thicker than 4m across the majority of the site.
- No other sub-seabed obstructions, natural or anthropogenic, or geological anomalies have been identified on the sub-bottom profiler records across the site that may be of constraint to either anchor handling or drilling operations.

5.0 MOORING EQUIPMENT / ANCHOR HANDLING VESSELS

5.1 <u>SEDCO 702 MOORING EQUIPMENT:</u>

Anchors: 8 x 12 ton Vryhof Stevpris high holding power anchors - 32.0º Fluke Angle.
Deployed by permanent Chain Chasers
De-rated Holding Capacity in Sand: 519 kips (assumed)

Chain: 3" ORQ
Breaking Strength = 1,045,000 lbs
Normal Operating Tension = 250 kips
Max Operating Tension = 350 kips
Max length = 4,300 ft, Useable length = 4,000 ft of chain per windlass.

Following chain lengths are available:

No.1	4,000 ft	No.2	4,000 ft	No.3	4,000 ft	No.4	4,000 ft
No.5	4,000 ft	No.6	4,000 ft	No.7	4,000 ft	No.8	4,000 ft

These chain lengths allow 300 ft. of 'dead' chain to be left in the lockers.

Windlass	x8 Baylor Series 350 Units EMD D79 Electric Motor, 800HP Max Tension = 500 kips; 15 minute Tension = 350 kips Mechanical Brake Capacity = 1,003 kips Dynamic Brake Capacity = 500 kips

5.2 ANCHOR HANDLING VESSELS:

Boats	Pacific Frontier	Pacific Challenger
Operator	Swire Pacific	Swire Pacific
Positioning (Thales)	Tug Tracking	Tug Tracking
BHP Maximum Continuous	12,240	8,480
Bollard Pull Tons	147	103
Winch Stall Tons	250	250
Tow wire	1,400m / 74mm	1,200m / 64mm
Work wire	2 x 1,100m / 74mm	600m / 76mm

6.0 MANAGEMENT OF CHANGE

1. The following procedures are the minimum requirements. Variations to the procedures due to weather and current will only be allowed if the variation is safe and do not present an increased personnel or operational risk.
2. Esso's Representative and the OIM shall discuss any variation prior to operations commencing.

7.0 PREPARATION FOR RIG MOVE

1. The rig will be released to Esso after completion of drilling services on BHPP's Minerva-3 well location and when the last anchor (#7) is racked and bolstered. Esso's spud gear may be loaded onboard and Esso's drilling representatives will be onboard prior to commencing the rig move. Tubulars in the derrick will be laid down and mud pits will be emptied in preparation for the tow.
2. Verify that the pre-tow stability calculations are complete.
3. Complete a material inventory prior to departure from the Minerva-3 location:
   - Inventory all mud products and additives on board (barite and bentonite).
   - Inventory all cement, additives and consumables in board.
   - Inventory all bulks (eg. fuel) on the rig and on the workboats.
   - Sign off the "Statement of Facts" between BHPP's representative, Sedco and Esso. Fax to Esso's Melbourne office (03-9270-3546).
4. Ensure any loose items are sea fastened.
5. Ensure all of Thales Geosolution's positioning system:
   - Skyfix DGPS
   - Barge Management System
   - Tug Tracking system

   are loaded on the rig at the end of the BHPP's Minerva-3 well when Esso takes over the rig. Thales personnel should also board the rig at this point to install the positioning equipment onboard the rig and both AHVs.

   NOTE: 1 Thales are to plot all relevant obstructions by programming the DGPS equipment so that the display on the VDU equipment clearly indicates bearings and distances from the rig to any know fixed obstructions.
6. Ensure that the two Emergency towing pendants have been prepared prior to moving off location and that sufficient spare mooring equipment is provided to cope with any potential problem.
7. All tidal and current data shall be considered prior to and during any rig move operation.

8. Conduct a pre-rig move meeting with rig crew and masters of the vessels to discuss the rig move and the anchor running procedure. The minimum attendance is:

   - Esso Drilling Supervisor
   - BHPP Representative
   - Transocean Sedco 702 OIM
   - Rig Superintendent
   - Barge Master
   - Thales Geosolution's Surveyor
   - Captains of both AHVs
   - Winch Operators

   During the meeting the rig move procedures, charts, site survey reports, tidal height predictions, near surface current predictions, navigational hazards, radio channels, weather predictions and any other information deemed to be relevant to the operation shall be discussed.

9. Note that a Western Geco's seismic survey vessel the "Western Monarch" is likely to be encountered during the tow to Scallop. It is performing seismic activities near the Blackback subsea wells and will be working around the following grid co-ordinates. Contact the Western Geco's master on Vsat phone +1-713-689-1996/+1-713-689-1908 or Inmarsat 871-133-5547 to advise of the tow plan.

Latitude	Longitude
38^o 25' 53.0" S	148^o 30' 15.0" E
38^o 29' 35.0" S	148^o 45' 52.0" E
38^o 47' 27.0" S	148^o 38' 51.0" E
38^o 41' 50.0" S	148^o 15' 34.0" E
38^o 31' 51.0" S	148^o 19' 31.0" E
38^o 33' 41.0" S	148^o 27' 15.0" E

8.0 TOW TO SCALLOP-1

NOTE: 1 All tidal and current data shall be considered prior to and during any rig move operation.

NOTE: 2 The move will be conducted in accordance with the "Sedco 702" Marine Operations Manual. Responsibility for the safety of personnel and integrity of the vessel will at all times remain with the Transocean OIM.

1. The tow will proceed to the Scallop-1 location with the one vessel connected to anchor chain #2 and the other connected to anchor chain #3. The projected tow route is illustrated on Attachment 1 & 2. The rig will be towed at a transit draft of 21 ft (excluding the vessel thrusters which extend a further 12 ft under the keel). The towing distance is estimated to be 310.3 nm and is expected to take approximately 77.5 hours at 4.0 knots. Thales, using the DGPS equipment, shall monitor the tow from the Minerva-3 location to the Scallop-1 location.

2. The proposed tow route to Scallop-1 is tabulated below:

Location	Latitude	Longitude	Rig Heading	Distance to next Loc
Minerva-3 Location	38° 42' 28.1" S	142° 57' 28.0" E	197°	--
Way Point #1	39° 02' 00" S	143° 30' 00" E	128°	32.0 nm
Way Point #2	39° 17' 00" S	146° 10' 00" E	096°	125.5 nm
Way Point #3	39° 17' 00" S	146° 33' 12" E	090°	18.0 nm
Way Point #4	39° 07' 54" S	147° 00' 00" E	066°	22.7 nm
Way Point #5	38° 49' 00" S	148° 13' 30" E	072°	60.4 nm
Way Point #6	38° 36' 00" S	148° 38' 30" E	056°	23.5 nm
Way Point #7	38° 11' 30" S	148° 39' 30" E	001°	24.5 nm
Way Point #8	38° 11' 12" S	148° 38' 00" E	284°	1.2 nm
Scallop-1 Approach	--	--	232°	2.5 nm

NOTE: 1 The exact route to Scallop-1 shall be determined by the Esso Representative, Transocean OIM and Barge Master.

NOTE: 2 During the rig move a radar qualified person shall remain in the pilot house to monitor radar contacts. In addition, the radio room is to maintain a listening watch as detailed in the Sedco 702 "Rig Move Procedure".

NOTE: 3 The planned tow route follows the shipping route channel next to the exclusion zone around Esso's existing Bass Strait Platforms and around the Blackback subsea well located below the shipping lane. The route is not anticipated to cross any Bass Strait to shore pipelines.

NOTE: 4 Should the rig near any Platforms or subsea structures during the tow, it should maintain a **minimum safe distance of 2 nm** from them.

3. Shorten/Reduce the tow length at a distance of 5 nm from the #7 anchor drop point and the tow vessels **shall** slow down and the tow length shortened further for the final run-in line.
4. An Esso Representative will provide a quality check for the final the rig positioning at the Scallop-1 location.
5. The run-in to the Scallop-1 location will be made at a heading of 232° and will commence at a distance of 2.0 nm from the #7 anchor drop point.

9.0 MOORING PREPARATION

1. Prior to reaching location, the OIM shall conduct a radio conference between the rig and vessel masters. Rig personnel to attend shall include the Rig Superintendent, the Rig Barge Master, Esso's Company Representative, Esso's QA/QC Survey Representative and the Thales Surveyors. Any variation required to the rig move procedure shall be discussed at this time. It will also be decided at this time when the second AHTS vessel will be removed from the tow arrangement in preparation for running anchors.
2. All winches and ancillary equipment to be checked prior to any anchor operation.
3. All chain markings shall be checked and refreshed where necessary. All personnel directly involved with the anchor chain recovery and deployment operations shall be aware of the markings on the chain.
4. Inspect all pennants and handling slings at rig end. Boats are to be supplied with spare equipment, pennants and shackles as required by vessel masters.
5. All tidal and current data shall be considered prior to and during mooring operations.
6. JSA's will be held prior to commencing anchor handling and pennant handling operations.

7. During anchor deployment operations, the amount of chain payed out shall be called out by the winch operator at 500 feet intervals and checked with the indicated chain deployed from the navigation system in the pilothouse.
8. The navigation screen shall always display the distance from the anchor fairlead to the stern of the vessel during anchor running. The OIM or his designee will be in the pilothouse for deployment of primary anchors.
9. During anchor handling operations the drilling operations will only be issued radios with the express permission of the Rig Superintendent. He shall ensure that radios are not on working frequencies that interfere with the anchor handling operations.

10.0 MOORING AT SCALLOP-1

1. Moor the Sedco 702 at the Scallop-1 location as follows (ref. Attachment 3 - Sedco's Rig Move Procedures).
2. The water depth at the location is ~110 m (361')
3. Mooring pattern is a symmetric 45/45 pattern with a **RIG HEADING OF 210°**, as follows:

LEG	HEADING	ANCHOR	MINIMUM CHAIN PAYOUT
1	142 °T	Vryhof Stevpris, 12t	3,000 ft
2	187 °T	Vryhof Stevpris, 12t	3,000 ft
3	232 °T	Vryhof Stevpris, 12t	3,000 ft
4	277 °T	Vryhof Stevpris, 12t	3,000 ft
5	322 °T	Vryhof Stevpris, 12t	3,000 ft
6	007 °T	Vryhof Stevpris, 12t	3,000 ft
7	052 °T	Vryhof Stevpris, 12t	3,000 ft
8	097 °T	Vryhof Stevpris, 12t	3,000 ft

NOTE: 1 One (1) of the eight (8) anchors is scheduled to be changed out, anchor #2.

NOTE: 2 The minimum acceptable chain length will be 3,000 ft.

4. During the deployment of the primary anchors the OIM or his deputy shall be present in the pilothouse to coordinate operations.
5. The run-in to the Scallop-1 location will be made at a heading of 232^o and will commence at a distance of 2.0 nm from the #7 anchor drop point.
6. 1.0 nm from the #7 drop point, on a rig heading of 232^o, the towing vessels will reduce pitch so that a speed of 1.5 knots can be maintained.

   NOTE: 1 If the tide or current is setting in a direction that may affect the run-in, the speed and run-in course may be amended. Rig thrusters will be used to assist.

7. The rig will drop **#7 anchor** when positioned 3,000 ft @ 052^o from the location.

   NOTE: 1 Speed of the rig is not to exceed 1.0 knots while paying out #7 chain.

   NOTE: 2 At 2,000 ft, the windlass will be stopped momentarily and the tension checked to ascertain that the anchor is holding.

8. When the rig is positioned over the location, pay out of the chain will be stopped. The Pacific Challenger will maintain a static tow while the Pacific Frontier reconnects and runs #3 anchor. The rig's thrusters may be used as required to hold location.
9. The Pacific Frontier will run **#3 anchor** on a bearing of 232^o. Tension #3 against #7 to a minimum of 175 kips then chase back the pendant to the rig.

   NOTE: 1 The pilot house and winch operator shall check the length of chain paid out as the vessel runs anchor towards the anchor point. This applies for all the anchor running steps below.

10. The Pacific Frontier will take #6 PCC, deck the anchor and change out the chain chaser ring. It will then run **#6 anchor** on a bearing of 007°. Tension #6 to a minimum of 175 kips then chase back the pendant to the rig.
11. The Pacific Challenger will disconnect **#2 anchor**. Change the anchor out with a new anchor. With the new anchor connected, run **#2 anchor** on a bearing of 187°. Tension #2 to a minimum of 175 kips then chase back the pendant to the rig.
12. Run the remaining secondary anchors on the following bearings: **#1 @ 142°, #4 @ 277°, #5 @ 322° & #8 @ 097°** utilising both AHTS vessels.
13. If drilling operations are to commence as soon as the rig reaches the location due to timing, then when the <u>last of the primary anchors</u> are run then:

    Consider ballasting the rig down to the drilling draft (80 ft). If this was decided, when the rig has been ballasted down pass the critical transition zone (between 26-52 ft), start running the secondary anchors (#1, #4, #5 & #8) whilst finishing the ballasting of the rig to the drilling draft.

    Operations in the derrick could commence within the rig safety stability envelope including the making up of the 30" casing string and hung-off once the four primary anchors have been run and the rig is ballasted down through the critical transition zone.

    The decision to run the secondary anchors while ballasting down shall be determined by the OIM.
14. Position rig and pre-tension all the anchors to 350 kips for a period of 15 minutes.

    NOTE: 1 The SWL of the anchor chain is 350 kips which is 1/3 of the breaking strain.
15. After all anchors have been satisfactorily set and tested, reduce and balance/adjust the tension to 240 kips (operating tension). Adjust the chains as required to balance the mooring system and to position the rig as close to the location as reasonably possible. The final rig location <u>must be **within 5m** of the intended location</u> prior to spudding the well.
16. Deploy ROV to confirm location is free of debris.
17. Fax and mail originals of the following reports to the Drilling Superintendent:
    - Well Location Report with the well location referenced to the GDA94 datum & UTM's, for the Latitude/Longitude coordinates.
    - Mooring Operations Summary, including a schematic of the final chain lengths.
    - Anchor Running Report
18. The calculated minimum required tensioner setting versus mud weight for drilling mode and for a connected, non-drilling riser will be provided at a later date due to timing constraints.
19. Attachment 4 shows shows the mooring pattern and safety zone around the rig.

11.0 ANCHOR RECOVERY

1. A detailed De-mooring and move-off location procedure will be generated towards the end of the well when drilling operations have ceased on Scallop-1.
2. A pre-rig move meeting shall be held onboard the rig prior to anchor recovery operations. The meeting shall be attended by but not limited to:
    - Esso Drilling Supervisor
    - Transocean Sedco 702 OIM
    - Rig Superintendent
    - Barge Master
    - Surveyors (if applicable)
    - Captains of both AHVs
    - Winch Operators

3. During the meeting the rig move procedures, charts, site survey reports, tidal height predictions, near surface current predictions, navigational hazards, radio channels, weather predictions and any other information deemed to be relevant to the operation shall be discussed.
4. The exact sequence for De-mooring and towing of the vessel from the Scallop-1 location will be agreed between Esso and the next operator (if applicable).
5. Upon completion of drilling operations and once the PGB is pulled clear of the seafloor and debris survey has been completed by the ROV, the rig may start to de-ballast. Anchor recovery may also start at this time.
6. De-ballasting shall be stopped at 52 ft draft and shall not continue until all drilling operations are completed.
7. Continue to de-ballast the rig and all operations shall cease while the rig passes through the critical draft from 52ft to 26 ft.
8. All winches and ancillary equipment to be checked prior to any anchor operation.
9. Inspect all pennants and handling slings at rig end.
10. **SPECIAL PRECAUTION:** <u>If the well has been Suspended, anchor handling operations not to take place directly above wellhead at any time</u>.
11. Vessels to be supplied with spare equipment, pennants and shackles as required by vessel masters.
12. Anchor recovery sequence, connection to the vessel to the main tow bridle and the move off location will be as detailed in the De-mooing and move off location procedures to be issues at the time.
13. The rig will finish on contract after recovery of the last anchor on the Scallop-1 location.

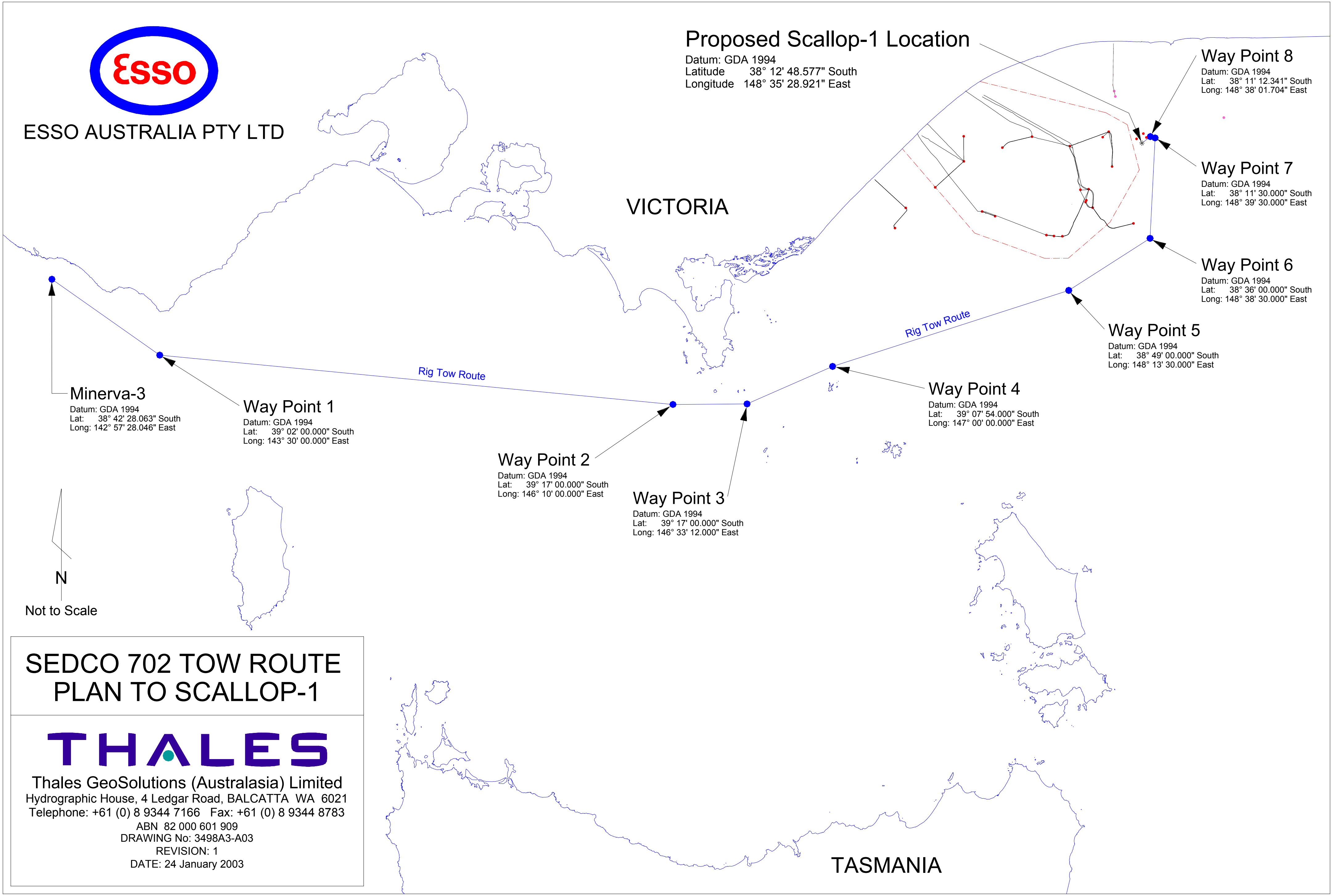
NOTE: 1 The exact route from Scallop-1 shall be determined by the Surveyor (if applicable), Transocean Sedco OIM and Barge Master.

NOTE: 2 Maintain a **minimum safe distance of 2 nm** from all platforms.

12.0 ATTACHMENTS & DISTRIBUTION

Organisation	Attention	Address	Check
Department of Primary Industries - Minerals & Petroleum Victoria **2 copies required**	Mr. Bruce Amour	PO Box 500 EAST MELBOURNE VIC 3002	
BHP Billiton Petroleum (Vic) Pty Ltd	Mr Mel Osborne Geoscience Section Leader	Bass Strait Asset Level 28, 600 Bourke Street MELBOURNE VIC 3000	
Santos Offshore Pty Limited	Mr Craig Gumley Manager Exploration & Exploitation	Level 29, Santos House 91 King William Street ADELAIDE SA 5000	
Woodside Energy Ltd	Mr Steve Townsend Operations Geologist	1 Adelaide Terrace PERTH WA 6000	
Esso Drilling Supervisors **plus 2 signed copies**	Mr. George Sharkey Mr. John Richmond	Internal e-mail	
Sedco Forex International Inc (Transocean)	Mr Blue O'Shea Rig Manager - Sedco 702	Level 6, 220 St Georges Tce, PERTH WA 6000	
Sedco 702 **3 copies required**	OIM	Sedco 702 Mailbag Via Sedco Forex International PERTH WA 6000	
Thales Geosolutions (Australia) Pty Ltd	Mr Jon McKay Mr Brad O'Brien	jon.mackay@thales-geosolutions.com brad.obrien@thales-geosolutions.com	
Rig Positioning QA	Mr Harry Arrowsmith	hydro@office.net.au	
Swire Pacific Offshore	Mr Sam Pullan	spullan@spopty.com.au	
EAPL Library	Librarian	Esso House 3rd floor	
Field Drilling Manager	Daniel L. Whiteman	Internal email	
Operations Superintendent **plus 1 signed copy**	Frank Kratzer	Internal email	
Engineering Manager	Colin Johancsik	Internal email	
Drilling Engineer **plus 1 signed copy & Original copy**	Chris Meakin	Internal email	
Drilling Engineer **plus 1 signed copy**	Rudolf M Fürchtenicht	Internal email	
Gippsland Geoscience Manager	Glen Nash	Internal email	
Geoscience Team Leader	Simon Grope	Internal email	

ATTACHMENT 1. ESSO AUSTRALIA PTY LTD RIG MOVE TOW ROUTE TO SCALLOP-1 #1



SEDCO 702 TOW ROUTE PLAN TO SCALLOP-1

THALES

Thales GeoSolutions (Australasia) Limited
Hydrographic House, 4 Ledgar Road, BALCATTA WA 6021
Telephone: +61 (0) 8 9344 7166 Fax: +61 (0) 8 9344 8783
ABN 82 000 601 909

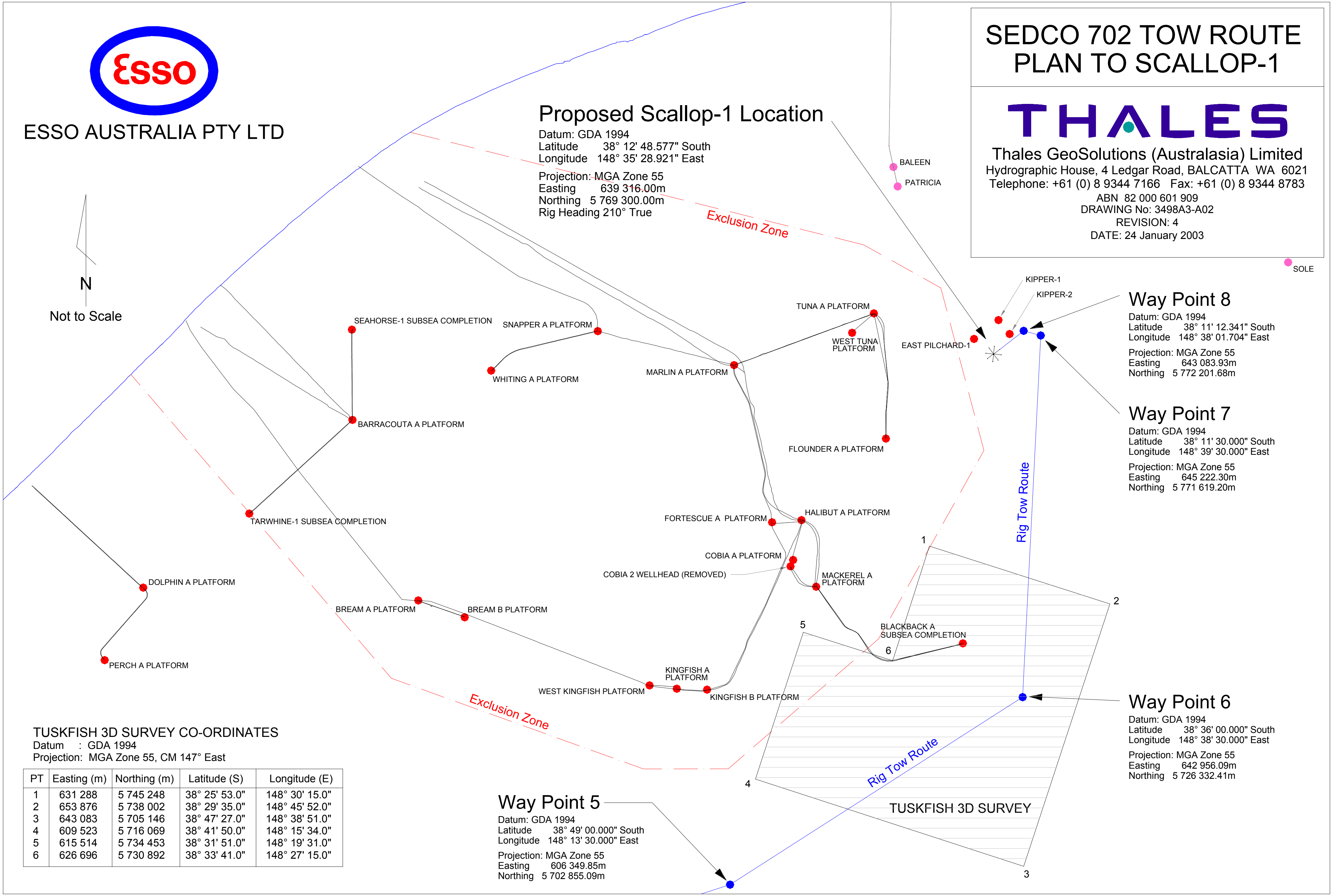
DRAWING No: 3498A3-A03
REVISION: 1
DATE: 24 January 2003

ATTACHMENT 2. **ESSO AUSTRALIA PTY LTD RIG MOVE TOW ROUTE TO SCALLOP-1 #2**

SEDCO 702 TOW ROUTE PLAN TO SCALLOP-1

THALES
Thales GeoSolutions (Australasia) Limited
Hydrographic House, 4 Ledgar Road, BALCATTA WA 6021
Telephone: +61 (0) 8 9344 7166 Fax: +61 (0) 8 9344 8783
ABN 82 000 601 909
DRAWING No: 3498A3-A02
REVISION: 4
DATE: 24 January 2003

Esso
ESSO AUSTRALIA PTY LTD



TUSKFISH 3D SURVEY CO-ORDINATES

Datum : GDA 1994
Projection: MGA Zone 55, CM 147° East

PT	Easting (m)	Northing (m)	Latitude (S)	Longitude (E)
1	631 288	5 745 248	38° 25' 53.0"	148° 30' 15.0"
2	653 876	5 738 002	38° 29' 35.0"	148° 45' 52.0"
3	643 083	5 705 146	38° 47' 27.0"	148° 38' 51.0"
4	609 523	5 716 069	38° 41' 50.0"	148° 15' 34.0"
5	615 514	5 734 453	38° 31' 51.0"	148° 19' 31.0"
6	626 696	5 730 892	38° 33' 41.0"	148° 27' 15.0"

<u>ATTACHMENT 3.</u> TRANSOCEAN SEDCO 702 SCALLOP-1 LOCATION RIG MOVE PROCEDURE

Minerva 3 to Scallop 1

APPROVALS

	Signature:	Name:	Position:
Author:		M. Walton	Barge Master
Checked by:		B. Henderson	OIM
Approved by:		B. O'Shea	Rig Manager

CONTENTS

References

1.	**Sedco 702 Marine Operations Manual**	**OIM Office and Bridge**
2.	**Rig Site Survey for Well Location**	**Operator Supply**
3.	**Thales Survey Procedures**	**Thales Supply**

1.0 INTRODUCTION

In February 2003 it is planned to move the semi submersible "SEDCO 702" from the BHP Billiton Minerva 3 location to the Esso Scallop 1 location in Bass Strait.

The departing and arrival location co-ordinates are as follows:

Minerva 3

Latitude	038° 42' 28.063"	South
Longitude	142° 57' 28.046"	East

Scallop 1 (Reference Datum - GDA 94)

Latitude	038° 12' 48.6"	South
Longitude	148° 35' 28.9"	East

The move will be conducted in accordance with the "SEDCO 702" Marine Operations Manual. Responsibility for the safety of personnel and integrity of the vessel will at all times remain with the Transocean O.I.M.

A pre-move meeting will be held on the rig. The meetings will be attended by the key personnel involved in the rig move, and, will include the anchor handling vessel Captains where possible. The purpose of these meetings will be to ensure that all personnel are aware of their job functions and responsibilities, and, to agree on any technical aspects and constraints that may affect the operation.

The offshore rig move meeting will be minuted and confirmation will be given to the Operator's Representative(s), prior to commencing the tow, that all of the fundamental safety systems on the vessel are fully operational. This will include ballast and fire pumps, emergency generator and watertight integrity. Stability loading sheets for the intended transit conditions will have been prepared and will remain available for review.

Weather forecasts will be supplied through the Operator by an agreed Met Ocean service for both the departure and arrival locations, and, at regular intervals for the tow route as required. Updated weather information is available on a 24-hour basis from the service via Fax, however, it is recommended that other and any sources of weather information be consulted as appropriate.

This procedure is for the guidance of all parties involved in the move. However, departure from the procedures is acceptable if agreed between the Transocean and Operator Representative(s), and, that any such departure is made in order to ensure a safe and efficient passage.

2.0 SAFETY and COMMUNICATION

SAFETY

Although anchor handling is defined as being a routine operation, it is by nature also hazardous. The mooring components are heavy, and the equipment used in performing the operation is working under high tensile loading. To outline the safety hazards involved with the operation it will be the responsibility of the O.I.M. to ensure that pre-job safety meetings are held prior to commencement, prior to any shift changes, or prior to effecting changes resulting from a deviation to the original plan. The TRA and Think Drill format will be used during the process and as a minimum will include review and discussion on the following items:

- Clarification that the rig-move procedures have been reviewed, understood, and agreed by all parties.
- Clarification of personnel "competency" and authorisation to operate machinery.
- Responsibilities of each crewmember involved in the operation
- Confirmation that fixed and portable communication equipment to be used in the operation have been checked and that appropriate channels have been allocated.
- Chain of command and lines of communication are fully understood.
- Equipment limitations with respect to speed and specifically Safe Working Loads.
- Keeping areas behind, in front of, and under moving equipment clear of personnel. This relates specifically to the Anchor Winches and Main Cranes.
- Hazards of handling anchor chain and wire cables.

COMMUNICATION

It is imperative that lines of communication and responsibility have been clearly defined and are understood by all concerned. It will be the responsibility of the OIM to ensure that these actions are complete prior to commencement of the operation.

Specific attention will be made to the interface requirements of passing and recovering the anchors and anchor pendants between the rig and the anchor handling vessels. The O.I.M. will accept, or suitably delegate responsibility, to ensure that a competent person is present on the deck while passing, or recovering the anchor to/from the vessel. This person will be equipped with portable VHF communications, and will be in direct contact with the Anchor Winch Operator, the Crane Operator, anchor handling vessel Captain, and the Sedco 702 Barge Control Room. His immediate responsibility will be in co-ordinating and ensuring that the anchor transfer process is conducted safely and within the equipment limitations.

The process of passing the anchor pendant between the rig and the anchor-handling vessel must be undertaken with extreme caution, as this operation is conducted with the rig crane whip-line hoist, which has a limited rating. Further, due to the operating radius of the crane while handling anchor pendants, the boom Safe Woking Load rating is at it's lowest values due to the long outreach to facilitate connecting to the wires at the stern of the anchor handling vessels.

Both the rating of the whip-line and the rating of the Crane Boom are below the potential weight of the anchor and connected anchor chain that is to be passed to, or received from, the attending vessels. It will be confirmed without doubt that the rigging involved in the pendant wire handling is:

a) ***Adequately rated & certified for the task at hand.***

BUT

b) ***Not of a significantly higher rating that would transfer the weak link in the lifting rigging to a critical component of the system for example the Crane Boom.***

In the event that the anchor is released from the anchor-handling vessel in an uncontrolled or unknown manner, the potential for catastrophic failure of the Crane, or components of the Crane may occur.

The "competent" person supervising the activity will ensure that the anchor is fully racked on the anchor bolster prior to handing or receiving the work pendant from the anchor-handling vessel. This will be done by visual means with the rig in a transit draft condition, or, by reference to the white indicator markings on the chain below the winch wildcat if the rig is in the deep draft or survival draft condition. The footage reading on the chain out display located at the anchor winch should also be checked and confirmed as required. Prior to the passing of the anchor pendant from the AHTSV to the rig crane, the AHTSV Captain shall ensure, and clarify to the rig, that the load being suspended on the pendant line is not excessive. If it appears to be overly loaded or taut, this could suggest that the anchor is not properly racked or the wire is binding in the Karm Forks or the stern roller of the AHTSV.

For a more detailed break down of Rig Specific Procedures and material pertaining to safe anchor handling operations, reference should me made to the following documents:

Rig Marine Operations Manual	Various Sections under index A - "Anchors".
Sedco 702 Barge Procedures	8, 11, 23, and 38
Site Survey Documents	

3.0 JOB FUNCTIONS AND RESPONSIBILITIES

ESSO DRILLING REPRESENTATIVE – Is considered the designated ESSO representative onboard the rig.

He will liase with the SEDCO 702 OIM and Master with regard to rig move status.

He will be responsible for authorising commencement of operations after consultation with the SEDCO 702 OIM and Master.

He will also be responsible for acceptance of On and Off hire times and figures detailing v/l consumables.

ESSO MARINE REPRESENTATIVE (if applicable) – Will assist and advise the SEDCO 702 OIM and Master to ensure that all operations are conducted in such a manner as to safeguard the integrity of all ESSO assets. He will assist Transocean personnel in the detailed briefing of all key personnel involved in the rig move prior to the commencement of anchor handling operations.

He will assist in ensuring that all marine equipment provided by ESSO and the contractor is in good condition, certificated where required and correctly recorded upon deployment, recovery and redeployment.

He will liase with the OIM and Master regarding the correct deployment operations. Also with the ESSO Drilling Supervisor to ensure the correct deployment and recovery of all mooring systems and associated equipment.

RIG MOVE VESSEL MASTERS – Will be responsible for the safety of their vessels, and where towing, the safety of the tow.

They will ensure that the appropriate navigation warnings are issued at regular intervals.
They will be responsible for ensuring that all anchor-handling operations are conducted in a safe manner with due regard to safe working practices and the practice of good seamanship.

TRANSOCEAN OFFSHORE INSTALLATION MANAGER (O.I.M.) - Will at all times have full responsibility for the safety of the unit and all personnel on board.

When advised by the Operator Representative(s) that the rig has been accepted for the drilling program, he will decide when it is safe and practicable to commence rig-move operations within the limits of the units Marine Operations Manual.

Will ensure that the Navigational Bridge is continually manned by certified and competent Watchkeepers.

TRANSOCEAN BARGE MARINE SUPERVISOR - Will ensure deployment of sufficient and competent rig crews for the safe and efficient conduct of rig-move operations.

Will be responsible for the correct operation and availability of associated mooring and moving machinery and equipment.

Will liase directly with the Transocean O.I.M. regarding marine matters. He will pass instructions to the vessels regarding anchor handling and towing operations.

Will ensure pre-move operational maintenance and checks are conducted in an efficient and timely manner.

Will ensure that appropriate notifications regarding the rig move are made to governmental and agency bodies as defined by controlling legislation.

SURVEY REPRESENTATIVE - Reports directly to the Operator Representative(s).

Is responsible for the installation and preparation of the rig-move positioning equipment and any respective calibration, on both the MODU and the AHTSV's.

Will provide strict quality control at all stages of the operation and will pay particular attention to the quality of records and their annotation.

Will make regular independent checks on the positioning systems and take every opportunity to check the correct functioning and operation of all survey equipment.

4.0 DEPARTURE and ARRIVAL LOCATIONS

4.1 DEPARTURE LOCATION: Minerva 3

Latitude	-	038° 42' 28.063"	South
Longitude	-	142° 57' 28.046"	East
Water Depth	-	+/- 59m LAT: 193.5 feet	
Rig heading	-	197°	
Seabed	-	Relatively flat	
Obstructions	-	Minerva 1 wellhead exists 618mtrs x 322° from Minerva 3	
		Minerva 2a wellhead exists 1138mtrs x 188° from Minerva 3	
		Minerva 4 wellhead exists 1402mtrs x 169° from Minerva 3	
		Minerva 3 wellhead exists at location	
Anchor holding	-	Moderate to good with fluke angles set to 32 degrees	

Mooring pattern: Eight anchors at the following bearings and distances.

These footages indicate chain deployed.

1.	**132°**	**x**	**2928'**	**5.**	**312°**	**x**	**2810'**
2.	**177°**	**x**	**2640'**	**6.**	**357°**	**x**	**2772'**
3.	**222°**	**x**	**2850'**	**7.**	**042°**	**x**	**3083'**
4.	**267°**	**x**	**2853'**	**8.**	**087°**	**x**	**2870'**

4.2 ARRIVAL LOCATION: Scallop 1 (GDA94)

Latitude	-	038° 12' 48.6"	South
Longitude	-	148° 35' 28.9"	East
Water Depth	-	+/- 110m	
Rig heading	-	210°	
Seabed	-	To be advised	
Obstructions	-	East Pilchard-1	3.1 km to NW
		Kipper-1	4.3 km to NNE
		Kipper-2	3.2 km to NE
Anchor holding	-	Expected to be moderate to good with fluke angles set to 32 degrees	

Mooring pattern: Eight anchors at the following bearings and distances.

These footages indicate chain deployed.

1.	**142°**	**x**	**3000'**	**5.**	**322°**	**x**	**3000'**
2.	**187°**	**x**	**3000'**	**6.**	**007°**	**x**	**3000'**
3.	**232°**	**x**	**3000'**	**7.**	**052°**	**x**	**3000'**
4.	**277°**	**x**	**3000'**	**8.**	**097°**	**x**	**3000'**

Minimum footage required as per the Marine Operations Manual is 1500ft.

Maximum useable chain is to be documented and known at all times but in any case should not be required to EXCEED 4000ft.

FINAL POSITION ACCEPTANCE SHALL BE THE RESPONSIBILITY OF THE ESSO DRILLING REPRESENTATIVE AND THE ESSO SURVEY REPRESENTATIVE.

THE RIG POSITIONING CONTRACTOR WILL BE ADVISE ACCORDINGLY.

5.0 DEPARTURE FROM LOCATION (Two boats towing on #2, #3 anchors.)

The safety of the SEDCO 702 will at all times remain the responsibility of the Sedco 702 O.I.M. Stability calculations will have been made for all expected load and draft conditions anticipated throughout the move and shall be available for inspection on request.

Anchors will be recovered in the following proposed order, subject to the prevailing weather conditions. The anchors will be inspected at the roller, and the results noted on the Anchor Inspection Form.

Precautions are to be taken to ensure the integrity of the Minerva 3 wellhead.

When Recovering anchors, the rigs shadow will be over the Minerva 3 wellhead at all times, no fairlead, anchor or anchor chain shall be allowed to pass over or remain over the top of the Minerva 3 wellhead.

During recovery of an anchor a minimum of 50m shall be maintained between the Minerva 3 wellhead and the fairlead, anchor and anchor chain that is being recovered.

Additionally, during recovery of #5 anchor, caution is to be exercised to ensure there is no excursion of AHV or chain towards the Minerva 1 wellhead. All navigation equipment onboard the rig and the AHSV shall be operational prior and during the recovery of the #6 anchor.

Whilst on static tow (#2 and #3 anchor) the AHSV shall exercise care to ensure that the AHSV's and the tow wire / chain or the anchor do not pass over or get closer than 50m to the Minerva 3 wellhead.

Any anchor chain running close to a subsea obstruction will not be recovered or deployed unless Rig and AHV navigation equipment is confirmed as fully <u>functional</u>.

<u>Before commencing anchor work, the rig will be de-ballasted to a draft of 60 feet.</u>

1. Secondary anchors # 1, # 5, # 4 and # 8 will be recovered first. Captain to confirm that the anchor jewelry has been checked at the anchor connections. If two vessels are immediately available, one will work the Port side and the other will work the Starboard side. If only one vessel is immediately available, then the secondary anchors will be recovered diagonally opposite subject to the prevailing weather conditions. Recovery of the Primary anchors will not commence until such time as the process, availability of additional vessels, and prevailing weather conditions have been confirmed, approved and endorsed by Shore Based Management.

2. The anchors will be heaved in and racked with caution to avoid any chance of the anchor falling inside the bolster. The pendants will be stretched, returned and racked ensuring that they are not snagged around the anchor, the adjacent anchor, or the anchor rack. If secondary anchors are not racked, to avoid fouling of primary PCC's then anchors shall be secured at a maximum of 60' chain out.

3. The Rigs thrusters may be used to assist in station keeping as required.

The rig shall be moved port to position P1. (P1 is 80m at 110° from the Minerva 3 wellhead). Once on the P1 location primary anchors can be recovered.

4 The Pacific Frontier will receive the # 6 pendant, chase out and recover the # 6 anchor.

5 The Pacific Challenger will receive the # 2 pendant, chase out and recover the # 2 anchor. The chain will be shortened and the Pacific Challenger will set up for static tow.

6 The Pacific Frontier will receive the # 3 pendant, chase out and recover the # 3 anchor. The chain will be shortened and the Pacific Frontier will set up for static tow.

7 The rig will commence heaving in and back up over # 7 anchor, maintaining a heading around 200^{o}.

8 When # 7 anchor is off the bottom, the towing v/ls will move to port assisted by the rig thrusters and come round to a heading of 128^{o}.

The tow will commence when #7 anchor is racked. Both the rig and the AHSV(s) will measure and record fuel and bulk material volumes and provide these to the Contractor and/or the Client(s) in a "Statement of Fact" format.

When the last anchor is racked, the rig will be de-ballasted to a transit draft of 21 feet if weather conditions permit. During this operation, speed through the water will be kept to a maximum of 1.5 knots and the heading adjusted accordingly to the prevailing swell for minimum rolling.

The Sedco 702 is equipped with two EMERGENCY towing pendants attached to the 100' level on the forward port and starboard columns. In the event of parting a towing anchor chain, the emergency-towing bridle will be lowered down to the appropriate vessel from the fore deck of the Sedco 702 aided by the dedicated rig tugger located on the bow.

6.0 TRANSIT TO NEW LOCATION

From the Minerva 3 location the towing vessel shall make good all courses to the way points indicated, passing clear of all navigational hazards using safe and practical clearing margins, and provide any relevant information when required. Notification of the planned passage and departure will be conveyed to the relevant authorities.
Any course alterations that may be required during the voyage whilst en-route to the final destination shall be reported to the barge control prior to alteration.

CAUTION: The draft of the rig does not include the vessel thrusters, which extend 12 feet under the rig keel.

The SEDCO 702 will submit all of the relevant reporting information to the Australian Maritime Safety Authority, RCC Canberra, and other regulatory or agency bodies as required. The towing vessels will also be included on Sailing Plans, Position Reports and Final Reports.

Departure and arrival details should also be submitted to the Occupational Safety and Health Services, Petroleum Inspector.

AUSREP Sailing plan and daily position reports will be submitted to RCC Canberra.

Radio Frequencies: The Sedco 702 radio room maintains a listening watch on channel 16 VHF, and additionally channels 4125 and 2182 HF to meet international requirements. The Barge Control Room will maintain a constant listening watch on channel 10 VHF to monitor vessel operations.

TRANSOCEAN MARINE OPERATIONS MANUAL REQUIREMENTS - The pilothouse will be manned throughout the move by certified and competent personnel. Positions will be requested from the towing vessel every four hours and verified by the navigation system on the rig. The positions will be plotted on a navigational chart in order that any possible hazards may be identified.

REF: Charts AUS 349. 445B. 445A. 357A.

A visual / radar watch is to be maintained and targets which may endanger the tow are to be plotted. Where risk of collision is deemed to exist then action should be taken according to the International Rules and Regulations for the Prevention of Collisions at Sea.

The Towing vessel will be responsible for transmitting radio navigation warnings on VHF and HF at suitable intervals. **THE TOWING VESSEL SHALL PROVIDE THE FOLLOWING SUMMARY INFORMATION TO THE RIG EVERY FOUR (4) HOURS DURING THE TOW**.

1. Rig position.
2. Distance to travel.
3. Distance travelled.
4. Time to E.T.A.
5. Average speed from departure.
6. Speed made good.
7. Weather and sea conditions.

The proposed tow route Minerva 3 to Scallop 1 is as follows:

Minerva 3 to WP 1	39° 02.0' S	143° 30.0' E	128° x 32.0 nm
WP 1 to WP 2	39° 17.0' S	146° 10.0' E	096° x 125.5 nm
WP 2 to WP 3	39° 17.0' S	146° 33.2' E	090° x 18.0 nm
WP 3 to WP 4	39° 07.9' S	147° 00.0' E	066° x 22.7 nm
WP 4 to WP 5	38° 49.0' S	148° 13.5' E	072° x 60.4 nm
WP 5 to WP 6	38° 36.0' S	148° 38.5' E	056° x 23.5 nm
WP 6 to WP 7	38° 11.5' S	148° 39.5' E	001° x 24.5 nm
WP 7 to WP 8	38° 11.2' S	148° 38.0' E	284° x 1.2 nm
WP 8 to Scallop 1	38° 12.8' S	148° 35.5' E	232° x 2.5 nm

Reduce Tow Length at a distance 5 N.M. from the # 7 anchor drop point. The towing vessel speed will be reduced, and the tow length shortened for the final run in to location.

This gives a total distance from Minerva 3 to Scallop 1, of 310.3 Nautical miles.
(a) At average speed of 5.0 knots travel time = 62.0 hrs
(b) At average speed of 4.0 knots travel time = 77.5 hrs.

Subsea or Surface Obstructions: The surveyors are to plot all relevant obstructions by programming DGPS equipment so that the display on the VDU equipment clearly indicates bearing and distance from the rig to any known fixed obstructions.

7.0 MOORING AT NEW LOCATION

Note 1: #2 anchor is to be changed out during the anchor deployment. Depending on weather conditions, it is planned to change out #2 anchor before deployment.
Note 2: #6 collar is to be changed out before deploying the anchor.

When the rig is at a position 1.0 nautical mile from the # 7 anchor drop point, and whilst on a heading of 232º the towing vessels will reduce pitch so that a speed of 1.5 kts can be maintained. If the tide or current is setting in a direction that may affect the run in, the speed and run in course may be amended. Rig thrusters will be used to assist

1. The run in to the Scallop 1 will be made on a heading of 232º and will commence at a distance of 2.0 nautical miles. from the # 7 drop point.

2. The rig will drop # 7 anchor when positioned 3000 ft x 052º from the location. The speed of the rig is not to exceed 1.0 knot while paying out # 7 chain. At 2000 ft the windlass will be stopped momentarily and the tension checked to ascertain that # 7 anchor is holding. When the rig is in position over location pay out will be stopped on # 7 chain. At this time the Pacific Challenger will maintain a static tow while Pacific Frontier reconnects and runs # 3. The rig's thrusters may also be used as required to assist.

3. The Pacific Frontier will run the # 3 anchor on a bearing of 232°. Tension # 3 (against # 7) to a minimum of 175 kips then chase back # 3 pendant to the rig.

4. The Pacific Frontier will take the #6 PCC, deck the anchor and change out the chain chaser ring. She will then run #6 anchor on a bearing of 007°. Tension the #6 anchor to a minimum of 175 kips and chase back the pendant to the rig.

5. The Pacific Challenger will disconnect #2 anchor. Change anchor out with the new anchor. With the new anchor connected, she will then run #2 on a bearing of 187°. Tension # 2 anchor to a minimum tension of 175 kips, then chase back pendant to rig.

6. The remaining secondary anchors will then be run on the following bearings and distances.

   # 1 x 142° - 3000 ft. # 4 x 277° - 3000 ft. # 5 x 322° - 3000 ft # 8 x 097° - 3000 ft

7. Pretension all anchors to 350 kips for a 15-minute duration. Reduce and balance tensions to 240 kips. Adjust chains as required to anchor rig within acceptable tolerances of desired location.

SWL of the anchor chain is 350 kips which is 1/3 of the breaking strain.

8.0 ANCHOR HANDLING / TOWING VESSELS

Two vessels are to be used for the rig move. Each is capable of towing and anchor handling.
The vessels are requested to conform to the following specifications if at all practicable.

Minimum power	8400HP
Bollard pull	100 tons.
Towing winch	3,000 ft x 64mm tow wire.

Double drum anchor handling winch with work wire and storage drums.
Shark's Jaws / Karm Forks.
Open stern with stern roller.

9.0 SURVEY AND NAVIGATIONAL EQUIPMENT

An example of the equipment package supplied by the Survey Contractor would comprise the following equipment:

DGPS Satellite Navigation System

1. 2 x Trimble 4000DL GPS Receivers (1 spare)
2. 2 x Skyfix/Landstar Demodulators (1 spare)
3. 1 x Optus Whip Antenna (1 spare)
4. 1 x 486 PC c/w Multifix Software
5. 1 x Skyfix Portable Antenna/Radome

PC Based Computer Systems

6. 2 x Pentium Computers c/w GRREP Software, Keyboard & Monitor (1 spare)
7. 2 x Printers (1 spare)
8. 2 x HT Basic and GNS Dongles (1 spare)
9. GNS PC Software V.R400 and GRREP Software & 19"rack.

Optional Barge Management Systems

10. 2 x Skytrac RTU Controllers (1 spare).
11. 1 x 486 PC (Tracking Computer) running Skytrac Software complete with dongle.

10.0 MARINE PARTICULARS

SEDCO 702 SEMI SUBMERSIBLE DRILLING UNIT

Design	MODU 700 Series
Service date	April 1973
Classification	American Bureau of Shipping Class - A1 E M
Registry / Flag	Liberia
Length	295 ft
Width	245 ft
Height	130 ft from keel to top of main deck
Transit draft	21 ft
Operating draft	80 ft

Var load transit	1200 short tons Deckload at 20 ft draft
	2425 short tons Deckload at 55 ft draft
	3200 short tons Deckload at 70 ft draft
Var load operating	3325 short tons Deckload at 80 ft draft

WARNING: These figures are for information only. They are calculated from specific load cases and depend on load distribution. Only VCG values control the stability of the rig.

Crew quarters	106 certified berths with hospital facilities for five persons
Rated drilling depth	25000 ft
Operating water depth	1500 ft.

MOORING SYSTEM

Anchors 8 x 12 ton Stevpris anchors
Each anchor combined with 4300 ft of 3 in ORQ chain
Windlasses Baylor Single Wildcat, 500 kips stall
Thrusters 4 x 360 azimuthing thrusters each rated at 1600 horsepower
Environmental Operating Capabilities:

Wind 70 kts	Survival
Waves 70 ft at 11.7 secs.	Wind 100 kts
Current 2.4 kts	Waves 110ft at 18.8 secs.

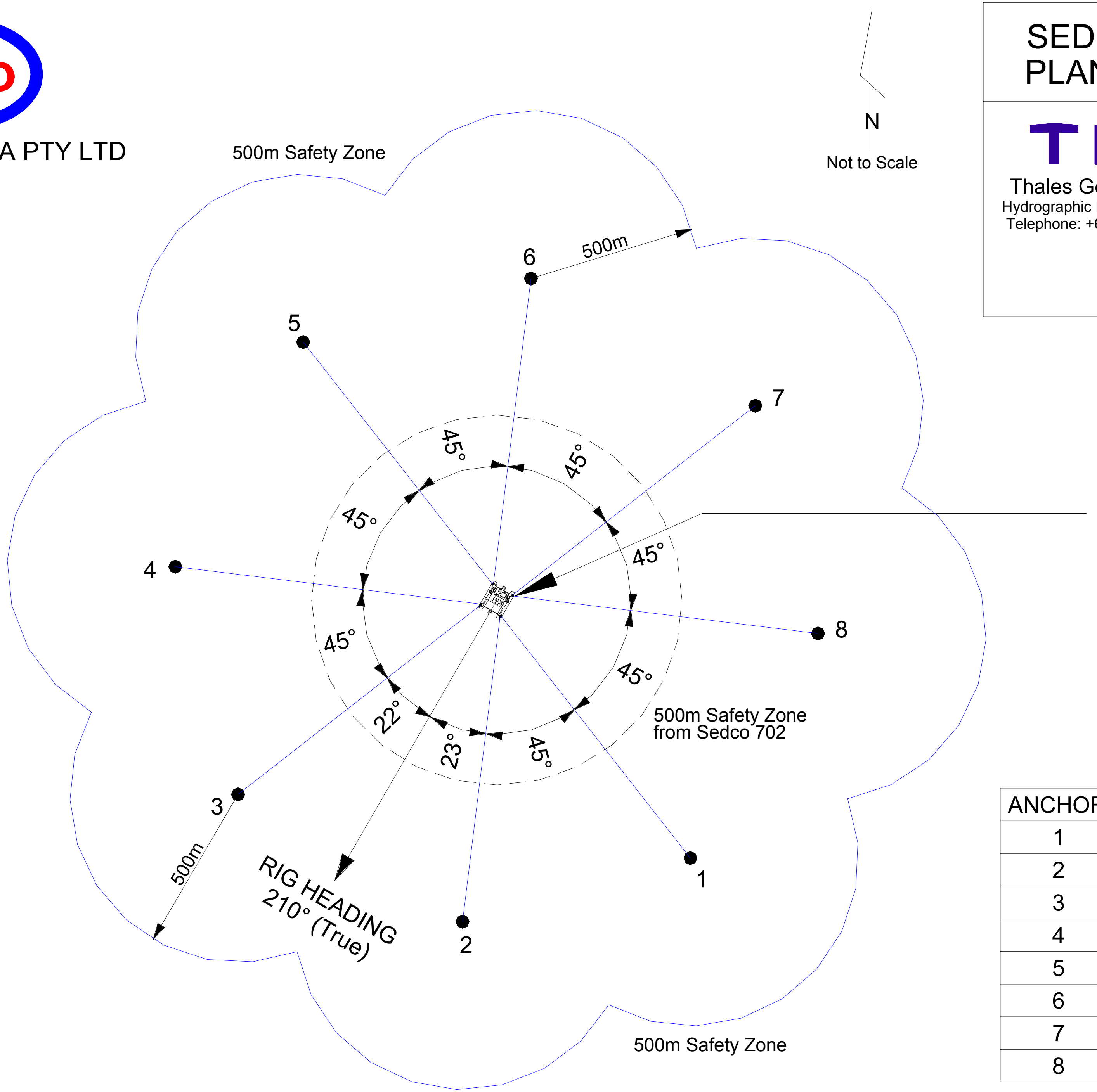
ATTACHMENT 4. ESSO AUSTRALIA PTY LTD MOORING PLAN FOR SCALLOP-1

ESSO AUSTRALIA PTY LTD

SEDCO 702 MOORING PLAN FOR SCALLOP-1

THALES

Thales GeoSolutions (Australasia) Limited
Hydrographic House, 4 Ledgar Road, BALCATTA WA 6021
Telephone: +61 (0) 8 9344 7166 Fax: +61 (0) 8 9344 8783
ABN 82 000 601 909
DRAWING No: 3498A3-A01
REVISION: 2
DATE: 24 January 2003



Proposed Scallop-1 Location
Datum: GDA 1994
Latitude 38° 12' 48.577" South
Longitude 148° 35' 28.921" East

Projection: MGA Zone 55
Easting 639 316.00m
Northing 5 769 300.00m

ANCHOR	HEADING	DISTANCE (ft)
1	142°	3 000
2	187°	3 000
3	232°	3 000
4	277°	3 000
5	322°	3 000
6	007°	3 000
7	052°	3 000
8	097°	3 000

MOVE & MOORING PROGRAMME SUPPLEMENT #1		WELL: Scallop-1
AFE NO: L7401 D001	RK ORDER: 2300 1069	TYPE: Near Field Wildcat Well

1.0 RISER TENSIONING RECOMMENDATIONS

- The table below details the recommended Riser Tension setting versus mud weight when in drilling mode as per API 16Q (with 20 kips overpull on bottom, designed for use with 8 tensioners and tension to support failure of 2 tensioners).

Mud Wt (ppg)	8.55	9.0	9.5	10.0	11.0	12.0
Tension Setting (kips)	148	152	157	161	170	179

- Consistent with the above Riser Tensions, below is the Vessel Offset anticipated and permitted for both drilling and for a connected, non-drilling riser modes (calculated from EMDC DrillMoor Analysis program and a water depth of 110m).

	Mean Vessel Offset (m) (as per EMDC)	**Peak** Vessel Offset (m) (as per EMDC)	**Max Permitted** Vessel Offset (m) DM = 4 deg C = 90% of max 6 deg (as per EMDC)	**Max Permitted** Vessel Offset (m) single mooring line failure C = 90% of max 9 deg (as per EMDC)
Drilling Mode (when rotating)	2.13m (1.9% of WD)	2.74m (2.5% of WD)	7.69m (7.0% of WD)	N/A
Connected Non-Drilling Mode (when not rotating)	5.18m (4.7% of WD)	6.10m (5.5% of WD)	10.41m (9.5% of WD)	15.68m (14.3% of WD)

Engineer	(R. M. Fürchtenicht)		05TH FEB, 2003
Drilling Engineering Manger	(C. A. Johancsik)		5/02/03
Operations Superintendent	(F. W. Kratzer)		05-02-03
Drilling Manager	(D. L. Whiteman)		5/2/2003

MOVE & MOORING PROGRAMME SUPPLEMENT #1	WELL: Scallop-1
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Engineer	(R. M. Fürchtenicht)	______________________
Drilling Engineering Manger	(C. A. Johancsik)	______________________
Operations Superintendent	(F. W. Kratzer)	______________________
Drilling Manager	(D. L. Whiteman)	______________________

REV: 0

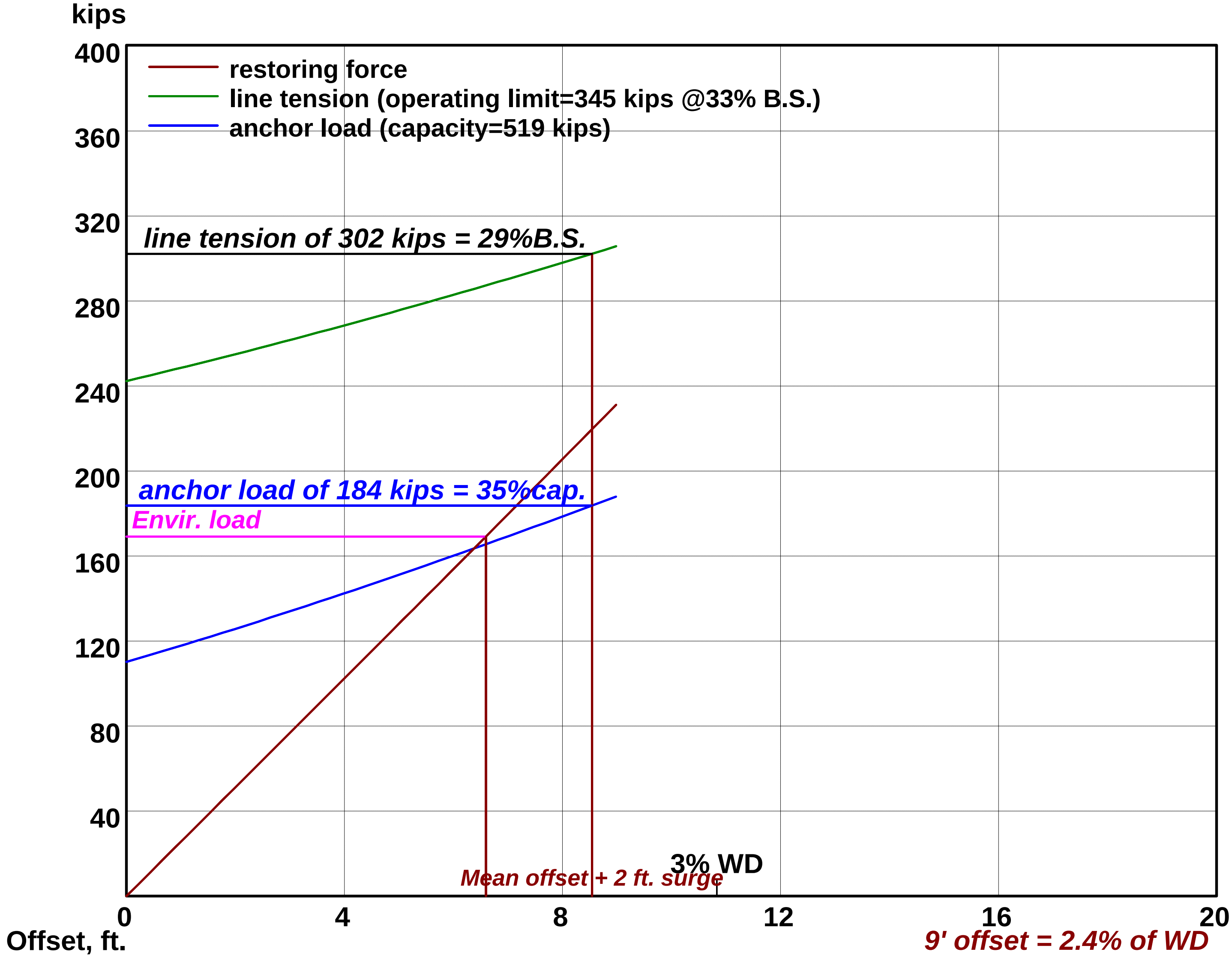
2.0 ATTACHMENTS & DISTRIBUTION

Organisation	Attention	Address	Check
Esso Drilling Supervisors **plus 2 signed copies**	Mr. George Sharkey Mr. John Richmond	Internal e-mail	
Sedco Forex International Inc (Transocean)	Mr Blue O'Shea Rig Manager - Sedco 702	Level 6, 220 St Georges Tce, PERTH WA 6000	
Sedco 702 **3 copies required**	OIM	Sedco 702 Mailbag Via Sedco Forex International PERTH WA 6000	
EAPL Library **plus 2 signed copy**	Librarian	Esso House 3rd floor	
Field Drilling Manager	Daniel L. Whiteman	Internal email	
Operations Superintendent **plus 1 signed copy**	Frank Kratzer	Internal email	
Engineering Manager	Colin Johancsik	Internal email	
Drilling Engineer **plus 1 signed copy & Original copy**	Chris Meakin	Internal email	
Drilling Engineer **plus 1 signed copy**	Rudolf M Fürchtenicht	Internal email	
Gippsland Geoscience Manager	Glen Nash	Internal email	
Geoscience Team Leader	Simon Grope	Internal email	

ATTACHMENT 1. ESSO AUSTRALIA PTY LTD MOORING & RISER ANALYSIS FOR SCALLOP-1 #1

Mooring Response Curves

Scallop-1 Extreme Current, Sedco 702 - Operating Condition



Environment: Quartering

Wind speed, knots	33	(79 kips)
Current, knots	1.3	(66 kips)
Sig. wave hgt., ft.	11	(26 kips)
Weather heading	255°	
Rig heading	210°	
Net heading	45°	
Load heading	257°	(169 kips)
Offset from	257°	

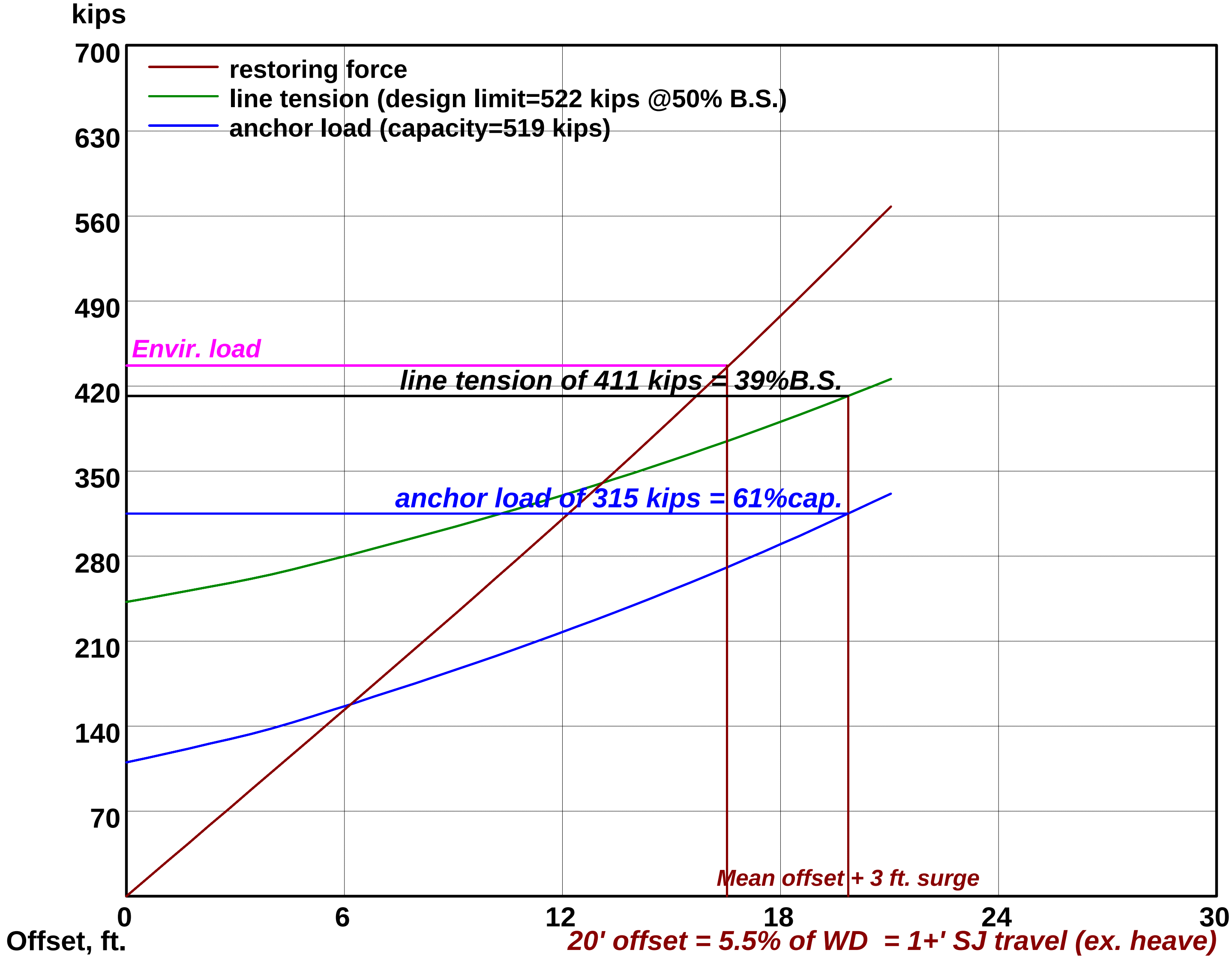
EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_extcurrent.mor (1:38 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Current, Sedco 702 - Other Design Condition



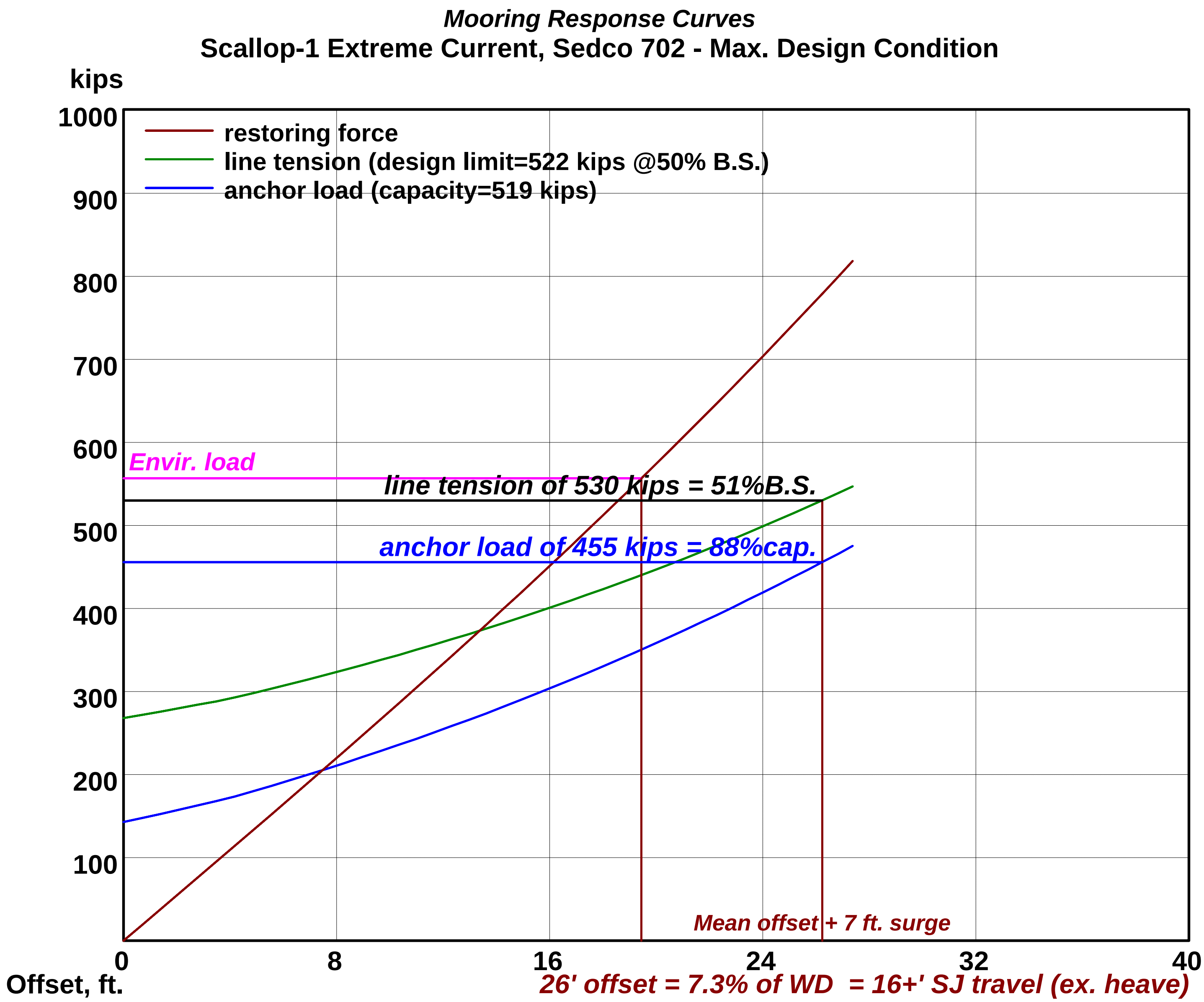
Environment: Beam

Wind speed, knots	51	(154 kips)
Current, knots	2.4	(248 kips)
Sig. wave hgt., ft.	13	(35 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	133°	(436 kips)
Offset from	133°	

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_extcurrent.mor (1:38 PM 28-Jan-03)



Environment: Beam

Wind speed, knots	55	(244 kips)
Current, knots	2.8	(266 kips)
Sig. wave hgt., ft.	18	(48 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	133°	(556 kips)
Offset from	133°	

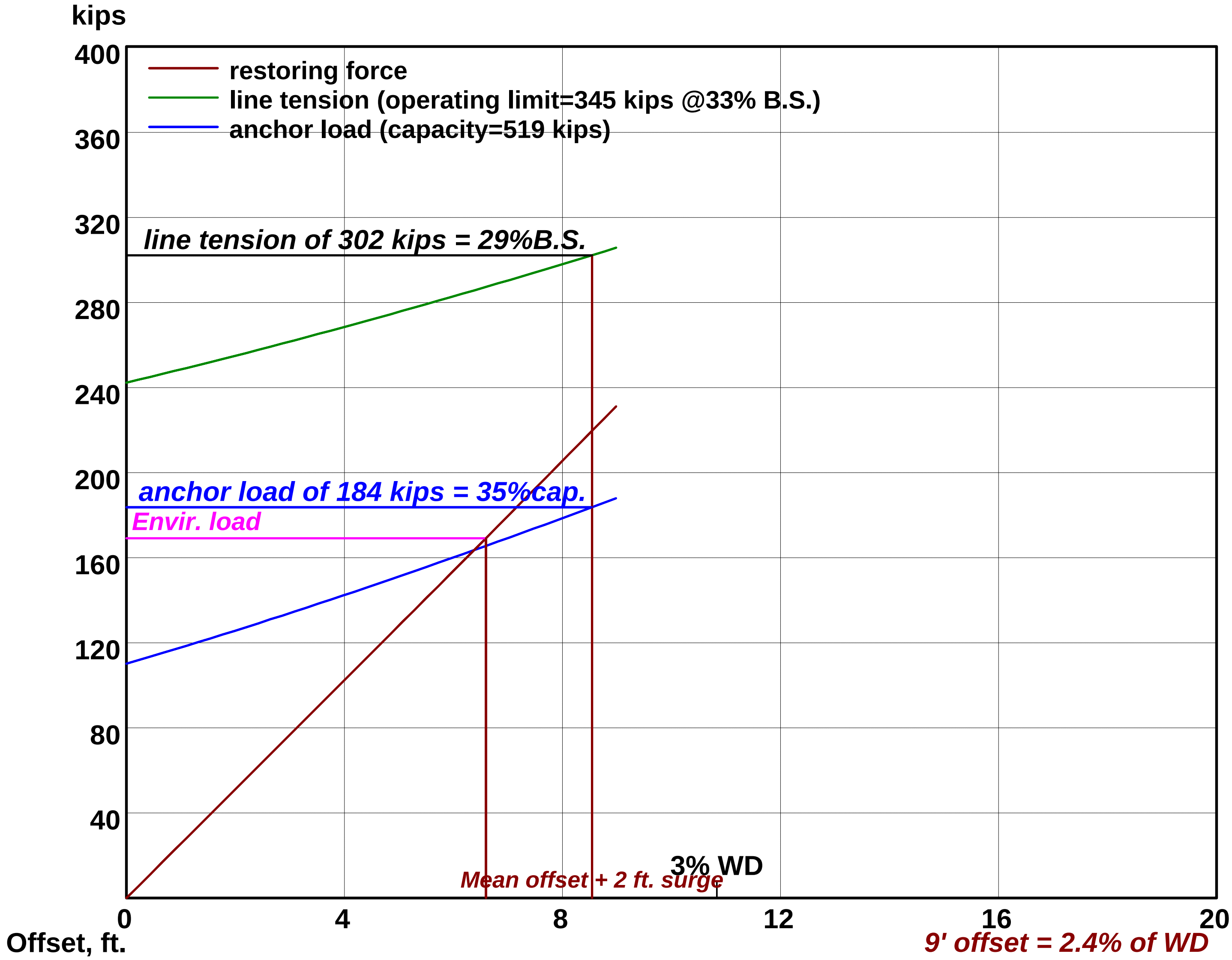
EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_extcurrent.mor (1:39 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Operating Condition



Environment: Quartering

Wind speed, knots	33	(79 kips)
Current, knots	1.3	(66 kips)
Sig. wave hgt., ft.	11	(26 kips)
Weather heading	255°	
Rig heading	210°	
Net heading	45°	
Load heading	257°	(169 kips)
Offset from	257°	

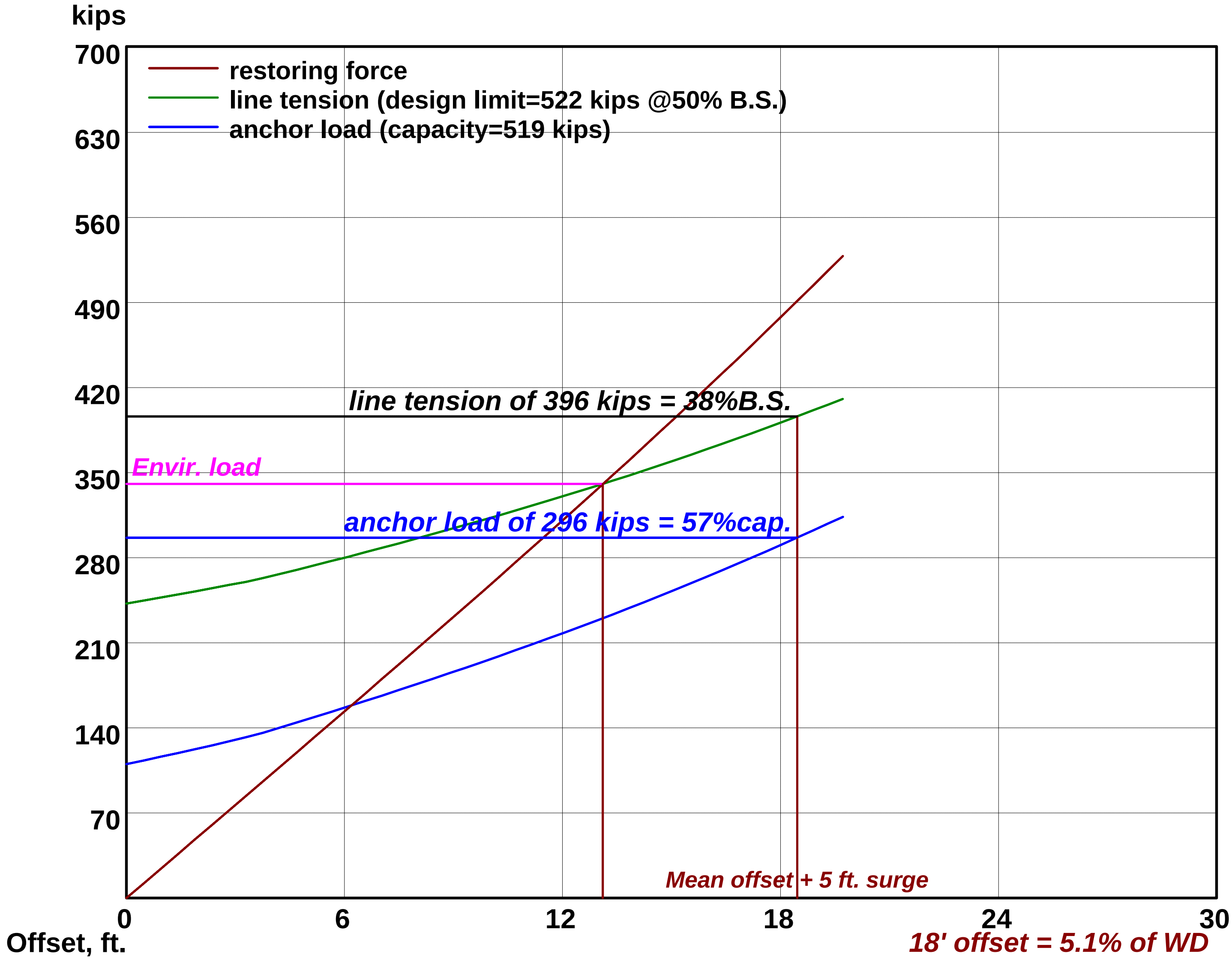
EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_10yr_extwave.mor (12:55 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Other Design Condition



Environment: Beam

Wind speed, knots	51	(154 kips)
Current, knots	1.8	(139 kips)
Sig. wave hgt., ft.	17	(47 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	134°	(340 kips)
Offset from	134°	

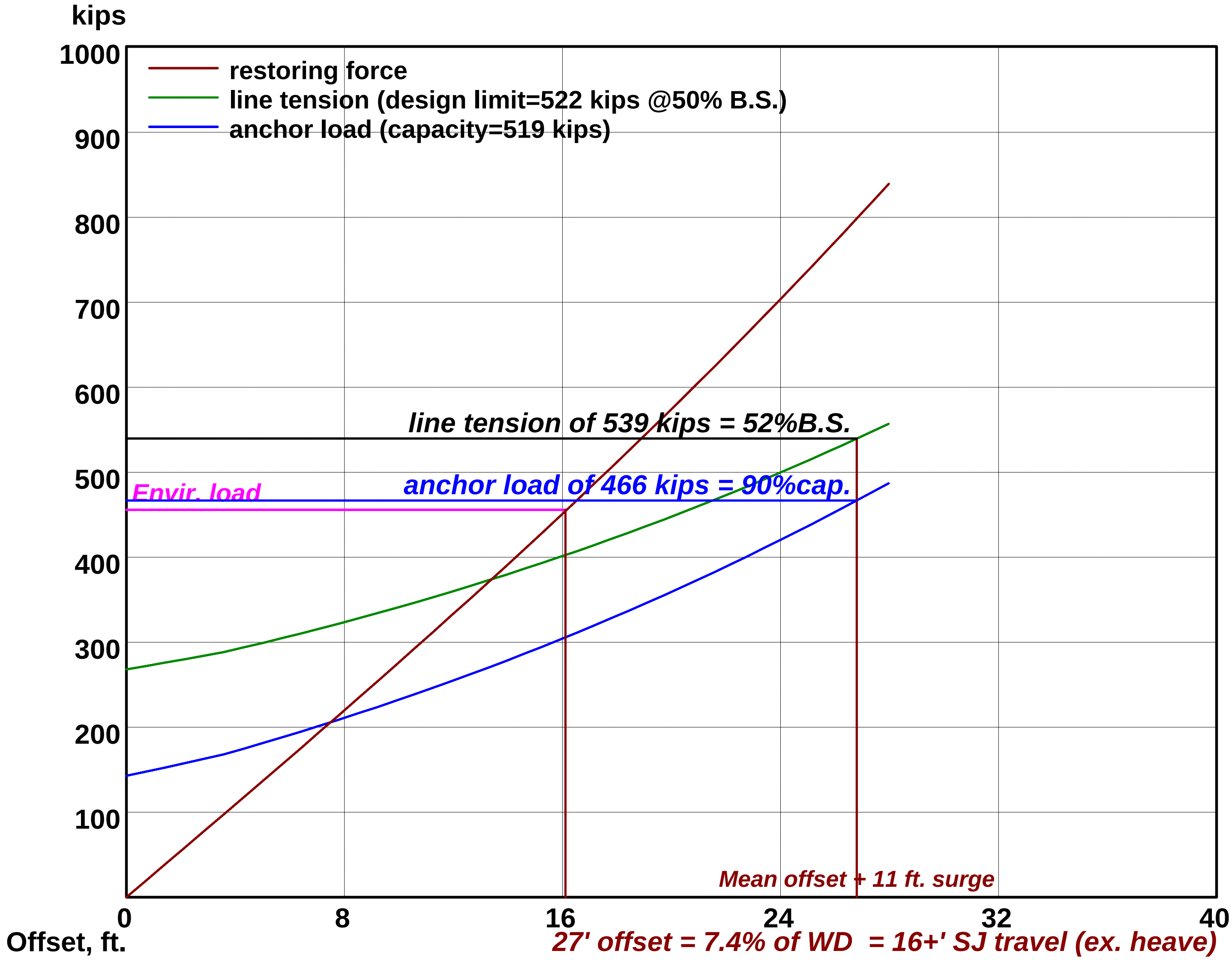
EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_10yr_extwave.mor (12:58 PM 28-Jan-03)

Mooring Response Curves

Scallop-1 Extreme Wave, Sedco 702 - Max. Design Condition



Environment: Beam

Wind speed, knots	55	(244 kips)
Current, knots	2.1	(150 kips)
Sig. wave hgt., ft.	24	(63 kips)
Weather heading	135°	
Rig heading	210°	
Net heading	285°	
Load heading	134°	(455 kips)
Offset from	134°	

EPR motion curves: Group 9
(Aker H3.2, Sedco 700)

Pretension: 240 kips (avg.)
Mooring Line Out: 2906 feet (avg.)

scallop-1_mooring_analysis_calc_10yr_extwave.mor (1:02 PM 28-Jan-03)

Riser Stability worksheet Rig: **Sedco 702** Water Depth: **361 ft**

Riser OD: **21** aux mw area 10.82 si Total area **317.02** Sea Water Pressure Column **317 ft** **wgt @1**

C&K ID/OD: **2.625** **0.1875** Hydro ID: **0** Number 0 Drilling Fluid Pressure Column **390 ft** **buoy @1** **lower BOP** **303,000** **modules:** **8**

Boost ID/OD: **0** **0** Int area 0.00 si

Section	Length	Wall thick.	Wgt Wet/ft	Wgt Dry/ft	Int. Area, si	# of joints	length	Depth From	Depth To	Buoy. Dia	Buoy Comp. %	Est. Length	Bouy Density	Dry weights per joint Riser	Buoyancy	Total	Wet Weights, each Riser	Buoyancy	Total	Totals Riser	Buoyancy	Total	Total Wgt. Dry	Total Wgt. Wet	Total internal Area, si	Section Volume, cf	buoy Volume	cf per module			
LMRP/BOP/FJ	**44**					1	44	361	317					**262100**		262100	228027		228027	228027		228027	262,100	228,027							
FJ	**6**	**0.625**	**0.0**	**0.0**	306.20	**1**	6	317	311					**0**		0	0		0	0		0	0	0	317.02	13			6	283.6	1701.6
Bare	**50**	**0.625**	**232.5**	**267.2**	306.20	**2**	100	311	211					**13360**		13360	11623		11623	23246		23246	26,720	23,246	317.02	213			100	283.6	28360
Buoy 1500	**50**	**0.625**	**38.8**	**387.2**	306.20	**3**	150	211	61	**43**	**83.3%**	38.2	24.5	**13360**	**6000**	19360	11623	-9682	1941	34870	-29046	5823	58,080	5,823	317.02	319	245.0	30.6	150	33.96	5094
Bare	**50**	**0.625**	**232.5**	**267.2**	306.20	**0**	0	61	61					**13360**		13360	11623		11623	0		0	0	0	317.02	0			0	283.6	0
Fill Valve	**20**	**0.625**	**699.4**	**804.0**	306.20	**0**	0	61	61					**16079**		16079	13989		13989	0		0	0	0	317.02	0			0		
Bare	**50**	**0.625**	**421.6**	**484.6**	306.20	**0**	0	61	61					**24229**		24229	21079	0	21079	0		0	0	0	317.02	0			0	283.6	0
pup	**35**	**0.625**	**251.3**	**288.9**	306.20	**1**	35	61	26					**10110**		10110	8796		8796	8796		8796	10,110	8,796	317.02	74			35		0
pup	**10**	**0.625**	**284.1**	**326.5**	306.20	**0**	0	26	26					**3265**		3265	2841		2841	0		0	0	0	317.02	0			0		0
TJ OB	**65**	**0.75**	**553.8**	**553.8**	298.50	1	65	26	-39					**36000**		36000	36000		36000	36000		36000	36,000	36,000	298.50	135			65	688	44720
MUX	1	0.0	**1345.5**	**1950.0**	*#DIV/0!*	0	0						*3.98*	**1950**		1950	1346		1346	1346		1346	1,950	1,346					1	1000	1000
Overpull							400									0	0		0	0		0	0	0							
						5 full joints														104,257	-29,046	75,211	132,860	**75,211**		**754 cf**					**80,876**
																						Ex. Opull	132,860	**75,211**							
																					Total hang wgt			**606,238**							

Tensioners:	Number: **8**	Capacity ea.:	**80** kips	Total:	**640** kips	**At DTL:**	**576** kips
	# Failed: **2**		Factor: 1.333	DTL limit	**90%**		
Mud returns:	**73** ft.	Fleet/Mech:	**0.94**	riser yield, ksi:	**52**	stress limit:	**34.8** ksi

Mud Density ppg	MW above SW, kips	*Riser Wet x **1.05**	Buoy x **0.96**	TSRmin	**Tmin**	**Tmin + SF**	
8.55	10	107.6	-27.9	90	**128**	**148**	
9	13	107.6	-27.9	93	**132**	**152**	
10	20	107.6	-27.9	99	**141**	**161**	
11	26	107.6	-27.9	106	**150**	**170**	
12	32	107.6	-27.9	112	**159**	**179**	
13	39	107.6	-27.9	119	**168**	**188**	
14	45	107.6	-27.9	125	**177**	**197**	
15	52	107.6	-27.9	131	**186**	**206**	
16	58	107.6	-27.9	138	**195**	**215**	
17	65	107.6	-27.9	144	**205**	**225**	
18	71	107.6	-27.9	151	**214**	**234**	
18	71	107.6	-27.9	151	**214**	**234**	**Max. Design Mud Weight**
							Limited by: not

Collapse Analysis

void depth:	191 ft.	SW head:	84 psi
		Collapse Rating:	946 psi
		OK?	**Yes**

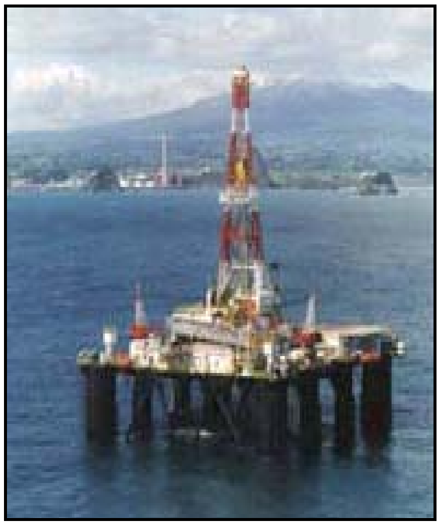
Without Safety Factors on riser weight and buoyancy loss

27.12 771.907
56.7865
136.5

ATTACHMENT 2. TRANSOCEAN MOORING & RISER ANALYSIS FOR SCALLOP-1 #2

Transocean Offshore Deepwater Drilling, Inc.
Engineering & Construction Department
Marine and Structual Engineering

Sedco 702
Moored Semisubmersible



Riser and Mooring Analysis
361 ft (110 m) Water Depth in Bass Strait Australia

Rig No.	Group	Subgroup	REA / Project		
0526	AA	014	0526-003-H001		
0	First Release		24 Jan 03	L. Malm	D. Pelly
Rev No.	**Description**		**Date**	**Author**	**Check By**

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report documents the riser analysis and mooring analysis for the Sedco 702 semisubmersible operating in 361-ft (110-m) water depth in the Bass Strait, Australia. The following sections of this report will outline:

- Riser spaceout
- API Tension versus Mud Weight
- Mooring pattern
- Mooring performance

Review Conclusions and Recommendations

Mooring

The rig should be moored heading into the direction of the worst weather, South, based on the weather data provided.

For the 1-year weather criteria provided the mooring system will be nearing the upper and lower flex joint angle limits. As the weather increases, constant monitoring of the riser angle will be required and the rig will require winching as needed to maintain necessary flex joint angles at the 1-yr weather criteria. In addition, the leeward mooring lines may need to be slack to maintain safety factors for line loading on the weather side of the rig.

The proposed mooring system also has adequate strength to meet API 10-yr intact and damaged conditions for the survival scenario for both the extreme wave and current conditions. However it is assumed that the rig is in a disconnected mode with the riser wholly or partially retrieved. The hanging performance of the riser in the axial direction is not addressed in the current study.

Riser

In the absence of a required mud weight for this report, a general riser analysis was completed for a range of mud weights and the minimum riser tension required for each is presented. Careful monitoring of the riser angle my require tensions above the minimum tension to reduce the riser angle.

The stability tension versus mud weight values are calculated according to API RP 16Q using the following assumptions:

1) 2 tensioners subject to failure
2) 90% max dynamic tension limit (DTL) rating
3) Friction and fleet losses = 5%
4) 20 kips overpull at bottom
5) Riser wet weight factor = 1.05, Buoyancy Reduction Factor = 0.96

2. SEDCO 702 GENERAL DESCRIPTION

2.1. Rig Dimensions

The Sedco 702 is a rectangular, twin hull semi submersible of the Earl & Wright design with 8 circular columns. Its principal particulars are as follows.

Length overall	295 ft
Width overall	245 ft
Depth	130 ft
Lower Hull (two)	
Length	295 ft
Height	21 ft
Breadth	50 ft
Stability Columns	
Four Corners	30 ft dia.
Four intermediates	18 ft dia.
Main Deck	
Length overall	231 ft
Width overall	197 ft
Normal drafts	
Operating	83.5 ft
Survival	55 to 70 ft

2.2. Present Mooring System

The present mooring system is composed as follows.

Line number :	8
Chain type :	3" diameter, ORQ grade
Chain breaking load :	473 tonnes
Average length per leg :	1300 m (1230 m can be paid out)
Anchors :	12 t Stevpris MK 5 on each mooring line. Holding capacity in very soft clay: 280 t

3. ENVRONMENTAL DATA

The environmental data supplied are summarized in table below.

For both the 10yr and 1yr data, extreme wave and extreme current data were provided.

Only three sets of directional heads were supplied, SW, S, SE. For this analysis, the worst environment was used and applied to the rig on the head, beam and quartering headings.

Case	Wind Speed (m/s)	Wave Height Hs (m)	Wave Period Tp (s)	Current speed (m/s)
10 Year Return Extreme Waves	27.9	7.3	14	1.07
10 Year Return Extreme Current	27.9	5.5	11	1.43
1 Year Return Extreme Waves	26.1	5.2	12	0.93
1 Year Return Extreme Current	26.1	3.9	11	1.24

4. MOORING ANALYSIS

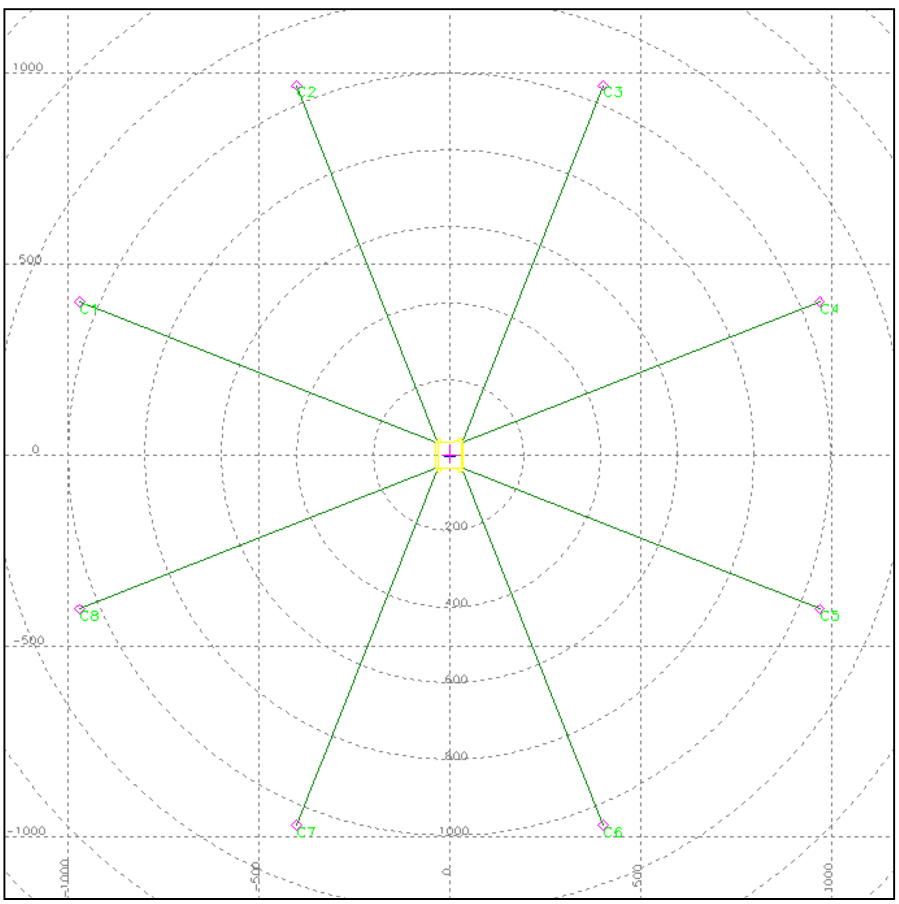
For this analysis the following assumptions were made: Flat bottom, No obstructions.

4.1. Mooring System Layout

Case	Pretension [t]	Paid Out Length [m]
Operating	160	1013
Survival	50	1029

Line No.	Anchor Bearing to Rig Axis [deg]	Anchor Range Relative to vessel From Vessel Centre [m]
C1	292.5	1050
C2	337.5	1050
C3	022.5	1050
C4	067.5	1050
C5	112.5	1050
C6	157.5	1050
C7	202.5	1050
C8	247.5	1050

Notes: Anchor bearings are wrt to the SEDCO 702's bow (positive clockwise)



4.2. Seamoor 2000 Program

The mooring system was analysed using the mooring program SEAMOOR 2000, where peak line tensions are predicted using a quasi static approach for intact or damaged system and a dynamic analysis to simulate transient response of the system after a sudden line failure. Initially, this program computes load-extension characteristics of each line. The static loads resulting from wind, wave and current are then applied to the mooring system. From this, the program computes the equilibrium position of the unit. The maximum dynamic first order excursions resulting from waves are then applied to the system. From the new equilibrium position, the maximum line tensions are computed.

4.3. Mooring criteria & assumptions

Mooring Line Stress Criteria

The assessment of the mooring was based on the API RP 2 SK safety factors for line tension as follows:

	Operating & Survival
Intact	2.00 (50 % of B.L.)
Damage case	1.43 (70 % of B.L.)

Anchor Holding Capacity & Anchor Uplift

No uplift forces should be experienced at the maximum computed line and the maximum anchor load should not exceed the anchor holding capacity in intact conditions.

Vessel Offset

In survival condition, no offset limit as the drilling riser is disconnected.

The following offsets were checked for riser angle. A distance of flex joint to flex joint was used to calculate these offsets in accordance with API 16Q (107m)

	Normal Operations		Connected Not Drilling	
Flex Joint Angle	2 deg. (Drilling mean flex joint angle).	4 deg. (Drilling Max flex joint angle).	6 deg. (Drill pipe in hole Max flex joint angle).	9 deg. (One mooring lime damaged, Max flex joint angle).
Max allowable rig offset	3.73 m	7.48 m	11 m	16 m

Winching Policy

In accordance with API Rules, simulation assuming active modification of the mooring arrangement using winching, only in intact case, could be undertaken.

Weather heading

The wind, current and waves have been assumed collinear and superposed. The mooring system has been checked for the three following conditions: head, quartering and beam environment. This allows a very conservative approach.

4.4. Mooring system performance Survival

MOORING ANALYSIS RESULTS SUMMARY 10 YEAR RETURN PERIOD EXTREME WAVES AT SURVIVAL DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***		**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	140t	30 %	***50 %***	14.7 m max	62t	no
	Damage	NO	220t	46 %	***70 %***	24.7 m max	160t	no
Quartering	Intact.	NO	172t	36 %	***50 %***	17.2 m max	103t	no
	Damage	NO	261t	55 %	***70 %***	27.9 m max	207t	no
Beam	Intact.	NO	147t	31 %	***50 %***	15.2 m max	72t	no
	Damage	NO	228t	48 %	***70 %***	25.6 m max	168t	no

Initial tension 50 tones

MOORING ANALYSIS RESULTS SUMMARY 10 YEAR RETURN PERIOD EXTREME CURRENT AT SURVIVAL DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***		**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	135t	28 %	***50 %***	14.2 m max	58t	no
	Damage	NO	212t	45 %	***70 %***	24.6 m max	150t	no
Quartering	Intact.	NO	173t	37 %	***50 %***	17.0 m max	104t	no
	Damage	NO	260t	55 %	***70 %***	27.8 m max	206t	no
Beam	Intact.	NO	154t	33 %	***50 %***	15.8 m max	82t	no
	Damage	NO	243t	51 %	***70 %***	27.0 m max	187t	no

Initial tension 50 tones

4.5. Mooring system performance Survival

MOORING ANALYSIS RESULTS SUMMARY 1 YEAR RETURN PERIOD EXTREME WAVES AT OPERATING DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***	**meters**	**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	231t	49 %	***50 %***	2.1m static 1.9 m 1-order max	173t	no
	Damage	NO	296t	62 %	***70 %***	8.8 m max	248t	no
Quartering	Intact.	NO	224t	47 %	***50 %***	2.7m static 1.9 m 1-order max	164t	no
	Damage	NO	288t	61 %	***70 %***	8.8 m max	239t	no
Beam	Intact.	NO	233t	49 %	***50 %***	2.2m static 1.9 m 1-order max	175t	no
	Damage	NO	297t	63 %	***70 %***	9.1 m max	249t	no

Initial tension 160 tonnes
Quartering heading required slacking of leeward lines to reduce weather mooring wire tensions.

MOORING ANALYSIS RESULTS SUMMARY 1 YEAR RETURN PERIOD EXTREME CURRENT AT OPERATING DRAFT								
Weather Direction	**Case**	**Use of thrusters**	**LINE TENSION**			**Rig Offset**	**ANCHOR HOLDING**	
			Max. Line Tension	**% B.L.**	***Req. % B.L***	**meters**	**Max Anchor Tension**	**Anchor uplift**
Head	Intact.	NO	226t	48 %	***50 %***	2.5 m static 1.3 m 1-order max	167t	no
	Damage	NO	294t	62 %	***70 %***	8.8 m max	246t	no
Quartering	Intact.	NO	235t	49 %	50 %	3.5 m static 1.3 m 1-order max	177t	no
	Damage	NO	303t	64 %	70 %	9.6 m max	256t	no
Beam	Intact.	NO	235t	49 %	***50 %***	3.0 m static 1.2 m 1-order max	177t	no
	Damage	NO	306t	65 %	***70 %***	9.7 m max	260t	no

Initial tension 160 tonnes
Quartering heading required slacking of leeward lines to reduce weather mooring wire tensions.

5. RISER ANALYSIS

Riser space-out and tension stability calculation using API RP 16Q methodology

5.1. Riser Space Out

Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit:	**Moored Semisubmersible MODU**	**Draft:**	83.5 feet
Region of Operation:	**South Australia - Bass Strait**	**Wellhead Ht:**	10.0 feet
Name of Operator:		**RKB-Wellhead:**	feet
Well No.:	Scallop #1	☑ Check to use Auto RKB-Wellhead Distance	
REA No.:	0526 003 H001		
Riser Length Discrepancy	**0.0** feet	☑ Check to use Riser Stretch Estimate	
WATER DEPTH:	361.0 feet	**RKB-to-Wellhead:**	**437.5** feet

INSTRUCTIONS

Only the blue-text cells require editing.

The table at right shows the remaining available joints of each type onboard.

Enter the joint type to be run in the left-most column of each row. The same type can be run in multiple columns if necessary.

The joint description will appear corresponding to the type entered. Enter the quantity of joints to run in the third column of each row.

The total string length should equal RKB-wellhead. Adjustment of the TJ stroke is possible by altering stroke in feet under the Unit Length Column.

The user can decide whether to add riser stretch estimates and whether to auto-calculate RKB-Wellhead from rig constants by checking the boxes at right.

Type	Description	Remaining Onboard
1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	14
2	Not in Use	
3	Not in Use	
4	Not in Use	
5	Not in Use	
6	Not in Use	
7	Buoy Jt. 1500-ft x 21 in. x 0.625 in. x 50 ft.	14
8	Not in Use	
9	Not in Use	
10	Riser Fill Valve	1
11	Not in Use	
12	Slick Pup 21 in. x 0.625 in. x 40 ft.	2
13	Slick Pup 21 in. x 0.625 in. x 35 ft.	0
14	Slick Pup 21 in. x 0.625 in. x 25 ft.	3
15	Slick Pup 21 in. x 0.625 in. x 10 ft.	2

Proposed Riser Configuration

Joint Type	Description	Quantity	Unit Length (feet)	Section Length (feet)	Distance, RKB to T.O. Riser (feet)	Distance, Datum to T.O. Riser (feet)
	RKB-to-Wellhead				**437.5**	10.0
	BOP Stack	1	27.08	27.08	410.4	37.1
	Lower Marine Riser Package	1	23.51	23.51	386.9	60.6
			0.00	0.00	386.9	60.6
1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	2	50.00	100.00	286.9	160.6
			0.00	0.00	286.9	160.6
			0.00	0.00	286.9	160.6
7	Buoy Jt. 1500-ft x 21 in. x 0.625 in. x 50 ft.	3	50.00	150.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
			0.00	0.00	136.9	310.6
13	Slick Pup 21 in. x 0.625 in. x 35 ft.	1	35.00	35.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
			0.00	0.00	101.9	345.6
	Telescopic Joint	1	65.00	65.00	36.9	410.6
	Telescopic Joint Stroke		22.7	22.70	14.2	433.3
	Diverter Housing/UFJ	1	10.50	10.50	3.7	443.8
	RKB - Diverter		3.30	3.30	0.4	447.1
	Riser Stretch			0.44	0.0	447.5
	TOTAL STRING LENGTH:			**437.5** feet		

5.2. Riser Tension vs Mud Weight

Transocean

Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

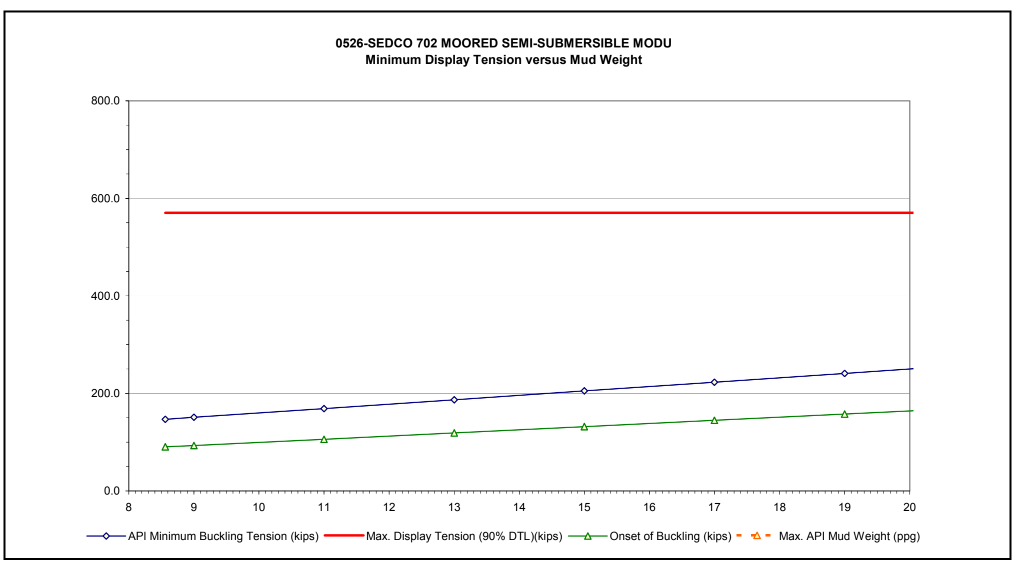
Type of Unit: Moored Semisubmersible MODU
Region of Operation: South Australia - Bass Strait
Name of Operator: 0
Well No.:
REA No.:

WATER DEPTH: 361.0 feet — **MAX MUD WEIGHT:** 55.5 ppg
Available Top Tension 570.4 kips — **RKB-to-Wellhead:** 437.5 feet

Tensioner Fleet Angle 8.00 degrees
Tensioner Friction/Efficiency Factor 0.95
Mudweight Increment 2.00 ppg

Mud Weight	Mud Fluid Density	Total Mud Weight	Minimum Slip Ring Tension	Minimum Display Tension				
				8 Tensioners	7 Tensioners	6 Tensioners	5 Tensioners	4 Tensioners
(ppg)	(lbs/cu-ft)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
8.56	64.0	10.2	90.4	146.9	172.3	210.3	273.8	400.6
9.00	67.3	13.1	93.2	150.9	177.0	216.3	281.7	412.6
11.00	82.3	25.9	106.1	168.9	198.7	243.4	317.8	466.7
13.00	97.2	38.8	119.0	187.0	220.3	270.4	353.9	520.9
15.00	112.2	51.7	131.8	205.0	242.0	297.5	390.0	575.0
17.00	127.2	64.5	144.7	223.1	263.7	324.6	426.1	629.2
19.00	142.1	77.4	157.5	241.1	285.3	351.6	462.2	683.3
21.00	157.1	90.2	170.4	259.1	307.0	378.7	498.3	737.4
23.00	172.1	103.1	183.3	277.2	328.6	405.8	534.4	791.6
25.00	187.0	116.0	196.1	295.2	350.3	432.9	570.5	845.7
27.00	202.0	128.8	209.0	313.3	372.0	459.9	606.6	899.9
29.00	216.9	141.7	221.8	331.3	393.6	487.0	642.7	954.0
31.00	231.9	154.5	234.7	349.4	415.3	514.1	678.8	1008.2
33.00	246.9	167.4	247.6	367.4	436.9	541.2	714.9	1062.3
35.00	261.8	180.3	260.4	385.5	458.6	568.2	751.0	1116.5
37.00	276.8	193.1	273.3	403.5	480.3	595.3	787.1	1170.6
39.00	291.7	206.0	286.1	421.6	501.9	622.4	823.2	1224.8
41.00	306.7	218.8	299.0	439.6	523.6	649.5	859.3	1278.9
43.00	321.7	231.7	311.9	457.7	545.2	676.5	895.4	1333.1
45.00	336.6	244.6	324.7	475.7	566.9	703.6	931.5	1387.2
47.00	351.6	257.4	337.6	493.8	588.6	730.7	967.6	1441.4
49.00	366.5	270.3	350.4	511.8	610.2	757.8	1003.7	1495.5
51.00	381.5	283.1	363.3	529.9	631.9	784.8	1039.8	1549.7
53.00	396.5	296.0	376.2	547.9	653.5	811.9	1075.9	1603.8
55.00	411.4	308.9	389.0	566.0	675.2	839.0	1112.0	1658.0
57.00	426.4	321.7	401.9	584.0	696.8	866.1	1148.1	1712.1
59.00	441.4	334.6	414.7	602.1	718.5	893.1	1184.2	1766.3
61.00	456.3	347.4	427.6	620.1	740.2	920.2	1220.3	1820.4
63.00	471.3	360.3	440.5	638.2	761.8	947.3	1256.4	1874.6
65.00	486.2	373.2	453.3	656.2	783.5	974.4	1292.5	1928.7
67.00	501.2	386.0	466.2	674.3	805.1	1001.4	1328.6	1982.9
69.00	516.2	398.9	479.0	692.3	826.8	1028.5	1364.7	2037.0
71.00	531.1	411.7	491.9	710.4	848.5	1055.6	1400.8	2091.2
MAXIMUM MUD WEIGHT:				**55.5**	**38.7**	**24.6**	**13.1**	**#N/A**

5.3. Riser Configuration



Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit: Moored Semisubmersible MODU
Region of Operation: South Australia - Bass Strait
Name of Operator: 0
Well No.:
REA No.:

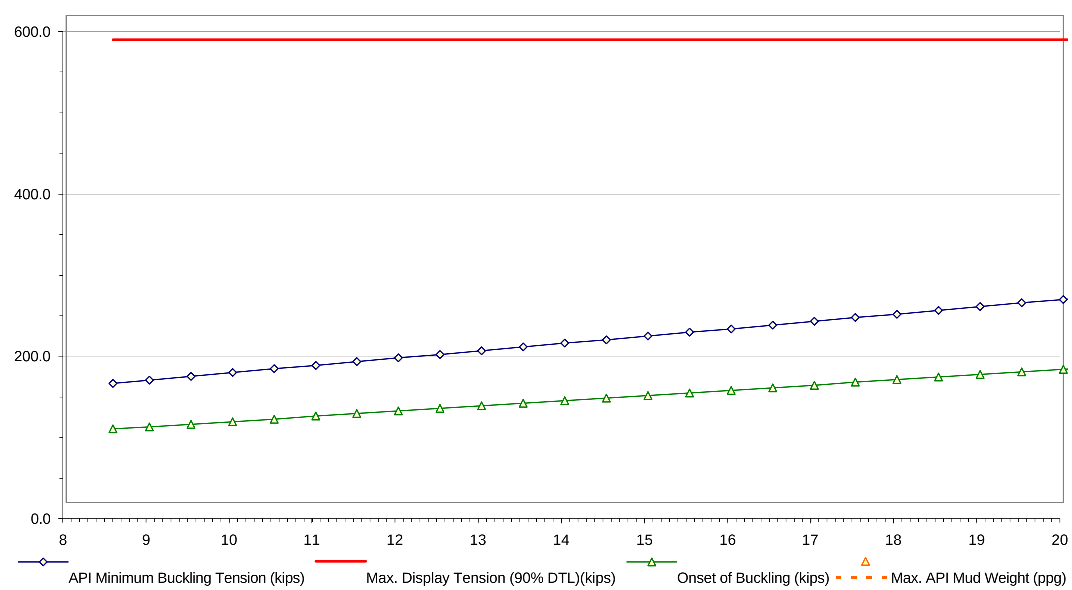
WATER DEPTH: 361.0 feet | **MAX MUD WEIGHT:** #DIV/0! ppg

Available Top Tension 570.4 kips | **RKB-to-Wellhead:** 437.5 feet

Tensioner Fleet Angle 8.00 degrees
Tensioner Friction/Efficiency Factor 0.95
Mudweight Increment 0.50 ppg

Mud Weight	Mud Fluid Density	Total Mud Weight	Minimum Slip Ring Tension	Minimum Display Tension: 8 Tensioners	7 Tensioners	6 Tensioners	5 Tensioners	4 Tensioners
(ppg)	(lbs/cu-ft)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
8.56	64.0	10.2	90.4	146.9	172.3	210.3	273.8	400.6
9.00	67.3	13.1	93.2	150.9	177.0	216.3	281.7	412.6
9.50	71.1	16.3	96.4	155.4	182.4	223.0	290.7	426.1
10.00	74.8	19.5	99.7	159.9	187.9	229.8	299.8	439.6
10.50	78.5	22.7	102.9	164.4	193.3	236.6	308.8	453.2
11.00	82.3	25.9	106.1	168.9	198.7	243.4	317.8	466.7
11.50	86.0	29.2	109.3	173.4	204.1	250.1	326.8	480.2
12.00	89.8	32.4	112.5	177.9	209.5	256.9	335.9	493.8
12.50	93.5	35.6	115.7	182.4	214.9	263.7	344.9	507.3
13.00	97.2	38.8	119.0	187.0	220.3	270.4	353.9	520.9
13.50	101.0	42.0	122.2	191.5	225.8	277.2	362.9	534.4
14.00	104.7	45.2	125.4	196.0	231.2	284.0	372.0	547.9
14.50	108.5	48.4	128.6	200.5	236.6	290.7	381.0	561.5
15.00	112.2	51.7	131.8	205.0	242.0	297.5	390.0	575.0
15.50	115.9	54.9	135.0	209.5	247.4	304.3	399.0	588.5
16.00	119.7	58.1	138.2	214.0	252.8	311.0	408.1	602.1
16.50	123.4	61.3	141.5	218.5	258.2	317.8	417.1	615.6
17.00	127.2	64.5	144.7	223.1	263.7	324.6	426.1	629.2
17.50	130.9	67.7	147.9	227.6	269.1	331.3	435.1	642.7
18.00	134.6	70.9	151.1	232.1	274.5	338.1	444.2	656.2
18.50	138.4	74.2	154.3	236.6	279.9	344.9	453.2	669.8
19.00	142.1	77.4	157.5	241.1	285.3	351.6	462.2	683.3
19.50	145.9	80.6	160.7	245.6	290.7	358.4	471.2	696.8
20.00	149.6	83.8	164.0	250.1	296.1	365.2	480.2	710.4
20.50	153.4	87.0	167.2	254.6	301.6	372.0	489.3	723.9
21.00	157.1	90.2	170.4	259.1	307.0	378.7	498.3	737.4
21.50	160.8	93.5	173.6	263.7	312.4	385.5	507.3	751.0
22.00	164.6	96.7	176.8	268.2	317.8	392.3	516.3	764.5
22.50	168.3	99.9	180.0	272.7	323.2	399.0	525.4	778.1
23.00	172.1	103.1	183.3	277.2	328.6	405.8	534.4	791.6
23.50	175.8	106.3	186.5	281.7	334.1	412.6	543.4	805.1
24.00	179.5	109.5	189.7	286.2	339.5	419.3	552.4	818.7
24.50	183.3	112.7	192.9	290.7	344.9	426.1	561.5	832.2
MAXIMUM MUD WEIGHT:				#DIV/0!	#DIV/0!	#DIV/0!	13.1	#N/A

0526-SEDCO 702 MOORED SEMI-SUBMERSIBLE MODU
Minimum Display Tension versus Mud Weight



Transocean

Transocean Offshore Deepwater Drilling, Inc.

ONBOARD RISER CONFIGURATION WORKSHEET

0526 - SEDCO 702 MOORED SEMI-SUBMERSIBLE

Type of Unit:	Moored Semisubmersible MODU	No. of Tensioners:	8.0	each	fws =	1.05
Region of Operation:	South Australia - Bass Strait	Capacity, each:	80.0	kips	fwb =	0.96
Name of Operator:		Subj to Fail (n):	2	each		
Well No.:	Scallop #1	Max (%) DTL Limit	90%	percent		
REA No.:	0526 003 H001	Avail. Display Tension:	576.0	kips		
WATER DEPTH:	361.0 feet	Riser Section Area:	2.21	sq-feet		
RKB-to-Wellhead:	437.5 feet	LMRP Overpull (If Req'd):	20.0	kips		

Section	Type	Description	Section Length (feet)	Dry Unit Weight (kips/joint)	Wet Unit Weight (kips/joint)	Dry Section Weight (kips)	Wet Section Weight (kips)	Wet/Dry Ratio with BOP	Wet/Dry Ratio LMRP Only	Wet Steel Weight (pounds)	Ws x fs (pounds)	Bn (pounds)	Bn x fb (pounds)	Mud Volume (cu-feet)
1		RKB-to-Wellhead												
2		BOP Stack	27.08	156.30	135.98	156.30	135.98	87.0%						
3		Lower Marine Riser Package	17.02	105.80	92.04	105.80	92.04	87.0%	87.0%					
4		Lower Flex Joint	6.49	0.00	0.00	0.00	0.00	87.0%	87.0%					
5			0.00			0.00	0.00	87.0%	87.0%					
6	1	Slick Jt. 21 in. x 0.625 in. x 50 ft.	100.00	13.36	11.62	26.72	23.25	87.0%	87.0%	23246.4	24408.7	0.0	0.0	220.9
7			0.00			0.00	0.00	87.0%	87.0%					
8			0.00			0.00	0.00	87.0%	87.0%					
9	7	Buoy Jt. 1500-ft x 21 in. x 0.625 in	150.00	19.36	1.94	58.08	5.81	74.1%	63.5%	34869.6	36613.0	29061.6	27899.1	331.3
10			0.00			0.00	0.00	74.1%	63.5%					
11			0.00			0.00	0.00	74.1%	63.5%					
12			0.00			0.00	0.00	74.1%	63.5%					
13			0.00			0.00	0.00	74.1%	63.5%					
14			0.00			0.00	0.00	74.1%	63.5%					
15			0.00			0.00	0.00	74.1%	63.5%					
16	13	Slick Pup 21 in. x 0.625 in. x 35 ft.	35.00	10.11	8.79	10.11	8.79	74.5%	64.7%	8793.9	9233.6	0.0	0.0	77.3
17			0.00			0.00	0.00	74.5%	64.7%					
18			0.00			0.00	0.00	74.5%	64.7%					
19			0.00			0.00	0.00	74.5%	64.7%					
20			0.00			0.00	0.00	74.5%	64.7%					
21			0.00			0.00	0.00	74.5%	64.7%					
22			0.00			0.00	0.00	74.5%	64.7%					
23		Telescopic Joint	65.00	36.00	31.32	36.00	36.00	76.8%	70.1%	36000.0	37800.0	0.0	0.0	143.6
24		Telescopic Joint Stroke	22.70											50.1
25		Diverter Housing/UFJ	10.50											
26		RKB - Diverter	3.30											
27		Riser Stretch	0.44											
28		Tensioner Ring	0.00	0.00	0.00	0.00	0.00			0.0	0.0			
29		MUX Cable (2-each)	423.29			1.95	1.35							

Total Dry Weight, Drilling Riser and LMRP	**238.7** kips			
Total Dry Weight, Drilling Riser, LMRP and BOP:	**395.0** kips	**Minimum Ratios**	**Total Mud Volume:**	**146.61** barrels
Total Wet Weight, Drilling Riser without LMRP/BOP	**75.2** kips	**74.1%** with BOP / **63.5%** LMRP Only	**SW Column Height to center, LFJ:**	**316.90** feet
Total Wet Weight, Drilling Riser and LMRP	**167.2** kips		**SW Pressure Column (dwHw):**	**20281.6** lb/sqft
Total Wet Weight, Drilling Riser, LMRP and BOP:	**303.2** kips			
Riser Steel Wet Weight Excluding LMRP x 1.05:	**108.1** kips		**Drilling Fluid Pressure Column:**	**389.19** feet
Riser Steel Wet Weight Including LMRP x 1.05:	**204.7** kips			
Riser Buoyancy x 0.96:	**-27.9** kips			

Esso Australia Pty Ltd

SCALLOP-1

DRILLING PROGRAM

Rev. 0 January 2003

DRILLING PROGRAM	WELL: Scallop-1
AFE NO: L.0201C001 RK ORDER: 23001065	JOB: Exploration Well

NOTE: 1 Drilling Reporting System (DRS) designation for this well is SCALLOP1.

NOTE: 2 All depths are referenced to Mean Sea Level (MSL).

1.0 PROPOSED WELL OBJECTIVES

- Rig : Transocean Sedco 702
- Water Depth : 110 m
- RT to sea-level : 25.9 m
- RT to Mudline : 136 m
- 30 "Conductor Shoe : 184 m MDRT 184 m TVDRT
- 13-3/8" Surface Casing Depth : 900 m MDRT 900 m TVDRT
- 9-5/8" Production Casing Depth : 3126m MDRT 3126m TVDRT (if required)
- Total Depth : 3126 m MDRT 3126m TVDRT
  with potential to deepen as per the Scallop-1 Geological Program.
- Maximum inclination : vertical well
- Pressure / Temperature : 3,928 psi / 117° C ±10° C at 2736m TVDRT
- Anticipated Start Date : January 2003

2.0 TARGET DETAILS

2.1 BASIN, LICENCE

Gippsland Basin, Vic/RL2

2.2 TARGET

PARAMETER	TARGET
Longitude:	148° 35' 28.9" E
Latitude:	38° 12' 48.6" S
Datum and Spheroid	Geodetic Datum of Australia 1994 (GDA94) Geodetic Reference System 1980 ellipsoid (GRS80) Map Grid of Australia Zone 55, CM 147° E
Easting:	639,316m E
Northing:	5,769,300m N
Depth:	Between 2511 m TVDSS and 3100 m TVDSS (2537 - 3126m TVDRT)
Size:	150m square target with hard northern boundary

Engineer	(C.P. Meakin)	C.P. Meakin 16-Jan-03
Drilling Engineering Manger	(C.A. Johancsik)	Colin Johancsik 16-01-03
Operations Superintendent	(F.W. Kratzer)	F.W. Kratzer
APPROVED Drilling Manager	(D.L. Whiteman)	for F.W. Kratzer 16-01/03
ENDORSED Gippsland Project Manager	(G.A. Nash)	G.A. Nash

REV: 0

3.0 TABLE OF CONTENTS

4.0 GENERAL WELL INFORMATION

4.1 INTRODUCTION

The Scallop-1 will be drilled with the Sedco Forex International Sedco 702 semi-submersible in 110m of water. ATTACHMENT 1 Location Map shows the well location.

The well is planned as a straight hole to a dry hole depth of 3100m MDSS/TVDSS, with a possibility of deepening as detailed in ATTACHMENT 2 Scallop-1 Geological Program. 30" conductor will be set and cemented in 36" hole at 184m MDRT. 13-3/8" surface casing will be set and cemented in 17-1/2" hole at 900m MDRT. The well will be drilled to TD in 12-1/4" hole. The proposed well is shown schematically in ATTACHMENT 3 Wellbore Sketch.

The well is planned to be drilled in a Target time of 39 days (42 AFE days) to the dry hole AFE depth of 3100m TVDSS, before logging and P&Aing, as shown in ATTACHMENT 4 Well Progress Curve - Scallop-1 Dry Hole Scenario.

Based on the results of the logs run at TD the well may be deepened, and if the well is successful it may be cased and suspended. Otherwise the well will be plugged and abandoned.

Contingent 9-5/8" casing is available if the well is to be suspended. The 9-5/8" casing design has been included as part of this program.

4.1.1 Offset Well Control

Well Name	Distance & Direction	TD (TVDSS)	Max. MW	Analogous Interval to Scallop-1 Target Interval (Formation Name/Depth m TVDSS)	Date Drilled
Kipper-1	4.3km NNE	-2854	10.4	S-1 Reservoir (-1968 to -2258)	1986
Kipper-2	3.2km NE	-2578	9.6	S-1 Reservoir (-2189 to -2545)	1987
East Pilchard-1	3.1km NW	-3113	10.2	S-1 Reservoir (-2567 to -3107)	2001

4.1.2 Offset Pressure Data

Well Name	Distance & Direction	Depth (TVDSS)	Reservoir	Pressure (psi)	Pressure (EMW ppg)	Pressure Data Source
Kipper-1	4.3km NNE	-2824.5	P.*mawsonni*	4740.4	9.8	RFT
Tuna-1	13km WNW	-3631	P.*mawsonni*	5599.4	13.8	RFT
Tuna-4	16.5km W	-3136.8	S Reservoir	5584.7	10.4	RFT
East Pilchard-1	3.1km NW	-3097.0	S Reservoir	4860.8	9.2	MDT

4.2 SUMMARY DRILLING PLAN

1. Position rig over the Scallop-1 location within 5.0m of the call location.
2. Drill 26" x 36" hole to 184m, run and cement 30" structural casing with Dril-Quip SS-10-C Low Pressure Housing and permanent guide base, with base of PGB ~1.5 - 2m above the mudline.
3. Drill 17-1/2" hole to 915m MDRT, run and cement 20" x 13-3/8" surface casing with 18-3/4" SS-10-C High Pressure Housing at 900m MDRT.
4. Run riser and BOP stack. Drill-out and run PIT.
5. Drill 12-1/4" hole.
6. On the last bit trip before TD pick-up MWD/LWD.
7. Drill 12-1/4" hole to TD at 3126m TVDRT.
8. Run wireline logs and evaluate well success.
9. If UNSUCCESSFUL, P&A.
10. Recover anchors and release rig.
11. If SUCCESSFUL, deepen the well as per the Geological program.
12. Run 9-5/8" casing and cement.
13. Suspend the well.
14. Recover anchors and release rig.

4.3 CONTROLLING DOCUMENTS

All operations will be conducted in compliance with the Scallop-1 Safety Case Bridging Document and the ExxonMobil Development Company Drilling Operations Manual - Floating Drilling (DOM).

The Safety Case Bridging Document defines the interfaces between the Sedco 702 Vessel Safety Case and the ExxonMobil Development Company Drilling OIMS.

Geological operations should be carried out in accordance with the Scallop-1 Geological Program. If geological requirements in this program conflict with any in the Scallop-1 Geological Program, then the Scallop-1 Geological Program takes precedence.

4.4 ENVIRONMENTAL MANAGEMENT PLAN

All operations will be conducted in compliance with the Scallop-1 Environmental Plan and EAPL's waste management guidelines as referenced in the Esso Waste Management Manual.

EAPL's existing plans provide for offshore and onshore waste handling, chemical and materials inventory management, handling of radioactive and explosive materials, fuel transfer management, reporting and documentation guidelines, etc.

The water base mud drilling fluids proposed are approved for ocean discharge in Australia and Victoria. Also approved for discharge are formation cuttings, cement returns, bulk materials, treated rig domestic effluent, wash and ballast waters.

4.5 REPORTING

ATTACHMENT 5 contains the well description for the Drilling Reporting System Well Setup Data.

4.5.1 Daily Reporting

On a daily basis report:

- Drilling activity from midnight to midnight in the Daily Drilling Report (DDR);
- Fuel usage midnight to midnight for the Sedco 702 and both support vessels.
- Daily cost report;
- Mud report;
- Mooring report;
- Directional Survey report;
- Mud logging report;
- Sedco 702 Persons on board at midnight (POB);
- Sedco 702 Daily Report Weather and Figures.

4.5.2 Periodic Reporting

Report after the event:

- Well location report;
- Mooring reports;
- Water depth, RT to MSL and 30" and 18-3/4" wellhead depths below RT;
- Wellhead reports including PGB diagram;
- BHA diagrams;
- Bit reports;
- Final casing tallies;
- Casing reports;
- Cementing reports;
- PIT reports;
- P&A Diagrams;
- Incident reports.

5.0 GEOLOGY AND FORMATION EVALUATION

5.1 WELL OBJECTIVES

1. Complete operations TRI free and without unapproved discharges.
2. Conduct all drilling activities in a safe manner.

3. The Scallop-1 well is designed to explore for hydrocarbon in fluvial reservoirs in the sub-volcanic Golden Beach Group (*T.lilliei – N.Senectus* age). A lowside fault dependent closure has been mapped on the Scallop fault block and two possible DHI's (flat-spots) have been identified. The well will test the validity of these DHI's. The primary risk for the Scallop-1 well is that the "flatspots" observed may be related to residual gas, or lithological complications within the reservoir section.

   A secondary objective for the well is possible fault dependent closures in the fluvial-coastal plain reservoir facies in the shallower upper *T.lilliei* Latrobe Group section (above the volcanics).

4. Obtain quality formation evaluation data through mud logging and LWD and electric-line logging.

5.2 PREDICTED LITHOLOGY/PORE PRESSURES

Formation	Lithology	TVDSS (m)	TVDRT (m)	Estm. Pore Press. (PPG)
Top Gippsland Limestone	Limestone, calcarenite, marl	-110	136	
Top Lakes Entrance Fm	Marl, claystone, limestone, shale	-1312	1339	8.5
Top Latrobe Group	Sandstone, shale, coal	-1683	1709	8.4
KTFS	Sandstone, shale, coal	-2208	2234	8.4
Top T.*lilliei*	Sandstone, shale, coal	-2511	2537	8.1
Top of Volcanics	Basalt, shale	-2535	2561	8.2
Base of Volcanics/ Top S1	Sandstone, shale, minor basalt	-2755	2781	9.1
Top Intra-Volcanics	Basalt, shale	-2796	2822	
Base Intra-Volcanics	Sandstone, shale, minor basalt	-2846	2872	9.1
Top 1st Volcanics	Basalt, shale	-2984	3010	
Base 1st Volcanics	Sandstone, shale, minor basalt	-3034	3060	9.2
TD		-3100	3126	9.2

5.2.1 Stick Charts

ATTACHMENT 6 Kipper-1 Stick Chart shows drilling data for Kipper-1, drilled in March 1986, and located 4.3 km NNE of the Scallop-1 location.

ATTACHMENT 7 Kipper-2 Stick Chart shows drilling data for Kipper-2, drilled in March 1987, and located 3.2 km NE of the Scallop-1 location.

ATTACHMENT 8 East Pilchard-1 Stick Chart shows drilling data for East Pilchard-1, drilled in July 2001, and located 3.1 km NW of the Scallop-1 location.

5.3 FORMATION EVALUATION

5.3.1 Electric Logging

No wireline logging is planned across the 17-1/2" hole section, except for gamma ray and DSI through 13-3/8" casing.

The following wireline logging program is planned across the 311mm (12 1/4") hole section at +/- 3126mMD. (Table 4 and Figure 4.) The order of logging runs may change based on drilling results and a finalised program will be issued to the wellsite at TD.

Run No.	Wireline Logs	Comments
1	PEX-HALS-HNGS-LEHQT	GR from TD to seafloor. PEX-HNGS to 80m above TOL. HALS to 13 3/8" shoe
2	FMI-DSI-GR-LEHQT	FMI to run to 80m above Base Volcanics. DSI though casing until last good signal
3*	MDT-GR-LEHQT	Pressure seats and samples as required.
4	DUAL CSAT-VSP	Shot data to be acquired at 15m spacing from TD to 13 3/8" casing shoe and through casing up to 250m. If signal lost then checkshots at 100m levels to sea floor.
5*	MSCT-GR-LEHQT	30 cores
6	CST-GR	60 shots

* Runs 3 and 5 contingent on hydrocarbons.

The order of logging runs may change based on drilling results. A final program/protocol will be issued to the wellsite at TD.

Additional Comments

- A continuous sonic log (DSI) will be recorded from TD to seafloor or until the last good signal is lost. This log is to be recorded in Crossed Dipole mode in open hole and in compressional mode only inside casing.

- The MDT will be run in the success case only. Samples may be taken in the event that hydrocarbons are found. Equipment to acquire fluid/gas samples is to be available on the rig including Pump Out module, OFA, MRMS, 1 gallon dump chambers and large hole kit. All modules, including the MRMS and chambers will have backup tools available on the rig. <u>Note: the big hole kit will only be run after the PEX log has been evaluated by the Esso petrophysicist and approval has been given directly to the rig.</u> A detailed depth and sampling program will be prepared by Esso in the office and sent to the wellsite after receipt of the PEX log. The MDT protocol is contained in Appendix 1 of the Scallop-1 Geological Program.

- The VSP is a vertical survey. No walk-away survey is required. A detailed program is contained in Appendix 2. Data is to be processed at the wellsite to provide corrected 2-way time data. The VSP will be QC'd onsite by Hydrosearch personnel.

- The wireline product distribution summary is contained in Section 8 of the Scallop-1 Geological Program.

Notes:

1. A Schlumberger WL logging unit will be on the rig with back-up tools.
2. If the logging program is extensive, a wiper trip may be required to condition the hole.
3. Severing and stuckpipe tools should be available on-site.
4. If sample chambers are emptied into the wellbore, the Drilling Supervisor shall be notified of the volume emptied and the pressure, to allow the hazard of any gas migrating into the riser to be evaluated and mitigated.

5.3.2 Cuttings Samples

Cuttings/Sample Type	Interval	Frequency	Samples per Point
Washed & dried	13-3/8" Shoe to 1526m TVDRT	Every 30m	6
Washed & dried	1526m TVDRT to TD	Every 5m	6
Lightly Washed and Air Dried*	13-3/8" Shoe to 1526m TVDRT	Every 30m	1
Lightly Washed and Air Dried*	1526m TVDRT to TD	Every 5m	1

* Lightly washed and air dried cuttings may be required for analyses affected by subjecting the cuttings to temperature (i.e. oven drying).

Notes:

1. Cuttings should be shipped as specified in the Scallop-1 Geological Program.

5.3.3 Mud Logging

Normal mud logging services will be utilised for drilling below the 20" x 13-3/8" casing shoe. A fully computerised mud logging unit will be used. The services required are specified in the Scallop-1 Geological Program.

5.3.4 Coring

No coring is planned for this well.

6.0 CRITICAL ISSUES & OFFSET DRILLING EXPERIENCE

6.1 SURFACE HAZARDS

Tuna platform, the nearest surface facility, is 15.8 km from the Scallope-1 location on a grid bearing of 289°. The cased and suspended East Pilchard-1 sub-sea wellhead is 3.1 km from the Scallop-1 location on a grid bearing of 308°.

Refer to the Scallop-1 Site Survey Report for details of any hazards within a 3 km by 3 km square centred on the Scallop-1 location.

A ROV will be deployed when the rig is moored to verify the wellhead area is clear of seafloor debris.

The well is located outside the Shipping Exclusion Zone.

6.2 SHALLOW HAZARDS

No shallow gas zones have been identified during drilling of the adjacent wells (Kipper 1, Kipper 2, East Pilchard-1 and Manta 1). Total gas % recorded above TOL are low. In Manta 1, total gas % recorded above TOL ranges from 0-1.4% (generally 0-0.4%). Total gas recorded in Kipper 1 above TOL is 0-0.9% (generally < 0.4%), while in Kipper 2 the range is 0-0.4%.

In all these cases, low impedance seismic anomalies are not associated with elevated levels of drill gas. Thus there is no demonstrated link between seismic amplitudes and shallow gas in the Kipper/East Pilchard area. There are some shallow low impedance seismic reflections at the Scallop-1 well location but these can not be distinguished from similar reflections at the other well locations in the area that have been proven to not be associated with shallow gas.

6.2.1 Shallow Hazard Precautions

However, not withstanding the above, the following practices will be undertaken to mitigate the consequential impact of any shallow gas:

1. Riserless drilling will be conducted until the 20" x 13-3/8" casing point at about 900m MDRT. The subsea BOP stack and marine riser system will be installed on the 18-3/4" SS-10-C wellhead.
2. Drilling will not commence until a JSA of normal riserless drilling operations has been completed. Periodic shallow gas drills will be conducted. Operational meetings will be held with rig personnel to finalise riserless drilling preparations, emergency response plans and personnel duties.
3. The ROV will be deployed near the wellhead to monitor for indications of gas flow during riserless operations.
4. Preparations will be put in place to move the rig off location should any significant flows be encountered which could effect the drilling unit and onsite personnel.
5. All watertight doors and vent hatches not in use will be closed.
6. Pump pressure will be monitored to check for a sudden change that could indicate the well is flowing.
7. Non-ported drill pipe floats will be used while drilling riserless.
8. Keep any workboat adjacent to the rig in a state of readiness to monitor for gas.
9. No hot work and limited crane activity is to be ongoing while drilling this hole.
10. Walkie-talkies to be ready and available for communications with critical rig staff.
11. Standard tripping practices will be utilised to keep the hole full and prevent swabbing.

6.3 ABNORMAL PRESSURE

Latrobe Group: Normally pressured systems can be expected from TOL to the top of the volcanics, ie. ~ 1.4 psi/m (~8.5-8.6 ppg MWE).

Golden Beach Group: Pressure data in the sub-volcanic section from wells in the area can be summarised as follows:

A. *Kipper-1, Tuna-1 and Manta-1/Chimaera-1* are close to normally pressured in the GBG (8.5-8.8ppg throughout much of the section, slightly higher at top of gas column in Kipper). The Tuna-1 and Manta-1/Chimaera-1 wells are probably the most likely analogues for Scallop-1 ie. same fault block, similar depths

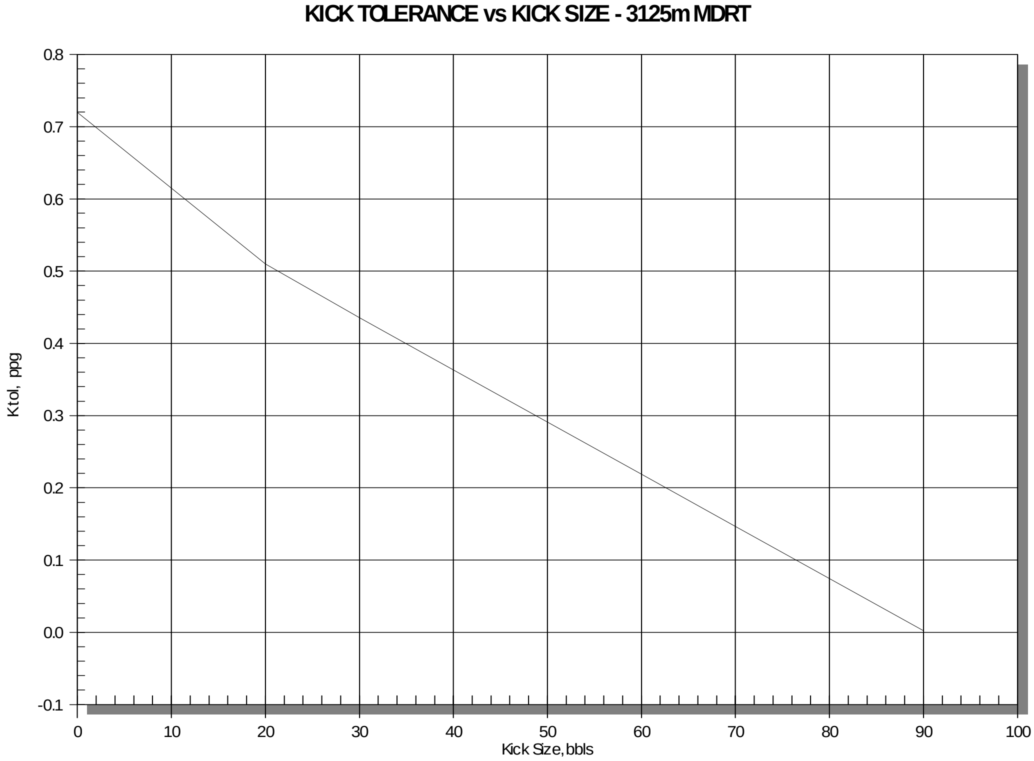
B. *West Tuna* well data indicate gradients ~1.42-1.8psi/m (ie. 8.5ppg increasing to 10.5ppg at depth, below the volcanics). However, the West Tuna fault block is deeper and more distal from East Pilchard, so is probably not the most appropriate analogue. The higher accommodation on the lowside of fault provides lower net-to-gross in WTN area and therefore this area may be more likely to be overpressured than E. Pilchard.

To summarise this data, it is expected that Scallop-1 will be normally pressured throughout the sub-volcanic Golden Beach Group section. However, as can be seen from the variability above, pressures in the sub-volcanic section are closely controlled by stratigraphy, and it will be necessary to monitor the well closely.

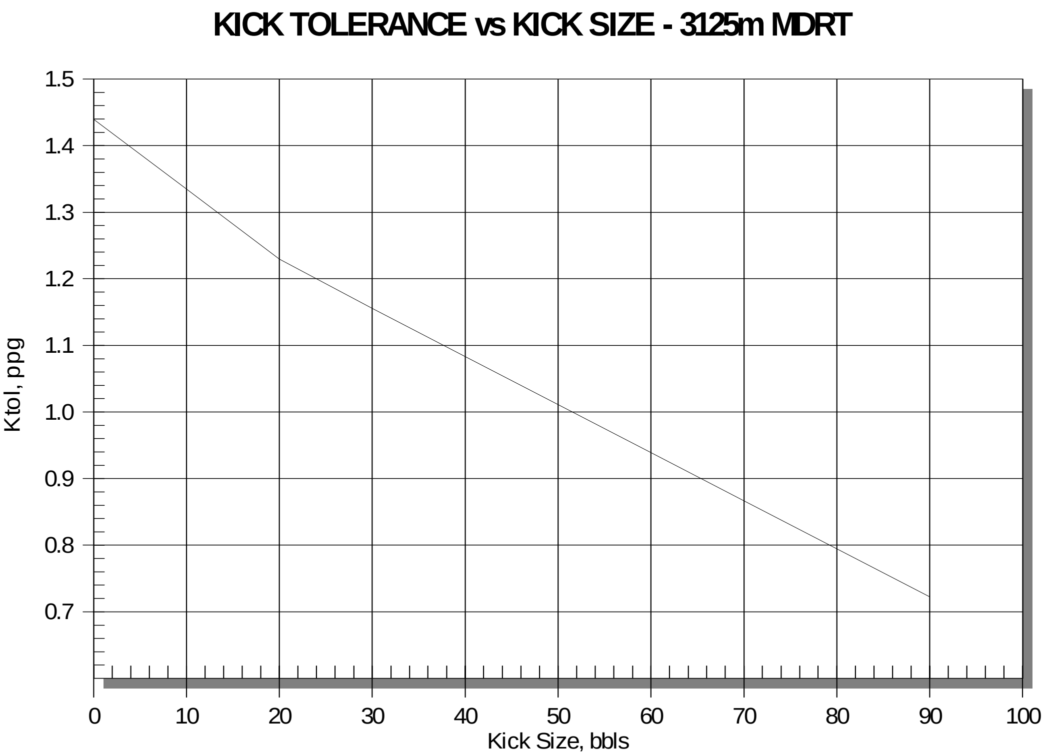
Although abnormal pressure is not expected, all abnormal pressure parameters will be monitored from surface casing to TD. A full service mud-logging unit will monitor and plot parameters. If abnormal pressure trends are identified consult with the Operations Superintendent on possible options, including:

- Mud weight increases;
- Conducting a Phase III open hole leak-off test;
- Running 9-5/8" casing;
- Calling well TD.

The kick tolerance for Scallop-1 for and the **minimum LOT of 12.5 ppg MWE** at the 13-3/8" surface casing shoe at 900m is 0.61 ppg kick for a 10bbl influx, and a 0.44 ppg kick for a larger 30 bbl influx. The kick calculation is based on a gas kick with 1 ppg intensity taken at the 12-1/4" hole at 3125m, 10 ppg mud, and 75m of 8" collars, 292m of 5" HWDP with a balance of 5" drill pipe to surface.



If the LOT at the 13-3/8" surface casing shoe was 15 ppg MWE the kick tolerance increases to 1.33 ppg kick for a 10bbl influx, and 1.15 ppg kick for a larger 30 bbl influx.



6.3.1 Over-pressure Precautions

1. A trip book is to be maintained for all trips in and out of the well with the drilling riser in place.
2. On trips in the hole, fill the drill pipe and break circulation at least every 25 stands.

6.4 HYDROGEN SULFIDE

Offset well data shows levels of H_2S as follows: 0 ppm detected from Kipper-1 production test, 0-trace at Manta-1, 0-25ppm at Tuna-4. No H_2S was detected in the East Pilchard-1 gas samples taken as MDT's.
Offset well data shows levels of H_2S as follows: 0 ppm detected from Kipper-1 production test, 0-trace at Manta-1, 0-25ppm at Tuna-4. No H_2S was detected in the East Pilchard-1 gas samples taken as MDT's.

6.4.1 H_2S Precautions

1. Continuous monitoring of H_2S will be done from the 20" X 13-3/8" casing shoe to TD with the mud loggers H_2S detection equipment.
2. After entering the Latrobe (1709m MDRT), the Mud engineers will run the Hagh test every mud test, and a Garret Gas Train (GGT) every 24 hours to monitor for H_2S, CO_2 and soluble sulphides.
3. Keep sufficient quantities of NO-SULF (a zinc based H_2S scavenger) on-board to treat H_2S in the mud system.

NOTE: 1 As the H_2S concentration level expected in reservoir fluid is less than 20 ppm, EAL Guidelines do not require the use of H_2S Personnel Protective Equipment.

6.5 CARBON DIOXIDE

There is considerable variability seen in the CO_2 levels in the sub-volcanic section from adjacent well control. In the Kipper S1 reservoir CO_2 levels of 0-19% were recorded, while CO_2 levels of 25% were recorded in the P.mawsonni section. East Pilchard-1 gas samples showed CO_2 levels ranging from 11-22% In the Manta-1 2-3% CO_2 was recorded in gas below the volcanics. In Tuna-4, 25-45% CO_2 was recorded from solution gas.

6.6 WELLBORE STABILITY

Hole instability problems are not anticipated until penetrating the Lakes Entrance formation. The Lakes Entrance is present across the Gippsland Basin and is characterised as a reactive shale, siltstone and claystone section with moderate surface areas (~150-250m^2/g). It is a highly water and time sensitive section where hole deterioration, mud rings, washouts, tight hole, excessive reaming and hole collapse have been experienced when drilling with WBM. This formation is expected to be only about 371m thick at Scallop-1.

6.6.1 Wellbore Stability Precautions

1. In the shallow hole sections bridging has been experienced in several Gippsland Basin wells while running casing. Normally, these bridges are encountered a short distance below the mudline (0-25m). Wiping the hole completely to the seafloor and displacing the entire wellbore with hi-vis mud in stages (to minimise the mud level drops while POH) is required to help prevent these shallow bridges.
2. Hole instability will be managed by a combined chemical, mechanical and operational approach. The drilling fluid of 9.0-9.5 ppg KCL/PHPA/Polymer/Glycol will be used to inhibit shale and claystone hydration. Mud weight guidelines of 9.0-9.5 ppg and additions of Calcium Carbonate will be utilised to maximise ROP and minimise the likelihood of differential sticking, but at the same time provide hydraulic support to the shales. A flow rate of 800-1000± gpm will be run in the 12-1/4" hole to maximise hole cleaning. A PDC bit is proposed to assist in drilling this section as fast as prudent to minimise open-hole exposure time. Wiper trips will be conducted as required to minimise tight hole events based on true hole indications, with precautions taken to avoid swabbing or BHA sticking tendencies.

3. ATTACHMENT 9 EAL Tripping Practices summarises hole condition monitoring and tripping, connection and wiper trip practices that should be followed while drilling this well.

6.7 COAL STRINGERS

Sloughing coals have been a problem within the Latrobe Group elsewhere in the basin, however no drilling problems associated with sloughing coals have been reported in the nearby Kipper wells. Coals in surrounding wells are predominantly less than 2 m thick with minor occurrences of up to 6m thick.

6.7.1 Coal Stringer Precautions

1. Generally coal stringers may be handled with a combination of mud weight, increased cuttings carrying capacity, reaming and wiper trips. Repeated reaming may be required to break up coal chunks. Exercise caution if coal stringers are encountered. Pyrite stringers are routinely encountered at the top of the Latrobe. PDC bits can be nursed through these stringers by limiting rotary speed (<80) and WOB.
2. Coal stringers are expected/possible in the Latrobe sands. The main danger is stuck pipe from not cleaning excessive amounts of coal from the hole. The primary preventative measure to prevent the coal seams becoming unstable is to drill the coal stringers at a steady controlled ROP. When drilling ahead, coal seams will be indicated by softer drilling. The following is a suggested guideline when coal seams are encountered or suspected:
   - Drill a maximum of 1.5m into the coal.
   - Pick up above the coal and circulate for 5 minutes (at same pump rate as when drilling). Maintain pipe movement and rotation. The intention is to circulate any coal above the BHA before drilling ahead.
   - Prior to making the next connection after drilling through a coal stringer, wipe the stand 2-3 times while maintaining circulation (without rotation).
   - Pull pipe slowly when picking up for any reason or pulling out of hole past the coal seams. Swabbing will cause additional caving of the seams.
   - If coal sloughing becomes severe, consideration should be given to adding 6-10 ppb BARABLOK to plug microfractures and minimise filtrate invasion.

6.8 SUBSEA

Planned actions are given below under each particular challenge:

6.8.1 Wellhead Sinking

A string of 30" Structural Casing will be set at ~184m MDRT and cemented in 36" hole. No wellhead sinking have been noted for PGBs run on recent Bass Strait wells. No shallow water or gas flows have been experienced behind any shallow casing strings. Surrounding well data indicates no instances of formations flowing water and therefore it is not anticipated to occur at the Scallop-1 location.

6.8.2 Shallow Hole Drilling

The well will be drilled riserless down to the 20" x 13-3/8" casing point, taking seawater gel sweeps and cuttings to the seafloor. Basin-wide offset well experience does not indicate a need for pilot hole drilling.

6.8.3 Mooring

The mooring design was based on a computerised mooring analysis. Operating limits are not expected to exceed 50% of the mooring line breaking strength limit of the 3" ORQ chain. The maximum anchor holding force expected is well within the predicted holding force of the 12 ton

Vryhof Stevpris high holding-power anchors that will be deployed. A supplemental mooring procedure will be issued.

6.8.4 Riser Tensioning

A computerised riser analysis was conducted to access the riser-tensioning guidelines required for the well. Riser tensioning will be according to operational guidelines for this shallow water depth.

6.8.5 Well Control

Based on fracture gradient predictions for this site and offset wells, the 13-3/8" casing will be set so that its casing shoe will have formation integrity of at least 12.5 ppg. This is adequate for circulating out a gas kick relevant for Bass Strait area normally pressured formations. Sufficient mud weight will be carried based on the geologic section to be drilled to prevent a gas kick considering historical pore pressures. The BOP stack will be function/pressure tested at the surface before it is run and per P(SL)A and EMDC requirements. The PIT limit above is adequate for cementing the surface casing.

6.8.6 ROV

An ROV will be available on the rig to inspect the BOP stack and riser on a routine basis. The ROV will perform site clearance work and observing the well at the seafloor while drilling without the riser.

6.9 LOST RETURNS

No lost return intervals were recorded from any of the adjacent wells. Seepage is possible in drawndown zones and fault breccias.

There is a possibility for many small-scale (sub-seismic) faults to be encountered in the sub-volcanic reservoir section. LCM may be required.

Minimum mud weight overbalances will be utilised when possible and with rheological properties and circulating rates monitored at all times to avoid losses. Mud properties will be run to promote filter cake formation with reasonable fluid loss levels run. LCM (Barofibre and Calcium Carbonate) will be kept on location for spotting of any pills that may be required.

6.10 DRAWNDOWN FORMATIONS

Top of Latrobe and shallower intra-Latrobe reservoirs are likely to be slightly drawn down in pressure due to nearby production from the Tuna field. Maximum draw down should be in the order of 100psi. No draw down is expected to be observed from the sub-volcanic S-1 reservoir.

Drilling into the Top of the Latrobe Group should proceed cautiously when initially penetrating it to evaluate the risk of sticking. Adequate BHA stabilisation should be run, minimum drill collars used and the mud system prepared by the addition of Calcium Carbonate.

6.11 ENVIRONMENTAL CONSIDERATIONS

The MetOcean conditions are detailed in the Scallop-1 Safety Case Bridging document.

Storms are typically from the southeast, south and southwest directions.

6.12 DRILLING RISK ASSESSMENT SUMMARY

A Drilling Risk Assessment for this well has been held prior to spud. The primary goal of this risk assessment was to identify significant risk events involved with the entire operation, together with preventative measures and mitigation plans for these identified risks. All action items should be closed before spud.

Results of the risk assessment will be distributed to key personnel associated with the drilling operations.

7.0 WELL DESIGN & ENGINEERING

7.1 DIRECTIONAL SURVEY PROGRAM

The Scallop-1 well will be drilled as a straight hole. Andergauge Anderdrift tools will be included in the BHA for the 36", 17-1/2" and 12-1/4" hole sections to take inclinations on every connection. Report these surveys at a constant azimuth on the Drilling Reporting System Daily Drilling Report. Drop a gyro survey prior to POOH to run surface casing, and also prior to tripping to pick-up the MWD/LWD BHA. When drilling the 12-1/4" hole section through the S1 reservoir, tie the MWD surveys into the gyro survey and report these on the Drilling Reporting System Daily Drilling Report. The regulations require depth and inclination be taken at least every 300m or nearest bit change.

Hole Size-Inches	Depth-m MDRT	Survey Interval-m	Survey Instrument
26" x 36"	136-184	Each connection	9-1/2" Anderdrift tool
17-1/2"	184-915m	Each connection and at TD (915m MDRT)	9-1/2" Anderdrift tool & SDI drop gyro at TD
12-1/4"	900-2781m	Each connection and at top S1 (2781m MDRT)	8" Anderdrift tool & SDI drop gyro at 2781m
12-1/4"	2781m to TD	Each connections.	8" MWD tool

NOTE: 1 Ensure that all Hi-Vis sweeps are clear of drill string prior to taking a Anderdrift survey or take the survey prior to pumping any Hi-Vis.

NOTE: 2 The target boundary between 2537 m TVDRT and 3126 m TVDRT (TD) is a 150m square target with hard northern boundary.

NOTE: 3 Recent offset wells indicate a straight hole should be within this target radius.

Well	Closure Distance at/near TD
Turrum 3	44.7m
Turrum 4	46.0m
Turrum 5	13.5m
Turrum 6	40.0m
Turrum 7	10.4m
East Pilchard-1	57.9m
Beardie-1	16.9m

NOTE: 4 Relief well criteria require that the location of the well be known within 15m.

7.2 CASING DESIGN

Size	Depth-m MDRT	Nominal ID	Drift ID	Weight ppf	Grade	Conn.	Burst Rating psi w/DF	Collapse Rating Psi W/DF	Tension Rating Pipe-kips w/DF	Tension Rating Con.-kips w/DF	Max. Calc'd Burst psi	Max. Calc'd Collap. psi	Max. Calc'd Tension Kips	Burst Design DF	Coll. Design DF	Tension Design DF PB/Conn.
30"	134-146	27.000"	26.813"	457	X-52	HD-90	3309	4000	5239	2813	N/A	0	47	1.375	1.0	1.333/1.50
30"	146-158	27.000"	26.813"	457	X-52	SF-60	3309	4000	5239	1387	N/A	39	14	1.375	1.0	1.333/1.5
30"	158-176	28.000"	27.813"	310	X-52	SF-60	2204	1670	3554	1387	N/A	62		1.375	1.0	1.333/1.50
20"	176-184	18.750"	18.562"	129	X-56	Weld	2225	1460	1598	N/A	N/A	71		1.375	1.0	1.333/1.50
20"	134-140	18.000"	17.813"	203	X-56	Weld	3564	4140	2508	N/A	2977	0	235	1.375	1.0	1.333/1.50
13-3/8"	140-143	12.347"	12.191"	72	L-80	BTC	3913	2670	1247	1100	2977	2	241	1.375	1.0	1.333/1.50
13-3/8"	143-900	12.415"	12.259"	68	L-80	BTC	3651	2260	1167	1030	2977	705	72	1.375	1.0	1.333/1.50
9-5/8"	134-137	8.535"	8.500"	53.5	P-110	V' TOP	8720	7067	1283	948	4229	232	501	1.25	1.125	1.333/1.50
9-5/8"	137-2400	8.681"	8.525"	47	L-80	LTC	5496	4222	815	595	4228	233	501	1.25	1.125	1.333/1.50
9-5/8"	2400-3126	8.535"	8.500"	53.5	L-80	LTC	6344	5884	933	698		5321	145	1.25	1.125	1.333/1.50

NOTE: 1 The 30" casing is to be run so that bottom of PGB is 1.5 - 2m above the mudline when landed. Run 4 joints of 30" casing top to bottom as follows: 30" wellhead joint, 1-1/2" Wall (with HD-90 box down), one 30" x 1-1/2" wall with HD-90 pin up by SF-60 box down, one 30" x 1" wall with SF-60 pin up by SF-60 box down, one float joint 30" x 1" wall with SF-60 pin up, 1.8m long, with welded crossover swedge to 20", ~1m long, with 7.6m of 20" x 0.625" wall to a Davis Lynch 500 PVTS float shoe on bottom.

NOTE: 2 The 20" x 13-3/8" casing burst design is based on a full column of gas (PSLA Requirement) in 12-1/4" hole, and assumes a conservative 17 ppg leak-off at the 13-3/8" shoe. This results in a maximum net burst pressure at the mudline of 2200 psi. The casing design also satisfies ExxonMobil LRFD design criteria for both production and surface casing.

NOTE: 3 Casing test pressure for 20" x 13-3/8" is 2200 psi.

NOTE: 4 PIT test to be taken on the 20" x 13-3/8" casing shoe to 17.0 ppg EMW. Consult with the Drilling Superintendent if 12.5 ppg EMW is not achieved.

NOTE: 5 Below the Dril-Quip SS-10-C 18-3/4" MS700 High Pressure housing is a 6.1m (20') pup joint of 20" 1" wall X56 pipe, a 1m (crossover swedge 20" to 13-3/8" BTC box), and a 3m 13-3/8" 72 lb/ft L-80 pup joint with BTC pin down.

7.3 DRILLING FLUIDS REQUIREMENTS

Hole	Depths-m MD	System	MW PPG	PV Cp	YP lb/100ft^2	Funnel Viscosity sec/qt	6 RPM	API WL cc/30 min	HTHP cc/30 min	pH	%LGS
26" x 36"	136-184	SW/with gel sweeps	8.5+	N/R	>40	>100	N/R	N/R	N/R	N/R	N/R
17-1/2"	184-915	SW/with gel sweeps	8.5+	N/R	>40	>100	N/R	N/R	N/R	N/R	N/R
12-1/4"	900-1339	6% KCL/EZ-Mud/Polymer/Glycol	9.0 - 9.5	<30	25 - 45		7 - 10	<6	<15	8.5-9.2	<10
12-1/4"	1339-1709	6% KCL/EZ-Mud/Polymer/Glycol	9.5-10.0	<30	25 - 45		7 - 10	<6	<12	8.5-9.2	<10
12-1/4"	1709-2561	6% KCL/EZ-Mud/Polymer/Glycol	9.5-10.0	<30	25 - 45		7 - 10	<6	<12	8.5-9.2	<10
12-1/4"	2561-3126	6% KCL/EZ-Mud/Polymer/Glycol	10.0-10.5	<30	25 - 45		7 - 10	<6	<12	8.5-9.2	<10

NOTE: 1 Recommend two high vis sweeps per stand (FV>100, YP>40) while drilling and opening 26" hole to 36" with seawater.

NOTE: 2 Run HTHP at 121° C/250° F, 500 psi. Run Garret Gas Train every 24 hours on mud checks below 1709m for H_2S, CO_2 and soluble sulphides, and Hach tests on every mud check. Additional mud weight may be required to combat formation instabilities, especially in the Lakes Entrance formation or the possibility of gas cut mud in the Latrobe and Intra-Latrobe sands. Increase mud weight to 10.0 ppg prior to drilling into the volcanics. Contact the Drilling Operations Superintendent if raising the mud weight above 10.5 ppg. Run the finest mesh screens practical on the shakers at all times. All mud checks must conform to the latest edition of API RP 13B-1 and "ExxonMobil Water Base Mud Testing Guidelines". Report "in" and "out" mud properties, corrected for lag time. Run PV, YP and 10-sec/10-min gel strengths at 120° F. Report all mud losses and discharges. Measure and report chlorides and calcium content of the make-up waters. Measure alkalinities/pH with a pH meter and keep calibration references onsite for all mud testing equipment.

NOTE: 3 Add 5 ppb each of Calcium Carbonate-25 and Calcium Carbonate-50, and 10 ppb of Calcium Carbonate-100 also, if MBT < 8 ppb, 2-5 ppb of pre-hydrated Aquagel immediately above the Latrobe. These pore throat bridging agents will reduce HPHT fluid loss and reduce the risk of differential sticking in the Latrobe. Regularly add an additional 1 x 25 kg sack of Calcium Carbonate-50 and 2 x 25 kg sack of Calcium Carbonate-100 for every 10m of new hole drilled below top of Latrobe. Maintain 6% KCl in mud, excess PHPA content >1 ppb in mud and residual sulphite >100 mg/l in mud. If there are indications of hole instability in the Lakes Entrance formation, consider increasing the mud weight, increasing the glycol concentration in 0.5% increments to a maximum of 5%, and increasing the KCl concentration to 8%. Maintain 3%-3.5% Glycol in the mud for fluid loss control and shale stability.

NOTE: 4 If coal sloughing becomes severe, consider adding 6-10 ppb Barablok and HME Energiser, to plug microfractures and minimise filtrate invasion. Check with the Esso Drilling Supervisor as HME Energiser is a surfactant and may alter the wettability of the formation impairing core data.

NOTE: 5 ATTACHMENT 10 Depth vs Mud Weight Plot shows the mud weight requirements versus depth. ATTACHMENT 11 Baroid Drilling Fluid Program - Scallop-1 contains the detailed Baroid mud program.

7.4 BIT AND HYDRAULICS PROGRAM

Hole Size	Interval-m MD	Bit Type	IADC Code	Nozzles (32nds)	WOB Kips	RPM	GPM	Pump Pressure-psi	Open Hole drill pipe AV m/min
26" x 36"	136 - 184	26" Mill tooth bit tba w/- Grant 36" M6980 Hole Opener	111S	~1.23 in^2 TFA (bit) 4 x 14 (36" HO)	0 - 5	50 - 150	250 - 1200	800 - 1000	7
17-1/2"	184 - 915	PDC bit tba	S223	~1.2 in^2 TFA	5 - 10	130	1000 - 1200	4000 - 3200 @ 1200 gpm	32
12-1/4" (Primary)	900 - 2234	PDC bit tba	M232	~0.75 in^2 TFA	10 - 20	50 - 150	1000 - 900	4200	58 - 52
12-1/4"	2234 - 2781	TCI bit tba	517/537	3 x 16	25 - 65	120 - 50	800	4200	48
12-1/4"	2781 - 3126	TCI bit tba	517/537	3 x 16	25 - 65	120 - 50	800	4200	48

NOTE: 1 Mud pumps are 3 x Oilwell A-1700 PT and 6" liners are assumed installed, with a max. discharge pressure of 4200 psi and output at rated speed (150 spm) and HP of 555 gpm each (100% volumetric and 90% mechanical efficiency). Max. design WP and output has been assumed to be 4200 psi and 463 gpm for each pump.

NOTE: 2 Bits types and parameters are from offset reviews and service company compressive strength analysis programs and are intended to serve as a guide. Run low WOB to spud and start the well straight. Preliminary nozzle sizes based on the Reed Hydraulics program. Re-size nozzles based on onsite conditions and pump performance, including on bottom loadings. WOB should not exceed the maximum recommended by the manufacturer.

NOTE: 3 Optimise bit weight and rotary speed as prudent using drill-off tests and re-run drill-off tests as needed. When drilling hard dolomitic sandstone with PDC bits, reduce WOB to 8 - 14 kips, and if possible RPM to ~120 rpm. Optimise RPM to prevent damaging vibrations

NOTE: 4 ATTACHMENT 12 Scallop-1 - Longitudinal Drill String Vibration details the critical rotary speeds for the x1, x4 and x9 harmonics with depth

NOTE: 5 Adequate backup PDC and tricone bits should be available on-site. As well as junk bits, backup 517, 537 and 637 tricone bits maybe required.

7.5 CEMENTING DESIGN

Refer to ATTACHMENT 14 Scallop-1 - 30" Conductor Casing and Cementing Requirements, ATTACHMENT 15 Scallop-1 - 13-3/8" Surface Casing and Cementing Requirements and ATTACHMENT 16 Halliburton Scallop Cementing Program.

7.6 BOTTOM HOLE ASSEMBLY PROGRAM

26" x 36" Hole	17-1/2" Hole	12-1/4" Hole - PDC Bit & Anderdrift Tool	12-1/4" Hole - TCI Bit and Anderdrift Tool	12-1/4" Hole - TCI Bit and MWD/LWD Tools
• 26" Mill Tooth Bit with 20 centre jet and 3 x 20 nozzles • 36" Grant Hole Opener w/ 4 x 14 nozzles • Float Sub 7-5/8" Reg box x 7-5/8" Reg box, w/Solid Float • 9-1/2" Anderdrift Tool 7-5/8" Reg PxB • Totco Ring • 3 x 9-1/2" Drill Collars, 7-5/8" Reg PxB • Crossover, 6-5/8" Reg box x 7-5/8" Reg pin • 2 x 8-1/4" Drill Collars, 6-5/8" Reg PxB • Crossover, 4-1/2" IF box x 6-5/8" Reg pin • balance 5" HWDP (Do not run jars in this hole section) Estimated Total Length of BHA (not including HWDP) = 56m	• 17-1/2" Bit • 17-1/2" Near-bit Integral Blade Stabiliser, 7-5/8" Reg BxB, w/Solid Float • 9-1/2" Anderdrift Tool 7-5/8" Reg PxB • Totco Ring • 17-1/2" Integral Blade Stabiliser, 7-5/8" Reg PxB • 2 x 9-1/2" Drill Collars, 7-5/8" Reg PxB • 17-1/2" Integral Blade Stabiliser, 7-5/8" Reg PxB • 1 x 9-1/2" Drill Collars, 7-5/8" Reg PxB • Crossover, 6-5/8" Reg box x 7-5/8" Reg pin • 2 x 8-1/4" Drill Collars, 6-5/8" Reg PxB • Crossover, 4-1/2" IF box x 6-5/8" Reg pin • 2 x 5" HWDP • 6-1/2" Jars - Dailey Hydraulic • 30 x 5" HWDP • balance 5" 19.5 ppf S-135 drill pipe	• 12-1/4" PDC Bit • 12-1/4" Near bit Stabiliser 6-5/8" Reg BxB, w/Ported Float • 8" Anderdrift Tool 6-5/8" Reg box x 6-5/8" Reg pin • Totco Ring • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 1 x 8-1/4" Drill Collar, 6-5/8" Reg PxB • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 3 x 8-1/4" Drill Collars, 6-5/8" Reg PxB • Crossover, 4-1/2" IF box x 6-5/8" Reg pin • 2 x 5" HWDP • 6-1/2" Jars - Dailey Hydraulic • 30 x 5" HWDP • balance 5" 19.5 ppf S-135 drill pipe	• 12-1/4" TCI Bit • 12-1/4" Near bit Stabiliser 6-5/8" Reg BxB, w/Ported Float • 8" Anderdrift Tool 6-5/8" Reg box x 6-5/8" Reg pin • Totco Ring • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 1 x 8-1/4" Drill Collar, 6-5/8" Reg PxB • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 12 x 8-1/4" Drill Collars, 6-5/8" Reg PxB • Crossover, 4-1/2" IF box x 6-5/8" Reg pin • 2 x 5" HWDP • 6-1/2" Jars - Dailey Hydraulic • 30 x 5" HWDP • balance 5" 19.5 ppf S-135 drill pipe	• 12-1/4" TCI Bit • 12-1/4" Near bit Stabiliser 6-5/8" Reg BxB, w/Ported Float • 8" x 10' Pony Drill Collar 6-5/8" Reg box x 6-5/8" Reg pin • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 1 x 8-1/4" Drill Collar, 6-5/8" Reg PxB • 12-1/4" Integral Blade Stabiliser, 6-5/8" Reg PxB • 8" ARC tool • 8" MWD tool • 12 x 8-1/4" Drill Collars, 6-5/8" Reg PxB • Crossover, 4-1/2" IF box x 6-5/8" Reg pin • 2 x 5" HWDP • 6-1/2" Jars - Dailey Hydraulic • 30 x 5" HWDP • balance 5" 19.5 ppf S-135 drill pipe
			Estimated distance bit to : Resistivity Gamma Ray MWD	 19.8m 19.9m 25.1m

NOTE: 1 All nominal full gauge stabilisers are 1/16" undergauge.

7.7 DRILL COLLAR PROPERTIES

Tube OD	Tube ID	Wt.-ppf	Wt-31 ft.	Conn. OD	Type	BSR	M/U Torque-ft/lbs	DC1 OD	DC2 OD	Stiffness Ratio
8-1/4"	2-13/16"	160	4,960	8.00"	6-5/8" Regular	2.93	54,410	8-1/4"	5" HWDP	5.09
9-1/2"	3"	216	6,696	9.50"	7-5/8" Regular	2.81	84,440	9-1/2"	8-1/4"	1.53

NOTE: 1 ExxonMobil recommended BSR Design: 2.25 ≤ BSR ≤ 2.75. TH Hill recommended BSR Range (Drill collars ≥ 8"): 2.5 ≤ BSR ≤ 3.20.

NOTE: 2 ExxonMobil recommended Stiffness Ratio: SR ≤ 5.5.

NOTE: 3 M/U Torque for 7-5/8" Reg. Bits is 34,000-40,000 ft-lbs. M/U for 6-5/8" Reg. Bits is 28,000-32,000 ft-lbs.

NOTE: 4 M/U Torque for 5" HWDP is 29,500 ft-lbs.

7.8 WELL CONTROL EQUIPMENT AND TESTING

Casing	Section	Top Flange	Casing Burst w/- DF (psi)	MASP (psi) @ shoe	Subsea BOP Stack Installed	BOP Size & Rating	Annular Test (k psi)	Pipe Ram Test (k psi)	Blind Ram Test (k psi)	Choke & Kill Lines/ Valves Test (k psi)	Choke Manifold Test (k psi)
30"	Riserless	30" wellhead	2204	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20" x 13-3/8"	12-1/4"	18-3/4" 10k psi	3564	383	2-Annular 4-Rams	18-3/4"-5k 18-3/4"-10k	5.0/3.5	5.0/5.0	2.22/ 2.22	5.0/5.0	5.0/5.0

NOTE: 1 Refer to the Sedco 702 Vessel Safety Case for a description of the BOP equipment and method of operation.

NOTE: 2 Pressures shown above are Initial Nipple-Up/Subsequent Test. Precede all high-pressure tests with a 250-psi low-pressure test.

NOTE: 3 The BOP Stack Ram Arrangement is to be, from the top SBR-Blind/Shear, UPR- 3-1/2" to 7-5/8" VBR, MPR- 5" Pipe, LPR-5" Pipe.

NOTE: 4 ATTACHMENT 13 shows the Sedco 702 18-3/4" BOP Stack.

NOTE: 5 Pressure test frequency: 1) Full test on stump, 2) Connections at nipple-up, 3) Every 14 days, 4) Each new tubular string run.

NOTE: 6 All tests must be held stabilised for a minimum of 10 minutes. Test choke manifold out of the critical path.

NOTE: 7 Test blind rams during the casing test.

NOTE: 8 After installation of the riser, pump through the diverter system and inspect it for leaks.

NOTE: 9 Stump test BOP stack to its full rated working pressures with water prior to running.

NOTE: 10 Pressure testing of the BOP stack to be alternated between subsea control pods and function the stack on the other pod.

NOTE: 11 MASP pressure is based on a 12.5 ppg MWE LOT, 10.0 ppg mud in the well and a surface casing shoe at 900m TVDRT.

8.0 DETAILED PROCEDURES - 26"/36" HOLE & 30" CONDUCTOR

8.1 GENERAL INFORMATION

Although shallow gas is not expected, the precautions detailed in Paragraph 6.2 Shallow Hazards will be observed.

8.2 RUNNING TEMPORARY GUIDE BASE (IF REQUIRED)

8.2.1 TGB Running Preparation

1. Inspect the TGB and running tool as per Dril-Quip procedure.
2. Install the four chains using 25 tonne shackles to the TGB, to allow the ROV to connect these to the Permanent Guide Base (TGB) for the simultaneous recovery of both the PGB and TGB.

8.2.2 TGB Running Procedure (if required)

1. Set the temporary guide base on the spider or moon pool beams.
2. Fill the TGB with barite or similar weight material to approximately 25,000 lb.
3. Install the guidelines onto the four lifting eyes provided.
4. Install the level indicator on the TGB.
5. Pick up the running tool with a tugger line and lift the stem through the rotary table. Lower and install the tool into the J-slots inside the TGB by rotating 1/8th of a turn to the left.
6. Pick up the TGB. Run and land it on the ocean floor. Slack off the guideline as the TGB is lowered.
7. With weight down, rotate 1/8th turn to the right to release the running tool.
8. Maintain a little right-hand torque on the drillpipe and pick up the running string slowly, until it is certain that the running tool is free, and retrieve the running assembly.
9. Adjust the tension on the guidelines over the weight of the lines.

   NOTE: 1 Avoid over tensioning the guidelines and lifting the TGB off the ocean floor.

8.3 PREPARATIONS PRIOR TO DRILLING 26" X 36" HOLE SECTION

1. Confirm that the two bulls-eyes (0 to 2° and/or 0 to 5°) have been installed on the retrievable Permanent Guide Base (PGB) 90° apart. This installation should be made onshore for accurate levelling.
2. Paint numbers 1 through 4 on the base of the guideposts, and paint the cement outlets on the PGB. Pass a sketch of the PGB showing bullseyes, numbered guide posts and cement outlets to the ROV contractor, and forward a copy to town.
3. MU 26” x 36" HO BHA. Paint the 26" bit white. Paint white stripes every 2m on the bottom 2 DCs. MU 5" HWDP in stands to use as a landing string and SLM. Stand it back in the derrick. Based on the 30" conductor tally and planned stickup, mark the BHA to indicate when the correct amount of hole has been drilled. Complete as many items out of the critical path as possible (ie. MU HWDP and drill pipe in stands for top drive use, and SLM. MU cementing head assembly).

   NOTE: 1 Refer to 7.6 Bottom Hole Assembly Program for a description of the BHA assemblies.

4. Make sure at least 450 bbls of hi-vis gel mud is mixed and ready to pump, as needed.

5. Have sufficient 12.0 ppg mud available to prepare 420 bbl of 9.6 ppg kill mud if required for a dynamic kill while drilling riserless. This mud will later be used in the 17-1/2" surface hole.

NOTE: 1 200% of the open hole volume of the 36" hole from seafloor to 183m is 400 bbl.

6. Prior to picking up the 30" Housing Running Tool:
   - Inspect the o-ring on the OD of the cam tool and replace if required. Lightly grease immediately before running the tool.
   - Grease and perform all required manufacturer's required services and checks.
   - Rotate the stem five (5) LH turns to extend the rams. Rotate the stem five (5) RH turns and ensure the rams will move back into the body freely when lightly tapped, using a wooden block and hammer. Observe the Indicator Rod move from 3-3/8" above the top flange when unlocked to 7/8" above the flange when locked.
   - Check the spring loaded anti-rotation (housing stop) pin on the cam tool to ensure that it moves in and out freely.
7. Each 30" joint has been fitted with horizontal lifting pad eyes and an elevator ring.
8. Clean 30" connector boxes and pins thoroughly. Reinstall protectors. Check condition of the O-ring on each box end and replace if damaged or missing. Lubricate each pin and box with heavy weight oil before make-up. **Do not use pipe dope.** The connections are weight-set to makeup, rotation is not required. An anti-rotation pin and slot prevent rotation after makeup.
9. Paint the 30" shoe white. Paint white stripes on the casing every 1 m on the bottom joint. Paint five white stripes, at 1m intervals, on the 30" wellhead housing extension. Sequentially number the stripes (1, 2, 3, 4 and 5) from the top of the housing down.
10. **Drift 5" DP landing string to 2.625" prior to running this casing.**
11. R/U dual 30" side-door elevators to run the conductor.

NOTE: 1 30" bowl and slips will be available as back-up.

8.4 DRILLING 26" X 36" HOLE SECTION PROCEDURE

1. Hold JSA meeting to discuss riserless drilling procedures and responses.
2. PU the 26" x 36" hole BHA and RIH to mudline at 136m MDRT. Slowly lower the BHA on the compensator, with pumps idling to keep the bit jets clear, until the string begins to take weight. Record the depth when the 26" bit tags the mudline and when 5 kips of weight can be held for 5 minutes (competent mudline). **Mark the drill pipe when the bit is at the mudline, and strap from this mark the required depth calculated from the conductor tally.** Take an inclination survey.

NOTE: 1 Record tide from tide tables.

NOTE: 2 Have ROV at the mudline to observe spud and drilling of the entire hole section.

NOTE: 3 Leave the ROV on bottom to mark the well location. If the ROV is recovered, drop a marker buoy to mark the well location.

3. Drill the first 10-20m with low pump rate (250± gpm), 0-2 kips WOB and 60-80 rpm to avoid excessive washout and to control hole deviation. Pump hi-vis sweeps every 15m or as needed for hole cleaning. **Use very little WOB the first few meters because a near-mudline hard streak exists in some areas of Bass Strait that has caused excessive deviation in past wells.**

NOTE: 1 Space-out the drillstring so that the first connection will not pull the bit out of hole.

4. Continue drilling to 184m MD (48m BML). **Adjust drilling depth, based on strap of the 30" tubulars and 20" shoe joint, to set pipe on bottom in the 26" hole, with the base of the PGB**

1.5 to 2.0m above the seafloor, or 1.0m above the top of the TGB if this was run. Drill with minimum bit weight (0-5 kips), and 250-1200 gpm, for deviation control. Limit ROP to one stand/hour and pump hi-vis gel sweeps as needed. Monitor sea floor for hole washout, shallow gas and cuttings dispersion using the ROV. Pump a 100-bbl hi-vis sweep. Circulate BU with seawater.

NOTE: 1 On East Pilchard-1 ~5 kips WOB achieved 50-60 m/hr ROP. Increasing WOB to 15 kips reduced ROP to ~ 20 m/hr from buckling of the unsupported HWDP while drilling riserless.

5. Take an Anderdrift survey when spudding, on every connection and at TD. **Maximum deviation should not exceed 1.0° of drift.** If this angle is exceeded, consult with the Esso Drilling Operations Superintendent. Prepare to ream the hole until hole angle is within this tolerance.

6. Make a wiper trip to the mudline. **Do not pull the HO above the mudline.** RIH to TD. Circulate the hole clean with a 50-bbl hi-vis gel sweep. Displace hole with hi-vis mud (200% hole volume-±400 bbls) made with seawater, without lime, while POH to 15m BML. Fill hole in stages to mitigate hole collapse. Refill the hole with 100 bbls of hi-vis mud at this point. Finish POH.

8.5 RUNNING 30" STRUCTURAL CASING

1. Conduct JSA to discuss casing running procedures. Casing properties are listed in 7.2 Casing Design. Details of the conductor casing and cementing requirements are contained in ATTACHMENT 14 Scallop-1 - 30" Conductor Casing and Cementing Requirements. Review the EMDC Drilling Operations Manual - Floating Drilling casing running checklist.

NOTE: 1 The float shoe joint assembly comprises a Davis Lynch Type 500 PVTS float shoe on 20" x 0.625" wall X-56 ERW pipe (length 7.6m), a 20" x 30" swedge (~1m) and 30" x 1" wall X-52 pipe (~1.8m) with SF-60 pin connector on top. The joint is fitted with elevator ring and horizontal lifting padeyes.

NOTE: 2 Ensure that a detailed drawing has been made of the 30" housing joint with all dimensions noted. This will be used during the P&A when cutting the 30".

2. RU 30" casing running equipment and prepare floor to run casing. Have Dril-Quip serviceman on the rig floor to supervise casing running and connection make-up.

NOTE: 1 Evaluate on-site whether to run the 30" with dual side-door elevators or 30" slips and split bowl.

3. Move the PGB onto the spider/moon pool beams.

4. Run the 30" x 20" casing as described below. Use rig slings and shackles and dual side-door elevators to handle the casing.

   - The float shoe joint assembly comprises a Davis Lynch Type 500 PVTS float shoe on 20" x 0.625" wall X-56 ERW pipe (length 7.6m), a 20" x 30" swedge (~1m) and 30" x 1" wall X-52 pipe (~1.8m) with SF-60 pin connector on top. The joint is fitted with pad-eye mounts and two low-profile lifting eyes;
   - One Intermediate Joint - 30" 310#, X-52, SF-60 (box down x pin up. The joint is fitted with an elevator ring and two low-profile lifting eyes;
   - One Intermediate Joint - 30" 457#, X-52, SF-60 box down x HD-90 pin up. The joint is fitted with an elevator ring and two low-profile lifting eyes.

NOTE: 1 Cut-off the horizontal lift padeyes while running the intermediate and shoe joints.

5. Verify water will flow through the 20" float shoe, before it passes the waterline, by filling the casing with seawater and observing flow out of the shoe. Fill the remaining joints with seawater, as they are run, using the top drive.

6. PU and run the 30" wellhead Housing with 40' x 30", 457#, X-52 extension joint (30" wellhead Housing up x HD-90 box down).

NOTE: 1 The 30" extension joint below the 30" wellhead Housing is also fitted with an elevator ring and two low-profile lifting eyes.

7. RD casing handling tools. Install a split plate on top of the 30” wellhead housing joint and run the inner cementing string of 5" drill pipe. The bottom of the stinger should be 12±m above the float shoe (planned TOC is 4m above the float shoe). The weight of the 30" casing in 8.5 ppg SW is ~47 kips.
8. PU the 30" Housing Running Tool. MU running tool to the 5" drill pipe cementing stinger.
9. Position running tool in the 30" wellhead housing. Rotate tool stem to the left five (5) turns by hand chain tong as per the Dril-Quip Running Procedure. Turn the tool stem 1/8 turn back to the right to break any seizing between the tool stem and ram housing. Observe the Indicator Rod move down from 3-3/8" above the top flange when unlocked to 7/8" above the flange when locked. Perform a PU test to ensure the locking dogs are fully engaged.
10. Paint a vertical white stripe on the 30” Housing Running Tool tool joint and wellhead housing to verify proper tool rotation on retrieval.
11. Lock the blocks on the TDS.
12. Lower, land and latch the 30" housing in the PGB. Make sure the retainer ring on the PGB snaps closed over the top of the 30" Housing. Install two cap screws and the retainer key at the split of the retainer ring.
13. Open the ball valve in the running tool and check that the handle will be easy to remove in the next step. Check that the remaining bull plugs are tight. PU assembly off the moon pool beams.
14. Lower the assembly until the 30” wellhead housing is just below the water line. MU top drive and circulate seawater at 100 spm to displace air out of the casing. Close the ball valve and remove the handle. Observe bullseye.
15. Run casing to the mudline. The running string should consist of:
    - XO-6-5/8” Reg. Pin Down x 4-1/2” IF Box Up
    - 5”, 19.5# DP (4-1/2” IF)
16. Monitor casing descent through the water column with the ROV. Observe casing entry into the 36" hole with the ROV.
17. Lower the 30” string to 3m above mudline. Record the assembly weight. Check bullseye with the ROV. Lock the blocks to prevent rotation that could back-out the 30" Housing Running Tool.
18. Slowly lower the 30” casing into the well, while observing with the ROV. **Land the casing so that the 20" shoe is at the bottom of the 26" hole, and the PGB base is about 1.5 - 2m above the mudline, or ~1m above the TGB if this was run.** Check the PGB bulls-eyes angles with the ROV. **Maintain an angle of less than 1° on the casing and 30" wellhead assembly. If inclination is more than 1°, notify the Drilling Operations Superintendent before cementing this string in place.**

NOTE: 1 If the bullseye is more than 1° use the anchor winches to try to pull the wellhead angle to 1° or less.

8.6 CEMENTING 30" STRUCTURAL CASING.

1. Conduct a JSA to discuss casing cementing procedures while circulating. Break circulation using the rig pumps at 6 bpm. Increase pump rate to 14 bpm maximum over the next five minutes. Circulate a minimum of 1.5 string volumes with seawater. RU and test cementing lines to 2000 psi. Review the EMDC Drilling Operations Manual - Floating Drilling cementing checklist.
2. Recalculate cement volume onsite based on actual hole depth and verify with the onsite cementing crew.

3. Pump a 20-bbl seawater pre-flush.
4. Pump 252 bbls of cement slurry (volume required to fill the annulus with 250% excess) and displace with 31.3 bbl[1] of seawater to leave ~4m of cement above the float shoe. Use the ROV to monitor cement returns near the mudline during the job. . Report volume pumped.
5. Proposed cement slurry properties are detailed in ATTACHMENT 14 Scallop-1 - 30" Conductor Casing and Cementing Requirements. Refer to the Halliburton Cementing Laboratory Report for actual properties of the slurry.
6. Capacity values for displacement:
   - 30" casing, 310 ppf: 2.4986 bbl/m
   - 20" casing, 129 ppf: 1.1204 bbl/m
   - 5" 49.3 ppf HWDP: 0.02897 bbl/m
   - 5" 19.5 ppf S-135 drill pipe: 0.05827 bbl/m
7. Shut down pumps. Check float for proper operation. Hold backpressure if required.
8. Slack-off weight of the 30" casing string after the cement is in place. Mark drill pipe at RT. Check bullseyes on the PGB. If less than 1° adjust the heave compensator to support slightly more than the combined weight of the running string, running tool and inner string cementer. Release the 30" wellhead running tool with five (5) right-hand turns. Observe the Indicator Rod move up from 7/8" above the top flange when locked to 3-3/8" above the flange when unlocked. Retrieve the landing string, stinger and 30" Housing Running Tool. Flush the wellhead with the drill pipe stinger when POH. The compensator should stroke closed, when the running tool releases, if the compensator is balanced. Strap pipe and record the wellhead depth on the Daily Drilling Report along with the 30" shoe depth from the RT.

   NOTE: 1 If the bullseyes shows greater than 1° inclination, pick-up the weight of the 30" string and WOC about 4 hours, or until the surface samples set up, then release the 30" wellhead running tool and continue.
9. Use the ROV to sweep any wet cement mounds around the wellhead away.
10. Report the 30" shoe depth on the Daily Drilling Report and send in the Drilling Reporting System casing and cementing reports, and 30" casing tally as a spreadsheet.
11. Ensure the following measurements are reported on the next Daily Drilling Report:
    - Water Depth;
    - Top of the 30" SSWH from RT;
    - Actual RT to ML:
    - Actual distance RT to sealevel.

    NOTE: 1 Correct measured depths to MSL using the tide tables provided

9.0 DETAILED PROCEDURES - 17-1/2" HOLE & 20" X 13-3/8" CASING

9.1 GENERAL INFORMATION

Although shallow gas is not expected, the precautions detailed in Paragraph 6.2 Shallow Hazards will be observed.

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[1] 136.4m 5" DP @ 0.05827 bbl/m = 7.95 bbl plus 36.6m of 5" DP stinger @ 0.05827 bbl/m = 2.13 bbl plus 5.3m of 30" conductor (28" ID) @ 2.4986 bbl/m = 13.24 bbl plus 3.6m of 20" conductor (18.750" ID) @ 1.1204 bbl/m = 4.03 bbl plus 1.5 bbl surface volume = 28.85 bbl TOTAL.

9.2 PREPARATIONS PRIOR TO DRILLING 17-1/2" HOLE SECTION

1. Make sure at least 450 bbls of hi-vis gel mud is mixed and ready to pump, as needed.
2. Have sufficient 12.0 ppg mud available to prepare 1600 bbl of 9.6 ppg kill mud if required for a dynamic kill while drilling riserless. This mud will later be used after TDing the 17-1/2" surface hole.

   NOTE: 1 The 30" x 20" conductor volume is ~118 bbl. 200% of the 17-1/2" openhole volume is 1417 bbl. Total kill weight mud should exceed 1535 bbl.

3. M/U Top Drive Cementing Head to a drill pipe pup joint and drill pipe single and lay out.
4. Paint the 13-3/8" shoe white. Paint 8 white stripes at 1m intervals on the 18-3/4" wellhead housing extension, numbered 1 to 8 from top down.
5. 18-3/4" Wellhead Housing
   - Inspect the 18-3/4" Wellhead Housing as per Dril-Quip Procedures;
   - Verify installation of the reduced bore seat protector (12.375" ID).
6. 18-3/4" Housing Running Tool
   - Inspect the 18-3/4" Housing Running Tools as per Dril-Quip procedures;
   - Rotate the stem to the left to extend the rams. Rotate the stem to the right approximately 5 turns to ensure the rams will move back into the body freely when lightly tapped, using a wooden block and hammer. Observe the Indicator Rod move down from 3-3/8" above the top flange when unlocked to 7/8" above the flange when locked.
   - Check the spring-loaded anti-rotation (housing stop) block on the cam tool to ensure that it moves in and out freely.
   - Check all bull plugs are tight.
7. MU a pup joint of 5" drill pipe on top of the 18-3/4" Housing Running Tool with at least 9.1m (**see Note 1 below**) of 5" drill pipe below and the Halliburton SSR Swivel/Equaliser Tool on-bottom. Lay down on the riser deck trolley.

   NOTE: 1 The amount of 5" drill pipe run below the 18-3/4" Housing Running Tool should be enough the stab the SSR Cementing plug into the top joint of 13-3/8" casing.

   NOTE: 2 The SSR Swivel/Equaliser Valve Tool is 0.73m long with 4-1/2" IF box by 4" 6 Stud ACME pin connections.

8. Position the running tool in the 18-3/4" wellhead housing. Rotate the tool carefully to the left, by hand, until the anti-rotation pins engage slots in the wellhead housing. MU the tool with five (5) left hand turns as per Dril-Quip procedures. Observe the Indicator Rod move down from 3-3/8" above the top flange when unlocked to 7/8" above the flange when locked. Lay down the 18-3/4" Housing Running Tool and the 18-3/4" High Pressure Housing pre-assembly on the riser deck trolley.
9. Drift 5" DP casing landing string prior to running casing. The SSR dart nose OD is 1.855" for drill pipe with a minimum diameter of 2.25".
10. Drift 13-3/8" casing to 12.259".

9.3 DRILLING 17-1/2" HOLE SECTION

1. Hold JSA meeting to discuss all riserless drilling procedures and responses.
2. If extensive amounts of cement need to be cleaned out of the conductor PU 26" Bit/17-1/2" stab/3 x 9-1/2" DC/Stab/3 x 8" DCs/5" HWDP, RIH and drill out the 30" conductor to the crossover to 20". Pump 50 Bbl hi-vis pill, circulate hole clean and POH.
3. PU the 17-1/2" hole BHA, listed in Paragraph 7.6 Bottom Hole Assembly Program, and RIH to TD on 5", 19.5#, S-135 drill pipe. Paint the 17-1/2" bit white and paint a white stripe at +/-860m from the bottom of the bit (adjust this mark based on the actual casing tally). Have ROV at the

mudline to observe drilling of the entire hole section. Have ROV swim in and check for flow on connections.

NOTE: 1 Do not circulate at the 30" shoe. Pull up inside the 30" casing to circulate.

4. Drill ahead at 800-1200 GPMs, 50-150 RPMs, and 5 - 10 kips WOB to 915m MDRT, to provide ~15 m of rathole below the 20" x 13-3/8" casing shoe proposed for 900m MDRT. Pump 20 Bbl hi-vis sweeps every 15m or as needed for adequate hole cleaning while drilling. Monitor mudline for hole washout, shallow gas and cuttings dispersion with the ROV. Adjust the drilling depth based on strap of the 20" x 13-3/8" tubulars. Take an Anderdrift surveys at every connection and at TD.

NOTE: 1 If a survey is missed repeat surveys are not required. However, ensure that there are surveys at least every 150m.

5. At TD of 915m MDRT, pump a 100 Bbls hi-vis sweep and circulate bottoms up with seawater. Make a wiper trip to the 30" shoe. RIH to TD, pump 100 bbl hi-vis pill and circulate B/U, then displace the hole with 12.0 ppg mud. Drop the SDI gyro survey and SLM out of hole. At the 30" shoe, fill the hole with 110 Bbls of 12.0 ppg gel mud, keeping it full while SLM POH. Wash the 30" wellhead while pulling the bit out of the hole. Using the ROV monitor the hole for flow after the bit is out of it.

9.4 CASING RUNNING PROCEDURE

1. Hold JSA meeting to discuss casing running procedures. Review the EMDC Drilling Operations - Floating Drilling casing running checklist.

2. RU 20" x 13-3/8" casing running equipment and prepare floor to run casing.

NOTE: 1 A FMS will be used to run the 13-3/8" casing.

NOTE: 2 Sedco 702 20" casing slips and casing bushing will be required for handling the 18-3/4" High Pressure Housing with 20" casing extension in the rotary table.

NOTE: 3 Ensure that a detailed drawing has been made of the 18-3/4" housing joint with all dimensions noted. This will be used during the P&A when cutting the 20".

3. Run the 20" x 13-3/8" casing as described below using 150 ton sidedoor elevators and FMS to a depth of 900m MDRT. Have Weatherford on the rig floor to supervise casing running and connection make-up as needed.

NOTE: 1 Run soft lines on shoe joint to facilitate entering the 30" wellhead and secure these lines properly. Run soft lines at 90° @ 3 m & 5 m above the end of the shoe. Use the ROV to clean the inside of the 30" wellhead for acceptance of the 18-3/4" wellhead profile.

NOTE: 2 Note that the casing will enter the wellhead on the 12th joint run.

4. Verify water will flow through the 13-3/8" float shoe/collar, before it passes the waterline, by filling the casing with seawater and observing flow out of the shoe. Fill the remaining joints with seawater as they are run.

5. Make-up and run casing as detailed in ATTACHMENT 15 Scallop-1 - 13-3/8" Surface Casing and Cementing Requirements.

6. M/U the 13-3/8" casing using Best-O-Life 2000 thread compound.

7. Make-up the 13-3/8" casing using ExxonMobil Torque position makeup. For 13-3/8" 68ppf L80 BTC casing with phosphatised couplings T-min is 8,950 ft-lbs and T-max is 15,200 ft-lbs. D1 is 4.813" and D2 5.188".

8. Primary float equipment and wiper plugs are PDC-drillable/non-rotating.

9. Use hydraulic tongs to make up the 13-3/8" casings.

10. Slowly lower the 13-3/8" shoe into the well, while observing it with the ROV. Once successfully stabbed in, continue to run casing. Monitor the movement of the casing at the wellhead and do not use more than 50 kips of S/O weight before conferring with the Operations Superintendent. Circulate the casing down if required.

11. Run casing at 20 sec/joint and drill pipe at 40 sec/stand

12. Run the last joint of 13-3/8" casing with the No-Cross™ coupling preinstalled.

13. PU the 18-3/4" Dril-Quip SS-10-C wellhead Housing Joint w/20' long 20" extension, crossover swedge, and 13-3/8" pup joint BTC pin down on the 18-3/4" Wellhead Running Tool, and make-up to the No-Cross™ coupling.

    NOTE: 1 **The SSR Top Plug is not installed at this step.**

    NOTE: 2 **The 18-3/4" reduced bore seat protector has been installed in the 18-3/4" wellhead housing.**

    NOTE: 3 The 18-3/4" SS-10-C Wellhead Housing Joint w/20' long 20" extension, crossover swedge, and 13-3/8" pup joint has been made up to the 18-3/4" Wellhead Running Tool off the critical path and laid down on the riser deck trolley.

14. RD casing handling tools. Install the 20" Master Bushing and the Sedco 702 20" slips.

15. Set the 18-3/4" SS-10-C Wellhead Housing assembly in the 20" slips. Release the 18-3/4" Wellhead Running Tool with five (5) right hand turns and PU above 18-3/4" wellhead Housing assembly.

16. Install the 13-3/8" Halliburton SSR Top Plug to the drillpipe stinger. Sting the SSR plug through the 18-3/4" Wellhead Housing into the 13-3/8" casing below it.

    NOTE: 1 Check final spaceout of the SSR plug on the stinger before installing into the 18-3/4" Wellhead Housing Assembly.

    NOTE: 2 The ID through the reduced bore casing protector is 12.375". The SSR Top Plug will pass through this minimum bore.

17. Fill the void between the top of the SSR cement plug and the top of the wellhead with water before finally making up the running tool.

18. Position the Wellhead Running Tool in the 18-3/4" Wellhead Housing Assembly. Rotate the tool carefully to the left, by hand, until the anti-rotation pins engage slots in the wellhead housing. MU the tool with five (5) left hand turns as per Dril-Quip procedure.

19. Turn the Wellhead Running Tool stem 1/8 turn back to the right to break any seizing between the tool stem and ram housing. Perform a PU test to ensure the locking dogs are fully engaged.

20. Lock the blocks to prevent rotation that could back out the Wellhead Running Tool. Record the assembly weight.

    NOTE: 1 The weight of the 20" x 13-3/8" casing string in 8.5 ppg seawater is 148 kips. The total string including casing, high pressure housing and running string in seawater is estimated to be 173 kips.

21. Paint a white stripe on the 18-3/4” Wellhead Running Tool tool joint and wellhead housing to verify proper tool rotation on retrieval subsea.

22. The running string should consist of:
    - XO-6-5/8” Reg. Pin Down x 4-1/2” IF Box Up
    - 5" 19.5 ppf S-135 drill pipe pup joint on the 18-3/4" running tool XO.
    - 5" 19.5 ppf S-135 drill pipe (4-1/2” IF)

23. Maintain observation with the ROV from the rig floor to ensure casing movement at the rig floor is consistent with casing movement at the wellhead.

24. Continue to RIH. M/U cement head and connect cement hoses. Prior to 20" swage entering the 30" wellhead, open the compensator. To reduce the potential for lost returns, slow down pipe movement to +/-1 minute stand once the 20" section enters the wellhead. Continue to RIH to land the 18-3/4" wellhead in the 30" wellhead. Make a PU test of the running string. Record the hook weight just prior to the PU test. Land and latch the 18-3/4" wellhead into the 30" wellhead housing and with the 13-3/8" shoe at 900m± MD. Pull test latch-up with 30 kips of overpull and then release the overpull. If latch up does not occur, it may be necessary to pick-up and repeat the process.

9.5 CEMENTING 20" X 13-3/8" SURFACE CASING

1. Conduct a JSA to discuss casing cementing procedures while circulating. Break circulation using the rig pumps at 6 bpm. Increase pump rate to 10 bpm maximum over the next five minutes. Circulate a minimum of 1.5 string volume with seawater to the shoe to ensure the drillstring and floats are clear prior to cementing and densities inside and outside of the casing are similar. RU and test cementing lines to 2500 psi. Rig-Up the Top Drive Cementing head. Review the EMDC Drilling Operations - Floating Drilling Cementing checklist.
2. Recalculate volume onsite based on actual hole depth, and verify with the onsite cementing crew. Use 100% excess on open hole.
3. Pump a 50-bbl seawater pre-flush, monitor returns at the seabed.
4. Pump 517 bbls of 12.5 ppg lead cement slurry followed by 150 bbl of 15.9 ppg tail slurry (volume required to fill the float joints, 30" conductor and 13-3/8" annulus, and 17-1/2" open-hole annulus with 100% excess).
5. Proposed cement slurry properties are detailed in ATTACHMENT 15 Scallop-1 - 13-3/8" Surface Casing and Cementing Requirements
6. Refer to the Halliburton Cementing Laboratory Report for actual properties of the slurry.
7. Drop Top Plug Releasing Dart.

   NOTE: 1 Drift all drillpipe and xovers. The SSR dart nose OD is 1.855" for drill pipe with a minimum diameter of 2.25".

8. Displace cement with nominally 370.9 bbl[2] seawater to bump the top plug with 2200 psi for 2 minutes. Base the actual displacement on the actual lengths of tubulars run, and the callipered casing ID. Monitor for cement returns with ROV near the mudline during the job. Do not cut the volume of the tail slurry short. Displace cement with the rig pump and maintain an 8-10 bpm rate. Reduce pumping rate if necessary, to maintain cement returns at the mudline, or to avoid pumping cement into the formation.

   NOTE: 1 Check the efficiency of the rig pumps.

   NOTE: 2 Pump the total calculated displacement plus a maximum of half the shoe track volume = 370.9 bbl + 6.2 bbl = 377 bbl.

9. Capacity values for displacement:
   - 13-3/8" 68 ppf casing: 0.49767 bbl/m (based on callipered casing used on Beardie-1.)

   NOTE: 1 Use actual capacity based on the average ID for 13-3/8" 68 ppf L80 casing allocated.

   - 5" 19.5 ppf S-135 drill pipe: 0.05827 bbl/m
10. Shut down pumps. Check floats for proper operation. Hold backpressure if required.

---

[2] 137.4m (134.4m + 3m stickup) 5" drill pipe @ 0.05827 bbl/m = 8.0 bbl, plus 727.5m (875.5m - 148.0m) of 13-3/8" 68 ppf casing (drillpipe stinger to float collar) @ 0.49767 bbl/m = 362.1 bbl, plus 13.6m (148.0m - 134.4m) of 5" drillpipe stinger @ 0.05827 bbl/m = 0.8 bbl. Total = 370.9 bbl.

11. Slack-off weight of the 20" x 13-3/8" casing string after the cement is in place. Mark drill pipe at drill floor. Check the bullseye and report inclination on the Daily Drilling Report. Adjust the heave compensator to support slightly more (2-3 kips) than the combined weight of the running string, running tool and inner cementing string. Release the 18-3/4" wellhead running tool with five (5) right-hand turns. Retrieve the landing string, stinger and Wellhead Running Tool. The compensator should stroke closed, when the running tool releases, if the compensator is balanced. Monitor for any settling before releasing the Wellhead Running Tool and discuss with the Operations Superintendent if any is observed before releasing.

    NOTE: 1 Mark an index line on the drill pipe at drill floor elevation prior to POOH, for reference if 9-5/8" casing is run.

12. Use the ROV to inspect the wellhead and sweep away any wet cement mounds around the wellhead.

    NOTE: 1 A wash tool is available to wash inside the wellhead if required.

13. Retrieve the Wellhead Running Tool and drillpipe stinger out of the hole to get a precise wellhead distance measurement, reporting the distance from the RT-18-3/4" wellhead on the Daily Drilling Report. Examine the wellhead area for any debris or flow with the ROV. Inspect the wellhead area for excessive accumulation that requires jetting prior to running the BOPs. Jet these materials and wellhead as needed.
14. L/D the Dril-Quip Wellhead Running Tool. Stand back the 5" drill pipe stinger and drill pipe landing string.
15. Report the 13-3/8" shoe depth on the Daily Drilling Report and send in the Drilling Reporting System casing and cementing reports, and 13-3/8" casing tally spreadsheet.

10.0 DETAILED PROCEDURES - 12-1/4" PRODUCTION HOLE

10.1 RUNNING THE 18-3/4" BOP STACK AND RISER

1. Prior to running the BOP and riser confirm that the flex-joint angle indicator is functional. Move the rig +/- 15m off location. Run the 18-3/4" 10,000 psi BOP stack and riser. Reposition the rig back over the well.

    NOTE: 1 Test the choke and kill lines after running the first riser joint, and again when on-bottom.

2. While observing with the ROV, land and latch the stack. Pull 50 kips to verify the latch. Check the BOP and riser bullseyes. Report inclinations on the Daily Drilling Report (DDR). Notify Esso Drilling Operations Superintendent if either bullseye is over 1.5° of angle. To minimise the chances of damage caused by riser recoil during a disconnect, space out the slip joint at 1/2 stroke. This should place the top of the outer barrel well above the water line.
3. Test the wellhead connector, shear rams and 13-3/8" casing to 250/2200 psi surface pressure while laying down the landing joint. These test pressures are required by P(SL)A regulations. Pressure must not decline by more than 10% in 30 minutes. Notify Esso Drilling Operations Superintendent if pressure test requirements are not met. Function test the blind rams.
4. Adjust riser tensions, unscope slip joint and rig-up the diverter system. Function test the diverter system and pump through it with seawater. Tension guidelines as required.
5. Tension riser per Sedco 702 operational guidelines and increase as required based on actual mud weights.

    NOTE: 1 Observe and monitor mooring tension loads and upper flex joint angle and increase tensioner load as required.

6. Test the BOP stack connections, choke and kill lines against the blind rams and casing shoe to 2200 psi (Phase I PIT).

   NOTE: 1 Report results of PITs using the EMDC Drilling PIT spreadsheet on the following daily report. Send original plots for the PITs and a copy of the spreadsheet to the office for the well file.

7. Function test BOP stack against drill pipe using both pods. Before drilling out conduct a choke drill.

RISER PROPERTIES	
Outside Diameter	21"
Wall Thickness	0.625"
Connection Type	Regan FD8, 18-3/4"
Material Grade	API 5L X52
Minimum Yield Strength	52,000 psi
Average Length of Each Joint	15.2m (50 ft)

10.2 PREPARING THE KCL/PHPA/POLYMER/GLYCOL MUD SYSTEM

1. The following is the recommended system formulation (in order of addition) for the KCL/PHPA/Polymer/Glycol mud system. Note that Glycol will not be added to the mud system until after the PIT and drilling ahead.
   - Baracide 0.1 ppb (add to reserve only)
   - KCl Brine 22 - 30 ppb
   - Xantham Gum 1.0 - 1.5 ppb (first polymer to be mixed)
   - PAC-L 1 ppb
   - Dextrid-LT 3 - 4 ppb
   - PHPA 1.5 ppb
   - Glycol-CP 3% by volume (after PIT and drilling ahead)
   - Caustic Potash 0.2 ppb (to pH 9.0)
   - Barite: As Required
2. In new pre-mix, PHPA should be the last polymer added, in order to minimise the inhibitive effect of PHPA on the yield of the other polymers.
3. Prior to drilling cement and the shoe track displace the hole with mud (or use mud from the previous section). Pre-treated with 0.5 ppb each of Citric Acid and Bicarb. Soda. It will be necessary to run coarser screens at first until the new mud shears down sufficiently. Then replace these with finer screens.
4. Add Glycol-CP to the active system after any high pH caused by cement contamination has been treated out with Citric Acid and Bicarb. Soda.
5. Maintain mud properties as listed in ATTACHMENT 11 Baroid Drilling Fluid Program - Scallop-1 program.

10.3 DRILLING 12-1/4" HOLE SECTION

1. While running riser and testing BOPs, prepare the Baroid KCL/PHPA/Polymer/Glycol mud system (and maintain its properties) as detailed in 7.3 Drilling Fluids Requirements and ATTACHMENT 11 Baroid Drilling Fluid Program - Scallop-1 program.
2. PU the 12-1/4" hole BHA, listed in Paragraph 7.6 Bottom Hole Assembly Program and RIH to TD on 5", 19.5#, S-135 drill pipe.

3. Finish TIH to float shoe. Prepare to displace seawater in the well with 9.0 ppg KCL/PHPA/Polymer/Glycol mud system. Note, that Glycol will not be added until after the PIT and while drilling ahead.

NOTE: 1 Coarse screens should be used on the shakers until the KCL/PHPA/Polymer/Glycol mud is sheared at the bit and increases in temperature. Screens should be the finest possible size that can be used without whole mud losses.

4. Prior to drilling float equipment conduct a Phase I PIT if not obtained in Section 10.1 step (6).

NOTE: 1 Report results of PITs using the EMDC Drilling PIT spreadsheet on the following daily report. Send original plots for the PITs and a copy of the spreadsheet to the office for the well file.

5. Displace with the KCL/PHPA/Polymer/Glycol mud system.

NOTE: 1 To mitigate possible damage to the 12-1/4" PDC bit used to drill the shoe track, drill the 13-3/8" shoe track either with mud from the previous hole section, or with new mud.

NOTE: 2 When displacing the well to new mud, dump the seawater returns. At 100 bbls before theoretical displacement, reduce the pump rate and have the mud engineer observe for KCL/PHPA/Polymer/Glycol returns. Divert flow to the active mud system when new mud is observed at the surface.

6. Drill cement and float equipment. Clean out rathole. Drill 3m of new hole. Pull bit into casing.

7. Circulate and condition mud for PIT.

8. Test cement line to 5000 psi. Perform a Phase II PIT by pumping simultaneously down the drill pipe and annulus to leak-off, but not exceeding 17.0 ppg MWE.

NOTE: 1 Contact the Operations Drilling Superintendent if a PIT greater than 12.5 ppg MWE is not obtained.

NOTE: 2 Complete the ExxonMobil PIT calculation Excel spreadsheet and send to Town.

9. Optimum drilling parameters are: 800-1000 gpm, 50-220 rpm, and 0-20 kips WOB for PDC bits and 40 - 60 kips WOB for TCI bits. Use the maximum flow rate possible while minimising mud losses at the shaker.

10. Drill ahead, taking Anderdrift surveys every connection.

NOTE: 1 This is a vertical well with a 100m radius target.

NOTE: 2 Do not repeat a missed survey. Ensure that as a minimum there are surveys every 150m.

NOTE: 3 Maintain complete details of all BHAs (through HWDP) run to TD, with ODs, IDs and lengths and connections.

11. Within the Golden Beach formation, and on the last bit trip expected prior to TD, drop the SDI gyro survey and POOH to pick-up the MWD/LWD BHA.

NOTE: 1 The MWD/LWD will be run to pick the well TD.

12. Drill ahead to the TD depth of 3126m MDRT, determining the final dry hole depth according to ATTACHMENT 2 Scallop-1 Geological Program.

13. Additional notes for the 12-1/2" hole section are:

NOTE: 1 Maintain the mud properties as listed in 7.3 Drilling Fluids Requirements and ATTACHMENT 11 Baroid Drilling Fluid Program - Scallop-1. Raise MW to 9.5 to 10.0 ppg prior to drilling into the Lakes Entrance Formation expected at 1154m MDRT. Immediately prior to drilling into the Latrobe Formation expected at about 1339m MDRT, add 5 ppb each of Calcium Carbonate-25 and Calcium Carbonate-50, and 10 ppb of Calcium Carbonate-100. Raise mud weight as hole conditions dictate. Discuss with Operations Superintendent before raising mud weight above 10.5 ppg.

NOTE: 2 ATTACHMENT 9 EAL Tripping Practices for recommendations on tripping and wiper tripping practices in Bass Strait.

NOTE: 3 Coal stringers are expected/possible in the Latrobe sands. Guidelines for drilling coal are contained in 6.7.1 Coal Stringer Precautions.

NOTE: 4 Run Garret Gas Train every 24 hours on mud checks below 1709m for H_2S, CO_2 and soluble sulphides, and Hach tests on every mud check. Have Baroid measure and report chlorides and calcium content of the make-up water on the Daily Drilling Report.

NOTE: 5 Break circulation at a minimum every 25 stands when TIH.

NOTE: 6 Monitor flow and cuttings characteristics across the shakers to ensure hole integrity and cleaning.

NOTE: 7 Continue drilling with the blocks strung to 12 lines (1-1/2" EIPS IWRC), depending on current conditions. Drilling guidelines for maximum allowable weight indicator readings are as follows, including the block weights (110 kips for the blocks, motion compensator and top drive):

Routine Operations	**Stuck Pipe-Controlled Pull**
4.0 Safety Factor	3.0 Safety Factor
12 Lines 535 kips	713 kips

These are calculated for 1-1/2" 6 x 19 IWRC EIPS drill line with 228 kips strength. Contact the Esso Drilling Operations Superintendent before pulling in excess of 713 kips. The 5" S drill pipe will be the weak link in the string. The derrick is rated for 1000 kips.

14. At the dry hole TD, pump a 100-bbl hi-vis sweep. Circulate bottoms up at the maximum possible rate. Make a wiper trip to the 13-3/8" shoe. RIH to TD and circulate the hole until the shakers are clean or 2.0 times bottoms up, whichever occurs last. POOH to log.
15. Log the well at ~1905m MDRT according to ATTACHMENT 2 Scallop-1 Geological Program.
16. Depending on the results of the above logs and in accordance with ATTACHMENT 2 Scallop-1 Geological Program the well may be deepened.
17. At the deepened TD, pump a 100-bbl hi-vis sweep. Circulate bottoms up at the maximum possible rate. Make a wiper trip to the 13-3/8" shoe. RIH to TD and circulate the hole until the shakers are clean or 2.0 times bottoms up, whichever occurs last. POOH to log.
18. Log the well at TD according to ATTACHMENT 2 Scallop-1 Geological Program.

11.0 P&A OR CASE & SUSPEND SUPPLEMENTAL PROGRAM

A Supplemental Program will be issued to either P&A the well or to case and suspend it.

12.0 ATTACHMENTS

ATTACHMENT 1. Location Map

ATTACHMENT 2. Scallop-1 Geological Program

ATTACHMENT 3. Wellbore Sketch

ATTACHMENT 4. Well Progress Curve - Scallop-1 Dry Hole Scenario

ATTACHMENT 5. Drilling Reporting System Well Setup Data

ATTACHMENT 6. Kipper-1 Stick Chart

ATTACHMENT 7. Kipper-2 Stick Chart

ATTACHMENT 8. East Pilchard-1 Stick Chart

ATTACHMENT 9. EAL Tripping Practices

ATTACHMENT 10. Depth vs Mud Weight Plot

ATTACHMENT 11. Baroid Drilling Fluid Program - Scallop-1

ATTACHMENT 12. Scallop-1 - Longitudinal Drill String Vibration

ATTACHMENT 13. Sedco 702 18-3/4" BOP Stack

ATTACHMENT 14. Scallop-1 - 30" Conductor Casing and Cementing Requirements

ATTACHMENT 15. Scallop-1 - 13-3/8" Surface Casing and Cementing Requirements

ATTACHMENT 16. Halliburton Scallop Cementing Program

SCALLOP-1 DRILLING PROGRAM DISTRIBUTION LIST

Organisation	Attention	Address	Check
Department of Primary Industries - Minerals & Petroleum Victoria **2 copies required with EMDC Op. Man**	Mr. Bruce Amour	PO Box 500 EAST MELBOURNE VIC 3002	
BHP Billiton Petroleum (Vic) Pty Ltd (including copy of DPI letter & EMDC Op. Manual)	Mr Mel Osborne Geoscience Section Leader	Bass Strait Asset Level 28, 600 Bourke Street MELBOURNE VIC 3000	
Santos Offshore Pty Limited (including copy of DPI letter & EMDC Op. Manual)	Mr Craig Gumley Manager Exploration & Exploitation	Level 29, Santos House 91 King William Street ADELAIDE SA 5000	
Woodside Energy Ltd (including copy of DPI letter & EMDC Op. Manual)	Mr Steve Townsend Operations Geologist	1 Adelaide Terrace PERTH WA 6000	
SRO Department (+ DPI letter & EMDC Op. Man)	Mr David Tyler	Esso House Room 10th floor	
Sedco Forex International Inc (Transocean)	Mr Blue O'Shea Rig Manager - Sedco 702	Level 6, 220 St Georges Tce, PERTH WA 6000	
Sedco 702 **Note: 3 copies plus one copy of the EMDC Operating Manual**	OIM	Sedco 702 Mailbag Via Sedco Forex International PERTH WA 6000	
ExxonMobil Development Company - Drilling	Mr Joel Kiker Operations Managers	EMDC, GP 4 708 16945 NorthChase Drive HOUSTON TX 77060	
D.Q. Holdings Pty Ltd (Drill-Quip)	Mr Brian Maitland	The Forest Centre, Level 14 221 St Georges Terrace PERTH WA 6000	
AIPC (Wellsite Geologists)	Andrew Hodgson	Esso House Room 4.84	
Baker Hughes INTEQ	Mr Ted Rideout	Suite 4, 5 Stoneham Street, BELMONT WA 6104 PO Box 339, BELMONT WA	
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Halliburton Australia Pty. Ltd.	Mr Jim Collins	90 Talinga Road CHELTENHAM VIC 3192	
Schlumberger Sale	Mr Trevor Speldrich	314 Raglan St. SALE VIC 3850	
Weatherford Australia	Mr Bill Winter	P.O. Box 1154 SALE VIC. 3850	
BBMT Materials Supervisors	Mr Col Walker & Ms Sally McKenzie	BBMT WELSHPOOL VIC	
EAPL Library **Note: 2 copies incld EMDC Op Man**	Librarian	Esso House 3rd floor	
Field Drilling Manager	Daniel L. Whiteman	Esso House Room 6.16	
Operations Superintendent (including EMDC Op. Manual)	Frank Kratzer	Esso House Room 6.23	
Engineering Manager	Colin Johancsik	Esso House Room 6.18	
Program Original Copy	Chris Meakin	Esso House Room 6.19	
Drilling Engineer	Chris Meakin	Esso House Room 6.19	
Drilling Engineer	Rudolf Furchenicht	Esso House Room 6.20	
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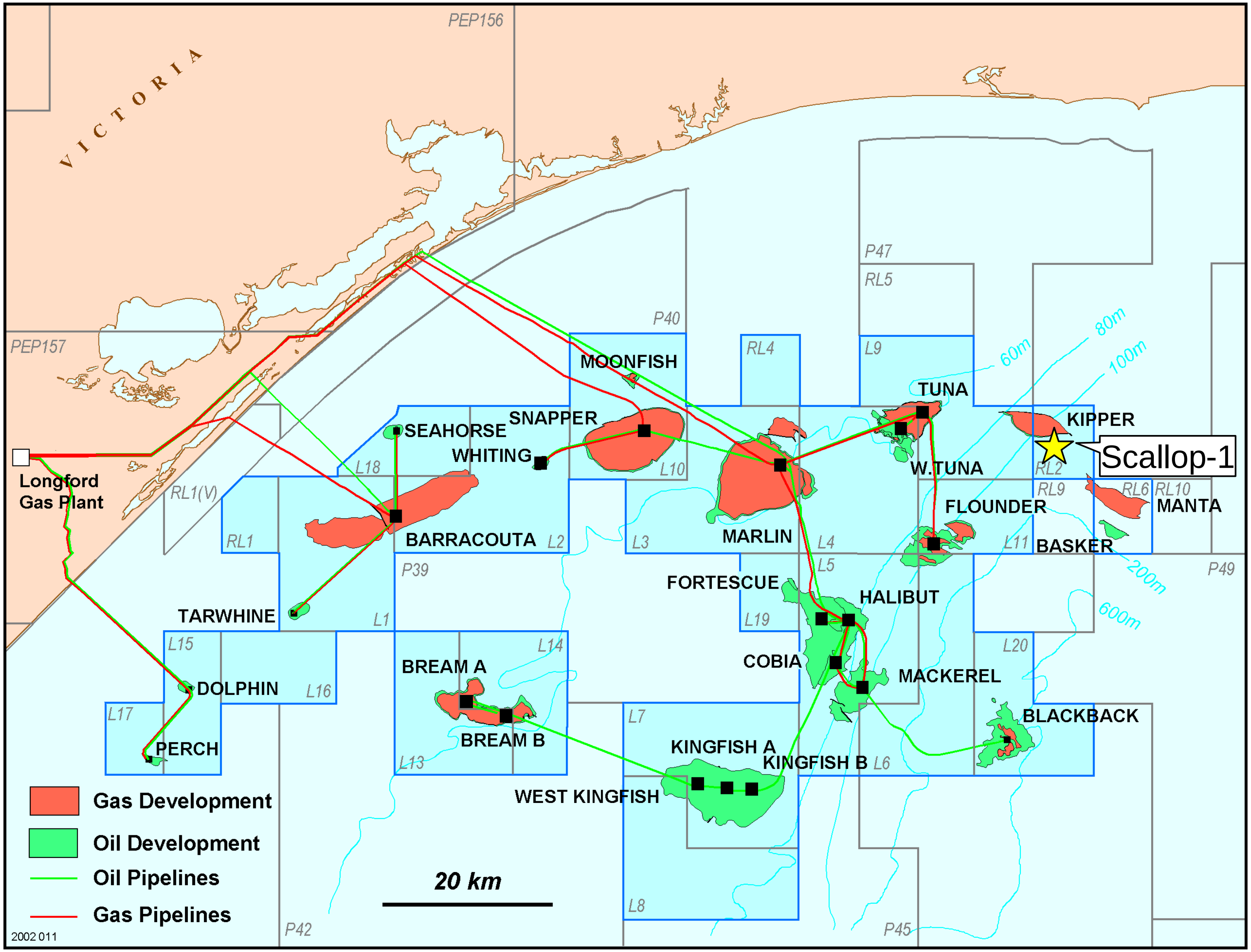
Formation Evaluation	Kumar Kuttan	Esso House Room 4.86	
Operations Geologist	Andrew Hodgson	Esso House Room 4.84	

Scallop 1 - Location Map

ATTACHMENT 1



ATTACHMENT 2

ESSO AUSTRALIA PTY LTD

SCALLOP-1

GEOLOGICAL PROGRAM

VIC/RL2

January, 2003

ESSO AUSTRALIA PTY LTD
12 RIVERSIDE QUAY, SOUTHBANK, MELBOURNE, VIC, 3006.

CONTROLS

Approval, Ownership and Control

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Reviewed By	K. Kuttan	Petrophysicist		15/01/03
Approved By	G. Nash	Gippsland Geoscience Project Manager		15/1/03
Document Control	EAPL Library			

Registration

Document Name	**Scallop-1 Geological Programme - VIC/RL2**

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FIGURES

APPENDIXES

1.0 SCALLOP-1 WELL DATA SUMMARY

Well Name		:	Scallop-1
Location :	Primary Target	:	S-1 (Sub-volcanic)
	Basin, Permit	:	Gippsland Basin, Vic/RL2
	Seismic Lines	:	Kipper G99A 3D Seismic Survey Inline-1025, Crossline-1330
	Latitude	:	38 12' 48.6" S
	Longitude	:	148 35' 28.9" E
	A.M.G.	:	X = 639,316 m E Y = 5,769,300 m N
Target Depth		:	3126mMDRT (3100mTVDSS)
Datum		:	**Geocentric Datum of Australia 1994 (GDA94)**
Spheroid		:	**Geodetic Reference System 1980 ellipsoid (GRS80)** UTM Zone 55 / **Map Grid of Australia 1994** Central Meridian (CM) 147 Degrees East. False Easting 500,000.0 False Northing 10,000,000.0 Scale Factor at CM 0.9996.
Projection		:	Universal Transverse Mercator (UTM).
Block Equity Percentage		:	ESSO Australia Resources PTY Ltd (Operator) 25.0 % BHP Billiton Petroleum Victoria Pty Ltd 25.0 % Santos Group 20.0% Woodside Group 30.0%
Type of Well		:	Wildcat Exploration
Anticipated Spud Date		:	January, 2003
Proposed Total Depth		:	3126mMDRT, (3100mTVDSS) potential to deepen if required.
Water Depth		:	110m MSL
RT - Sea Level		:	26 m
Rig		:	SEDCO 702

2.0 GEOLOGICAL SUMMARY

2.1 Geological Synopsis

The proposed Scallop-1 location is approximately 3 km south-east of the East Pilchard-1 well (Figure 1). The location lies in 110 meters of water, within the VIC/RL2 retention lease area of the Gippsland Basin (Figure 1).

The Scallop-1 well is designed to explore for hydrocarbon in fluvial reservoirs in the sub-volcanic Golden Beach Group (*T.lilliei – N.Senectus* age). A lowside fault dependent closure has been mapped on the Scallop fault block and two possible DHI's (flat-spots) have been identified. The well will test the validity of these DHI's. The primary risk for the Scallop-1 well is that the "flatspots" observed may be related to residual gas, or lithological complications within the reservoir section.

A secondary objective for the well is possible fault dependent closures in the fluvial-coastal plain reservoir facies in the shallower upper *T.lilliei* Latrobe Group section (above the volcanics).

Scallop-1 is programmed to drill to a total depth of 3126mMD (3100mTVDSS).

Figure 1: Scallop-1 Location Map

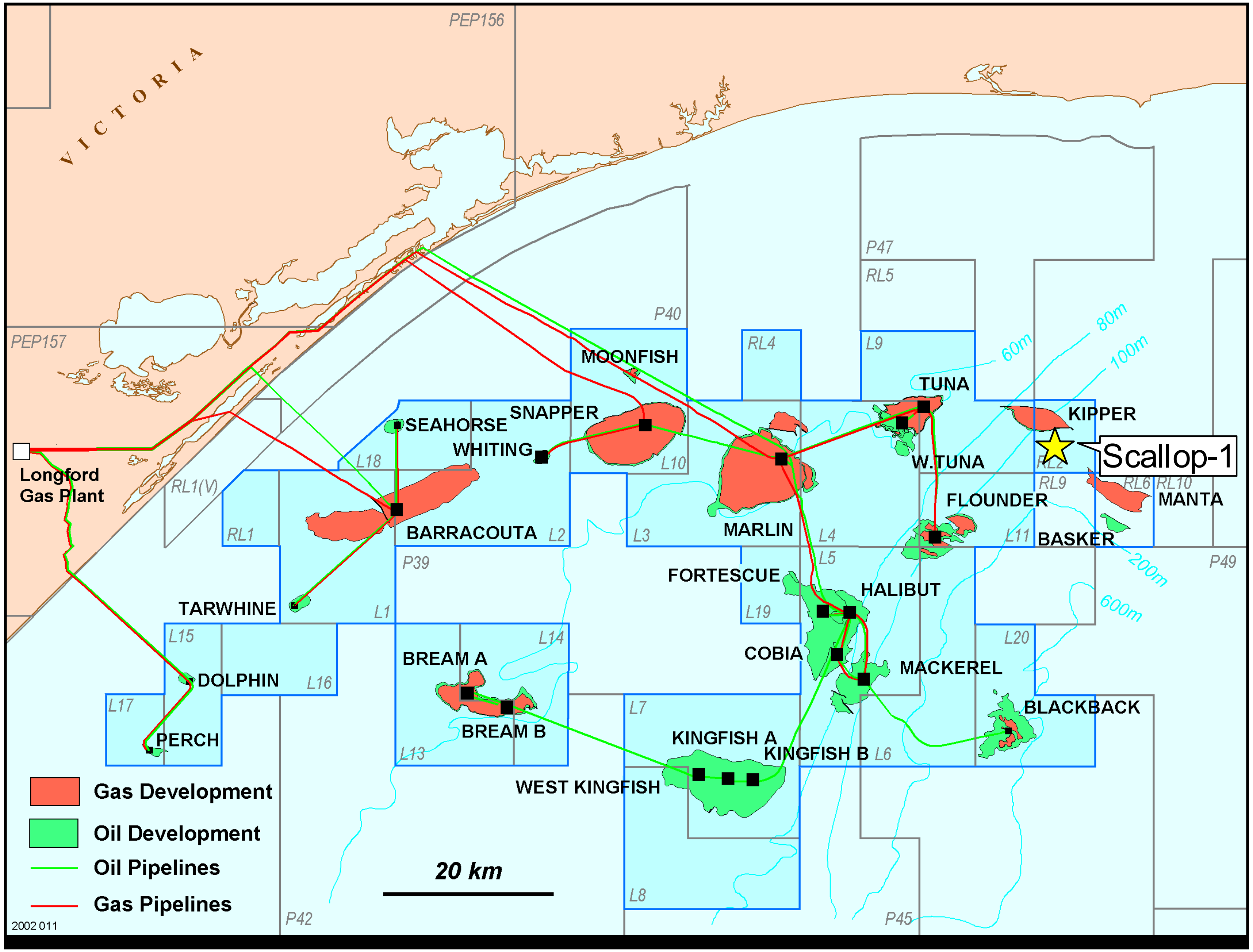


Figure 2: Analogue Wells

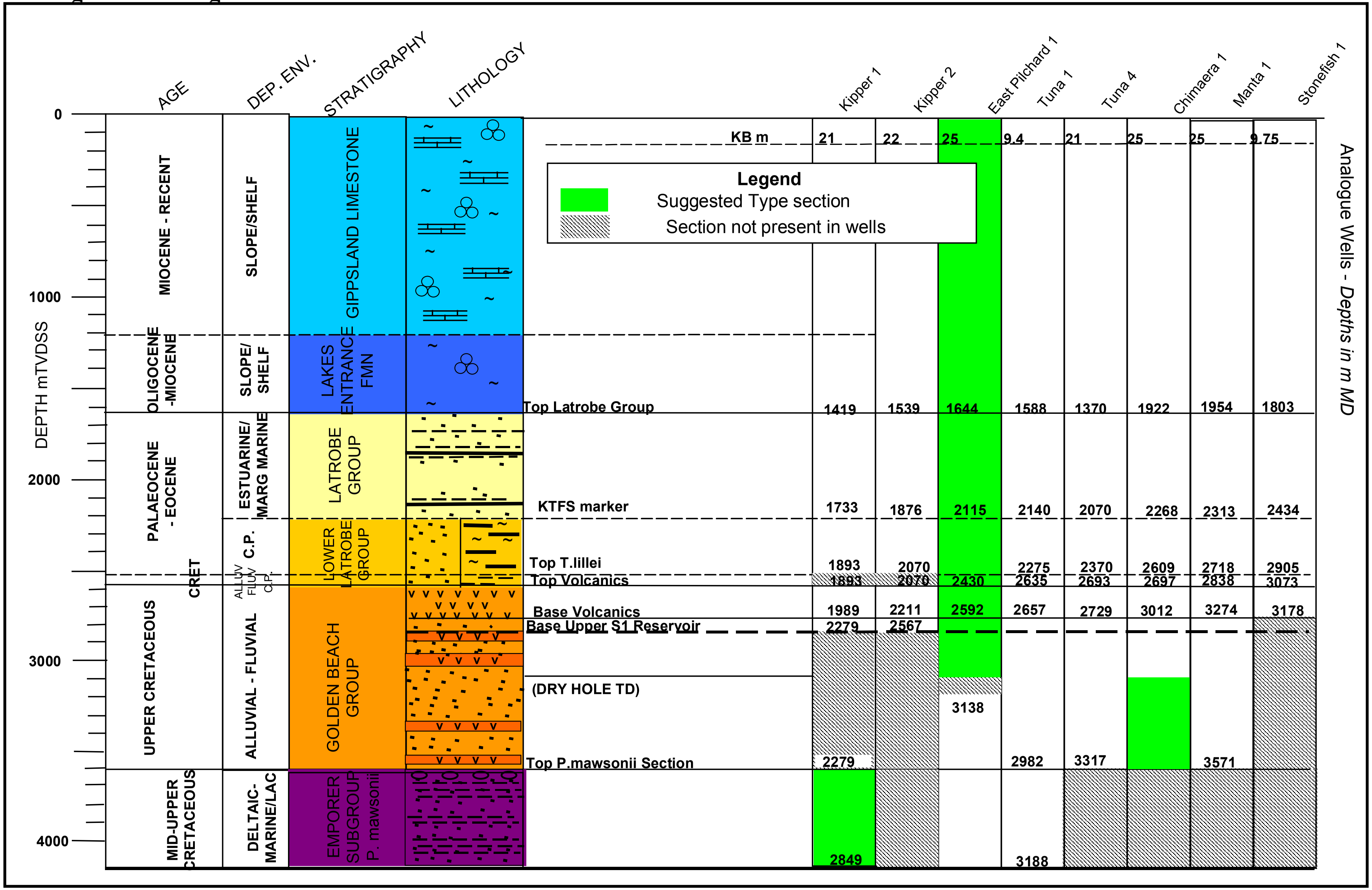
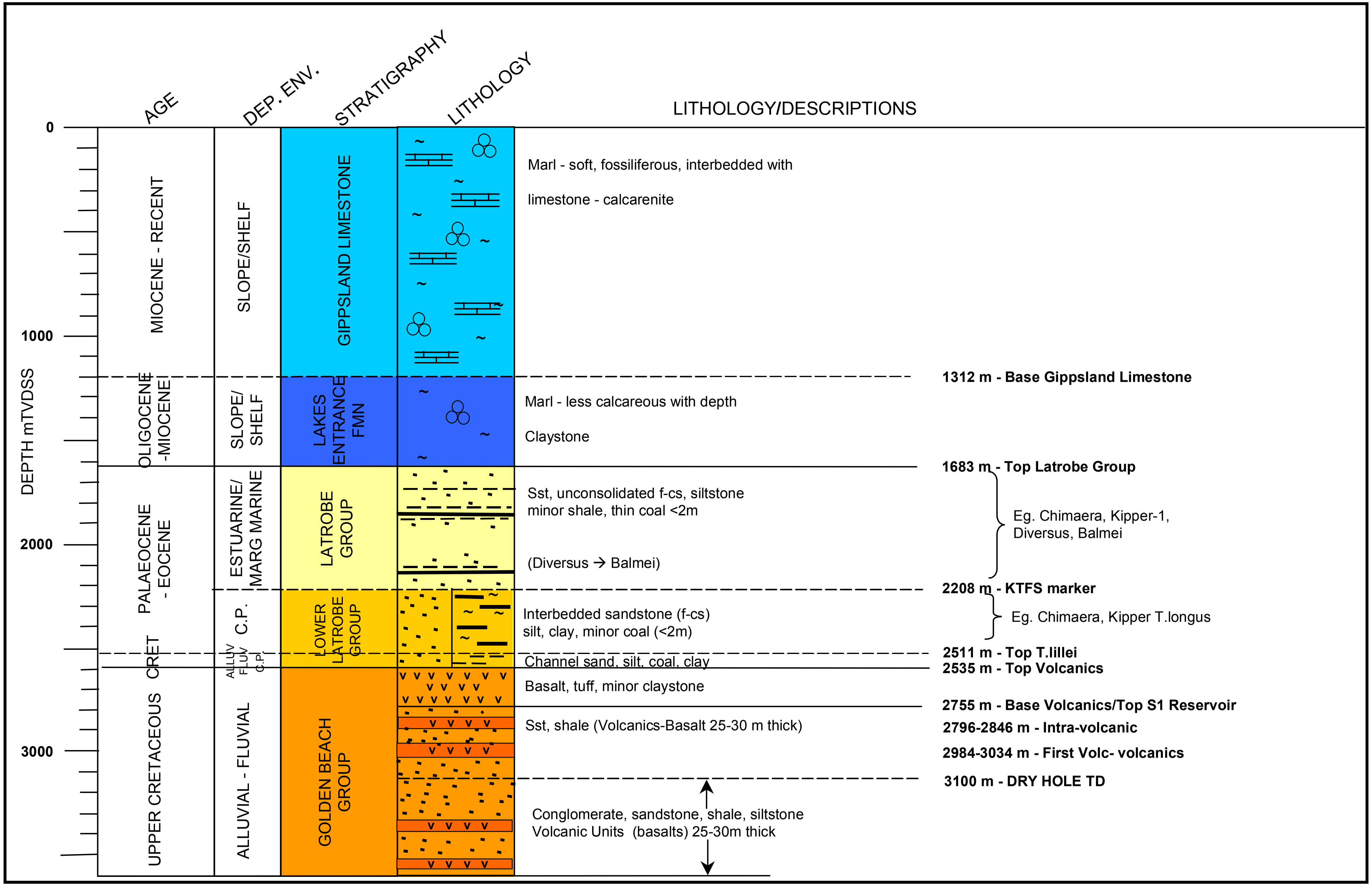


Figure 3: Scallop-1 Predicted Well Section



2.2 Offset Wells

Table 1

Well Name	Distance & Direction	TD (TVDSS)	Max. MW	Analogous Interval	Drilled Date
Kipper 1	4.3km NNE	-2854	10.4	S-1 Reservoir (-1968 to -2258)	1986
Kipper 2	3.2km NE	-2578	9.6	S-1 Reservoir (-2189 to -2545)	1987
E. Pilchard-1	3.1km NW	-3113	10.2	S-1 Reservoir (-2567 to -3107)	2001

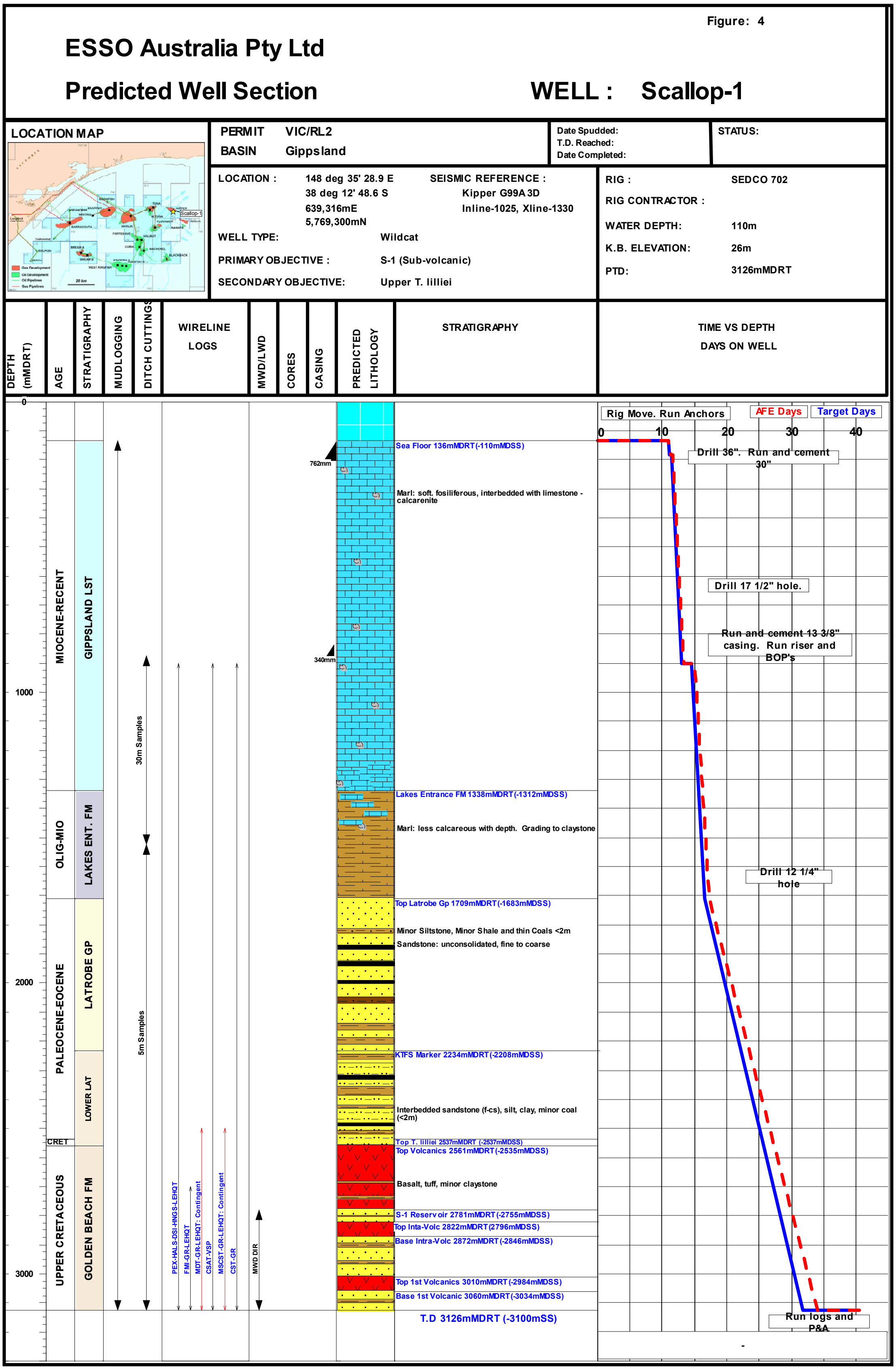
2.3 Geological Prognosis

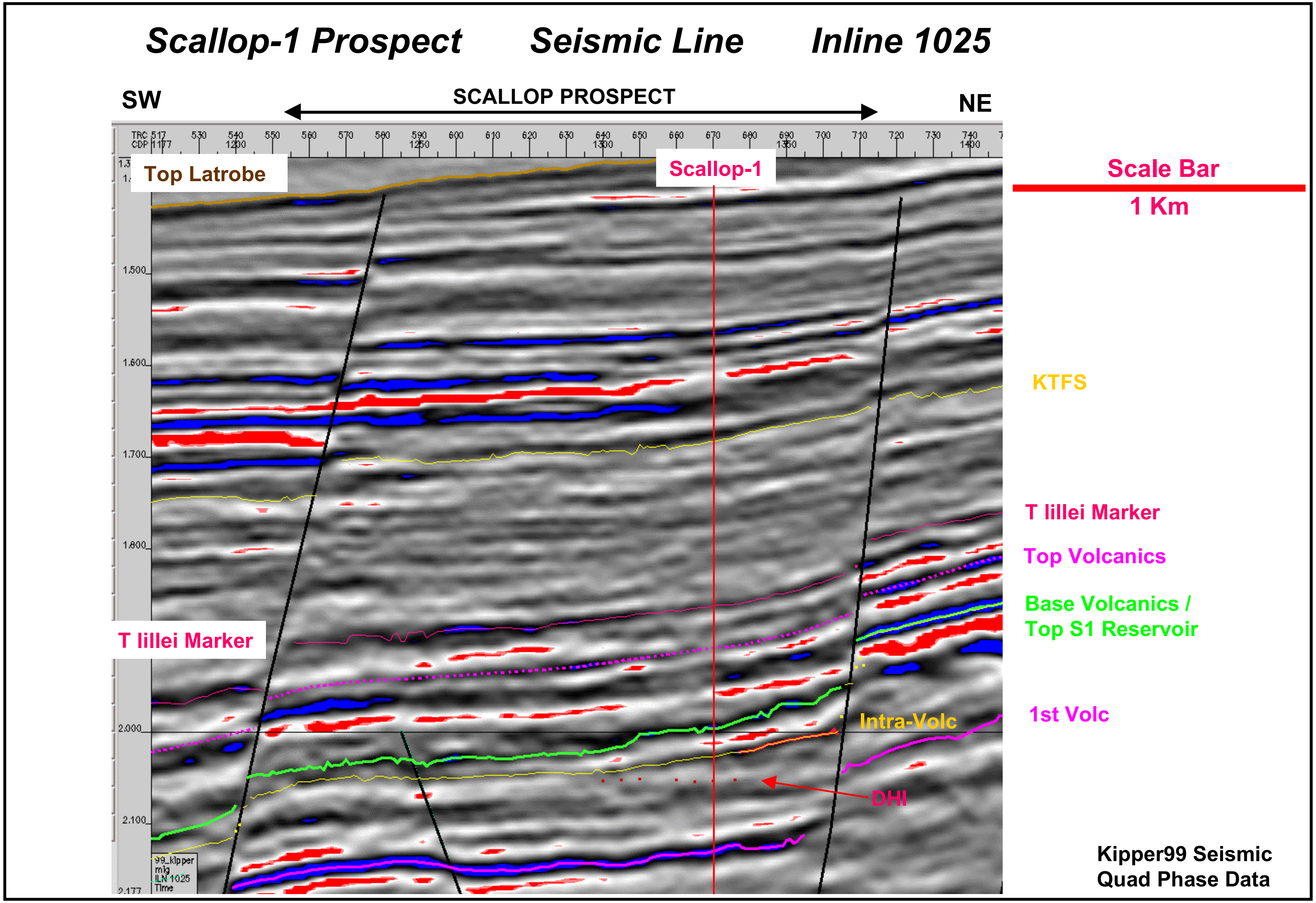
The Scallop-1 well will drill a lowside, fault-dependent trap in the sub-volcanic (Golden Beach) section on the Scallop fault block, and test the validity of two possible DHI's. The well will also be testing fault seal in this part of the pre-Latrobe section.Table 1 lists offset well which have intersected the S1 reservoir. Figure 2 highlights the type section expected in Scallop-1. The prognosed formation tops are listed in Table 2 and the predicted well section with predicted time versus depth curve and formation evaluation program illustrated in Figure 3.

Table 2

Prognosed Formation Tops			
Formation/Marker	**Thickness (m)**	**MDRT (m)**	**TVDSS (m)**
Sea bed / Top Gippsland Limestone	1202	136	-110
Top Lakes Entrance Fm	371	1338	-1312
Top Latrobe Group	525	1709	-1683
KTFS	303	2234	-2208
Top *T.lilliei*	24	2537	-2511
Top Volcanics	220	2561	-2535
Base Volcanics/Top S1	41	2781	-2755
Top Intra-Volc	50	2822	-2796
Base Intra-Volc	138	2872	-2846
Top 1st Volcanic	50	3010	-2984
Base 1st Volcanic		3060	-3034
Total Depth		3126	-3100

Figure 4: Scallop-1 Formation Evaluation and Time Depth Curve




Scallop-1 Prospect Seismic Line Inline 1025
SW
SCALLOP PROSPECT
NE
Top Latrobe
Scallop-1
Scale Bar
1 Km
KTFS
T lillei Marker
Top Volcanics
Base Volcanics /
Top S1 Reservoir
1st Volc
Intra-Volc
DHI
T lillei Marker
Kipper99 Seismic
Quad Phase Data

Fi gure 5: Scallop-1 Seismic Section

2.4 Stratigraphy

The prognosed stratigraphy of the Scallop-1 well (summarised in Figure 3 & 4) is based on adjacent well data and regional seismic correlations. The predicted section at Scallop-1 was intersected in its entirety in E. Pilchard-1. The Kipper wells and E. Pilchard-1 provide the main stratigraphic control (Table 1).

The well is expected to penetrate a thick sequence of limestones and marls of the Gippsland Limestone and the Lakes Entrance Formation. The Top Latrobe Coarse Clastics to the Cretaceous/Tertiary Flooding Surface (lower *M. diversus* to the basal upper *L. balmei* age) section varies from thick upper shoreface sand packages with occasional lower shoreface sands and shales in the upper section to a lower succession dominated by shales and thin sheet sands deposited in a lower delta plain environment. Some thin coals, single channel sands generally less than 5m thick, minor point bars and some crevasse splay deposits also occur within this section.

The lower Latrobe Group interval (lower *T.longus*- upper *T.lilliei)* is comprised of braided to meandering fluvial non-marine deposits and marginal marine estuarine and bayhead delta deposits. Coals are more common than in the upper Latrobe section. Sand packages similar to those seen in the E. Pilchard-1 well are expected (stacked sand intervals with up to ~20m net). This section is not seen in the Kipper wells.

The primary objective of the Scallop-1 well is to test the sub-volcanic potential of the Golden Beach Group. The volcanics themselves are a thick (200m) unit of interbedded basic volcanic flows and weathered equivalents.

2.5 Reservoir

The primary S-1 objective reservoir may be composed of sediments ranging from good quality braided fluvial to upper delta plain sands and gravels as seen in the Kipper wells, to lower net to gross fluvial reservoirs as seen in the East Pilchard-1 well. Intra-reservoir volcanic units (basaltic flows) are seen in this section in many wells (Kipper-2, Chimaera-1 and Manta-1). Intrusive bodies feeding the flow units are also identifiable from seismic. While these intrusive bodies usually have a distinctive seismic signature (high impedance, irregular geometries), more subtle ring-like features with a lower impedance signature can also be seen in the seismic data, and may represent weathered equivalents. While the well has been sited away from any obvious volcanic and intrusive features, the palaeogeographic setting for the Scallop ramp remains a critical factor influencing reservoir quality.

2.6 Total Depth

Scallop-1 is predicted to penetrate the base of 1st-Volc at -3034 m TVD SS. The proposed TD of -3100 m TVD SS will allow the section below 1st-Volc to be adequately appraised. The TD of the well may be deepened if required.

3.0 Potential Geologically Related Drilling Hazards

3.1 Bore Hole Conditions

i) Brecciated/Sheared Fault Zones

There is a possibility for many small-scale (sub-seismic) faults to be encountered in the sub-volcanic reservoir section. LCM may be required although no lost circulation has been encountered in offset wells.

ii) Carbon Dioxide

There is considerable variability seen in the CO_2 levels in the sub-volcanic section from adjacent well control. E. Pilchard-1 recorded 11-22% CO_2 levels from MDT samples taken in the S1 reservoir. In the Kipper S1 reservoir CO_2 levels of 0-19% were recorded, while CO_2 levels of 25% were recorded in the P.mawsonii section. In the Manta-1 2-3% CO_2 was recorded in gas below the volcanics. In Tuna-4, 25-45% CO_2 was recorded from solution gas

iii) Hydrocarbon Gas

Hydrocarbon gas sands were present in the Tuna and Manta intra-Latrobe section. It is unlikely that gas sands will be encountered at TOL as there is no independent closure at that structural level. Large gas columns were intersected in both Kipper and Manta in the sub-volcanic reservoir section (see overpressure section)

iv) Swelling Shale

The Lakes Entrance Formation is recognised as a potential problem zone for swelling shale, and is prognosed to be 371m thick.

v) Coal

Sloughing coals have been a problem within the Latrobe Group elsewhere in the basin, however no drilling problems associated with sloughing coals have been reported in the nearby Kipper wells or E. Pilchard-1. Coals in surrounding wells are predominantly less than 2 m thick with minor occurrences of up to 6m thick.

vi) Hydrogen Sulphide Gas

Offset well data shows levels of H_2S as follows:0 ppm from E. Pilchard-1 MDT samples, 0 ppm detected from Kipper-1 production test, 0-trace at Manta-1, 0-25ppm at Tuna-4.

3.2 Over Pressure

i) Abnormal Pressures

Latrobe Group: Normally pressured systems can be expected from TOL to the top of the volcanics; ie. ~ 1.4 psi/m (8.1 to 8.5 ppg MWE).

Golden Beach Group: Pressure data in the sub-volcanic section from wells in the area can be summarised as follows:

A. *Kipper-1, E.Pilchard-1 and Manta-1/Chimaera-1* are close to normally pressured in the GBG (8.5-9.2ppg throughout much of the section, slightly higher at top of gas column in Kipper). The E.Pilchard-1 and Manta-1/Chimaera-1 wells are probably the most likely analogues for Scallop-1 ie. same fault block, similar depths. If Scallop structure is filled to spill then effect of gas column could add 300 psi to formation pressure ie increase from 8.5ppg to 9.1ppg.

B. *West Tuna* well data indicate gradients ~1.42-1.8psi/m (ie. 8.5ppg increasing to 10.5ppg at depth, below the volcanics). However, the West Tuna fault block is deeper and more distal from East Pilchard, so is probably not the most appropriate analogue. The higher accommodation on the lowside of fault provides lower net-to-gross in WTN area and therefore this area may be more likely to be overpressured than E. Pilchard.

<u>To summarise this data, it is expected that Scallop-1 will be normally pressured throughout the sub-volcanic Golden Beach Group section. However, as can be seen from the variability above, pressures in the sub-volcanic section are closely controlled by stratigraphy, and it will be necessary to monitor the well closely.</u>

ii) Sea Floor Hydrocarbon Seeps

No evidence of any sea-floor hydrocarbon seeps.

iii) Flowing Formation

Surrounding well data indicates no instances of formations flowing water and therefore it is not anticipated to occur at the Scallop-1 location.

iv) Shallow Production

Production at TOL and intra-Latrobe from nearby Tuna Field (see Draw Down Reservoir 6.3, i))

v) Shallow Gas

No shallow gas zones have been identified during drilling of the adjacent wells (Kipper 1, Kipper 2, East Pilchard-1 and Manta 1). Total gas % recorded above TOL are low. In Manta 1, total gas % recorded above TOL ranges from 0-1.4% (generally 0-0.4%). Total gas recorded in Kipper 1 above TOL is 0-0.9% (generally < 0.4%), while in Kipper 2 the range is 0-0.4%.

In all these cases, low impedance seismic anomalies are not associated with elevated levels of drill gas. Thus there is no demonstrated link between seismic amplitudes and shallow gas in the Kipper/East Pilchard area. There are some shallow low impedance seismic reflections at the Scallop-1 well location but these can not be distinguished from similar reflections at the other well locations in the area that have been proven to not be associated with shallow gas.

3.3 Under Pressure

i) Drawn Down Reservoir

Top of Latrobe and shallower intra-Latrobe reservoirs are likely to be slightly drawn down in pressure due to nearby production from the Tuna field. Maximum draw down should be in the order of 180psi. No draw down is expected to be observed from the sub-volcanic S-1 reservoir.

ii) Lost Returns

No lost return intervals were recorded from adjacent wells. However, during the drilling of the volcanic section in the E.Pilchard-1 well, some mud losses were noted. A Phase III PIT was run at 2471m to 11.8ppg EMW. Losses may have been related to seepage in either drawn down zones just above the volcanics or fault breccias/fractures within the volcanics themselves.

3.4 Formation Temperatures

The predicted static bottom hole temperature at this location is approximately 124 deg C.

4.0 EVALUATION PROGRAM

4.1 Mudlogging

Mudlogging and data engineering services will be provided by BHI Inteq.

Full mudlogging services are to commence from spud. Sampling will commence after first returns after setting the 340mm (13 3/8") casing and will continue to T.D. Hardcopies and digital copies (.PDF format) of the mudlog, drilling data log, pressure log and gas ratio log are required on a **daily basis updated to 05:00hrs ESST** for the wellsite geologist to send to the office. Further updates are to be supplied when required.

A finalised Mudlog (scale 1/500), Formation Pressure log (1/1000), Gas Ratio Log (1:500) and Drilling Data log (1/1000) in hard copy paper form are to be supplied at the end of the well to the wellsite geologist and forwarded to the Operations Geologist as a check print prior to finalisation of the End of Well Report.

BHI Inteq will be notified when final prints are to be made of the mudlogs and End of Well Report after QC of field prints.

4.1.1 Data Engineering Services

Data engineering services will include gas detection and monitoring of drilling parameters as follows:

Gas Detection

- FID total gas
- FID chromatographic analysis
- Report Background gas, Circulating gas, Connection gas and Trip gas
- Continuous H_2S detection - ditch gas line, active mud pits and shakers
- Report any H_2S associated with the above
- Continuous CO2 detection
- Draeger portable detector for H_2S, CO_2 and SO_2

Monitoring Drilling Parameters

- Rate of penetration
- Depth
- Weight on bit
- Rotary and bit RPM
- Mud pit levels
- Pump strokes
- Calculation of lag time
- Formation pressure analysis and prediction
- Drill string torque and drag
- Casing shut in pressure
- Standpipe pressure
- Mud density (in/out)
- Mud temperature (in/out)

- Mud conductivity (in/out)
- Mud flow (in/out)

4.1.2 Formation Sampling and Analysis

Formation sampling requirements are outlined in Table 3.

The sampling interval will relate to rate of penetration and importance of the interval in question. All cutting samples will be described and monitored for hydrocarbon fluorescence,

Interval (mMDRT)	Hole Size	Formation	Sample Interval *
13 3/8" Shoe – 1500	311mm (12 1/4")	Gipps Limestone	30m
1500 - TD	311mm (12 1/4")	Gipps Lts - Latrobe Gp.	5m

* To be increased or decreased at the discretion of the Esso Wellsite Geologist, and subject to Drilling rate and returns.

Table 3

Formation and Mud Samples				
Type	**No. of Sets**	**Quantity**	**Set No**	**Destination**
Lightly washed dried and bagged cuttings (Palynology).	1	200gm	A	EAPL
Type	**No. of Sets**	**Quantity**	**Set No**	**Destination**
Washed and dried and bagged Cuttings.	1	100gm	B	EAPL
	1	100gm	C	BHPB
	1	100gm	D	DNRE
	1	100gm	E	SANTOS
	1	100gm	F	WOODSIDE
	1	100gm	G	GA
Type	**No. of Sets**	**Quantity**		**Destination**
Mud Samples (TD)	1	1 litre		EAPL*

* Hold till the end of well before decision to transport or dispose.

All samples are to be boxed and labelled and dispatched as directed by the Wellsite Geologist. All sample suites are to be accompanied by a full manifest located (separately) externally in plastic on the first box of the suite. An additional back-up manifest should be included inside the first box. *(See **Section 8.3** for distribution)*

4.1.3 Other Mudlogging Services

Fluid sample receptacles: BHI are to supply both plastic and glass screw-top bottles, and 4 litre cans for oil samples.

Fluid hydrometers and thermometers to be supplied for oil API determination.

4.2 MWD / LWD Logging Services

Logging While Drilling (LWD) services will be provided by Anadrill. The MWD/LWD tools will be picked up below the base of the volcanics on the last bit run in the hole.

Comments:

- The 12 1/4" string will include a RAB/MWD package.
- MWD/LWD data will be gathered in real time and recorded mode.
- Both surface and memory (digital) data will be provided by Anadrill. One paper and one sepia print (scale 1/500), merged across the entire well, will be provided at the end of the well for QC purposes.
- LWD is required for stratigraphic correlation and determining TD.
- If the LWD tool fails while in the hole it will be replaced on the next bit trip or at 3100mSS, whichever comes first. A MAD pass will be acquired if no useable data is acquired at TD.

PDS and A4 PDF file format logs and ASCII data will be provided on a daily basis for **05:00** report time or when requested for transmission to town.

4.3 Wireline Logging Services

No wireline logging is planned across the 445mm (17 ½") hole section, except for gamma ray and DSI through 13 3/8" casing.

The following wireline logging program is planned across the 311mm (12 1/4") hole section at +/-3126mMD. (Table 4 and Figure 4.) The order of logging runs may change based on drilling results and a finalised program will be issued to the wellsite at TD.

Table 4.

Run No.	Wireline Logs	Comments
1	PEX-HALS-HNGS-LEHQT	GR from TD to seafloor. PEX-HNGS to 80m above TOL. HALS to 13 3/8" shoe
2	FMI-DSI-GR-LEHQT	FMI to run to 80m above Base Volcanics. DSI though casing until last good signal
3*	MDT-GR-LEHQT	Pressure seats and samples as required.
4	DUAL CSAT-VSP	Shot data to be acquired at 15m spacings from TD to 13 3/8" casing shoe and through casing up to 250m. If signal lost then checkshots at 100m levels to sea floor.
5*	MSCT-GR-LEHQT	30 cores
6	CST-GR	60 shots

* Runs 3 and 5 contingent on hydrocarbons.

The order of logging runs may change based on drilling results. A final program/protocol will be issued to the wellsite at TD.

Additional Comments

- A continuous sonic log (DSI) will be recorded from TD to seafloor or until the last good signal is lost. This log is to be recorded in Crossed Dipole mode in open hole and in compressional mode only inside casing.

- The MDT will be run in the success case only. Samples may be taken in the event that hydrocarbons are found. Equipment to acquire fluid/gas samples is to be available on the rig including Pump Out module, OFA, MRMS, 1 gallon dump chambers and large hole kit. All modules, including the MRMS and chambers will have backup tools available on the rig. Note: the big hole kit will only be run after the PEX log has been evaluated by the Esso petrophysicist and approval has been given directly to the rig. A detailed depth and sampling program will be prepared by Esso in the office and sent to the wellsite after receipt of the PEX log. The MDT protocol is contained in Appendix 1. **Note: Schlumberger are to record and report to the Company Drilling Supervisor all pump outs into the well bore prior to the end of the MDT program.**

- The VSP is a vertical survey. No walk-away survey is required. A detailed program is contained in Appendix 2. Data is to be processed at the wellsite to provide corrected 2-way time data. The VSP will be QC'd onsite by Hydrosearch personnel.

- The wireline product distribution summary is contained in Section 8.

4.4 Coring Program

4.4.1 Conventional Cores

No conventional cores are planned in Scallop-1.

4.4.2 Sidewall Cores (CST's)

Sidewall cores will be taken for reservoir identification and micropaleontological and palynological analysis.

4.4.3 Mechanical Sidewall Cores (MSCT)

Mechanical sidewall cores will be taken in the reservoir should hydrocarbons be encountered. Their aquisistion will be undertaken in order to obtain whole rock material for the determination of depositional models and reservoir properties such as porosity, permeability, reservoir producibility, sand and hydrocarbon netting parameters, relative permeability, and capillary pressure data. The data is required to optimise reservoir management.

4.5 Well Testing Services

No Drill Stem Test is planned. Wireline MDT samples will be taken in the success case.

5.0 DATA DISTRIBUTION SUMMARY

5.1 Distribution Summary

Well data (daily reports, logs etc) will be transmitted from the rig to the Esso office in Melbourne via the Esso LAN by the Esso wellsite geologist. A complete set of field prints of all logs and sidewall cores will be hand carried to Esso House by the wellsite geologist or the Schlumberger engineer, where possible at the conclusion of the well.

5.2 Wireline Data Distribution

Table 5 Field Data via Wellsite Geologist direct to Esso Office

Log	Format	Media	Interval	Order of Importance
Run 1:				
PEX-HALS	.PDS (1:200)	Esso LAN	TD to 13 3/8" shoe	A.S.A.P
	.PDF (1:200)	Esso LAN	TD to 13 3/8" shoe	A.S.A.P
	FAX (1:200)	Cont. Fax	TD to 13 3/8" shoe	If required*
	LAS ASCII	Esso LAN	TD to 13 3/8" shoe	A.S.A.P**
	Rmf, Rmc, Rm and BHT	Esso LAN		A.S.A.P
Run 2:				
SONIC LOG	.PDS (1:200)	Esso LAN	TD to 13 3/8" shoe	A.S.A.P
	.PDF (1:200)	Esso LAN	TD to 13 3/8" shoe	A.S.A.P
Run 3:				
MDT	WSG Field Spreadsheet	Esso LAN	Updated and forwarded to Esso Ops as required	A.S.A.P
	Opened chamber fluid/gas descriptions	Esso LAN	A/A	A.S.A.P
Run4:				
VSP	TWT ASCII	Esso LAN	Final survey	Upon completion
Run 5:				
SWC	Descriptions	Esso LAN	Full core suite	Upon completion.
Field Prints				
All logs	One set of prints	Paper	Full suite	At the end of well

* Fax logs will only be required in the event that the Esso LAN is down or at the request of the Operations Geologist

** Field ASCII LAS file should contain all basic curves over the entire open hole logged interval.

After return of corrected QC prints the following final logs will be generated in Schlumberger's Sale base and forwarded to Esso in Melbourne, marked Attention: Andrew Hodgson, Operations Geologist.

Table 6 Final Wireline Data Distribution List

Distribution	Prints*	Films*	CD ROM**
Esso, Melbourne	3	1	1
BHPP, Melbourne	-	-	1
Santos, Adelaide	1	-	1
Woodside, Perth	-	-	1
DNRE, Melbourne	1	-	1
GA. Canberra	1		1
Total	**6**	**1**	**6**

* Prints
Paper and film prints (1:200 and 1:500 scale, Hi and Low Res where appropriate) for each logging suite.

** Digital Data On CD
All non proprietary log data to be provided in DLIS format as separate, high and low resolution files. All .PDS and PDF image files.

5.3 Mudlog Cuttings Sample Distribution

Table 7 Final Cuttings Sample Distribution List

Distribution	**Lightly Washed & Air Dried**	**Washed / Dried Cuttings**
Esso, Melbourne	1 (Set A)	1 (Set B)
BHPP, Melbourne		1 (Set C)
Santos, Adelaide		1 (Set D)
Woodside, Perth		1 (Set E)
DME, Melbourne		1 (Set F)
GA, Canberra		1 (Set G)
Total	**1**	**6**

At the conclusion of drilling all cuttings will be forwarded directly to Kestrel marked *Attention: Diana Giodano*. All boxed sets should be clearly marked for their final destination after redistribution from Kestrel.

5.4 Mudlog Data Distribution

At the conclusion of the well a QC copy of the mudlogging end of well report (completed up to the point of the WSG departure) and the mudlog, drilling log, gas log and pressure log should be handed to the wellsite geologist to hand carry to the Esso office. A finalised QC copy of the end of well report should be forwarded to Esso, care of Andrew Hodgson, Operations Geologist.

After the QC copies have been returned to BHI the following final products should be produced and forwarded to Esso in Melbourne, marked Attention: Andrew Hodgson, Operations Geologist.

Final data distribution will be as follows:

Distribution	EOWR / Paper Logs and CD*	Sepia Logs
Esso, Melbourne	3	1
BHPP, Melbourne	1	-
Santos, Adelaide	1	-
Woodside, Perth	1	-
DME, Melbourne	1	-
GA, Canberra	1	-
Total	8	1

*CD's containing digital versions of the final well report, logs (.PDF or MS Word files) and ASCII files of the complete recorded drilling data for the well.

5.6 MWD Data Distribution

Table 7: Final MWD Data Distribution List

Distribution	Prints*	Films*	CD ROM**
Esso, Melbourne	3	1	1
BHPP, Melbourne	-	-	1
Santos, Adelaide	1	-	1
Woodside, Perth	-	-	1
DME, Melbourne	1	1	1
GA, Canberra	1		1
Total	**6**	**2**	**6**

* Prints
Combined Paper and film prints (1:200 and 1:500 scale) for whole well.

** Digital Data On CD
All non proprietary log data to be provided in DLIS or LAS format files. All PDF image files (1:200 and 1:500 scale), verification listings and full header information.

6.0 Log Formats

The standard wireline logging formats are contained within the Esso Logging Guidelines document.

6.0 CONTACTS

6.1 Esso Australia Pty Ltd

Esso Australia Pty Ltd
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EMDC - Melbourne

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6.2 Partners and Government Bodies

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Core and Cuttings Samples
DNRE Core Sample Library
South Rd, Werribee
Off Sneydes Rd
Melway Ref: P 206, E8.
Call first Dave Murfitt - DNRE: (03) 9742 8688

6.3 Contractor Personnel

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KESTREL CORE STORE (Cuttings)
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596-600 Somerville Rd, Sunshine Vic 3020
Core/Archive Supervisor - Diana Giodano
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APPENDIX 1: SCALLOP-1 MDT PROGRAM PROTOCOL (TD +/-3126mMD)

Objectives:

- To obtain pressure data in sub Volcanic sands to establish hydrocarbon column height and reservoir drive mechanisms

Pressure Testing:

- In hydrocarbon bearing intervals, sufficient pressure data will be collected so that hydrocarbon gradients can be determined (a minimum of 3 pressure readings will be required in most cases to confirm the pressure gradient). Similarly, in water bearing intervals, sufficient pressure data are to obtained so that water gradients can be clearly defined. They should include pressure data from above and below any hydrocarbon bearing zones. Repeat measurements may be carried out as required to achieve conclusive data on pressure gradients.

- The base plan is to obtain pressures and samples with one trip of the MDT. Pressure data is to be obtained while logging down before any samples are taken.

- Time spent on individual MDT pressure points will be left up to the discretion of the wellsite geologist, however an endeavour should be made to take no more than 5 minutes in each case.

- A large hole kit will be available onboard, but will not be used unless ordered to do so by the Esso petrophysicist.

Hydrocarbon Sampling:

The number and location of MRMS samples will be confirmed after evaluation of the open-hole logs. A 1 gallon dump chamber may be used to collect a non PVT quality sample which will be opened at surface.

Note: Schlumberger are to record and report to the Company drilling supervisor all pump outs into the well bore prior to the end of the MDT program.

Execution of Plan

After receipt of logs (resistivity-density-neutron), a team (office team) consisting of the petrophysicist, project geologist and reservoir engineer will select pressure and potential sample points. The program will be communicated to the wellsite geologist by the Operations Geologist. The program will be modified as appropriate depending on the results of the pressure data. All data from the rig will be communicated to the office team via the Operations Geologist or Petrophysicist. Except for any major deviation to the program the **running of the MDT program will be managed by the Petrophysicist.**

Authority Levels:

Pressure Testing	**Action Authorised By**
Point Selection (including repeats)	Petrophysicist, Reservoir Engineer & Project Geologist
Program Abandonment (without achieving objectives)	Gippsland Project Manager
Wiper Trip	Drilling Supervisor
Test duration (if significant risk of differential sticking)	Deputy Production Manager with Drilling Superintendent endorsement
Hydrocarbon Sampling	
Point Selection	Petrophysicist, Reservoir Engineer & Project Geologist
Repeat run to satisfy ATD objectives	Petrophysicist, Reservoir Engineer & Project Geologist
Program abandonment (without achieving objectives)	Gippsland Project Manager
Wiper Trip	Drilling Supervisor
Test duration (if significant risk of differential sticking	Deputy Production Manager with Drilling Superintendent endorsement

APPENDIX 2: SCALLOP-1 VSP PROGRAM (TD +/-3126mMD)

Borehole seismic survey

The proposed borehole seismic program in the Scallop-1 well is as follows:

1. Acquire a zero-offset VSP over whole well using a rig source. The objectives are to obtain:
   - Accurate time-depth conversion table for surface seismic events intersecting the well
   - Good interval, average, RMS velocities within the VSP interval
   - Good quality corridor-stack subsurface imaging

2. Acquire a zero-offset checkshot survey using a rig source when signal is poor /lost through casing. The objectives are to obtain:
   - Accurate time-depth conversion table for surface seismic events intersecting the well
   - Good interval, average, RMS velocities within the checkshot interval

The final acquisition will depend on the signal quality in casing, but as a minimum :
- 3126 m (TD) to 900 m. i.e TD to 13 3/8"casing shoe. The receiver depth interval will be 15 m and therefore the total number of levels will be 74.
- From 900 m (13 3/8" shoe), either continuing VSP levels at 15m and/or, in case signal through casing is lost/poor, checkshots at 100 m spacings with additional checkshots at significant interval velocity boundaries.

The VSP corridor stack will be a good-quality image of the subsurface.

The borehole seismic program will be accomplished with a dual CSAT.

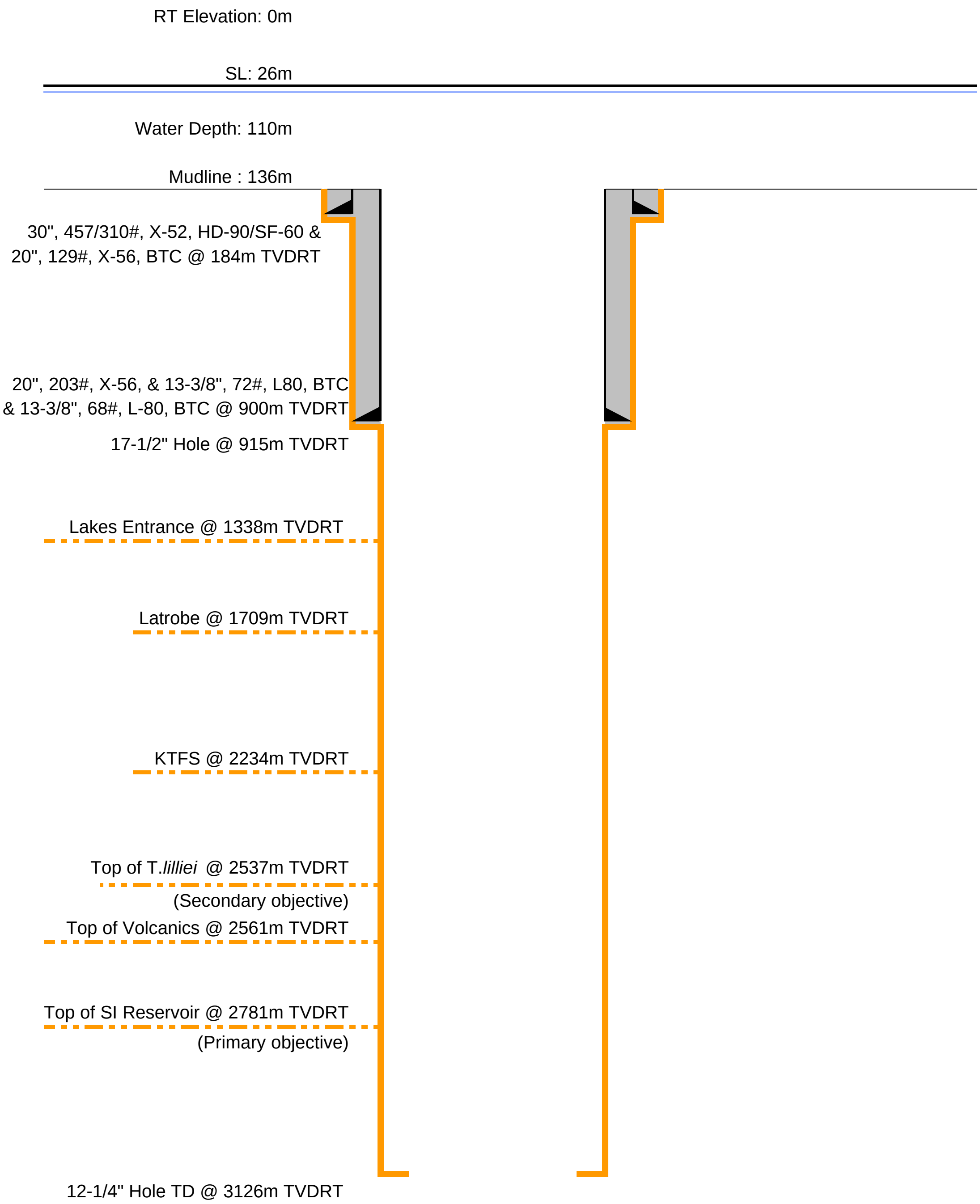
Air Supply Requirement

Scallop-1 will be drilled using the Sedco 702, a semi-submersible rig. The compressed air will come from the rig. There will be no issues regarding the supply of compressed air when using the standard 2x150 cu in G-Gun source cluster. However, standard safety procedures should will be followed.

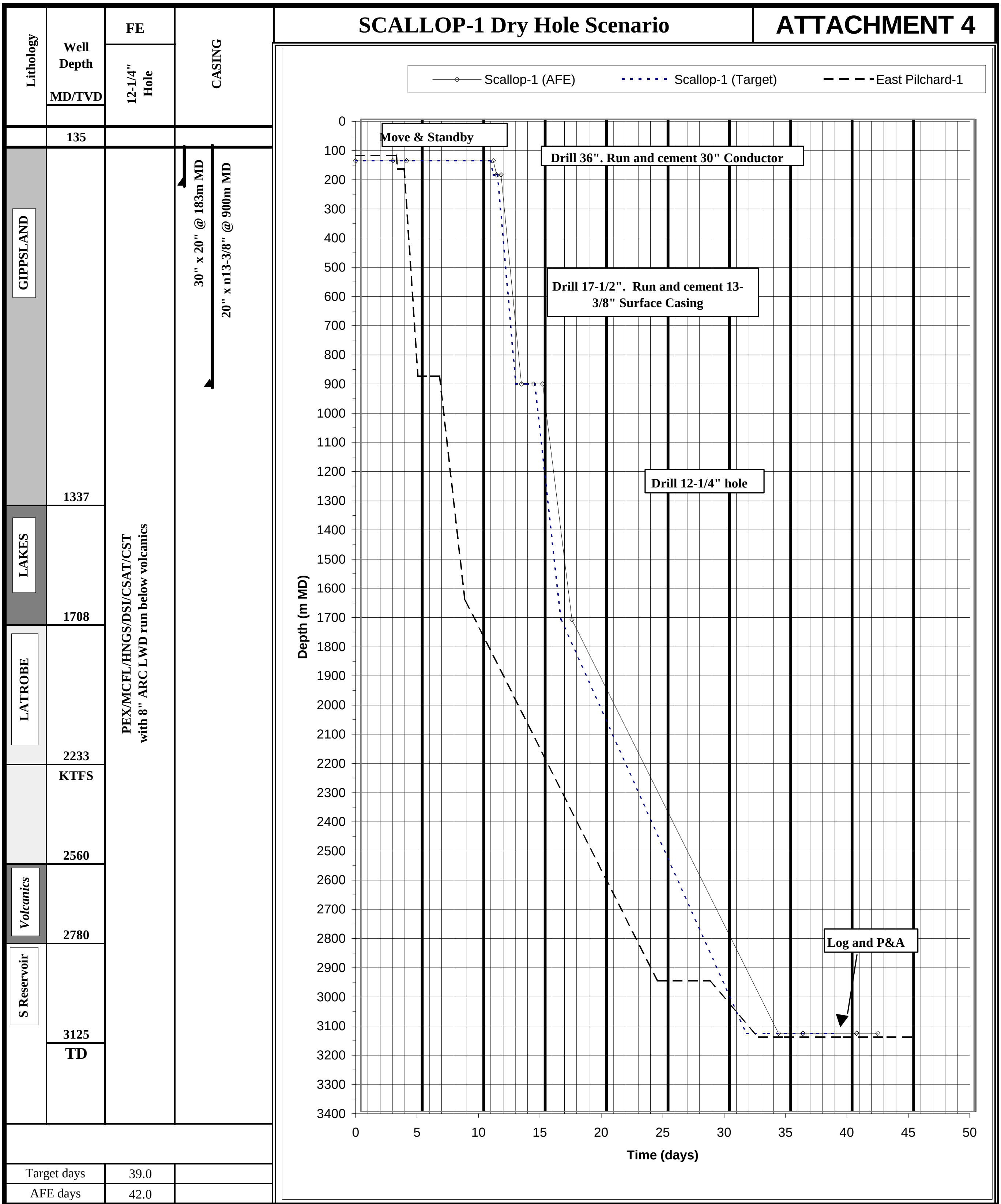
ATTACHMENT 3

SCALLOP-1 WELLBORE SKETCH

PLANNED



Well Progress Curve



	Near-Field Wildcat	
TD	3125	m MDRT
	3125	m TVDRT
Max Tangent angle:	vertical	
Target Location (AMG Zone 55):	639,316 mE	
	5,769,300 mN	
Target Depth & Size:	3125m TVDRT, 150m square target with a hard northern boundary.	

Summary Scallop-1 Dry Hole:
Accept rig from previous Operator. Move to Scallop-1 location. Moor & rig-up. Drill 26" x 36" hole. Run and cement 30" conductor. Drill 17-1/2" surface hole riserless and run and cement 13-3/8" surface casing with PGB. Drill 12-1/4" hole to TD. Log and P&A. Release rig.

* Customise individual well information, where Red color is shown.

ATTACHMENT 5

DRS Well Setup Information Form

DRS Well ID	SCALLOP1	**U.S. Only**	
Office Code	AUSTRALIA - SE	Location Code	--
Spud Time (dd-mm-yy hh:mm)	01-Feb-03 12:00	Sub-Code	--
Tight Hole (Y/N)	N	PRISM ID	--
Country	AUSTRALIA	OCSG Number	--
Province	VICTORIA	MMS District	--
Field	GIPPSLAND BASIN	API State Code	--
Unit/Lease	VIC/RL2	API County Code	--
Platform	--	API Well Code	--
Quadrant	--		
Block	--		
Slot	--		
License	--		

Water Depth	110	Surface Location	
Ground Elevation	--	North (+) / South (-)	0.00
Bradenhead Height (from MSL)	--	East (+) / West(-)	0.00
Rotary Table Height (from MSL)	25	Vertical Section Correction	0
Riser Used? (Y/N)	Y	**U.S. Only**	
Latitude (DMS) South	38 deg 12 min 48.6 sec S	Section	--
Longitude (DMS) East	148 deg 35 min 28.9 sec	Township	--
Lambert Zone	GRS80/MGA1994 Zone 55, CM 147	Range	--
Y-Coordinate (mN)	5,769,300	Benchamrk	--
X-Coordinate (mE)	639,316	Reference Corner	--

DRS Job Information Form

Start Date (dd-mm-yy hh:mm) (Start of move)	19-Jan-03 12:00	**Drilling Jobs Only**	
End Date (dd-mm-yy hh:mm)		Wellbore Code (O, R, G, L, U)	O
Job Type (D, S, C, W)	D	**Lateral and Multilaterals Only**	
Daylight Only (Y/N)	N	Lateral ID	--
Report Time (05:00)	Fixed	Branch ID	--
Data Source	DRS Network	Branch Number	--
Engineering Telephone Number	tba	**U.S. Only**	
Formal Well Name	SCALLOP-1	Release to Public (Y/N)	--
Well Number		API sidetrack code (00, 01, 02 ..)	--
Client	Esso Australia Resources Pty Ltd		
Operator	Esso Australia Pty Ltd		
ExxonMobil's Working Interest %	25%		

Currency	$A	**Drilling Jobs Only**	
Exchange Rate	A$1.9231 = US$1	Planned Wellbore Length	3125
AFE/OFR Number	L0201C001	AFE Amount - Dry (Aus$)	23,048,000
Project Type	Capital	AFE Amount - Suspended (Aus$)	0
Account Code	--	AFE Days - Dry	42.0
Budget Category	Exploration	AFE Days - Suspended	0.0
AFE Total Amount (Aus$)	23,048,000		
AFE Days - Total	42.0		
AFE Amount - Completion (Aus$)	--		
AFE Days - Completion	--		

Rig Contractor	Sedco Forex International (Transocean)	Mud Company	Baroid
Rig Name	SEDCO 702	MWD Company	No MWD
Wireline/Coiled Tubing Unit (Y/N)	N	Real-Time Company	Petrolink
		Real-Time Data (Y/N)	Y
		Planned Measured Depth	3125
Drilling Jobs Only		Planned True Vertical Depth	3125
Objective Code (O, G, O&G)	O & G	Target North (+) / South (-)	0
Permit Date	--	Target East (+) / West (-)	0

LIST OF PERSONNEL FOR REPORT/REALTIME TIGHT HOLE ACCESS	
Drilling Superintendent:	Frank Kratzer
Drilling Supervisors:	George Sharkey, Steve Felstead
Engineers:	Chris Meakin, Rudolf Furchtenicht
Others:	
E-MAIL DAILY DRILLING REPORTS ONLY (PARTNER VERSION)	
Parnter Name and Contact #1:	N/A
Parnter Name and Contact #2:	N/A
FAXED DAILY DRILLING REPORTS (PARTNER VERSION)	
Parnter Name and Contact #1:	N/A
Parnter Name and Contact #2:	N/A

ATTACHMENT 6

KIPPER - 1 **Rig - Southern Cross** **Total Days: 38.35** **Start: 13:45 hr 4-Mar-86**

RKB:MSL 21m Water Depth

Report	TVDKB	MDKB	Inc	MW (ppg)	Mud Type	Formation	Bits		Comments
1	0	0	0		Seawater with high viscosity gel slugs				Move to location. 10.25 hrs, 0.43 days
2	256	256	0.25	8.6			**#1RR - OSC3AJ (2 2 I) 141m, 4.25hrs, 33m/hr.**	**26" hole** **20" csg**	WOB = 20-30, RPM = 140. Cmt with Class 'G' with 2.2% Gel, 12.8 ppg, 182 bbl lead followed by 350 sx 15.8 ppg neat.
3	646	646	0.25	9.1	Seawater gel mud system	**Gippsland**		**238m**	WOB = 20-30, RPM = 140.
									Calc TOC @ 346m
							#2 - J1 (2 2 I)	**17-1/2" hole**	WOW 8.75 hr to run 13-3/8" casing.
4	846	846	0.00	9.2		**Gippsland**	**571m, 18.75hrs, 30.4m/hr.**	**13-3/8" csg**	Phase I PIT (1500psi).
5	846	846			Gel lignosulphonate mud system. The mud weight was held at 9.2 ppg to 1730m and then increased to 9.6 ppg for a predicted 165m closure at 1883m. Below the 96m volcanic section from 1893m to 1989m a thick gas sand was penetrated (and gas swabbed into the wellbore). An RFT gave 9.7 ppg MWE at the top of the gas sand. The mud weight was increased to 10.3 to 10.5 ppg to TD.			**830m**	WOB = 30-40, RPM = 150.
6	1244	1244		9.2					Phase II PIT (LOT - 16.7ppg EMW).
		1419.5				**Top of Latrobe**			
		1427					**#3 - J1 (2 3 I) 581m, 22.5hrs, 25.7m/hr.**		Calc TOC @ 1310m
7	1445.5	1445.5	0.00	8.5					Cut Core #1 & #2, both 100% recovery
8	1572	1572	0.00	9.3				**12-1/4" hole**	Cut Core #3 1445.5 to 1455.3m, 90% recovery
	1733					**KTFS Marker**			
9	1813	1813	1.75	9.5+			**#4 - J22 (2 2 1/8) 358m, 26.5hrs, 13.5m/hr.**		DV stage collar @ 1856m. Calc TOC @ 1897m
10	1842	1842		9.5+					WOB = 45, RPM = 65. Cut Cores #4 & #5, 76% & 91%
	1893	1893				**Top Volcanics**			Cut Core #6 1841.6 to 1851.1m, 100% recovery
11	1955	1955		9.5+		**Volcanics**			WOB = 45, RPM = 65
	1989	1989				**Base Volcanics, Top S1 Reserv.**			Tight spot 1906m to 1820m.
12	2140	2140		9.6		**S1 Reserv.**			
13	2140	2140	0.00	10.2		**SI Reserv.**	**#5 - J22 (4 3 1/8) 298m, 28.25hrs, 10.5m/hr.**		Well flowed. SIDPP = 0psi, SICP=240psi. Pit increase 10-15 bbl. This resulted from gas swabbed into the well from the gas sand below the volcanics. A RFT at the top of the gas sand gave a 9.7 ppg EMW pore pressure.
14	2140	2140		10.5		**SI Reserv.**			Log from 2139.5 to 1195m and take RFTs.
15	2140	2140		10.5		**SI Reserv.**			RFT Samples runs #2 to #6. Horner temp. 82.3C, gradient 32.91degC/km
16	2274	2274		10.5		**SI Reserv.**			WOB = 40-45, RPM = 65
	2279	2279				**Base upper S1 Reserv. Top P. mawsonni**			
17	2355	2355		10.5		**P.mawsonni**			80% conglomerate/sandstone & 20% siltstone
18	2424	2424		10.5		**P.mawsonni**	**#6 - J22 (6 5 1/8) 260m, 53hrs, 4.9m/hr.**		
19	2538	2538		10.4		**P.mawsonni**			
20	2633	2633		10.3		**P.mawsonni**			
21	2671	2671	1.75	10.35		**P.mawsonni**	**#7 - J22 (5 4 1/8) 250m, 61hrs, 4.09m/hr.**		
22	2746	2746		10.4		**P.mawsonni**			WOB = 50, RPM = 50. 24hr drilling @ 3.125m/hr
23	2809	2809		10.4		**P.mawsonni**			WOB = 50, RPM = 50. 24hr drilling @ 2.625m/hr
24	2850	2850		10.4		**P.mawsonni**	**#8 - J22 (2 4 1/4) 190m, 65.75hrs, 2.89m/hr.**		
25	2875	2875	6.00	10.4		**P.mawsonni**	**#9 - J33 (1 1 I) 35m, 12.25hrs, 2.85m/hr.**	**12-1/4" hole**	WOB = 50, RPM = 50-60.
26	2875	2875				**P.mawsonni**			Run RFT #7-9 incl.
27	2875	2875				**P.mawsonni**		**9-5/8" csg**	Run RFT #10-12 incl., commence logging
28	2875	2875		10.4		**P.mawsonni**		**2861m**	Continue logging. R/U to run 9-5/8" casing
28-39	2875	2875				**P.mawsonni**		**TD @ 2875m**	Run,cement & cleanout stage collar in 9-5/8" casing. Run Production test. Kill well and P&A.
28-39	2875	2875							Run,cement & cleanout stage collar in 9-5/8" casing. Run Production test. Kill well and P&A.

Location:	Latitude	38 deg 10' 30.31"
GDA94/GRS80	Longitude	148 deg 35' 51.29"
UTM Zone 55, MGA 1994	Easting	639,933.53m E
	Northing	5,773,552.69m N

Formation Evaluation

	Log	Interval
1	SDT-GR	835.8 - 238
2	DLTE-MSFL-GR-AMS-SP	2135 - 1196
	LDTC-CNTH-GR-AMS	2128.3 - 1370
	RFT-HP	Pretests
	RFT-GR	Prestests & samples
3	DLTE-MSFL-GR-SP	2869 - 1980
	LDTC-CNTH-GR	2862.5 - 1980
	SDT-GR	2860.4 - 832
	DITE-SDT-GR	2871.5 - 832
	HDT-GR	2870.5 - 1350
	RFT-HP	Pretests
	RFT-GR	Prestests & samples
	WST-GR	Check shots 2871 - 421
	CST-GR	2862 - 1412.5

ATTACHMENT 7

KIPPER - 2	**Rig - Diamond M Epoch**	**Total Days:**	**43.15**	**Start: 02:30 hr 10-Mar-87**
RKB:MSL	22m		Water Depth	107.24m

Report	TVDKB	MDKB	Inc	MW (ppg)	Mud Type	Formation	Bits		Comments
1	0	0	0	0	Seawater with high viscosity gel slugs	0	0		Report 1 Moving to location 0.90 days
2	190	190		8.6				← **26" hole**	WOB = 15, RPM = 100.
3	274	274	0.75	8.6			**#1 - 3AJ (1 1 I) 145m, 9.5hrs, 15.3m/hr.**		Cmt with Class 'G' with 2.2% Gel, 13.2 ppg, 650sx lead followed by 350 sx 16.0 ppg neat.
								20" csg	
4	274	274			Seawater/prehydrated gel slug mud	**Gippsland**		**259m**	
5	656	656							WOB = 30, RPM = 150. Calc TOC @ 204m
							#2 - J1 (4 3 I)	← **17-1/2" hole**	
6	835	835	1.25	8.8		**Gippsland**	**561m, 23hrs, 24.4m/hr.**	**13-3/8" csg**	Phase I PIT (1500psi).
7	835	835			Seawater/prehydrated gel/native clay mud system, with lignosulphonate			**830m**	Phase II PIT (LOT - 15.7ppg EMW).
	861	861					**#3 - J1 (1 1 I)**		WOB = 30, RPM = 150. Trip for low ROP
8	1020	1020		8.9			**26m, 3.25hrs, 8m/hr.**		
		1539				**Top of Latrobe**			
9	1561	1561	1.25	9.1					
	1598	1598	1.50				**#3RR - J1 (5 5 1/8) 763m, 39hrs, 19.6m/hr.**		
10	1668	1668		9.2					
	1876					**KTFS Marker**			
11	1898	1898		9.1				← **12-1/4" hole**	
12	2039	2039	2.25	9.1			**#4 - J22 (2 3 1/16) 441m, 38.5hrs, 11.5m/hr.**		
	2070	2070				**Top Volcanics**			
13	2144	2144		9.6					WOB = 30, RPM = 100.
	2211	2211				**Top S1**			
14	2216	2216		9.6		**SI Reserv.**	**#5 - J22 (2 4 1/16)**		
15	2216	2216	2.00	9.6		**S1 Reserv.**	**177m, 34.5hrs, 5.1m/hr.**		WOB = 45, RPM = 65
16	2222	2222				**S1 Reserv.**			Core #1
17	2231	2231		9.7		**S1 Reserv.**			Core #2
18	2269	2269		9.7		**SI Reserv.**			WOB = 45, RPM = 100
19	2291	2291	1.50	9.7		**SI Reserv.**	**#6 - J7 (6 7 1/16) 50m, 16.25hrs, 3.1m/hr.**		Core #3
20	2310	2310		9.6		**SI Reserv.**			Core #4
21	2321	2321		9.7		**SI Reserv.**			Core #5
22	2339	2339		9.6		**SI Reserv.**			Core #6
23	2347	2355		9.6		**SI Reserv.**			Core #7
24	2360	2360		9.6					Core #8
25	2360	2360		9.6					Fish dropped drill pipe
26	2360	2360		9.6					Fish dropped drill pipe
27	2360	2360		9.6					Fish dropped drill pipe
28	2361	2361		9.6					Fish dropped drill pipe
29	2390	2390		9.6					WOB = 45, RPM = 85
30	2393	2393	1.13	9.6			**#7 - JD8 (3 3 I) 32m, 17.25hrs, 1.9m/hr.**		Log, RFT & samples
31	2393	2393						← **12-1/4" hole**	Log, RFT & samples
32	2415	2415		9.6					Log, RFT & samples. Continue drilling
33	2437	2437		9.6			**#8 - J33 (2 2 I) 36m, 7.75hrs, 4.6m/hr.**		Core #9
34	2474	2474		9.6					
35	2550	2550		9.6					
36	2600	2600		9.6			**#9 - J33 (4 6 I) 161m, 54.25hrs, 3.0m/hr.**	**TD @ 2600m**	
37-43	2600	2600							Log, P&A, release rig

Location: GDA94/GRS80	Latitude	38 deg 11' 25.84"
	Longitude	148 deg 36' 49.78"
UTM Zone 55, MGA 1994	Easting	641,326.99m E
	Northing	5,771,816.38m N

Formation Evaluation

	Log	Interval
1	GR	259.0 - 129.6
	SLS-CAL-GR	827.1 - 259.0
2	LDL-CNL-GR-AMS	2382.5 - 1485.0
	DLL-MSFL-GR-SP	2388.0 - 820.5
	HP GAUGE	Pretests
	RFT-GR	Pretests
	HP GAUGE	Samples
	RFT-GR	Samples
3	BHC-GR	2600.0 - 820.0
	LDL-CNL-AMS-GR	2600.0 - 2297.0
	DLL-MSFL-GR	2600.0 - 2297.0
	SHDT-GR	2600.0 - 1490.0
	WST-GR	Check shots 2871 - 421

EAST PILCHARD-1 **Rig - DOGC Ocean Bounty** **Total Days: 45.30** **Start: 16:00 hr 29-Jun-01**

RT:SL 25m Water Depth 91.3m

Report	TVDKB	MDKB	Inc	MW (ppg)	Mud Type	Formation	Bits		Comments
1-5	0	0	-	0.0	Seawater with high viscosity gel slugs	0	0		Moving to location 2.52 days (0 days NPT), & mooring 1.32 days (0.52 days NPT)
5	162.5	162.5		8.6			**#1 - XT1C (1 1 I) 46.0m, 2.5hrs, 18.4m/hr.**	**36" hole**	17-1/2" bit & 36" h'opener. WOB = 4, RPM = 80. Cmt 'G' with 2% CaCl2, 15.9 ppg, 1020sx.
								30" conductor	
6	852	852	0.27		Seawater/prehydrated gel slug mud	**Gippsland**		**162.5m**	WOB = 10, RPM = 140.
7	885	885							
									Lead 1371sx (540 bbl) 12.5 ppg
							#2 - DS84HF (1 1 I)	**17-1/2" hole**	Tail 726 sx (150 bbl) 15.8 ppg. TOC 116m MD
8	885	885		9.1		**Gippsland**	**722m, 22hrs, 32.8m/hr.**	**20" x 13-3/8" csg**	Phase I PIT (1800psi).
	885	885						**873m**	Run BOPs
9	1170	1170	0.35	9.3	KCl/PHPA/glycol/polymer mud system		**#3 - MA89 (3 4 4)**		Phase II PIT (LOT - 16.97ppg MWE).
		1216				**Top Lakes Entr**	**1140m, 47hrs, 24.3m/hr.**		
		1644				**Top of Latrobe**			
10	1700	1700	0.90	9.6					WOB = 10, RPM = 150.
11	2001	2001	1.63	9.9					
12	2054	2054	1.86	10.0					Drill to 2054m, Unable to make hole. Bit trip
12	2065	2065					**#4 - XL20D (1 1 I) 53m, 7.75hrs, 6.8m/hr.**		
13	2107	2107	1.87	10.0			**#5 - MGR84PX (1 1 I) 7m, 7hrs, 0.58m/hr.**		Bit pulled on slow ROP. Bit balling suspected but later discounted when logs show interval drilled was formation with > 30,000 psi unconfined compressive strength.
13	2111	2111							
	2115	2115				**KTFS Marker**	**#6 - XL20D (2 2 1/16)**		
14	2131	2131	1.87	10.0			**357m, 70.9hrs, 5.0m/hr.**		WOB = 33/70, RPM = 67/80.
15	2268	2268	1.89	10.1					
16	2384	2384	1.98	10.1					
	2435	2435				**Top Volc.**			
17	2465	2465	2.13	10.1					
18	2471	2471							Phase III PIT 11.8 ppg MWE @ 2420m
19	2531	2531		10.1			**#7 - XL20D (2 3 1/16)**		WOB = 35/55, RPM = 65/95.
	2592	2592				**Top S1 Res.**	**312m, 82hrs, 3.8m/hr.**		
20	2619	2619	1.94	10.1					
21	2697	2697	2.15	10.1				**12-1/4" hole**	
22	2775	2775	2.74	10.1				**Actual size 12.53"**	
23	2783	2783		10.1					
	2810	2810					**#8 - EHP51H (2 2 I)**		WOB = 45/55, RPM = 80/90.
24	2894	2894		10.1			**162m, 40.3hrs, 4.0m/hr.**		
25	2945	2944		10.1					
26-30	2945	2944	2.50						Log, 4.42 days with 0.23 days NPT
31	2963	2962		10.2			**#9 - XL20D (2 2 1/16)**		
32	3040	3039		10.1			**193m, 52.5hs, 3.7m/hr.**		WOB = 50/58, RPM = 70/80.
33	3131	3130		10.1					
34	3138	3137		10.1					
35-38	3138	3137							Log, 3.06 days with 0.92 days NPT
39-41	3138	3137						**9-5/8" csg**	Run 9-5/8" casing and cement, 2.89 days with 0.34 days NPT
								3126m	Lead 886sx (178 bbl) 15.8 ppg HTB cement and tail 586sx (142 bbl) 14.5 ppg HTB cement. Calculated TOC 2392m. Float collar at 2522m
42-43	3138	3137							Suspend well, 2.20 days
44-46	3138	3137		9.6					Demoor, 3.58 days. During demooring 2.83 days was lost when one AHV left the site to assist a vessel is distress.

Location: GDA94/GRS80	Latitude	38 deg 11' 48.63"
	Longitude	148 deg 33' 47.34"
UTM Zone 55, MGA 1994	Easting	636,876.87m E
	Northing	5,771,189.84m N

EAL TRIPPING PRACTICES

Contents

Hole Condition Monitoring

Torque and Drag Monitoring, in conjunction with careful observance of cuttings return, and other drilling parameters, is referred to as "Hole Condition Monitoring".

Hole condition monitoring is used for the following (as a minimum) :

- Confirm that maximum achievable ROP is within hole cleaning capability. This is especially important when drilling large diameter hole (12-1/4" and larger), or when GPM and RPM are significantly limited.
- If maximum achievable ROP does exceed hole cleaning capability, hole condition monitoring is used to maximise the ROP (so that an arbitrary ROP is not defined).
- To flag the need for remedial hole conditioning measures (such as reduced ROP, circulate bottoms up, short wiper trips, etc.).
- To quantify the improvements / detrimental effects of parameter changes (such as flow rate, RPM, rheology changes, sweeps, wiper trips, etc.).

Tripping In

Precautionary wash & ream the final 2 stands prior to tagging bottom in open hole.

Tripping Out

Hole Clean-up

Prior to coming off-bottom to trip :

- Circulate at maximum flow rate and maximum RPM of drill string (depends on motor) until the shakers are clean, or 1.5 times bottoms up (whichever occurs later). Note that it may take up to 3-4 times bottoms up for shakers to clean up, depending on hole cleaning conditions.

- POOH without pumping or rotating.

- If any tight sections of hole are encountered while POOH, RIH 2-3 stands (to get the BHA out of the tight section), and repeat first step (i.e. circulate at maximum GPM and RPM until hole cleans up).

- POOH without pumping or rotating. If the hole is tight in the same spot, then the tight spot is likely to be "tight hole" or key-seating, and so back-reaming may be required.

The above points apply in all circumstances, except for the final trip out of the Latrobe which shall require back-reaming of the Latrobe interval. See Subject 2.5 (Drilling Intermediate/Production Hole) for details. This is to improve the quality of the cement job across the pay zone.

The points made above do not apply if there is a suspected washout in the drillstring.

It is up to the Drilling Supervisor's discretion to circulate the hole clean, if there has been only a marginal amount of hole made.

Connection Practices

The following are considered to be the "baseline" connection practice:

a) Drill connection down with prescribed rotary speed and pump rate.
b) Increase pump and rotary speed to maximum allowable.
c) Ream one full joint out and back into the hole. Monitor hole condition. If hole is "tight" repeat by reaming one full stand out and back into hole until hole pulls freely.
d) Pick-up off of bottom and obtain rotating torque & drag numbers.
d) Reciprocate one full joint without rotation. Monitor hole condition. If hole is "tight" repeat until hole pulls freely. Obtain pick-up weight on way up and slack-off weight on the way back in.
c) Shut down the pump and make a connection.

Connection practices are dependent upon a number of parameters:

1) <u>Drilling Mode</u> - if slide drilling, then the hole will be poor. Connections immediately following slide drilling should endeavour to move cuttings away from the BHA. Reaming a couple of times up into the derrick may be warranted using maximum GPM and RPM (motor dependent) allowable to stir the hole.

2) ROP - Hole cleaning may be inadequate at very high ROP's (especially in large diameter hole - such as 12-1/4"). If this is the case, then some time may need to be spent moving the cuttings up the hole prior to making connections.

3) Drilling Parameters - it may be necessary to slow down the pumps or the rotary speed for directional reasons. If this is the case, then when the pipe is pulled off of bottom the parameters should be brought back up to maximum allowable levels while the pipe is worked prior to a connection.
Do not continue to drill long sections with reduced pump rates or rotary for directional control, consider a BHA change to allow drilling parameters to be brought back to program targets.

It may not always be necessary to work the pipe prior to a connection given a favourable combination of the above factors.

Hole Cleaning Practices

Optimum Drilling Practices

Unless directed by the drilling program, or limited by mechanical issues (such as tool and equipment limits, or surface equipment failures), endeavour to drill within the following guidelines for optimum hole cleaning. Note that issues such as directional drilling may require operating outside of these guidelines. This should be minimised if possible.

- Pump at maximum allowable flowrate.

- Drill with maximum allowable pipe RPM. Note that if a steerable BHA is being used, the off-bottom RPM limit may be higher than the drilling (on-bottom) RPM limit. If so, then when circulating off bottom, the higher limit should be used. Refer to Section 2.7 Engineering Design Considerations for recommended pipe RPM limits for common motor configurations. *Generally, a significant increase in cuttings return occurs above 110 rpm, with improvement again above 150 rpm.*

- Maximise rotary drilling, when drilling with steerable BHAs.

- Drill at maximum ROP, provided that hole condition monitoring does not indicate that ROP is exceeding hole cleaning capability. Torque and Drag monitoring will then be required to match maximum allowable ROP with hole cleaning capacity.

- Carefully monitor cuttings return, and character, to ensure that hole integrity and cuttings flow are as expected.

Wiper trips

Gippsland & Lakes Entrance Formations

Wiper trips should not be conducted, unless hole condition monitoring (in particular torque and drag monitoring) indicates that the hole is loading up with cuttings. Wiper trips should not be based on time or metreage since last trip.

If hole condition monitoring indicates that remedial hole conditioning is required, wiper trips should be considered as a last resort. Wiper trips should generally not be considered unless alternate actions (such as modified parameters, lower ROP, or simply circulating the hole clean) are ineffective at cleaning the hole up.

Prior to tripping off bottom, the hole should be cleaned up beforehand (as per earlier tripping practices). Torque and drag measurements should be recorded before and after circulation, to quantify the improvement due to circulating, and to confirm if a wiper trip is / isn't required.

Precautionary ream the bottom 2 stands when RIH.

Latrobe Formation

Wiper trips will be conducted in the Latrobeif hole conditions indicate a wiper is necessary. Torque & drag monitoring has not been as reliable for hole condition monitoring in the Latrobe, therefore close attention should be paid to changes in readings. Torque & drag monitoring should still be utilised when drilling the Latrobe, however.

For wiper trips in the Latrobe :

1) Prior to commencing to POOH, circulate 1.5 x ***Latrobe** Open Hole Volume* with maximum RPM and flow rate.
2) Kelly-up top drive and pump out of hole for two stands. **(no rotary unless necessary)**
3) If hole pulls tight only on connections, then POOH with elevators minimising time between connections.
4) If hole pulls tight throughout the stand, then pump out of hole to TOL.
5) At TOL, circulate with maximum RPM and flowrate until shakers clean up (at least 1.5 x bottoms-up).
6) POOH with elevators only.

When at TOL and ready to RIH to TD:

1) If the Trip-out was good, then RIH to bottom with elevators only
2) If the Trip-out was tight, then pump into the hole every stand to TD (**no rotary unless necessary).**

Note Avoiding the use of rotary when tripping is meant to minimise the amount of filter cake that is removed from the low side of the hole by the stabilisers and bit.

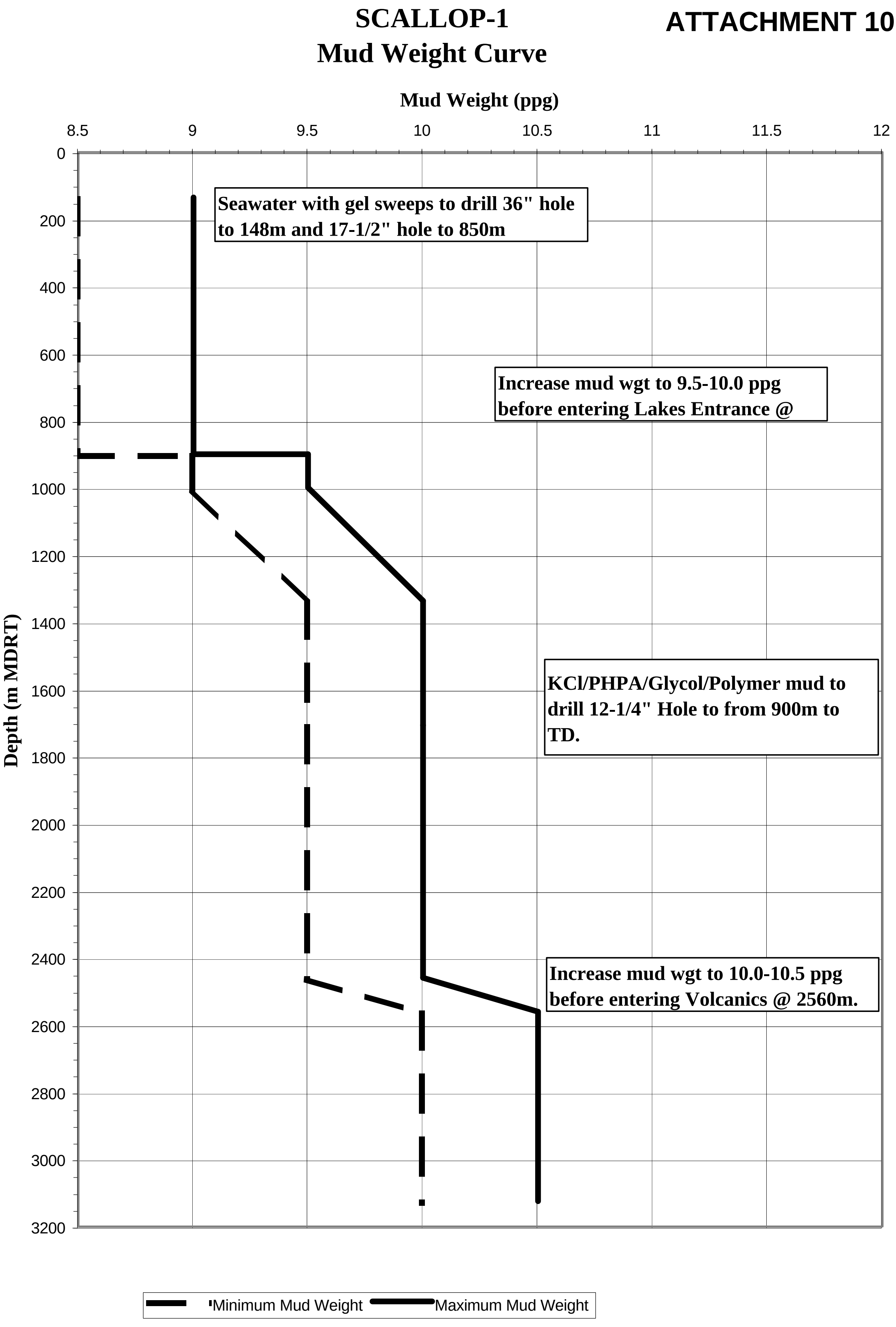
Sweeps

Generally it is Esso's practice that sweeps (for hole cleaning) should not be pumped. This is due to inconsistency of results, and the detrimental effect on the mud system. If a sweep is used it should be discharged overboard if the mud properties are ideal at that time.

If a sweep has to be pumped, it should be of a suitable size (say 50-100 bbls). If a viscous mud system (>45 sec) is being used, then a tandem sweep should be used (a thin pill, immediately followed by a heavy hi-vis (100+ sec) pill). The idea of the thin pill first is to initiate turbulent flow, stirring the cuttings bed prior to the hi-vis sweep.

If a thin mud system (<45 sec) is in use, then a hi-vis (100+ sec) only sweep should be used.

ATTACHMENT 10



ATTACHMENT 11

ESSO AUSTRALIA PTY LTD
DRILLING FLUID PROGRAM
SCALLOP - 1
BASS STRAIT, VICTORIA

Prepared by	:	Nicholas Doust
Date	:	January 2003
Revision	:	1

"All information, recommendations and suggestions herein concerning our products are based on tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity and suitability for their own use of the products described herein."

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INTRODUCTION

Well Summary

Operator	:	Esso Australia Pty Ltd
Project	:	Scallop Exploration Well
Well Name	:	Scallop-1
Location	:	Bass Strait, VIC/RL2, Victoria
Well Designation	:	Exploration
Rig	:	Sedco 702
Well Depth (TD) option	:	3,126m MDRT
Inclination & Direction	:	Vertical
Horizontal Displacement	:	0 m MD

Well Profile

Scallop-1 has been programmed as a vertical exploration well, penetrating targets in the S reservoir as well as minor shallower secondary objectives. The 36" and 17-1/2" intervals will be drilled riserless with seawater and high viscosity bentonite sweeps pumped at regular intervals to keep the hole clean. Returns will be to the seabed. The 36" hole will be drilled from the mud line at 136 m MDRT to 184 m with a 26" bit and 36" hole opener. 30" conductor casing will then be set at 184 m. The $17^1/_2$" hole section will be drilled from 184 m to 900 m MD where 13-3/8" surface casing will be set. $12^1/_4$" hole will be drilled to the production targets from the $13^3/_8$" surface casing shoe to a total depth of 3,126 m MD using a KCl/PHPA/Polymer/Glycol-CP system. If the well is successful then the option to drill deeper through the volcanics approximately another 200 m MD may be exercised.

The same mud system as the nearest offset well East Pilchard is recommended. This mud system proved to be very successful as apart from some seepage losses no hole problems were encountered on East Pilchard, even though the Lakes Entrance Formation was open for approximately 30 days. Also the caliper log on East Pilchard in the 12.25" hole section was very good with an average hole diameter of 12.5".

Well Parameters and Potential Hazards

- Scallop-1 will drill approximately 371 m of reactive Lakes Entrance Formation.
- No shallow gas is anticipated.
- Reservoir pressures are expected to be normal (8.3 – 8.5 ppg equivalent) above the Volcanics.
- Abnormal formation pressures (up to 9.2 ppg or 9.8 ppg in Kipper 1 (equivalent)) are possible in the S sands below the volcanics. Tuna-4 experienced abnormal pore pressures up to 10.4 ppg EMW in the S-Reservoir. The most recently drilled offset East Pilchard well experienced maximum pressures of ~ 9.2 ppg in the Volcanics.
- Small amounts of H_2S (8 ppm in Tuna-4) and CO_2 (0-19% in S-1 reservoir of Kipper 1,2) have been recorded in offset wells. No H_2S was recorded at the recently drilled East Pilchard well.
- CO_2 contamination was experienced on East Pilchard which required treating out with caustic.
- The Intra-Latrobe volcanics may contain weathered reactive clay bands.
- Hard drilling is likely in the Intra-Latrobe section due to dolomitised sandstone and volanics.
- The Intra-Latrobe volcanics may contain weathered reactive clay bands.
- Fault zones exist in the Latrobe Formation, which increases the possibility of mud losses. Seepage losses are also likely in the Volcanics as experienced on East Pilchard.
- 2 – 20 m coal beds were seen in offset wells and are expected at this location. Sloughing is not expected to be a problem in this vertical well.
- Anticipated bottom hole temperature is approximately 129.7°C (265.5°F) based on the standard Bass Strait temperature gradient. Usage of polymers will increase at this temperature.

Interval	Hazard/Concern	Action
36" / 17.1/2"	• Lost circulation / hard ledges • Unstable hole • Shallow Gas	• Drill with seawater pumping hi-vis bentonite sweeps. • Displace hole to pre-hydrated bentonite on trips and prior to running casing. • Ensure enough kill mud is stored in mud pits.
12.1/4"	• Overpressure in volcanics • Poor hole cleaning • Hole instability in reactive Lakes Entrance Formation. • Mud Losses in faults of Latrobe. • Differential Sticking in Latrobe Formation. • H_2S in reservoir. • CO_2 in reservoir. • Coal Sloughing	• Maintain sufficient barite stock and adequate mud weight. • Maintain Yield Point at 25 – 45 lb/100ft^2 , increase pump rate & limit ROP. • Keep constant monitoring on mud weight, hole cleaning, flow rates and rheology. • Consider stopping drilling to circulate the hole clean. • Limit ROP's. • Make a wiper trip to the shoe. • Run an inhibitive mud system. Maintain KCl concentration and fluid loss control. • Maintain adequate LCM supplies of BAROFIBRE, calcium carbonate and Kwik-Seal (non-reservoir LCM). • Add sized BARACARB bridging agent. Maintain tight filtration control. Have EZ-SPOT and ester supplies.on location or ready at BBMT. • Maintain adequate supplies of NO-SULF, BARACOR-129 and caustic potash on rig. • Treat with caustic soda. • Add BARABLOK to active system or spot pill across coals.

Formation Tops

Formation	Formation Tops/Thickness	
	MDRT/TVDRT (m)	M MD
RKB to Sea level	26	-
Gippsland Limestone	136	1202
Lakes Entrance Formation	1338	371
Latrobe Group	1709	1417
KTFS marker	2234	
Top T.lill	2537	
Top Volcanics	2561	
Base Volcanics/ Top S1	2781	
Top Intra-Volcanics	2822	
Base Intra-Volcanics	2872	
Top 1st Volcanics	3010	
Base 1st Volcanics	3060	
TD	3126	

Mud Systems

36” Hole Seawater/Bentonite Sweeps

- Seawater and high viscosity sweeps pumped at regular intervals will provide sufficient hole cleaning to drill the 36” interval.
- Lost circulation and harder ledges may occur in this interval.

$17^1/_2$” Hole Seawater/Bentonite Sweeps

- Seawater and high viscosity sweeps pumped at regular intervals will provide sufficient hole cleaning to drill the $17^1/_2$ ” interval.
- Approximately 1300 bbls of 12.0 ppg mud should be on standby and ready to be pumped in the event of shallow gas. This mud will be used to fill the hole while running casing.
- Sufficient drill water and pre-hydrated Bentonite will be needed to displace this large hole section twice.
- If required, Guar Gum can be used to supplement or replace bentonite in sweeps.

$12^1/_4$” Hole

- A fully specified 6% KCl/PHPA/Glycol-CP system should be used from the surface casing shoe to interval TD. This fluid will provide good hole stability in reactive claystone, prevent differential sticking in the high permeability sands, and provide maximum penetration rates in the Gippsland and Lakes Entrance Formations.
- An initial mud weight of 9.0 ppg is required. Raise the mud weight to 9.5 ppg by the top of the Lakes Entrance Formation. A maximum mud weight of 10.5 ppg is suggested if hole problems occur in the Lakes Entrance Formation. The mud weight should be at least 10.0 ppg prior to drilling into the volcanics.
- Differential sticking and seepage losses through faults are a potential danger in the Latrobe Formation. The differential sticking tendency will be highest opposite the most permeable sands penetrated in this section.
- Sized calcium carbonate should be added immediately prior to entering the Latrobe Formation. These pore throat bridging agents will reduce HPHT filtrate loss and reduce the risk of differential sticking in the Latrobe.
- A yield point value of 25-45 lb/100ft^2 is the primary rheology specification. This will provide optimum lift factors, as well as excellent cuttings suspension and carrying capacity at the high drilling rates expected.
- Hole cleaning is not expected to be a problem in this vertical well. Ensure maximum drillpipe rotation is used in conjunction with programmed low-shear rate rheology values and adequate circulation before connections and trips.
- The glauconitic Gurnard Formation is usually present at the top of the Latrobe Formation. It may contain minor amounts of abrasive pyrite.

DRILLING FLUID PERFORMANCE INDICATORS

Drilling fluid performance should be based on achieving the following targets and Performance Indicators. The hole condition targets are considered much more important than the drilling fluid targets, as these relate directly to savings in rig time. Note that rig cost/day far exceeds mud cost/day.

Hole Condition Targets

- No time lost to hole problems (flowing sand or hole collapse) in 36" hole
- No time lost due to lost circulation, hole instability or mud rings in $17^1/_2$" hole
- Minimal reaming or back-reaming (<15 hours) due to hole instability or inadequate hole cleaning
- No differential sticking problems in the Latrobe
- Wireline logs successfully run to bottom and retrieved
- All casings successfully run

Performance Indicators (±10%)

36" Hole (136 – 184 m)

- Consumption Rate : 22.0 bbl/m
- Mud Cost/bbl : $4.14
- Mud Cost/m : $91.16
- Interval Mud Cost : USD$4,558.02

$17^1/_2$" Hole (184 – 900 m)

- Consumption Rate : 10.1 bbl/m
- Mud Cost/bbl : $7.46
- Mud Cost/m : $75.09
- Interval Mud Cost : USD$53,688.13

$12^1/_4$" Hole (900 – 3,126 m)

- Volume Used : 5,578 bbls
- Dilution Rate : 1.55 bbl/m
- Consumption Rate : 2.51 bbl/m
- Mud Cost/bbl : $40.83
- Mud Cost/m : $102.31
- Interval Mud Cost : USD$227,747

- Total Mud Cost : USD$285,993

INTERVAL 1

36" Hole	**:**	**136 - 184 m (48 m drilled)**
Formations	**:**	**Sand/Shell/Marl**
Drilling Fluid	**:**	**Seawater with Hi-Vis Bentonite Sweeps**

INTRODUCTION

The 36" interval contains predominantly soft chalky limestone and marl. Shell beds, sands, calcarenite and calcilutite are possible. Potential hole problems include lost circulation and harder ledges.

The interval will be drilled with seawater and high viscosity gel sweeps pumped at regular intervals to keep the hole clean. Returns will be to the seabed. No shallow gas is expected in the 36" interval.

Fluid volumes have been estimated on the basis of 40 - 50 bbl sweeps every half-stand. Approximately 1.5 x hole volume of pre-hydrated bentonite will be displaced at the interval TD and then a short trip made and the hole once again displaced, as above prior to pulling out to run 30" casing. Mud displaced into the hole should not be flocculated with Lime.

RECOMMENDED PROPERTIES (Hi-Vis Sweeps)

Funnel Viscosity (sec/qt)	:	> 100
YP (lb/100ft^2)	:	> 40

FORMULATION

35 - 40 ppb bentonite should be pre-hydrated in treated drillwater and allowed to yield for at least 8 hours. If a shearing device is available this period may be reduced. The pre-hydrated mixture can then be diluted by 1/3 with seawater to give a final concentration of about 25 ppb bentonite. Lime and caustic should be added just prior to pumping to further flocculate the fluid. The actual dilution rate and the use or quantity of Lime can be adjusted to achieve the desired viscosity. Formulate sweeps with:

Soda Ash	:	0.1 - 0.2 ppb
Bentonite	:	35 - 40 ppb (hydrate 8 hours)
Seawater	:	1/3 initial volume
Caustic Soda	:	0.5 ppb (add before pumping)
Lime	:	0.5 ppb (add before pumping)

MAINTENANCE

- At casing depth, the hole should be displaced with 1.5 x the open hole volume of undiluted high viscosity pre-hydrated bentonite. After a wiper trip the hole will again be displaced 1.5 times with undiluted pre-hydrated bentonite to ensure the hole is full, including any overgauge sections.

- The hole should be spudded at a reduced pump rate to avoid washing out the seabed.

- Maintain enough bentonite and drillwater on the rig and boat to ensure a steady supply. Make sure the mud pits are full of pre-hydrated gel while drilling.

INTERVAL 2

17$^1/_2$" Hole	:	**184 - 900 m (716 m drilled)**
Formations	:	**Gippsland Limestone**
Drilling Fluid	:	**Seawater with Hi-Vis sweeps**

INTRODUCTION

The 17-1/2" interval will be drilled with seawater and high viscosity sweeps pumped at regular intervals to keep the hole clean. Returns will be to the seabed. No shallow gas is expected in the 17$^1/_2$" interval, however kill mud will be built as a precaution.

Fluid volumes have been estimated on the basis of 40 - 50 bbl sweeps every half-stand. To conserve drill water and ensure sufficient pre-hydrated Bentonite is available for two displacements at interval TD, high viscosity Seawater/Guar sweeps can be used alternately with Bentonite sweeps when drilling. Seawater/Guar should not be used to displace the hole at interval TD.

Approximately 1.5 – 2.0 x hole volume of 12.0 ppg unflocculated pre-hydrated Bentonite (without lime) will be displaced at the interval TD. After a short trip, the hole should displaced with the 12 ppg pre-hydrated Bentonite prior to pulling out to run 13$^3/_8$" casing. Mud displaced into the hole should not be flocculated with Lime. In the event of shallow gas the 12.0 ppg mud can be diluted (if required) with seawater and displaced into the hole to be used as kill mud.

RECOMMENDED PROPERTIES (Hi-Vis Sweeps)

Funnel Viscosity (sec/qt)	:	> 100
YP (lb/100ft^2)	:	> 40

FORMULATION

Formulate pre-hydrated Bentonite and high viscosity Bentonite sweeps as per the 36" interval.

Formulate Seawater Guar Gum hi-vis sweeps as follows to minimise mixing time, conserve drill water and maximise Guar yield:

Seawater

ALDACIDE G	:	0.05 – 0.1	ppb
Citric Acid	:	~ 0.1	ppb (Reduce pH to ~ 5 to maximise Guar dispersion)
Guar Gum	:	3 – 4	ppb
Caustic Soda	:	~ 0.1	ppb (Increase pH to 9 to maximise Guar yield)

Guar gum will not yield in the presence of hydroxyl ions, hence dry product should not be added to any fluid containing Caustic Soda, including pre-hydrated Bentonite. Check the pH of the mix water is < 7.5 and if necessary, reduce the pH with Citric Acid before mixing Guar Gum.

Displacement Mud Formulation

Approximately 1300 bbls of 12.0 ppg displacement mud will be required. **This mud must be built prior to drilling the 17-1/2" section as it may also be used as kill mud if required.**

To make 1 bbl of 12.0 ppg displacement mud add:

Soda Ash	:	0.1	ppb
Caustic Soda	:	0.1	ppb
Bentonite	:	20	ppb (pre-hydrated)
PAC-L	:	0.2	ppb
Barite	:	185	ppb (to 12.0 ppg)

- Initial 10 second gel must be bigger than 3 lbs/100ft^2 to prevent barite settling.
- Keep agitator on at all times.
- Keep salt out of mud, or flocculation may occur, resulting in barite settling.

Kill Mud Formulation

In the unlikely event that shallow gas is encountered, the 12.0 ppg displacement mud must be used to kill the well. This mud can be diluted with seawater if more volume is required to kill the well.

MAINTENANCE

- Drill with seawater and 40 – 50 bbl sweeps of high viscosity mud each half stand. Sweeps may be alternately Seawater-Bentonite and Seawater-Guar to conserve drill water and Bentonite supplies if required.

- The first 10 m below the conductor shoe should be drilled with spud mud at reduced pump rate to avoid washing out poorly consolidated sediment.

- If shallow gas is encountered then the 12.0 ppg displacement fluid can be pumped or can be diluted to achieve a kill mud weight of ~ 9.6 ppg. Dilute the 12.0 ppg mud to 9.6 ppg with addition of seawater at a ratio of 1 bbl of 12.0 ppg: 2.27 bbl seawater.

- At casing depth after a wiper trip to the 30” casing shoe pump a 100 bbl hi-vis sweep and displace the open hole section 1.5 –2.0 x with undiluted 12 ppg high viscosity (non-flocculated) pre-hydrated Bentonite. The 12.0 ppg mud will help maintain borehole stability and optimum cuttings suspension whilst running the 13-3/8” casing.

- Blending of concentrated fluids, plus drill water dilution, may be required to prepare the required large volume of fluid without incurring any down time.

- It is assumed that cement for the $13^3/_8$” casing job will be displaced with seawater, and that seawater will be used to drill out the casing shoe. If not, it may be necessary to retain some salvaged mud after cementing to drill out cement before displacing to new KCl/PHPA/Polymer/Glycol mud.

- Partial lost circulation is possible in the upper Gippsland Formation. This should not be a problem, as the formations are usually soft and hence unlikely to fall back and stick the pipe when the pumps are shut off. Any losses usually self-heal with pre-hydrated Bentonite sweeps and drill solids over time.

- Bentonite and drillwater requirements are high on this section. Make sure the mud pits are full of pre-hydrated gel while drilling. Ensure the rig and boats are topped up at every opportunity. This reduces the risk of non-productive downtime while waiting on the boat due to adverse weather.

INTERVAL 3

$12^{1}/_{4}$" Hole	**:**	**900 m to 3,126 m**	**(2,226 m to drill)**
Formations	**:**	**Lower Gippsland, Lakes Entrance, Latrobe & Volcanics**	
Drilling Fluid	**:**	**6% KCl/PHPA/Polymer/Glycol-CP**	

A 6 – 8 % KCl/PHPA/Polymer system should be used from the 13-3/8" surface casing shoe to interval TD to provide good hole stability in reactive claystone, prevent differential sticking in the sands, and provide maximum penetration rates in the Gippsland and Lakes Entrance Formations. This fluid has been used successfully on numerous Bass Strait wells.

This fluid will provide effective borehole stability, due to the following mechanisms:

- Sufficient KCl to provide adequate osmotic inhibition (salinity balance) and sufficient Potassium ion to convert reactive clay to non-reactive clay.
- The KCl will provide osmotic inhibition and reduce pore pressure penetration.
- Inhibiting polymers, particularly PHPA, and filtration control polymers such as PAC and DEXTRID-LT will provide additional clay inhibition and retard pore pressure penetration.
- Careful control of pH will also help minimise clay swelling.
- Bridging of the reservoir with sized calcium carbonate to reduce pore pressure penetration.
- Sufficient mud weight to intra-Latrobe Volcanics

Target Properties

Mud Weight	Initially 9.0	ppg	(see Esso chart)
	Incr. to 9.5 – 10.0	ppg	By Top of Lakes Entrance Fm.
	Incr. to 10.0	ppg	By Top of Volcanics
	Incr. to 10.5	ppg	as hole conditions dictate
Yield Point	25 – 45	$lb/100ft^2$	
API Filtrate	< 6	ml/30 min	
HPHT Filtrate	< 15	ml/30 min @ 250°F (Lakes Entrance Fm.)	
	< 12	ml/30 min @ 250°F (Latrobe Fm.)	
pH	8.5 - 9.2		
KCl Content	6 - 8	% by wt soln	
Excess PHPA Content	1	ppb	
Low Gravity Solids	< 10	% by vol	
Glycol Content	3	% by gross mud volume	

Recommended System Formulation (in order of addition)

BARACIDE	0.1	ppb (added to mix water)
KCl	22 - 30	ppb
Xanthan Gum	1.0 - 1.5	ppb (first polymer to be mixed)
PAC-L	1	ppb
DEXTRID-LT	3 – 4	ppb
PHPA	1.5	ppb
Glycol-CP	3	% by volume (added after displacement)
Caustic Potash	0.2	ppb (To pH 9.0)
Barite	As Req'd.	

Mixing & Maintenance

- In new pre-mix, PHPA should be the last polymer added, in order to minimise its' inhibitive effect on the yield of the other polymers.

- Prior to drilling cement and the shoe track displace the hole with mud (or use mud from the previous section). Pre-treated with 0.5 ppb each of Citric Acid and Bicarb. Soda. It will be necessary to run coarser screens at first until the new mud shears down sufficiently. Then replace these with finer screens.

- Add Glycol-CP to the active system after any high pH caused by cement contamination has been treated out with Citric Acid and Bicarb. Soda.

- Add Glycol-CP directly to the active system after displacement to maintain the required glycol concentration. Base all glycol additions on any new volume added to the active system. Keep extra glycol on board as the concentration may be increased to 5% in response to any hole problems.

- Maintain a constant mud formulation from the initial displacement. This will provide full inhibition for improved hole conditions and cuttings integrity for the entire section, thus avoiding any initial period of reduced mud performance.

- New mud will weigh approximately 8.8 – 9.0 ppg depending on initial KCl content. The mud weight will increase with the incorporation of drill solids, reaching 9.6 ppg at about the maximum recommended low gravity solids content of 10% by volume.

- Raise the mud weight steadily to reach 9.5 ppg by the top of the Lakes Entrance Formation. Use regular additions of Barite to maintain mud weight while keeping within the programmed low gravity solids range.

- Due to the possibility of overpressure, prior to drilling through the top of the volcanics raise the mud weight to 10.0 ppg with barite.

- To control HTHP filtration, as the bottom hole temperature increases towards 120ºC (250ºF), additions of DEXTRID-LT may be discontinued in favour of PAC-L. Additions of extra PAC-L with BARACOR-129 oxygen scavenger, GEM-CP, and if necessary, BARABLOK should be used to maintain HPHT filtration control at increasing BHT.

- Use the finest shaker screens practicable to avoid stripping out too much calcium carbonate bridging agent. It is advisable to use slightly coarser shaker screens, eg 120 mesh, when calcium carbonate is in use. The Ocean Bounty has 4 shakers so aim to run as fine as possible to reduce solids content and dilution requirements.

- Keep additional **drill water** based 6-8% KCl/PHPA/Polymer/Glycol-CP system pre-mixed in the reserve pits.

- Perform four complete mud checks per day while drilling. These should comprise two pairs of lagged checks on mud in the suction pit and the same mud returning at the flowline. Additional partial mud checks should be performed as necessary to ensure all critical mud properties remain within specification.

- Prior to tripping, logging and running casing the mud in approximately the bottom 500 metres of hole should be dosed with approximately 1 ppb PAC-L, 0.5 ppb BARACIDE, 2 ppb BARACOR-129 and 1% GEM-CP to extend the thermal stability of the mud system.

Borehole Stability/ Differential Sticking

- If there are indications of hole instability in the Lakes Entrance Formation, consideration should be given to increasing the mud weight, increasing the glycol content in 0.5% increments towards a maximum of 5% and increasing the KCl concentration to 8%.

- Immediately prior to drilling into the top of the Latrobe Formation, pretreat the entire circulating system with the addition of 5 ppb each of calcium carbonate-25 & calcium carbonate -50 plus 10 ppb of calcium carbonate 100. This will increase the mud weight by ~ 0.3 ppg. These are to act as pore throat bridging agents to reduce the likelihood of differential sticking and seepage losses in the high permeability sands.

- Regularly add an additional 2 X 25 kg sacks of calcium carbonate-100 and 1 sack of calcium carbonate-50 for every 10 m of new hole drilled in the Latrobe Formation, to replace losses to the solids control equipment and wall cake.

- Differential sticking is possible opposite the most permeable sands. If differential sticking of the drill string occurs, a stuck pipe spotting fluid can sometimes assist in freeing the string. Spotting fluids are designed to penetrate and break up the filter cake. Stuck pipe pills can be formulated with EZ-SPOT, ester and barite if required. To mix the EZ-SPOT pill, start with the required volume of ester, add EZ-SPOT, water and barite (weight to same as active mud system) in that order.

  For a 50 bbl pipe freeing pill at 10 ppg add the following (in order of addition):
  - 29 bbls of ester
  - 3 drums of EZ-SPOT
  - 13 bbls of water
  - 140 ppb barite

  Note: It is critical to have spotting fluid readily available and applied as soon as possible after the stuck pipe occurrence to increase the probability of success.

- Coal sloughing is not expected to be a problem in this vertical hole however it expected that coal beds will be drilled. Some tight hole occurred while tripping out of hole through coal seams on East Pilchard. If coal sloughing occurs, consideration should be given to adding 6 - 10 ppb BARABLOK to plug microfractures and minimise filtrate invasion. Care should be taken to avoid any swabbing or mud weight reduction. A gradual increase in mud weight may also be required. BARABLOK Gilsonite bridging agent and HME Energiser water wetting surfactant should be kept on the rig for contingency purposes when drilling the Intra-Latrobe coals. **Check with the Esso drilling supervisor prior to adding BARABLOK and HME Energiser**. **HME Energiser is a surfactant; hence it may alter the wettability of the formation and impair core tests.**

Hole Cleaning

- Hole cleaning should not be a problem in this vertical well, although the 12-1/4” hole size will require additional circulation time to clean. Maximum high-speed pipe rotation should be used while drilling and when circulating before connections and trips.

- Vary the amount of xanthan gum viscosifier added to the premix, in order to maintain the yield point value at the specified 25- 45 lb/100ft^2 required for hole cleaning. Avoid adding Drillzan D or BARAZAN-D PLUS directly to the active system, as PHPA will inhibit the hydration and yield of xanthan gum.

- The shakers should be circulated clean of cuttings before trips. Rapid pipe rotation and a circulation time of at least 2 x bottoms up will be necessary to completely clean the hole.

Lost Circulation/Seepage Losses

- BAROFIBRE should be kept on board as a contingency item and used if there are indications of significant seepage losses. Seepage losses are highly likely in the fault zones of the Volcanics and across small scale fault zones. On East Pilchard intermittent seepage losses at 2 – 40 bbls/hr occurred from the Top of Volcanics to TD. Average losses were 5 bbls/hr. The losses were treated and reduced with direct additions of calcium carbonate to the active system.

- In the event of seepage losses in the Volcanics then:
  1. Drill ahead and sweep the hole with 20 ppb of Calcium Carbonate 25/100 combination plus 5 – 10 ppb BAROFIBRE.
  2. If unacceptable losses persist then stop drilling, reduce pump rate and spot a 25 ppb Calcium Carbonate 25, 25 ppb Calcium Carbonate 100 and 10 ppb BAROFIBRE pill across the formation.

  Note that non-degradable LCM such as KWIK-SEAL should not be used in the Latrobe Formation as it may damage the reservoir.

Bit Balling

- If apparent bit balling occurs in the Lakes Entrance Formation, pump 30 bbl sweeps of KCl brine or KCl brine with 5% glycol, instead of seawater sweeps. While drilling the Lakes Entrance have sufficient KCl brine mixed for sweeps if required. Also WALL-NUT or coarse calcium carbonate may be added to a sweep to abrade sticky clay from the bit and BHA. Slugging the pipe during a connection with EZ-MUD L (liquid PHPA) may also eliminate bit balling. Bit balling should not occur in the sandy Latrobe Formation.

- If SAPP or CONDET is available then they may be used in a pill format to fix bit balling. SAPP pills should be made at a concentration of 1 to 3 lbs/bbl. Do not use SAPP in high Calcium environments. SAPP is a dispersant so should be used sparingly to prevent dispersing clay solids and also prevent possible borehole washout. Condet is a detergent which reduces surface tension and the sticking tendency of clay. Add 3 – 5% of CONDET in pill of active mud. CONDET may cause foaming of the mud system.

Corrosion, H_2S & CO_2 Control

- If CO_2 contamination is experienced then the Garret Gas Train (GGT) test should be run and the results reported in the mud treatment section of the mud report. The GGT can also be tested for H_2S contamination. For a quick test of soluble sulfides use the HACH test method.

- Keep sufficient quantities of NO-SULF on board. NO-SULF is a blend of zinc compounds used to treat out H_2S in the mud system. If H_2S is detected then treat the mud system with 1 – 4 lb/bbl of NO-SULF. The reaction of zinc and sulfide compounds forms an insoluble and unreactive precipitate of zinc sulfide.

- BARACOR-129 oxygen scavenger will be used when drilling or circulating with a closed system. The residual sulphite concentration should be maintained at > 100 mg/l at the flowline. BARACOR-129 oxygen scavenger solution should be added as close to the pump suction as possible. Ensure hoppers and non-essential solids control equipment is switched off when not in use in order to minimise aeration of the mud.

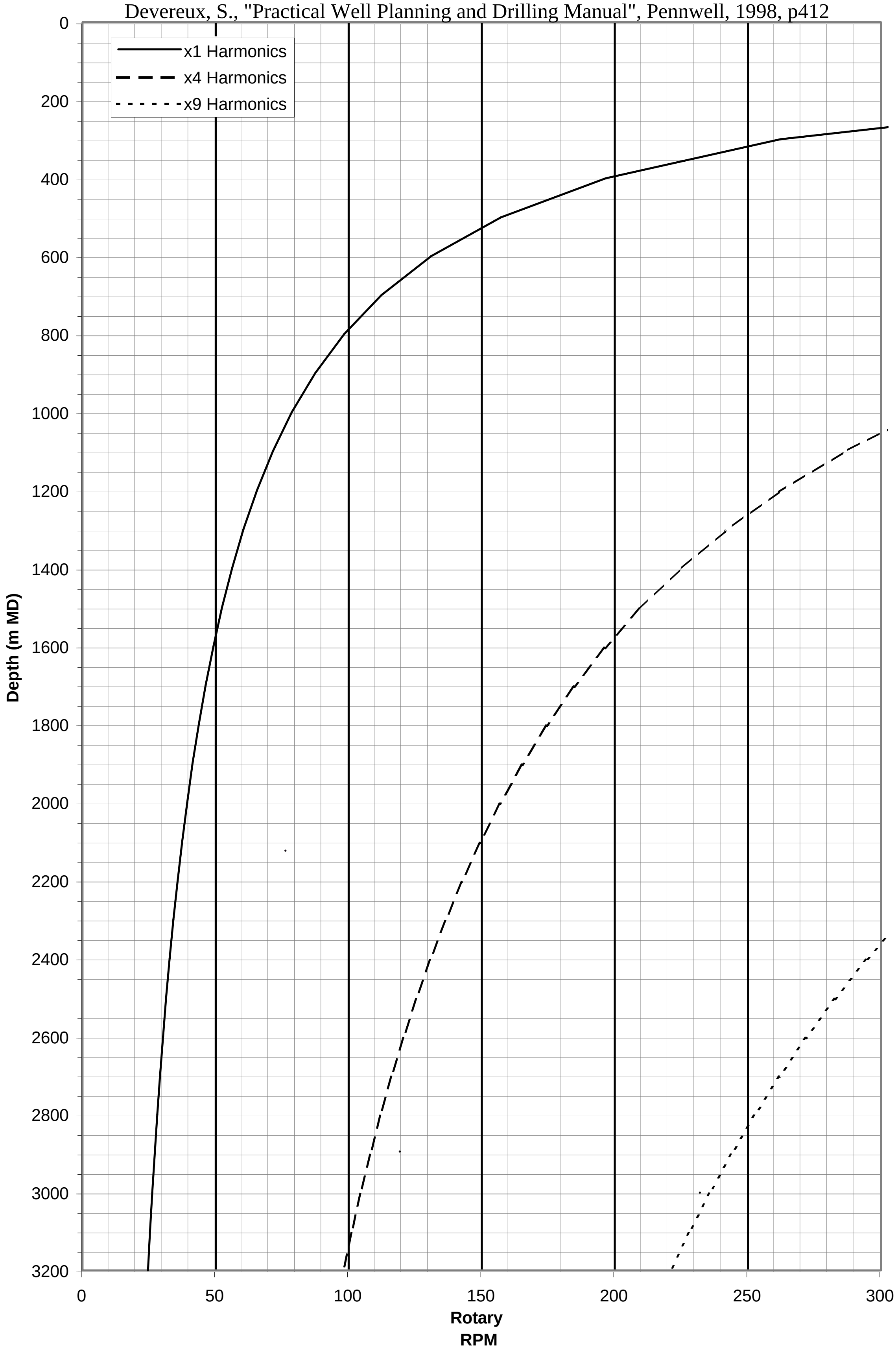
- BARAFILM / Ester pre-blended corrosion inhibitor should be used to coat the inside of the pipe before trips. Pour 20 - 40 litres per 1000 m of pipe of BARAFILM / Ester blend down the inside of the pipe after a heavy slug has been pumped. APPROPRIATE PROTECTIVE CLOTHING MUST BE WORN WHEN HANDLING CORROSION INHIBITORS.

- Mud left behind casing should be treated with extra BARACIDE and Caustic Potash to help prevent corrosion.

ATTACHMENT 12

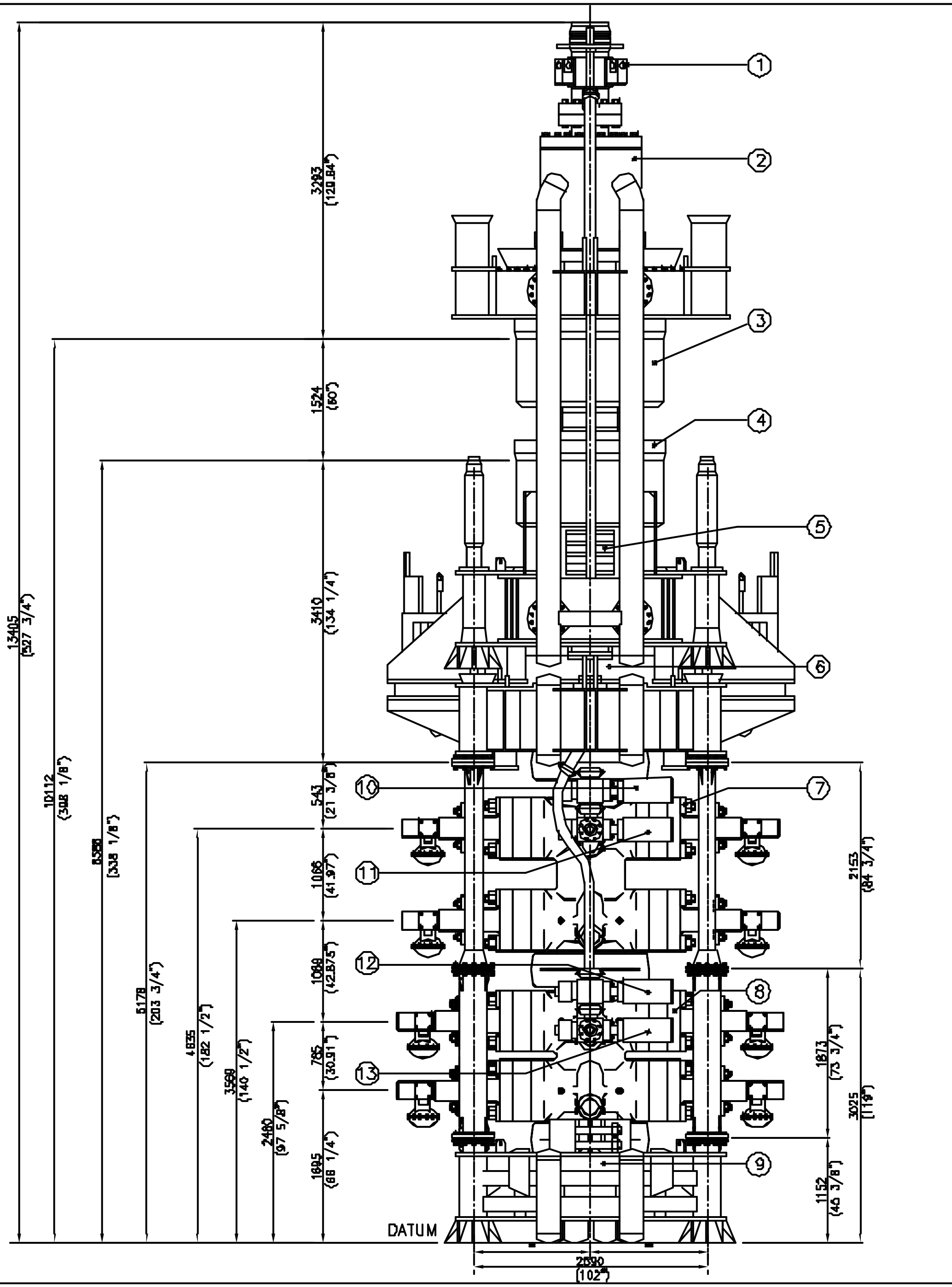
SCALLOP-1 - Longitudinal Drill String Vibration

Devereux, S., "Practical Well Planning and Drilling Manual", Pennwell, 1998, p412



ATTACHMENT 13

FILE No.: A-C-3253-M-GA-001-TF | DRAWING SIZE: A1



1. RISER ADAPTER
   FOR REGAN FD 8 RISER
   LOWER CONNECTION: BX 163 FLANGE

2. FLEX JOINT
   OIL STATES " DIVERTER II "
   UPPER CONNECTION: BX 163 FLANGE
   LOWER CONNECTION: BX 163 FLANGE

3. UPPER ANNULAR
   SHAFFER 18-3/4" , 5000 PSI
   UPPER CONNECTION: BX 163 STUDDED TOP
   LOWER CONNECTION: BX 164 FLANGE

   HOSE: COFLEXIP 10000 PSI

4. LOWER ANNULAR
   SHAFFER 18-3/4" , 5000 PSI
   UPPER CONNECTION: BX 164 STUDDED TOP
   LOWER CONNECTION: BX 164 HUB

5. RISER CONNECTOR
   LMRP CONNECTOR: CAMERON COLLET CONNECTOR
   MODEL 70 18-3/4" , 10000 PSI
   UPPER CONNECTION: BX 164 HUB

6. MANDREL
   BOP ADAPTER FOR CAMERON MODEL 70 CONNECTOR

7. RAM PREVENTERS
   BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
   RAMS FITTED: SHEAR/ BLIND
   " SHEAR RAMS "
   RAMS FITTED WITH LARGE OPERATING PISTONS AND
   EXTENDED BODY TO ALLOW PIPE SHEARING

   RAMS FITTED: 5" PIPE
   " UPPER RAMS "
   EXTENDED BODY TO ALLOW PIPE SHEARING

8. RAM PREVENTERS
   BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
   RAMS FITTED: VARIABLE
   "MIDDLE RAMS "

   RAMS FITTED: 5" PIPE
   " LOWER RAMS "

9. WELLHEAD CONNECTOR
   CAMERON COLLET CONNECTOR
   MODEL 70 18-3/4" , 10000 PSI
   UPPER CONNECTION: BX 164 HUB

10. FAILSAFE VALVES
    TO
13. " CAMERON " 3-1/16" (8 EACH)

NOTES

REV	DATE	DESCRIPTION	BY	CHKD	APPD	CLIENT
0	15 FEB 02	ISSUED FOR APPROVAL	B.B.	R.T.	R.T.	
A	15 FEB 02	ISSUED FOR COMMENT	B.B.	R.T.	R.T.	

REVISIONS

REFERENCE DRAWINGS

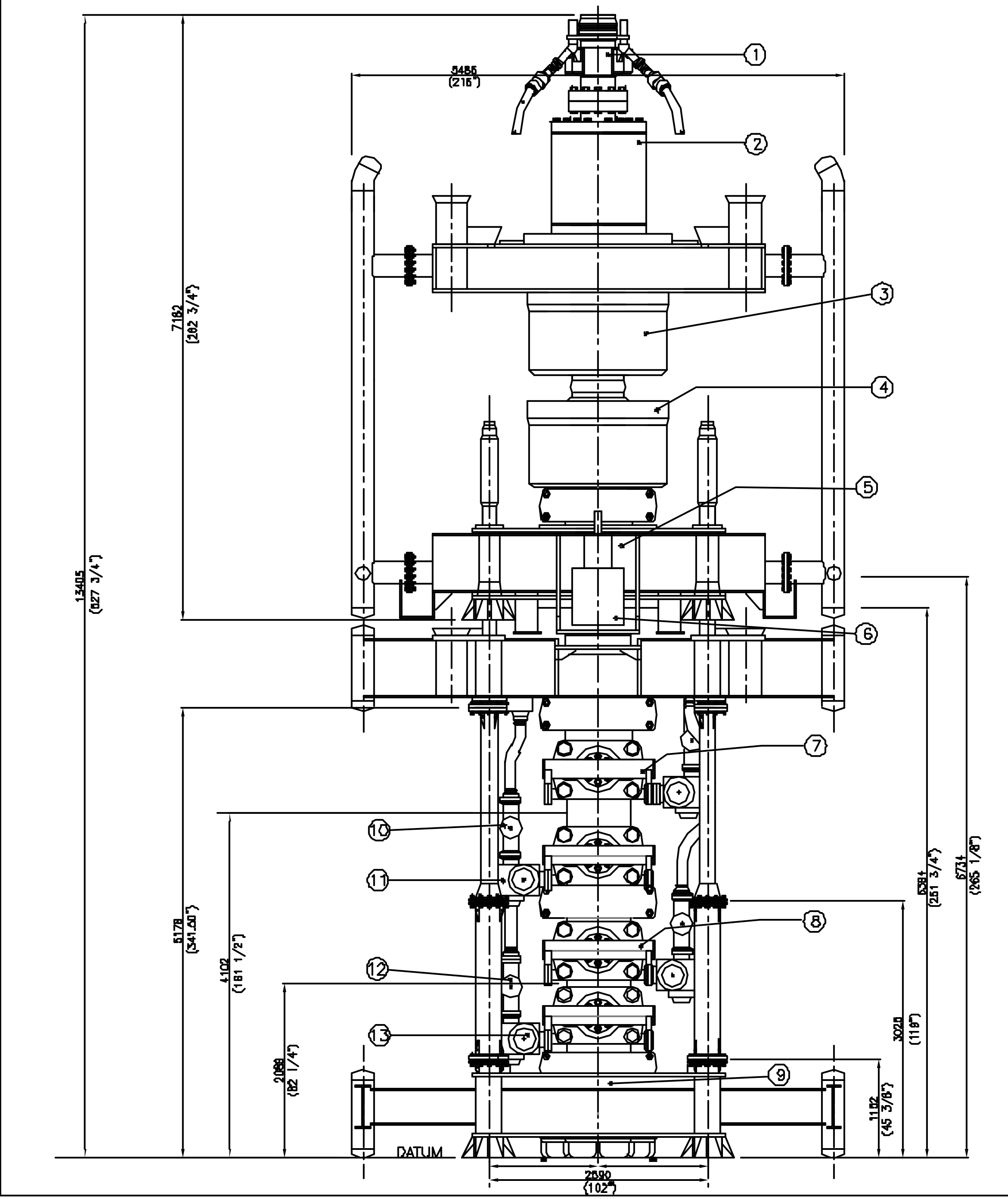
Transocean SedcoForex — SEDCO FOREX INTERNATIONAL INC.

INSTALLATION	SEDCO 702
PROJECT	18 3/4" 10K B.O.P.
DRAWING TITLE	STARBOARD / PORT ELEVATION

HAMPCO

ORIGINATED	B.BAIN	CHECKED	R.TYTLER
DRAWN	B.BAIN	APPROVED	R.TYTLER
DATE	12 FEB 02	SCALE	1:26
CLIENT No.	-	DRAWING SIZE	A1
DRAWING No.	A-C-3253-M-GA-001-TF	REV	0

FILE No.: A-C-3253-M-GA-002-TF | DRAWING SIZE: A1



1. RISER ADAPTER
FOR REGAN FD 8 RISER
LOWER CONNECTION: BX 163 FLANGE

2. FLEX JOINT
OIL STATES " DIVERTER II "
UPPER CONNECTION: BX 163 FLANGE
LOWER CONNECTION: BX 163 FLANGE

3. UPPER ANNULAR
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 163 STUDDED TOP
LOWER CONNECTION: BX 164 FLANGE

HOSE: COFLEXIP 10000 PSI

4. LOWER ANNULAR
SHAFFER 18-3/4" , 5000 PSI
UPPER CONNECTION: BX 164 STUDDED TOP
LOWER CONNECTION: BX 164 HUB

5. RISER CONNECTOR
LMRP CONNECTOR: CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 164 HUB

6. MANDREL
BOP ADAPTER FOR CAMERON MODEL 70 CONNECTOR

7. RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: SHEAR/ BLIND
' SHEAR RAMS '
RAMS FITTED WITH LARGE OPERATING PISTONS AND
EXTENDED BODY TO ALLOW PIPE SHEARING

RAMS FITTED: 5" PIPE
' UPPER RAMS '
EXTENDED BODY TO ALLOW PIPE SHEARING

8. RAM PREVENTERS
BOP : CAMERON DOUBLE U RAM TYPE 18-3/4" , 10000 PSI
RAMS FITTED: VARIABLE
'MIDDLE RAMS '

RAMS FITTED: 5" PIPE
' LOWER RAMS '

9. WELLHEAD CONNECTOR
CAMERON COLLET CONNECTOR
MODEL 70 18-3/4" , 10000 PSI
UPPER CONNECTION: BX 184 HUB

10. FAILSAFE VALVES
TO ' CAMERON ' 3-1/16" (8 EACH)
13.

NOTES

REV	DATE	DESCRIPTION	BY	CHKD	APP'D	CLIENT
D	15 FEB 02	ISSUED FOR APPROVAL	B.B.	R.T.	R.T.	
A	15 FEB 02	ISSUED FOR COMMENT	B.B.	R.T.	R.T.	

REVISIONS

REFERENCE DRAWINGS

Transocean SedcoForex
SEDCO FOREX INTERNATIONAL INC.
LEVEL 8, 220 ST GEORGE'S TERRACE
PERTH WA 6000 AUSTRALIA
TEL: (08) 9219 7000 FAX: (08) 9322 3277

INSTALLATION: SEDCO 702
PROJECT: 18 3/4" 10K B.O.P.
DRAWING TITLE: FORWARD / AFT ELEVATION

HAMPCO

ORIGINATED	B.BAIN	CHECKED	R.TYTLER
DRAWN	B.BAIN	APPROVED	R.TYTLER
DATE	12 FEB 02	SCALE	1:25
CLIENT No.	-	DRAWING SIZE	A1

DRAWING No. A-C-3253-M-GA-002-TF | REV 0

SCALLOP-1 CONDUCTOR CASING ATTACHMENT 14

Casing Type : 30", 1" & 1-1/2" wall, X-52, Dril-Quip HD-90 & SF-60
20", 0.625" wall, X-56

Centraliser type : None required

Nominal Conductor Hole Depth : **184 m MDRT** **184 m TVDRT**

String (Bottom to Top)	Length (m)	Joints (no.)	Casing O.D.	Conn	Weight (lb/ft)	Grade	Central's (no./jt)	Total No. Central's	Stop rings (no/jt)	Burst (psi) SF=1.375	Collapse (psi) SF=1.0
Float shoe joint. 30"x 20" (see Note 1)	12.50	1	30"/20"	SF-60	310/129	X-52/X-56	-	-	-	2204/2225	1670/1460
Intermdiate Conductor joints	12.50	1	30"	SF-60	310	X-52	-	-	-	2204	1670
Intermdiate Conductor joints	12.50	1	30"	HD-90/SF-60	457	X-52	-	-	-	3309	4000
Wellhead & 30" Housing Extension	15.00	1	30"	HD-90	457	X-52	-	-	-	3309	4000
String length	52.50	4						0	0		

RT - top 30" Wellhead **131.50**
Planned Total String Depth **184.00** m MDRT

(1) - The float shoe joint assembly comprises a Davis Lynch Type 500 PVTS float shoe on 20" x 0.625" wall X-56 ERW pipe (length 7.6m), a 20" x 30" swedge (~1m) and 30" x 1" wall X-52 pipe (~1.8m) with SF-60 pin connector on top. The joint is fitted with pad-eye mounts and two low-profile lifting eyes.
(2) - Ensure all o-rings are run in the Dril-Quip Quik-Stab connectors. Make-up the Quik-Stab connectors as per Dril-Quip manual.
(3) - Maximum allowable hookload on conductor casing is 1,497 kips (df = 1.5). This includes 110 kips for the weight of the travelling equipment. This far exceeds derrick capacity of 1,000 kips.
(4) - Land the 30" casing so that the base of the PGB is 1.5 to 2.0m above the mudline.
(5) - Record casing and cementing data in the Drilling Reporting system, and send the final Casing Tally spreadsheet to Melbourne office.

Cement Job Type	Slurry Vol (bbl)	No. sx (sx)	Total Fluid Required Type	Total Fluid Required Qty gal/sx	Additives Type	Additives Qty (gal/10 bbl)	Slurry Yield cu ft/sx	Slurry Density (ppg)	Max Job Time (hrs)	Thick'ning Time (hrs)	Displace. Vol (bbl)
Conductor Slurry	252	1,211	Seawater	5.00	NF-5 $CaCl_2$	0.5 1% (bwoc)	1.17	15.9	2hr:05min	2hr:30min to 2hr:55min	28.9

Slurry Volume assumes 250% excess on 36" gauge hole with cement back to mudline. Recalculate volumes based on actual hole depths.

Special Requirements
(1) - Pump the cement through a inner 5" drillpipe cementing string positioned so that the end of the 5" drill pipe is ~14m above the float shoe.
(2) - Displace with seawater leaving ~4m of cement above the float shoe.
(3) - BHST 16° C. BHCT 27° C.
(4) - Estimated 12hr compressive strength at 13° C is 1000 psi.

SCALLOP-1 **SURFACE CASING** **ATTACHMENT 15**

Casing Type :	13-3/8", 68ppf, K-55 and L-80 BTC	Centraliser type :	Eleven (11) 13-3/8" by 17-1/2" One (1) 13-3/8" by 27"
Nominal Casing Setting Depth :	900 m MDRT 873 m TVDRT	Stop Collar :	Weatherford 13-3/8" JSH - Stock No. 01161404

String	Length (m)	Joints (no.)	Casing O.D.	Conn	Weight (lb/ft)	Grade	Central's (no./jt)	Total No. Central's	Stop rings (no/jt)	Burst SF=1.375	Collapse SF=1.0
Float shoe jt.	12.50	1	13-3/8"	BTC	68	L-80	1	1	1	3651 psi	2260 psi
Float joint	12.00	1	13-3/8"	BTC	68	L-80	1	1	1	3651 psi	2260 psi
Float collar jt.	12.50	1	13-3/8"	BTC	68	L-80	1	1	1	3651 psi	2260 psi
Centralised Casing	95.50	8	13-3/8"	BTC	68	L-80	1	8	8	3651 psi	2260 psi
Uncentralised Casing	620.76	52	13-3/8"	BTC	68	L-80	0	0	-	3651 psi	2260 psi
Pup joint	3.00	0	13-3/8"	BTC	72	L-80	1	1	1	3913 psi	2670 psi
High pressure housing and 20" Casing	11.34	1	20"	welded	203	X-56	-	-	-	3564 psi	4140 psi
String length	767.60	64						12	12		
RT - Top 18-3/4" HP Housing	**132.40**										
Actual Casing Shoe Depth	**900.00** m MDRT										

(1) - Run all casing using Best-O-Life 2000 thread compound.
(2) - Confirm that all float equipment is PDC drillable.
(3) - M/U connections using ExxonMobil Torque position. For 13-3/8" 68ppf L80 BTC casing with phosphatised couplings T-min is 8,950 ft-lbs and T-max is 15,200 ft-lbs. D1 is 4.813" and D2 5.188".
(4) - Maximum allowable hookload on surface casing is 1140 kips (df = 1.5). This includes 110 kips for the weight of the travelling equipment.
(5) - High pressure housing and 20" casing comprises the Dril-Quip 18-3/4" SS-10-C 10,000 psi Wellhead Housing with a 6m (20') pup joint of 20" x 1" wall X56 pipe, a crossover swedge from 20" to 13-3/8", and a 3m (10') 13-3/8" 72 lb/ft L-80 pup joint with BTC pin down on bottom.
(6) - Record casing and cementing data in the Drilling Reporting system, and send the final Casing Tally spreadsheet to Melbourne office.

Cement Job Type	Slurry Vol (bbl)	No. sx (sx)	Total Fluid Required Type	Total Fluid Required Qty gal/sx	Additives Type	Additives Qty (gal/10 bbl)	Slurry Yield cu ft/sx	Slurry Density (ppg)	Max Job Time (hrs)	Thick'ning Time (hrs)	Displace. Vol (bbl)
Lead Cement Slurry	517	1,315	Seawater Total Fluid	12.99 12.54	Econolite NF-5	14.6 0.5	2.21	12.5	4hr:00min	4hr:45min to 5hr:35min	-
Tail Cement Slurry	150	726	Freshwater	5.15	NF-5	0.5	1.16	15.8	2hr:20min	2hr:45min to 3hr:15min	370.9

Slurry Vol assumes 100% excess on 17-1/2" gauge hole with cement back to mudline. Recalculate volumes based on actual hole depths.

Special Requirements
(1) - Pump a 50 bbl of seawater spacer in front of the cement. Monitor returns at the sea bed.
(2) - Use SSR Top Plug set to wipe the casing.
(3) - Displace with the seawater/gel mud used to drill surface hole. Pump the displacement capacity plus 1/2 the shoe track volume.
(4) - BHST 50° C. BHCT 45° C.
(5) - Maximum MWE at the 13-3/8" casing shoe for cement back to the mudline is 12.9 ppg MWE for gauge hole.
(6) - Estimated 24hr compressive strength for the lead slurry at 35° C is 500 psi. Estimated 18hr compressive strength for the tail slurry at 35° C is 2,600 psi.

ATTACHMENT 16

Esso Australia Ltd
12 Riverside Quay
Southbank, 3006

Scallop

Bass Strait

Cementing Program

Revision 0

Prepared for: Chris Meakin

15/ 01 / 03

Prepared by:
Jim Collins

Halliburton Energy Services

90 Talinga Rd

Cheltenham, 3192

Ph: (03) 9581 7511 Fax: (03) 9583 7588

HALLIBURTON

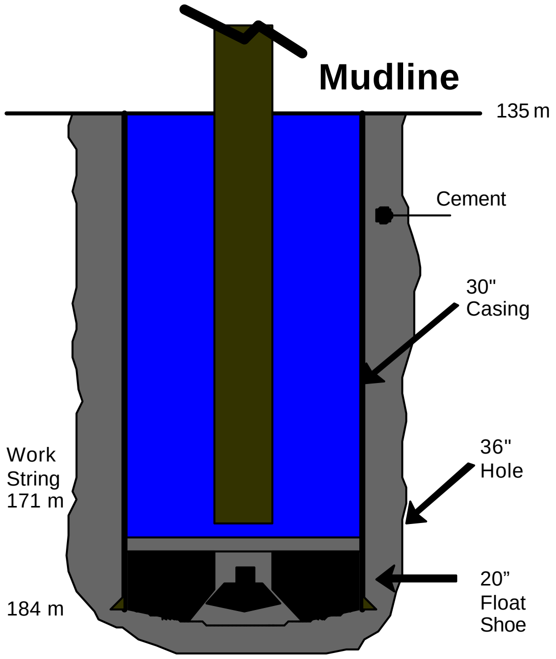
The Future Is Working Together.

Well Information

30” Casing

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	184 m
Casing O.D.	30”
Casing I.D.	28.5 & 29”
Casing weight	457 & 310 ppf
Hole size	36”
Mud type	Sea Water
Mud weight	8.55 ppg
BHST	13 °C
BHCT	13 °C
Excess	250% on OH

Note: The last 7.6m shoe joint will be 20” casing.



Calculations

SEA WATER: (Spacer)

		= 20 bbls
TOTAL SEA WATER		= 20 bbls

CEMENT SLURRY:

36” hole by 30” Casing	40.4 m * 1.262 bbls/m * 250 % excess	= 178.44 bbls
36” hole by 20” Casing	6.64 m * 2.856 bbls/m * 250 % excess	= 66.4 bbls
26” hole by 20” Casing	0.96 m * 0.8796 bbls/m * 250 % excess	= 2.944 bbls
ANNULAR SLURRY VOL.		= 247.78 bbls

SHOE JOINT VOLUME: (4 m fill)

20” Casing	4 m * 1.165 bbl/m	= 4.8 bbls
TOTAL TAIL SLURRY PLUS SHOE JOINT		= 252.6 bbls

TOTAL DISPLACEMENT VOLUME:

5” Drill pipe, 19.5ppf, S-135	171m * 0.05827 bbl/m	= 9.96 bbls
30” Casing	7m * 2.4986 bbl/m	= 17.5 bbls
Add 1.5 bbls surface volume		+ 1.5 bbls
		= 29 bbls

OPERATING TIME CALCULATIONS:

Cement Pump Time	= 253 / 5 = 51 mins
Displacement Pump Time	= 29 / 10 = 3 mins
Contingency Time	= 60 mins
Total Operating Time	= 114 mins or 1 hr 54 mins

THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 114 mins = 154 mins or 2 hrs 17 mins
Maximum Thickening Time	= 1.4 * 114 mins = 160 mins or 2 hrs 40 mins

Job Recommendation

FLUID 1: SEA WATER		
	Fluid Volume:	20 bbls
FLUID 2: CEMENT SLURRY		
Cement slurry	Fluid Weight:	15.90 lb/gal
1%BWOC Calcuim Chloride (Accelerator)	Fluid Yield:	1.17 ft^3/sk
	Fluid Ratio:	5.15 gal/sk
Mixed with Sea Water	Total Mixing Fluid:	149 bbls
	Top of Fluid:	Mudline
	Calculated Fill:	48 m
	Fluid Volume:	253 bbls
	Total Volume:	1214 sks
FLUID 3: DISPLACEMENT		
	Total Displacement Volume:	29 bbls

CEMENT SLURRY CRITERIA:

Cement Slurry	
Thickening time (hrs:mins)	2:16 plus
Free water	< 1%
24 hr Compressive Strength	2000 @ 26 deg C and 2000 psi

Conductor Casing

Job Procedure

1. Pressure test cement line to 2000 psi
2. Pump 20 bbls of sea water spacer and monitor returns at sea bed.
3. Mix and pump 253 bbls of cement slurry. Take samples and check density.
4. Pump the theoretical displacement volume of 29 bbls of displacement fluid
5. Displace cement at maximum pump rate wellbore conditions can tolerate.
6. Reciprocate casing throughout job if well conditions allow.
7. Wait on cement.

Chemical Requirements

Description	Spacer	Slurry	Total	Units
ABC CLASS 'G'		1214	1214	SK
Ca Cl2		1141	1141	IB
NF 5		2	2	GAL
SEA WATER	20	149	169	BBL

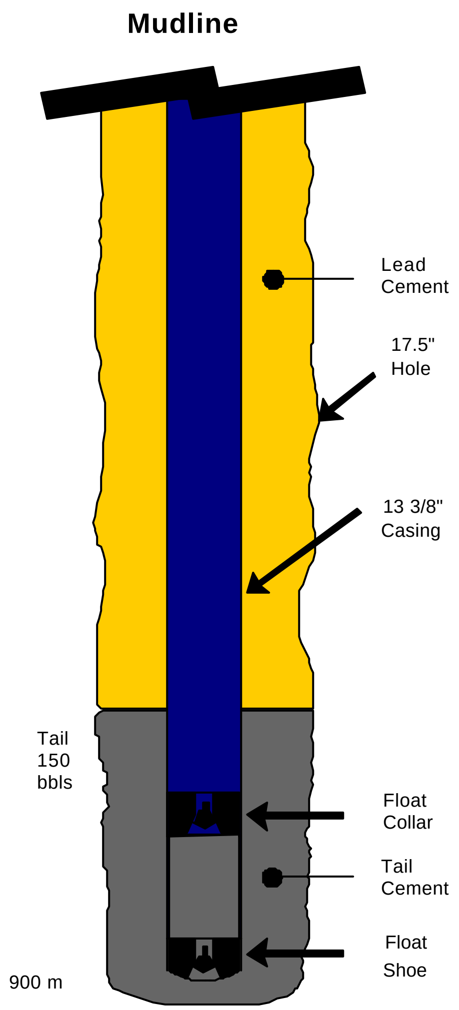
==

NOTE: 1. Service Location – BBMT
2. Baroid to supply CaCl
3. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

13 3/8" Casing

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	900 m
Vertical depth (TVD)	900 m
Casing O.D.	13 3/8"
Casing I.D.	12.415"
Casing weight	68 ppf
Hole size	17.5"
Mud type	Sea Water
Mud weight	8.6 ppg
BHST	56 degC
BHCT	34 degC
Excess	100% on OH



Calculations

TOTAL HOLE VOLUME

30" x 13 3/8 " Casing	35 m * 2.11 bbls/m * 0 %	= 74 bbls
17.5" x 13 3/8" Casing	716 m * 0.4059 bbls/m * 100 %	= 581 bbls

SHOE JOINT VOLUME: (24 m fill)

24 m * 0.491 bbl/m	= 11.8 bbls
TOTAL SLURRY	= 667 bbls
TAIL SLURRY:	**= 150 bbls**
LEAD SLURRY: **667 – 150 bbls**	**= 517 bbls**

TOTAL DISPLACEMENT VOLUME: (148 m Drill Pipe, 716 m casing)

148m * 0.0245 bbl/m	= 3.63 bbls
716m * 0.49767 bbl/m	= 369 bbls
	= 372.9 bbls

LEAD OPERATING TIME CALCULATIONS:

Cement Pump Time	= 517 / 5 + 150 / 5 = 133 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 373 / 8 = 47 mins
Contingency Time	= 60 mins
Total Operating Time	= 250 mins or 4 hrs 10 mins

LEAD THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 250 mins = 283 mins or 4 hrs 43 mins
Maximum Thickening Time	= 1.4 * 250 mins = 330 mins or 5 hrs 30 mins

TAIL OPERATING TIME CALCULATIONS:

Cement Pump Time	= 150 / 5 = 30 mins
Drop top plug	= 10 mins
Displacement Pump Time	= 373 / 10 = 47 mins
Contingency Time	= 60 mins
Total Operating Time	= 147 mins or 2 hr 27 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 147 mins = 176 mins or 2 hrs 56 mins
Maximum Thickening Time	= 1.4 * 147 mins = 206 mins or 3 hrs 26 mins

HALLIBURTON

Cement Surface Casing

Job Recommendation

FLUID 1: SEA WATER		
Sea water	Calculated Fill:	Circulated out
	Fluid Volume:	50 bbls
FLUID 2: LEAD SLURRY		
Lead slurry	Fluid Weight:	12.5 lb/gal
14.6 gal/10bbls ECONOLITE Liquid (drum) (Extender)	Fluid Yield:	2.21 ft³/sk
0.25 gal/10bbls NF-5 (Defoamer)	Fluid Ratio:	12.99 gal/sk
Mixed With Sea Water	Water Ratio	12.54 gal/sk
	Total Mix Water:	406 bbls
	Fluid Volume:	517 bbls
	Total Volume:	1313 sks
FLUID 3: TAIL SLURRY		
Tail slurry	Fluid Weight:	15.90 lb/gal
0.25 gal/10bbls NF-5 (Defoamer)	Fluid Yield:	1.16 ft³/sk
Mixed With Fresh Water	Fluid Ratio:	5.15 gal/sk
	Total Mix Water:	89 bbls
	Fluid Volume:	150 bbls
	Total Volume:	726 sks
FLUID 4: DISPLACEMENT		
	Total Displacement Volume:	373 bbls

CEMENT SLURRY CRITERIA:

Lead Slurry	
Thickening time (hrs:mins)	5:00+
Free water	< 1.4%
24 hr Compressive Strength	400 psi @ 34 degC and 2000 psi
Tail Slurry	
Thickening time (hrs:mins)	3:15
Free water	< 1.0%
24 hr Compressive Strength	2500 @ 34 degC and 2000 psi

Cement Surface Casing

Job Procedure

1. Run casing on D/P (with D/P stinger, swivel equiliser and SSR top plug set below the running tool such that the SSR top plug set is inside the top joint of 13-3/8" casing) and land in subsea wellhead.
2. Pressure test cement line to 3000 psi.
3. Pump 50 bbls sea water and monitor returns at sea bed.
4. Mix and pump 517 bbls of lead cement slurry. Take samples and check density
5. Mix and pump 150 bbls of tail cement slurry. Take samples and check density
6. Release top Drillpipe wiper dart.
7. Displace D/P with seawater (slowing down while releasing top plug), then the casing until the SSR top plug lands.
8. Bump the plug to 500 psi over the final differential pressure.
9. Bleed off pressure and check floats.
10. Unlatch running tool and withdraw swivel equaliser assembly washing excess cement clear of mudline suspension system.
11. Wait on cement.

Chemical Requirements

Description	Spacer	Lead	Tail	Total	Units
ABC CLASS 'G'		1313	726	2039	SK
ECONOLITE LIQUID		593		593	IB
NF 5		5	6	11	GAL
SEA WATER	50	406	89	545	BBL

NOTE:
1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Frank W Kratzer

10/02/03 19:43

To: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil@xom
cc:
Subject: Scallop-1 - Pre-Spud Meeting Minutes Approval

I approve the minutes, i am sure i did this last week.

Frank W. Kratzer
Operations Superintendent
Esso Australia
Mobil Exploration
0417 368 772
61 3 9270 3540

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----- Forwarded by Frank W Kratzer/U-SouthPacific/ExxonMobil on 10/02/03 19:49 -----

Rudolf M Furchtenicht

05/02/03 10:14

To: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
cc: Chris P Meakin/U-SouthPacific/ExxonMobil@xom
Subject: Scallop-1 - Pre-Spud Meeting Minutes

Frank,

Would you please approve the minor changes to the drilling programme and noted comments based on discussions held on Sedco 702 during the Pre-Spud. I will then forward your approval to all concern.

Page 5, Section 4.5.1 - Daily Reporting
- Ballast Control Report to be included in daily reporting.
- Service Companies to provide electronic versions of their report whenever possible. Electronic reports to be sent to town.

Page 6, Section 5.1 - Well Objectives
- A secondary objective exists in the shallower upper *T.lilliei* Latrobe Group.

Page 7, Section 5.3.1 - Electric Logging - Notes
- Severing and stuck pipe tools should be available on the wellsite.

Page 9, Section 6.2.1 - Shallow Hazard Precautions
- Item #9, Crane activity will be ongoing in the preparation for the casing run and to offload the boats. It will however be managed offshore accordingly to minimise unnecssary operations when possible.

Page 12, Section 6.7.1 - Coal Stringer Precautions
- Drillers advised to pay particular attention to coal stringers in the main hole interval and requested to read section 6.7.1.

Page 13, Section 6.8.5 - Well Control
- FIT to be performed to at least 12.5ppg and up to a maximum of 17.0ppg. Advised personnel that the well lay leak-off before then so they should be aware. Note that wells in the Bass Strait generally have a LOT of 12.5-12.8 ppg (reference made to TNA & FLA production wells)

Page 13, Section 6.12 - Drilling Risk Assessment Summary
- Advise personnel that RA had been completed and all action items closed out. Reference also made in induction presentations. Copy to be e-mail out to personnel offshore of reference ASAP.

Page 14, Section 7.1 - Directional Survey Programme

- Survey will be performed with a combination of Anderdrift and Gyro surveys with MWD available on last trip only when drilling the main 12-1/4" hole interval. Goverment requirements are for a survey every 300m but surveys will be taken every connection with Anderdrift with a minimum survey every 150m. Should the Anderdrift tool fail based on consecutive surveys give no result (ie greater than 4 surveys = 200m of no surveys), call the Drilling Superintendent to discuss. Recommendation would be to trip for a new Anderdrift tool but would be dependent on depth from objective(s) and bit trips.
- Note #2, 150m square target with a hard northern boundary was highlighted.

Page 16, Section 7.3 - Drilling Fluids Requirements
- Notes #2, #3 & #4 were emphasised with all personnel including the mud engineer. Reference was made to the mud weighting strategy shown in Attachment 10 of the Drilling Programme.

Page 17, Section 7.4 - Bit & Hydraulic Programme
- Drilling Engineer was to forward recommendations to rig personnel ASAP.
- Mud pump liners to be changed from 6-1/2" liners to 5-1/2" liners after drilling the surface hole for the main hole interval.

Page 18, Section 7.6 - Bottom Hole Assembly Programme
- Oversight during meeting, it was not reinforced that the 12-1/4" BHA's with near-bit stabilisers have been replaced with 12-1/4" Redback near-bit Roller Reamers.

Page 19, Section 7.7 - Well Control Equipment & Testing
- Advised that pressure testing requirements had changed. They are as follows:

On the Stump
* 10,000 psi Body test (one off test)
* 3,500 psi Annular (both)
* 5,000 psi All Rams, C&K Valves & Lines

Subsequent Tests
* 3,500 psi Annular (both)
* 5,000 psi All Rams (except Blind rams),
* 5,000 psi C&K Valves & Lines
* 2,220 psi Blind rams

- All pressure test to include a low test with test frequencies and times as detailed in notes # 2 to #10.

Page 21-25, Section 8.1 to 8.6 - Drilling 36" & Cementing Conductor Casing
- This was not covered as the events had passed.

Page 27, Section 9.3 - Drilling 17-1/2" Hole Section
- Item #4, 25bbl Gel sweeps to be pumped every 15m and 50 bbls Gel sweeps at connections. In addition, hole conditions to dictate if additional sweeps or different volume size sweeps would be pumped.

Page 27, Section 9.4 - Casing Running Procedures
- Item #2, Note #1, instead of rigging the flush mounted spiders (FMS) as suggested in the programme, hand slips instead were going to be used due to the short casing string length.
- Reference to Attachment #15, the single 13-3/8" x 27" centraliser below the high pressure housing has been replaced with a 20" x 25" welded balde/rib centraliser. The centraliser on the pup joint is no longer required.

Page 29, Section 9.5 - Cementing 20" x 13-3/8" Surface Casing
- Cement volume to include 100% excess based on a 17-1/2" gauge hole.
- A single TOP SSR plug will be used in the displacement of the cement.
- Releasing dart and shearing of the SSR plug to be performed with the cement unit after which, displacement of the cement will be with the mud pumps.

Page 30, Section 10.1 - Running the 18-3/4" BOP Stack & Riser
- After cementing the Surface casing, ROV will install a trash cap over the wellhead connector while the BOP Stack & Riser is being run.

- Item #3, pressure test will be for a 30 minute period.
- Item #4, tensioning requirements will be e-mail to the rig ASAP.

Regards,
Rudolf M Fürchtenicht
Drilling Engineer
ExxonMobil Development Company
Tel: (+61 3) 9270-3612, Fax: (+61 3) 9270-3546
E-mail: rudolf.m.furchtenicht@exxonmobil.com
Mail: Esso Australia Pty Ltd
12 Riverside Quay, Southbank
Victoria, Australia, 3006

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Rudolf M Furchtenicht

18/02/03 10:08

To: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
cc: Colin A Johancsik/U-SouthPacific/ExxonMobil@xom, Chris P Meakin/U-SouthPacific/ExxonMobil@xom, (bcc: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil)
Subject: Re: Scallop-1 - Drilling Programme Amendment [1] - TD Criteria & LWD Logging

Frank,

After review of documentation, Glen Nash advised that a letter will have to be prepared for submission to DPI for the potential deepening of the well. He is in the process of doing this.

Regarding drilling todate, he advised that we will still encounter ratty/interbedded volcanic rock to a depth as deep as 3,060mMD (base of the second volcanic layer predicted as per the programme). Belief is that there should be a sand package below this interval.

Regards,
Rudolf M Fürchtenicht
Drilling Engineer
ExxonMobil Development Company
Tel: (+61 3) 9270-3612, Fax: (+61 3) 9270-3546
E-mail: rudolf.m.furchtenicht@exxonmobil.com
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Frank W Kratzer

Frank W Kratzer

17/02/03 21:29

To: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil@xom
cc:
Subject: Re: Scallop-1 - Drilling Programme Amendment [1] - TD Criteria & LWD Logging

Where are we from a licensing position, i.e extending FTD, do we need to get approval from DPI ?

Frank W. Kratzer
Operations Superintendent
Esso Australia
Mobil Exploration
0417 368 772
61 3 9270 3540

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Rudolf M Furchtenicht

17/02/03 12:18

To: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil@xom
cc:
Subject: Scallop-1 - Drilling Programme Amendment [1] - TD Criteria & LWD Logging

----- Forwarded by Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil on 17/02/03 12:25 -----

Rudolf M Furchtenicht

17/02/03 12:07

To: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom
cc: Colin A Johancsik/U-SouthPacific/ExxonMobil@xom, Chris P Meakin/U-SouthPacific/ExxonMobil@xom, George K Sharkey/U-Houston/ExxonMobil@xom, Murray G Jackson/B/U-SouthPacific/ExxonMobil@xom, (bcc: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil)
Subject: Scallop-1 - Drilling Programme Amendment [1] - TD Criteria & LWD Logging

Frank,

* Would you please review and approve the attached proposal from Geology which is the "Planned Decision Tree" as to whether or not we will deepen the well, noting that a specific MOC will be raised at the appropriate time should the decision be made to deepen as per the flowchart. Upon your approval, I will forward it to all relevant parties.

* Secondly, Geology have advised that depending on when we pick up the LWD tools after the bit trip, Geology will require at least 200m of LWD log data from 2,926m - 3,126mMD TD for evaluation purposes. If the bit is pulled **below** 2,926mMD, this would require us to log via reaming when RIH, otherwise, we will collect the data as we are drilling to TD.

* This interval may be reduced depending on the thickness of sand below the Volcanics. Geology will advise accordingly if they require a smaller LWD logged interval.

Regards,
Rudolf M Fürchtenicht
Drilling Engineer
ExxonMobil Development Company
Tel: (+61 3) 9270-3612, Fax: (+61 3) 9270-3546
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ESSO AUSTRALIA PTY LTD

TD Criteria
Document

SCALLOP-1

PREPARED BY :

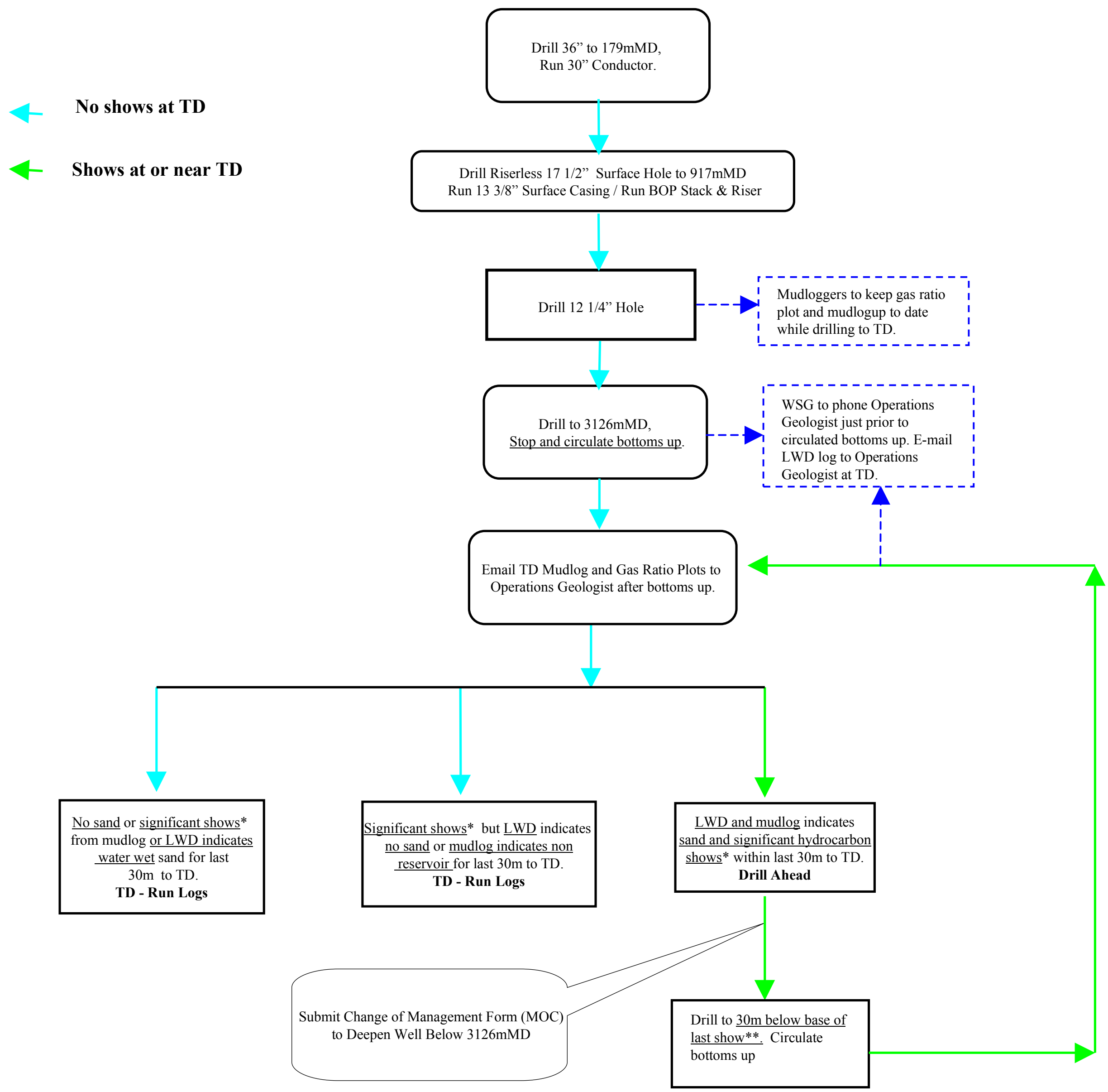
Signature	Name	Title
	S. Grope -	Drillwell Coordinator
	G. Nash -	Project Geologist
	K. Kuttan -	Petrophysicist
	A. Hodgson -	Operations Geologist

ENDORSED BY:

Signature	Name	Title
	D.A. Schwebel -	Area Geoscience Manager
	G. A. Nash -	Project Manager

TD at +/-3126mMD

Production
PM = Project Manager (G. Nash)
DWC = Drill Well Coordinator (S. Grope)
WSG = Wellsite Geologist



***Definition Of Significant Mudlog Shows:**
Gas reading 5 times or more over background.

**** Maximum of 60m to be drilled below T.D. before running logs.**

Approved: D.A Schwebel
Area Geoscience Manager

PLUG & ABANDONMENT PROGRAMME		WELL: Scallop-1
AFE NO: L7401 D001	**RK ORDER:** 2300 1069	**TYPE:** Near Field Wildcat Well

NOTE: 1 Drilling Reporting System (DRS) designation for this well is SCALLOP_1.

NOTE: 2 All depth are relative to Mean Sea Level (MSL).

1.0 PROPOSED WELL OBJECTIVES

▪ Rig	:	Transocean Sedco 702	
▪ Water Depth (MSL)	:	110.0m	
▪ RT to SL	:	25.9 m	
▪ RT to Mudline	:	135.5m	
▪ 30 "Conductor Shoe	:	184 mMDRT	184 mTVDRT
▪ 13-3/8" Surface Casing Depth	:	900 mMDRT	900 mTVDRT
▪ 9-5/8" Production Casing Depth	:	3,126 mMDRT	3,126 mTVDRT
▪ Total Depth	:	3,126 mMDRT	3,126 mTVDRT
▪ Maximum inclination	:	Vertical Well	
▪ Pressure / Temperature	:	3,928 psi / 117 °C ± 10 °C at 2,736 mTVDRT	
▪ Anticipated Start Date	:	February, 2003	

NOTE:	This supplemental programme is to be used in conjunction with the Scallop-1 Drilling Programme and the EMDC Drilling Operations Manual - Floating Drilling.

Engineer	(R. M. Fürchtenicht)	RMFürchtenicht 25/Feb/2003
Drilling Engineering Manger	(C. A. Johancsik)	Colin Johancsik 25/02/03
Operations Superintendent	(F. W. Kratzer)	F W Kratzer 26/02/03
Drilling Manager	(D. L. Whiteman)	Daniel L Whiteman 26/2/2003

REV: 0

PLUG & ABANDONMENT PROGRAMME	WELL: Scallop-1
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▪ Total Depth	:	3,126 mMDRT	3,126 mTVDRT
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NOTE: This supplemental programme is to be used in conjunction with the Scallop-1 Drilling Programme and the EMDC Drilling Operations Manual - Floating Drilling.

Engineer	(R. M. Fürchtenicht)	______________________
Drilling Engineering Manger	(C. A. Johancsik)	______________________
Operations Superintendent	(F. W. Kratzer)	______________________
Drilling Manager	(D. L. Whiteman)	______________________

REV: 0

2.0 TABLE OF CONTENTS

3.0 GENERAL WELL INFORMATION

3.1 ACTUAL WELL DATA

Well Name:	Scallop-1
Water Depth:	109.60 m
RT to SL:	25.90 m
RT to Mud Line:	135.51 m
RT to top 18-3/4" HP Wellhead Housing:	131.80 m
RT to top 30" Wellhead Housing:	132.72 m
30" Conductor Casing Shoe:	179.00 m
13-3/8" Surface Casing Shoe:	900.81 m
12-1/4" **Actual** Open Hole TD:	3,174.00 mMD
Drilling Fluid:	KCl/PHPA/Glycol/Polymer - water based mud.

3.2 SUMMARY OF PLUG & ABANDONMENT PROGRAMME IS AS FOLLOWS:

1. R/D Schlumberger.
2. M/U and RIH with 200m of 3-1/2" DP stinger to bottom on 5" DP.
3. Circulate bottoms up and condition hole. R/U to cement.
4. Set a Balanced Cement **Plug #1A** from 3,174m to 3,037mMD. Pull back & circulate.
5. Set a Balanced Cement **Plug #1B** from 3,037m to 2,900mMD. Pull back & circulate.
6. Set a Balanced Cement **Plug #1C** from 2,900m to 2,763mMD. Pull back & circulate.
7. Set a Balanced Cement **Plug #1D** from 2,763m to 2,626mMD. Pull back & circulate.
8. Set a Balanced Cement **Plug #1E** from 2,626m to 2,500mMD. Pull back & circulate.
9. POOH to 10 stands above TOC and WOC.

10. RIH and tag TOC. POOH to surface.
11. R/U Schlumberger. M/U, RIH and Set a 13-3/8" EZ Drill SV Squeeze Packer at 895mMD. POH & R/D Schlumberger.
12. M/U & RIH a Starguide-DP Stinger to the EZ Drill SV Squeeze Packer at 895mMD. Stab-in to verify access.
13. Conduct an injectivity test. R/U to cement.
14. Squeeze cement (**Plug #2A**) below the EZ Drill SV from 930m to 895mMD. Unsting from EZ Drill SV.
15. Set a Balanced Cement **Plug #2B** from 895m to 850mMD. POH to top of Cement Plug & reverse circulate.
16. Pressure test the plug. POH to surface.
17. M/U, RIH and Set a 13-3/8" EZ Drill SV Bridge Plug at 200mMD. Unsting from the EZ Drill SV.
18. R/U to cement.
19. Set a Balanced Cement **Plug #3** from 200m to 155mMD. POH to top of Cement Plug & reverse circulate.
20. Pressure test the plug. POH to surface.
21. Recover both the flex joint wearbusing and 18-3/4" wellhead seat protector.
22. Recover the Drilling Riser & Subsea BOP Stack.
23. M/U and RIH with Weatherford's MOST Tool & Casing Cutter.
24. Cut both the 20" and 30" Casing strings.
25. Recover the cut Wellhead Housing and PGB from the sea-floor.
26. Perform an ROV seabed survey.
27. Commence De-mooring and Anchor Recovery operations.

3.3 CAPACITY DATA

12.50" open hole	0.15185 bbl/ft	0.49821 bbl/m
3-1/2", 13.3# S135 DP (ID = 2.764")	0.00742 bbl/ft	0.02435 bbl/m
5", 19.5# S135 DP (ID = 4.276")	0.01777 bbl/ft	0.05830 bbl/m
5", 50# HWDP (ID = 3.000")	0.00745 bbl/ft	0.02870 bbl/m
20" 203 ppf casing (ID = 18.0")	0.31487 bbl/ft	1.03308 bbl/m
13-3/8" 68 ppf casing	0.15186 bbl/ft	0.49826 bbl/m
5" DP x 20" casing annulus	0.29057 bbl/ft	0.95337 bbl/m
3-1/2" DP x 13-3/8" casing annulus	0.13996 bbl/ft	0.45920 bbl/m
5" DP x 13-3/8" casing annulus	0.12757 bbl/ft	0.41854 bbl/m
3-1/2" DP x 12.50" open hole	0.13994 bbl/ft	0.45915 bbl/m
5" DP x 12.50" open hole	0.12755 bbl/ft	0.41849 bbl/m

NOTE: 1 13-3/8" casing capacities are based on the average measured ID of 12.5006" from 69 joints of 68# L80 casing used in this programme.

3.4 ZONES REQUIRING ISOLATION

ZONE	TOP (mMDRT)	BASE (mMDRT)	COMMENT
Top Volcanics	2,628.80	2,637.95	Oil zone, inter-bedded within Volcanics
S1 Sands	2,838.85	2,841.35	Oil zone, inter-bedded within Volcanics
S1 Sands	2,888.35	2,900.35	Gas zone, inter-bedded within Volcanics
Intra-Volcanics Sands	2,978.30	2,984.60	Gas zone, inter-bedded within Volcanics
1st Volcanics Sands	3,099.15	3,147.05	Gas zone, inter-bedded within Volcanics

3.5 PLUG AND SLURRY SUMMARY

Plug No.	Interval (m)	Length (m)	Volume (bbl)*	Sacks	Displace (bbl)	Slurry Recipe	Tag Plug Above
1A	3,174-3,037	137	75.0	373	173.9	A	N/R
1B	3,037-2,900	137	75.0	373	165.9	A	N/R
1C	2,900-2,763	137	75.0	373	157.9	A	N/R
1D	2,763-2,626	137	75.0	373	149.9	A	N/R
1E	2,626-2,500	126	69.1	344	142.2	B	2,598mMD
2A	930-895	35	19.2	93	N/A	C	N/R
2B	895-850	45	22.4	109	47.6	C	Test @ 1,000 psi
3	200-155	45	22.4	109	7.0	D	Test @ 1,000 psi

NOTE: 1 Open Hole cement volumes based on 12.50" open hole + 10% excess. **Base ACTUAL volumes on Calipered hole size + 10% Excess**.

NOTE: 2 Length of Open Hole cement plugs are based on setting a 75 bbl plug due to the capacity of the batch mixer.

NOTE: 3 Cased Hole cement volumes based on Caliper ID. **NO EXCESS for Plugs #2B & #3.**

NOTE: 4 Open Hole displacement volumes based on 200m 3-1/2" DP stinger and underdisplaced by 1 bbl.

NOTE: 5 Cased Hole displacement volumes based on 5" DP stinger ONLY and underdisplaced by 1 bbl.

NOTE: 6 **Ensure all balanced plugs are underdisplaced** (approx 1 bbl) to eliminate back flow when pulling out of the cement plug.

NOTE: 7 Displacement excludes surface volume and stick-up.

3.6 SLURRY RECIPES

	A	B	C	D
Depth (mMD)	3,174	2,626	895	200
Cement Type	HTB 35% Silica	HTB 35% Silica	Class "G"	Class "G"
Density (ppg)	15.8	15.8	15.8	15.9
Yield (cfs)	1.13	1.13	1.16	1.17
Water Type	Drillwater	Drillwater	Drillwater	Seawater
Mixing Water (gps)	4.35	4.35	5.15	5.15
Total Mixing Fluid (gps)	4.75	4.74	5.15	5.15
SCR-100L (gal/10 bbl)	3	2	--	--
Halad 413L (gal/10 bbl)	32	32	--	--
NF-5 (gal/10 bbl)	0.25	0.25	0.25	0.25
CaCl2 (% bwoc)	--	--	--	2
BHST (^{o}C)	143	122	57	15
BHCT (^{o}C)	119	99	35	15
Thickening Time Reqd (hrs:min.)	2:17-2:40	2:07-2:30	1:48-2:06	1:34-1:50
Thickening Time Pilot Test (70 BC)	tba	tba	tba	tba

4.0 PLUGBACK PROCEDURES

1. R/D Schlumberger after logging the well.
2. M/U and RIH with at least 200m of 3-1/2" drillpipe and RIH on 5" drillpipe to 3,174mMD.
3. Circulate and condition mud while rotating the drillpipe. Circulate a minimum of one bottoms up before rigging up to cement.
4. R/U to cement. Pressure test cement lines/equipment to 2,000 psi.
5. Pump and set Plug #1A as an open-hole balanced cement plug over the interval as detailed in Section 3.5 in the following manner:
   - 50m seawater spacer into the open hole ahead of the cement plug.
   - Cement volumes, mixed as detailed in Section 3.6.
   - 50m seawater spacer behind the cement in the drillstring.
   - Displace the cement with mud as required to set a balanced plug.
   - Pull back above the plug and circulate bottoms up till returns are clean of cement. Rotate the drillstring in the process.

   NOTE: 1 Option to use freshwater as the lead & tail spacers.

   NOTE: 2 The cement plug intervals are based on a pumping 75 bbl cement plugs so as to utilise the 75 bbl capacity of the Batch Mixer which will ensure consistent cement density during the operation.

   NOTE: 3 Cement intervals may vary based on actual caliper hole size. An additional shorter/reduced cement plug may be required to achieve the **minimum programmed** cement top at 2,500 mMD.
6. Repeat Step 5 setting Plugs #1B, #1C, #1D and #1E as described in Sections 3.5, placing cement from 3,174m to 2,500mMD.

7. After pulling back above Plug #1C and dressing off the top of the cement plug by circulate bottoms up till returns are clean of cement. Rotate the drillstring in the process.

8. Pick up 10 stands and circulate bottoms up while flushing the BOP's through choke and kill lines. Rotate and circulate the DP clean in the process.

9. WOC a minimum of 4 hours or until the surface samples are hard. Rotate and circulate as required which WOC, pulling back a single every half hour.

   NOTE: 1 Consider laying down excess drillpipe, BHA or picking up the MOST tool BHA while WOC.

10. TIH slowly, wash down and tag TOC with 10-15 klbs WOB while circulating. TOC **MUST BE** no lower than 2,598 mMDRT. Record the location and tag weight of the cement plug on the morning report.

    NOTE: 1 If TOC is **below** 2,598 mMDRT, spot additional cement as required, WOC and verify TOC as per Steps 6 to 10.

    NOTE: 2 P(SL)A Schedule of Specific Requirements Clause 514 (1) requires that in the uncased portions of a well, cement plugs shall be placed such as to provide a minimum of 30 metres of cement above and a minimum of 30 metres of cement below any significant oil, gas or fresh water zones.

    NOTE: 3 P(SL)A Schedule of Specific Requirements Clause 514 (8) requires that the location and integrity of cement plugs shall be verified in an approved manner.

11. After verifying the TOC of the stacked open hole cement plug, POOH to surface, laying down the 3-1/2" stinger.

12. R/U Schlumberger. M/U and RIH with a 13-3/8" EZ Drill SZ Squeeze Packer-CCL toolstring to 895mMD.

13. Position and Set the EZ Drill SV at 895mMD (casing connector at 887.9mMD).

    NOTE: 1 Place the EZ Drill SV Squeeze Packer **at least 3m** from any casing connector.

    NOTE: 2 Log the position of the Packer on the CCL log.

14. POH with the toolstring and R/D Schlumberger.

15. M/U and RIH with a Starguide-DP Stinger to 895mMD on 5" DP.

16. Sting into the 13-3/8" EZ Drill SV Squeeze Packer at 895mMD to verify access. Set down 5-10 klbs to verify that the EZ Drill SV is set.

    NOTE: 1 Record the location and tag weight of the EZ Drill SV on the morning report.

17. While stung into the EZ Drill SV, establish the injection rate and record this in the morning report for future reference.

18. Verify ability to disconnect the setting tool from the EZ Drill SV Squeeze Packer by unstinging.

19. R/U to cement. Pressure test cement lines/equipment to 5,000 psi.

20. Break circulation and displace the drillstring to freshwater.

21. Pump and displace 41.6 bbls (202 sacks) of cement as detailed in Section 3.5. With the cement 12 bbls (approx 200m) from the end of the stinger, string back into the EZ Drill SV, close the Annular and monitoring the pressure at the annulus.

22. Squeeze 19.2 bbls of cement (Plug #2A includes 10% excess) below the EZ Drill SV from 930m to 895mMD. Open the Annular, unsting from the EZ Drill SV and set a balanced plug (Plug #2B) with the remaining 22.4 bbls of cement from 895m to 850mMD in the following manner:

    - 25m (10.5 bbls) freshwater spacer into the cased hole above the cement plug
    - Cement volumes, mixed as detailed in Section 3.6.
    - 25m (1.5 bbls) freshwater spacer behind the cement in the drillstring
    - Displace the cement with mud as required to set a balanced plug above the EZ Drill SV Squeeze Packer.

    NOTE: 1 P(SL)A Schedule of Specific Requirements Clause 514 (2) requires where there is open hole immediately below the casing string, there shall be placed in the casing string:

    (a) a cement plug placed by displacement method so as to extend at least 30 metres above and at least 30 metres below the casing shoe; or

(b) a cement retainer with effective back pressure control set at least 10 metres, but not more than 30 metres, above the casing shoe with a cement plug calculated to extend at least 30 metres below the casing shoe and at least 15 metres above the retainer; or

(c) where lost circulation conditions exist or are anticipated, a permanent type bridge plug set within 45 metres above the casing shoe with at least 15 metres of cement on top of the bridge plug.

23. Pull back above the plug and reverse circulate bottoms up until returns are clean of cement, rotating the drillstring in the process.

NOTE: 1 Flush the BOP's through choke and kill lines while circulating bottoms up.

24. Pull back 1 stand and displace the mud in the cased hole from 850m to 135m with 357 bbls of inhibited mud. Inhibit the mud by adding:

- 0.35 ppb Baracide (Biocide);
- Caustic soda or caustic potash to a pH of 10.5+;
- 0.5 ppb Baracor 129 (oxygen scavenger) just prior to pumping the mud.

NOTE: 1 P(SL)A Schedule of Specific Requirements Clause 514 (9) requires any intervals of cased hole in a well between cement plugs shall be filled with mud fluid of appropriate density suitably inhibited to prevent the corrosion of the casing string.

25. Rig up to pressure test. Close the pipe rams and pressure test cement Plug #2B to 1,000 psi for 5 minutes to verify integrity.

NOTE: 1 Record the volume pumped and bled back.

NOTE: 2 Record the test on the morning report.

NOTE: 3 P(SL)A Schedule of Specific Requirements Clause 514 (8) requires that the location and integrity of cement plugs shall be verified in an approved manner.

26. POH to surface.

27. M/U and RIH with a 13-3/8" EZ DRILL SV Bridge Plug to 200mMD on 5" DP.

28. Set the 13-3/8" EZ DRILL SV Bridge Plug. Set down 5-10 klbs to verify that the EZ DRILL SV is set.

NOTE: 1 Record the location and tag weight of the EZ DRILL SV on the morning report.

29. Unsting from the EZ DRILL SV Bridge Plug.

30. R/U to cement. Pressure test cement lines/equipment to 2,000 psi.

31. Break circulation. Pump and displace 22.4 bbls (109 sacks) of cement as detailed in Section 3.5, setting a balanced plug (Plug #3) from 200m to 155mMD in the following manner:

- 25m freshwater spacer into the cased hole above the cement plug
- Cement volumes, mixed as detailed in Section 3.6.
- 25m freshwater spacer behind the cement in the drillstring
- Displace the cement with mud as required to set a balanced plug above EZ DRILL SV Bridge Plug.

NOTE: 1 P(SL)A Schedule of Specific Requirements Clause 514 (6) requires a surface plug extending at least 45 metres in height shall be placed in the innermost casing string which extends to the seabed with the top of the plug at a depth no greater than 45 metres below the seabed.

32. Pull back above the plug and reverse circulate bottoms up till returns are clean of cement, rotating the drillstring in the process.

NOTE: 1 Flush the BOP's through choke and kill lines while circulating bottoms up.

33. Rig up to pressure test. Close the pipe rams and pressure test cement Plug #3 to 1,000 psi for 5 minutes to verify integrity.

NOTE: 1 Record the volume pumped and bled back. Compare this volume against that recorded in Step #25 to ensure that there is no leak path past the upper plug.

NOTE: 2 Record the test on the morning report.

NOTE: 3 P(SL)A Schedule of Specific Requirements Clause 514 (8) requires that the location and integrity of cement plugs shall be verified in an approved manner.

34. POH to 140mMD and displace the Casing and Riser clean with seawater. Continue to POH to surface.

5.0 WELLHEAD REMOVAL PROCEDURES

1. Remove both the flex joint wearbushing and 18-3/4" wellhead seat protector.
2. Recover the Drilling Riser & Subsea BOP Stack.
3. Prepare to cut the 30" Conductor casing and 20" Surface casing **at or below 137.0 mMDRT** (at least 1.5m below the mudline) with the Weatherford's MOST Tool.
   - Confirm that <u>DNRE approval has been obtained</u> for cutting the casing strings at this depth.
   - **MOST TOOL IS DRESSED FOR A CAMERON HUB WELLHEAD PROFILE.**
   - Check the casing cutter upon arrival on the rig (it should be painted white for subsea observation of wellhead entry, and should be dressed with **30" knife arms (P/N 2436) and set for a 47.5" sweep**.
   - Gauge all stabilisers and check against the wellhead dimensions (assistance from the Dril-Quip Servicehand).
   - Measure and caliper all tools and **CHECK DEPTH OF CUT**.
   - Cut the 20" Surface casing **above** the centraliser fins welded to the 20" casing extension which are between 139.1 m to 137.9 mMD (refer to Dril-Quip wellsite sketch).

   NOTE: 1 RT to Mud Line = 135.5mMD (referenced to MSL).

   NOTE: 2 P(SL)A Schedule of Specific Requirements Clause 514 (10) requires all casing string and piling shall be severed and removed at least 5 metres below the seabed and the well location shall be cleared of any debris or obstructions. *Dispensation is been sought from the Regulator to cut the 30" and 20" shallower.*
4. The following BHA is recommended. Consult with Weatherford Servicehand.
   - Bullnose Stabiliser, 8" OD, w/ 6-5/8" Reg Pin
   - 12" OD Cutter, w/ 6-5/8" Reg Box x Box (dressed to cut both 20" & 30" casing).
   - Spacer Sub, w/ 6-5/8" Reg Pin x Box (space out to cut the 20" casing as close to crossover as possible)
   - 17-1/4" Stabiliser, w/ 6-5/8" Reg Pin x Box
   - MOST Tool, w/ 6-5/8" Reg Pin x Box
   - Marine Swivel, w/6-5/8" Reg Pin x Box.
   - 2 stands of 8" OD Drill Collars, 6-5/8" Reg Pin x Box
   - Crossover, 6-5/8" Reg Pin x 4-1/2" IF Box
   - 5" HWDP to surface

   NOTE: 1 Space out is important as the plan is to cut the 20" Casing cut as deep as possible to comply with P(SL)A Schedule.

   NOTE: 2 Spacer subs lengths available are 8", 12" and 18".
5. M/U and RIH with the MOST tool cutting BHA to 131.8mMD (Top of 18-3/4" Wellhead Housing - refer to attachment).

   NOTE: 1 Function test the BHA below the Rotary Table at the minimum flowrate to ensure that the knives operate correctly.
6. Slowly locate and land the MOST tool on the wellhead. Slack-off 10-15 klbs to ensure that the MOST tool is in compression prior to commencing cutting operations.
7. Start cutting the 20" and 30" casing stings by slowly bringing up the flowrate to 825-925 gpm and rotation to 100-150rpm as per the directions of the Weatherford Servicehand.
8. A 50-70% pressure drop would indicate that the knives have reached their preset sweep.

9. Stop rotation and circulation. Pick up to neutral weight. With the torque limiter turned down, rotate the drillstring left. Pick up and engage the MOST tool.
10. Attempt to pick up the Wellhead and PGB. If unsuccessful, continue cutting and pulling.
11. Pull and recover the casing stubs. When pulling the wellhead free, ensure that the casing stub is clear of the seafloor before breaking a connection. Similarly, ensure that the PGB is not held in the splash zone when breaking a connection.

    NOTE: 1 Be aware that the guide wires must not be pulled faster than the drillstring.
12. Conduct a seabed survey with the Rig's ROV prior to departing location off the critical path. Visually survey a 100m square area around the wellhead and make a record (using the same Pre-Spud Site Survey video if possible). Use the ROV sonar to scan out from the extremities of the square on a range of 100m. Request that Sonsub fill out a written report on the survey performed and fax it to the office.
13. The mud system is approved for discharge into the Bass Strait.

6.0 DEMOORING & ANCHOR RECOVERY

1. A detailed De-mooring and move-off location procedure is **not required** for the move off the Scallop-1 location, however the following points (as previously described in the Scallop-1 "Move & Mooring Programme") should be noted for the release of the rig from the location.
2. A pre-rig move meeting shall be held onboard the rig prior to anchor recovery operations. The meeting shall be attended by but not limited to:
    - Esso Drilling Supervisor
    - Transocean Sedco 702 OIM
    - Rig Superintendent
    - Barge Master
    - Surveyors (if applicable)
    - Captains of both AHVs
    - Winch Operators
3. During the meeting the rig move plans/procedures, charts, site survey reports, tidal height predictions, near surface current predictions, navigational hazards, radio channels, weather predictions and any other information deemed to be relevant to the operation shall be discussed.
4. The exact sequence for De-mooring and towing of the vessel from the Scallop-1 location will be agreed between Esso and the next operator (if applicable).
5. Upon completion of drilling operations and once the PGB is pulled clear of the seafloor and after a debris survey has been completed by the ROV, the rig may start to de-ballast. Anchor recovery may also start at this time.
6. De-ballasting shall be stopped at 52 ft draft and shall not continue until all drilling operations are completed.
7. Continue to de-ballast the rig and all operations shall cease while the rig passes through the critical draft from 52ft to 26 ft.
8. All winches and ancillary equipment to be checked prior to any anchor operation.
9. Inspect all pennants and handling slings at rig end.
10. Vessels to be supplied with spare equipment, pennants and shackles as required by vessel masters.
11. Anchor recovery sequence, connection of the vessels to the anchor chains and the move off location will be as detailed in Transocean's "De-mooing and move off location" procedures to be issued at the time.
12. The rig will finish on contract after recovery of the last anchor on the Scallop-1 location. Complete a "Statement of Facts" and fax a copy to the office.

    NOTE: 1 The exact route from Scallop-1 shall be determined by the Surveyor (if applicable), Transocean Sedco OIM and Barge Master.

NOTE: 2 Maintain a **minimum safe distance of 2 nm** from all platforms.

NOTE: 3 The main tow bride is currently not connected and there is no plan to connect it to the rig for the tow off location.

7.0 ATTACHMENTS & DISTRIBUTION

Organisation	Attention	Address	Check
Department of Primary Industries - Minerals & Petroleum Victoria **2 copies required**	Mr. Bruce Amour	PO Box 500 EAST MELBOURNE VIC 3002	
Esso Drilling Supervisors **plus 2 signed copies**	Mr. George Sharkey Mr. John Richmond	Internal e-mail	
Sedco Forex International Inc (Transocean)	Mr Blue O'Shea Rig Manager - Sedco 702	Level 6, 220 St Georges Tce, PERTH WA 6000	
Sedco 702 **3 copies required**	OIM	Sedco 702 Mailbag Via Sedco Forex International PERTH WA 6000	
EAPL Library	Librarian	Esso House 3rd floor	
Field Drilling Manager	Daniel L. Whiteman	Internal email	
Operations Superintendent **plus 1 signed copy**	Frank Kratzer	Internal email	
Engineering Manager	Colin Johancsik	Internal email	
Drilling Engineer **plus 1 signed copy & Original copy**	Chris Meakin	Internal email	
Drilling Engineer **plus 1 signed copy**	Rudolf M Fürchtenicht	Internal email	

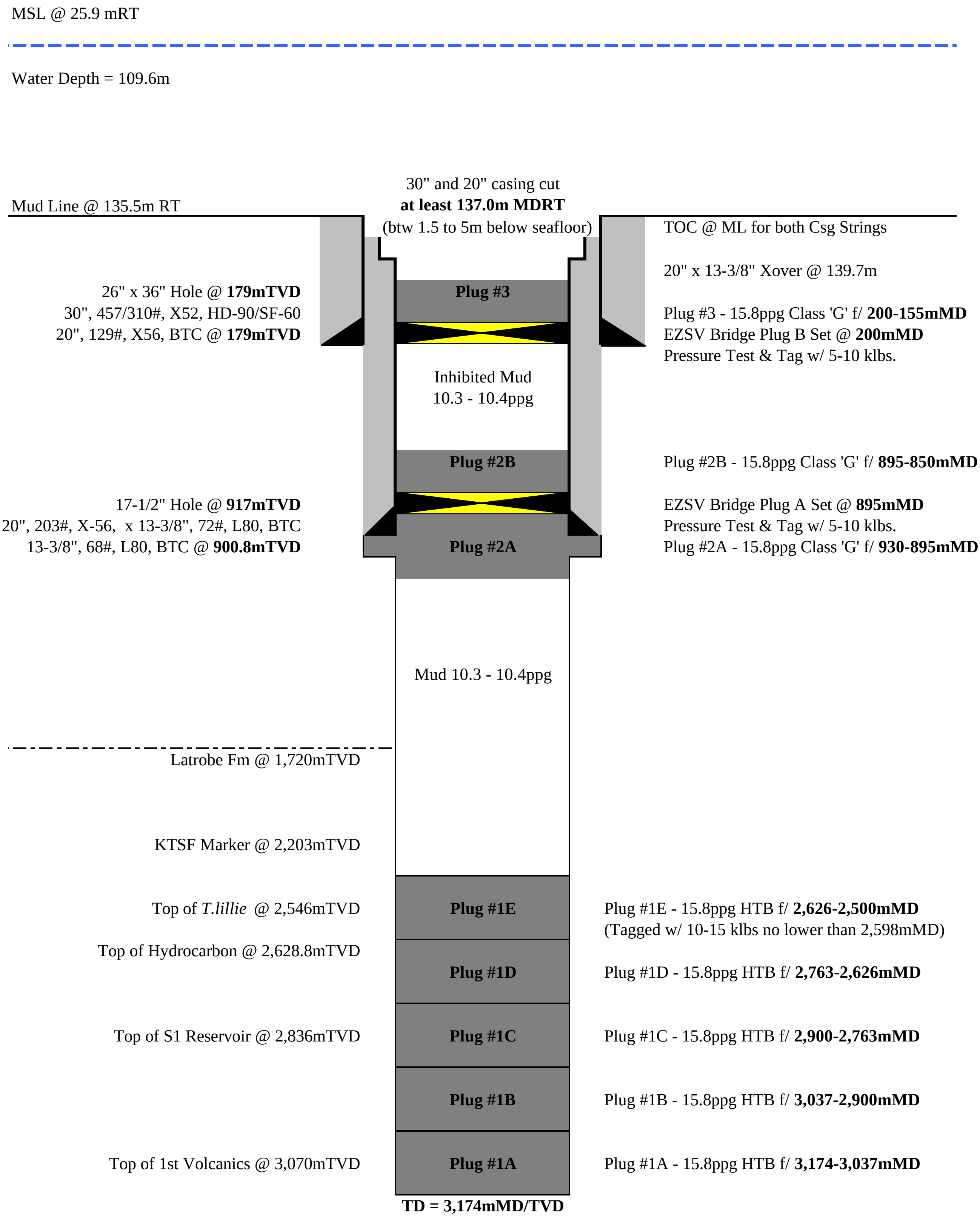
7.1 PROPOSED PLUG & ABANDONMENT WELLBORE SKETCH

ATTACHMENT 1

PROPOSED PLUG & ABANDONMENT WELLBORE SKETCH
TRANSOCEAN "SEDCO 702"
SCALLOP-1

Location: GDA 1994. Latitude 38° 12' 48.615" S, Longitude 148° 35' 28.879" E.
MGA 94 Zone 55, Easting 639,314.95m, Northing 5,769,298.84m

All Depths In Meters From Rotary Table (MD=TVD), Referenced to Mean Sea Leve (MSL)

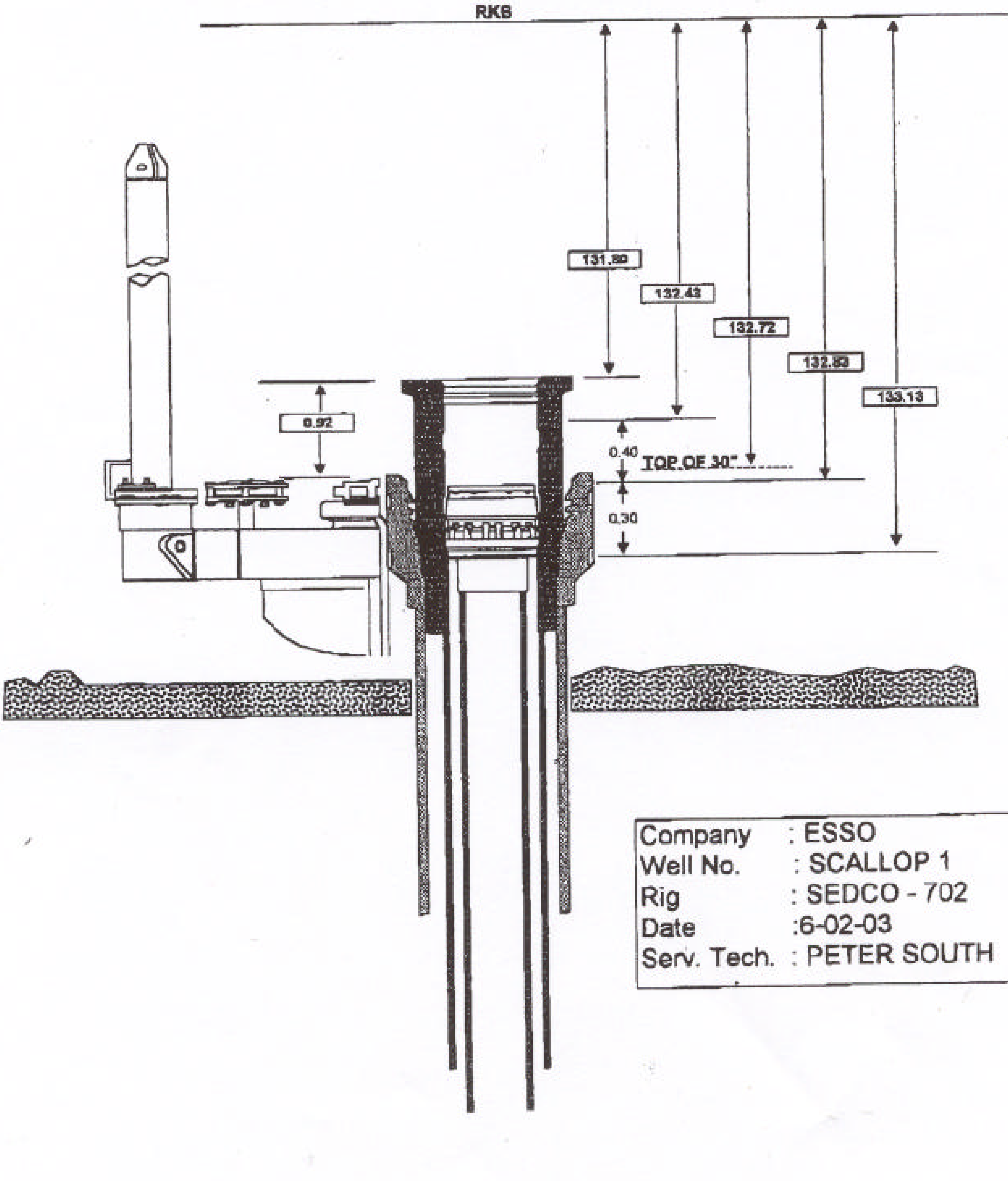


7.2 DRIL-QUIP WELLHEAD WELLSITE SKETCHES

DRIL-QUIP AUSTRALIA

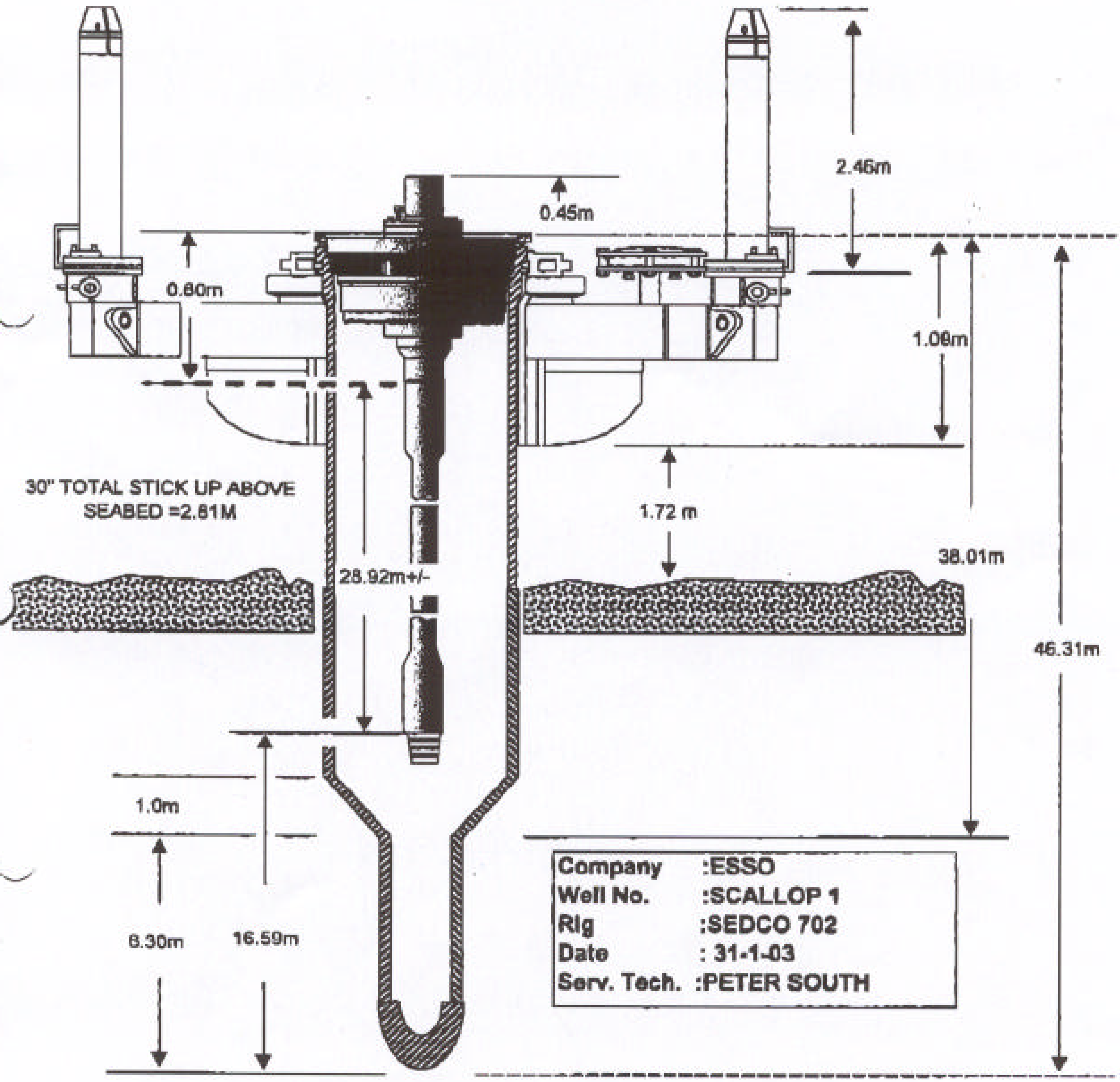
Copy of well specific stack-up

18 3/4" WELLHEAD=	131.80
RKB-30" WELL HEAD=	132.72
TOP OF HANGER IN THE 1ST POSSITION	132.83
PRIMARY SHOULDER=	133.13



Company : ESSO
Well No. : SCALLOP 1
Rig : SEDCO - 702
Date :6-02-03
Serv. Tech. : PETER SOUTH

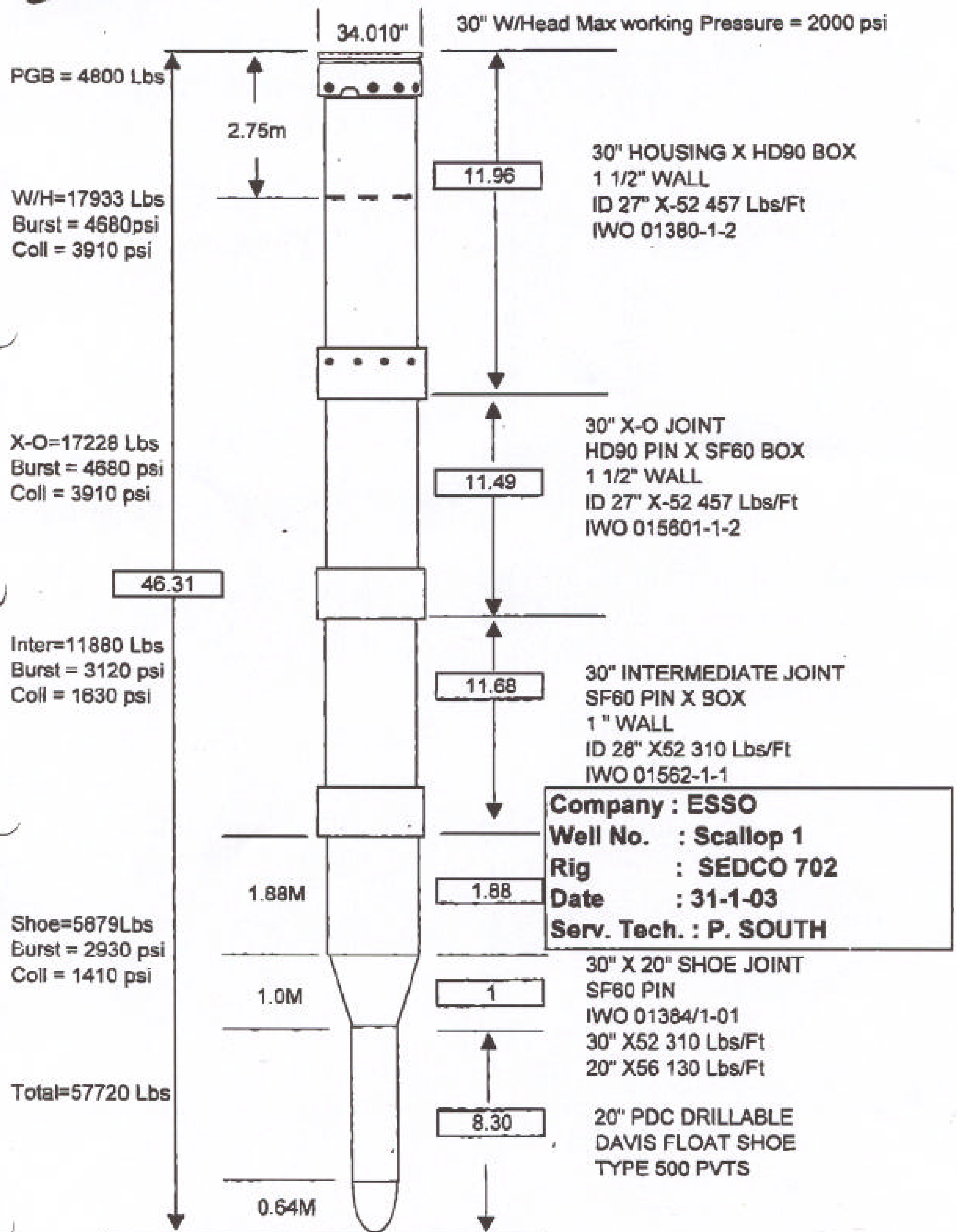
Dril-Quip Australia
PGB with 30" R/Tool & Stinger



Company	:ESSO
Well No.	:SCALLOP 1
Rig	:SEDCO 702
Date	: 31-1-03
Serv. Tech.	:PETER SOUTH

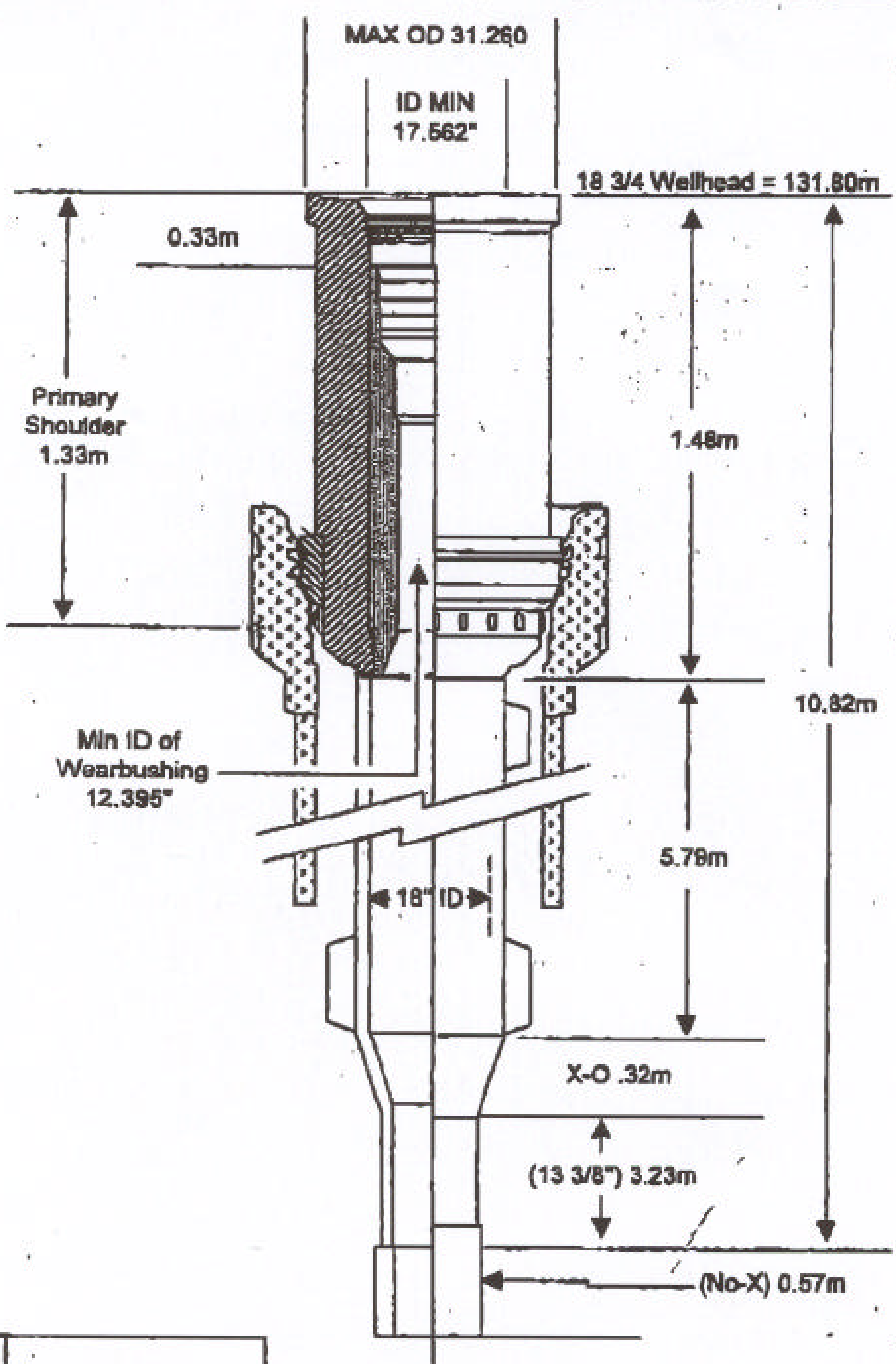
51 422769

DRIL-QUIP AUSTRALIA



DRIL-QUIP Dril-Quip Australia	Customer:	ESSO	Well:	Scallop 1
	Rig:	Sedco 702	Date:	February 3, 2003

ID / OD and Length of Wellhead



Rep:	P.SOUTH

7.3 HALLIBURTON CEMENTING PROGRAMME

Esso Australia Ltd
12 Riverside Quay
Southbank, 3006

Scallop

Bass Strait

P&A
Individual Plugs
Cementing
Program

Revision 2

Prepared for: Chris Meakin / Rudolf Furchtenicht

25/ 02 / 03

Prepared by:
Jim Collins

Halliburton Energy Services

90 Talinga Rd

Cheltenham, 3192

Ph: (03) 9581 7513 Fax: (03) 9583 7588

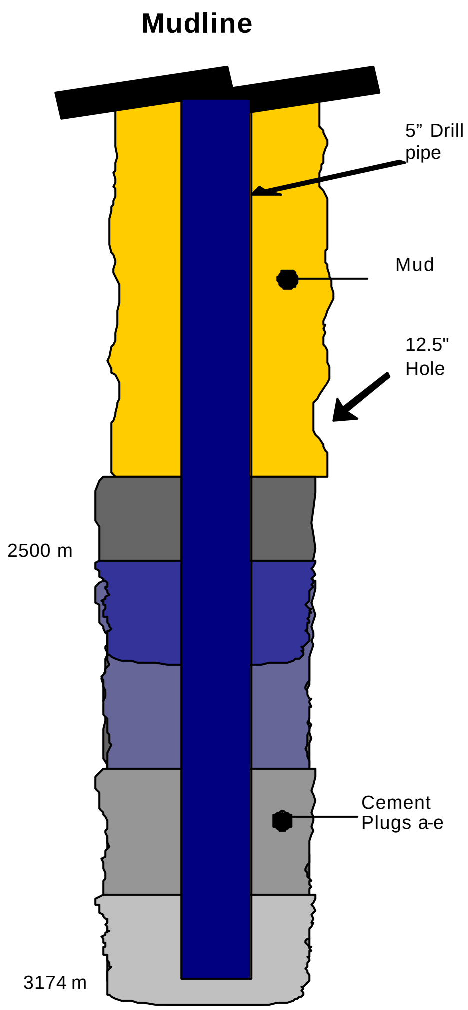
The Future Is Working Together.

Well Information

Plug 1a,b,c,d and e

Open Hole Stacked Cement Plugs

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	3174 m
Vertical depth (TVD)	3174 m
Casing O.D.	13 3/8”
Casing I.D.	12.5006”
Casing weight	68 ppf
Hole size	12 ½”
Mud type	PHPA
Mud weight	10.0 ppg
BHST	143 degC
BHCT	119 degC
TOC Plug	2500 m
EXCESS	10 %



Calculations

TOTAL HOLE VOLUME (3174-2500m)

12 ½" open hole 10% excess

Plug a	(3174-3037m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug b	(3037-2900m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug c	(2900-2763m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug d	(2763-2626m) 137 m * 0.49821 bbls/m x 1.1	= 75.0 bbls
Plug e	(2626-2500m) 126 m * 0.49821 bbls/m x 1.1	= 69.0 bbls
		= 369.42 bbls

TOTAL DISPLACEMENT VOLUME:

3 ½" Stinger	(3174-2974) 200 m * 0.02435 bbls/m	= 4.87 bbls
5" Drillpipe	(2974-0) 2974 m * 0.05830 bbls/m	= 173.38 bbls
		= 178.25 bbls

Note: Plug 1a has been used to calculate the displacement and hence thickening times for plugs 1a-d as it will have the longest displacement.

PLUGS 1a-d OPERATING TIME CALCULATIONS:

Cement Pump Time	= 75 / 5 = 15 mins
Displacement Pump Time	= 178 /5 = 36 mins
Contingency Time	= 60 mins
Total Operating Time	= 111 mins or 1 hr 51 mins

PLUGS 1a-d THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 111 mins = 133 mins or 2 hrs 13 mins
Maximum Thickening Time	= 1.4 * 111 mins = 155 mins or 2 hrs 35 mins

TOTAL DISPLACEMENT VOLUME PLUG 1e:

3 ½" Stinger	(2626-2426)200 m * 0.02435 bbls/m	= 4.9 bbls
5" Drillpipe	(2426-0)2426 m * 0.05830 bbls/m	= 141.44 bbls
		= 146.34

PLUG 1e OPERATING TIME CALCULATIONS:

Cement Pump Time	= 69 / 5 = 14 mins
Displacement Pump Time	= 146 /5 = 30 mins
Contingency Time	= 60 mins
Total Operating Time	= 104 mins or 1 hr 44 mins

PLUG 1e THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 104 mins = 125 mins or 2 hrs 04 mins
Maximum Thickening Time	= 1.4 * 104 mins = 146 mins or 2 hrs 26 mins

Job Recommendation

FLUID 1: SPACER

Fresh Water	Calculated Fill:	50m

FLUID 2: TAIL SLURRY

DESIGN FOR PLUGS 1a-d	Fluid Weight:	15.80 lb/gal
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)	Fluid Yield:	1.13 ft³/sk
3 gal/10bbls SCR 100L (Retarder)	Fluid Ratio:	4.75 gal/sk
0.25 gal/10bbls NF-5 (Defoamer)	Water Ratio:	4.35 gal/sk
Mixed With Drill Water	Total Mixing Fluid:	169 bbls
	Top of Fluid:	2626 m
	Calculated Fill:	548 m
	Fluid Volume:	300 bbls
	Proposed Volume:	1490 sks
PLUG 1e	Fluid Weight:	15.80 lb/gal
32 gal/10bbls Halad 413L (Fluid Loss/Dispersant)	Fluid Yield:	1.13 ft³/sk
2 gal/10bbls SCR 100L (Retarder)	Fluid Ratio:	4.74 gal/sk
0.25 gal/10bbls NF-5 (Defoamer)	Water Ratio:	4.35 gal/sk
Mixed With Drill Water	Total Mixing Fluid:	39 bbls
	Top of Fluid:	2500 m
	Calculated Fill:	126 m
	Fluid Volume:	69 bbls
	Proposed Volume:	343 sks

FLUID 3: DISPLACEMENT

Total Displacement Volume will change for each plug from: 178-146 bbls bbls

CEMENT SLURRY CRITERIA:

Plug Slurry 1a-d	
Thickening time (hrs:mins)	2:30
Free water	< 1.0%
24 hr Compressive Strength	500 @ 143 degC @ 8 HRS
Plug Slurry 1e	
Thickening time (hrs:mins)	2:00
Free water	< 1.0%
24 hr Compressive Strength	500 @ 122 degC @ 4-6 HRS

Job Procedure

1. Run in hole with diverter sub, 200m of 3 ½” cement stinger on 5” drillpipe.
2. Pressure test cement line to 3000 psi.
3. Pump spacer and monitor returns.
4. Mix and pump the plug cement slurry. Take samples and check density.
5. Displace D/P with seawater at 5-6 bpm to create a balanced plug.
6. POOH above TOC and reverse circulate clean. Wiper balls can be dropped to clean drill string if pumping the long way round.
7. Stay in hole and prepare for pumping plug 1b-e.

HALLIBURTON

P&A INDIVIDUALCEMENT PROGRAM

Chemical Requirements

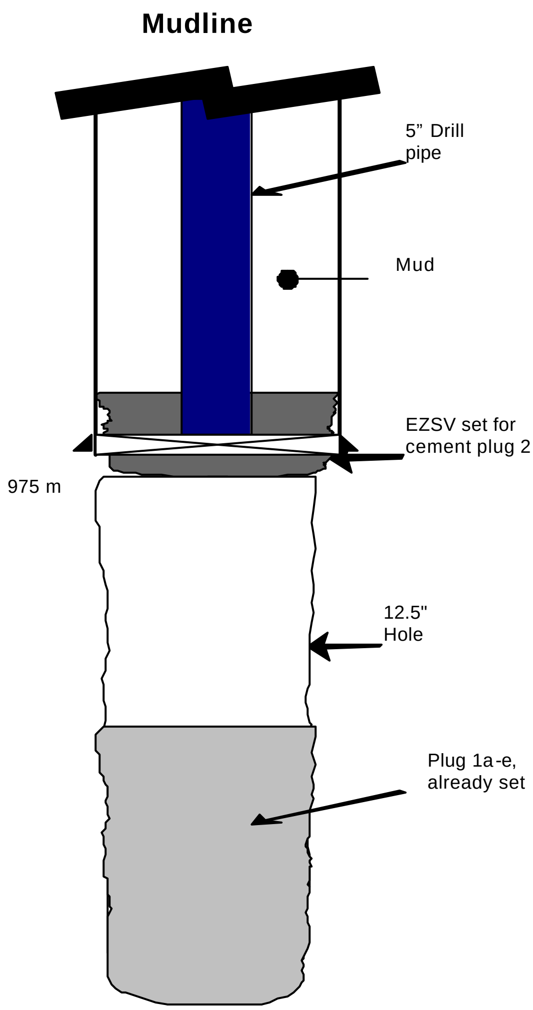
Description	Spacer	Plugs a-e	Plug d	Units	Total
HTB CLASS 'G'		1491	343	Sk	1834
HALAD 413L		541	125	Gals	666
SCR-100L		51	8	Gals	59
NF-5		5	1	Gals	6
FRESH WATER		154	36	BBLS	190
DUAL SPACER	3600			Lbs	3600
DSMA	6			Gals	5
MUSOL A	20			Gals	20
SEM-7	20			Gals	20

NOTE:
1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

Plug 2

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	930 m
Vertical depth (TVD)	930 m
Casing O.D.	13 3/8”
Casing I.D.	12.5006”
Casing weight	68 ppf
Hole size	12 ½”
Mud type	PHPA
Mud weight	10.0 ppg
BHST	56 degC
BHCT	35 degC



Calculations

TOTAL HOLE VOLUME (930-850m)

Plug 2
12 ½" Open hole x 13 3/8" Casing balanced plug

12 ½" Open hole with 10% excess	35 m * 0.49821 bbls/m * 1.1	= 19.2 bbls
13 3/8" Casing plug	45 m * 0.49826 bbls/m	= 22.4 bbls
Total		= 41.6 bbls

TOTAL DISPLACEMENT VOLUME:

5" Drillpipe	850 m * 0.05827 bbls/m	= 49.53 bbls

PLUG OPERATING TIME CALCULATIONS:

Cement Pump Time	= 42 / 5 = 9 mins
Unsting from Plug plug	= 10 mins
Displacement Pump Time	= 50 / 5= 10 mins
Contingency Time	= 60 mins
Total Operating Time	= 89 mins or 1 hr 29 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 89 mins = 107 mins or 1 hrs 47 mins
Maximum Thickening Time	= 1.4 * 89 mins = 126 mins or 2 hrs 06 mins

P&A INDIVIDUALCEMENT PROGRAM

Job Recommendation ____

FLUID 1: SPACER
Fresh Water

FLUID 2: TAIL SLURRY
Tail slurry
0.25 gal/10bbls NF-5 (Defoamer)
Mixed With Fresh Water

Fluid Weight:	15.80 lb/gal
Fluid Yield:	1.16 ft³/sk
Fluid Ratio:	5.15 gal/sk
Total Mix Water:	25 bbls
Fluid Volume:	42 bbls
Total Volume:	203.3 sks

FLUID 3: DISPLACEMENT

Total Displacement Volume:	50 bbls

CEMENT SLURRY CRITERIA:

Tail Slurry	
Thickening time (hrs:mins)	3:00
Free water	< 1.0%
24 hr Compressive Strength	500 psi @ 57 degC @ 6 hours

Job Procedure

1. RIH with 13 3/8” EZSV to 900m and set, unsting establish circulation.
2. Pressure test cement line to 3000 psi / casing if required.
3. Sting back into EZSV and squeeze 20 bbls through EZSV.
4. Sting out of EZSV and pump remaining 22 bbls on top of EZSV as balanced plug.
5. Displace D/P with 2 bbls of fresh and then seawater at 6bpm to create a balanced plug.
6. Pooh at least 50 M above TOC and reverse circulate.
7. POOH.

Chemical Requirements

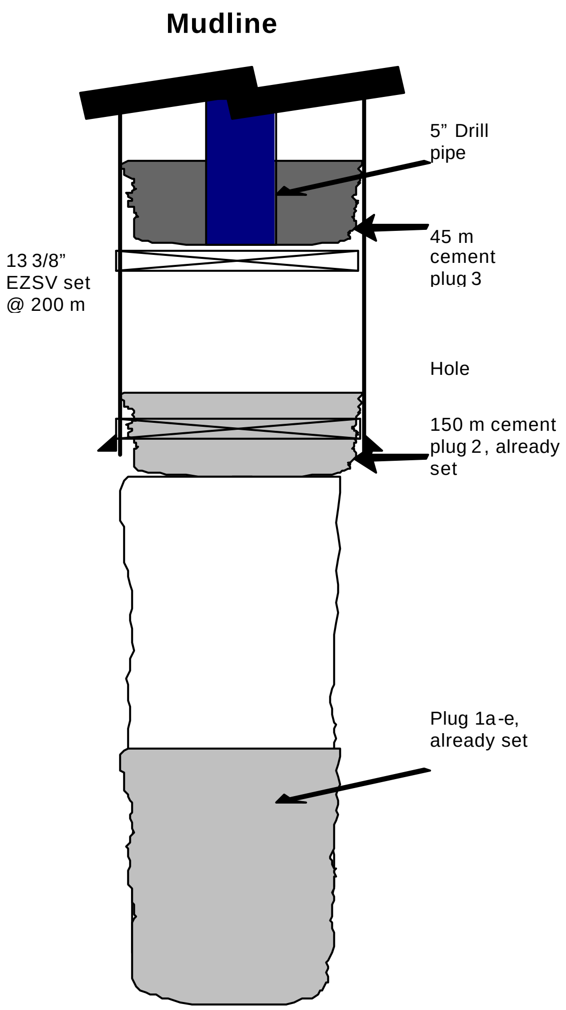
Description	Spacer	Tail	Units
CLASS 'G'		203	SK
NF-5		3	GAL
FRESH WATER	50	25	BBL

NOTE:
1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Well Information

Plug 3

Water Depth (MD)	110 m
RT to Mean Sea Level (MD)	26 m
Measured depth (MD)	200 m
Vertical depth (TVD)	200 m
Casing O.D.	13 3/8”
Casing I.D.	12.5006”
Casing weight	68 ppf
Mud type	PHPA
Mud weight	10.0 ppg
BHST	15 degC
BHCT	15 degC



Calculations

TOTAL HOLE VOLUME (975-825m)

Plug 3
13 3/8" Casing balanced plug on top of EZSV

13 3/8" Casing plug	45 m * 0.49826 bbls/m	= 22.4 bbls
Total		= 22.4 bbls

TOTAL DISPLACEMENT VOLUME: (to create balanced plug with 5" drill pipe (factor 0.6095 bbl/m approx 36m))

5" Drillpipe	200m * 0.05827 bbls/m	= 11.7 bbls

PLUG OPERATING TIME CALCULATIONS:

Cement Pump Time	= 23 / 5 = 5 mins
Displacement Pump Time	= 12 / 5 = 3 mins
Contingency Time	= 78 mins
Total Operating Time	= 78 mins or 1 hr 18 mins

TAIL THICKENING TIME CALCULATIONS:

Minimum Thickening Time	= 1.2 * 78 mins = 94 mins or 1 hrs 32 mins
Maximum Thickening Time	= 1.4 * 78 mins = 110 mins or 1 hrs 50 mins

HALLIBURTON

P&A INDIVIDUALCEMENT PROGRAM

Job Recommendation ____

FLUID 1: SPACER
Fresh Water

FLUID 2: CEMENT SLURRY

Cement slurry	Fluid Weight:	15.90 lb/gal
2%BWOC Calcuim Chloride (Accelerator)	Fluid Yield:	1.17 ft^3/sk
	Fluid Ratio:	5.15 gal/sk
Mixed with Sea Water	Total Mixing Fluid:	13 bbls
	Top of Fluid:	155 m
	Calculated Fill:	45 m
	Fluid Volume:	22 bbls
	Total Volume:	106 sks

FLUID 3: DISPLACEMENT

	Total Displacement Volume:	9.5 bbls

CEMENT SLURRY CRITERIA:

Tail Slurry	
Thickening time (hrs:mins)	4:00
Free water	< 1.0%
24 hr Compressive Strength	500 psi @ 15 degC @ 9 hours

Job Procedure

1. RIH to 200 m with the EZSV on 5" drillpipe.
2. Pressure test cement line to 3000 psi.
3. Pump spacer and monitor returns.
4. Mix and pump 22 bbls of tail cement slurry. Take samples and check density
5. Displace D/P with approximately 9.5 bbls of seawater at 6bpm to create a balanced plug.
6. Pooh at least 50 M above TOC and reverse circulate.
7. POOH.

Chemical Requirements

Description	Spacer	Tail	Units
CLASS 'G'		106	SK
CACL		200	LBS
NF-5		3	GAL
FRESH WATER	50	44	BBL

NOTE: 1. Service Location – BBMT
2. Volumes calculated are based on theoretical operational requirements. Tank bottoms to be added

Rudolf M Furchtenicht

28/02/03 09:23

To: George K Sharkey/U-Houston/ExxonMobil@xom, Murray G Jackson/B/U-SouthPacific/ExxonMobil@xom
cc: Frank W Kratzer/U-SouthPacific/ExxonMobil@xom, Chris P Meakin/U-SouthPacific/ExxonMobil@xom, (bcc: Rudolf M Furchtenicht/U-SouthPacific/ExxonMobil)
Subject: Scallop-1 - Response to EZSV Setting Depth

George/Murray,

As per discussed, raised the question regarding setting the EZ Drill SV Squeeze Packer above the 13-3/8" Casing Float Collar with Frank, Dan & Colin with Operations concerns of setting the packer below the float collar and what has been done in the past. Decision was made to proceed as planned subject to what is observed from the Junk-Basket Run.

With the drilling out of the shoetrack, amount of drilling hours, the trips made in and out with gauged BHA's, etc, the float collar should be gauge and have no burrs which may prevent the EZ Drill SV from being set above the Shoe Joint. However, with your plan to run a junk basket prior to running the EZSV, this will establish if we have clear access.

Should the junk basket not make it past the float collar, please contact Frank to discuss. The appropriate paperwork and phone calls will then be made to notify the respective parties.

Appreciate the query and if there is anything else of note, please advise or note this as a lessons learnt.

Regards,
Rudolf M Fürchtenicht
Drilling Engineer
ExxonMobil Development Company
Tel: (+61 3) 9270-3612, Fax: (+61 3) 9270-3546
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Victoria, Australia, 3006

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SCALLOP-1 - DRILLING OPERATIONS SUMMARY

```
Lease :  Scallop                    Well:  1
Field :  Gippsland Basin            Work:  DRILLING    DRS ID:  SCALLOP_1
                                    Rig :  Trans Sed Forex Sedco 702
Supt  :  F.W. Kratzer               Engr:  R.M. Furchtenicht
                                           C.P. Meakin
Public?  No
```

```
Date: 30-Jan-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :      .00
Days:     0/ 42   TD      :      .00   Cost    :   6744 M   Casing:  N/A
Exploration       Progress:      .00   XOM WI  :  25.000%       at:
```
Now : Distance travelled 4nm .311 nm to Scallop 1.
Next: Continue tow to Scallop #1 location (Bass Strait).
Last anchor off bottom at 22:50hrs. Commence tow @ 23:00hrs while deballasting to transit draft. 4 nautical miles from Minerva 3 location @ 00:00hrs.

```
Date: 31-Jan-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :      .00
Days:     0/ 42   TD      :      .00   Cost    :   7090 M   Casing:  N/A
Exploration       Progress:      .00   XOM WI  :  25.000%       at:
```
Now : Dist travelled 177miles. Distance to LOC 118miles.
Next: Sail to Scallop 1 location. Commence deploying anchors
Distance travelled 141.3 miles. Distance to location 147.3miles. Average speed. 6.48knts. ETA at location 01:23hrs 01 Feb.

```
Date:  1-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :      .00
Days:     0/ 42   TD      :      .00   Cost    :   7428 M   Casing:  N/A
Exploration       Progress:      .00   XOM WI  :  25.000%       at:
```
Now : Run out anchor #3.
Next: Moor rig over Scallop 1 location. Prepare to spud well.
Travelled total of 314.8miles. Distance in last 24hrs 180.5miles. MODUSPEC continue rig inspection.

```
Date:  2-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :      .00
Days:     0/ 42   TD      :      .00   Cost    :   7762 M   Casing:  N/A
Exploration       Progress:      .00   XOM WI  :  25.000%       at:
```
Now : RIH with 26" bit with 36" Hole opener BHA.
Next: Spud well. Drill 36" hole, run and cement 30" Casing.
Moor rig over Scallop #1 location. Run and pretension anchors. MODUSPEC continue with rig acceptance inspections. Offload bulks from supply vessels. Mix kill mud.

Date: 3-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 8.80
Days: 1/ 42 TD : 179.00 Cost : 8135 M Casing: 30.000
Exploration Progress: 43.50 XOM WI : 25.000% at: 179.000
Now : Make up 17 1/2" BHA.
Next: WOC. Make up 17 1/2" BHA. RIH drill 17-1/2" hole to +- 900m.
P/up Drill pipe. Offload cement from supply vessels. Make up 36" BHA. RIH. Tagged competent mud line at 135.51m. Drill 36" hole to 179m. Run and cement 30" structural casing with W/H and PGB.

Date: 4-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 8.65
Days: 2/ 42 TD : 506.00 Cost : 8478 M Casing: 30.000
Exploration Progress: 327.00 XOM WI : 25.000% at: 179.000
Now : Drilling 17 1/2" hole.
Next: Drill to 17 1/2" Hole to 915m. Conduct wiper trip. POOH. Run Casing.
Displace cement. POOH Lay out cement stinger. Make up Cement head. Pick up 17 1/2" BHA. Drill from 179m to 506m.

Date: 5-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 12.00
Days: 3/ 42 TD : 917.00 Cost : 8991 M Casing: 30.000
Exploration Progress: 411.00 XOM WI : 25.000% at: 179.000
Now : Handling 17 1/2" BHA.
Next: Wiper trip. Drop Gyro. POOH. Run and cement 13-3/8" casing.
Drilled 17 -1/2 hole from 506m to 917m. Pump sweeps and circulate hole clean, Conduct wiper trip to shoe @ 179m. Condition hole prior to running casing.

Date: 6-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 12.00
Days: 4/ 42 TD : 917.00 Cost : 9498 M Casing: 13.375
Exploration Progress: .00 XOM WI : 25.000% at: 900.810
Now : Running riser and BOP stack
Next: Run Riser and land BOP stack, Test Casing.
POOH Rack back 17- 1/2" BHA. Rig up run and cement 13-3/8" casing..

Date: 7-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 12.00
Days: 5/ 42 TD : 917.00 Cost : 9848 M Casing: 13.375
Exploration Progress: .00 XOM WI : 25.000% at: 900.810
Now : P/up 5" Drill pipe.
Next: P/up 5" D/pipe & 12 1/4" BHA. RIH. Hold Diverter/choke drill.
Lay out 18 3/4" wellhead running tool. Run BOP and riser. Function test BOPS. Test Casing. P/up D/pipe.

Date: 8-Feb-03 Prop TD : 3126.00 AFE : 23048 M MW : 8.80
Days: 6/ 42 TD : 917.00 Cost : 10268 M Casing: 13.375
Exploration Progress: .00 XOM WI : 25.000% at: 900.810
Now : Drilling 12 1/4" hole from 920m.
Next: Drill 12 1/4" hole.
Function test BOP's on both pods. Pick up 5" D/pipe. Lay out 17 1/2" BHA. Make up 12 1/4" BHA. RIH hold choke drill. Drill out cement. Displace well

to 9.0ppg KCL PHPA mud system.

```
Date:  9-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :     9.55
Days:     7/ 42   TD      :  1303.00   Cost    :  10672 M   Casing:   13.375
Exploration       Progress:   386.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling and surveying 12 1/4" hole from 1480m.
Next: Drill and survey 12 1/4" hole from 1303m.
Condition mud. Conduct FIT to 16.5 EMW. Drill and survey 12 1/4" hole from
920m to 1303m.
```

```
Date: 10-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :     9.80
Days:     8/ 42   TD      :  1870.00   Cost    :  11034 M   Casing:   13.375
Exploration       Progress:   567.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12 1/4" hole from 2003m.
Next: Drill 12 1/4" hole from 1870m.
Drill and survey 12 1/4" hole from 1303m to 1870m. Backream each connection.
```

```
Date: 11-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :     9.85
Days:     9/ 42   TD      :  2154.00   Cost    :  11380 M   Casing:   13.375
Exploration       Progress:   284.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12 1/4" hole from 2192m.
Next: Drill 12 1/4" hole from 2154m
Drill and survey 12 1/4" hole from 1870m to 2154m.
```

```
Date: 12-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.00
Days:    10/ 42   TD      :  2303.00   Cost    :  11714 M   Casing:   13.375
Exploration       Progress:   149.00   XOM WI  :  25.000%       at:  900.810
Now : Drill 12 1/4" hole 2346
Next: Drill and survey 12 1/4" hole from 2303m.
Drill and survey 12 1/4" hole from 2154m to 2303m. Backream each connection.
```

```
Date: 13-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.30
Days:    11/ 42   TD      :  2465.00   Cost    :  12067 M   Casing:   13.375
Exploration       Progress:   162.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12 1/4" hole from 2495m.
Next: Drill and survey 12 1/4" hole from 2465m.
Drill and surveyed 12 1/4" Hole from 2346m to 2465m.  Backream each
connection.
```

```
Date: 14-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.40
Days:    12/ 42   TD      :  2595.00   Cost    :  12414 M   Casing:   13.375
Exploration       Progress:   130.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12¼" hole at 2,595 m.
Next: Drill and survey 12 1/4" hole from 2595m
Drill and survey 12 1/4" hole from 2465m to 2595m.
```

```
Date: 15-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.35
Days:    13/ 42   TD      :  2618.00   Cost    :  12733 M   Casing:   13.375
Exploration       Progress:    23.00   XOM WI  :  25.000%       at:  900.810
Now : Run in hole with new bit.
Next: Drill ahead from 2618m.
Drilled 12-1/4" hole from 2595m to 2618m. Pull out of hole for bit change.
```

```
Date: 16-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.30
Days:    14/ 42   TD      :  2706.00   Cost    :  13063 M   Casing:   13.375
Exploration       Progress:    88.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12-1/4" hole at 2706m.
Next: Drill & survey 12-1/4" hole from 2706m.
RIH to 2618m with new bit and drill & survey 12-1/4" hole from 2618m to
2706m..
```

```
Date: 17-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.40
Days:    15/ 42   TD      :  2830.00   Cost    :  13394 M   Casing:   13.375
Exploration       Progress:   124.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12-1/4" hole at 2830m.
Next: Drill & survey 12-1/4" hole from 2830m.
Drill & survey 12-1/4" hole from 2706m to 2830m.
```

```
Date: 18-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.40
Days:    16/ 42   TD      :  2914.00   Cost    :  13701 M   Casing:   13.375
Exploration       Progress:    84.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12-1/4" hole at 2914m.
Next: Drill @ survey 12-1/4" hole from 2914m.
Drill @ survey 12-1/4" hole from 2830m to 2914m.
```

```
Date: 19-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.35
Days:    17/ 42   TD      :  2933.00   Cost    :  14019 M   Casing:   13.375
Exploration       Progress:    19.00   XOM WI  :  25.000%       at:  900.810
Now : RIH with new 12-1/4" bit & LWD assy.
Next: Slip & cut, RIH & continue to drill & log 12-1/4" hole to TD at 3126m.
Drill 12-1/4" hole to 2933m. Drop gyro survey tool, POOH, change bit and
pick up LWD/MWD assy. RIH to drill to TD.
```

```
Date: 20-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.30
Days:    18/ 42   TD      :  2996.00   Cost    :  14336 M   Casing:   13.375
Exploration       Progress:    63.00   XOM WI  :  25.000%       at:  900.810
Now : Drill, log & survey 12-1/4" hole at 2996m
Next: Drill, log & survey 12-1/4" hole from 2996m to TD at 3126m.
Ran in hole & drilled 12-1/4" hole from 2933m to 2996m.
```

```
Date: 21-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.30
Days:    19/ 42   TD      :  3080.00   Cost    :  14928 M   Casing:   13.375
Exploration       Progress:    84.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12-1/4" hole at 3080m.
Next: Drill, log & survey 12-1/4" hole from 3080m to TD.
Drill 12-1/4" hole from 2996m to 3080m.
```

```
Date: 22-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.35
Days:    20/ 42   TD      :  3154.00   Cost    :  15267 M   Casing:   13.375
Exploration       Progress:    74.00   XOM WI  :  25.000%       at:  900.810
Now : Drilling 12-1/4" hole at 3154m.
Next: Drill, log and survey 12-1/4" hole from 3154m to TD at 3230m.
Drill, log and survey 12-1/4" hole from 3080m to 3154m.
```

```
Date: 23-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.35
Days:    21/ 42   TD      :  3174.00   Cost    :  15626 M   Casing:   13.375
Exploration       Progress:    20.00   XOM WI  :  25.000%       at:  900.810
Now : Pulling out of the hole for TD logs.
Next: POH, Test BOP's, Rig up Schlum and log.
Drill to TD at 3174m, Make wiper trip to shoe, Circ, Pull out of the hole.
```

```
Date: 24-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.40
Days:    22/ 42   TD      :  3174.00   Cost    :  15944 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Schlum running in hole for logging run #1
Next: Continue running electric line TD logs.
POOH, tested BOP's, Commenced running TD logs.
```

```
Date: 25-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.45
Days:    23/ 42   TD      :  3174.00   Cost    :  16258 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Logging run #2 MDT. Taking pressure data at 3106m.
Next: Schlum continue run #2 MDT for pressures and samples. Continue TD
logs. Completed logging run #1 & commence run #2 MDT - pressures and
samples.
```

```
Date: 26-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW    :    10.45
Days:    24/ 42   TD      :  3174.00   Cost    :  16566 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Schlum logging run #3  FMI-DSI-GR-LEHQT at 2100m.
Next: Continue TD logging program.
Complete MDT sample & pressure program, Continue with TD logging program.
```

```
Date: 27-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.35
Days:    25/ 42   TD      :  3174.00   Cost    :  16898 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Schlum RIH with run #5 CST/GR
Next: Complete logging program, RIH and set open hole P&A cement plugs.
Continued running TD logs - DUAL CSAT-VSP & CST-GR.
```

```
Date: 28-Feb-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.40
Days:    26/ 42   TD      :  3174.00   Cost    :  17936 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Circulating bottoms up at 2710m.
Next: Complete open hole P&A plugs. Lay down pipe, tag TOC & POH.
Completed TD logging.  RIH and set 3 open hole P&A plugs.
```

```
Date:  1-Mar-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.40
Days:    27/ 42   TD      :  3174.00   Cost    :  18267 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Rig down Schlumberger.
Next: Continue with plugback program.
Complete open hole P&A plugs and tag top one. POH and set EZSV squeeze pkr.
```

```
Date:  2-Mar-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.40
Days:    28/ 42   TD      :  3174.00   Cost    :  18711 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Move LMRP to set back area.
Next: Set back BOP, Cut & recover wellhead, B/L equipment & pull anchors.
Set & test P&A plugs, Lay out drill pipe, Pull riser & BOP's.
```

```
Date:  3-Mar-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.40
Days:    29/ 42   TD      :  3174.00   Cost    :  19037 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Wait on sea conditions to subside to backload.
Next: Backload Lady Elizabeth. Recover anchors, release rig.
Cut and recover 30" Wellhead, and PGB. Conduct Seabed survey. Lay out MOST
tool, Lay down D/collars, and remaining tubulars from derrick. WOW. Wind
gusting 45-55kts.
```

```
Date:  4-Mar-03   Prop TD :  3126.00   AFE     :  23048 M   MW     :   10.40
Days:    30/ 42   TD      :  3174.00   Cost    :  19654 M   Casing:   13.375
Exploration       Progress:      .00   XOM WI  :  25.000%       at:  900.810
Now : Sedco 702 in Transit to Dampier.
Next: Sedco 702 in transit to Dampier.
WOW. Backload Lady Elizabeth with Esso owned and third party equipment.
Recover anchors. Last anchor recovered and bolstered at 0000 hrs 4 Mar 03
```

SCALLOP-1 - DETAILED DAILY DRILLING REPORTS

```
Drilling                     DETAILED DAILY REPORT                 30-Jan-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                      AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                 MD             m: 3126.00 |     .00
Office     : Australia SE                   TVD            m: 3126.00 |     .00
Client     : ExxonMobil Development         Days                      |
Drill Team : Australia Offshore              - if Dry      :     42.0 |
                                             - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO  - to Complete :       .0 |
Contractor : Trans Sed Forex                 - Susp + Comp :     42.0 |      .0
Rig Name   : Sedco 702                       - Ahead/Behind:          |     N/A
Operator   : Esso Aus Res                    - from Spud   :          |      .0
Field      : Gippsland Basin                Spud Date      :       02-Feb-2003
Country    : Australia                      Progress      m:                .00
Latitude   :  38d 12' 49" South             Drilling Hours :                .00
Longitude  : 148d 35' 29" East              ROP        m/hr:
Water Depth:  109.60 m                      Percentage NPT :                 .0
RKB Height :   25.90 m                      Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: NO CASING REPORTED YET
Leakoff Test      : .00 ppg

Current: Distance travelled 4nm .311 nm to Scallop 1.
Planned: Continue tow to Scallop #1 location (Bass Strait).

Start Elpsd  End MD                        Description
----- ----- -------- ---------------------------------------------------------
23:00  1.00      .00 MOB  Last anchor off bottom at 22:50hrs. Commence towing
                          rig at 23:00hrs at a heading of 107 degrees. 4
                          nautical miles from Minerva 3 location @ 00:00hrs.
                          Statement of Facts taken at 23:00 hrs.

                          Statement of Facts as follows:-
                          Sedco 702
                          Fuel oil      309019 litres
                          Lube oil      5678 litres
                          Drill Water   397000 litres
                          Pot Water     108000 litres
                          Bulks         Nil onboard

                          Pacific Frontier

                          Fuel Oil    333300 litres
                          Lube Oil    27413 litres
                          Drill Water 200000 litres
                          Pot Water   465000 litres
                          Gel         952 Sx   Esso Owned
                          Cement      1146 Sx
                          Barytes     1381 Sx
```

```
                          Pacific Challanger
                          Fuel Oil    349000 litres
                          Lube Oil    20288 litres
                          Drill water 290000 litres
                          Pot Water   190000 litres
                          Gel         820 sx  Esso Owned
                          Barytes     970 Sx


                          O6:00 update

                          Distance travelled 32 nautical miles.
                          Distance to Scallop #1, 293 nautical miles.
Total  1.00
```

===================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ==================================

```
Personnel       :  N/A
Supervisors     :  Basset, Anthony A.
                   Vestal, Tommy M.
Total Head Count:     66
Total Hours     :    792.00
```

================================== HEAD COUNTS =================================

Contractor	63	ExxonMobil	2
Contractor Short Service (SSE)	6	Service Company	1

============================== MANAGEMENT SUMMARY ==============================

Last anchor off bottom at 22:50hrs. Commence tow @ 23:00hrs while deballasting to transit draft. 4 nautical miles from Minerva 3 location @ 00:00hrs.

======================== COST DATA (Australian Dollar) =========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	6,728,252	15,708	6,743,960	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	6,728,252	15,708	6,743,960	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	6,728,252	15,708	6,743,960	0

================================ SOLIDS CONTROL ================================

Hours on Centrifuge: .00   Dilution Rate: .00

```
================================= SUPPLIES DATA ================================
                 Usage Receipts  Stock                    Usage Receipts  Stock
Drill Water          0    2497    2497   Potable Water        0     679     679
Fuel                 0    1944    1944


================================= MUD ADDITIVES ================================
                  Function             Name        Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------


================================== BIT RECORD ==================================
                      No bit report was entered for this date.


================================== HYDRAULICS ==================================
Pump Displaces    Rate
      bbl/st     str/min          No hydraulics calculations were performed
                                  because no bit report was entered.





Pump Rate       0 str/min
Flow Rate     .00 gpm
Pressure        0 psi


==================================== SURVEYS ===================================
                              No surveys have been entered.


================================= WELL CONTROL =================================
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)              0 psi
                                          Formation Strength      N/A
                                          Kick Tolerance          N/A
                                          Pore Pressure           .00 ppg
                                          MASP                    N/A

                                          Background Gas           .0
Density              .00 ppg              Connection Gas           .0
ECD              ******* ppg              Trip Gas                 .0
   at               .000 meters
   with bit at      .000 meters


============================== DAILY DRILL STRING ==============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD       .0   BHA              .00
RPM      0     Slack-off               0    On-TD        .0   Shock Sub        .00
               Off-TD, Rotating        0                      Jars             .00


==================================== CASING ====================================
  Section    O.D.     Grade   Wt/Lng    Thread   Joints     Top       Bottom

*** End 30-Jan-2003 report for SCALLOP_1      Run 01-Apr-2003 17:02 Central Time
```

```
Drilling                     DETAILED DAILY REPORT                31-Jan-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 |     .00
Office     : Australia SE                     TVD            m: 3126.00 |     .00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :     42.0 |
                                               - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :       .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :     42.0 |     1.0
Rig Name   : Sedco 702                         - Ahead/Behind:          |     N/A
Operator   : Esso Aus Res                      - from Spud   :          |      .0
Field      : Gippsland Basin                  Spud Date      :        02-Feb-2003
Country    : Australia                        Progress      m:                .00
Latitude   :  38d 12' 49" South               Drilling Hours :                .00
Longitude  : 148d 35' 29" East                ROP        m/hr:
Water Depth:  109.60 m                        Percentage NPT :                 .0
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: NO CASING REPORTED YET
Leakoff Test      : .00 ppg

Current: Dist travelled 177miles. Distance to LOC 118miles.
Planned: Sail to Scallop 1 location. Commence deploying anchors

Start Elpsd  End MD                           Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00      .00 MOB  Continue tow towards Scallop #1 location. 141.3 miles
                          travelled in last 24hrs. Distance to Scallop #1
                          location 147.7 miles. ETA at current speed 01:23hrs 01
                          Feb.

                          Location at 00:00hrs
                          39deg 15.9  South
                          146deg 01 East
                          Ave Tow speed 6.48kts

                          NOTE:
                          MODUSPEC inspect draw works and drill floor equipment.
                          Commence inspecting BOP's


                          06:00 update. 118 miles to Scallop #1 Location.
                          Current location
                          lat: 39deg 09 South
                          Longitude: 146 deg 52 East
                          ave speed 7.03 kts. ETA 22:00 hrs 31 Jan.
Total 24.00
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Hand safety, Change out pump liners, Prepare pipe for inspection, Waste Segregation, MPI Draw works.
BHPB Helifuel onboard 3689 litres
Boats:
Pacific Frontier: on Tow
Pacific Challanger: on Tow
Last fire drill:- 12 Jan 03
Abandon drill:- 28 Jan 03
Last Safety meeting:- 19 Jan 03
2x Helicopters

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ===================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 81
Total Hours : 972.00

================================== HEAD COUNTS ==================================

Contractor	65	ExxonMobil	2
Contractor Short Service (SSE)	0	Service Company	14

============================= MANAGEMENT SUMMARY =============================

Distance travelled 141.3 miles. Distance to location 147.3miles. Average speed. 6.48knts. ETA at location 01:23hrs 01 Feb.

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	346,396	0	346,396	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,074,648	15,708	7,090,356	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,074,648	15,708	7,090,356	0

================================ SOLIDS CONTROL ================================

Hours on Centrifuge: .00 Dilution Rate: .00

================================= SUPPLIES DATA =================================

	Usage	Receipts	Stock		Usage	Receipts	Stock
Drill Water	246	0	2251	Potable Water	60	0	619
Fuel	49	0	1895				

```
================================= MUD ADDITIVES =================================
                  Function            Name        Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------


================================== BIT RECORD ==================================
                      No bit report was entered for this date.


================================== HYDRAULICS ==================================
Pump Displaces    Rate
      bbl/st     str/min          No hydraulics calculations were performed
                                  because no bit report was entered.




Pump Rate       0 str/min
Flow Rate     .00 gpm
Pressure        0 psi


==================================== SURVEYS ===================================
                              No surveys have been entered.


================================= WELL CONTROL =================================
Pump    Rate     Pressure      MD
       str/min     psi      meters       Burst (70%)                0 psi
                                         Formation Strength       N/A
                                         Kick Tolerance           N/A
                                         Pore Pressure            .00 ppg
                                         MASP                     N/A

                                         Background Gas            .0
Density             .00 ppg              Connection Gas            .0
ECD             ******* ppg              Trip Gas                  .0
   at              .000 meters
   with bit at     .000 meters


================================ WEATHER REPORT ================================
                 23:59  Max                                23:59  Max
                 ----- -----                              ------ ------
Bar Pressure   :  1004     0 mm Hg      Wind Speed     :   30.0     .0 knot
Heave          :   .00   .00 meters          Direction :    270      0 degree
Pitch          :   .00   .00 degree     Wave Height    :    .00    .00 meters
Roll           :   .00   .00 degree          Period    :      0      0 second
Swell Height   :  1.50   .00 meters          Direction :      0      0 degree
      Period   :     5     0 second     Air Temperature:   16.0     .0 deg C
      Direction:   270     0 degree     Sea Temperature:   20.0     .0 deg C
Visibility     :  12.0    .0 km         Cloud Cover    :      0      0


============================== DAILY DRILL STRING ==============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD        .0   BHA              .00
RPM      0     Slack-off               0    On-TD         .0   Shock Sub        .00
               Off-TD, Rotating        0                       Jars             .00
```

```
==================================== CASING =====================================
  Section    O.D.     Grade   Wt/Lng    Thread   Joints     Top       Bottom

*** End 31-Jan-2003 report for SCALLOP_1      Run 01-Apr-2003 17:02 Central Time
```

```
Drilling                      DETAILED DAILY REPORT                 01-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD            m: 3126.00 |     .00
Office     : Australia SE                      TVD           m: 3126.00 |     .00
Client     : ExxonMobil Development            Days                     |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |     2.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |     N/A
Operator   : Esso Aus Res                       - from Spud   :         |      .0
Field      : Gippsland Basin                   Spud Date      :       02-Feb-2003
Country    : Australia                         Progress      m:               .00
Latitude   :  38d 12' 49" South                Drilling Hours :               .00
Longitude  : 148d 35' 29" East                 ROP        m/hr:
Water Depth:  109.60 m                         Percentage NPT :                .0
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: NO CASING REPORTED YET
Leakoff Test      : .00 ppg

Current: Run out anchor #3.
Planned: Moor rig over Scallop 1 location. Prepare to spud well.

Start Elpsd  End MD                          Description
----- ----- -------- -----------------------------------------------------------
00:00 24.00      .00 MOB  Continue tow towards Scallop #1 location. Total
                          distance travelled 314.8 miles. Distance travelled in
                          last 24 hrs 180.5 miles. Distance to Scallop #1
                          location 20 miles.

                          Location at 00:00hrs
                          38deg 10.9  South
                          148deg 43.4 East
                          Ave Tow speed 6.4kts

                          NOTE:
                          MODUSPEC inspect drill floor equipment. Continue
                          inspection of BOP's. Inspect choke manifold valves.

                          Prepare drilling equipment for scallop #1 well.


                          00:00 - 06:00

                          Approach Scallop location on heading of 233 degrees.
                          Ballast down to 80ft draft, and deploy anchor #7, play
                          out 3000ft of anchor chain. Position rig over Scallop
                          #1 location. #7 anchor on bottom at 4:19hrs. Run out
                          anchor #3.
Total 24.00
```

REMARKS

Held PTSM with both day and night shifts.
Topics: Hand safety, Handling Anchors, P/up BHA and D/pipe, Hand safety. Mooring operations.
BHPB Helifuel onboard 3689 litres
Boats:
Pacific Frontier: on Tow
Pacific Challanger: on Tow
Last fire drill:- 12 Jan 03
Abandon drill:- 28 Jan 03
Last Safety meeting:- 19 Jan 03
Nil Helicopters

INSPECTIONS, DRILLS, AND CITATIONS

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	
BOP System Inspection (Minicheck)	No	0	

PERSONNEL

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 81
Total Hours : 972.00

HEAD COUNTS

Contractor	65	ExxonMobil	2
Contractor Short Service (SSE)	0	Service Company	14

MANAGEMENT SUMMARY

Travelled total of 314.8miles. Distance in last 24hrs 180.5miles. MODUSPEC continue rig inspection.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	337,590	0	337,590	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,412,238	15,708	7,427,946	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,412,238	15,708	7,427,946	0

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Drill Water	177	0	2074	Potable Water	106	0	513
Fuel	66	0	1829				

```
================================== MUD ADDITIVES ==================================
                  Function            Name        Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------


=================================== BIT RECORD ===================================
                      No bit report was entered for this date.


=================================== HYDRAULICS ===================================
Pump Displaces    Rate
      bbl/st     str/min          No hydraulics calculations were performed
                                  because no bit report was entered.





Pump Rate       0 str/min
Flow Rate     .00 gpm
Pressure        0 psi


==================================== SURVEYS ====================================
                              No surveys have been entered.


================================== WELL CONTROL ==================================
Pump    Rate     Pressure      MD
       str/min     psi       meters      Burst (70%)               0 psi
                                         Formation Strength       N/A
                                         Kick Tolerance           N/A
                                         Pore Pressure            .00 ppg
                                         MASP                     N/A

                                         Background Gas            .0
Density              .00 ppg             Connection Gas            .0
ECD              ******* ppg             Trip Gas                  .0
   at               .000 meters
   with bit at      .000 meters


================================= WEATHER REPORT =================================
                 23:59  Max                                   23:59  Max
                 ----- -----                                 ------ ------
Bar Pressure   :  1015     0 mm Hg      Wind Speed     :   22.0   45.0 knot
Heave          :   .00   .00 meters          Direction :    260      0 degree
Pitch          :   .00   .00 degree     Wave Height    :   2.50    .00 meters
Roll           :   .00   .00 degree          Period    :      5      5 second
Swell Height   :  2.00  3.00 meters          Direction :    260      0 degree
      Period   :     5     5 second     Air Temperature:   14.0   20.0 deg C
      Direction:   260   260 degree     Sea Temperature:   16.0   16.0 deg C
Visibility     :  20.0  15.0 km         Cloud Cover    :      0      0


=============================== DAILY DRILL STRING ===============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD       .0   BHA              .00
RPM      0     Slack-off               0    On-TD        .0   Shock Sub        .00
               Off-TD, Rotating        0                      Jars             .00
```

```
==================================== CASING ====================================
  Section    O.D.     Grade   Wt/Lng    Thread   Joints     Top       Bottom

*** End 01-Feb-2003 report for SCALLOP_1      Run 01-Apr-2003 17:02 Central Time
```

```
Drilling                      DETAILED DAILY REPORT                 02-Feb-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                          AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                     MD             m: 3126.00 |     .00
Office     : Australia SE                       TVD            m: 3126.00 |     .00
Client     : ExxonMobil Development             Days                      |
Drill Team : Australia Offshore                  - if Dry      :    42.0 |
                                                 - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO      - to Complete :      .0 |
Contractor : Trans Sed Forex                     - Susp + Comp :    42.0 |     3.0
Rig Name   : Sedco 702                           - Ahead/Behind:         |     N/A
Operator   : Esso Aus Res                        - from Spud   :         |      .0
Field      : Gippsland Basin                    Spud Date      :       02-Feb-2003
Country    : Australia                          Progress      m:             .00
Latitude   :  38d 12' 49" South                 Drilling Hours :             .00
Longitude  : 148d 35' 29" East                  ROP        m/hr:
Water Depth:  109.60 m                          Percentage NPT :              .0
RKB Height :   25.90 m                          Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: NO CASING REPORTED YET
Next Casing       : 30.000 inches at 179.500 meters MD
Leakoff Test      : .00 ppg

Current: RIH with 26" bit with 36" Hole opener BHA.
Planned: Spud well. Drill 36" hole, run and cement 30" Casing.

Start Elpsd  End MD                          Description
----- ----- -------- ------------------------------------------------------------
00:00   .50      .00 MOB  Continue tow towards Scallop #1 location. At way point
                          #7, @ 00:15hrs. Tow in at 2 kts.
00:30  3.00      .00 MOB  Ballast down to 80ft draft. Shorten tow and commence
                          final tow in on heading of 232 degrees.
03:30  1.25      .00 MOB  Deploy anchor #7.Anchor on bottom at 04:19hrs.
                          Continue to run in on 332 degrees. Test pull anchor to
                          250kips, after letting out 2000ft anchor chain.
                          Continue to let out 3000ft of chain. Position rig over
                          Scallop #1 location.
04:45  2.25      .00 MOB  Pacific Challanger maintain static tow. Release
                          Pacific Frontier, #3 PCC passed back to rig at
                          06:50hrs.
07:00  2.00      .00 MOB  #6 PCC pass to Pacific Frontier @ 07:34hrs. #2 anchor
                          on deck of Pacific Challanger @ 07:37hrs, #6 PCC
                          passed back to rig @ 08:55hrs.

                          NOTE:

                          Continue MODUSPEC inspections. Continue MPI inspection
                          of Handling equipment and BHA components. Continue
                          pressure testing Choke and kill manifold, Prepare BHA
                          on Catwalk. Inspect Rotary table, and PMS on Iron
                          roughneck.
09:00  2.00      .00 MOB  #2 PCC passed back to rig @ 09:36hrs. Pacific
                          Challanger off load Gel @ 10:00hrs. #5 PCC passed to
                          rig @ 10:41hrs.
11:00  1.00      .00 MOB  #4 PCC ready, stopped for Helicopter. Pacific
```

			Challanger start to offload Barite and Gel.
12:00	1.50	.00 MOB	#4 PCC to Pacific Challenger @ 12:20hrs. #4 anchor on bottom @ 13:15hrs. #4PCC to passed to rig at 13:30hrs. Mix 465bbls 12ppg Kill mud.
13:30	2.50	.00 MOB	#8 PCC to Pacific Frontier at 14:43hrs. #8 anchor on bottom 15:26hrs. #8 PCC handed to rig at 16:00hrs.
16:00	1.75	.00 MOB	#1 PCC to Pacific Frontier at 16:25hrs. #1 anchor on bottom at 17:12hrs. #1 PCC handed to rig at 17:40hrs. Tuboscope continue to MPI Drilquip 30" R/tool, X-overs and D/collars.
17:45	3.00	.00 MOB	Pretension all anchors to 350kips. Rig on location at 20:43hrs. All anchor tensions set at 240 kips. Anchor # 1 3238 feet Anchor # 2 2935 feet Anchor # 3 2970 feet Anchor # 4 3258 feet Anchor # 5 3106 feet Anchor # 6 2788 feet Anchor # 7 2879 feet Anchor # 8 3210 feet Lady Kari-anne alongside at 18:00hrs. Offload 1752 sx Barite, and 541 sx Gel.
20:45	2.00	.00 BOP	Pressure test IBOP's and Kelly hose to 250/5000psi 10/10mins. Tested Ok. Baroid mixed the following mud 379bbls of Guar gum 880bbls of Gel 250bbls of Drillwater/gel
22:45	.25	.00 BOP	Rig down test assy.
23:00	.50	.00 TRIP	Pick up or make up string, BHA, or tools -- Pick up 30" running tool, make up to stand 5" Drill pipe, and cement stand. Rack same in derrick.
23:30	.50	.00 TRIP	Pick up or make up string, BHA, or tools -- Begin picking up 27 stands of 5" Drill pipe. Rack same in derrick. OO:00- 06:00 Pick up 27 stands of 5" Drill pipe. Make up 26" bit with 36" hole opener BHA. Clear cement loading line, and commence offloading Cement from Lady Kari-anne. Offload Gel, and drill water from Pacific Frontier. Pacific Challenger departed rig at 02:00hrs for BBMT.
Total	24.00		

==================================== REMARKS ===================================

Held PTSM with both day and night shifts.
Topics: Hand safety, Handling Anchors, P/up BHA and D/pipe, Hand safety. Mooring operations. Pressure testing, Working boats.
BHPB Helifuel backloaded on Pacific Challenger to BBMT.
Boats:
Pacific Frontier: at Rig
Pacific Challanger: at Rig
Lady Kari-anne: Alongside at 18:00hrs.
Last fire drill:- 12 Jan 03

Abandon drill:- 28 Jan 03
Last Safety meeting:- 19 Jan 03
1x Helicopters. Longford Heli ops conducted an inspection of the Sedco 702 Helipad.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ===================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 86
Total Hours : 1032.00

================================== HEAD COUNTS ==================================

Contractor	64	ExxonMobil	2
Contractor Short Service (SSE)	0	Service Company	20

============================== MANAGEMENT SUMMARY ==============================

Moor rig over Scallop #1 location. Run and pretension anchors. MODUSPEC continue with rig acceptance inspections. Offload bulks from supply vessels. Mix kill mud.

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	334,152	0	334,152	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,746,390	15,708	7,762,098	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,746,390	15,708	7,762,098	0

================================ SOLIDS CONTROL ================================

Hours on Centrifuge: .00 Dilution Rate: .00

================================= SUPPLIES DATA =================================

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	2563	2563	Gel	361	1252	891
Drill Water	1497	1823	2400	Potable Water	106	126	533
Fuel	0	34	1863				

================================= MUD ADDITIVES =================================

Function	Name	Unit	Size	Amount

================================== BIT RECORD ==================================

No bit report was entered for this date.

```
===================================== HYDRAULICS ========================================
Pump Displaces    Rate
      bbl/st     str/min          No hydraulics calculations were performed
                                  because no bit report was entered.




Pump Rate       0 str/min
Flow Rate     .00 gpm
Pressure        0 psi


===================================== SURVEYS ==========================================
                              No surveys have been entered.


=================================== WELL CONTROL =======================================
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)                0 psi
                                          Formation Strength       N/A
                                          Kick Tolerance           N/A
                                          Pore Pressure            .00 ppg
                                          MASP                     N/A

                                          Background Gas            .0
Density              .00 ppg              Connection Gas            .0
ECD              ******* ppg              Trip Gas                  .0
   at               .000 meters
   with bit at      .000 meters


================================= WEATHER REPORT ======================================
                 23:59  Max                                   23:59  Max
                 ----- -----                                 ------ ------
Bar Pressure   :  1023     0 mm Hg      Wind Speed     :    5.0     .0 knot
Heave          :   .00   .00 meters          Direction :     85      0 degree
Pitch          :   .30   .00 degree     Wave Height    :    .20    .00 meters
Roll           :   .30   .00 degree          Period    :      5      0 second
Swell Height   :   .20   .00 meters          Direction :     85      0 degree
      Period   :     5     0 second     Air Temperature:   15.0   20.0 deg C
      Direction:    85     0 degree     Sea Temperature:   16.0     .0 deg C
Visibility     :  20.0    .0 km         Cloud Cover    :      0      0


============================== DAILY DRILL STRING =====================================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD       .0   BHA             .00
RPM      0     Slack-off               0    On-TD        .0   Shock Sub       .00
               Off-TD, Rotating        0                      Jars            .00


====================================== CASING ==========================================
  Section    O.D.     Grade   Wt/Lng    Thread   Joints     Top       Bottom

*** End 02-Feb-2003 report for SCALLOP_1      Run 01-Apr-2003 17:02 Central Time
```

```
Drilling                      DETAILED DAILY REPORT                03-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 |  179.00
Office     : Australia SE                     TVD            m: 3126.00 |  179.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |      4.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |      N/A
Operator   : Esso Aus Res                      - from Spud   :         |       .5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:             43.50
Latitude   :  38d 12' 49" South               Drilling Hours :              2.00
Longitude  : 148d 35' 29" East                ROP        m/hr:             21.75
Water Depth:  109.60 m                        Percentage NPT :                .0
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 30.000 inches at 179.000 MD, 179.000 TVD
Next Casing       : 13.375 inches at 900.000 meters MD
Leakoff Test      : .00 ppg

Current: Make up 17 1/2" BHA.
Planned: WOC. Make up 17 1/2" BHA. RIH drill 17-1/2"  hole to +- 900m.

Start Elpsd  End MD                          Description
----- ----- -------- ---------------------------------------------------------
00:00  4.00      .00 TRIP Pick up or make up string, BHA, or tools -- Continue
                          picking up 27 stands of 5" Drill pipe. Drift each jt.
                          Rack same in derrick. Complete backloading Pacific
                          Challanger. Departed at 02:00hrs for BBMT. Commence
                          off loading deck cargo from Lady Kari-anne.

                          Attempt to offload bulk cement from supply vessels.
                          Bulk loading hose blocked. Disaassemble and clear
                          blockage. Flush line with compressed air.
04:00  2.00      .00 TRIP Pick up or make up string, BHA, or tools -- Pick up
                          and make up 26" Bit with 36" Hole opener BHA, and RIH.
06:00   .25      .00 TRIP Pick up or make up string, BHA, or tools -- Held
                          safety meeting with crew. Discussed shallow gas
                          procedure and personell responsibilities. Held Shallow
                          gas drill.
06:15  3.00      .00 TRIP Run string in hole -- Offload cement from Lady
                          Kari-anne. SONSUB repair fault in ROV submersible.
09:15   .25      .00 TRIP Run string in hole -- ROV assist in tagging seabed
                          with 36" BHA. Competent mud line tagged at 135.51m
                          MSL.(no merk line)
09:30  2.50      .00 WAIT Planned wait -- Continue to offload cement. 1471 sx of
                          cement required for the 30" Casing cement job.
12:00  2.00   179.00 DRLG Drill 36" hole from 135.51m to 179m. Pump 50bbl hi-vis
                          sweep mid stand. Spot 50bbl By-Visc on bottom on
                          connection
14:00   .50   179.00 CIRC Pump 50bbl Hy-visc sweep
14:30   .25   179.00 TRIP Short trip (not to surface) -- Perform wiper trip from
```

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                                179m to 155m. Hole good no excess drag.
14:45   .50   179.00 CIRC Take anderdrift survey at 148, and 163m ( o degrees)
                          Andadrift tool stopped working at TD.  Displace hole
                          to Gel. Total 350bbls Gel pumped.
15:15  1.75   179.00 TRIP Pull string out of hole -- POOH with 26" bit with 36"
                          Hole opener BHA. Rack back BHA.

                          NOTE: 1x plugged nozzle on 26" Bit. 1x missing nozzle
                          on 36" Hole opener. 1x seized cone on 36" hole opener.
17:00  1.00   179.00 TBLR Held Think Drill. Rig up 30" casing running equipment.
                          Move PGB to centre of spider beams.
18:00  1.75   179.00 TBLR Pick up 30" Casing. Pick up 30x20" Casing shoe Jt.
                          Pump thru same. Tested Ok. Run 4x jts of 30" casing to
                          46m.
19:45  1.00   179.00 TBLR Run 1x stand 5" Drill pipe cement stinger, and make up
                          30" Dril-Quip running tools. Land out on PGB.
20:45   .50   179.00 TBLR Remove skid beams. From PGB. Fill casing with rig
                          pumps and close fill up valves.
21:15  1.25   179.00 TBLR RIH from 46m to 179m. 1m of fill on bottom. Make up
                          TDS and wash down last 3m.

                          Weekly abandon ship drill conducted @ 22:00hrs.
22:30   .25   179.00 TBLR Hold Think drill. Rig up cement hose.
22:45   .25   179.00 CIRC Pressure test cement hose to 2000psi 10 mins.
                          Circulate total of 190bbls at 6bpm with rig pumps.
23:00  1.00   179.00 CMT  Dowell Pump 5bbls seawater Test lines 2000psi 5 mins.
                          Tested Ok. Pump remaining 15bbls of Seawater preflush.
                          Mix and pump 240bbl, 15.9ppg cement slurry consisting
                          of 1149sx Class G cement with 20sx CACL (1% BWOC) 141
                          bbls of mixwater.

                          00:00 - 06:00 : Displace cement. Check floats. OK.
                          Release R/tool. POOH. L/out cementing string, 30"
                          W/head running tool, and 36" BHA. Make up 17 1/2" BHA.
                          P/up 5" HWDP.
Total 24.00
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: P/up BHA and D/pipe, Hand safety. Working Boats. Shallow gas procedures.
Drilling 36" hole. Cementing operations.
Boats:
Pacific Frontier: at Rig
Pacific Challanger: at BBMT
Lady Kari-anne: Departed rig at 17:30hrs. Offloaded Cement and 13-3/8" Casing,
Cement.
Last fire drill:- 12 Jan 03
Abandon drill:- 02 Feb 03
Last Safety meeting:- 02 Feb 03
2x Helicopters.
Steve Felstead conduct EAL Scallop #1 inductions with Rig crews.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	Yes		
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	

BOP System Inspection (Minicheck) No 0

PERSONNEL

Personnel : S. Felstead, K.Pool
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 91
Total Hours : 1092.00

HEAD COUNTS

Contractor	64	ExxonMobil	4
Contractor Short Service (SSE)	0	Service Company	23

SAFETY INCIDENT

*** Near Miss
The deck crew on the supply vessel Lady Kari-anne were inadvertently engulfed by Barite/Bentonite dust from Sedco 702 while discharging cargo. Rig notified and venting stopped while vessel being offloaded.

MANAGEMENT SUMMARY

P/up Drill pipe. Offload cement from supply vessels. Make up 36" BHA. RIH. Tagged competent mud line at 135.51m. Drill 36" hole to 179m. Run and cement 30" structural casing with W/H and PGB.

COST DATA (Australian Dollar)

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	372,809	0	372,809	38,657
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,119,199	15,708	8,134,907	38,657
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,119,199	15,708	8,134,907	38,657

MUD REPORT

Time	11:30	Flowline Temp	.0 deg C	% Solids	.0
Mud Type	WBM	Filtrate	.0 cc	% LGS	.0
Sample From	Pit	Filter Cake	.0 32nd"	% Sand	.00
		HTHP Temp	.0 deg C	% Water	.0
MD	.00 meters	Filtrate	.0 cc	% Oil	.0
Density	8.80 ppg				
Viscosity	138 sec	Elec Stab	0 volts	Ca++	0
PV	22.0 cp	MBT	.0 lb/bbl	Cl-	0
YP	91.0 phsf	Excess Lime	.00 lb/bbl	CaCl2	0
Gels	33./ 34. phsf			pH	7.5
		Circ Volume	111.4 barrel	Pf/Mf	.0/ .0
		Vol Hole Dr	93.7 barrel	Pm	.0

Rhe'try at 20.0 deg: 600/135 300/113 200/102 100/87 60/0 30/0 6/42 3/33
Check on Guar Gum sweep fluid.

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	775	1475	3263	Fuel	0	0	1863

Cement	1150	1861	711	Gel	174	671	1388
Drill Water	69	4531	6862	Potable Water	126	126	533

MUD ADDITIVES

Function	Name	Unit	Size	Amount
CALCIUM REMOVER	Soda Ash	KGS	25	5
FILTRATION REDUCER	PAC-L	KGS	25	2
SHALE CONTROL	Calcium Chlorid	KGS	25	20
VISCOSIFIER	Bentonite	SAX	1	551
VISCOSIFIER	Guar Gum	KGS	25	26
WEIGHTING MATERIAL	Barite	SAX	100	775
WEIGHTING MATERIAL	Caustic Soda	KGS	25	6

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
1 1	26.000	BT	RRB	Y11	135.51	43.5	2.00	21.75	21.75	1-1	1	1	270

HYDRAULICS

```
Pump Displaces    Rate      Nozzle Sizes      20.0 18.0 18.0  Annular Velocities
      bbl/st     str/min        32nd"         18.0   .0   .0            ft/min
                                                .0   .0       DC (Max)        0.
                            Total Flow Area  1.0523 in2       DP (Min)        0.
                            Nozzle Velocity     .00 m/sec        (Min OH) ******
                            Hole Diameter    26.000 inches    Riser (Min)     0.
                            Bit
                              Pressure Drop       0 psi
Pump Rate       0 str/min                         0 % of SPP
Flow Rate     .00 gpm         Impact Force        0 lbf
Pressure        0 psi         Hydraulic HP     .000 hp/in2
```

SURVEYS

No surveys have been entered.

WELL CONTROL

```
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)            1543 psi
                                          Formation Strength      N/A
                                          Kick Tolerance          N/A
                                          Pore Pressure           .00 ppg
                                          MASP                    N/A

                                          Background Gas           .0
Density              .00 ppg              Connection Gas           .0
ECD                  .00 ppg              Trip Gas                 .0
   at            179.000 meters
   with bit at      .000 meters
```

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure :	1019	0	mm Hg	Wind Speed :	35.0	.0	knot
Heave :	.00	.00	meters	Direction :	75	0	degree
Pitch :	.30	.00	degree	Wave Height :	2.00	.00	meters
Roll :	.30	.00	degree	Period :	4	0	second

Swell Height :	2.00	.00	meters	Direction :	75	0	degree
Period :	4	0	second	Air Temperature:	17.0	.0	deg C
Direction:	75	0	degree	Sea Temperature:	16.0	.0	deg C
Visibility :	20.0	.0	km	Cloud Cover :	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	230	0
3	240	0
4	230	0
5	240	0
6	240	0
7	240	0
8	250	0

RISER DATA

Riser Tension: 0 Flex Joint Rotation: .0 Hole Position, Offset: .00
Angle : .0 Angle : 0

DRILL STRING

Date Run:	2-Feb-03	Date Pulled:	2-Feb-03	Length of BHA :	135.790
Time Run:	06:00	Time Pulled:	17:00	BHA Weight in Air :	.0
Depth In:	135.510	Depth Out :	179.000	Above Jars:	.0
				Below Jars:	.0
				In Mud :	.0

BT/HO/BS/SV/9.500 DC/9.500 DC/9.500 DC/XO/8.250 DC/8.250 DC/XO/5.000 HW

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
HW	5.000	3.000	????	4.500	IF	.0					125.590
XO	8.188	2.875	????	4.500	IF	.0					.850
DC	8.250	2.875	????	6.625	REG	.0					8.640
DC	8.250	2.875	????	6.625	REG	.0					8.910
XO	9.438	3.000	????	6.625	REG	.0					1.090
DC	9.500	3.000	????	7.625	REG	.0					8.920
DC	9.500	3.000	????	7.625	REG	.0					9.320
DC	9.500	3.000	????	7.625	REG	.0					9.290
SV	9.500	3.000	????	7.625	REG	.0					2.730
BS	9.500	3.125	????	7.625	REG	.0			.000	.00	.840
HO	36.000	3.000	????	7.625	REG	.0					2.220
BT	26.000	3.000	????	7.625	REG	.0					.600

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000

============================== CEMENT INFORMATION ==============================

Start Date :	2-Feb-03	Reciprocation?:	N	Number of Plugs :	0
Time :	23:00	Rotation? :	N	Did Plug Bump? :	N
Finish Date:	2-Feb-03	% Returns :	0	Did Float(s) Hold?:	Y
Time	23:59	Top of Cement :	132.00	Casing Size :	30.000

	Density	Yield	Amt	Volume	Rate	Composition
Pref	.00			.0	.0	
Flsh	8.58			20.0	6.0	Seawater
Lead	.00	.0	0	.0	.0	
Tail	15.90	1.2	1149	240.0	6.0	
Post	.00			.0	.0	
Disp	8.58			35.0	6.0	Seawater

	Class	Additives
Lead		
Tail	G	Class G. 1% BWOC CaCl2, 0.003 gal/sk NF-5

Floats held.

*** End 03-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:02 Central Time

```
Drilling                     DETAILED DAILY REPORT                  04-Feb-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD            m: 3126.00 |  506.00
Office     : Australia SE                      TVD           m: 3126.00 |  506.00
Client     : ExxonMobil Development            Days                     |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |      5.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |       .0
Operator   : Esso Aus Res                       - from Spud   :         |      1.5
Field      : Gippsland Basin                   Spud Date      :       02-Feb-2003
Country    : Australia                         Progress      m:            327.00
Latitude   :  38d 12' 49" South                Drilling Hours :             10.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:             32.70
Water Depth:  109.60 m                         Percentage NPT :                .0
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 30.000 inches at 179.000 MD, 179.000 TVD
Next Casing       : 13.375 inches at 900.000 meters MD
Leakoff Test      : .00 ppg

Current: Drilling 17 1/2" hole.
Planned: Drill to 17 1/2" Hole to 915m. Conduct wiper trip. POOH. Run Casing.

Start Elpsd  End MD                          Description
----- ----- -------- ------------------------------------------------------------
00:00   .50   179.00 CMT  Dowell displace cement with 35bbls of seawater.
                          Displace cement at 6BPM with 200psi. Cement returns
                          noted at sea bed with ROV. Shut down pump. No returns.
                          Float held ok. Rig down cement line. ROV inspect Bulls
                          eye. Both Bulls eye indicators showing balls at 0
                          degree's.

                          Dril quip release running tool with 4 turns clockwise.

                          Reference depths:
                          Water Depth                109.6m.
                          Top of 30" SSWH from RT  132.69m
                          RT to mudline             135.51m
                          RT to sealevel             25.90m
                          30" Casing shoe set at   179.00m
00:30   .75   179.00 TBLR POOH lay out 30" Dril Quip r/tool, and X-overs.
01:15   .25   179.00 TRIP Break and lay down string, BHA or tools -- Break out
                          cement stand, side entry sub and TIW valve.
01:30   .25   179.00 TRIP Break and lay down string, BHA or tools -- Rig down
                          350 tonne elevators. Rig up drilling bails and
                          elevators.
01:45  1.00   179.00 TRIP Break and lay down string, BHA or tools -- Break and
                          lay down 26" Bit and 36" hole opener BHA.

                          NOTE: Broken TOTCO ring found in Andergauge flask.
02:45  1.25   179.00 TRIP Pick up or make up string, BHA, or tools -- Pick up
                          and make up 17 1/2' BHA. Rack same in derrick.
```

04:00	.75	179.00	TRIP	Pick up or make up string, BHA, or tools -- Pick up and make up 18-3/4' R/tool and pup joints. Lay down same.
04:45	1.50	179.00	TRIP	Pick up or make up string, BHA, or tools -- Pick up and make up 5" HWDP and Jars.
06:15	.75	179.00	TRIP	Pick up or make up string, BHA, or tools -- Hold think drill. Pick up and rack back 5" Drill pipe in derrick.
07:00	3.75	179.00	TRIP	Pick up or make up string, BHA, or tools -- Lay out single from HWDP stand. Load dart in cement head on catwalk. Pick up and make up TIW valve. Rack back same.
10:45	1.25	179.00	TRIP	Run string in hole -- RIH with 17 1/2" BHA, tie on guide ropes in moon pool.
12:00	1.00	179.00	TRIP	Run string in hole -- Continue to RIH with 17 1/2" BHA from 84m to 173m. Tag hard cement with pumps at 173m.
13:00	.25	179.00	DRLG	Hold shallow gas think drill.
13:15	.75	179.00	DRLG	Drill out cement and shoe from 173m to 179m. WOB 10k, RPM 80, 800gpm.
14:00	10.00	506.00	DRLG	Drill 17-1/2" hole from 179m to 506m. Survey on connections. Pump 25bbl Hi-visc mid stand and 50bbls on every connection.
Total	24.00			

==================================== REMARKS ===================================

Held PTSM with both day and night shifts.
Topics: P/up BHA and D/pipe, Hand safety. Working Boats. Shallow gas procedures. Drilling 17.5" hole. ROV monitoring, Work permits.
Boats:
Pacific Frontier: at Rig
Pacific Challanger: at BBMT
Last fire drill:- 12 Jan 03
Abandon drill:- 02 Feb 03
Last Safety meeting:- 03 Feb 03
2x Helicopters.
Continue with EAL Scallop #1 inductions with Rig crews.
NOTE:- The WGS84 position of the drill stem at the Scallop location is as follows. (1.56m on a bearing of 221.1 deg (T) from the intended Scallop #1 location)
Latitude 38 deg 12min 48.615 South
Longitude 148 deg 35min 28.879 East

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ==================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 89
Total Hours : 1068.00

HEAD COUNTS

Contractor	62	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	22

MANAGEMENT SUMMARY

Displace cement. POOH Lay out cement stinger. Make up Cement head. Pick up 17 1/2" BHA. Drill from 179m to 506m.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	342,698	0	342,698	10,200
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,461,897	15,708	8,477,605	48,857
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,461,897	15,708	8,477,605	48,857

MUD REPORT

Time	22:45	Flowline Temp	.0 deg C	% Solids	.0
Mud Type	WBM	Filtrate	.0 cc	% LGS	.0
Sample From	Pit	Filter Cake	.0 32nd"	% Sand	.00
		HTHP Temp	.0 deg C	% Water	.0
MD	474.00 meters	Filtrate	.0 cc	% Oil	.0
Density	8.65 ppg				
Viscosity	113 sec	Elec Stab	0 volts	Ca++	0
PV	9.0 cp	MBT	.0 lb/bbl	Cl-	0
YP	58.0 phsf	Excess Lime	.00 lb/bbl	CaCl2	0
Gels	14./ 32. phsf			pH	10.5
		Circ Volume	430.7 barrel	Pf/Mf	.0/ .0
		Vol Hole Dr	319.2 barrel	Pm	.0

Rhe'try at 22.0 deg: 600/76 300/67 200/62 100/55 60/0 30/0 6/20 3/12
Check on seawater-diluted flocced gel.

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3263	Fuel	158	0	1705
Cement	0	0	711	Gel	265	0	1123
Drill Water	1280	0	5582	Potable Water	106	126	553

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	12
CALCIUM REMOVER	Soda Ash	KGS	25	1
VISCOSIFIER	Bentonite	SAX	1	249
VISCOSIFIER	Guar Gum	KGS	25	42
WEIGHTING MATERIAL	Caustic Soda	KGS	25	3

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
2 1	17.500	BT	NLH	DS34HF	179.00	327.0	10.00	32.70	32.70	1-1	X	1	168

```
==================================== HYDRAULICS ====================================
Pump Displaces    Rate      Nozzle Sizes      14.0 14.0 14.0  Annular Velocities
      bbl/st     str/min       32nd"          14.0 14.0 14.0            ft/min
  1    .1194       81                         14.0 14.0       DC (Max)      136.
  2    .1194       82       Total Flow Area  1.2026 in2       DP (Min)       38.
  3    .1194       77       Nozzle Velocity   97.86 m/sec        (Min OH)   104.
                            Hole Diameter    17.500 inches    Riser (Min)    42.
                            Bit
                              Pressure Drop     774 psi
Pump Rate     240 str/min                        32 % of SPP
Flow Rate 1203.55 gpm         Impact Force     1684 lbf
Pressure     2400 psi         Hydraulic HP    2.261 hp/in2


===================================== SURVEYS =====================================
                              No surveys have been entered.


=================================== WELL CONTROL ===================================
Pump    Rate     Pressure      MD
      str/min     psi       meters        Burst (70%)            1543 psi
  1        0           0        .000      Formation Strength       N/A
  2        0           0        .000      Kick Tolerance           N/A
  3        0           0        .000      Pore Pressure            .00 ppg
                                          MASP                     N/A

                                          Background Gas            .0
Density             8.40 ppg              Connection Gas            .0
ECD                 8.40 ppg              Trip Gas                  .0
   at             506.000 meters
   with bit at    505.968 meters


================================= WEATHER REPORT =================================
                 23:59  Max                                  23:59  Max
                 ----- -----                                ------ ------
Bar Pressure   :  1021     0 mm Hg      Wind Speed     :   32.0   35.0 knot
Heave          :   .00   .00 meters          Direction :     55      0 degree
Pitch          :   .30   .00 degree     Wave Height    :   3.00    .00 meters
Roll           :   .30   .00 degree          Period    :      5      0 second
Swell Height   :  3.00   .00 meters          Direction :     55      0 degree
      Period   :     5     0 second     Air Temperature:   19.0     .0 deg C
      Direction:    55     0 degree     Sea Temperature:   16.0     .0 deg C
Visibility     :  20.0    .0 km         Cloud Cover    :      0      0


================================ ANCHOR TENSIONS ================================
                 Anchor     Tension at 23:59     24-Hr Maximum
                    1               250                0
                    2               230                0
                    3               240                0
                    4               230                0
                    5               240                0
                    6               250                0
                    7               250                0
                    8               260                0


==================================== RISER DATA ====================================
Riser Tension:       0  Flex Joint Rotation:   .0  Hole Position, Offset:    .00
      Angle  :      .0                                            Angle :      0
```

DRILL STRING

Date Run:	3-Feb-03	Date Pulled:	6-Feb-03	Length of BHA :	276.720
Time Run:	12:00	Time Pulled:	06:30	BHA Weight in Air :	.0
Depth In:	179.000	Depth Out :	917.000	Above Jars:	.0
				Below Jars:	.0
				In Mud :	.0

BT/17.500 ST/SV/17.500 ST/9.500 DC/9.500 DC/17.500 ST/9.500 DC/XO/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
HW	5.000	3.000	????	4.500	IF	.0					832.680
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	8.188	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					8.640
DC	8.250	2.875	????	6.625	REG	.0					8.910
XO	9.438	3.000	????	6.625	REG	.0					1.090
DC	9.500	3.000	????	7.625	REG	.0					8.920
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.870
DC	9.500	3.000	????	7.625	REG	.0					9.320
DC	9.500	3.000	????	7.625	REG	.0					9.290
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		2.000
SV	9.500	3.000	????	7.625	REG	.0					3.000
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.800
BT	17.500	3.000	????	7.625	REG	.0					.420

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	10	Pick-up	180	Off-TD	2000.0	BHA	10.75
RPM	145	Slack-off	180	On-TD	10000.0	Shock Sub	.00
		Off-TD, Rotating	180			Jars	10.75

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000

*** End 04-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

```
Drilling                     DETAILED DAILY REPORT                 05-Feb-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 |  917.00
Office     : Australia SE                     TVD            m: 3126.00 |  917.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry       :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |     6.0
Rig Name   : Sedco 702                         - Ahead/Behind:          |     N/A
Operator   : Esso Aus Res                      - from Spud   :          |     2.5
Field      : Gippsland Basin                  Spud Date      :      02-Feb-2003
Country    : Australia                        Progress      m:           411.00
Latitude   :  38d 12' 49" South               Drilling Hours :            11.00
Longitude  : 148d 35' 29" East                ROP        m/hr:            37.36
Water Depth:  109.60 m                        Percentage NPT :               .0
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 30.000 inches at 179.000 MD, 179.000 TVD
Next Casing       : 13.375 inches at 900.000 meters MD
Leakoff Test      : .00 ppg

Current: Handling 17 1/2" BHA.
Planned: Wiper trip. Drop Gyro. POOH. Run and cement 13-3/8" casing.

Start Elpsd  End MD                       Description
----- ----- -------- ------------------------------------------------------------
00:00 11.00   917.00 DRLG Held Shallow gas drill. Continued to drill 17-1/2"
                          hole from 506m to 917m. Survey on connections. Pump
                          25bbl Hi-visc mid stand and 50bbls on every
                          connection. Surveys taken at 506m, 536m, 565m,594m,
                          623m, 652m,681m, 710m with Anderdrift survey tool. All
                          surveys showing 0 degrees inclination.

                          Held Shallow gas drill.

                          Pacific Frontier alongside at 04:30hrs. Offload cargo
                          and bulk Cement
11:00  1.00   917.00 CIRC Circulate hole clean. Pump 100bbl Hy-Visc sweep, and
                          circulate out with seawater. Take Anderdrift survey at
                          917m. 0 degrees inclination.
12:00   .50   917.00 CIRC Continue to circulate hole clean with 2000bbls of
                          seawater.
12:30   .75   917.00 CIRC Displace hole to Gel. Pumped total of 800bbls Gel.
13:15  2.50   917.00 TRIP Short trip (not to surface) -- Conduct wipetr trip to
                          shoe @ 179m. Hole good no excess drag.
15:45   .25   917.00 TRIP Short trip (not to surface) -- RIH from 179m to 237m.
16:00  2.00   917.00 DRLG Hung up at 237m. Make up TDS washed and reamed thru
                          tight spots at 237, 273, 290m, 340m, 498m. Reamed down
                          to 518m.
18:00  1.00   917.00 TRIP Short trip (not to surface) -- Wiper trip from 518m to
                          casing shoe at 179m. Hole OK no excess drag.
19:00   .75   917.00 TRIP Run string in hole -- RIH from 179m to 519m on
                          elevators. Hole good.
```

19:45	2.00	917.00	DRLG	Hung up at 519m. Made up TDS. Washed and reamed from 519m to TD @ 917m. 3.5m of fill on bottom. Tight hole at 519m, 553m, 572m, 584m, and 692m.
21:45	1.25	917.00	CIRC	Pumped 150bbls of Gel sweep. Circulated hole clean with 1500bbls of seawater.
23:00	1.00	917.00	TRIP	Short trip (not to surface) -- Conduct wiper trip from 917m to 518m. Hole good no excess drag.
Total	24.00			

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Drilling 17 1/2" Hole. Correct PPE. Hand safety. Working Boats. Shallow gas procedures. ROV monitoring, Work permits. Environmental awareness.
Boats:
Pacific Frontier: at BBMT
Pacific Challanger: at Rig
Last fire drill:- 12 Jan 03
Abandon drill:- 02 Feb 03
Last Safety meeting:- 03 Feb 03
1x Helicopters.
Continue with EAL Scallop #1 inductions with Rig crews.
NOTE:- The FINAL Position, based on "Differential GPS", of the drill stem at the Scallop location is as follows:
Final drillstring position is 1.56m on a bearing of 221.1 deg (True) from the intended Scallop #1 location
Datum: GDA94
Latitude 38deg 12min 48.615 South
Longitude 148deg 35min 28.879 East
Projection: MGA94 Zone55
Easting 639,314.95mE
Northing 5,769,298.84mN

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	04-Feb-2003
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ===================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 88
Total Hours : 1056.00

================================== HEAD COUNTS ==================================

Contractor	62	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	21

============================== MANAGEMENT SUMMARY ==============================

Drilled 17 -1/2 hole from 506m to 917m. Pump sweeps and circulate hole clean, Conduct wiper trip to shoe @ 179m. Condition hole prior to running casing.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	372,769	140,414	513,183	51,824
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,834,666	156,122	8,990,788	100,681
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,834,666	156,122	8,990,788	100,681

MUD REPORT

Time	20:30	Flowline Temp	.0 deg C	% Solids	.0
Mud Type	WBM	Filtrate	.0 cc	% LGS	.0
Sample From	Pit	Filter Cake	.0 32nd"	% Sand	.00
		HTHP Temp	.0 deg C	% Water	.0
MD	917.00 meters	Filtrate	.0 cc	% Oil	.0
Density	12.00 ppg				
Viscosity	143 sec	Elec Stab	0 volts	Ca++	0
PV	19.0 cp	MBT	.0 lb/bbl	Cl-	0
YP	51.0 phsf	Excess Lime	.00 lb/bbl	CaCl2	0
Gels	42./ 61. phsf			pH	9.0
		Circ Volume	831.8 barrel	Pf/Mf	.0/ .0
		Vol Hole Dr	401.2 barrel	Pm	.0

Rhe'try at 21.0 deg: 600/89 300/70 200/63 100/52 60/0 30/0 6/38 3/35
Check on 12.0 ppg hi-vis mud.

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	2197	0	1066	Fuel	147	0	1558
Cement	0	2271	2982	Gel	418	0	705
Drill Water	1869	0	3713	Potable Water	112	132	573

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	12
FILTRATION REDUCER	PAC-L	KGS	25	5
SURFACE ACTIVE	NO-SULF	KGS	25	2
VISCOSIFIER	Bentonite	SAX	1	418
WEIGHTING MATERIAL	Barite	KGS	25	136
WEIGHTING MATERIAL	Barite	SAX	100	2197
WEIGHTING MATERIAL	Caustic Soda	KGS	25	15

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
2 1	17.500	BT	NLH	DS34HF	179.00	738.0	21.00	37.36	35.14	1-1	X	1	152

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min		
1	.1194	81		
2	.1194	82		

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 14.0
Total Flow Area 1.2026 in2

Annular Velocities ft/min
DC (Max) 136.
DP (Min) 38.

```
  3    .1194       77       Nozzle Velocity   97.86 m/sec        (Min OH)   104.
                            Hole Diameter    17.500 inches    Riser (Min)    42.
                            Bit
                              Pressure Drop     793 psi
Pump Rate     240 str/min                        30 % of SPP
Flow Rate 1203.55 gpm         Impact Force     1724 lbf
Pressure     2650 psi         Hydraulic HP    2.315 hp/in2
```

SURVEYS

No surveys have been entered.

WELL CONTROL

```
Pump    Rate     Pressure      MD
       str/min     psi       meters      Burst (70%)             1543 psi
  1       0          0         .000      Formation Strength       N/A
  2       0          0         .000      Kick Tolerance           N/A
  3       0          0         .000      Pore Pressure            .00 ppg
                                         MASP                     N/A

                                         Background Gas            .0
Density             8.60 ppg             Connection Gas            .0
ECD                 8.60 ppg             Trip Gas                  .0
   at             917.000 meters
   with bit at    916.838 meters
```

WEATHER REPORT

```
                 23:59  Max                               23:59  Max
                 ----- -----                             ------ ------
Bar Pressure   :  1014     0 mm Hg      Wind Speed     :   35.0     .0 knot
Heave          :   .00   .00 meters          Direction :     30      0 degree
Pitch          :   .30   .00 degree     Wave Height    :   1.00   2.50 meters
Roll           :   .30   .00 degree          Period    :     40      0 second
Swell Height   :  2.50   .00 meters          Direction :     30      0 degree
      Period   :     4     0 second     Air Temperature:   19.0     .0 deg C
      Direction:   230     0 degree     Sea Temperature:   16.0     .0 deg C
Visibility     :  19.0    .0 km         Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	225	0
3	230	0
4	230	0
5	240	0
6	250	0
7	250	0
8	260	0

RISER DATA

```
Riser Tension:       0  Flex Joint Rotation:   .0  Hole Position, Offset:    .00
      Angle  :      .0                                          Angle :      0
```

DRILL STRING

```
Date Run:   3-Feb-03   Date Pulled:   6-Feb-03   Length of BHA         :  276.720
Time Run:      12:00   Time Pulled:      06:30   BHA Weight in Air     :       .0
Depth In:    179.000   Depth Out  :    917.000              Above Jars:       .0
                                                            Below Jars:       .0
```

In Mud : .0

BT/17.500 ST/SV/17.500 ST/9.500 DC/9.500 DC/17.500 ST/9.500 DC/XO/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
HW	5.000	3.000	????	4.500	IF	.0					832.680
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	8.188	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					8.640
DC	8.250	2.875	????	6.625	REG	.0					8.910
XO	9.438	3.000	????	6.625	REG	.0					1.090
DC	9.500	3.000	????	7.625	REG	.0					8.920
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.870
DC	9.500	3.000	????	7.625	REG	.0					9.320
DC	9.500	3.000	????	7.625	REG	.0					9.290
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		2.000
SV	9.500	3.000	????	7.625	REG	.0					3.000
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.800
BT	17.500	3.000	????	7.625	REG	.0					.420

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	10	Pick-up	210	Off-TD	5.0	BHA	34.75
RPM	140	Slack-off	205	On-TD	15.0	Shock Sub	.00
		Off-TD, Rotating	200			Jars	34.75

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000

*** End 05-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

Drilling **DETAILED DAILY REPORT** **06-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                       AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                  MD             m: 3126.00 |  917.00
Office     : Australia SE                    TVD            m: 3126.00 |  917.00
Client     : ExxonMobil Development          Days                      |
Drill Team : Australia Offshore               - if Dry      :     42.0 |
                                              - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO   - to Complete :       .0 |
Contractor : Trans Sed Forex                  - Susp + Comp :     42.0 |      7.0
Rig Name   : Sedco 702                        - Ahead/Behind:          |      7.8
Operator   : Esso Aus Res                     - from Spud   :          |      3.5
Field      : Gippsland Basin                 Spud Date      :       02-Feb-2003
Country    : Australia                       Progress      m:               .00
Latitude   :  38d 12' 49" South              Drilling Hours :               .00
Longitude  : 148d 35' 29" East               ROP        m/hr:
Water Depth:  109.60 m                       Percentage NPT :                .1
RKB Height :   25.90 m                       Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Next Casing       : 13.375 inches at 900.730 meters MD
Leakoff Test      : .00 ppg

Current: Running riser and BOP stack
Planned: Run Riser and land BOP stack, Test Casing.
```

Start	Elpsd	End MD		Description
00:00	.75	917.00	TRIP	Short trip (not to surface) -- Conduct wiper trip from 518m to 917m. Make up TDS wash last stand to bottom. 1m fill. Hole good.
00:45	1.25	917.00	CIRC	Pump 150 bbls of Hy-Visc sweep, followed by 1500bbls of Seawater
02:00	1.00	917.00	CIRC	Displace hole to 1200bbls of 12ppg mud. SDI drop gyro.
03:00	2.50	917.00	TRIP	Pull string out of hole -- POOH with 17-1/2" BHA from 917m. Rack back 5" HWDP. SLM on trip out. Hole good no drag. Fill hole on trip out with 12 ppg mud.
05:30	1.00	917.00	TRIP	Break and lay down string, BHA or tools -- Continue to POOH from 55m. Break off 17-1/2" PDC bit and Rack back 17 1/2" BHA. ROV jet off wellhead. Bullseyes still reading 0 degrees.
06:30	1.00	917.00	TBLR	Rig down drilling equipment. Dress rig floor for running 13-3/8" casing.
07:30	.50	917.00	TBLR	Hold think drill for running casing. Pick up shoe track. Check pump thru and floats. Tested OK.
08:00	.25	917.00	TBLR	Change out Weatherford Casing tong due to leaking seal on tong.
			NPT	See Event 1 (RIG)
08:15	.75	917.00	TBLR	Threadlock Shoe track, and install centralisers.
09:00	.25	917.00	TBLR	Install ropes to guidelines in the moonpool.
09:15	2.00	917.00	TBLR	Run 13 3/8" casing from 25m to 167m. ROV observe Shoe track stab into 30" wellhead.

				NOTE:- Held Emergency response notification drill. All required notifications confirmed in 9 minutes.
11:15	.25	917.00	TBLR	Rig down 150 ton side door elevators, Rig up 350 tonne elevators.
11:30	.25	917.00	TBLR	Held Casing THINK drill with on coming crew.
11:45	.25	917.00	TBLR	Run 13 3/8" Casing from 167m to 192m. Entered open hole at 179m.
12:00	3.00	917.00	TBLR	Continue to run 13 3/8" Casing from 192m to 758m. Filling every Jt with seawater.
15:00	.25	917.00	TBLR	Rig down 350 tonne elevators. Rig up 5" D/pipe elevators.
15:15	.75	917.00	TBLR	Pick up 18 3/4" wellhead housing with running tool, and make up same.
16:00	.50	917.00	TBLR	Back out running tool, and make up 13 3/8" Cement plug. Make up 18 3/4" R/tool wellhead. Fill with seawater.
16:30	.50	917.00	TBLR	Continue to run casing from 758m to 900.73m on 5" D/pipe landing string. Drift landing string with 2.75" drift.
17:00	.25	917.00	TBLR	Land out wellhead as per Dril-Quip instructions. Take 50K O/pull to confirm latched. Tested Ok. Float shoe @ 900.81m Float collar @ 875.14m Top of 18 3/4" Well head @ 131.85m
17:15	.25	917.00	CIRC	Rig up cement line to cement head.
17:30	1.25	917.00	CIRC	Break circulation with 550psi.Circulate 600bbls of seawater with rig pumps at 10bbl/min.
18:45	.25	917.00	CMT	Line up Dowell. Break circulation with 5bbls of seawater and flouricine dye. Test Line to 2500psi/5mins tested Ok. Pump remaining 5bbls of seawater/dye.
19:00	.25	917.00	CMT	Dowell pumped 40bbls of Seawater preflush
19:15	2.25	917.00	CMT	Dowell Mix and pump 535 bbls (1358 sks) of class G cement @ 12.5 ppg - Mix with seawater - 420 bbls of total mix fluid - 614 gals of Econolite (14.6 gal/10bbl) - 11 gals of NF-5 (0.25 gal/10bbl) - 84 gals of HR-6L Retarder(2.0 gal/10bbl) Followed by - 150 bbls (726 sks)of class G cement @ 15.8 ppg Mixed with FRESH WATER. - 89 bbls of total mix fluid - 2.2 gal of NF-5 (0.25gal/10bbl)
21:30	1.00	917.00	CMT	Drop dart. Dowell pump 25bbls of seawater. Observed dart leave head. No latch on plug observed. Theoretical volume to latch plug with dart:- Drill Pipe volume 7.5bbls + 2 bbls for surface lines + 9.5bbls. Change to rig pump and continued displacement with 340bbls seawater at 10BPM. Pressure increased from 200psi to 650 while displacing cement with rig pump. Shut down pressure 580psi after displacing cement. Did not bump plug.(Theoretical volume only pumped at 100% pump efficiency.) NOTE:- Flouricine seen at wellhead by ROV after pumping 1049stks (125bbls). Theoretically 167bbls of excess cement returned to wellhead/PGB.
22:30	.25	917.00	CMT	Line up to Cement unit. Dowell bled back 1.5bbls.

```
                              Floats Held ok. Rig down cement line.

                              S/off string weight. Observe wellhead with ROV for
                              subsidance. OK.
22:45   .50   917.00 CMT  Back out and release wellhead running tool with 5
                              turns to right. Lay out cement head.
23:15   .75   917.00 TRIP Pull string out of hole -- POOH with landing string
                              from 133m. Pick up cement head. Break and lay out
                              same.

                              NOTE: Cement plug sheared from running stinger.

                              Move rig 15m off location.
Total 24.00
```

========================= PROBLEM EVENTS AND MILESTONES =========================

```
Event:   1    NPT: Yes   Hours:    .25    Responsible Party: Weatherford
Start:  5-Feb-03 08:00   RIG  Other rig equipment problem
End  :  5-Feb-03 08:15        Seal leaking on Weatherford casing tong
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Tripping. Correct PPE. Hand safety. Working Boats. Running Casing. ROV monitoring, Work permits. Environmental awareness.
Boats:
Pacific Frontier: Arrived at Rig at 23:59hrs.
Pacific Challanger: at Rig
Last fire drill:- 12 Jan 03
Abandon drill:- 02 Feb 03
Last Safety meeting:- 03 Feb 03
1x Helicopters.
NOTE:- The WGS84 position of the drill stem at the Scallop location is as follows. (1.56m on a bearing of 221.1 deg (T) from the intended Scallop #1 location)
Latitude 38 deg 12min 48.615 South
Longitude 148 deg 35min 28.879 East

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		
BOP Pressure Test	No		
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	No		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	04-Feb-2003
BOP System Inspection (Minicheck)	No	0	

=================================== PERSONNEL ===================================

```
Personnel       :  N/A
Supervisors     :  Basset, Anthony A.
                   Vestal, Tommy M.
Total Head Count:     86
Total Hours     :   1032.00
```

================================== HEAD COUNTS ==================================

Contractor	62	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	19

MANAGEMENT SUMMARY

POOH Rack back 17- 1/2" BHA. Rig up run and cement 13-3/8" casing..

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	375,430	131,851	507,281	29,049
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,210,096	287,973	9,498,069	129,730
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,210,096	287,973	9,498,069	129,730

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	1066	Fuel	33	944	2469
Cement	2098	0	884	Gel	0	0	705
Drill Water	709	2200	5204	Potable Water	93	113	593

MUD ADDITIVES

Function	Name	Unit	Size	Amount

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
2 1	17.500	BT	NLH	DS34HF	179.00	.0	.00	.00	.00	1-1	X	1	-1

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.1194	81
2	.1194	82
3	.1194	77

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 14.0

Total Flow Area 1.2026 in2
Nozzle Velocity 97.86 m/sec
Hole Diameter 17.500 inches
Bit
Pressure Drop 793 psi
30 % of SPP
Impact Force 1724 lbf
Hydraulic HP 2.315 hp/in2

Annular Velocities ft/min
DC (Max) 461.
DP (Min) 228.
(Min OH) ******
Riser (Min) 99.

Pump Rate 240 str/min
Flow Rate 1203.55 gpm
Pressure 2650 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec		N+/S-		E+/W-	Dogleg
157.800	.25	195.26	157.800	-.332	-	.332	-	.091	.048
185.100	.37	2.83	185.099	-.302	-	.302	-	.102	.678
212.500	.35	350.71	212.499	-.131	-	.131	-	.111	.087
239.900	.32	1.45	239.899	.028	+	.028	-	.123	.078
267.500	.35	15.59	267.498	.187	+	.187	-	.098	.096
296.400	.35	357.50	296.397	.360	+	.360	-	.078	.114
325.400	.35	358.93	325.397	.537	+	.537	-	.084	.000
354.400	.31	351.16	354.396	.703	+	.703	-	.097	.065

383.200	.28	341.33	383.196	.847	+	.847	-	.132	.062
412.200	.28	333.71	412.196	.977	+	.977	-	.186	.035
441.300	.30	330.59	441.295	1.108	+	1.108	-	.255	.020
470.300	.26	319.95	470.295	1.224	+	1.224	-	.334	.068
499.300	.27	316.67	499.295	1.324	+	1.324	-	.424	.020
528.300	.29	341.21	528.294	1.443	+	1.443	-	.494	.124
557.300	.35	334.17	557.294	1.592	+	1.592	-	.556	.074
586.300	.37	339.92	586.293	1.760	+	1.760	-	.627	.046
644.200	.44	344.86	644.192	2.150	+	2.150	-	.749	.041
673.100	.48	339.40	673.091	2.371	+	2.371	-	.821	.065
702.100	.47	355.15	702.090	2.603	+	2.603	-	.874	.134
731.100	.49	354.85	731.089	2.845	+	2.845	-	.895	.020
760.100	.46	355.22	760.088	3.085	+	3.085	-	.916	.035
789.100	.46	350.78	789.087	3.315	+	3.315	-	.944	.041
818.200	.41	301.70	818.186	3.485	+	3.485	-	1.052	.376
847.200	.51	355.47	847.185	3.669	+	3.669	-	1.150	.440
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

================================= WELL CONTROL =================================

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	0	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	N/A
Kick Tolerance	N/A
Pore Pressure	.00 ppg
MASP	N/A
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density	8.60 ppg
ECD	8.60 ppg
at	917.000 meters
with bit at	916.838 meters

=============================== WEATHER REPORT ================================

	23:59	Max	
Bar Pressure	1017	0	mm Hg
Heave	.00	.00	meters
Pitch	.30	.00	degree
Roll	.30	.00	degree
Swell Height	1.00	.00	meters
Period	2	0	second
Direction	210	0	degree
Visibility	3.0	.0	km

	23:59	Max	
Wind Speed	3.0	.0	knot
Direction	210	0	degree
Wave Height	.20	.00	meters
Period	2	0	second
Direction	210	0	degree
Air Temperature	19.0	.0	deg C
Sea Temperature	16.0	.0	deg C
Cloud Cover	10	0	

============================== ANCHOR TENSIONS ===============================

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	230	0
3	240	0
4	240	0
5	240	0
6	240	0
7	240	0
8	250	0

```
=================================== RISER DATA ===================================
Riser Tension:       0  Flex Joint Rotation:   .0  Hole Position, Offset:    .00
      Angle  :      .0                                              Angle :     0


================================== DRILL STRING ==================================
Date Run:   3-Feb-03   Date Pulled:   6-Feb-03   Length of BHA       :  276.720
Time Run:      12:00   Time Pulled:      06:30   BHA Weight in Air   :       .0
Depth In:    179.000   Depth Out  :    917.000              Above Jars:      .0
                                                            Below Jars:      .0
                                                            In Mud    :      .0
BT/17.500 ST/SV/17.500 ST/9.500 DC/9.500 DC/17.500 ST/9.500 DC/XO/8.250 DC/8.250
DC/XO/5.000 HW/5.000 HW/JR/5.000 HW
```

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
HW	5.000	3.000	????	4.500	IF	.0					832.680
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	8.188	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					8.640
DC	8.250	2.875	????	6.625	REG	.0					8.910
XO	9.438	3.000	????	6.625	REG	.0					1.090
DC	9.500	3.000	????	7.625	REG	.0					8.920
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.870
DC	9.500	3.000	????	7.625	REG	.0					9.320
DC	9.500	3.000	????	7.625	REG	.0					9.290
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		2.000
SV	9.500	3.000	????	7.625	REG	.0					3.000
ST	17.500	3.000	????	7.625	REG	.0	.000	.000	.000		1.800
BT	17.500	3.000	????	7.625	REG	.0					.420

```
=============================== DAILY DRILL STRING ===============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD       .0   BHA              .00
RPM      0     Slack-off               0    On-TD        .0   Shock Sub        .00
               Off-TD, Rotating        0                      Jars             .00
```

==================================== **CASING** ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

```
============================== CEMENT INFORMATION ==============================
Start Date :  5-Feb-03   Reciprocation?:        N   Number of Plugs   :        1
      Time :     19:00   Rotation?     :        N   Did Plug Bump?    :        N
Finish Date:  5-Feb-03   % Returns     :      100   Did Float(s) Hold?:        Y
       Time      22:45   Top of Cement :   132.69   Casing Size       :   13.375
```

	Density	Yield	Amt	Volume	Rate	Composition
Pref	.00			.0	.0	
Flsh	8.58			50.0	6.6	10 bbls SW w/Floricine, 40 bbls SW

Lead	12.50	2.2	1358	535.0	6.1	
Tail	15.80	1.2	726	150.0	5.1	
Post	8.60			25.0	4.0	Seawater
Disp	8.60			340.0	10.0	Seawater

	Class	Additives
Lead	G	0.0452 gal/sk Econolite Liquid, 0.062 gal/sk HR-6L, 0.003 gal/sx NF-5
Tail	G	0.003 gal/sx NF-5

Did not see dart pick up plug and shear out. Floricine seen at seabed with ROV on final displacement. Calculated 167 bbls excess returns at wellhead.

*** End 06-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

Drilling **DETAILED DAILY REPORT** **07-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 |  917.00
Office     : Australia SE                     TVD           m: 3126.00 |  917.00
Client     : ExxonMobil Development           Days                     |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |      8.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |      7.8
Operator   : Esso Aus Res                      - from Spud   :         |      4.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:               .00
Latitude   :  38d 12' 49" South               Drilling Hours :               .00
Longitude  : 148d 35' 29" East                ROP        m/hr:
Water Depth:  109.60 m                        Percentage NPT :                .1
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Next Casing       : 13.375 inches at 900.730 meters MD
Leakoff Test      : .00 ppg

Current: P/up  5" Drill pipe.
Planned: P/up 5" D/pipe & 12 1/4" BHA. RIH. Hold Diverter/choke drill.
```

Start	Elpsd	End MD		Description
00:00	.25	917.00	TRIP	Break and lay down string, BHA or tools -- Service break Dril-Quip 18 3/4" Well Head Running tool.
00:15	1.00	917.00	BOP	Rig up to run BOP's and riser.
01:15	1.00	917.00	BOP	Make up Riser double and rack back in derrick.
02:15	.75	917.00	BOP	Skid LMRP and BOP over moon pool.
03:00	2.50	917.00	BOP	Function test LMRP and BOP's. Tested Ok.
05:30	.75	917.00	BOP	Make up and run BOP stack through splash zone with double riser section. (Installed beacons and carried out pre submersion checks.)
06:15	1.00	917.00	BOP	Rig up and pressure test choke and kill lines 250psi/10 mins- 5000psi 10mins. Tested Ok.
07:15	2.00	917.00	BOP	Continue to run 3x 50', 1x 35' and 1x 10' riser joints.
09:15	.75	917.00	BOP	Rig up and pressure test choke and kill lines 250psi/10 mins- 5000psi 10mins. Tested Ok.
10:00	.75	917.00	BOP	Pick up and make up slip Jt.
10:45	.75	917.00	BOP	Pick up and make up landing joint. Wait on helicopter 15mins.
11:30	.50	917.00	BOP	Hold THINK drill with new crew on tour for run riser and rucker tensioners.
12:00	.50	917.00	BOP	Install rucker line tensioners.
12:30	1.00	917.00	BOP	Install choke and kill lines.
13:30	.75	917.00	BOP	Pressure test choke and kill goosenecks to 250/5000psi 10/10mins. Tested Ok.
14:15	.50	917.00	BOP	Install storm loops on BOP control lines.
14:45	.25	917.00	BOP	Land BOPS on wellhead, and latch wellhead connector.

				Take 50K O/pull and confirm latched.
				Land BOPs with 540kips, including 110kips block weight.
15:00	1.50	917.00	CMT	Close shear rams. Pressured up on casing to 250psi. Held for 10 mins. Continued to pressure up on casing to 2225psi against shear rams. Pressure bled to 2000psi in 30 mins. Pumped 3bbls, and bled back 3 bbls seawater.
16:30	.25	917.00	BOP	Un pin slip jt and scope out.
16:45	.50	917.00	BOP	Lay out landing Jt.
17:15	.75	917.00	BOP	Install diverter package.
18:00	1.00	917.00	BOP	Rig down riser running equipment. Rig up drilling bails and elevators.
19:00	1.00	917.00	BOP	Run flex joint wear bushing.
20:00	.25	917.00	BOP	Hold THINK drill. (Picking up drill pipe).
20:15	3.00	917.00	BOP	Pick up and RIH 60 jts 5" Drill pipe to 579m. Drift same to 2.75".
23:15	.75	917.00	BOP	Hang off on Middle Pipe rams. Carry out full function test on BOPs using both pods.
Total	24.00			

==================================== **REMARKS** ====================================

Held PTSM with both day and night shifts.
Topics: L/out R/tool. Running BOP's. Correct PPE. Hand safety. Running Casing.
ROV monitoring, Work permits. Environmental awareness.
Boats:
Pacific Frontier: Departed rig at 22:07hrs, in transit to BBMT.
Pacific Challanger: at Rig
Man overboard drill:- 06 Feb 03
4x Helicopters.
Man overboard drill conducted. Pacific Frontier and FRC used in rescue.
Lifeboats 1 & 2 Launched and taken for test run.

====================== **INSPECTIONS, DRILLS, AND CITATIONS** ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		
BOP Pressure Test	Yes		
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	Yes		
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	04-Feb-2003
BOP System Inspection (Minicheck)	Yes	1	

=================================== **PERSONNEL** ===================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 87
Total Hours : 1044.00

================================== **HEAD COUNTS** ==================================

Contractor	61	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	18

MANAGEMENT SUMMARY

Lay out 18 3/4" wellhead running tool. Run BOP and riser. Function test BOPS. Test Casing. P/up D/pipe.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	350,323	0	350,323	45,950
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,560,419	287,973	9,848,392	175,680
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,560,419	287,973	9,848,392	175,680

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	191	2755	3630	Fuel	54	0	2415
Cement	0	0	884	Gel	0	0	705
Drill Water	1697	3080	6587	Potable Water	153	113	553

MUD ADDITIVES

Function	Name	Unit	Size	Amount
BACTERICIDE	Baracide	BKT	25	3
CALCIUM REMOVER	Soda Ash	KGS	25	1
FILTRATION REDUCER	DEXTRID LT	KGS	25	75
FILTRATION REDUCER	PAC-L	KGS	25	21
SHALE CONTROL	phpa	KGS	25	12
VISCOSIFIER	XCD Polymer	KGS	25	21
WEIGHTING MATERIAL	Barite	SAX	100	191
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	20

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
2 1	17.500	BT	NLH	DS34HF	179.00	.0	.00	.00	.00	1-1	X	1	-1

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.1194	81
2	.1194	82
3	.1194	77

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 14.0
Total Flow Area 1.2026 in2
Nozzle Velocity 97.86 m/sec
Hole Diameter 17.500 inches
Bit Pressure Drop 793 psi
30 % of SPP
Impact Force 1724 lbf
Hydraulic HP 2.315 hp/in2

Annular Velocities ft/min
DC (Max) 461.
DP (Min) 228.
(Min OH) ******
Riser (Min) 99.

Pump Rate 240 str/min
Flow Rate 1203.55 gpm
Pressure 2650 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
876.200	.53	338.22	876.184	3.922	+ 3.922	- 1.210	.164

```
  885.800     .51   327.67    885.784      3.999  +   3.999  -   1.249     .309
  907.800     .39   329.98    907.783      4.147  +   4.147  -   1.339     .166


================================= WELL CONTROL =================================
Pump    Rate     Pressure      MD
       str/min     psi       meters        Burst (70%)              2495 psi
  1       0           0        .000        Formation Strength        N/A
  2       0           0        .000        Kick Tolerance            N/A
  3       0           0        .000        Pore Pressure             .00 ppg
                                           MASP                      N/A

                                           Background Gas             .0
Density             8.60 ppg               Connection Gas             .0
ECD                 8.60 ppg               Trip Gas                   .0
   at             917.000 meters
   with bit at    916.838 meters


=============================== WEATHER REPORT ================================
                 23:59  Max                                   23:59  Max
                 ----- -----                                 ------ ------
Bar Pressure   :  1015     0 mm Hg       Wind Speed     :   30.0     .0 knot
Heave          :   .00   .00 meters          Direction :     60      0 degree
Pitch          :   .20   .00 degree      Wave Height    :   2.00   .00 meters
Roll           :   .20   .00 degree          Period     :      5      0 second
Swell Height   :  1.00   .00 meters          Direction :     60      0 degree
      Period   :     5     0 second      Air Temperature:   20.0     .0 deg C
      Direction:    45     0 degree      Sea Temperature:   16.0     .0 deg C
Visibility     :  16.0    .0 km          Cloud Cover    :      0      0


============================== ANCHOR TENSIONS ================================
                 Anchor     Tension at 23:59     24-Hr Maximum
                    1              250                 0
                    2              240                 0
                    3              260                 0
                    4              240                 0
                    5              250                 0
                    6              240                 0
                    7              260                 0
                    8              250                 0


================================== RISER DATA ==================================
Riser Tension:      352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.40
      Angle  :      1.0                                          Angle :    180


================================= DRILL STRING =================================
Date Run:   3-Feb-03   Date Pulled:   6-Feb-03   Length of BHA        :  276.720
Time Run:      12:00   Time Pulled:      06:30   BHA Weight in Air    :       .0
Depth In:    179.000   Depth Out  :    917.000              Above Jars:       .0
                                                            Below Jars:       .0
                                                            In Mud    :       .0
BT/17.500 ST/SV/17.500 ST/9.500 DC/9.500 DC/17.500 ST/9.500 DC/XO/8.250 DC/8.250
DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

                                Connections  Nom     Stab Blade    Length      Section
Tp  OD       ID     Grd    Size  Type Wt/Len  OD In  OD Out  To Ctr Bend   Length
-- ------- ------- ---- ------- --- ------ ------- ------- ------ ----- --------
HW   5.000   3.000 ????   4.500 IF      .0                                   832.680
JR   6.375   2.750 ????   4.500 IF      .0                                     9.940
```

HW	5.000	3.000 ????	4.500 IF	.0				9.380
HW	5.000	3.000 ????	4.500 IF	.0				9.130
XO	8.188	2.875 ????	4.500 IF	.0				.610
DC	8.250	2.875 ????	6.625 REG	.0				8.640
DC	8.250	2.875 ????	6.625 REG	.0				8.910
XO	9.438	3.000 ????	6.625 REG	.0				1.090
DC	9.500	3.000 ????	7.625 REG	.0				8.920
ST	17.500	3.000 ????	7.625 REG	.0	.000	.000	.000	1.870
DC	9.500	3.000 ????	7.625 REG	.0				9.320
DC	9.500	3.000 ????	7.625 REG	.0				9.290
ST	17.500	3.000 ????	7.625 REG	.0	.000	.000	.000	2.000
SV	9.500	3.000 ????	7.625 REG	.0				3.000
ST	17.500	3.000 ????	7.625 REG	.0	.000	.000	.000	1.800
BT	17.500	3.000 ????	7.625 REG	.0				.420

============================== **DAILY DRILL STRING** ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

==================================== **CASING** =====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 07-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

```
Drilling                     DETAILED DAILY REPORT                08-Feb-2003
                                  Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 |  917.00
Office     : Australia SE                     TVD           m: 3126.00 |  917.00
Client     : ExxonMobil Development           Days                     |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |      9.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |      7.8
Operator   : Esso Aus Res                      - from Spud   :         |      5.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:               .00
Latitude   :  38d 12' 49" South               Drilling Hours :               .00
Longitude  : 148d 35' 29" East                ROP       m/hr:
Water Depth:  109.60 m                        Percentage NPT :                .1
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : .00 ppg

Current: Drilling 12 1/4" hole from 920m.
Planned: Drill 12 1/4" hole.

Start Elpsd  End MD                        Description
----- ----- -------- ----------------------------------------------------------
00:00  1.25   917.00 BOP  Complete full function test on BOPs using both pods.
                          Carry out closing unit draw down test.
01:15   .75   917.00 BOP  MODUSPEC continue inspections. Install diverter
                          element, and function test diverter. Diverter not
                          sequencing correctly. The Flowline valve closes before
                          the diverter overboard line valve opens. Subsea
                          engineer trouble shoot system. Continue to pick up 5"
                          drill pipe.
02:00   .50   917.00 TRIP Pull string out of hole -- POOH and rack back 20
                          stands 5" D/pipe in derrick.
02:30  2.25   917.00 TRIP Pick up or make up string, BHA, or tools -- Pick up
                          37jts of 5" Drill pipe from pipe rack.
04:45   .25   917.00 BOP  Function test diverter. Close diverter element.
                          Diverter overboard valve opened and the flowline valve
                          closed in the correct sequence. Pump through both port
                          and starboard overboard lines. Tested Ok.
05:00   .50   917.00 TRIP Pick up or make up string, BHA, or tools -- Continue
                          to pick up 5" drill pipe from pipe deck. 20x stands
                          RIH.
05:30  1.00   917.00 TRIP Pick up or make up string, BHA, or tools -- POOH and
                          rack back 5" D/pipe in Derrick
06:30  2.50   917.00 TRIP Pick up or make up string, BHA, or tools -- Pick up
                          and make up 6ojts 5" drill pipe from pipe deck. RIH to
                          579m. Drift all d/pipe  to 2.75". Held Trip drill 20
                          secs.
09:00   .75   917.00 TRIP Pull string out of hole -- POOH with 5" D/pipe. Rack
                          back in derrick.
09:45   .75   917.00 TRIP Pick up or make up string, BHA, or tools -- M/up
```

				emergency hangoff tool and rack back in derrick.
10:30	2.50	917.00	TRIP	Pick up or make up string, BHA, or tools -- Hold THINK drill. Lay out 17-1/2" BHA from derrick.
13:00	.25	917.00	TRIP	Pick up or make up string, BHA, or tools -- Make up IBOP and Grey valve assy, for pressure testing. Lay out same.
13:15	1.75	917.00	TRIP	Pick up or make up string, BHA, or tools -- Make up 12 1/4" BHA. RIH with same to 295m.
15:00	1.25	917.00	TRIP	Pick up or make up string, BHA, or tools -- Pick up 27x jts of 5" drill pipe, and continue to RIH to 555m. Drift D/pipe to 2.75".
16:15	.50	917.00	CIRC	Install diverter element and circulate 2x string volume. 71 bbls.
16:45	.75	917.00	BOP	Pressure test upper annular and LMRP connector to 250/2200psi 10/10mins.
17:30	.50	917.00	DRLG	BOP drill. Hang off on middle pipe rams and perform power choke drill with all crew members.
18:00	.50	917.00	DRLG	Perform diverter drill, pump through port and stb overboard lines.
18:30	.50	917.00	TRIP	Pick up or make up string, BHA, or tools -- RIH picking up 9x jts of 5" drill pipe, from catwalk. RIH from 555m to 642m.
19:00	1.00	917.00	TRIP	Pick up or make up string, BHA, or tools -- Cont to RIH from 642m to 750m. Make up TDS and wash down to TOC at 843.6m.
20:00	3.25	917.00	DRLG	Drill cement from 843.6m to 900m. Drilled out cement plug at 850m and float collar at 874.5m.
23:15	.25	917.00	CIRC	Pump 100bbl Hy-visc sweep, followed by 100bbls of seawater.
23:30	.50	917.00	CIRC	Displace hole to 9.0ppg KCL/PHPA mud system.
Total	24.00			

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: P/up drill pipe. Well control. Correct PPE. Boats. Drilling ahead.
Boats:
Pacific Frontier: BBMT.
Pacific Challanger: at Rig
Man overboard drill:- 06 Feb 03
2x Helicopters.
Man overboard drill conducted. Pacific Frontier and FRC used in rescue.
Lifeboats 1 & 2 Launched and taken for test run.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		07-Feb-2003
BOP Pressure Test	Yes		07-Feb-2003
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	04-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	07-Feb-2003

=================================== PERSONNEL ===================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 85
Total Hours : 1020.00

HEAD COUNTS

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	19

MANAGEMENT SUMMARY

Function test BOP's on both pods. Pick up 5" D/pipe. Lay out 17 1/2" BHA. Make up 12 1/4" BHA. RIH hold choke drill. Drill out cement. Displace well to 9.0ppg KCL PHPA mud system.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	419,793	0	419,793	13,468
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,980,212	287,973	10,268,185	189,148
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,980,212	287,973	10,268,185	189,148

MUD REPORT

Time	16:45	Flowline Temp	.0 deg C	% Solids	.0
Mud Type	WBM	Filtrate	.0 cc	% LGS	.0
Sample From	Pit	Filter Cake	.0 32nd"	% Sand	.00
		HTHP Temp	.0 deg C	% Water	.0
MD	917.00 meters	Filtrate	.0 cc	% Oil	.0
Density	8.80 ppg				
Viscosity	109 sec	Elec Stab	0 volts	Ca++	0
PV	9.0 cp	MBT	.0 lb/bbl	Cl-	0
YP	47.0 phsf	Excess Lime	.00 lb/bbl	CaCl2	0
Gels	31./ 46. phsf			pH	9.5
		Circ Volume	777.5 barrel	Pf/Mf	.0/ .0
		Vol Hole Dr	.0 barrel	Pm	.0

Rhe'try at 22.0 deg: 600/65 300/56 200/50 100/41 60/0 30/0 6/33 3/29
Test on hi-vis bentonite fluid used for sweeps while drilling out cement with seawater.

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3630	Fuel	58	0	2357
Cement	0	0	884	Gel	124	0	581
Drill Water	840	0	5747	Potable Water	113	113	553

MUD ADDITIVES

Function	Name	Unit	Size	Amount
FILTRATION REDUCER	DEXTRID LT	KGS	25	22
FILTRATION REDUCER	PAC-L	KGS	25	6
SHALE CONTROL	phpa	KGS	25	24
VISCOSIFIER	Bentonite	SAX	1	124
VISCOSIFIER	XCD Polymer	KGS	25	5
WEIGHTING MATERIAL	Caustic Soda	KGS	25	1

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Cum	Grade T	B	G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	.0	.00	.00	.00	2-4	X	0	-1

HYDRAULICS

```
Pump Displaces    Rate      Nozzle Sizes      14.0 14.0 14.0  Annular Velocities
      bbl/st     str/min       32nd"          14.0 14.0 14.0            ft/min
  1    .1194       81                         14.0   .0       DC (Max)       493.
  2    .1194       82       Total Flow Area  1.0523 in2       DP (Min)       228.
  3    .1194       77       Nozzle Velocity  111.84 m/sec        (Min OH) ******
                            Hole Diameter    12.250 inches    Riser (Min)    99.
                            Bit
                              Pressure Drop    1036 psi
Pump Rate     240 str/min                        39 % of SPP
Flow Rate 1203.55 gpm         Impact Force     1970 lbf
Pressure     2650 psi         Hydraulic HP    6.171 hp/in2
```

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

```
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)              2495 psi
  1       0          0         .000       Formation Strength        N/A
  2       0          0         .000       Kick Tolerance            N/A
  3       0          0         .000       Pore Pressure             .00 ppg
                                          MASP                      N/A

                                          Background Gas             .0
Density            8.60 ppg               Connection Gas             .0
ECD                8.60 ppg               Trip Gas                   .0
   at            917.000 meters
   with bit at   916.838 meters
```

WEATHER REPORT

```
                 23:59  Max                                 23:59  Max
                 ----- -----                               ------ ------
Bar Pressure   :  1016     0 mm Hg      Wind Speed     :   20.0     .0 knot
Heave          :   .30   .00 meters          Direction :    260      0 degree
Pitch          :   .20   .00 degree     Wave Height    :    .20    .00 meters
Roll           :   .20   .00 degree          Period    :      4      0 second
Swell Height   :   .80   .00 meters          Direction :    260      0 degree
      Period   :     4     0 second     Air Temperature:   19.0     .0 deg C
      Direction:   260     0 degree     Sea Temperature:   16.0     .0 deg C
Visibility     :  18.0    .0 km         Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	260	0
4	240	0
5	240	0

6	250	0
7	250	0
8	250	0

================================== RISER DATA ==================================

```
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:    .60
      Angle  :      .9                                            Angle :     60
```

================================ DRILL STRING ================================

```
Date Run:   7-Feb-03   Date Pulled:  14-Feb-03   Length of BHA        :  295.020
Time Run:      13:15   Time Pulled:      18:30   BHA Weight in Air    :     64.0
Depth In:    917.000   Depth Out  :   2618.000              Above Jars:     33.0
                                                            Below Jars:     22.0
                                                            In Mud    :     55.0
BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000
HW/5.000 HW/JR/5.000 HW
```

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

============================== DAILY DRILL STRING ==============================

```
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                0    Off-TD        .0   BHA             .00
RPM      0     Slack-off              0    On-TD         .0   Shock Sub       .00
               Off-TD, Rotating       0                       Jars            .00
```

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 08-Feb-2003 report for SCALLOP_1   Run 01-Apr-2003 17:03 Central Time

```
Drilling                    DETAILED DAILY REPORT                 09-Feb-2003
                                  Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 | 1303.00
Office     : Australia SE                     TVD           m: 3126.00 | 1303.00
Client     : ExxonMobil Development           Days                     |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    10.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                      - from Spud   :         |     6.5
Field      : Gippsland Basin                  Spud Date      :        02-Feb-2003
Country    : Australia                        Progress      m:             386.00
Latitude   :  38d 12' 49" South               Drilling Hours :              16.75
Longitude  : 148d 35' 29" East                ROP        m/hr:              23.04
Water Depth:  109.60 m                        Percentage NPT :                 .7
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling and surveying 12 1/4" hole from 1480m.
Planned: Drill and survey 12 1/4" hole from 1303m.

Start Elpsd  End MD                          Description
----- ----- -------- -------------------------------------------------------------
00:00  1.00   917.00 CIRC Circulate and condition 9.0ppg KCL/PHPA mud system.
01:00   .25   917.00 CIRC Take SCR's.

                          SPM         Pump #1    Pump #2     Pump #3
                          30            100psi     100psi      100psi
                          40            125psi     125psi      125psi
                          50            150psi     150psi      150psi
01:15   .50   917.00 CIRC Close upper annular element. Line up and take Choke
                          line frictions.

                          SPM        PSI
                          30         110psi
                          40         135psi
                          50         170psi
01:45   .50   917.00 WAIT Planned wait -- Open annular. Shut down mud pump and
                          line up on trip tank. Measure surge volume. 3bbls
                          3mins.
02:15  1.25   920.00 DRLG Held well control briefing with day shift crew. Drill
                          out float shoe & 900m. Clean out rat hole and drill 3m
                          of new hole to 920m.
03:30   .50   920.00 CIRC Circulate bottoms up. Condition mud prior to PIT. Pull
                          back inside casing shoe @ 900.81mMD (900.79mTVD). Mud
                          weight 9.0 ppg.
04:00  1.25   920.00 TEST Space out and close upper pipe rams. Rig up side entry
                          sub and TIW. Dowell break circulation, and conduct
                          line test to 2,000psi 10 mins. Tested OK. Line up to
                          pump down kill line and D/string. Conduct LOT to 1,148
                          psi w/9.0 ppg MW @ 900.79mTVD. Formation fractured at
```

```
                          16.5 ppg EMW. Initial SI pressure 738psi. Pressure
                          dropped and stabalised at 709psi in 10 mins. Pumped
                          1.9bbls 9ppg mud. Bled back same.

                          (Note: Recalculation of LOT at end of well indicated
                          true LOT as 16.1 ppg EMW (w/ 1,085psi 9.0ppg @
                          900.79mTVD)
05:15   .50   920.00 DRLG Rig down Side entry sub and TIW. Make up TDS, RIH wash
                          to bottom.
05:45  2.75   959.00 DRLG Drill 12 1/4" hole from 920m to 959m. Take Anderdrift
                          surveys and backream each connections.
08:30  1.50   959.00 CIRC Losing mud over shakers, due to high visc mud (
                          (polymers not sheared). Stop drilling, slow down pump
                          and shear mud.
                     NPT  See Event 2 (CIRC)
10:00 14.00  1303.00 DRLG Drill 12 1/4" hole from 959m to 1303m. Take Anderdrift
                          surveys. backream each connections. Take SCR's @
                          1247m. Held PIT drills with both crews.

                          NOTE: Hard stringer @ 1180m - 1187m, and 1214m -1217m.
                          ROPs dropped to 3m/hr.
                          Anderdrift Surveys as follows:

                          930m    0deg inc
                          959m    0deg inc
                          988m    0deg inc
                          1075m   0deg inc
                          1133m   0.5 deg inc
                          1190m   0deg inc.
Total 24.00
```

========================= PROBLEM EVENTS AND MILESTONES ========================

```
Event:   2    NPT: Yes   Hours:   1.50    Responsible Party: Operator
Start:  8-Feb-03 08:30   CIRC Mud/fluids problem
End  :  8-Feb-03 10:00        Circulate and shear mud and polymers, due to
                              losses at shakers.
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Drilling ahead. Well control. Mixing mud. Correct PPE. Working Boats, backloading.
Boats:
Pacific Frontier: at Rig.
Pacific Challenger: at Rig
Man overboard drill:- 06 Feb 03
1x Helicopters.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		
Abandon Ship Drill	No		03-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	08-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	08-Feb-2003

PERSONNEL

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 81
Total Hours : 972.00

HEAD COUNTS

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	15

MANAGEMENT SUMMARY

Condition mud. Conduct FIT to 16.5 EMW. Drill and survey 12 1/4" hole from 920m to 1303m.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	403,557	0	403,557	99,184
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	10,383,769	287,973	10,671,742	288,332
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	10,383,769	287,973	10,671,742	288,332

MUD REPORT

Time	21:15	Flowline Temp	48.0 deg C	% Solids	6.2
Mud Type	WBM	Filtrate	3.5 cc	% LGS	1.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.35
		HTHP Temp	.0 deg C	% Water	93.8
MD	1228.00 meters	Filtrate	.0 cc	% Oil	.0
Density	9.55 ppg				
Viscosity	51 sec	Elec Stab	0 volts	Ca++	60
PV	15.0 cp	MBT	3.5 lb/bbl	Cl-	32500
YP	23.0 phsf	Excess Lime	.01 lb/bbl	CaCl2	0
Gels	4./ 5. phsf			pH	9.7
		Circ Volume	574.0 barrel	Pf/Mf	.2/ .5
		Vol Hole Dr	184.6 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/53 300/38 200/31 100/22 60/0 30/0 6/6 3/4

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	612	0	3018	Fuel	101	0	2256
Cement	0	940	1824	Gel	0	0	581
Drill Water	1257	2514	7004	Potable Water	87	107	573

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	2
BACTERICIDE	Baracide	BKT	25	1
CORROSION INHIBITOR	BARACOR 129	BKT	25	13
FILTRATION REDUCER	DEXTRID LT	KGS	25	44
FILTRATION REDUCER	PAC-L	KGS	25	12

SHALE CONTROL	Glycol CP	LTR	1500	6
SHALE CONTROL	phpa	KGS	25	33
VISCOSIFIER	XCD Polymer	KGS	25	27
WEIGHTING MATERIAL	Barite	KGS	25	612
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	12

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	386.0	16.75	23.04	23.04	2-4	X	0	250

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	81
2	.0855	82
3	.0855	77

Pump Rate 240 str/min
Flow Rate 861.84 gpm
Pressure 2075 psi

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 .0
Total Flow Area 1.0523 in2
Nozzle Velocity 80.09 m/sec
Hole Diameter 12.250 inches
Bit Pressure Drop 587 psi
28 % of SPP
Impact Force 1116 lbf
Hydraulic HP 2.503 hp/in2

Annular Velocities ft/min
DC (Max) 353.
DP (Min) 163.
(Min OH) 168.
Riser (Min) 71.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	225	1247.000
2	40	225	1247.000
3	40	225	1247.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 4.57 ppg
Pore Pressure .00 ppg
MASP 1076 psi

Background Gas .0
Connection Gas .0
Trip Gas .0

Density 9.50 ppg
ECD 9.56 ppg
at 1303.000 meters
with bit at 1227.734 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1017	0	mm Hg
Heave	.30	.00	meters
Pitch	.20	.00	degree
Roll	.20	.00	degree
Swell Height	2.00	.00	meters
Period	4	0	second
Direction	160	0	degree
Visibility	10.0	.0	km

	23:59	Max	
Wind Speed	25.0	.0	knot
Direction	90	0	degree
Wave Height	1.80	.00	meters
Period	4	0	second
Direction	90	0	degree
Air Temperature	16.0	.0	deg C
Sea Temperature	16.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	240	0
4	240	0
5	240	0
6	250	0
7	240	0
8	250	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.00
Angle : 1.1 Angle : 180

DRILL STRING

Date Run: 7-Feb-03 Date Pulled: 14-Feb-03 Length of BHA : 295.020
Time Run: 13:15 Time Pulled: 18:30 BHA Weight in Air : 64.0
Depth In: 917.000 Depth Out : 2618.000 Above Jars: 33.0
Below Jars: 22.0
In Mud : 55.0

BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

DAILY DRILL STRING

		Weights		Torques		Cumulative Time On	
WOB	10	Pick-up	212	Off-TD	5.0	BHA	20.75
RPM	130	Slack-off	218	On-TD	10.0	Shock Sub	.00
		Off-TD, Rotating	210			Jars	46.50

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 09-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

```
Drilling                      DETAILED DAILY REPORT                  10-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 1870.00
Office     : Australia SE                     TVD            m: 3126.00 | 1870.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :     42.0 |
                                               - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :       .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :     42.0 |     11.0
Rig Name   : Sedco 702                         - Ahead/Behind:          |      7.8
Operator   : Esso Aus Res                      - from Spud   :          |      7.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:            567.00
Latitude   :  38d 12' 49" South               Drilling Hours :             24.00
Longitude  : 148d 35' 29" East                ROP        m/hr:             23.63
Water Depth:  109.60 m                        Percentage NPT :                .7
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12 1/4" hole from 2003m.
Planned: Drill 12 1/4" hole from 1870m.
```

```
Start Elpsd  End MD                          Description
----- ----- -------- ------------------------------------------------------------
00:00 12.00  1642.00 DRLG Drill 12 1/4" hole from 1303m to 1642m. Take
                          Anderdrift surveys. Backream each connection. Take
                          SCR's at 1508m, and boosted riser.

                          Lakes Entrance Formation top @ 1345m. Prognosed @
                          1338m.
12:00  6.50  1776.00 DRLG Drill 12 1/4" hole from 1642m to 1776m. Take
                          Anderdrift surveys. Backream each connection. Flow
                          check well @ 1776m. Well static.

                          Top of Latrobe formation at 1720m. Prognosed at 1709m.
18:30   .50  1788.00 DRLG Drill 12 1/4" hole from 1776m to 1778m. Take
                          Anderdrift surveys. Backream each connection. Flow
                          check well @ 1778m. Well static.
19:00  1.75  1803.00 DRLG Drill 12 1/4" hole from 1778m to 1803m. Take
                          Anderdrift surveys. Backream each connection. Flow
                          check well @ 1778m. Well static.
                          Take SCR's at 1797m.
20:45  3.25  1870.00 DRLG Drill 12 1/4" hole from 1803m to 1870m. Take
                          Anderdrift surveys. Backream each connection.

                          Anderdrift Surveys as follows:
                          1306m   0 deg inc
                          1335m   0 deg inc
                          1364m   0 deg inc
                          1393m   0 deg inc
                          1422m   0 deg inc
                          1451m   0 deg inc
```

```
                          1480m   0 deg inc
                          1625m   0 deg inc
                          1654m   1 deg inc
                          1710m   1.5 deg inc
                          1768m   1.5 deg inc
                          1827m   1.5 deg inc
Total 24.00
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Drilling ahead. Well control. Mixing mud. Correct PPE. Working Boats, backloading. Hold THINK Drills. Start cards.
Boats:
Pacific Frontier: at Rig.
Pacific Challenger: at BBMT
Fire and Abandon drill:- 09 Feb 03
Held weekly safety meeting. Continued EAL Scallop #1 inductions.
0x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 3/4 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	Yes		
Abandon Ship Drill	Yes		03-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	09-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	09-Feb-2003

=================================== PERSONNEL ===================================

```
Personnel       :  N/A
Supervisors     :  Basset, Anthony A.
                   Vestal, Tommy M.
Total Head Count:     81
Total Hours     :    972.00
```

================================== HEAD COUNTS ==================================

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	15

============================== MANAGEMENT SUMMARY ==============================

Drill and survey 12 1/4" hole from 1303m to 1870m. Backream each connection.

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	362,101	0	362,101	49,715
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	10,745,870	287,973	11,033,843	338,047
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	10,745,870	287,973	11,033,843	338,047

```
=================================== MUD REPORT ===================================
Time            22:25          Flowline Temp   49.0 deg C       % Solids    8.0
Mud Type          WBM          Filtrate         3.6 cc          % LGS       2.0
Sample From Flowline           Filter Cake      1.0 32nd"       % Sand      .70
                               HTHP Temp         .0 deg C       % Water    92.0
MD            1838.00 meters        Filtrate     .0 cc          % Oil        .0
Density          9.80 ppg
Viscosity          56 sec      Elec Stab          0 volts       Ca++        200
PV               20.0 cp       MBT              2.5 lb/bbl      Cl-       38000
YP               26.0 phsf     Excess Lime      .01 lb/bbl      CaCl2         0
Gels          6./  8. phsf                                      pH          9.2
                               Circ Volume    845.3 barrel      Pf/Mf   .0/  .4
                               Vol Hole Dr    271.2 barrel      Pm           .1
Rhe'try at  49.0 deg: 600/66 300/46 200/38 100/28 60/0 30/0 6/9 3/6


================================ SOLIDS CONTROL ================================
 Hours on Centrifuge:    .00            Dilution Rate:     .00


================================= SUPPLIES DATA ================================
                 Usage Receipts  Stock                       Usage Receipts  Stock
Barite               0        0   3018  Fuel                   154        0   2102
Cement               0        0   1824  Gel                      0        0    581
Drill Water        891        0   6113  Potable Water           93      113    593


================================= MUD ADDITIVES ================================
                  Function             Name        Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------
            ALKALINITY (PH)       pottassium hydr   BKT    20       4
            BACTERICIDE           Baracide          BKT    25       1
            CORROSION INHIBITOR   BARACOR 129       BKT    25      18
            FILTRATION REDUCER    DEXTRID LT        KGS    25      22
            FILTRATION REDUCER    PAC-L             KGS    25       6
            SHALE CONTROL         Glycol CP         LTR  1500       1
            SHALE CONTROL         phpa              KGS    25      16
            VISCOSIFIER           XCD Polymer       KGS    25      23
            WEIGHTING MATERIAL    BARACARB 100      KGS    25      30
            WEIGHTING MATERIAL    BARACARB 100      KGS  1200       6
            WEIGHTING MATERIAL    BARACARB 25       KGS  1200       4
            WEIGHTING MATERIAL    BARACARB 50       KGS    25      15
            WEIGHTING MATERIAL    BARACARB 50       KGS  1200       3
            WEIGHTING MATERIAL    KCL Tech.         MTN  1000       7


================================== BIT RECORD ==================================
Bit/Run                        Depth         Rotary   Lng/Hour      Grade   Cost
Numbers  Size   Cd Mfg  Type    In     Length Hours  Today   Cum     T  B G  /Lng
------- ------- -- --- ------ ------- ------ ------ ------ ------ --- - -- -----
    3 1  12.250 BT STC MA89PX  917.00  953.0  40.75  23.63  23.39 2-4 X  0   221


================================== HYDRAULICS ==================================
Pump Displaces    Rate      Nozzle Sizes      14.0 14.0 14.0  Annular Velocities
      bbl/st     str/min       32nd"          14.0 14.0 14.0            ft/min
  1    .0855       81                         14.0   .0       DC (Max)      353.
  2    .0855       82       Total Flow Area  1.0523 in2       DP (Min)      163.
  3    .0855       77       Nozzle Velocity   80.09 m/sec        (Min OH)   168.
                            Hole Diameter    12.250 inches    Riser (Min)    71.
                            Bit
                              Pressure Drop     593 psi
```

Pump Rate	240 str/min		23	% of SPP
Flow Rate	861.84 gpm	Impact Force	1128	lbf
Pressure	2550 psi	Hydraulic HP	2.529	hp/in2

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
876.200	.53	338.22	876.184	3.922	+ 3.922	- 1.210	.164
885.800	.51	327.67	885.784	3.999	+ 3.999	- 1.249	.309
907.800	.39	329.98	907.783	4.147	+ 4.147	- 1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	225	1797.000
2	40	225	1797.000
3	40	225	1797.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	3.13 ppg
Pore Pressure	.00 ppg
MASP	1060 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density	9.60 ppg
ECD	9.73 ppg
at	1870.000 meters
with bit at	1869.948 meters

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure :	1013	0	mm Hg	Wind Speed :	12.0	.0	knot
Heave :	.30	.00	meters	Direction :	195	0	degree
Pitch :	.20	.00	degree	Wave Height :	2.00	.00	meters
Roll :	.20	.00	degree	Period :	3	0	second
Swell Height :	1.00	.00	meters	Direction :	195	0	degree
Period :	1	0	second	Air Temperature:	18.0	.0	deg C
Direction:	260	0	degree	Sea Temperature:	16.0	.0	deg C
Visibility :	6.0	.0	km	Cloud Cover :	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	270	0
4	240	0
5	250	0
6	240	0
7	250	0
8	250	0

RISER DATA

Riser Tension:	352	Flex Joint Rotation:	.0	Hole Position, Offset:	.40
Angle :	.5			Angle :	120

================================= DRILL STRING =================================

Date Run:	7-Feb-03	Date Pulled:	14-Feb-03	Length of BHA :	295.020
Time Run:	13:15	Time Pulled:	18:30	BHA Weight in Air :	64.0
Depth In:	917.000	Depth Out :	2618.000	Above Jars:	33.0
				Below Jars:	22.0
				In Mud :	55.0

BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	12	Pick-up	248	Off-TD	2000.0	BHA	44.75
RPM	125	Slack-off	252	On-TD	8000.0	Shock Sub	.00
		Off-TD, Rotating	25			Jars	70.50

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 10-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:03 Central Time

Drilling **DETAILED DAILY REPORT** **11-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 2154.00
Office     : Australia SE                     TVD            m: 3126.00 | 2154.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    12.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                      - from Spud   :         |     8.5
Field      : Gippsland Basin                  Spud Date      :        02-Feb-2003
Country    : Australia                        Progress      m:             284.00
Latitude   :  38d 12' 49" South               Drilling Hours :              24.00
Longitude  : 148d 35' 29" East                ROP        m/hr:              11.83
Water Depth:  109.60 m                        Percentage NPT :                 .6
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12 1/4" hole from 2192m.
Planned: Drill 12 1/4" hole from 2154m
```

Start	Elpsd	End MD		Description
00:00	24.00	2154.00	DRLG	Drill 12 1/4" hole from 1870m to 2154m. Take Anderdrift surveys. Backream each connection. Flow check well at 1876m, 1885m and 2092m. Take SCR's at 2146m. Anderdrift Surveys as follows: 1857m 1 deg inc 1885m 1 deg inc 1914m 1 deg inc 1944m 1.5 deg inc 1972m 1.5 deg inc. 2002m 1 deg inc. 2031m 1 deg inc 2060m 1 deg inc 2117m 2 deg inc 2146m 1.5 deg inc TOTAL BIT REVS (Krevs) Today 139.1 Total 378.4
Total	24.00			

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Drilling ahead. Well control. Mixing mud. Correct PPE. Working Boats.
Hold THINK Drills. Start cards. Work permits.
Boats:
Pacific Frontier: at Rig.

Pacific Challenger: in transit to rig. ETA 03:00hrs 11/02
Fire and Abandon drill:- 09 Feb 03
Held weekly safety meeting. Continued EAL Scallop #1 inductions.
2x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg port forward
PGB bullseye 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		10-Feb-2003
Abandon Ship Drill	No		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	10-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	10-Feb-2003

================================== PERSONNEL ==================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 80
Total Hours : 960.00

================================= HEAD COUNTS =================================

Contractor	62	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	13

============================= MANAGEMENT SUMMARY =============================

Drill and survey 12 1/4" hole from 1870m to 2154m.

======================= COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	346,044	0	346,044	33,658
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	11,091,914	287,973	11,379,887	371,705
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	11,091,914	287,973	11,379,887	371,705

================================= MUD REPORT =================================

Time	22:00	Flowline Temp	68.0 deg C	% Solids	9.1
Mud Type	WBM	Filtrate	3.6 cc	% LGS	4.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.40
		HTHP Temp	.0 deg C	% Water	90.9
MD	2143.00 meters	Filtrate	.0 cc	% Oil	.0
Density	9.85 ppg				
Viscosity	57 sec	Elec Stab	0 volts	Ca++	280
PV	21.0 cp	MBT	3.3 lb/bbl	Cl-	39500
YP	29.0 phsf	Excess Lime	.01 lb/bbl	CaCl2	0
Gels	7./ 9. phsf			pH	8.6
		Circ Volume	981.1 barrel	Pf/Mf	.0/ .2
		Vol Hole Dr	135.8 barrel	Pm	.1

Rhe'try at 49.0 deg: 600/71 300/50 200/42 100/29 60/0 30/0 6/9 3/7

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3018	Fuel	171	0	1931
Cement	0	0	1824	Gel	0	0	581
Drill Water	1234	1257	6136	Potable Water	120	120	593

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	8
BACTERICIDE	Baracide	BKT	25	1
CALCIUM REMOVER	Soda Ash	KGS	25	2
CORROSION INHIBITOR	BARACOR 129	BKT	25	9
FILTRATION REDUCER	DEXTRID LT	KGS	25	22
FILTRATION REDUCER	PAC-L	KGS	25	6
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	13
VISCOSIFIER	BARAZAN D	KGS	25	11
VISCOSIFIER	XCD Polymer	KGS	25	4
WEIGHTING MATERIAL	BARACARB 100	KGS	25	49
WEIGHTING MATERIAL	BARACARB 25	KGS	25	75
WEIGHTING MATERIAL	BARACARB 50	KGS	25	39
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	8

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	1237.0	64.75	11.83	19.10	2-4	X	0	260

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	81
2	.0855	82
3	.0855	77

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 .0

Total Flow Area 1.0523 in2
Nozzle Velocity 80.09 m/sec
Hole Diameter 12.250 inches
Bit Pressure Drop 599 psi
22 % of SPP
Impact Force 1139 lbf
Hydraulic HP 2.556 hp/in2

Pump Rate 240 str/min
Flow Rate 861.84 gpm
Pressure 2700 psi

Annular Velocities	ft/min
DC (Max)	353.
DP (Min)	163.
(Min OH)	168.
Riser (Min)	71.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	275	2146.000
2	40	275	2146.000
3	40	275	2146.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	2.67 ppg
Pore Pressure	.00 ppg
MASP	1045 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 9.70 ppg
ECD 9.85 ppg
at 2154.000 meters
with bit at 2142.744 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1016	0	mm Hg
Heave	.30	.00	meters
Pitch	.20	.00	degree
Roll	.20	.00	degree
Swell Height	1.00	.00	meters
Period	3	0	second
Direction	240	0	degree
Visibility	18.0	.0	km

	23:59	Max	
Wind Speed	10.0	.0	knot
Direction	260	0	degree
Wave Height	.30	.00	meters
Period	3	0	second
Direction	260	0	degree
Air Temperature	19.0	.0	deg C
Sea Temperature	16.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	240	0
8	250	0

RISER DATA

Riser Tension: 352   Flex Joint Rotation: .1   Hole Position, Offset: 1.00
Angle : .1   Angle : 78

DRILL STRING

Date Run:	7-Feb-03	Date Pulled:	14-Feb-03	Length of BHA :	295.020
Time Run:	13:15	Time Pulled:	18:30	BHA Weight in Air :	64.0
Depth In:	917.000	Depth Out :	2618.000	Above Jars:	33.0
				Below Jars:	22.0
				In Mud :	55.0

BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610

DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

============================== **DAILY DRILL STRING** ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	5	Pick-up	275	Off-TD	2500.0	BHA	68.75
RPM	130	Slack-off	270	On-TD	6000.0	Shock Sub	.00
		Off-TD, Rotating	275			Jars	94.50

==================================== **CASING** ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 11-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

```
Drilling                    DETAILED DAILY REPORT               12-Feb-2003
                                  Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 2303.00
Office     : Australia SE                     TVD            m: 3126.00 | 2303.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |     13.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |      7.8
Operator   : Esso Aus Res                      - from Spud   :         |      9.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress       m:           149.00
Latitude   :  38d 12' 49" South               Drilling Hours :             24.00
Longitude  : 148d 35' 29" East                ROP         m/hr:             6.21
Water Depth:  109.60 m                        Percentage NPT :                .6
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drill 12 1/4" hole 2346
Planned: Drill and survey 12 1/4" hole from 2303m.

Start Elpsd  End MD                        Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00  2303.00 DRLG Drill 12 1/4" hole from 2154m to 2303m. Take
                          Anderdrift surveys. Backream each connection. Take
                          SCR's at 2205m. Flow check well at 2210m.

                          Change out swab and liner #1 on mud pump #3, while
                          drilling with 2x mud pumps (04:00hrs, 2179m).
                          Anderdrift Surveys as follows:

                          2176m   1 deg inc
                          2205m   1 deg inc
                          2234m   1 deg inc
                          2263m   1.5 deg inc
                          2291m   1.5 deg inc


                          Pacific Challenger alongside at 03:00hrs. Offload mud
                          chemicals and supplies.

                          KTSF Marker 2203m. Prognosed at 2234m.
                          TOTAL BIT REVS (Krevs)
                          Today 149.8      Total  528.2
Total 24.00


==================================== REMARKS ====================================
Held PTSM with both day and night shifts.
Topics: Drilling ahead. Well control. Mixing mud. Correct PPE. Working Boats.
Hold THINK Drills. Start cards. Work permits.  Correct PPE.
```

Boats:
Pacific Frontier: at BBMT.
Pacific Challenger: at Rig
Fire and Abandon drill:- 09 Feb 03
Held weekly safety meeting.
0x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseyes 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		10-Feb-2003
Abandon Ship Drill	No		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	11-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	11-Feb-2003

================================== PERSONNEL ==================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 80
Total Hours : 960.00

================================= HEAD COUNTS =================================

Contractor	62	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	13

============================ MANAGEMENT SUMMARY ============================

Drill and survey 12 1/4" hole from 2154m to 2303m. Backream each connection.

======================= COST DATA (Australian Dollar) =======================

AFE		Intangible	Tangible	Total	Mud
Dry : 23,048,000	Daily	334,306	0	334,306	18,168
Susp : 0	Cum Mbl	0	0	0	0
Comp : 0	Cum Drl	11,426,220	287,973	11,714,193	389,873
Total: 23,048,000	Cum Comp	0	0	0	0
	Cum W/O	0	0	0	0
Exc : 1.92310/US$	Cum AFE	11,426,220	287,973	11,714,193	389,873

================================= MUD REPORT =================================

Time	20:30	Flowline Temp	77.0 deg C	% Solids	9.7
Mud Type	WBM	Filtrate	3.3 cc	% LGS	4.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.35
		HTHP Temp	.0 deg C	% Water	90.3
MD	2280.00 meters	Filtrate	.0 cc	% Oil	.0
Density	10.00 ppg				
Viscosity	55 sec	Elec Stab	0 volts	Ca++	290
PV	21.0 cp	MBT	4.0 lb/bbl	Cl-	40000
YP	34.0 phsf	Excess Lime	.01 lb/bbl	CaCl2	0
Gels	8./ 9. phsf			pH	8.5
		Circ Volume	1052.3 barrel	Pf/Mf	.0/ .1

Vol Hole Dr 71.3 barrel Pm .0
Rhe'try at 49.0 deg: 600/76 300/55 200/45 100/32 60/0 30/0 6/11 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	73	0	2945	Fuel	141	0	1790
Cement	0	0	1824	Gel	0	0	581
Drill Water	1063	0	5073	Potable Water	86	126	633

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	3
CORROSION INHIBITOR	BARACOR 129	BKT	25	13
FILTRATION REDUCER	DEXTRID LT	KGS	25	16
FILTRATION REDUCER	PAC-L	KGS	25	4
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	12
VISCOSIFIER	BARAZAN D	KGS	25	3
WEIGHTING MATERIAL	BARACARB 100	KGS	25	17
WEIGHTING MATERIAL	BARACARB 50	KGS	25	14
WEIGHTING MATERIAL	Barite	SAX	100	73

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	1386.0	88.75	6.21	15.62	2-4	X	0	312

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	81
2	.0855	82
3	.0855	77

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 .0
Total Flow Area 1.0523 in2
Nozzle Velocity 80.09 m/sec
Hole Diameter 12.250 inches
Bit Pressure Drop 599 psi
22 % of SPP
Impact Force 1139 lbf
Hydraulic HP 2.556 hp/in2

Pump Rate 240 str/min
Flow Rate 861.84 gpm
Pressure 2700 psi

Annular Velocities	ft/min
DC (Max)	353.
DP (Min)	163.
(Min OH)	168.
Riser (Min)	71.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
876.200	.53	338.22	876.184	3.922	+ 3.922	- 1.210	.164
885.800	.51	327.67	885.784	3.999	+ 3.999	- 1.249	.309
907.800	.39	329.98	907.783	4.147	+ 4.147	- 1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	290	2205.000
2	40	290	2205.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 2.50 ppg

```
  3       40          290    2205.000      Pore Pressure            .00 ppg
                                           MASP                    1045 psi

                                           Background Gas            .0
Density              9.70 ppg              Connection Gas            .0
ECD                  9.84 ppg              Trip Gas                  .0
   at           2303.000 meters
   with bit at  2142.744 meters
```

WEATHER REPORT

```
                 23:59  Max                                      23:59  Max
                 ----- -----                                    ------ ------
Bar Pressure   :  1013     0 mm Hg      Wind Speed     :   10.0     .0 knot
Heave          :   .30   .00 meters          Direction :    110      0 degree
Pitch          :   .20   .00 degree     Wave Height    :    .50    .00 meters
Roll           :   .20   .00 degree          Period    :      3      0 second
Swell Height   :  1.00   .00 meters          Direction :    110      0 degree
      Period   :     3     0 second     Air Temperature:   19.0     .0 deg C
      Direction:   225     0 degree     Sea Temperature:   16.0     .0 deg C
Visibility     :  18.0    .0 km         Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	240	0
8	250	0

RISER DATA

```
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.00
      Angle  :      .7                                            Angle :    225
```

DRILL STRING

```
Date Run:   7-Feb-03   Date Pulled:  14-Feb-03   Length of BHA        :  295.020
Time Run:      13:15   Time Pulled:      18:30   BHA Weight in Air    :     64.0
Depth In:    917.000   Depth Out  :   2618.000             Above Jars:     33.0
                                                           Below Jars:     22.0
                                                           In Mud    :     55.0
```

BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000

```
HO  12.250   3.000 ????   6.625 REG     .0                                     2.510
BT  12.250   3.000 ????   6.625 REG     .0                                      .370
```

============================== DAILY DRILL STRING ===============================

```
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB     10     Pick-up                275    Off-TD   2000.0   BHA            92.75
RPM    125     Slack-off              285    On-TD    7000.0   Shock Sub        .00
               Off-TD, Rotating       282                      Jars          118.50
```

==================================== CASING =====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 12-Feb-2003 report for SCALLOP_1   Run 01-Apr-2003 17:04 Central Time

```
Drilling                       DETAILED DAILY REPORT                13-Feb-2003
                                     Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 | 2465.00
Office     : Australia SE                      TVD            m: 3126.00 | 2465.00
Client     : ExxonMobil Development            Days                      |
Drill Team : Australia Offshore                 - if Dry      :     42.0 |
                                                - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :       .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :     42.0 |     14.0
Rig Name   : Sedco 702                          - Ahead/Behind:          |      7.8
Operator   : Esso Aus Res                       - from Spud   :          |     10.5
Field      : Gippsland Basin                   Spud Date      :        02-Feb-2003
Country    : Australia                         Progress      m:             162.00
Latitude   :  38d 12' 49" South                Drilling Hours :              24.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:               6.75
Water Depth:  109.60 m                         Percentage NPT :                 .5
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12 1/4" hole from 2495m.
Planned: Drill and survey 12 1/4" hole from 2465m.

Start Elpsd  End MD                          Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00  2465.00 DRLG Drill 12 1/4" hole from 2303m to 2465m. Take
                          Anderdrift surveys. Backream each connection.
                          Take SCR's and CLF's at 2320m and 2436m.

                          Held PIT drill 1.5 mins

                          Andergauge surveys

                          2320m      1 deg inc
                          2350m      1.5 deg inc
                          2379m      1 deg inc
                          2408m      2 deg inc
                          2436m      1 deg inc


                          TOTAL BIT REVS (Krevs)
                          Today 147.2      Total  675.4
Total 24.00


==================================== REMARKS ===================================
Held PTSM with both day and night shifts.
Topics: Drilling ahead. Well control. Mixing mud. Correct PPE. Reviewed recent
ISDL incident with both day and night shift crews. Hold THINK Drills. Start
cards. Work permits.  Correct PPE. Housekeeping.
Boats:
Pacific Frontier:  at BBMT.
Pacific Challenger: at Rig
```

Fire and Abandon drill:- 09 Feb 03
0x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseyes 0 deg.

================================== **PERSONNEL** ==================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Vestal, Tommy M.
Total Head Count: 0
Total Hours : .00

============================== **MANAGEMENT SUMMARY** ==============================

Drill and surveyed 12 1/4" Hole from 2346m to 2465m. Backream each connection.

======================== **COST DATA (Australian Dollar)** ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	353,222	0	353,222	38,262
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	11,779,442	287,973	12,067,415	428,135
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	11,779,442	287,973	12,067,415	428,135

================================== **MUD REPORT** ==================================

Time	20:30	Flowline Temp	80.0 deg C	% Solids	10.6
Mud Type	WBM	Filtrate	2.7 cc	% LGS	3.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.35
		HTHP Temp	120.0 deg C	% Water	89.4
MD	2449.00 meters	Filtrate	11.2 cc	% Oil	.0
Density	10.30 ppg				
Viscosity	58 sec	Elec Stab	0 volts	Ca++	220
PV	22.0 cp	MBT	4.5 lb/bbl	Cl-	40000
YP	40.0 phsf	Excess Lime	.00 lb/bbl	CaCl2	0
Gels	8./ 10. phsf			pH	8.6
		Circ Volume	1888.9 barrel	Pf/Mf	.0/ .3
		Vol Hole Dr	77.5 barrel	Pm	.0

Rhe'try at 49.0 deg: 600/84 300/62 200/52 100/37 60/0 30/0 6/12 3/8

================================ **SOLIDS CONTROL** ================================

Hours on Centrifuge: .00 Dilution Rate: .00

================================ **SUPPLIES DATA** ================================

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	775	0	2170	Fuel	161	0	1629
Cement	0	0	1824	Gel	0	0	581
Drill Water	1834	2514	5753	Potable Water	98	138	673

================================ **MUD ADDITIVES** ================================

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	7
BACTERICIDE	Baracide	BKT	25	1
CALCIUM REMOVER	Soda Ash	KGS	25	7
CORROSION INHIBITOR	BARACOR 129	BKT	25	13
FILTRATION REDUCER	DEXTRID LT	KGS	25	20

FILTRATION REDUCER	PAC-L	KGS	25	5
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	12
VISCOSIFIER	BARAZAN D	KGS	25	4
WEIGHTING MATERIAL	BARACARB 100	KGS	25	8
WEIGHTING MATERIAL	BARACARB 25	KGS	25	34
WEIGHTING MATERIAL	BARACARB 50	KGS	25	16
WEIGHTING MATERIAL	Barite	SAX	100	775
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	7

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	1548.0	112.75	6.75	13.73	2-4	X	0	351

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	81
2	.0855	82
3	.0855	77

Pump Rate 240 str/min
Flow Rate 861.84 gpm
Pressure 2700 psi

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 .0
Total Flow Area 1.0523 in2
Nozzle Velocity 80.09 m/sec
Hole Diameter 12.250 inches
Bit
  Pressure Drop 636 psi
  24 % of SPP
  Impact Force 1210 lbf
  Hydraulic HP 2.714 hp/in2

Annular Velocities	ft/min
DC (Max)	353.
DP (Min)	163.
(Min OH)	168.
Riser (Min)	71.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	325	2436.000
2	40	325	2436.000
3	40	325	2436.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	2.11 ppg
Pore Pressure	.00 ppg
MASP	953 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 10.30 ppg
ECD 10.52 ppg
  at 2465.000 meters
  with bit at 2464.917 meters

WEATHER REPORT

		23:59	Max	
Bar Pressure	:	1012	0	mm Hg
Heave	:	.30	.00	meters
Pitch	:	.20	.00	degree
Roll	:	.20	.00	degree
Swell Height	:	1.00	.00	meters
Period	:	3	0	second

		23:59	Max	
Wind Speed	:	10.0	.0	knot
Direction	:	320	0	degree
Wave Height	:	.50	.00	meters
Period	:	3	0	second
Direction	:	320	0	degree
Air Temperature	:	18.0	.0	deg C

```
      Direction:   230     0 degree      Sea Temperature:   16.0     .0 deg C
Visibility     :  18.0    .0 km          Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	270	0
4	240	0
5	250	0
6	240	0
7	250	0
8	240	0

RISER DATA

```
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.80
      Angle  :      .9                                         Angle :    219
```

DRILL STRING

```
Date Run:   7-Feb-03   Date Pulled:  14-Feb-03   Length of BHA        :  295.020
Time Run:      13:15   Time Pulled:      18:30   BHA Weight in Air    :     64.0
Depth In:    917.000   Depth Out  :   2618.000             Above Jars:     33.0
                                                           Below Jars:     22.0
                                                           In Mud    :     55.0
BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000
HW/5.000 HW/JR/5.000 HW
```

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

DAILY DRILL STRING

```
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB     10     Pick-up               282    Off-TD   2000.0   BHA           116.75
RPM    120     Slack-off             292    On-TD    6000.0   Shock Sub        .00
               Off-TD, Rotating      288                      Jars          142.50
```

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 13-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

```
Drilling                     DETAILED DAILY REPORT                   14-Feb-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 | 2595.00
Office     : Australia SE                      TVD            m: 3126.00 | 2595.00
Client     : ExxonMobil Development            Days                      |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |    15.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                       - from Spud   :         |    11.5
Field      : Gippsland Basin                   Spud Date      :        02-Feb-2003
Country    : Australia                         Progress      m:             130.00
Latitude   :  38d 12' 49" South                Drilling Hours :              24.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:               5.42
Water Depth:  109.60 m                         Percentage NPT :                 .5
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12¬" hole at 2,595 m.
Planned: Drill and survey 12 1/4" hole from 2595m

Start Elpsd  End MD                           Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00  2595.00 DRLG Drill 12 1/4" hole from 2465m to 2595m. Take
                          Anderdrift surveys. Backream each connection.
                          Take SCR's at 2532m.

                          Top of T.lilliei formation advised @ 2,546mMD.
                          Prognosed @ 2537m.

                          Andergauge surveys
                          2465m    1.5 deg inc
                          2495m    1 deg inc
                          2523m    1 deg inc
                          2553m    1 deg inc
                          2581m    1 deg inc



                          TOTAL BIT REVS (Krevs)
                          Today 140.3      Total  815.7
Total 24.00
=================================== REMARKS ==================================
Held PTSM with both day and night shifts.
Held Esso Induction for new oncoming crews.
Topics: Drilling practises. Well control. Mixing mud. Correct PPE. Hold THINK
Drills. Start cards. Work permits.Communication. Correct PPE. Housekeeping.
Boats:
Pacific Frontier:  at BBMT.
Pacific Challenger: at Rig
Fire and Abandon drill:- 09 Feb 03
```

2x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseyes 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		10-Feb-2003
Abandon Ship Drill	No		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	12-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	12-Feb-2003

================================= PERSONNEL =================================

Personnel : Murray Jackson
Supervisors : Basset, Anthony A.
Sharkey, George K.
Total Head Count: 81
Total Hours : 972.00

================================ HEAD COUNTS ================================

Contractor	62	ExxonMobil	7
Contractor Short Service (SSE)	0	Service Company	12

============================ MANAGEMENT SUMMARY ============================

Drill and survey 12 1/4" hole from 2465m to 2595m.

======================= COST DATA (Australian Dollar) =======================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	347,042	0	347,042	32,082
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,126,484	287,973	12,414,457	460,217
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,126,484	287,973	12,414,457	460,217

================================ MUD REPORT ================================

Time	20:30	Flowline Temp	74.0 deg C	% Solids	10.2
Mud Type	WBM	Filtrate	2.9 cc	% LGS	2.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.30
		HTHP Temp	120.0 deg C	% Water	89.8
MD	2586.00 meters	Filtrate	10.8 cc	% Oil	.0
Density	10.40 ppg				
Viscosity	50 sec	Elec Stab	0 volts	Ca++	250
PV	21.0 cp	MBT	4.5 lb/bbl	Cl-	41000
YP	35.0 phsf	Excess Lime	.01 lb/bbl	CaCl2	0
Gels	8./ 9. phsf			pH	8.7
		Circ Volume	1974.0 barrel	Pf/Mf	.0/ .2
		Vol Hole Dr	62.2 barrel	Pm	.0

Rhe'try at 49.0 deg: 600/77 300/56 200/47 100/23 60/0 30/0 6/10 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	204	0	1966	Fuel	150	0	1479
Cement	0	0	1824	Gel	0	0	581
Drill Water	1760	0	3993	Potable Water	92	132	713

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	10
BACTERICIDE	Baracide	BKT	25	1
CALCIUM REMOVER	Soda Ash	KGS	25	3
CORROSION INHIBITOR	BARACOR 129	BKT	25	10
FILTRATION REDUCER	DEXTRID LT	KGS	25	20
FILTRATION REDUCER	PAC-L	KGS	25	5
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	12
VISCOSIFIER	BARAZAN D	KGS	25	7
WEIGHTING MATERIAL	BARACARB 100	KGS	25	24
WEIGHTING MATERIAL	BARACARB 25	KGS	25	35
WEIGHTING MATERIAL	BARACARB 50	KGS	25	24
WEIGHTING MATERIAL	Barite	SAX	100	204
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	10

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	1678.0	136.75	5.42	12.27	2-4	X	0	390

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	94
2	.0855	94
3	.0855	94

Pump Rate 282 str/min
Flow Rate 1012.66 gpm
Pressure 3300 psi

Nozzle Sizes 32nd": 14.0 14.0 14.0 / 14.0 14.0 14.0 / 14.0 .0
Total Flow Area 1.0523 in2
Nozzle Velocity 94.10 m/sec
Hole Diameter 12.250 inches
Bit
Pressure Drop 878 psi
27 % of SPP
Impact Force 1670 lbf
Hydraulic HP 4.403 hp/in2

Annular Velocities ft/min
DC (Max) 414.
DP (Min) 192.
(Min OH) 198.
Riser (Min) 83.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	325	2436.000
2	40	325	2436.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 2.00 ppg

```
  3       40          325    2436.000      Pore Pressure           8.60 ppg
                                           MASP                     953 psi

                                           Background Gas            .0
Density            10.30 ppg               Connection Gas            .0
ECD                10.51 ppg               Trip Gas                  .0
   at            2595.000 meters
   with bit at  2594.762 meters
```

WEATHER REPORT

```
                 23:59  Max                                    23:59  Max
                 ----- -----                                  ------ ------
Bar Pressure   :  1016     0 mm Hg       Wind Speed     :    8.0     .0 knot
Heave          :   .30   .00 meters           Direction :    230      0 degree
Pitch          :   .30   .00 degree      Wave Height    :    .50    .00 meters
Roll           :   .20   .00 degree           Period    :      3      0 second
Swell Height   :  1.00   .00 meters           Direction :    230      0 degree
      Period   :     3     0 second      Air Temperature:   16.0     .0 deg C
      Direction:   230     0 degree      Sea Temperature:   16.0     .0 deg C
Visibility     :  18.0    .0 km          Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	240	0
8	240	0

RISER DATA

```
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:    .90
      Angle  :      .7                                            Angle :    178
```

DRILL STRING

```
Date Run:   7-Feb-03   Date Pulled:  14-Feb-03   Length of BHA         :  295.020
Time Run:      13:15   Time Pulled:      18:30   BHA Weight in Air     :     64.0
Depth In:    917.000   Depth Out  :   2618.000             Above Jars:     33.0
                                                           Below Jars:     22.0
                                                           In Mud    :     55.0
BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000
HW/5.000 HW/JR/5.000 HW
```

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000

HO	12.250	3.000	????	6.625 REG	.0	2.510
BT	12.250	3.000	????	6.625 REG	.0	.370

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	10	Pick-up	292	Off-TD	2000.0	BHA	140.75
RPM	100	Slack-off	300	On-TD	7000.0	Shock Sub	.00
		Off-TD, Rotating	300			Jars	166.50

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 14-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

```
Drilling                     DETAILED DAILY REPORT                  15-Feb-2003
                                  Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 | 2618.00
Office     : Australia SE                      TVD            m: 3126.00 | 2618.00
Client     : ExxonMobil Development            Days                     |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |    16.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                       - from Spud   :         |    12.5
Field      : Gippsland Basin                   Spud Date      :      02-Feb-2003
Country    : Australia                         Progress      m:            23.00
Latitude   :  38d 12' 49" South                Drilling Hours :             8.50
Longitude  : 148d 35' 29" East                 ROP        m/hr:             2.71
Water Depth:  109.60 m                         Percentage NPT :               .5
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Run in hole with new bit.
Planned: Drill ahead from 2618m.

Start Elpsd  End MD                       Description
----- ----- -------- -------------------------------------------------------------
00:00  8.50  2618.00 DRLG Drill 12¬" hole from 2595m to 2618 m RT corrected to
                          mean sea level datum. Take Anderdrift surveys.
                          Backream each connection.

                          Top Of Volcanics formation advised @ 2,610mMD
                          Prognosed @ 2,561m.

                          Andergauge survey
                          2610m    1.0 deg inc

                          TOTAL BIT REVS (Krevs)
                          Today 44    Total 859.7
08:30  1.75  2618.00 CIRC Circulate hole clean.  Circulate through choke and
                          kill lines. Jet riser. Flow check and check drink
                          rate.
10:15  6.50  2618.00 TRIP Pull string out of hole -- Pump out of hole from 2,618
                          m to casing shoe (no rotation).  No excess overpull
                          while tripping to shoe.
16:45   .50  2618.00 RIG  Flow check and service TDS.
17:15  1.25  2618.00 TRIP Pull string out of hole -- Pull out of hole to BHA.
18:30  1.75  2618.00 TRIP Break and lay down string, BHA or tools -- Handle BHA.
                          Guage stabilizers, lay out NB roller reamer (5/16"
                          under guage) and bit. Function test shear rams.
20:15  3.75  2618.00 TRIP Pick up or make up string, BHA, or tools -- Make up
                          new bit - 12¬" MX-20DDT and NB roller reamer. Hold
                          think drill and pick up 9 x 8-1/4" DC's. Continue to
                          RIH with BHA. Make up TDS and flush thru string.
Total 24.00
```

REMARKS

Held PTSM with both day and night shifts.
Topics: Drilling practises. Tripping & handling BHA. Well control. Mixing mud. Correct PPE. Hold THINK Drills. Start cards. Work permits.Communication. Correct PPE. Housekeeping. Rig maintenance.
Boats:
Pacific Frontier: Depart BBMT at 18:00 14 Feb 03.
Pacific Challenger: at Rig
Fire and Abandon drill:- 09 Feb 03
3 x Helicopters.
ROV conducted Riser inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseyes 0 deg.

INSPECTIONS, DRILLS, AND CITATIONS

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		10-Feb-2003
Abandon Ship Drill	No		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	1	14-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	14-Feb-2003

PERSONNEL

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 82
Total Hours : 984.00

HEAD COUNTS

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	16

SAFETY INCIDENT

*** First Aid
Floorman got mud in left eye from mud bucket latch - no injury. Flushed eye at rig floor eye wash station, medic checked (OK), and floorman returned to work.

MANAGEMENT SUMMARY

Drilled 12-1/4" hole from 2595m to 2618m. Pull out of hole for bit change.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	318,699	0	318,699	7,839
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,445,183	287,973	12,733,156	468,056
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,445,183	287,973	12,733,156	468,056

MUD REPORT

Time	19:00	Flowline Temp	.0 deg C	% Solids	10.2
Mud Type	WBM	Filtrate	2.8 cc	% LGS	2.0
Sample From	Pit	Filter Cake	1.0 32nd"	% Sand	.15
		HTHP Temp	120.0 deg C	% Water	89.8
MD	2618.00 meters	Filtrate	10.6 cc	% Oil	.0
Density	10.35 ppg				
Viscosity	56 sec	Elec Stab	0 volts	Ca++	180
PV	21.0 cp	MBT	4.0 lb/bbl	Cl-	40500
YP	36.0 phsf	Excess Lime	.03 lb/bbl	CaCl2	0
Gels	8./ 9. phsf			pH	9.1
		Circ Volume	1845.1 barrel	Pf/Mf	.1/ .4
		Vol Hole Dr	11.0 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/78 300/57 200/48 100/35 60/0 30/0 6/11 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	89	1523	3400	Fuel	160	0	1319
Cement	0	0	1824	Gel	0	0	581
Drill Water	874	0	3119	Potable Water	86	126	753

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	3
CALCIUM REMOVER	Soda Ash	KGS	25	1
CORROSION INHIBITOR	BARACOR 129	BKT	25	6
FILTRATION REDUCER	DEXTRID LT	KGS	25	17
FILTRATION REDUCER	PAC-L	KGS	25	4
SHALE CONTROL	phpa	KGS	25	12
WEIGHTING MATERIAL	BARACARB 100	KGS	25	2
WEIGHTING MATERIAL	BARACARB 25	KGS	1200	1
WEIGHTING MATERIAL	BARACARB 50	KGS	25	8
WEIGHTING MATERIAL	Barite	SAX	100	89

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
3 1	12.250	BT	STC	MA89PX	917.00	1701.0	145.25	2.71	11.71	2-4	X	0	408
4 1	12.250	BT	HC	MX20DD	2618.00	.0	.00	.00	.00	4-7	E	1	-1

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min				
1	.0855	96	Nozzle Sizes 32nd"	20.0 20.0 20.0 / .0 .0 .0 / .0 .0	DC (Max)	309.
2	.0855	96	Total Flow Area	.9204 in2	DP (Min)	196.
3	.0855	96	Nozzle Velocity	109.88 m/sec	(Min OH)	202.
			Hole Diameter	12.250 inches	Riser (Min)	85.
			Bit Pressure Drop	1197 psi		
				37 % of SPP		

Annular Velocities ft/min

Pump Rate	288 str/min		
Flow Rate	1034.21 gpm	Impact Force	1992 lbf
Pressure	3200 psi	Hydraulic HP	6.130 hp/in2

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
876.200	.53	338.22	876.184	3.922	+ 3.922	- 1.210	.164
885.800	.51	327.67	885.784	3.999	+ 3.999	- 1.249	.309
907.800	.39	329.98	907.783	4.147	+ 4.147	- 1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	40	325	2436.000
2	40	325	2436.000
3	40	325	2436.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.99 ppg
Pore Pressure	8.60 ppg
MASP	953 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 10.30 ppg
ECD 10.68 ppg
at 2618.000 meters
with bit at 2617.927 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1013	0	mm Hg
Heave	.30	.00	meters
Pitch	.20	.00	degree
Roll	.20	.00	degree
Swell Height	1.00	.00	meters
Period	3	0	second
Direction	220	0	degree
Visibility	18.0	.0	km

	23:59	Max	
Wind Speed	12.0	.0	knot
Direction	200	0	degree
Wave Height	.30	.00	meters
Period	3	0	second
Direction	200	0	degree
Air Temperature	19.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	250	0
8	240	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.00
Angle : 1.1 Angle : 180

DRILL STRING

Date Run:	7-Feb-03	Date Pulled:	14-Feb-03	Length of BHA	295.020
Time Run:	13:15	Time Pulled:	18:30	BHA Weight in Air	64.0
Depth In:	917.000	Depth Out :	2618.000	Above Jars:	33.0
				Below Jars:	22.0
				In Mud	55.0

BT/HO/SV/12.250 ST/9.500 DC/12.250 ST/8.250 DC/8.250 DC/8.250 DC/XO/5.000 HW/5.000 HW/JR/5.000 HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2322.979
HW	5.000	3.000	????	4.500	IF	.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	.0					9.380
HW	5.000	3.000	????	4.500	IF	.0					9.130
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	.0					26.870
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		1.800
DC	9.500	3.000	????	9.625	REG	.0					9.330
ST	12.250	3.000	????	9.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
HO	12.250	3.000	????	6.625	REG	.0					2.510
BT	12.250	3.000	????	6.625	REG	.0					.370

================================ DRILL STRING ================================

Date Run:	14-Feb-03	Date Pulled:	18-Feb-03	Length of BHA :	377.280
Time Run:	20:30	Time Pulled:	19:00	BHA Weight in Air :	104.0
Depth In:	2618.000	Depth Out :	2933.000	Above Jars:	31.0
				Below Jars:	58.0
				In Mud :	89.0

BT/RR/SV/12.250 ST/8.250 DC/12.250 ST/ 12 x 8¬ drill collars/XO/5" HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2555.719
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	160.0					18.510
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

============================= DAILY DRILL STRING =============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	18	Pick-up	298	Off-TD	2000.0	BHA	149.25
RPM	80	Slack-off	302	On-TD	5000.0	Shock Sub	.00
		Off-TD, Rotating	300			Jars	175.00

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 15-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

Drilling **DETAILED DAILY REPORT** **16-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 2706.00
Office     : Australia SE                     TVD            m: 3126.00 | 2706.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    17.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                      - from Spud   :         |    13.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:             88.00
Latitude   :  38d 12' 49" South               Drilling Hours :             18.50
Longitude  : 148d 35' 29" East                ROP        m/hr:              4.76
Water Depth:  109.60 m                        Percentage NPT :                .4
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12-1/4" hole at 2706m.
Planned: Drill & survey 12-1/4" hole from 2706m.
```

Start	Elpsd	End MD		Description
00:00	.75	2618.00	TRIP	Run string in hole -- Insert diverter packer and RIH to shoe.
00:45	.75	2618.00	BOP	Hang off on middle pipe rams and function rams, annulars and valves on blue pod. Function test diverter system and overboard valves.
01:30	3.00	2618.00	TRIP	Run string in hole -- Continue to RIH to 2578m. No drag.
04:30	1.00	2618.00	DRLG	Pre-cautionary wash and ream to bottom at 2618m. Tight stringer at top of volcanics. No fill.
05:30	18.50	2706.00	DRLG	Drill 12¬ inch hole from 2618 m to 2706m w/ WOB 45-49, 5,000 ft-lb torque, 96 RPM, 820 gpm, SPP 2,890 psi. Backream each connection. Take Anderdrift surveys. Andergauge survey 2,618 m 1ø inclination 2,635 m 1«ø inclination 2,664 m 1«ø inclination 2,693 m 1«ø inclination TOTAL BIT REVS (Krevs) Today 97.5 Total = 97.5

Total 24.00

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Drilling practises. Well control. Mixing mud. Correct PPE. Hold THINK Drills. Start cards. Housekeeping. Rig maintenance.
Boats:
Pacific Frontier: Depart Rig at 18:00hrs. ETA BBMT 07:00 16Feb03.
Pacific Challenger: at Rig
Fire and Abandon drill:- 09 Feb 03
0 x Helicopters.
ROV ran riser and bullseye inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		08-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		10-Feb-2003
Abandon Ship Drill	No		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	15-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	15-Feb-2003

==================================== PERSONNEL ====================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 82
Total Hours : 984.00

=================================== HEAD COUNTS ===================================

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	16

=============================== MANAGEMENT SUMMARY ===============================

RIH to 2618m with new bit and drill & survey 12-1/4" hole from 2618m to 2706m..

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	330,065	0	330,065	29,381
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,775,248	287,973	13,063,221	497,437
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,775,248	287,973	13,063,221	497,437

=================================== MUD REPORT ===================================

Time	20:10	Flowline Temp	68.0 deg C	% Solids	10.5
Mud Type	WBM	Filtrate	3.3 cc	% LGS	4.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.25
		HTHP Temp	120.0 deg C	% Water	89.5
MD	2691.00 meters	Filtrate	10.6 cc	% Oil	.0
Density	10.30 ppg				
Viscosity	52 sec	Elec Stab	0 volts	Ca++	80
PV	26.0 cp	MBT	4.0 lb/bbl	Cl-	34500

```
YP              28.0 phsf       Excess Lime      .02 lb/bbl      CaCl2          0
Gels         8./ 10. phsf                                        pH           9.5
                                Circ Volume   1245.0 barrel      Pf/Mf   .1/  .6
                                Vol Hole Dr     42.1 barrel      Pm            .2
Rhe'try at  49.0 deg: 600/80 300/54 200/49 100/35 60/0 30/0 6/10 3/7
```

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3400	Fuel	64	944	2199
Cement	0	0	1824	Gel	0	0	581
Drill Water	166	3583	6536	Potable Water	130	132	755

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	4
ALKALINITY (PH)	pottassium hydr	BKT	20	5
BACTERICIDE	Baracide	BKT	25	1
CORROSION INHIBITOR	BARACOR 129	BKT	25	8
SHALE CONTROL	Glycol CP	LTR	1500	3
WEIGHTING MATERIAL	BARACARB 100	KGS	25	19
WEIGHTING MATERIAL	BARACARB 25	KGS	25	1
WEIGHTING MATERIAL	BARACARB 50	KGS	25	13
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	1

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
4 1	12.250	BT	HC	MX20DD	2618.00	88.0	18.50	4.76	4.76	4-7	E	1	1641

HYDRAULICS

```
Pump Displaces    Rate      Nozzle Sizes      20.0 20.0 20.0  Annular Velocities
      bbl/st     str/min        32nd"            .0   .0   .0             ft/min
  1    .0855       75                            .0   .0      DC (Max)       241.
  2    .0855       75       Total Flow Area   .9204 in2       DP (Min)       153.
  3    .0855       75       Nozzle Velocity   85.84 m/sec        (Min OH)    158.
                            Hole Diameter    12.250 inches    Riser (Min)     66.
                            Bit
                              Pressure Drop     731 psi
Pump Rate     225 str/min                        25 % of SPP
Flow Rate  807.98 gpm         Impact Force     1216 lbf
Pressure     2890 psi         Hydraulic HP    2.923 hp/in2
```

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

```
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)            2495 psi
```

1	30	250	2693.000	Formation Strength	16.50	ppg
2	40	350	2693.000	Kick Tolerance	1.93	ppg
3	50	450	2693.000	Pore Pressure	8.60	ppg
				MASP	953	psi

			Background Gas	.1
Density	10.30 ppg		Connection Gas	.0
ECD	10.45 ppg		Trip Gas	.0
at	2706.000 meters			
with bit at	2705.709 meters			

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure :	1012	0	mm Hg	Wind Speed :	5.0	.0	knot
Heave :	.30	.00	meters	Direction :	200	0	degree
Pitch :	.20	.00	degree	Wave Height :	.20	.00	meters
Roll :	.20	.00	degree	Period :	2	0	second
Swell Height :	1.00	.00	meters	Direction :	200	0	degree
Period :	3	0	second	Air Temperature:	18.0	.0	deg C
Direction:	230	0	degree	Sea Temperature:	.0	.0	deg C
Visibility :	18.0	.0	km	Cloud Cover :	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	250	0
8	240	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.10
Angle : .9 Angle : 164

DRILL STRING

Date Run:	14-Feb-03	Date Pulled:	18-Feb-03	Length of BHA :	377.280
Time Run:	20:30	Time Pulled:	19:00	BHA Weight in Air :	104.0
Depth In:	2618.000	Depth Out :	2933.000	Above Jars:	31.0
				Below Jars:	58.0
				In Mud :	89.0

BT/RR/SV/12.250 ST/8.250 DC/12.250 ST/ 12 x 8¬ drill collars/XO/5" HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2555.719
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	160.0					18.510
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000

```
RR  12.250   3.000 ????   6.625 REG     .0    .000    .000   .000          2.450
BT  12.250   3.000 ????   6.625 REG     .0                                  .330

============================== DAILY DRILL STRING ==============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB     49     Pick-up               325    Off-TD   2000.0   BHA         169.00
RPM     96     Slack-off             335    On-TD    5000.0   Shock Sub      .00
               Off-TD, Rotating      325                      Jars        194.75

==================================== CASING ====================================
  Section     O.D.     Grade   Wt/Lng    Thread   Joints     Top       Bottom
      1      30.000   X52    457.000    HD90        1      132.690    144.650
      2      30.000   X52    457.000    SF60        1      144.650    156.140
      3      30.000   X52    310.000    SF60        1      156.140    167.820
      4      30.000   X52    310.000    SF60        1      167.820    179.000
      5      20.000   X56    203.000    WELD        1      131.850    139.440
      6      13.375   L80     72.000    BTC         1      139.440    142.670
      7      13.375   L80     68.000    BTC        57      142.670    900.810

*** End 16-Feb-2003 report for SCALLOP_1      Run 01-Apr-2003 17:04 Central Time
```

Drilling **DETAILED DAILY REPORT** **17-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 | 2830.00
Office     : Australia SE                     TVD           m: 3126.00 | 2830.00
Client     : ExxonMobil Development           Days                     |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    18.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     7.8
Operator   : Esso Aus Res                      - from Spud   :         |    14.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:            124.00
Latitude   :  38d 12' 49" South               Drilling Hours :             24.00
Longitude  : 148d 35' 29" East                ROP        m/hr:              5.17
Water Depth:  109.60 m                        Percentage NPT :                .4
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12-1/4" hole at 2830m.
Planned: Drill & survey 12-1/4" hole from 2830m.
```

Start	Elpsd	End MD		Description
00:00	24.00	2830.00	DRLG	Drill 12¬ inch hole from 2706m to 2830m w/ WOB 40-48, 4,500/5,000 ft-lb torque, 96/140 RPM, 830 gpm, SPP 2, 920 psi. Backream each connection. Take Anderdrift surveys. Andergauge survey 2,722 m 1«ø inclination 2,751 m 2ø inclination 2,780 m 1«ø inclination 2,808 m 1« inclination TOTAL BIT REVS (Krevs) Today 138.2 Total = 235.7
Total	24.00			

==================================== REMARKS ====================================

Held three general safety meetings. Site Safety Plan was discussed.
Held PTSM with both day and night shifts.
Topics: Drilling practises. Well control. Mixing mud. Correct PPE.Check choke & kill manifold. Hold THINK Drills. Housekeeping. Rig maintenance.
Boats:
Pacific Frontier: at Barry Beach Marine Terminal
Pacific Challenger: at Rig on mobile standby
Fire and Abandon drill:- 16 Feb 03
0 x Helicopters.
Heli crew conducted helicopter crash drill.
ROV ran riser and bullseye inspection.

```
Riser bullseye 1 deg port aft
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.
```

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		16-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	Yes		10-Feb-2003
Abandon Ship Drill	Yes		10-Feb-2003
Operations Superintendent Inspection	No		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	16-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	16-Feb-2003

================================== PERSONNEL ==================================

```
Personnel       :  N/A
Supervisors     :  Jackson, Murray G.
                   Sharkey, George K.
Total Head Count:     82
Total Hours     :    984.00
```

================================== HEAD COUNTS =================================

Contractor	61	ExxonMobil	5
Contractor Short Service (SSE)	0	Service Company	16

============================== MANAGEMENT SUMMARY ==============================

Drill & survey 12-1/4" hole from 2706m to 2830m.

======================= COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	331,204	0	331,204	26,450
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	13,106,452	287,973	13,394,425	523,887
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	13,106,452	287,973	13,394,425	523,887

================================== MUD REPORT ==================================

```
Time            20:20          Flowline Temp   67.0 deg C       % Solids   11.0
Mud Type          WBM          Filtrate         2.8 cc          % LGS       3.0
Sample From Flowline           Filter Cake      1.0 32nd"       % Sand      .65
                               HTHP Temp      120.0 deg C       % Water    89.0
MD            2808.00 meters        Filtrate    8.8 cc          % Oil        .0
Density         10.40 ppg
Viscosity          54 sec      Elec Stab          0 volts       Ca++         60
PV               22.0 cp       MBT              5.5 lb/bbl      Cl-       40000
YP               41.0 phsf     Excess Lime      .03 lb/bbl      CaCl2         0
Gels          8./  9. phsf                                      pH          8.8
                               Circ Volume   2077.4 barrel      Pf/Mf   .0/  .3
                               Vol Hole Dr     59.3 barrel      Pm           .1
Rhe'try at  49.0 deg: 600/85 300/63 200/53 100/37 60/0 30/0 6/11 3/8
```

=============================== SOLIDS CONTROL ================================

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3400	Fuel	148	0	2051
Cement	0	0	1824	Gel	0	0	581
Drill Water	823	0	5713	Potable Water	80	138	813

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	5
BACTERICIDE	Baracide	BKT	25	1
CORROSION INHIBITOR	BARACOR 129	BKT	25	8
FILTRATION REDUCER	DEXTRID LT	KGS	25	17
FILTRATION REDUCER	PAC-L	KGS	25	4
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	13
VISCOSIFIER	BARAZAN D	KGS	25	10
WEIGHTING MATERIAL	BARACARB 100	KGS	25	12
WEIGHTING MATERIAL	BARACARB 25	KGS	25	48
WEIGHTING MATERIAL	BARACARB 50	KGS	25	25
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	6

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Cum	Grade T	B	G	Cost /Lng
4 1	12.250	BT	HC	MX20DD	2618.00	212.0	42.50	5.17	4.99	4-7	E	1	1203

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	75
2	.0855	75
3	.0855	75

Nozzle Sizes 32nd": 20.0 20.0 20.0 / .0 .0 .0 / .0 .0

Total Flow Area	.9204	in2
Nozzle Velocity	85.84	m/sec
Hole Diameter	12.250	inches
Bit Pressure Drop	738	psi
	25	% of SPP
Impact Force	1228	lbf
Hydraulic HP	2.952	hp/in2

Annular Velocities	ft/min
DC (Max)	241.
DP (Min)	153.
(Min OH)	158.
Riser (Min)	66.

Pump Rate	225	str/min
Flow Rate	807.98	gpm
Pressure	2930	psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	250	2751.000
2	0	0	.000
3	50	450	2751.000

Burst (70%)	2495	psi
Formation Strength	16.50	ppg
Kick Tolerance	1.81	ppg
Pore Pressure	8.60	ppg
MASP	937	psi
Background Gas	.0	
Connection Gas	.0	

Density 10.40 ppg

```
ECD                10.64 ppg            Trip Gas                  .0
   at           2830.000 meters
   with bit at  2829.763 meters
```

WEATHER REPORT

```
                 23:59  Max                                     23:59  Max
                 ----- -----                                   ------ ------
Bar Pressure   :  1013     0 mm Hg      Wind Speed     :   25.0     .0 knot
Heave          :   .30   .00 meters          Direction :    220      0 degree
Pitch          :   .20   .00 degree     Wave Height    :   1.50    .00 meters
Roll           :   .20   .00 degree          Period    :      3      0 second
Swell Height   :  1.00   .00 meters          Direction :    220      0 degree
      Period   :     5     0 second     Air Temperature:   18.0     .0 deg C
      Direction:    60     0 degree     Sea Temperature:     .0     .0 deg C
Visibility     :  12.0    .0 km         Cloud Cover    :      0      0
```

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	240	0
8	240	0

RISER DATA

```
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:    .70
      Angle  :      .5                                             Angle :    115
```

DRILL STRING

```
Date Run:  14-Feb-03   Date Pulled:  18-Feb-03   Length of BHA       :  377.280
Time Run:      20:30   Time Pulled:      19:00   BHA Weight in Air   :    104.0
Depth In:   2618.000   Depth Out  :   2933.000              Above Jars:     31.0
                                                            Below Jars:     58.0
                                                            In Mud    :     89.0
BT/RR/SV/12.250 ST/8.250 DC/12.250 ST/ 12 x 8¬ drill collars/XO/5" HW
```

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2555.719
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	160.0					18.510
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

DAILY DRILL STRING

		Weights		Torques		Cumulative Time On	
WOB	47	Pick-up	332	Off-TD	2000.0	BHA	191.70
RPM	100	Slack-off	342	On-TD	5000.0	Shock Sub	.00
		Off-TD, Rotating	342			Jars	218.75

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 17-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

```
Drilling                      DETAILED DAILY REPORT                  18-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 | 2914.00
Office     : Australia SE                      TVD            m: 3126.00 | 2914.00
Client     : ExxonMobil Development            Days                      |
Drill Team : Australia Offshore                 - if Dry       :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |    19.0
Rig Name   : Sedco 702                          - Ahead/Behind:          |     9.0
Operator   : Esso Aus Res                       - from Spud   :          |    15.5
Field      : Gippsland Basin                   Spud Date      :       02-Feb-2003
Country    : Australia                         Progress      m:             84.00
Latitude   :  38d 12' 49" South                Drilling Hours :             24.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:              3.50
Water Depth:  109.60 m                         Percentage NPT :                .4
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12-1/4" hole at 2914m.
Planned: Drill @ survey 12-1/4" hole from 2914m.

Start Elpsd  End MD                         Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00  2914.00 DRLG Drill 12¬ inch hole from 2830 m to 2914 m w/ WOB 46-50
                           5,000 ft-lb torque, 90-100 RPM, 820 gpm, SPP 2,975
                          psi.  Backream each connection.  Take Anderdrift
                          surveys. Flow checks at 2868 m & 2912nm - well static.

                          Andergauge survey
                          2,838 m    1«ø inclination
                          2,867 m    1«ø inclination
                          2,896 m    2ø inclination


                          TOTAL BIT REVS (Krevs)
                          Today 129.2    Total = 364.9
Total 24.00


==================================== REMARKS ===================================
Held PTSM with both day and night shifts.
Esso & TSF management visited rig.
Topics: Rig operations. Drilling practises. Mixing & mud transfers. Correct PPE.
Check choke & kill manifold. THINK well control. Housekeeping. Rig maintenance.
Boats:
Pacific Frontier:  at Barry Beach Marine Terminal
Pacific Challenger: at Rig on standby
Fire and Abandon drill:- 16 Feb 03
3 x Helicopters.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 1-1/4 deg port aft
```

BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		16-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	Yes		07-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	17-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	17-Feb-2003

==================================== PERSONNEL ====================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 84
Total Hours : 1008.00

==================================== HEAD COUNTS ====================================

Contractor	60	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	16

============================== MANAGEMENT SUMMARY ==============================

Drill @ survey 12-1/4" hole from 2830m to 2914m.

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	306,138	0	306,138	1,384
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	13,412,590	287,973	13,700,563	525,271
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	13,412,590	287,973	13,700,563	525,271

==================================== MUD REPORT ====================================

Time	20:45	Flowline Temp	66.0 deg C	% Solids	7.8
Mud Type	WBM	Filtrate	3.2 cc	% LGS	3.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.20
		HTHP Temp	120.0 deg C	% Water	89.2
MD	2902.00 meters	Filtrate	9.2 cc	% Oil	4.8
Density	10.40 ppg				
Viscosity	56 sec	Elec Stab	0 volts	Ca++	70
PV	25.0 cp	MBT	6.0 lb/bbl	Cl-	39000
YP	39.0 phsf	Excess Lime	.11 lb/bbl	CaCl2	0
Gels	8./ 11. phsf			pH	9.0
		Circ Volume	2113.6 barrel	Pf/Mf	.1/ .3
		Vol Hole Dr	40.2 barrel	Pm	.4

Rhe'try at 49.0 deg: 600/89 300/64 200/58 100/39 60/0 30/0 6/11 3/8

=============================== SOLIDS CONTROL ===============================

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3400	Fuel	121	0	1930
Cement	0	0	1824	Gel	0	0	581
Drill Water	343	0	5370	Potable Water	106	126	833

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	5
ALKALINITY (PH)	pottassium hydr	BKT	20	3
CORROSION INHIBITOR	BARACOR 129	BKT	25	6
WEIGHTING MATERIAL	BARACARB 100	KGS	25	16
WEIGHTING MATERIAL	BARACARB 25	KGS	25	7
WEIGHTING MATERIAL	BARACARB 50	KGS	25	8

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
4 1	12.250	BT	HC	MX20DD	2618.00	296.0	66.50	3.50	4.45	4-7	E	1	1234

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	75
2	.0855	75
3	.0855	75

Nozzle Sizes 32nd": 20.0 20.0 20.0 / .0 .0 .0 / .0 .0

Total Flow Area .9204 in2
Nozzle Velocity 85.84 m/sec
Hole Diameter 12.250 inches
Bit
Pressure Drop 731 psi
25 % of SPP
Impact Force 1216 lbf
Hydraulic HP 2.923 hp/in2

Pump Rate 225 str/min
Flow Rate 807.98 gpm
Pressure 2950 psi

Annular Velocities ft/min
DC (Max) 241.
DP (Min) 153.
(Min OH) 158.
Riser (Min) 66.

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-		E+/W-		Dogleg
876.200	.53	338.22	876.184	3.922	+	3.922	-	1.210	.164
885.800	.51	327.67	885.784	3.999	+	3.999	-	1.249	.309
907.800	.39	329.98	907.783	4.147	+	4.147	-	1.339	.166

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	300	2868.000
2	40	375	2868.000
3	50	500	2868.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 1.79 ppg
Pore Pressure 8.60 ppg
MASP 953 psi

Background Gas .0
Connection Gas .0
Trip Gas .0

Density 10.30 ppg
ECD 10.52 ppg
at 2914.000 meters
with bit at 2913.888 meters

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure	1019	0	mm Hg	Wind Speed	8.0	35.0	knot
Heave	.30	.00	meters	Direction	260	0	degree
Pitch	.30	.00	degree	Wave Height	.50	2.50	meters
Roll	.20	.00	degree	Period	3	0	second
Swell Height	1.50	2.00	meters	Direction	260	0	degree
Period	7	0	second	Air Temperature	15.0	.0	deg C
Direction	230	0	degree	Sea Temperature	.0	.0	deg C
Visibility	18.0	.0	km	Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	250	0
6	240	0
7	250	0
8	240	0

RISER DATA

Riser Tension: 344 Flex Joint Rotation: .0 Hole Position, Offset: .80
Angle : 1.0 Angle : 187

DRILL STRING

Date Run:	14-Feb-03	Date Pulled:	18-Feb-03	Length of BHA :	377.280
Time Run:	20:30	Time Pulled:	19:00	BHA Weight in Air :	104.0
Depth In:	2618.000	Depth Out :	2933.000	Above Jars:	31.0
				Below Jars:	58.0
				In Mud :	89.0

BT/RR/SV/12.250 ST/8.250 DC/12.250 ST/ 12 x 8¬ drill collars/XO/5" HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2555.719
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	160.0					18.510
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	50	Pick-up	340	Off-TD	2000.0	BHA	215.70
RPM	100	Slack-off	350	On-TD	5000.0	Shock Sub	.00
		Off-TD, Rotating	348			Jars	242.75

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 18-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

Drilling **DETAILED DAILY REPORT** **19-Feb-2003**

Scallop 1

DRS Well ID: SCALLOP_1
Units : Mixed Oilfield
Office : Australia SE
Client : ExxonMobil Development
Drill Team : Australia Offshore

Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO
Contractor : Trans Sed Forex
Rig Name : Sedco 702
Operator : Esso Aus Res
Field : Gippsland Basin
Country : Australia
Latitude : 38d 12' 49" South
Longitude : 148d 35' 29" East
Water Depth: 109.60 m
RKB Height : 25.90 m
Ground Elev: .00 m
Phone : 61 - 3 - 51422747

AFE L7401D001		Planned	Actual
MD	m:	3126.00	2933.00
TVD	m:	3126.00	2933.00
Days			
- if Dry	:	42.0	
- if Suspended	:	42.0	
- to Complete	:	.0	
- Susp + Comp	:	42.0	20.0
- Ahead/Behind	:		9.0
- from Spud	:		16.5
Spud Date	:		02-Feb-2003
Progress	m:		19.00
Drilling Hours	:		7.00
ROP	m/hr:		2.71
Percentage NPT	:		.4
Depth Reference	:		Rig Floor (RKB)

Superintendent : F.W. Kratzer
Engineers : R.M. Furchtenicht
C.P. Meakin
Formation Desc :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test : 16.50 ppg

Current: RIH with new 12-1/4" bit & LWD assy.
Planned: Slip & cut, RIH & continue to drill & log 12-1/4" hole to TD at 3126m.

Start	Elpsd	End MD		Description
00:00	7.00	2933.00	DRLG	Drill 12¬ inch hole from 2914 m to 2933 m RT corrected to mean sea level datum w/ WOB 50-52, 5,000 ft-lb torque, 90-106 RPM, 810 gpm, SPP 3,000 psi. Backream each connection. Take Anderdrift surveys. Stop drilling due to torque spikes. Andergauge survey 2,925 m 2ø inclination TOTAL BIT REVS (Krevs) Today = 39.0 Total =403.9
07:00	1.50	2933.00	CIRC	Circulate and boost riser. Flow check well. Hold think drill for dropping Gyro tool.
08:30	1.00	2933.00	DRLG	Drop Scientific Drilling 1¾ú Keeper Drop Gyro down drill string. Pump down gyro at 215 gpm, SPP 450 psi, then reduce pump rate to 144 gpm.
09:30	1.75	2933.00	TRIP	Pull string out of hole -- POOH wet from 2933 m to 2606 m. Most of hole had no excess overpull except 15 kips at 2881 m, 30 kips at 2874 m, 16 kips at 2860 m, 20 kips at 2780 m, 40 kips from 2775 to 2770 m, 31 kips at 2767 m, 26 kips from, 2760 to 2759 m, 22 kips at 2740 m, 38 kips at 2738 m, 26 kips at 2689 m, 18 kips at 2655 m, 29 kips at 2641 m, 21 kips at 2619 m intermittent overpull.
11:15	.25	2933.00	CIRC	Pump 30 bbl, 12.3 ppg slug at 2606 m.
11:30	6.00	2933.00	TRIP	Pull string out of hole -- Continue to POOH from 2606 m to top stabilizer. Most of hole had no excess overpull except 12 kips at 2600 m, 18 kips at 2586 m,

				24 kips from 2586 m to 2578 m, 24 kips at 2384 m, 46 kips at 2367 m, 17 kips at 2287 m, 10 kips at 2027 m, 45 kips at 2005 m, 10 kips at 1998 m, 45 kips at 1983 m, 15 kips at 1969 m, 10 kips at 1940 m, 20 kips at 1795 m, and 15 kips at 1792 m.
17:30	.50	2933.00	TRIP	Pull string out of hole -- Gauge top stabilizer - 1/16" OG. Held Think Drill on recovery of gyro and handling of BHA. Recover Keeper Gyro.
18:00	1.00	2933.00	TRIP	Break and lay down string, BHA or tools -- Lay out bit NB roller reamer (1/16" OG), Anderdrift tool and string stabilizer(1/8" OG). Function test shear rams.
19:00	2.00	2933.00	TRIP	Pick up or make up string, BHA, or tools -- Make up new 12-1/4" bit - MX20DT, roller reamer, pony DC and string stabilizer. Pick up Anadrill LWD/MWD assy. Make up TDS and pump thru tools to surface test. Gamma ray is 19.4 m above bit.
21:00	2.25	2933.00	TRIP	Pick up or make up string, BHA, or tools -- RIH with balance of BHA. Change out drilling jars (on hrs) and DC x-over sub.
23:15	.75	2933.00	TRIP	Run string in hole -- Install diverter bag, RIH with HWDP to 388m and fill drill string.
Total	24.00			

====================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Rig operations. Tripping & BHA handling. Mixing & mud transfers, Communications, Correct PPE. Check choke & kill manifold. THINK well control. Housekeeping. Rig maintenance.
Processed gyro survey data for interval 2923m to 907m. The horizontal displacement at 2,923 m measured depth is 37.35 m in a direction of 4.36ø.
Boats:
Pacific Frontier: Arrive rig 19:30 & offload
Pacific Challenger:Dpt Rig 21:07 to BBMT. ETA 08:00.
Fire and Abandon drill:- 16 Feb 03
0 x Helicopters.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		16-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	18-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	18-Feb-2003

=================================== PERSONNEL ==================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 84
Total Hours : 1008.00

HEAD COUNTS

Contractor	60	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	16

MANAGEMENT SUMMARY

Drill 12-1/4" hole to 2933m. Drop gyro survey tool, POOH, change bit and pick up LWD/MWD assy. RIH to drill to TD.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	318,353	0	318,353	1,769
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	13,730,943	287,973	14,018,916	527,040
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	13,730,943	287,973	14,018,916	527,040

MUD REPORT

Time	16:30	Flowline Temp	.0 deg C	% Solids	7.3
Mud Type	WBM	Filtrate	3.3 cc	% LGS	3.0
Sample From	Pit	Filter Cake	1.0 32nd"	% Sand	.10
		HTHP Temp	120.0 deg C	% Water	89.6
MD	2933.00 meters	Filtrate	9.3 cc	% Oil	.0
Density	10.35 ppg				
Viscosity	61 sec	Elec Stab	0 volts	Ca++	160
PV	23.0 cp	MBT	5.5 lb/bbl	Cl-	39000
YP	38.0 phsf	Excess Lime	.02 lb/bbl	CaCl2	0
Gels	8./ 11. phsf			pH	8.7
		Circ Volume	1983.7 barrel	Pf/Mf	.0/ .3
		Vol Hole Dr	9.1 barrel	Pm	.1

Rhe'try at 49.0 deg: 600/84 300/61 200/50 100/36 60/0 30/0 6/11 3/7

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	38	0	3362	Fuel	107	0	1823
Cement	0	0	1824	Gel	0	0	581
Drill Water	280	0	5090	Potable Water	82	82	833

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	1
BACTERICIDE	Baracide	BKT	25	1
WEIGHTING MATERIAL	BARACARB 100	KGS	25	9
WEIGHTING MATERIAL	BARACARB 25	KGS	25	3
WEIGHTING MATERIAL	BARACARB 50	KGS	25	9
WEIGHTING MATERIAL	Barite	SAX	100	38

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
4 1	12.250	BT	HC	MX20DD	2618.00	315.0	73.50	2.71	4.29	4-7	E	1	1262
5 1	12.250	BT	HC	MX20DX	2933.00	.0	.00	.00	.00	3-7	E	2	-1

================================== HYDRAULICS ==================================

```
Pump Displaces    Rate      Nozzle Sizes      18.0 18.0 18.0  Annular Velocities
      bbl/st     str/min       32nd"             .0   .0   .0           ft/min
  1    .0855       75                            .0   .0       DC (Max)       241.
  2    .0855       75       Total Flow Area   .7455 in2        DP (Min)       153.
  3    .0855       75       Nozzle Velocity  105.98 m/sec         (Min OH)    158.
                            Hole Diameter    12.250 inches     Riser (Min)     66.
                            Bit
                              Pressure Drop    1114 psi
Pump Rate     225 str/min                        38 % of SPP
Flow Rate  807.98 gpm         Impact Force     1501 lbf
Pressure     2950 psi         Hydraulic HP    4.455 hp/in2
```

================================== SURVEYS ==================================

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
945.500	.45	10.33	945.482	4.403	+ 4.403	- 1.377	.235
974.400	.51	49.51	974.381	4.599	+ 4.599	- 1.259	.339
1003.200	.50	44.10	1003.180	4.772	+ 4.772	- 1.074	.055
1032.100	.56	65.45	1032.079	4.921	+ 4.921	- .857	.212
1060.900	.53	47.97	1060.877	5.069	+ 5.069	- .630	.175
1089.800	.58	59.57	1089.776	5.233	+ 5.233	- .405	.128
1118.700	.56	29.96	1118.675	5.429	+ 5.429	- .208	.303
1147.600	.64	46.68	1147.573	5.662	+ 5.662	- .020	.199
1176.500	.62	19.17	1176.472	5.921	+ 5.921	+ .148	.311
1205.300	.56	31.60	1205.270	6.188	+ 6.188	+ .273	.146
1234.100	.58	34.13	1234.069	6.428	+ 6.428	+ .429	.036
1263.000	.64	42.47	1262.966	6.668	+ 6.668	+ .620	.112
1291.900	.64	44.73	1291.864	6.902	+ 6.902	+ .842	.029
1321.000	.60	16.43	1320.963	7.164	+ 7.164	+ 1.000	.315
1350.100	.60	43.77	1350.062	7.420	+ 7.420	+ 1.148	.293
1378.900	.63	46.82	1378.860	7.637	+ 7.637	+ 1.368	.046
1407.600	.65	54.20	1407.558	7.840	+ 7.840	+ 1.615	.090
1436.500	.63	47.67	1436.456	8.043	+ 8.043	+ 1.866	.080
1465.300	.64	55.52	1465.255	8.241	+ 8.241	+ 2.115	.092
1494.500	.73	32.93	1494.452	8.489	+ 8.489	+ 2.351	.291
1523.600	.83	36.39	1523.550	8.814	+ 8.814	+ 2.577	.114
1552.700	.85	12.09	1552.646	9.195	+ 9.195	+ 2.747	.365
1581.800	.88	5.86	1581.743	9.629	+ 9.629	+ 2.815	.102
1610.800	.84	19.01	1610.740	10.051	+ 10.051	+ 2.907	.209
1639.900	.96	51.87	1639.836	10.403	+ 10.403	+ 3.168	.538
1668.900	.99	5.30	1668.832	10.803	+ 10.803	+ 3.382	.798
1698.000	1.05	16.09	1697.928	11.309	+ 11.309	+ 3.480	.207
1727.100	1.07	8.49	1727.023	11.834	+ 11.834	+ 3.594	.146
1756.100	.97	37.88	1756.018	12.296	+ 12.296	+ 3.784	.545
1785.101	1.64	8.97	1785.011	12.899	+ 12.899	+ 4.000	.951
1814.200	1.49	355.64	1814.101	13.688	+ 13.688	+ 4.036	.405
1843.101	1.39	352.07	1842.991	14.410	+ 14.410	+ 3.959	.139
1871.801	1.36	10.96	1871.683	15.089	+ 15.089	+ 3.976	.473
1900.899	1.42	5.91	1900.773	15.787	+ 15.787	+ 4.078	.141
1930.100	1.06	350.75	1929.966	16.413	+ 16.413	+ 4.072	.497
1959.100	1.45	318.73	1958.959	16.954	+ 16.954	+ 3.787	.814
1988.200	1.54	10.39	1988.051	17.615	+ 17.615	+ 3.615	1.345
2017.300	1.50	350.44	2017.141	18.375	+ 18.375	+ 3.622	.544
2046.200	1.62	18.76	2046.031	19.135	+ 19.135	+ 3.691	.801
2075.300	1.40	356.86	2075.121	19.879	+ 19.879	+ 3.803	.632
2104.300	1.68	29.66	2104.112	20.603	+ 20.603	+ 3.994	.942
2133.100	1.45	11.55	2132.901	21.326	+ 21.326	+ 4.276	.565
2162.100	1.41	6.00	2161.892	22.041	+ 22.041	+ 4.387	.148
2191.200	1.38	355.52	2190.983	22.746	+ 22.746	+ 4.397	.265
2220.200	1.25	3.94	2219.976	23.410	+ 23.410	+ 4.391	.240
2249.300	1.27	342.71	2249.069	24.034	+ 24.034	+ 4.317	.479
2278.200	1.32	17.85	2277.962	24.657	+ 24.657	+ 4.324	.813

2307.200	1.42	358.33	2306.954	25.334	+	25.334	+	4.416	.491
2336.300	1.52	359.27	2336.044	26.081	+	26.081	+	4.401	.104
2365.400	1.49	352.09	2365.135	26.841	+	26.841	+	4.344	.197
2394.500	1.39	344.11	2394.225	27.555	+	27.555	+	4.195	.231
2423.400	1.31	350.73	2423.117	28.219	+	28.219	+	4.046	.183
2452.399	1.36	357.28	2452.108	28.890	+	28.890	+	3.976	.166
2481.199	1.28	8.12	2480.901	29.549	+	29.549	+	4.005	.273
2510.199	1.31	3.41	2509.894	30.201	+	30.201	+	4.071	.114
2539.101	1.30	359.16	2538.788	30.859	+	30.859	+	4.086	.101
2568.100	1.17	4.09	2567.779	31.483	+	31.483	+	4.102	.174
2597.100	1.09	6.25	2596.773	32.052	+	32.052	+	4.153	.094
2626.200	1.14	1.74	2625.867	32.617	+	32.617	+	4.192	.104
2655.200	1.19	357.56	2654.862	33.206	+	33.206	+	4.188	.100
2684.200	1.36	10.59	2683.854	33.845	+	33.845	+	4.238	.346
2713.100	1.15	121.25	2712.751	34.032	+	34.032	+	4.549	2.146
2742.100	1.26	336.84	2741.749	34.174	+	34.174	+	4.673	2.374
2771.100	1.18	349.21	2770.743	34.760	+	34.760	+	4.492	.284
2800.100	1.12	286.24	2799.738	35.133	+	35.133	+	4.164	1.244
2829.000	1.30	317.47	2828.632	35.454	+	35.454	+	3.671	.699
2858.000	1.13	327.90	2857.626	35.938	+	35.938	+	3.296	.288
2887.000	1.27	345.20	2886.620	36.491	+	36.491	+	3.062	.400
2916.000	1.29	328.73	2915.613	37.081	+	37.081	+	2.811	.380
2923.000	1.35	28.95	2922.612	37.221	+	37.221	+	2.810	5.680

================================= WELL CONTROL =================================

Pump	Rate str/min	Pressure psi	MD meters
1	30	300	2868.000
2	40	375	2868.000
3	50	500	2868.000

Burst (70%)	2495	psi
Formation Strength	16.50	ppg
Kick Tolerance	1.78	ppg
Pore Pressure	8.60	ppg
MASP	953	psi
Background Gas	.0	
Connection Gas	.0	
Trip Gas	.0	

Density	10.30	ppg
ECD	10.52	ppg
at	2933.000	meters
with bit at	2932.786	meters

================================ WEATHER REPORT ================================

	23:59	Max	
Bar Pressure	1014	0	mm Hg
Heave	.30	.00	meters
Pitch	.30	.00	degree
Roll	.20	.00	degree
Swell Height	2.00	.00	meters
Period	7	0	second
Direction	230	0	degree
Visibility	18.0	.0	km

	23:59	Max	
Wind Speed	25.0	.0	knot
Direction	250	0	degree
Wave Height	1.50	.00	meters
Period	5	0	second
Direction	250	0	degree
Air Temperature	16.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

=============================== ANCHOR TENSIONS ================================

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	250	0
3	270	0
4	240	0
5	240	0
6	235	0
7	240	0
8	240	0

==================================== RISER DATA ===================================

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: .30
Angle : .7 Angle : 120

================================== DRILL STRING ==================================

Date Run:	14-Feb-03	Date Pulled:	18-Feb-03	Length of BHA :	377.280
Time Run:	20:30	Time Pulled:	19:00	BHA Weight in Air :	104.0
Depth In:	2618.000	Depth Out :	2933.000	Above Jars:	31.0
				Below Jars:	58.0
				In Mud :	89.0

BT/RR/SV/12.250 ST/8.250 DC/12.250 ST/ 12 x 8¬ drill collars/XO/5" HW

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2555.719
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.940
HW	5.000	3.000	????	4.500	IF	160.0					18.510
XO	7.938	2.875	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.250
SV	8.000	3.000	????	6.625	REG	.0					3.000
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

================================== DRILL STRING ==================================

Date Run:	18-Feb-03	Date Pulled:	23-Feb-03	Length of BHA :	388.790
Time Run:	20:15	Time Pulled:	09:00	BHA Weight in Air :	104.0
Depth In:	2933.000	Depth Out :	3174.000	Above Jars:	31.0
				Below Jars:	57.0
				In Mud :	88.0

BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5" HW/5" DP

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440
DC	8.000	3.000	????	6.625	REG	.0					2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

============================== **DAILY DRILL STRING** ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	50	Pick-up	345	Off-TD	2000.0	BHA	222.75
RPM	110	Slack-off	355	On-TD	6000.0	Shock Sub	.00
		Off-TD, Rotating	355			Jars	249.75

==================================== **CASING** ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 19-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:04 Central Time

Drilling **DETAILED DAILY REPORT** **20-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                      AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                 MD             m: 3126.00 | 2996.00
Office     : Australia SE                   TVD            m: 3126.00 | 2996.00
Client     : ExxonMobil Development         Days                      |
Drill Team : Australia Offshore              - if Dry      :     42.0 |
                                             - if Suspended:     42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO  - to Complete :       .0 |
Contractor : Trans Sed Forex                 - Susp + Comp :     42.0 |     21.0
Rig Name   : Sedco 702                       - Ahead/Behind:          |      9.0
Operator   : Esso Aus Res                    - from Spud   :          |     17.5
Field      : Gippsland Basin                Spud Date      :       02-Feb-2003
Country    : Australia                      Progress      m:             63.00
Latitude   :  38d 12' 49" South             Drilling Hours :             16.50
Longitude  : 148d 35' 29" East              ROP        m/hr:              3.82
Water Depth:  109.60 m                      Percentage NPT :                .3
RKB Height :   25.90 m                      Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drill, log & survey 12-1/4" hole at 2996m
Planned: Drill, log & survey 12-1/4" hole from 2996m to TD at 3126m.

Start Elpsd  End MD                         Description
----- ----- -------- ------------------------------------------------------------
00:00   .75  2933.00 TRIP Run string in hole -- Continue RIH from 388m to 822m.
                          Fill pipe after 15 stds.
00:45   .50  2933.00 BOP  Space out and hang off on middle pipe rams. Function
                          test variable & lower rams.
01:15  1.25  2933.00 RIG  Hang off blocks and slip and cut 115' of drill line.
                          Service TDS.
02:30  4.25  2933.00 TRIP Run string in hole -- Continue to RIH from 822m to
                          2916 m.
06:45   .75  2933.00 LOG  Precautionary ream from 2,916 m to 2,933 m while
                          logging interval with Anadrill LWD (gamma ray,
                          resistivity, and survey data).
                          Trip gas 0.1% over 0.04% BGG
07:30 16.50  2996.00 DRLG Drill 12¬ inch hole from 2,933 m to 2996m w/ WOB 46-50
                           5,000/6,000 ft-lb torque, 90-100 RPM, 820 gpm, SPP 3,
                          550 psi.  Backream each connection.
                          Flow check drilling breaks @ 2941m & 2947m - static.

                          TOTAL BIT REVS (Krevs)
                          Today = 88.5    Total = 88.5
Total 24.00
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Rig operations. Slip & cut. BHA handling. Mixing & mud transfers, Communications, Correct PPE. Check choke & kill manifold. THINK well control. Housekeeping. Rig maintenance & derrick inspection.
Boats:

Pacific Frontier: At rig on stby
Pacific Challenger: Barry Beach Marine Terminal
Fire and Abandon drill:- 16 Feb 03
1 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 1 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		16-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	19-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	19-Feb-2003

================================== PERSONNEL ==================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 86
Total Hours : 1032.00

================================= HEAD COUNTS =================================

Contractor	60	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	18

============================== MANAGEMENT SUMMARY ==============================

Ran in hole & drilled 12-1/4" hole from 2933m to 2996m.

======================= COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	316,909	0	316,909	11,264
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	14,047,852	287,973	14,335,825	538,304
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	14,047,852	287,973	14,335,825	538,304

================================= MUD REPORT ==================================

Time	20:35	Flowline Temp	70.0 deg C	% Solids	8.2
Mud Type	WBM	Filtrate	2.8 cc	% LGS	5.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.30
		HTHP Temp	120.0 deg C	% Water	88.8
MD	2985.00 meters	Filtrate	10.6 cc	% Oil	.0
Density	10.30 ppg				
Viscosity	56 sec	Elec Stab	0 volts	Ca++	90
PV	22.0 cp	MBT	6.0 lb/bbl	Cl-	38000
YP	39.0 phsf	Excess Lime	.04 lb/bbl	CaCl2	0
Gels	8./ 9. phsf			pH	9.3
		Circ Volume	2149.8 barrel	Pf/Mf	.1/ .4
		Vol Hole Dr	30.1 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/83 300/61 200/51 100/37 60/0 30/0 6/11 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3362	Fuel	137	883	2569
Cement	0	0	1824	Gel	0	0	581
Drill Water	337	0	4753	Potable Water	107	201	927

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	5
CORROSION INHIBITOR	BARACOR 129	BKT	25	7
SHALE CONTROL	Glycol CP	LTR	1500	1
SHALE CONTROL	phpa	KGS	25	3
WEIGHTING MATERIAL	BARACARB 100	KGS	25	15
WEIGHTING MATERIAL	BARACARB 25	KGS	25	2
WEIGHTING MATERIAL	BARACARB 50	KGS	25	11
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	1

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
5 1	12.250	BT	HC	MX20DX	2933.00	63.0	17.25	3.65	3.65	3-7	E	2	2178

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	75
2	.0855	75
3	.0855	75

Nozzle Sizes 32nd": 18.0 18.0 18.0 / .0 .0 .0 / .0 .0

Total Flow Area .7455 in2
Nozzle Velocity 105.98 m/sec
Hole Diameter 12.250 inches
Bit Pressure Drop 1114 psi
31 % of SPP
Impact Force 1501 lbf
Hydraulic HP 4.455 hp/in2

Annular Velocities ft/min
DC (Max) 241.
DP (Min) 153.
(Min OH) 158.
Riser (Min) 66.

Pump Rate 225 str/min
Flow Rate 807.98 gpm
Pressure 3550 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
2936.300	1.36	325.18	2935.909	37.487	+ 37.487	+ 2.796	3.229
2964.010	1.45	327.72	2963.610	38.054	+ 38.054	+ 2.421	.117

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	300	2994.000
2	40	375	2994.000
3	50	500	2994.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 1.74 ppg
Pore Pressure 8.60 ppg
MASP 953 psi

Background Gas .0
Connection Gas .0

Density 10.30 ppg

```
ECD                10.52 ppg             Trip Gas                  .0
   at           2996.000 meters
   with bit at  2995.879 meters


================================ WEATHER REPORT ================================
                 23:59  Max                                      23:59  Max
                 ----- -----                                    ------ ------
Bar Pressure   :  1016     0 mm Hg      Wind Speed     :   25.0     .0 knot
Heave          :   .50   .00 meters          Direction :     90      0 degree
Pitch          :   .30   .00 degree     Wave Height    :   1.50    .00 meters
Roll           :   .50   .00 degree          Period    :      5      0 second
Swell Height   :  3.00   .00 meters          Direction :     90      0 degree
      Period   :     9     0 second     Air Temperature:   15.0     .0 deg C
      Direction:   140     0 degree     Sea Temperature:     .0     .0 deg C
Visibility     :  18.0    .0 km         Cloud Cover    :      0      0


=============================== ANCHOR TENSIONS ================================
                 Anchor     Tension at 23:59     24-Hr Maximum
                    1              240                 0
                    2              250                 0
                    3              270                 0
                    4              240                 0
                    5              240                 0
                    6              235                 0
                    7              240                 0
                    8              240                 0


================================== RISER DATA ==================================
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.30
      Angle  :      .9                                             Angle :    202


================================= DRILL STRING =================================
Date Run:  18-Feb-03   Date Pulled:  23-Feb-03   Length of BHA         :  388.790
Time Run:      20:15   Time Pulled:      09:00   BHA Weight in Air     :    104.0
Depth In:   2933.000   Depth Out  :   3174.000              Above Jars:     31.0
                                                            Below Jars:     57.0
                                                            In Mud    :     88.0
BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5"
HW/5" DP
```

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440
DC	8.000	3.000	????	6.625	REG	.0					2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	46	Pick-up	345	Off-TD	2000.0	BHA	240.00
RPM	97	Slack-off	350	On-TD	6.4	Shock Sub	.00
		Off-TD, Rotating	350			Jars	17.25

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 20-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

Drilling **DETAILED DAILY REPORT** **21-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD            m: 3126.00 | 3080.00
Office     : Australia SE                      TVD           m: 3126.00 | 3080.00
Client     : ExxonMobil Development            Days                     |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |    22.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |     9.0
Operator   : Esso Aus Res                       - from Spud   :         |    18.5
Field      : Gippsland Basin                   Spud Date      :      02-Feb-2003
Country    : Australia                         Progress      m:            84.00
Latitude   :  38d 12' 49" South                Drilling Hours :            24.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:             3.50
Water Depth:  109.60 m                         Percentage NPT :               .3
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12-1/4" hole at 3080m.
Planned: Drill, log & survey 12-1/4" hole from 3080m to TD.

Start Elpsd  End MD                            Description
----- ----- -------- ------------------------------------------------------------
00:00 24.00  3080.00 DRLG Drill, log & survey 12¬ inch hole from 2,996m to 3080m
                          w/ WOB 50, 5,000 ft-lb torque, 90-105 RPM, 820 gpm,
                          SPP 3,600 psi.
                          Flow check @ 3028m - static.


                          TOTAL BIT REVS (Krevs)
                          Today = 135.2    Total = 223.7
Total 24.00


==================================== REMARKS ===================================
Held PTSM with both day and night shifts.
Topics: Good drilling paractises. Mixing & mud transfers, Communications,
Correct PPE. Check choke & kill manifold. THINK well control. Housekeeping. Rig
maintenance & derrick inspection.
Held Esso Induction for new personnel to rig.
TSF Management visit -  Blue O'Shea, Joe Lesiuk
Boats:
Pacific Frontier:  At rig on mobile stby
Pacific Challenger: Barry Beach Marine Terminal
Fire and Abandon drill:- 16 Feb 03
1 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 3/4 deg port aft
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.
```

INSPECTIONS, DRILLS, AND CITATIONS

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		20-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	20-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	20-Feb-2003

PERSONNEL

Personnel : Ray Wyld
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 89
Total Hours : 1068.00

HEAD COUNTS

Contractor	61	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	20

MANAGEMENT SUMMARY

Drill 12-1/4" hole from 2996m to 3080m.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	592,153	0	592,153	10,563
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	14,640,005	287,973	14,927,978	548,867
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	14,640,005	287,973	14,927,978	548,867

MUD REPORT

Time	20:40	Flowline Temp	70.0 deg C	% Solids	7.8
Mud Type	WBM	Filtrate	3.0 cc	% LGS	4.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.15
		HTHP Temp	.0 deg C	% Water	89.3
MD	3070.00 meters	Filtrate	.0 cc	% Oil	.0
Density	10.30 ppg				
Viscosity	53 sec	Elec Stab	0 volts	Ca++	120
PV	22.0 cp	MBT	6.0 lb/bbl	Cl-	37500
YP	37.0 phsf	Excess Lime	.02 lb/bbl	CaCl2	0
Gels	8./ 9. phsf			pH	9.0
		Circ Volume	2199.9 barrel	Pf/Mf	.1/ .6
		Vol Hole Dr	40.2 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/81 300/59 200/49 100/35 60/0 30/0 6/9 3/7

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3362	Fuel	142	0	2427
Cement	0	0	1824	Gel	0	0	581
Drill Water	400	0	4353	Potable Water	207	271	991

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	2
ALKALINITY (PH)	pottassium hydr	BKT	20	2
CORROSION INHIBITOR	BARACOR 129	BKT	25	6
SHALE CONTROL	Glycol CP	LTR	1500	1
WEIGHTING MATERIAL	BARACARB 100	KGS	25	26
WEIGHTING MATERIAL	BARACARB 25	KGS	25	15
WEIGHTING MATERIAL	BARACARB 50	KGS	25	18

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	B	G	Cost /Lng
5 1	12.250	BT	HC	MX20DX	2933.00	147.0	41.25	3.50	3.56	3-7	E	2	1684

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	75
2	.0855	75
3	.0855	75

Nozzle Sizes 32nd": 18.0 18.0 18.0 / .0 .0 .0 / .0 .0
Total Flow Area .7455 in2
Nozzle Velocity 105.98 m/sec
Hole Diameter 12.250 inches
Bit Pressure Drop 1114 psi
31 % of SPP
Impact Force 1501 lbf
Hydraulic HP 4.455 hp/in2

Annular Velocities ft/min
DC (Max) 241.
DP (Min) 153.
(Min OH) 158.
Riser (Min) 66.

Pump Rate 225 str/min
Flow Rate 807.98 gpm
Pressure 3550 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
2993.090	1.51	327.61	2992.681	38.688	+ 38.688	+ 2.019	.061
3023.620	1.56	335.57	3023.200	39.406	+ 39.406	+ 1.631	.215
3051.740	1.55	335.18	3051.310	40.100	+ 40.100	+ 1.314	.021

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	250	3080.000
2	40	300	3080.000
3	50	425	3080.000

Burst (70%) 2495 psi
Formation Strength 16.50 ppg
Kick Tolerance 1.69 ppg
Pore Pressure 8.60 ppg
MASP 953 psi

Background Gas .0
Connection Gas .0
Trip Gas .0

Density 10.30 ppg
ECD 10.51 ppg
at 3080.000 meters
with bit at 3079.699 meters

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure	1013	0	mm Hg	Wind Speed	30.0	37.0	knot
Heave	1.00	.00	meters	Direction	65	0	degree
Pitch	.30	.00	degree	Wave Height	2.50	.00	meters
Roll	.50	.00	degree	Period	6	0	second
Swell Height	1.50	.00	meters	Direction	65	0	degree
Period	9	0	second	Air Temperature	20.0	.0	deg C
Direction	50	0	degree	Sea Temperature	.0	.0	deg C
Visibility	16.0	.0	km	Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	220	0
3	235	0
4	210	0
5	240	0
6	260	0
7	275	0
8	265	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.50
Angle : 1.2 Angle : 184

DRILL STRING

Date Run:	18-Feb-03	Date Pulled:	23-Feb-03	Length of BHA :	388.790
Time Run:	20:15	Time Pulled:	09:00	BHA Weight in Air :	104.0
Depth In:	2933.000	Depth Out :	3174.000	Above Jars:	31.0
				Below Jars:	57.0
				In Mud :	88.0

BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5" HW/5" DP

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440
DC	8.000	3.000	????	6.625	REG	.0					2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	50	Pick-up	352	Off-TD	2000.0	BHA	264.00
RPM	100	Slack-off	362	On-TD	6000.0	Shock Sub	.00
		Off-TD, Rotating	360			Jars	41.25

====================================== CASING ======================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 21-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

```
Drilling                      DETAILED DAILY REPORT                 22-Feb-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 | 3154.00
Office     : Australia SE                      TVD            m: 3126.00 | 3154.00
Client     : ExxonMobil Development            Days                      |
Drill Team : Australia Offshore                 - if Dry      :    42.0 |
                                                - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO     - to Complete :      .0 |
Contractor : Trans Sed Forex                    - Susp + Comp :    42.0 |    23.0
Rig Name   : Sedco 702                          - Ahead/Behind:         |     9.0
Operator   : Esso Aus Res                       - from Spud   :         |    19.5
Field      : Gippsland Basin                   Spud Date      :      02-Feb-2003
Country    : Australia                         Progress      m:            74.00
Latitude   :  38d 12' 49" South                Drilling Hours :            24.00
Longitude  : 148d 35' 29" East                 ROP        m/hr:             3.08
Water Depth:  109.60 m                         Percentage NPT :               .3
RKB Height :   25.90 m                         Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Drilling 12-1/4" hole at 3154m.
Planned: Drill, log and survey 12-1/4" hole from 3154m to TD at 3230m.

Start Elpsd  End MD                        Description
----- ----- -------- ------------------------------------------------------
00:00 24.00  3154.00 DRLG Drill & log 12¬ inch hole from 3,080m to 3,154m w/ WOB
                          50k, 4 to 6,000 ft-lb torque, 110 RPM, 820 gpm, SPP 3,
                          450 psi. Back ream and take MWD survey's on each
                          connection.
                          Flow check drilling break at 3104m - static.

                          Drilled the 1st Volcanic from 3070m to 3090.5m.
                          Prognosed 3010mm - 3060m.

                          TOTAL BIT REVS (Krevs)
                          Today = 129.9    Total = 353.6
Total 24.00


========================= PROBLEM EVENTS AND MILESTONES ========================
Event:   5    Milestone
Start: 21-Feb-03 13:40   MILE Reached target depth
                              Reached programme TD of 3,126mMD.

                              Approval to extended TD to first water wet sands
                              or 3,230m by MOC dated 20 Feb 2003 due to change
                              in geological base case.


==================================== REMARKS ===================================
Held PTSM with both day and night shifts.
Topics: Good drilling paractises. Mixing & mud transfers, Communications,
Correct PPE. Check choke & kill manifold. THINK well control. Housekeeping. Rig
```

maintenance. Prep equipment for stacking.
Held Esso Induction for new personnel to rig.
MOC to extend time for two week BOP stack pressure test
Boats:
Pacific Frontier: At rig on mobile stby
Pacific Challenger: En route to Sedco 702
Fire and Abandon drill:- 16 Feb 03
3 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 1/2 deg port aft
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

==================== INSPECTIONS, DRILLS, AND CITATIONS ====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		20-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	21-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	21-Feb-2003

================================= PERSONNEL =================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 95
Total Hours : 1140.00

================================ HEAD COUNTS ================================

Contractor	62	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	25

============================ MANAGEMENT SUMMARY ============================

Drill, log and survey 12-1/4" hole from 3080m to 3154m.

====================== COST DATA (Australian Dollar) ======================

AFE		Intangible	Tangible	Total	Mud
Dry : 23,048,000	Daily	338,688	0	338,688	4,934
Susp : 0	Cum Mbl	0	0	0	0
Comp : 0	Cum Drl	14,978,693	287,973	15,266,666	553,801
Total: 23,048,000	Cum Comp	0	0	0	0
	Cum W/O	0	0	0	0
Exc : 1.92310/US$	Cum AFE	14,978,693	287,973	15,266,666	553,801

================================ MUD REPORT ================================

Time	20:25	Flowline Temp	73.0 deg C	% Solids	8.8
Mud Type	WBM	Filtrate	2.9 cc	% LGS	5.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.15
		HTHP Temp	120.0 deg C	% Water	88.2
MD	3144.00 meters	Filtrate	9.8 cc	% Oil	.0
Density	10.35 ppg				
Viscosity	55 sec	Elec Stab	0 volts	Ca++	170
PV	24.0 cp	MBT	6.0 lb/bbl	Cl-	38500
YP	39.0 phsf	Excess Lime	.04 lb/bbl	CaCl2	0

Gels	7./ 9. phsf			pH	8.7
		Circ Volume	2223.3 barrel	Pf/Mf	.0/ .3
		Vol Hole Dr	35.4 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/87 300/63 200/52 100/37 60/0 30/0 6/9 3/7

================================ SOLIDS CONTROL ================================

Hours on Centrifuge: .00 Dilution Rate: .00

================================= SUPPLIES DATA =================================

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3362	Fuel	303	0	2124
Cement	0	0	1824	Gel	0	0	581
Drill Water	120	1474	5707	Potable Water	153	271	1109

================================= MUD ADDITIVES =================================

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	Lime	KGS	20	4
ALKALINITY (PH)	pottassium hydr	BKT	20	6
CORROSION INHIBITOR	BARACOR 129	BKT	25	7
FILTRATION REDUCER	DEXTRID LT	KGS	25	5
SHALE CONTROL	phpa	KGS	25	7
WEIGHTING MATERIAL	BARACARB 100	KGS	25	22
WEIGHTING MATERIAL	BARACARB 25	KGS	25	4
WEIGHTING MATERIAL	BARACARB 50	KGS	25	13
WEIGHTING MATERIAL	KCL Tech.	MTN	1000	2

================================== BIT RECORD ==================================

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
5 1	12.250	BT	HC	MX20DX	2933.00	221.0	65.25	3.08	3.39	3-7	E	2	1619

================================== HYDRAULICS ==================================

Pump	Displaces bbl/st	Rate str/min
1	.0855	75
2	.0855	75
3	.0855	75

Nozzle Sizes 32nd": 18.0 18.0 18.0 / .0 .0 .0 / .0 .0

Total Flow Area	.7455	in2
Nozzle Velocity	105.98	m/sec
Hole Diameter	12.250	inches
Bit Pressure Drop	1114	psi
	31	% of SPP
Impact Force	1501	lbf
Hydraulic HP	4.455	hp/in2

Annular Velocities	ft/min
DC (Max)	241.
DP (Min)	153.
(Min OH)	158.
Riser (Min)	66.

Pump Rate 225 str/min
Flow Rate 807.98 gpm
Pressure 3550 psi

==================================== SURVEYS ====================================

MD	Angle	Azimuth	TVD	Vert Sec		N+/S-		E+/W-	Dogleg
3080.660	1.55	335.18	3080.219	40.810	+	40.810	+	.985	.021
3110.840	1.52	333.82	3110.389	41.540	+	41.540	+	.637	.048

================================= WELL CONTROL =================================

Pump	Rate str/min	Pressure psi	MD meters
1	30	275	3154.000
2	40	350	3154.000

Burst (70%)	2495	psi
Formation Strength	16.50	ppg
Kick Tolerance	1.65	ppg

```
  3       50         450    3154.000      Pore Pressure          8.60 ppg
                                          MASP                    953 psi

                                          Background Gas           .0
Density            10.30 ppg              Connection Gas           .0
ECD                10.51 ppg              Trip Gas                 .0
   at           3154.000 meters
   with bit at  3153.766 meters


================================ WEATHER REPORT ================================
                 23:59  Max                                       23:59  Max
                 ----- -----                                     ------ ------
Bar Pressure   :  1012     0 mm Hg       Wind Speed     :   30.0   40.0 knot
Heave          :   .50   .00 meters           Direction :     65     65 degree
Pitch          :   .30   .00 degree      Wave Height    :   2.00    .00 meters
Roll           :   .30   .00 degree           Period    :      5      0 second
Swell Height   :  2.00   .00 meters           Direction :     65      0 degree
      Period   :    10     0 second      Air Temperature:   18.0     .0 deg C
      Direction:    70     0 degree      Sea Temperature:     .0     .0 deg C
Visibility     :   4.8    .0 km          Cloud Cover    :      0      0


=============================== ANCHOR TENSIONS ================================
                Anchor     Tension at 23:59     24-Hr Maximum
                  1               240                 0
                  2               230                 0
                  3               250                 0
                  4               230                 0
                  5               240                 0
                  6               250                 0
                  7               260                 0
                  8               260                 0


================================== RISER DATA ==================================
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.60
      Angle  :     1.3                                            Angle :    176


================================= DRILL STRING =================================
Date Run:  18-Feb-03   Date Pulled:  23-Feb-03   Length of BHA         :  388.790
Time Run:      20:15   Time Pulled:      09:00   BHA Weight in Air     :    104.0
Depth In:   2933.000   Depth Out  :   3174.000              Above Jars:     31.0
                                                            Below Jars:     57.0
                                                            In Mud    :     88.0
BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5"
HW/5" DP
```

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440

DC	8.000	3.000	????	6.625	REG	.0				2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000	2.450
BT	12.250	3.000	????	6.625	REG	.0				.330

============================== **DAILY DRILL STRING** ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	50	Pick-up	360	Off-TD	2000.0	BHA	288.00
RPM	100	Slack-off	368	On-TD	5000.0	Shock Sub	.00
		Off-TD, Rotating	365			Jars	65.25

==================================== **CASING** ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 22-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

Drilling **DETAILED DAILY REPORT** **23-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                      AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                 MD             m: 3126.00 | 3174.00
Office     : Australia SE                   TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development         Days                      |
Drill Team : Australia Offshore              - if Dry      :    42.0 |
                                             - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO  - to Complete :      .0 |
Contractor : Trans Sed Forex                 - Susp + Comp :    42.0 |    24.0
Rig Name   : Sedco 702                       - Ahead/Behind:         |     8.0
Operator   : Esso Aus Res                    - from Spud   :         |    20.5
Field      : Gippsland Basin                Spud Date      :       02-Feb-2003
Country    : Australia                      Progress      m:             20.00
Latitude   :  38d 12' 49" South             Drilling Hours :              9.75
Longitude  : 148d 35' 29" East              ROP        m/hr:              2.05
Water Depth:  109.60 m                      Percentage NPT :                .3
RKB Height :   25.90 m                      Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Pulling out of the hole for TD logs.
Planned: POH, Test BOP's, Rig up Schlum and log.
```

Start	Elpsd	End MD		Description
00:00	9.75	3174.00	DRLG	Drill, log & survey 12¬ inch hole from 3,154 m to 3, 174 m w/ WOB 50k, 4 to 5,000 ft-lb torque, 90 RPM, 767 gpm, SPP 3,285 psi. Flow check drilling break at 3154m - static. TOTAL BIT REVS (Krevs) Today = 50.7 Total = 404.3
09:45	1.25	3174.00	CIRC	Circulate bottoms up.
11:00	1.25	3174.00	TRIP	Short trip (not to surface) -- Flow check and POOH from 3,174 m to 2,892 m. No excess overpull except 35 kips from 3,160m to 3,151m.
12:15	3.75	3174.00	TRIP	Short trip (not to surface) -- Pump slug, install double wiper rubbers, and disconnect Anadrill drilling recorder line. Continue short trip from 2,892 m to casing shoe. No overpull.
16:00	.50	3174.00	RIG	Service top drive and grease rollers.
16:30	3.25	3174.00	TRIP	Short trip (not to surface) -- RIH from 880 m to 3140m. Hole Good. No excess drag.
19:45	.25	3174.00	DRLG	Wash to bottom. Minor drag at 3170m. Rotate thru. No fill.
20:00	3.00	3174.00	CIRC	Pump 100-bbl hi-vis sweep and circulate twice bottoms up and hole clean. Short trip gas nil. No increase in cuttings when hi-vis returned. Boost riser. Spot 240 bbls inhibited treated mud in bottom 500m of open hole.
23:00	1.00	3174.00	TRIP	Pull string out of hole -- Flow check and POH. Work thru tight hole from 3,160m to 3,140m with intermittant 40K overpull.Wipe past and clean up. No

excess drag above 3140m.
Total 24.00

========================= PROBLEM EVENTS AND MILESTONES =========================

Event: 6 Milestone
Start: 22-Feb-03 09:45 MILE Reached target depth
Final TD called after LWD log confirmed water wet sands.

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Good drilling paractises.Tripping pipe. Pit volumes, Communications, Correct PPE. Check choke & kill manifold. THINK well control. Housekeeping. Rig maintenance.
MOC to extend time for two week BOP stack pressure test
Boats:
Pacific Frontier: Depart 07:10hrs. ETA BBMT 19:00hrs.
Pacific Challenger: Arrive rig 05:55hrs and work deck cargo.
Fire and Abandon drill:- 16 Feb 03
0 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 3/4 deg port fwd
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		20-Feb-2003
BOP Pressure Test	No		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	2	21-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	22-Feb-2003

=================================== PERSONNEL ===================================

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 95
Total Hours : 1140.00

================================== HEAD COUNTS ==================================

Contractor	62	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	25

============================== MANAGEMENT SUMMARY ==============================

Drill to TD at 3174m, Make wiper trip to shoe, Circ, Pull out of the hole.

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	358,843	0	358,843	18,983
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,337,536	287,973	15,625,509	572,784
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	15,337,536	287,973	15,625,509	572,784

```
=================================== MUD REPORT ===================================
Time           23:00           Flowline Temp     .0 deg C       % Solids    8.3
Mud Type         WBM           Filtrate         2.6 cc          % LGS       5.0
Sample From Flowline           Filter Cake      1.0 32nd"       % Sand      .05
                               HTHP Temp      120.0 deg C       % Water    88.4
MD           3174.00 meters         Filtrate   10.2 cc          % Oil        .0
Density        10.35 ppg
Viscosity         54 sec       Elec Stab          0 volts       Ca++        200
PV              24.0 cp        MBT              5.0 lb/bbl      Cl-       42000
YP              43.0 phsf      Excess Lime      .04 lb/bbl      CaCl2         0
Gels         8./ 11. phsf                                       pH          8.9
                               Circ Volume   2315.0 barrel      Pf/Mf   .0/  .2
                               Vol Hole Dr      9.6 barrel      Pm           .2
Rhe'try at  73.0 deg: 600/91 300/67 200/55 100/39 60/0 30/0 6/10 3/7

================================ SOLIDS CONTROL ================================
 Hours on Centrifuge:    .00             Dilution Rate:     .00

================================= SUPPLIES DATA =================================
                 Usage Receipts  Stock                    Usage Receipts  Stock
Barite             163        0   3199   Fuel               111        0   2013
Cement               0        0   1824   Gel                  0        0    581
Drill Water        177      251   5781   Potable Water      128        0    981

================================= MUD ADDITIVES =================================
                  Function            Name         Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------
            ALKALINITY (PH)       pottassium hydr   BKT    20     10
            BACTERICIDE           Baracide          BKT    25      5
            CORROSION INHIBITOR   BARACOR 129       BKT    25     15
            FILTRATION REDUCER    PAC-L             KGS    25      5
            SHALE CONTROL         Glycol CP         LTR  1500      1
            VISCOSIFIER           BARAZAN D         KGS    25      1
            WEIGHTING MATERIAL    BARACARB 100      KGS    25     10
            WEIGHTING MATERIAL    BARACARB 25       KGS    25      5
            WEIGHTING MATERIAL    BARACARB 50       KGS    25      7
            WEIGHTING MATERIAL    Barite            SAX   100    163

=================================== BIT RECORD ===================================
Bit/Run                      Depth         Rotary   Lng/Hour     Grade   Cost
Numbers  Size   Cd Mfg  Type   In    Length Hours  Today   Cum    T  B G  /Lng
------- ------- -- --- ------ ------- ------ ------ ------ ------ --- - -- -----
    5 1  12.250 BT HC  MX20DX 2933.00  241.0  75.00   2.05   3.21 3-7 E  2  1670

=================================== HYDRAULICS ===================================
Pump Displaces    Rate      Nozzle Sizes      18.0 18.0 18.0  Annular Velocities
      bbl/st     str/min       32nd"             .0   .0   .0            ft/min
  1    .0855       75                            .0   .0      DC (Max)      241.
  2    .0855       75       Total Flow Area   .7455 in2       DP (Min)      153.
  3    .0855       75       Nozzle Velocity  105.98 m/sec        (Min OH)   158.
                            Hole Diameter    12.250 inches    Riser (Min)    66.
                            Bit
                              Pressure Drop    1114 psi
Pump Rate     225 str/min                        31 % of SPP
Flow Rate  807.98 gpm         Impact Force     1501 lbf
Pressure     3600 psi         Hydraulic HP    4.455 hp/in2
```

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	275	3154.000
2	40	350	3154.000
3	50	450	3154.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.64 ppg
Pore Pressure	8.60 ppg
MASP	953 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density	10.30 ppg
ECD	10.51 ppg
at	3174.000 meters
with bit at	3173.882 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1013	0	mm Hg
Heave	.80	.00	meters
Pitch	.30	.00	degree
Roll	.30	.00	degree
Swell Height	2.00	.00	meters
Period	8	0	second
Direction	60	0	degree
Visibility	4.5	.0	km

	23:59	Max	
Wind Speed	27.0	35.0	knot
Direction	80	0	degree
Wave Height	2.00	.00	meters
Period	5	0	second
Direction	80	0	degree
Air Temperature	18.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	230	0
3	250	0
4	230	0
5	250	0
6	250	0
7	250	0
8	250	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.70
Angle : 1.5 Angle : 203

DRILL STRING

Date Run:	18-Feb-03	Date Pulled:	23-Feb-03	Length of BHA :	388.790
Time Run:	20:15	Time Pulled:	09:00	BHA Weight in Air :	104.0
Depth In:	2933.000	Depth Out :	3174.000	Above Jars:	31.0
				Below Jars:	57.0
				In Mud :	88.0

BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5" HW/5" DP

Tp	OD	ID	Grd	Connections Size	Connections Type	Nom Wt/Len	Stab Blade OD In	Stab Blade OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440
DC	8.000	3.000	????	6.625	REG	.0					2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	50	Pick-up	370	Off-TD	2000.0	BHA	297.75
RPM	100	Slack-off	370	On-TD	5000.0	Shock Sub	.00
		Off-TD, Rotating	370			Jars	75.00

===================================== CASING =====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 23-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

```
Drilling                      DETAILED DAILY REPORT               24-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                          AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                     MD             m: 3126.00 | 3174.00
Office     : Australia SE                       TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development             Days                      |
Drill Team : Australia Offshore                  - if Dry      :    42.0 |
                                                 - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO      - to Complete :      .0 |
Contractor : Trans Sed Forex                     - Susp + Comp :    42.0 |     25.0
Rig Name   : Sedco 702                           - Ahead/Behind:         |      8.0
Operator   : Esso Aus Res                        - from Spud   :         |     21.5
Field      : Gippsland Basin                    Spud Date      :      02-Feb-2003
Country    : Australia                          Progress      m:              .00
Latitude   :  38d 12' 49" South                 Drilling Hours :              .00
Longitude  : 148d 35' 29" East                  ROP        m/hr:
Water Depth:  109.60 m                          Percentage NPT :               .6
RKB Height :   25.90 m                          Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Schlum running in hole for logging run #1
Planned: Continue running electric line TD logs.

Start Elpsd  End MD                     Description
----- ----- -------- ------------------------------------------------------
00:00  8.00  3174.00 TRIP Pull string out of hole -- Continue to POOH wet to
                          2560m.(Above inhibited pill).Hole good - no excess
                          drag. Pump slug and POOH to jars.  Retrieve diverter
                          element. Test choke and kill manifold to 250/5,000 psi
                           10 minutes each pressure, after bit enters shoe.
08:00  1.75  3174.00 TRIP Break and lay down string, BHA or tools -- Lay down
                          Anadrill MWD/LWD tools on deck to download log data.
                          Top stabilizer 1/8" OG, middle stabilizer 1/16" OG w/
                          even wear, near bit roller reamer in gauge with all
                          cutters in good condition (inserts and bearings) Lay
                          down one drill collar, stabilizer, pony collar, roller
                          reamer, and bit.
09:45  1.00  3174.00 TRIP Set or release downhole equipment -- Retrieve flex
                          joint wear bushing. No wear in wear bushing.
10:45  4.25  3174.00 BOP  Run Dril-Quip isolation test tool with HeviWate drill
                          pipe below and 4.6 meter drill pipe pup joint above.
                          Pressure test BOP stack on blue pod to 250 psi/3,500
                          psi on annulars, 250 psi/5,000 psi on rams/choke &
                          kill line valves, 10 minutes each pressure. On test #6
                          pressure suddenly released at 4,500 psi. Trouble shoot
                          problem.
15:00  1.75  3174.00 BOP  Jump ROV to assess leak in kill line.
                          Found kill line kick off sub above jumper hose on LMRP
                          sheared out of support nut letting pin separate from
                          box.
                     NPT  See Event 3 (RIG)
16:45  2.75  3174.00 BOP  Isloate kill line & continue to test BOP stack down
                          choke line. Not able to test lower inner choke valve
```

				from below and choke manifold valve 13 (first surface valve in kill line) from below. Complete testing BOP rams and all other valves. Switch to yellow pod and complete function test. POOH with test tool assy and rack HWDP in derrick. Function test shear rams.
19:30	2.25	3174.00	BOP	Make up side entry sub and test TDS system. Upper & lower IBOP, mud hose & full opening safety valve to 250psi/5000psi. Hold tests for 10 min low & 10 min high. Break and lay out test assy.
21:45	.75	3174.00	TRIP	Set or release downhole equipment -- Run & set flex joint wear bushing & POOH.
22:30	1.50	3174.00	LOG	Hold think drill and rig up Schlum.for logging. Make up tool string #1 PEX/HALS/HNGS/LEHQT & RIH. Monitor hole on trip tank - loss rate 0.7 to 1 bph.
Total	24.00			

======================== PROBLEM EVENTS AND MILESTONES ========================

```
Event:   3    NPT: Yes   Hours:   1.75    Responsible Party: Rig Contractor
Start: 23-Feb-03 15:00   RIG  BOP or riser problem
End  : 23-Feb-03 16:45        While testing BOP's lost integrity in kill line.
                              Found kick off sub above jumper hose on LMRP
                              sheared out of supporting nut letting pin separate
                              from box. Unable to pressure up on kill line.
```

==================================== REMARKS ===================================

Held PTSM with both day and night shifts.
Topics:Tripping pipe.Logging.Pit volumes, Communications, Correct PPE. Check choke & kill manifold. THINK well control. Review kill line isolation and alternate options.
Held general safety meetings for all crews
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE.
Commence briefings for all personel onboard on kill line isolation & tag out status.
Boats:
Pacific Frontier: Barry Beach Marine Terminal
Pacific Challenger: Standby on location
Fire and Abandon drill:- 16 Feb 03
0 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 3/4 deg port fwd
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		20-Feb-2003
BOP Pressure Test	Yes		08-Feb-2003
Fire Drill	No		17-Feb-2003
Abandon Ship Drill	No		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	1	23-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	23-Feb-2003

PERSONNEL

Personnel : N/A
Supervisors : Jackson, Murray G.
Sharkey, George K.
Total Head Count: 95
Total Hours : 1140.00

HEAD COUNTS

Contractor	62	ExxonMobil	8
Contractor Short Service (SSE)	0	Service Company	25

MANAGEMENT SUMMARY

POOH, tested BOP's, Commenced running TD logs.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	318,619	0	318,619	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,656,155	287,973	15,944,128	572,785
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	15,656,155	287,973	15,944,128	572,785

MUD REPORT

Time	18:30	Flowline Temp	.0 deg C	% Solids	8.7
Mud Type	WBM	Filtrate	2.5 cc	% LGS	5.0
Sample From	Pit	Filter Cake	1.0 32nd"	% Sand	.05
		HTHP Temp	120.0 deg C	% Water	88.2
MD	3174.00 meters	Filtrate	10.2 cc	% Oil	.0
Density	10.40 ppg				
Viscosity	68 sec	Elec Stab	0 volts	Ca++	290
PV	25.0 cp	MBT	4.5 lb/bbl	Cl-	40500
YP	44.0 phsf	Excess Lime	.06 lb/bbl	CaCl2	0
Gels	8./ 11. phsf			pH	8.9
		Circ Volume	2144.0 barrel	Pf/Mf	.0/ .2
		Vol Hole Dr	.0 barrel	Pm	.2

Rhe'try at 49.0 deg: 600/94 300/69 200/55 100/41 60/0 30/0 6/11 3/7

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	3199	Fuel	85	0	1928
Cement	0	0	1824	Gel	0	0	581
Cement Blend	0	1300	1300	Potable Water	201	0	780
Drill Water	126	206	5861				

MUD ADDITIVES

Function	Name	Unit	Size	Amount

LOGGING RUNS

Start: 23-Feb-2003 22:30 Run : 1
End : 24-Feb-2003 06:30 Vendor: Not Available

Log Type	Starting MD	Ending MD
PEX	3174.500	900.800 meters
HALS	3174.500	900.800
HNGS	3174.500	900.800
LEHQT	3174.500	900.800

BIT RECORD

Bit/Run Numbers	Size	Cd	Mfg	Type	Depth In	Length	Rotary Hours	Lng/Hour Today	Lng/Hour Cum	Grade T	Grade B	Grade G	Cost /Lng
5 1	12.250	BT	HC	MX20DX	2933.00	241.0	75.00	.00	3.21	3-7	E	2	1670

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

Nozzle Sizes 32nd": 18.0 18.0 18.0 / .0 .0 .0 / .0 .0

Total Flow Area	.7455 in2
Nozzle Velocity	.00 m/sec
Hole Diameter	12.250 inches
Bit Pressure Drop	0 psi
	0 % of SPP
Impact Force	0 lbf
Hydraulic HP	.000 hp/in2

Annular Velocities	ft/min
DC (Max)	0.
DP (Min)	0.
(Min OH)	******
Riser (Min)	0.

Pump Rate 0 str/min
Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	275	3154.000
2	40	350	3154.000
3	50	450	3154.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.61 ppg
Pore Pressure	8.60 ppg
MASP	937 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 10.40 ppg
ECD 10.40 ppg
at 3174.000 meters
with bit at .000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1012	0	mm Hg
Heave	.30	.00	meters
Pitch	.20	.00	degree
Roll	.30	.00	degree
Swell Height	2.00	.00	meters
Period	8	0	second
Direction	60	0	degree

	23:59	Max	
Wind Speed	32.0	.0	knot
Direction	65	0	degree
Wave Height	2.00	.00	meters
Period	5	0	second
Direction	65	0	degree
Air Temperature	19.0	.0	deg C
Sea Temperature	.0	.0	deg C

Visibility : 18.0 .0 km Cloud Cover : 0 0

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	230	0
3	240	0
4	220	0
5	240	0
6	260	0
7	270	0
8	260	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 2.50
Angle : 1.5 Angle : 200

DRILL STRING

Date Run: 18-Feb-03 Date Pulled: 23-Feb-03 Length of BHA : 388.790
Time Run: 20:15 Time Pulled: 09:00 BHA Weight in Air : 104.0
Depth In: 2933.000 Depth Out : 3174.000 Above Jars: 31.0
Below Jars: 57.0
In Mud : 88.0

BT/RR/Pony DC/12.25 ST/8.25 DC/12.25 ST/ MW/MW/ 12 x 8.25 DC /XO/5" HW/JR/5" HW/5" DP

Tp	OD	ID	Grd	Connections Size	Type	Nom Wt/Len	Stab Blade OD In	OD Out	Length To Ctr	Bend	Section Length
DP	5.000	4.276	????	4.500	IF	19.5					2785.211
HW	5.000	3.000	????	4.500	IF	49.0					219.830
JR	6.375	2.750	????	4.500	IF	.0					9.770
HW	5.000	3.000	????	4.500	IF	49.0					18.510
XO	8.000	2.812	????	4.500	IF	.0					.610
DC	8.250	2.875	????	6.625	REG	160.0					109.230
MW	8.250	1.920	????	6.625	REG	.0	.000	.000	.000		8.440
MW	8.250	1.920	????	6.625	REG	.0	12.125	.000	.000		4.130
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.800
DC	8.250	3.000	????	6.625	REG	160.0					9.330
ST	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		1.440
DC	8.000	3.000	????	6.625	REG	.0					2.920
RR	12.250	3.000	????	6.625	REG	.0	.000	.000	.000		2.450
BT	12.250	3.000	????	6.625	REG	.0					.330

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

==================================== **CASING** ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 24-Feb-2003 report for SCALLOP_1   Run 01-Apr-2003 17:05 Central Time

```
Drilling                      DETAILED DAILY REPORT                  25-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 3174.00
Office     : Australia SE                     TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    26.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     8.0
Operator   : Esso Aus Res                      - from Spud   :         |    22.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:               .00
Latitude   :  38d 12' 49" South               Drilling Hours :               .00
Longitude  : 148d 35' 29" East                ROP        m/hr:
Water Depth:  109.60 m                        Percentage NPT :               1.3
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Logging run #2 MDT. Taking pressure data at 3106m.
Planned: Schlum continue run #2 MDT for pressures and samples. Continue TD logs.

Start Elpsd  End MD                        Description
----- ----- -------- -----------------------------------------------------------
00:00  6.50  3174.00 LOG  Schlumberger run logging suite #1 PEX/ HALS/ HNGS/
                          LEHQT from TD at 3,174.5 m  to casing shoe at 900.8m.
                          W/L TD 3,174.5m. BHT = 110øC at 25.4 hrs after final
                          circ.
                          Monitor hole on trip tank - average loss rate 1« bph.
06:30  1.75  3174.00 LOG  Rig up to run modular dynamic tester with two probes
                          (large area and martineau), one 1 gallon sample
                          chamber, and twelve 450 cm´ chambers.
08:15  4.75  3174.00 LOG  Had intermittent faults communicating through MDT
                          tool. Removed martineau probe leaving MDT with only
                          large area probe.
                     NPT  See Event 4 (FE)
13:00 11.00  3174.00 LOG  RIH with logging suite #2 MDT-GR with only large area
                          probe. Take 6 pressures from 1,780m to 2,300m while
                          RIH. RIH to 3,162m and take 6 x 450cc samples from 3
                          levels and 17 pressures between 3,162m and 3,106m.

                          At 24:00 hrs a total of 64.8 liters of formation
                          fluids had been pumped into wellbore.

                          Monitor hole on trip tank - taken 21.0 bbls/24hrs

                          Pressure test standpipe manifold to 250/5,000 psi for
                          ten minutes each pressure.
Total 24.00
```

========================= PROBLEM EVENTS AND MILESTONES =========================

```
Event:   4    NPT: Yes   Hours:   4.75    Responsible Party: Schlum Wireline
Start: 24-Feb-03 08:15   FE   Logging problem
End  : 24-Feb-03 13:00        Had intermittent faults communicating through MDT
                              tool.  Removed martineau probe leaving MDT with
                              only large area probe.
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics:Wireline ops - hands & fingers.Pit volumes, Housekeeping, Testing mud manifold. Check Crown-O-Matic. THINK well control. Review kill line isolation and alternate options.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE.
Completed briefings for all personnel onboard on kill line isolation & tag out status.
Boats:
Pacific Frontier: Barry Beach Marine Terminal
Pacific Challenger: Standby on location
Fire and Abandon drill:- 24 Feb 03
2 x Helicopter.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 3/4 deg port
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	Yes		17-Feb-2003
Abandon Ship Drill	Yes		17-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	24-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	24-Feb-2003

=================================== PERSONNEL ===================================

```
Personnel       :  N/A
Supervisors     :  Jackson, Murray G.
                   Sharkey, George K.
Total Head Count:     93
Total Hours     :   1116.00
```

================================== HEAD COUNTS ==================================

Contractor	62	ExxonMobil	7
Contractor Short Service (SSE)	0	Service Company	24

=============================== MANAGEMENT SUMMARY ===============================

Completed logging run #1 & commence run #2 MDT - pressures and samples.

======================== COST DATA (Australian Dollar) =========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	313,709	0	313,709	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,969,864	287,973	16,257,837	572,786
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0

```
Exc  : 1.92310/US$| Cum AFE    15,969,864      287,973   16,257,837      572,786


================================== MUD REPORT ==================================
Time          17:00            Flowline Temp     .0 deg C       % Solids    7.5
Mud Type        WBM            Filtrate         2.7 cc          % LGS       2.0
Sample From Flowline           Filter Cake      1.0 32nd"       % Sand      .05
                               HTHP Temp         .0 deg C       % Water    89.2
MD          3174.00 meters          Filtrate     .0 cc          % Oil        .0
Density       10.45 ppg
Viscosity        72 sec        Elec Stab          0 volts       Ca++        310
PV             26.0 cp         MBT              4.5 lb/bbl      Cl-       42000
YP             43.0 phsf       Excess Lime      .05 lb/bbl      CaCl2         0
Gels        8./ 11. phsf                                        pH          8.9
                               Circ Volume   2131.0 barrel      Pf/Mf   .1/  .4
                               Vol Hole Dr       .0 barrel      Pm           .3
Rhe'try at  49.0 deg: 600/95 300/69 200/57 100/41 60/0 30/0 6/11 3/8


================================ SOLIDS CONTROL ================================
 Hours on Centrifuge:    .00            Dilution Rate:     .00


================================= SUPPLIES DATA ================================
                 Usage Receipts  Stock                    Usage Receipts  Stock
Barite               0        0   3199  Fuel                 88        0   1840
Cement               0        0   1824  Gel                   0        0    581
Cement Blend         0     1270   2570  Potable Water        72       62    770
Drill Water        269     1291   6883


================================= MUD ADDITIVES ================================
                  Function            Name       Unit  Size  Amount
            -------------------  --------------  ----  ----  ------


================================= LOGGING RUNS =================================
     Start:  23-Feb-2003 22:30      Run   :    1
     End  :  24-Feb-2003 06:30      Vendor:  Not Available

        Log Type       Starting MD   Ending MD
     ---------------   -----------   ---------
     PEX                 3174.500     900.800 meters
     HALS                3174.500     900.800
     HNGS                3174.500     900.800
     LEHQT               3174.500     900.800
     ----------------------------------------------------------------------
     Start:  24-Feb-2003 06:30      Run   :    2
     End  :  25-Feb-2003 17:15      Vendor:  Not Available

        Log Type       Starting MD   Ending MD
     ---------------   -----------   ---------
     MDT                 3162.000    1780.000 meters
     GR                  3162.000    1780.000
     LEHQT               3162.000    1780.000


================================== BIT RECORD ==================================
                      No bit report was entered for this date.
```

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 0 str/min
Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	30	275	3154.000
2	40	350	3154.000
3	50	450	3154.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.61 ppg
Pore Pressure	8.60 ppg
MASP	937 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 10.40 ppg
ECD ******* ppg
at 3174.000 meters
with bit at .000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1009	0	mm Hg
Heave	.50	.00	meters
Pitch	.20	.00	degree
Roll	.30	.00	degree
Swell Height	1.80	.00	meters
Period	8	0	second
Direction	60	0	degree
Visibility	16.0	.0	km

	23:59	Max	
Wind Speed	14.0	.0	knot
Direction	350	0	degree
Wave Height	1.00	.00	meters
Period	6	0	second
Direction	350	0	degree
Air Temperature	20.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	230	0
3	250	0
4	230	0
5	250	0
6	250	0
7	240	0
8	240	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.60
Angle : 1.2 Angle : 165

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 25-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

```
Drilling                      DETAILED DAILY REPORT                  26-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD              m: 3126.00 | 3174.00
Office     : Australia SE                     TVD             m: 3126.00 | 3174.00
Client     : ExxonMobil Development           Days                       |
Drill Team : Australia Offshore                - if Dry       :     42.0 |
                                               - if Suspended:      42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :        .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :      42.0 |     27.0
Rig Name   : Sedco 702                         - Ahead/Behind:           |      8.0
Operator   : Esso Aus Res                      - from Spud   :           |     23.5
Field      : Gippsland Basin                  Spud Date      :        02-Feb-2003
Country    : Australia                        Progress      m:                .00
Latitude   :  38d 12' 49" South               Drilling Hours :                .00
Longitude  : 148d 35' 29" East                ROP       m/hr:
Water Depth:  109.60 m                        Percentage NPT :                1.3
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Schlum logging run #3  FMI-DSI-GR-LEHQT at 2100m.
Planned: Continue TD logging program.

Start Elpsd  End MD                         Description
----- ----- -------- ------------------------------------------------------------
00:00 17.25  3174.00 LOG  Schlumberger continues with MDT program using the
                          large area probe.

                          Overall summary of MDT run:
                          *  Took samples from 3,146.5m to 2,630.2m in the 1
                          gallon chamber and 450 cm´ chambers (13 sample points
                          attempted, 11 samples taken overall, did pump-outs at
                          3,059.5 m and 2,983.2 m but no samples taken)
                          *  Made 64 pre-tests from 1,780m to 3,162m with repeat
                          tests at 2,180m, 1,950m, and 1,780m - x11 tight no
                          test results, x2 aborted test points (no included in
                          pre-test count)
                          * Formation pressure equivalent mud weight ranges from
                          8.26 ppg to 8.65 ppg. By pressure, mud weight in hole
                          is 10.4 ppg

                          A total of  185.3 liters of formation fluid has been
                          pumped into the well during the MDT run.

                          Monitor hole on trip tank:- lost 24.1 bbls/24 hrs
17:15  5.00  3174.00 LOG  Schlumberger make up tool string #3 FMI/DSI/GR/LEHQT.
                          RIH, tag bottom & log from 3,177.5m (wireline depth).
22:15   .50  3174.00 LOG  Re-log bottom section of hole due to caliper problem
                          on first pass.
                     NPT  See Event 7 (FE)
22:45  1.25  3174.00 LOG  Schlumberger continue with logging run #3 from 3177.5
                          to 2100m at rpt time.
Total 24.00
```

PROBLEM EVENTS AND MILESTONES

```
Event:   7    NPT: Yes   Hours:    .50    Responsible Party: Schlum Wireline
Start: 25-Feb-03 22:15   FE   Logging problem
End  : 25-Feb-03 22:45        After starting to log up from bottom, caliper pad
                              was found to have failed to fully open. Section
                              was re-logged.
```

REMARKS

Held PTSM with both day and night shifts.
Topics:Wireline ops - hands & fingers.Housekeeping, General maintenance. Permit requirements. Check Crown-O-Matic. THINK well control. Review kill line isolation and alternate options.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE 23/2/03.
Boats:
Pacific Frontier: Barry Beach Marine Terminal
Pacific Challenger: Standby on location
Fire and Abandon drill:- 24 Feb 03
1 x Helicopter - Freight.
Sonsub ROV ran riser and bullseye inspection.
Riser bullseye 3/4 deg port
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.

INSPECTIONS, DRILLS, AND CITATIONS

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	24-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	25-Feb-2003

PERSONNEL

```
Personnel       :  N/A
Supervisors     :  Jackson, Murray G.
                   Sharkey, George K.
Total Head Count:     93
Total Hours     :   1116.00
```

HEAD COUNTS

Contractor	62	ExxonMobil	7
Contractor Short Service (SSE)	0	Service Company	24

MANAGEMENT SUMMARY

Complete MDT sample & pressure program, Continue with TD logging program.

COST DATA (Australian Dollar)

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	308,066	0	308,066	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	16,277,930	287,973	16,565,903	572,787
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0

```
Exc  : 1.92310/US$| Cum AFE    16,277,930      287,973   16,565,903      572,787


================================== MUD REPORT ==================================
Time           20:00            Flowline Temp     .0 deg C       % Solids     .0
Mud Type         WBM            Filtrate          .0 cc          % LGS        .0
Sample From Flowline            Filter Cake       .0 32nd"       % Sand      .00
                                HTHP Temp         .0 deg C       % Water      .0
MD           3174.00 meters          Filtrate     .0 cc          % Oil        .0
Density        10.45 ppg
Viscosity         76 sec        Elec Stab          0 volts       Ca++          0
PV                .0 cp         MBT               .0 lb/bbl      Cl-           0
YP                .0 phsf       Excess Lime      .00 lb/bbl      CaCl2         0
Gels         0./  0. phsf                                        pH           .0
                                Circ Volume   1469.0 barrel      Pf/Mf   .0/  .0
                                Vol Hole Dr       .0 barrel      Pm           .0


================================ SOLIDS CONTROL ================================
 Hours on Centrifuge:    .00             Dilution Rate:     .00


================================= SUPPLIES DATA ================================
                 Usage Receipts  Stock                     Usage Receipts  Stock
Barite               0        0   3199  Fuel                  46      639   2433
Cement               0        0   1824  Gel                    0        0    581
Cement Blend         0        0   2570  Potable Water        294      243    719
Drill Water        280      537   7140


================================= MUD ADDITIVES ================================
                  Function             Name        Unit  Size  Amount
            --------------------  ---------------  ----  ----  ------


================================= LOGGING RUNS =================================
     Start:  24-Feb-2003 06:30      Run   :    2
     End  :  25-Feb-2003 17:15      Vendor:  Not Available

        Log Type       Starting MD   Ending MD
     ---------------   -----------   ---------
     MDT                 3162.000     1780.000 meters
     GR                  3162.000     1780.000
     LEHQT               3162.000     1780.000
     -------------------------------------------------------------------------
     Start:  25-Feb-2003 17:15      Run   :    3
     End  :  26-Feb-2003 05:45      Vendor:  Not Available

        Log Type       Starting MD   Ending MD
     ---------------   -----------   ---------
     FMI                 3177.500     2580.000 meters
     DSI                 3177.500      137.000
     GR                  3177.500      137.000
     LEHQT               3177.500      137.000


================================== BIT RECORD ==================================
                      No bit report was entered for this date.
```

```
==================================== HYDRAULICS ====================================
Pump Displaces    Rate
      bbl/st     str/min          No hydraulics calculations were performed
  1    .0855        0             because no bit report was entered.
  2    .0855        0
  3    .0855        0



Pump Rate       0 str/min
Flow Rate     .00 gpm
Pressure        0 psi


===================================== SURVEYS =====================================
   MD       Angle  Azimuth     TVD      Vert Sec     N+/S-      E+/W-     Dogleg
 3138.260    1.52   333.59   3137.799     42.192  +  42.192  +    .315      .000


=================================== WELL CONTROL ===================================
Pump    Rate     Pressure      MD
       str/min     psi       meters       Burst (70%)             2495 psi
  1       30         275    3154.000      Formation Strength     16.50 ppg
  2       40         350    3154.000      Kick Tolerance          1.61 ppg
  3       50         450    3154.000      Pore Pressure           8.60 ppg
                                          MASP                     937 psi

                                          Background Gas            .0
Density             10.40 ppg             Connection Gas            .0
ECD               ******* ppg             Trip Gas                  .0
   at            3174.000 meters
   with bit at       .000 meters


================================= WEATHER REPORT =================================
                 23:59  Max                                    23:59  Max
                 ----- -----                                  ------ ------
Bar Pressure   :  1012     0 mm Hg       Wind Speed     :      .0     .0 knot
Heave          :   .50   .00 meters           Direction :       0      0 degree
Pitch          :   .20   .00 degree      Wave Height    :     .00    .00 meters
Roll           :   .20   .00 degree           Period    :       0      0 second
Swell Height   :   .80   .00 meters           Direction :       0      0 degree
      Period   :     8     0 second      Air Temperature:    20.0     .0 deg C
      Direction:    60     0 degree      Sea Temperature:      .0     .0 deg C
Visibility     :  16.0    .0 km          Cloud Cover    :       0      0


================================ ANCHOR TENSIONS ================================
                 Anchor     Tension at 23:59     24-Hr Maximum
                    1              245                 0
                    2              230                 0
                    3              255                 0
                    4              230                 0
                    5              250                 0
                    6              250                 0
                    7              240                 0
                    8              235                 0


=================================== RISER DATA ===================================
Riser Tension:     352  Flex Joint Rotation:   .0  Hole Position, Offset:   1.60
      Angle  :      .7                                           Angle :    172
```

============================== DAILY DRILL STRING ==============================

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

==================================== CASING ====================================

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 26-Feb-2003 report for SCALLOP_1   Run 01-Apr-2003 17:05 Central Time

```
Drilling                      DETAILED DAILY REPORT                  27-Feb-2003
                                    Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 3174.00
Office     : Australia SE                     TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development           Days                      |
Drill Team : Australia Offshore                - if Dry      :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    28.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     8.0
Operator   : Esso Aus Res                      - from Spud   :         |    24.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress      m:               .00
Latitude   :  38d 12' 49" South               Drilling Hours :               .00
Longitude  : 148d 35' 29" East                ROP        m/hr:
Water Depth:  109.60 m                        Percentage NPT :               1.3
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Schlum RIH with run #5 CST/GR
Planned: Complete logging program, RIH and set open hole P&A cement plugs.

Start Elpsd  End MD                          Description
----- ----- -------- -------------------------------------------------------------
00:00  5.75  3174.00 LOG  Schlumberger continue with logging run #3 -
                          FMI/DSI/GR/LEHQT from 2100m to sea floor. POH and lay
                          out tools.
05:45 16.75  3174.00 LOG  Run Dual C-Sat (VSP). Hang airgun from port crane off
                          stern of rig. Shoot 111 levels from 3171m(bottom shot)
                          to 173.6m at 15m intervals. POH and lay out tool
                          string.
                          Mud drink rate 1 bph.
22:30  1.50  3174.00 LOG  Complete permits and checklists and establish radio
                          silence. Hold think drill and pick up tool string #5
                          CST/GR. RIH.

                          Continue to monitor hole on trip tank. Hole taken 23.9
                          bbls last 24 hrs.
Total 24.00


==================================== REMARKS ====================================
Held PTSM with both day and night shifts.
Topics:Wireline ops - hands & fingers.Housekeeping, General maintenance. Permit
requirements. Check Crown-O-Matic. THINK well control. Review kill line
isolation.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE 23/2/03.
Boats:
Pacific Frontier:  Standby on location
Pacific Challenger: Departed rig at 18:35hrs for Barry Beach Marine Terminal
Fire and Abandon drill:- 24 Feb 03
Held man overboard drill. Recoved man in five minutes.
```

Helicopter crash drill held by helideck response crew.
0 x Helicopter
Sonsub ROV unable to dive due to siesmic survey.
Last readings:
Riser bullseye 3/4 deg port
BOP bullseye 3/4 deg forward
PGB bullseye 0 deg.

==================== INSPECTIONS, DRILLS, AND CITATIONS ====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	24-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	26-Feb-2003

==================== PERSONNEL ====================

Personnel : N/A
Supervisors : Basset, Anthony A.
Jackson, Murray G.
Sharkey, George K.
Total Head Count: 93
Total Hours : 1116.00

==================== HEAD COUNTS ====================

Contractor	62	ExxonMobil	7
Contractor Short Service (SSE)	0	Service Company	24

==================== MANAGEMENT SUMMARY ====================

Continued running TD logs - DUAL CSAT-VSP & CST-GR.

==================== COST DATA (Australian Dollar) ====================

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	332,104	0	332,104	17,616
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	16,610,034	287,973	16,898,007	590,403
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	16,610,034	287,973	16,898,007	590,403

==================== MUD REPORT ====================

Time	17:15	Flowline Temp	.0 deg C	% Solids	7.6
Mud Type	WBM	Filtrate	2.7 cc	% LGS	3.0
Sample From	Flowline	Filter Cake	1.0 32nd"	% Sand	.05
		HTHP Temp	120.0 deg C	% Water	89.1
MD	3174.00 meters	Filtrate	10.4 cc	% Oil	.0
Density	10.35 ppg				
Viscosity	73 sec	Elec Stab	0 volts	Ca++	90
PV	26.0 cp	MBT	4.5 lb/bbl	Cl-	42000
YP	41.0 phsf	Excess Lime	.05 lb/bbl	CaCl2	0
Gels	8./ 11. phsf			pH	8.9
		Circ Volume	2096.0 barrel	Pf/Mf	.1/ .3
		Vol Hole Dr	.0 barrel	Pm	.3

Rhe'try at 49.0 deg: 600/93 300/67 200/55 100/40 60/0 30/0 6/11 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	1409	0	1790	Fuel	48	0	2385
Cement	0	0	1824	Gel	581	0	0
Cement Blend	0	0	2570	Potable Water	472	252	499
Drill Water	11	0	7129				

MUD ADDITIVES

Function	Name	Unit	Size	Amount
VISCOSIFIER	Bentonite	SAX	1	581

LOGGING RUNS

Start: 25-Feb-2003 17:15 Run : 3
End : 26-Feb-2003 05:45 Vendor: Not Available

Log Type	Starting MD	Ending MD
FMI	3177.500	2580.000 meters
DSI	3177.500	137.000
GR	3177.500	137.000
LEHQT	3177.500	137.000

Start: 26-Feb-2003 05:45 Run : 4
End : 26-Feb-2003 22:30 Vendor: Not Available

Log Type	Starting MD	Ending MD
DUAL CSAT-VSP	3171.000	176.000 meters

Start: 26-Feb-2003 22:30 Run : 5
End : 27-Feb-2003 05:30 Vendor: Not Available

Log Type	Starting MD	Ending MD
CST-GR	3165.000	1717.000 meters

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 0 str/min
Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.61 ppg
Pore Pressure	8.60 ppg
MASP	937 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density	10.40 ppg
ECD	******* ppg
at	3174.000 meters
with bit at	.000 meters

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure	1008	0	mm Hg	Wind Speed	4.0	.0	knot
Heave	.50	.00	meters	Direction	40	0	degree
Pitch	.20	.00	degree	Wave Height	.00	.00	meters
Roll	.20	.00	degree	Period	0	0	second
Swell Height	.80	.00	meters	Direction	40	0	degree
Period	8	0	second	Air Temperature	20.0	.0	deg C
Direction	60	0	degree	Sea Temperature	.0	.0	deg C
Visibility	16.0	.0	km	Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	260	0
4	230	0
5	250	0
6	245	0
7	240	0
8	240	0

RISER DATA

Riser Tension:	352	Flex Joint Rotation:	.0	Hole Position, Offset:	.80
Angle :	1.0			Angle :	158

DAILY DRILL STRING

		Weights		Torques		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820

4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 27-Feb-2003 report for SCALLOP_1 Run 01-Apr-2003 17:05 Central Time

Drilling **DETAILED DAILY REPORT** **28-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                      AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                 MD             m: 3126.00 | 3174.00
Office     : Australia SE                   TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development         Days                      |
Drill Team : Australia Offshore              - if Dry      :    42.0 |
                                             - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO  - to Complete :      .0 |
Contractor : Trans Sed Forex                 - Susp + Comp :    42.0 |     29.0
Rig Name   : Sedco 702                       - Ahead/Behind:         |      8.0
Operator   : Esso Aus Res                    - from Spud   :         |     25.5
Field      : Gippsland Basin                Spud Date      :      02-Feb-2003
Country    : Australia                      Progress      m:              .00
Latitude   :  38d 12' 49" South             Drilling Hours :              .00
Longitude  : 148d 35' 29" East              ROP        m/hr:
Water Depth:  109.60 m                      Percentage NPT :              1.3
RKB Height :   25.90 m                      Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Circulating bottoms up at 2710m.
Planned: Complete open hole P&A plugs. Lay down pipe, tag TOC & POH.
```

Start	Elpsd	End MD		Description
00:00	5.50	3174.00	LOG	Schlumberger continue running CST-GR. Fire 60 bullets from 3165m to 1717m. Recovered 52 of 60. (Lost 7 and 1 empty) POH and rig down. Monitor hole on trip tank - taking average 1 bph.
05:30	1.00	3174.00	TRIP	Run string in hole -- Pick up 3«" mule shoe diverter tool, 3«" drill pipe, and crossover. Drift pipe to 2 inch while picking up. Total length of 3« inch is 243.52 m.
06:30	4.75	.00	TRIP	Run string in hole -- Run 3« inch drill pipe in hole on 5 inch drill pipe to 3,174 m. Break circulation at casing shoe. No fill on bottom.
11:15	2.75	3174.00	CIRC	Circulate until gas from MDT pumpout levels off below 0.1%. Trip gas 7.91%
14:00	1.75	3174.00	CMT	Set balanced cement plug #1A from 3,174m to 3,014m with 375 sacks @ 1.13 yield HTB silica flour cement mixed with 3 gal SCR-100L per 10 bbl of mix water, 32 gal Halad 413 per 10 bbl mix water, and 0.25 gal NF-5 per 10 bbl mix water in freshwater to yield 75.4 bbls 15.8 ppg slurry. Dowell displace with 10.4 ppg mud to balance plug. Fresh water spacers ahead and behind.
15:45	.50	3174.00	TRIP	Pull string out of hole -- Pull to 3,014 m. String pulled wet with slight backflow on first four stands, then no backflow.
16:15	1.50	3174.00	CIRC	Circulate 171 barrels past bottoms up at 828 gpm, SPP 2,500 psi. Had an early gas peak of 0.7%. No water or cement in returns.
17:45	1.25	3174.00	CMT	Set balanced cement plug #1B from 3,014 m to 2,857m

```
                             with 374 sacks @ 1.13 yield HTB silica flour cement
                             mixed with 3 gal SCR-100L per 10 bbl of mix water, 32
                             gal Halad 413 per 10 bbl mix water, and 0.25 gal NF-5
                             per 10 bbl mix water in freshwater to yield 75.3 bbls
                             15.8 ppg slurry. Dowell displace with 10.4 ppg mud to
                             balance plug. Fresh water spacers ahead and behind.
19:00   .50  3174.00 TRIP Pull string out of hole -- Pull to 2,857 m. String
                             pulled wet with slight backflow on first three stands,
                             then no backflow.
19:30  1.50  3174.00 CIRC Circulate 205 bbls past bottoms up. No cement returns.
21:00  1.50  3174.00 CMT  Set balanced plug #1C from 2857m to 2710m with 364 sks
                             @ 1.13 yield HTB silica flour cement mixed in fresh
                             water with 3 gals of SCR-100L, 32gals Halad 413, 0.25
                             gals NF-5 per 10 bbls to yield 73.3 bbls 15.8 ppg
                             slurry. Dowell displace with 10.4 ppg mud to balance
                             plug. Pump balanced fresh water spacers ahead and
                             behind.
22:30   .50  3174.00 TRIP Pull string out of hole -- Pull back to 2710m. Slight
                             back flow stopped after 3 stds pulled then string
                             static.
23:00  1.00  3174.00 CIRC Circulate bottoms up from 2710m.
Total 24.00
```

========================= PROBLEM EVENTS AND MILESTONES ========================

```
Event:   8    Milestone
Start: 27-Feb-03 05:30   MILE Began suspension activities
                                 Advised from town that well will NOT be suspended.
                                 Make preparations to P&A well. RIH with cement
                                 stinger to set open hole P&A plugs.
```

==================================== REMARKS ===================================

Held PTSM with both day and night shifts.
Topics: Pick up & Tripping pipe. Setting cement plugs. Manriding, Hands &
fingers. Check Crown-O-Matic. THINK well control. Review kill line isolation.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE 23/2/03.
Boats:
Pacific Frontier: Standby on location. Responded to call from vessel in
distress 8km from location. Gave assistance to re-start engine.
Pacific Challenger: At Barry Beach Marine Terminal
Fire and Abandon drill:- 24 Feb 03
2 x Helicopter
Sonsub ROV ran riser & bullseye inspection..
Riser bullseye 3/4 deg port
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.

====================== INSPECTIONS, DRILLS, AND CITATIONS ======================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	Yes	1	24-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	27-Feb-2003

PERSONNEL

Personnel : N/A
Supervisors : Basset, Anthony A.
Jackson, Murray G.
Sharkey, George K.
Total Head Count: 92
Total Hours : 1104.00

HEAD COUNTS

Contractor	63	ExxonMobil	6
Contractor Short Service (SSE)	0	Service Company	23

MANAGEMENT SUMMARY

Completed TD logging. RIH and set 3 open hole P&A plugs.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	1,038,185	0	1,038,185	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	17,648,219	287,973	17,936,192	590,404
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	17,648,219	287,973	17,936,192	590,404

MUD REPORT

Time	13:00	Flowline Temp	30.0 deg C	% Solids	7.8
Mud Type	WBM	Filtrate	2.9 cc	% LGS	3.0
Sample From	Pit	Filter Cake	1.0 32nd"	% Sand	.05
		HTHP Temp	.0 deg C	% Water	89.0
MD	3174.00 meters	Filtrate	.0 cc	% Oil	.0
Density	10.40 ppg				
Viscosity	72 sec	Elec Stab	0 volts	Ca++	90
PV	27.0 cp	MBT	.0 lb/bbl	Cl-	41000
YP	44.0 phsf	Excess Lime	.03 lb/bbl	CaCl2	0
Gels	9./ 13. phsf			pH	8.9
		Circ Volume	2193.0 barrel	Pf/Mf	.0/ .4
		Vol Hole Dr	.0 barrel	Pm	.1

Rhe'try at 49.0 deg: 600/98 300/71 200/61 100/44 60/0 30/0 6/11 3/8

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	0	0	1790	Drill Water	440	0	6689
Cement	0	0	1824	Fuel	50	0	2335
Cement Blend	0	0	2570	Potable Water	289	231	441

MUD ADDITIVES

Function	Name	Unit	Size	Amount

LOGGING RUNS

Start: 26-Feb-2003 22:30 Run : 5
End : 27-Feb-2003 05:30 Vendor: Not Available

Log Type	Starting MD	Ending MD
CST-GR	3165.000	1717.000 meters

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	74
2	.0855	74
3	.0855	74

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 222 str/min
Flow Rate 797.20 gpm
Pressure 2400 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.61 ppg
Pore Pressure	8.60 ppg
MASP	937 psi

Background Gas	.1
Connection Gas	.0
Trip Gas	7.9

Density 10.40 ppg
ECD ******* ppg
at 3174.000 meters
with bit at 2857.000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1003	0	mm Hg
Heave	.50	.00	meters
Pitch	.30	.00	degree
Roll	.20	.00	degree
Swell Height	.80	.00	meters
Period	8	0	second
Direction	60	0	degree
Visibility	8.0	.0	km

	23:59	Max	
Wind Speed	13.0	.0	knot
Direction	215	0	degree
Wave Height	.40	.00	meters
Period	5	0	second
Direction	215	0	degree
Air Temperature	20.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	250	0
2	240	0
3	215	0
4	265	0
5	250	0
6	230	0
7	235	0
8	230	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: 1.00
Angle : 1.0 Angle : 162

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

CEMENT INFORMATION

Start Date :	27-Feb-03	Reciprocation?:		Number of Plugs :	0
Time :	14:00	Rotation? :		Did Plug Bump? :	
Finish Date:	27-Feb-03	% Returns :	0	Did Float(s) Hold?:	
Time	15:45	Top of Cement :	3014.00	Casing Size :	13.375

	Density	Yield	Amt	Volume	Rate	Composition
Pref	8.33			21.1	1.7	Drillwater
Flsh	.00			.0	.0	
Lead	.00	.0	0	.0	.0	
Tail	15.80	1.1	375	75.4	4.9	
Post	8.33			1.3	2.0	Drillwater
Disp	10.40			171.1	5.3	active mud

	Class	Additives
Lead		
Tail	G	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L

Open hole P&A Plug - Plug #1A. 1 of 5 stacked balanced plugs. No cmt rtns.

```
============================== CEMENT INFORMATION ==============================
Start Date : 27-Feb-03   Reciprocation?:            Number of Plugs   :        0
      Time :     17:45   Rotation?     :            Did Plug Bump?    :
Finish Date: 27-Feb-03   % Returns     :         0  Did Float(s) Hold?:
       Time      19:00   Top of Cement :  2857.00   Casing Size       :   13.375

     Density Yield   Amt  Volume   Rate              Composition
     ------- ------ ----- ------- ------ ---------------------------------------
Pref    8.33                 21.6    1.8 Drillwater
Flsh     .00                   .0     .0
Lead     .00     .0     0      .0     .0
Tail   15.80    1.1   374    75.3    5.1
Post    8.33                  1.3    2.0 Drillwater
Disp   10.40                159.2    5.3 active mud

           Class                        Additives
           ----- ------------------------------------------------------------
    Lead
    Tail    G    HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk
                 NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L
```

Open hole P&A Plug - Plug #1B. 2 of 5 stacked balanced plugs. No cmt rtns.

```
============================== CEMENT INFORMATION ==============================
Start Date : 27-Feb-03   Reciprocation?:            Number of Plugs   :        0
      Time :     21:00   Rotation?     :            Did Plug Bump?    :
Finish Date: 27-Feb-03   % Returns     :         0  Did Float(s) Hold?:
       Time      22:30   Top of Cement :  2710.00   Casing Size       :   13.375

     Density Yield   Amt  Volume   Rate              Composition
     ------- ------ ----- ------- ------ ---------------------------------------
Pref    8.33                 22.0    1.5 Drillwater
Flsh     .00                   .0     .0
Lead     .00     .0     0      .0     .0
Tail   15.80    1.1   364    73.3    5.2
Post    8.33                  1.3    2.0 Drillwater
Disp   10.40                149.1    5.4 active mud

           Class                        Additives
           ----- ------------------------------------------------------------
    Lead
    Tail    G    HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk
                 NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L
```

Open hole P&A Plug - Plug #1C. 3 of 5 stacked balanced plugs. No cmt rtns.

*** End 28-Feb-2003 report for SCALLOP_1   Run 01-Apr-2003 17:06 Central Time

Drilling **DETAILED DAILY REPORT** **01-Mar-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                          AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                     MD              m: 3126.00 | 3174.00
Office     : Australia SE                       TVD             m: 3126.00 | 3174.00
Client     : ExxonMobil Development             Days                       |
Drill Team : Australia Offshore                  - if Dry      :    42.0 |
                                                 - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO      - to Complete :      .0 |
Contractor : Trans Sed Forex                     - Susp + Comp :    42.0 |      30.0
Rig Name   : Sedco 702                           - Ahead/Behind:         |       8.0
Operator   : Esso Aus Res                        - from Spud   :         |      26.5
Field      : Gippsland Basin                    Spud Date      :        02-Feb-2003
Country    : Australia                          Progress      m:                .00
Latitude   :  38d 12' 49" South                 Drilling Hours :                .00
Longitude  : 148d 35' 29" East                  ROP       m/hr:
Water Depth:  109.60 m                          Percentage NPT :                1.2
RKB Height :   25.90 m                          Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : 16.50 ppg

Current: Rig down Schlumberger.
Planned: Continue with plugback program.
```

Start	Elpsd	End MD		Description
00:00	.50	3174.00	CIRC	Circulate bottoms up from 2710m. No cement returns. Pumped 230 bbls over bottoms up. Mud weight reduced to 10.2 from spacer water. No gas peak. Back ground gas 0.05%.
00:30	1.25	3174.00	CMT	Rig up and set balanced plug #1D from 2710m to 2560m with 368 sks @ 1.13 yield HTB silica flour cement mixed with fresh water and 3 gals SCR-100L, 32 gals Halad 413, 0.25 gals NF-5 per 10 bbls to yield 74.1 bbls 15.8 ppg slurry. Dowell displaced with 10.4 ppg mud to balance plug. Test lines and pump fresh water spacers ahead and behind.
01:45	.75	3174.00	TRIP	Pull string out of hole -- Rig down cement hose and pull back to 2560m. Slight back flow first 3 stds then static.
02:30	1.25	3174.00	CIRC	Circulate bottoms up at 2560m. No cement returns but mud weight cut to 10.1+ from spacer water. Pump additional 100 bbls over bottoms up. Gas peaked at 0.08%.
03:45	1.25	3174.00	CMT	Rig up and set balanced plug #1E from 2560m to 2403m with 373 sks @ 1.13 yield HTB silica flour cement mixed with fresh water and 1.0 gal SCR-100L, 32gals Halad 413, 0.25gals NF-5 per 10 bbls to yield 75 bbls 15.8ppg slurry. Dowell displaced with 10.3ppg mud to balance plug. Lines tested to 2000 psi prior to job. Fresh water spacers pumped ahead and behind.
05:00	.75	3174.00	TRIP	Pull string out of hole -- Rig down cement hose and pull back to 2374m. Slight flow back for first 2 stds then static.

```
05:45  2.00  3174.00 CIRC Circulate bottoms up at 2374m. No cement returns. Mud
                          weight reduced to 10.1+ from water spacers. Gas peaked
                          at 0.07%.
                          Circulate complete system adding barite to level out
                          mud weight at 10.4 ppg.
07:45  3.75  3174.00 TRIP Break and lay down string, BHA or tools -- Pull ten
                          stands. Lay down 29 stands of 5" drill pipe, five
                          stands of HeviWate, and jars.
11:30  2.25  3174.00 TRIP Break and lay down string, BHA or tools -- Make up 6
                          5/8 Reg box x 4« IF pin sub and lay down 8¬" drill
                          collars and hang-off tool.
13:45  1.25  3174.00 TRIP Run string in hole -- TIH to tag top of cement at 2,
                          403.7 meters with 15 kips weight while circulating at
                          131 gpm, SPP 200 psi.
15:00  3.00  3174.00 TRIP Break and lay down string, BHA or tools -- Pump slug
                          and POOH laying down excess drill pipe.
18:00   .50  3174.00 RIG  Service rig & drill floor equipment once inside shoe.
18:30  2.75  3174.00 TRIP Break and lay down string, BHA or tools -- Continue
                          POOH - lay out excess 5" drill pipe and all 3-1/2" DP.
21:15  1.50  3174.00 WIRE Hold Think drill and rig up Schlumberger. Make up
                          12-1/16 guage ring, junk basket/CCL and RIH to 897m.
                          No drag. POOH. Recover 1/4 cup of small formation
                          cuttings.
22:45  1.25  3174.00 WIRE Complete permits and establish radio silence. Make up
                          Hlbtn 13-3/8" EZSV pkr on setting tool & CCL. RIH and
                          set packer at 895m - centre rubber. Good indication of
                          set. Log above, POOH and rig down.
Total 24.00
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Lay out & Tripping pipe. Setting cement plugs. Permits. Check
Crown-O-Matic. Review kill line isolation.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE 23/2/03.
Boats:
Pacific Frontier: Depart location 19:45hrs. ETA BBMT 07:30hrs.
Pacific Challenger: ETA rig 04:00hrs 1 March 03
Fire and Abandon drill:- 24 Feb 03
2 x Helicopter
Sonsub ROV ran riser & bullseye inspection.
Riser bullseye 3/4 deg port
BOP bullseye   3/4 deg forward
PGB bullseye   0 deg.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	28-Feb-2003
BOP System Inspection (Minicheck)	Yes	2	28-Feb-2003

=================================== PERSONNEL ===================================

```
Personnel      :  N/A
Supervisors    :  Basset, Anthony A.
                  Jackson, Murray G.
                  Sharkey, George K.
```

Total Head Count: 84
Total Hours : 1008.00

HEAD COUNTS

Contractor	62	ExxonMobil	4
Contractor Short Service (SSE)	0	Service Company	18

MANAGEMENT SUMMARY

Complete open hole P&A plugs and tag top one. POH and set EZSV squeeze pkr.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	330,322	0	330,322	6,365
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	17,978,541	287,973	18,266,514	596,769
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	17,978,541	287,973	18,266,514	596,769

MUD REPORT

Time	08:00	Flowline Temp	45.0 deg C	% Solids	8.0
Mud Type	WBM	Filtrate	2.8 cc	% LGS	4.0
Sample From	Pit	Filter Cake	1.0 32nd"	% Sand	.10
		HTHP Temp	.0 deg C	% Water	88.8
MD	2403.00 meters	Filtrate	.0 cc	% Oil	.0
Density	10.40 ppg				
Viscosity	58 sec	Elec Stab	0 volts	Ca++	125
PV	23.0 cp	MBT	6.0 lb/bbl	Cl-	41000
YP	40.0 phsf	Excess Lime	.15 lb/bbl	CaCl2	0
Gels	8./ 11. phsf			pH	10.0
		Circ Volume	2190.0 barrel	Pf/Mf	.3/ .6
		Vol Hole Dr	.0 barrel	Pm	.9

Rhe'try at 49.0 deg: 600/86 300/63 200/52 100/38 60/0 30/0 6/10 3/7

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	254	0	1536	Drill Water	560	0	6129
Cement	0	0	1824	Fuel	43	679	2971
Cement Blend	0	0	2570	Potable Water	92	210	559

MUD ADDITIVES

Function	Name	Unit	Size	Amount
ALKALINITY (PH)	pottassium hydr	BKT	20	2
BACTERICIDE	Baracide	BKT	25	3
CORROSION INHIBITOR	BARACOR 129	BKT	25	5
CORROSION INHIBITOR	BARAFILM	LTR	205	1
WEIGHTING MATERIAL	Barite	SAX	100	160

LOGGING RUNS

Start: 28-Feb-2003 21:15 Run : 1
End : 28-Feb-2003 22:45 Vendor: Not Available

Log Type	Starting MD	Ending MD
GR-JB-CCL	897.000	135.000 meters

Start: 28-Feb-2003 22:45 Run : 2
End : 28-Feb-2003 00:00 Vendor: Not Available

Log Type	Starting MD	Ending MD
EZSV-CCL	895.000	895.000 meters

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	74
2	.0855	74
3	.0855	74

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 222 str/min
Flow Rate 797.20 gpm
Pressure 2300 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	16.50 ppg
Kick Tolerance	1.61 ppg
Pore Pressure	8.60 ppg
MASP	937 psi
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density 10.40 ppg
ECD ******* ppg
at 3174.000 meters
with bit at 2374.000 meters

WEATHER REPORT

	23:59	Max			23:59	Max	
Bar Pressure	1000	0	mm Hg	Wind Speed	13.0	.0	knot
Heave	.80	.00	meters	Direction	215	0	degree
Pitch	.60	.00	degree	Wave Height	.40	.00	meters
Roll	.40	.00	degree	Period	5	0	second
Swell Height	1.50	.00	meters	Direction	215	0	degree
Period	8	0	second	Air Temperature	16.0	.0	deg C

Direction:	230	0 degree	Sea Temperature:	.0	.0 deg C
Visibility :	16.0	.0 km	Cloud Cover :	0	0

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	240	0
2	240	0
3	220	0
4	245	0
5	250	0
6	235	0
7	220	0
8	230	0

RISER DATA

Riser Tension: 352 Flex Joint Rotation: .0 Hole Position, Offset: .70
Angle : .3 Angle : 134

DAILY DRILL STRING

		-------- Weights --------		--- Torques ---		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

CEMENT INFORMATION

Start Date :	28-Feb-03	Reciprocation?:		Number of Plugs :	0
Time :	00:30	Rotation? :		Did Plug Bump? :	
Finish Date:	28-Feb-03	% Returns :	0	Did Float(s) Hold?:	
Time	01:45	Top of Cement :	2560.00	Casing Size :	13.375

	Density	Yield	Amt	Volume	Rate	Composition
Pref	8.33			22.1	1.8	Drillwater
Flsh	.00			.0	.0	
Lead	.00	.0	0	.0	.0	
Tail	15.80	1.1	368	74.1	5.3	
Post	8.33			1.3	2.0	Drillwater
Disp	10.40			140.1	6.2	active mud

	Class	Additives
Lead		
Tail	G	HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk NF-5, 0.362 gal/sk Halad-413L, 0.034 gal/skSCR-100L

Open hole P&A Plug - Plug #1D. 4 of 5 stacked balanced plugs. No cmt rtns.

```
============================== CEMENT INFORMATION ==============================
Start Date : 28-Feb-03   Reciprocation?:            Number of Plugs   :        0
      Time :     03:45   Rotation?     :            Did Plug Bump?    :
Finish Date: 28-Feb-03   % Returns     :         0   Did Float(s) Hold?:
       Time      05:00   Top of Cement :   2403.00   Casing Size       :   13.375

     Density Yield   Amt  Volume   Rate              Composition
     ------- ------ ----- ------- ------ --------------------------------------
Pref    8.33                 22.0    1.8 Drillwater
Flsh     .00                   .0     .0
Lead     .00     .0     0      .0     .0
Tail   15.80    1.1   373    75.0    6.0
Post    8.33                  1.3    2.0 Drillwater
Disp   10.30                130.2    6.3 active mud

           Class                         Additives
           ----- ------------------------------------------------------------
    Lead
    Tail    G    HTB Silica Flour Cmt, batch mixed in blender. 0.003 gal/sk
                 NF-5, 0.362 gal/sk Halad-413L, 0.011 gal/skSCR-100L


Open hole P&A Plug - Plug #1E. 5 of 5 stacked balanced plugs. No cmt rtns.  WOC
and tag plug w/ 15 kips.

*** End 01-Mar-2003 report for SCALLOP_1      Run 01-Apr-2003 17:06 Central Time
```

Drilling **DETAILED DAILY REPORT** **02-Mar-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD              m: 3126.00 | 3174.00
Office     : Australia SE                     TVD             m: 3126.00 | 3174.00
Client     : ExxonMobil Development           Days                       |
Drill Team : Australia Offshore                - if Dry       :    42.0 |
                                               - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :      .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :    42.0 |    31.0
Rig Name   : Sedco 702                         - Ahead/Behind:         |     8.0
Operator   : Esso Aus Res                      - from Spud   :         |    27.5
Field      : Gippsland Basin                  Spud Date      :       02-Feb-2003
Country    : Australia                        Progress       m:              .00
Latitude   :  38d 12' 49" South               Drilling Hours :               .00
Longitude  : 148d 35' 29" East                ROP        m/hr:
Water Depth:  109.60 m                        Percentage NPT :               1.2
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : .00 ppg

Current: Move LMRP to set back area.
Planned: Set back BOP, Cut & recover wellhead, B/L equipment & pull anchors.
```

Start	Elpsd	End MD		Description
00:00	.75	3174.00	WIRE	Continue to POOH with Schlumberger. Confirm charge fired, and rig down Schlumberger. Lay out EZSV setting tool.
00:45	.25	3174.00	TRIP	Pick up or make up string, BHA, or tools -- Make up cementing assy. Make up side entry sub and 1x jt 5" D/pipe.
01:00	1.00	3174.00	TRIP	Run string in hole -- HOWCO make up star guide and stinger. RIH with same on 5" Drill pipe to 817m.
02:00	.25	3174.00	TRIP	Run string in hole -- Pick up cementing assy with side entry sub. Make up Cementing line.
02:15	.50	3174.00	CMT	Break circulation with Dowell. Close TIW and conduct line test to 5000psi for 5 mins. Tested OK. P/up wt 155kips, S/off wt 165kips. Sting into EZ Drill SV at 895m with stinger. S/off 30 kips on EZ Drill SV.
02:45	.25	3174.00	CMT	Line up Dowell and pump 40bbls of drillwater to conduct injectivity test. Inject mud into formation.

Rate	BBLS	Pressure
4 BPM	5 bbls	622 psi
4 BPM	8 bbls	1160 psi
4.5 BPM	15 bbls	830 psi
4.5 BPM	20 bbls	851 psi
5.5 BPM	25 bbls	950 psi
5.5 BPM	30 bbls	942 psi
5.5 BPM	35 bbls	960 psi
5.5 BPM	40 bbls	960 psi

Sting out of EZ Drill SV. Pump remaining 24.8bbls of

				drillwater. (Total of 64.8bbls of Drill water pumped.)
03:00	.50	3174.00	CMT	Sting into EZSV at 895m. Close upper annular element, and pressure up on annulus to 400psi with mud pumps. Dowell mix 50 bbls of neat Class G cement at 15.8 ppg with freshwater.
03:30	.50	3174.00	CMT	Pump 50 bbls (242sx) of 15.8ppg Class G cement, 0.003 gal/sx NF-5, and 5.15 gal/sx fresh water mix water, yield 1.16 ft3/sx. Displace cement with 1.5 bbls of freshwater followed with 30.1 bbls of mud. Displace the cement at 5 BPM and 480 psi.

Rate	BBLS	Pressure
3.6 BPM	5 bbls	1002 psi
3.6 BPM	10 bbls	905 psi
4.4 BPM	15 bbls	870 psi
5.0 BPM	20 bbls	805 psi
5.1 BPM	25 bbls	695 psi
5.2 BPM	30 bbls	608 psi
5.2 BPM	35 bbls	548 psi
5.2 BPM	40 bbls	535 psi
5.0 BPM	45 bbls	530 psi
5.0 BPM	50 bbls	520 psi

Bleed off pressure on annulus and open annular. Sting out of EZSV and continue to displace remaining cement with an additional 18.1 bbls of mud, to spot a 45m balanced cement plug above EZSV at 895m.

Summary of cement plugs
Balanced plug #2B above retainer from 895m to 850m (approx 27.3 bbls)
EZ Drill SV squeeze packer set at 895m
Cement plug #2A below retainer from 930m to 895m (approx 22.7 bbls)

04:00	.75	3174.00	CMT	Rig down cement line and side entry sub. POOH with stinger to 844m. Rig up side entry sub and cement line. Close annular element.
04:45	.50	3174.00	CIRC	Reverse circulate drill string clean. Cement contaminated mud in returns on bottoms up. Dumped 12 bbls of mud.
05:15	.25	3174.00	CMT	Line up and pressure test cement plug to 1000 psi/5 mins with Dowell. Pumped 1.7 bbls, returned same. Tested OK.
05:30	.50	.00	CIRC	Rig down side entry sub. POH 1x stand to 810m. Circulate hole to inhibited mud. Spot 375bbls of inhibited mud to 135m. 0.35 ppb Baracide (Biocide) Caustic soda to pH of 10.5 0.5 ppb Baracor 129 (Oxygen scavenger)
06:00	1.25	.00	TRIP	Pull string out of hole -- POOH and lay out starguide
07:15	1.50	.00	WIRE	Set bridge plug at 200 m on electric line. Bridge plug is EZ Drill SV converted to bridge plug with bridging plug.
08:45	.50	.00	TRIP	Run string in hole -- Run in hole with mule shoe on five inch drill pipe. Tag bridge plug at 200 m RT corrected to mean sea level datum with 10 kips.
09:15	.75	.00	CIRC	Displace hole with seawater.
10:00	2.50	.00	TRIP	Break and lay down string, BHA or tools -- POOH laying down drill pipe.
12:30	.25	.00	TRIP	Run string in hole -- Run in hole to position mule shoe at 200 m.
12:45	.25	.00	CMT	Hold Think Drill on setting balanced plug with all involved personnel on rig floor.

13:00	.75	.00	CMT	Set a balanced cement plug #3 from 200m to 155m with 24.0 bbls (115 sx)of Class G cement with 2% CaCl2 mixed in seawater to 15.8ppg (yield 1.18 ft3/sx)
13:45	.25	.00	TRIP	Pull string out of hole -- Pull mule shoe to 150 meters. Pulled dry.
14:00	.25	.00	CIRC	Reverse circulate at 162 gpm, SPP 170 psi. Ten barrels of cement contaminated water in returns - no cement.
14:15	.25	.00	TRIP	Pull string out of hole -- POOH with Mule shoe. Flush BOP while boosting choke line while POOH.
14:30	.50	.00	CMT	Dowell break circulation with 5bbls seawater, conduct line test 2000psi 5mins. Tested OK. Close shear rams and pressure up on 13 3/8" casing and cement plug #3 to 1,000 psi/5mins. Tested Ok. Pumped 0.2 bbl seawater. Bled back same.
15:00	1.50	.00	TRIP	Set or release downhole equipment -- Pull flex joint wear bushing. Run Dril-Quip multi-purpose tool with jet sub below on drill pipe. Purchase wear bushing and shear free with 60 kips overpull. Recover wear bushing. All pins sheared. Lay out multi-purpose tool. Make up stack jetting tool on stand and stand back (will be used to flush stack on beams).
16:30	1.50	.00	BOP	Rig up 500 ton riser equipment for handling BOPs. Prepare to pull BOP stack. Make up pulling tool, pull and lay out diverter assy. Remove kill and choke line storm loops.
18:00	.75	.00	BOP	Pick up a working joint of riser, close up slip joint inner barrel and lock down. Prepare to unlatch BOP's.
18:45	.50	.00	BOP	Unlatch BOP's and pull clear of post tops. Hold think drill and remove tensioner lines.
19:15	2.75	.00	BOP	Pull BOP's and set on beams. Lay out slip joint and riser joints to deck.(1x10',1x35',3x50')
22:00	.75	.00	BOP	Break out last double of riser from BOP and stand back in derrick.
22:45	1.00	.00	BOP	Rig down riser handling equipment and make up wash tool to TDS. Flush & jet thru BOP's.
23:45	.25	.00	BOP	Hold think drill and move LMRP to set back area and secure on stump.
Total	24.00			

==================================== **REMARKS** ====================================

Held PTSM with both day and night shifts.
Topics: Lay out & Tripping pipe. Setting cement plugs. Manriding. Pulling BOP's.
Check Crown-O-Matic. Review kill line isolation.
Approval to proceed with kill line isolated advised by EAPL, TSF & DNRE 23/2/03.
Boats:
Pacific Frontier: Dpt BBMT for rig.
Pacific Challenger: Arrive 05:15 & Stby at location
Lady Elizabeth: arrive location 17:30hrs - Stby for B/L
Fire and Abandon drill:- 24 Feb 03
1 x Helicopter
Sonsub ROV monitor BOP release and recovery.

===================== **INSPECTIONS, DRILLS, AND CITATIONS** =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	Yes		24-Feb-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	28-Feb-2003

BOP System Inspection (Minicheck)	Yes	1	01-Mar-2003

PERSONNEL

Personnel : N/A
Supervisors : Basset, Anthony A.
Jackson, Murray G.
Sharkey, George K.
Total Head Count: 78
Total Hours : 936.00

HEAD COUNTS

Contractor	62	ExxonMobil	4
Contractor Short Service (SSE)	0	Service Company	12

MANAGEMENT SUMMARY

Set & test P&A plugs, Lay out drill pipe, Pull riser & BOP's.

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	444,769	0	444,769	58,906
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	18,423,310	287,973	18,711,283	655,675
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	18,423,310	287,973	18,711,283	655,675

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Barite	1536	0	0	Drill Water	531	0	5598
Cement	1824	0	0	Fuel	68	0	2903
Cement Blend	2570	0	0	Potable Water	167	207	599

MUD ADDITIVES

Function	Name	Unit	Size	Amount

LOGGING RUNS

Start: 01-Mar-2003 07:15 Run : 1
End : 01-Mar-2003 08:30 Vendor: Not Available

Log Type	Starting MD	Ending MD
EZSV- CCL	200.000	200.000 meters

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 0 str/min
Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	N/A
Kick Tolerance	N/A
Pore Pressure	.00 ppg
MASP	N/A
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density .00 ppg
ECD ******* ppg
at 3174.000 meters
with bit at .000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1006	0	mm Hg
Heave	.90	.00	meters
Pitch	.90	.00	degree
Roll	.60	.00	degree
Swell Height	3.00	.00	meters
Period	8	0	second
Direction	230	0	degree
Visibility	16.0	.0	km

	23:59	Max	
Wind Speed	39.0	48.0	knot
Direction	275	0	degree
Wave Height	2.50	.00	meters
Period	4	0	second
Direction	275	0	degree
Air Temperature	14.0	.0	deg C
Sea Temperature	.0	.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	230	0
2	250	0
3	225	0
4	250	0
5	260	0
6	230	0
7	220	0
8	220	0

RISER DATA

Riser Tension: 0 Flex Joint Rotation: .0 Hole Position, Offset: 1.00
Angle : .0 Angle : 78

DAILY DRILL STRING

		Weights		Torques		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

CEMENT INFORMATION

Start Date :	1-Mar-03	Reciprocation?:		Number of Plugs :	0
Time :	03:00	Rotation? :		Did Plug Bump? :	
Finish Date:	1-Mar-03	% Returns :	0	Did Float(s) Hold?:	
Time	04:00	Top of Cement :	850.00	Casing Size :	13.375

	Density	Yield	Amt	Volume	Rate	Composition
Pref	8.58			64.8	5.0	Seawater
Flsh	.00			.0	.0	
Lead	.00	.0	0	.0	.0	
Tail	15.80	1.2	242	50.0	5.0	
Post	8.58			1.5	2.0	Seawater
Disp	10.30			30.1	6.3	active mud

	Class	Additives
Lead		
Tail	G	Class G cmt, 0.003 gal/sk NF-5

Cased hole P&A Plug - Plug #2. Plug #2A squeezed through a EZSV Cmt Retainer set at 895m (wireline set) placing 35m cement below the retainer and a balanced 45m cement plug #2B above the retainer. EZSV was tagged w/ 30 kips and Cmt Plug #2 pressure tested to 1,000 psi.

CEMENT INFORMATION

Start Date :	1-Mar-03	Reciprocation?:		Number of Plugs :	0
Time :	13:00	Rotation? :		Did Plug Bump? :	
Finish Date:	1-Mar-03	% Returns :	0	Did Float(s) Hold?:	
Time	13:45	Top of Cement :	155.00	Casing Size :	13.375

	Density	Yield	Amt	Volume	Rate	Composition
Pref	8.58			10.0	5.0	Seawater
Flsh	.00			.0	.0	
Lead	.00	.0	0	.0	.0	
Tail	15.90	1.2	115	24.0	5.0	
Post	.00			.0	.0	

```
Disp    8.58                  9.0    2.5 Seawater

           Class                         Additives
           ----- ------------------------------------------------------------
    Lead
    Tail    G    Class G cmt, 0.003 gal/sk NF-5, 2% CaCl2 BWOC
```

Cased hole P&A Plug - Plug #3. Set a balanced 45m cement plug above EZSV Cmt Retainer at 200m (wireline set). EZSV was tagged w/ 10 kips and Cmt Plug #3 pressure tested to 1,000 psi.

*** End 02-Mar-2003 report for SCALLOP_1   Run 01-Apr-2003 17:06 Central Time

```
Drilling                     DETAILED DAILY REPORT                03-Mar-2003
                                   Scallop 1

DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD              m: 3126.00 | 3174.00
Office     : Australia SE                     TVD             m: 3126.00 | 3174.00
Client     : ExxonMobil Development           Days                       |
Drill Team : Australia Offshore                - if Dry        :    42.0 |
                                               - if Suspended:      42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO    - to Complete :        .0 |
Contractor : Trans Sed Forex                   - Susp + Comp :      42.0 |     32.0
Rig Name   : Sedco 702                         - Ahead/Behind:           |      8.0
Operator   : Esso Aus Res                      - from Spud   :           |     28.5
Field      : Gippsland Basin                  Spud Date      :        02-Feb-2003
Country    : Australia                        Progress       m:                .00
Latitude   :  38d 12' 49" South               Drilling Hours :                 .00
Longitude  : 148d 35' 29" East                ROP         m/hr:
Water Depth:  109.60 m                        Percentage NPT :                 2.5
RKB Height :   25.90 m                        Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : .00 ppg

Current: Wait on sea conditions to subside to backload.
Planned: Backload Lady Elizabeth. Recover anchors, release rig.
```

Start	Elpsd	End MD		Description
00:00	.75	.00	BOP	Pick up and move BOP to set back area and secure on stump.
00:45	1.50	.00	BOP	Lay out double of riser from derrick and rig down handling tools.
02:15	.50	.00	TRIP	Pick up or make up string, BHA, or tools -- Make up Weatherford MOST tool and M-24 casing cutter dressed with four 22¾" knife arms for 47«" sweep. Make up TDS and function cutter in rotary.
02:45	1.50	.00	TRIP	Pick up or make up string, BHA, or tools -- Attach guide ropes and tie off to guide lines. RIH with 2 stds 8¬" DC's and HWDP. Monitor with ROV and stab into well head. Land out and latch tool to well head with cutter set at 137.1m.
04:15	1.25	.00	BOP	Set 15K down and bring up rotary and pumps. Start cutting casing at 04:26 with 100rpm, 3k torque, 115gpm and 850psi. Indication of 20" cut at 05:20hrs.
05:30	3.25	.00	BOP	Continue to cut casing 4.44 meters below the top of the 30ú housing at 137.1m with 20 kips weight on marine swivel, 100 RPM, 115 gpm, 4,000/5,000 ft-lb torque, SPP 825 psi. At 0610 hr cloudiness appeared from below guide base. At 0750 hrs, had significant increase in flow from 30 inch below mudline. At 0830 hrs, SPP dropped 25 psi and started fluctuating between 700 and 800 psi and torque started fluctuating between 4,000 and 7,000 ft-lb.
08:45	1.00	.00	BOP	Made decision to pull on housings. Pick up on string with 60,000 overpull from below MOST tool (probably due to knife being stuck in cut pipe) which broke back

```
                          to string weight. Pull casing cutter above 18 ¾ú
                          housing to observe that approximately 11« inches of
                          one knife was broken off and still in hole. Attempt to
                          latch MOST tool on housing w/o success as MOST tool
                          would not fall completely over housing due to wellhead
                          angle (> 2ø) and MOST tool could not be bumped by
                          marine swivel due to obstruction inside 20 inch
                          preventing downward travel of casing cutter.
09:45   .75      .00 TRIP Pull string out of hole -- Pull casing cutter to rig
                          floor.
10:30   .50      .00 TRIP Break and lay down string, BHA or tools -- Found
                          bullnose scored by junk in hole and plugged (possible
                          reason for less than expected pressure drop). The
                          remaining 9 inches of knife that had been observed
                          from the broken knife had fallen off.  The three
                          remaining knives indicated a full cut had been made of
                          the 30 inch.  Lay out bullnose and casing cutter.
11:00  1.00      .00 TRIP Run string in hole -- Run same MOST tool assembly
                          except for casing cutter and bullnose.  Sting into
                          housing
12:00   .50      .00 BOP  Purchase 18¾ú housing with MOST (mechanical outside
                          single trip) tool. Continue to increase overpull and
                          work overpull.  Cut conductors came free with 160 kips
                          overpull.
12:30  1.00      .00 BOP  Pull 30ú and 20ú cut casing with permanent guide base
                          to moon pool and set on beams. Strap length of
                          recovered cut 30" casing below the 30" wellhead
                          housing is 4.44m long (cut approx 1.66m below
                          mudline).
13:30 10.50      .00 WAIT Unplanned wait -- Wait on weather.  Wind speed 45
                          knots. Gusts to 56 knots. Seas 4 to 5 meters.  Lady
                          Elizabeth standing by with half empty deck to take
                          backload.  M/V Pacific Challenger and M/V Pacific
                          Frontier standing by ready to pull anchors.  Crane
                          operator standing by on West Tuna if this platform is
                          needed as staging area.
                          ROV conducted a seabed survey and provided statement
                          that no debris was left on site.  ROV specifically
                          looked for lost knife, but it was not found.

                          Laydown MOST Tool, Remove and lay out 18-3/4" and 30"
                          wellheads and cut casing stubs from PGB.

                          Lay out remaining tubulars from derrick. Deballast rig
                          from 85 feet draft to 65 feet draft.
                     NPT  See Event 9 (WAIT)
Total 24.00
```

========================= PROBLEM EVENTS AND MILESTONES =========================

```
Event:   9    NPT: Yes   Hours:  10.50    Responsible Party: Not Applicable
Start:  2-Mar-03 13:30   WAIT Weather or environment problem
End  :  3-Mar-03 06:45        Wait on Weather. Wind gusting 40-56kts. Seas
                              4-5metres. Unable to backload Lady Elizabeth, and
                              commence demooring.
```

==================================== REMARKS ====================================

Held PTSM with both day and night shifts.
Topics: Cutting and recovering wellhead. Handling Wellhead. BHA. Anchor recovery.
Held general safety meetings for all crew.
Boats:

Pacific Frontier: Standby at rig.
Pacific Challenger: Standby at rig.
Lady Elizabeth: Standby for Backloading.
Fire and Abandon drill:- 24 Feb 03
1 x Helicopter
Sonsub conducted Seabed survey and confirmed seabed clear, after recovering Wellhead, & PGB.

===================== INSPECTIONS, DRILLS, AND CITATIONS =====================

	Occurred?	Count	Most Recently Reported
BOP Control Function Test (BCFT)	No		02-Mar-2003
BOP Pressure Test	No		24-Feb-2003
Fire Drill	No		25-Feb-2003
Abandon Ship Drill	No		25-Feb-2003
Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	28-Feb-2003
BOP System Inspection (Minicheck)	No	0	02-Mar-2003

==================================== PERSONNEL ====================================

Personnel : N/A
Supervisors : Basset, Anthony A.
Sharkey, George K.
Total Head Count: 80
Total Hours : 960.00

=================================== HEAD COUNTS ===================================

Contractor	72	ExxonMobil	3
Contractor Short Service (SSE)	0	Service Company	5

============================== MANAGEMENT SUMMARY ==============================

Cut and recover 30" Wellhead, and PGB. Conduct Seabed survey. Lay out MOST tool, Lay down D/collars, and remaining tubulars from derrick. WOW. Wind gusting 45-55kts..

======================== COST DATA (Australian Dollar) ========================

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	325,936	0	325,936	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	18,749,246	287,973	19,037,219	655,675
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	18,749,246	287,973	19,037,219	655,675

================================ SOLIDS CONTROL ================================

Hours on Centrifuge: .00 Dilution Rate: .00

================================= SUPPLIES DATA =================================

	Usage	Receipts	Stock		Usage	Receipts	Stock
Drill Water	166	0	5432	Potable Water	167	221	653
Fuel	78	0	2825				

================================= MUD ADDITIVES =================================

Function	Name	Unit	Size	Amount

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 0 str/min
Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	N/A
Kick Tolerance	N/A
Pore Pressure	.00 ppg
MASP	N/A
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density .00 ppg
ECD ******* ppg
at 3174.000 meters
with bit at .000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1012	0	mm Hg
Heave	1.80	1.80	meters
Pitch	2.20	2.20	degree
Roll	1.80	1.80	degree
Swell Height	4.00	.00	meters
Period	6	6	second
Direction	250	250	degree
Visibility	10.0	16.0	km

	23:59	Max	
Wind Speed	30.0	55.0	knot
Direction	240	240	degree
Wave Height	3.00	4.00	meters
Period	6	6	second
Direction	240	240	degree
Air Temperature	16.0	18.0	deg C
Sea Temperature	16.0	16.0	deg C
Cloud Cover	0	0	

ANCHOR TENSIONS

Anchor	Tension at 23:59	24-Hr Maximum
1	270	0
2	275	0
3	250	0
4	270	0
5	275	0
6	250	0
7	235	0
8	250	0

```
=================================== RISER DATA ==================================
Riser Tension:       0  Flex Joint Rotation:   .0  Hole Position, Offset:    .00
      Angle  :      .0                                             Angle :      0


============================== DAILY DRILL STRING ===============================
               -------- Weights --------    --- Torques ---   Cumulative Time On
WOB      0     Pick-up                 0    Off-TD       .0   BHA              .00
RPM      0     Slack-off               0    On-TD        .0   Shock Sub        .00
               Off-TD, Rotating        0                      Jars             .00


==================================== CASING =====================================
  Section     O.D.      Grade   Wt/Lng    Thread   Joints     Top       Bottom
      1      30.000   X52     457.000    HD90        1     132.690    144.650
      2      30.000   X52     457.000    SF60        1     144.650    156.140
      3      30.000   X52     310.000    SF60        1     156.140    167.820
      4      30.000   X52     310.000    SF60        1     167.820    179.000
      5      20.000   X56     203.000    WELD        1     131.850    139.440
      6      13.375   L80      72.000    BTC         1     139.440    142.670
      7      13.375   L80      68.000    BTC        57     142.670    900.810

*** End 03-Mar-2003 report for SCALLOP_1      Run 01-Apr-2003 17:06 Central Time
```

Drilling **DETAILED DAILY REPORT** **04-Mar-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                            AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                       MD             m: 3126.00 | 3174.00
Office     : Australia SE                         TVD            m: 3126.00 | 3174.00
Client     : ExxonMobil Development               Days                      |
Drill Team : Australia Offshore                    - if Dry      :    42.0 |
                                                   - if Suspended:    42.0 |
Budget Cat : WILDCAT--PRODUCTIVE AND DRY HO        - to Complete :      .0 |
Contractor : Trans Sed Forex                       - Susp + Comp :    42.0 |    33.0
Rig Name   : Sedco 702                             - Ahead/Behind:         |     8.0
Operator   : Esso Aus Res                          - from Spud   :         |    29.5
Field      : Gippsland Basin                      Spud Date      :       02-Feb-2003
Country    : Australia                            Progress      m:               .00
Latitude   :  38d 12' 49" South                   Drilling Hours :               .00
Longitude  : 148d 35' 29" East                    ROP       m/hr:
Water Depth:  109.60 m                            Percentage NPT :               3.3
RKB Height :   25.90 m                            Depth Reference:   Rig Floor (RKB)
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superintendent    : F.W. Kratzer
Engineers         : R.M. Furchtenicht
                    C.P. Meakin
Formation Desc    :
Deepest Casing Run: 13.375 inches at 900.810 MD, 900.810 TVD
Leakoff Test      : .00 ppg

Current: Sedco 702 in Transit to Dampier.
Planned: Sedco 702 in transit to Dampier.
```

Start	Elpsd	End MD		Description
00:00	2.25	.00	WAIT	Unplanned wait -- Wait on weather. Wind speed 45 knots. Gusts to 50 knots. Seas 4 to 5 meters. Heave 2.0m, Pitch 1.5m, Roll 0.8m. Lady Elizabeth standing by with half empty deck to take backload. M/V Pacific Challenger and M/V Pacific Frontier standing by ready to pull anchors. Crane operator standing by on West Tuna if this platform is needed as staging area. Crane operational @ 01:30hrs. Prepare backloading. Sling up recovered 30" casing stub. Pack up MOST tool ready for transport. Secure rig equipment ready for Tow. Called Lady Elizabeth @ 0215, requested vessel review sea conditions with the view of taking backloading.
			NPT	See Event 9 (WAIT)
02:15	4.50	.00	WAIT	Unplanned wait -- Continue to Wait on Weather. Lady Elizabeth reviewed weather conditions and determined that backloading not safe; will review again at first light. Wind speed 26 knots. Gusts to 30 knots. Heave 1.8m, Pitch 2.2m, Roll 1.8m. Deck crew relocate riser sections from pipe deck to Stb riser bay. Secure same for transport. Lady Elizabeth to attempt taking back loading at first light.
			NPT	See Event 9 (WAIT)
06:45	3.00	.00	MOB	Backload remaining cargo to Lady Elizabeth. Nothing transferred to West Tuna.

```
                          Held anchor pulling meeting with masters of M/V
                          Pacific Frontier and M/V Pacific Challenger. Transfer
                          personnel between vessels.  Vessels prepare to handle
                          anchors.
09:45  4.50      .00 MOB  With rig at 65 ft draft, pull all secondary anchors
                          with chain chasers
                          Anchor  Vessel
                          1       Pacific Challenger
                          4       Pacific Frontier
                          5       Pacific Frontier
                          8       Pacific Challenger
                          Detailed time breakdowns are on LAN
14:15  9.75      .00 MOB  Pacific Frontier recovered anchor 3, decked and
                          removed anchor from chain, and prepared to tow rig on
                          # 3 chain.
                          Pacific Challenger recovered anchor 7 with a chain
                          chaser.
                          Pacific Challenger recovered anchor 2, decked and
                          removed anchor from chain, and prepared to tow rig on
                          # 2 chain. Vessel set to tow at 2230hrs, #2 chain
                          shortened to 300 ft.
                          Start deballasting rig from 65 ft draft to transit
                          draft at 1800 hrs. Completed deballasting to 21 ft
                          transit draft at 2200hrs.

                          Rig hauled anchor #6 into 1500 ft while bolstering
                          recovered anchors.

                          Last anchor up (#6)and bolstered at 0000 hrs.
                          FRR to Transocean 0000 hrs 4 March 2003
Total 24.00


========================= PROBLEM EVENTS AND MILESTONES ========================
Event:   9    NPT: Yes   Hours:  17.25    Responsible Party: Not Applicable
Start:  2-Mar-03 13:30   WAIT Weather or environment problem
End  :  3-Mar-03 06:45        See report for 03-Mar-2003 (job 29-Jan-2003 23:00)

Event:  10    Milestone
Start:  4-Mar-03 00:00   MILE Released rig
                              Last anchor hauled in and bolstered at 0000 hrs 04
                              March 2003. Rig released from Scallop #1 location.
                              Rig on town back to Port Dampier in Western
                              Australia as part of Demobilisation agreement.


==================================== REMARKS ===================================
Held PTSM with both day and night shifts.
Topics: Backloading equipment. Recovering anchors.
Boats:
Pacific Frontier:  On Tow.
Pacific Challenger: On Tow
Fire and Abandon drill:- 24 Feb 03
3 x Helicopter
Rig released, and last Anchor (#6) bolstered at 2400hrs 03 March 03.


====================== INSPECTIONS, DRILLS, AND CITATIONS ======================
                                        Occurred?  Count  Most Recently Reported
BOP Control Function Test (BCFT)          No                   02-Mar-2003
BOP Pressure Test                         No                   24-Feb-2003
Fire Drill                                No                   25-Feb-2003
Abandon Ship Drill                        No                   25-Feb-2003
```

Operations Superintendent Inspection	No		18-Feb-2003
Regulatory Agency Citation	No		
BOP Drill (Pit or Trip Drill)	No	0	28-Feb-2003
BOP System Inspection (Minicheck)	No	0	02-Mar-2003

PERSONNEL

Personnel : N/A
Supervisors : Basset, Anthony A.
Sharkey, George K.
Total Head Count: 55
Total Hours : 660.00

HEAD COUNTS

Contractor	52	ExxonMobil	3
Contractor Short Service (SSE)	0	Service Company	0

MANAGEMENT SUMMARY

WOW. Backload Lady Elizabeth with Esso owned and third party equipment. Recover anchors. Last anchor recovered and bolstered at 0000 hrs 4 Mar 03

COST DATA (Australian Dollar)

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	595,303	21,116	616,419	94,557
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	19,344,549	309,089	19,653,638	750,232
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	19,344,549	309,089	19,653,638	750,232

SOLIDS CONTROL

Hours on Centrifuge: .00 Dilution Rate: .00

SUPPLIES DATA

	Usage	Receipts	Stock		Usage	Receipts	Stock
Drill Water	2497	0	2935	Potable Water	366	231	518
Fuel	50	0	2775				

MUD ADDITIVES

Function	Name	Unit	Size	Amount

BIT RECORD

No bit report was entered for this date.

HYDRAULICS

Pump	Displaces bbl/st	Rate str/min
1	.0855	0
2	.0855	0
3	.0855	0

No hydraulics calculations were performed because no bit report was entered.

Pump Rate 0 str/min

Flow Rate .00 gpm
Pressure 0 psi

SURVEYS

MD	Angle	Azimuth	TVD	Vert Sec	N+/S-	E+/W-	Dogleg
3138.260	1.52	333.59	3137.799	42.192	+ 42.192	+ .315	.000

WELL CONTROL

Pump	Rate str/min	Pressure psi	MD meters
1	0	0	.000
2	40	0	.000
3	0	0	.000

Burst (70%)	2495 psi
Formation Strength	N/A
Kick Tolerance	N/A
Pore Pressure	.00 ppg
MASP	N/A
Background Gas	.0
Connection Gas	.0
Trip Gas	.0

Density .00 ppg
ECD ******* ppg
at 3174.000 meters
with bit at .000 meters

WEATHER REPORT

	23:59	Max	
Bar Pressure	1012	0	mm Hg
Heave	.60	.00	meters
Pitch	2.00	.00	degree
Roll	3.00	.00	degree
Swell Height	.80	.00	meters
Period	8	0	second
Direction	250	0	degree
Visibility	20.0	.0	km

	23:59	Max	
Wind Speed	13.0	.0	knot
Direction	250	0	degree
Wave Height	.80	.00	meters
Period	5	0	second
Direction	250	0	degree
Air Temperature	18.0	.0	deg C
Sea Temperature	16.0	.0	deg C
Cloud Cover	0	0	

DAILY DRILL STRING

		Weights		Torques		Cumulative Time On	
WOB	0	Pick-up	0	Off-TD	.0	BHA	.00
RPM	0	Slack-off	0	On-TD	.0	Shock Sub	.00
		Off-TD, Rotating	0			Jars	.00

CASING

Section	O.D.	Grade	Wt/Lng	Thread	Joints	Top	Bottom
1	30.000	X52	457.000	HD90	1	132.690	144.650
2	30.000	X52	457.000	SF60	1	144.650	156.140
3	30.000	X52	310.000	SF60	1	156.140	167.820
4	30.000	X52	310.000	SF60	1	167.820	179.000
5	20.000	X56	203.000	WELD	1	131.850	139.440
6	13.375	L80	72.000	BTC	1	139.440	142.670
7	13.375	L80	68.000	BTC	57	142.670	900.810

*** End 04-Mar-2003 report for SCALLOP_1 Run 01-Apr-2003 17:06 Central Time

SCALLOP-1 - DAILY COST REPORT

Drilling **DAILY COST REPORT** **30-Jan-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	.00
Office : Australia SE	TVD m:	3126.00	.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	.0
Country : Australia	- from Spud :		.0
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01	100	Surface Casing	15,708	15,708
130	01	100	Materials and equipment other	42	42
138	01	100	Diesel	1,961	1,961
201	01	100	Contract transport- Land	83	83
202	01	100	Contract Transport- Air	324	324
203	01	100	Contract transport- Marine	2,654	2,654
209	01	100	ROV's	264	264
214	01	100	Offshore Mob. & Demob.	5,783,699	5,783,699
217	01	100	Electric logging	15,000	15,000
218	01	100	Mud Logging	184	184
219	01	100	Directional Drilling (Anadrill)	13,464	
		100	Directional Drilling. (Anderdrift)	15,439	
			219 01 Subtotal	28,903	28,903
221	01	100	Cementing Service (Halliburton)	46	
		100	Cementing Service (Dowell)	152	
			221 01 Subtotal	198	198
222	01	100	Drilling Services	8,163	8,163
223	01	100	Misc Drilling Services	88,852	88,852
230	01	100	Skilled Logistics	980	
		100	Contracts other (BAE)	40,152	
		100	Contracts other (Furgo)	373,624	
		100	Contracts other (Moduspec)	96,154	
		100	Contracts other (Thales)	14,342	
			230 01 Subtotal	525,252	525,252

260	01 100 Tech/Prof- Eng. Consultants (Bond)	6,447		
	100 Tech/Prof-Eng. Const (EDR Hydro)	63		
	100 Tech/Prof-eng.Const (Wyld)	42		
	260 01 Subtotal	6,552		6,552
413	01 100 Other Affiliate Charges	130,623		130,623
760	01 100 Alloc. Marine Terminals	208		208
770	01 100 Alloc-Drilling Support	135,290		135,290
	Total Cost	6,743,960		6,743,960
	Fixed Cost	944,553		944,553

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	6,728,252	15,708	6,743,960	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	6,728,252	15,708	6,743,960	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	6,728,252	15,708	6,743,960	0

Drilling **DAILY COST REPORT** **31-Jan-2003**

Scallop 1

DRS Well ID: SCALLOP_1
Units : Mixed Oilfield
Office : Australia SE
Drill Team : Australia Offshore

Contractor : Trans Sed Forex
Rig Name : Sedco 702
Operator : Esso Aus Res
Country : Australia
Latitude : 38d 12' 49" South
Longitude : 148d 35' 29" East

Water Depth: 109.60 m
RKB Height : 25.90 m
Ground Elev: .00 m
Phone : 61 - 3 - 51422747

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

AFE L7401D001		Planned	Actual
MD	m:	3126.00	.00
TVD	m:	3126.00	.00
Days			
- if Dry	:	42.0	
- if Suspended	:	42.0	
- to Complete	:	.0	
- Susp + Comp	:	42.0	1.0
- from Spud	:		.0

Spud Date : 02-Feb-2003
Progress m: .00
Exc Rate /US$: 1.92310
Currency : Australian Dollar

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	15,708
130	01	100	Materials and equipment- other	1,000	1,042
138	01	100	Diesel	47,059	49,020
201	01	100	Contract Transport- Land	2,000	2,083
202	01	100	Contract Transport- Air	7,775	8,099
203	01	100	Contract Transport- Marine	63,689	66,343
209	01	100	ROV's	6,340	6,604
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	4,420	4,604
219	01	100	Anderdrift	1,314	
		100	Anadrill	792	
			219 01 Subtotal	2,106	31,009
221	01	100	Cementing Services (Halliburton)	1,098	
		100	Cementing Services (Dowell)	3,654	
			221 01 Subtotal	4,752	4,950
222	01	100	Drilling services	159,921	168,084
223	01	100	Misc Drilling Services	15,826	104,678
230	01	100	Skilled Logistics	980	
		100	Contracts other- Thales	4,605	
			230 01 Subtotal	5,585	530,837
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
			260 01 Subtotal	2,500	9,052
413	01	100	Other affiliate Charges	6,473	137,096
760	01	100	Alloc-Marine Terminals	5,000	5,208

770	01 100 Alloc- Drilling Support	11,950	|	147,240
	Total Cost	346,396	|	7,090,356
	Fixed Cost	346,396	|	1,290,949

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	346,396	0	346,396	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,074,648	15,708	7,090,356	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,074,648	15,708	7,090,356	0

Drilling **DAILY COST REPORT** **01-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	.00
Office : Australia SE	TVD m:	3126.00	.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	2.0
Country : Australia	- from Spud :		.0
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	15,708
130	01	100	Materials and equipment- other	1,000	2,042
138	01	100	Diesel (340bbls)	31,297	80,317
201	01	100	Contract Transport- Land	2,000	4,083
202	01	100	Contract Transport- Air	18,450	26,549
203	01	100	Contract Transport- Marine	63,689	130,032
209	01	100	ROV's	4,020	10,624
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	775	5,379
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
			219 01 Subtotal	2,106	33,115
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,098	
			221 01 Subtotal	3,867	8,817
222	01	100	Drilling services	159,921	328,005
223	01	100	Smith Service	77	
		100	BOM	130	
		100	Dril-Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	
		100	Baroid	865	
		100	AIPC	1,700	
			223 01 Subtotal	7,967	112,645
230	01	100	Skilled Logistics	980	
		100	Contracts (Arrowsmith)	990	

		100	Contracts other- Thales		4,605	
			230	01 Subtotal	6,575	537,412
260	01		Engineering Consultants		0	9,052
413	01	100	Other affiliate Charges		6,473	143,569
760	01	100	Alloc-Supply Vessels		12,500	
		100	Alloc-Marine Terminals		5,000	
			760	01 Subtotal	17,500	22,708
770	01	100	Alloc- Drilling Support		11,950	159,190
			Total Cost		337,590	7,427,946
			Fixed Cost		337,590	1,628,539

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	337,590	0	337,590	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,412,238	15,708	7,427,946	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,412,238	15,708	7,427,946	0

Drilling **DAILY COST REPORT** **02-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                         AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                    MD             m: 3126.00 |     .00
Office     : Australia SE                      TVD            m: 3126.00 |     .00
Drill Team : Australia Offshore                Days                      |
                                                - if Dry      :    42.0 |
Contractor : Trans Sed Forex                    - if Suspended:    42.0 |
Rig Name   : Sedco 702                          - to Complete :      .0 |
Operator   : Esso Aus Res                       - Susp + Comp :    42.0 |     3.0
Country    : Australia                          - from Spud   :         |      .0
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East                 Spud Date      :        02-Feb-2003
                                               Progress      m:                .00
Water Depth:  109.60 m                         Exc Rate   /US$:            1.92310
RKB Height :   25.90 m                         Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
```

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	15,708
130	01	100	Materials and equipment- other	1,000	3,042
138	01	100	Diesel (244bbls)	15,519	95,836
201	01	100	Contract Transport- Land	2,000	6,083
202	01	100	Contract Transport- Air	18,450	44,999
203	01	100	Contract Transport- Marine	63,689	193,721
209	01	100	ROV's	4,020	14,644
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	775	6,154
219	01	100	Anderdrift	1,314	
		100	Anadrill	792	
			219 01 Subtotal	2,106	35,221
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,098	
			221 01 Subtotal	3,867	12,684
222	01	100	Drilling services	159,921	487,926
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Labrador	3,000	
		100	Gearhart	80	
		100	Smith Service	77	
		100	Weatherford	5,235	
		100	Contracts other- Thales	4,605	
		100	Baroid	865	
		100	BOM	130	
		100	Dril Quip	2,115	
			223 01 Subtotal	17,807	130,452

230	01	100	Arrowsmith	990	
		100	Skilled Logistics	980	
			230 01 Subtotal	1,970	539,382
260	01	100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
		100	Thales	4,605	
		100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
			260 01 Subtotal	7,105	16,157
413	01	100	Other affiliate Charges	6,473	150,042
760	01	100	Alloc-Marine Terminals	5,000	27,708
762	01	100	Alloc-Supply Vessels	12,500	12,500
770	01	100	Alloc- Drilling Support	11,950	171,140
			Total Cost	334,152	7,762,098
			Fixed Cost	334,152	1,962,691

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	334,152	0	334,152	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	7,746,390	15,708	7,762,098	0
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	7,746,390	15,708	7,762,098	0

Drilling **DAILY COST REPORT** **03-Feb-2003**
Scallop 1

DRS Well ID:	SCALLOP_1	AFE L7401D001	Planned | Actual
Units :	Mixed Oilfield	MD m:	3126.00 | 179.00
Office :	Australia SE	TVD m:	3126.00 | 179.00
Drill Team :	Australia Offshore	Days	
		- if Dry :	42.0
Contractor :	Trans Sed Forex	- if Suspended:	42.0
Rig Name :	Sedco 702	- to Complete :	.0
Operator :	Esso Aus Res	- Susp + Comp :	42.0 | 4.0
Country :	Australia	- from Spud :	| .5
Latitude :	38d 12' 49" South		
Longitude :	148d 35' 29" East	Spud Date :	02-Feb-2003
		Progress m:	43.50
Water Depth:	109.60 m	Exc Rate /US$:	1.92310
RKB Height :	25.90 m	Currency :	Australian Dollar
Ground Elev:	.00 m		
Phone :	61 - 3 - 51422747		
Superint'nt:	F.W. Kratzer		
Engineer :	R.M. Furchtenicht		
	C.P. Meakin		

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	15,708
130	01	100	Materials and equipment- other	1,000	4,042
138	01	100	Diesel (244bbls)	15,519	111,355
151	01	100	Baroid mud costs.	29,457	
		100	Cement 1150sx @ $8sx	9,200	
			151 01 Subtotal	38,657	38,657
201	01	100	Contract Transport- Land	2,000	8,083
202	01	100	Contract Transport- Air	18,450	63,449
203	01	100	Contract Transport- Marine	63,689	257,410
209	01	100	ROV's	4,020	18,664
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	775	6,929
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
			219 01 Subtotal	2,106	37,327
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,098	
			221 01 Subtotal	3,867	16,551
222	01	100	Drilling services	159,921	647,847
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Contracts other- Thales	4,605	
		100	Baroid	865	
		100	Weatherford	5,235	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	BOM	130	

		100 Dril Quip			2,115	
		100 Gearhart			80	
			223	01 Subtotal	17,807	148,259
230	01	100 Skilled Logistics			980	
		100 Arrowsmith			990	
			230	01 Subtotal	1,970	541,352
260	01	100 Tech/Prof-Eng. Consultants (Wyld)			1,000	
		100 Tech/Prof- Eng. Consultants EDR Hyd			1,500	
		100 Thales			4,605	
			260	01 Subtotal	7,105	23,262
413	01	100 Other affiliate Charges			6,473	156,515
760	01	100 Alloc-Marine Terminals			5,000	32,708
762	01	100 Alloc-Supply Vessels			12,500	25,000
770	01	100 Alloc- Drilling Support			11,950	183,090
		Total Cost			372,809	8,134,907
		Fixed Cost			334,152	2,296,843

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	372,809	0	372,809	38,657
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,119,199	15,708	8,134,907	38,657
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,119,199	15,708	8,134,907	38,657

Drilling **DAILY COST REPORT** **04-Feb-2003**
Scallop 1

DRS Well ID:	SCALLOP_1	AFE L7401D001	Planned | Actual
Units	: Mixed Oilfield	MD m:	3126.00 | 506.00
Office	: Australia SE	TVD m:	3126.00 | 506.00
Drill Team	: Australia Offshore	Days	|
		- if Dry :	42.0 |
Contractor	: Trans Sed Forex	- if Suspended:	42.0 |
Rig Name	: Sedco 702	- to Complete :	.0 |
Operator	: Esso Aus Res	- Susp + Comp :	42.0 | 5.0
Country	: Australia	- from Spud :	| 1.5
Latitude	: 38d 12' 49" South		
Longitude	: 148d 35' 29" East	Spud Date :	02-Feb-2003
		Progress m:	327.00
Water Depth:	109.60 m	Exc Rate /US$:	1.92310
RKB Height :	25.90 m	Currency :	Australian Dollar
Ground Elev:	.00 m		
Phone	: 61 - 3 - 51422747		
Superint'nt:	F.W. Kratzer		
Engineer	: R.M. Furchtenicht		
	C.P. Meakin		

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	15,708
130	01	100	Materials and equipment- other	1,000	5,042
138	01	100	Diesel (218bbls)	13,865	125,220
151	01	100	Baroid mud costs.	10,200	48,857
201	01	100	Contract Transport- Land	2,000	10,083
202	01	100	Contract Transport- Air	18,450	81,899
203	01	100	Contract Transport- Marine	63,689	321,099
209	01	100	ROV's	4,020	22,684
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	775	7,704
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
			219 01 Subtotal	2,106	39,433
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,098	
			221 01 Subtotal	3,867	20,418
222	01	100	Drilling services	159,921	807,768
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Contracts other- Thales	4,605	
		100	Baroid	865	
		100	Weatherford	5,235	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
			223 01 Subtotal	17,807	166,066

230	01	100	Skilled Logistics	980	
		100	Arrowsmith	990	
			230 01 Subtotal	1,970	543,322
260	01	100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
		100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Thales	4,605	
			260 01 Subtotal	7,105	30,367
413	01	100	Other affiliate Charges	6,473	162,988
760	01	100	Alloc-Marine Terminals	5,000	37,708
762	01	100	Alloc-Supply Vessels	12,500	37,500
770	01	100	Alloc- Drilling Support	11,950	195,040
			Total Cost	342,698	8,477,605
			Fixed Cost	332,498	2,629,341

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	342,698	0	342,698	10,200
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,461,897	15,708	8,477,605	48,857
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,461,897	15,708	8,477,605	48,857

Drilling **DAILY COST REPORT** **05-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1		AFE L7401D001 Planned	Actual
Units : Mixed Oilfield		MD m: 3126.00	917.00
Office : Australia SE		TVD m: 3126.00	917.00
Drill Team : Australia Offshore		Days	
		- if Dry : 42.0	
Contractor : Trans Sed Forex		- if Suspended: 42.0	
Rig Name : Sedco 702		- to Complete : .0	
Operator : Esso Aus Res		- Susp + Comp : 42.0	6.0
Country : Australia		- from Spud :	2.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East		Spud Date : 02-Feb-2003	
		Progress m: 411.00	
Water Depth: 109.60 m		Exc Rate /US$: 1.92310	
RKB Height : 25.90 m		Currency : Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01	100	Surface Casing	140,414	156,122
130	01	100	Materials and equipment- other	1,000	6,042
138	01	100	Diesel (218bbls)	20,000	145,220
150	01	100	Float equipment	5,985	5,985
151	01	100	Baroid mud costs.	51,824	100,681
201	01	100	Contract Transport- Land	2,000	12,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	384,788
209	01	100	ROV's	6,270	28,954
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	11,349
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	44,712
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	24,815
222	01	100	Drilling services	159,921	967,689
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Weatherford	6,735	
		100	Smith Service	77	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	

		100	Tuboscope		700	
			223	01 Subtotal	18,026	184,092
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	548,132
260	01	100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
		100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
			260	01 Subtotal	2,500	32,867
413	01	100	Other affiliate Charges		6,473	169,461
760	01	100	Alloc-Marine Terminals		5,000	42,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	206,990
			Total Cost		513,183	8,990,788
			Fixed Cost		314,960	2,944,301

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	372,769	140,414	513,183	51,824
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	8,834,666	156,122	8,990,788	100,681
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	8,834,666	156,122	8,990,788	100,681

Drilling **DAILY COST REPORT** **06-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	917.00
Office : Australia SE	TVD m:	3126.00	917.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	7.0
Country : Australia	- from Spud :		3.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01	100	Surface Casing	131,851	287,973
130	01	100	Materials and equipment- other	1,000	7,042
138	01	100	Diesel (274bbls)	17,600	162,820
150	01	100	Float equipment	15,971	21,956
151	01	100	Cement	29,049	129,730
152	01	100	17.5" PDC Bit rental	17,850	17,850
201	01	100	Contract Transport- Land	2,000	14,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	448,477
209	01	100	ROV's	6,270	35,224
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	14,994
219	01	100	Anadrill	792	
		100	SDI	3,173	
		100	Anderdrift	1,314	
			219 01 Subtotal	5,279	49,991
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	29,212
222	01	100	Drilling services	159,921	1,127,610
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	

		100	Smith Service		77	
		100	Weatherford		6,735	
			223	01 Subtotal	18,026	202,118
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	552,942
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	35,367
413	01	100	Other affiliate Charges		6,473	175,934
760	01	100	Alloc-Marine Terminals		5,000	47,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	218,940
			Total Cost		507,281	9,498,069
			Fixed Cost		310,801	3,255,102

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	375,430	131,851	507,281	29,049
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,210,096	287,973	9,498,069	129,730
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,210,096	287,973	9,498,069	129,730

Drilling **DAILY COST REPORT** **07-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                     AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                MD            m: 3126.00 |  917.00
Office     : Australia SE                  TVD           m: 3126.00 |  917.00
Drill Team : Australia Offshore            Days                     |
                                            - if Dry      :    42.0 |
Contractor : Trans Sed Forex                - if Suspended:    42.0 |
Rig Name   : Sedco 702                      - to Complete :      .0 |
Operator   : Esso Aus Res                   - Susp + Comp :    42.0 |      8.0
Country    : Australia                      - from Spud   :         |      4.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East             Spud Date      :        02-Feb-2003
                                           Progress      m:                .00
Water Depth:  109.60 m                     Exc Rate   /US$:            1.92310
RKB Height :   25.90 m                     Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	8,042
138	01	100	Diesel (148bbls)	9,413	172,233
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	45,950	175,680
152	01		Drill Bits	0	17,850
201	01	100	Contract Transport- Land	2,000	16,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	512,166
209	01	100	ROV's	6,270	41,494
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	18,639
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	55,270
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	33,609
222	01	100	Drilling services	159,921	1,287,531
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

		100 Labrador		3,000	
		100 Smith Service		77	
		223	01 Subtotal	18,026	220,144
230	01	100 Skilled Logistics		980	
		100 Thales		3,830	
		230	01 Subtotal	4,810	557,752
260	01	100 Tech/Prof-Eng. Consultants (Wyld)		1,000	
		100 Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		260	01 Subtotal	2,500	37,867
413	01	100 Other affiliate Charges		6,473	182,407
760	01	100 Alloc-Marine Terminals		5,000	52,708
762	01	Alloc Prod Trans-Boats		0	37,500
770	01	100 Alloc- Drilling Support		11,950	230,890
		Total Cost		350,323	9,848,392
		Fixed Cost		304,373	3,559,475

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	350,323	0	350,323	45,950
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,560,419	287,973	9,848,392	175,680
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,560,419	287,973	9,848,392	175,680

Drilling **DAILY COST REPORT** **08-Feb-2003**

Scallop 1

DRS Well ID:	SCALLOP_1	AFE L7401D001	Planned | Actual
Units	: Mixed Oilfield	MD m:	3126.00 | 917.00
Office	: Australia SE	TVD m:	3126.00 | 917.00
Drill Team	: Australia Offshore	Days	|
		- if Dry :	42.0 |
Contractor	: Trans Sed Forex	- if Suspended:	42.0 |
Rig Name	: Sedco 702	- to Complete :	.0 |
Operator	: Esso Aus Res	- Susp + Comp :	42.0 | 9.0
Country	: Australia	- from Spud :	| 5.5
Latitude	: 38d 12' 49" South		
Longitude	: 148d 35' 29" East	Spud Date :	02-Feb-2003
		Progress m:	.00
Water Depth:	109.60 m	Exc Rate /US$:	1.92310
RKB Height :	25.90 m	Currency :	Australian Dollar
Ground Elev:	.00 m		
Phone	: 61 - 3 - 51422747		
Superint'nt:	F.W. Kratzer		
Engineer	: R.M. Furchtenicht		
	C.P. Meakin		

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	9,042
138	01	100	Diesel (148bbls)	9,413	181,646
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	13,468	189,148
152	01	100	Smith MA89PXX bit.	101,952	119,802
201	01	100	Contract Transport- Land	2,000	18,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	575,855
209	01	100	ROV's	6,270	47,764
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	22,284
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	60,549
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	38,006
222	01	100	Drilling services	159,921	1,447,452
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	

		100 Smith Service		77	
		100 Weatherford		6,735	
		223	01 Subtotal	18,026	238,170
230	01	100 Skilled Logistics		980	
		100 Thales		3,830	
		230	01 Subtotal	4,810	562,562
260	01	100 Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100 Tech/Prof-Eng. Consultants (Wyld)		1,000	
		260	01 Subtotal	2,500	40,367
413	01	100 Other affiliate Charges		6,473	188,880
760	01	100 Alloc-Marine Terminals		5,000	57,708
762	01	Alloc Prod Trans-Boats		0	37,500
770	01	100 Alloc- Drilling Support		11,950	242,840
		Total Cost		419,793	10,268,185
		Fixed Cost		304,373	3,863,848

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	419,793	0	419,793	13,468
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	9,980,212	287,973	10,268,185	189,148
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	9,980,212	287,973	10,268,185	189,148

Drilling **DAILY COST REPORT** **09-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                       AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                  MD             m: 3126.00 | 1303.00
Office     : Australia SE                    TVD            m: 3126.00 | 1303.00
Drill Team : Australia Offshore              Days                      |
                                              - if Dry      :    42.0 |
Contractor : Trans Sed Forex                  - if Suspended:    42.0 |
Rig Name   : Sedco 702                        - to Complete :      .0 |
Operator   : Esso Aus Res                     - Susp + Comp :    42.0 |     10.0
Country    : Australia                        - from Spud   :         |      6.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East               Spud Date      :       02-Feb-2003
                                             Progress      m:            386.00
Water Depth:  109.60 m                       Exc Rate   /US$:           1.92310
RKB Height :   25.90 m                       Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	10,042
138	01	100	Diesel (148bbls)	9,413	191,059
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	99,184	288,332
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	20,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	639,544
209	01	100	ROV's	6,270	54,034
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	25,929
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	65,828
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	42,403
222	01	100	Drilling services	159,921	1,607,373
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip			2,115	
		100	Gearhart			80	
				223	01 Subtotal	18,026	256,196
230	01	100	Thales			3,830	
		100	Skilled Logistics			980	
				230	01 Subtotal	4,810	567,372
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd			1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)			1,000	
				260	01 Subtotal	2,500	42,867
413	01	100	Other affiliate Charges			6,473	195,353
760	01	100	Alloc-Marine Terminals			5,000	62,708
762	01		Alloc Prod Trans-Boats			0	37,500
770	01	100	Alloc- Drilling Support			11,950	254,790
			Total Cost			403,557	10,671,742
			Fixed Cost			304,373	4,168,221

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	403,557	0	403,557	99,184
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	10,383,769	287,973	10,671,742	288,332
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	10,383,769	287,973	10,671,742	288,332

Drilling **DAILY COST REPORT** **10-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	1870.00
Office : Australia SE	TVD m:	3126.00	1870.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	11.0
Country : Australia	- from Spud :		7.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		567.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	11,042
138	01	100	Diesel	17,426	208,485
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	49,715	338,047
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	22,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	703,233
209	01	100	ROV's	6,270	60,304
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	29,574
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	71,107
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	46,800
222	01	100	Drilling services	159,921	1,767,294
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	274,222
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	572,182
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	45,367
413	01	100	Other affiliate Charges		6,473	201,826
760	01	100	Alloc-Marine Terminals		5,000	67,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	266,740
			Total Cost		362,101	11,033,843
			Fixed Cost		312,386	4,480,607

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	362,101	0	362,101	49,715
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	10,745,870	287,973	11,033,843	338,047
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	10,745,870	287,973	11,033,843	338,047

Drilling **DAILY COST REPORT** **11-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2154.00
Office : Australia SE	TVD m:	3126.00	2154.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	12.0
Country : Australia	- from Spud :		8.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		284.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	12,042
138	01	100	Diesel	17,426	225,911
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	33,658	371,705
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	24,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	766,922
209	01	100	ROV's	6,270	66,574
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	33,219
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	76,386
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	51,197
222	01	100	Drilling services	159,921	1,927,215
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip			2,115	|	
		100	Gearhart			80	|	
				223	01 Subtotal	18,026	|	292,248
230	01	100	Thales			3,830	|	
		100	Skilled Logistics			980	|	
				230	01 Subtotal	4,810	|	576,992
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd			1,500	|	
		100	Tech/Prof-Eng. Consultants (Wyld)			1,000	|	
				260	01 Subtotal	2,500	|	47,867
413	01	100	Other affiliate Charges			6,473	|	208,299
760	01	100	Alloc-Marine Terminals			5,000	|	72,708
762	01		Alloc Prod Trans-Boats			0	|	37,500
770	01	100	Alloc- Drilling Support			11,950	|	278,690
			Total Cost			346,044	|	11,379,887
			Fixed Cost			312,386	|	4,792,993

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000|	Daily	346,044	0	346,044	33,658
Susp :	0|	Cum Mbl	0	0	0	0
Comp :	0|	Cum Drl	11,091,914	287,973	11,379,887	371,705
Total:	23,048,000|	Cum Comp	0	0	0	0
	|	Cum W/O	0	0	0	0
Exc	: 1.92310/US$|	Cum AFE	11,091,914	287,973	11,379,887	371,705

Drilling **DAILY COST REPORT** **12-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2303.00
Office : Australia SE	TVD m:	3126.00	2303.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	13.0
Country : Australia	- from Spud :		9.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :	02-Feb-2003	
	Progress m:	149.00	
Water Depth: 109.60 m	Exc Rate /US$:	1.92310	
RKB Height : 25.90 m	Currency :	Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	13,042
138	01	100	Diesel	21,178	247,089
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	18,168	389,873
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	26,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	830,611
209	01	100	ROV's	6,270	72,844
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	36,864
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	81,665
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	55,594
222	01	100	Drilling services	159,921	2,087,136
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

					Daily	Cum
		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	310,274
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	581,802
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	50,367
413	01	100	Other affiliate Charges		6,473	214,772
760	01	100	Alloc-Marine Terminals		5,000	77,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	290,640
			Total Cost		334,306	11,714,193
			Fixed Cost		316,138	5,109,131

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	334,306	0	334,306	18,168
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	11,426,220	287,973	11,714,193	389,873
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	11,426,220	287,973	11,714,193	389,873

Drilling **DAILY COST REPORT** **13-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2465.00
Office : Australia SE	TVD m:	3126.00	2465.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	14.0
Country : Australia	- from Spud :		10.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		162.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	14,042
138	01	100	Diesel	20,000	267,089
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	38,262	428,135
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	28,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	894,300
209	01	100	ROV's	6,270	79,114
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	40,509
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	86,944
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	59,991
222	01	100	Drilling services	159,921	2,247,057
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	328,300
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	586,612
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	52,867
413	01	100	Other affiliate Charges		6,473	221,245
760	01	100	Alloc-Marine Terminals		5,000	82,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	302,590
			Total Cost		353,222	12,067,415
			Fixed Cost		314,960	5,424,091

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	353,222	0	353,222	38,262
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	11,779,442	287,973	12,067,415	428,135
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	11,779,442	287,973	12,067,415	428,135

Drilling **DAILY COST REPORT** **14-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2595.00
Office : Australia SE	TVD m:	3126.00	2595.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	15.0
Country : Australia	- from Spud :		11.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		130.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	15,042
138	01	100	Diesel	20,000	287,089
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	32,082	460,217
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	30,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	957,989
209	01	100	ROV's	6,270	85,384
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	44,154
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	92,223
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	64,388
222	01	100	Drilling services	159,921	2,406,978
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	346,326
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	591,422
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	55,367
413	01	100	Other affiliate Charges		6,473	227,718
760	01	100	Alloc-Marine Terminals		5,000	87,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	314,540
			Total Cost		347,042	12,414,457
			Fixed Cost		314,960	5,739,051

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	347,042	0	347,042	32,082
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,126,484	287,973	12,414,457	460,217
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,126,484	287,973	12,414,457	460,217

Drilling **DAILY COST REPORT** **15-Feb-2003**
Scallop 1

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DRS Well ID: SCALLOP_1                          AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                     MD              m: 3126.00 | 2618.00
Office     : Australia SE                       TVD             m: 3126.00 | 2618.00
Drill Team : Australia Offshore                 Days                       |
                                                 - if Dry      :    42.0 |
Contractor : Trans Sed Forex                     - if Suspended:    42.0 |
Rig Name   : Sedco 702                           - to Complete :      .0 |
Operator   : Esso Aus Res                        - Susp + Comp :    42.0 |     16.0
Country    : Australia                           - from Spud   :         |     12.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East                  Spud Date      :        02-Feb-2003
                                                Progress      m:              23.00
Water Depth:  109.60 m                          Exc Rate   /US$:            1.92310
RKB Height :   25.90 m                          Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	16,042
138	01	100	Diesel	15,900	302,989
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	7,839	468,056
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	32,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,021,678
209	01	100	ROV's	6,270	91,654
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	47,799
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	97,502
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	68,785
222	01	100	Drilling services	159,921	2,566,899
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	364,352
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	596,232
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	57,867
413	01	100	Other affiliate Charges		6,473	234,191
760	01	100	Alloc-Marine Terminals		5,000	92,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	326,490
			Total Cost		318,699	12,733,156
			Fixed Cost		310,860	6,049,911

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	318,699	0	318,699	7,839
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,445,183	287,973	12,733,156	468,056
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,445,183	287,973	12,733,156	468,056

Drilling **DAILY COST REPORT** **16-Feb-2003**
Scallop 1

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DRS Well ID: SCALLOP_1                   AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield              MD             m: 3126.00 | 2706.00
Office     : Australia SE                TVD            m: 3126.00 | 2706.00
Drill Team : Australia Offshore          Days                      |
                                          - if Dry      :    42.0 |
Contractor : Trans Sed Forex              - if Suspended:    42.0 |
Rig Name   : Sedco 702                    - to Complete :      .0 |
Operator   : Esso Aus Res                 - Susp + Comp :    42.0 |     17.0
Country    : Australia                    - from Spud   :         |     13.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East           Spud Date      :       02-Feb-2003
                                         Progress      m:             88.00
Water Depth:  109.60 m                   Exc Rate   /US$:           1.92310
RKB Height :   25.90 m                   Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	17,042
138	01	100	Diesel	5,724	308,713
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	29,381	497,437
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	34,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,085,367
209	01	100	ROV's	6,270	97,924
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	51,444
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	102,781
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	73,182
222	01	100	Drilling services	159,921	2,726,820
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip	2,115	
		100	Gearhart	80	
			223 01 Subtotal	18,026	382,378
230	01	100	Thales	3,830	
		100	Skilled Logistics	980	
			230 01 Subtotal	4,810	601,042
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
			260 01 Subtotal	2,500	60,367
413	01	100	Other affiliate Charges	6,473	240,664
760	01	100	Alloc-Marine Terminals	5,000	97,708
762	01		Alloc Prod Trans-Boats	0	37,500
770	01	100	Alloc- Drilling Support	11,950	338,440
			Total Cost	330,065	13,063,221
			Fixed Cost	300,684	6,350,595

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	330,065	0	330,065	29,381
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	12,775,248	287,973	13,063,221	497,437
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	12,775,248	287,973	13,063,221	497,437

Drilling **DAILY COST REPORT** **17-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2830.00
Office : Australia SE	TVD m:	3126.00	2830.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	18.0
Country : Australia	- from Spud :		14.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :	02-Feb-2003	
	Progress m:	124.00	
Water Depth: 109.60 m	Exc Rate /US$:	1.92310	
RKB Height : 25.90 m	Currency :	Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	18,042
138	01	100	Diesel	9,794	318,507
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	26,450	523,887
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	36,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,149,056
209	01	100	ROV's	6,270	104,194
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	55,089
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	108,060
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	77,579
222	01	100	Drilling services	159,921	2,886,741
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

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             100 Dril Quip                                 2,115  |
             100 Gearhart                                     80  |
                                223      01 Subtotal      18,026  |       400,404
                                                                  |
                                                                  |
230       01 100 Thales                                    3,830  |
             100 Skilled Logistics                           980  |
                                230      01 Subtotal       4,810  |       605,852
                                                                  |
                                                                  |
260       01 100 Tech/Prof- Eng. Consultants EDR Hyd       1,500  |
             100 Tech/Prof-Eng. Consultants (Wyld)         1,000  |
                                260      01 Subtotal       2,500  |        62,867
                                                                  |
413       01 100 Other affiliate Charges                   6,473  |       247,137
760       01 100 Alloc-Marine Terminals                    5,000  |       102,708
762       01     Alloc Prod Trans-Boats                        0  |        37,500
770       01 100 Alloc- Drilling Support                  11,950  |       350,390
                                                                  |
                          Total Cost                     331,204  |    13,394,425

                          Fixed Cost                     304,754  |     6,655,349

---------------------------------------------------------------------------------
       AFE                      Intangible    Tangible      Total         Mud
Dry  :  23,048,000| Daily         331,204            0     331,204        26,450
Susp :           0| Cum Mbl             0            0           0             0
Comp :           0| Cum Drl    13,106,452      287,973  13,394,425       523,887
Total:  23,048,000| Cum Comp            0            0           0             0
                  | Cum W/O             0            0           0             0
Exc  : 1.92310/US$| Cum AFE    13,106,452      287,973  13,394,425       523,887
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Drilling **DAILY COST REPORT** **18-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2914.00
Office : Australia SE	TVD m:	3126.00	2914.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	19.0
Country : Australia	- from Spud :		15.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		84.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	19,042
138	01	100	Diesel	9,794	328,301
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1,384	525,271
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	38,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,212,745
209	01	100	ROV's	6,270	110,464
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	58,734
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	113,339
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	81,976
222	01	100	Drilling services	159,921	3,046,662
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	418,430
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	610,662
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	65,367
413	01	100	Other affiliate Charges		6,473	253,610
760	01	100	Alloc-Marine Terminals		5,000	107,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	362,340
			Total Cost		306,138	13,700,563
			Fixed Cost		304,754	6,960,103

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	306,138	0	306,138	1,384
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	13,412,590	287,973	13,700,563	525,271
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	13,412,590	287,973	13,700,563	525,271

Drilling **DAILY COST REPORT** **19-Feb-2003**
Scallop 1

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DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD             m: 3126.00 | 2933.00
Office     : Australia SE                     TVD            m: 3126.00 | 2933.00
Drill Team : Australia Offshore               Days                      |
                                               - if Dry      :    42.0 |
Contractor : Trans Sed Forex                   - if Suspended:    42.0 |
Rig Name   : Sedco 702                         - to Complete :      .0 |
Operator   : Esso Aus Res                      - Susp + Comp :    42.0 |     20.0
Country    : Australia                         - from Spud   :         |     16.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East                Spud Date      :       02-Feb-2003
                                              Progress      m:             19.00
Water Depth:  109.60 m                        Exc Rate   /US$:           1.92310
RKB Height :   25.90 m                        Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	20,042
138	01	100	Diesel	21,624	349,925
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1,769	527,040
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	40,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,276,434
209	01	100	ROV's	6,270	116,734
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	62,379
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	118,618
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	86,373
222	01	100	Drilling services	159,921	3,206,583
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

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             100 Dril Quip                                  2,115  |
             100 Gearhart                                      80  |
                                223      01 Subtotal       18,026  |       436,456
                                                                   |
                                                                   |
230       01 100 Thales                                     3,830  |
             100 Skilled Logistics                            980  |
                                230      01 Subtotal        4,810  |       615,472
                                                                   |
                                                                   |
260       01 100 Tech/Prof- Eng. Consultants EDR Hyd        1,500  |
             100 Tech/Prof-Eng. Consultants (Wyld)          1,000  |
                                260      01 Subtotal        2,500  |        67,867
                                                                   |
413       01 100 Other affiliate Charges                    6,473  |       260,083
760       01 100 Alloc-Marine Terminals                     5,000  |       112,708
762       01     Alloc Prod Trans-Boats                         0  |        37,500
770       01 100 Alloc- Drilling Support                   11,950  |       374,290
                                                                   |
                          Total Cost                      318,353  |    14,018,916

                          Fixed Cost                      316,584  |     7,276,687

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       AFE                       Intangible    Tangible      Total         Mud
Dry  :  23,048,000| Daily           318,353           0      318,353         1,769
Susp :           0| Cum Mbl               0           0            0             0
Comp :           0| Cum Drl      13,730,943     287,973   14,018,916       527,040
Total:  23,048,000| Cum Comp              0           0            0             0
                  | Cum W/O               0           0            0             0
Exc  : 1.92310/US$| Cum AFE      13,730,943     287,973   14,018,916       527,040
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Drilling **DAILY COST REPORT** **20-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	2996.00
Office : Australia SE	TVD m:	3126.00	2996.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	21.0
Country : Australia	- from Spud :		17.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :	02-Feb-2003	
	Progress m:	63.00	
Water Depth: 109.60 m	Exc Rate /US$:	1.92310	
RKB Height : 25.90 m	Currency :	Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment- other	1,000	21,042
138	01	100	Diesel	10,685	360,610
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	11,264	538,304
152	01		Drill Bits	0	119,802
201	01	100	Contract Transport- Land	2,000	42,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,340,123
209	01	100	ROV's	6,270	123,004
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	66,024
219	01	100	Anadrill	792	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	5,279	123,897
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	90,770
222	01	100	Drilling services	159,921	3,366,504
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Weatherford	6,735	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Baroid	1,730	
		100	BOM	130	

		100	Dril Quip		2,115	
		100	Gearhart		80	
			223	01 Subtotal	18,026	454,482
230	01	100	Thales		3,830	
		100	Skilled Logistics		980	
			230	01 Subtotal	4,810	620,282
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	70,367
413	01	100	Other affiliate Charges		6,473	266,556
760	01	100	Alloc-Marine Terminals		5,000	117,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	386,240
			Total Cost		316,909	14,335,825
			Fixed Cost		305,645	7,582,332

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	316,909	0	316,909	11,264
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	14,047,852	287,973	14,335,825	538,304
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	14,047,852	287,973	14,335,825	538,304

Drilling **DAILY COST REPORT** **21-Feb-2003**
Scallop 1

DRS Well ID:	SCALLOP_1	AFE L7401D001	Planned | Actual
Units :	Mixed Oilfield	MD m:	3126.00 | 3080.00
Office :	Australia SE	TVD m:	3126.00 | 3080.00
Drill Team :	Australia Offshore	Days	
		- if Dry :	42.0 |
Contractor :	Trans Sed Forex	- if Suspended:	42.0 |
Rig Name :	Sedco 702	- to Complete :	.0 |
Operator :	Esso Aus Res	- Susp + Comp :	42.0 | 22.0
Country :	Australia	- from Spud :	| 18.5
Latitude :	38d 12' 49" South		
Longitude :	148d 35' 29" East	Spud Date :	02-Feb-2003
		Progress m:	84.00
Water Depth:	109.60 m	Exc Rate /US$:	1.92310
RKB Height :	25.90 m	Currency :	Australian Dollar
Ground Elev:	.00 m		
Phone :	61 - 3 - 51422747		
Superint'nt:	F.W. Kratzer		
Engineer :	R.M. Furchtenicht		
	C.P. Meakin		

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	22,042
138	01	100	Diesel	10,939	371,549
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	10,563	548,867
152	01	100	Bits x 4	143,333	263,135
201	01	100	Contract Transport- Land	2,000	44,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,403,812
209	01	100	ROV's	6,270	129,274
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	69,669
219	01	100	Anadrill - (lump sum catch up)	94,800	
		100	Anadrill - daily operating	16,500	
		100	SDI	3,173	
		100	Anderdrift	1,314	
			219 01 Subtotal	115,787	239,684
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	95,167
222	01	100	Drilling services	159,921	3,526,425
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart + (3 x sets cutters)	21,930	
		100	Labrador	3,000	

		100	Smith Service	77	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
			223 01 Subtotal	39,876	494,358
230	01	100	Skilled Logistics	980	
		100	Thales	3,830	
			230 01 Subtotal	4,810	625,092
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
			260 01 Subtotal	2,500	72,867
413	01	100	Other affiliate Charges	6,473	273,029
760	01	100	Alloc-Marine Terminals	5,000	122,708
762	01		Alloc Prod Trans-Boats	0	37,500
770	01	100	Alloc- Drilling Support	11,950	398,190
			Total Cost	592,153	14,927,978
			Fixed Cost	343,457	7,925,789

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	592,153	0	592,153	10,563
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	14,640,005	287,973	14,927,978	548,867
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	14,640,005	287,973	14,927,978	548,867

Drilling **DAILY COST REPORT** **22-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3154.00
Office : Australia SE	TVD m:	3126.00	3154.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	23.0
Country : Australia	- from Spud :		19.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		74.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	23,042
138	01	100	Diesel - adjustment	11,066	
		100	Diesel	12,020	
			138 01 Subtotal	23,086	394,635
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	4,934	553,801
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	46,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,467,501
209	01	100	ROV's	6,270	135,544
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	73,314
219	01	100	SDI	3,173	
		100	Anderdrift	1,314	
		100	Anadrill - daily operating	16,500	
			219 01 Subtotal	20,987	260,671
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	99,564
222	01	100	Drilling services	159,921	3,686,346
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Tuboscope	700	
		100	Baroid	1,730	

		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Weatherford	6,735	
			223 01 Subtotal	18,026	512,384
230	01	100	Thales	3,830	
		100	Skilled Logistics	980	
			230 01 Subtotal	4,810	629,902
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
			260 01 Subtotal	2,500	75,367
413	01	100	Other affiliate Charges	6,473	279,502
760	01	100	Alloc-Marine Terminals	5,000	127,708
762	01		Alloc Prod Trans-Boats	0	37,500
770	01	100	Alloc- Drilling Support	11,950	410,140
			Total Cost	338,688	15,266,666
			Fixed Cost	322,688	8,248,477

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	338,688	0	338,688	4,934
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	14,978,693	287,973	15,266,666	553,801
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	14,978,693	287,973	15,266,666	553,801

Drilling **DAILY COST REPORT** **23-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3174.00
Office : Australia SE	TVD m:	3126.00	3174.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	24.0
Country : Australia	- from Spud :		20.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		20.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	24,042
138	01	100	Diesel	29,192	423,827
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	18,983	572,784
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	48,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,531,190
209	01	100	ROV's	6,270	141,814
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	76,959
219	01	100	SDI	3,173	
		100	Anadrill - daily operating	16,500	
		100	Anderdrift	1,314	
			219 01 Subtotal	20,987	281,658
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	103,961
222	01	100	Drilling services	159,921	3,846,267
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

		100	Labrador		3,000	
		100	Smith Service		77	
			223	01 Subtotal	18,026	530,410
230	01	100	Skilled Logistics		980	
		100	Thales		3,830	
			230	01 Subtotal	4,810	634,712
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	77,867
413	01	100	Other affiliate Charges		6,473	285,975
760	01	100	Alloc-Marine Terminals		5,000	132,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	422,090
			Total Cost		358,843	15,625,509
			Fixed Cost		339,860	8,588,337

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	358,843	0	358,843	18,983
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,337,536	287,973	15,625,509	572,784
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	15,337,536	287,973	15,625,509	572,784

Drilling **DAILY COST REPORT** **24-Feb-2003**
Scallop 1

DRS Well ID:	SCALLOP_1	AFE L7401D001	Planned	Actual
Units	Mixed Oilfield	MD m:	3126.00	3174.00
Office	Australia SE	TVD m:	3126.00	3174.00
Drill Team	Australia Offshore	Days		
		- if Dry :	42.0	
Contractor	Trans Sed Forex	- if Suspended:	42.0	
Rig Name	Sedco 702	- to Complete :	.0	
Operator	Esso Aus Res	- Susp + Comp :	42.0	25.0
Country	Australia	- from Spud :		21.5
Latitude	38d 12' 49" South			
Longitude	148d 35' 29" East	Spud Date :		02-Feb-2003
		Progress m:		.00
Water Depth:	109.60 m	Exc Rate /US$:		1.92310
RKB Height :	25.90 m	Currency :		Australian Dollar
Ground Elev:	.00 m			
Phone	61 - 3 - 51422747			
Superint'nt:	F.W. Kratzer			
Engineer	R.M. Furchtenicht			
	C.P. Meakin			

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	25,042
138	01	100	Diesel	7,950	431,777
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1	572,785
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	50,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,594,879
209	01	100	ROV's	6,270	148,084
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	80,604
219	01	100	SDI	3,173	
		100	Anadrill - daily operating	16,500	
		100	Anderdrift	1,314	
			219 01 Subtotal	20,987	302,645
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	108,358
222	01	100	Drilling services	159,921	4,006,188
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

		100	Labrador		3,000	
		100	Smith Service		77	
			223	01 Subtotal	18,026	548,436
230	01	100	Skilled Logistics		980	
		100	Thales		3,830	
			230	01 Subtotal	4,810	639,522
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	80,367
413	01	100	Other affiliate Charges		6,473	292,448
760	01	100	Alloc-Marine Terminals		5,000	137,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	434,040
			Total Cost		318,619	15,944,128
			Fixed Cost		318,618	8,906,955

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	318,619	0	318,619	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,656,155	287,973	15,944,128	572,785
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	15,656,155	287,973	15,944,128	572,785

Drilling **DAILY COST REPORT** **25-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 | 3174.00
Office     : Australia SE                     TVD           m: 3126.00 | 3174.00
Drill Team : Australia Offshore               Days                     |
                                               - if Dry      :    42.0 |
Contractor : Trans Sed Forex                   - if Suspended:    42.0 |
Rig Name   : Sedco 702                         - to Complete :      .0 |
Operator   : Esso Aus Res                      - Susp + Comp :    42.0 |     26.0
Country    : Australia                         - from Spud   :         |     22.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East                Spud Date      :        02-Feb-2003
                                              Progress      m:                .00
Water Depth:  109.60 m                        Exc Rate   /US$:            1.92310
RKB Height :   25.90 m                        Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	26,042
138	01	100	Diesel	8,140	439,917
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1	572,786
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	52,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,658,568
209	01	100	ROV's	6,270	154,354
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	84,249
219	01	100	SDI	3,173	
		100	Anadrill - daily operating	11,400	
		100	Anderdrift	1,314	
			219 01 Subtotal	15,887	318,532
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	112,755
222	01	100	Drilling services	159,921	4,166,109
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

		100	Labrador		3,000	
		100	Smith Service		77	
			223	01 Subtotal	18,026	566,462
230	01	100	Skilled Logistics		980	
		100	Thales		3,830	
			230	01 Subtotal	4,810	644,332
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	82,867
413	01	100	Other affiliate Charges		6,473	298,921
760	01	100	Alloc-Marine Terminals		5,000	142,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	445,990
			Total Cost		313,709	16,257,837
			Fixed Cost		313,708	9,220,663

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	313,709	0	313,709	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	15,969,864	287,973	16,257,837	572,786
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	15,969,864	287,973	16,257,837	572,786

Drilling **DAILY COST REPORT** **26-Feb-2003**
Scallop 1

```
DRS Well ID: SCALLOP_1                        AFE L7401D001    Planned | Actual
Units      : Mixed Oilfield                   MD            m: 3126.00 | 3174.00
Office     : Australia SE                     TVD           m: 3126.00 | 3174.00
Drill Team : Australia Offshore               Days                     |
                                               - if Dry      :    42.0 |
Contractor : Trans Sed Forex                   - if Suspended:    42.0 |
Rig Name   : Sedco 702                         - to Complete :      .0 |
Operator   : Esso Aus Res                      - Susp + Comp :    42.0 |    27.0
Country    : Australia                         - from Spud   :         |    23.5
Latitude   :  38d 12' 49" South
Longitude  : 148d 35' 29" East                Spud Date      :      02-Feb-2003
                                              Progress      m:              .00
Water Depth:  109.60 m                        Exc Rate   /US$:          1.92310
RKB Height :   25.90 m                        Currency       : Australian Dollar
Ground Elev:     .00 m
Phone      : 61 - 3  - 51422747

Superint'nt: F.W. Kratzer
Engineer   : R.M. Furchtenicht
             C.P. Meakin
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Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	27,042
138	01	100	Diesel	4,897	444,814
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1	572,787
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	54,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,722,257
209	01	100	ROV's	6,270	160,624
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	87,894
219	01	100	SDI	3,173	
		100	Anadrill - stby tools only	9,000	
		100	Anderdrift	1,314	
			219 01 Subtotal	13,487	332,019
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	117,152
222	01	100	Drilling services	159,921	4,326,030
223	01	100	Misc Drilling Services AIPC	1,700	
		100	Tuboscope	700	
		100	Weatherford	6,735	
		100	Baker oil Tools	1,759	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

		100	Labrador		3,000	
		100	Smith Service		77	
			223	01 Subtotal	18,026	584,488
230	01	100	Skilled Logistics		980	
		100	Thales		3,830	
			230	01 Subtotal	4,810	649,142
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
			260	01 Subtotal	2,500	85,367
413	01	100	Other affiliate Charges		6,473	305,394
760	01	100	Alloc-Marine Terminals		5,000	147,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	457,940
			Total Cost		308,066	16,565,903
			Fixed Cost		308,065	9,528,728

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	308,066	0	308,066	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	16,277,930	287,973	16,565,903	572,787
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	16,277,930	287,973	16,565,903	572,787

Drilling **DAILY COST REPORT** **27-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001		Planned	Actual
Units : Mixed Oilfield	MD	m:	3126.00	3174.00
Office : Australia SE	TVD	m:	3126.00	3174.00
Drill Team : Australia Offshore	Days			
	- if Dry	:	42.0	
Contractor : Trans Sed Forex	- if Suspended	:	42.0	
Rig Name : Sedco 702	- to Complete	:	.0	
Operator : Esso Aus Res	- Susp + Comp	:	42.0	28.0
Country : Australia	- from Spud	:		24.5
Latitude : 38d 12' 49" South				
Longitude : 148d 35' 29" East	Spud Date	:	02-Feb-2003	
	Progress	m:	.00	
Water Depth: 109.60 m	Exc Rate	/US$:	1.92310	
RKB Height : 25.90 m	Currency	:	Australian Dollar	
Ground Elev: .00 m				
Phone : 61 - 3 - 51422747				

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	28,042
138	01	100	Diesel	11,320	456,134
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	17,616	590,403
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	56,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,785,946
209	01	100	ROV's	6,270	166,894
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	15,000
218	01	100	Mud Logging	3,645	91,539
219	01	100	Anadrill - stby tools only	9,000	
		100	Anderdrift	1,314	
		100	SDI	3,173	
			219 01 Subtotal	13,487	345,506
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
			221 01 Subtotal	4,397	121,549
222	01	100	Drilling services	159,921	4,485,951
223	01	100	Tuboscope	700	
		100	Baker oil Tools	1,759	
		100	Misc Drilling Services AIPC	1,700	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	

		100	Smith Service		77	
		100	Weatherford		6,735	
			223	01 Subtotal	18,026	602,514
230	01	100	Skilled Logistics		980	
		100	Thales		3,830	
			230	01 Subtotal	4,810	653,952
260	01	100	Tech/Prof-Eng. Consultants (Wyld)		1,000	
		100	Tech/Prof- Eng. Consultants EDR Hyd		1,500	
			260	01 Subtotal	2,500	87,867
413	01	100	Other affiliate Charges		6,473	311,867
760	01	100	Alloc-Marine Terminals		5,000	152,708
762	01		Alloc Prod Trans-Boats		0	37,500
770	01	100	Alloc- Drilling Support		11,950	469,890
			Total Cost		332,104	16,898,007
			Fixed Cost		314,488	9,843,216

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	332,104	0	332,104	17,616
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	16,610,034	287,973	16,898,007	590,403
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	16,610,034	287,973	16,898,007	590,403

Drilling **DAILY COST REPORT** **28-Feb-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3174.00
Office : Australia SE	TVD m:	3126.00	3174.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	29.0
Country : Australia	- from Spud :		25.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :	02-Feb-2003	
	Progress m:	.00	
Water Depth: 109.60 m	Exc Rate /US$:	1.92310	
RKB Height : 25.90 m	Currency :	Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	29,042
138	01	100	Diesel	5,660	461,794
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	1	590,404
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	58,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,849,635
209	01	100	ROV's	6,270	173,164
214	01		Offshore Mob & Demob	0	5,783,699
217	01	100	Schlum TD logging	727,876	742,876
218	01	100	Mud Logging	3,645	95,184
219	01	100	Anderdrift	1,314	
		100	Anadrill - stby tools only	9,000	
		100	SDI	3,173	
			219 01 Subtotal	13,487	358,993
221	01	100	Cementing Services (Halliburton)	1,628	
		100	Cementing Services (Dowell)	2,769	
		100	P&A plugs x 4	1,480	
			221 01 Subtotal	5,877	127,426
222	01	100	Drilling services	159,921	4,645,872
223	01	100	Dril Quip	2,115	
		100	Gearhart	80	
		100	BOM	130	
		100	Baroid	1,730	
		100	Misc Drilling Services AIPC	1,700	
		100	Labrador	3,000	
		100	Smith Service	77	

		100	Weatherford	6,735	
		100	Tuboscope	700	
		100	Baker oil Tools	1,759	
			223 01 Subtotal	18,026	620,540
230	01	100	Skilled Logistics	980	
		100	Thales	3,830	
			230 01 Subtotal	4,810	658,762
260	01	100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
		100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
			260 01 Subtotal	2,500	90,367
413	01	100	Other affiliate Charges	6,473	318,340
760	01	100	Alloc-Marine Terminals	5,000	157,708
762	01		Alloc Prod Trans-Boats	0	37,500
770	01	100	Alloc- Drilling Support	11,950	481,840
			Total Cost	1,038,185	17,936,192
			Fixed Cost	308,828	10,152,044

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	1,038,185	0	1,038,185	1
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	17,648,219	287,973	17,936,192	590,404
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	17,648,219	287,973	17,936,192	590,404

Drilling **DAILY COST REPORT** **01-Mar-2003**
Scallop 1

DRS Well ID: SCALLOP_1
Units : Mixed Oilfield
Office : Australia SE
Drill Team : Australia Offshore

Contractor : Trans Sed Forex
Rig Name : Sedco 702
Operator : Esso Aus Res
Country : Australia
Latitude : 38d 12' 49" South
Longitude : 148d 35' 29" East

Water Depth: 109.60 m
RKB Height : 25.90 m
Ground Elev: .00 m
Phone : 61 - 3 - 51422747

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

AFE L7401D001		Planned	Actual
MD	m:	3126.00	3174.00
TVD	m:	3126.00	3174.00
Days			
- if Dry	:	42.0	
- if Suspended	:	42.0	
- to Complete	:	.0	
- Susp + Comp	:	42.0	30.0
- from Spud	:		26.5

Spud Date : 02-Feb-2003
Progress m: .00
Exc Rate /US$: 1.92310
Currency : Australian Dollar

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	30,042
138	01	100	Diesel	2,735	464,529
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Baroid Mud costs	6,365	596,769
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	60,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,913,324
209	01	100	ROV's	6,270	179,434
214	01		Offshore Mob & Demob	0	5,783,699
217	01	100	Schlum set EZSV	10,000	752,876
218	01	100	Mud Logging	3,645	98,829
219	01	100	SDI	3,173	
		100	Anderdrift	1,314	
		100	Anadrill - stby tools only	9,000	
			219 01 Subtotal	13,487	372,480
221	01	100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
		100	Cmt plug #1-E	356	
		100	Hlbtn EZSV	7,698	
			221 01 Subtotal	12,451	139,877
222	01	100	Drilling services	159,921	4,805,793
223	01	100	Tuboscope	700	
		100	Baker oil Tools	1,759	
		100	Misc Drilling Services AIPC	1,700	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	

```
             100 Labrador                                 3,000  |
             100 Smith Service                               77  |
             100 Weatherford                              6,735  |
             100 Baroid                                   1,730  |
                                223      01 Subtotal     18,026  |       638,566
                                                                 |
                                                                 |
230       01 100 Skilled Logistics                          980  |
             100 Thales                                   3,830  |
                                230      01 Subtotal      4,810  |       663,572
                                                                 |
                                                                 |
260       01 100 Tech/Prof-Eng. Consultants (Wyld)        1,000  |
             100 Tech/Prof- Eng. Consultants EDR Hyd      1,500  |
                                260      01 Subtotal      2,500  |        92,867
                                                                 |
413       01 100 Other affiliate Charges                  6,473  |       324,813
760       01 100 Alloc-Marine Terminals                   5,000  |       162,708
762       01     Alloc Prod Trans-Boats                       0  |        37,500
770       01 100 Alloc- Drilling Support                 11,950  |       493,790
                                                                 |
                          Total Cost                    330,322  |    18,266,514

                          Fixed Cost                    305,903  |    10,457,947

--------------------------------------------------------------------------------
       AFE                       Intangible    Tangible      Total         Mud
Dry  :  23,048,000| Daily          330,322           0      330,322       6,365
Susp :           0| Cum Mbl              0           0            0           0
Comp :           0| Cum Drl     17,978,541     287,973   18,266,514     596,769
Total:  23,048,000| Cum Comp             0           0            0           0
                  | Cum W/O              0           0            0           0
Exc  : 1.92310/US$| Cum AFE     17,978,541     287,973   18,266,514     596,769
```

Drilling **DAILY COST REPORT** **02-Mar-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3174.00
Office : Australia SE	TVD m:	3126.00	3174.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	31.0
Country : Australia	- from Spud :		27.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	31,042
138	01	100	Diesel	12,911	477,440
150	01		Float Equip, Centralizers	0	21,956
151	01	100	Surplus bulk barite (1523 sks)	26,987	
		100	Surplus bulk bentonite (581sks)	17,604	
		100	Surplus cement G(1500sx)	10,500	
		100	Surplus cement HTB (545 sks)	3,815	
			151 01 Subtotal	58,906	655,675
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	62,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	1,977,013
209	01	100	ROV's	6,270	185,704
214	01		Offshore Mob & Demob	0	5,783,699
217	01	100	Schlum set EZSV	10,000	762,876
218	01	100	Mud Logging	3,645	102,474
219	01	100	SDI	3,173	
		100	Anderdrift	1,314	
		100	Anadrill - stby tools only	9,000	
			219 01 Subtotal	13,487	385,967
221	01	100	Hlbtn EZSV	7,698	
		100	Cmt plugs 2 A,2 B, & 3.	4,142	
		100	Cementing Services (Dowell)	2,769	
		100	Cementing Services (Halliburton)	1,628	
		100	Dowell Cement unit pumping charge	47,944	
			221 01 Subtotal	64,181	204,058
222	01	100	Drilling services	159,921	4,965,714

223	01	100	Misc Drilling Services AIPC	1,700	
		100	Baker oil Tools	1,759	
		100	Tuboscope	700	
		100	Baroid	1,730	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Labrador	3,000	
		100	Smith Service	77	
		100	Weatherford	6,735	
			223 01 Subtotal	18,026	656,592
230	01	100	Thales	3,830	
		100	Skilled Logistics	980	
			230 01 Subtotal	4,810	668,382
260	01	100	Tech/Prof- Eng. Consultants EDR Hyd	1,500	
		100	Tech/Prof-Eng. Consultants (Wyld)	1,000	
			260 01 Subtotal	2,500	95,367
413	01	100	Other affiliate Charges	6,473	331,286
760	01	100	Alloc-Marine Terminals	5,000	167,708
762	01		Alloc Prod Trans-Boats	0	37,500
770	01	100	Alloc- Drilling Support	11,950	505,740
			Total Cost	444,769	18,711,283
			Fixed Cost	316,079	10,774,026

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	444,769	0	444,769	58,906
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	18,423,310	287,973	18,711,283	655,675
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	18,423,310	287,973	18,711,283	655,675

Drilling **DAILY COST REPORT** **03-Mar-2003**
Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3174.00
Office : Australia SE	TVD m:	3126.00	3174.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	32.0
Country : Australia	- from Spud :		28.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :	02-Feb-2003	
	Progress m:	.00	
Water Depth: 109.60 m	Exc Rate /US$:	1.92310	
RKB Height : 25.90 m	Currency :	Australian Dollar	
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	**Act**	**% Scp**	**Description**	**Daily Cost**	**Cumulative AFE Cost**
101	01		Surface Casing	0	287,973
130	01	100	Materials and equipment	1,000	32,042
138	01	100	Diesel	22,768	500,208
150	01		Float Equip, Centralizers	0	21,956
151	01		Drilling Fluid / Cement	0	655,675
152	01		Drill Bits	0	263,135
201	01	100	Contract Transport- Land	2,000	64,083
202	01		Contract Transport-Air	0	81,899
203	01	100	Contract Transport- Marine	63,689	2,040,702
209	01	100	ROV's	6,270	191,974
214	01		Offshore Mob & Demob	0	5,783,699
217	01		Electric Logging	0	762,876
218	01	100	Mud Logging	3,645	106,119
219	01	100	Anderdrift	1,314	
		100	SDI	3,173	
		100	Anadrill - stby tools only	9,000	
			219 01 Subtotal	13,487	399,454
221	01	100	Cementing Services (Halliburton)	1,628	
		100	Cementing Services (Dowell)	2,769	
			221 01 Subtotal	4,397	208,455
222	01	100	Drilling services	159,921	5,125,635
223	01	100	Tuboscope	700	
		100	Misc Drilling Services AIPC	1,700	
		100	BOM	130	
		100	Dril Quip	2,115	
		100	Gearhart	80	
		100	Baker oil Tools	1,759	
		100	Labrador	3,000	
		100	Smith Service	77	

		100	Weatherford			6,735	
		100	Baroid			1,730	
				223	01 Subtotal	18,026	674,618
230	01	100	Skilled Logistics			980	
		100	Thales			3,830	
				230	01 Subtotal	4,810	673,192
260	01	100	Tech/Prof-Eng. Consultants (Wyld)			1,000	
		100	Tech/Prof- Eng. Consultants EDR Hyd			1,500	
				260	01 Subtotal	2,500	97,867
413	01	100	Other affiliate Charges			6,473	337,759
760	01	100	Alloc-Marine Terminals			5,000	172,708
762	01		Alloc Prod Trans-Boats			0	37,500
770	01	100	Alloc- Drilling Support			11,950	517,690
			Total Cost			325,936	19,037,219
			Fixed Cost			325,936	11,099,962

	AFE		Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	325,936	0	325,936	0
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	18,749,246	287,973	19,037,219	655,675
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	Cum AFE	18,749,246	287,973	19,037,219	655,675

Drilling **DAILY COST REPORT** **04-Mar-2003**

Scallop 1

DRS Well ID: SCALLOP_1	AFE L7401D001	Planned	Actual
Units : Mixed Oilfield	MD m:	3126.00	3174.00
Office : Australia SE	TVD m:	3126.00	3174.00
Drill Team : Australia Offshore	Days		
	- if Dry :	42.0	
Contractor : Trans Sed Forex	- if Suspended:	42.0	
Rig Name : Sedco 702	- to Complete :	.0	
Operator : Esso Aus Res	- Susp + Comp :	42.0	33.0
Country : Australia	- from Spud :		29.5
Latitude : 38d 12' 49" South			
Longitude : 148d 35' 29" East	Spud Date :		02-Feb-2003
	Progress m:		.00
Water Depth: 109.60 m	Exc Rate /US$:		1.92310
RKB Height : 25.90 m	Currency :		Australian Dollar
Ground Elev: .00 m			
Phone : 61 - 3 - 51422747			

Superint'nt: F.W. Kratzer
Engineer : R.M. Furchtenicht
C.P. Meakin

Daily Cost

Cost Code	Act	% Scp	Description	Daily Cost	Cumulative AFE Cost
101	01	100	Cost Correction - Surface Csg	(194,339)	93,634
107	01	100	Cost Correction - Damaged Wellheads	215,455	215,455
130	01	100	Materials and equipment	16,396	48,438
131	01	100	Cost Correction - Matls & Equip Int	33,042	33,042
138	01	100	Diesel	(30,433)	469,775
150	01	100	Cost Correction - Float Equip	(15,920)	6,036
151	01	100	Cost Correction - Mud & Cmt	94,557	750,232
152	01	100	Cost Correction - Bits	(10,020)	253,115
201	01	100	Contract Transport- Land	2,000	66,083
202	01	100	Cost Correction - Cont Transp - Air	(40,175)	41,724
203	01	100	Contract Transport - Marine	(24,727)	2,015,975
209	01	100	ROV's	38,644	230,618
214	01	100	Cost Correction - Offshore Demob	(391,553)	5,392,146
217	01	100	Cost Correction - Logging	298,200	1,061,076
218	01	100	Mud Logging	17,208	123,327
219	01	100	Cost Correction - Directional	(157,491)	241,963
221	01	100	Cost Correction - Cementing	(12,139)	196,316
222	01	100	Drilling services	108,922	5,234,557
223	01	100	Cost Correction - Misc Services	409,053	1,083,671
230	01	100	Cost Correction- Contract Other	(41,774)	631,418
260	01	100	Cost Correction - Tech/Prog-Eng	(20,822)	77,045
413	01	100	Cost Correction - Other Affiliate	50,185	387,944
702	01	100	Alloc - Exploration Gippsland	63,000	63,000
708	01	100	Alloc - Exploration Form Evaluation	63,000	63,000
760	01	100	Cost Correction - Alloc-Marine	(7,500)	165,208
762	01	100	Cost Correction - Alloc S. Vessel	37,500	75,000
764	01	100	Cost Correction - Alloc Helicopters	79,200	79,200
770	01	100	Alloc - Drilling Support	11,950	529,640
782	01	100	Alloc - Reservoir Technology	25,000	25,000
			Total Cost	616,419	19,653,638
			Fixed Cost	605,309	11,705,271

AFE			Intangible	Tangible	Total	Mud
Dry :	23,048,000	Daily	595,303	21,116	616,419	94,557
Susp :	0	Cum Mbl	0	0	0	0
Comp :	0	Cum Drl	19,344,549	309,089	19,653,638	750,232
Total:	23,048,000	Cum Comp	0	0	0	0
		Cum W/O	0	0	0	0
Exc :	1.92310/US$	**Cum AFE**	**19,344,549**	**309,089**	**19,653,638**	**750,232**

END OF WELL REPORT

ESSO AUSTRALIA PTY LTD

SCALLOP - 1

FEBRUARY 2003

by

BAKER HUGHES INTEQ

The information, interpretations, recommendations, or opinions contained herein are advisory only and may be rejected. Consultant does not warrant their accuracy or correctness. Nothing contained herein shall be deemed to be inconsistent with, nor expand, modify or alter Consultant's obligation of performance as provided for in a written agreement between the parties, or, if none, in Consultant's most recent price list.

Esso Australia Pty Ltd: Scallop-1

End of Well Report

Section 1

Operations Summary

1. Operations Summary

1.1 Introduction

Baker Hughes INTEQ Mudlogging provided formation evaluation, drill monitoring and pressure evaluation services for Scallop-1 from 261m until suspension. Data was processed and stored using Drillbyte V.2.3.1 software. All depths in this report unless otherwise stated refer to mMDRT - measured distance in metres from the rig's rotary table and are not tide corrected

Scallop-1 was planned as a 3126m MDRT vertical hole to test the sub-volcanic hydrocarbon potential of the Golden Beach Group, expected to be composed of good quality braided fluvial to upper deltaic sands.

The well was spudded at 12:00 Hrs on the 2nd February 2003, drilling the 36" hole with a 26" bit and a 36" hole opener, without a riser, from the seabed at 135.5m to 179m using seawater and with all returns to the seabed.

The 17.5" hole was drilled with penetration rates averaging 56m/hr, using seawater and hi-vis sweeps mid stand and at every connection to the section TD of 917m. The 13.375" casing was run smoothly with the shoe set at 900.8m. The BOPs and riser were then landed and tested as per programme.

With a 12.25" drilling assembly, the float collar was drilled using seawater and hi-vis sweeps. Before drilling out the casing shoe, the hole was displaced to 9.0 ppg KCl polymer mud and the Leak Off Test (LOT) conducted to 16.5 ppg EMW. The 12.25" hole was drilled initially with a PDC bit, drilling from 917m to 2618m with penetration rates ranging from 0.5 to 105.1m/hr. The MW was increased to 10.3ppg until the bit was pulled due to poor penetration rates within the volcanic formations. A tricone bit was then used to drill volcanics, and inter-bedded claystones and sandstones to a depth of 2933m with penetration rates averaging 4.6m/hr. The bit was pulled due to erratic torque readings. With the same 12.25 drilling" assembly but with an LWD tool, another tricone bit run produced penetration rates of 4.6m/hr through the same formations. Several flow checks were conducted on all drill breaks, all with static hole results. The original target depth of 3126m was extended another 48m to 3174m due to formation tops appearing deeper than prognosis. The maximum gas readings whilst drilling the reservoir sections was 0.25% over a background of 0.02-0.06%. After a wiper trip to the shoe, the hole was circulated clean before running E-logs. After more than three(3) days of running electric logs, it was decided to plug and abandon the hole without the need to run the 9 5/8" casing.

1.2 Well and Rig Information

Well Name:	Scallop-1	
Well Type:	Wildcat Exploration	
Operator:	ESSO Australia Pty Ltd.	
Location:	Gippsland Basin, Offshore Victoria, Australia	
Block:	VIC/RL2	
Final Coordinates:	Latitude	038° 12’ 48.615” S
	Longitude	148° 35’ 28.879” E
Rig:	Transocean Sedco 702	
Type:	Semi-submersible	
Rig Floor - Seabed:	135.5 mRT	
Rig Floor - MSL	25.9 m	
Spud Date:	02 February 2003	
Total Depth:	3174 mMDRT	
Status:	Plugged and Abandoned	
Baker Hughes INTEQ:	Data Engineers:	Matt de Leon Matt Goode
	Logging Geologists:	Trent Liang Peter Morris
	Trainee Logging Geologists:	Dan Walding Ryan Burns

Section 2

Drilling and Engineering

2.1 Bit Run Summaries

914mm (36") Hole Section
02nd February 2003

Bit Run No. 1 Summary

Bit No.	NB1
Bit Size	660mm (26")
W/	914mm (36") H/O
Bit Type	Reed Y11
Serial Number	660478
Jets	1 x20, 3x18 H.O. - 4 x 20
Depth In	135.5m
Depth Out	179m
Metres Drilled	43.5m
Drill Hours	2.0 hrs
Total Bit Revolutions	10.8 krevs
Circulating Hours	2.5 hrs
ROP min-max / avg	*NA - NA / 21.8
Bit Grading	1/1/PN/A/1/I/RR/TD

Drilling Parameters *(Rig drilling data)

WOB	2 klbs
RPM	90
Torque	3 kft-lbs
Pump Pressure	2800 psi
Flow In	1204 gpm

Mud

Sea Water 1.03 sg

High viscosity gel sweeps

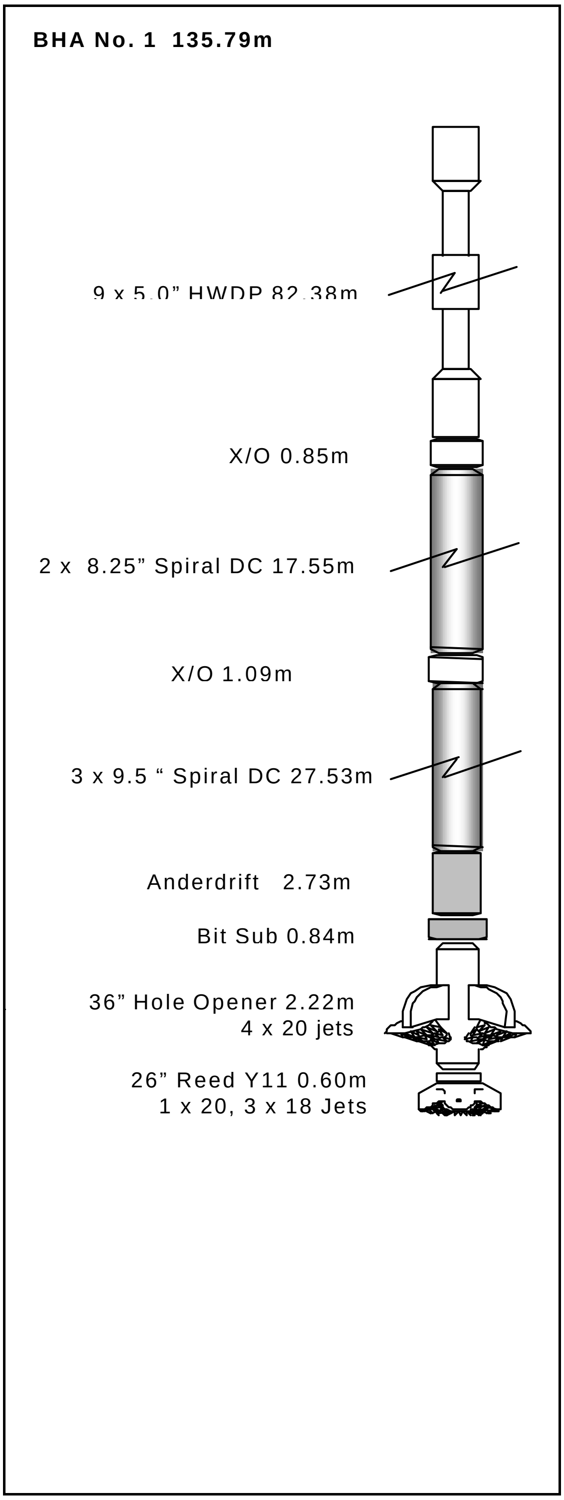
Lithology

Returns to seabed

Drilling Summary

RR1 was made up on a rotary BHA, with a 914mm (36") hole opener and run in the hole, tagging the seabed at 135.5m. Scallop-1 was spudded at 1200hrs on 2nd February 2003. The 914mm (36") hole was drilled riserless to a TD for of 179m with seawater. At 185m the Anderdrift tool indicated an inclination of 0.37°. The bit was then pulled out of the hole in preparation for running the 762mm (30") casing. The PGB and 762mm (30") casing was run with 5" drillpipe running tool, stabbing into the 914mm (36") hole with the assistance of the ROV(No mudlogging services in this section).

*BHI SLS not required for monitoring this section.



444mm (17.5”) Hole Section
03rd- 04th February 2003

Bit Run No. 2 Summary

Bit No.	NB2
Bit Size	444mm (17.5”)
Bit Type	Hycalog DS34HF
Serial Number	24400Z
Jets	8 x 14
Depth In	179m
Depth Out	917m
Metres Drilled	738m
Drill Hours	14.1 hrs
Total Bit Revolutions	118.8 krevs
Circulating Hours	22.1 hrs
ROP min-max / avg	8.5 – 361.7 / 52.3 m/hr
Bit Grading	1/1ER/T/X/1/NO/TD

Drilling Parameters

WOB	0.5 – 13.2 klbs
RPM	54 - 152
Torque	1.5 – 11.6 kft-lbs
Pump Pressure	1585 - 2840 psi
Flow In	1090 - 1233 gpm

Mud

Sea Water 1.03 sg

High viscosity gel sweeps

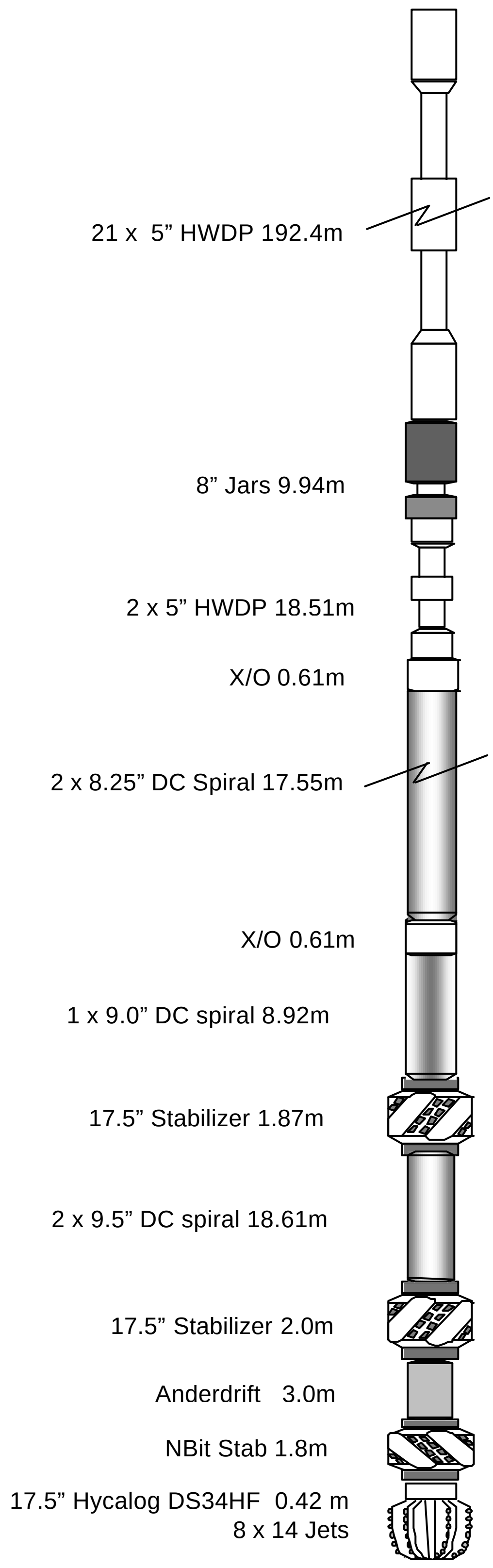
Lithology

Returns to seabed

Drilling Summary

NB2 bit was run in the hole with the same rotary assembly as NB1 minus the hole opener. Tagged and drilled out cement. Drilled new formation with seawater from 179m to 261m without problems. Mudlogging data collection commenced from 261m. Continued drilling from 261m to 917 with seawater, pumping 40-50 bbls of hi-vis sweeps at mid-stand and prior to connections. Upon reaching 917mTD, circulated the hole clean and made a few wiper trips before finally pumping 120 bbls of hi-vis sweep displaced by seawater. Pumped 1200 bbls of 12 ppg prehydrated Bentonite prior to POOH. At 907.8m, the Gyro tool indicated an inclination of 0.39 deg. The bit was pulled out of the hole without problems.

BHA No. 2 276.72m



311mm (12.25”) Hole Section
08th – 14th February 2003

Bit Run No. 3 Summary

Bit No.	NB3
Bit Size	311mm (12.25”)
Bit Type	Smith MA89PX
Serial Number	JT0152
Jets	7 x 14
Depth In	917m
Depth Out	2618m
Metres Drilled	1701m
Drill Hours	127.8 hrs
Total Bit Revolutions	859.7 krevs
Circulating Hours	141.1 hrs
ROP min-max / avg	0.5 – 105.1 / 13.3 m/hr
Bit Grading	2/4/CT/S/X/0/BT/PR

Drilling Parameters

WOB	3.8 - 20 klbs
RPM	23 - 148
Torque	1.6 – 12.7 kftlbs
Pump Pressure	1000 - 3408 psi
Flow In	800 - 1014 gpm

Mud

KCl Polymer/Glycol 1.08 - 1.23 sg

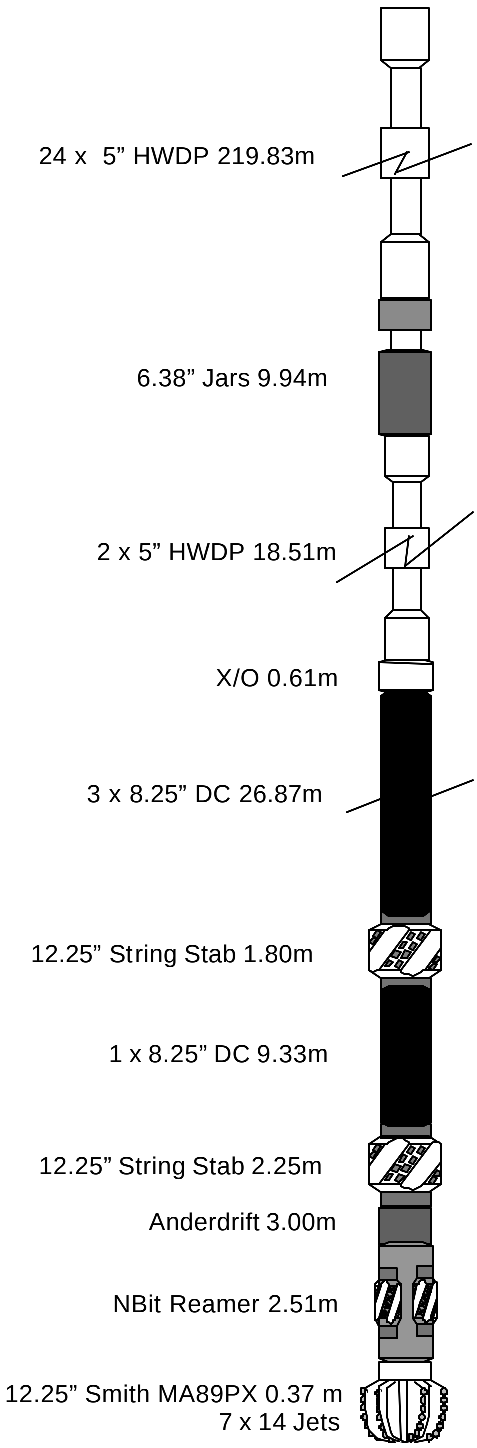
Lithology

Limestone, Claystone, Siltstone, Sandstone, Altered Volcanics

Drilling Summary

NB3, a Smith 12 ¼” PDC bit was made up with a rotary assembly and an Anderdrift survey tool. The bit was run in the hole and tagged cement at 843.6m. The cement and the float collar were drilled with seawater and hi-vis sweeps. Before drilling out the casing shoe, displaced the hole with 9.0 ppg(1.08sg) KCl Polymer mud. After the mud displacement, drilled out the casing shoe and rat hole from 900m to 917m. Drilled out three(3) meters of formation to 920m. CBU and conditioned mud to 9.0 ppg prior to conducting the Leak-Off Test(LOT) to 16.5 ppg EMW(1.98sg). Drilled ahead from 920m to 2145m without problems, increasing the mud weights to 9.6 to 9.7+ ppg(1.16-1.17sg). Drilled ahead without problems from 2145m to 2500m where the mud weight was increased to 10.2-10.3 ppg(1.22-1.23 sg) in anticipation of drilling thru the volcanics. Drilled down to 2618m after drilling thru the volcanics, CBU and pumped slug prior to POOH for bit change. POOH pumping out stands of DPs without problems.

BHA No. 3 295.02m



311mm (12.25") Hole Section
15th February- 18th February 2003

Bit Run No. 4 Summary

Bit No.	NB4
Bit Size	311mm (12.25")
Bit Type	Hughes MX20DDT
Serial Number	6007902
Jets	3 x 20
Depth In	2618m
Depth Out	2933m
Metres Drilled	315m
Drill Hours	69.1 hrs
Total Bit Revolutions	403.9 krevs
Circulating Hours	74.6 hrs
ROP min-max / avg	1.7 – 16.1 / 4.6 m/hr
Bit Grading	4/7/BT/S/E/1/WT/TQ

Drilling Parameters

WOB	11 - 54 klbs
RPM	77 - 138
Torque	5 – 6 kftlb
Pump Pressure	2605 - 3000 psi
Flow In	820 - 830 gpm

Mud

KCl/PHPA/Polymer/Glycol 1.22 - 1.23+ sg

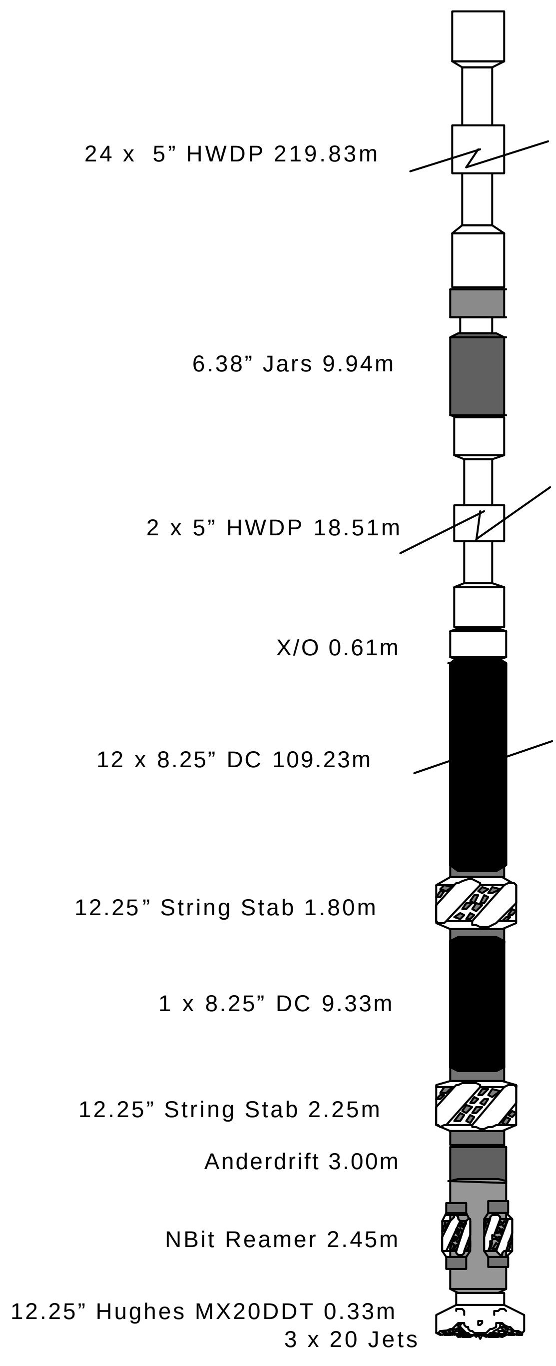
Lithology

Altered Volcanics, Sandstone,Claystone

Drilling Summary

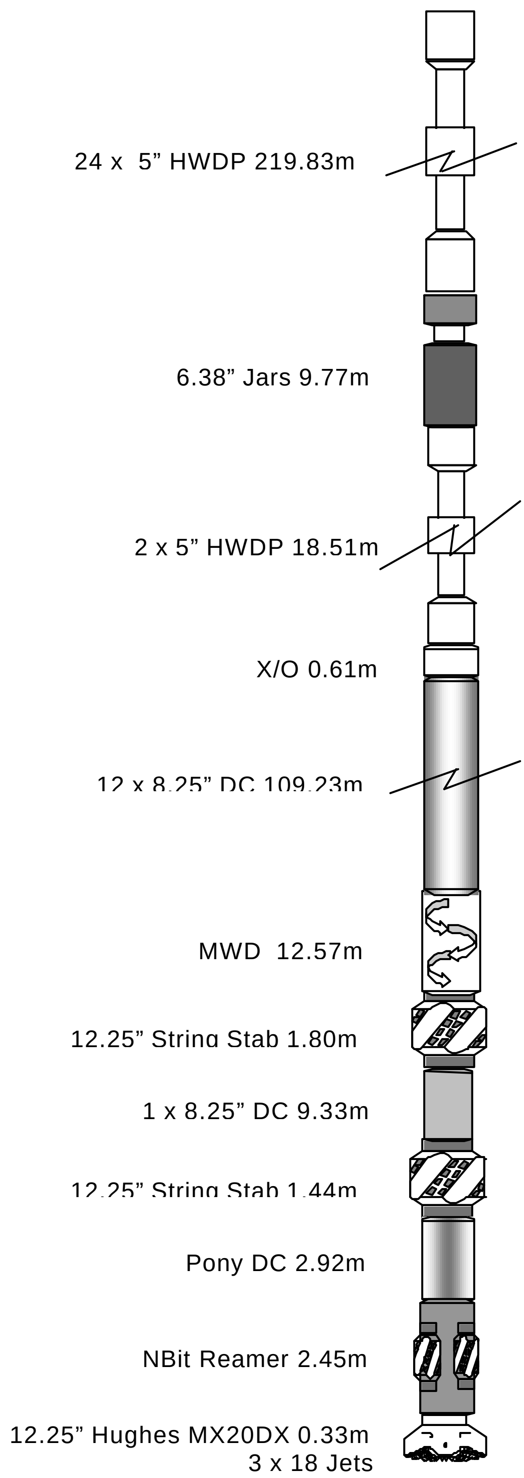
A 12 ¼" tri-cone bit was made up with a rotary assembly, without the MWD/LWD tool. Ran in hole and washed/reamed from 2578m down to 2618m. Drilled ahead from 2618m to 2933m using 10.2+ to 10.3 ppg mud(1.23 sg), maximizing penetration rates while monitoring the hole deviation every stand drilled using the Anderdrift tool. Flow checks were conducted at the driller's discretion whenever significant change in the drilling parameters was observed, especially rates of penetration. CBU at 2933m, then boosted the riser. A flow check was performed before pumping down the Gyro survey tool. Pulled out the first five(5) stands without problems, but the sixth(6th) AND 7TH stand were tight. Continued pulling out slowly without overpulls to surface for bit change.

BHA No. 4 377.28m



311mm (12.25”) Hole Section
19th February- 22nd February 2003

BHA No. 5 388.79m



Bit Run No. 5 Summary

Bit No.	NB5
Bit Size	311mm (12.25”)
Bit Type	Hughes MX20DX
Serial Number	W42DV
Jets	3 x 18
Depth In	2933m
Depth Out	3174m
Metres Drilled	241m
Drill Hours	69.3 hrs
Total Bit Revolutions	404.3 krevs
Circulating	77.9 hrs
ROP min – max / ave	1.4-15.7 / 3.5
Bit Grading	3/7/BT/S/E/2/RG/TD

Drilling Parameters

WOB	32 - 55 klbs
RPM	75 - 133
Torque	5 - 7 kftlb
Pump Pressure	3400 - 3500 psi
Flow In	750 - 850 gpm

Mud
KCl/PHPA/Polymer/Glycol 1.22+ - 1.23 sg

Lithology
Claystone, Sandstone, Altered Volcanics

Drilling Summary
NB5 was made up on a rotary assembly and LWD tool. Ran in hole and washed/reamed a stand from 2933m. Drilled ahead from 2933m to 3174m (hole TD) without problems, drilling thru the altered volcanics, the interbedded Claystone and Sandstone. Reached the hole TD 09:45 hrs 22 February. The maximum gas detected while drilling was 0.25%, with a background gas of 0.02-0.06%. CBU at 3174m, then pulled out to the casing shoe for a wiper trip. Ran back to bottom, pumped 100 bbls of hi-vis pill, then circulated bottoms up twice until the hole was clean. Pulled out twenty (20) stands, pumped slug, then pulled out of hole for BOP test and electric logging.

2.2 Casing and Cementing Summaries

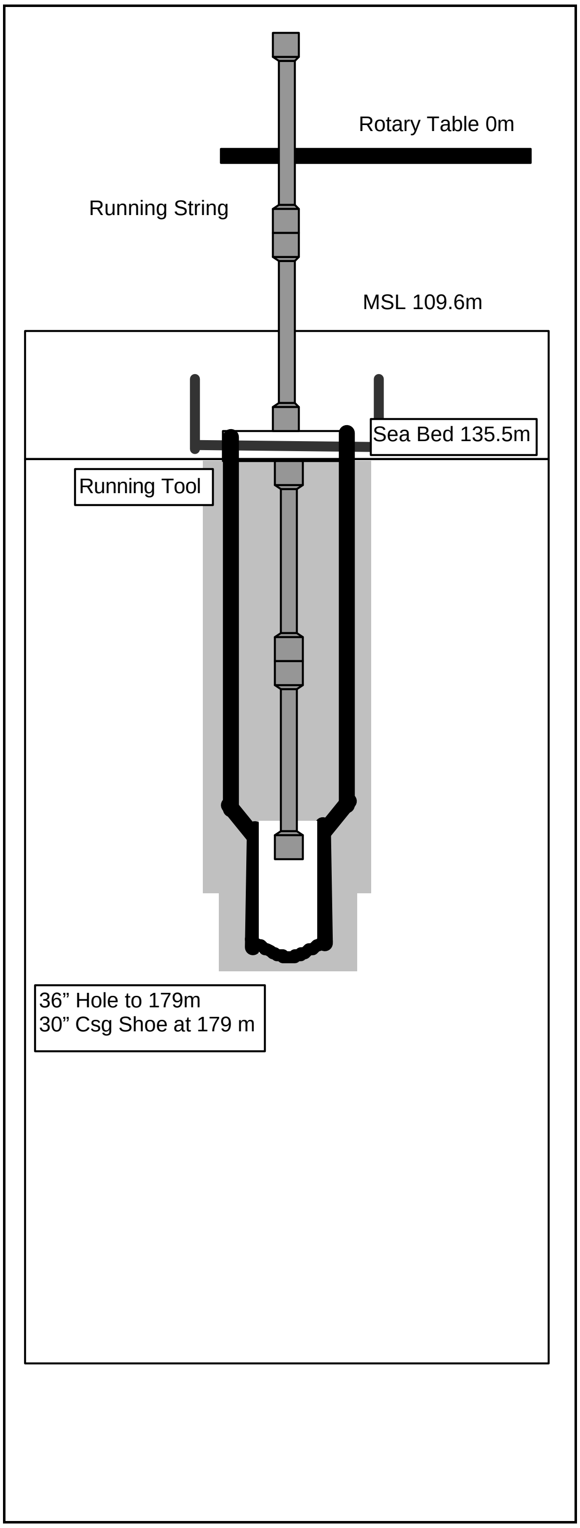
914mm (30”) Casing
02nd February 2003

HOLE: SIZE: 914mm (36”)
HOLE DEPTH: 179.0m
SEABED: 109.6
(RKB to seabed = 135.5m)

Casing Details
OD 762 mm (30”)
Grade / Weight: X 52 / 457 and 310 ppf.
Joints: 1 shoe joint / 1 INT
04 casing joints
SHOE: 179.0m

LEAD CEMENT:
TYPE: Class G
SACKS: 1149 sx
WEIGHT: 15.9 ppg
MIX FLUID: Mix with seawater
1%BWOC CACL
11 GAL NF-5

Summary
A total of 4 joints of 762 mm (30”) casing were run, including the shoe track, without problems. The casing shoe was landed at 179.0m and landed in place using the inner string. Dowell mixed and pumped 240 bbls of lead cement slurry (15.9 ppg). Dowell pumped 35 bbls seawater. Changed to rig pumps and continued displacement. Floats held.



340 mm (13 3/8") Casing
05th February 2003

HOLE: SIZE: 444 mm (17.5")
DEPTH: 917m

Casing Details

OD	340 mm (13 3/8")
Grade / Weight:	L 80 / 68 ppf.
Joints:	1 shoe joint / 1 INT
	1 float collar joint
	58 casing joints
SHOE:	900.8m

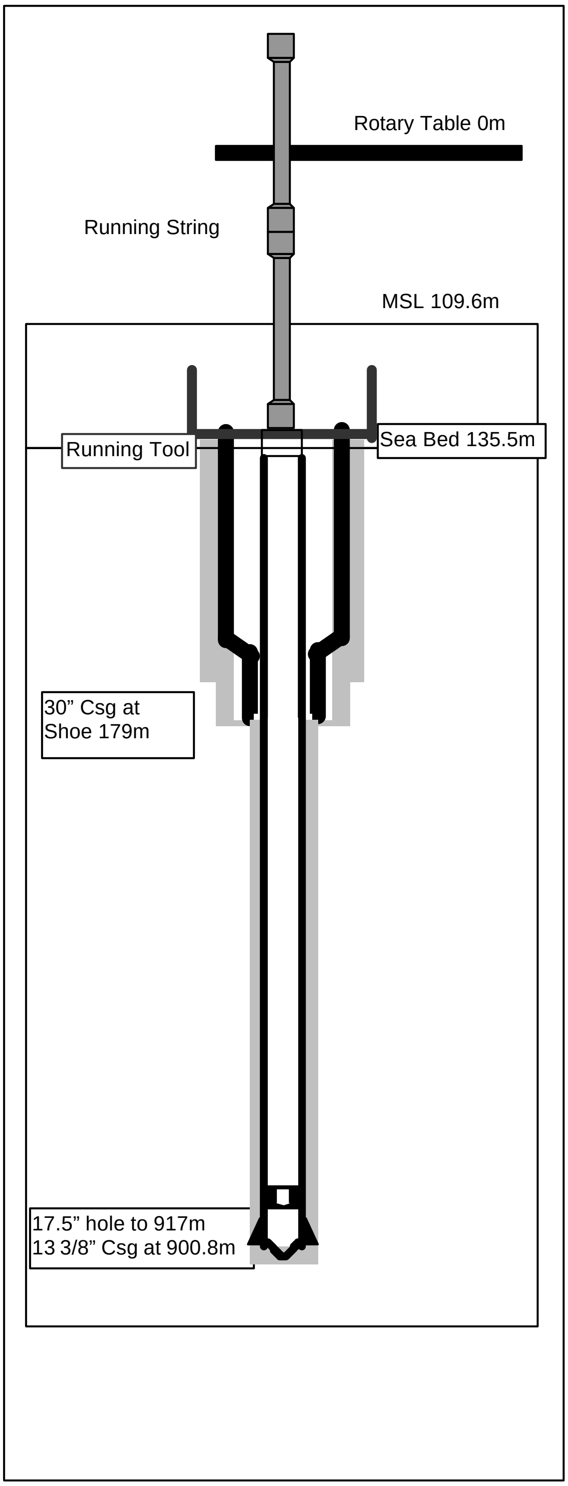
Cement Details

LEAD CEMENT:

TYPE:	Class G
SACKS:	1358 sx
WEIGHT:	12.5 ppg
MIX FLUID:	Mix with seawater
	420 bbls of total mix fluid
	614 gals Econolite
	11 gals of NF-5
	84 gals of retarder

TAIL CEMENT:

TYPE:	Class G
SACKS:	89 sx
WEIGHT:	15.8 ppg
MIXFLUID:	Mix with Fresh water
	89 bbls of total mix fluid
	5 gals of NF-5



Summary

A total of 60 joints of 340 mm (13 3/8") casing were run, including the shoe track, without problems. The casing shoe was landed at 900.7m off the 20" wellhead. Mixed and pumped 535 bbls of lead cement slurry (12.5 ppg), followed by 150 bbls of tail cement slurry (15.8 ppg). Drop dart, Dowell pumped 25 bbls seawater, no latch on plug observed. Changed to rig pump and continued displacement with 340 bbls of seawater at 10BPM. Did not bump plug.

Plug and Abandonment
26th - 01st March 2003

HOLE: SIZE: 12.5" Open hole
DEPTH: 3174m

Casing Details
Open Hole stacked cement plug arrangement.

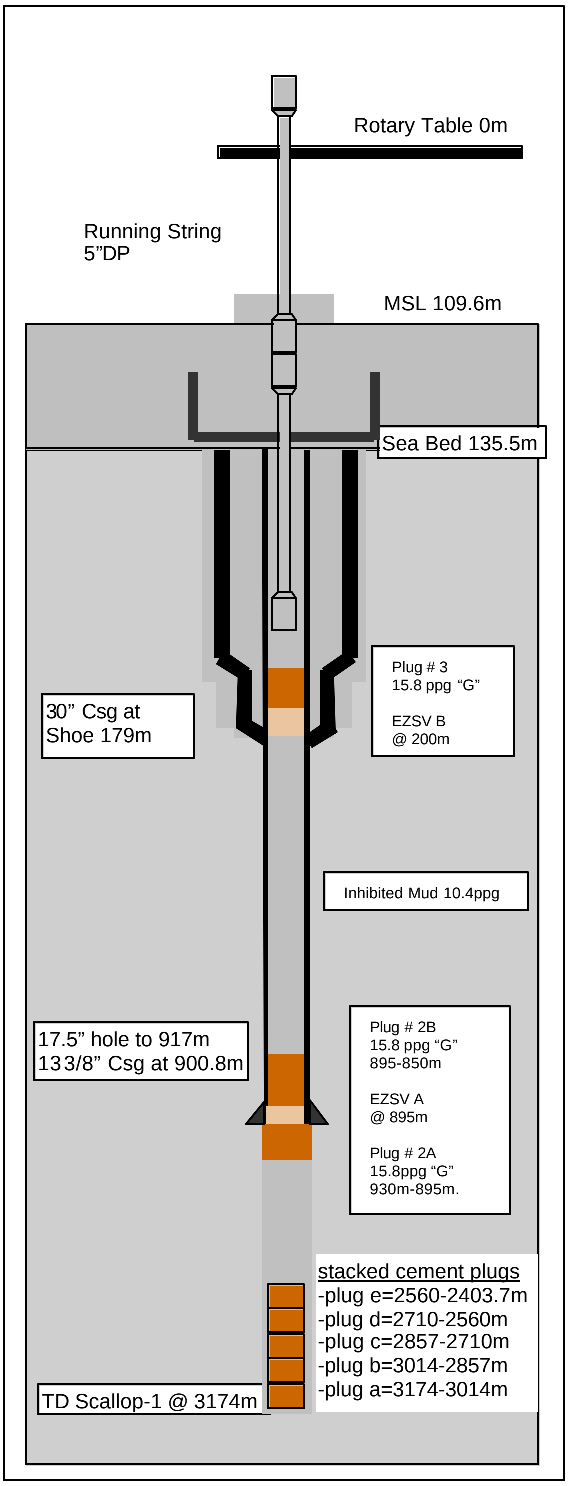
Cement Details
CEMENT PLUGS 1a-d:

TYPE:	Class G
SACKS:	1491 sx
WEIGHT:	15.8 ppg
MIX FLUID:	Mix with freshwater 300 bbls of total mix fluid 541 gals HALAD 413L 05 gals of NF-5 51 gals SCR-100L

CEMENT PLUG 1e:

TYPE:	Class G
SACKS:	343 sx
WEIGHT:	15.8 ppg
MIXFLUID:	Mix with Fresh water 69 bbls of total mix fluid 125 gals HALAD 413L 01 gals of NF-5 08 gals SCR-100L

Summary
Run in hole with 3.5"slotted mule shoe and 25 joints of 3.5" DP on 5" DP to 3174mTD. Circulated B/U with a max gas (associated with MDT pumps) of 7.91%. Set 5 balanced cement plugs in consecutive stages and circulate B/U in between each plug. WOC. Tag top cement plug at 2403.7m. Plug 2A set across the 13 3/8" shoe, POH to lay down cement stinger. R/U Schlumberger and set EZSV at 895mMD. RIH w/DP and pressure test EZSV and set Plug 2B. Displace to inhibited mud. R/U Schlumberger and set EZSV Bridge Plug B at 200mMD. RIH w/DP and pressure test EZSV. Set Plug 3 and POH.



Section 3

Geology and Shows

3.1 GEOLOGY AND SHOWS

Geological logging for Scallop-1 commenced in the 311mm (12.25") hole section from 917m MDRT and continued to the total depth of 3174m MDRT (All depths given in this section are taken from the datum of the Rotary Table, and the Measured Depth taken from the driller's depth unless otherwise specified). Full samples as per the Scallop-1 Drilling Programme were collected in the 311mm (12.25") hole section of Scallop-1.

During the course of the well, all gas equipment was checked and calibrated regularly, and spot samples were taken at drilling breaks and other changes in drilling parameters to better assess lithological change.

The Lithology as logged in Scallop-1 is described below. For more detailed descriptions, see Appendix 1, Formation Evaluation Log.

SAMPLE INTERVALS

Scallop-1	
917-930m	23m
930-1500m	30m
1500-1660m	10m
1660-3170m	5m
3170-3174m	4m

FORMATION DESCRIPTIONS:

914mm (36") Hole Section (135.5m to 179m)
Returns to seabed

444mm (17.5") Hole Section (179m to 917m)
Returns to seabed

311mm (12.25") Hole Section (917m to 3174m)
917m – 1410m: ARGILLACEOUS CALC ILUTITE with minor MARL
ARGILLACEOUS CALCILUTITE: Light grey to medium dark grey, light olive grey to olive grey, very soft to firm, dispersive in part, sub-blocky to blocky, argillaceous, trace carbonaceous specks, trace glauconite, trace dolomite, trace calcareous concretions, trace forams, trace fossil fragments.
MARL: Medium light grey, olive grey, soft to firm, sub-blocky to blocky, trace glauconite, trace carbonaceous specks, trace forams.
The section from 917m to 1410m was drilled with an average rate of penetration of 36.2 m/hr and ranged from 3.6 m/hr to 67.4 m/hr.

Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)
0.01 – 0.06	0 – 0.048	0	0	0	0	0	0

1410m – 1720m: MARL with minor ARGILLACEOUS CALCILUTITE
MARL: Light grey to medium light grey, medium grey to medium dark grey, light olive grey to olive grey, soft to firm, dispersive in part, sub-blocky to blocky, occasionally minor siltstone laminae, trace glauconite, trace pyrite nodules, trace carbonaceous specks, trace forams, trace fossil fragments.
ARGILLACEOUS CALCILUTITE: Light grey to medium grey, occasional light olive grey, soft to firm, sub-blocky to blocky, trace carbonaceous specks, trace foram, trace pyrite nodules, trace glauconite, trace fossil fragments, trace unconsolidated rounded quartz grains.

The section from 1410m to 1720m was drilled with an average rate of penetration of 37.6 m/hr and ranged from 9.5 m/hr to 86.4 m/hr.

Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)
0.01–0.04	0.014–0.044	0	0	0	0	0	0

1720m – 2610m: Interbedded CLAYSTONE and SANDSTONE with minor COAL and rare SILTSTONE and CONGLOMERATE

CLAYSTONE: Very light grey to dark grey, light brownish grey to brownish grey, greyish orange to dark yellowish orange, pale to dark yellowish brown, dusky brown to yellowish brown, greyish brown, brownish black, olive grey to dark olive grey, olive black, white to yellowish grey, occasional greenish grey, occasionally black, occasionally mottled, very soft to firm, amorphous, sub-blocky to blocky, occasionally dispersive, occasional micro-laminations, occasionally kaolinitic, trace to rare carbonaceous specks, occasionally trace to common glauconite, trace pyrite nodules, trace disseminated pyrite, trace quartz silt, sandy in part.

SANDSTONE: White to medium grey, greyish brown, very light grey to light brownish grey, moderate pink, clear to translucent quartz grains, occasionally frosted, predominantly loose, occasionally friable to hard aggregates, very fine to very coarse, occasional granules, predominantly very fine to medium, angular to rounded, sub-spherical to sub-elongate, very poorly to well sorted, occasionally broken loose grains, weak silica cement, occasional quartz overgrowths, trace pyrite cement, trace pyrite nodules, occasionally argillaceous, occasional to abundant kaolinite matrix, trace smoky quartz, trace grey chert and jasper, trace glauconite, trace coal, poor to good visual porosity, poor to good inferred porosity for loose grains.

FLUORESCENCE

1760-1770m: 30% decreasing to trace, moderate pale yellow, no cut, strong yellow crush cut, strong ring residue associated with dense argillaceous aggregates.

1790-1800m: 10% decreasing to trace, dull to moderate bright yellow, very slow faint diffuse cut, slow to moderate crush cut associated with argillaceous aggregates.

COAL: Bituminous, greyish black to black, dull to sub-vitreous, brownish black, occasional earthy lustre, firm to hard, sub-conchoidal, sub-angular to angular, sub-blocky to blocky, sub-fissile, uneven fracture.

SILTSTONE: Medium light grey to medium grey, brownish grey, off white, soft to firm, blocky, dispersive, abundant white kaolinite matrix, carbonaceous material, very fine to fine disseminated quartz grains, trace pyrite nodules, occasional quartz grains.

CONGLOMERATE: Disaggregated quartz granules (3-5mm), rounded, moderate to high sphericity, occasional clay matrix.

The section from 1720m to 2610m was drilled with an average rate of penetration of 16.8 m/hr and ranged from 0.5 m/hr to 105.1 m/hr.

Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)
0.01–0.12	0.012–0.059	0.021– 0.040	0–0.030	0–0.040	0–0.004	0.016	0–0.010

2610m – 3174m: ALTERED VOLCANICS and CLAYSTONE with minor SANDSTONE

ALTERED VOLCANICS: Black, white to very light grey to light grey to light brownish grey to brown, greyish red to greyish pink, greenish grey to dark greenish grey to light olive grey, very soft to very hard, amorphous to subangular to blocky, predominantly subangular, commonly kaolinitic, trace of chlorite, trace of silica.

CLAYSTONE: very light grey to dark grey, pale brown to greyish brown to dusky brown to dark yellowish brown, brownish black to black, very soft to firm, trace of carbonaceous matrix, trace of nodular pyrite, amorphous to sub blocky to sub fissile occasionally fissile, trace of carbonaceous specks.

SANDSTONE: Clear to transparent to translucent, white to light grey to dark grey to brownish grey quartz grains, predominantly loose, occasional hard to very hard aggregates, very fine to very coarse grained, predominantly fine to medium grained, angular to rounded, poorly sorted, trace pyrite cement, trace nodular pyrite, occasional trace of argillaceous matrix, occasional kaolinite matrix, fair inferred porosity, poor visible porosity.

FLUORESCENCE

2627-2635m: 80% moderate bright white fluorescence with very bright spots, very slow blooming white cut, thin ring residue, poor fluorescence for 2630-2635m, calcite cement mineral fluorescence.

2836-2838: 30%, bright white, patchy, associated with aggregates, occasional pinpoint, faint instant, strong blooming white crush cut, dull yellow ring residue.

2888m (spot sample): Trace dull yellow, spotty, slow bleeding cut, moderate ring residue, associated with tight sandstone aggregates with clay matrix.

2993m (spot sample): Moderate yellow-white, moderate blooming cut, moderate green-yellow ring residue, associated with lower porosity sand aggregates.

3026-3030m: 50%, bright white to yellowish white, spotted, associated with kaolinitic sandstone, slow cut, crush cut: pale blue film residue, blue-white ring residue.

3097-3107m: 10-70%, dull, pale yellow to pale brown, patchy, slow blooming cut, thin film residue, milky ring residue, associated with soft to firm kaolinitic matrix supported sandstone.

3115-3127m: 60% to trace, very dull pale yellowish white, no cut, moderate yellowish white crush cut, thin ring residue.

3137-3145m: 60% to trac e, very dull pale yellowish white, no cut, moderate yellowish white crush cut, thin ring residue.

3150-3161m: 70%, decreasing to 10%, very dull yellow fluorescence, spotty on loose grains, solid on kaolinitic aggregates, nil cut, very faint crush cut, thin spotty yellow to white ring residue.

COAL: Black, moderately hard to hard, earthy to vitreous lustre, sub-angular to angular.

The section from 2610m to 3174m was drilled with an average rate of penetration of 4.9 m/hr and ranged from 1.0 m/hr to 16.1 m/hr.

Total Gas (%)	C1 (%)	C2 (%)	C3 (%)	IC4 (%)	NC4 (%)	IC5 (%)	NC5 (%)
0.02-0.25	0.006–0.170	0 – 0.025	0 – 0.020	0 –0.006	0 – 0.007	0 – 0.008	0 – 0.005

INTEQ

3.2 SAMPLES DISTRIBUTION LIST
ESSO AUSTRALIA PTY LTD
Scallop –1

CONTAINER: #112

Well Name: Scallop-1
Rig: Sedco 702
Operator: Esso Australia Pty.Ltd.

Lightly Washed and Dried (Palynology)

Set A	**ESSO,Melbourne** (200g) **Attn:** Diana Giodano C/O Kestrel Information Management (Australia) 596-600 Somerville Rd Sunshine VIC 3020

Washed and Dried (100g)

Set B	**ESSO, Melbourne** (100g) **Attn:** Diana Giodano C/O Kestrel Information Management (Australia) 596-600 Somerville Rd Sunshine VIC 3020
Set C	**BHPBilliton, Melbourne** (100g) **Attn:** Diana Giodano C/O Kestrel Information Management (Australia) 596-600 Somerville Rd Sunshine VIC 3020
Set D	**Santos, Adelaide** (100g) **Attn:** Andy Pietsch Santos Core Library C/o Ascot Transport Francis Street Gillman, South Australia 5013
Set E	**Woodside, Perth** (100g) **Attn:** Gary Kemp Core Laboratories 447-449 Belmont Ave Kewdale, WA 6105
Set F	**DPI Core Sample Library** (100g) South Road (off Sneydes Rd) Werribee, VIC 3030
Set G	**Geoscience Australia** (100g) **Attn:** Eddie Resiak Cnr Jerrabomberra Ave & Hindmarsh Drive Symonston ACT 2069
Set H (Charts etc.):	**ESSO, Melbourne** (Charts etc.) **Attn:** Diana Giodano C/O Kestrel Information Management (Australia) 596-600 Somerville Rd Sunshine VIC 3020

3.2 SAMPLES DISTRIBUTION LIST
ESSO AUSTRALIA PTY LTD
Scallop –1

Lightly Washed, Set A:

Split Box	1:	917m – 1440m
	2:	1440m – 1675m
	3:	1675m – 1795m
	4:	1795m – 1870m
	5:	1870m – 1945m
	6:	1945m – 2035m
	7:	2035m – 2140m
	8:	2140m – 2235m
	9:	2235m – 2325m
	10:	2325m – 2445m
	11:	2445m – 2520m
	12:	2520 m – 2595m
	13:	2595 m – 2670m
	14:	2670m – 2750m
	15:	2750m – 2825m
	16:	2825m – 2900m
	17:	2900m – 2990m
	18:	2990m – 3080m
`	19:	3080m – 3174m

Washed & dried, Sets B,C, D, E, F &G (100g) :

Split Box	1:	917m – 1530m
	2:	1530m – 1705m
	3:	1705m – 1840m
	4:	1840m – 1920m
	5:	1920m – 2030m
	6:	2030m – 2130m
	7:	2130m – 2260m
	8:	2260m – 2360m
	9:	2360m – 2470m
	10:	2470m – 2585m
	11:	2585m – 2700m
	12:	2700m – 2805m
	13:	2805m – 2900m
	14:	2900m – 3020m
	15:	3020m – 3120m
	16:	3120m – 3174m

Printouts, Charts & Plots, Set H:

Siemens Charts
Chromatograph printouts
Online Drilling/Tripping/Reaming data
Loggers worksheets

SET A: 2 large boxes and one small box
SET B: 2 large boxes
SET C: 2 large boxes
SET D: 2 large boxes
SET E: 2 large boxes
SET F: 2 large boxes
SET G: 2 large boxes
SET H: 1 large box

Total 16 boxes for distribution to Esso Melbourne and onward forwarding to above addresses.

Section 4

Pressure Evaluation

4.1 PORE PRESSURE EVALUATION

Baker Hughes INTEQ formation pressure evaluation services commenced at 261m. Formation evaluation was carried out using data collected whilst drilling, with the aid of offset data provided by the client for correlation purposes and on-line MWD data. An average sea water density of 8.6 ppg was assumed as the normal saline pressure gradient for all calculations for Scallop-1. Using real-time data, such as the hydrocarbon gas trend, lithology, flowline temperature, character of drilled cuttings, constant drilling fluid parameters, corrected drilling exponent (Dxc) data, as well as wireline logging data when available, pore pressure estimates were made during the drilling of Scallop-1. For more details, please refer to Appendix 3, "Pressure Summary Plot".

444mm (17.5") Hole Section: 179m – 917m

The 17.5" hole section was drilled with returns to seabed, and was drilled with a PDC bit. Baker Hughes INTEQ commenced mudlogging services from 261m. No indications of shallow gas was seen in any offset wells or on seismic interpretations, and no shallow gas indications were observed(by ROV) while drilling this section. Rig safety on shallow gas procedures were adhered to throughout the drilling of this hole section. Seawater was used as the primary drilling fluid, with prehydrated gel sweeps pumped to assist in hole cleaning.

The Dxc profile while drilling from 261m to around 500m(Limestone lithology) showed no clear Dxc trend, but not as widely scattered as the typical Dxc profile in shallow depth drilling. The Dxc values ranged from 0.29 to 1.06(average = 0.67). The interval below 500m down to 650m showed a steeper, near-vertical Dxc trend with depth. The Dxc values ranged from 0.59 to 0.99(average = 0.76) which possibly correspond to silty/marly sections of the Gippsland Limestone formation. Below 650m to 800m, no clear Dxc trend could be discerned from the Dxc plot(Dxc range = 0.51 – 0.87, average = 0.67). From 800m to section TD of 917m, again, a steep Dxc trend with depth was shown by the Dxc plot(Dxc range = 0.68 – 0.99, average = 0.79).

The above Dxc profile trend analysis(while drilling without returns) merely suggested the absence of any significant Dxc trend(or compaction trend) which could be established after drilling the section from 179m to 917m. The prognosticated Limestone formation to be drilled in this interval seemed to agree with the general Dxc profile.

As this section was drilled successfully using seawater, the pore pressure was assumed to be normal at 8.6 ppg(1.03 sg) EMW.

311mm (12.25") Hole Section: 917m – 3174m (TD)

A KCl/PHPA/Polymer/Glycol water-based mud system was used throughout this section, with mud weights ranging from 9.0 ppg(1.08 sg) to 10.2 ppg(1.23 sg). The ECD varied from 9.1 ppg to 10.5ppg(1.09sg to 1.26 sg).

The 311mm (12.25") section consisted predominantly of Limestone, altered volcanics, Sandstone, Claystone, with minor Siltstone and Marl lithologies. This section was drilled initially with a PDC bit(NB3) from 917m down to 2618m. Penetration rates were maximized throughout most of the section, with the mud weight being increased with depth based on the predicted lithologic characteristics, and based on marginal overpressures in the offsett wells. The drilling parameters like weight on bit was occasionally controlled depending on the deviation surveys(Anderdrift) taken after every stand of drillpipe drilled. The rates of penetration ranged from 1 m/hr to 105 m/hr, with an average of 13 m/hr. The second bit (NB4) was an insert bit which drilled from 2618m down to 2933m. This bit drilled thru predominantly the altered volcanics, with some minor Claystone and Sandstone interbeds. The rates of penetration ranged from 2 m/hr to 16 m/hr, with an average of 5 m/hr. The last bit (NB5) was another insert bit which drilled from 2933m to the hole TD of 3174m. The lithologies drilled were altered volcanics, Claystone and Sandstone. The rates of penetration ranged from 1 m/hr to 16 m/hr, with an average of 4 m/hr

The Dxc plot analysis while drilling was utilized throughout the section, especially while drilling below 1700m with the intention of assessing for any indications of pore pressure increase(s) with depth. Although conditions were not ideal, due to bit type and lithologic interbeds/impurities, what was thought to represent a normal (1.03 sg EMW) compaction curve could be established from the Dxc plot below 1700m to approximately 1850m(Dxc range = 0.57 to 1.38), and below 2000m to nearly 2300m (Dxc range = 0.70 to 1.45). Below 2300m down to approximately 2570m, a different trend in the Dxc plot was apparent with the Dxc values ranging from 0.72 to 1.18 only. This could possibly be correlated to a rock formation change. Also, a minor shift in the Dxc trend was discernible within the depth intervals of about 2400m to 2500m. The lower Dxc values within the depth interval equate to an estimated pore pressure of 8.9 ppg (1.07 sg) EMW, or higher.

The Dxc plot corresponding to the two(2) insert bits run from 2618m to the hole TD of 3174m both showed a Dxc trend of generally decreasing drillability with depth. Both the Dxc trend lines showed a low-angle, positive slope with depth, e.g. from 2628m to 2933m, the Dxc values ranged from 1.06 to 1.87(average = 1.54); and from 2933m to 3174m, the Dxc values ranged from 1.22 to 1.99(average = 1.63). A sand-line could also be established from approximately 2940m to 3110m which appeared to run parallel the above-mentioned Dxc trend line. No increasing pore pressure, therefore, were indicated by the Dxc plot from 2618m to TD.

The background gas from 1000m to 2300m ranged from 0.01% to 0.08%, with an average of 0.03%. Below 2300m to around 2520m, the background gas ranged from 0.02% to 0.12%, with an average of 0.04%, despite the mud weight increasing from 9.9 ppg (1.19 sg) to 10.2 ppg (1.23 sg). The background gas below 2520m to TD (average was 0.05-0.06%) was relatively higher due to the gas-bearing sand interbeds and stringers drilled thru. No connection gasses were observed during the entire drilling. Trip gas at 2618m was 0.05% over a background of 0.02%, while at 2933m, the trip gas was 0.10% over a background of 0.04%.

The hole conditions whilst drilling the section were generally good, except for some tight spots when tripping out which could possibly be Sandstone/volcanic ledges. A wiper trip was performed after reaching the hole TD of 3174m, and the hole was circulated twice the annular volume with not much cuttings coming out over the shakers. Nill cavings were observed in the drill cuttings throughout the drilling of the 311mm (12.25”) section.

Temperature data showed no abnormal variations, with all variations being attributed to surface mud transfers, changes in pump rates, and occasional cuttings accumulation in the possum belly.

Overall, no strong indications of increasing pore pressure were interpreted while drilling Scallop-1 based on the available pore pressure parameters. A possible higher(than normal) pore pressure regime was apparent in the Dxc plot between 2400m-2500m, which could correlate to slightly higher background gas in the same depth interval. As a corollary of the aforementioned pore pressure assessment, the hole was drilled with a good overbalance from 917m to the final TD of 3174m.

4.2 FRACTURE PRESSURE EVALUATION

Fracture pressure estimation for Scallop-1 was made using the Baker Hughes INTEQ zero tensile strength method. For a full explanation of this method, refer to INTEQ Manual MS-156 "The Theory and Evaluation of Formation Pressures".

The 660mm / 914mm (26” / 36”) and 444mm (17 1/2”) hole sections were drilled with seawater, with returns to the seabed. With no returns to surface it was not possible to estimate the fracture pressure through the 17.5" hole sections.

After running and testing the BOP stack and riser, the cement and the 340mm (13.375”) casing shoe was drilled out from 843m to 900m, and the rathole was cleaned out to 917m. Three(3) meters of new 311mm (12.25”) hole was drilled to 920m, and a Leak-Off Test (LOT) was performed. The results are shown below :

Casing Depth	Casing Size		Hole Size		Test Mud Density	PIT EMW	Test type
mMDRT	in	mm	in	mm	(sg/ppg)	(sg/ppg)	
900	13.375	340	12.25	311	1.15/9.0	1.98/16.5	LOT

The hole was displaced to a KCL/PHPA/Glycol/Polymer water-based mud system weighted at 9.0 ppg while drilling out the cement and casing shoe. A leak-off test was then performed recording a 16.5 ppg EMW formation leak-off strength. Drilling resumed with minimal surface losses. The mud system was weighted up slowly to 9.5 ppg to 9.8 ppg at approximately 2000m while drilling. Baracarb limestone mud additive was gradually added to the drilling fluid to minimise seepage losses into the Latrobe sands. Further additions of KCl and Baracarb then increased the mud weight to 10.2 ppg at around 2500m without significant mud loss into the formation. Flow checks conducted at drilling breaks showed static hole conditions. The maximum ECD of the mud while drilling the 12 ¼” hole from 917m to 3174m was 10.5 ppg(1.26 sg) which was low compared to the 16.5 ppg(1.98 sg) EMW measured strength of the weakest formation. The calculated maximum fracture pressure gradient in this section ranged from 15.8 ppg to 17.6 ppg(1.90-2.12 sg) EMW.

Tables

BAKER HUGHES INTEQ

ESSO

LOCATION / WELL NAME
Vic / RL2
Scallop-1
OPERATOR
ESSO Australia Pty. Ltd.

CONTRACTOR / RIG
Transocean Sedco Forex
Sedco 702

Rotary Type Abbreviations
TS - Top Drive System
RT - Rotary Table
PD - Positive Displacement Motor
SB - Steerable PDM & Bent Sub
TB - Turbine
m - suffix designates MWD

Mud Type Abbreviations
PHG - Gel Sweeps GLY - Glycol
G - Gel PHPA - Polyacrylamide
SBM - Synthetic-Based Mud

Geology Abbreviations
Sd : Sand
Sst : Sandstone
Lst : Limestone
Slt : Silt
Stst : Siltstone
Cl : Clay
Clst : Claystone
Volc: Volcanics
Sh : Shale
Mrl : Marls

Dull Grade & Reason Pulled
A - All Rows
BC - Broken Cone
BHA - Bottomhole Assembly
BU - Balled Up Bit
CM - Condition Mud
CP - Core Point
DMF - Down Hole Motor Failure
DP - Drill Plug
DSF - Drill String Failure
DTF - Down Hole Tool Failure
E - Seals Effective
F - Seals Failed
FC - Flat Crested Wear
G - Gage Rows as 1/16
H - Heel
HP - Hole Problems
HR - Hours on Bit
I - In Gauge
PR - Penetration rate
RG - Rounded Gauge
SD - Shirt Tail Damage
TD - Total / Csg Depth
TQ - Torque
TW - Twist Off
WC - Weather Condition
WT - Worn Teeth
BT - Broken Teeth
JD - Junk Damage
LIH - Left In Hole
LOG - Run Logs
LT - Lost Teeth
M - Middle Rows
MH - Mid Heel
NO - No Dull Wear
O - Out of Gauge
PP - Pump Pressure

Run No.	Bit No.	Vendor	Type	Serial Number	Size (in)	IADC Code	Nozzles (x 1/32")	Depth In	Depth Out	Drilled m	Drilled hrs	ROP (m/hr)	WOB (klb)	RPM (at bit)	TORQ. (kftlb)	TBR x1000	RT	Pump Pr (psi)	Flow Rate (gpm)	Dev (deg)	Geology Formation	W sg	Mud Type	PV/YP	IADC Dull Grade (G in 1/16") I	O	D	L	B	G	O	R
660mm / 914mm (26" / 36") Hole Section 135.5 - 179m																																
1	NB1	Reed	Y11	660478	26"	111	1 X 20 3 x 18	135.5	179	43.5	2	21.8	2	90	3.00	10.8	TS	2800	1204	0.00	Returns to seabed	1.03	SW / Hi-Vis	1 / 1	1	1	PN	A	1	1	RR	TD
			Hole Opener		36"		5 x 20																(Start M/Logging F/261m)									
444mm (17.5") Hole Section 179 - 917m																																
2	NB2	Hycalog	DS34HF	24400Z	17.5"		8 x 14	179	917	738	14.1	52.3	0.5 - 13.2	54 - 152	1.5 - 11.6	118.7	TS	1585 - 2840	1090 - 1230	0.00	Returns to seabed	1.03	SW / Hi-Vis	1 / 1	1	1	ER	T	X	1	NO	TD
311mm (12.25") Hole Section 917m - 3174m								(Start M/Logging F/261m)															(Start M/Logging F/261m)									
3	NB3	Smith	MA89PX	JT 0152	12.25"	M223	7 x 14	917	2618	1701	127.8	13.3	3.8 - 20	23 - 148	1.6 - 12.7	14.5	TS	1000 - 3408	800 - 1014	2.12	Sst, Clst, Slst	1.20	KCL/PHPAPoly/Glycol	21/24	2	4	CT	S	X	0	BT	PR
4	NB4	Hughes	MX20DDT	6007902	12.25"	1/05/2007	3 x 20	2618	2933	315	69.1	4.6	11-54	77-138	5 - 6	403.9	TS	2605-3000	820 - 830	2.00	Sst, Clst, Slst, Volc	1.23	KCL/PHPAPoly/Glycol	24/37	4	7	BT	S	E	1	WT	TQ
5	NB5	Hughes	MX20DX	WD42DV	12.25"	1/05/2007	3 x 18	2933	3174	241	69.3	3.5	32-55	75-133	5 -7	404.3	TS	3400 - 3500	750-850	1.52	Sst, Clst, Volc	1.22	KCL/PHPAPoly/Glycol	24/38	3	7	BT	S	E	2	RG	TD

BAKER HUGHES INTEQ

Bit Hydraulics Summary

ESSO

Operator	Well Name	Location	Drilling Contractor	Rig
ESSO Australia Pty. Ltd.	**Scallop-1**	**VIC / RL2**	**Transocean Sedco Forex**	**Sedco 702**

Drillstring Abbreviations

N Normal **P** Positive Displacement Motor **S** Camco SRD Tool
M MWD **A** Adjustable Gauge Stabilizer **T** Halliburton TRACS Tool
C Core

Hydraulics Models

Power Law Model used for drilling with Mud
Bingham Model used for coring and drilling with sea water

Bit No.	Depth *(m)*	Hole Size *in*	Jets *x 1/32"*	Drill String Type	Mud Type	Mud Density *sg*	PV *cP*	YP *lbs/100 ft sq*	Flow Rate *gpm*	Jet Vel *m/sec*	Impact Force *lbf*	Hydraulic Power *hhp*	Power/ Area *hp/sq in*	Bit Loss *Psi*	Bit Loss *%*	Pipe Loss *Psi*	ECD *sg*	Annular Velocities: DP OH *m/min*	Annular Velocities: DC OH *m/min*	Annular Velocities: DC Critical *m/min*
914mm (36") Hole Section																				
NB1	179	36"	3x18	N	SW&Hi-Vis Pills	1.03	1	1	855	70	855	195.0	0.8	395	64.0	165	1.04	-	4	24
444mm (17.5") Hole Section																				
NB2	917	17.5"	8x14	N	SW&Hi-Vis Pills	1.03	1	1	1220	99	1765	577.0	2.4	813	33.3	655	1.03	32	42	45
311mm (12.25") Hole Section																				
NB3	1303	12.25	7x14	N	KCl/Polymer/Glycol	1.15	14	25	1000	93	1513	464.2	4.0	796	36.4	1223	1.17	60	91	138
	1870	12.25	7x14	N	KCl/Polymer/Glycol	1.15	20	26	950	88	1365	398.0	3.4	719	28.1	1678	1.17	57	87	144
	2154	12.25	7x14	N	KCl/Polymer/Glycol	1.16	21	31	990	92	1495	454.0	3.9	787	27.0	1947	1.18	59	90	160
	2303	12.25	7x14	N	KCl/Polymer/Glycol	1.19	20	35	1000	93	1565	480.0	4.1	824	26.9	1997	1.22	60	91	168
	2465	12.25	7x14	N	KCl/Polymer/Glycol	1.22	22	40	1005	93	1621	500.0	4.3	853	26.1	2189	1.25	57	85	176
	2595	12.25	7x14	N	KCl/Polymer/Glycol	1.23	21	35	1005	93	1634	504.0	4.3	860	25.5	2297	1.26	57	85	162
NB4	2706	12.25	3x20	N	KCl/Polymer/Glycol	1.23	21	37	825	88	1259	364.0	3.1	758	26.6	1889	1.26	47	75	170
	2830	12.25"	3x20	N	KCl/Polymer/Glycol	1.23	22	34	810	86	1214	345.0	3.0	731	25.3	1972	1.25	47	74	163
	2933	12.25"	3x20	N	KCl/Polymer/Glycol	1.23	24	37	800	85	1184	332.0	2.9	713	24.4	2033	1.26	48	73	172
NB5	2996	12.25"	3x18	N	KCl/Polymer/Glycol	1.23	22	36	830	109	1573	565.0	4.9	1169	31.1	2415	1.26	47	73	166
	3174	12.25"	3x18	N	KCl/Polymer/Glycol	1.22	24	38	820	108	1523	541.0	4.7	1132	29.5	2522	1.25	47	75	175

Esso Australia Pty Ltd. **February 2003**

Gyro Survey listings

Survey number	Measured Depth Depth	Inclination Deg.	Azimuth Deg.	Survey number	Measured Depth Depth	Inclination Deg.	Azimuth Deg.
1	157.8	0.25	195.26	51	1610.8	0.84	19.01
2	185.1	2.83	2.83	52	1639.9	0.96	51.87
3	212.5	0.35	350.71	53	1668.9	0.99	5.3
4	239.9	0.32	1.45	54	1698	1.05	16.09
5	267.5	0.35	15.59	55	1727.1	1.07	8.49
6	296.4	0.35	357.5	56	1756.1	0.97	37.88
7	325.4	0.35	358.93	57	1785.1	1.64	8.97
8	354.4	0.31	351.16	58	1814.2	1.49	355.64
9	383.2	0.28	342.33	59	1843.1	1.39	352.07
10	412.2	0.28	333.71	60	1871.8	1.36	10.96
11	441.3	0.3	330.59	61	1900.9	1.42	5.91
12	470.3	0.26	329.95	62	1930.1	1.06	350.75
13	499.3	0.27	316.67	63	1959.1	1.45	318.73
14	528.3	0.29	341.21	64	1988.2	1.54	10.39
15	557.3	0.35	334.17	65	2017.3	1.5	350.44
16	586.3	0.37	339.92	66	2046.2	1.62	18.76
17	644.2	0.44	344.86	67	2075.3	1.4	356.86
18	673.1	0.48	339.4	68	2104.3	1.68	29.66
19	702.1	0.47	355.15	69	2133.1	1.45	11.55
20	731.1	0.49	354.85	70	2162.1	1.41	6
21	760.1	0.46	355.22	71	2191.2	1.38	355.52
22	789.1	0.46	350.78	72	2220.2	1.25	3.94
23	818.2	0.41	301.7	73	2249.3	1.27	342.71
24	847.2	0.51	355.47	74	2278.2	1.32	17.85
25	876.2	0.53	338.22	75	2307.2	1.42	358.33
26	885.8	0.51	327.67	76	2336.3	1.52	359.27
27	907.8	0.39	329.98	77	2365.4	1.49	352.09
28	945.5	0.45	10.33	78	2394.5	1.39	344.11
29	974.4	0.51	49.51	79	2423.4	1.31	350.73
30	1003.2	0.5	44.1	80	2452.4	1.36	357.28
31	1032.1	0.56	65.45	81	2481.2	1.28	8.12
32	1060.9	0.53	47.97	82	2510.2	1.31	3.41
33	1089.8	0.58	59.57	83	2539.1	1.3	359.16
34	1118.7	0.56	29.96	84	2568.1	1.17	4.09
35	1147.6	0.64	46.68	85	2597.1	1.09	6.25
36	1176.5	0.62	19.17	86	2626.2	1.14	1.74
37	1205.3	0.56	31.6	87	2655.2	1.19	357.56
38	1234.1	0.58	34.13	88	2684.2	1.36	10.59
39	1263	0.64	42.47	89	2713.1	1.15	121.25
40	1291.9	0.64	44.73	90	2742.1	1.26	336.84
41	1321	0.6	16.43	91	2771.1	1.18	349.21
42	1350.1	0.6	43.77	92	2800.1	1.12	286.24
43	1378.9	0.63	46.82	93	2829	1.3	317.47
44	1407.6	0.65	54.2	94	2858	1.13	327.9
45	1436.5	0.63	47.67	95	2887	1.27	345.2
46	1465.3	0.64	55.52	96	2916	1.29	328.73
47	1494.5	0.73	32.93	97	2923	1.35	28.95
48	1523.6	0.83	36.39				
49	1552.7	0.85	12.09				
50	1581.8	0.88	5.86				

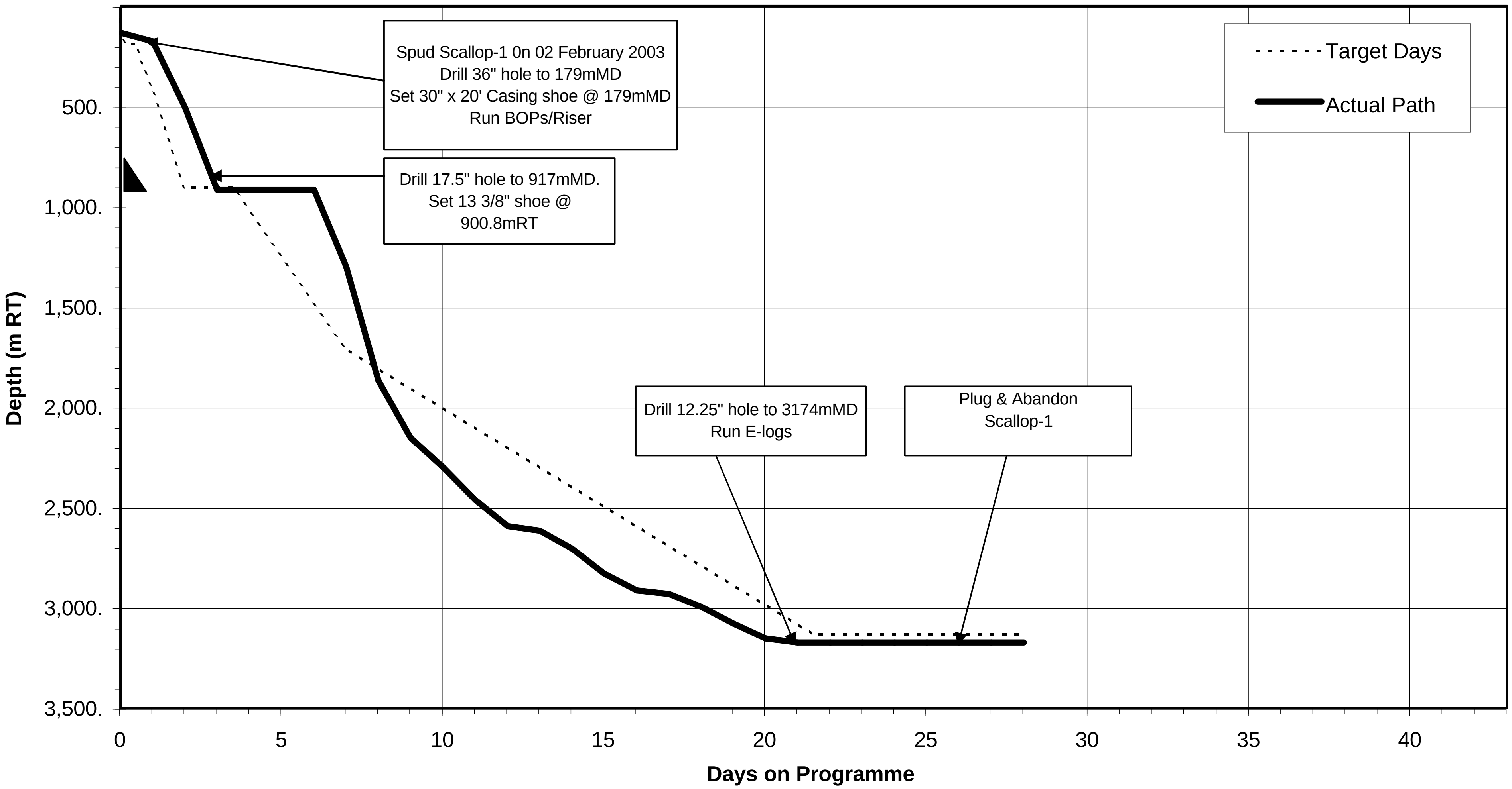
Directional Survey listings

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
1	2923	1.35	28.95	0	2922.61	37.24	37.24	2.84	37.35	4.36	0	TIP	None
2	2936.3	1.36	325.18	13.3	2935.91	37.51	37.51	2.83	37.61	4.31	1.08	MWD	None
3	2964.01	1.45	327.72	27.71	2963.61	38.07	38.07	2.45	38.15	3.68	0.04	MWD	None
4	2993.09	1.51	327.61	29.08	2992.68	38.71	38.71	2.05	38.76	3.03	0.02	MWD	None
5	3023.62	1.56	335.57	30.53	3023.2	39.43	39.43	1.66	39.46	2.41	0.07	MWD	None
6	3051.74	1.55	335.18	28.12	3051.31	40.12	40.12	1.34	40.14	1.92	0.01	MWD	None
7	3080.66	1.55	331.24	28.92	3080.22	40.82	40.82	0.99	40.83	1.39	0.04	MWD	None
8	3110.84	1.52	333.82	30.18	3110.39	41.53	41.53	0.62	41.54	0.85	0.02	MWD	None
9	3138.26	1.52	333.59	27.42	3137.8	42.19	42.19	0.3	42.19	0.4	0	MWD	None

ESSO AUSTRALIA PTY LTD

Scallop-1

Time vs. Depth Curve



Appendices

Formation Evaluation Log

1: 500

BAKER HUGHES

INTEQ

Esso

Company	**Esso Australia Pty. Ltd**
Well	**Scallop-1**
Permit	**Vic / RL2**
Region	**Gippsland Basin**
Designation	**Wildcat Exploration**
Coordinates	**038° 12' 48.615" S Lat** **148° 35' 28.879" E Long**
Ref Elevation	**RT 25.9 m above LAT**
Total Depth	**3174mRT**
Contractor	**Transocean**
Rig	**Sedco 702**
Type	**Semi-Submersible**

LOG INTERVAL

Depth	**261mRT to3174mRT**
Date	**03 February – 22 February 2003**
Scale	**1 : 500**
Data Engineers	**M. de Leon, M. Goode**
Logging Geologists	**P. Morris, T.Liang, D.Walding, R.Burns**

INTEQ LOG SUITE

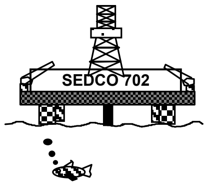
Formation Evaluation
Drilling Data Plot
Gas Ratio Plot
Drilling Data Pressure Plot
Pressure Summary Plot

ABBREVIATIONS

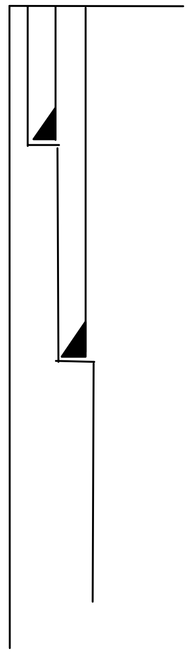
NB	New Bit	MD	Measured Depth
RR	Rerun Bit	GPM	Gallons per Min
CB	Core Bit	PP	Pump Pressure
WOB	Weight on Bit	MW	Mud Weight sg
RPM	Revs per Minute	FV	Funnel Viscosity
FLC	Flow Check	F	Filtrate - API
FCG	Flow Check Gas	FC	Filter Cake
PR	Poor Returns	PV	Plastic Viscosity
NR	No Returns	YP	Yield Point
BG	Background Gas	Sol	Solids %
WTG	Wiper Trip Gas	Sd	Sand %
TG	Trip Gas	Cl	Chlorides
POG	Pumps Off Gas	RM	Mud Resistivity
CG	Connection Gas	RMF	Filtrate Resistivty
SWG	Swab Gas	TVD	True Vertical Depth

LITHOLOGY SYMBOLS

Calcarenite Ca
Calcisiltite Cs
Calcilutite Cl
Glauconite Glauc
Dolomite Dol
Marl Mrl
Conglomerate Cgl
Pyrite Pyr
Sandstone Sst
Siltstone Sltst
Claystone Clst
Chert Cht
Volcanics Volc
Cement Cmt
Coal C
Calcareous Calc



Datum, Drillfloor (DF)
Sealevel 25.9 mRT MSL



Seabed @ 135.5mRT

Drilling Fluid: Seawater / PHG sweeps

914mm (36") x 660mm (26") hole to 179m
762mm (30") csg set @ 179m

444mm(17.5") hole to 917m

Drilling Fluid: Seawater / PHG sweeps

340mm (13.375") csg set @ 900.8m

311mm (12.25") hole to 3174 m

Drilling Fluid: KCL Polymer PHPA / Glycol

Casing Seat
Liner Hanger
Cored Interval
Unrecovered
Test Interval
M Mechanical Sidewall Core
Wireline Logs
Formation Test
Sidewall Core
No Recovery
Sliding

FORMATION EVALUATION LOG
Scallop-1
SCALE: 1:500

BAKER HUGHES INTEQ

ESSO

RATE OF PENETRATION

WOB (klbs)

60 50 40 30 20 10 0

ROP (m/hr)

500 100 10 1 0.5

MEASURED DEPTH (m)

CUTTINGS LITHOLOGY

CHROMATOGRAPH & TOTAL GAS

Methane

Ethane

Propane

I-Butanes

N-Butanes

Pentanes (ppm)

0.001 0.01 0.1 1 10 100

Total Gas (%) 1%TG = 50Units

0.001 0.01 0.1 1 10 100

DIRECT FLUORESCENCE

POOR FAIR GOOD

CUT FLUORESCENCE

POOR FAIR GOOD

REMARKS

250

Spud Scallop-1 1200hrs
02 February'03
Seabed @ 135.5m
RT - MSL: 25.9m
WD: 109.6m
Data Collection Start from 261m

17.5" HOLE DRILLED FROM SEAFLOOR TO 917mMD
RETURNS TO SEAFLOOR

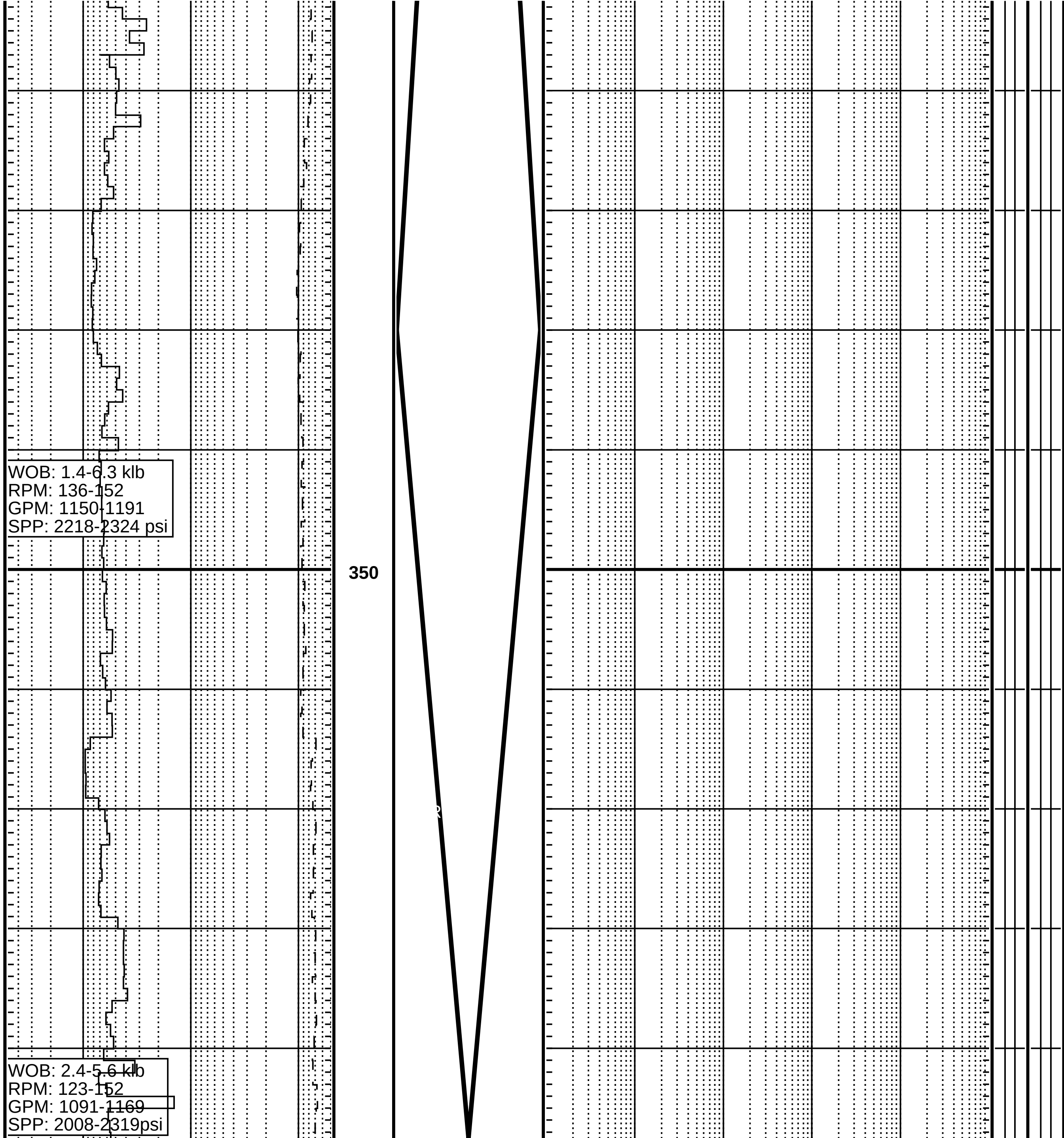
NB#2 HYCALOG DS34HF 17.5"
Jets 8x14
In:179m
Out:917m
On Btm:14.1 hrs
1/1/ER/T/X/1/NO/TD

Survey @ 267.50mMD
Inc: 0.35 deg
Azi: 15.59 deg
TVD 267.49m

WOB: 0.57-1.54 klb
RPM: 54-150
GPM: 1129-1191
SPP: 2126-2339 psi

Survey @ 296.40mMD
Inc: 0.35 deg
Azi: 357.50 deg
TVD 296.39m

300

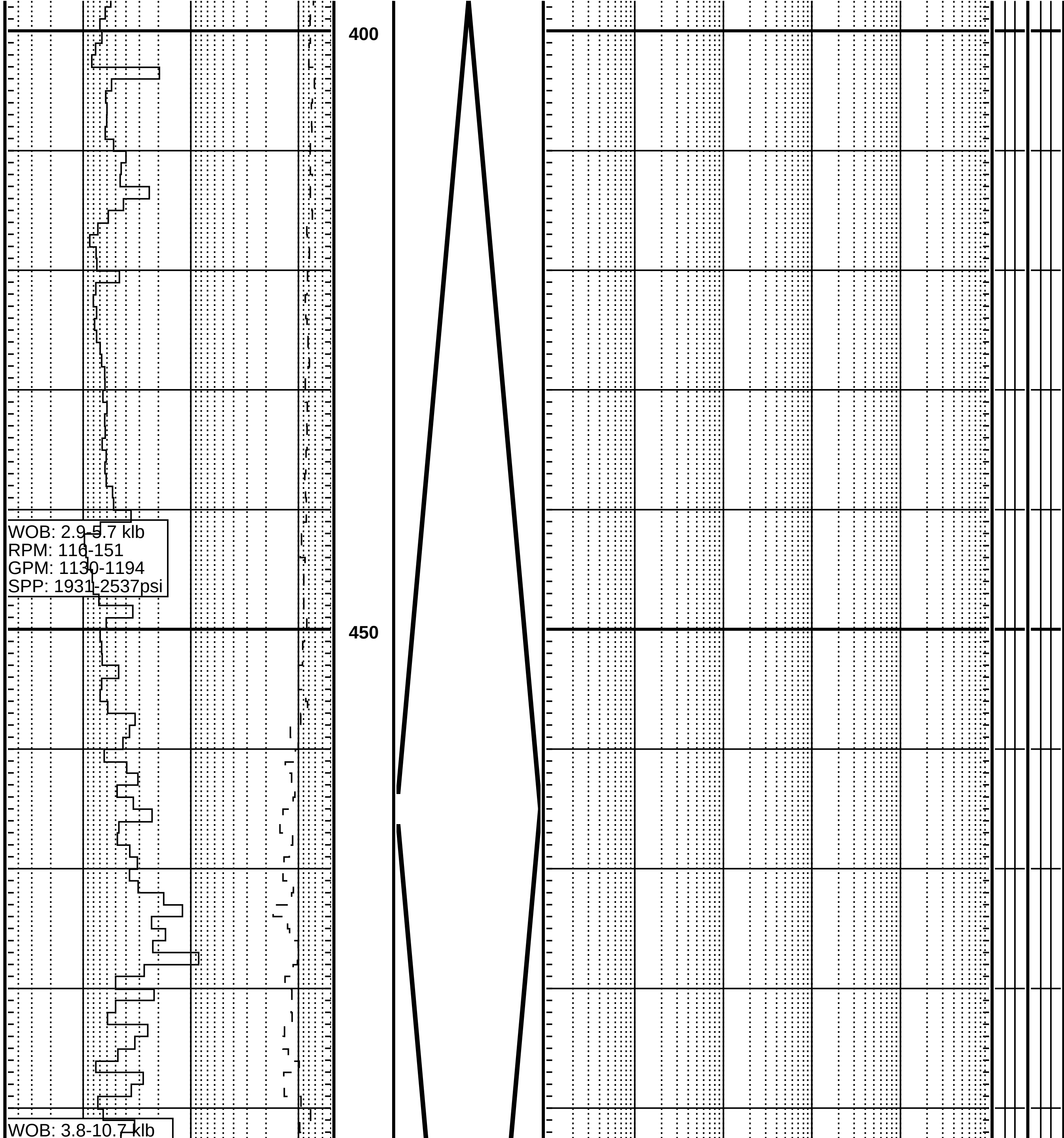


Drill with Seawater
Returns to Seabed

Survey @ 325.40mMD
Inc: 0.35 deg
Azi: 358.93 deg
TVD 325.39m

Survey @ 354.40mMD
Inc: 0.31 deg
Azi: 351.16 deg
TVD 351.16m

Survey @ 383.20mMD
Inc: 0.28 deg
Azi: 341.33 deg
TVD 383.19m

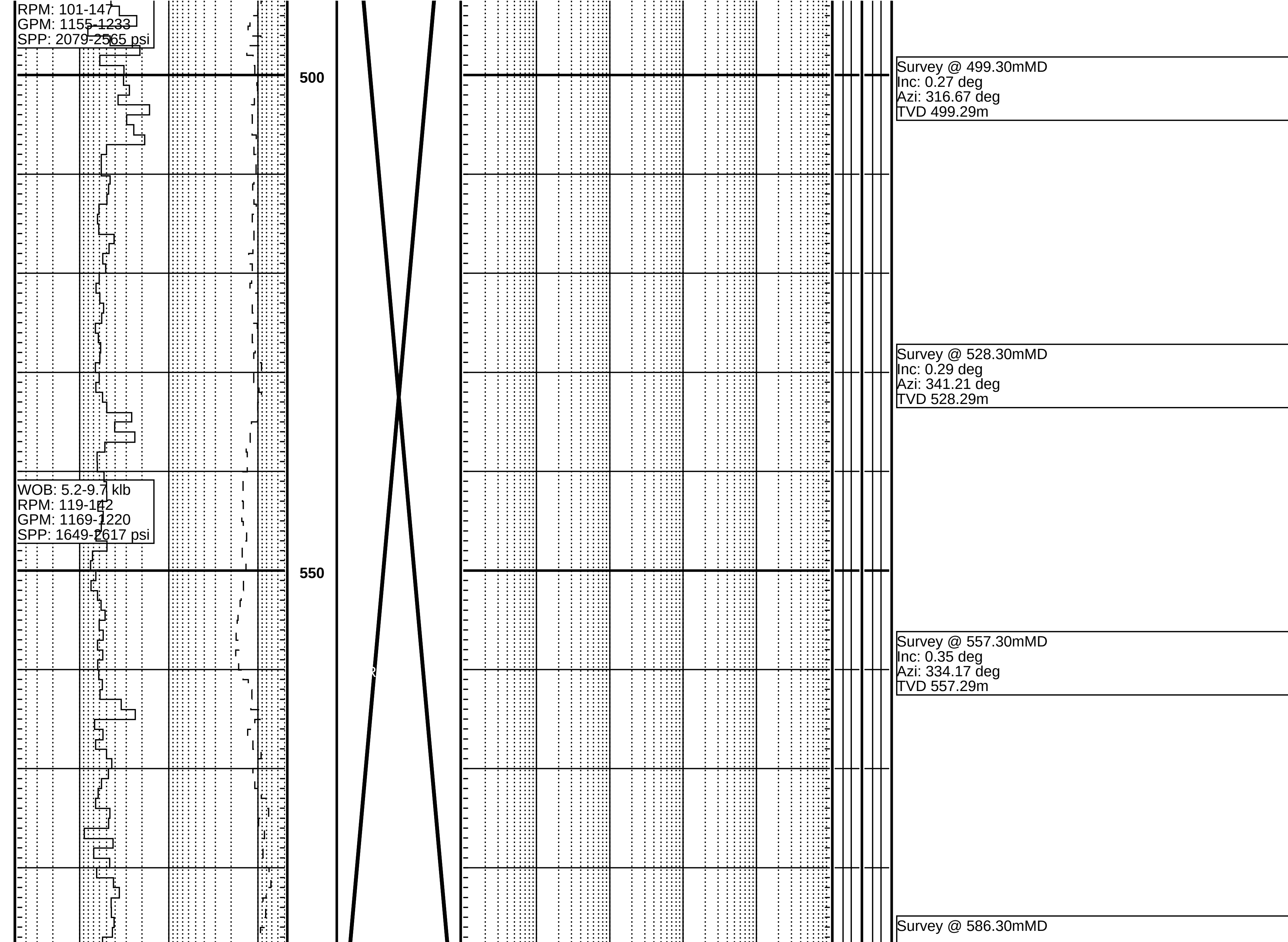


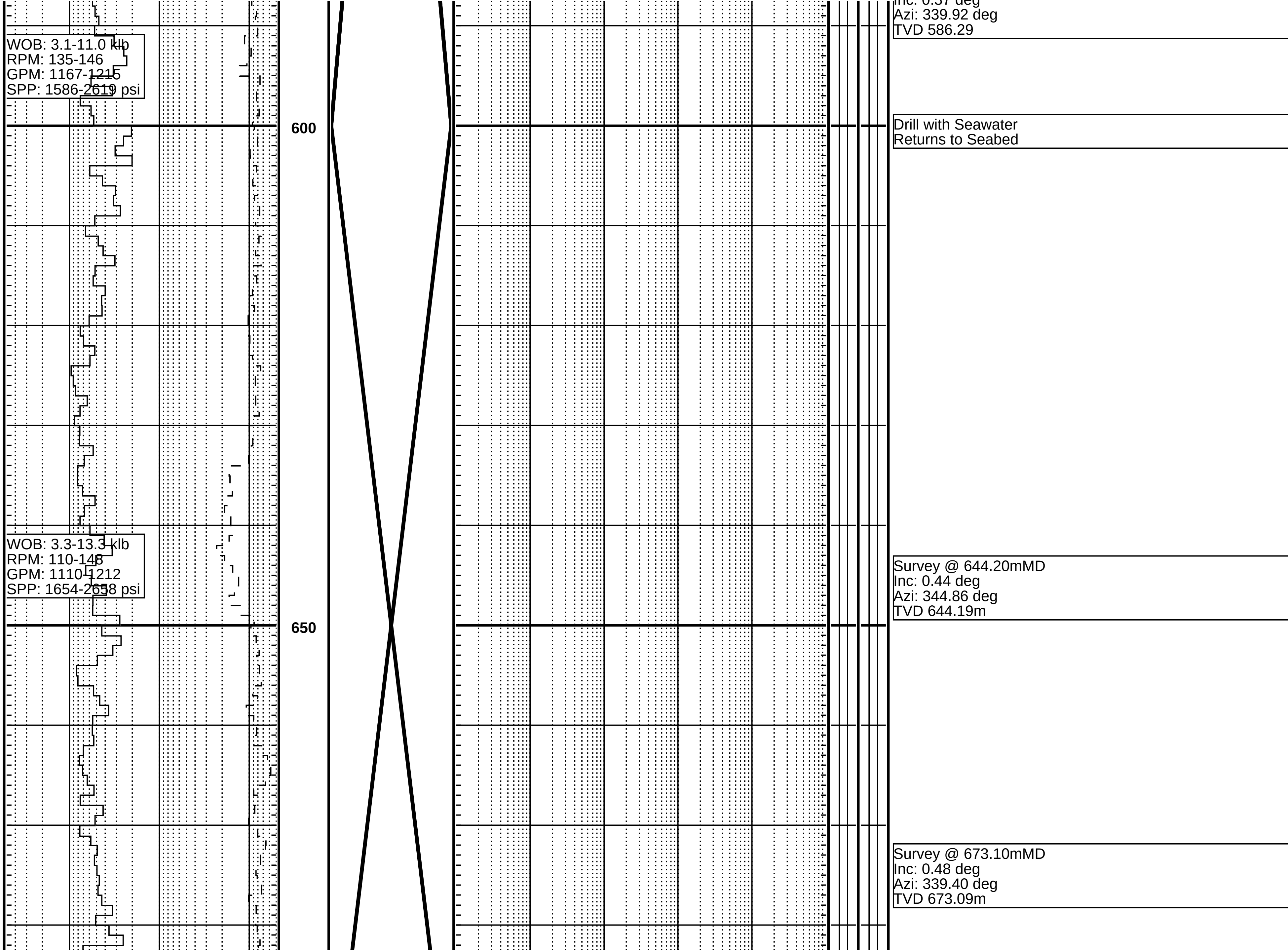
Drill with Seawater
Returns to Seabed

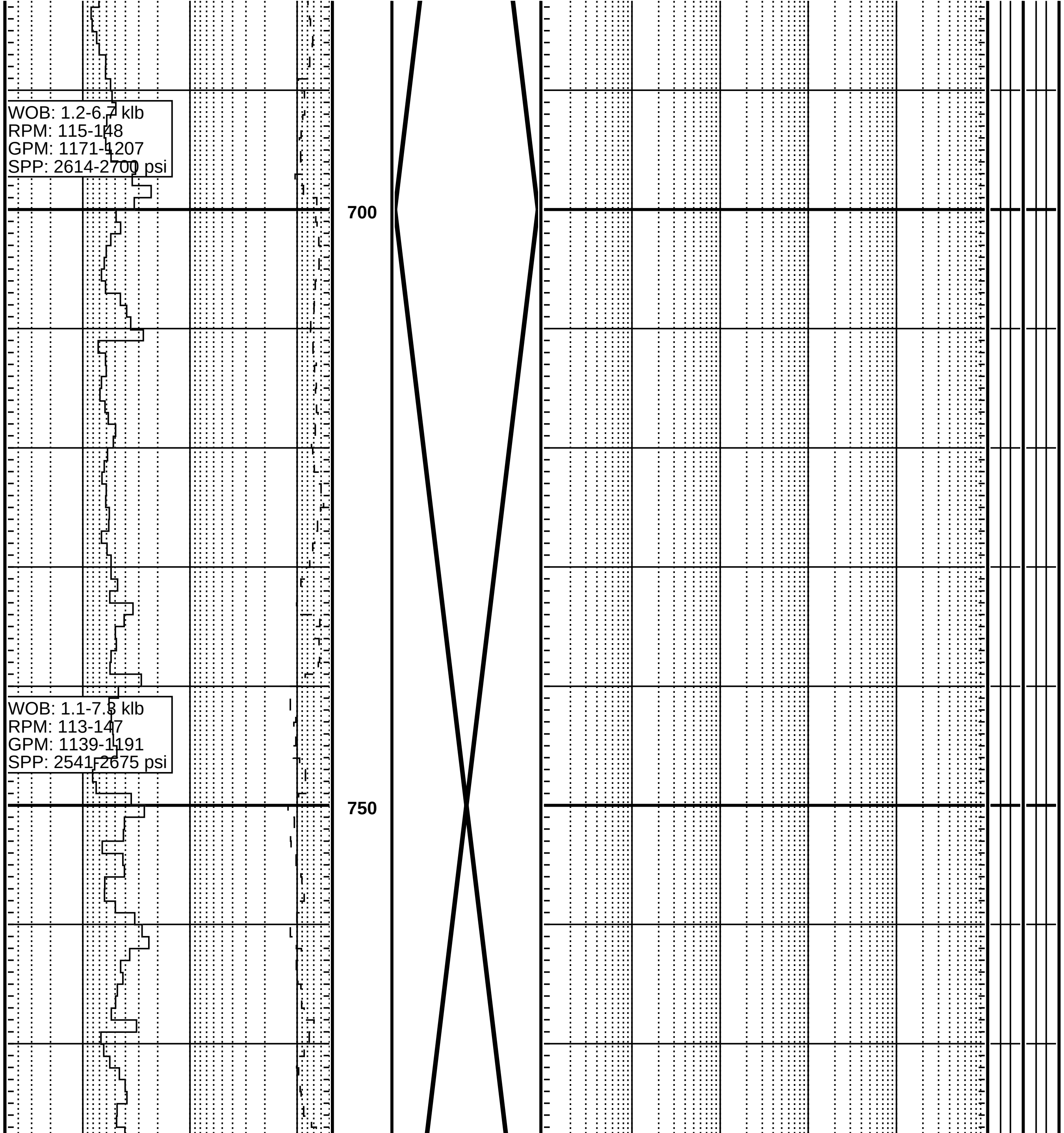
Survey @ 412.20mMD
Inc: 0.28 deg
Azi: 333.71 deg
TVD 412.19m

Survey @ 441.30mMD
Inc: 0.30 deg
Azi: 330.59 deg
TVD 441.29m

Survey @ 470.30mMD
Inc: 0.26 deg
Azi: 319.95 deg
TVD 470.29m


RPM: 101-147
GPM: 1155-1233
SPP: 2079-2565 psi
500
Survey @ 499.30mMD
Inc: 0.27 deg
Azi: 316.67 deg
TVD 499.29m
Survey @ 528.30mMD
Inc: 0.29 deg
Azi: 341.21 deg
TVD 528.29m
WOB: 5.2-9.7 klb
RPM: 119-142
GPM: 1169-1220
SPP: 1649-2617 psi
550
Survey @ 557.30mMD
Inc: 0.35 deg
Azi: 334.17 deg
TVD 557.29m
Survey @ 586.30mMD


Azi: 339.92 deg
TVD 586.29
WOB: 3.1-11.0 klb
RPM: 135-146
GPM: 1167-1215
SPP: 1586-2619 psi
600
Drill with Seawater
Returns to Seabed
WOB: 3.3-13.3 klb
RPM: 110-148
GPM: 1110-1212
SPP: 1654-2658 psi
Survey @ 644.20mMD
Inc: 0.44 deg
Azi: 344.86 deg
TVD 644.19m
650
Survey @ 673.10mMD
Inc: 0.48 deg
Azi: 339.40 deg
TVD 673.09m

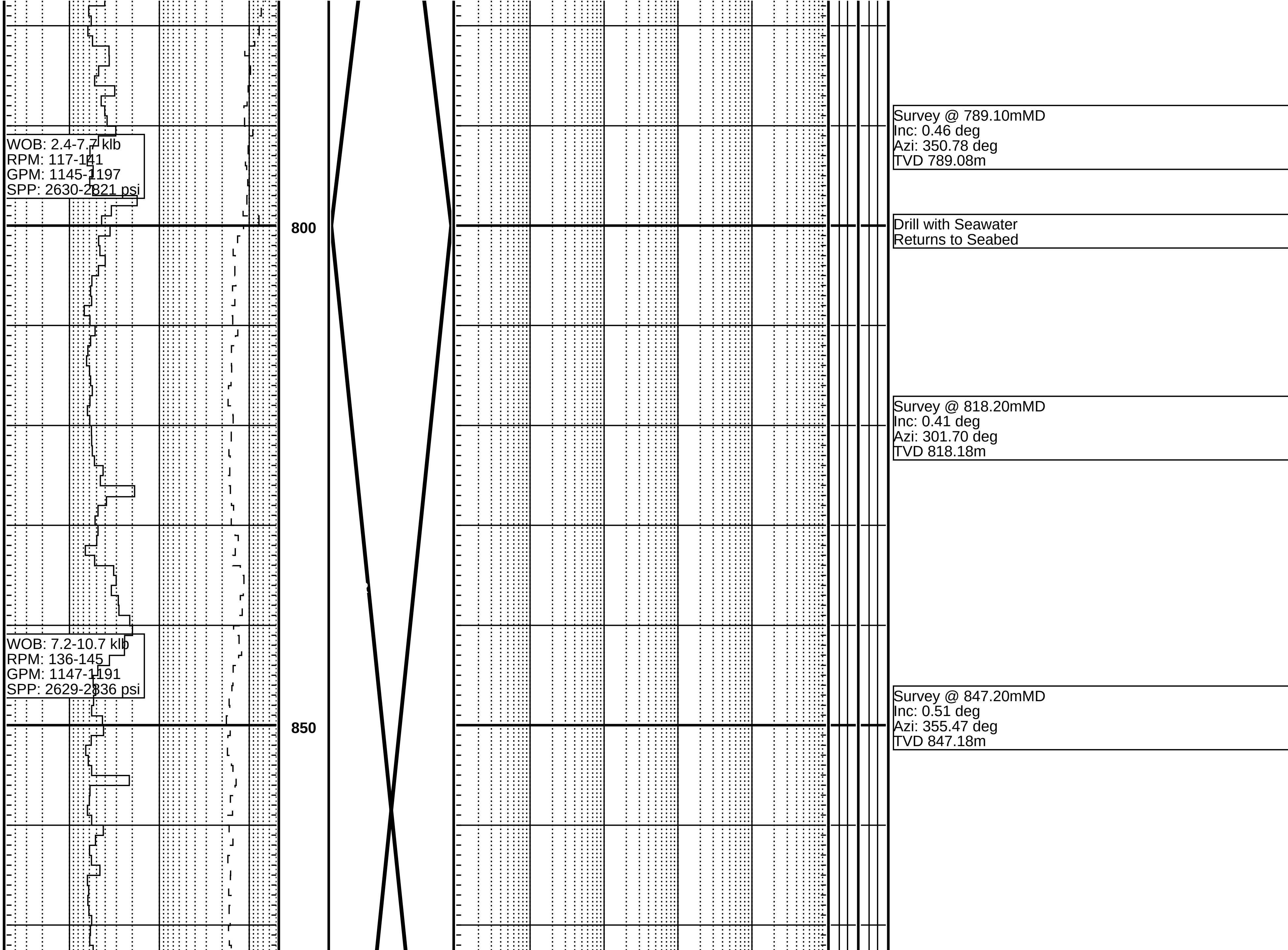


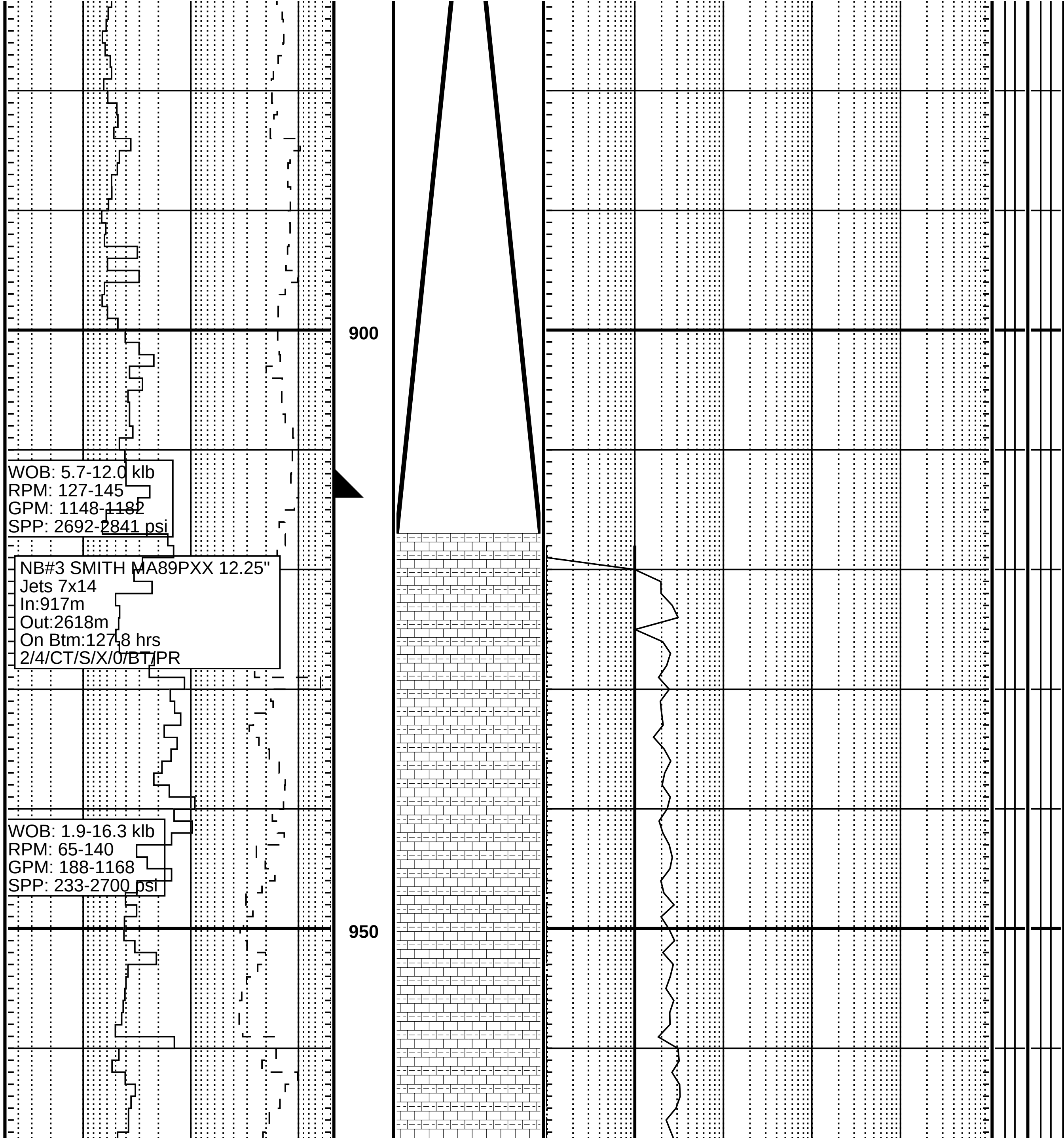
Drill with Seawater
Returns to Seabed

Survey @ 702.10mMD
Inc: 0.47 deg
Azi: 355.15 deg
TVD 702.09m

Survey @ 731.10mMD
Inc: 0.49 deg
Azi: 354.85 deg
TVD 731.08m

Survey @ 760.10mMD
Inc: 0.46 deg
Azi: 355.22 deg
TVD 760.08m


WOB: 2.4-7.7 klb
RPM: 117-141
GPM: 1145-1197
SPP: 2630-2821 psi
800
Survey @ 789.10mMD
Inc: 0.46 deg
Azi: 350.78 deg
TVD 789.08m
Drill with Seawater
Returns to Seabed
Survey @ 818.20mMD
Inc: 0.41 deg
Azi: 301.70 deg
TVD 818.18m
WOB: 7.2-10.7 klb
RPM: 136-145
GPM: 1147-1191
SPP: 2629-2836 psi
850
Survey @ 847.20mMD
Inc: 0.51 deg
Azi: 355.47 deg
TVD 847.18m



Survey @ 876.20mMD
Inc: 0.53 deg
Azi: 338.22 deg
TVD 876.18m

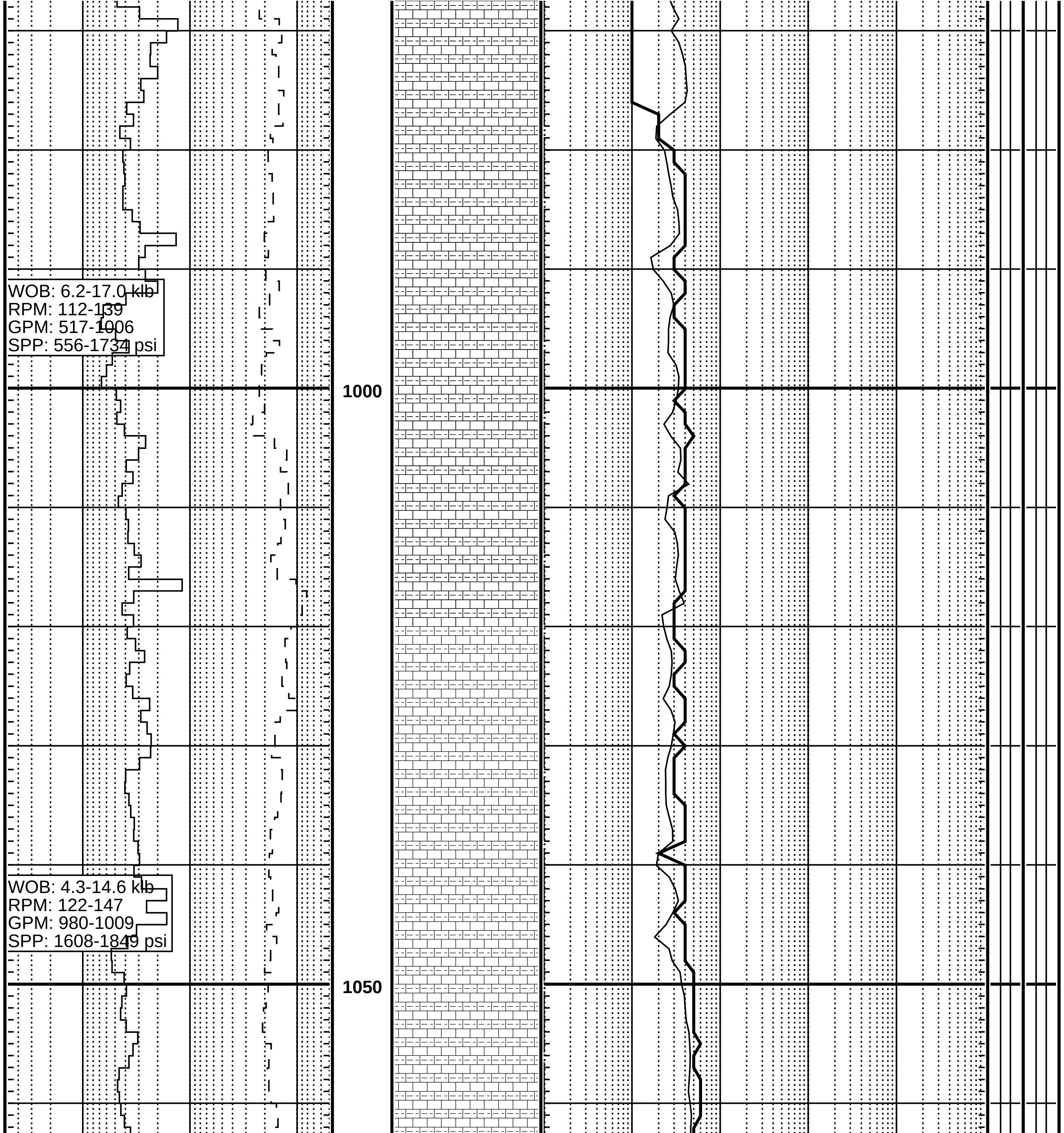
Survey @ 885.80mMD
Inc: 0.51 deg
Azi: 327.67 deg
TVD 885.78m

Drill with Seawater
Returns to Seabed

Survey @ 907.80mMD
Inc: 0.39 deg
Azi: 329.98 deg
TVD 907.78m

Displace hole to KCL/Polymer/Glycol-CP mud system
LOT @ 920m
EMW 1.98 sg(16.5 ppg)

Survey (Gyro)
945.50mMD
TVD: 945.48m
Inc: 0.45 deg Az: 10.33 deg

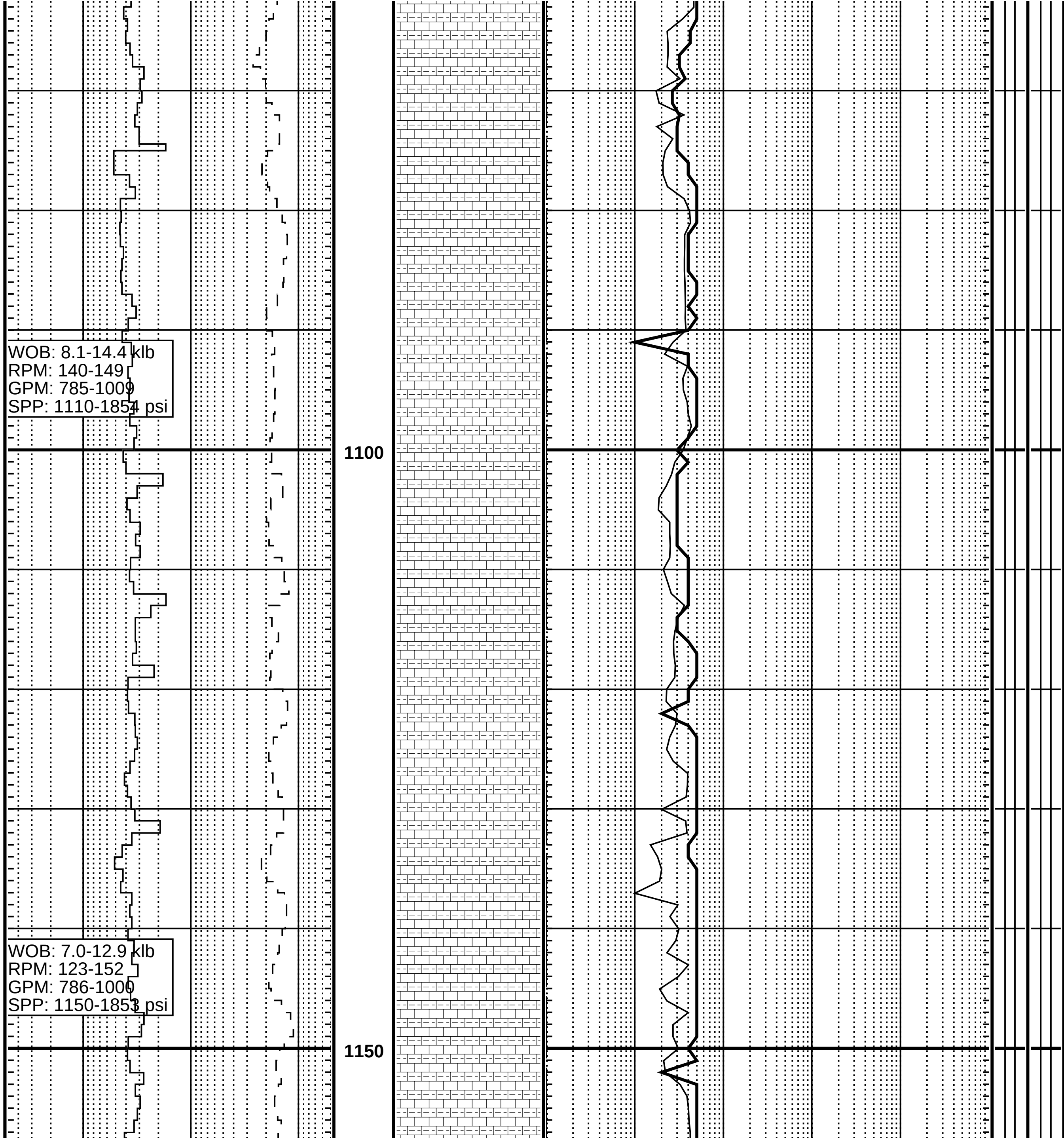


ARGILLACEOUS CALCILUTITE:lt gy-m lt gy,lt olv gy,sft-occ frm,disp i/p, sbblky-blky,tr carb spk,tr foram

W 9.00 V 45 PV/YP 11/15
Gels 3/3 F 5.4 FC 1
Sol 1.2 Sd 0.25 pH 9.5
Cl 34k Ca 120 KCl 7.2%

ARGILLACEOUS CALCILUTITE:lt gy-m lt gy,lt olv gy,sft-frm,sbblky,tr carb spk,tr foram

ARGILLACEOUS CALCILUTITE:lt gy-m lt gy,lt olv gy,sft-frm,sbblky,tr carb spk,tr foram



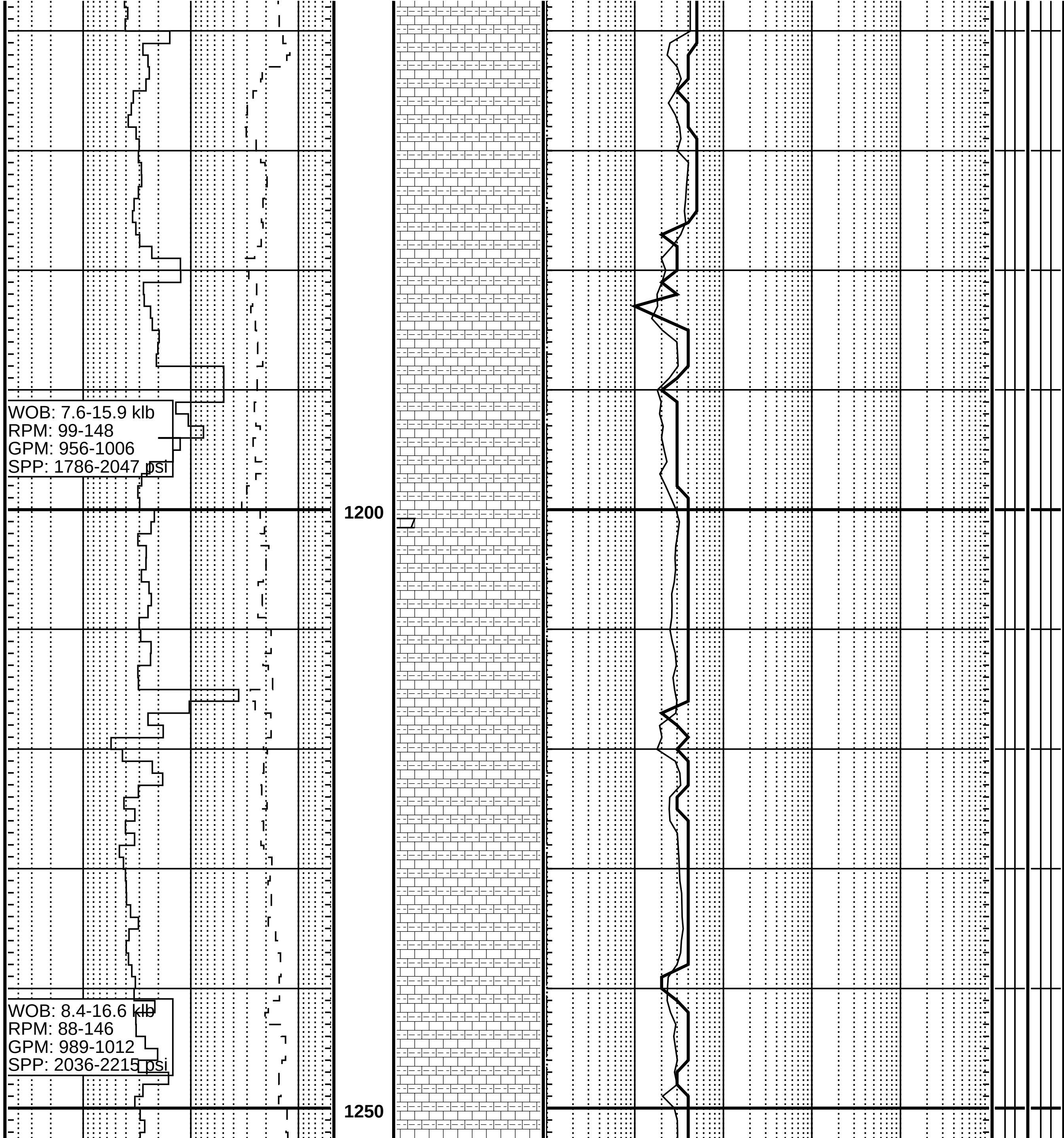
BOOST RISER @ 1064-1083m

ARGILLACEOUS CALCILUTITE:lt gy-m dk gy,lt olv gy,v sft-frm,sbblky-blky,tr carb spk,tr foram

ARGILLACEOUS CALCILUTITE:m dk gy-olv gy,sft-frm, sbblky-blky,tr carb spk

ARGILLACEOUS CALCILUTITE:m dk gy-olv gy,frm,sbblky-blky,tr carb spk

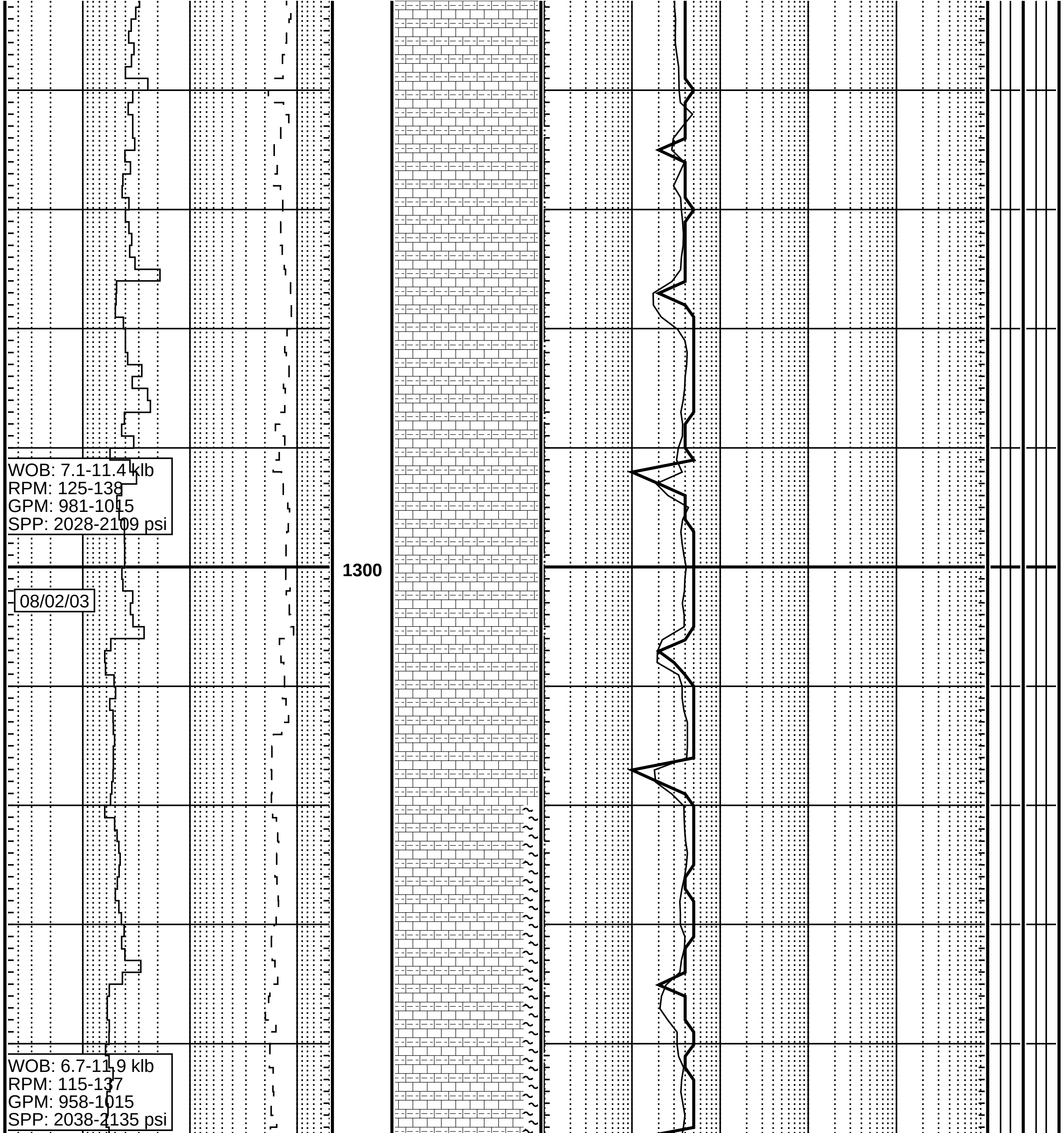
Survey (Gyro)
1147.61mMD
TVD: 1147.58m
Inc: 0.64 deg Az: 46.68 deg



ARGILLACEOUS CALCILUTITE:m dk gy-olv gy,frm,sbblky-blky,tr carb spk

ARGILLACEOUS CALCILUTITE:m gy-olv gy,sft-frm,sbblky-blky,tr glau,tr dol @ 1215m

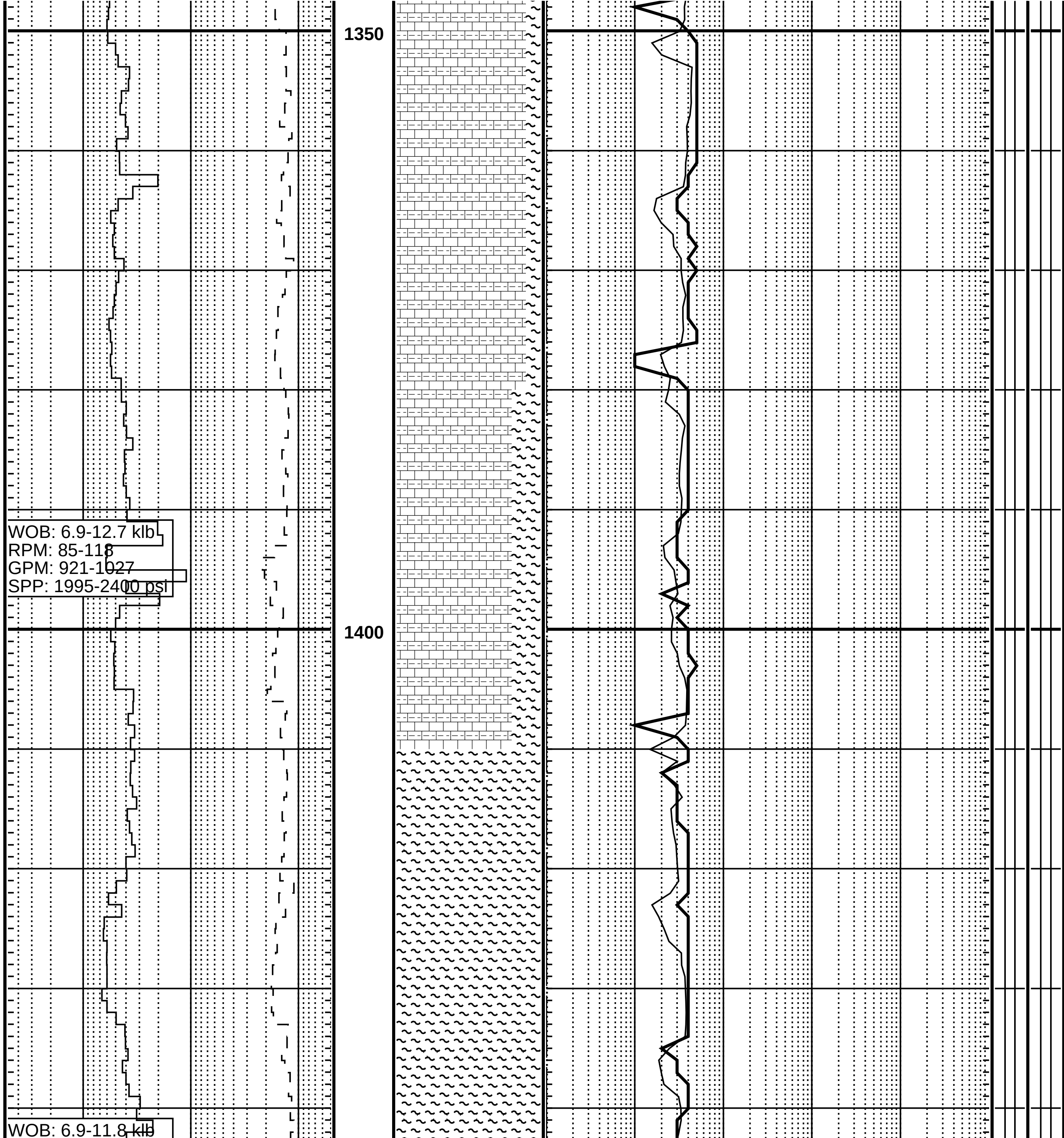
W 9.55 V 51 PV/YP 15/23
Gels 4/5 F 3.5 FC 1
Sol 3.5 Sd 0.35 pH 9.7
Cl 32.5k Ca 60 KCl 6.3%



ARGILLACEOUS CALCILUTITE:m dk gy-olv gy,sft-frm, sbblky-blky,tr glau,tr carb spk

ARGILLACEOUS CALCILUTITE:m dk gy-olv gy,occ olv gy, sft-frm,sbblky-blky,tr carb spk,tr foram

ARGILLACEOUS CALCILUTITE:m gy-lt olv gy,occ olv gy, sft-frm,blky-sbblky



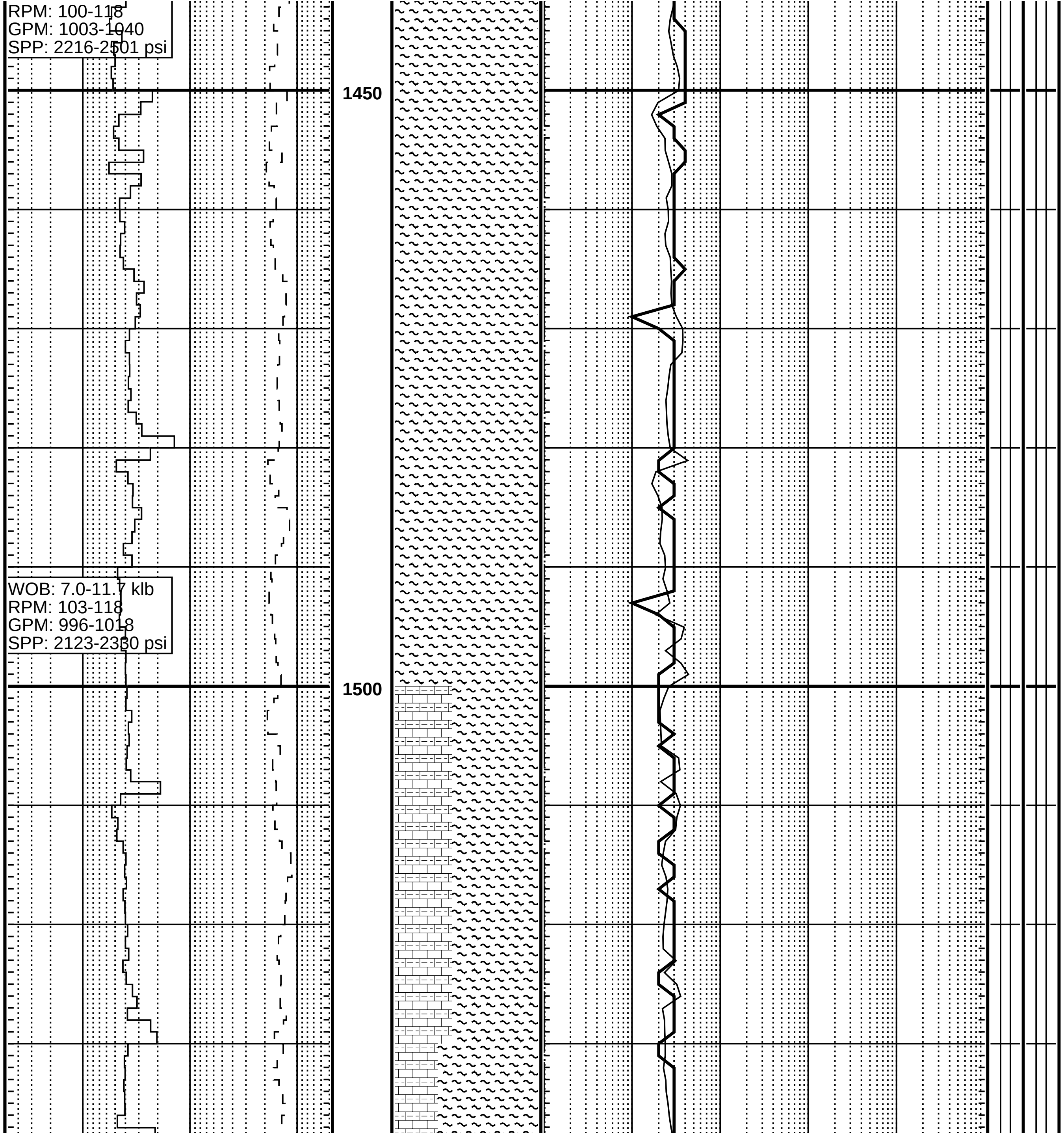
ARGILLACEOUS CALCILUTITE:m dk gy,olv gy,sft-frm,
sbblky-blky,tr carb spk,tr foram,tr calc conc

Survey (Gyro)
1350.10mMD
TVD: 1350.06m
Inc: 0.60 deg Az: 43.77 deg

ARGILLACEOUS CALCILUTITE:m dk gy,olv gy,sft-frm,disp
i/p,sbblky-blky,arg,tr carb spk,tr foram,tr foss frag

MARL:m lt gy,olv gy,sft-frm,sbblky-blky,tr glau,tr carb spk,tr
foram

MARL:m lt gy,olv gy,sft-frm,sbblky-blky,tr glau,tr carb spk,tr
foram

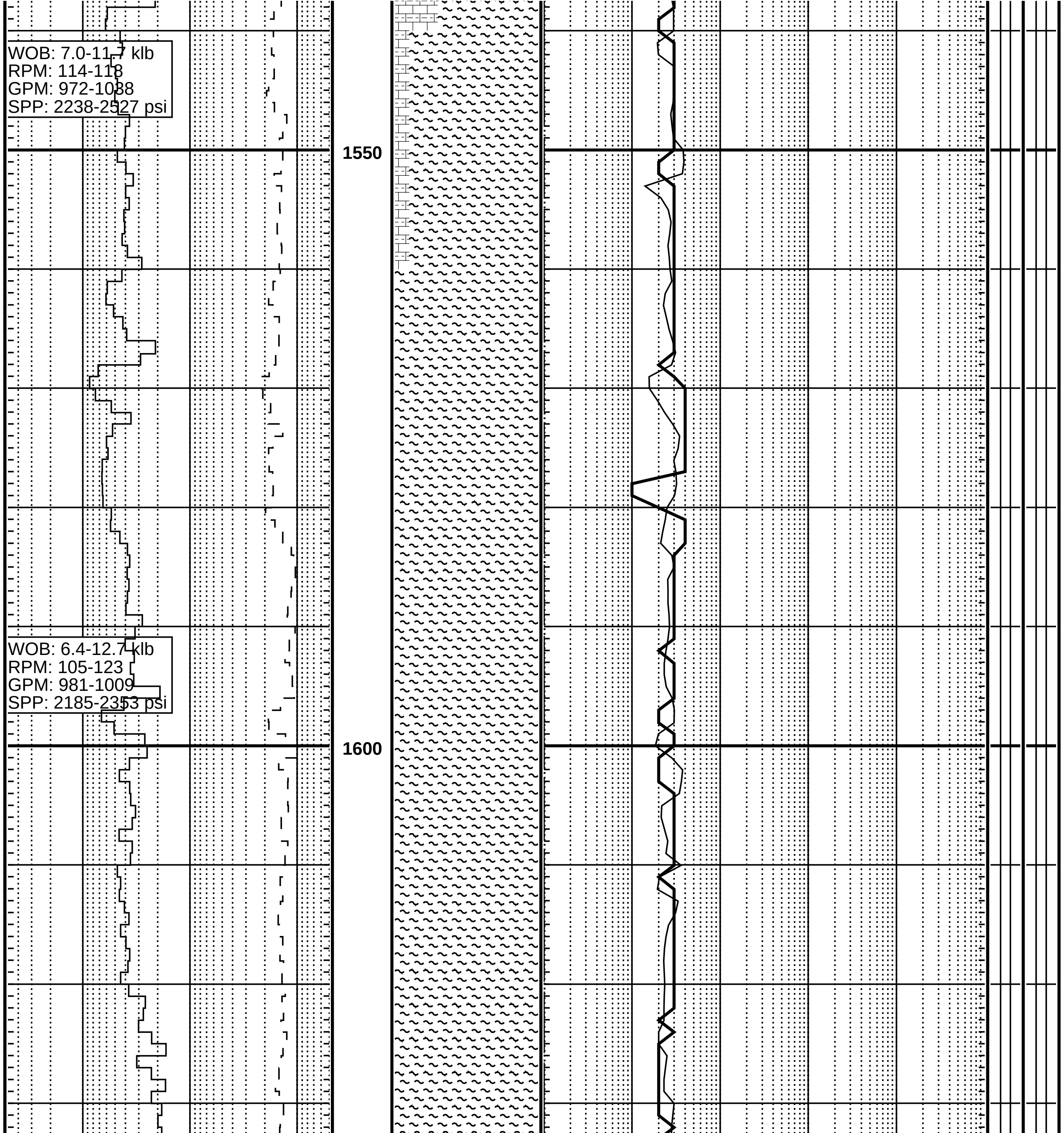


MARL:lt gy-m lt gy,occ lt olv gy,sft-frm,sbblky-blky,tr foram, tr glau

MARL:m dk gy,olv gy,sft-frm,blky,disp i/p,tr foss frag,tr foram

ARGILLACEOUS CALCILUTITE:lt gy-m gy,occ lt olv gy,sft-frm,sbblky-blky,tr carb spks,tr foram,tr pyr nod,tr glau,tr foss frag,tr uncons rnd qtz gr

MARL:m dk gy-m gy,sft-frm,sbblky-blky,mnr sltst lam,tr foram

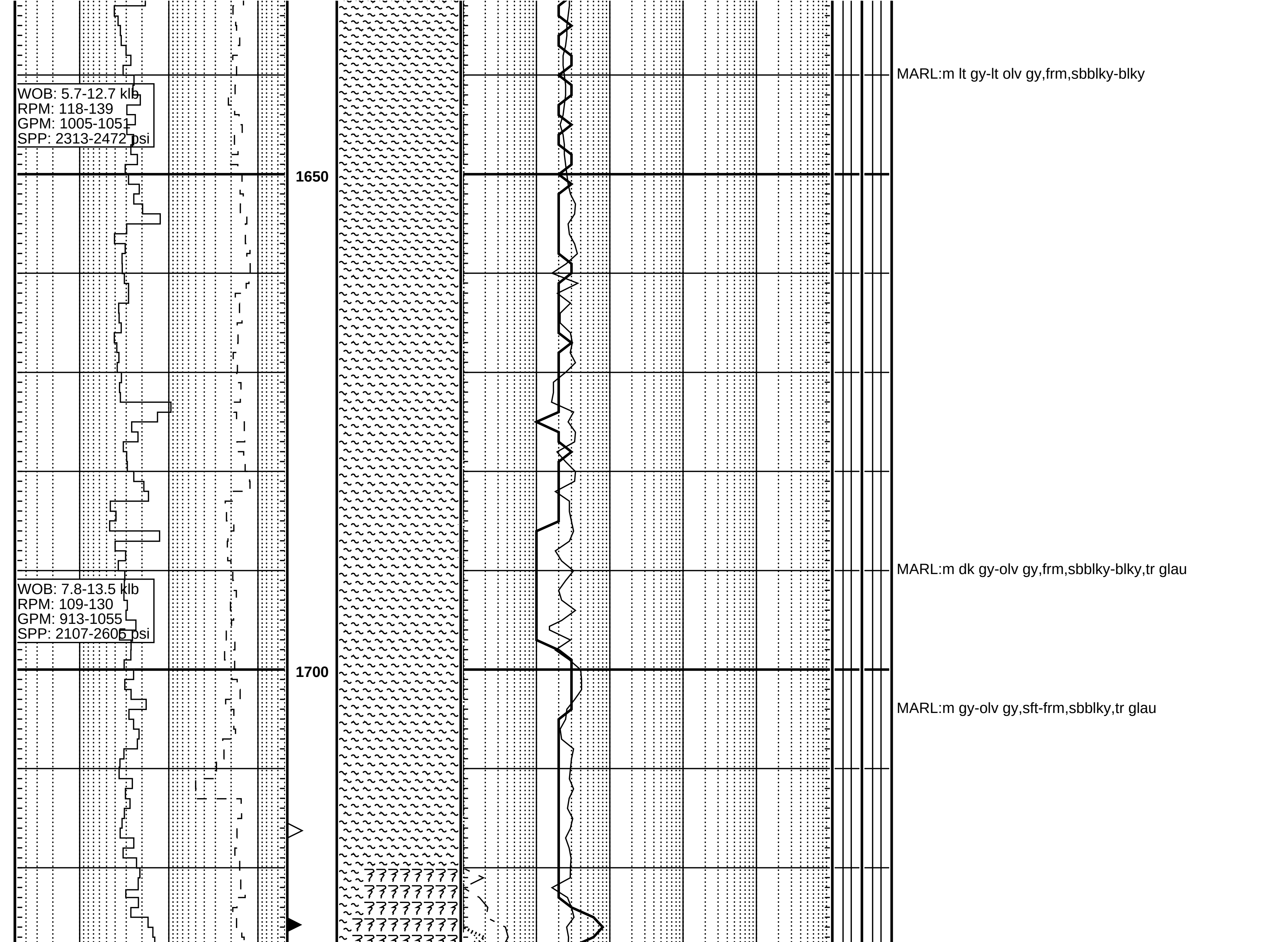


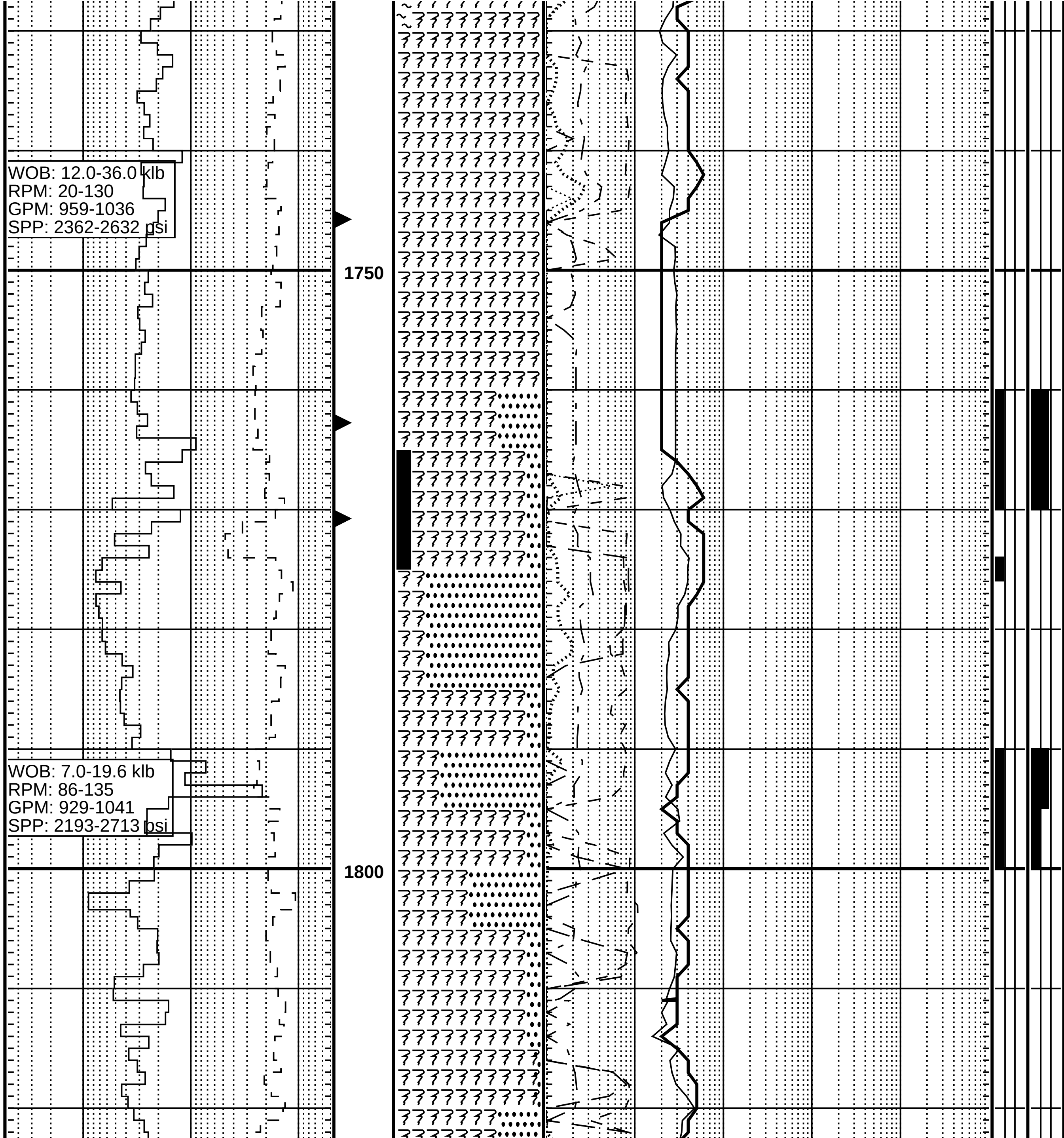
Survey (Gyro)
1552.70mMD
TVD: 1552.65m
Inc: 0.85 deg Az: 12.09 deg

MARL:lt gy-m dk gy,sft-frm,disp i/p,sbblky-blky,mnr slt lam,t
glau,tr foram,tr pyr nod

W 9.55 V 50 PV/YP 15/27
Gels 6/6 F 4.4 FC 1
Sol 3.5 Sd 0.30 pH 9.5
Cl 35k Ca 180 KCl 6.2%

MARL:m dk gy-olv gy,frm,sbblky-blky


WOB: 5.7-12.7 klb
RPM: 118-139
GPM: 1005-1051
SPP: 2313-2472 psi
1650
WOB: 7.8-13.5 klb
RPM: 109-130
GPM: 913-1055
SPP: 2107-2605 psi
1700
MARL:m lt gy-lt olv gy,frm,sbblky-blky
MARL:m dk gy-olv gy,frm,sbblky-blky,tr glau
MARL:m gy-olv gy,sft-frm,sbblky,tr glau



CLAYSTONE:gysh or-mod yelsh brn,v sft,sbblky,r carb spk

CLAYSTONE:v lt gy-m dk gy,gysh or-dk yelsh or,v sft-frm,r carb spk,sbblky

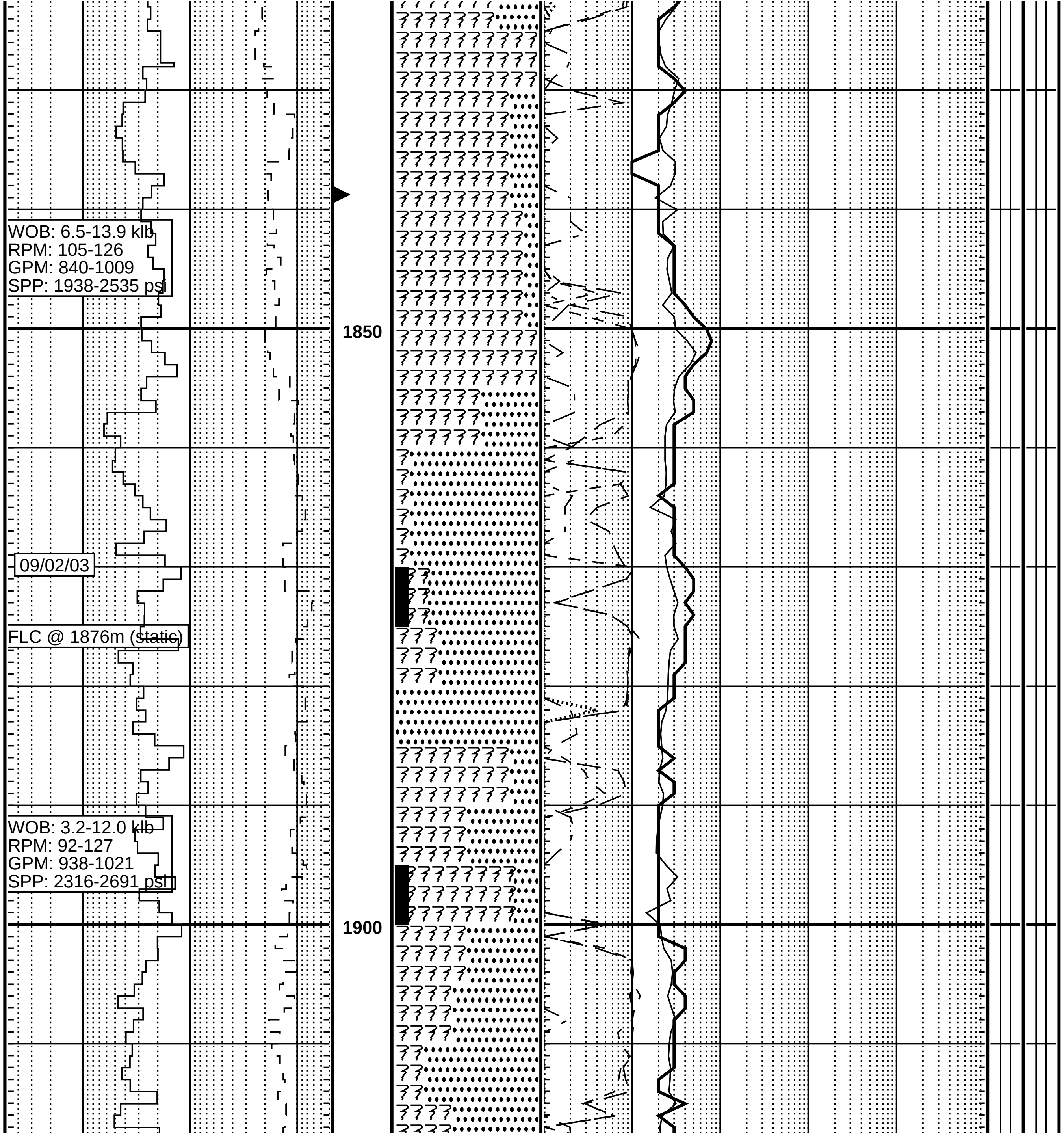
Survey (Gyro)
1756.10mMD
TVD: 1756.01m
Inc: 0.97 deg Az: 37.88 deg

SANDSTONE:trnsp-trnsl qtz gr,vf-m,pred lse,sbang-rnd,fr inf por
FLUORESCENCE (1760m-1770m):30% decr to tr,mod pl yel,n cut,stg yel c/c,stg r/r,assoc w/ dns arg agg

CLAYSTONE:v lt gy-m dk gy,dk yelsh or-mod yelsh brn,v sft ,sbblky
COAL:bit,gysh blk-blk,brnsh blk,frm-mod hd,sbconch,sbblky blky

SANDSTONE:trnsp-trnsl qtz gr,vf-m,pred lse,sbang-rnd,tr glau,fr inf por
FLUORESCENCE (1790m-1800m):10% decr to tr,dl-mod brt yel,v slw faint diffuse cut,slw-mod c/c assoc w/ arg agg

CLAYSTONE:lt gy-m dk gy,gysh or-mod yelsh brn,v sft-sft , tr carb spk,sbblky-blky



SANDSTONE:trnsp-trnsl,wh-m lt gy lse qtz gr,sbang-rnd,v pr srt,wk sil cmt,tr c,n shw

W 9.80 V 50 PV/YP 20/26
Gels 6/8 F 3.6 FC 1
Sol 4.9 Sd 0.70 pH 9.2
Cl 38k Ca 200 KCl 6.0%

SANDSTONE:trnsp-trnsl,wh-m lt gy lse qtz gr,sbang-rnd,v pr srt,wk sil cmt,tr c,n shw

CLAYSTONE:dsky brn,brnsh blk,frm,tr carb spk,micro lam

SANDSTONE:wh-v lt gy,trnsp-trnsl,lse qtz gr,f-m,sbang-sbrnd,mod-wl srt,gd inf por,n shw

COAL:gysh blk-blk,dll-sbvit,frm-mod hd,sbfiss,unevn frac

SANDSTONE:trnsp-trnsl,wh-m lt gy lse qtz gr,sbang-rnd,v pr srt,wk sil cmt,tr c,n shw

CLAYSTONE:brnsh blk,olv blk,brnsh gy,sft-frm,occ disp, sbblky-blky,tr carb spk,occ lam

CLAYSTONE:brnsh blk,olv blk,brnsh gy,sft-frm,occ disp, sbblky-blky,tr carb spk,occ lam

SANDSTONE:wh-m gy,mod pk,trnsp-trnsl,lse qtz gr,f-v crs, sbang-sbrnd,sbspher-sbelong,pr srt,fr inf por,occ carb inc
FLUORESCENCE: (1955m-1960m),tr dll spty yel,slw bldg mky wh cut

Survey (Gyro)
1959.10mMD
TVD: 1958.95m
Inc: 1.45 deg Az: 318.73 deg

CONGLOMERATE:(spot spl @ 1986m)3-5mm disagg qtz gran,rnd,mod-hi spher,occ cly mtx

SANDSTONE:trnsl-trnsp lse qtz gr,f-m,sbang,wl rnd,l-hi spher,mod-wl srt,gr rimmed w/tr cly,pr-fr inf por.n shw

CLAYSTONE:olv gy,brnsh gy,brnsh blk,sft,occ frm,disp i/p

COAL:(trace),brkn-bld,frm-hd,blky,lig,dl-sbvit

W 9.85 V 54 PV/YP 20/31
Gels 8/8 F 3.5 FC 1
Sol 5.8 Sd 0.25 pH 8.5
Cl 40k Ca 240 KCl 6.0%

SANDSTONE:wh-m gy,trnsp-trnsl,lse qtz gr,f-v crs,occ gran
rnd-sbang,pr srt,tr pyr cmt,pr inf por,n shw

WOB: 6.0-14.1 klb
RPM: 66-134
GPM: 976-1010
SPP: 2592-2807 psi

SILTSTONE:m lt gy-brnsh gy,wh,sft,disp,abd wh kao cly
mtx,vf-f dissem qtz gr

2050

CLAYSTONE:brnsh gy,dk yelsh brn,sft,amor,slty i/p

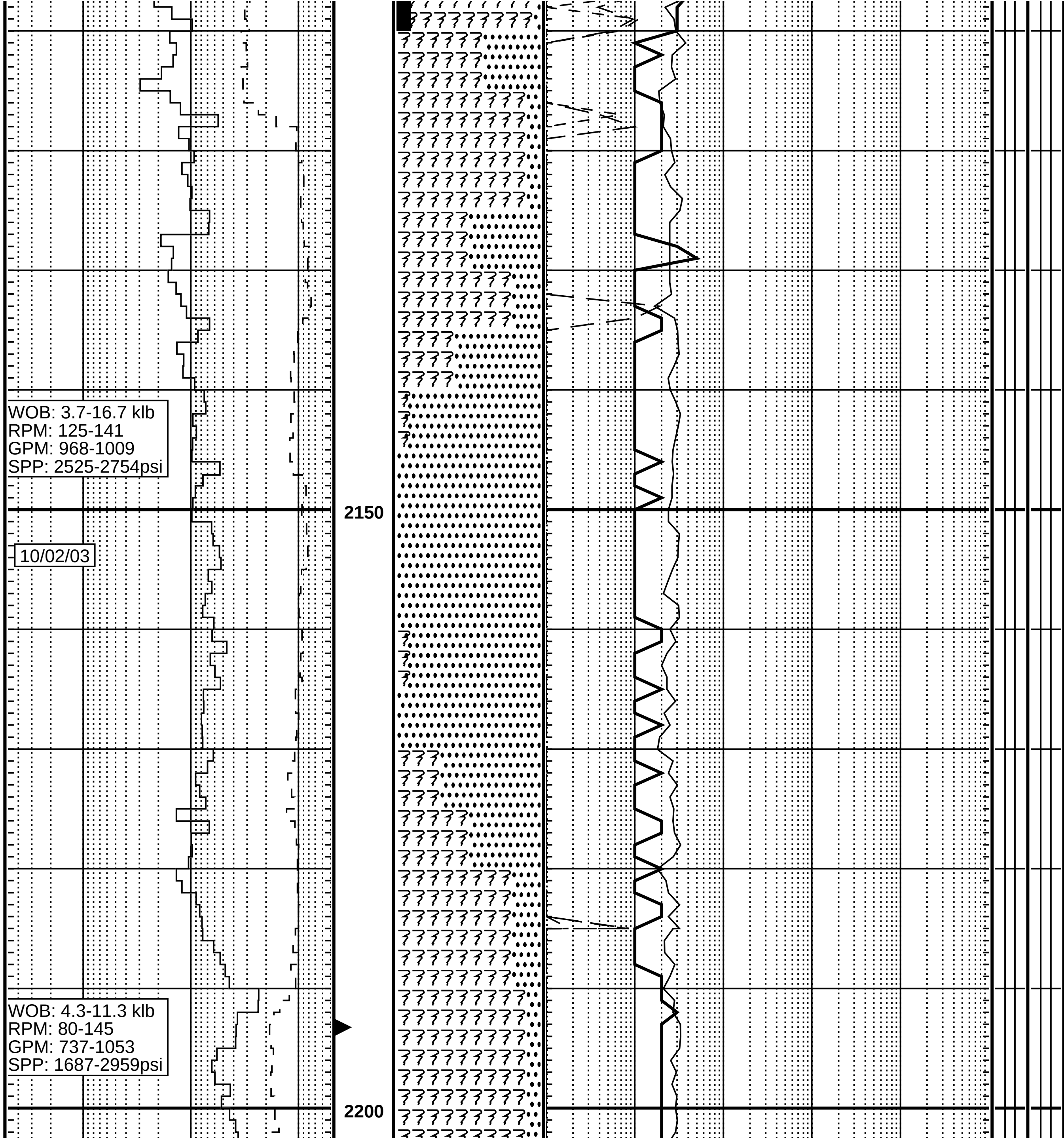
COAL:brnsh blk-blk,mod hd-hd,ea lstr,sbang

FLC @ 2092m (static)

WOB: 4.2-58.5 klb
RPM: 100-150
GPM: 958-1009
SPP: 2558-2738 psi

COAL:brnsh blk-blk,mod hd-hd,ea lstr,conch,g/t
CARBONACEOUS SHALE

2100



ARGILLACEOUS SANDSTONE:v lt gy-gysh brn,vf-occ m, sbang,pr srt,kao mtx,pr vis por,n shw

CLAYSTONE:lt gy-m dk gy,wh-yelsh gy, v sft-sft,sbblky-blky

Survey (Gyro)
2133.10mMD
TVD: 2132.88m
Inc: 1.45 deg Az: 11.55 deg

SANDSTONE:trnsp-trnsl qtz gr,pred lse,vf-crs,ang-sbang,pr srt,occ agg w/ sil cmt,gd vis por,tr smky qtz,tr gy cht,n shw

W 9.85 V 57 PV/YP 21/29
Gels 7/9 F 3.6 FC 1
Sol 6.0 Sd 0.40 pH 8.6
Cl 39.5k Ca 280 KCl 6.6%

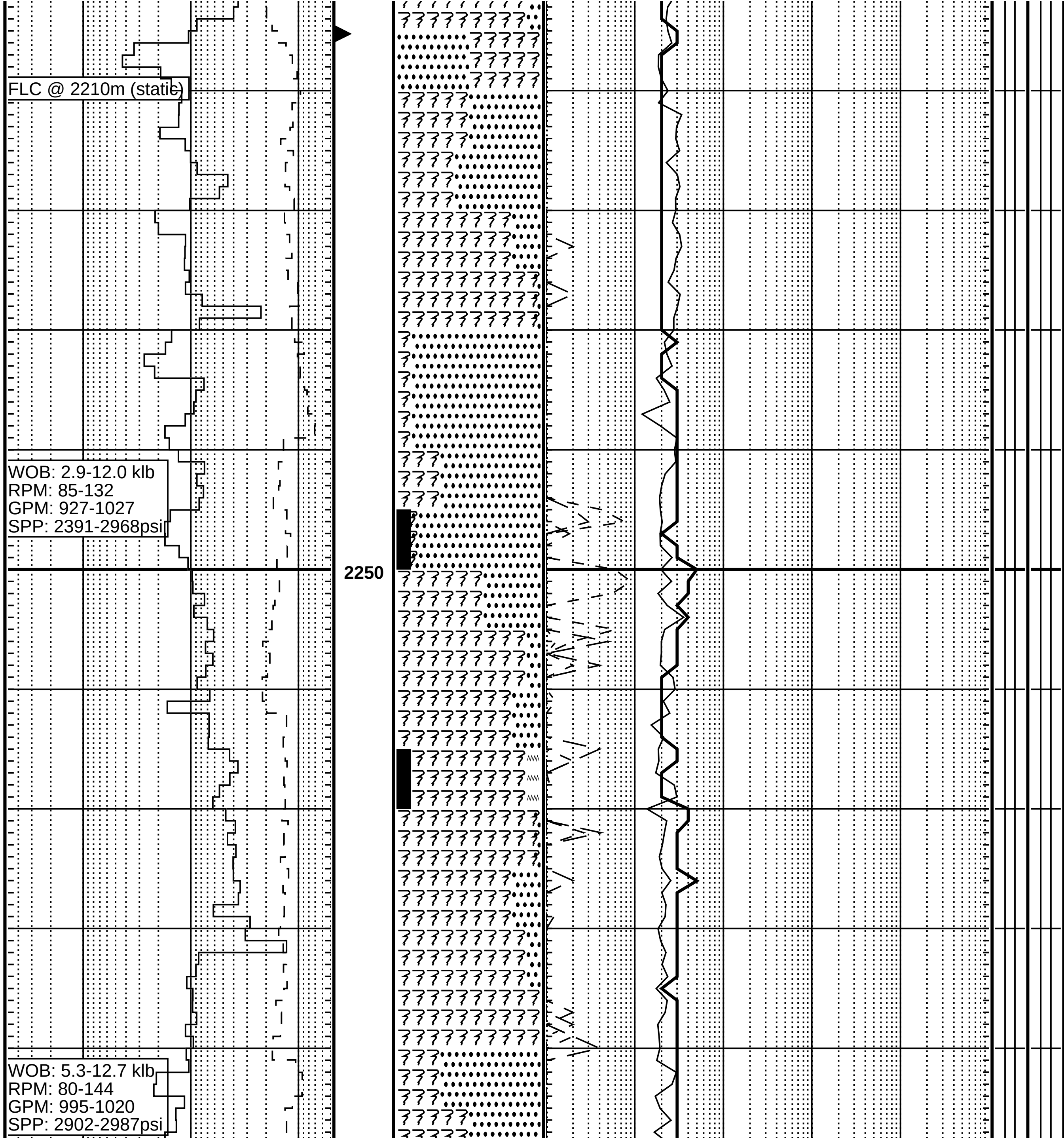
SANDSTONE:trnsp-trnsl,occ fros,pred lse,r agg,f-m,ang-sbrnd,wl srt,tr pyr cmt,pr vis por,tr nod pyr,n shw

CLAYSTONE:wh-gysh brn,mott,sft-disp,kao,sd i/p,tr carb spk

SANDSTONE:trnsp-trnsl,occ fros,pred lse,vf-m gr,occ crs, ang-sbrnd,wl srt,tr sil cmt,pr vis por,n shw

W 9.90 V 53 PV/YP 20/33
Gels 8/9 F 3.2 FC 1
Sol 5.8 Sd 0.25 pH 8.5
Cl 40.0k Ca 180 KCl 6.0%

CLAYSTONE:m lt gy-lt gy,occ wh,sft-frm,amor-sbblky



CLAYSTONE:brnsh gy,olv gy-olv blk,occ gnsh gy,v sft-sft, disp,amor,occ sbblky,com glau,tr pyr nod,tr dissem pyr

SANDSTONE:trnsp-trnsl qtz gr,lse,vf-crs,pred f,ang-sbang, mod srt,tr pyr cmt,fr inf por,n shw

CLAYSTONE:brnsh gy,m lt gy,sft,amor,tr slt,tr pyr nod,tr carb spk

SANDSTONE:trnsp-trnsl qtz gr,lse,vf-crs,pred f,ang-sbang, mod srt,tr pyr cmt,fr inf por,n shw

SANDSTONE:trnsp-trnsl qtz gr,lse,f-v crs,pred m,ang-sbang,qtz ovgth,pr srt,tr pyr cmt,fr inf por,n shw

COAL:brnsh blk-blk,frm-mod hd,ea lstr,sbang-ang

W 10.0 V 55 PV/YP 21/34
Gels 8/9 F 3.3 FC 1
Sol 6.5 Sd 0.35 pH 8.5
Cl 40.0k Ca 290 KCl 6.4%

SANDSTONE:trnsl,vf-f,pred vf,mod srt,sbang,wh mtx,n shw

11/02/03

2300

CLAYSTONE:lt gy-m gy,occ brnsh gy,occ brnsh blk, v sft, sbblky,amor,kao altn,tr glau

Ran carbide @ 2321m
Indicated hole size: 12.5"

SANDSTONE:lt gy,trnsp-trnsl qtz gr,vf-crs,pred f,sbang,fri, abd wh kao arg mtx,tr pyr nod,pr vis por,n shw

WOB: 4.2-10.3 klb
RPM: 85-114
GPM: 992-1012
SPP: 2752-3029 psi

BOOST RISER @ 2347-2371m

2350

CLAYSTONE:m gy-dk olv gy,occ wh,pred v sft,pred amor,tr qtz slt,tr nod pyr

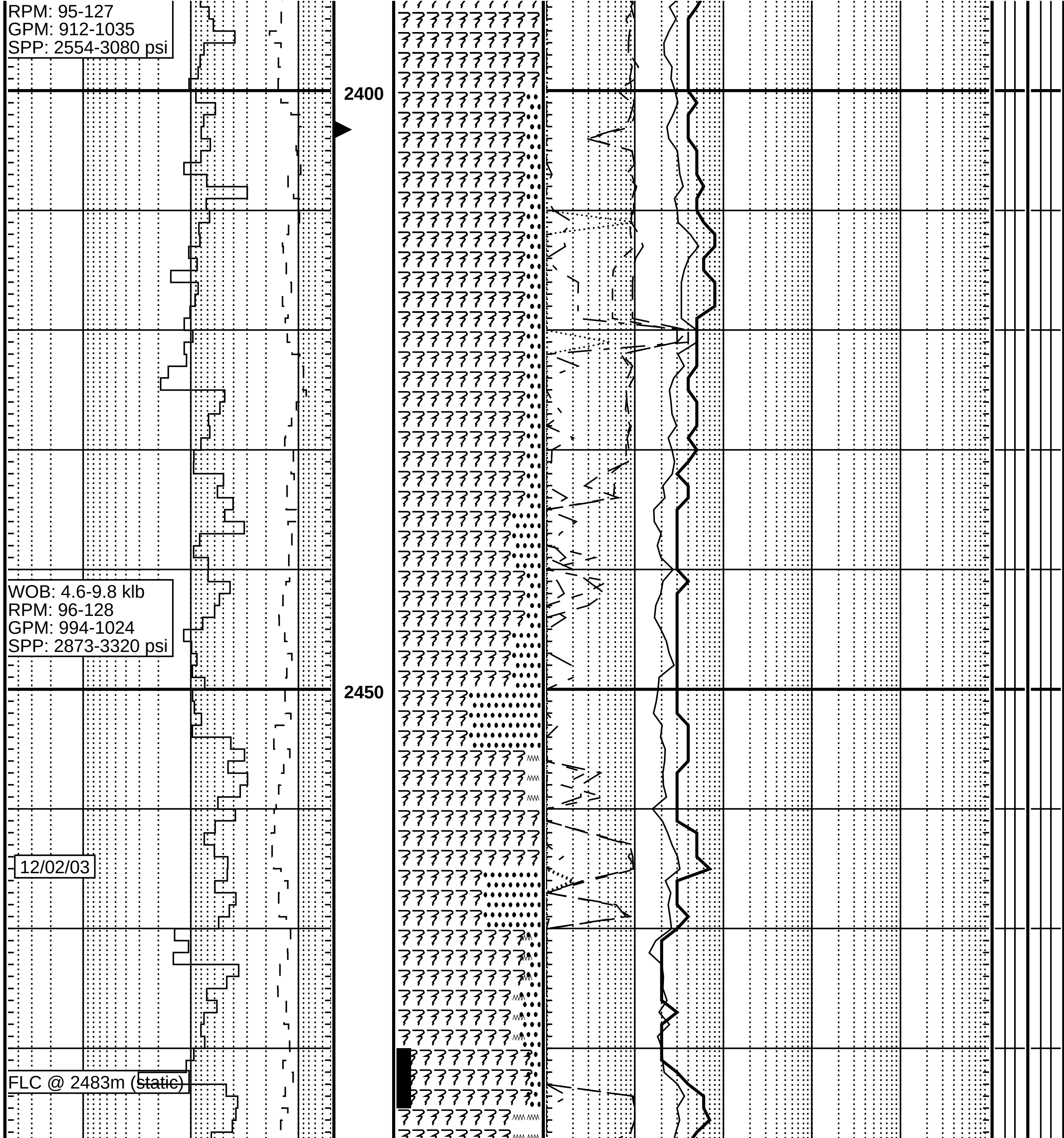
W 10.0 V 53 PV/YP 21/35
Gels 8/10 F 3.4 FC 1
Sol 6.9 Sd 0.30 pH 9.0
Cl 42.0k Ca 240 KCl 5.8%

Survey (Gyro)
2365.40mMD
TVD: 2365.10m
Inc: 1.49 deg Az: 352.09 deg

CLAYSTONE:v lt gy,brnsh gy-brnsh blk,sft-frm,amor-sbblky slty i/p,tr carb spk

SANDSTONE:trnsp-trnsl qtz gr,lse,occ hd agg,vf-crs,pred f-m,sbang,pr srt,qtz ovgth,tr pyr cmt,por inf por,n shw

WOB: 5.5-11.4 klb



CLAYSTONE:brnsh gy,occ lt gy,pred sft,occ frm,pred amor,
occ sbblky,tr carb spk,slty i/p

CLAYSTONE:lt brnsh gy-dk gy,occ v lt gy,pred sft,occ frm,
sbblky-blky,tr carb spk,

W 10.3 V 58 PV/YP 22/40
Gels 8/10 F 2.7 FC 1
Sol 7.5 Sd 0.35 pH 8.6
Cl 40.0k Ca 220 KCl 6.5%

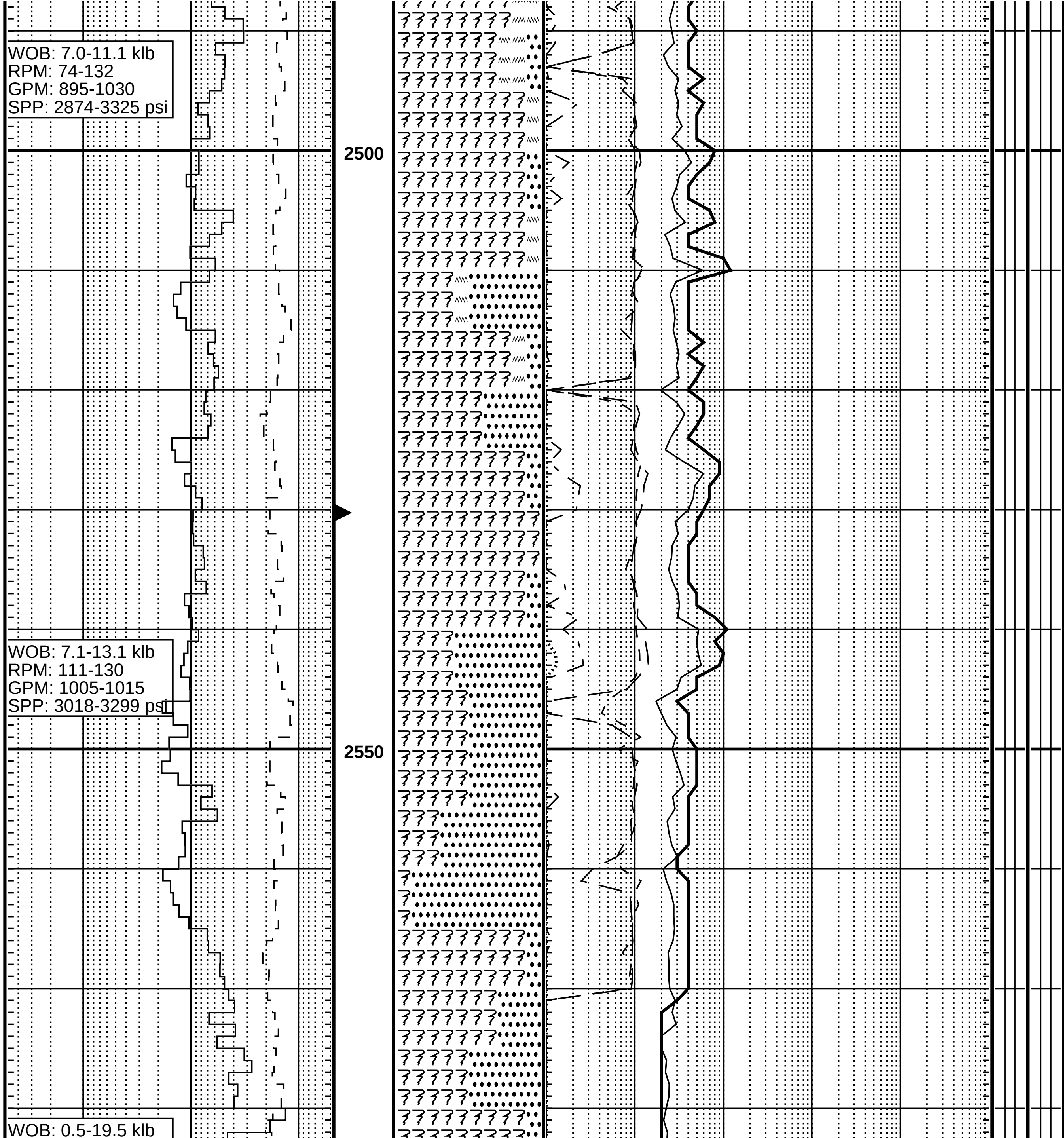
CLAYSTONE:brnsh gy,occ lt gy,pred sft,occ frm,sbblky-blky
tr carb spk

SANDSTONE:lt gy, f-gran,abd lse frac gr,ang-sbrnd,pr srt,tr
sil cmt,abd kao mtx,pr vis por,n shw

SANDSTONE:v lt gy,trnsp-trnsl qtz gr,occ fros,pred lse,f-m,
sbang-rnd,mod-wl srt,arg mtx i/p,pr vis por,gr supp,tr carb
spk,tr jasp,n shw

W 10.35 V 55 PV/YP 19/30
Gels 6/7 F 3.3 FC 1
Sol 7.8 Sd 0.30 pH 9.0
Cl 40.5k Ca 240 KCl 6.25%

CLAYSTONE:blk,v lt gy-wh,brnsh gy-brnsh blk,lt brnsh gy,v
sft-sft,occ frm,sbblky-blky,occ disp,tr pyr nod,occ carb lam,r



lse qtz gr,com COAL @ spot 2482m

SILTSTONE:m lt gy,m gy,brnsh gy,sft-frm,blky,arg mtx,com carb mat,tr pyr nod,abd qtz gr

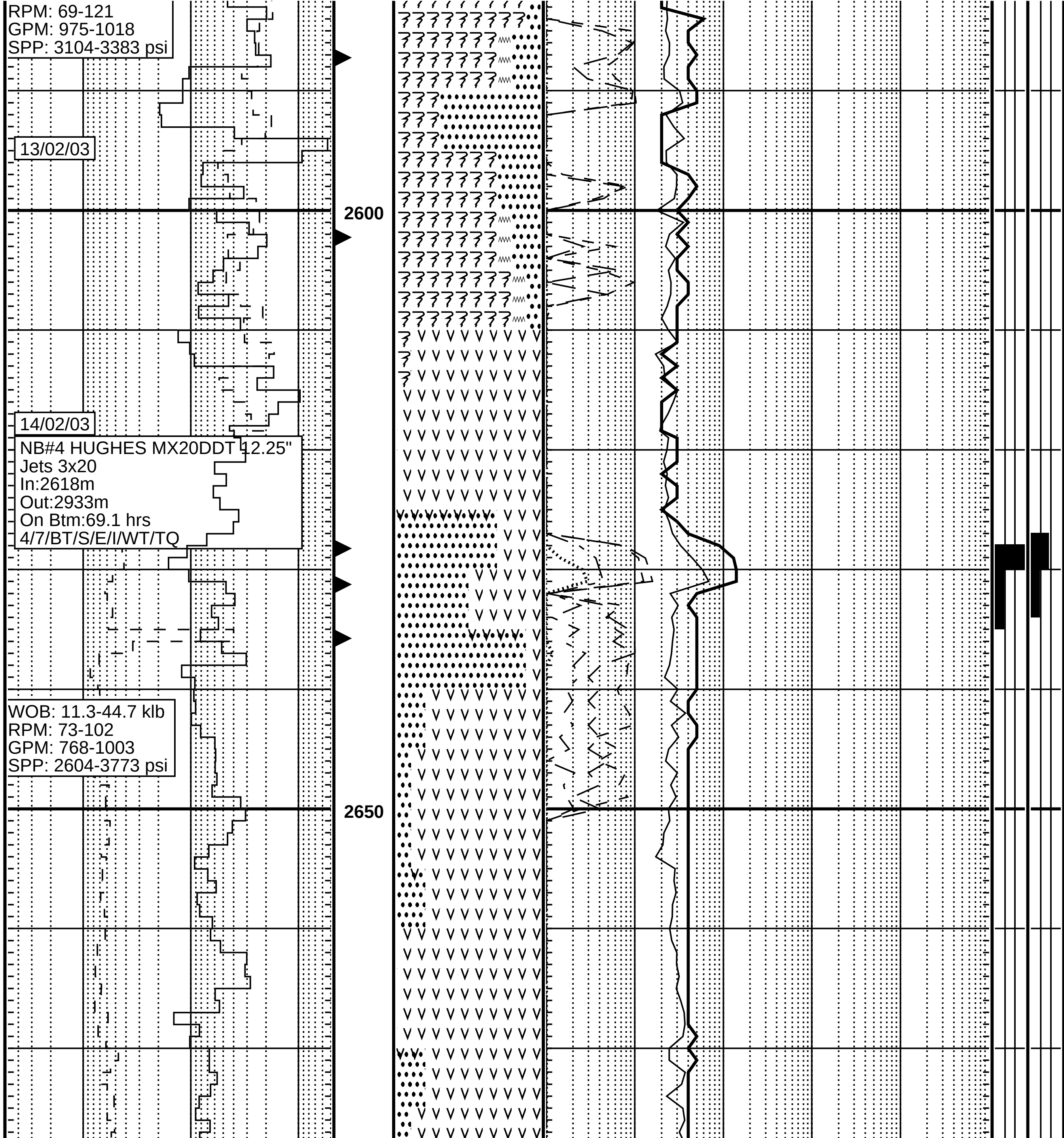
SANDSTONE:wh-lt gy,trnsl qtz gr,fri,vf-crs,occ v crs,pred f, sbrnd,mod srt,tr pyr cmt,abd wh kao mtx,pr vis por,n shw

CLAYSTONE:pl yelsh brn-dsky yelsh brn,sft,amor,tr slt,tr carb spk

SANDSTONE:lt gy-lt brnsh gy,trnsp-trnsl qtz,lse,occ fri agg, vf-f,pred vf,sbang-sbrnd,pr srt,kao mtx,pr inf por,n shw

Survey (Gyro)
2568.10mMD
TVD: 2567.74m
Inc: 1.17 deg Az: 4.09 deg

CLAYSTONE:pl yelsh brn-dk yelsh brn,occ brnsh gy-brnsh blk,sft,amor,tr carb spk,tr pyr nod



SANDSTONE:wh-v lt gy agg,sft-frm,vf-f qtz gr,mod-wl srt, ang-sbrnd,kao mtx,occ wl cmt,pr vis por,tr pyr nod

W 10.4 V 50 PV/YP 50/21
Gels 8/9 F 2.9 FC 1
Sol 7.0 Sd 0.30 pH 8.7
Cl 41.0k Ca 250 KCl 6.20%

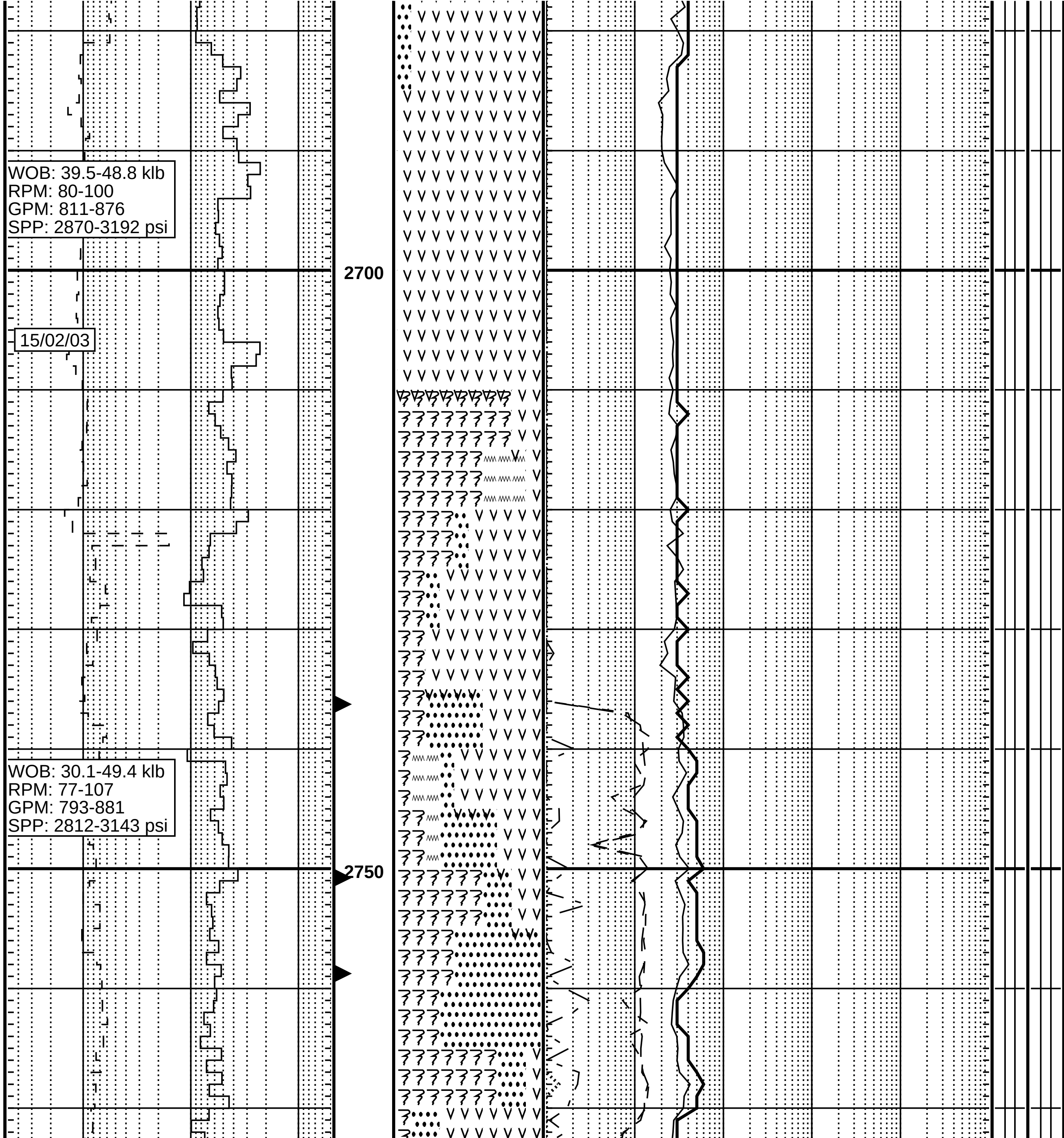
ALTERED VOLCANICS:lt brn,mod brn,mod dk gy,gysh rd, sft-frm,arg alt,tr chlor,com kao,com hem

SANDSTONE:wh-lt gy,sft-frm,f-m,sbang-mod wl rnd,mod-w srt,arg mtx,calc i/p,tr pyr nod,pr vis por

FLUORESCENCE (2627-2635m):80% mod brt wh fluor w/ v brt spt,v slow blooming wh cut thn r/r,pr fluor 2630-2635m, calc cmt min fluor

W 10.35 V 53 PV/YP 53/21
Gels 8/9 F 3.0 FC 1
Sol 7.5 Sd 0.40 pH 9.0
Cl 40.0k Ca 160 KCl 6.20%

ALTERED VOLCANICS:blk,gnsh gy-dk gnsh gy,lt olv gy, gysh rd,wh,v lt gy,occ gysh gn,occ dsky gn,frm-v hd,amor-sbang,com chlor alt,com hem alt,tr sil



ALTERED VOLCANICS:gnsh gy-dk gnsh gy,lt gy,occ mod rd,frm-v hd,pred hd,amor-sbang,tr kao mtx

W 10.30 V 52 PV/YP 26/28
Gels 8/10 F 3.3 FC 1
Sol 7.8 Sd 0.25 pH 9.5
Cl 34.5k Ca 80 KCl 6.00%

CLAYSTONE:mod brn,sft,sblky-blky,tr carb mat,tr qtz gr, poss VOLCANICLASTIC

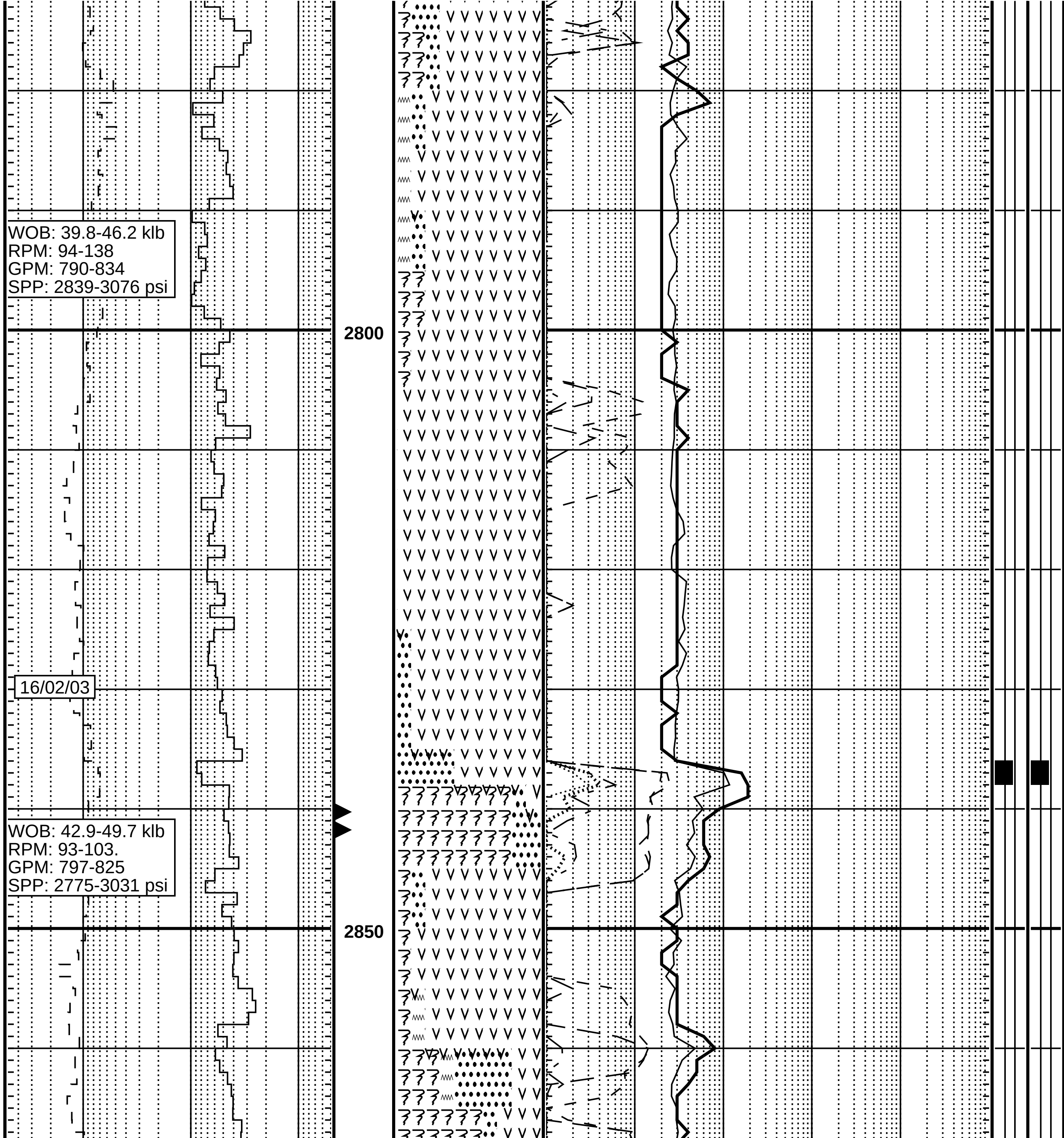
ALTERED VOLCANICS:gysh brn,wh,gysh gn,gysh blk,lt brn sft-mod hd,sbang,r chlor alt,com kao mtx,pred tuff

W 10.35 V 54 PV/YP 20/35
Gels 8/8 F 2.8 FC 1
Sol 7.7 Sd 0.30 pH 9.2
Cl 40.0k Ca 160 KCl 6.40%

SANDSTONE:lt gy-m dk gy,dk gy,wh,pred lse qtz gr,f-m, ang-sbrnd,mod wl srt,occ agg w/ pyr cmt,occ calc cmt,calc g/t arg mtx,pr vis por,n shw

Survey (Gyro)
2742.10mMD
TVD: 2741.70m
Inc: 1.26 deg Az: 336.84 deg

SANDSTONE:v lt gy-lt gy,trnsp-trnsl qtz gr,pred lse,com v hd agg,vf-v crs,pred f-m,sbang,pr srt,calc cmt,tr pyr cmt,pr vis por,n shw



ALTERED VOLCANICS:v lt gy-lt gy,m dk gy-gysh blk,occ dk gnsh gy,sft-v hd,amor-sbang,com cly alt,r chlor alt

CLAYSTONE:v lt gy-dk gy,lt brnsh gy,v sft-frm,amor-sbblky

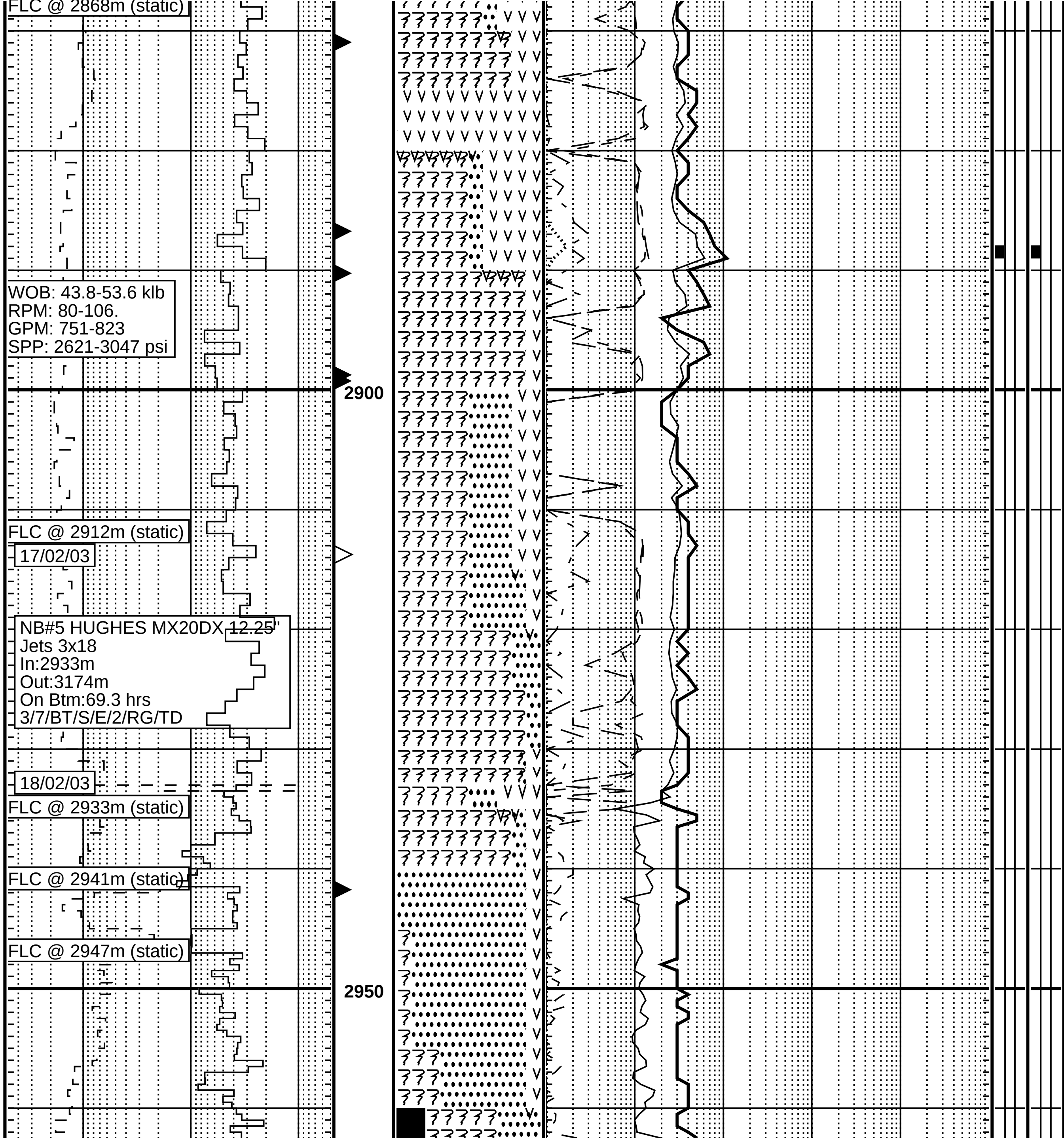
W 10.40 V 54 PV/YP 22/41
Gels 8/9 F 2.8 FC 1
Sol 7.9 Sd 0.65 pH 8.8
Cl 40.0k Ca 60 KCl 6.50%

ALTERED VOLCANICS:v lt gy-lt gy,blk, brnsh gy-brnsh blk, v sft-frm,occ hd,blky,com arg alt,occ chlor alt

SANDSTONE:lt gy-m lt gy agg,trnsl-trnsp lse qtz gr,occ wh, v sft-sft,vf-f,rnd-sbrnd,mod-wl srt,arg mtx,por vis por,fr inf por,tr carb spk
FLUORESCENCE (2836-2838m):30%,brt wh,ptch,assoc w/ agg,occ ppt,fnt inst,stg blooming wh c/c,dll yel r/r

ALTERED VOLCANICS:wh-lt gy,sft, occ frm,sbfiss,com arg alt

CLAYSTONE:dsky yelsh brn,brnsh blk,blk,sft-frm,sbfiss, com carb mat,arg,g/t SILTSTONE
SILTSTONE:gysh brn,sft,occ mod hd,carb mat,dissem qtz



SANDSTONE:trnsp-trnsl qtz,vf-m,pred f,lse,sbang,mod srt, abd frac gr,tr nod pyr,fr inf por,n shw

FLUORESCENCE (Spot @ 2888m):tr dll yel,spty,slw bleeding cut,mod r/r,assoc w/ ti SANDSTONE agg w/ cly mtx

CLAYSTONE (Spot @ 2912m):pl brn-gysh brn,gysh or pk, vsft-sft,occ frm,sbblky-blky,occ amor,occ sbfiss,comm carb mat,tr pyr nod,tr qtz-pyr vn frag,g/t SILTSTONE

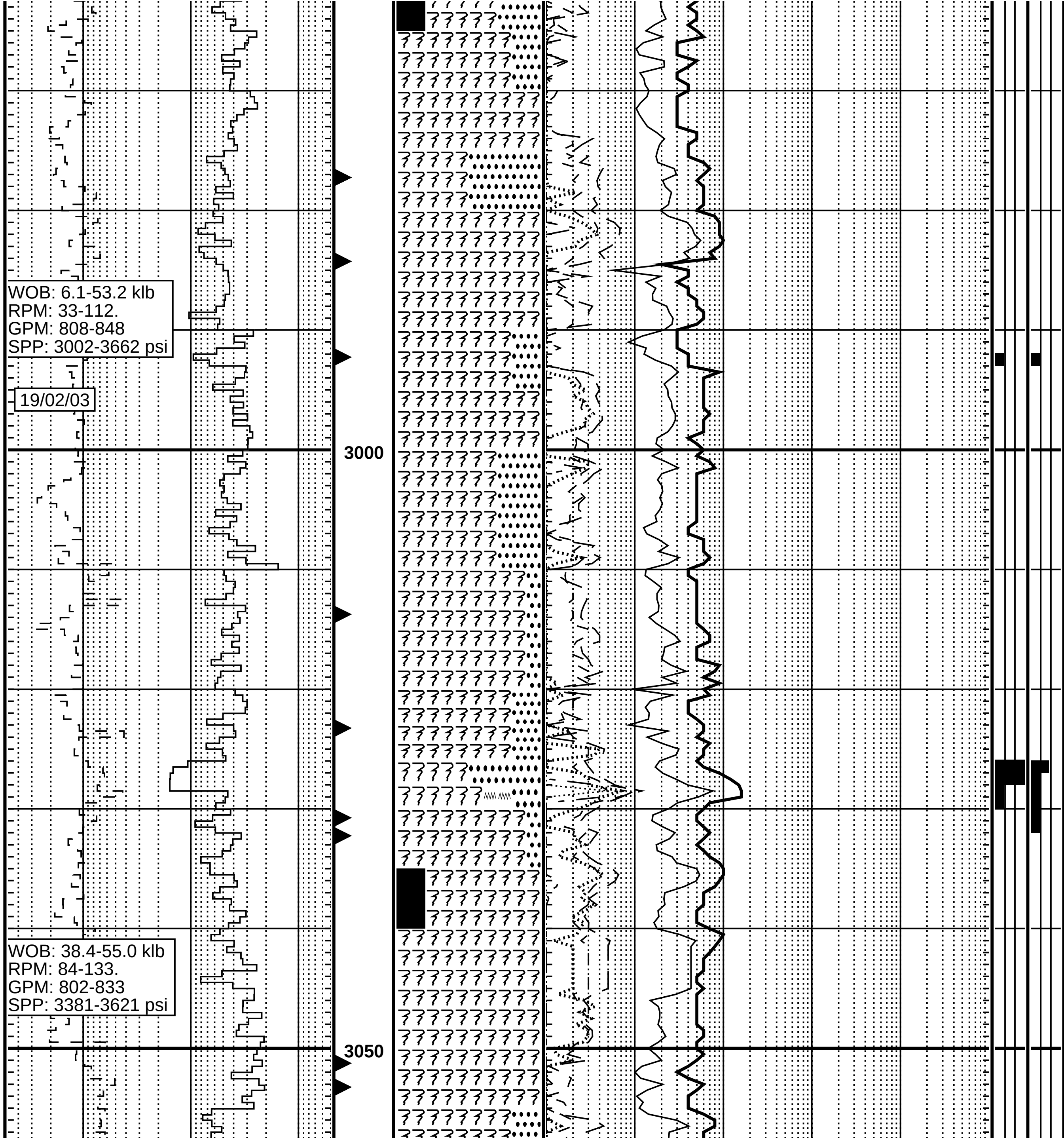
W 10.35 V 60 PV/YP 23/39
Gels 8/9 F 2.8 FC 1
Sol 7.5 Sd 0.20 pH 9.20
Cl 38.0k Ca 150 KCl 6.50%

SILTY CLAYSTONE:pl brn-pl yel brn,occ lt brn,sft - occ frm, sbblky-amor,tr-r qtz slt,tr-r blk carb spk,g/t SILSTSTONE i/p

SANDSTONE:wh-v lt gy,trnsp-trnsl qtz gr,pred lse,occ v hd agg,f- v crs,pred m,sbang,abd frac gr,pr srt,com sil cmt,tr pyr cmt,tr calc cmt,pr vis por,fr inf por,n show

Survey (MWD)
2964.10mMD
TVD: 2963.66m
Inc: 1.45 deg Az: 327.72 deg

COAL:blk,mod hd-hd,ea-vit lstr,sbang-ang



CLAYSTONE:v lt-m gy,mod brn-gysh brn,v sft-frm,sbblky-amor

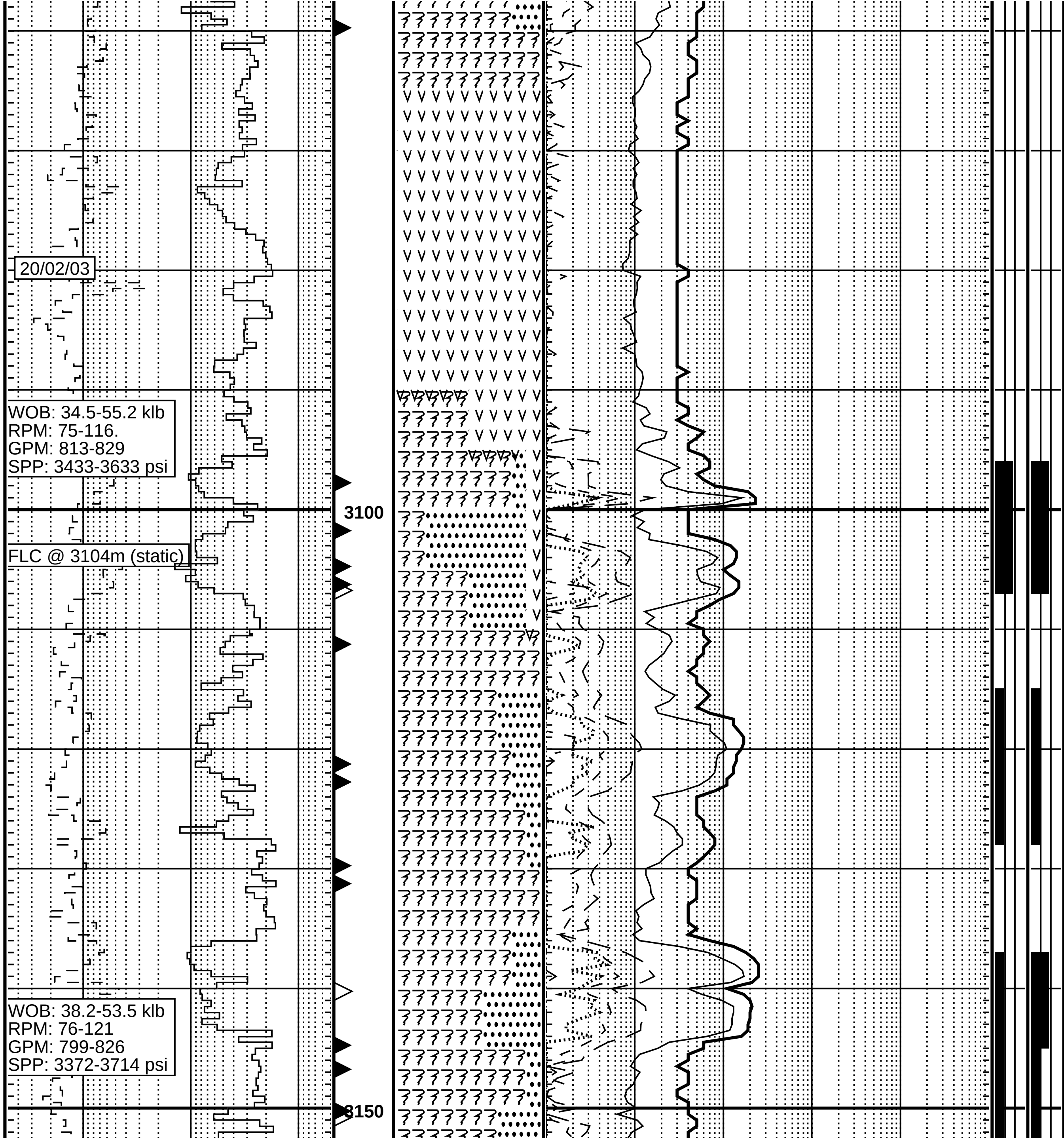
W 10.30 V 56 PV/YP 22/39
Gels 8/9 F 2.8 FC 1
Sol 8.2 Sd 0.30 pH 9.30
Cl 38.0k Ca 90 KCl 6.00%

SANDSTONE:v lt gy,wh,trnsp-trnsl,occ fros,mod wl srt,r wk sil cmt agg,fr vis por,tr lit gr
FLUORESCENCE (2993m):mod yel-wh,mod blmg cut,mod gn-yel r/r,assoc w/ l por sd agg

CLAYSTONE:v lt gy-lt gy,brnsh gy,brnsh blk,sft-mod hd,slt i p,blky,occ fiss,com carb lam

SANDSTONE:pred trnsp,occ trnsl,lse qtz gr,abd aggs: wh-v lt gy,sft-frm,vf-f,sbang-sbrnd,mod wl srt,kao mtx,pr cmt,pr vis por,tr pyr,tr carb spk
FLUORESCENCE (3026-3030m):70% mod bri wh-yelsh wh uni fluor w/bri yel sptd fluor,v slw blooming wh cut,thn r/r

CLAYSTONE:dk yelsh brn,lt brn,wh- v lt gy,sft,amor,slty i/p, tr pyr nod,tr carb spk



W 10.30 V 53 PV/YP 22/37
Gels 8/9 F 3.0 FC 1
Sol 7.8 Sd 0.15 pH 9.00
Cl 37.5k Ca 120 KCl 6.30%

ALTERED VOLCANICS:lt blsh gy,v lt gy,gysh or pk,gysh gr
frm,occ hd,blky,com arg alt,mnr chlor alt,r qtz,gr w carb inc

CLAYSTONE:pl brn,dsky brn,brnsh gy,sft-frm,fiss,com carb
lam,g/t SILTSTONE

FLUORESCENCE (3097m-3107m):10%-70%,dll,pl yel-pl
brn,ptchy,slw blmng cut,thn flm res,mky r/r,assoc w sft-frm
kao mtx supp SANDSTONE

W 10.30 V 56 PV/YP 22/36
Gels 7/9 F 3.4 FC 1
Sol 8.6 Sd 0.20 pH 9.50
Cl 38.0k Ca 150 KCl 6.00%

SANDSTONE:lt brnsh gy,trnsp-trnsl qtz gr,pred lse,occ hd
agg,vf-f,pred f,sbang,wl srt,tr pyr cmt,tr sil cmt,fr inf por
FLUORESCENCE (3115-3127m):60%-tr,v dll pl yelsh wh,n
cut,mod yelsh wh c/c,thn r/r

CLAYSTONE:lt brnsh gy-brnsh blk,wh,sft-frm,amor-sbblky,
tr carb spk

SANDSTONE:v lt gy,trnsp-trnsl,qtz gr pred lse,occ v hd agg
vf-crs,pred m,sbang,tr pyr cmt,sil cmt,fr inf por
FLUORESCENCE (3137-3145m):60%-tr,v dll pl yelsh wh,n
cut,mod yelsh wh c/c,thn r/r

21/02/03

TD @ 3174mMD (Tide corrected)
09:45hrs on 22/02/03

3200

SANDSTONE:trnsp-trnsl lse gr,m lt gy-m gy agg,sft-mod hd
pred vf-f,occ crs,sbrnd-rnd,occ ang,mod srt,tr wk-occ stg sil
cmt,tr dol cmt,pr vis por,tr lit frag,tr pyr nod

FLUORESCENCE (3150-3161m):70%,decr to 10%,v dll yel
fluor,sptty on lse gr,solid on kao agg,nil cut,v fnt c/c,thn
sptty yel-wh r/r

CLAYSTONE:lt brnsh gy-brnsh gy,wh-v lt gy,sft,occ frm,
amor,occ sbblky,slty i/p,tr carb spk

RUN E-LOGS :
PEX-HALS-HNGS-LEHQT
MDT-GR-LEHQT
DSI-FMI-GR-LEHQT
DUAL CSAT-VSP
CST's

RATE OF PENETRATION		CUTTINGS LITHOLOGY	CHROMATOGRAPH & TOTAL GAS	DIRECT FLUORESCENCE	CUT FLUORESCENCE	REMARKS
WOB (klbs) 60 50 40 30 20 10 0 ROP (m/hr) 500 100 10 1 0.5			Methane Ethane Propane I-Butanes N-Butanes Pentanes (ppm) 0.001 0.01 0.1 1 10 100 Total Gas (%) 1%TG = 50Units 0.001 0.01 0.1 1 10 100			

Drilling Data Plot

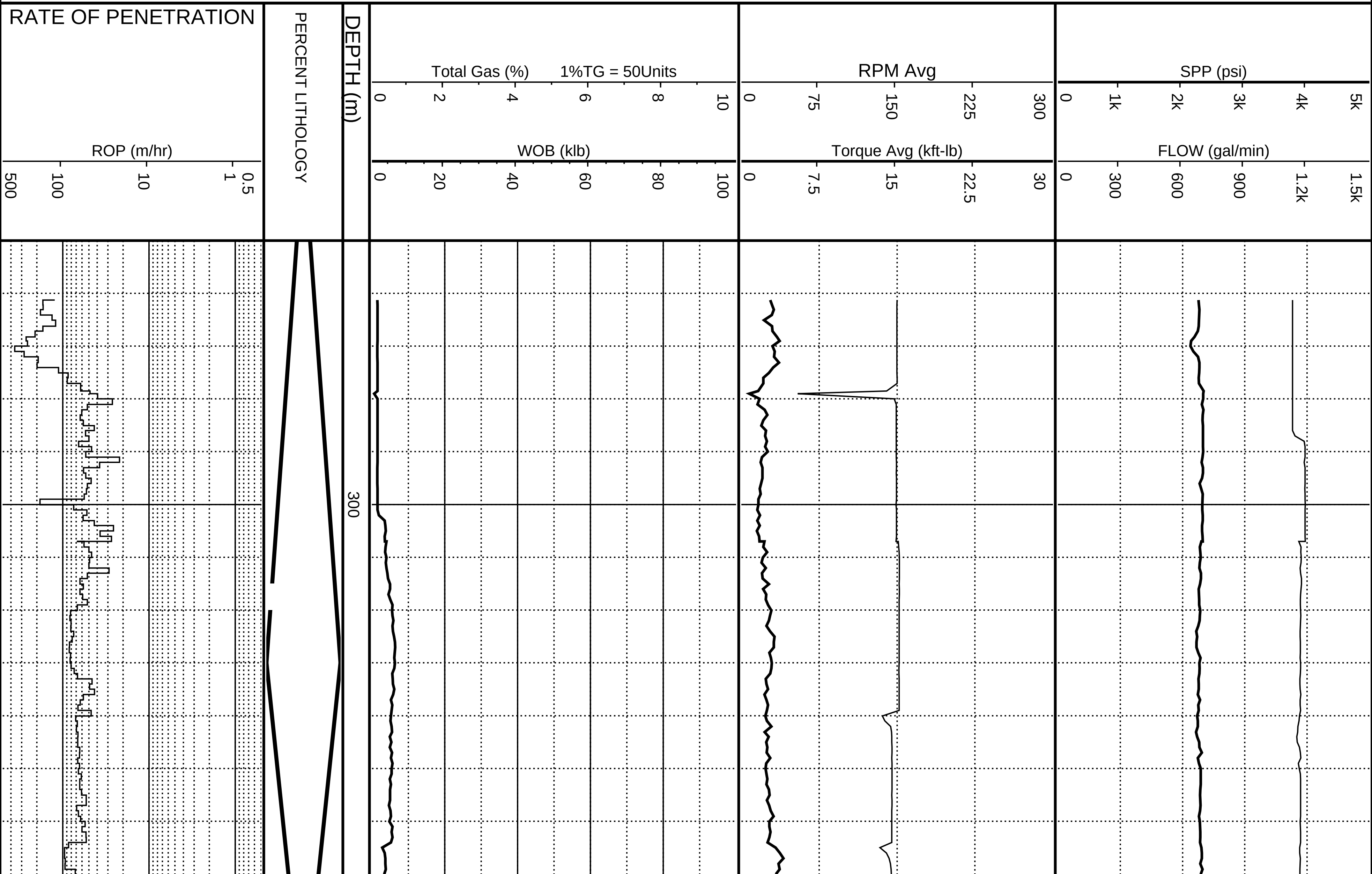
1: 1000

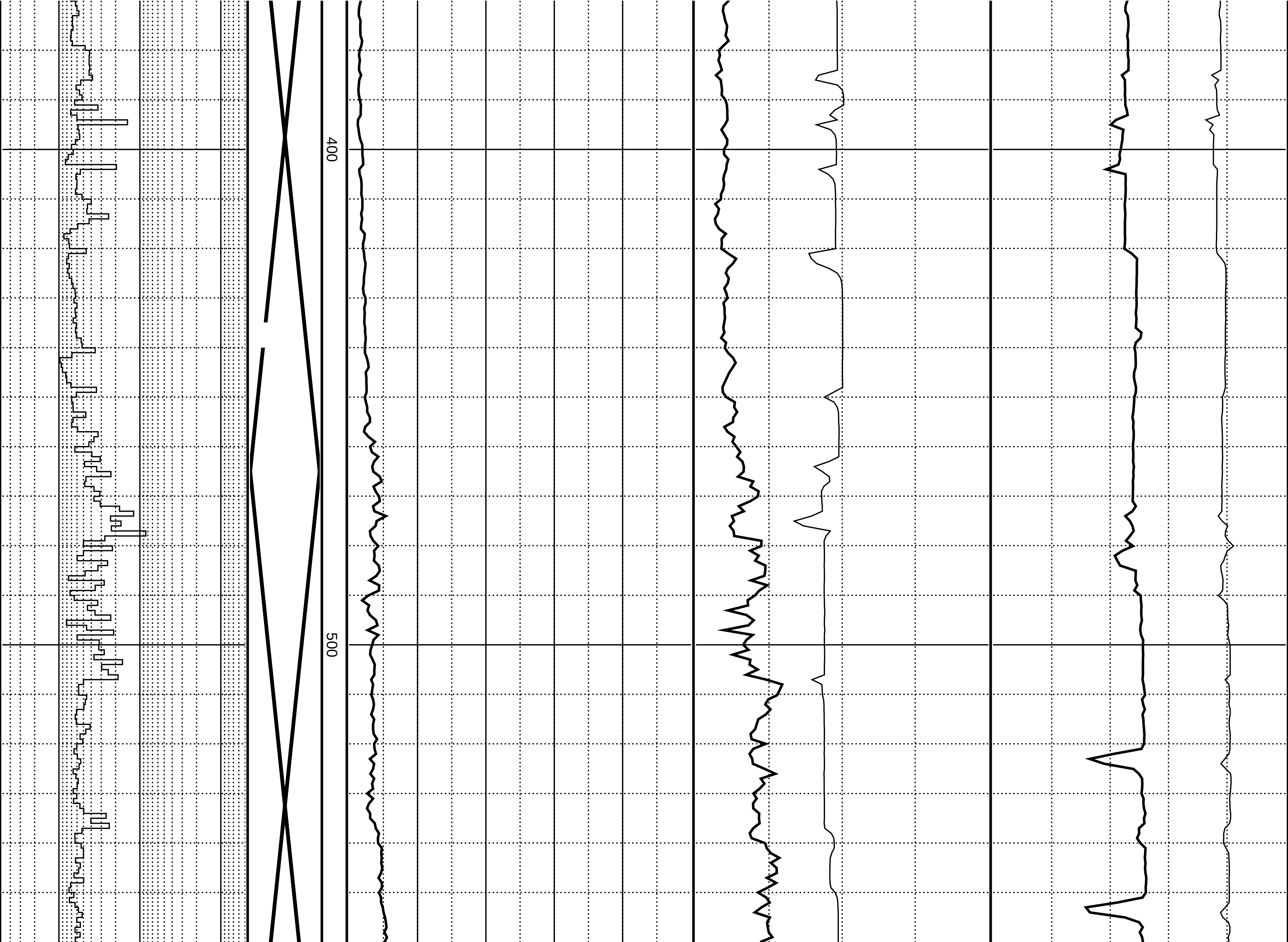
BAKER HUGHES
INTEQ

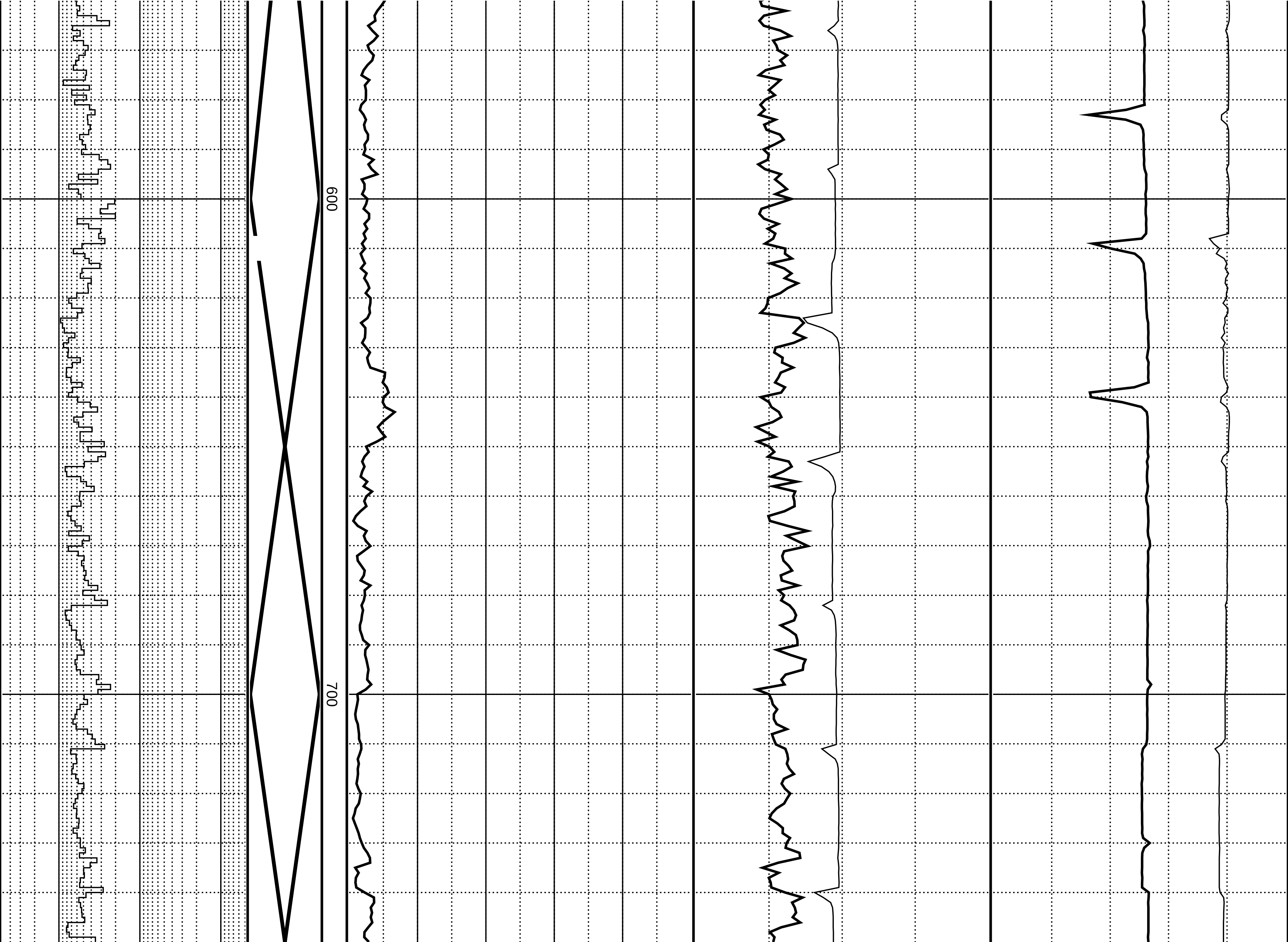
DRILLING DATA PLOT

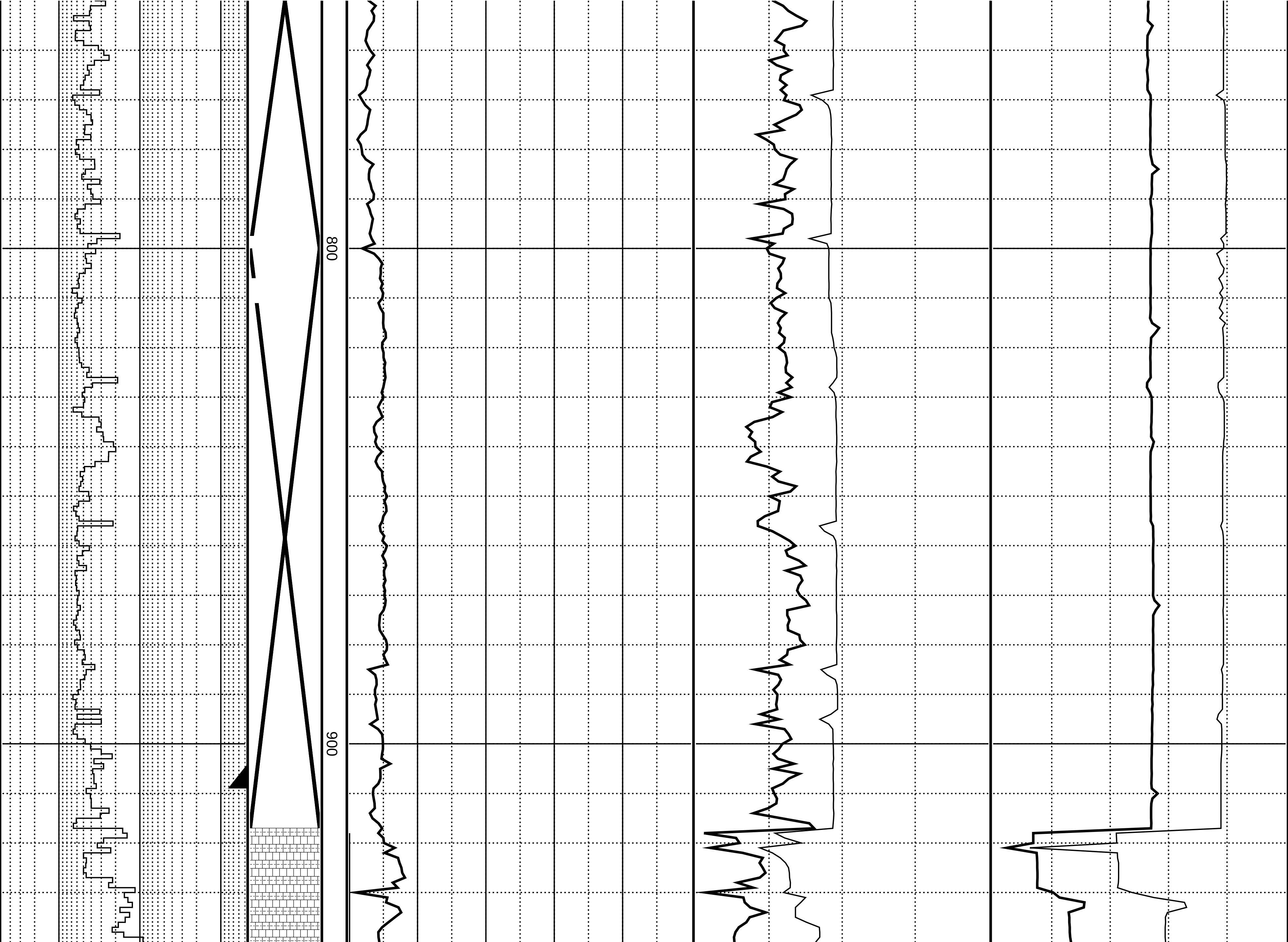
Scallop-1

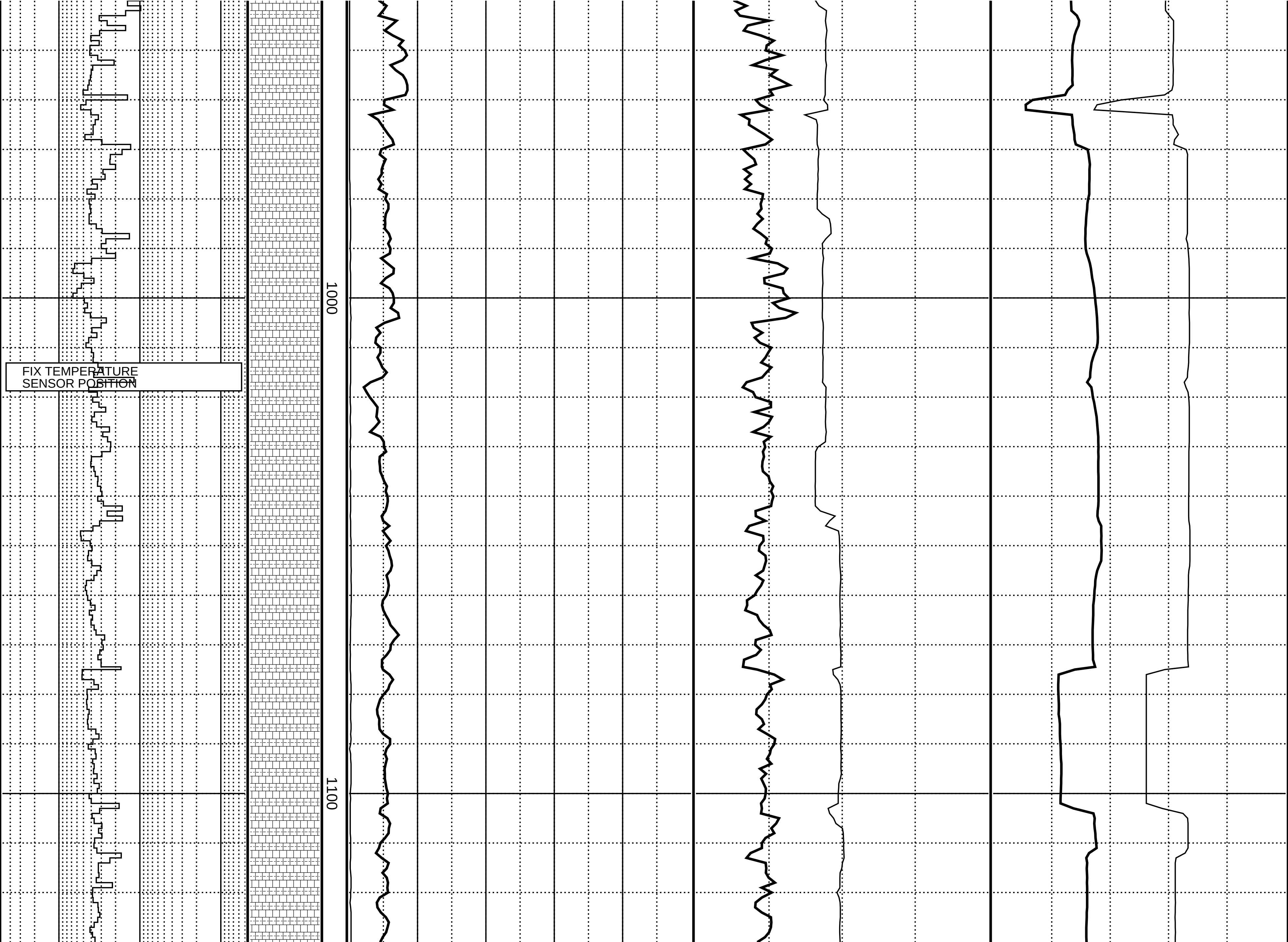
SCALE 1 : 1000.0

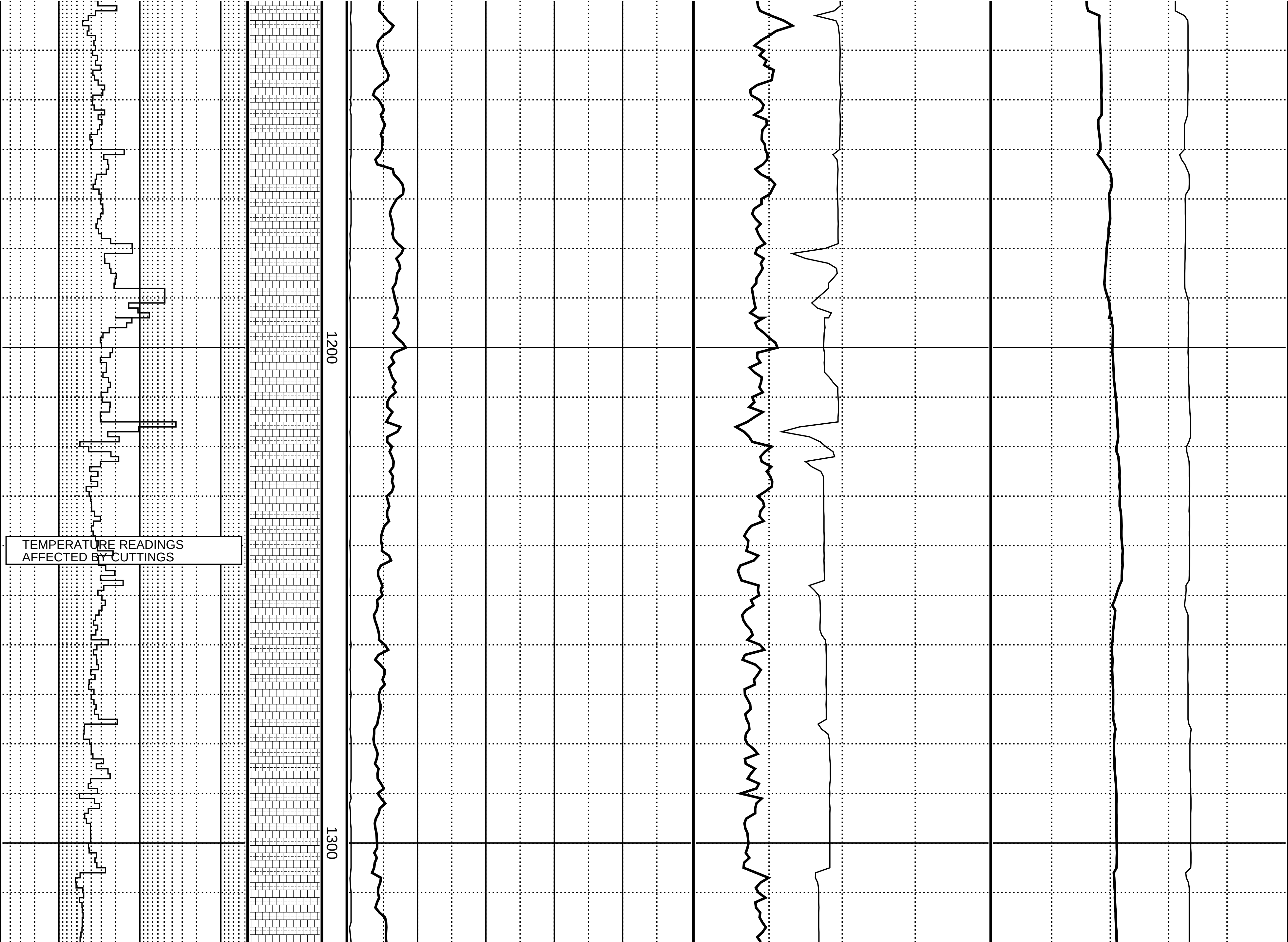


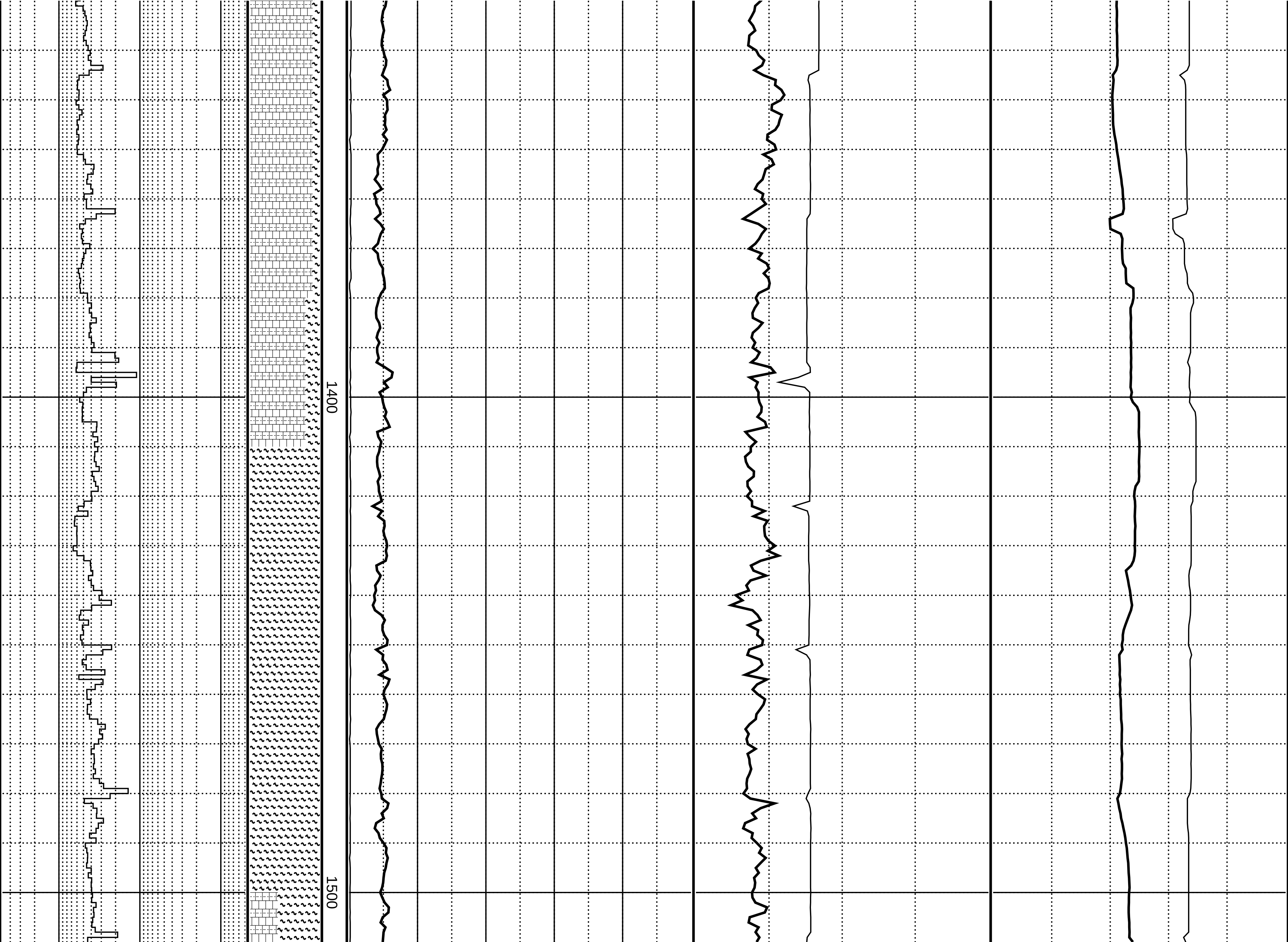

400
500

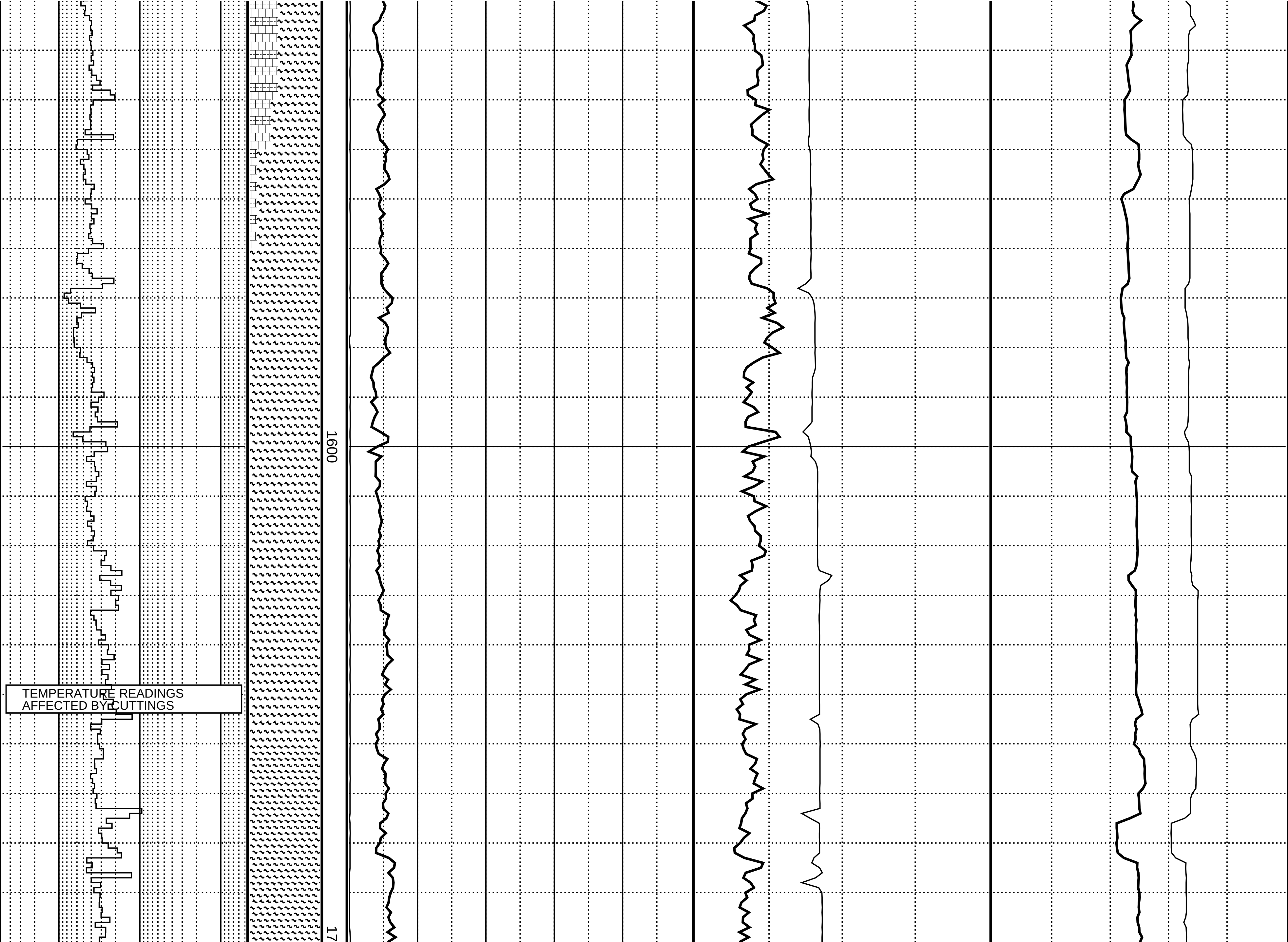

600
700

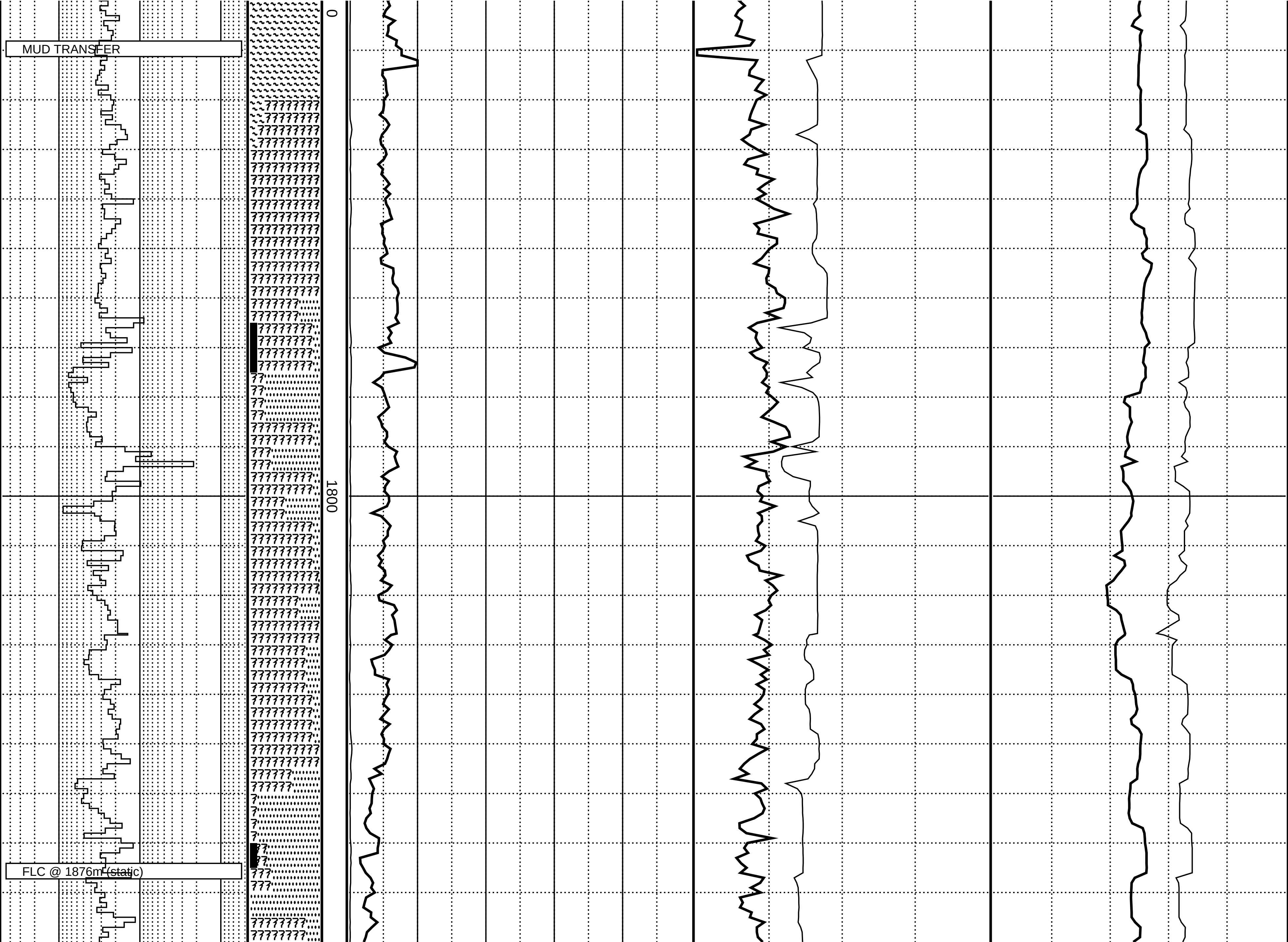

800
900

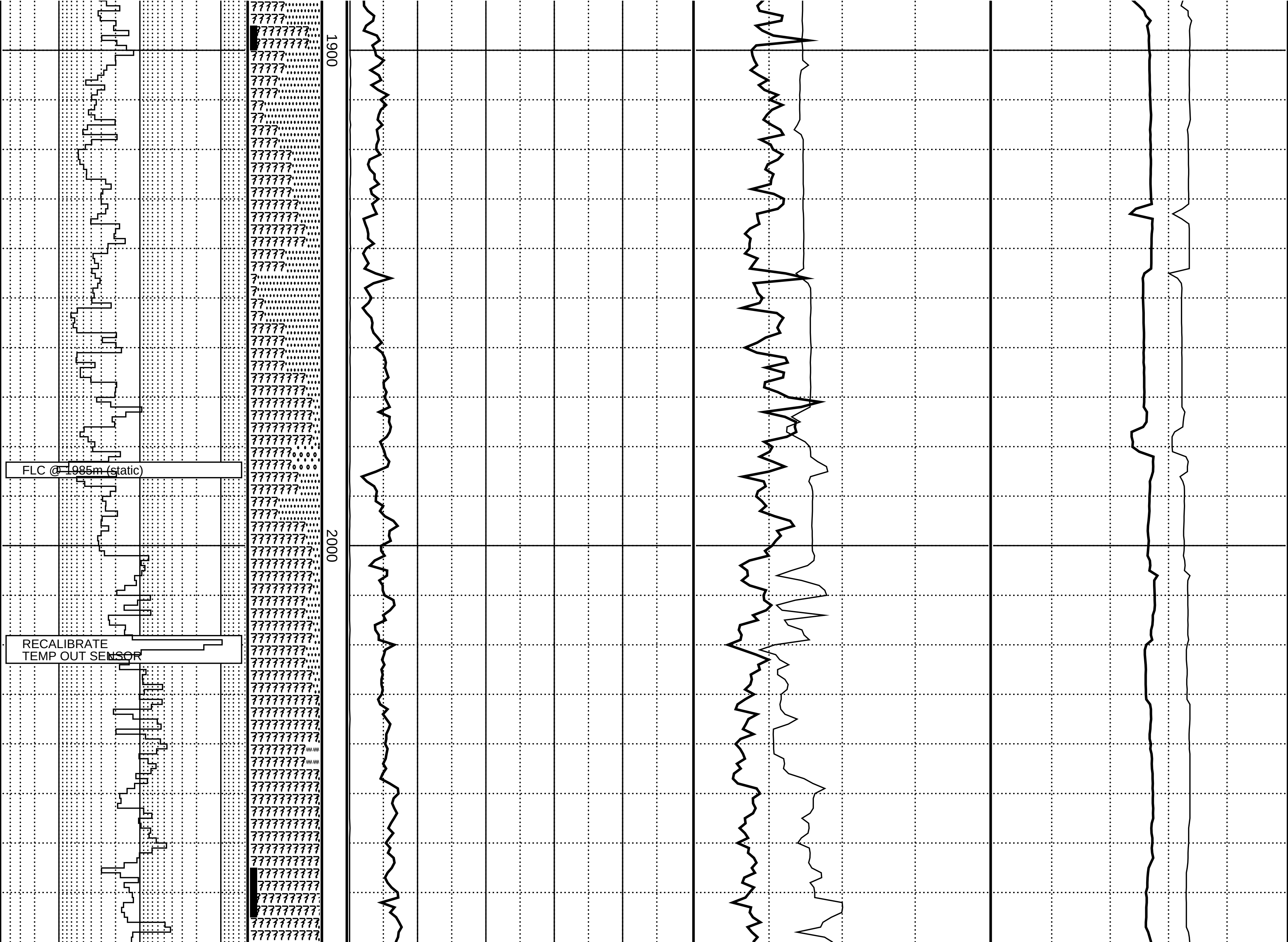

FIX TEMPERATURE
SENSOR POSITION
1000
1100

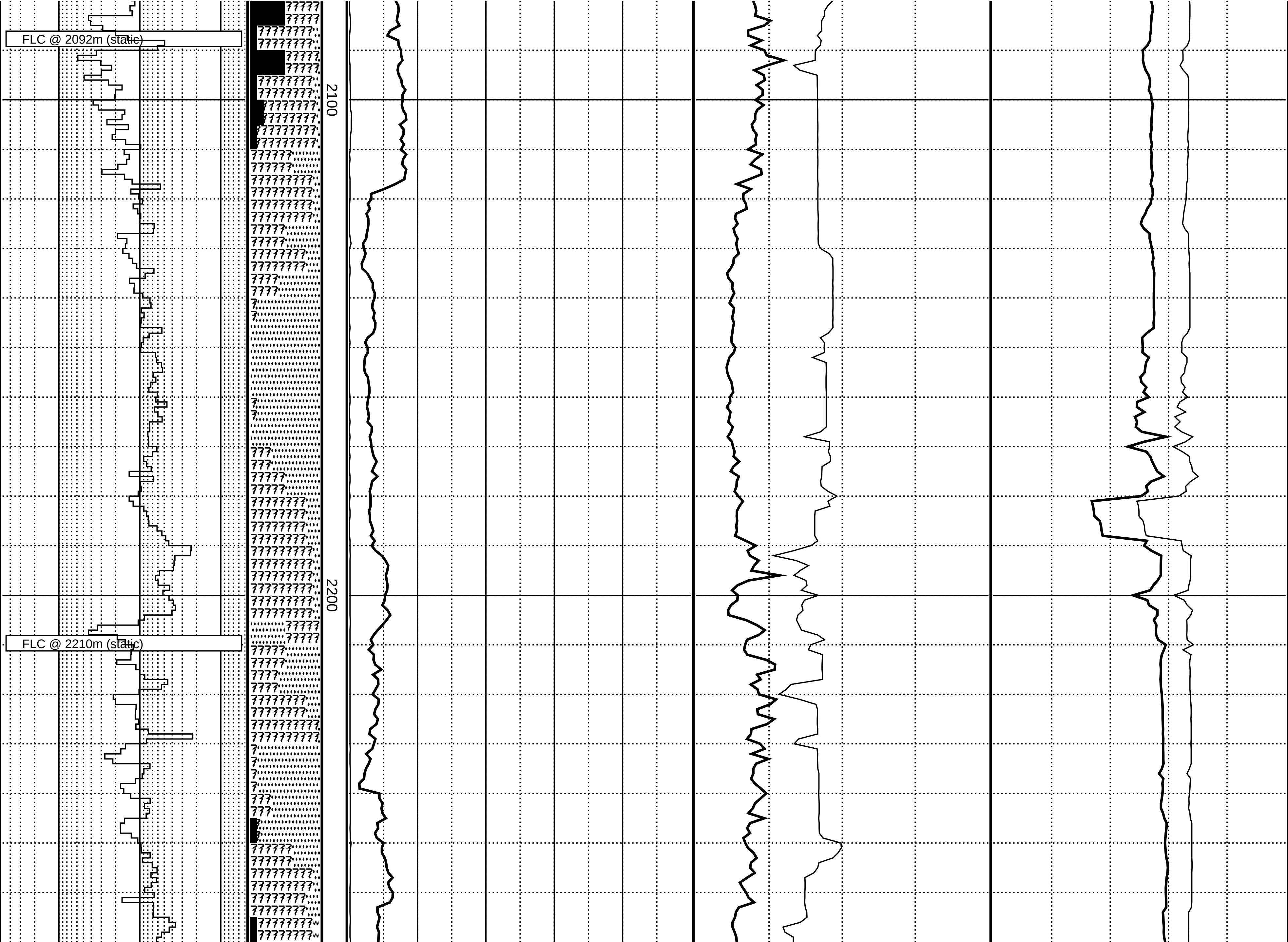

TEMPERATURE READINGS
AFFECTED BY CUTTINGS
1200
1300

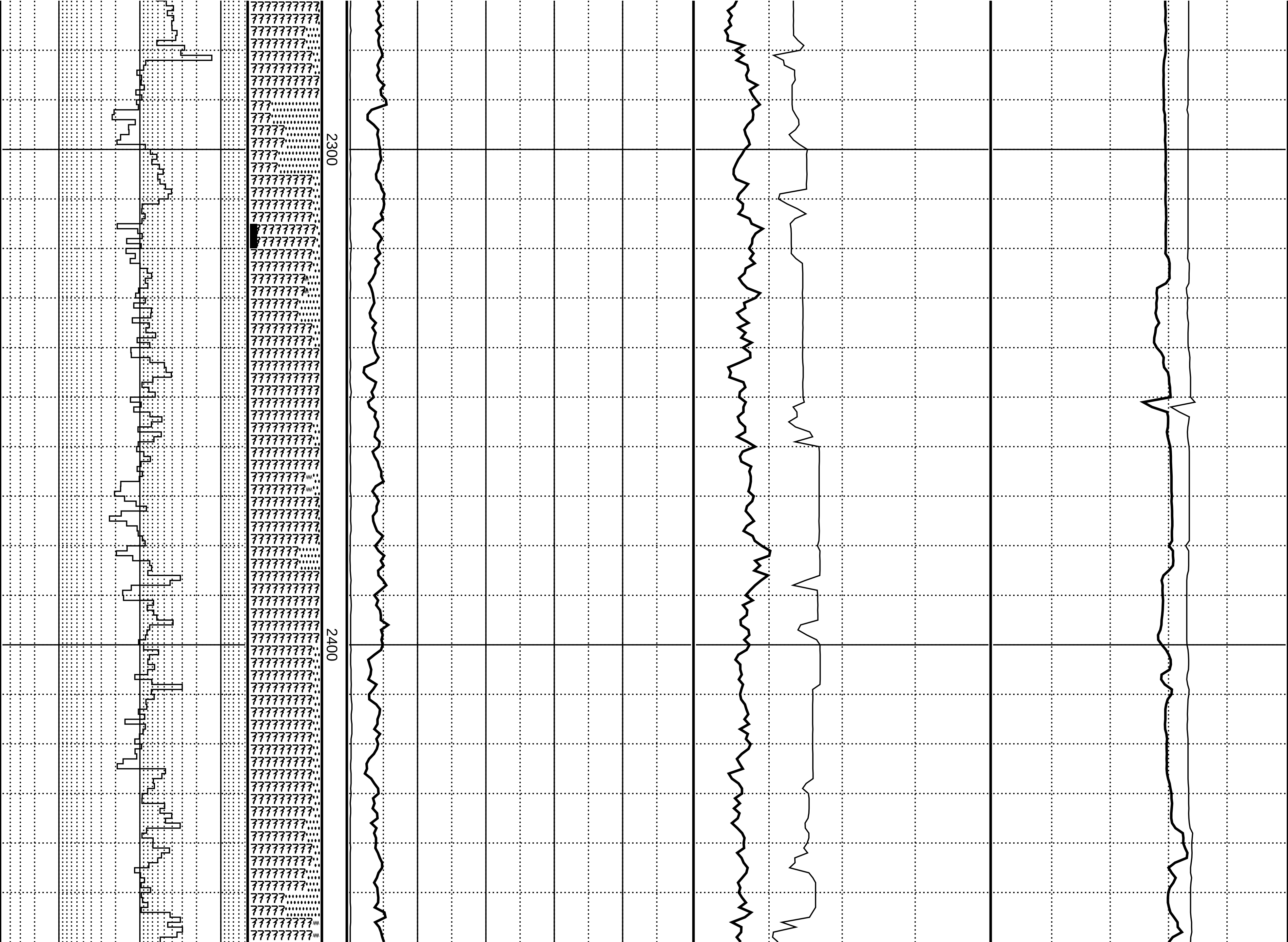

1400
1500

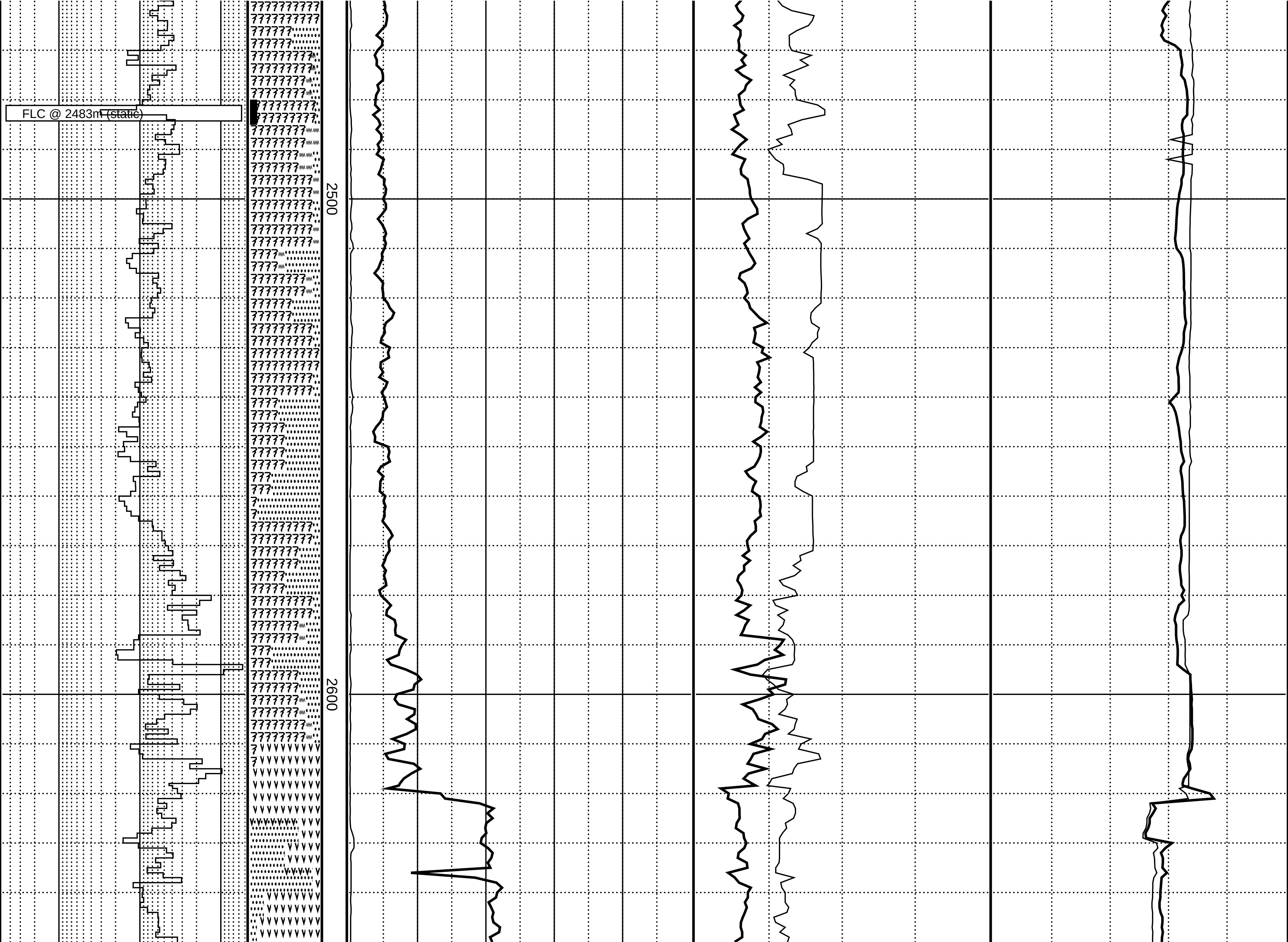

TEMPERATURE READINGS
AFFECTED BY CUTTINGS
1600

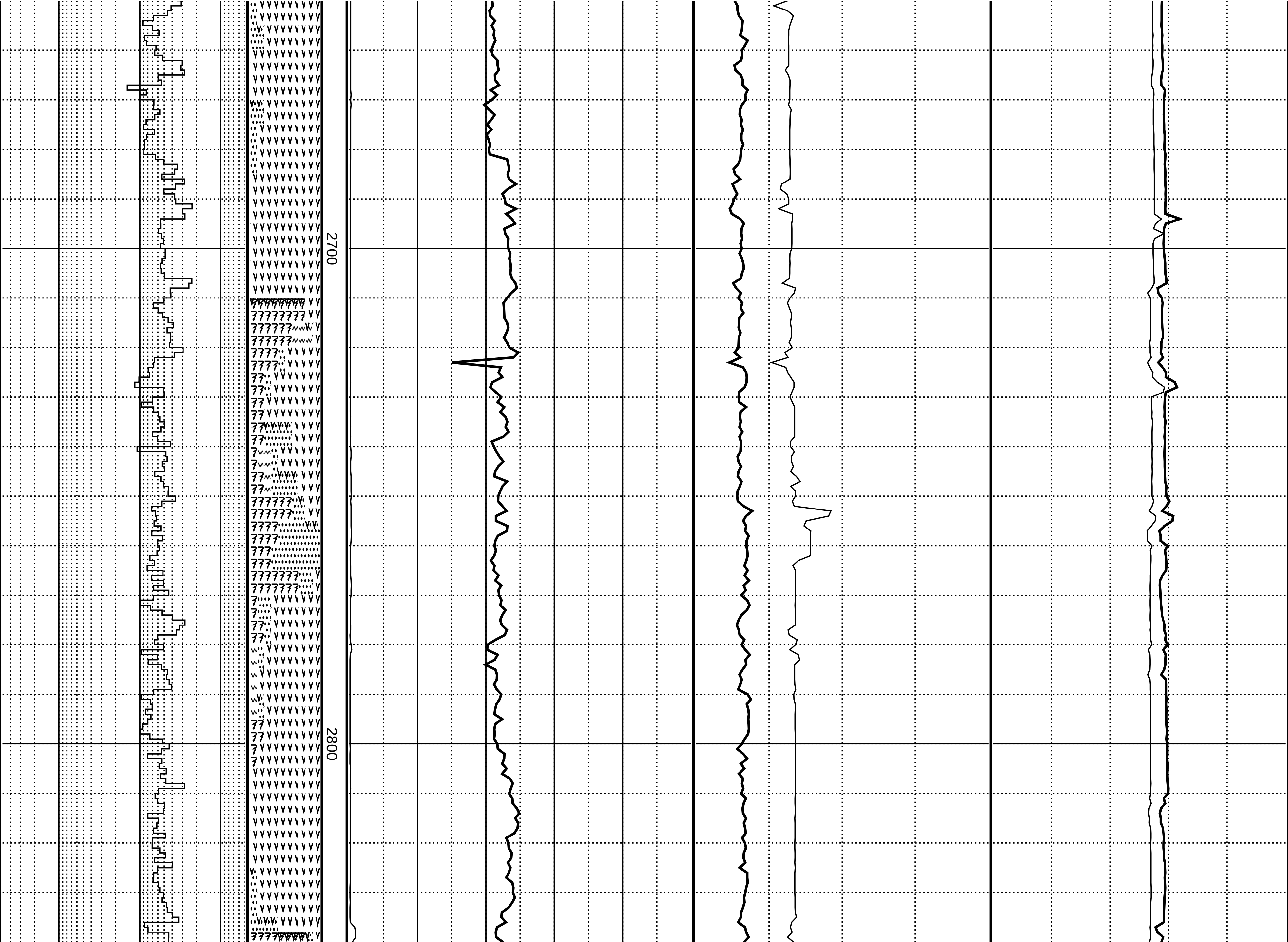

MUD TRANSFER
0
1800
FLC @ 1876m (static)

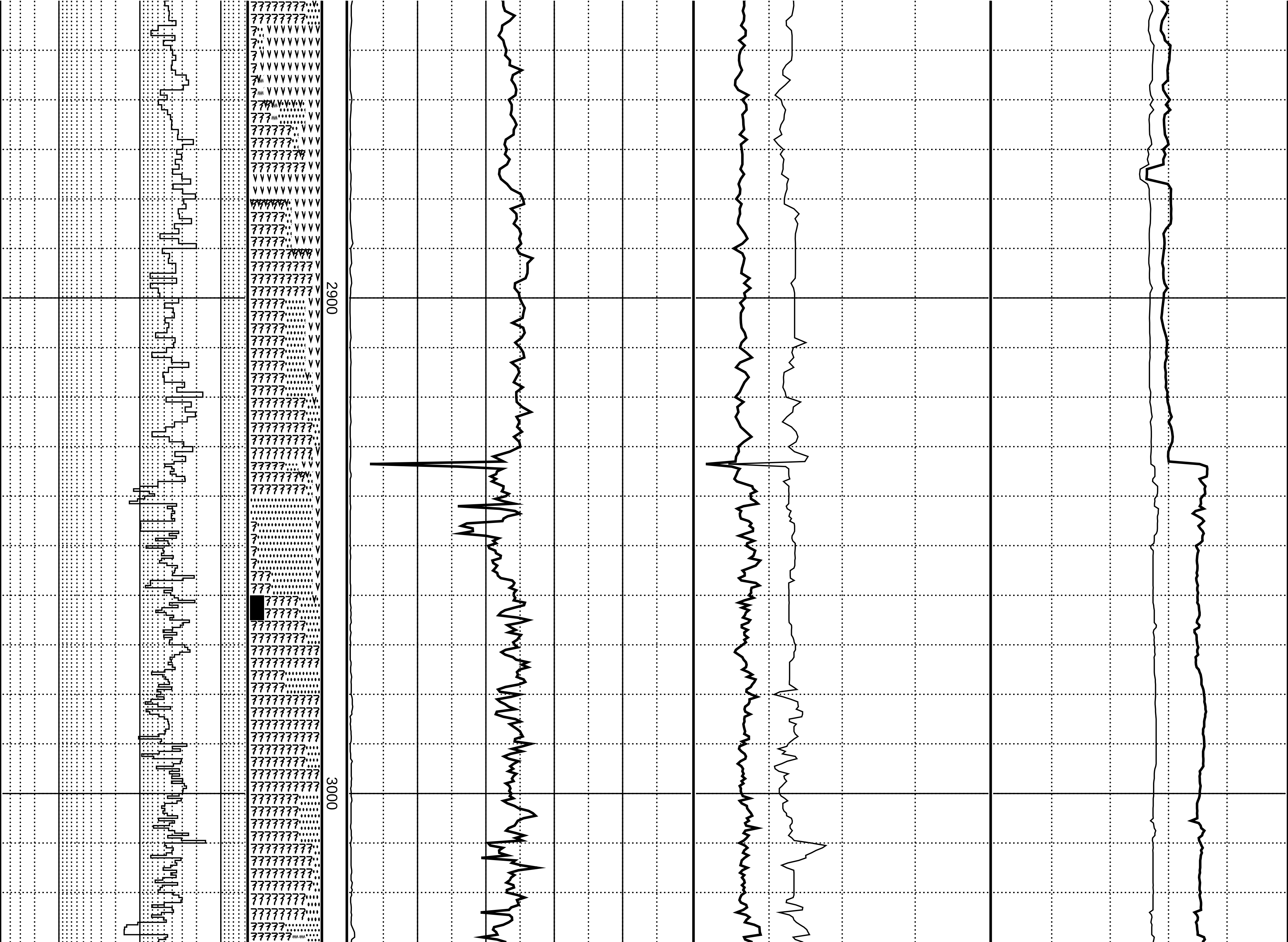

1900
FLC @ 1985m (static)
2000
RECALIBRATE
TEMP OUT SENSOR

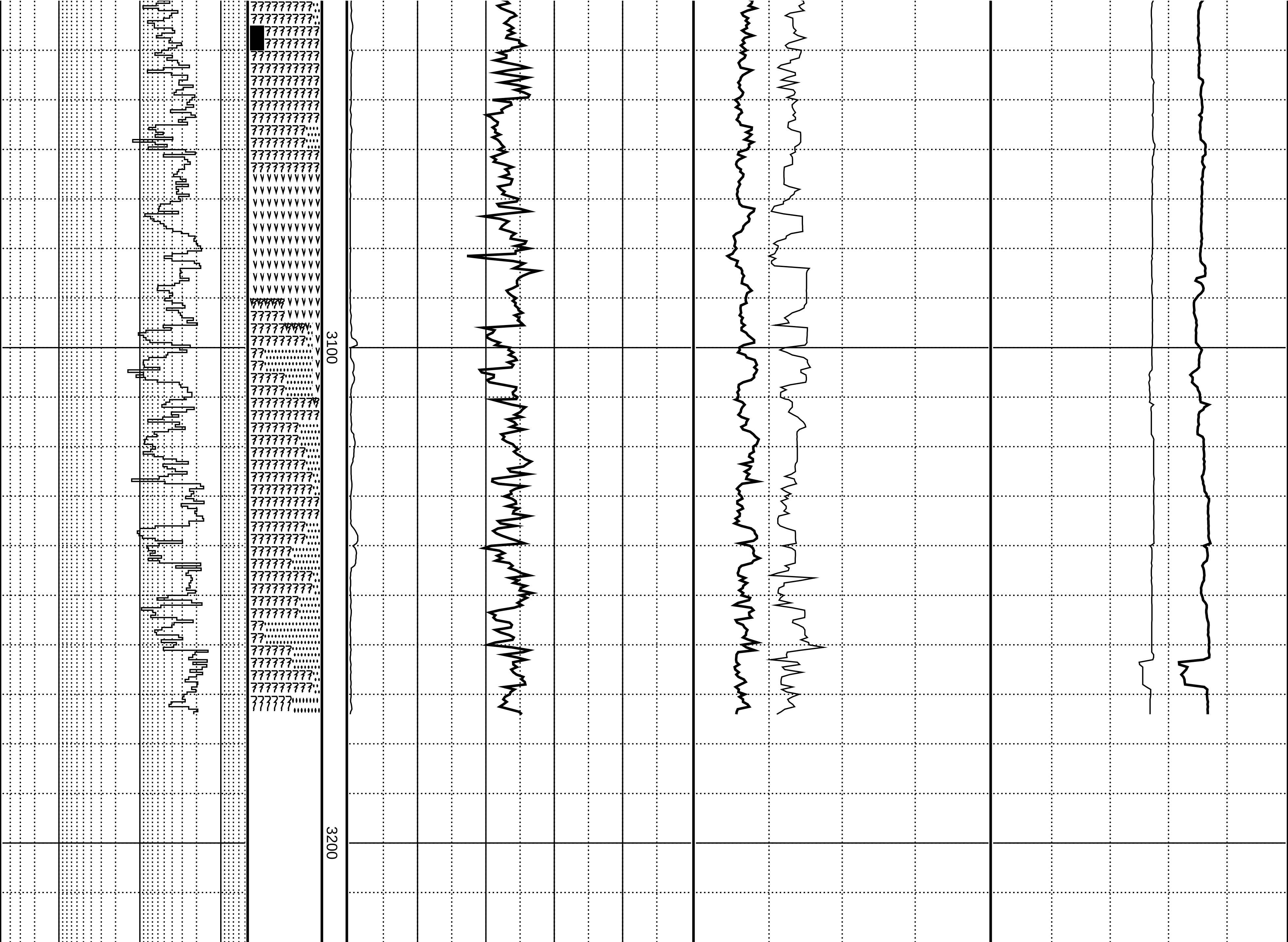

FLC @ 2092m (static)
2100
2200
FLC @ 2210m (static)


2300
2400


FLC @ 2483m (static)
2500
2600


2700
2800


2900
3000

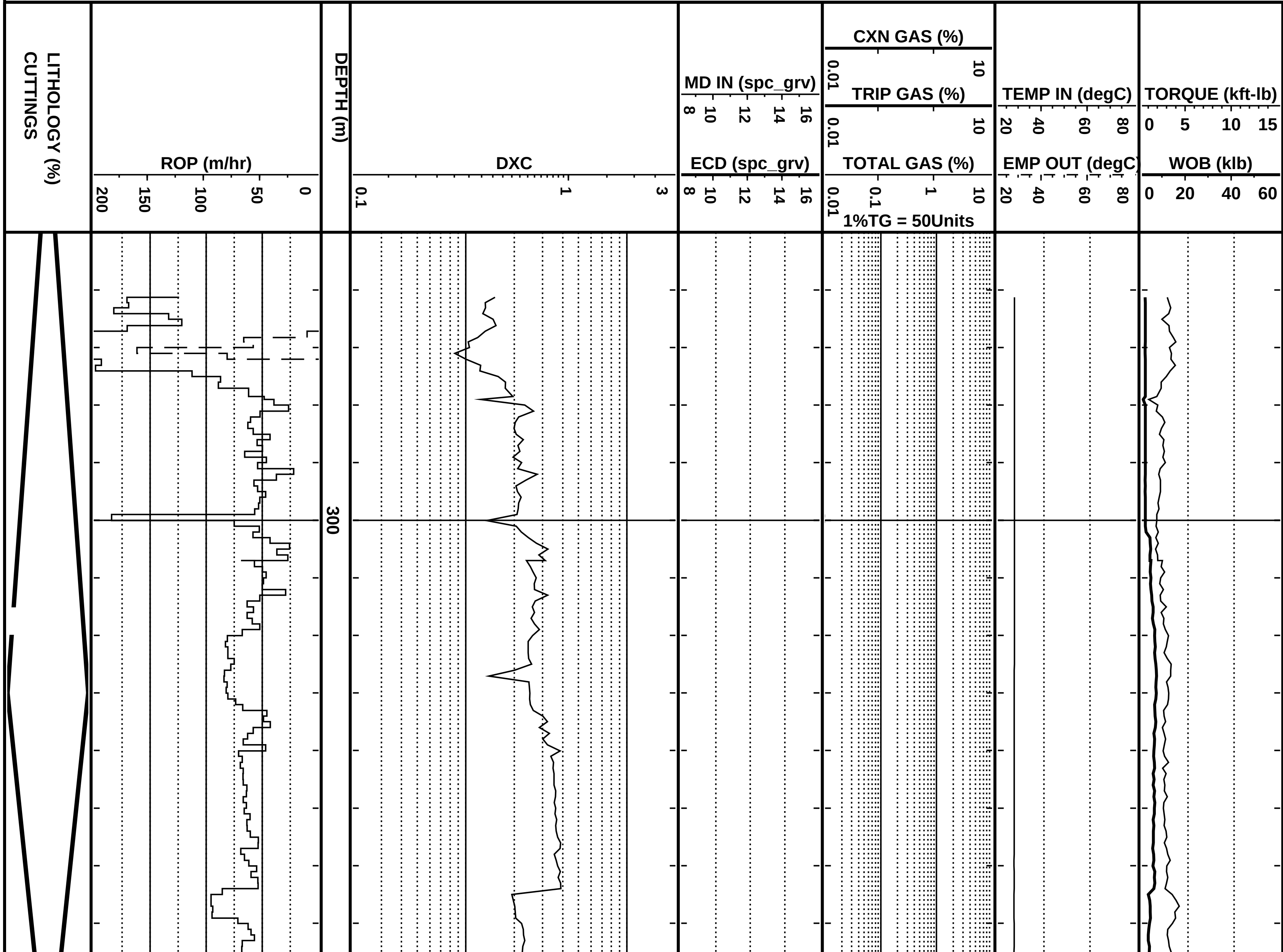

3100
3200

RATE OF PENETRATION	PERCENT LITHOLOGY	DEPTH (m)	Total Gas (%) 1%TG = 50Units	RPM Avg	SPP (psi)
			0 2 4 6 8 10	0 75 150 225 300	0 1k 2k 3k 4k 5k
ROP (m/hr)			WOB (klb)	Torque Avg (kft-lb)	FLOW (gal/min)
500 100 10 1 0.5			0 20 40 60 80 100	0 7.5 15 22.5 30	0 300 600 900 1.2k 1.5k

Pressure Data Plot

1: 1000

ESSO AUSTRALIA LTD.
PRESSURE DATA PLOT
Scallop-1
SCALE: 1 to 1000.0



Comments

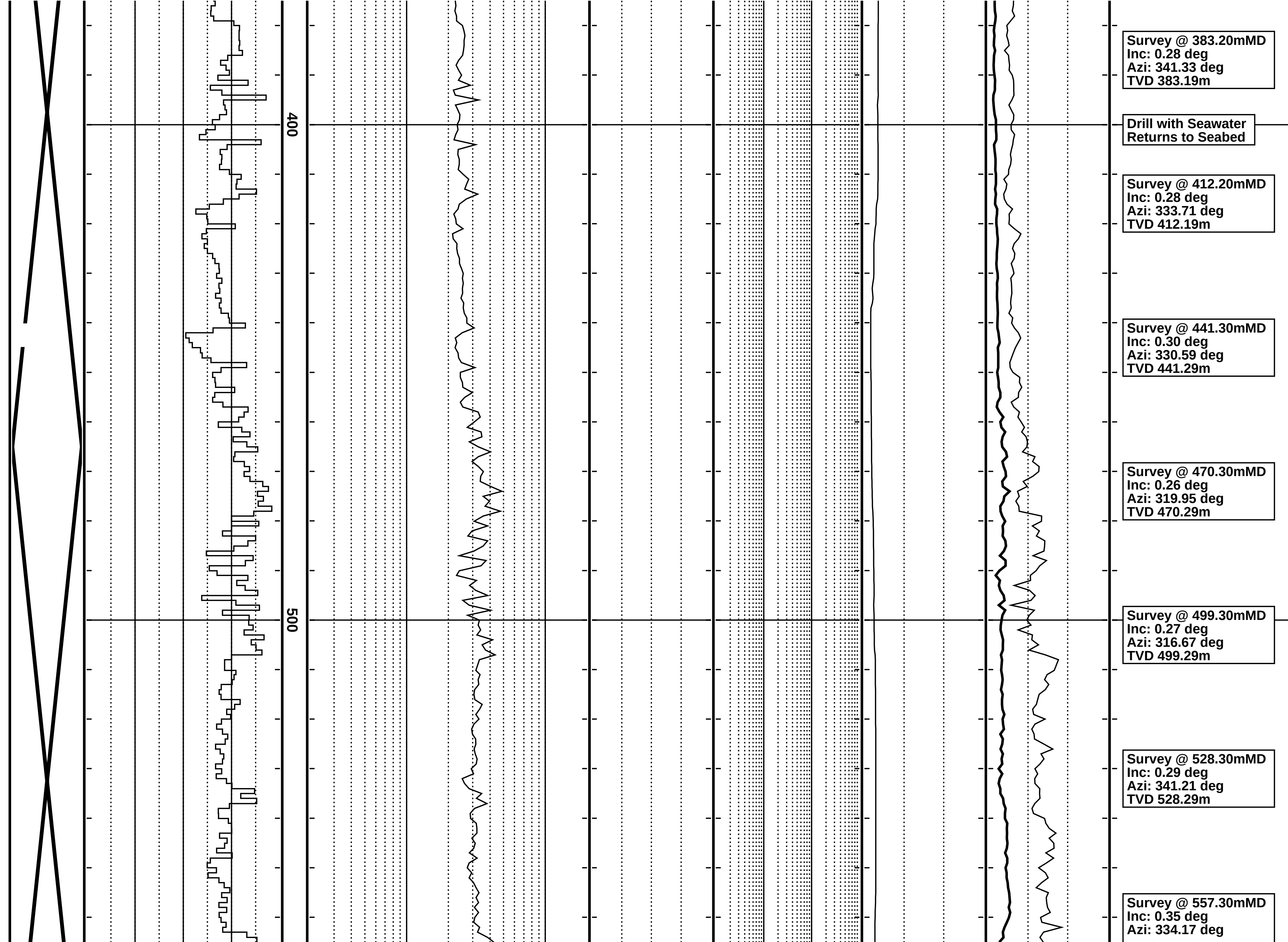
Spud Scallop-1 1200hrs
02 February'03
Seabed @ 135.5m
RT - MSL: 25.9m
WD: 109.6m
Data Collection Start
from 261m

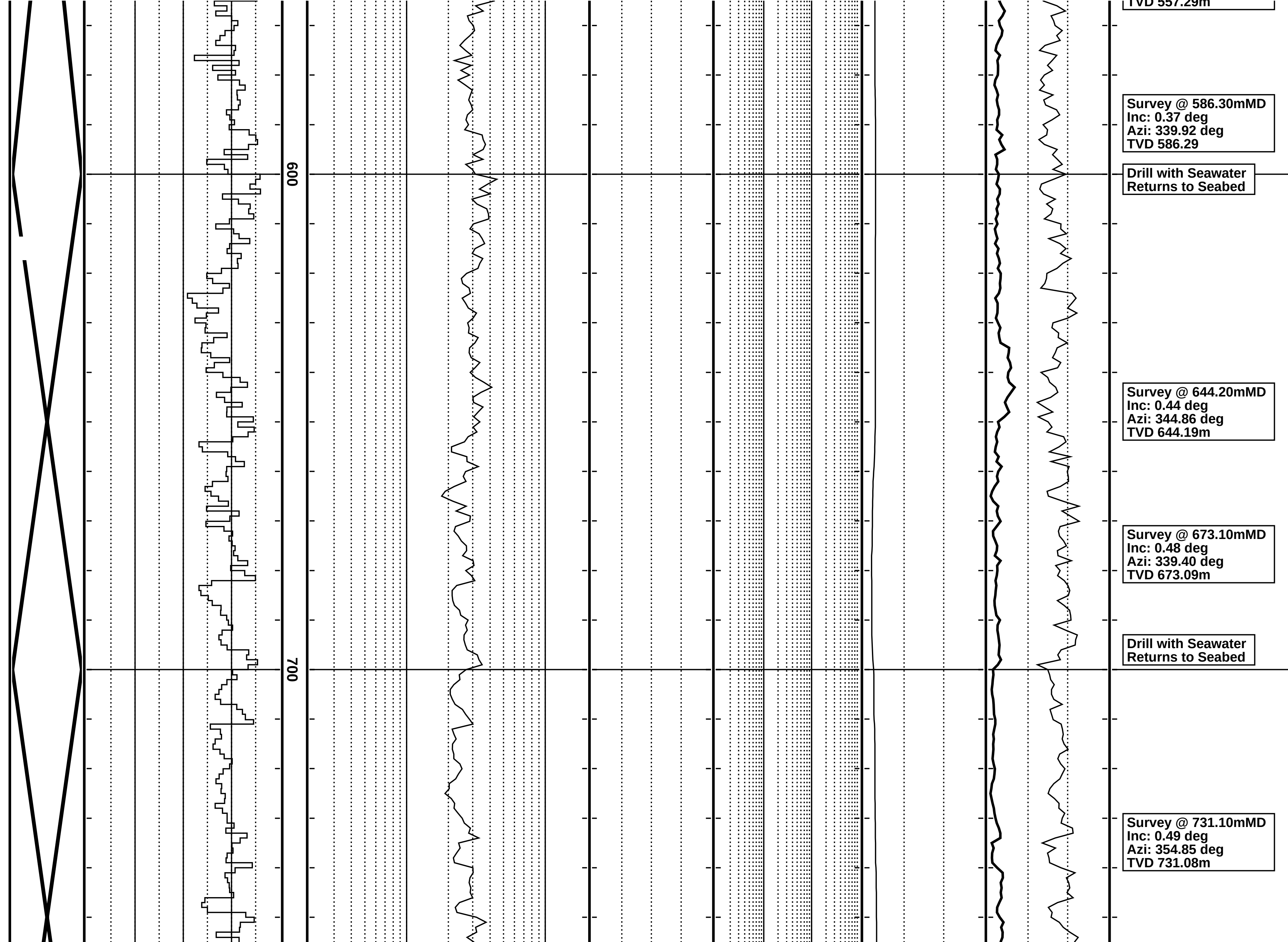
Survey @ 267.50mMD
Inc: 0.35 deg
Azi: 15.59 deg
TVD 267.49m

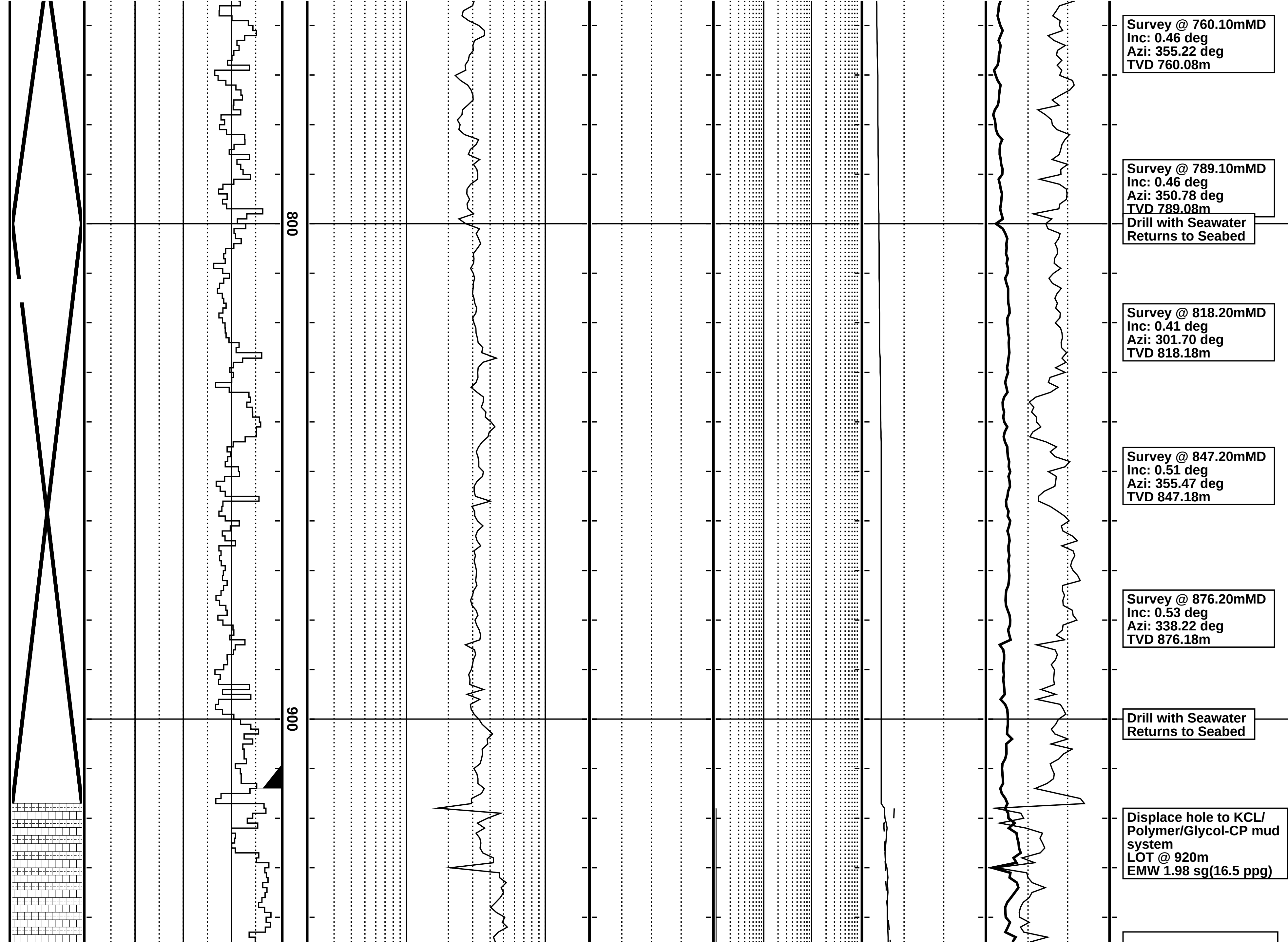
Survey @ 296.40mMD
Inc: 0.35 deg
Azi: 357.50 deg
TVD 296.39m

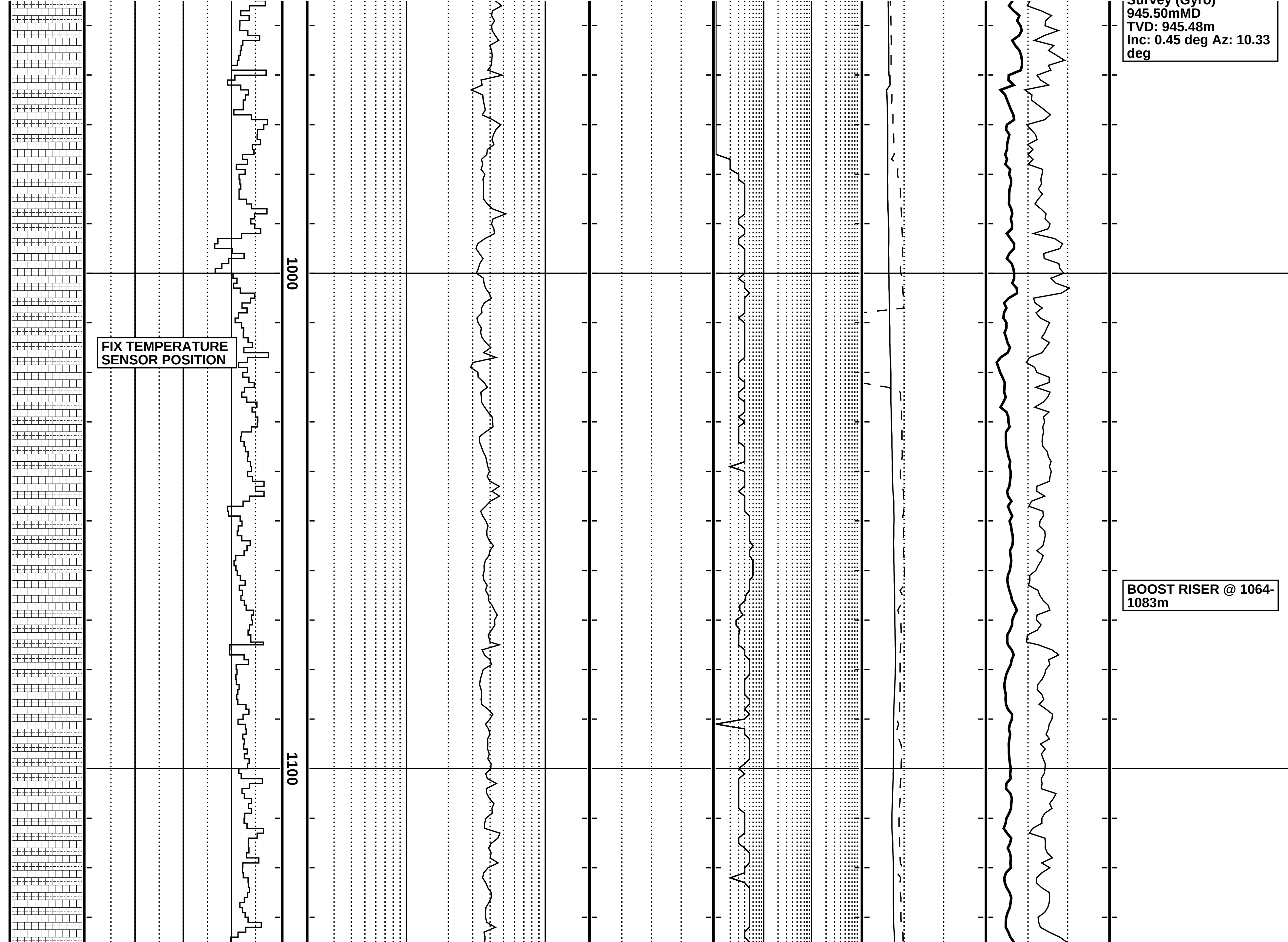
Survey @ 325.40mMD
Inc: 0.35 deg
Azi: 358.93 deg
TVD 325.39m

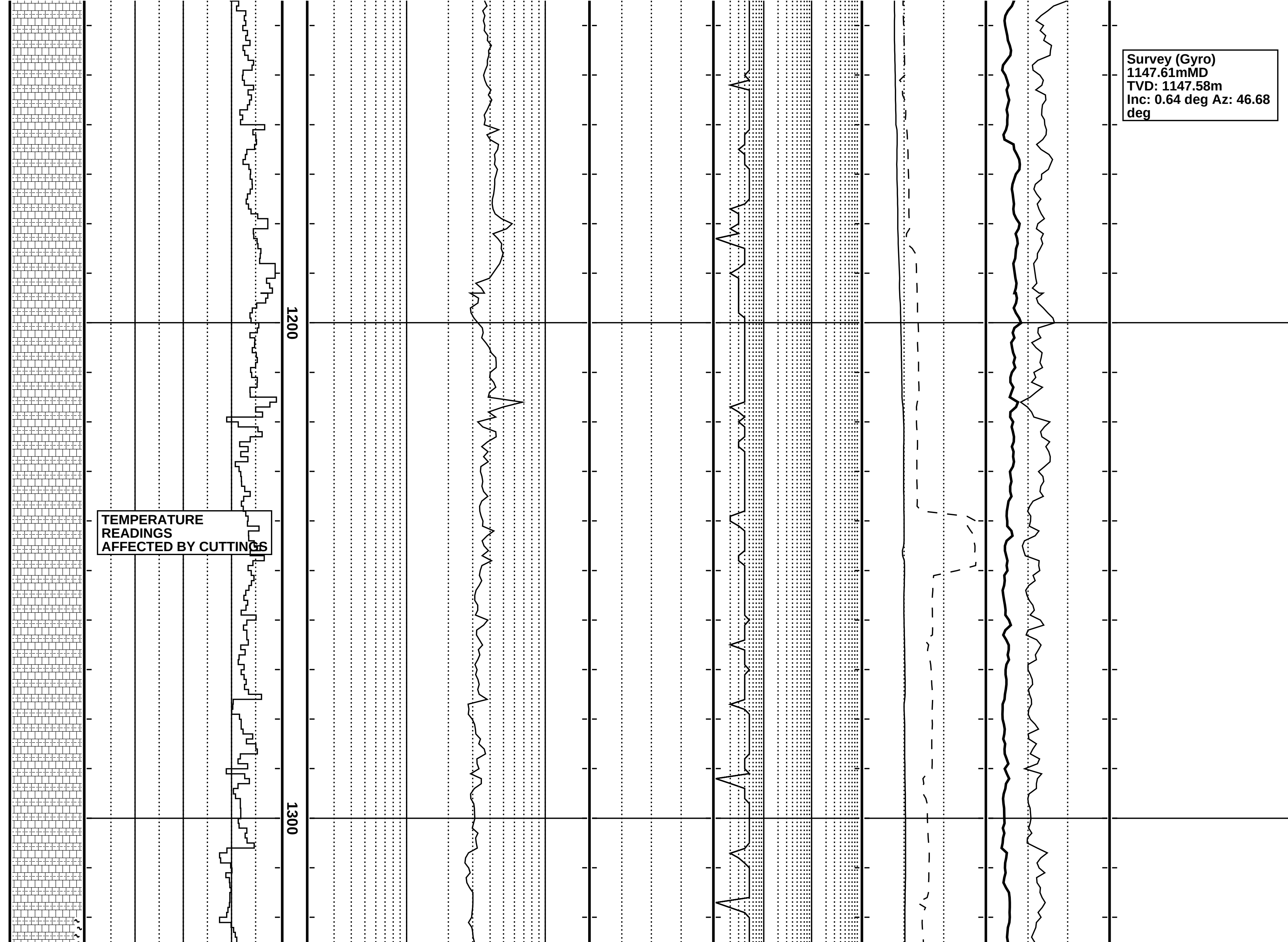
Survey @ 354.40mMD
Inc: 0.31 deg
Azi: 351.16 deg
TVD 351.16m

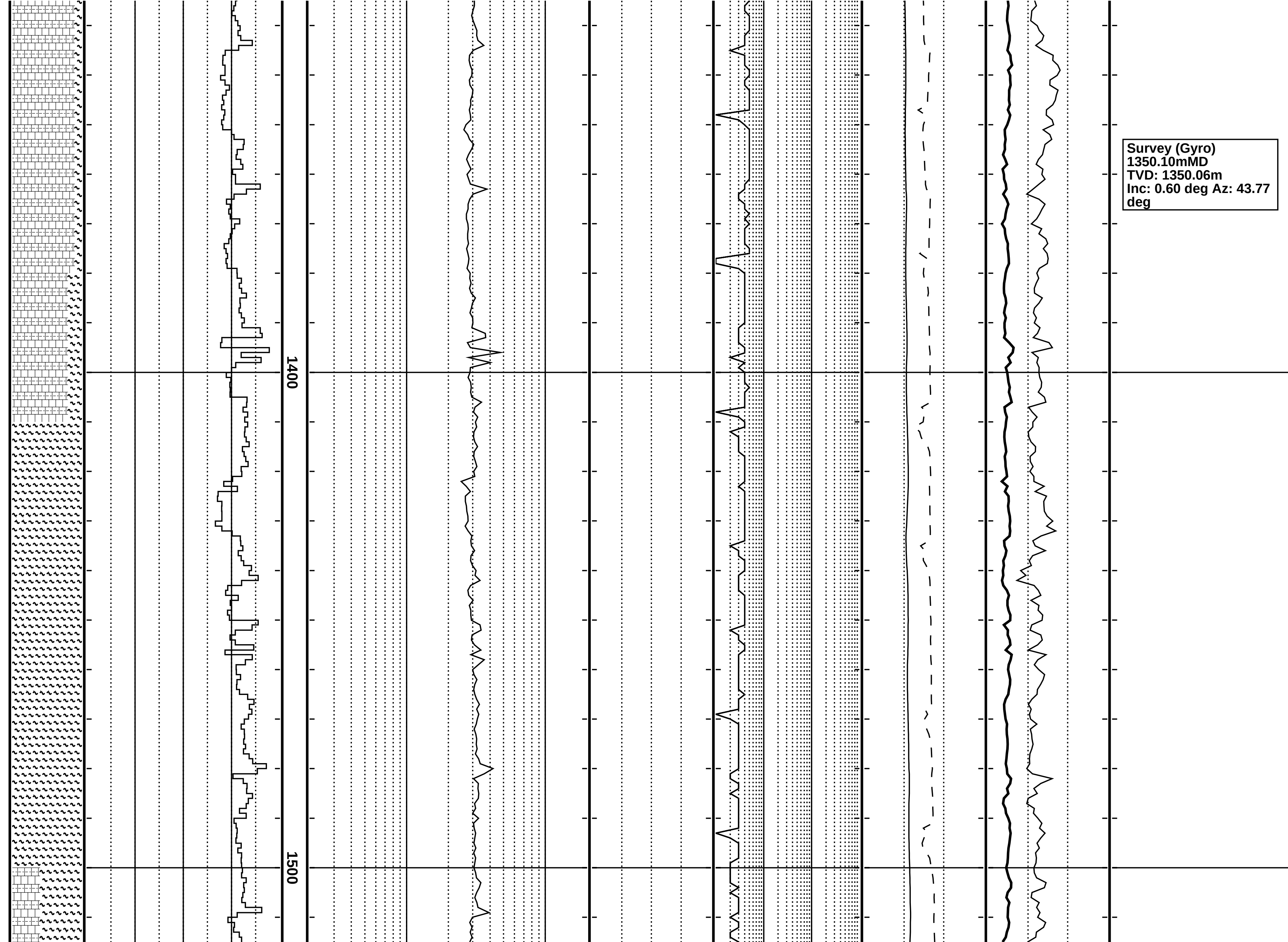

400
500
Survey @ 383.20mMD
Inc: 0.28 deg
Azi: 341.33 deg
TVD 383.19m
Drill with Seawater
Returns to Seabed
Survey @ 412.20mMD
Inc: 0.28 deg
Azi: 333.71 deg
TVD 412.19m
Survey @ 441.30mMD
Inc: 0.30 deg
Azi: 330.59 deg
TVD 441.29m
Survey @ 470.30mMD
Inc: 0.26 deg
Azi: 319.95 deg
TVD 470.29m
Survey @ 499.30mMD
Inc: 0.27 deg
Azi: 316.67 deg
TVD 499.29m
Survey @ 528.30mMD
Inc: 0.29 deg
Azi: 341.21 deg
TVD 528.29m
Survey @ 557.30mMD
Inc: 0.35 deg
Azi: 334.17 deg

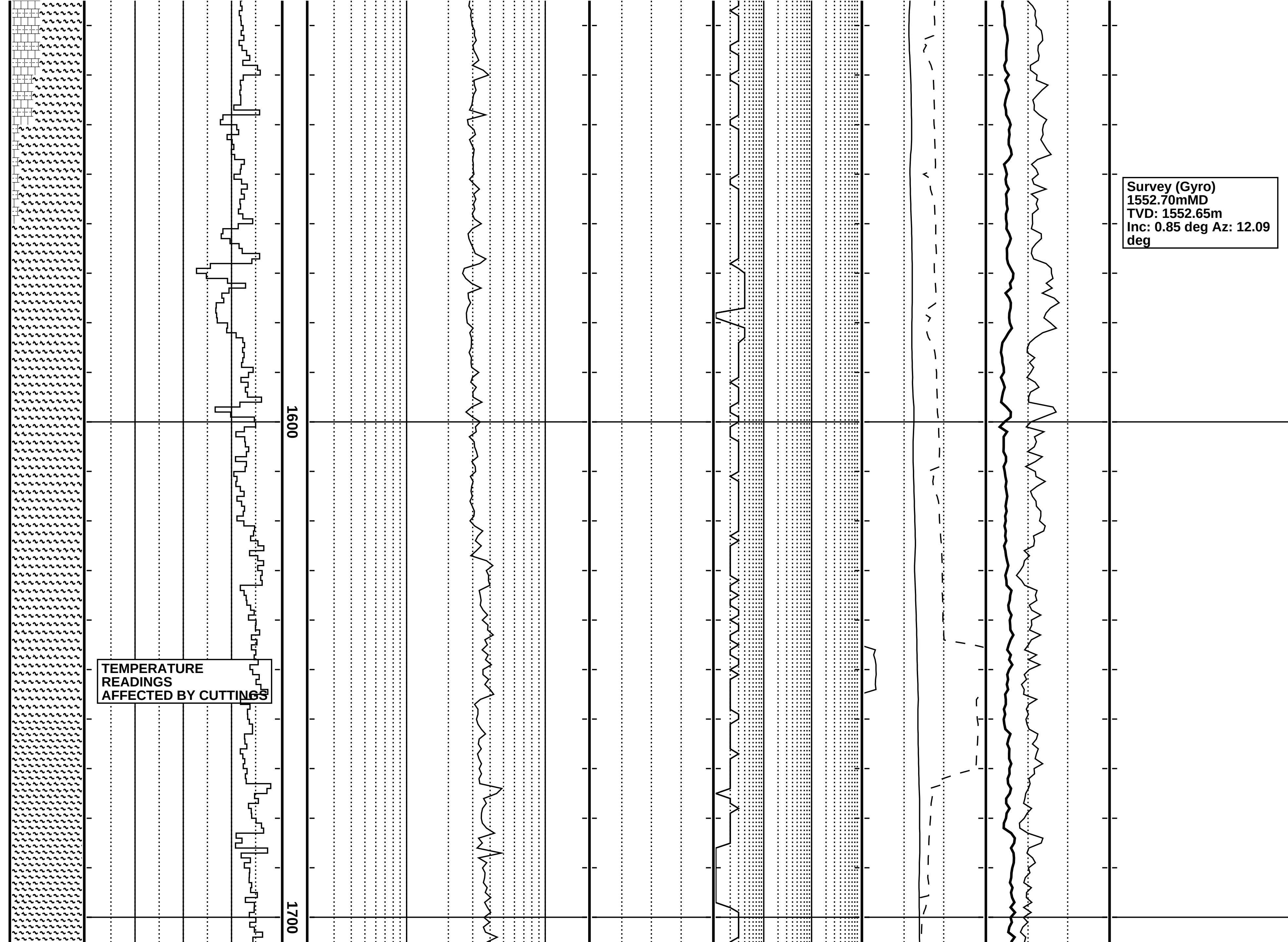

TVD 557.29m
Survey @ 586.30mMD
Inc: 0.37 deg
Azi: 339.92 deg
TVD 586.29
600
Drill with Seawater
Returns to Seabed
Survey @ 644.20mMD
Inc: 0.44 deg
Azi: 344.86 deg
TVD 644.19m
Survey @ 673.10mMD
Inc: 0.48 deg
Azi: 339.40 deg
TVD 673.09m
Drill with Seawater
Returns to Seabed
700
Survey @ 731.10mMD
Inc: 0.49 deg
Azi: 354.85 deg
TVD 731.08m

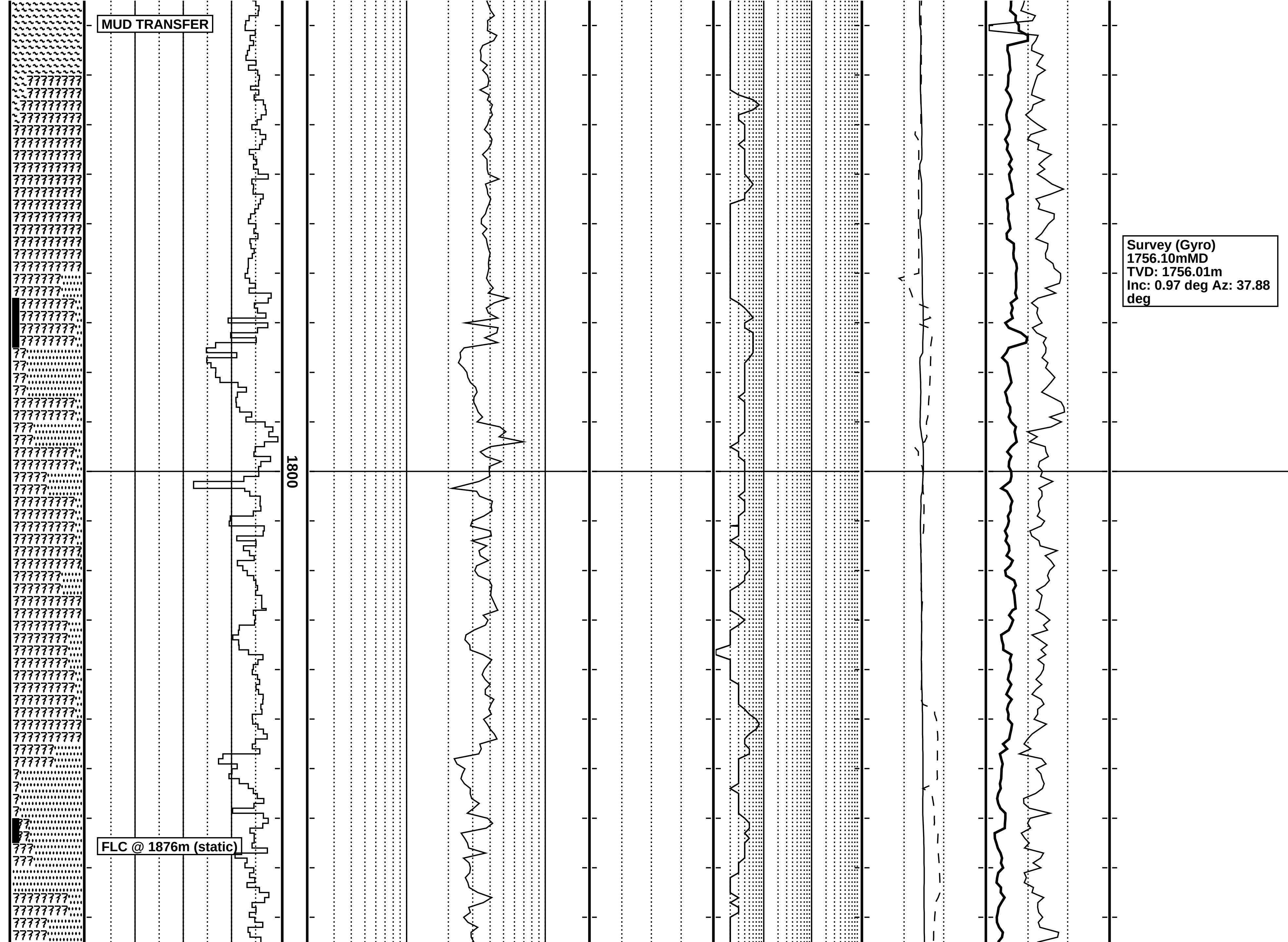

800
900
Survey @ 760.10mMD
Inc: 0.46 deg
Azi: 355.22 deg
TVD 760.08m
Survey @ 789.10mMD
Inc: 0.46 deg
Azi: 350.78 deg
TVD 789.08m
Drill with Seawater
Returns to Seabed
Survey @ 818.20mMD
Inc: 0.41 deg
Azi: 301.70 deg
TVD 818.18m
Survey @ 847.20mMD
Inc: 0.51 deg
Azi: 355.47 deg
TVD 847.18m
Survey @ 876.20mMD
Inc: 0.53 deg
Azi: 338.22 deg
TVD 876.18m
Drill with Seawater
Returns to Seabed
Displace hole to KCL/
Polymer/Glycol-CP mud
system
LOT @ 920m
EMW 1.98 sg(16.5 ppg)

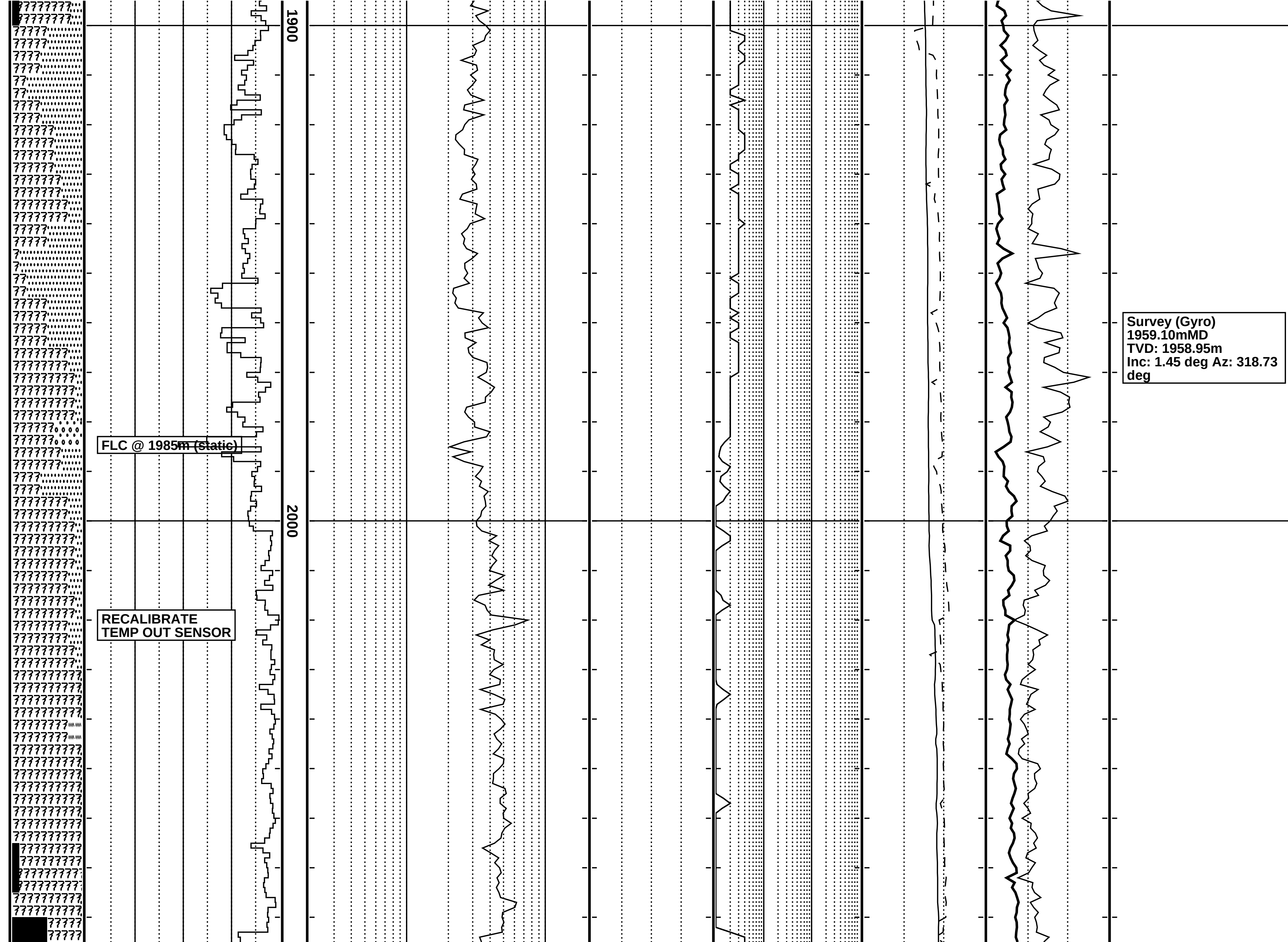

Survey (Gyro)
945.50mMD
TVD: 945.48m
Inc: 0.45 deg Az: 10.33 deg
1000
FIX TEMPERATURE SENSOR POSITION
BOOST RISER @ 1064-1083m
1100

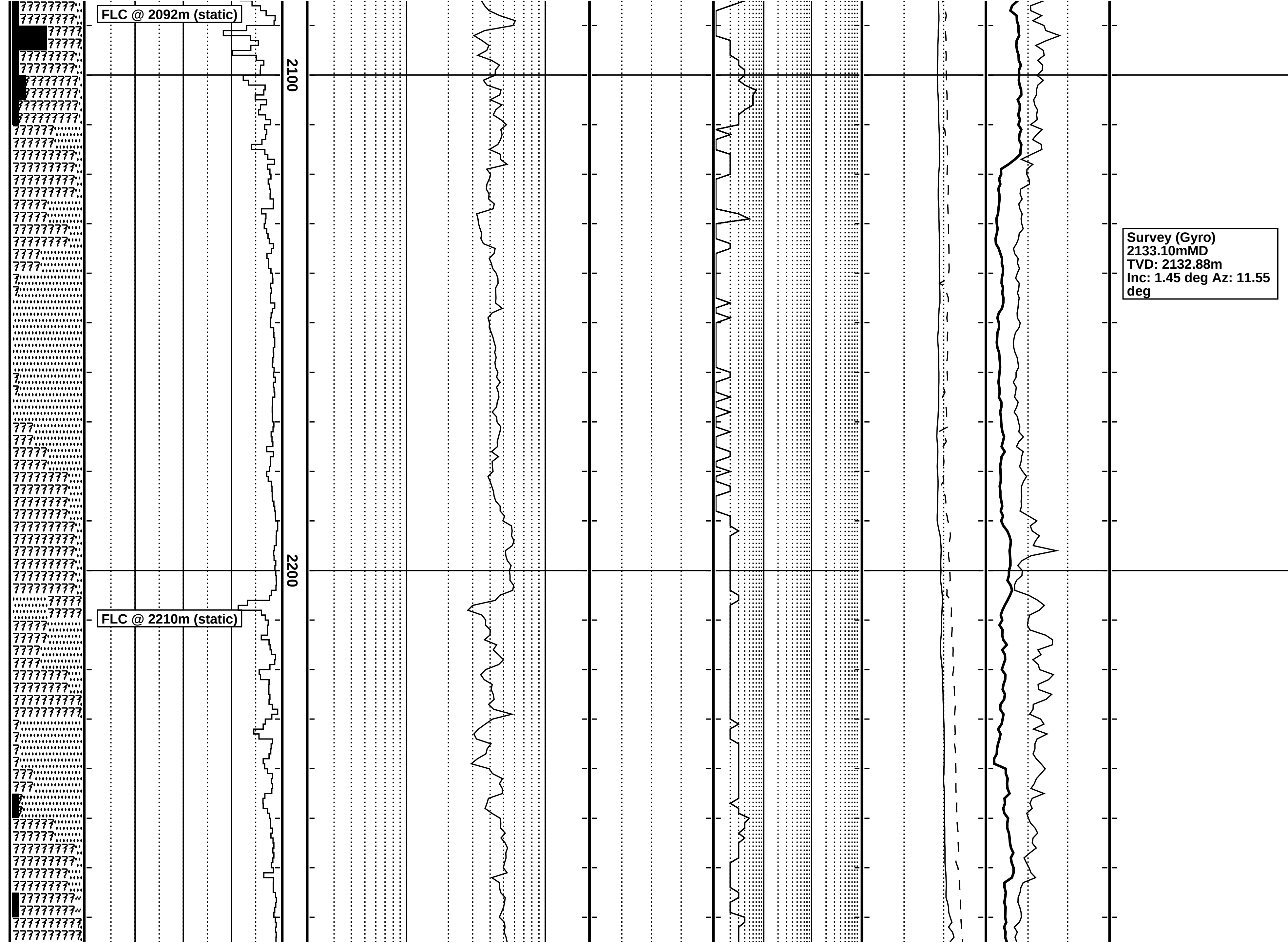

Survey (Gyro)
1147.61mMD
TVD: 1147.58m
Inc: 0.64 deg Az: 46.68 deg
1200
TEMPERATURE READINGS AFFECTED BY CUTTINGS
1300

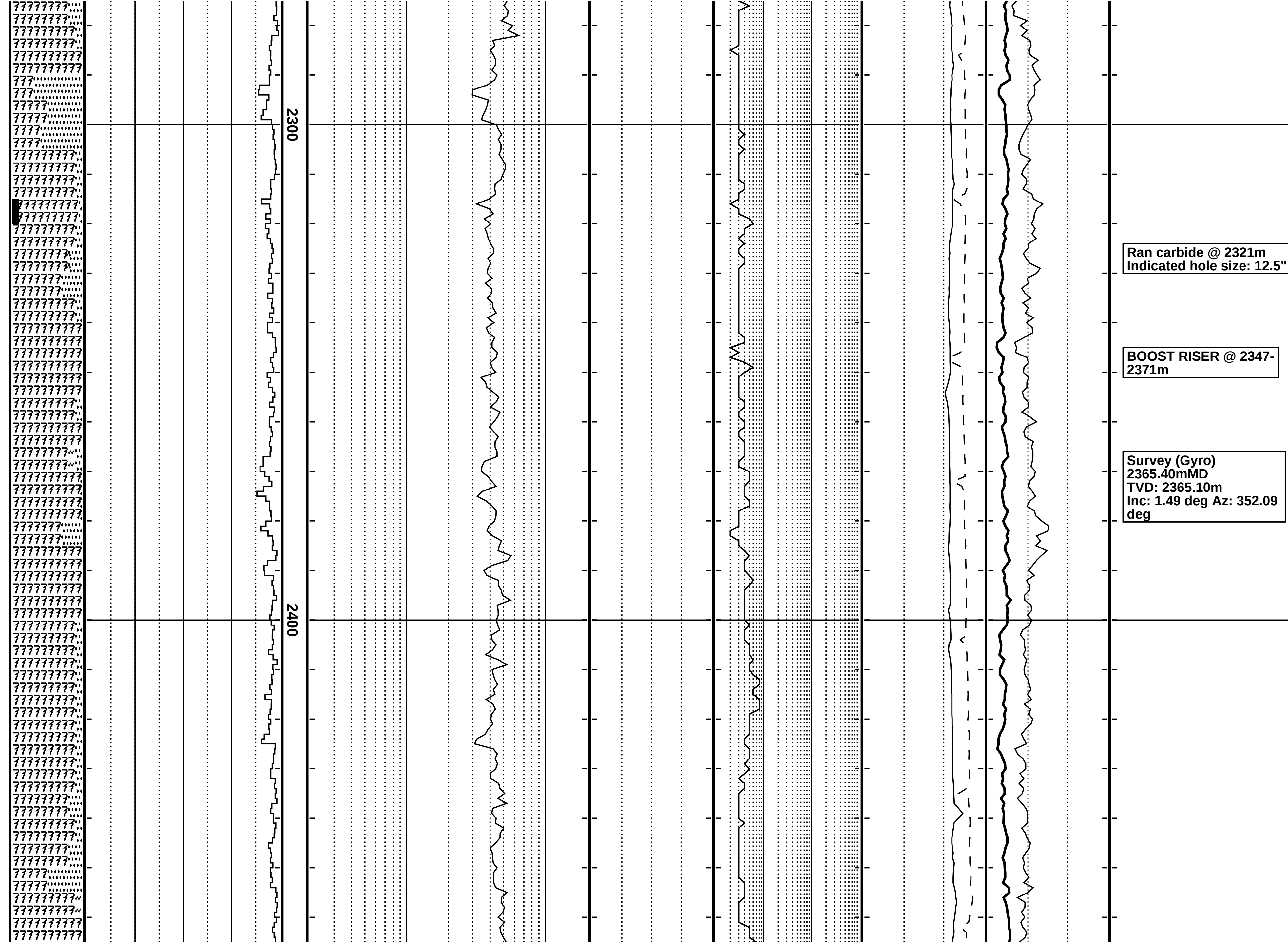

1400
1500
Survey (Gyro)
1350.10mMD
TVD: 1350.06m
Inc: 0.60 deg Az: 43.77 deg

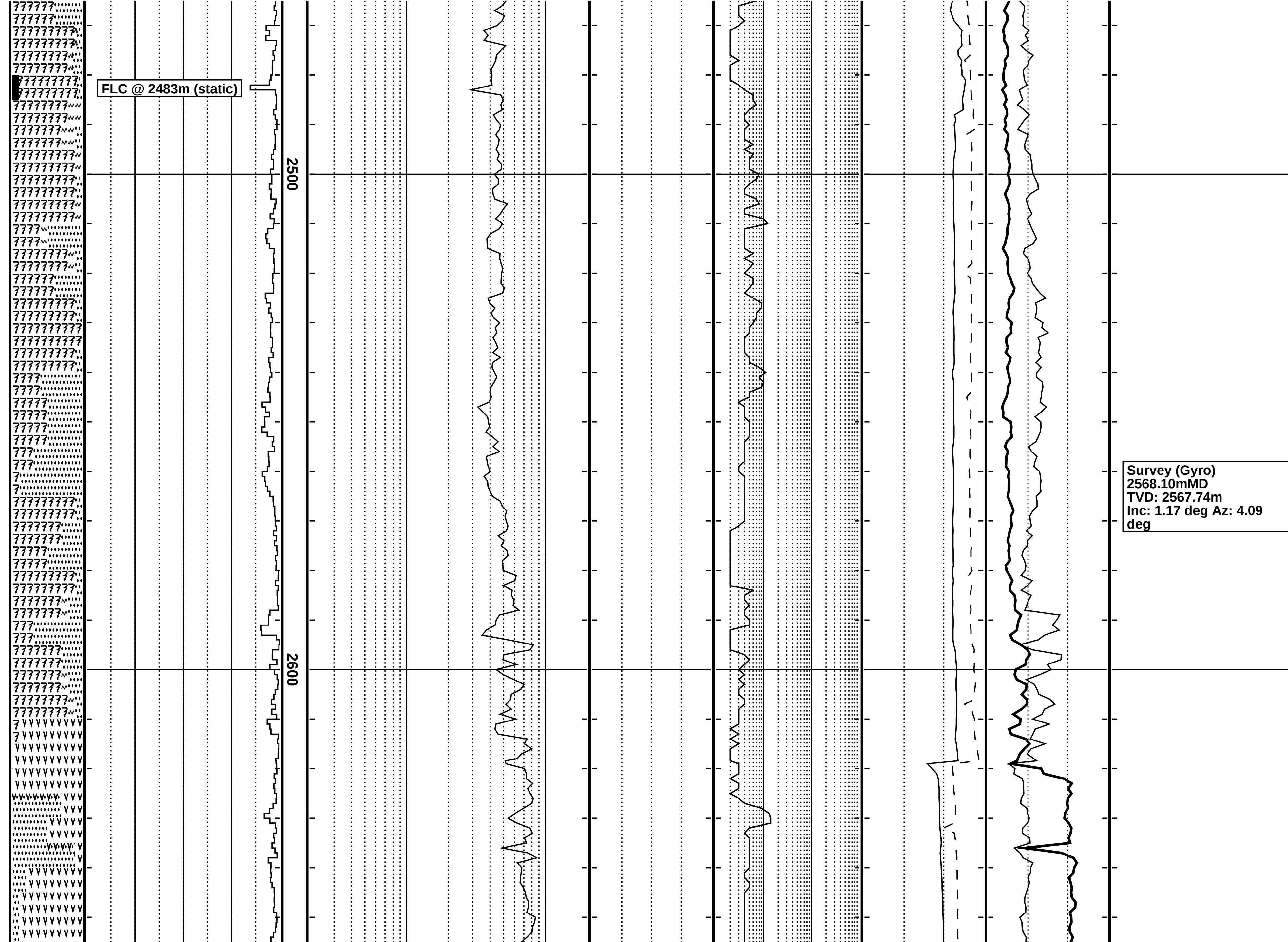

1600
1700
TEMPERATURE
READINGS
AFFECTED BY CUTTINGS
Survey (Gyro)
1552.70mMD
TVD: 1552.65m
Inc: 0.85 deg Az: 12.09
deg

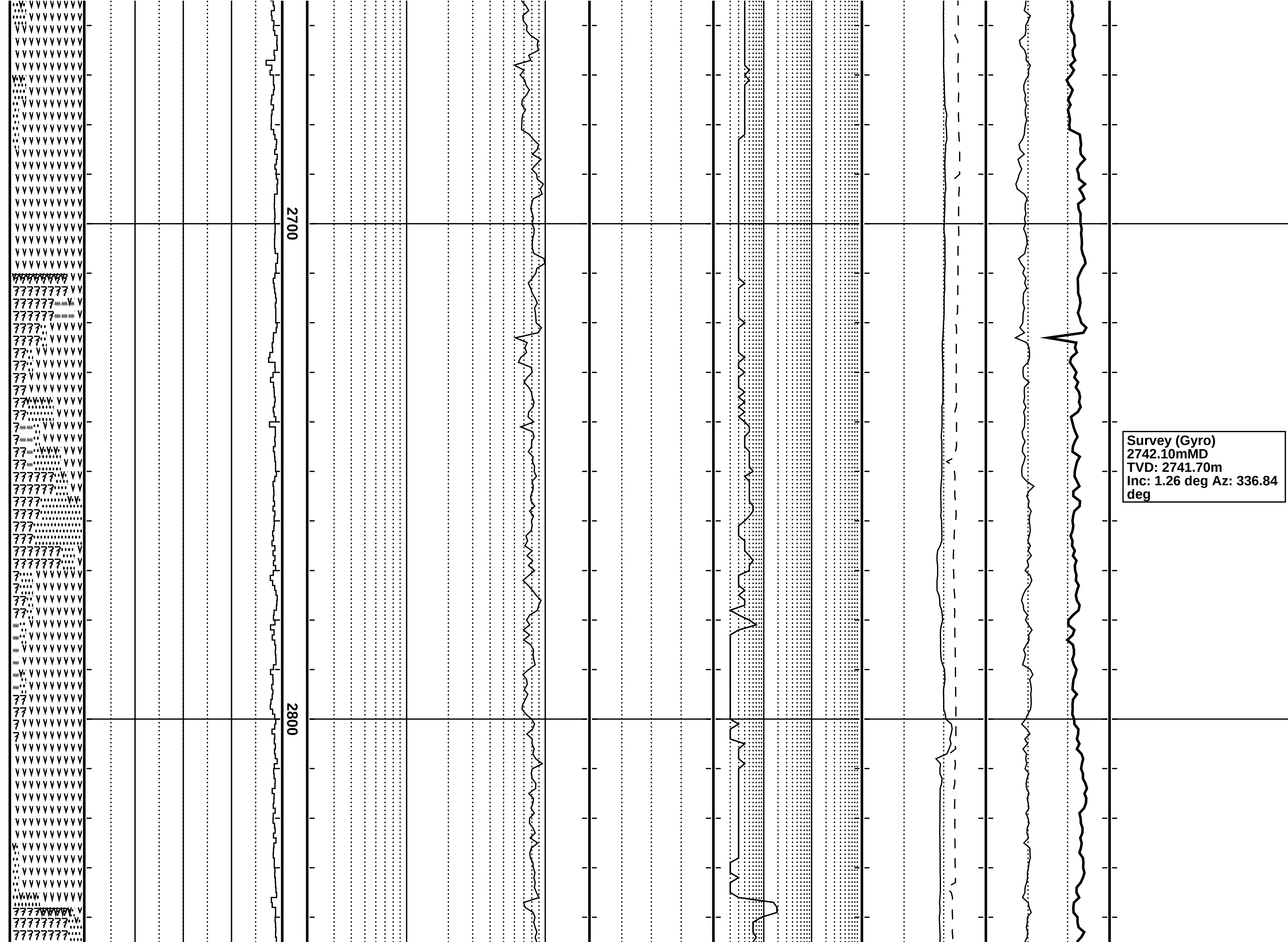

MUD TRANSFER
1800
Survey (Gyro)
1756.10mMD
TVD: 1756.01m
Inc: 0.97 deg Az: 37.88
deg
FLC @ 1876m (static)

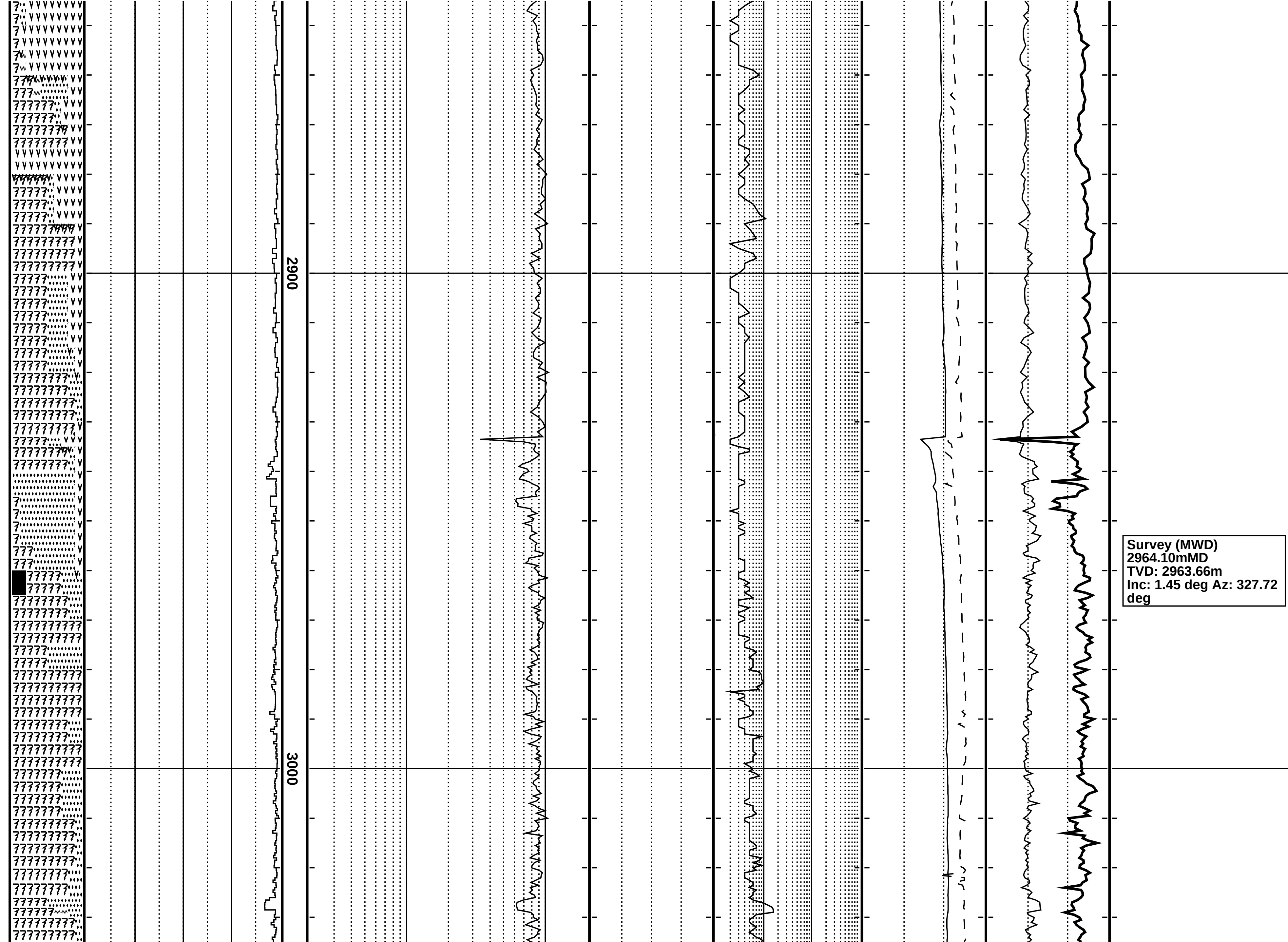

1900
2000
FLC @ 1985m (static)
RECALIBRATE
TEMP OUT SENSOR
Survey (Gyro)
1959.10mMD
TVD: 1958.95m
Inc: 1.45 deg Az: 318.73
deg

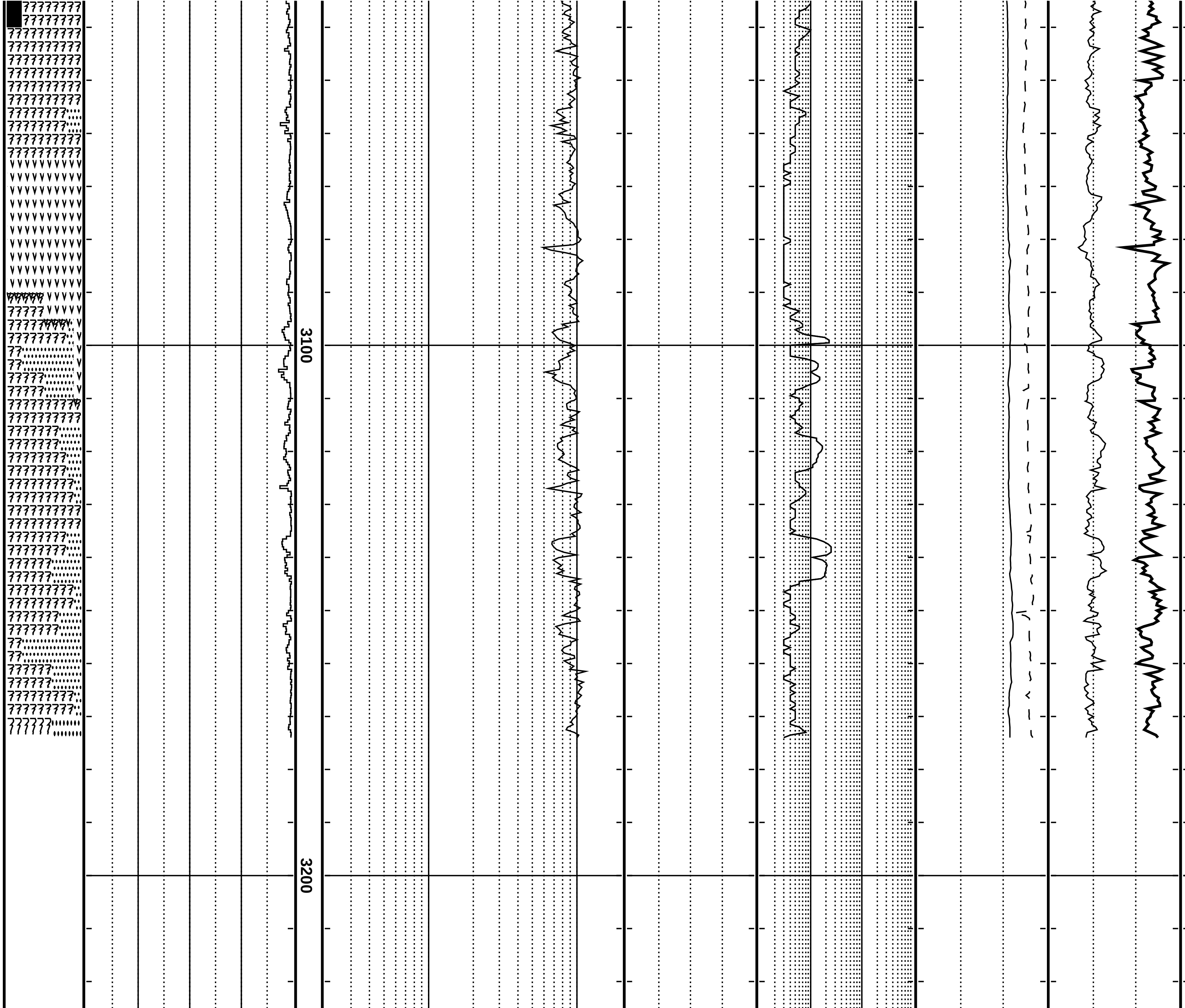

FLC @ 2092m (static)
2100
Survey (Gyro)
2133.10mMD
TVD: 2132.88m
Inc: 1.45 deg Az: 11.55
deg
2200
FLC @ 2210m (static)


2300
Ran carbide @ 2321m
Indicated hole size: 12.5"
BOOST RISER @ 2347-2371m
Survey (Gyro)
2365.40mMD
TVD: 2365.10m
Inc: 1.49 deg Az: 352.09 deg
2400


FLC @ 2483m (static)
2500
2600
Survey (Gyro)
2568.10mMD
TVD: 2567.74m
Inc: 1.17 deg Az: 4.09
deg


2700
2800
Survey (Gyro)
2742.10mMD
TVD: 2741.70m
Inc: 1.26 deg Az: 336.84 deg


2900
3000
Survey (MWD)
2964.10mMD
TVD: 2963.66m
Inc: 1.45 deg Az: 327.72 deg



RUN E-LOGS :
PEX-HALS-HNGS-LEHQT
MDT-GR-LEHQT
DSI-FMI-GR-LEHQT
DUAL CSAT-VSP
CST's

	ROP (m/hr)		DXC	MD IN (spc_grv) / ECD (spc_grv)	CXN GAS (%) / TRIP GAS (%) / TOTAL GAS (%)	TEMP IN (degC) / EMP OUT (degC)	TORQUE (kft-lb) / WOB (klb)	
				MD IN (spc_grv): 8 10 12 14 16	CXN GAS (%): 0.01 10	TEMP IN (degC): 20 40 60 80	TORQUE (kft-lb): 0 5 10 15	
					TRIP GAS (%): 0.01 10			
	ROP (m/hr): 200 150 100 50 0		DXC: 0.1 1 3	ECD (spc_grv): 8 10 12 14 16	TOTAL GAS (%): 0.01 0.1 1 10	EMP OUT (degC): 20 40 60 80	WOB (klb): 0 20 40 60	
					1%TG = 50Units			

Pressure Summary Plot

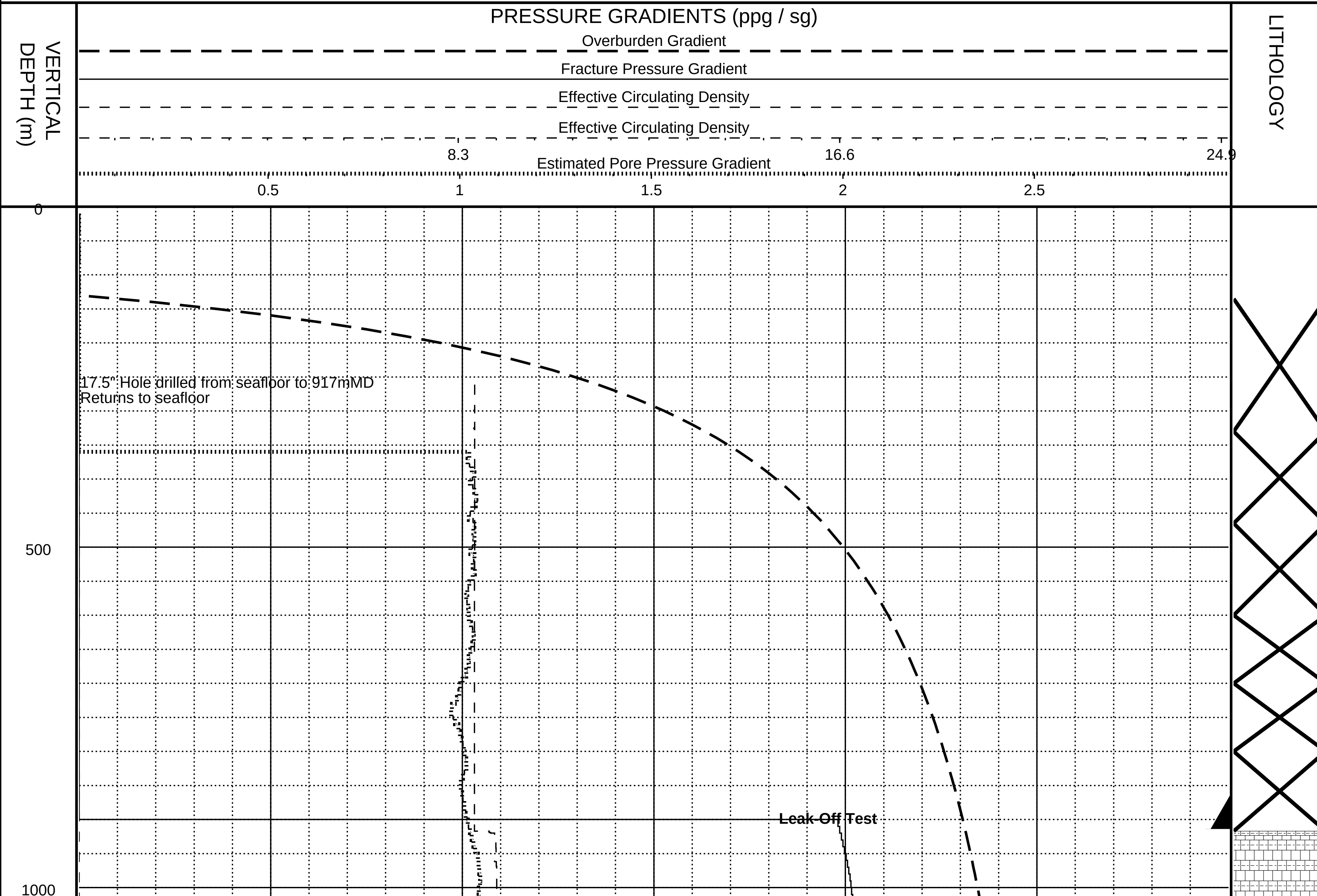
1: 7500

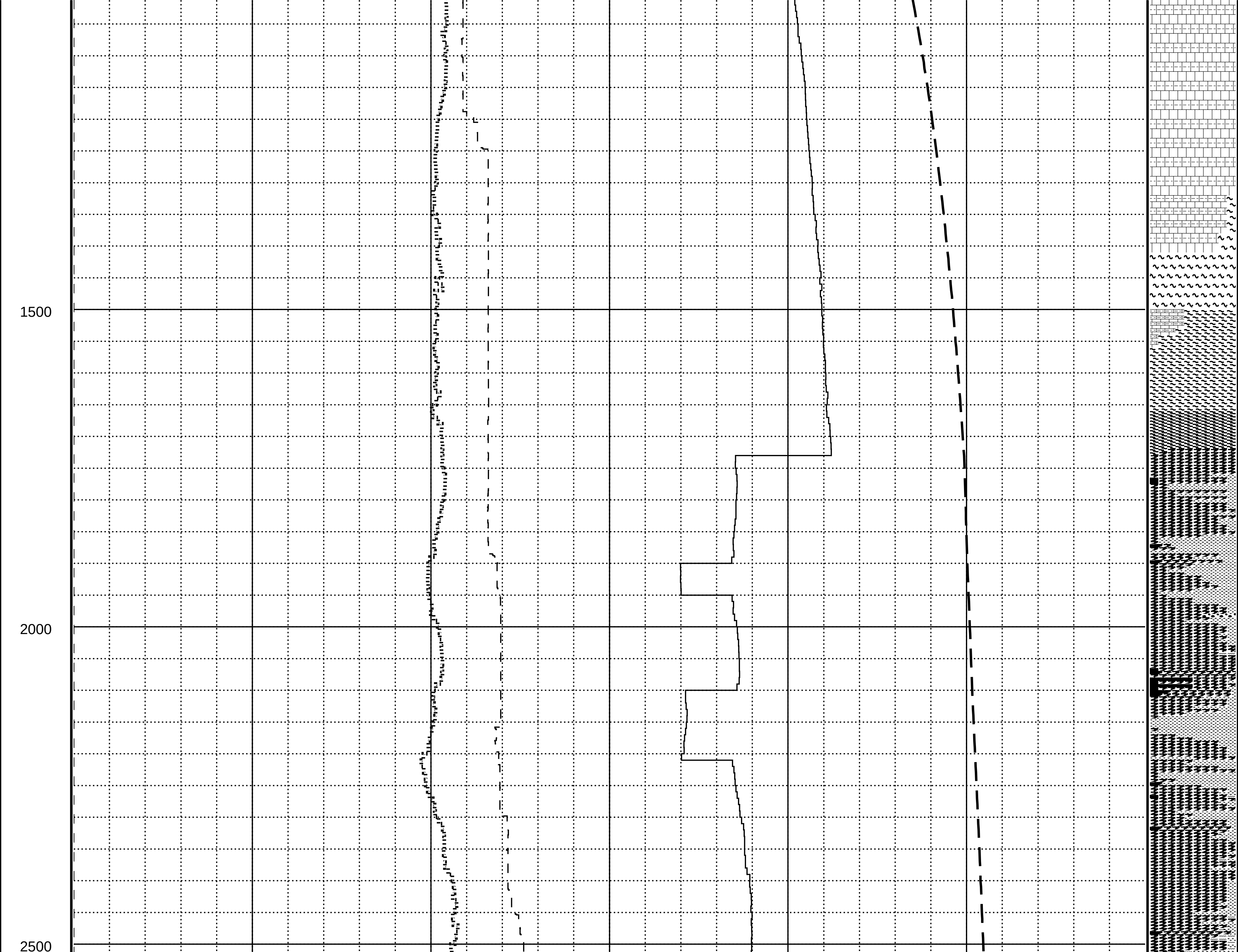
BAKER HUGHES
INTEQ

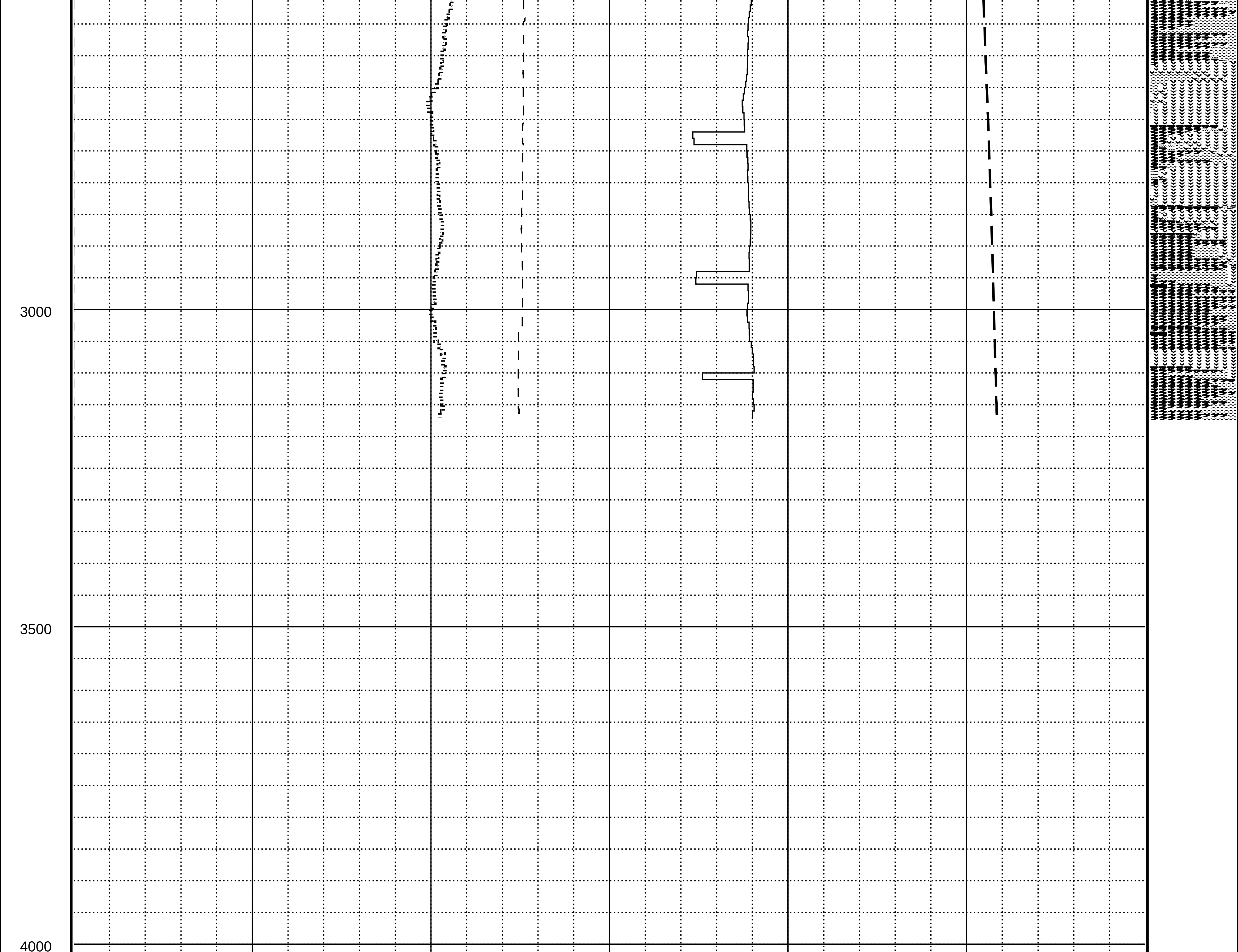
PRESSURE SUMMARY PLOT

Scallop-1

SCALE: 1:7500.0




1500
2000
2500


3000
3500
4000

PRESSURE GRADIENTS (ppg / sg)

Overburden Gradient

Fracture Pressure Gradient

Effective Circulating Density

Effective Circulating Density

8.3 16.6 24.9

Estimated Pore Pressure Gradient

0.5 1 1.5 2 2.5

LITHOLOGY

Gas Ratio Analysis Plot

1: 500

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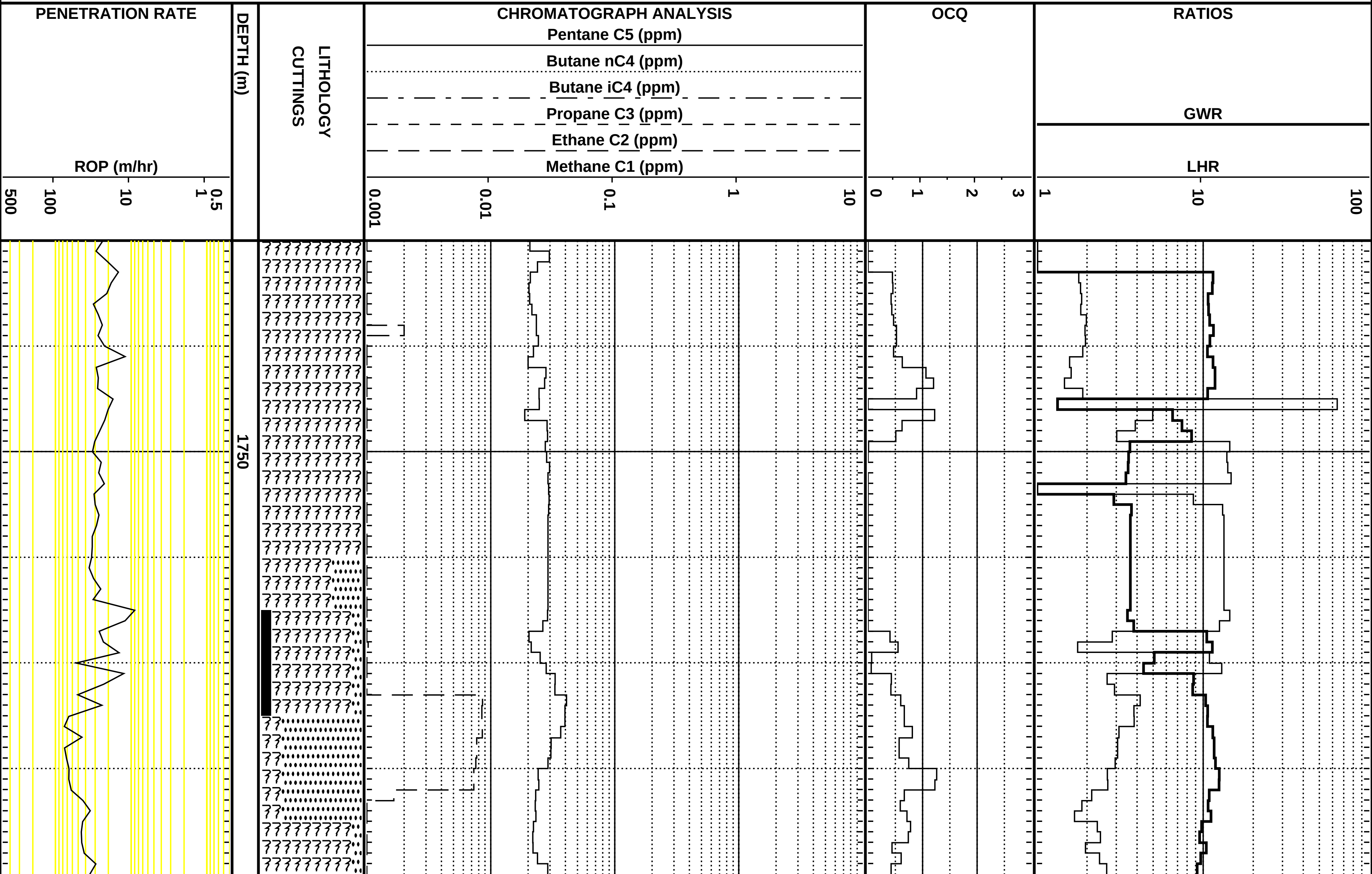
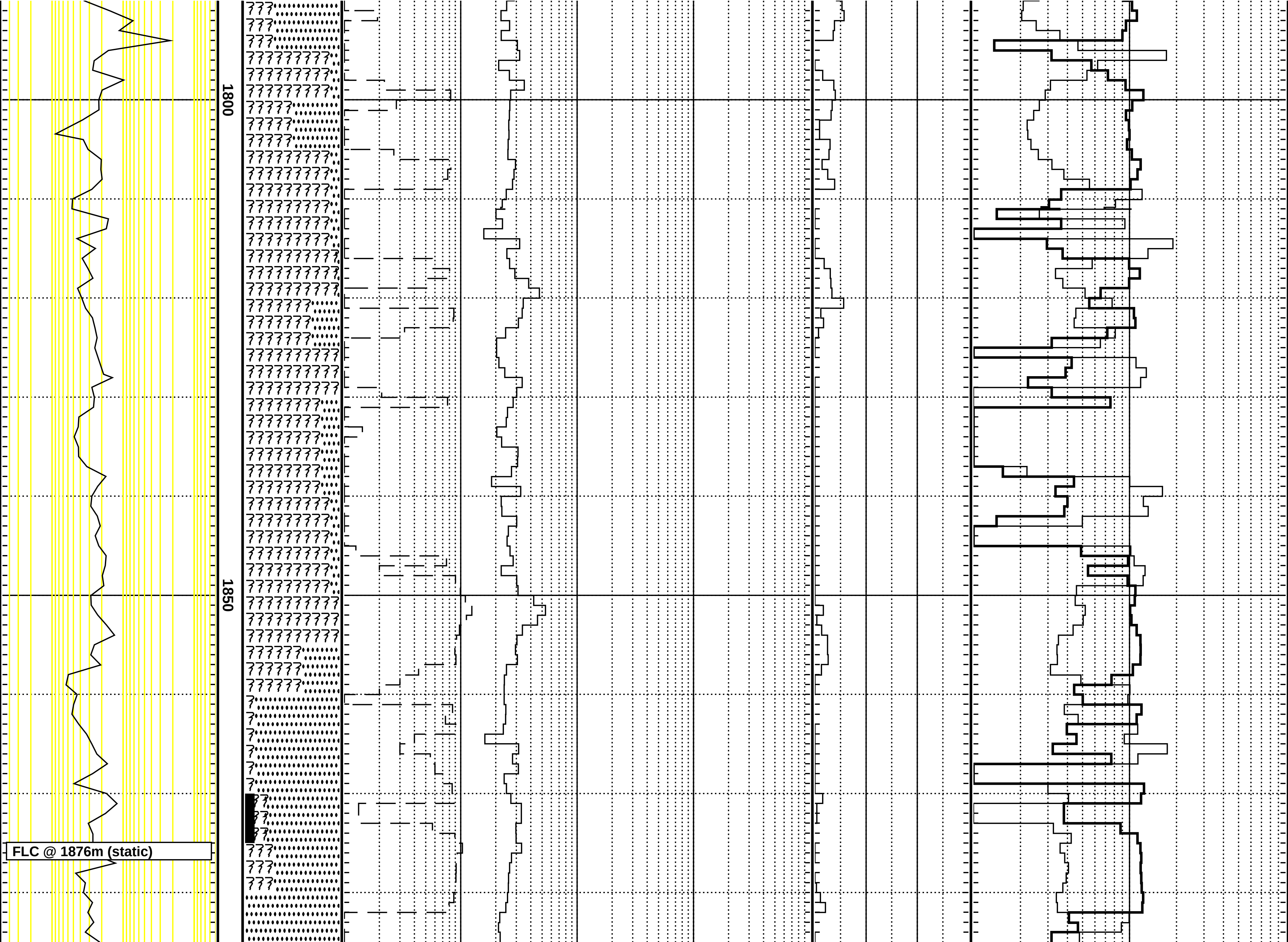
GAS RATIO ANALYSIS PLOT

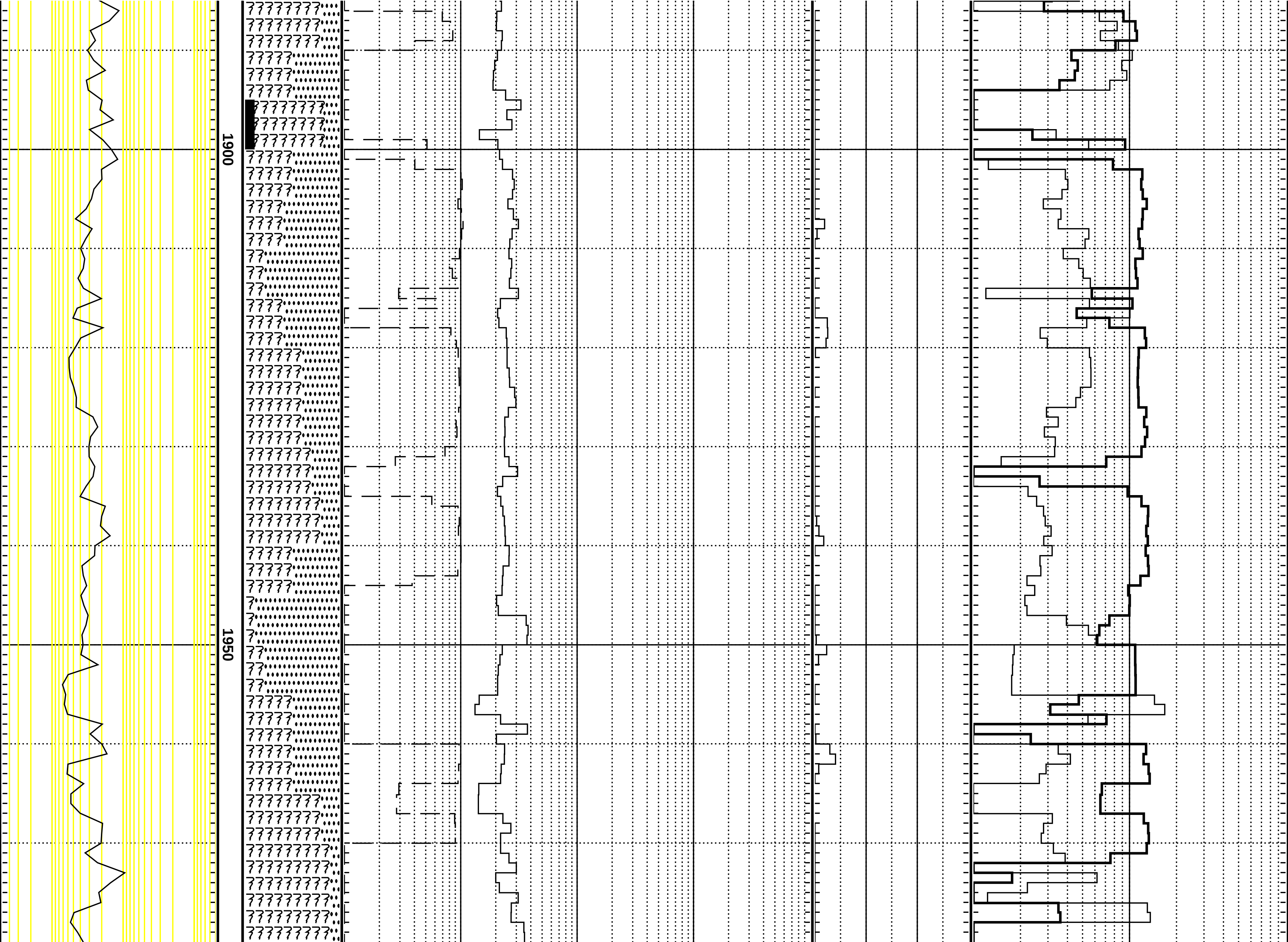
Scallop-1

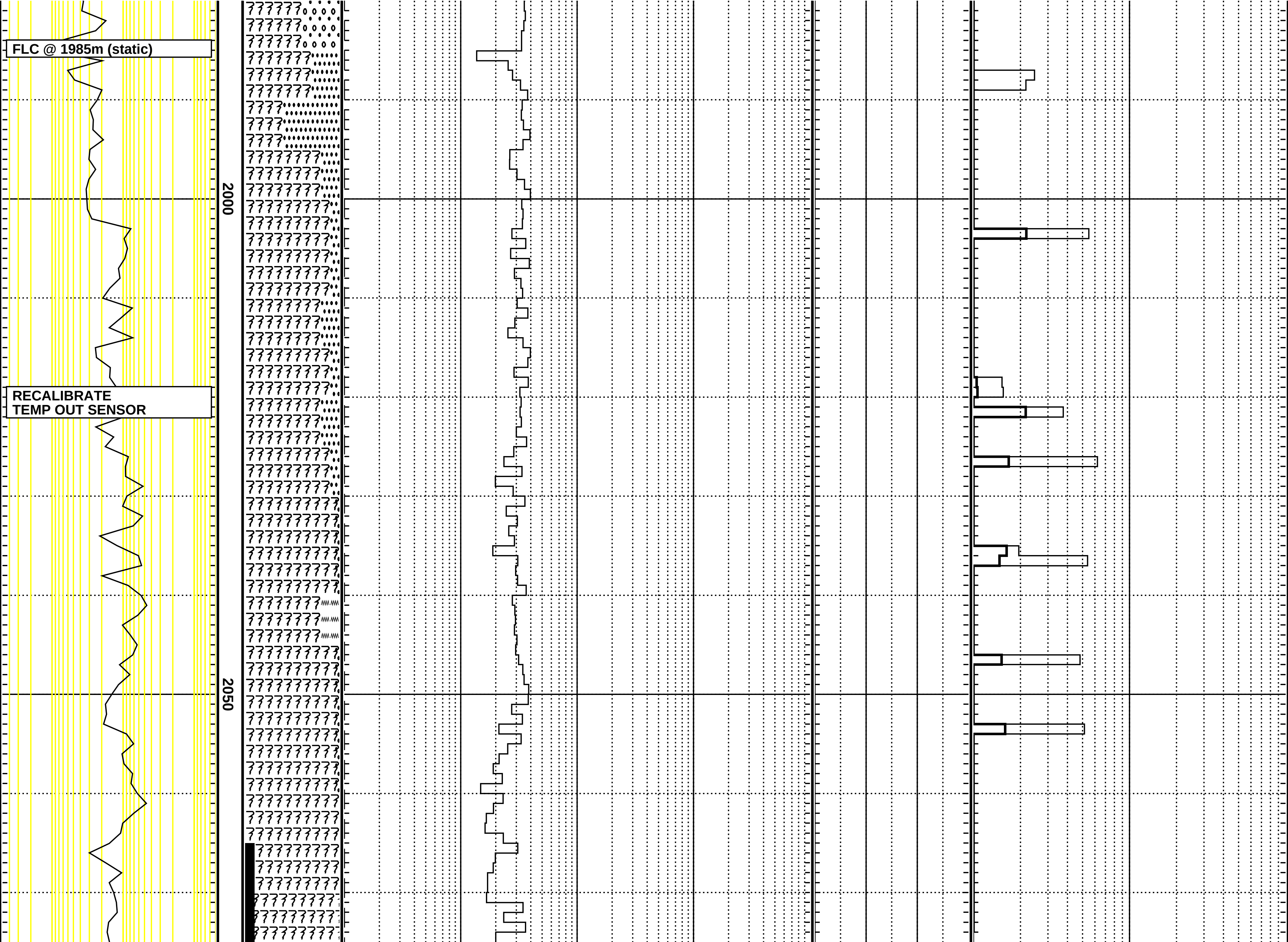
SCALE: 1:500.0

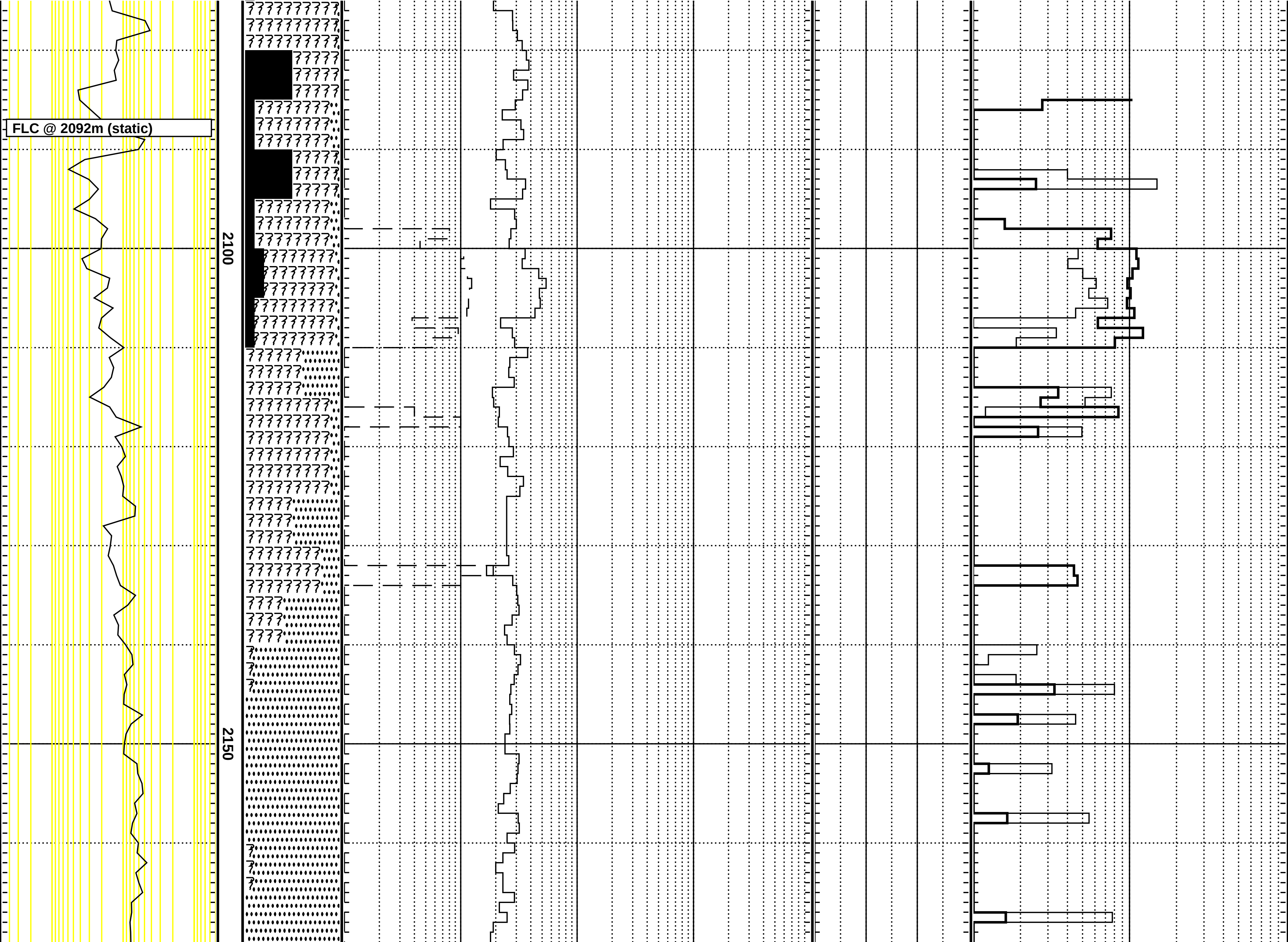
ESSO

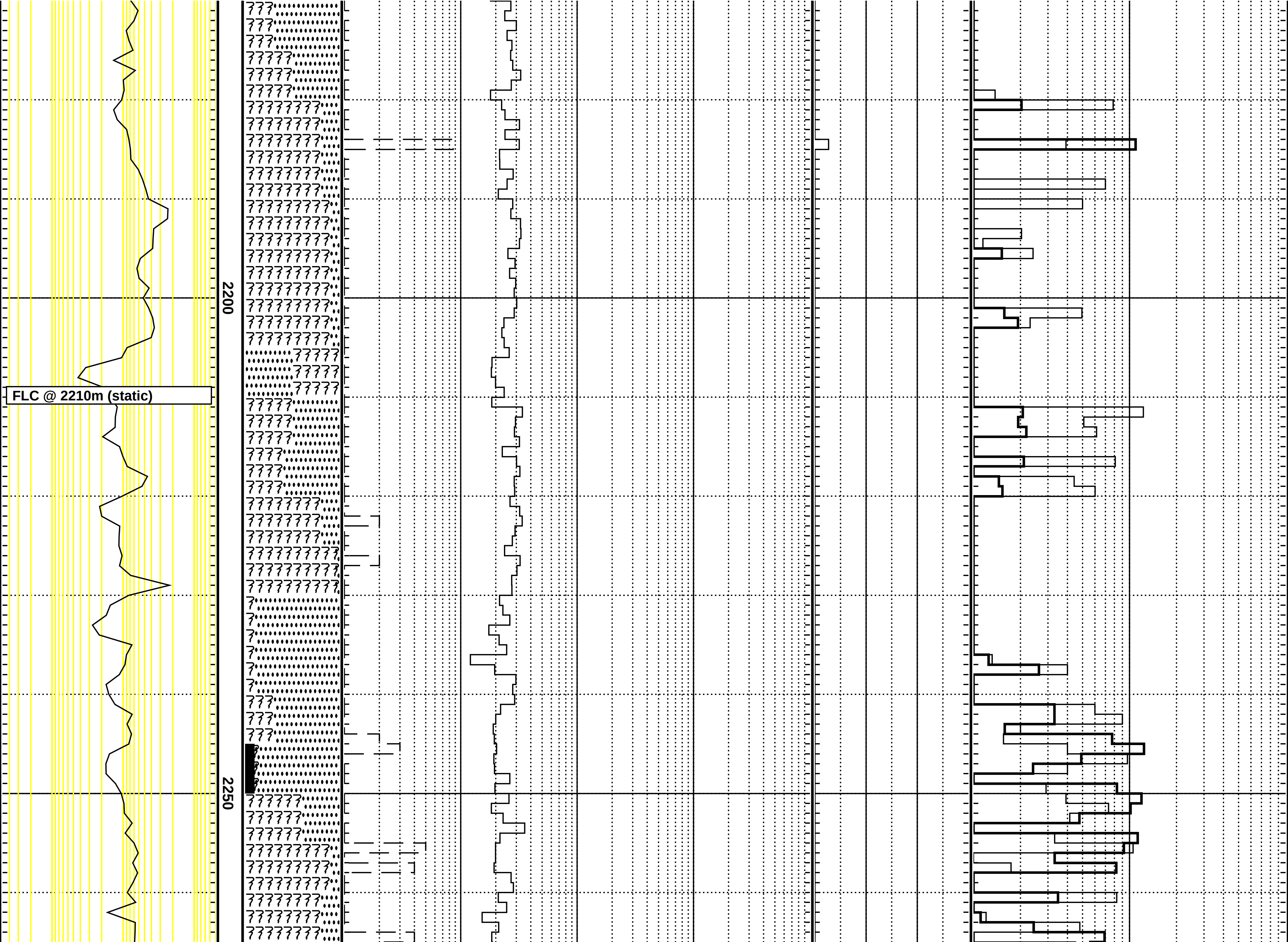


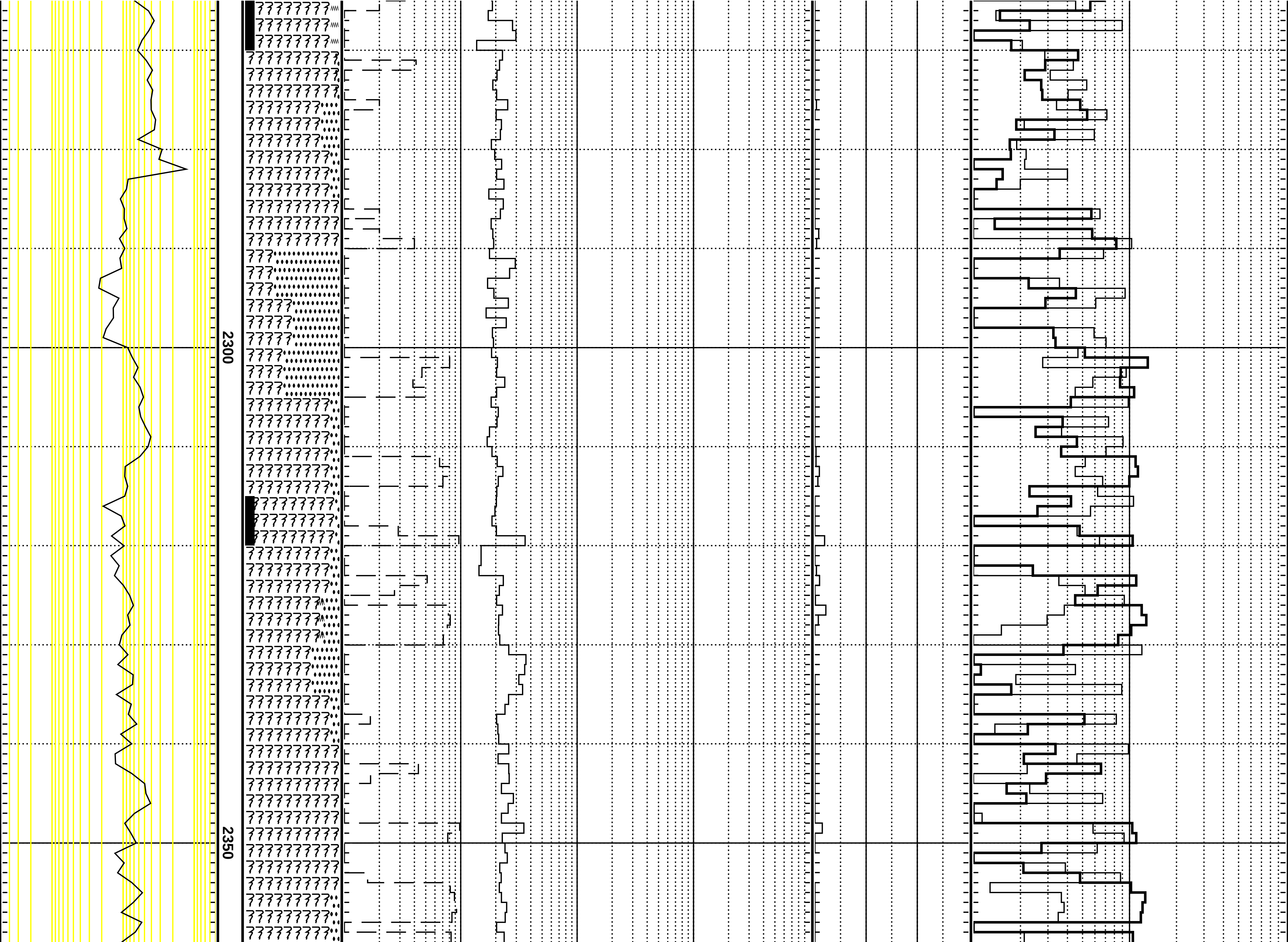

1800
1850
FLC @ 1876m (static)

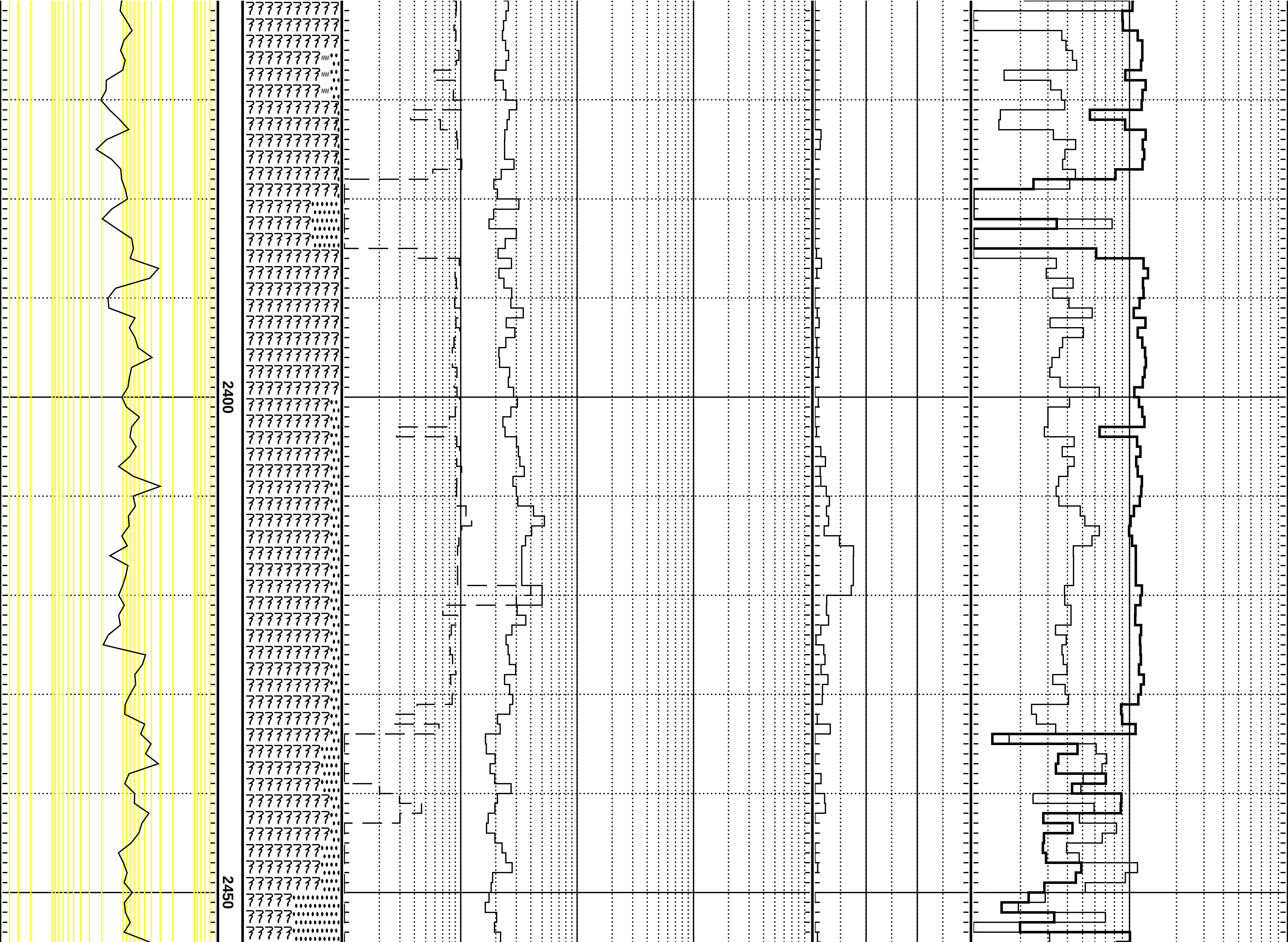

1900
1950

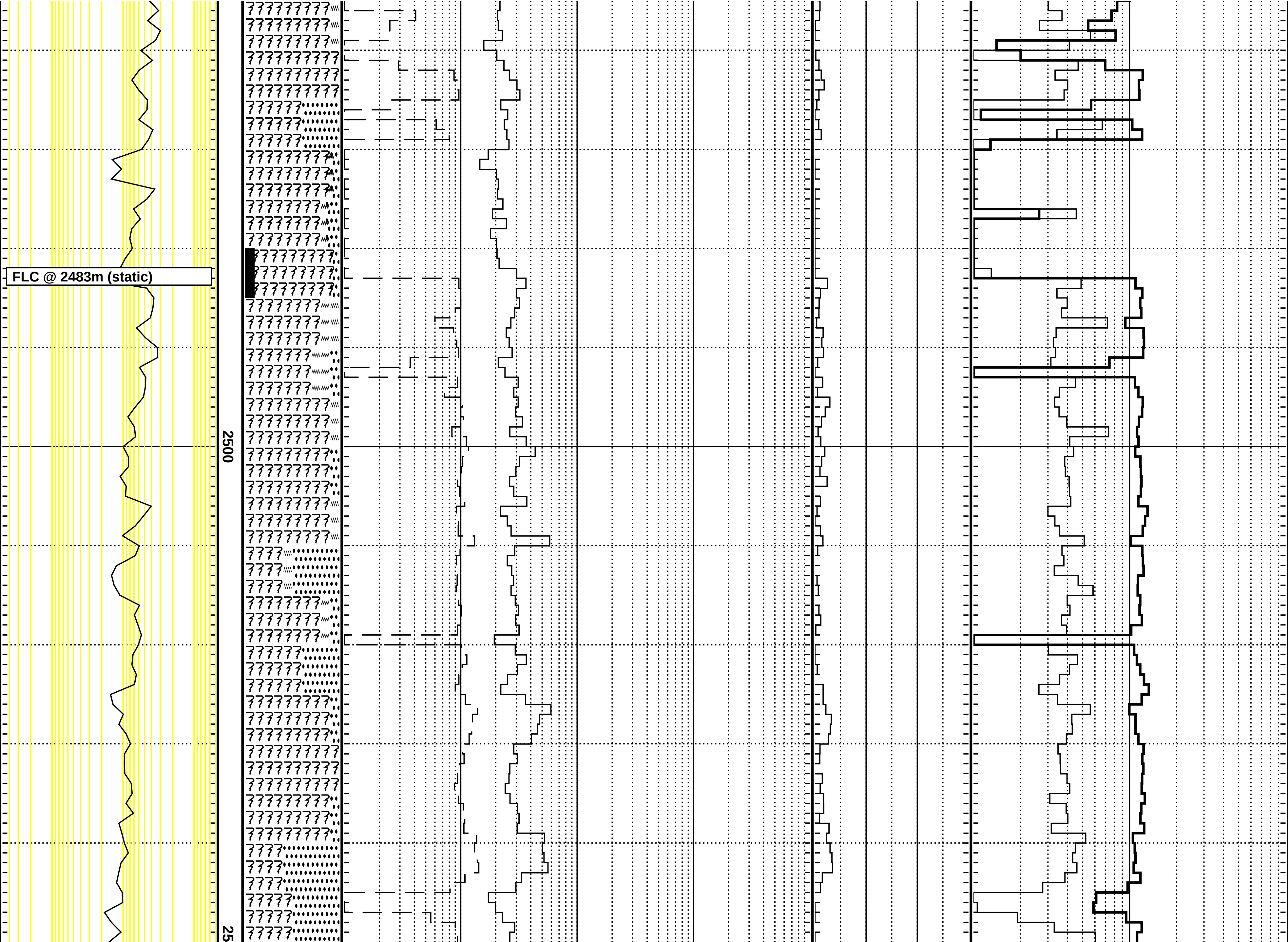

FLC @ 1985m (static)
RECALIBRATE
TEMP OUT SENSOR
2000
2050


FLC @ 2092m (static)
2100
2150

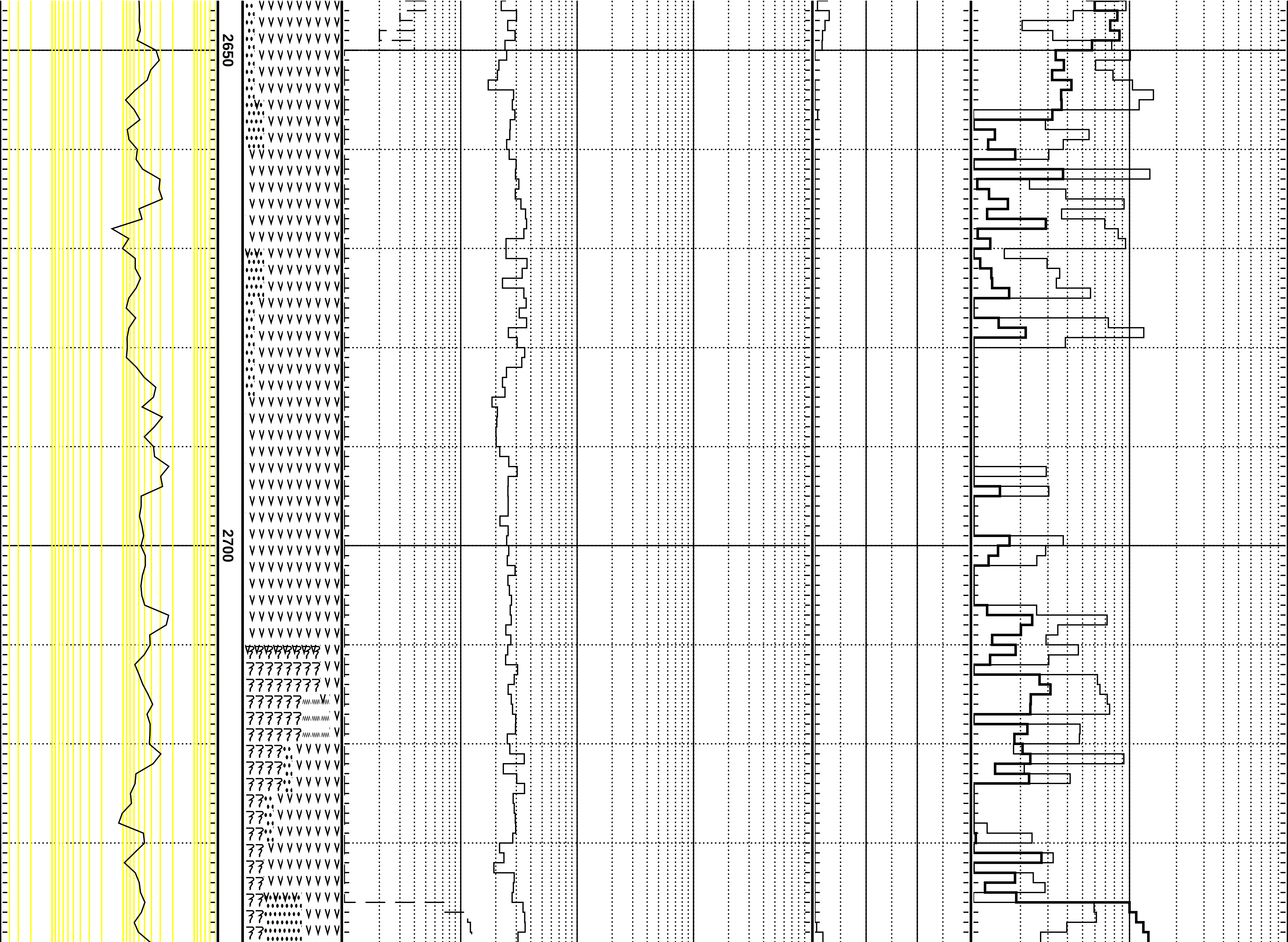

FLC @ 2210m (static)
2200
2250

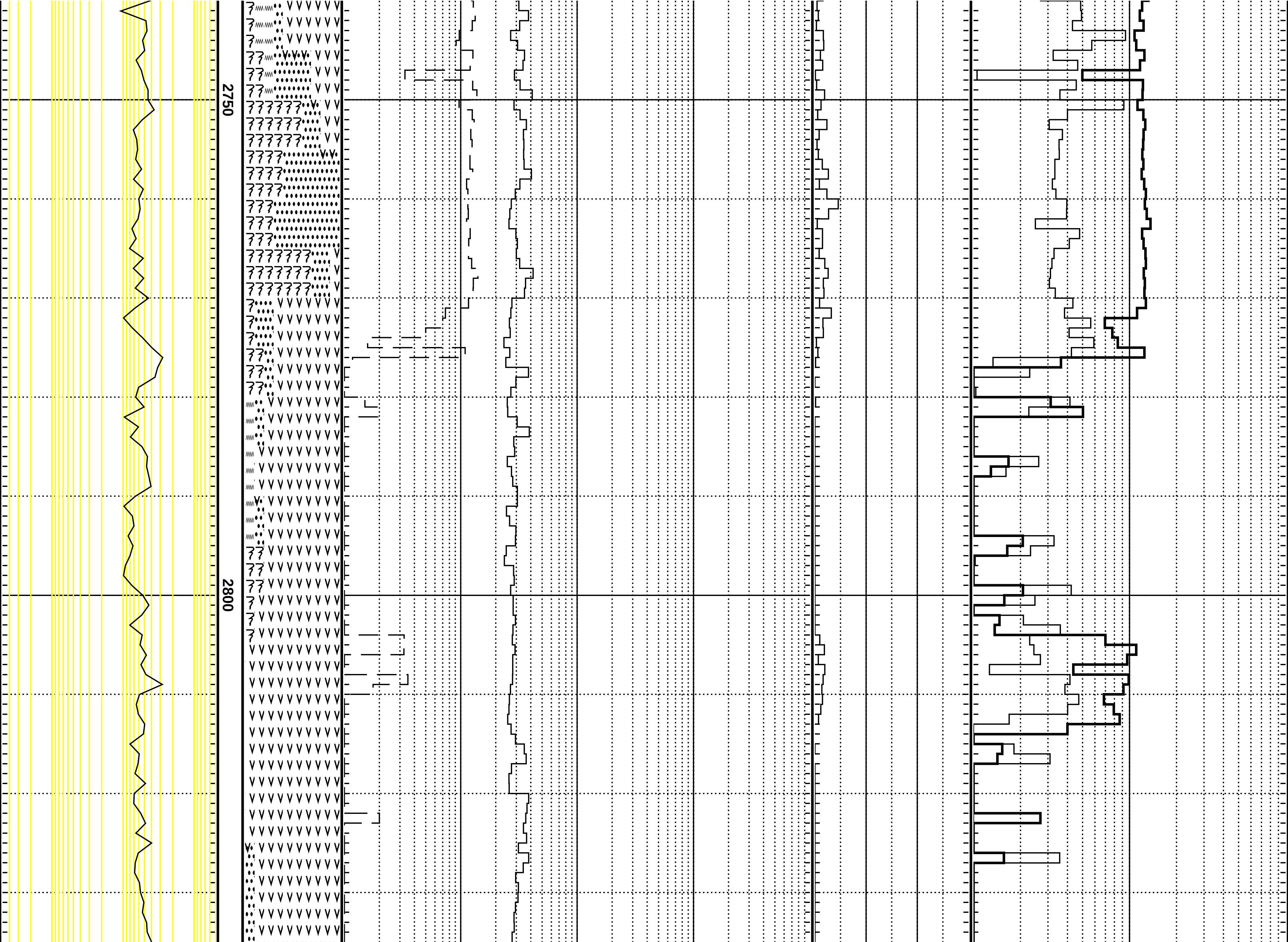

2300
2350


2400
2450

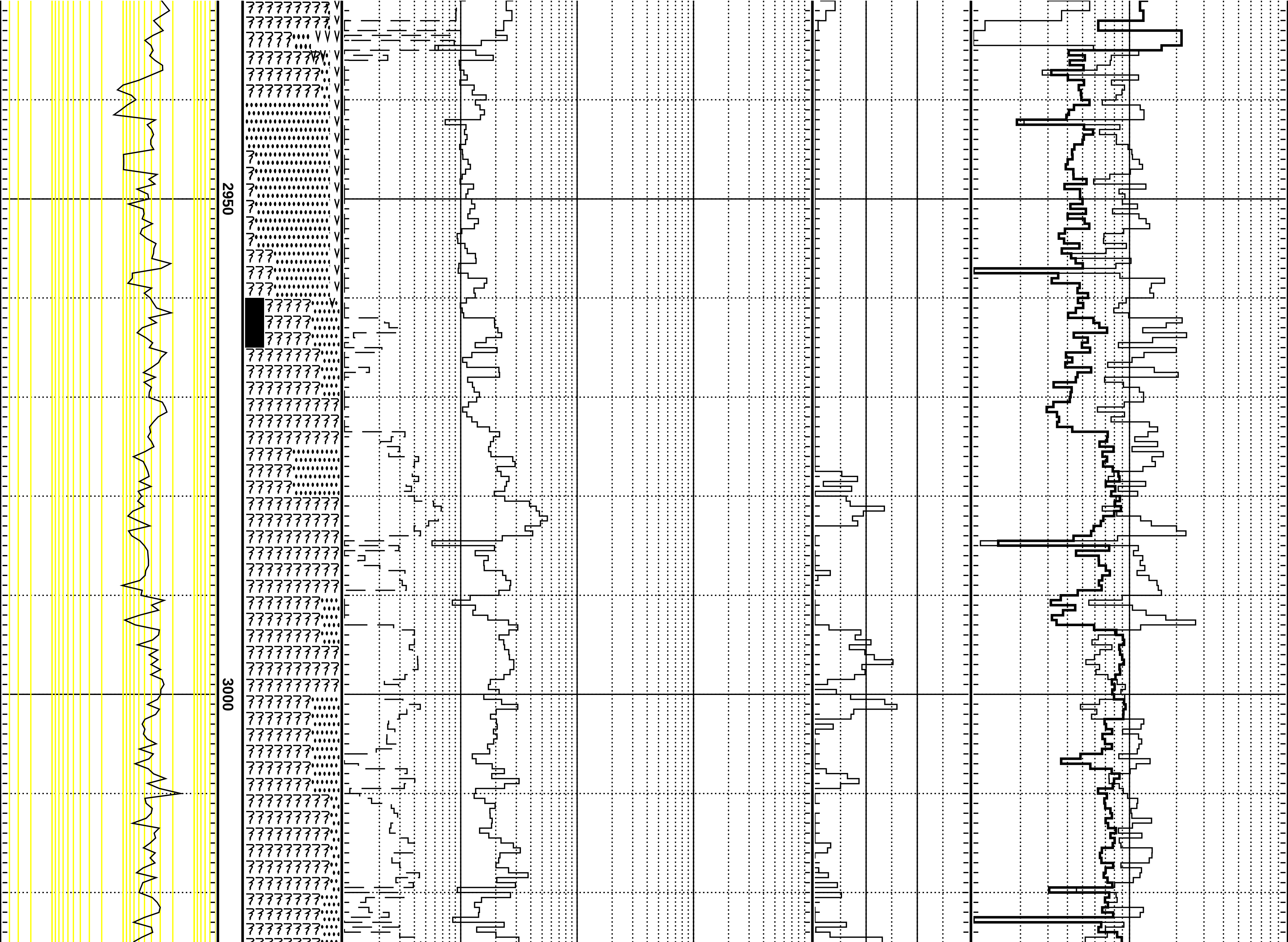

FLC @ 2483m (static)
2500
25

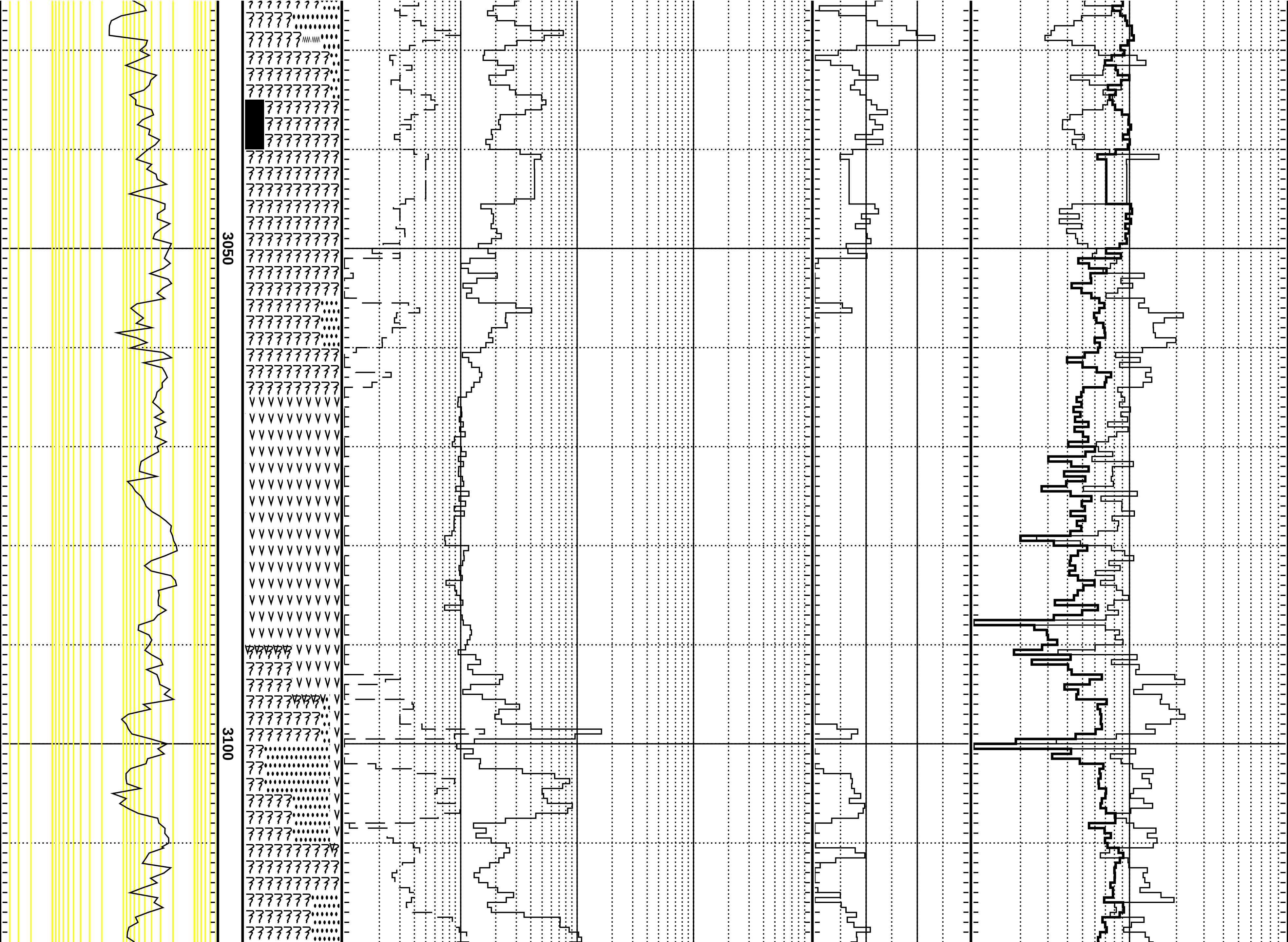

0
2600

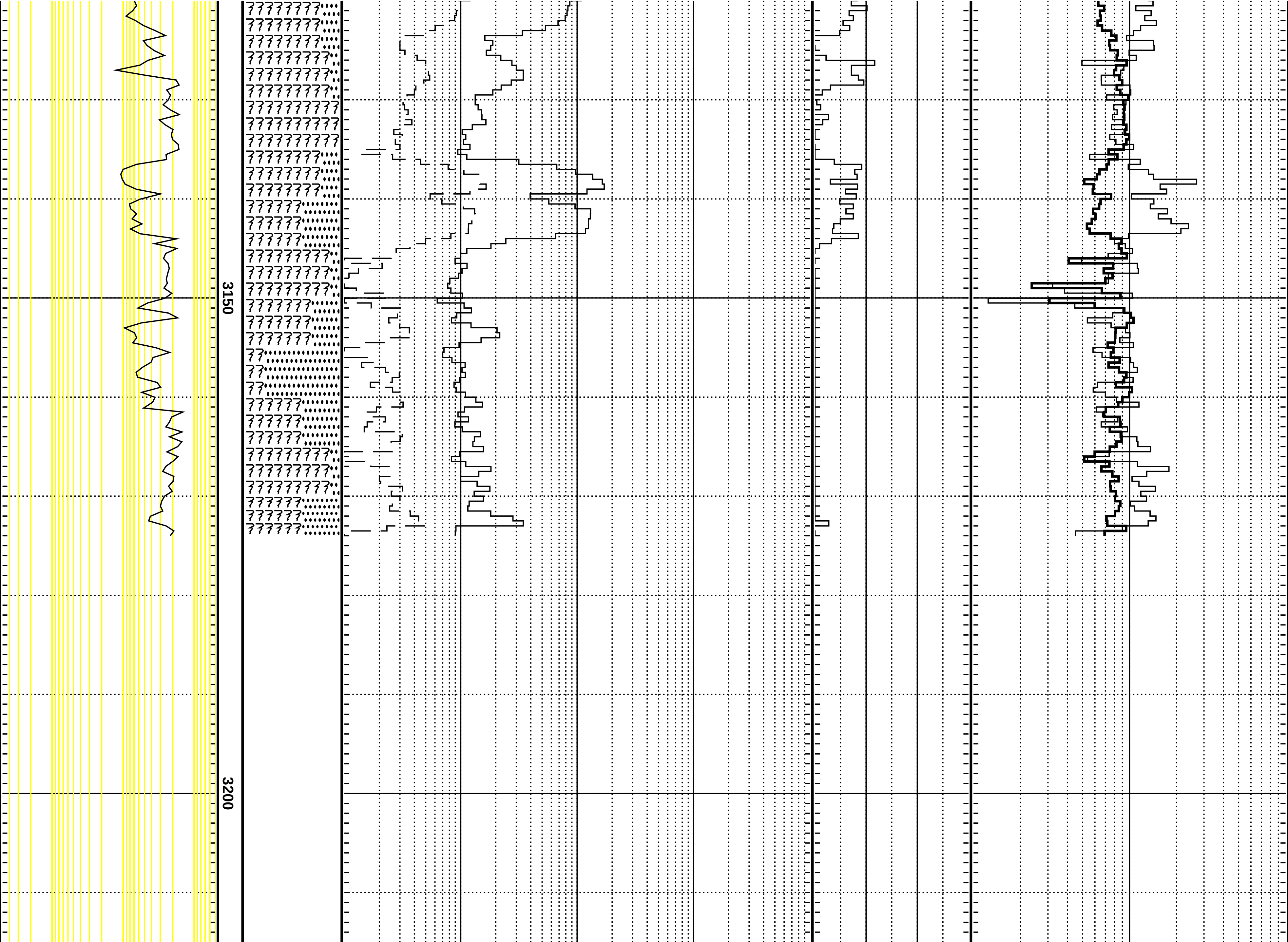

2650
2700


2750
2800


2850
2900


2950
3000


3050
3100


3150
3200

PENETRATION RATE	DEPTH (m)		CHROMATOGRAPH ANALYSIS	OCQ	RATIOS
ROP (m/hr)			Pentane C5 (ppm) Butane nC4 (ppm) Butane iC4 (ppm) Propane C3 (ppm) Ethane C2 (ppm) Methane C1 (ppm)		GWR LHR
500 100 10 1 0.5			0.001 0.01 0.1 1 10	0 1 2 3	1 10 100

SCALLOP-1 - LOGGING RUNS

Start Date and Time: 23-Feb-2003 22:30
End Date and Time: 24-Feb-2003 06:30
Run Number : 1
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
PEX	3174.500	900.800	meters
HALS	3174.500	900.800	
HNGS	3174.500	900.800	
LEHQT	3174.500	900.800	

Start Date and Time: 24-Feb-2003 06:30
End Date and Time: 25-Feb-2003 17:15
Run Number : 2
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
MDT	3162.000	1780.000	meters
GR	3162.000	1780.000	
LEHQT	3162.000	1780.000	

Start Date and Time: 25-Feb-2003 17:15
End Date and Time: 26-Feb-2003 05:45
Run Number : 3
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
FMI	3177.500	2580.000	meters
DSI	3177.500	137.000	
GR	3177.500	137.000	
LEHQT	3177.500	137.000	

Start Date and Time: 26-Feb-2003 05:45
End Date and Time: 26-Feb-2003 22:30
Run Number : 4
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
DUAL CSAT-VSP	3171.000	176.000	meters

Start Date and Time: 26-Feb-2003 22:30
End Date and Time: 27-Feb-2003 05:30

Run Number : 5
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
CST-GR	3165.000	1717.000	meters

Start Date and Time: 28-Feb-2003 21:15
End Date and Time: 28-Feb-2003 22:45
Run Number : 1
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
GR-JB-CCL	897.000	135.000	meters

Start Date and Time: 28-Feb-2003 22:45
End Date and Time: 28-Feb-2003 00:00
Run Number : 2
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
EZSV-CCL	895.000	895.000	meters

Start Date and Time: 01-Mar-2003 07:15
End Date and Time: 01-Mar-2003 08:30
Run Number : 1
Vendor : Schlumberger Wireline

Log Type	Starting MD	Ending MD	
EZSV- CCL	200.000	200.000	meters

Report Count: 8

WELL PLANNING CHECKLIST

Geological Operations
Esso Australia Ltd

Items marked ***** must be filled in prior to initial well costing**, items marked * to be filled in if available.

Scallop-1

General Information***

Country***   Australia
State***   Victoria
Well Name***   Scallop 1   **Permit/Licence*****   VIC/RL2

Well Classification***	**Wildcat**	✓	**Offshore*****	✓
EMWI* 25%	**Outpost/Appraisal**		**Onshore*****	
	Development			
	Other			**(description)**

Target Location **- Sub-volcanic**
(Vertical Well)

· **Longitude***	148° 35' 28.9" E	· **Depth*****	-3100m TVDSS
· **Latitude***	38° 12' 48.6" S	· **Seismic Reference***	Kipper G99A 3D Inline 1025, X-line 1330
· **X (Prelim. only)*****	639,316 mE		
· **Y (Prelim. only)*****	5,769,300 mN	· **Shot Point***	

Nb: all co-ordinates are based on the GDA94 datum
Water Depth***   110 m

Surface Restrictions (if any)*   No pipelines etc. in well area. Well location lies outside shipping exclusion zone boundary.

Well Summary

Budget TD* (TVDSS***)**	-3100 m	**Formation at TD***	Golden Beach Group
Directional Well? (Y/N)***	No	**Abnormal Pressure***(Y/N)**	Not expected
Preliminary Target Size***	150m diameter square	**Target Constraints**	Hard boundary to the north

Prepared by: S.Grope, Geophysicist

Reviewed by: G. Nash, Gippsland Project Manager

Checklist Date*** 03 January, 2003

Directional Considerations***

- **If the well is vertical, is a 3 - 5° cone acceptable? (Y/N)*** Yes -** 150m diameter square at target depth with a hard boundary to the north

- **If the well is directional, describe the well path in plan and section (define anticipated horizontal sections, etc)***
  N/A

Formation Tops and Marker Depths (see also Figure 1)***

Vertical Well

Formation/Marker ***	TVDSS ***	Res. Pres. (Psig)	Est PP/ (EMW)	Lithology	Comments (incl target radius, boundaries, etc.)
Top Gippsland Limestone	0	-	-	Limestone, calcarenite, marl	
Top Lakes Entrance Fm	-1312	1890	8.5	Marl, claystone, limestone, shale	
Top Latrobe Group	-1683	2390	8.4	sandstone, shale, coal	
KTFS	-2208	3165	8.4	sandstone, shale, coal	
Top T.lilliei [2]	-2511	3480	8.1	sandstone, shale, coal	150m diameter square - hard northern boundary
Top Volcanics	-2593	3640	8.2	basalt, shale	
Base Volcanics/Top S1 [1]	-2755	4270*	9.1*	sandstone, shale, minor basalt	150m diameter square - hard northern boundary
Top Intra-Volc	-2796	-	-	basalt, shale	
Base Intra-Volc [1]	-2846	4410*	9.1*	sandstone, shale, minor basalt	150m diameter square - hard northern boundary
Top 1st Volcanic	-2984	-	-	basalt, shale	
Base 1st Volcanic [1]	-3034	4755**	9.2**	sandstone, shale, minor basalt	150m diameter square - hard northern boundary
TD	-3100	4855**	9.2**		

[1] ***Primary Objectives*** [2] ***Secondary Objective***
0-2600m; based on offset wells primarily E.Pilchard-1 where had drawn-down pressures at TOL and lower Intra-Latrobe
**** 2600 - 3000m; aquifer pressure = (Depth mtvdss x 1.42psi/m) + 79.6***
(Standard Gippsland Basin aquifer pressure calculation). Have also assumed structure filled to spill with gas ie 250m column height which adds approx. 300 psi to formation pressures.
***** 3000 - 3100; pressures based on elevated measurements from near TD of E.Pilchard-1 well (max. pressure measured E.Pilchard-1 well 9.2 ppg)***

Temperature at Reservoir level (2710mTVFSS) estimated at 117°C +/- 10°C (243°F +/- 15°F)
Geothermal gradient in deeper section of well = 38.13C/km (from Kipper 1 horner plot)

Offset Well Control

Well Name	Distance & Direction	TD (TVDSS)	Max. MW	Analogous Interval Scallop-1 target interval (formation name/depth m TVDSS)	Date Drilled
Kipper 1	4.3km NNE	-2854	10.4	S-1 Reservoir (-1968 to -2258)	1986
Kipper 2	3.2km NE	-2578	9.6	S-1 Reservoir (-2189 to -2545)	1987
E. Pilchard-1	3.1km NW	-3113	10.2	S-1 Reservoir (-2567 to -3107)	2001

Offset Pressure Data (Potential Overpressured Sands)*

Well Name	Distance & Direction	Depth (TVDSS)	Reservoir	Pressure PSI	Pressure EMW	Pressure Data Source
Kipper 1	3.9km NE	-2824.5	P.mawsonni	4740.4	9.8	RFT
Tuna 1	13km WNW	-3631	P.mawsonni	5599.4	13.8	FIT
Tuna 4	16.5km W	-3136.8	S Reservoir	5584.7	10.4	RFT
E. Pilchard-1	3.1km NW	-3097.0	S Reservoir	4860.8	9.2	MDT

Subsurface Geological Hazards***

Bore Hole Conditions***

- **Carbon Dioxide Gas***

  Kipper 1, 2: 0-19% in S1 reservoir
  25% in P.mawsonni section
  E. Pilchard-1: 11-22% in S1 reservoir.
  Manta 1 2-3% in S1 reservoir
  Tuna 4: 25-45% CO_2 in solution gas

- **Hydrogen Sulphide Gas***

  0 ppm detected from Kipper 1 production test,
  0-trace at Manta 1
  0-25ppm at Tuna 4
  0 ppm detected in E. Pilchard-1 MDT samples.

- **Swelling Shale***

  Lakes Entrance Formation prognosed to be 371m thick. Normal precautions should be taken whilst drilling this unit

- **Sloughing Coal***

  Common (but not problematic) in Latrobe Group in offset wells. No thick coals are expected to intersected at Scallop-1. Coals in surrounding wells are predominantly less than 2 m thick with minor occurrences of up to 6m thick.

- **Brecciated/Sheared Fault Zones***

  There is a possibility for many small-scale (sub-seismic) faults to be encountered in the sub-volcanic reservoir section. LCM may be required.

Normal Pressure***

- **High Solution Gas Water Sands***

  Not present

- **Hydrocarbon Gas Sands*****

Present in Kipper, Tuna & Vic/RL6 Intra Latrobe section. Unlikely at TOL as there is no independent closure at that structural level.

Large gas columns seen in both Kipper and Manta in sub-volcanic reservoir section (see overpressure section)

Overpressure***

- **Seafloor/Surface Hydrocarbon Seeps*****

None

- **Shallow Gas*****

No shallow gas zones have been identified during drilling of the adjacent wells (Kipper 1, Kipper 2, East Pilchard-1 and Manta 1). Total gas % recorded above TOL are low. In Manta 1, total gas % recorded above TOL ranges from 0-1.4% (generally 0-0.4%). Total gas recorded in Kipper 1 above TOL is 0-0.9% (generally < 0.4%), while in Kipper 2 the range is 0-0.4%.

In all these cases, low impedance seismic anomalies are <u>not</u> associated with elevated levels of drill gas. Thus there is no demonstrated link between seismic amplitudes and shallow gas in the Kipper/East Pilchard area. There are some shallow low impedance seismic reflections at the Scallop-1 well location but these can not be distinguished from similar reflections at the other well locations in the area that have been proven to not be associated with shallow gas.

- **Overpressured Mud or Shale*****

Not present in offset wells or Kipper field

- **Overpressured Reservoirs*****

Latrobe Group: Normally pressured systems can be expected from TOL to the top of the volcanics; ie. ~ 1.4 psi/m (8.1 to 8.5 ppg MWE).

Golden Beach Group: Pressure data in the sub-volcanic section from wells in the area can be summarised as follows:

A. *Kipper-1, E.Pilchard-1 and Manta-1/Chimaera-1* are close to normally pressured in the GBG (8.5-9.2ppg throughout much of the section, slightly higher at top of gas column in Kipper). The E.Pilchard-1 and Manta-1/Chimaera-1 wells are probably the most likely analogues for Scallop-1 ie. same fault block, similar depths. If Scallop structure is filled to spill then effect of gas column could add 300 psi to formation pressure ie increase from 8.5ppg to 9.1ppg.

B. *West Tuna* well data indicate gradients ~1.42-1.8psi/m (ie. 8.5ppg increasing to 10.5ppg at depth, below the volcanics). However, the West Tuna fault block is deeper and more distal from East Pilchard, so is probably not the most appropriate analogue. The higher accommodation on the lowside of fault provides lower net-to-gross in WTN area and therefore this area may be more likely to be overpressured than E. Pilchard.

To summarise this data, it is expected that Scallop-1 will be normally pressured throughout the sub-volcanic Golden Beach Group section. However, as can be seen from the variability above, pressures in the sub-volcanic section are closely controlled by stratigraphy, and it will be necessary to monitor the well closely.

Underpressure***

- **Draw Down Reservoirs*** ** Top of Latrobe and shallower intra-Latrobe reservoirs are likley to be slightly drawn down in pressure due to nearby production from the Tuna field. Maximum draw down should be in the order of 180psi. No draw down is expected to be observed from the sub-volcanic S-1 reservoir.
- **Lost Returns*** ** No lost return intervals were recorded from adjacent wells. However, during the drilling of the volcanic section in the E.Pilchard-1 well, some mud losses were noted. A Phase III PIT was run at 2471m to 11.8ppg EMW. Losses may have been related to seepage in either drawn down zones just above the volcanics or fault breccias/fractures within the volcanics themselves.

Seafloor Stability***

- **High Relief/Seafloor Topography*** ** Near flat (<0.5 degree) around surface location.
- **Other*** ** Well location lies just outside of Shipping Exclusion Zone Boundary.

For information on other hazards (i.e. sea floor stability, well site safety, environmental, man-made obstructions) consult Drilling Engineer.

Geophysical Shallow Hazard Survey

- **Based on the foregoing hazard identification, will a site specific hazard survey be required? Y/N*** **
  No

If Yes:

- **Can existing 3-D seismic data be used, or will acquisition of high resolution 2-D data be required?**
  Good quality 3D data exists over planned well locations
- **List services required (i.e. high res 2-D, bathymetric, sub-bottom profile, side scan sonar, etc.)**

- **Expected Required Products:**

Interpreted high res 2-D or 3-D seismic	☐	
Bathymetric maps	☐	
Seafloor hazards/obstruction map	☐	
Shallow gas/shallow fault map	☐	
Consultants' report (if required)	☐	
In-house summary report	☑	Complete

Completion Considerations***

- **How will the well be maintained? P&A/T&A/etc, single/dual, csg/tbg size/etc, oil/gas, conventional/gravel pack/etc, flowing/ESP/etc?*****
  P&A (dry-hole scenario).

  Well may be cased & suspended if significant hydrocarbons are encountered in the S-1 reservoir

Well Testing***

- **How many well tests are probable?*****
  None.

- **Clarify the test objectives as listed below.**

Confirm the existence of hydrocarbons	☐
Measure the productivity of the well	☐
Measure the formation pressure and temperature	☐
Obtain separator samples of oil, gas, and water for laboratory analyses	☐
Obtain bottom-hole samples for laboratory analyses	☐
Determine the amount of wellbore damage or stimulation	☐
Determine reservoir limits	☐
Determine hydrocarbon reserves	☐
Determine the vertical components of productivity using production logs	☐

- **Well Reservoir Engineer has provided input to above program?**
  N/A

- **Well Test Engineer has communicated test equipment needs to Drilling?**
  N/A

Mud Program Data*

- **Estimated Maximum Pore Pressure (EMW)*** 8.6 - 9.5ppg
- **Formation/Depth*** 2511-3100m TVDSS
- **Pressure Profile Attached*** No
- **Conductivity/Pore Pressure Plots Completed?*** No
- **Does the wireline formation evaluation program place restrictions on the mud program? Explain***
  Mud weight < 10.5 ppg to prevent differential sticking.
  Suitable mud program required for FMI logging.
- **Does the coring program place restrictions on the mud program? Explain***
  N/A
- **Does the formation integrity and/or formation evaluation considerations require adjustments in the mud or mud hydraulics (e.g. MW, FV, WL, GPM, AV, etc)? Elaborate***
  No
- **If hydrateable shale has been identified as potentially affecting wellbore stability, should the DCM be employed or mechanical properties be investigated?***
  No. Swelling shale problems in the Lakes Entrance are well documented.

Coring Program Data***

- **Number and length of conventional cores to be cut*****
  None
- **Type core/barrel***
  N/A

Type Core:	**4½"**	☐
	5¼"	☐
	Other	☐
Type Barrel/OD:	**Fibreglass sleeve**	☐
	Plastic liner	☐
	Aluminium	☐
	Other	☐

- **Objectives of the coring program***
  N/A
- **Types of routine core analysis to be performed***
  N/A
- **Types of special core analysis (SCAL) to be performed in the future (no cost estimate is required)***
  N/A
- **Will any special handling "onsite" be required? (epoxy stabilisation, on-site plugging, measurements, etc)***
  N/A

For costing purposes provide (documented) cost estimates and enter values in summary table at back of WPC*

Formation*	Interval* (TVDSS)	Type & Length*	Total Core*	Comments*

- **What will be the disposition of the core after the preliminary wellsite description is made?**
  N/A

- **Disposition of on-site core plugs?**
  N/A

- **How will the core point be determined (i.e. on shows; stratigraphy)? Qualifying conditions will be outlined in ATD/RTD and Coring Protocol.**
  N/A

Mud Logging and Sample Program***

- **Will mud logging be required? (Y/N)***** Yes

For costing purposes, provide (documented) cost estimate and enter value in summary table at back of WPC*

- **Indicate any additional services required and depth ranges:**

Wellsite Geochem ☐ **Dielectric Const Meter** ☐ **Fission Track** ☐ **Other** ☐

Type	Number	Interval	Frequency	Recipients	Shipping Frequency
Washed & Dried	6	13-3/8" casing to 1600mTVDSS	30m	EAL, BHPP, SANTOS, WOODSIDE, DNRE, GA (via EAL)	End of well
		1600 mTVDSS to TD	5m		
Lightly Washed and Air Dried	1	13-3/8" casing to 1600mTVDSS	30m		
		1600 mTVDSS to TD	5m		
Geochemical	none				

Lightly washed and air dried cuttings may be required for analyses affected by subjecting the cuttings to temperature (i.e. oven drying).

- **Discuss any special considerations regarding samples.**
  No

- **Are there any wellsite paleontology requirements (e.g. to avoid geological hazards)?**
  No

FORMATION EVALUATION PROGRAM***

Preliminary Wireline Logging Program***

Depth Interval*	**TD-30" conductor**	**TD-13 3/8" surface casing**	**TD-80m above TOL**	**TD-80m above Base of volcanics**
Hole Size/Suite #	36" / 1	17 1/2" / 1	12 1/4" / 1	12 1/4" / 1
Generic Tools				
• **Gamma Ray**	✓			
- HNGS			✓	
• **Neutron**			✓	
• **Density**			✓	
• **Caliper**		✓		
• **Resistivity**		✓		
• **Sonic – P wave**	✓	✓		
- dipole		✓		
• **Borehole imaging FMI**				✓
• **MDT**				75 pressures, 10 samples [1]
• **MSCT's**				30 samples [1]
• **Sidewall Cores**		60 Shots		
• **VSP**	✓			

[1] contingent on significant hydrocarbons

For costing purposes, provide documented cost estimate and enter value in summary table at back of WPC*

- **Formation Evaluation specialist has provided input to above program?** Yes

- **Will sidewall core samples be taken for paleo, geochem, etc. purposes?** Yes

- **Will mechanical rotary sidewall cores be taken for reservoir and lithology identification?** Yes

- **List formation evaluation problems, if any (e.g. deep invasion, hole washout, fresh formation waters, fracture identification, complex mineralogy, etc)***
  Volcanics are highly variable in lithology, and may be prone to washouts locally.
  Possibility of invasion in high permeability sands.

  Some draw down in Latrobe section could lead to differential sticking if using elevated mud weights

- **What can be done to minimise these problems?***
  Appropriate drilling parameters during drilling of volcanics.
  Appropriately designed mud system to minimise invasion in high permeability sands.

- **Has optimisation of drilling parameters been discussed with Drilling Department? Y/N*** Yes

MWD/LWD Program***

- **Will MWD/LWD services be required?*** ** Yes
- **If so, justification is as follows:** Real time Gamma Ray and Resistivity required to confirm TD in water wet formation.

For costing purposes, provide documented cost estimate and enter value in summary table at back of WPC*

Depth Interval	13 3/8" in Shoe to TD			
Hole Size	12 1/4"			
Directional Only				
Directional/Resis/GR	✓			
Porosity				

- **Has BHA configuration been discussed with Drilling Department?**
  No.

Geophysical Surveys (specs provided by geophysical applications)***

- **Will a geophysical survey be run?*** ** Yes

For costing purposes, provide documented cost estimate and enter value in summary table at back of WPC*

- **Type of velocity survey to be run (i.e. checkshot, VSP, walkaways, etc)**
  VSP & checkshot
- **What depth?**
  From TD to mudline.
- **Energy source and supplier.**
  Schlumberger airgun
- **Geophone type.**
  CSI
- **Will a pit or boat be required?**
  No
- **Pit specs provided to drilling.**
  N/A
- **Will geophysical applications provide on-site supervision?**
  Provided by EDR Hydrosearch.
- **Any additional special instructions:**

WELLSITE GEOLOGICAL SUPERVISION

Will a contract Wellsite Geologist be required?* Y/N** Yes

Will the Wellsite Geologist require backup during long work periods? Y/N Yes from top 12 1/4" hole.
If so provide a (documented) cost estimate and enter the value in the summary table at the back of the W.P.C.***

Bid/Contract Considerations

Technical specifications (tool types, services required, etc) are to be/have been supplied to Formation Evaluation and Geophysical Operations for inclusion in bids/contracts/planning, etc***

Specifications	To Whom	Date	EAL Contact
Wireline	Schlumberger	Provided for by normal contracts	A. Hodgson/ K. Kuttan
Wellsite Geology	AIPC		A. Hodgson/ K. Kuttan
Mudlog	BHI		A. Hodgson/ K. Kuttan
MWD/LWD	Anadrill / Sperry		A. Hodgson/ K. Kuttan
Biostratigraphy	Morgan		A. Hodgson/ K. Kuttan
Onsite Sample Transfer / PVT	Petrolab		A. Hodgson/ K. Kuttan
Onsite VSP QC	EDR Hydrosearch		A. Hodgson/ K. Kuttan
Geophysical - Shallow Hazards	N/A		A. Hodgson/ K. Kuttan

Cost elements for Formation Evaluation related services (via contract terms, quotes, or contract plan) are to be provided to Drilling for inclusion in the well costing on the following table.

Summary of Anticipated Costs for Inclusion in Well Costing***

(include only items expected to be invoiced within six months of reaching TD)

Item	Vertical
Wireline Logging (including Processing and Seismic)	AUS$390K [1]
LWD - Gr/Res/Dir	AUS$470K
Wellsite Geological Supervision	AUS$34K
Mudlogging	AUS$126K [2]
Wellsite sample transfer and onsite analysis	AUS$19K
Palynology (URC)	AUS$20K
Geochemical Analysis	AUS$7K
Onsite VSP QC	AUS$11K
Secure Website	AUS$10K
Operations Geology Surveillance	AUS$30K
FE Surveillance	AUS$33K
Contingency (10%)	AUS$115K
Total	AUS$1,265K

Note - all costs based on dry hole case
[1] includes indicative equipment rentals for callout tools (MSCT and MDT) used in a success case. Includes FMI.
[2] assumes 35 day dry hole AFE

When requesting cost estimates from Formation Evaluation for any of the above, supply a documented programme as backup.

INDEPENDENT FIELD REPORT ON

SCALLOP-1 SITE SURVEY

CONDUCTED FROM THE MV MERMAID RAIDER

BY

FUGRO SURVEYS PTY. LTD.

Monday January 13, 2003

To

Saturday January 18, 2003

INTRODUCTION.

Fugro Surveys (FS) were contracted to undertake a geohazard site survey for Esso Australia Ltd (EAL) at the Scallop 1 site in Bass Strait. FS chartered the MV Mermaid Raider owned and operated by Mermaid Marine for use as the survey vessel. FS were also contracted by Woodside Petroleum to complete other survey work in Bass Strait. The work for EAL commenced following the completion of the Woodside work, and after a port call at Geelong to land ashore survey data, equipment and personnel not required for the EAL scope of work.

MOBILISATION.

Mobilisation of the vessel had previously been conducted in Launceston, Tasmania at the commencement of the Woodside scope of work. Project specific equipment was installed, seafastened as required, and tested on the vessel.

ACCEPTANCE TRIALS.

During the port call at Geelong, calibration documentation for the gyrocompass and DGPS systems was witnessed and accepted. En route to the survey area further trials and calibrations of the following equipment were conducted and accepted:

- Motion sensor and echo sounder bar check
- Sidescan sonar system deck checked (rub test) and water tested
- X-star sub bottom profiler water tested.

DYNAMIC POSITION CHECK.

The Mermaid Raider arrived at the Halibut 1 wellhead location around 0900 hours Wednesday 15th January. A sound velocity probe (SVP) reading was taken and a figure of 1,512 metres per second recorded. The echo sounder hydrophone, X-star and sidescan sonar towfish were all deployed prior to the vessel running 2 lines, one northeast and one southwest to pass the Halibut 1 wellhead. From the sidescan records obtained, the position of the Halibut 1 wellhead was derived as:

Easting : 614 899m
Northing : 5 749 231m
GDA94 AMG zone 55 CM 147 East.

The published co-ordinates supplied by EAL are:

Easting : 615 061.5m
Northing : 5 749 274.8m
GDA94 AMG zone 55 CM 147 East.

These published co-ordinates are 163 metres east and 44 metres north from the derived co-ordinates.

The EAL Client Representative was in possession of co-ordinates derived from ROV positioning work on the wellhead, conducted within the previous 2 years. These were supplied to the FS Party Chief who compared them with the FS derived position.

ROV derived co-ordinates supplied by Client Representative:

Easting : 614 917.4m
Northing : 5 749 220.6m
GDA94 AMG zone 55 CM 147 East.

These ROV derived co-ordinates are 18 metres east and 10 metres south of the FS derived co-ordinates.

The wellhead target was easily identifiable on both runs of the sidescan survey, and was within 21 metres of the second set of co-ordinates supplied; therefore approval was given for the Scallop-1 site survey to proceed. A site memo was generated and forwarded to EAL at this time detailing the discrepancies between the 2 sets of Esso supplied positions. (See Attachment 1)

SURVEY AREA DETAILS.

The location for the Scallop-1 site survey was quoted by EAL as "3 km x 3 km area centered on following point: E. 639 316m N. 5 769 300m, co-ordinates to GDA 94". Accordingly a grid pattern (centered on the quoted position) was setup with 31 lines 3,000 metres long running north-east/south-west at 100 metre spacing and 13 cross lines 3,000 metres long running north-west/south-east at 250 metre spacing.

SURVEY ACTIVITIES.

Starting at 1525 hours on Wednesday 15th January, the survey of the Scallop 1 site continued without interruption until 2100 hours on Thursday 16th January. A total of 33 main lines (including 3 re-run lines) plus 9 cross lines had been completed. At this time the weather had deteriorated and was freshening from the NNE; sea conditions of 2 metres and over 25 knots windspeed dictated that the towed equipment be recovered whilst it was still safe to do so. Recovery of the equipment was concluded by 2240 hours. The three remaining cross lines were then run using bathymetry only and these lines were completed at 0030 hours on Friday 17th January. The vessel steamed to weather until 0530 hours when conditions had improved significantly such that coring operations were commenced. By 0700 hours four cores had been attempted: Two drop cores were unsuccessful, while two grab sample cores were successful. Good quantity and quality samples were retrieved for further analysis from the grab samples. A final SVP dip produced a result of 1,511 metres per second. At 0715 hours, Friday 17th January, the scope of work at Scallop 1 site was now complete and the vessel departed from the Esso area of Bass Strait setting course for Geelong to demobilise the survey spread.

SURVEY RESULTS.

From initial interpretation of the sidescan records, it appears that the Scallop-1 survey area is flat and featureless. There is a gradual slope across the whole area in a generally southeast direction. More detailed interpretation will be obtained from FS final report.

DEMOBILISATION.

En route to Geelong, a Project Close Out meeting was held which included an explanation of EAL's height safety policy, particularly as it applies to equipment demobilisation. FS commenced their en route demobilisation at 1330 hours and by 1730 had completed all of the preparatory work. The vessel berthed alongside Lascelles #1 wharf at 1000 hours on Saturday 18th January. The balance of demobilisation was commenced with the arrival of shoreside contractors, and all personnel and equipment were clear of the vessel by 1600 hours.

Rick Glanville,

Client Representative for
Esso Australia Ltd.

April 28, 2003.

ATTACHMENT 1

SCALLOP 1 SITE SURVEY

MERMAID RAIDER SITE MEMO

Date January 15, 2003

To Rudolf Fürchtenicht

From Rick Glanville

Re: Sidescan Survey Results from Halibut 1 wellhead.

Rudolf,

As discussed earlier we completed the Sidescan test runs to confirm the Halibut 1 wellhead position this morning.

Final results are as per Fugro's attached report.

The GDA94 co-ordinates that you supplied from the well survey database are 165 metres from todays derived position. I had AGD84 co-ordinates from previous ROV work which we converted onboard to GDA94, and found them to be 21 metres from the derived position. We ran two lines in opposite directions today and as you can see from the results the repeatability is good (only a 3 metre difference between the runs). The wellhead was easily identifiable on both runs of the sidescan record as a strong target with a shadow. We then ran a line close to the co-ordinates originally supplied and only located a shallow dip in the seabed 65 metres to the east of that position.

I advised Fugro's Party Chief (Rob Bruinsma) that the derived position was acceptable as a check on the Sidescan and Survey systems, and the vessel proceeded towards Scallop 1 to commence site survey.

Regards
Rick Glanville,

Mermaid Raider.

Mobile 0427 080 789

ESSO AUSTRALIA LTD.
SCALLOP-1 SITE SURVEY

SIDE SCAN SONAR TOWFISH
SYSTEM CHECK

FUGRO JOB #16526

DATE: 15th January

Line No.	**SSS Halibut-1 Well Position Easting (mE) (GDA-94)**	**SSS Halibut-1 Well Position Northing (mN) (GDA-94)**
SSS_Check	614 897	5 749 231
SSS_Check_A	614 900	5 749 231
Average Position	**614 899**	**5 749 231**
	148º18'56".85 E	**38º23'51".85 S**
ESSO Supplied Position	615 061.5	5 749 274.8
	148º19'03".54 E	38º23'50".46 S
	E = -163m	N = -044m
ESSO Client Rep. Supplied Position	614 917.4	5 749 220.6
	148º18'57".63 E	38º23'52".29 S
	E = -018m	N = +010m

SCALLOP 1 SITE SURVEY.

OPERATIONS TIMETABLE

CONDUCTED FROM THE MV MERMAID RAIDER

BY

FUGRO SURVEYS PTY LTD.

Monday January 13 2003

To

Saturday January 18 2003

Date	Time	Location	Activity
13/1	0900	Geelong	Vessel changes over to Esso work, although some Fugro equipment being discharged as not required for Scallop 1 work. Ship's stores being loaded. Pilot booked for 0700 14/1. (Fugro's decision.)
	1500		Statement of facts for end of Woodside's fuel usage and commencement of Esso's consumption.
14/1	0700		Pilot onboard, vessel departs.
	0830	Port Phillip Bay	Vessel all stopped E/S pole deployed and bar check completed.
	0900		Resume on passage.
	1100		Pilot disembarks.
	1200	Port Phillip Heads	Vessel clears Heads, enroute for Scallop 1.
	1300/30	Bass Strait	Muster, Boat Drill and Fire Drill for all personnel. (30 minutes).
	2350		Telephone call to Esso's Production Control Room at Longford, advising them of vessel's timing for entering the Area To Be Avoided (approx 0600 15/1).
15/1	0600	Bass Strait	Advised Production Control vessel now within their Area, and proposed activities.
	0700		Advised Halibut Platform of vessel's proposed activities at Halibut 1 location.
	0900	Halibut area	Vessel all stopped for E/S pole deployment and SVP dip. Dip gives result of 1512m/s. SSS deployed for test runs at Halibut 1.
	1000		Commence running SSS test lines.
	1110		Completed test runs, and recover towfish, proceed to Scallop 1.
	1130	Flounder area	Telephone calls to Flounder and Tuna Platforms to advise them of vessel's location and operations at Scallop 1 for next 48 hours.
	1320	Scallop 1	On location, equipment downtime: X Star printer power supply failure
	1355		Equipment repaired, deploy SSS and X Star, fishing boat hauling lines near start point.
	1415		Waiting on fishing vessel to vacate location.
	1525		Commence site survey.
	2400		Continuing site survey, 14 out of 44 SSS, bathy and sub bottom lines completed.

Date	Time	Location	Activity
16/1	0000	Scallop 1	Continuing site survey.
	0900		Received VHF radio call from Chris Newman Skipper of fishing vessel St Andrew, requesting information regarding the Scallop 1 site.
	1600		Completed 33 main run lines, and commenced running 12 cross lines.
	2100		Completed 9 cross lines, sea conditions now marginal, recovering SSS and X Star towfishes.
	2130		Towfishes secured on deck, steam to weather while preparing deck for coring operations.
	2230		Commence running remaining cross lines with bathymetry only.
	2400		Running final cross line with bathymetry only.
17/1	0030		Completed final cross line bathymetry. Steaming to weather, waiting for moderation to commence coring operations.
	0530		Weather moderated, commence coring works.
	0700		Completed coring. Two drop cores unsuccessful, two grab sample cores successful. Recover Echo Sounder pole.
	0710		SVP dip gives result of 1511m/s.
	0715		Scallop 1 site survey complete, depart for Geelong for demobilisation.
	0830	Flounder area	Telephone call to Production Control Room advising vessel's position and course.
	1230	12' south of Bream	Advised Production Control vessel clear of Esso's area.
	1300/20		Project Close Out meeting and explanation of Esso's Height Safety Policy concerning the demobilisation of survey equipment.
	1330	Bass Strait	Demobilisation of Fugro survey equipment while enroute to Geelong.
	1730		Enroute demobilisation completed.
	2400		Enroute to Geelong, ETA Pilot 0530.
18/1	0530	Port Phillip Heads	Pilot onboard.
	1000	Geelong	Vessel secured at Lascelles #1 wharf.
			Shoreside labour onboard for demobilisation.
	1300		Off Hire fuel dips taken.
	1600		All Fugro equipment off vessel, Personnel departing. R Glanville drives back to Sale.
	1615		Phone call to Colin Johancsik (Esso) advising end of demobe.

WOODSIDE OFF HIRE 13/1/03 1500 HRS
ESSO ON HIRE

Mermaid Marine Australia Limited 2202

On/Off hire Certificate

FORM REF MMA QP09.302-01

Vessel name: Mermaid Raider On hire to: Fugro

Time and date on hire: 0800hrs 20-12-02

Survey carried out by: Name: Paul Caswell PAC Company Fugro.

Charterer: Fugro Chief engineer: Wayne Thompson.

Vessels draft at time of survey: Fwd: 9 7" Aft: 9"

Fuel onboard at start; 48,816 Lts All Lubes onboard at start: DD40 866 GAD40 1250 Lts

ON HIRE

TANK	SOUNDING	LITRES	TONNES
10P	0	0	
10S	0	0	
9P	2.07M	22,734	
9S	0	0	
8P	0.15M	4,500	
8S	0.15M	4,500	
7P	0	0	
7S	0.66m	17,084	

TOTALS

OFF HIRE

TANK	SOUNDING	LITRES	TONNES
10P		41,814	
10S		38,512	
9P		10,816	
9S		17,777	
8P		1,402	
8S		4,497	
7P		0	
7S		5,840	
		120,658	

TOTALS

NOTE: Unless other wise specified the Density to be used is 0.844 for all fuel Calculations. Surveyors may use a density that differ as long as the on/off figure Utilizes the same density. In the case that no surveyor is appointed the fuel/lube figures will be passed onto the client as stipulated by the company's Masters or Chief engineers on this document.

Off hire

Survey carried out by: Name: PAUL CASWELL Company: FUGRO

Fuel onboard at end: 120,658 All Lubes onboard at end DD40 774 GAD40 795

Fresh water onboard at end:

Charterer: Paul Caswell PAC Chief engineer WM Thompson

OIL USAGE

Main Engine	Hydraulic Oil	Gear Box	Alt Eng Oil	Compressor Oil	Gear Oil	Total Litres
455			92	4		551

TOTAL FUEL CONSUMED FOR CHARTER: 28162

TOTAL LUBES CONSUMED FOR CHARTER: 551 LTRS

Distribution: White copy to Head Office, Yellow to Charterer, Blue copy remains on Vessel

May 2002

OFF HIRE FUEL FIGURES

During the demobilisation of the Mermaid Raider in Geelong at completion of the Woodside Energy Limited project the fuel tanks were dipped to provide the following off hire figures. These fuel figures were obtained at 1500 hrs on 13th January 2003.

Tank	Reading	Fuel (Litres)
7 P	MT	0
7 S	0.15	5840
8 P	0.01	1402
8 S	0.15	4497
9 P	1.21	10816
9 S	1.72	17777
10 P	3.68	41814
10 S	3.44	38512
	Total	**120658**

The day tank was configured to hold 8000 litres to equate to the amount in this tank when the on hire readings were taken.

Fuel Usage Summary (Litres)

On Hire Fuel	48818
Fuel Taken 23/12/02	100002
Off Hire Fuel	120658
Total Used	**28162**

....

Dave Myers
Woodside Energy Ltd
Offshore Representative

....

Paul Caswell
Fugro Survey
Party Chief

....

Glen Wetters
Mermaid Marine
Vessel Master

ESSO OFF HIRE 18/1/03.
1300 HRS
2203

Mermaid Marine Australia Limited
On/Off hire Certificate

FORM REF MMA QP09.302-01

Vessel name: MERMAID RAIDER On hire to: FUGRO

Time and date on hire: 13/1/03

Survey carried out by: Name: ROBERT BRUINSMA. Company FUGRO

Charterer: FUGRO Chief engineer: WAYNE THOMPSON

Vessels draft at time of survey: Fwd: ______ Aft: ______

Fuel onboard at start; 120,658 Lts All Lubes onboard at start: 1,569 Lts

ON HIRE

TANK	SOUNDING	LITRES	TONNES
7P		—	
7S		5,840	
8P		1,402	
8S		4,497	
9P		10,816	
9S		17,777	
10P		41,814	
10S		38,512	
		120,658	

TOTALS

OFF HIRE

TANK	SOUNDING	LITRES	TONNES
7P		0	
7S		5,840	
8P		1,485	
8S		0	
9P		6,559	
9S		15,341	
10P		41,961	
10S		37,804	
		108,990	

TOTALS

NOTE: Unless other wise specified the Density to be used is 0.844 for all fuel Calculations. Surveyors may use a density that differ as long as the on/off figure Utilizes the same density. In the case that no surveyor is appointed the fuel/lube figures will be passed onto the client as stipulated by the company's Masters or Chief engineers on this document.

Off hire

Survey carried out by: Name: ROBERT BRUINSMA Company: FUGRO SURVEY

Fuel onboard at end: 108,990 LTR All Lubes onboard at end 1,357

Fresh water onboard at end: ______

Charterer: ______ Chief engineer W Thompson

OIL USAGE

Main Engine	Hydraulic Oil	Gear Box	Alt Eng Oil	Compressor Oil	Gear Oil	Total Litres
180			32			212

TOTAL FUEL CONSUMED FOR CHARTER: 11,668 LTR

TOTAL LUBES CONSUMED FOR CHARTER: 212 LTR

Distribution: White copy to Head Office, Yellow to Charterer, Blue copy remains on Vessel

May 2002

OFF HIRE FUEL FIGURES

During the demobilisation of the Mermaid Raider in Geelong at completion of the ESSO AUSTRALIA Limited project the fuel tanks were dipped to provide the following off hire figures. These fuel figures were obtained at 1300 hrs on 18th January 2003.

Tank	Reading	Fuel (Litres)
7 P	MT	0
7 S	0.15	5,840
8 P	0.02	1,485
8 S	MT	0
9 P	0.89	6,559
9 S	1.54	15,341
10 P	3.69	41,961
10 S	3.39	37,804
	Total	**108,990**

The day tank was configured to hold 8000 litres to equate to the amount in this tank when the on hire readings were taken.

Fuel Usage Summary (Litres)

On Hire Fuel	120,658
Fuel Taken	-
Off Hire Fuel	108,990
Total Used	**11,668**

Rick Glanville
ESSO AUSTRALIA Ltd
Offshore Representative

Robert Bruinsma
Fugro Survey
Party Chief

Simon Feldman
Mermaid Marine
Vessel Master

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

Telephone (Mobile) 0427 080 789 Telephone (Satellite) : 0415 118 669
Facsimile (Mobile) 0427 080 782 E-mail fugromarine@bigpond.com

DAILY OPERATIONS REPORT

To	**:**	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	**:**	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	**:**	**13th January 2003**	**Job No : HY16526**
From	**:**	**Robert Buinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 01 For Period 09:00 to 24:00 Hrs Date: 13th January 2003

1. Safety / Environmental Incidents

None

2. Vessel Location at 24:00hrs

Alongside Lascelles Wharf, Geelong.

3. Weather / Sea State

	08.00	12.00	16.00	24.00
Wind Direction				
Wind Force				
Seas (m)				
Air pressure				

24 Hour Forecast	SW winds 20 kts

4. Summary of Events

Start	End	Stx	Hrs	Event
09:00	24:00	MOB	15:00	Preparations for vessel sailing (pilot due 07:00hrs 14/01/03). Esso pre-job briefing and safety induction held onboard vessel at 15:30hrs

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	15	15
Vessel Transit	TRA		
Survey Operations	OPS		
Vessel Downtime	VDT		
Equipment Downtime	EDT		
Weather Standby	WXS		
Vessel Demobilisation	DMB		
TOTAL Hrs.		**15**	**15**

6. Production Summary

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		0	0	0
TOTAL DISTANCE	**132km**	**0**	**0**	**0**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Pilot due 07:00hrs. Transit to Halibut-1 well location for towfish system test lines (estimated duration 30hrs).

8. Health, Safety and Environmental Summary

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
0	0	0	1	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	0			Hazard IDs Total	0		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	60	60
ESSO (1)	12	12
MMA (8)	72	72
Shipyard personnel (0)	0	0
TOTAL	**144**	**144**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

None

10. ESSO Australia Limited Representative Comments.

None

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

Telephone (Mobile) 0427 080 789 | Telephone (Satellite) : 0415 118 669
Facsimile (Mobile) 0427 080 782 | E-mail fugromarine@bigpond.com

DAILY OPERATIONS REPORT

To	**:**	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	**:**	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	**:**	**14th January 2003**	**Job No : HY16526**
From	**:**	**Robert Buinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 02 For Period 00:00 to 24:00 Hrs Date: 14th January 2003

1. Safety / Environmental Incidents

None

2. Vessel Location at 24:00hrs

Transit to Halibut-1 well location for towfish system acceptance trials.

3. Weather / Sea State

	06:00	12:00	18:00	24:00
Wind Direction	-	SW	SW	SW
Wind Force	-	4-5	5	4-5
Seas (m)	-	2	2	2
Air pressure	-	1017	1017	1019

24 Hour Forecast	SW winds decreasing to 12kts, veering SE, 14kts by 24:00

4. Summary of Events

Start	End	Stx	Hrs	Event
00:00	07:00	MOB	07:00	Preparations for vessel sailing.
07:00	08:30	TRA	01:30	Pilot onboard 07:00hrs. Depart Lascelles Wharf for Halibut-1 well location.
08:30	09:00	TRA	00:30	Undertake echo-sounder bar check and draft verification within harbour approaches.
09:00	24:00	TRA	15:00	Continue transit to Halibut-1 well location.

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	7	22
Vessel Transit	TRA	17	17
Survey Operations	OPS		
Vessel Downtime	VDT		
Equipment Downtime	EDT		
Weather Standby	WXS		
Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**39**

6. **Production Summary**

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		0	0	0
TOTAL DISTANCE	**132km**	**0**	**0**	**0**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

**Sections re-run not included in totals.*

7. **Programme for Next 24 Hours**

Continue transit to Halibut-1 well site for towfish system test lines. Continue on to Scallop-1 site to commence survey operations.

8. **Health, Safety and Environmental Summary**

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
1	0	0	1	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
Deployment and recovery of USBL / echo-sounder pole.							
Hazard Ids							
Hazard IDs Today	0			Hazard IDs Total	0		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	120	120
ESSO (1)	24	24
MMA (8)	144	144
Shipyard personnel (0)	0	0
TOTAL	**288**	**288**

*Based on 12 hour working day.

9. **Fugro Party Chief Comments**

None

10. **ESSO Australia Limited Representative Comments.**

None

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990
MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey **ihobbs.geo@fugro.com.au**
ichobbs@iinet.net.au

To : Rudolf M Fürchtenicht, ESSO **rudolf.m.furchtenicht@exxonmobil.com**

Date : 15th January 2003 **Job No : HY16526**

From : Robert Buinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 03 For Period 00:00 to 24:00 Hrs Date: 15th January 2003

1. Safety / Environmental Incidents
None

2. Vessel Location at 24:00hrs
Scallop-1 survey area.

3. Weather / Sea State

	06:00	12:00	18:00	24:00
Wind Direction	SW	SW	SW	Lt. Airs
Wind Force	3	2	2	1
Seas (m)	1.0	1.5	1.5	1.0
Air pressure	1017	1019	1018	1019

24 Hour Forecast	SE winds (10kts) veering ENE increasing to max. 18kts by 06:00hrs (17/01).

4. Summary of Events

Start	End	Stx	Hrs	Event
00:00	09:00	TRA	09:00	Transit to Halibut-1 well location.
09:00	09:25	MOB	00:25	Deploy USBL / echo-sounder pole and carry out SVP dip.
09:25	10:15	MOB	00:50	Deploy side scan sonar and head for system test line.
10:15	11:15	MOB	01:00	Run test lines over Halibut-1 wellhead.
11:15	13:20	TRA	02:05	Side scan sonar recovered. Transit to Scallop-1 survey location on successful completion of test lines.
13:20	13:55	EDT	00:35	Repair X-Star printer power supply.
13:55	14:15	STO	00:20	X-Star and side scan sonar deployed. Abort approach to SOL due to fishing vessel across survey area recovering 1.2 miles of gear.
14:15	15:25	STO	01:10	Waiting on fishing vessel to recover gear and depart survey area.
15:25	24:00	OPS	08:35	Commence survey main lines (Hdg. 045°/ 225°) at Scallop-1.

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	2:15	24:15
Vessel Transit	TRA	11:05	28:05
Survey Operations	OPS	8:35	8:35
Vessel Downtime	VDT		

Equipment Downtime	EDT	0:35	0:35
Weather Standby	WXS		
Standby Other	STO	1:30	1:30
Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**63**

6. Production Summary

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		14km	14km	32%
TOTAL DISTANCE	**132km**	**14km**	**14km**	**32%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Continue survey operations at Scallop-1.

8. Health, Safety and Environmental Summary

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
0	0	0	0	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	1			Hazard IDs Total	1		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	180	180
ESSO (1)	36	36
MMA (8)	240	240
Shipyard personnel (0)	0	0
TOTAL	**456**	**456**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

At current progress expected completion time of all survey runlines and seabed sampling approximately 24:00hrs 16/01/03

10. ESSO Australia Limited Representative Comments.

Derived co-ordinates of Halibut 1 wellhead from SSS are within 21 metres of Esso quoted position, obtained from previous ROV position fixes.

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey **ihobbs.geo@fugro.com.au**
ichobbs@iinet.net.au

To : Rudolf M Fürchtenicht, ESSO **rudolf.m.furchtenicht@exxonmobil.com**

Date : 16th January 2003 **Job No : HY16526**

From : Robert Bruinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 04 For Period 00:00 to 24:00 Hrs Date: 16th January 2003

1. **Safety / Environmental Incidents**
   None

2. **Vessel Location at 24:00hrs**
   Scallop-1 survey area.

3. **Weather / Sea State**

	06:00	12:00	18:00	24:00
Wind Direction	NNE	E	ENE	ENE
Wind Force	3	4	5	4/5
Seas (m)	1	1.5	2	2
Air pressure	1017	1015	1013	1012

24 Hour Forecast	ENE winds veering N 15kts

4. **Summary of Events**

Start	End	Stx	Hrs	Event
00:00	21:20	OPS	21:20	Continue survey operations.
21:20	22:40	WXS	1:20	Recover towed equipment in deteriorating Wx. Return to survey area to complete crosslines with echo-sounder only.
22:40	24:00	OPS	1:20	Complete crosslines with echo-sounder only.

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA		28:05
Survey Operations	OPS	22:40	31:15
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS	1:20	1:20
Standby Other	STO		1:30
Vessel Demobilisation	DMB		

TOTAL Hrs.		**24**	**87**

6. Production Summary

Survey Area	**Approx. Program**	**Today**	**Cumulative Total**	**Percent Complete**
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	0	0	0

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Waiting on weather for safe coring. Complete coring (2 core samples) and depart site for transit to Geelong Port.

8. Health, Safety and Environmental Summary

Safety Drills		**HSE Meetings***		**Health and Safety Injuries/Incidents**		**Environmental Incidents**	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
0	0	0	0	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	1			Hazard IDs Total	1		

Personnel Nos.	**Total Hours Worked***	**Total Hours Since LTI***
Fugro Survey (5)	240	240
ESSO (1)	48	48
MMA (8)	336	336
Shipyard personnel (0)	0	0
TOTAL	**624**	**624**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

10. ESSO Australia Limited Representative Comments.

Estimate completion of coring activities by 0900 17/1, then transit to Geelong for an ETA around noon 18/1.

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To	:	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	:	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	:	**17th January 2003**	**Job No : HY16526**
From	:	**Robert Bruinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 05 For Period 00:00 to 24:00 Hrs Date: 17th January 2003

1. **Safety / Environmental Incidents**
None

2. **Vessel Location at 24:00hrs**
Transit to Geelong Harbour.

3. **Weather / Sea State**

	06:00	12:00	18:00	24:00
Wind Direction	NIL	Lt Airs	-	-
Wind Force	0	0	-	-
Seas (m)	0.5	0.5	-	-
Air pressure	1013	1012	-	-

24 Hour Forecast	-

4. **Summary of Events**

Start	End	Stx	Hrs	Event
00:00	00:40	OPS	0:40	Complete crosslines with echo-sounder only.
00:40	05:50	WXS	5:10	Stand by on Wx. suitable for coring operations.
05:50	06:20	OPS	0:30	Carry out gravity coring and grab sampling at drill location.
06:20	06:45	TRA	0:25	Transit to north of site to second seabed sampling location.
06:45	07:15	OPS	0:30	Carry out grab sampling at north location sample location.
07:15	07:25	OPS	0:10	Undertake SVP dip. Completion of survey operations at Scallop-1.
07:25	24:00	TRA	16:35	Depart site. Vessel heading for Geelong Harbour for demobilisation.

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA	17:00	45:05
Survey Operations	OPS	1:50	33:05
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS	5:10	6:30
Standby Other	STO		1:30
Vessel Demobilisation	DMB		

TOTAL Hrs.		**24**	**111**

6. Production Summary

Survey Area	**Approx. Program**	**Today**	**Cumulative Total**	**Percent Complete**
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	2	2	100%

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Continue transit to Geelong Harbour for demobilisation.

8. Health, Safety and Environmental Summary

Safety Drills		**HSE Meetings***		**Health and Safety Injuries/Incidents**		**Environmental Incidents**	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
0	1	1	3	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	0			Hazard IDs Total	0		

Personnel Nos.	**Total Hours Worked***	**Total Hours Since LTI***
Fugro Survey (5)	300	300
ESSO (1)	60	60
MMA (8)	432	432
Shipyard personnel (0)	0	0
TOTAL	**792**	**792**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

None

10. ESSO Australia Limited Representative Comments.

Preliminary Field Report issued by Fugro Party Chief and forwarded to Esso today.

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990
MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To	:	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	:	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	:	**18th January 2003**	**Job No : HY16526**
From	:	**Robert Bruinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 06 For Period 00:00 to 24:00 Hrs Date: 18th January 2003

1. Safety / Environmental Incidents

None

2. Vessel Location at 24:00hrs

Alongside Lascelles Wharf, Geelong Harbour.

3. Weather / Sea State

	06:00	12:00	18:00	24:00
Wind Direction	-	-	-	-
Wind Force	-	-	-	-
Seas (m)	-	-	-	-
Air pressure	-	-	-	-

24 Hour Forecast	-

4. Summary of Events

Start	End	Stx	Hrs	Event
00:00	10:00	TRA	10:00	Vessel heading for Geelong Harbour for demobilisation.
10:00	16:00	DMB	6:00	Vessel demobilisation.

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA	10	55:05
Survey Operations	OPS		33:05
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS		6:30
Standby Other	STO		1:30
Vessel Demobilisation	DMB	6	6
TOTAL Hrs.		**16**	**127**

6. Production Summary

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	2	2	100%

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Vessel demobilisation alongside Lascelles Wharf, Geelong Harbour.

8. Health, Safety and Environmental Summary

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
0	1	0	3	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	0			Hazard IDs Total	0		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	360	360
ESSO (1)	72	72
MMA (8)	528	528
Shipyard personnel (0)	16	16
TOTAL	**976**	**976**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

None

10. ESSO Australia Limited Representative Comments.

None

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

SURVEY REPORT FOR THE RIG SITE SURVEY AT THE SCALLOP-1 LOCATION

FUGRO REPORT NO. HY16526

Client	:	ESSO Australia Pty Ltd 12 Riverside Quay Southbank Victoria 3006
Date of Survey	:	13th to 18th January, 2003
Date of Report	:	05th February, 2003
Checked	:	__________________________
Authorised	:	__________________________

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ABSTRACT

Fugro Survey Pty Ltd were appointed by ESSO Australia Pty Ltd to survey and map the seabed and shallow geology, in order to assess soil anchor handling properties and shallow drilling hazards, within a 3km x 3km survey area centred on the proposed Scallop-1 drill site location, Gippsland Basin, Permit Vic/RL2.

Single beam bathymetry, side scan sonar and sub-bottom profiling data were obtained along 132km of survey line coverage. The survey work was successfully completed in the period from 13th January to 18th January 2003.

Survey results indicate a generally southeasterly shelving seabed comprising predominantly fine to medium sediments. The shallow sub-seabed geology across the site is characterised by a surficial sedimentary unit that thins towards the north and west, overlying a variably thick unit of probable variably indurated and/or coarse sediments. Two sediment samples were also obtained within the surveyed area to aid correlation of the geophysical survey data.

Surface positioning was achieved utilising Fugro Survey's Multi-Reference and Direct Injection Differential GPS with Starfix.Seis Navigation Software.

All coordinates in this report are quoted in GDA94 datum and UTM Zone 55 (CM 147° E) projection, unless otherwise stated.

All bathymetric soundings have been reduced to Mean Sea Level based on predicted tidal data supplied by ESSO for the proposed Scallop-1 drill rig location.

The results of the survey are provided on a total of five (5) 1:5,000 horizontal scale charts (1:200 vertical scale on the shallow geological profile chart).

The defined project and HSE objectives were successfully achieved.

1.0 INTRODUCTION

1.1 The Project

Fugro Survey Pty Ltd (Fugro) was contracted by ESSO Australia Pty Ltd (ESSO) to carry out geophysical survey operations at the proposed Scallop-1 drill location located within the Gippsland Basin, Permit Vic/RL2, Bass Strait.

Survey operations were undertaken within a 3km x 3km survey area centred on the following coordinates:

Grid		Geographical	
Easting	639316m	Latitude	38º12'48.6" S
Northing	5769300m	Longitude	148º35'28.9" E

TABLE 1-1 : SURVEY AREA – CENTRE COORDINATES (GDA94)

Fugro chartered the survey vessel MV Mermaid Raider from Mermaid Marine Australia Ltd. The survey was completed in full over the period 13th to 18th January, 2003.

The seabed and the sub-seabed geological data evaluation included in this report has been conducted in accordance with the terms of contract between Fugro and ESSO and is covered by the service warranty as presented in Appendix A.

All survey related works were carried out in accordance with ESSO's project requirements and Fugro's standard Survey Procedures, in conjunction with the project specifications.

The quality and work procedures followed during the course of operations were tied into Fugro's HS&E management system and all activities conducted were carried out in accordance with the requirements of these HS&E procedures.

Figure 1-1 shows the location of the proposed Scallop-1 drill site.

1.2 Project Objectives

The drilling rig site survey covered the area specified to identify any seafloor or near seafloor obstruction (such as pipelines, power lines, telephone or telegraph cables, wellheads, wrecks, oil/gas seeps, surface faults etc.) that may impact the rig's anchor pattern or drilling location.

The analysis of the survey data also included any sub-surface geological or man made features and conditions that may have an adverse affect on the drilling operation.

1.3 Scope of Work

In order to achieve the objectives as identified in Section 1.2, the vessel MV Mermaid Raider was used as the survey platform for the provision of hydrographic and geophysical services for the following data collection purposes:

- To accurately measure and map the water depth and to identify any variations in the seabed topography.
- To determine the nature and composition of the seabed sediments.
- To identify any seabed obstructions.
- To map and interpret the shallow geological structure.

LOCATION DIAGRAM

FIGURE 1-1

Fugro provided the following systems and services to acquire the survey data necessary to address the objectives defined above:

- Vessel positioning and survey navigation.
- High precision single beam echo sounder for measuring water depths.
- High resolution side scan sonar for delineating seabed features.
- Sub-bottom profiler enabling the mapping of the shallow geological structure.
- Soil sampling using a grab sampler.
- Suitably experienced survey personnel.

The workscope comprised running survey lines over the site acquiring simultaneous bathymetric (single beam), side scan sonar and sub-bottom profiler (X-Star) data.

In addition, two seabed grab samples were taken within the surveyed area, including one at the proposed drill location, using a large Van Veen grab sampler.

1.4 Reporting Format

In addition to the bound hard copy of the report, containing text and charts, an electronic version in Adobe's PDF format is supplied to ESSO, along with the charts in Microstation .dgn format

2.0 PROJECT CONFIGURATION DATA

2.1 Geodetic Parameters

Positions supplied in this report are referenced to the Geocentric Datum of Australia (GDA94), on the Australian Map Grid, UTM Zone 55, Central Meridian 147° East.

GPS operates in reference to the World Geodetic System 1984 (WGS84).

Datum	**:**	**WGS84**
Reference Spheroid	:	World Geodetic Spheroid 1984
Semi-Major Axis	:	6378137m
Inverse flattening	:	298.257223563

Datum	**:**	**GDA94**
Reference Spheroid	:	GRS80
Semi-Major Axis	:	6378137m
Inverse flattening	:	298.257222101

There are no datum shifts or rotations when transforming from WGS84 to GDA94

Projection	**:**	**Universal Transverse Mercator**
Grid	:	Australian Map Grid (AMG)
Latitude of Origin	:	0°
Central Meridian	:	147° E (UTM Zone 55)
Central Scale Factor	:	0.9996
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Units	:	Metres

2.2 Horizontal Control

The coordinates of the DGPS reference stations used during the project to reference the satellite positions are presented in Table 2-1.

Stn Id	Name	Latitude	Longitude	Height	Datum
355	Adelaide	34°55'51.842" S	138°36'12.776" E	54.427m	WGS84
336	Bathurst	33°25'46.902" S	149°34'01.959" E	756.784m	WGS84
385	Melbourne	37°48'29.029" S	144°57'48.019" E	82.101m	WGS84

TABLE 2-1 : DGPS REFERENCE STATIONS

2.3 Vertical Control

Bathymetric data has been reduced to mean sea level (MSL) using tides provided by ESSO for the proposed Scallop-1 location (see Appendix B).

Fugro's processing software, Starfix.Proc, described further in Section 7-0, applies tide values to the logged data by a process of temporal and spatial interpolation.

2.4 Survey Coverage

The survey grid comprised of 31 primary lines orientated 045º / 225º run at 100m line spacing and 13 cross lines orientated at 135º / 315º run at 250m line spacing. Single beam echo sounder, side scan sonar and sub-bottom profiler data were collected simultaneously along all runlines with the exception of cross lines Sca_1_xl_36, Sca_1_xl_39, Sca_1_xl_41 and Sca_1_xl_43. These lines were run using single beam echo sounder only, due to deteriorating weather conditions. The two centre lines (Sca_1_ml_16 and Sca_1_xl_38) cross the proposed Scallop-1 drill location.

A total of two seabed grab samples were taken within the surveyed area, including one at the proposed drill location. Gravity core sample attempts close to the proposed drill location resulted in no recovery due to the presence of non-cohesive medium sands at the seabed. Poor gravity core recovery levels are typically associated with this type of sediment.

Planned survey lines are detailed in Appendix C.

3.0 SUMMARY OF EVENTS

A general sequence of events for the Scallop-1 Site Survey is shown below. Full details of Fugro involvement in the site survey are presented in the Daily Operations Reports presented in Appendix D.

13th January, 2003	Vessel preparations alongside Lascelles Wharf, Geelong Port.
14th January, 2003	Pilot onboard at 0700hrs. Depart Geelong Port for SSS towfish calibration site (Halibut-1 wellhead).
15th January, 2003	Arrive Halibut-1 wellhead at 0900hrs. Undertake SSS towfish calibration and transit to Scallop-1 site upon successful completion at 1320hrs. Arrive on site at 1355hrs. Commence survey operations at 1525hrs.
16th January, 2003	Continue survey operations at Scallop-1 site.
17th January, 2003	Complete survey operations at 0040hrs. Standing by on suitable weather conditions for seabed sampling. Commence seabed sampling at 0550hrs. Complete seabed sampling at 0715hrs. All operations at Scallop-1 site complete. Depart site for transit to Geelong Port for vessel demobilisation at 0725hrs.
18th January, 2003	Arrive Lascelles Wharf, Geelong Port. at 1000hrs for vessel demobilisation. Demobilisation completed by 1600hrs. Survey crew depart for Melbourne.

4.0 SURVEY EQUIPMENT, VESSEL AND PERSONNEL

4.1 Equipment Listing

The equipment listed below was mobilised for the proposed Scallop-1 site survey:

Positioning Systems

Starfix Spot DGPS (Primary) comprising:
1 x Trimble 4000 GPS receiver
1 x Trimble compact dome antenna (GPS and Optus signal reception)
1 x Signal down converter/demodulator

Starfix Spot DGPS (Secondary) comprising:
1 x Trimble 4000 GPS receiver
1 x Allison antenna (GPS and APSat signal reception)
1 x Signal down converter/demodulator

Navigation & Data Logging Systems

2 x Starfix navigation system computers (Seis, IOWin, MRDGPS)
2 x Helmsman's monitors (1 spare)
2 x Instrument room monitors (1 spare)
2 x Printers (1 spare)
2 x SG Brown gyro compass

Single Beam Echo Sounder System

2 x Odom Echotrac DF3200 echo sounders (1 spare)
2 x 24/200kHz echo sounder transducers (1 spare)
2 x TSS DMS-05 motion sensor unit (1 spare)
2 x Applied Microsystems SVPlus velocity probes (1 spare)
1 x Bar check plate

Side Scan Sonar System

2 x GeoAcoustics dual frequency towfish (1 spare)
2 x GeoAcoustics side scan transceivers (1 spare)
2 x Winch c/w 500m armoured tow cable and remote control
2 x Sheave blocks and electronic counters (1 spare)
2 x Deck cables (1 spare)

Sub-Bottom Profiling

2 x Surface-tow catamaran with Applied Acoustics boomer plate (1 spare)
2 x Tow cable (1 spare)
2 x Applied Acoustics CSP 500 power supply unit (1 spare)
2 x Edgetech X-Star sub-bottom profiler system (1 spare)
2 x Ultra Widescan thermal printers
1 x Storage oscilloscope
2 x External Exabyte tape drives (1 spare)

Digital Recording System

2 x	GLog/GPlot data logging and processing systems c/w Exabyte tape drives (1 spare)
2 x	Front end analogue module (FEAM) – amplifier/conditioner
2 x	Alden thermal printers

Soil Sampling

2 x	Van Veen grab samplers (1 large, 1 small)
2 x	3m gravity corers c/w cutters, catchers and liners (1 spare)
1 x	Free-fall winch with 300m wire rope (supplied by vessel)
1 x	Hand-held penetrometer
1 x	Hand-held shear vane

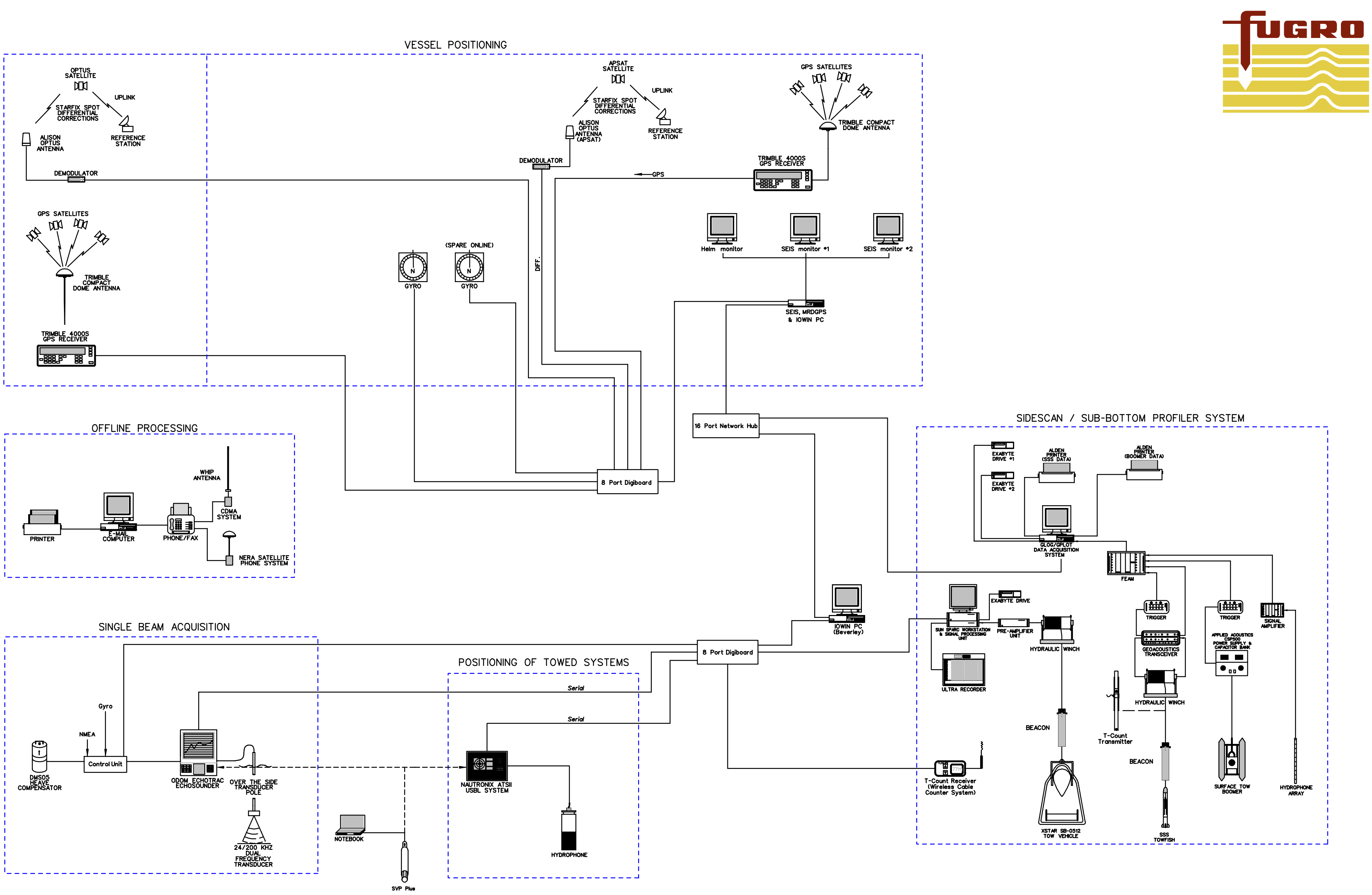
Communications / Miscellaneous

1 x	CDMA mobile phone/email system
1 x	Onboard intercom system
1 x	Network system

Containers

1 x	Back deck instrument room
1 x	Back deck storage

All systems were supplied with their associated power supplies, antennae, interconnecting cables and consumables. An equipment configuration diagram, showing the various items and their interfacing, is included as Figure 4-1.



MV MERMAID RAIDER – EQUIPMENT CONFIGURATION DIAGRAM

FIGURE 4–1

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4.2 Survey Vessel

The survey vessel used for the project was the MV Mermaid Raider, operated by Mermaid Marine Australia Limited (Figure 4-2). The vessel was chartered under a direct agreement with Fugro.

FIGURE 4-2 : MV MERMAID RAIDER

All positioning and geophysical acquisition equipment was located in the back deck instrument container. Antennae for GPS positioning and differential corrections were mounted on a frame located on the roof of the back deck instrument container.

A vessel diagram showing the offsets of the survey equipment is shown as Figure 4-3.

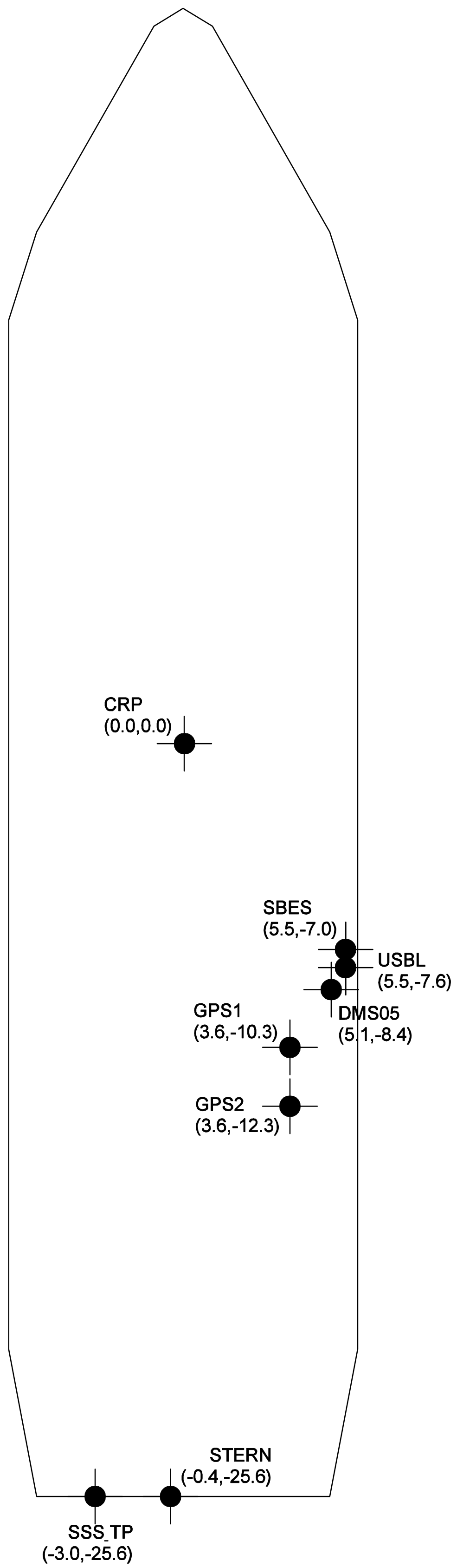
4.3 Survey Personnel

The following Fugro personnel were involved in the survey on board the MV Mermaid Raider:

Robert Bruinsma	Party Chief / Geophysicist
Tom Hansen	Surveyor
Brett Sellars	Surveyor
Ben Mannion	Electronic Technician
Leigh Clark	Electronic Technician

The client representative onboard the vessel for the project was:

Rick Glanville	ESSO Australia Pty Ltd.



FUGRO

VESSEL OFFSET DIAGRAM – MERMAID RAIDER

FIGURE 4–3

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5.0 EQUIPMENT CALIBRATIONS

As with all marine survey projects, system calibrations prior to the acquisition of data are critical to ensure the validity and integrity of the data collected. A "Mobilisation and Calibration Task Checklist" was implemented for this purpose and the accepted signed off checklist sheets are included as Appendix E.

5.1 Gyro Compass Calibration

Between 22nd and 24th December, 2002, whilst the vessel was alongside Kings Wharf, Launceston, Tasmania for the mobilisation of the previous project, a total of fifteen sets of offset measurements were taken from near the bow and stern of the vessel to the wharf face. The difference of the two offsets and the length of the baseline between them were used to calculate the angle of the vessel's centreline from the known wharf alignment. The time was recorded with each set of measurements so that the calculated heading could be compared to the observed gyro heading logged in Starfix.Seis.

The correction for the heading output from the SG Brown Gyro Compass was determined to be 178.6° for the primary gyro (aft) and 179.4° for the secondary gyro (foreward). These correction values were applied to the heading data in the navigation software. The gyro compasses remained in the same location and were not powered off following this calibration in Tasmania.

Calibration details and location sketches are enclosed in Appendix F.

5.2 DGPS Calibration

The primary navigation system comprised a Trimble GPS receiver and the Fugro Multiple Reference Differential GPS (MRDGPS) utilising reference stations at Adelaide, Bathurst and Melbourne. Starfix differential corrections were received from the Optus and APSat satellites. The secondary navigation system comprised a Trimble GPS receiver with virtual base station direct injection RTCM corrections via the Optus satellite (Starfix Spot DGPS).

To confirm the operation of the GPS systems a static verification was undertaken on 24th December, 2002, while the vessel was alongside Kings Wharf, Launceston, Tasmania. The GPS systems were verified after completion of the gyro calibration and prior to the commencement of survey work on the previous project.

To establish the integrity of the GPS systems, a taped measurement was made from a coordinated control point on the wharf alongside the vessel to establish a temporary mark, perpendicular to the primary navigation GPS antenna. Offset measurements were then made from the vessel's common reference point (CRP) to the temporary mark and entered as a fixed offset into the Starfix.Seis vessel file. The observed coordinates of the offset position were then compared directly against the temporary mark between 0104hrs and 0134hrs UTC. Data was logged at 10 second intervals in Starfix.Seis and is summarised in Table 5-1.

Measurement	Easting	Northing
Temporary Mark Coordinates	1011711.6m	5395641.8m
Observed Coordinates	1011711.4m	5395640.9m
Differences (Established – Observed)	0.2m	0.9m

TABLE 5-1 : STATIC DGPS CHECK – MRDGPS (GDA94)

Details of the observations and a location sketch are enclosed in Appendix G.

5.3 Single Beam Echo Sounder Calibration

The Odom Echotrac echo sounder was calibrated by bar check on 14th January, 2003 whilst the vessel was within the approaches to Geelong Port, Victoria. The dual frequency 24/200kHz transducer was installed on an over-the-side mounted pole on the starboard side of the vessel. Before commencing the bar check the motion sensor was disconnected from the echo sounder.

A bar check plate was deployed directly beneath the echo sounder transducer at varying depths down to 6m below the sea surface. The draft setting on the echo sounder was adjusted, using an assumed velocity of 1510m/s, to produce a digitised output for the high frequency transducer equal to the depth of the bar. The low frequency transducer was then checked and corrected in the same manner. The results are shown in Table 5-2.

Transducer	Draft
24kHz	3.95m
200kHz	4.04m

TABLE 5-2 : INITIAL DRAFT MEASUREMENTS

A copy of the analogue trace from the bar check is included in Appendix H.

5.4 Velocity Profiler

The Applied Microsystems Velocity Probe (SVPlus) used to determine the velocity of sound through the water column on this project was supplied with a calibration certificate verifying current calibration. The originals of these certificates are held at Fugro offices.

The operation of this instrument was checked using a test deployment whilst in Geelong during the vessel mobilisation.

The locations and the results from the velocity profiles taken during the project are contained in Appendix I.

5.5 Side Scan Sonar Verification

The operation of the GeoAcoustics side scan sonar system was verified during mobilisation using a series of inbuilt tests, which confirm printing resolution and verify the accuracy of the slant range and speed processing. The towfish were ‘rub’ tested and ‘wet’ tested to ensure correct transducer operation and that all submarine connections were sound. During the wet test, the returning signals were passed to GLog/GPlot digital acquisition system to verify its operation.

Cable counters (T-Count telemetry system) were used to obtain cable out distances for layback positioning.

As part of the pre-survey acceptance trials a side scan sonar towfish positioning verification was carried out over the Halibut-1 wellhead. Two lines were run at reciprocal headings over the Halibut-1 wellhead and the position plotted from the sonar records. A position difference of 3m was computed.

The average position was then compared to an initial ESSO supplied co-ordinate as well as a more recent position co-ordinate supplied by the client representative onboard. The results of the verification and comparisons are detailed in Table 5-3: The somewhat large discrepancies noted here have been attributed to the uncertain validity of the supplied data.

Line No.	Halibut-1 Wellhead Position From SSS Easting	Halibut-1 Wellhead Position From SSS Northing
SSS_Check	614897m	5749231m
SSS_Check_A	614900m	5749231m
Difference	3m	0m
Average Position	**614899m**	**5749231m**
	(148º18'56.9” E)	**(38º23'52.0” S)**
Comparison		
ESSO Supplied Position	615 061.5m	5749274.8m
	(148º18'56".58 E)	(38º23'51".85 S)
Difference	**-163m**	**-44m**
ESSO Client Representative Supplied Position	614917.4m	5749220.6m
	(148º18'57".63 E)	(38º23'52".29 S)
Difference	**-18m**	**+10m**

TABLE 5-3 : SIDE SCAN SONAR TOWFISH POSITIONING VERIFICATION (GDA94)

5.6 Sub-Bottom Profiling Verification

The calibration of the towed X-Star sub-bottom profiler system comprised a basic test sequence and the tuning of the receiving and printing equipment to confirm quality of the hard copy output. The received signals were logged and processed by the X-Star top (processing) unit to verify its operation.

5.7 Ultra Short Baseline (USBL) System Calibration

The Nautronix ATS II Ultra Short Baseline (USBL) System comprised a surface control unit and a transceiver with in-built pitch and roll sensors mounted on an over-side pole on the starboard side of the vessel. The over-side installation was shared with the echo sounder transducers. A system calibration was undertaken on 26 December, 2002 in approximately 50m of water off the northern coast of Tasmania.

The calibration of the USBL system carried out for the previous project was adopted for the Scallop-1 site survey. As the system was not reconfigured between the projects the earlier results for the calibration remained valid.

Prior to commencing the calibration, a high power ATS beacon was deployed to the seabed with sub-surface flotation and marked on the surface by a Norwegian buoy. A velocity profile was also measured and the speed of sound value entered to the Nautronix control unit.

The *MV Mermaid Raider* was not a suitable vessel for undertaking a 360° spin adjacent to the beacon and the calibration took the form of interrogating the beacon from each of the four quadrants. The vessel heading was held constant during the observations and a stand-off distance of approximately 100m from the beacon was maintained. All calibration observations were completed between 0830 hours and 1040 hours on 26 December, and the beacon was recovered to deck.

The Fugro Starfix USBL utility was used to perform calibration calculations to derive the system corrections shown in Table 5-4 below. These corrections were entered to the USBL software for use during the project.

Correction Type	Value
Alignment Correction	3.45°
Scale Factor	0.98865
Pitch Correction	-0.13°
Roll Correction	-0.10°

TABLE 5-4 : CORRECTION VALUES DERIVED FOR USBL SYSTEM

6.0 SURVEY PROCEDURES

6.1 Mobilisation

Prior to mobilisation of the vessel MV Mermaid Raider at the Port of Geelong, there was a period of preparation in order to organise the equipment, personnel and to put together a plan for the conduct of the survey. A key component of the preparation was the compilation of project documentation that included health, safety, environmental, quality management and operational procedures. This was a process that involved close interaction between ESSO, Mermaid Marine and Fugro.

Additional information regarding the preparations is also documented in the Health, Safety and Environment Management section of this report (see Section 10).

Mobilisation commenced on 13th January, 2003 alongside Lascelles wharf, Geelong Port. The majority of the survey equipment was previously mobilised and calibrated for Woodside Energy Ltd in Launceston, Tasmania, between 19 – 24 December, 2002, where the survey container, winches and sounder transducer mount were placed and welded onto the vessel. The pre-installed equipment in the survey container was interfaced and checked before mounting the container on the back deck (see Figure 6-1).

Prior to any access to the vessel for mobilisation purposes, a mobilisation JHA and vessel induction was conducted for all Fugro personnel.

During mobilisation, personnel from Fugro, ESSO and Mermaid Marine attended a project induction, the purpose of which was to introduce the operational objectives of the project and develop health, safety and environmental objectives. Key managers addressed personnel to emphasise the significance of the project.

FIGURE 6-1 : BACK DECK LAYOUT

6.2 Vessel Positioning and Survey Navigation

Surface positioning was carried out using Fugro's MRDGPS interfaced to the Starfix.Seis navigation and data logging system (see Figure 6-2). The Starfix.Seis navigation system was operated using coordinates on the GDA94 reference frame using the geodetic and transformation parameters as detailed in Section 2.1. Both the positioning and navigation systems were installed in the back deck instrument container. The GPS and demodulator antennae were installed above the container on an antennae stand. An intercom system was installed between the instrument container and the bridge for communications, ensuring survey line order, vessel line sequence and turning manoeuvres between survey lines was effectively managed.

A scaled outline of the vessel and selected sensor positions was displayed at each navigation update with the position of the selected sensors computed using the interfaced gyro reading and measured offsets from the vessel file. This detail was displayed on the navigation system, helmsman's monitor and remote displays.

FIGURE 6-2: NAVIGATION EQUIPMENT

While the navigation system was on-line, all raw sensor data was logged to disk using Starfix.Logging, which creates a separate file for each sensor containing sensor specific time tagged data. For each survey line these files were logged to a unique directory based on the line name. As well as the sensor inputs, geodesy, runline information and navigation data was also logged.

Data was also output at each fix event to a text file in summary form on the Starfix.Seis computer. This information included date, time, runline name, start and end coordinates, fix number, coordinates of each offset position, quality figure, gyro heading, speed, depth, KP and offset of each offset position. This file contained all online system settings and navigation summary data. An example of a Starfix.Seis configuration printout is included as Appendix J.

Survey runline logs were completed for each line detailing line name, direction, start and end times, and start and end fix numbers. A copy of the survey run logs is presented in Appendix K.

6.3 Motion Compensator

The TSS DMS-05 motion compensator was mounted on the back deck in a position adjacent to the transducer pole (see Figure 6-3). Heave data from the DMS-05 was input to the Odom Echotrac echo sounder and applied directly to the raw measurements. Heave corrected data was displayed on the echo sounder paper print out.

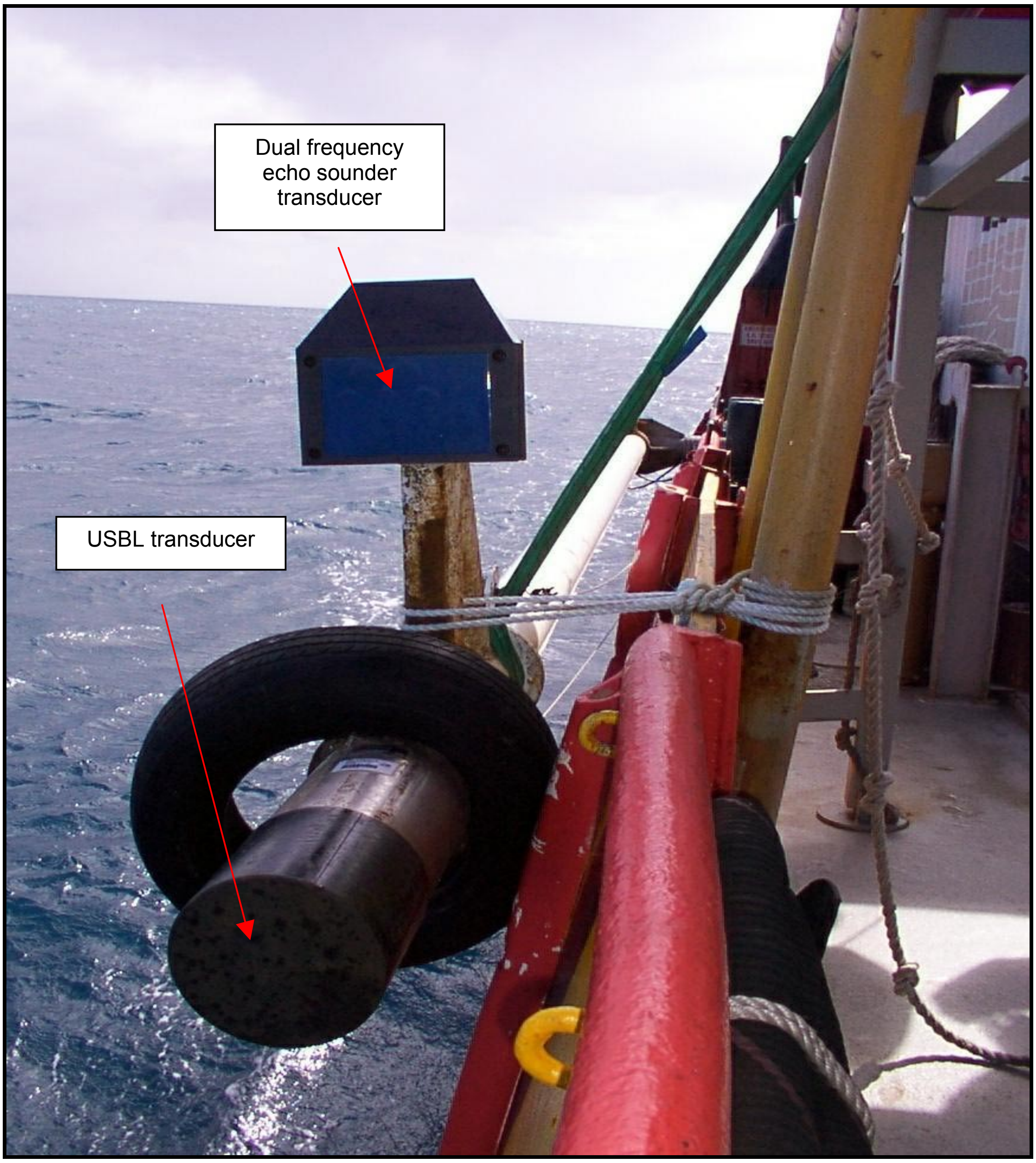


FIGURE 6-3 : OVER THE SIDE POLE WITH USBL AND ECHO SOUNDER TRANSDUCERS IN STOWED POSITION

6.4 Single Beam Echo Sounder

The Odom Echotrac DF 3200 echo sounder transducer was installed on an over-the-side pole mounted on the starboard side of the vessel (see Figure 6-3). Corrections from the TSS DMS-05 motion compensator were input to the echo sounder and applied to the raw measurements. Whilst corrected water depths were printed by the echo sounder, raw water depths were recorded internally and passed to the Starfix.IOWIN computer for logging.

The equipment setup is shown in Figure 6-4.

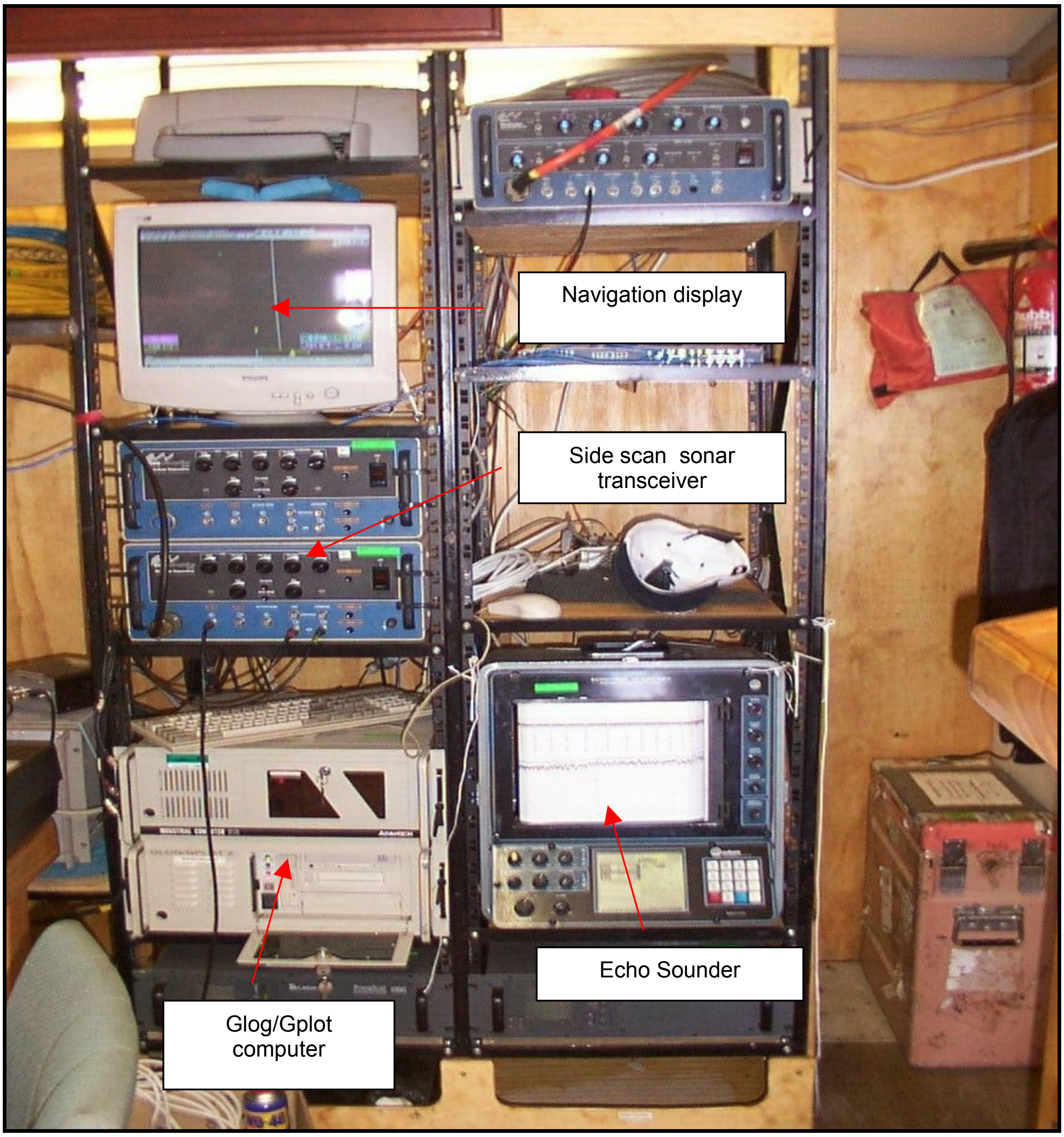


FIGURE 6-4: EQUIPMENT RACK

Fix marks generated by Starfix.Seis were printed on the paper records by the recorder and were automatically annotated by Starfix.Seis. All records were annotated at start and end of lines with line name, time, date and direction of travel.

Results from the initial bar check were set into the echo sounder at the start of the survey and then checked at regular intervals. A constant sound velocity of 1510m/s was used in the echo sounder for the duration of the survey. Sound velocity profiles obtained prior to commencement and upon completion of the survey were used in final post processing to determine correct water depth.

6.5 Velocity Probe

An SVP-Plus sound velocity profiler was used to measure the speed of sound in the water column. Sound velocity profiles were taken before and after the survey work, for use in post-processing of the bathymetry data.

During the survey, the single beam echo sounder was operated using a constant velocity of sound of 1510m/s. Results and locations for the velocity measurements are presented in Appendix I.

6.6 Side Scan Sonar

The GeoAcoustics side scan sonar towfish, was deployed through a sheave block suspended from a davit positioned at the stern of the vessel. For the survey, an operating frequency of 100kHz was used and the scan range set to 125m. The towfish was operated approximately 13m above the seabed to obtain optimal coverage and resolution.

Both Ultra Short Baseline (USBL) positioning and a T-Count telemetry cable-counter unit provided towfish positioning.

The returned digital data was processed through the FEAM/Glog/Gplot system before being displayed as a slant-range corrected image on an Alden thermal graphic recorder. At the start and end of each survey line, the line names, direction, date and time were annotated on the records. The data was also digitally displayed and logged in raw and processed format by the Glog/Gplot software (see Figure 6-5).

Geophysical run logs for the side scan sonar system are presented in Appendix L.

6.7 Sub-Bottom Profiler

The Edgetech X-Star sub-bottom profiler towfish was towed through a sheave block suspended from an A-frame above the stern of the vessel (see Figure 6-6). To optimise data quality, and at the same time prevent possible entanglement with the side scan sonar towfish, the X-Star towfish was towed at a fixed offset of 160m from the stern. Towfish positioning was provided by USBL.

The X-Star Chirp system was operated on a 100% power setting utilising a band-pass filter of 1.5kHz (Low Cut) and 7.5kHz (High Cut). The reflected signals from the seabed and sub-seabed layers were processed through the X-Star top (processing) unit with a hard copy printed out on an Ultra Dowty Widescan thermal graphic recorder. The data was also logged in processed format on an external Exabyte tape drive.

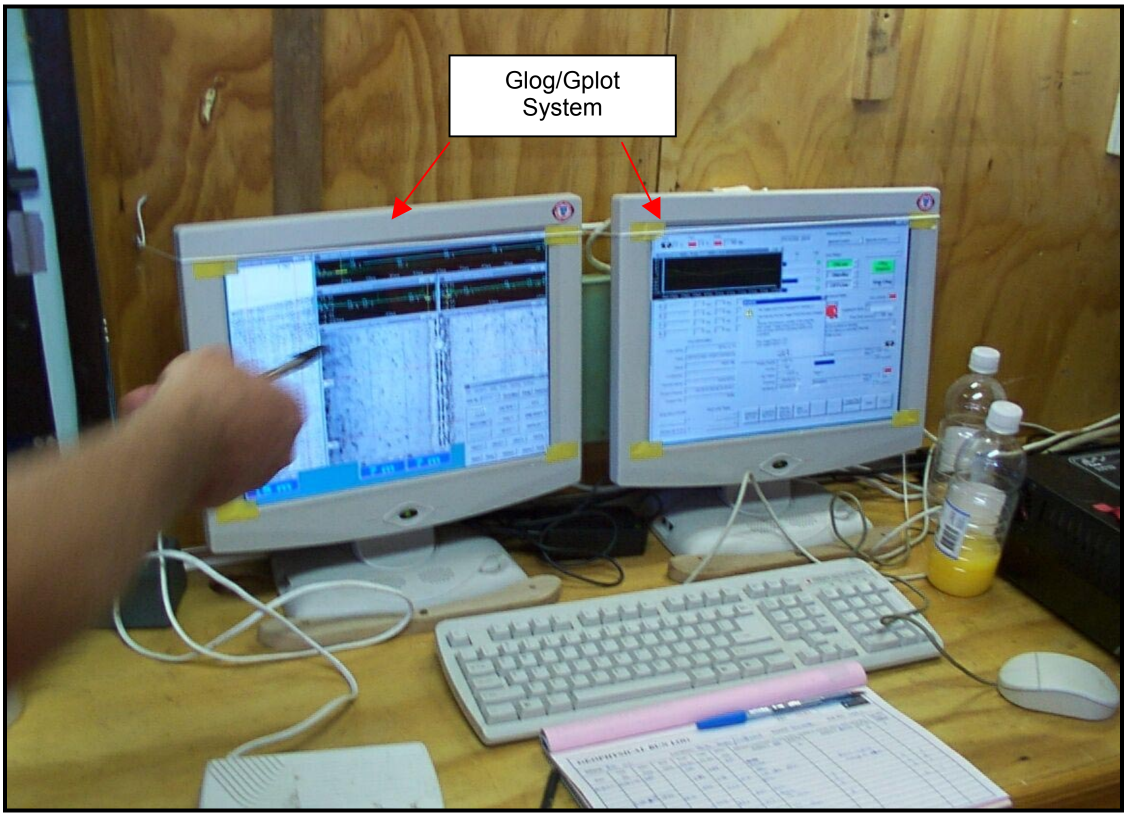


FIGURE 6-5 : GLOG/GPLOT SIGNAL PROCESSING SYSTEM

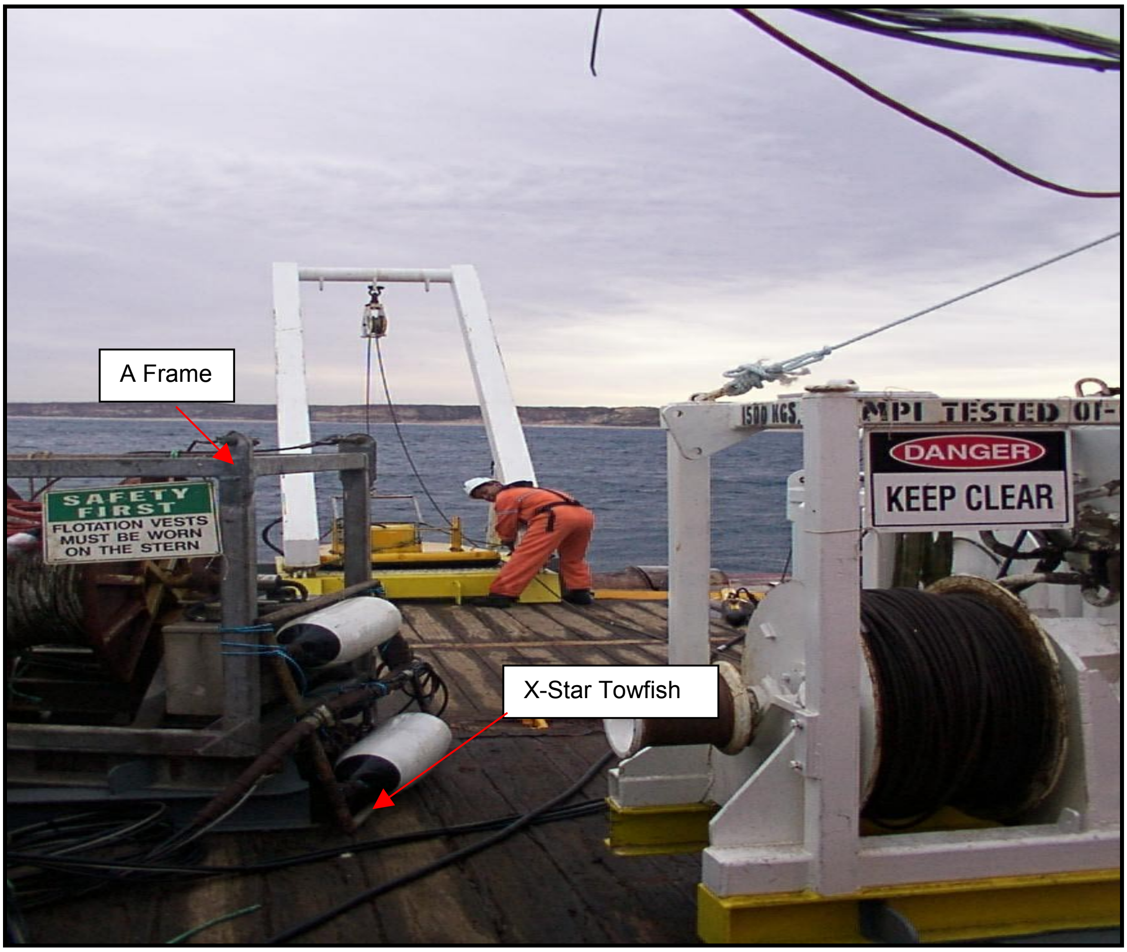


FIGURE 6-6 : X-STAR TOWFISH AND A-FRAME

6.8 USBL Acoustic Towfish Tracking

A Nautronix ATS II Ultra Short Baseline (USBL) tracking system was utilised to achieve subsea positioning for both the side scan sonar and X-Star sub-bottom profiler towfish (see Figure 6-3). A Nautronix high power directional mini beacon was attached to each towfish cable. These mini beacons were attached within 1m and 5m of the X-Star and side scan sonar towfish respectively. Mini beacon interrogation rate was one ping every 5 seconds. With maximum ranges in the vicinity of only 450m, interrogation was generally always possible.

Observed (X, Y, Z) values corrected for vessel pitch and roll at each mini beacon interrogation were generated in the Nautronix top deck unit and passed to the Starfix navigation and logging system through the Starfix.Iowin Software. The (X, Y, Z) values were time stamped and were logged directly through Starfix Logging onto the network server. The on line Starfix.Seis navigation system also used the (X, Y, Z) values in the Starfix.USBL software to generate real world/real time position display of the mini beacons and, by deduction, the tow fish positions.

The length of towfish cable deployed was also monitored utilising a digital cable counter with the amount of cable deployed being continuously displayed in the survey room. The 'cable out' values were logged and entered into the Starfix.Seis navigation system as a 'towed variable offset' providing another positioning 'option' for the towfish.

The towfish position as derived by the USBL system was frequently compared to the online display of the towfish layback position as derived from the tow cable cable-out counter. This provided a gross check for the correct operation of the USBL system.

6.9 Sediment Sampling

Shallow soils information was acquired to aid the interpretation of the side scan sonar and sub-bottom profiler (X-Star) data sets. A total of two (2) planned locations were sampled one of which was in the vicinity of the proposed drill location.

The project was equipped with a 3m long gravity corer and a Van Veen type grab sampler. The grab sampler was intended as back up to the gravity corer. Due to the prevailing, generally coarse, non-cohesive sediments encountered across the survey area, the gravity corer recovered no significant samples and the grab sampler was therefore utilised at each of the planned locations.

The gravity corer was prepared with a clean liner and a fresh catcher and cutter shoe, and securely fastened to the marked winch wire prior to each deployment.

Using the main coring winch through a block on the vessel A-frame, the corer was lifted and lowered into the water. This operation did not require any significant man-handling of the corer and only one marine or survey crew winch operator was required on deck, thus making the operation as safe as possible.

The coring reference point of the vessel was then positioned over the proposed sample location using the vessels' engines. Once on location the corer was lowered to a height of approximately 5m above the seabed at which point the corer was allowed to free fall to the seabed. At point of contact with the seabed where the deployment cable slackened a location fix was taken.

Following the impact with the seabed the corer was immediately recovered and brought onboard. Only one marine or survey crewmember was then required to fasten a second line equipped with a karabiner from a tugger winch (X-Star winch) to the core barrel weight for extra stability while the corer was recovered to the deck.

The grab sampler was deployed in a similar fashion to that described for the gravity corer above. The grab sampler bucket was ‘armed’ by means of a catch mechanism that released when the bucket impacted with the seabed The A-frame was positioned over the water aft of the vessel in such a way that upon lifting the ‘armed’ grab bucket it swung out over the water ready for lowering to the seabed. Minimal man-handling was required once the sampler was ‘armed’ and placed into position at the vessel stern. A position fix was taken upon impact with the seabed when the deployment cable slackened and the grab sampler was immediately recovered and brought onboard. Care was taken not to lose any sample material during the recovery process.

6.10 Data QC

During the course of the survey a number of tools were employed offshore to QC the data sets being acquired and to ensure that the best quality data obtainable was recorded. Data from the various sensors was constantly monitored using the following techniques:

- Navigation

  On-screen track plots of both the vessels common reference point (CRP) and side scan sonar (SSS) positions were produced to ensure full coverage of the survey area and to define areas for possible infill work.

- Bathymetry

  The bathymetric data was processed and corrected for predicted tides (based on preliminary tidal data for Lakes Entrance) with particular attention being focused on the runline crossing points to ensure depths tied in correctly.

- Side Scan Sonar

  Side scan sonar hard copy data was visually scrutinised by the onboard geophysicist for data quality and to ensure that 100% coverage of the survey area had been achieved.

- Sub-bottom Profiler

  Hard copy data from the sub-bottom profiler system was visually inspected by the onboard geophysicist to ensure that quality data was collected. The online technical engineer ensured that seabed tracking and gain settings were optimised during the course of the survey.

7.0 DATA REDUCTION

7.1 Navigation

Data logged in Starfix.Seis was transferred to the onshore processing centre for further processing to be completed.

Each runline was checked for navigation spikes using Starfix.Proc, which has a graphical page to replay the recorded vessel track along the runline. No horizontal position editing was required for the surface navigation which was stable throughout the survey.

More extensive editing was required in processing the USBL positions for the towed sensors due to the greater instability inherent in acoustic positioning. For the X-Star and side scan tracked positions, 10 point and 20 point filters respectively, were used to obtain a smoothed sensor track

7.2 Sound Velocity Profiles

Speed of sound was determined by SVP's taken at two locations. The first, 10 Km south of the survey site, was taken prior to start of work, and the second, in the Scallop-1 site upon project completion. The results were edited to remove spikes and velocity curves produced.

7.3 Single Beam Echo Sounder

The high frequency (200kHz) bathymetry data from the Odom Echotrac was edited in Starfix.Proc to remove any spikes and gross anomalies with a light smoothing applied to the seabed. The final depths and profiles were then reduced to Mean Sea Level (MSL) by the application of predicted tides provided by ESSO for the Scallop-1 site survey location (Appendix B).

7.4 Side Scan Sonar Data

The side scan sonar records show areas of seabed characterised by different sonar reflectivity, indicating variations in the composition and relief of sediments, outcrops or other features on the seabed. Typically, hard rocky seabed produces dark records, soft fine-grained sediments produce light featureless records and sandy seabed produces intermediate tones. Objects such as outcrops, pipelines, etc., standing proud of the seabed, will show dark printing to represent the near reflecting sides, with very light printing behind representing the acoustic "shadow" behind the object. Textured seabed due to rock or coral outcrops or coarse sandy or gravelly sediments will produce variably textured records ranging from strong mottled very dark and light printing to lightly "salt and pepper" textured printing according to the extent of seabed relief.

The soil samples collected were used in correlation the side scan sonar data interpretation.

7.5 Sub-Bottom Profiler Data

The towed X-star sub-bottom profiles represent time sections on which the vertical axis shows the two-way travel time in milliseconds from the source to the various reflecting surfaces and back to the receiving hydrophone array.

To calculate the depth below the seabed to a relatively strong and continuous reflector representing the “acoustic basement” surface and to reflecting horizons within the overlying unconsolidated sediment sequence, an assumed average velocity of sound of 1650m/s was used.

Interpreted sediment thicknesses were scaled directly off the sub-bottom profiler records, annotated on the sub-bottom profiler track plots and contoured to produce the sediment thickness isopach charts and geological profiles.

8.0 SURVEY RESULTS

8.1 Bathymetry (Drawing No. 16526_02)

All bathymetric soundings have been reduced to Mean Sea Level based on predicted tidal information for the Scallop-1 drill location as supplied by ESSO.

The seabed across the Scallop-1 site is observed to shelve gently towards the southeast. Average seabed gradients vary slightly from around 1:130 (<1º) in the west to a minimum gradient of around 1:400 (<1º) towards the southeast.

The water depth across the site varies from an observed minimum of 100.4m in the extreme west to a maximum of 117.4m in the extreme south. The observed water depths in the extreme north and east of the site are 101.3m and 114.3m respectively.

The seabed in the vicinity of the proposed drill location shelves gently towards the southeast at gradient of 1:135 (<1º). The water depth at the proposed Scallop-1 drill location is 109.4m.

An example of an echo sounder record through the proposed drill location (line Sca_1_xl_38) is presented as Figure 8-1.

8.2 Seabed Features (Drawing No. 16526_03)

The seabed across the Scallop-1 site is generally of moderate reflectivity on side scan sonar records indicative of homogenous fine to medium sediments. This correlates with two grab samples taken from within the surveyed area, which consisted of fine to medium, loose, slightly gravelly, shelly (carbonate) SAND (see Table 8-1).

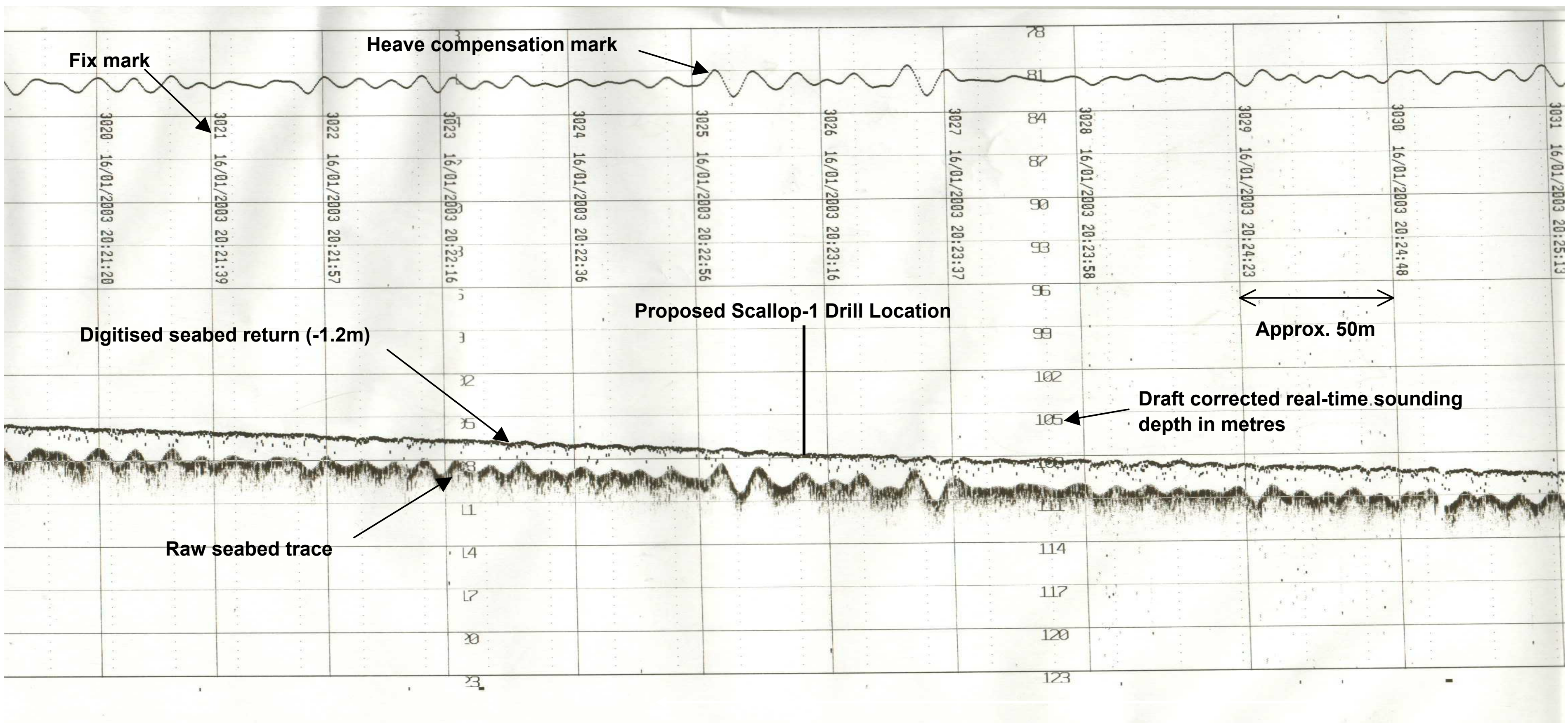
Sample No.	Sample Name	Sample Type	Easting	Northing	Sample Description
1.	Sca_1_DC01	Gravity Core	639327m	5769283m	No Recovery
2.	Sca_1_DC02	Gravity Core	639311m	5769297m	No Recovery. Trace of medium SAND.
3.	Sca_1_GS01	Grab Sample	639196m	5769282m	Fine to medium, loose, slightly gravelly (<30mm diameter), shelly, carbonate SAND.
4.	Sca_1_GS02	Grab Sample	639388m	5771202m	Fine to medium, loose, slightly gravelly (<20mm diameter), shelly, carbonate SAND.

TABLE 8-1 : SEDIMENT SAMPLE DESCRIPTIONS (GDA 94)

The majority of the surveyed area is essentially featureless with few minor patches of higher reflectivity seabed identified across the site on the side scan sonar records. These patches are interpreted to comprise concentrations of coarser sediments such as surficial gravels and/or coarse shelly material, generally elongate in shape and

SURVEY RECORD EXAMPLE

Image	Route / Site	Line/Line Direction	Client	Job No.	Survey
Echo Sounder Data Record	Scallop-1	Sca_1_xl_38 / Hdg 135º	ESSO Australia Pty Ltd	HY 16526	Proposed Scallop-1 Drill Site



GENERAL INFORMATION

Survey tool:	Odom Echotrac Echo Sounder	**Scale:**	Not to scale
Vessel:	MV Mermaid Raider	**Range:**	45m
Survey date:	January 16, 2003	**Frequency :**	24kHz / 200kHz
Recording Medium:	-		

Echo Sounder Data Example Along Centreline SCA_1_XL_38 in Vicinity of Proposed Scallop-1 Drill Location

FUGRO

FIGURE 8-1

typically less than 20m long. The closest proximity to the proposed drill location of these patches is 255m, bearing 158º.

One object is identified within the southern extremity of the surveyed area, 1670m at a bearing of 175º from the proposed drill location. From the irregular reflection characteristics this object is interpreted as a probable sediment mound with dimensions 7m x 3m x 0.7m high. A few, shallow trawl scars, orientated east northeast/west southwest, are observed to cross the southern part of the site.

The seabed at, and in the vicinity of, the proposed Scallop-1 drill location is generally featureless. No significant objects or items of debris are identified in the immediate vicinity of the proposed drill location.

The side scan sonar data example presented as Figure 8-2 shows the featureless seabed present along line Sca_1_xl_38 in the vicinity of the proposed drill location, and a minor patch of interpreted coarser sediments to the south. Figure 8-3 shows a side scan sonar data example along the southeastern part of line Sca_1_xl_34. This example shows the probable sediment mound and trawl scars identified in this part of the site.

8.3 Shallow Geology (Drawing Nos. 16526_04 and 16526_05)

Acoustic penetration was attained to a depth of approximately 15m below seabed by the X-Star sub-bottom profiler system across the majority of the surveyed area.

Based on the sub-bottom profiler data, the sub-seabed geology across the site may be divided into three (3) general sedimentary units as described below. An assumed acoustic velocity of $1650ms^{-1}$ has been used for the depth conversion of top unit sediments.

Unit A

This acoustically opaque, surficial sedimentary unit is observed to extend across the entire site varying in thickness from a maximum of around 7m in the southeast thinning to around 2m in the extreme north. This unit is typically 4m to 6m thick across the majority of the surveyed area.

Sediments within Unit A are interpreted to comprise unconsolidated, slightly gravelly, carbonate (silty) SAND.

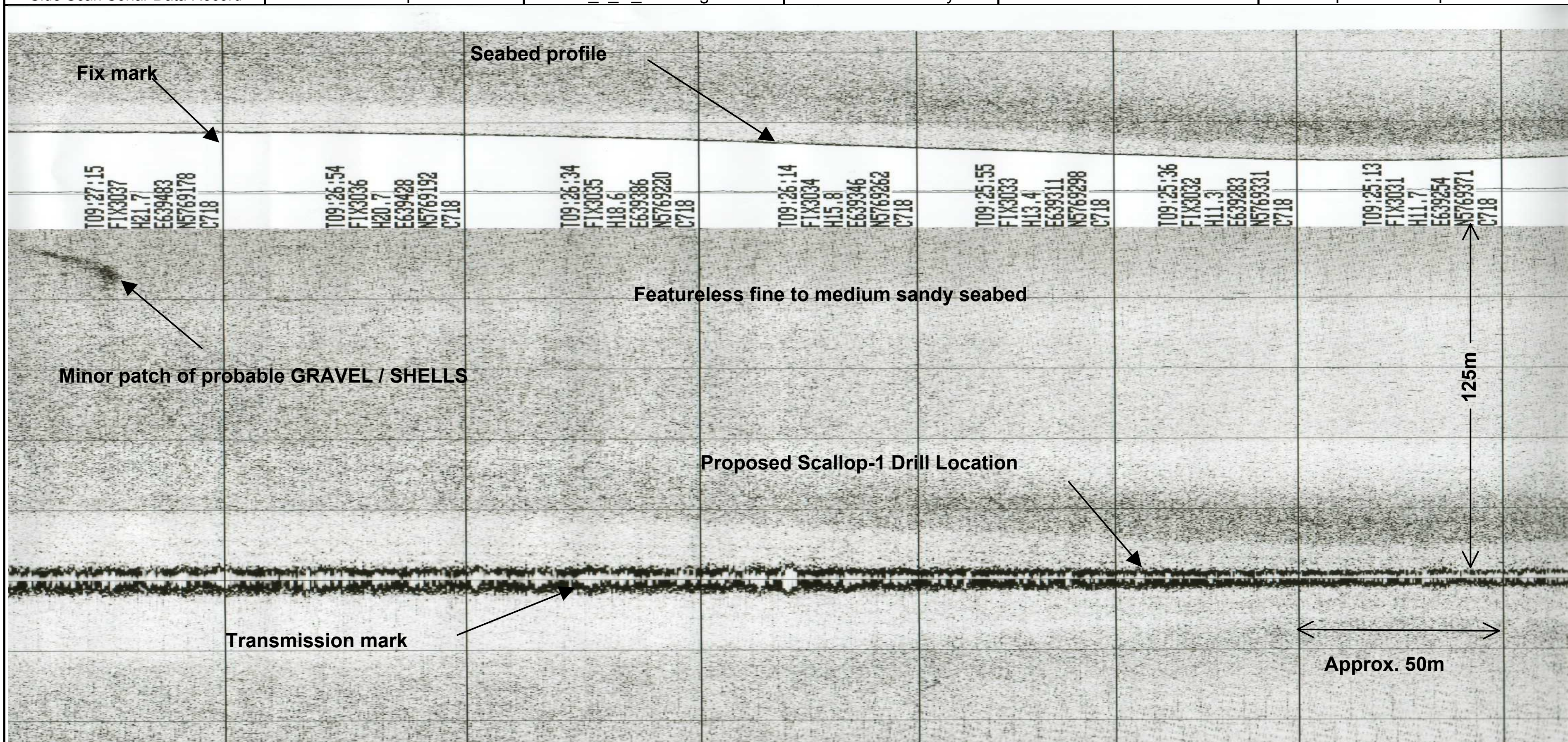
The base of this unit is marked by an acoustically variable series of reflectors (see Unit B below). The uppermost of these reflectors (Reflector R_1) is identified at 5m below seabed (BSB) at the proposed Scallop-1 drill location. Reflector R_1 exhibits strong acoustic reflectivity, indicative of well-indurated sediments, in this area.

Unit B

Unit B extends across the entire site as a generally 3m thick unit exhibiting a series of acoustically variable (weak to strong), sub-parallel, irregular reflectors. The acoustic reflection characteristics observed within this unit are indicative of unconsolidated sediments interspersed with coarse and/or variably indurated (cemented) sediments. Three, generally continuous, prominent reflectors (Reflectors R_1 to R_3) dominate this unit and are interpreted to represent different periods of surficial sediment induration through sub-aerial exposure during past lower sea-level stands. These sediments are also expected to have undergone some reworking during successive sea-level rises.

SURVEY RECORD EXAMPLE

Image	Route / Site	Line/Line Direction	Client	Job No.	Survey
Side Scan Sonar Data Record	Scallop-1	Sca_1_xl_38 / Hdg 135º	ESSO Australia Pty Ltd	HY 16526	Proposed Scallop-1 Drill Site



GENERAL INFORMATION

Survey tool:	GeoAcoustics Side Scan Sonar	**Scale:**	Not to scale
Vessel:	MV Mermaid Raider	**Range:**	125m
Survey date:	January 16, 2003	**Frequency :**	100kHz
Recording Medium:	Glog / Gplot		

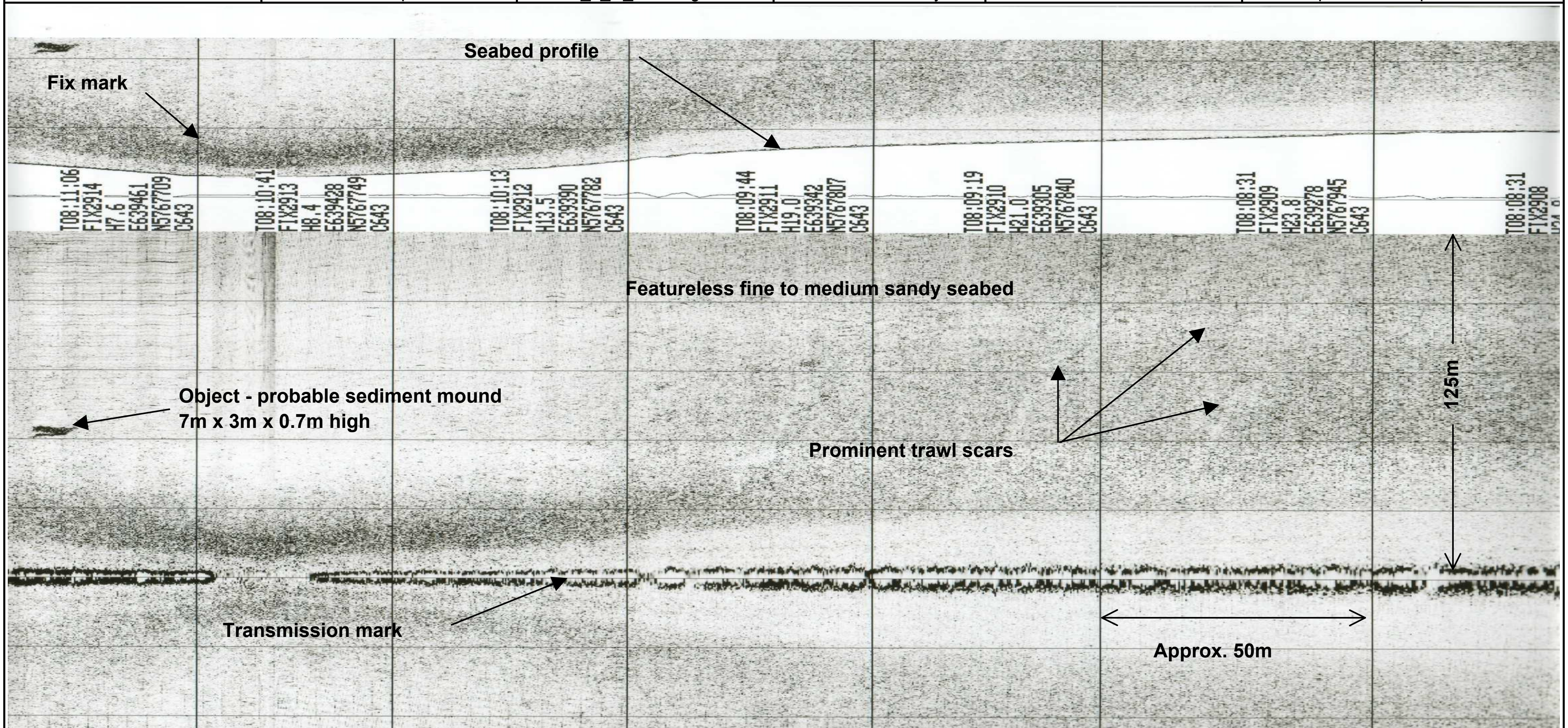
Side Scan Sonar Data Example Along Centreline SCA_1_XL_38 in Vicinity of Proposed Scallop-1 Drill Location

FUGRO

FIGURE 8-2

SURVEY RECORD EXAMPLE

Image	Route / Site	Line/Line Direction	Client	Job No.	Survey
Side Scan Sonar Data Record	Scallop-1	Sca_1_xl_34 / Hdg 135º	ESSO Australia Pty Ltd	HY 16526	Proposed Scallop-1 Drill Site



GENERAL INFORMATION

Survey tool:	GeoAcoustics Side Scan Sonar	**Scale:**	Not to scale	**Side Scan Sonar Data Example Along Line SCA_1_XL_34 in Southern Part of Scallop-1 Survey Area**
Vessel:	MV Mermaid Raider	**Range:**	125m	
Survey date:	January 16, 2003	**Frequency :**	100kHz	
Recording Medium:	Glog / Gplot			**FIGURE 8-3**

Sediments within this unit are interpreted to comprise variably indurated (predominantly carbonate) SILTS and SANDS with probable GRAVEL (Calcarenite).

The interpreted base of this unit (Reflector R_3) is observed at 7.5m to 8m BSB at the proposed drill location. The series of reflectors that make up this unit are acoustically moderate to strong at this location.

Unit C

Unit C underlies Unit B above and extends across the entire site as a generally acoustically opaque, variably thick unit. The base of this unit is not always evident across the site, particularly in areas where the reflectors of Unit B described above are acoustically strong. Where observed, however, a generally acoustically weak continuous reflector (Reflector R_4) marks the base of Unit C. The base of Unit C is identified at approximately 12m to 13m BSB in the vicinity of the proposed drill location.

Sediments within this unit are tentatively interpreted to comprise probable dense, unconsolidated (carbonate) SILTS and SANDS.

The X-Star sub-bottom profiler data example presented as Figure 8-4 shows the sub-seabed acoustic reflection characteristics along line Sca_1_ml_16 in the vicinity of the proposed drill location.

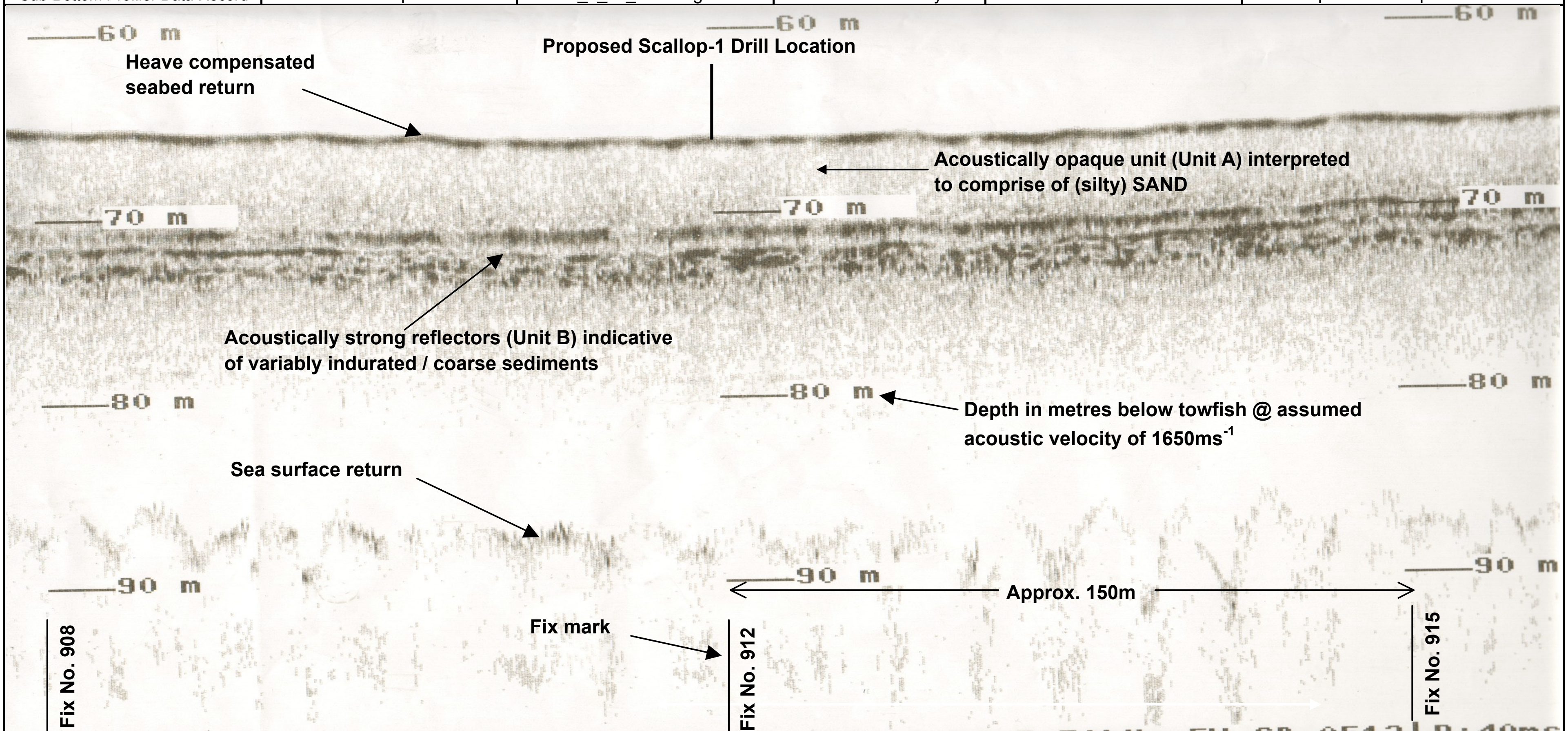
8.4 Sediment Sampling

A total of two seabed grab samples were taken within the surveyed area, including one at the proposed drill location. Gravity core sample attempts at the proposed drill location resulted in no recovery due to the presence of non-cohesive, predominantly medium, sands at the seabed. Poor gravity core recovery levels are typically associated with this type of sediment.

Field descriptions of the seabed sediment samples are presented in Table 8-1.

SURVEY RECORD EXAMPLE

Image	Route / Site	Line/Line Direction	Client	Job No.	Survey
Sub-Bottom Profiler Data Record	Scallop-1	Sca_1_ml_16 / Hdg 045°	ESSO Australia Pty Ltd	HY 16526	Proposed Scallop-1 Drill Site



GENERAL INFORMATION

Survey tool:	X-Star (Geo Chirp) SBP	**Scale:**	Not to scale
Vessel:	MV Mermaid Raider	**Range:**	70m
Survey date:	January 16, 2003	**Frequency :**	1.5kHz to 7.5kHz
Recording Medium:	-		

Sub-Bottom Profiler Data Example Along Centreline SCA_1_ML_16 in Vicinity of Proposed Scallop-1 Drill Location

FUGRO

FIGURE 8-4

9.0 CONCLUSIONS

The seabed across the Scallop-1 surveyed area is observed to shelve gently towards the southeast. The water depth at the proposed location is 109.4m (MSL). No anomalous seabed gradients or ridges have been identified on bathymetric records. The seabed profile across the entire site should pose no constraint to rig access, manoeuvrability or anchor handling.

The seabed across the site is generally featureless. Seabed sediments comprise fine to medium, loose, slightly gravelly, shelly (carbonate) SAND. Elongate patches of higher reflectivity observed on the side scan sonar records, which are typically <20m in length and interpreted as concentrations of surficial gravels and / or coarse shelly material, are expected to be thin and not differ significantly with the anchor holding properties of the surrounding seabed sediments.

One object is identified within the southern extremity of the surveyed area. From the irregular reflection characteristics this object is interpreted as a probable sediment mound with dimensions 7m x 3m x 0.7m high. As the reflection strength of this object is relatively high, anchor or other seabed activities should avoid this feature. Observed trawl scars are generally shallow (<0.25m) and are not expected to be of constraint to anchor handling operations.

No other significant natural or anthropogenic objects, or items of debris, that may be of constraint to anchor handling or drilling operations have been identified on the seabed within the surveyed area or at the proposed drill location.

Based on the sub-bottom profiler data, the sub-seabed geology across the site may be divided into three (3) general sedimentary units as described below:

Unit A	2m to 7m thick unit interpreted to comprise predominantly unconsolidated, slightly gravelly, carbonate (silty) SAND. Unit thins towards the north. Base of unit identified at 5m BSB at the proposed drill location.
Unit B	Generally 3m thick unit interpreted to comprise variably indurated (predominantly carbonate) SILTS and SANDS with probable GRAVEL (Calcarenite). Base of unit identified at 7.5m to 8m BSB at the proposed drill location.
Unit C	Variably thick unit tentatively interpreted to comprise of probable dense, unconsolidated (carbonate) SILTS and SANDS. Base of unit identified at approximately 12m to 13m BSB in the vicinity of the proposed drill location.

Based on grab samples recovered from within the survey area, sediments within the upper surficial Unit A are expected to be non-cohesive and generally homogenous across the site. These sediments are not expected to pose any constraint on anchor handling operations. Although this unit thins to approximately 2m in the north, it is generally thicker than 4m across the majority of the site.

Due to the likelihood of indurated (cemented) material being present within the thin sedimentary sequence that makes up Unit B, some impact on drilling progress is anticipated while drilling at this level. Acoustic reflection characteristics observed on the sub-bottom profiler records within this unit at the proposed drill location suggest that sediments are likely to be moderate to well-indurated compared to other areas of similar sub-seabed depth identified across the site.

It must be noted that without borehole or drilling data from the vicinity of the Scallop-1 drill location the classification of the shallow soils is based entirely on the interpretation of the acoustic character of the survey records.

No other sub-seabed obstructions, natural or anthropogenic, shallow gas or geological anomalies have been identified on the sub-bottom profiler records across the site that may be of constraint to either anchor handling or drilling operations.

10.0 PROJECT HEALTH, SAFETY AND ENVIRONMENT MANAGEMENT

10.1 Project Preparations

On award of the contract, Fugro commenced the planning process for the project. The plans that were developed covered many aspects of the project including Health, Safety, Environment, Quality, Operational and Emergency Response issues and initiatives. The plans reviewed the key objectives for the project and set out how Fugro intended to undertake the operations to comply with the objectives (see Appendix M). The plans and key components are discussed in more detail below:

Health, Safety and Environment Plan

The purpose of the Health and Safety Plan was:

- To provide the client with a clear statement of the methods by which Fugro will provide its services in a safe manner.
- To define the safety and environmental responsibilities, reporting systems and operational procedures to be followed by Fugro staff and sub-contractors.

One of the key aspects of this plan was to identify the macro health and safety objectives for the project. The macro objectives were:

- Zero fatalities.
- Zero lost time injuries.
- Zero alternate duty injuries.
- Zero medical treatment injuries.
- Minimise health problems.
- Zero environmental incidents.

The Plan brought together many of Fugro's safety work practices in the form of a "Job Hazard Analysis Plan" and Toolbox Meetings (refer to Appendix M1) in which safety aspects of the working environment were discussed and analysed. This involved a step-by-step review of the project to identify the key hazards anticipated for different tasks and proposed procedures to mitigate or eliminate the risk.

Fugro personnel were all made familiar with the health, safety, environmental, technical and operational documentation on board the MV Mermaid Raider.

A cetacean watch was maintained during the survey. There were no cetacean sightings reported during the project.

Quality Plan

The conduct and management of the survey was carried out as per the requirements of Fugro's Quality Plan. For this project the Quality Plan was integrated into the Project Procedures. The Quality Plan was produced to provide the structure for meeting the specifications, requirements and commitments of the project with the intent of conducting a high quality service. The quality system introduced in the Plan identifies key responsibilities, lists the procedures and work practices to be followed and links all the documents and forms used during the project into a common system.

Fugro's Quality System has recently been streamlined and made more accessible by issuing the regularly referred to work practices and flowcharts as an Internet Explorer based system available at all workstations in the office and on CD whilst offshore.

Mobilisation/Demobilisation HS&E Issues

The mobilisation and demobilisation phases of a project are potentially the most hazardous as a result of the numerous welding and engineering tasks all occurring within a confined space and short time frame. Several initiatives implemented during this project to lessen the risk of any HS&E incidents. These are summarised below:

- Heavy lifts, welding, cutting and grinding tasks were completed prior to the survey team joining the vessel.
- All survey personnel undertook a vessel induction that demonstrated the vessels safety systems and location of safety apparatus.
- A safety meeting and HSE induction was held prior to mobilisation where Fugro's safety plan and project documentation was discussed.
- A pre-mobilisation JHA's was conducted prior to commencing work.

Prior to the survey team commencing any mobilisation or demobilisation of survey equipment, a job hazard analysis was carried out, covering all of the mobilisation activities and risks involved. The MV Mermaid Raider's permit to work and hot work permits system was used for all welding, cutting and grinding activities.

The Vessel Master, Client Representatives and Fugro Party Chief, conducted a vessel safety inspection and safety audit on the survey systems at the conclusion of the mobilisation phase, undertaken as part of the previous contract, and again on completion of the demobilisation phase. The inspection consisted of a visual check of all work sites and equipment installed or demobilised, identifying any items that needed to be rectified. The vessel Master confirmed that the survey installations and subsequent removal of installations did not compromise vessel integrity (see Appendix E).

10.2 Conduct of Survey

Safety was regarded by all onboard as paramount for the success of the project, consequently safety awareness and participation was well received. This was borne out by the good safety performance achieved with no reportable incidents occurring during the project.

Job Hazard Analysis

A Job Hazard Analysis (JHA) was conducted prior to any key task being performed, such as deployment of the geophysical and seabed sampling equipment or the use of the ship's crane for deployment of the over-the-side mounted USBL pole. The JHA is a method of evaluating, step by step, the risks involved with the process and then looking at ways in which that potential risk can be eliminated or, as a minimum, protected against.

A summary of the Job Hazard Analysis sheet is included in the Project Hazard Register in Appendix M1.

Toolbox Meetings

Toolbox meetings were held at regular intervals throughout the project. At each shift change an informal meeting was held by relevant parties to ensure the safe continuation of the tasks in hand. Toolbox meetings were also held in conjunction with JHA's, prior to the deployment and recovery of equipment (see Appendix M1).

Safety Meetings and Drills

A project HS&E meeting was conducted during the period of vessel preparation on the 13th January, 2003. During this meeting the vessel crew were given a project induction and introduced to Fugro's project and HS&E plans, emphasising operational issues, PPE requirements and hazard reporting. The meeting concluded with the development of project specific HS&E goals and objectives.

During transit to the Scallop-1 site survey area on 14th January, 2003, a safety drill was undertaken involving all personnel onboard. This initial drill was used to ensure that everyone was familiar with their muster station, lifeboat location and understood the general procedures in the event of an emergency. During the fire drill, survey personnel assisted the fire team as directed in the containment of a simulated fire

At the conclusion of the survey operations on the 17 January, 2003, a close out meeting was held to discuss HS&E performance and to close out any outstanding HS&E issues.

Minutes of the safety meetings appear in Appendix M2 and Vessel Emergency Checklists appear in Appendix M3.

Reported Hazards and Incidents

Operations during the project totaled 976 man-hours without a single reportable Health, Safety or Environmental incident. During the project, potential hazards identified onboard were appended to the vessel's hazard register and for the crew's information displayed on the ship's notice board. Only one hazard, concerning hydraulic hoses left on the deck posing a potential trip hazard, was reported during the project.

Table 10-1 below lists the key HS&E statistics for the project:

Item	Number
Safety Drills	1
HS&E Meetings	3
Total Man Hours Worked	976
Reportable Injuries/Incidents	0
First Aid Cases	0
Reported Hazards	1

TABLE 10-1 : SUMMARY OF SAFETY STATISTICS

APPENDIX A

SERVICE WARRANTY

1. This report and the geophysical interpretation and assessment carried out in connection with the report (together with the "Services") were compiled and carried out by Fugro Survey Pty Ltd (FSPL) for ESSO Australia Pty Ltd (the "Client") in accordance with the terms of a contract between FSPL and the Client. The Services were performed by FSPL with the skill and care ordinarily exercised by a reasonable geophysical survey contractor, at the time the Services were performed. Further, and in particular, the Services were performed by FSPL taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial, equipment and manpower resources, agreed between FSPL and the Client.

2. Other than that expressly contained in paragraph 1 above, FSPL provides no other representation or warranty whether expressed or implied, in relation to the Services and all warranties and conditions implied by law are hereby expressly excluded.

3. The Services were performed by FSPL exclusively for the purposes of the Client. FSPL is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless stated in the contract or report for the Services or expressly provided in writing, FSPL does not authorise, consent or condone any party other than the Client relying upon the services. Should this report or any part of this report, or otherwise details of the Services or any part of the services be made known to any such party and such party relies thereon that party does so wholly at its own and sole risk and FSPL disclaims any liability to such parties. Any such party would be well advised to seek (*independent*) advice from a competent (*geophysical survey contractor/consultant*) and/or lawyer.

4. It is FSPL's understanding that this report is to be used for the purpose described in Section 1 - "Introduction" of the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the Client's proposed development or activity change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the Client without FSPL's review and advice shall be at the Client's sole and own risk. Should FSPL be requested to review the report after the date hereof, FSPL shall be entitled to additional payment at the then existing rates or such other terms as agreed between FSPL and the Client.

5. The passage of time may result in man-made and/or natural changes in site conditions and changes in regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should be not relied upon if any such changes have taken place and in any event after a period not greater than two years (or typically six months in the case of seabed features information) from the date of this report or as stated in the report without the written advice of FSPL. In the absence of such written advice from FSPL, reliance on the report after the specified time period shall be at the Client's own and sole risk. Should FSPL be asked to review the report after the specified time period, FSPL shall be entitled to additional payment at the then existing rate or such other terms as may be agreed upon between FSPL and the Client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and FSPL. FSPL has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the Client and FSPL. FSPL is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services.

7. Where the Services have involved the use of any information provided by third parties or the Client and upon which FSPL was reasonably entitled to rely then the Services clearly are limited by the accuracy of such information. Unless otherwise stated, FSPL was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the services. FSPL is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to FSPL and including the doing of any independent investigation of the information provided to FSPL save as otherwise provided in the terms of the contract between the Client and FSPL

8. Neither FSPL nor any director, officer, agent, or employee of FSPL shall have any liability (whether direct or indirect, in contract or in tort or breach of statutory duty or otherwise) to the Client (nor to any body corporate related to the Client within the meaning of section 50 of the Corporations Law, nor to any director, officer, agent, or employee of the Client or of any such body) for or in connection with the engagement of FSPL for the provision of the Services, except to the extent to which it is not permissible by law to exclude, restrict or modify liability and except for any such liability for losses, claims, damages, liabilities or expenses incurred by the Client (or any of them) that are determined by a final judgement of a court of competent jurisdiction to have resulted primarily from actions taken or omitted to be taken by such person illegally or in bad faith from such person's gross negligence.

The above provisions will survive any termination of FSPL's engagement to provide the Services.

APPENDIX B

TIDAL DATA

Tide predictions for Scallop-1

Datum is Mean Sea Level (MSL)

Heights in metres

Times is EST (UTC+10)

Time	Height	Time	Height	Time	Height
200301150000	-0.203	200301150510	0.498	200301151020	-0.168
200301150010	-0.197	200301150520	0.511	200301151030	-0.202
200301150020	-0.189	200301150530	0.523	200301151040	-0.235
200301150030	-0.179	200301150540	0.532	200301151050	-0.266
200301150040	-0.167	200301150550	0.538	200301151100	-0.296
200301150050	-0.154	200301150600	0.542	200301151110	-0.324
200301150100	-0.138	200301150610	0.544	200301151120	-0.349
200301150110	-0.121	200301150620	0.543	200301151130	-0.373
200301150120	-0.102	200301150630	0.538	200301151140	-0.394
200301150130	-0.082	200301150640	0.531	200301151150	-0.413
200301150140	-0.059	200301150650	0.520	200301151200	-0.430
200301150150	-0.035	200301150700	0.507	200301151210	-0.445
200301150200	-0.010	200301150710	0.490	200301151220	-0.457
200301150210	0.017	200301150720	0.470	200301151230	-0.466
200301150220	0.045	200301150730	0.447	200301151240	-0.474
200301150230	0.075	200301150740	0.421	200301151250	-0.479
200301150240	0.105	200301150750	0.393	200301151300	-0.482
200301150250	0.136	200301150800	0.362	200301151310	-0.483
200301150300	0.167	200301150810	0.329	200301151320	-0.482
200301150310	0.198	200301150820	0.294	200301151330	-0.479
200301150320	0.229	200301150830	0.257	200301151340	-0.474
200301150330	0.260	200301150840	0.219	200301151350	-0.467
200301150340	0.290	200301150850	0.180	200301151400	-0.458
200301150350	0.319	200301150900	0.140	200301151410	-0.447
200301150400	0.348	200301150910	0.101	200301151420	-0.434
200301150410	0.374	200301150920	0.061	200301151430	-0.419
200301150420	0.399	200301150930	0.021	200301151440	-0.403
200301150430	0.423	200301150940	-0.018	200301151450	-0.385
200301150440	0.445	200301150950	-0.057	200301151500	-0.365
200301150450	0.464	200301151000	-0.095	200301151510	-0.344
200301150500	0.482	200301151010	-0.132	200301151520	-0.321

Time	Height	Time	Height	Time	Height
200301151530	-0.297	200301152130	-0.047	200301160330	0.157
200301151540	-0.273	200301152140	-0.066	200301160340	0.192
200301151550	-0.248	200301152150	-0.085	200301160350	0.227
200301151600	-0.223	200301152200	-0.103	200301160400	0.262
200301151610	-0.197	200301152210	-0.121	200301160410	0.297
200301151620	-0.172	200301152220	-0.138	200301160420	0.331
200301151630	-0.147	200301152230	-0.154	200301160430	0.364
200301151640	-0.123	200301152240	-0.170	200301160440	0.396
200301151650	-0.099	200301152250	-0.183	200301160450	0.427
200301151700	-0.076	200301152300	-0.196	200301160500	0.456
200301151710	-0.055	200301152310	-0.207	200301160510	0.483
200301151720	-0.034	200301152320	-0.217	200301160520	0.508
200301151730	-0.015	200301152330	-0.225	200301160530	0.531
200301151740	0.004	200301152340	-0.232	200301160540	0.551
200301151750	0.021	200301152350	-0.236	200301160550	0.569
200301151800	0.037	200301160000	-0.239	200301160600	0.585
200301151810	0.051	200301160010	-0.240	200301160610	0.597
200301151820	0.064	200301160020	-0.238	200301160620	0.607
200301151830	0.075	200301160030	-0.235	200301160630	0.614
200301151840	0.085	200301160040	-0.229	200301160640	0.618
200301151850	0.093	200301160050	-0.222	200301160650	0.619
200301151900	0.099	200301160100	-0.212	200301160700	0.617
200301151910	0.103	200301160110	-0.200	200301160710	0.611
200301151920	0.105	200301160120	-0.186	200301160720	0.601
200301151930	0.105	200301160130	-0.170	200301160730	0.588
200301151940	0.102	200301160140	-0.152	200301160740	0.571
200301151950	0.097	200301160150	-0.132	200301160750	0.551
200301152000	0.090	200301160200	-0.110	200301160800	0.527
200301152010	0.081	200301160210	-0.086	200301160810	0.500
200301152020	0.070	200301160220	-0.061	200301160820	0.469
200301152030	0.057	200301160230	-0.033	200301160830	0.435
200301152040	0.042	200301160240	-0.005	200301160840	0.399
200301152050	0.026	200301160250	0.026	200301160850	0.360
200301152100	0.009	200301160300	0.057	200301160900	0.318
200301152110	-0.010	200301160310	0.090	200301160910	0.275
200301152120	-0.028	200301160320	0.123	200301160920	0.230

Time	Height	Time	Height	Time	Height
200301160930	0.185	200301161530	-0.466	200301162130	0.042
200301160940	0.138	200301161540	-0.442	200301162140	0.023
200301160950	0.091	200301161550	-0.416	200301162150	0.002
200301161000	0.045	200301161600	-0.388	200301162200	-0.019
200301161010	-0.002	200301161610	-0.359	200301162210	-0.041
200301161020	-0.048	200301161620	-0.329	200301162220	-0.063
200301161030	-0.093	200301161630	-0.299	200301162230	-0.085
200301161040	-0.138	200301161640	-0.268	200301162240	-0.106
200301161050	-0.181	200301161650	-0.236	200301162250	-0.127
200301161100	-0.223	200301161700	-0.205	200301162300	-0.147
200301161110	-0.263	200301161710	-0.175	200301162310	-0.166
200301161120	-0.301	200301161720	-0.145	200301162320	-0.184
200301161130	-0.338	200301161730	-0.116	200301162330	-0.201
200301161140	-0.373	200301161740	-0.088	200301162340	-0.216
200301161150	-0.405	200301161750	-0.061	200301162350	-0.230
200301161200	-0.435	200301161800	-0.036	200301170000	-0.241
200301161210	-0.463	200301161810	-0.012	200301170010	-0.252
200301161220	-0.488	200301161820	0.010	200301170020	-0.260
200301161230	-0.511	200301161830	0.030	200301170030	-0.266
200301161240	-0.531	200301161840	0.049	200301170040	-0.270
200301161250	-0.548	200301161850	0.066	200301170050	-0.271
200301161300	-0.563	200301161900	0.081	200301170100	-0.271
200301161310	-0.574	200301161910	0.095	200301170110	-0.268
200301161320	-0.583	200301161920	0.106	200301170120	-0.262
200301161330	-0.589	200301161930	0.115	200301170130	-0.254
200301161340	-0.592	200301161940	0.122	200301170140	-0.244
200301161350	-0.593	200301161950	0.127	200301170150	-0.231
200301161400	-0.591	200301162000	0.129	200301170200	-0.216
200301161410	-0.586	200301162010	0.129	200301170210	-0.199
200301161420	-0.579	200301162020	0.127	200301170220	-0.179
200301161430	-0.570	200301162030	0.122	200301170230	-0.158
200301161440	-0.558	200301162040	0.114	200301170240	-0.134
200301161450	-0.544	200301162050	0.104	200301170250	-0.108
200301161500	-0.528	200301162100	0.091	200301170300	-0.081
200301161510	-0.509	200301162110	0.077	200301170310	-0.051
200301161520	-0.489	200301162120	0.060	200301170320	-0.021

Time	Height	Time	Height	Time	Height
200301170330	0.012	200301170930	0.390	200301171530	-0.624
200301170340	0.046	200301170940	0.344	200301171540	-0.605
200301170350	0.081	200301170950	0.296	200301171550	-0.583
200301170400	0.117	200301171000	0.247	200301171600	-0.559
200301170410	0.154	200301171010	0.197	200301171610	-0.532
200301170420	0.192	200301171020	0.145	200301171620	-0.504
200301170430	0.230	200301171030	0.093	200301171630	-0.474
200301170440	0.268	200301171040	0.041	200301171640	-0.442
200301170450	0.306	200301171050	-0.010	200301171650	-0.409
200301170500	0.344	200301171100	-0.062	200301171700	-0.375
200301170510	0.381	200301171110	-0.112	200301171710	-0.340
200301170520	0.418	200301171120	-0.162	200301171720	-0.304
200301170530	0.453	200301171130	-0.210	200301171730	-0.268
200301170540	0.486	200301171140	-0.257	200301171740	-0.232
200301170550	0.517	200301171150	-0.303	200301171750	-0.196
200301170600	0.546	200301171200	-0.346	200301171800	-0.161
200301170610	0.573	200301171210	-0.388	200301171810	-0.127
200301170620	0.597	200301171220	-0.428	200301171820	-0.095
200301170630	0.619	200301171230	-0.465	200301171830	-0.063
200301170640	0.637	200301171240	-0.500	200301171840	-0.033
200301170650	0.652	200301171250	-0.532	200301171850	-0.005
200301170700	0.664	200301171300	-0.562	200301171900	0.022
200301170710	0.673	200301171310	-0.588	200301171910	0.046
200301170720	0.677	200301171320	-0.612	200301171920	0.068
200301170730	0.678	200301171330	-0.632	200301171930	0.089
200301170740	0.676	200301171340	-0.649	200301171940	0.107
200301170750	0.669	200301171350	-0.663	200301171950	0.123
200301170800	0.658	200301171400	-0.673	200301172000	0.136
200301170810	0.644	200301171410	-0.680	200301172010	0.147
200301170820	0.625	200301171420	-0.683	200301172020	0.156
200301170830	0.602	200301171430	-0.684	200301172030	0.161
200301170840	0.575	200301171440	-0.681	200301172040	0.165
200301170850	0.545	200301171450	-0.675	200301172050	0.165
200301170900	0.511	200301171500	-0.667	200301172100	0.163
200301170910	0.473	200301171510	-0.655	200301172110	0.158
200301170920	0.433	200301171520	-0.641	200301172120	0.150

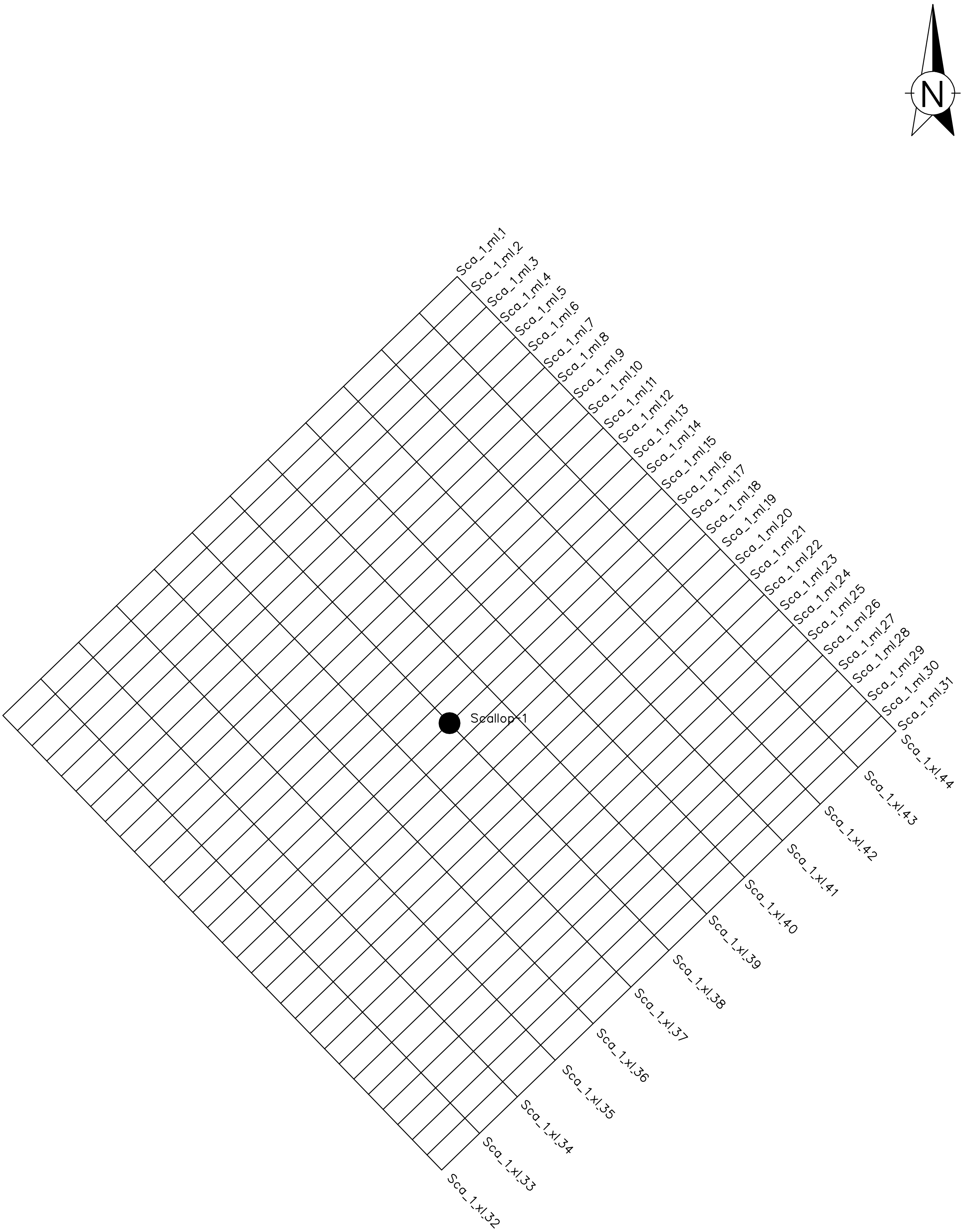
Time	Height	Time	Height	Time	Height
200301172130	0.139	200301180330	-0.143	200301180930	0.581
200301172140	0.126	200301180340	-0.115	200301180940	0.545
200301172150	0.110	200301180350	-0.085	200301180950	0.507
200301172200	0.093	200301180400	-0.054	200301181000	0.465
200301172210	0.073	200301180410	-0.020	200301181010	0.420
200301172220	0.052	200301180420	0.015	200301181020	0.372
200301172230	0.029	200301180430	0.051	200301181030	0.323
200301172240	0.005	200301180440	0.089	200301181040	0.271
200301172250	-0.019	200301180450	0.128	200301181050	0.218
200301172300	-0.043	200301180500	0.167	200301181100	0.164
200301172310	-0.068	200301180510	0.208	200301181110	0.110
200301172320	-0.092	200301180520	0.249	200301181120	0.055
200301172330	-0.116	200301180530	0.290	200301181130	-0.000
200301172340	-0.139	200301180540	0.331	200301181140	-0.055
200301172350	-0.161	200301180550	0.372	200301181150	-0.109
200301180000	-0.182	200301180600	0.412	200301181200	-0.163
200301180010	-0.201	200301180610	0.450	200301181210	-0.215
200301180020	-0.219	200301180620	0.488	200301181220	-0.266
200301180030	-0.236	200301180630	0.523	200301181230	-0.316
200301180040	-0.251	200301180640	0.557	200301181240	-0.364
200301180050	-0.263	200301180650	0.588	200301181250	-0.410
200301180100	-0.274	200301180700	0.616	200301181300	-0.455
200301180110	-0.283	200301180710	0.641	200301181310	-0.497
200301180120	-0.289	200301180720	0.663	200301181320	-0.536
200301180130	-0.293	200301180730	0.681	200301181330	-0.573
200301180140	-0.295	200301180740	0.696	200301181340	-0.606
200301180150	-0.294	200301180750	0.706	200301181350	-0.637
200301180200	-0.290	200301180800	0.713	200301181400	-0.664
200301180210	-0.284	200301180810	0.715	200301181410	-0.687
200301180220	-0.275	200301180820	0.713	200301181420	-0.707
200301180230	-0.264	200301180830	0.707	200301181430	-0.723
200301180240	-0.250	200301180840	0.697	200301181440	-0.735
200301180250	-0.233	200301180850	0.682	200301181450	-0.744
200301180300	-0.214	200301180900	0.663	200301181500	-0.748
200301180310	-0.193	200301180910	0.640	200301181510	-0.749
200301180320	-0.169	200301180920	0.612	200301181520	-0.747

Time	Height
200301181530	-0.740
200301181540	-0.731
200301181550	-0.718
200301181600	-0.702
200301181610	-0.684
200301181620	-0.663
200301181630	-0.639
200301181640	-0.613
200301181650	-0.584
200301181700	-0.554
200301181710	-0.522
200301181720	-0.487
200301181730	-0.452
200301181740	-0.415
200301181750	-0.376
200301181800	-0.337
200301181810	-0.298
200301181820	-0.258
200301181830	-0.219
200301181840	-0.179
200301181850	-0.141
200301181900	-0.103
200301181910	-0.067
200301181920	-0.033
200301181930	0.000
200301181940	0.031
200301181950	0.060
200301182000	0.086
200301182010	0.111
200301182020	0.132
200301182030	0.151
200301182040	0.168
200301182050	0.181
200301182100	0.192
200301182110	0.200
200301182120	0.204

Time	Height
200301182130	0.206
200301182140	0.205
200301182150	0.200
200301182200	0.193
200301182210	0.183
200301182220	0.170
200301182230	0.154
200301182240	0.136
200301182250	0.116
200301182300	0.094
200301182310	0.070
200301182320	0.046
200301182330	0.020
200301182340	-0.006
200301182350	-0.032

APPENDIX C

RUNLINE PLAN



FUGRO

u:\hy16526\report\appendix_c Runline Plan\line_plan.dgn

Scallop-1 Site Survey Runline Plan	Appendix C

WARNING: DO NOT CHANGE THE PARAMETERS IN THIS GEODESY HEADER MANUALLY

Datum Transformations in Fugro Software: Always go From WGS84 To Local, and

Use the Coordinate Frame Rotation convention as defined by UKOOA

##

Datum Name

DatumHorizontal.szName : GDA94 (Australia-AUSLIG)

Spheroid Name

DatumHorizontal.Spheroid.szName : GRS80

Semi Major Axis in metres

DatumHorizontal.Spheroid.dSMAxis : +6378137.00000000

Inverse Flattening

DatumHorizontal.Spheroid.dIFlattening : +298.257222101000

Shift in X Axis in metres

DatumHorizontal.Transform.dDX : +0.000000000000000

Shift in Y Axis in metres

DatumHorizontal.Transform.dDY : +0.000000000000000

Shift in Z Axis in metres

DatumHorizontal.Transform.dDZ : +0.000000000000000

Rotation about X Axis in seconds

DatumHorizontal.Transform.dRX : +0.000000000000000

Rotation about Y Axis in seconds

DatumHorizontal.Transform.dRY : +0.000000000000000

Rotation about Z Axis in seconds

DatumHorizontal.Transform.dRZ : +0.000000000000000

Scale Correction in ppm

DatumHorizontal.Transform.dK : +0.000000000000000

##

Vertical Datum Name

DatumVertical.szName :

Geoid-Ellipsoid Separation from WGS84 Ellipsoid to Geoid in metres

DatumVertical.dEllipsoidalSeparation : +0.000000000000000

##

Projection Name

Projection.szName : Transverse Mercator (UTM)

Projection Type

1 = Transverse Mercator

2 = Lambert Conformal Conical 2 Parallels

3 = Lambert Conformal Conical 1 Parallel

4 = Rectified Skewed Orthomorphic

5 = New Zealand Map Grid

6 = Mercator

7 = Stereographic (Dutch)

8 = Stereographic (General)

9 = Universal Transverse Mercator

10= Ordnance Survey Great Britain (OSGB36)

11= South Africa Gauss Conform

12= Albers Conic Equal Area

13= Krovak Conformal Oblique Conic

Projection.lType : 9

Projection Grid Name

Projection.szGridName :

Grid Latitude Origin in decimal degrees

Projection.dLatOrigin : +0.000000000000000

Grid Longitude Origin / Central Meridian in decimal degrees

Projection.dCMeridian : +147.000000000000

Easting at Grid Origin in metres

Projection.dFalseE : +500000.000000000

Northing at Grid Origin in metres

Projection.dFalseN : +10000000.0000000

Central Scale Factor at the Grid Origin

Projection.dCSFact : +0.999600000000000

##

Type of Range Calculation

1 = Grid

2 = Vincenty

3 = Rhumbline

lRangeCalculationType : 2

##

Convergence Convention

0 = Rest of World

1 = Australia/New Zealand

IANZConvergence : 1

Factor to convert Grid Units To metres

GeoUnits.dUnitsConversion : +1.00000000000000

Units Name, like 'metres', 'feet'

GeoUnits.dUnitsName : metres

Units Abbreviation,like 'm', 'ft'

GeoUnits.dUnitsAbbrev : m

```
#####################################################################################
# WARNING: DO NOT CHANGE THE PARAMETERS IN THIS GEODESY HEADER MANUALLY
#####################################################################################
# FCF                     =  1
# FCF File Coordinate Format Options  1 = Local E/N                 [9.3]
#                         2 = Local Lat/Lon sDDD.dddddddd    [4.8]
#                         3 = Local Lat/Lon sDDD.MMmmmmmm    [4.8]
#                         4 = Local Lat/Lon sDDD.MMSSssss    [4.8]
#                         5 = WGS84 E/N                 [9.3]
#                         6 = WGS84 Lat/Lon sDDD.dddddddd    [4.8]
#                         7 = WGS84 Lat/Lon sDDD.MMmmmmmm    [4.8]
#                         8 = WGS84 Lat/Lon sDDD.MMSSssss    [4.8]
#####################################################################################

[DEFAULT]
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Sca_1_xl_34,   639638.978,   5767526.796,    0.00,   637555.047,   5769684.179,    0.00
Sca_1_xl_35,   639818.761,   5767700.457,    0.00,   637734.828,   5769857.840,    0.00
Sca_1_xl_36,   639998.544,   5767874.118,    0.00,   637914.609,   5770031.501,    0.00
Sca_1_xl_37,   640178.327,   5768047.779,    0.00,   638094.390,   5770205.162,    0.00
Sca_1_xl_44,   641436.808,   5769263.414,    0.00,   639352.857,   5771420.797,    0.00
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Sca_1_xl_40,   640717.676,   5768568.765,    0.00,   638633.733,   5770726.148,    0.00
Sca_1_xl_39,   640537.893,   5768395.103,    0.00,   638453.952,   5770552.486,    0.00
Sca_1_xl_38,   640358.110,   5768221.441,    0.00,   638274.171,   5770378.824,    0.00
Sca_1_ml_31,   641436.530,   5769263.419,    0.00,   639279.132,   5767179.480,    0.00
Sca_1_ml_30,   641367.065,   5769335.332,    0.00,   639209.668,   5767251.393,    0.00
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Sca_1_ml_29,	641297.600,	5769407.245,	0.00,	639140.204,	5767323.306,	0.00
Sca_1_ml_28,	641228.135,	5769479.158,	0.00,	639070.740,	5767395.219,	0.00
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Sca_1_ml_23,	640880.810,	5769838.723,	0.00,	638723.420,	5767754.784,	0.00
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Sca_1_ml_17,	640464.020,	5770270.201,	0.00,	638306.636,	5768186.262,	0.00
Sca_1_ml_1,	639352.580,	5771420.803,	0.00,	637195.212,	5769336.863,	0.00
Sca_1_ml_2,	639422.045,	5771348.891,	0.00,	637264.676,	5769264.951,	0.00
Sca_1_ml_3,	639491.510,	5771276.979,	0.00,	637334.140,	5769193.039,	0.00
Sca_1_ml_4,	639560.975,	5771205.067,	0.00,	637403.604,	5769121.127,	0.00
Sca_1_ml_5,	639630.440,	5771133.155,	0.00,	637473.068,	5769049.215,	0.00
Sca_1_ml_6,	639699.905,	5771061.243,	0.00,	637542.532,	5768977.303,	0.00
Sca_1_ml_7,	639769.370,	5770989.331,	0.00,	637611.996,	5768905.391,	0.00
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Sca_1_ml_9,	639908.300,	5770845.505,	0.00,	637750.924,	5768761.566,	0.00
Sca_1_ml_10,	639977.765,	5770773.592,	0.00,	637820.388,	5768689.653,	0.00
Sca_1_ml_11,	640047.230,	5770701.679,	0.00,	637889.852,	5768617.740,	0.00
Sca_1_ml_12,	640116.695,	5770629.766,	0.00,	637959.316,	5768545.827,	0.00
Sca_1_ml_13,	640186.160,	5770557.853,	0.00,	638028.780,	5768473.914,	0.00
Sca_1_ml_14,	640255.625,	5770485.940,	0.00,	638098.244,	5768402.001,	0.00
Sca_1_ml_15,	640325.090,	5770414.027,	0.00,	638167.708,	5768330.088,	0.00
Sca_1_ml_16,	640394.555,	5770342.114,	0.00,	638237.172,	5768258.175,	0.00
SSS_Check,	614677.372,	5748986.569,	0.00,	615265.372,	5749550.569,	0.00
SSS_Check_A,	614705.054,	5748957.709,	0.00,	615293.052,	5749521.707,	0.00

APPENDIX D

DAILY OPERATIONS REPORTS

Fugro Survey Pty Ltd A.C.N. 009 172 990
MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

Telephone (Mobile) 0427 080 789 Telephone (Satellite) : 0415 118 669
Facsimile (Mobile) 0427 080 782 E-mail fugromarine@bigpond.com

DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey ihobbs.geo@fugro.com.au
ichobbs@iinet.net.au
To : Rudolf M Fürchtenicht, ESSO rudolf.m.furchtenicht@exxonmobil.com
Date : 13th January 2003 Job No : HY16526
From : Robert Buinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 01 For Period 09:00 to 24:00 Hrs Date: 13th January 2003

1. **Safety / Environmental Incidents**
None

2. **Vessel Location at 24:00hrs**
Alongside Lascelles Wharf, Geelong.

3. **Weather / Sea State**

	08.00	12.00	16.00	24.00
Wind Direction				
Wind Force				
Seas (m)				
Air pressure				

24 Hour Forecast	SW winds 20 kts

4. **Summary of Events**

Start	End	Stx	Hrs	Event
09:00	24:00	MOB	15:00	Preparations for vessel sailing (pilot due 07:00hrs 14/01/03). Esso pre-job briefing and safety induction held onboard vessel at 15:30hrs

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	15	15
Vessel Transit	TRA		
Survey Operations	OPS		
Vessel Downtime	VDT		
Equipment Downtime	EDT		
Weather Standby	WXS		
Vessel Demobilisation	DMB		
TOTAL Hrs.		**15**	**15**

TOTAL Hrs.			15	15

6. **Production Summary**

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		0	0	0
TOTAL DISTANCE	**132km**	**0**	**0**	**0**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

**Sections re-run not included in totals.*

7. **Programme for Next 24 Hours**

Pilot due 07:00hrs. Transit to Halibut-1 well location for towfish system test lines (estimated duration 30hrs).

8. **Health, Safety and Environmental Summary**

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
0	0	1	1	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
None							
Hazard Ids							
Hazard IDs Today	0			Hazard IDs Total	0		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	60	60
ESSO (1)	12	12
MMA (8)	72	72
Shipyard personnel (0)	0	0
TOTAL	**144**	**144**

*Based on 12 hour working day.

9. **Fugro Party Chief Comments**

None

10. **ESSO Australia Limited Representative Comments.**

None

Rick Glanville
ESSO Representative

Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990
MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

Telephone (Mobile) 0427 080 789 Telephone (Satellite) : 0415 118 669
Facsimile (Mobile) 0427 080 782 E-mail fugromarine@bigpond.com

DAILY OPERATIONS REPORT

To	**:**	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	**:**	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	**:**	**14th January 2003**	**Job No : HY16526**
From	**:**	**Robert Buinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 02 **For Period 00:00 to 24:00 Hrs** **Date: 14th January 2003**

1. **Safety / Environmental Incidents**
   None

2. **Vessel Location at 24:00hrs**
   Transit to Halibut-1 well location for towfish system acceptance trials.

3. **Weather / Sea State**

	06:00	12:00	18:00	24:00
Wind Direction	-	SW	SW	SW
Wind Force	-	4-5	5	4-5
Seas (m)	-	2	2	2
Air pressure	-	1017	1017	1019

24 Hour Forecast	SW winds decreasing to 12kts, veering SE, 14kts by 24:00

4. **Summary of Events**

Start	End	Stx	Hrs	Event
00:00	07:00	MOB	07:00	Preparations for vessel sailing.
07:00	08:30	TRA	01:30	Pilot onboard 07:00hrs. Depart Lascelles Wharf for Halibut-1 well location.
08:30	09:00	TRA	00:30	Undertake echo-sounder bar check and draft verification within harbour approaches.
09:00	24:00	TRA	15:00	Continue transit to Halibut-1 well location.

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	7	22
Vessel Transit	TRA	17	17
Survey Operations	OPS		
Vessel Downtime	VDT		
Equipment Downtime	EDT		
Weather Standby	WXS		
Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**39**

TOTAL Hrs.			24	39

6. **Production Summary**

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		0	0	0
TOTAL DISTANCE	**132km**	**0**	**0**	**0**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

Sections re-run not included in totals.

7. **Programme for Next 24 Hours**

Continue transit to Halibut-1 well site for towfish system test lines. Continue on to Scallop-1 site to commence survey operations.

8. **Health, Safety and Environmental Summary**

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
1	1	1	2	0	0	0	0
*Excludes JHA reviews and toolbox meetings							
JHAs Undertaken Today							
Deployment and recovery of USBL / echo-sounder pole.							
Hazard Ids							
Hazard IDs Today	0		Hazard IDs Total		0		

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	120	120
ESSO (1)	24	24
MMA (8)	144	144
Shipyard personnel (0)	0	0
TOTAL	**288**	**288**

*Based on 12 hour working day.

9. **Fugro Party Chief Comments**

None

10. **ESSO Australia Limited Representative Comments.**

None

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Telephone (Mobile) 0427 080 789 Telephone (Satellite) : 0415 118 669
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DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey **ihobbs.geo@fugro.com.au**
ichobbs@iinet.net.au

To : Rudolf M Fürchtenicht, ESSO **rudolf.m.furchtenicht@exxonmobil.com**

Date : 15th January 2003 **Job No : HY16526**

From : Robert Buinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 03 For Period 00:00 to 24:00 Hrs Date: 15th January 2003

1. **Safety / Environmental Incidents**
None

2. **Vessel Location at 24:00hrs**
Scallop-1 survey area.

3. **Weather / Sea State**

	06:00	12:00	18:00	24:00
Wind Direction	SW	SW	SW	Lt. Airs
Wind Force	3	2	2	1
Seas (m)	1.0	1.5	1.5	1.0
Air pressure	1017	1019	1018	1019

24 Hour Forecast	SE winds (10kts) veering ENE increasing to max. 18kts by 06:00hrs (17/01).

4. **Summary of Events**

Start	End	Stx	Hrs	Event
00:00	09:00	TRA	09:00	Transit to Halibut-1 well location.
09:00	09:25	MOB	00:25	Deploy USBL / echo-sounder pole and carry out SVP dip.
09:25	10:15	MOB	00:50	Deploy side scan sonar and head for system test line.
10:15	11:15	MOB	01:00	Run test lines over Halibut-1 wellhead.
11:15	13:20	TRA	02:05	Side scan sonar recovered. Transit to Scallop-1 survey location on successful completion of test lines.
13:20	13:55	EDT	00:35	Repair X-Star printer power supply.
13:55	14:15	STO	00:20	X-Star and side scan sonar deployed. Abort approach to SOL due to fishing vessel across survey area recovering 1.2 miles of gear.
14:15	15:25	STO	01:10	Waiting on fishing vessel to recover gear and depart survey area.
15:25	24:00	OPS	08:35	Commence survey main lines (Hdg. 045°/ 225°) at Scallop-1.

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB	2:15	24:15
Vessel Transit	TRA	11:05	28:05
Survey Operations	OPS	8:35	8:35
Vessel Downtime	VDT		

Vessel Downtime	VDT		
Equipment Downtime	EDT	0:35	0:35
Weather Standby	WXS		
Standby Other	STO	1:30	1:30
Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**63**

6. Production Summary

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		14km	14km	32%
TOTAL DISTANCE	**132km**	**14km**	**14km**	**32%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	1	0	0	0

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Continue survey operations at Scallop-1.

8. Health, Safety and Environmental Summary

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
0	1	0	2	0	0	0	0

*Excludes JHA reviews and toolbox meetings

JHAs Undertaken Today			
None			
Hazard Ids			
Hazard IDs Today	1	Hazard IDs Total	1

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	180	180
ESSO (1)	36	36
MMA (8)	240	240
Shipyard personnel (0)	0	0
TOTAL	**456**	**456**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

At current progress expected completion time of all survey runlines and seabed sampling approximately 24:00hrs 16/01/03

10. ESSO Australia Limited Representative Comments.

Derived co-ordinates of Halibut 1 wellhead from SSS are within 21 metres of Esso quoted position, obtained from previous ROV position fixes.

....
Rick Glanville
ESSO Representative

....
Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Telephone (Mobile) 0427 080 789 Telephone (Satellite) : 0415 118 669
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DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey ihobbs.geo@fugro.com.au

ichobbs@iinet.net.au

To : Rudolf M Fürchtenicht, ESSO rudolf.m.furchtenicht@exxonmobil.com

Date : 16th January 2003 Job No : HY16526

From : Robert Bruinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 04 For Period 00:00 to 24:00 Hrs Date: 16th January 2003

1. Safety / Environmental Incidents

None

2. Vessel Location at 24:00hrs

Scallop-1 survey area.

3. Weather / Sea State

	06:00	12:00	18:00	24:00
Wind Direction	NNE	E	ENE	ENE
Wind Force	3	4	5	4/5
Seas (m)	1	1.5	2	2
Air pressure	1017	1015	1013	1012

24 Hour Forecast	ENE winds veering N 15kts

4. Summary of Events

Start	End	Stx	Hrs	Event
00:00	21:20	OPS	21:20	Continue survey operations.
21:20	22:40	WX S	1:20	Recover towed equipment in deteriorating Wx. Return to survey area to complete crosslines with echo-sounder only.
22:40	24:00	OPS	1:20	Complete crosslines with echo-sounder only.

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA		28:05
Survey Operations	OPS	22:40	31:15
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS	1:20	1:20
Standby Other	STO		1:30
Vessel Demobilisation	DMB		

Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**87**

6. Production Summary

Survey Area	**Approx. Program**	**Today**	**Cumulative Total**	**Percent Complete**
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	0	0	0

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Waiting on weather for safe coring. Complete coring (2 core samples) and depart site for transit to Geelong Port.

8. Health, Safety and Environmental Summary

Safety Drills		**HSE Meetings***		**Health and Safety Injuries/Incidents**		**Environmental Incidents**	
Today	**Total**	**Today**	**Total**	**Today**	**Total**	**Today**	**Total**
0	1	0	2	0	0	0	0

*Excludes JHA reviews and toolbox meetings

JHAs Undertaken Today

None

Hazard Ids

Hazard IDs Today	1	Hazard IDs Total	1

Personnel Nos.	**Total Hours Worked***	**Total Hours Since LTI***
Fugro Survey (5)	240	240
ESSO (1)	48	48
MMA (8)	336	336
Shipyard personnel (0)	0	0
TOTAL	**624**	**624**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

None

10. ESSO Australia Limited Representative Comments.

None

Rick Glanville
ESSO Representative

Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.
Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To : Ian Hobbs (G) Fugro Survey **ihobbs.geo@fugro.com.au**
ichobbs@iinet.net.au

To : Rudolf M Fürchtenicht, ESSO **rudolf.m.furchtenicht@exxonmobil.com**

Date : 17th January 2003 **Job No : HY16526**

From : Robert Bruinsma / Rick Glanville

Scallop-1 Site Survey

Daily Report No. 05 For Period 00:00 to 24:00 Hrs Date: 17th January 2003

1. **Safety / Environmental Incidents**
None

2. **Vessel Location at 24:00hrs**
Transit to Geelong Harbour.

3. **Weather / Sea State**

	06:00	12:00	18:00	24:00
Wind Direction	NIL	Lt Airs	-	-
Wind Force	0	0	-	-
Seas (m)	0.5	0.5	-	-
Air pressure	1013	1012	-	-

24 Hour Forecast	-

4. **Summary of Events**

Start	End	Stx	Hrs	Event
00:00	00:40	OPS	0:40	Complete crosslines with echo-sounder only.
00:40	05:50	WX S	5:10	Stand by on Wx. suitable for coring operations.
05:50	06:20	OPS	0:30	Carry out gravity coring and grab sampling at drill location.
06:20	06:45	TRA	0:25	Transit to north of site to second seabed sampling location.
06:45	07:15	OPS	0:30	Carry out grab sampling at north location sample location.
07:15	07:25	OPS	0:10	Undertake SVP dip. Completion of survey operations at Scallop-1.
07:25	24:00	TRA	16:35	Depart site. Vessel heading for Geelong Harbour for demobilisation.

5. **Project Times (from 09:00hrs 13th January 2003)**

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA	17:00	45:05
Survey Operations	OPS	1:50	33:05
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS	5:10	6:30
Standby Other	STO		1:30
Vessel Demobilisation	DMB		

Vessel Demobilisation	DMB		
TOTAL Hrs.		**24**	**111**

6. Production Summary

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	2	2	100%

**Sections re-run not included in totals.*

7. Programme for Next 24 Hours

Continue transit to Geelong Harbour for demobilisation.

8. Health, Safety and Environmental Summary

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
0	1	1	3	0	0	0	0

*Excludes JHA reviews and toolbox meetings

JHAs Undertaken Today			
None			
Hazard Ids			
Hazard IDs Today	0	Hazard IDs Total	0

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	300	300
ESSO (1)	60	60
MMA (8)	432	432
Shipyard personnel (0)	0	0
TOTAL	**792**	**792**

*Based on 12 hour working day.

9. Fugro Party Chief Comments

None

10. ESSO Australia Limited Representative Comments.

Preliminary Field Report issued by Fugro Party Chief and forwarded to Esso today.

Ross Glanville

....

Rick Glanville
ESSO Representative

....

Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

Fugro Survey Pty Ltd A.C.N. 009 172 990

MV Mermaid Raider – HY16526 ESSO Australia Ltd.

Scallop-1 Site Survey

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DAILY OPERATIONS REPORT

To	:	**Ian Hobbs (G) Fugro Survey**	**ihobbs.geo@fugro.com.au**
			ichobbs@iinet.net.au
To	:	**Rudolf M Fürchtenicht, ESSO**	**rudolf.m.furchtenicht@exxonmobil.com**
Date	:	**18th January 2003**	**Job No : HY16526**
From	:	**Robert Bruinsma / Rick Glanville**	

Scallop-1 Site Survey

Daily Report No. 06 For Period 00:00 to 24:00 Hrs Date: 18th January 2003

1. Safety / Environmental Incidents

None

2. Vessel Location at 24:00hrs

Alongside Lascelles Wharf, Geelong Harbour.

3. Weather / Sea State

	06:00	12:00	18:00	24:00
Wind Direction	-	-	-	-
Wind Force	-	-	-	-
Seas (m)	-	-	-	-
Air pressure	-	-	-	-

24 Hour Forecast	-

4. Summary of Events

Start	End	Stx	Hrs	Event
00:00	10:00	TRA	10:00	Vessel heading for Geelong Harbour for demobilisation.
10:00	16:00	DMB	6:00	Vessel demobilisation.

5. Project Times (from 09:00hrs 13th January 2003)

Activity	Status	Daily (Hrs)	Cumulative (Hrs)
Vessel Preparation / Testing	MOB		24:15
Vessel Transit	TRA	10	55:05
Survey Operations	OPS		33:05
Vessel Downtime	VDT		
Equipment Downtime	EDT		0:35
Weather Standby	WXS		6:30
Standby Other	STO		1:30
Vessel Demobilisation	DMB	6	6
TOTAL Hrs.		**16**	**127**

TOTAL Hrs.		16	127

6. **Production Summary**

Survey Area	Approx. Program	Today	Cumulative Total	Percent Complete
Site Survey – Scallop-1		118km	118km	100%
TOTAL DISTANCE	**132km**	**118km**	**118km**	**100%**
	Planned	**Today**	**Cumulative Total**	**Percent Complete**
Sampling – Scallop-1	2	2	2	100%

Sections re-run not included in totals.

7. **Programme for Next 24 Hours**

Vessel demobilisation alongside Lascelles Wharf, Geelong Harbour.

8. **Health, Safety and Environmental Summary**

Safety Drills		HSE Meetings*		Health and Safety Injuries/Incidents		Environmental Incidents	
Today	Total	Today	Total	Today	Total	Today	Total
0	1	0	3	0	0	0	0

*Excludes JHA reviews and toolbox meetings

JHAs Undertaken Today			
None			
Hazard Ids			
Hazard IDs Today	0	Hazard IDs Total	0

Personnel Nos.	Total Hours Worked*	Total Hours Since LTI*
Fugro Survey (5)	360	360
ESSO (1)	72	72
MMA (8)	528	528
Shipyard personnel (0)	16	16
TOTAL	**976**	**976**

*Based on 12 hour working day.

9. **Fugro Party Chief Comments**

None

10. **ESSO Australia Limited Representative Comments.**

None

Rick Glanville
ESSO Representative

Robert Bruinsma
Fugro Survey Party Chief

Signed Original Retained on Vessel

APPENDIX E

MOBILISATION TASK CHECKLISTS & AND DEMOBILISATION DECLARATION

MV Mermaid Raider - Calibration Task Checklist

Location: Alongside Supervisors: Andrew Janczewski, Ian Walker, Scott Miller

Item	Description	Completed
1	Echosounder functionality – barcheck	I.W.
2	MBE Functionality – Barcheck (OFFSET/SYSTEM COMPARISON)	[signature]
	Deploy and Test SVP	I.W.
3	Navigation calibration	I.W.
4	Gyro Calibrations	I.W.
5	USBL static calibration	I.W.
6	SSS rub/wet test	[signature]
7	X-Star functionality test – wet test	[signature]
8	Streamer tap test (NOT REQUIRED – ALTERNATIVE TESTS MADE)	–
9	Airgun firing test	[signature]
10	~~Piston~~ Corer's deployment test in Portland (PROCEDURE TO BE UPDATED)	PAC
11	Heave comp raise/lower test	[signature]
12	System I/F test	[signature]
13	Glog playback test	[signature]
14	Internal Communications test	[signature]
15	External Communications Test	PAC
16	Digital system functionality test	[signature]
17	Network Interface test	[signature]

Signed Off .... P A Cunwell [signature] .... [signature] ....

Party Chief　　　　Client Representative

MV Mermaid Raider - Calibration Task Checklist

Location: Transit /Site Supervisor: Andrew Janczewski, Ian Walker, Scott Miller

Item	Description	Completed
1	Navigation latency check (CHECKED DURING MBE CALIBRATION)	PA
2	POSMV calibration (Figure 8's)	
3	USBL Calibration	
4	MBE Calibration	
5	Balance Streamer	
6	Full System Acquisition	PAC

(using X-star – Boomer Not operational)

Signed Off ....

Party Chief Client Representative

MV Mermaid Raider - Mobilisation Task Checklist

Location: Instrument Room (Seabat topside units, geophysical systems and UHRES systems)

Installation Team: **Andrew Janczewski – Supervisor**

Leigh Clarke, Ben Manion

Item	Description	Completed
1	**Check Power supplies**	
2	Install 6042	
3	Run cable from POSMV	
4	Install MBE processor unit	
5	Install MBE TX Unit	
6	Run MBE I/F cables	
7	Install SSS topside	
8	Install X-Star topside	
9	Install FEAM unit	
10	Install Glog computer	
11	Install 2 exabyte drives	
12	Run I/F cable Glog to FEAM	
13	Install Alden	
14	Run I/F cable Glog to Alden	
15	Install Starfix Multibeam	
16	Run I'F cable Glog to 2nd Alden	
17	Install E/S system	
18	Run E/S cables to Tx's	
19	Run I/f cables E/S to IOWIN	
20	Run cables Heave comp to E/S	
21	Install UPS/power conditioners	
22	Run Winch remote cables	
23	Install Nav monitor	
24	Install Cable counter and antenna	
25	Install Sheave Blocks	
26	Install Camera monitors	
27	Install CCTV cameras	
28	Run deck lead streamer to Inst room	
29	Install digiquartz modem & PC	
30	Install Stratavisor Acquisition system	
31	Install Shot Control Box	
32	Run Cable Stratavisor to tape drive	
33	Install tape drive	
34	Install Laser Printer	
35	Run Stratavisor to Alden cable	
36	Run shot control to OYO DAS cable	

37	Run Cable Nav to shot control	
38	Tidy up cabling – Cable tie together	
39	Remove rubbish and stow packing boxes	
40	Stow consumables	
41	Secure all equipment for bad weather	

Signed Off PA Curwen .... David ....

Party Chief Client Representative

MV Mermaid Raider - Mobilisation Task Checklist

Location: Survey Container (Positioning and navigation systems inc. USBL and External Coms)

Installation Team: **Ian Walker – Supervisor**

T. Hansen, Brett Sellers

Item	Description	Completed
1	Lift equipment/boxes to survey container	I.W.
2	**Check power supply levels (AJ/LC)**	SKI
3	Install GPS/DGPS/POSMV/Telephone Antennae	I.W.
4	Install IMU at vessel COG	I.W.
5	Install DMS05 heave comp adjacent to transducer * Note Diff Woodside	I.W.
6	Measure offsets to antennae/transducers. Check vessel dimensions	I.W.
7	Run GPS/DGPS/POSMV/Telephone Antennae cables	I.W.
8	Install navigation computers	I.W.
9	Install Trimbles/demodulators	I.W.
10	Install helm monitors	I.W.
11	Run helm cable for VGA splitter	I.W.
12	Install 2 gyros	I.W.
13	Install USBL topside	I.W.
14	Run USBL cable to transducer	I.W.
15	Install USBL transducer on USBL pole	I.W.
16	Install DMS05 heave comp adjacent to transducer * Note Diff Woodside.	I.W.
17	Run Heave comp cables	I.W.
18	Install UPS/power conditioners	I.W.
19	Connect power supplies to each system	SKI
20	Check I/F cables	SKI
21	Do safety walk around – trip hazards etc	I.W.
22	Secure all cables neatly, remove rubbish	I.W.
23	Secure equipment in case of bad weather	I.W.
24	Interface cable counter readout to Nav	SKI

Signed Off [illegible] .... [illegible] ....

Party Chief Client Representative

MV Mermaid Raider - Mobilisation Task Checklist

Location: Processing Room (Network Server, data processing work stations, plotter)

Installation Team: **Scott Miller – Supervisor**

Gerard Laurent, Rob Bruinsma

Item	Description	Completed
1	**Check power supplies (AJ/LC)**	
2	Install UPS's/power conditioners	
3	Store processing consumables	
4	Install Alden for Lookout system (Digital Engineer)	
5	Install Lookout computer	
6	Install Network printer	
7	Install Microstation Computer	
8	Install Starfix Proc computer	
9	Install network plotter	
10	Install network switches	
11	Install network server	
12	Install 19" racking (N/A)	–
13	Connect network cables	
14	Connect power cables	
15	Connect I/F cables	
16	Tidy up cabling	
17	Remove rubbish and stow packing boxes	
18	Secure all equipment for bad weather	
19	Install Lookout Seascope system (Digital Engineers)	
20	Install Internal Comm's system and test	
21	Install CDMA system and test	
22	Install Satellite Comm's and test	
23	Install Email computer and configure system.	

Signed Off ....

Party Chief Client Representative

OFF HIRE VESSEL CONDITION DECLARATION

Ref: Demob. M.V. Mermaid Raider

Date: 18th January 2003

Location: Lascelles Wharf #1, Geelong Port

I, Simon Feldman, master onboard M.V. Mermaid Raider have, on behalf of Mermaid Marine, inspected the vessel whilst alongside Lascelles Wharf, Geelong Port. I am satisfied that the vessel has been left by the charterer, Fugro Survey Pty. Ltd., in a similar condition to that at start of the hire period (20th December 2003).

Simon Feldman
Mermaid Marine
Vessel Master

Robert Bruinsma
Fugro Survey
Party Chief

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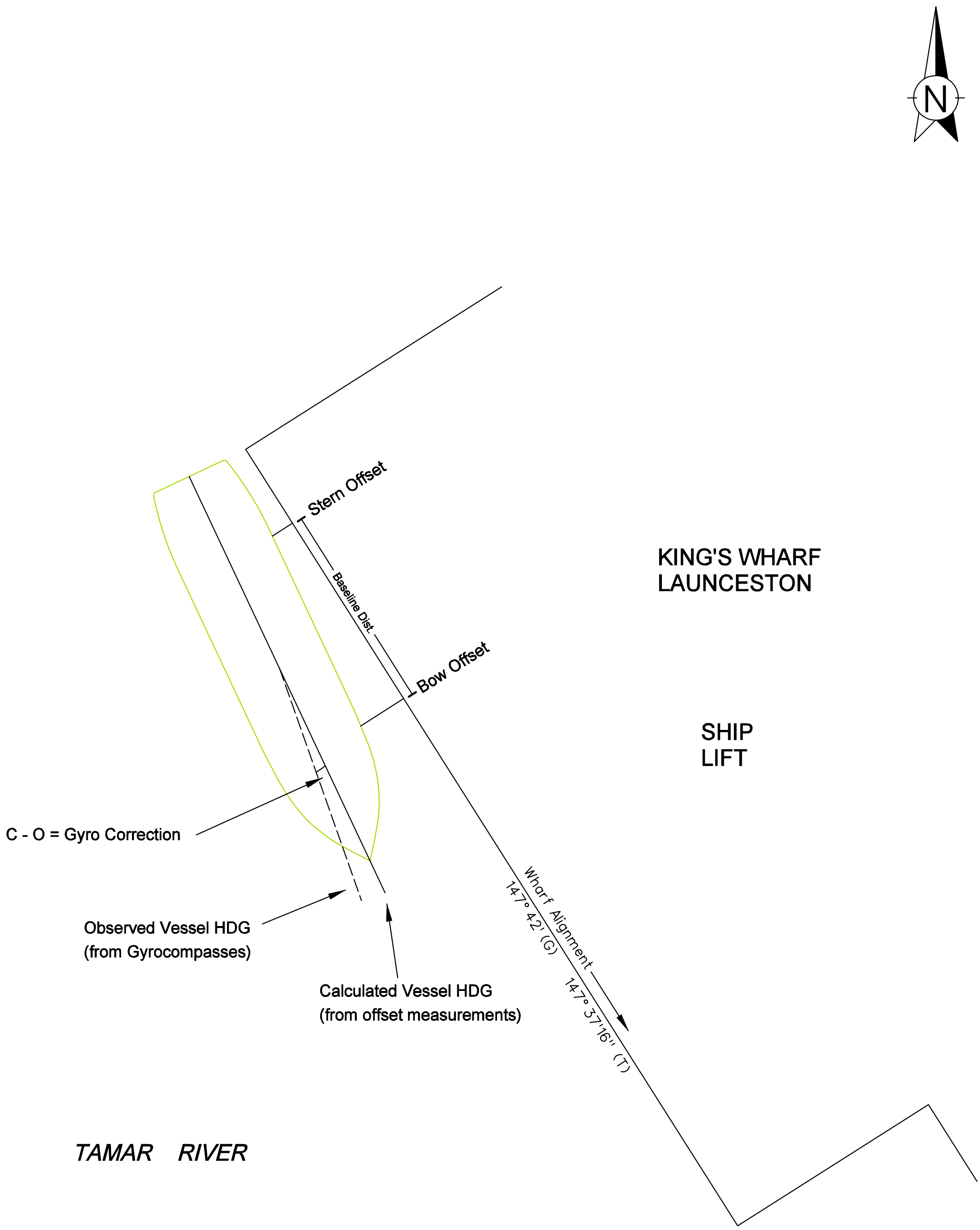
APPENDIX F

GYRO COMPASS CALIBRATION



NOT TO SCALE
COORDINATES IN GRS80 (GDA 94), CM 141° E

MV MERMAID RAIDER AFT GYRO CALIBRATION (HEADING: 147 Degrees)	APPENDIX F

u:\hy16526\report\appendix f\gyro_calibration-147.dgn

GYRO COMPASS CALIBRATION - CALCULATION SUMMARY

Forward Gyro - Heading 147°

COMPASS TYPE :	**SG Brown (Fore)**	**VESSEL :**	**"Mermaid Raider"**
FUGRO ASSET NOS. :	**131680**	**DATE :**	**24th December, 2002**
LOCATION :	**King's Wharf, Launceston**	**WHARF ALIGNMENT :** (Grid)	
PROJECT :	**Scallop-1 Site Survey**	**(Input either Grid or True)** (True)	**147 37 16**
JOB NOS.:	**HY16526**	**GRID CONVERGENCE :**	**004° 03' 35.95"**
CLIENT:	**ESSO**	**APP. POSITION:**	1011711 E 5395641 N

GEODETIC PARAMETERS :		**DATUM :**	GDA94	**SPHEROID :** GRS80	**PROJECTION :**	UTM
Origin Latitude :	0 0 0	**False Easting :**	500000		**Semi Major Axis (a) :**	6378137
Origin Longitude :	141 0 0	**False Northing :**	10000000		**Inverse Flattening (1/f) :**	298.2572221
		Scale Factor on C.M. :	0.9996			**Assumes obs at sea level**

Obs. No.	Time			Observations Offset Bow	Offset Stern	Baseline Dist.	Angle to Wharf(Degs)	Wharf Alignment (G) Deg	Mts	Secs	Wharf Alignment(T) Deg	Mts	Secs	Calc'd Vessel Hdg (T)	Obs. Vessel Hdg (T)	**Diff. C-O Degrees**
1	9	33	35	1.45	1.20	17.90	-00.80017				147	37	16	146.82	328.50	**-1.7**
2	9	34	05	1.44	1.21	17.90	-00.73616				147	37	16	146.88	328.50	**-1.6**
3	9	34	30	1.44	1.21	17.90	-00.73616				147	37	16	146.88	328.50	**-1.6**
4	9	34	45	1.44	1.19	17.90	-00.80017				147	37	16	146.82	328.50	**-1.7**
5	9	35	00	1.44	1.19	17.90	-00.80017				147	37	16	146.82	328.50	**-1.7**
6	9	35	15	1.44	1.18	17.90	-00.83217				147	37	16	146.79	328.50	**-1.7**
7	9	35	30	1.44	1.18	17.90	-00.83217				147	37	16	146.79	328.50	**-1.7**
8	9	35	45	1.44	1.18	17.90	-00.83217				147	37	16	146.79	328.50	**-1.7**
9	9	36	00	1.44	1.17	17.90	-00.86417				147	37	16	146.76	328.50	**-1.7**
10	9	36	15	1.44	1.18	17.90	-00.83217				147	37	16	146.79	328.50	**-1.7**
11	9	36	30	1.45	1.17	17.90	-00.89617				147	37	16	146.72	328.50	**-1.8**
12	9	36	45	1.45	1.16	17.90	-00.92817				147	37	16	146.69	328.50	**-1.8**
13	9	37	00	1.45	1.15	17.90	-00.96017				147	37	16	146.66	328.50	**-1.8**
14	9	37	15	1.45	1.16	17.90	-00.92817				147	37	16	146.69	328.50	**-1.8**
15	9	37	30	1.45	1.16	17.90	-00.92817				147	37	16	146.69	328.50	**-1.8**
16																
17																
18																
19																
20																

NOTES : 1. Ensure that gyro offset in nav system / software is reset to zero before commencing observations.
2. True Bearing = Grid Bearing - Convergence (Convergence is -ve in WA/NT;add to Grid)

Mean	**-1.73**
Std Dev.	**0.07**

GYRO COMPASS CALIBRATION - CALCULATION SUMMARY

Aft Gyro - Heading 147°

COMPASS TYPE :	**SG Brown (Aft)**	**VESSEL :**	**"Mermaid Raider"**
FUGRO ASSET NOS. :	**130582**	**DATE :**	**24th December, 2002**
LOCATION :	**King's Wharf, Launceston**	**WHARF ALIGNMENT : (Grid)**	
PROJECT :	**Scallop-1 Site Survey**	**(Input either Grid or True) (True)**	**147 37 16**
JOB NOS.:	**HY16526**	**GRID CONVERGENCE :**	**004° 03' 35.95"**
CLIENT:	**ESSO**	**APP. POSITION:**	1011711 E 5395641 N

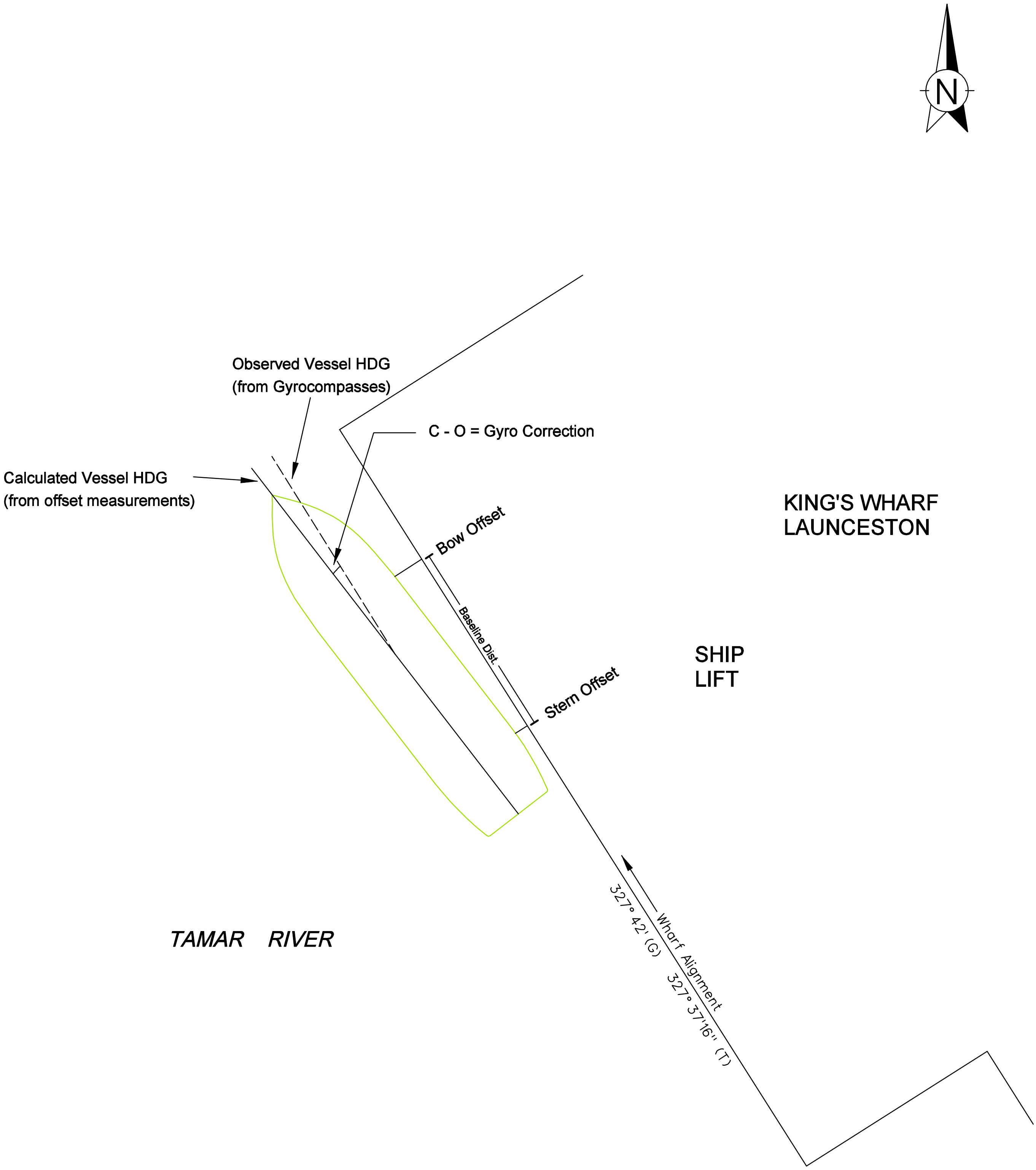
GEODETIC PARAMETERS : **DATUM :** GDA94 **SPHEROID :** GRS80 **PROJECTION :** UTM

Origin Latitude :	0	0	0	**False Easting :**	500000	**Semi Major Axis (a) :**	6378137
Origin Longitude :	141	0	0	**False Northing :**	10000000	**Inverse Flattening (1/f) :**	298.2572221
				Scale Factor on C.M. :	0.9996		**Assumes obs at sea level**

Obs. No.	Time			Observations: Offset Bow	Offset Stern	Baseline Dist.	Angle to Wharf(Degs)	Wharf Alignment (G) Deg	Mts	Secs	Wharf Alignment(T) Deg	Mts	Secs	Calc'd Vessel Hdg (T)	Obs. Vessel Hdg (T)	**Diff. C-O Degrees**
1	9	33	35	1.45	1.20	17.90	-00.80017				147	37	16	146.82	329.17	**-2.3**
2	9	34	05	1.44	1.21	17.90	-00.73616				147	37	16	146.88	329.17	**-2.3**
3	9	34	30	1.44	1.21	17.90	-00.73616				147	37	16	146.88	329.17	**-2.3**
4	9	34	45	1.44	1.19	17.90	-00.80017				147	37	16	146.82	329.17	**-2.3**
5	9	35	00	1.44	1.19	17.90	-00.80017				147	37	16	146.82	329.17	**-2.3**
6	9	35	15	1.44	1.18	17.90	-00.83217				147	37	16	146.79	329.17	**-2.4**
7	9	35	30	1.44	1.18	17.90	-00.83217				147	37	16	146.79	329.17	**-2.4**
8	9	35	45	1.44	1.18	17.90	-00.83217				147	37	16	146.79	329.17	**-2.4**
9	9	36	00	1.44	1.17	17.90	-00.86417				147	37	16	146.76	329.17	**-2.4**
10	9	36	15	1.44	1.18	17.90	-00.83217				147	37	16	146.79	329.17	**-2.4**
11	9	36	30	1.45	1.17	17.90	-00.89617				147	37	16	146.72	329.17	**-2.4**
12	9	36	45	1.45	1.16	17.90	-00.92817				147	37	16	146.69	329.17	**-2.5**
13	9	37	00	1.45	1.15	17.90	-00.96017				147	37	16	146.66	329.17	**-2.5**
14	9	37	15	1.45	1.16	17.90	-00.92817				147	37	16	146.69	329.17	**-2.5**
15	9	37	30	1.45	1.16	17.90	-00.92817				147	37	16	146.69	329.17	**-2.5**
16																
17																
18																
19																
20																

NOTES : 1. Ensure that gyro offset in nav system / software is reset to zero before commencing observations.
2. True Bearing = Grid Bearing - Convergence (Convergence is -ve in WA/NT;add to Grid)

Mean	-2.40
Std Dev.	0.07



NOT TO SCALE
COORDINATES IN GRS80 (GDA 94), CM 141° E

MV MERMAID RAIDER GYRO CALIBRATION (HEADING: 327 Degrees)	APPENDIX F

u:\hy16526\report\appendix f\gyro_calibration-327.dgn

GYRO COMPASS CALIBRATION - CALCULATION SUMMARY

Forward Gyro - Heading 327°

COMPASS TYPE :	SG Brown (Fore)	VESSEL :	"Mermaid Raider"	
FUGRO ASSET NOS. :	131680	DATE :	22nd December, 2002	
LOCATION :	King's Wharf, Launceston	WHARF ALIGNMENT :	(Grid)	
PROJECT :	Scallop-1 Site Survey	(Input either Grid or True)	(True)	327 37 16
JOB NOS.:	HY16526	GRID CONVERGENCE :	004° 03' 35.95"	
CLIENT:	ESSO	APP. POSITION:	1011711 E	5395641 N

GEODETIC PARAMETERS :				DATUM :	GDA94	SPHEROID : GRS80	PROJECTION : UTM
Origin Latitude :	0	0	0	False Easting :	500000	Semi Major Axis (a) :	6378137
Origin Longitude :	141	0	0	False Northing :	10000000	Inverse Flattening (1/f) :	298.2572221
				Scale Factor on C.M. :	0.9996		Assumes obs at sea level

Obs. No.	Time			Observations Offset Bow	Offset Stern	Baseline Dist.	Angle to Wharf(Degs)	Wharf Alignment (G) Deg	Mts	Secs	Wharf Alignment(T) Deg	Mts	Secs	Calc'd Vessel Hdg (T)	Obs. Vessel Hdg (T)	Diff. C-O Degrees
1	21	35	00	1.51	1.10	19.00	-01.23619				327	37	16	326.38	145.80	**0.6**
2	21	35	30	1.55	1.09	19.00	-01.38689				327	37	16	326.23	145.80	**0.4**
3	21	36	00	1.51	1.08	19.00	-01.29647				327	37	16	326.32	145.80	**0.5**
4	21	36	30	1.51	1.08	19.00	-01.29647				327	37	16	326.32	145.80	**0.5**
5	21	37	00	1.50	1.08	19.00	-01.26633				327	37	16	326.35	145.80	**0.6**
6	21	37	30	1.50	1.08	19.00	-01.26633				327	37	16	326.35	145.80	**0.6**
7	21	38	00	1.50	1.08	19.00	-01.26633				327	37	16	326.35	145.80	**0.6**
8	21	38	30	1.52	1.09	19.00	-01.29647				327	37	16	326.32	145.80	**0.5**
9	21	39	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	145.80	**0.6**
10	21	39	30	1.51	1.09	19.00	-01.26633				327	37	16	326.35	145.80	**0.6**
11	21	40	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	145.80	**0.6**
12	21	40	30	1.51	1.09	19.00	-01.25126				327	37	16	326.37	145.70	**0.7**
13	21	41	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	145.70	**0.7**
14	21	41	30	1.51	1.09	19.00	-01.26633				327	37	16	326.35	145.70	**0.7**
15	21	42	00	1.51	1.09	19.00	-01.26633				327	37	16	326.35	145.70	**0.7**
16																
17																
18																
19																
20																

NOTES : 1. Ensure that gyro offset in nav system / software is reset to zero before commencing observations.
2. True Bearing = Grid Bearing - Convergence (Convergence is -ve in WA/NT;add to Grid)

Mean	0.58
Std Dev.	0.07

GYRO COMPASS CALIBRATION - CALCULATION SUMMARY

Aft Gyro - Heading 327°

COMPASS TYPE :	SG Brown (Aft)	VESSEL :	"Mermaid Raider"
FUGRO ASSET NOS. :	130582	DATE :	22nd December, 2002
LOCATION :	King's Wharf, Launceston	WHARF ALIGNMENT : (Grid)	
PROJECT :	Scallop-1 Site Survey	(Input either Grid or True) (True)	327 37 16
JOB NOS.:	HY16526	GRID CONVERGENCE :	004° 03' 35.95"
CLIENT:	ESSO	APP. POSITION:	1011711 E 5395641 N

GEODETIC PARAMETERS :		DATUM :	GDA94	SPHEROID : GRS80	PROJECTION : UTM
Origin Latitude :	0 0 0	False Easting :	500000	Semi Major Axis (a) :	6378137
Origin Longitude :	141 0 0	False Northing :	10000000	Inverse Flattening (1/f) :	298.2572221
		Scale Factor on C.M. :	0.9996		Assumes obs at sea level

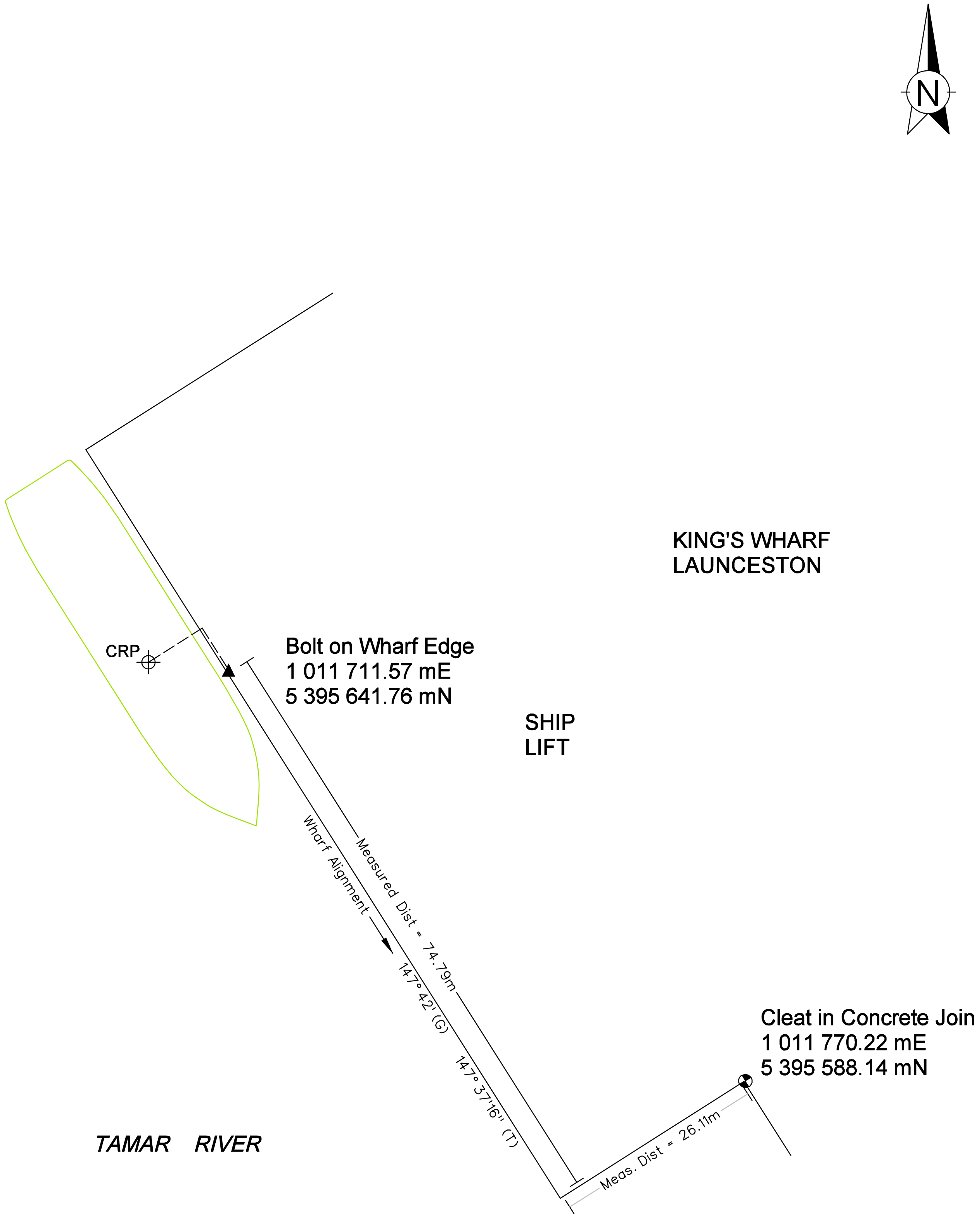
Obs. No.	Time			Observations Offset Bow	Offset Stern	Baseline Dist.	Angle to Wharf(Degs)	Wharf Alignment (G) Deg	Mts	Secs	Wharf Alignment(T) Deg	Mts	Secs	Calc'd Vessel Hdg (T)	Obs. Vessel Hdg (T)	Diff. C-O Degrees
1	21	35	00	1.51	1.10	19.00	-01.23619				327	37	16	326.38	146.70	**-0.3**
2	21	35	30	1.55	1.09	19.00	-01.38689				327	37	16	326.23	146.70	**-0.5**
3	21	36	00	1.51	1.08	19.00	-01.29647				327	37	16	326.32	146.70	**-0.4**
4	21	36	30	1.51	1.08	19.00	-01.29647				327	37	16	326.32	146.70	**-0.4**
5	21	37	00	1.50	1.08	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
6	21	37	30	1.50	1.08	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
7	21	38	00	1.50	1.08	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
8	21	38	30	1.52	1.09	19.00	-01.29647				327	37	16	326.32	146.70	**-0.4**
9	21	39	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	146.70	**-0.3**
10	21	39	30	1.51	1.09	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
11	21	40	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	146.70	**-0.3**
12	21	40	30	1.51	1.09	19.00	-01.25126				327	37	16	326.37	146.70	**-0.3**
13	21	41	00	1.50	1.09	19.00	-01.23619				327	37	16	326.38	146.70	**-0.3**
14	21	41	30	1.51	1.09	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
15	21	42	00	1.51	1.09	19.00	-01.26633				327	37	16	326.35	146.70	**-0.3**
16																
17																
18																
19																
20																

NOTES :
1. Ensure that gyro offset in nav system / software is reset to zero before commencing observations.
2. True Bearing = Grid Bearing - Convergence (Convergence is -ve in WA/NT;add to Grid)

Mean	-0.35
Std Dev.	0.04

APPENDIX G

DGPS VERIFICATION



NOT TO SCALE
COORDINATES IN GRS80 (GDA 94), CM 141° E

FUGRO

MV MERMAID RAIDER DGPS VERIFICATION

APPENDIX G

u:\hy16526\report\appendix_g DGPS Verification\dgps_verification.dgn

DGPS STATIC Verification Sheet
Navigation System 1 - MRDGPS

Client :	**ESSO Australia Pty Ltd**	**Job No.:**	**HY16526**
Project :	**Scallop-1 Site Survey**	**Vessel :**	**MV Mermaid Raider**
Survey Station :	**Bolt (King's Wharf, Launceston)**	**Date :**	**24 Dec. 2002**
Wharf Alighment :	**147° 37' 16" (True)**	**Surveyor :**	**IW / TH**
Datum : GDA94	**Spheroid :** GRS80	**Projection :**	**UTM (Zone 54)**

Offset: CRP to Nav Check (X-Axis) : -7.80m | **Offset: CRP to Nav Check (Y-Axis) : 5.75m**

UTC Time	Fix	Observed Easting	Observed Northing	Calculated Easting	Calculated Northing	C - O dE	C - O dN
01:04:31	1	1011711.6	5395643.1	1011711.6	5395641.8	0.0	1.3
01:04:41	2	1011711.7	5395643.0	1011711.6	5395641.8	0.1	1.2
01:04:51	3	1011711.7	5395642.9	1011711.6	5395641.8	0.2	1.2
01:05:01	4	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.1
01:05:11	5	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.2
01:05:21	6	1011711.5	5395642.9	1011711.6	5395641.8	-0.1	1.1
01:05:31	7	1011711.4	5395643.0	1011711.6	5395641.8	-0.1	1.2
01:05:41	8	1011711.5	5395642.9	1011711.6	5395641.8	-0.1	1.1
01:05:51	9	1011711.5	5395642.9	1011711.6	5395641.8	-0.1	1.1
01:06:01	10	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.2
01:06:11	11	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.1
01:06:21	12	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.2
01:06:31	13	1011711.6	5395642.8	1011711.6	5395641.8	0.1	1.0
01:06:41	14	1011711.6	5395642.8	1011711.6	5395641.8	0.1	1.1
01:06:51	15	1011711.7	5395642.7	1011711.6	5395641.8	0.1	1.0
01:07:01	16	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:07:11	17	1011711.7	5395642.7	1011711.6	5395641.8	0.2	1.0
01:07:21	18	1011711.7	5395642.7	1011711.6	5395641.8	0.2	0.9
01:07:31	19	1011711.7	5395642.6	1011711.6	5395641.8	0.2	0.9
01:07:41	20	1011711.7	5395642.6	1011711.6	5395641.8	0.1	0.9
01:07:51	21	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:08:01	22	1011711.7	5395642.6	1011711.6	5395641.8	0.1	0.8
01:08:11	23	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.8
01:08:21	24	1011711.8	5395642.5	1011711.6	5395641.8	0.3	0.7
01:08:31	25	1011711.7	5395642.3	1011711.6	5395641.8	0.1	0.5
01:08:41	26	1011711.7	5395642.3	1011711.6	5395641.8	0.1	0.6
01:08:51	27	1011711.7	5395642.3	1011711.6	5395641.8	0.1	0.5
01:09:01	28	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:09:11	29	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:09:21	30	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.7
01:09:31	31	1011711.7	5395642.6	1011711.6	5395641.8	0.2	0.8
01:09:41	32	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.7
01:09:51	33	1011711.7	5395642.5	1011711.6	5395641.8	0.2	0.7
01:10:01	34	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.7
01:10:11	35	1011711.7	5395642.6	1011711.6	5395641.8	0.2	0.8
01:10:21	36	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.8
01:10:31	37	1011711.7	5395642.6	1011711.6	5395641.8	0.1	0.8

UTC		Observed		Calculated		C - O	
Time	Fix	Easting	Northing	Easting	Northing	dE	dN
01:10:41	38	1011711.7	5395642.5	1011711.6	5395641.8	0.2	0.8
01:10:51	39	1011711.7	5395642.5	1011711.6	5395641.8	0.2	0.8
01:11:01	40	1011711.7	5395642.9	1011711.6	5395641.8	0.2	1.2
01:11:11	41	1011711.9	5395642.7	1011711.6	5395641.8	0.3	1.0
01:11:21	42	1011712.2	5395642.6	1011711.6	5395641.8	0.7	0.9
01:11:31	43	1011711.9	5395642.7	1011711.6	5395641.8	0.3	0.9
01:11:41	44	1011711.8	5395642.7	1011711.6	5395641.8	0.3	1.0
01:11:51	45	1011711.8	5395642.6	1011711.6	5395641.8	0.3	0.9
01:12:01	46	1011711.9	5395642.6	1011711.6	5395641.8	0.3	0.8
01:12:11	47	1011711.8	5395642.6	1011711.6	5395641.8	0.3	0.8
01:12:21	48	1011711.7	5395642.7	1011711.6	5395641.8	0.1	1.0
01:12:31	49	1011711.6	5395642.8	1011711.6	5395641.8	0.0	1.0
01:12:41	50	1011711.5	5395642.8	1011711.6	5395641.8	0.0	1.1
01:12:51	51	1011711.5	5395642.8	1011711.6	5395641.8	-0.1	1.1
01:13:01	52	1011711.6	5395642.9	1011711.6	5395641.8	0.0	1.1
01:13:11	53	1011711.5	5395642.8	1011711.6	5395641.8	0.0	1.0
01:13:21	54	1011711.5	5395642.7	1011711.6	5395641.8	0.0	1.0
01:13:31	55	1011711.4	5395642.4	1011711.6	5395641.8	-0.2	0.7
01:13:41	56	1011711.5	5395642.4	1011711.6	5395641.8	-0.1	0.7
01:13:51	57	1011711.5	5395642.4	1011711.6	5395641.8	0.0	0.6
01:14:01	58	1011711.5	5395642.4	1011711.6	5395641.8	-0.1	0.6
01:14:11	59	1011711.6	5395642.5	1011711.6	5395641.8	0.0	0.7
01:14:21	60	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.7
01:14:31	61	1011711.6	5395642.4	1011711.6	5395641.8	0.1	0.7
01:14:41	62	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.7
01:14:51	63	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.7
01:15:01	64	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.6
01:15:11	65	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:15:21	66	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:15:31	67	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:15:41	68	1011711.7	5395642.4	1011711.6	5395641.8	0.2	0.6
01:15:51	69	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.6
01:16:01	70	1011711.8	5395642.7	1011711.6	5395641.8	0.2	1.0
01:16:11	71	1011711.9	5395642.7	1011711.6	5395641.8	0.4	0.9
01:16:21	72	1011711.9	5395642.8	1011711.6	5395641.8	0.3	1.0
01:16:31	73	1011711.9	5395642.6	1011711.6	5395641.8	0.4	0.8
01:16:41	74	1011712.0	5395642.7	1011711.6	5395641.8	0.4	0.9
01:16:51	75	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.9
01:17:01	76	1011712.0	5395642.7	1011711.6	5395641.8	0.4	0.9
01:17:11	77	1011712.0	5395642.7	1011711.6	5395641.8	0.4	1.0
01:17:21	78	1011711.9	5395642.7	1011711.6	5395641.8	0.3	1.0
01:17:31	79	1011711.9	5395642.8	1011711.6	5395641.8	0.4	1.0
01:17:41	80	1011711.9	5395642.8	1011711.6	5395641.8	0.4	1.0
01:17:51	81	1011711.9	5395642.8	1011711.6	5395641.8	0.4	1.1
01:18:01	82	1011712.0	5395642.7	1011711.6	5395641.8	0.4	1.0
01:18:11	83	1011712.0	5395642.8	1011711.6	5395641.8	0.4	1.0
01:18:21	84	1011711.9	5395642.8	1011711.6	5395641.8	0.3	1.0
01:18:31	85	1011711.9	5395643.1	1011711.6	5395641.8	0.3	1.3

UTC		Observed		Calculated		C - O	
Time	Fix	Easting	Northing	Easting	Northing	dE	dN
01:18:41	86	1011711.9	5395643.1	1011711.6	5395641.8	0.3	1.3
01:18:51	87	1011711.9	5395643.1	1011711.6	5395641.8	0.3	1.3
01:19:01	88	1011711.9	5395643.1	1011711.6	5395641.8	0.4	1.3
01:19:11	89	1011711.9	5395643.0	1011711.6	5395641.8	0.3	1.2
01:19:21	90	1011712.0	5395643.0	1011711.6	5395641.8	0.4	1.3
01:19:31	91	1011712.0	5395643.1	1011711.6	5395641.8	0.4	1.3
01:19:41	92	1011712.0	5395643.0	1011711.6	5395641.8	0.4	1.3
01:19:51	93	1011712.0	5395643.1	1011711.6	5395641.8	0.4	1.3
01:20:01	94	1011712.0	5395643.1	1011711.6	5395641.8	0.4	1.4
01:20:11	95	1011712.0	5395643.1	1011711.6	5395641.8	0.4	1.3
01:20:21	96	1011712.0	5395643.1	1011711.6	5395641.8	0.4	1.4
01:20:31	97	1011711.9	5395643.1	1011711.6	5395641.8	0.3	1.3
01:20:41	98	1011711.9	5395643.1	1011711.6	5395641.8	0.3	1.3
01:20:51	99	1011711.9	5395643.0	1011711.6	5395641.8	0.4	1.2
01:21:01	100	1011711.9	5395642.8	1011711.6	5395641.8	0.3	1.0
01:21:11	101	1011711.9	5395642.8	1011711.6	5395641.8	0.3	1.0
01:21:21	102	1011711.8	5395642.7	1011711.6	5395641.8	0.2	1.0
01:21:31	103	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:21:41	104	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.9
01:21:51	105	1011711.7	5395642.7	1011711.6	5395641.8	0.2	0.9
01:22:01	106	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:22:11	107	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:22:21	108	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:22:31	109	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:22:41	110	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.8
01:22:51	111	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.8
01:23:01	112	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.8
01:23:11	113	1011711.7	5395642.5	1011711.6	5395641.8	0.2	0.8
01:23:21	114	1011711.8	5395642.4	1011711.6	5395641.8	0.2	0.7
01:23:31	115	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.6
01:23:41	116	1011711.6	5395642.5	1011711.6	5395641.8	0.0	0.7
01:23:51	117	1011711.6	5395642.6	1011711.6	5395641.8	0.0	0.8
01:24:01	118	1011711.6	5395642.4	1011711.6	5395641.8	0.0	0.7
01:24:11	119	1011711.6	5395642.5	1011711.6	5395641.8	0.0	0.7
01:24:21	120	1011711.6	5395642.5	1011711.6	5395641.8	0.0	0.7
01:24:31	121	1011711.6	5395642.3	1011711.6	5395641.8	0.1	0.5
01:24:41	122	1011711.6	5395642.4	1011711.6	5395641.8	0.1	0.7
01:24:51	123	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.7
01:25:01	124	1011711.7	5395642.4	1011711.6	5395641.8	0.1	0.7
01:25:11	125	1011711.6	5395642.6	1011711.6	5395641.8	0.1	0.8
01:25:21	126	1011711.7	5395642.6	1011711.6	5395641.8	0.1	0.9
01:25:31	127	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.8
01:25:41	128	1011711.7	5395642.5	1011711.6	5395641.8	0.1	0.7
01:25:51	129	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.7
01:26:01	130	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.8
01:26:11	131	1011711.7	5395642.7	1011711.6	5395641.8	0.2	0.9
01:26:21	132	1011711.7	5395642.8	1011711.6	5395641.8	0.2	1.0
01:26:31	133	1011711.7	5395642.7	1011711.6	5395641.8	0.2	1.0

UTC Time	Fix	Observed		Calculated		C - O	
		Easting	Northing	Easting	Northing	dE	dN
01:26:41	134	1011711.8	5395642.8	1011711.6	5395641.8	0.2	1.0
01:26:51	135	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:27:01	136	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:27:11	137	1011711.8	5395642.7	1011711.6	5395641.8	0.2	0.9
01:27:21	138	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.9
01:27:31	139	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:27:41	140	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:27:51	141	1011711.8	5395642.6	1011711.6	5395641.8	0.2	0.8
01:28:01	142	1011711.8	5395642.5	1011711.6	5395641.8	0.2	0.8
01:28:11	143	1011711.9	5395642.5	1011711.6	5395641.8	0.3	0.8
01:28:21	144	1011711.9	5395642.5	1011711.6	5395641.8	0.3	0.8
01:28:31	145	1011711.9	5395642.5	1011711.6	5395641.8	0.4	0.7
01:28:41	146	1011711.8	5395642.5	1011711.6	5395641.8	0.3	0.7
01:28:51	147	1011711.9	5395642.5	1011711.6	5395641.8	0.3	0.7
01:29:01	148	1011711.9	5395642.5	1011711.6	5395641.8	0.3	0.7
01:29:11	149	1011711.9	5395642.6	1011711.6	5395641.8	0.3	0.8
01:29:21	150	1011711.9	5395642.6	1011711.6	5395641.8	0.4	0.9
01:29:31	151	1011711.9	5395642.6	1011711.6	5395641.8	0.4	0.8
01:29:41	152	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.8
01:29:51	153	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.8
01:30:01	154	1011712.0	5395642.7	1011711.6	5395641.8	0.4	0.9
01:30:11	155	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.8
01:30:21	156	1011712.0	5395642.6	1011711.6	5395641.8	0.5	0.8
01:30:31	157	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.9
01:30:41	158	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.8
01:30:51	159	1011712.0	5395642.6	1011711.6	5395641.8	0.4	0.9
01:31:01	160	1011712.0	5395642.9	1011711.6	5395641.8	0.5	1.1
01:31:11	161	1011712.0	5395642.8	1011711.6	5395641.8	0.4	1.1
01:31:21	162	1011712.1	5395642.9	1011711.6	5395641.8	0.5	1.1
01:31:31	163	1011712.0	5395642.9	1011711.6	5395641.8	0.5	1.1
01:31:41	164	1011712.0	5395642.7	1011711.6	5395641.8	0.4	1.0
01:31:51	165	1011712.0	5395642.8	1011711.6	5395641.8	0.4	1.0
01:32:01	166	1011712.1	5395642.7	1011711.6	5395641.8	0.5	1.0
01:32:11	167	1011712.1	5395642.9	1011711.6	5395641.8	0.5	1.1
01:32:21	168	1011712.1	5395642.9	1011711.6	5395641.8	0.5	1.1
01:32:31	169	1011712.1	5395642.9	1011711.6	5395641.8	0.5	1.1
01:32:41	170	1011712.1	5395643.0	1011711.6	5395641.8	0.6	1.3
01:32:51	171	1011712.1	5395643.1	1011711.6	5395641.8	0.5	1.4
					Mean	**0.2**	**0.9**

DGPS Navigation Systems Comparison

CLIENT:	ESSO	**VESSEL:**	Mermaid Raider
JOB NO.:	HY16526	**LOCATION:**	King's Wharf, Launceston
SURVEYOR:	IW/TH	**DATE:**	24 December 2002

Fix	Datum Primary (MRDGPS)		Datum Secondary (Direct Inj.)		dE	dN
	Easting (m)	Northing (m)	Easting (m)	Northing (m)	(m)	(m)
1	1011702.1	5395644.5	1011703.7	5395642.3	-1.6	2.2
2	1011702.2	5395644.5	1011701.8	5395643.3	0.4	1.2
3	1011702.2	5395644.4	1011701.8	5395643.3	0.4	1.1
4	1011702.1	5395644.3	1011701.8	5395643.2	0.3	1.1
5	1011702.0	5395644.3	1011703.3	5395642.3	-1.3	2.0
6	1011702.0	5395644.4	1011703.3	5395642.3	-1.3	2.0
7	1011701.9	5395644.4	1011703.3	5395642.3	-1.4	2.1
8	1011701.9	5395644.3	1011703.3	5395642.3	-1.4	2.1
9	1011702.0	5395644.3	1011703.4	5395642.2	-1.5	2.1
10	1011702.0	5395644.4	1011703.5	5395642.2	-1.4	2.2
11	1011702.1	5395644.4	1011703.5	5395642.2	-1.4	2.2
12	1011702.1	5395644.4	1011703.5	5395642.2	-1.4	2.2
13	1011702.1	5395644.2	1011703.5	5395642.1	-1.4	2.1
14	1011702.1	5395644.3	1011703.5	5395642.1	-1.3	2.2
15	1011702.1	5395644.2	1011703.5	5395642.0	-1.3	2.2
16	1011702.2	5395644.2	1011703.5	5395642.0	-1.3	2.2
17	1011702.2	5395644.2	1011703.5	5395641.9	-1.3	2.3
18	1011702.2	5395644.1	1011703.4	5395641.9	-1.3	2.2
19	1011702.2	5395644.1	1011703.4	5395641.8	-1.2	2.2
20	1011702.2	5395644.1	1011703.4	5395641.8	-1.2	2.3
21	1011702.2	5395644.0	1011703.3	5395641.8	-1.1	2.3
22	1011702.2	5395644.0	1011703.3	5395641.7	-1.2	2.3
23	1011702.2	5395644.0	1011703.3	5395641.7	-1.1	2.3
24	1011702.3	5395643.9	1011703.3	5395641.6	-1.0	2.3
25	1011702.1	5395643.8	1011703.3	5395641.6	-1.2	2.1
26	1011702.1	5395643.8	1011703.3	5395641.7	-1.2	2.1
27	1011702.2	5395643.8	1011703.3	5395641.7	-1.2	2.0
28	1011702.2	5395643.8	1011703.3	5395641.8	-1.1	2.1
29	1011702.2	5395643.9	1011703.3	5395641.8	-1.1	2.0
30	1011702.3	5395643.9	1011703.3	5395641.9	-1.1	2.0
31	1011702.2	5395643.9	1011703.3	5395641.9	-1.1	2.0
32	1011702.2	5395643.9	1011703.4	5395641.9	-1.2	2.0
33	1011702.2	5395643.9	1011703.4	5395641.9	-1.2	2.0
34	1011702.1	5395643.9	1011703.5	5395641.9	-1.3	2.0
35	1011702.2	5395644.0	1011703.5	5395641.9	-1.3	2.1
36	1011702.2	5395644.0	1011703.5	5395641.9	-1.3	2.1
37	1011702.2	5395644.0	1011703.4	5395641.9	-1.2	2.1
38	1011702.2	5395644.0	1011703.4	5395641.9	-1.2	2.1
39	1011702.2	5395644.0	1011703.3	5395641.8	-1.1	2.1
40	1011702.2	5395644.3	1011703.3	5395641.8	-1.1	2.5
41	1011702.3	5395644.2	1011701.8	5395642.5	0.5	1.7
42	1011702.7	5395644.1	1011701.7	5395642.5	1.0	1.6
43	1011702.3	5395644.2	1011701.8	5395642.5	0.6	1.7
44	1011702.3	5395644.2	1011701.8	5395642.4	0.5	1.8
45	1011702.3	5395644.1	1011701.8	5395642.4	0.5	1.7
46	1011702.3	5395644.0	1011701.7	5395642.4	0.6	1.7

DGPS Navigation Systems Comparison

CLIENT:	ESSO	VESSEL:	Mermaid Raider
JOB NO.:	HY16526	LOCATION:	King's Wharf, Launceston
SURVEYOR:	IW/TH	DATE:	24 December 2002

Fix	Datum Primary (MRDGPS)		Datum Secondary (Direct Inj.)		dE	dN
	Easting (m)	Northing (m)	Easting (m)	Northing (m)	(m)	(m)
47	1011702.3	5395644.0	1011701.7	5395642.3	0.6	1.7
48	1011702.2	5395644.2	1011701.7	5395642.3	0.5	1.9
49	1011702.1	5395644.2	1011702.9	5395641.6	-0.9	2.7
50	1011702.0	5395644.3	1011702.9	5395641.6	-0.9	2.7
51	1011702.0	5395644.3	1011702.9	5395641.6	-0.9	2.7
52	1011702.0	5395644.3	1011702.9	5395641.5	-0.9	2.8
53	1011702.0	5395644.2	1011702.9	5395641.5	-0.9	2.7
54	1011702.0	5395644.2	1011702.9	5395641.5	-0.9	2.6
55	1011701.8	5395643.9	1011702.9	5395641.5	-1.1	2.4
56	1011701.9	5395643.9	1011703.0	5395641.5	-1.1	2.4
57	1011702.0	5395643.8	1011703.0	5395641.4	-1.0	2.4
58	1011702.0	5395643.8	1011703.0	5395641.4	-1.1	2.4
59	1011702.0	5395643.9	1011703.0	5395641.4	-1.0	2.5
60	1011702.1	5395643.9	1011703.1	5395641.3	-1.0	2.5
61	1011702.1	5395643.9	1011703.1	5395641.3	-1.0	2.6
62	1011702.1	5395643.9	1011703.1	5395641.3	-1.0	2.6
63	1011702.1	5395643.9	1011703.1	5395641.3	-1.0	2.6
64	1011702.1	5395643.8	1011703.1	5395641.3	-1.0	2.5
65	1011702.1	5395643.8	1011703.1	5395641.3	-1.0	2.5
66	1011702.2	5395643.8	1011703.1	5395641.4	-1.0	2.5
67	1011702.2	5395643.8	1011703.2	5395641.4	-1.0	2.4
68	1011702.2	5395643.8	1011703.2	5395641.5	-1.0	2.3
69	1011702.2	5395643.8	1011703.2	5395641.6	-1.0	2.2
70	1011702.3	5395644.2	1011703.2	5395641.7	-1.0	2.5
71	1011702.4	5395644.1	1011703.3	5395641.7	-0.9	2.4
72	1011702.4	5395644.2	1011703.3	5395641.7	-0.9	2.5
73	1011702.4	5395644.1	1011703.3	5395641.7	-0.9	2.4
74	1011702.5	5395644.1	1011703.3	5395641.7	-0.9	2.4
75	1011702.5	5395644.1	1011703.4	5395641.7	-0.9	2.3
76	1011702.5	5395644.1	1011703.4	5395641.8	-0.9	2.3
77	1011702.4	5395644.2	1011703.4	5395641.8	-0.9	2.4
78	1011702.4	5395644.2	1011703.4	5395641.8	-1.0	2.4
79	1011702.4	5395644.3	1011703.4	5395641.9	-0.9	2.4
80	1011702.4	5395644.3	1011703.3	5395641.9	-0.9	2.3
81	1011702.4	5395644.3	1011703.3	5395641.9	-0.9	2.3
82	1011702.4	5395644.2	1011703.3	5395641.9	-0.9	2.3
83	1011702.4	5395644.3	1011703.3	5395641.9	-0.9	2.3
84	1011702.4	5395644.3	1011703.3	5395641.9	-1.0	2.4
85	1011702.4	5395644.5	1011703.4	5395641.9	-1.0	2.6
86	1011702.4	5395644.5	1011703.4	5395641.9	-1.0	2.7
87	1011702.4	5395644.5	1011703.4	5395641.9	-1.0	2.7
88	1011702.4	5395644.5	1011703.4	5395641.8	-1.0	2.7
89	1011702.4	5395644.5	1011703.5	5395641.8	-1.1	2.6
90	1011702.4	5395644.5	1011703.5	5395641.8	-1.0	2.6
91	1011702.4	5395644.5	1011703.5	5395641.8	-1.0	2.7
92	1011702.5	5395644.5	1011703.4	5395641.8	-1.0	2.7

DGPS Navigation Systems Comparison

CLIENT:	ESSO	**VESSEL:**	Mermaid Raider
JOB NO.:	HY16526	**LOCATION:**	King's Wharf, Launceston
SURVEYOR:	IW/TH	**DATE:**	24 December 2002

Fix	Datum Primary (MRDGPS)		Datum Secondary (Direct Inj.)		dE	dN
	Easting (m)	Northing (m)	Easting (m)	Northing (m)	(m)	(m)
93	1011702.4	5395644.5	1011703.5	5395641.8	-1.0	2.7
94	1011702.4	5395644.6	1011703.4	5395641.8	-1.0	2.7
95	1011702.5	5395644.5	1011703.4	5395641.8	-1.0	2.7
96	1011702.4	5395644.6	1011703.4	5395641.8	-1.0	2.8
97	1011702.4	5395644.6	1011703.4	5395641.7	-1.0	2.8
98	1011702.4	5395644.5	1011703.4	5395641.7	-1.0	2.8
99	1011702.4	5395644.5	1011703.3	5395641.7	-0.9	2.8
100	1011702.4	5395644.3	1011703.3	5395641.6	-0.9	2.6
101	1011702.3	5395644.2	1011703.3	5395641.6	-0.9	2.6
102	1011702.3	5395644.2	1011703.2	5395641.6	-0.9	2.6
103	1011702.3	5395644.1	1011703.2	5395641.6	-0.9	2.6
104	1011702.3	5395644.1	1011703.1	5395641.5	-0.9	2.6
105	1011702.3	5395644.1	1011703.1	5395641.5	-0.9	2.6
106	1011702.3	5395644.0	1011703.1	5395641.5	-0.8	2.6
107	1011702.2	5395644.1	1011703.1	5395641.4	-0.8	2.7
108	1011702.3	5395644.1	1011703.1	5395641.4	-0.8	2.8
109	1011702.3	5395644.1	1011703.1	5395641.4	-0.8	2.7
110	1011702.3	5395644.0	1011703.1	5395641.4	-0.8	2.6
111	1011702.2	5395644.0	1011703.1	5395641.4	-0.8	2.6
112	1011702.2	5395644.0	1011703.1	5395641.4	-0.9	2.7
113	1011702.2	5395644.0	1011703.0	5395641.4	-0.8	2.6
114	1011702.2	5395643.9	1011703.0	5395641.4	-0.8	2.5
115	1011702.0	5395643.8	1011703.0	5395641.4	-1.0	2.5
116	1011702.1	5395643.9	1011703.0	5395641.3	-1.0	2.6
117	1011702.0	5395644.0	1011703.0	5395641.3	-1.0	2.6
118	1011702.1	5395643.9	1011703.0	5395641.3	-0.9	2.6
119	1011702.0	5395643.9	1011703.0	5395641.3	-1.0	2.7
120	1011702.0	5395643.9	1011703.0	5395641.3	-1.0	2.7
121	1011702.1	5395643.8	1011703.0	5395641.3	-0.9	2.6
122	1011702.1	5395643.9	1011703.0	5395641.2	-0.9	2.7
123	1011702.1	5395644.0	1011703.0	5395641.2	-0.8	2.7
124	1011702.2	5395643.9	1011702.9	5395641.3	-0.8	2.6
125	1011702.1	5395644.0	1011702.9	5395641.3	-0.8	2.7
126	1011702.1	5395644.1	1011702.9	5395641.3	-0.8	2.8
127	1011702.2	5395644.0	1011702.9	5395641.3	-0.7	2.7
128	1011702.2	5395644.0	1011702.9	5395641.3	-0.7	2.6
129	1011702.2	5395644.0	1011702.9	5395641.4	-0.7	2.6
130	1011702.2	5395644.0	1011702.9	5395641.4	-0.7	2.6
131	1011702.2	5395644.1	1011702.9	5395641.5	-0.7	2.7
132	1011702.2	5395644.2	1011702.9	5395641.5	-0.7	2.7
133	1011702.2	5395644.2	1011702.9	5395641.5	-0.7	2.7
134	1011702.2	5395644.2	1011702.9	5395641.5	-0.7	2.7
135	1011702.2	5395644.2	1011702.9	5395641.5	-0.7	2.6
136	1011702.2	5395644.1	1011702.9	5395641.5	-0.7	2.6
137	1011702.3	5395644.1	1011702.9	5395641.4	-0.7	2.7
138	1011702.3	5395644.1	1011703.0	5395641.4	-0.7	2.7

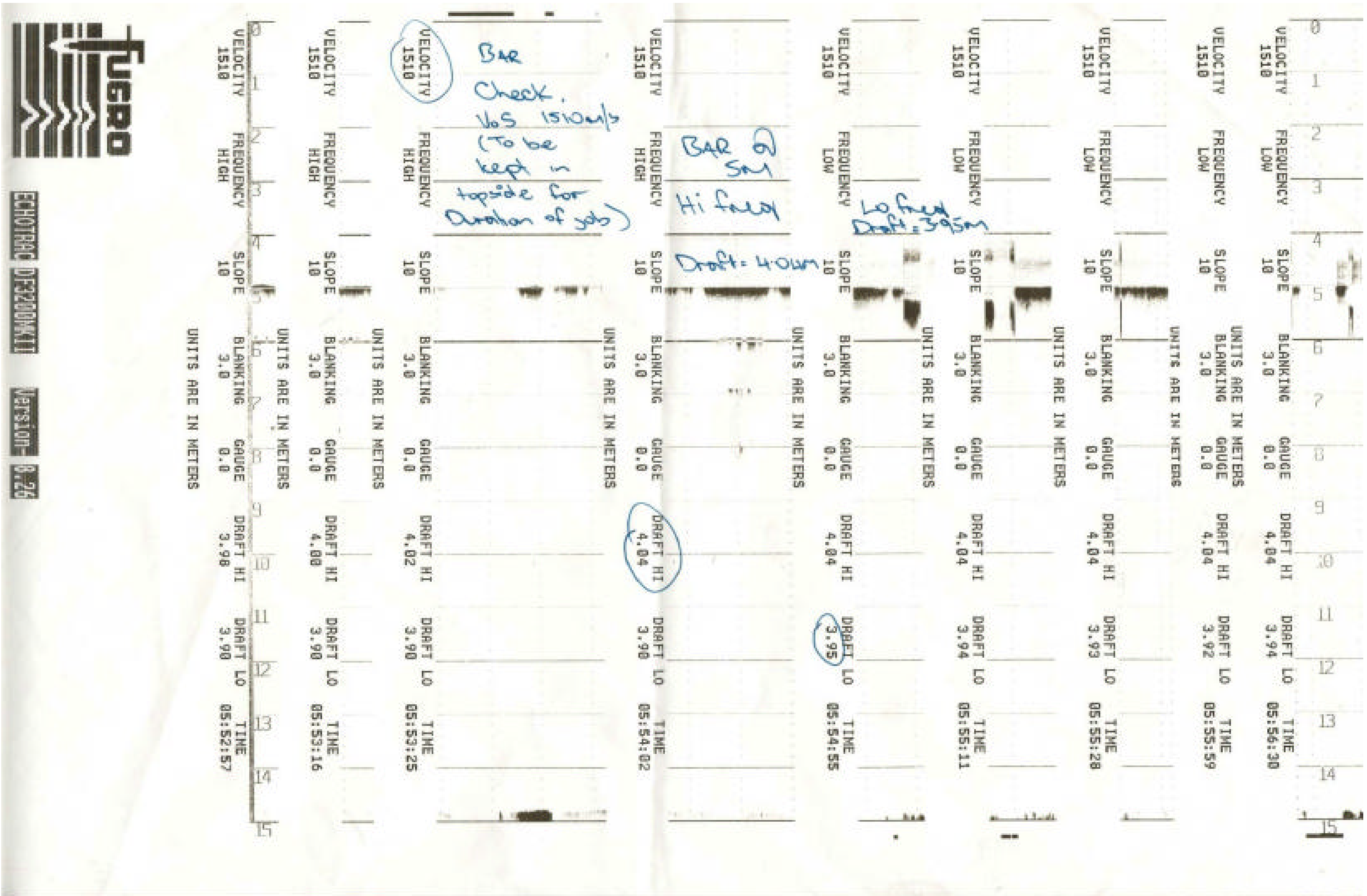
DGPS Navigation Systems Comparison

CLIENT:	ESSO	**VESSEL:**	Mermaid Raider
JOB NO.:	HY16526	**LOCATION:**	King's Wharf, Launceston
SURVEYOR:	IW/TH	**DATE:**	24 December 2002

Fix	Datum Primary (MRDGPS)		Datum Secondary (Direct Inj.)		dE	dN
	Easting (m)	Northing (m)	Easting (m)	Northing (m)	(m)	(m)
139	1011702.3	5395644.1	1011703.0	5395641.3	-0.7	2.7
140	1011702.3	5395644.1	1011703.0	5395641.3	-0.7	2.8
141	1011702.3	5395644.1	1011703.0	5395641.3	-0.7	2.8
142	1011702.3	5395644.0	1011703.0	5395641.2	-0.7	2.8
143	1011702.3	5395644.0	1011703.0	5395641.2	-0.7	2.8
144	1011702.3	5395644.0	1011703.0	5395641.1	-0.7	2.9
145	1011702.4	5395643.9	1011703.0	5395641.1	-0.6	2.8
146	1011702.3	5395644.0	1011703.0	5395641.2	-0.7	2.8
147	1011702.4	5395644.0	1011703.0	5395641.1	-0.6	2.8
148	1011702.4	5395644.0	1011703.0	5395641.2	-0.6	2.8
149	1011702.4	5395644.1	1011703.0	5395641.2	-0.6	2.9
150	1011702.4	5395644.1	1011702.9	5395641.3	-0.5	2.8
151	1011702.4	5395644.1	1011702.9	5395641.3	-0.5	2.8
152	1011702.4	5395644.1	1011702.9	5395641.3	-0.5	2.8
153	1011702.4	5395644.1	1011702.9	5395641.4	-0.5	2.7
154	1011702.4	5395644.2	1011702.9	5395641.4	-0.5	2.7
155	1011702.5	5395644.1	1011702.9	5395641.4	-0.4	2.7
156	1011702.5	5395644.1	1011702.9	5395641.4	-0.4	2.7
157	1011702.5	5395644.1	1011703.0	5395641.3	-0.5	2.8
158	1011702.5	5395644.1	1011703.0	5395641.4	-0.5	2.8
159	1011702.5	5395644.1	1011703.0	5395641.4	-0.5	2.8
160	1011702.5	5395644.4	1011703.0	5395641.4	-0.5	3.0
161	1011702.5	5395644.3	1011703.0	5395641.4	-0.5	2.9
162	1011702.5	5395644.4	1011703.0	5395641.5	-0.4	3.0
163	1011702.5	5395644.4	1011702.9	5395641.4	-0.4	2.9
164	1011702.5	5395644.2	1011702.9	5395641.5	-0.5	2.8
165	1011702.5	5395644.3	1011702.9	5395641.5	-0.4	2.8
166	1011702.5	5395644.2	1011702.9	5395641.5	-0.4	2.8
167	1011702.5	5395644.4	1011702.9	5395641.5	-0.4	2.9
168	1011702.6	5395644.4	1011702.9	5395641.5	-0.3	2.9
169	1011702.6	5395644.4	1011702.9	5395641.5	-0.3	2.9
170	1011702.6	5395644.5	1011702.9	5395641.6	-0.3	3.0
171	1011702.6	5395644.6	1011702.9	5395641.6	-0.3	3.0
				MEAN	**-0.8**	**2.5**
				Std Dev	**0.4**	**0.4**

APPENDIX H

SINGLE BEAM ECHO SOUNDER CALIBRATION



GENERAL INFORMATION

Survey tool:	ODOM Echotrac DF3200 Mk II	Scaling:	Not to scale
Vessel:	Mermaid Raider	Frequency:	Low (24 kHz) High (200kHz)
Survey date:	January 14, 2003		

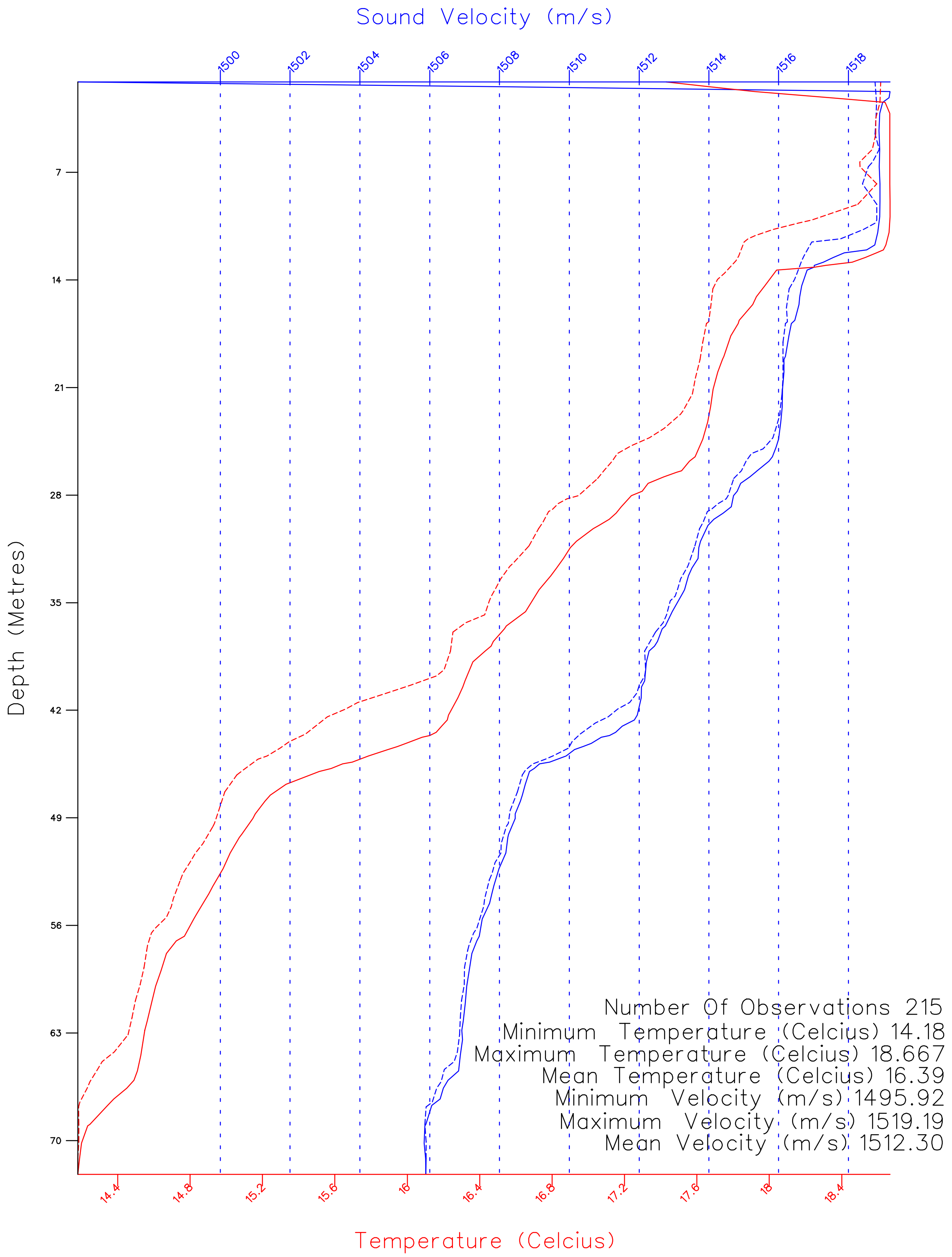
FUGRO

BAR CHECK RECORD - High and Low Frequency Transducer - Pre Survey Check

APPENDIX H

APPENDIX I

VELOCITY PROFILE RESULTS

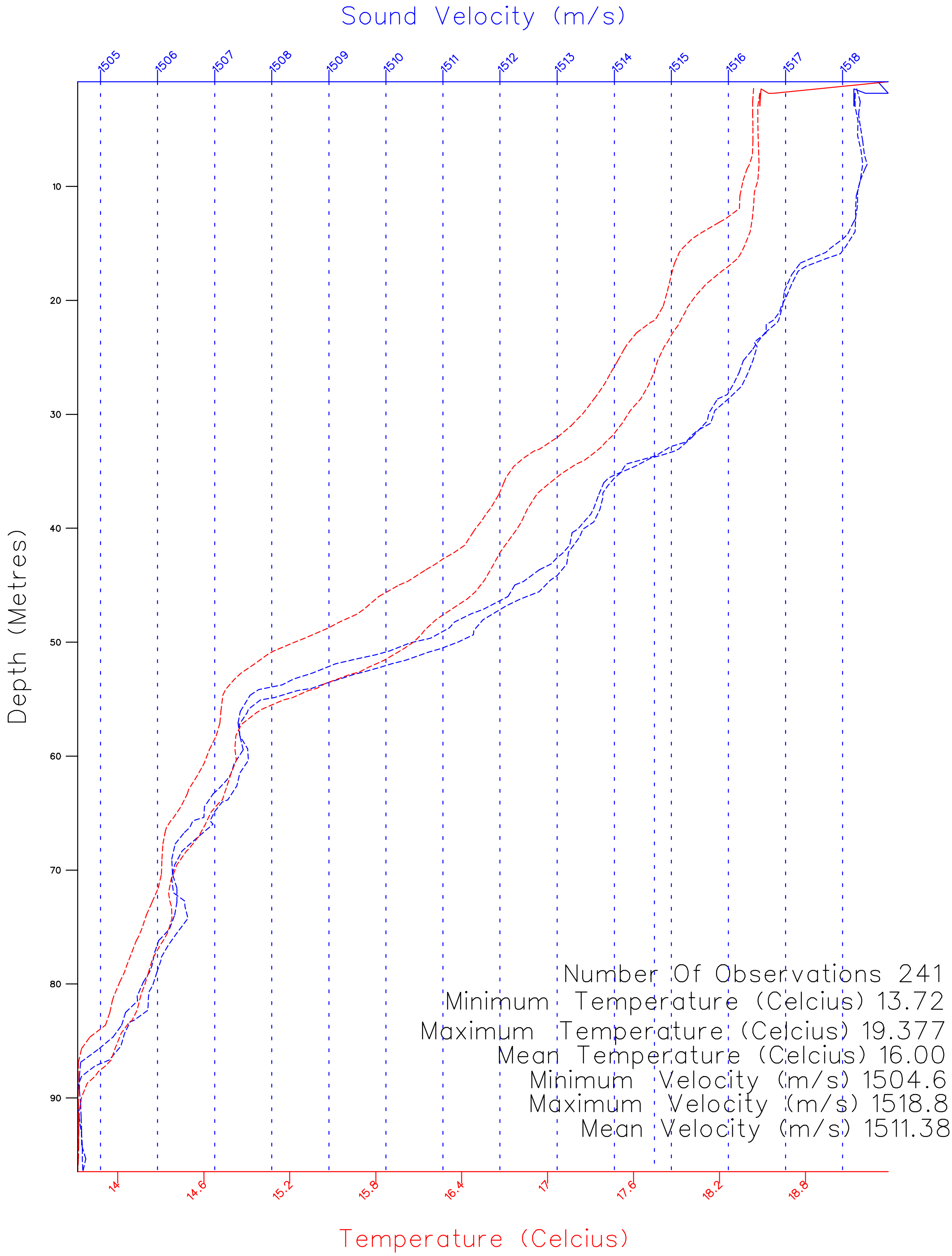


FUGRO

Sound Velocity Profile : Date 15/01/2003

Appendix I

u:\hy16526\report\appendix i\svp015.dgn



FUGRO

Sound Velocity Profile : Date 16/01/2003

Appendix I

u:\hy16526\report\appendix i\svp016.dgn

Fugro Marine Division
FSHY28-2

Sound Velocity Profile Log

Client: Esso **Location** Gippsland Basin **Vessel:** Mermaid Raider **Job No:** HY16526

DATE	TIME	SVP No.	Fix No.	Co ordinates		Max Depth	Raw File	Proc'ed File	Mean Velocity	Comments	Surveyor's Initials
				Easting	Northing						
15/01/2003	0922	1	1(M)	612613	5748588	70.8	svp015a.raw		1512.3	Near Halibut-1 Well location.	TH
17/01/2003	0716	2		638487	5771077	100	svp016a.raw		1511.4	In Scallop-1 Site Survey Area	BS

Approved by Dave Scott, Operations Manager - 1/08/01
Note - To ensure that this is the latest version check Electronic Master File

APPENDIX J

JOB CONFIGURATION PRINTOUT

```
*** FUGRO SURVEY STARFIX.SEIS ***

Header : Location                          :   Scallop-1
         Project Number                    :   Hy16526
         Client                            :   ESSO Australia Pty Ltd
         Client Representative             :   Rick Glanville
         Client Reference Number           :
         Project Description               :   Site Survey
         Geophysical Contractor            :   Fugro
         Positioning Contractor            :   Fugro
         Positioning Processing Contractor:    Fugro
         Setup By                          :   TH, BS, LC, BM
         On                                :   15/01/2003 23:35:32 UTC
         Time Source                       :   13 GPS 1 PPS Trimble
         Time Offset                       :   11:00 (Using UTC)
         Vessel                            :   RAIDER

Files    Runline        :   \\SEIS\DDrive\Hy16526\NonSession\SEIS\Scallop-1.srn
         Centreline     :   (None)
         Database       :   (None)
         CAD            :   \\SEIS\DDrive\Hy16526\dgn\vic_coat_gda94.dgn
         Waypoint       :   \\SEIS\DDrive\Hy16526\NonSession\SEIS\hy16526.swy

Logging: Directory      :   D:\Hy16526\logging\NonSession\SEIS\

Fixing : Mode           :   Distance
         Fix Interval   :    50.000m
         Reset at SOL   :   No
         Next Fix No.   :     2124
         Fix Increment  :        1
         Start FFID     :     2124
         Start Man. Fix:         3
         Early Start    :       10s
         Logging Start  :        5s

Datum 1: Datum          :  GDA94 (Australia-AUSLIG)
         Spheroid       :  GRS80
         SemiMajor Axis:   6378137.000
         1/Flattening   :  298.2572221010
         Eccentricity^2:   0.006694380022901

         Projection     :  Transverse Mercator (UTM)
         Grid Name      :
         Lat. Origin    :    0d00'00.0000"N
         Lon. Origin    :  147d00'00.0000"E
         False East     :    500000.000m
         False North    :  10000000.000m
         Scale Factor   :  0.9996
         Convergence    :  Australia/New Zealand

Datum 2: Datum          :  WGS 84
         Spheroid       :  WGS 84
         SemiMajor Axis:   6378137.000
         1/Flattening   :  298.2572235630
         Eccentricity^2:   0.006694379990141

Datum2>1:Parameters     :  From WGS84 to GDA94 (Australia-AUSLIG)
         DX             :     0.0000m         RX             :     0.0000"
```

```
         DY             :      0.0000m         RY             :      0.0000"
         DZ             :      0.0000m         RZ             :      0.0000"
         D Scale        :      0.0000ppm       Rot Convention:  +RZ=-RLongitude

Sundry : Vertical Datum:
         Ell. Sep.      :      0.0000m
         Distances      :    Spheroidal
         Bearings       :    True
         Units          :   metres
         Conversion     :      1.0000000000

Main Vessel             :   RAIDER
                        :   \\SEIS\DDRIVE\HY16517\SEIS\RAIDER.SVS

Nav. 1 : System         :   MRDGPS    (In Use)
         Type           :   Lat - Long
         Priority       :      1
         Time-out       :      5.0s
         X Offset       :      3.64m
         Y Offset       :    -10.33m
         Ant. Height    :      3.65m
Nav. 2 : System         :   TRIMBLE PRN
         Type           :   Lat - Long
         Priority       :      2
         Time-out       :      5.0s
         X Offset       :      3.64m
         Y Offset       :    -12.33m
         Ant. Height    :      3.66m
Dead Reckoning: No   Timeout:  30.0s

Gyro 1 : System         :   SGBrown    (In Use)
         Priority       :      1
         Time-out       :      3.0s
         Correction     :    178.62 Degrees

Motion 1 : System       :  TSS335    (In Use)
           Priority     :     1
           Time-out     :     3.0s
           X Offset     :     5.05m
           Y Offset     :    -8.37m
           Z Offset     :     0.21m
           Corr'n Pitch:      0.00 Degrees
           Corr'n Roll  :     0.00 Degrees

Sounder 1: System       :  EchoTrac.High    (In Use)
           Priority     :     1
           Time-out     :     5.0s
           X Offset     :     5.54m
           Y Offset     :    -7.00m
           Z Offset     :    -5.95m
           Vel. Sound   :  1500.00m/s
Sounder 2: System       :  EchoTrac.Low
           Priority     :     2
           Time-out     :     5.0s
           X Offset     :     5.54m
           Y Offset     :    -7.00m
           Z Offset     :    -5.95m
           Vel. Sound   :  1500.00m/s
```

```
Offsets: Name                          X          Y          Z
         IMU                         0.00       0.00       0.00
         IMU2                        0.21       0.00       0.00
         MBES                        1.75      -2.68      -5.98
         POSMV1                      1.17      -8.72       3.55
         POSMV2                      1.26     -11.16       3.47
         GPS1                        3.64     -10.33       3.65
         GPS2                        3.64     -12.33       3.66
         USBL                        5.54      -7.62      -6.68
         SBES                        5.54      -7.00      -5.95
         DMS05                       5.05      -8.37       0.21
         STERN                      -0.43     -25.60      -0.68
         SSS_TP                     -3.00     -25.60       0.00
         DAVIT                      -3.30     -24.60       0.00
         Nav_Check                  -7.60       5.93       0.00
         Boomer_CDP_TP               1.10     -25.60       0.00

O/Ts    : Steered Point:  O/T 0
         Shot          :  O/T 0

O/T  0    PR CRP              Flt:    Pos Sys: Datum In-Use
O/T  1    PR MRDGPS Datum     Flt:    Pos Sys: MRDGPS Datum
O/T  2    PR TRIMBLE_PRN_D    Flt:    Pos Sys: TRIMBLE PRN Datum
O/T  3    PR IMU              Flt:    Fxd Off: IMU
O/T  4    PR MBES             Flt:    Fxd Off: MBES
O/T  5    PR SBES             Flt:    Fxd Off: SBES
O/T  6    PR USBL             Flt:    Fxd Off: USBL
O/T  7    PR STERN            Flt:    Fxd Off: STERN
O/T  8    PR DAVIT            Flt:    Fxd Off: DAVIT
O/T  9    PR Nautronix ATS_1  Flt:    Target : Nautronix ATS_1
O/T 10    PR SSS_TP           Flt:    Fxd Off: SSS_TP
O/T 11    PR SSS_Tcount       Flt:    Var Off: SSS_Tcount
O/T 12    PR SSS_Bcn          Flt:    Var Off: SSS_Bcn
O/T 13    PR Xstar_Layback    Flt:    Var Off: Xstar_Layback
O/T 14    PR Xstar_usbl       Flt:    Target : Xstar_usbl

O/T Legend:   PR=Print LG=Log SN=Snap to line
V/O  1 SSS_Tcount
Using:
 75% vessel COG
  0% vessel heading
  0% offset bearing (from 0,0)
 25% line heading
 from O/T 10     0.0m@180.0G
V/O  2 SSS_Bcn
Using:
100% vessel COG
  0% vessel heading
  0% offset bearing (from 0,0)
  0% line heading
 from O/T  9    10.0m@180.0G
V/O  3 Xstar_Layback
Using:
 25% vessel COG
  0% vessel heading
  0% offset bearing (from 0,0)
 75% line heading
```

```
 from O/T  7   160.0m@180.0G
V/O  4 Xstar_Bn
Using:
100% vessel COG
  0% vessel heading
  0% offset bearing (from 0,0)
  0% line heading
 from O/T 14     2.0m@180.0G

Runline      : Sca_1_ml_28 (Sequence: 36)
Start        :  38d13'50.4913"S 148d35'20.1833"E    0.0m
                   639070.7mE  5767395.2mN        0.0m
End          :  38d12'41.6939"S 148d36'47.3949"E    0.0m
                   641228.1mE  5769479.2mN        0.0m
Azimuth      :       45.0 Degrees True
Length       :     3000.0 m
Run In       :        0.0 m
Run Out      :        0.0 m
Ghost Offset:         0.0 m
Turn radius :       200 m
Turn offset :         0 m
Turn angle  :       180.0 Degrees

Printing:
         Fix mark rate    :   1
         Weather Device   :   (None)
         Weather Interval:    60 minutes
         Weather Enabled :   No
         Config Changes   :   No
         System Timeouts :   No

Software:STARFIX SUITE 4.2
         RC: Seis RC3
         RC: Usbl HF1
         HF: SuperIn HF1
         HF: Cop HF1
         HF: StarfixProc HF1
         HF: Usbl HF1
         Seis        Ver 2.07.0009
         SeisEngine Ver 2.07.0010
         Display     Ver 2.09.0002
         Anchors     Ver 3.01.0009
         Print       Ver 2.03.0004
```

APPENDIX K

SURVEY RUN LOGS

Fugro Marine Division
FSHY26-3
SURVEY RUN LOG

No. **1**

Client: Esso **Location:** Gippsland Basin **Vessel:** Mermaid Raider **Job No.** HY16526

Date	Line Name	Time Start	Time End	Fix No. Start	Fix No. End	Speed	Echo Roll No.	Line Heading	File Name		COMMENTS (Quality of data, nav problems etc.)	Sur. Init.
1/15/03	SSS_Check	1015	1019	2	17	4.1	1	45°	SSS_Check	_002	Sidescan Checkline	BS
1/15/03	SSS_Check	1034	1043	18	41	4.1	1	225°	SSS_Check	_003	Sidescan Checkline	BS
1/15/03	SSS_Check_A	1038	1109	42	69	3.9	1	45°	SSS_Check_A		Sidescan Checkline	BS
1/15/03	Sca_1_ml_28	1526	1534	70	92	4.3	1	45°	Sca_1_ml_28		Scallop-1 Site Survey (No SSS, Line Aborted) DNP	TH
1/15/03	Sca_1_ml_23	1558	1625	93	164	4.4	1	225°	Sca_1_ml_23		Scallop-1 Site Survey (Lost Lo Freq ES during line)	TH
1/15/03	Sca_1_ml_26	1633	1701	165	235	4.1	1	45°	Sca_1_ml_26		Scallop-1 Site Survey (LF in echosounder OK)	TH
1/15/03	Sca_1_ml_21	1709	1737	236	307	4.3	1	225°	Sca_1_ml_21		Scallop-1 Site Survey	TH
1/15/03	Sca_1_ml_24	1744	1812	308	378	4	1	45°	Sca_1_ml_24		Scallop-1 Site Survey	TH
1/15/03	Sca_1_ml_19	1821	1846	379	449	4.3	1	225°	Sca_1_ml_19		Scallop-1 Site Survey	TH
1/15/03	Sca_1_ml_22	1856	1921	450	519	4.2	1	45°	Sca_1_ml_22		Scallop-1 Site Survey (T-count shows incorrect cable-out)	TH
1/15/03	Sca_1_ml_17	1948	2014	520	587	4.5	1	225°	Sca_1_ml_17		Scallop-1 Site Survey (T-Count OK)	TH
1/15/03	Sca_1_ml_20	2023	2046	588	658	4.7	1	45°	Sca_1_ml_20		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	TH
1/15/03	Sca_1_ml_15	2056	2121	659	730	4.7	1	225°	Sca_1_ml_15		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	TH
1/15/03	Sca_1_ml_18	2136	2200	731	803	4.6	1	45°	Sca_1_ml_18		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	TH
1/15/03	Sca_1_ml_13	2209	2234	804	875	4.7	1	225°	Sca_1_ml_13		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	TH
1/15/03	Sca_1_ml_16	2250	2314	876	947	4.7	1	45°	Sca_1_ml_16		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	TH
1/15/03	Sca_1_ml_14	2329	2354	948	1020	5	1	225	Sca_1_ml_14		Scallop-1 Site Survey (T-Count degrading, adjusting catenary in Seis)	BS
1/16/03	Sca_1_ml_11	50	118	1021	1095	4.2	1	45°	Sca_1_ml_11		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_9	132	159	1096	1167	4.3	1	225°	Sca_1_ml_9		Scallop-1 Site Survey (Occasional USBL Outages)	BS
1/16/03	Sca_1_ml_12	209	234	1168	1238	4.4	1	45°	Sca_1_ml_12		Scallop-1 Site Survey	BS

Approved by Dave Scott, Operations Manager - 1/08/01
Note - To ensure that this is the latest version check Electronic Master File

Fugro Marine Division
FSHY26-3
SURVEY RUN LOG

No. 2

Client: Esso **Location:** Gippsland Basin **Vessel:** Mermaid Raider **Job No.** HY16526

Date	Line Name	Time Start	Time End	Fix No. Start	Fix No. End	Speed	Echo Roll No.	Line Heading	File Name		COMMENTS (Quality of data, nav problems etc.)	Sur. Init.
1/16/03	Sca_1_ml_7	253	320	1239	1311	4.5	2	225°	Sca_1_ml_7		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_10	331	357	1312	1385	4.7	2	45°	Sca_1_ml_10		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_5	407	432	1386	1457	4.5	2	225°	Sca_1_ml_5		Scallop-1 Site Survey (Sporatic USBL)	BS
1/16/03	Sca_1_ml_8	443	509	1458	1531	4.7	2	45°	Sca_1_ml_8		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_3	518	545	1532	1605	4.2	2	225°	Sca_1_ml_3		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_6	556	622	1606	1678	4.4	2	45°	Sca_1_ml_6		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_1	632	657	1679	1750	4.9	2	225°	Sca_1_ml_1		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_4	714	739	1751	1824	4.7	2	45°	Sca_1_ml_4		Scallop-1 Site Survey	BS
1/16/03	Sca_1_xl_44	800	825	1825	1898	4.8	2	135°	Sca_1_xl_44		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_27	843	908	1899	1971	4.7	2	225°	Sca_1_ml_27		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_30	928	954	1972	2047	4.6	2	45°	Sca_1_ml_30		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_25	1005	1031	2048	2123	4.6	2	225°	Sca_1_ml_25		Scallop-1 Site Survey	BS
1/16/03	Sca_1_ml_28	1101	1126	2124	2198	4.6	2	45°	Sca_1_ml_28_001		DNP Bad Side Scan Scallop-1 Site Survey - ReRun (Tcount degrading Cat=	BS
1/16/03	Sca_1_ml_31	1154	1220	2199	2270	4.9	2	225°	Sca_1_ml_31		Scallop-1 Site Survey. (Re-run)	TH
1/16/03	Sca_1_ml_28	1243	1310	2271	2344	4.8	2	45°	Sca_1_ml_28_002		Scallop-1 Site Survey	TH
1/16/03	Sca_1_ml_29	1325	1351	2345	2417	4.6	2	225°	Sca_1_ml_29		Scallop-1 Site Survey	TH
1/16/03	Sca_1_ml_14	1417	1443	2418	2491	4.4	3	45°	Sca_1_ml_14_001		Scallop-1 Site Survey. (Re-run)	TH
1/16/03	Sca_1_ml_2	1456	1521	2492	2560	4.4	3	225°	Sca_1_ml_2		Scallop-1 Site Survey	TH

Approved by Dave Scott, Operations Manager - 1/08/01
Note - To ensure that this is the latest version check Electronic Master File

Fugro Marine Division
FSHY26-3
SURVEY RUN LOG

No. **3**

Client: Esso **Location:** Gippsland Basin **Vessel:** Mermaid Raider **Job No.** HY16526

Date	Line Name	Time Start	Time End	Fix No. Start	Fix No. End	Speed	Echo Roll No.	Line Heading	File Name		COMMENTS (Quality of data, nav problems etc.)	Sur. Init.
1/16/03	Sca_1_xl_32	1621	1645	2561	2629	4.5	3	135°	Sca_1_xl_32		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_35	1655	1721	2630	2704	4.7	3	315°	Sca_1_xl_35		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_33	1733	1758	2705	2776	4.9	3	135°	Sca_1_xl_33		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_37	1811	1834	2777	2848	4.7	3	315°	Sca_1_xl_37		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_34	1848	1913	2849	2920	5.0	4	135°	Sca_1_xl_34		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_40	1934	1959	2921	2992	5	4	315°	Sca_1_xl_40		Scallop-1 Site Survey (Cross lines).	TH
1/16/03	Sca_1_xl_38	2012	2036	2993	3065	5.1	4	135°	Sca_1_xl_38		Scallop-1 Site Survey (Cross line centreline through Scallop-1).	TH
1/16/03	Sca_1_xl_42	2054	2119	3066	3142	4.7	4	315°	Sca_1_xl_42		Scallop-1 Site Survey (Cross lines).	
1/16/03	Sca_1_xl_43	2239	2302	3143	3209	4.7	4	135°	Sca_1_xl_43		Scallop-1 Site Survey (Cross lines - Echosounder only).	TH
1/16/03	Sca_1_xl_41	2310	2331	3210	3273	5.0	4	315°	Sca_1_xl_41		Scallop-1 Site Survey (Cross lines - Echosounder only).	TH
1/16/03	Sca_1_xl_39	2343	0008	3274	3342	5.1	4	135°	Sca_1_xl_39		Scallop-1 Site Survey (Cross lines - Echosounder only).	TH
1/17/03	Sca_1_xl_36	18	39	3343	3407	5.1	4	315°	Sca_1_xl_36		Scallop-1 Site Survey (Cross lines - Echosounder only).	TH

Approved by Dave Scott, Operations Manager - 1/08/01
Note - To ensure that this is the latest version check Electronic Master File

APPENDIX L

GEOPHYSICAL RUN LOGS

GEOPHYSICAL RUN LOG

No. 0768

FUGRO

Client: ESSO **Location:** ESSO FEILD BASS STRAIT **Vessel:** RAIDER **Job No:** 16526

Date	Line No.	Start Time	End Time	First Fix No.	Last Fix No.	Direction	Operator's Comments: (record quality, variation in settings, filters, cable in/out etc.) SSS System 1	Roll No.	XSTAR System 2	Roll No.	TAPES XSTAR Operator Initials
15.1.03	SSS_CHECK	1015	1018	1	17	45°	100KHz @ 125m	1			1
	SSS_CHECK	1035	1043	18	41	225°		1			1
	SSS_CHECKA	1058	1109	42	69	45°		1			1
	SCA_1 ML_28	1526		70			100KHz 125m	1	XSTAR (LINE ABORTED)	1	1
	SCA-1 ML_23	15:58	1625	93	164	225°	100KHz 125m	1	XSTAR	1	1
	SCA-1 ML_26	1633	1701	165	235	45°		1		1	1
	SCA-1 ML_21	17:09	1737	236	307	225°		1		1	1
	SCA_1 ML_24	1744	1812	308	378	45		1		1	1
	SCA_1 ML_19	1821	1846	379	449	225°		2		1	1
	SCA-1 ML_22	1856	1921	450	519	45°		2		1	1
	SCA-1 ML_17	1948	2022	520	587	225°		2		1	1
	SCA_1 ML_20	2023	2046	588	657	45°		2		1	1
	SCA_1 ML_15	2056	2121	659	730	225		2		1	1
	SCA_1 ML_18	2135	2200	731	803	45°		2		1	1
	SCA_1 ML_13	2209	2234	804	875	225°		2		2	1
	SCA_1 ML_16	2250	2314	876	947	45°		2		2	1

GEOPHYSICAL RUN LOG

No. 0769

FUGRO

Client: ESSO **Location:** ESSO FIELD BASS STRAIT **Vessel:** MERMAID RAIDER **Job No:** 16526

Date	Line No.	Start Time	End Time	First Fix No.	Last Fix No.	Direction	Operator's Comments: (record quality, variation in settings, filters, cable in/out etc.) SSS System 1	Roll No.	XSTAR System 2	Roll No.	~~Operator Initials~~ TAPES	
15/01/03	SCA-1-ML-14	2329	2354	948	1020		100kHz 125m	2		2	1	
	SCA_1_ML_14	0050	0118	1021	1095	45°		2		2	1	
	SCA_1_ML_9	0132	0159	1096	1167	225°		2		2	1	
	SCA_1_ML_12	0209	0234	1168	1238	45°		2		2	1	
	SCA_1_ML_7	0253	0320	1239	1311	225°	ROLL CHANGE	3	ROLL CHANGE	3	1	
	SCA_1_ML_10	0331	0357	1312	1385	45°		3		3	1	
	SCA_1_ML_5	0407	0432	1386	1457	225°		3		3	1	
	SCA_1_ML_8	0443	0509	1458	1531	45°		3		3	1	
	SCA_1_ML_3	0518	0545	1532	1605	225°		3		3	1	
	SCA_1_ML_6	0556	0622	1606	1678	45°		3		3	1	
	SCA_1_ML_1	0632	0657	1679	1750	225°		3		3	1	
	SCA_1_ML_A	0714	0739	1751	1824	45°		3		3	1	
	SCA_1_XL_44	0800	0826	1825	1898	135°		3		3	1	
	SCA_1_ML_27	0843	0909	1899	1971	225°		3		3	1	
	SCA_1_ML_30	0928	0954	1972	2047	45°		3		3	1	
	SCA_1_ML_25	1005	1030	2048	2116	225°	GLOG CRASH IN RUNOUTS	3	LOST 50m	3	1	
	SCA_1_ML_28	1101	?	2124	2173	45°	LOTS OF NOISE PORT CHANNEL	4	ABORTED GLOG	3	1	2
	SCA_1_ML_31	1154	1220	2199	2270	225°	MISSED 15 FIXES ON PAPER	4		3	1	2

FSV028

GEOPHYSICAL RUN LOG

No. 0770

FUGRO

Client: ESSO **Location:** ESSO FIELD BASS STRAIT **Vessel:** MERMAID RAIDER **Job No:** 16526

Date	Line No.	Start Time	End Time	First Fix No.	Last Fix No.	Direction	Operator's Comments: (record quality, variation in settings, filters, cable in/out etc.) SSS System 1	Roll No.	XSTAR System 2	Roll No.	XSTAR ~~Operator~~ TAPES ~~Initials~~	SSS LOG
16/01/03	SCA_1 ML_28	1243	1309	2271	2344	45°	100KHZ 125m	4		3	1	2
	SCA_1 ML_29	1325	1351	2345	2417	225		4		3	1	2
	SCA_1 ML_14	1417	1443	2418	2491	45°		4		4	1	2
	SCA-1 ML-02	1456	1520	2492	2560	225°		4		4	1	2
	SCA-1 XL-32	1621	1645	2561	2629	135°		4		4	2	2
	SCA_1 XL_35	1655	1721	2630	2704	315		4		4	2	2
	SCA_1 XL_33	1733	1757	2705	2776	135		4		4	2	2
	SCA_1 XL_37	1811	1834	2777	2848	315'		4		4	2	2
	SCA_1 XL_34	1848	1913	2849	2920	135		4		4	2	2
	SCA_1 XL 40	1934	1959	2921	2992	315		5		4	2	2
	SCA_1 XL 38	2012	2036	2993	3065	135		5		4	2	2
	SCA_1 XL 42	2053	2119	3066	3142	315		5		4	2	2

FSV028

APPENDIX M

PROJECT HEALTH, SAFETY AND ENVIRONMENT DOCUMENTATION

APPENDIX M1

JOB HAZARD ANALYSIS PLAN

MERMAID MARINE AUSTRALIA LIMITED

JOB HAZARD ANALYSIS

To be completed prior to any work being commenced and forwarded to the HSE Supervisor as soon as possible.

VESSEL/SHORE DEPT MERMAID RAIDER DATE 14/01/03

JOB DESCRIPTION DEPLOYMENT OF USBL POLE

PERSONNEL / CREW NAME	SIGNATURE "I have read and understood the JHA"	PERSONNEL / CREW NAME	SIGNATURE "I have read and understood the JHA"
S. DAVIS	[signature]	T HANSEN	[signature]
R. MCQUEEN	[signature]	R. BRUINSMA.	[signature]
C. RAWLINSON	C Rawlinson.		
R. GLANVILLE	RG Glanville		

PERSONAL PROTECTIVE EQUIPMENT: Minimum requirement, overalls on vessels, steel capped boots (AS 2110), hard hats (AS 1801), safety glasses (AS 1337). Buoyancy vests if working overboard, near the stern or during cargo operations.

SEQUENCE OF EVENTS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PRECAUTION
1 SHIPS CRANE TO TAKE WT OF POLE	MISSUNDER STANDING OF SIGNALS PARTING OF WIRE, SLING. TRIP HAZARDS CON'D OF SEA CLEAR WORK AREA	RESTRICT ACCESS, WATCH KEEPER CLEAR SIGNALS. WEATHER REPORTS. P.P.E GEAR, 5 X 5
2/ RIG & ATTACH FWD STAY	CUTS TO HANDS FALLING OVERBOARD	P.P.E. GEAR HARD HATS, GLOVES, BOOTS, SAFTEY GLASSES.
3/ DEPLOY POLE – LOWER DOWN	DETERMINE DEPTH OF WATER. STOP V/L MOVEMENT. HAND SIGNALS	SOUND DEPTH CLEAR HAND SIGNALS RESTRICK ACCESS WATCH KEEPER.

JOB HAZARD ANALYSIS

FORM REF MarA SM01-12-02

SEQUENCE OF EVENTS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PRECAUTION
4/ ADJUST TO SUITABLE LENGTH FWD STAY	AS PER STEP 2	AS PER STEP 2
5/ RAISE POLE	AS PER STEP 1	AS PER STEP 1
6/ RIG AFT POLE LOWER STAY	AS PER STEP 1 & 2	AS PER STEP 1 & 2.
7/ ADJUST AFT STAY	AS PER STEP 2	
8/ CALLABRATE SENSORS & RAISE POLE, SECURE FOR SEA	CALABRATIONS AS PER FUGRO J.H.A RAISE POLE AS PER STEP 1	FUGRO PROCEDURE AS PER STEP 1

PREPARED BY S. DAVIS

APPROVED BY [signature]

HSE SUPERVISOR [signature]

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FORM REF : SM01-11-01

MERMAID MARINE
AUSTRALIA LIMITED

TOOL BOX MEETING

To be completed prior to any work being commenced and forwarded to HSE Supervisor as soon as possible.

VESSEL / SUPPLY BASE MERMAID RAIDER **CHARTERER** FUGRO

DATE 14/01/03 **COMPLETED BY** S.DAVIS

TASK	PERSONNEL / CREW	PERSONNEL SIGNATURE "I have read and understood the task involved"	REMARKS
	S. DAVIS	[signature]	
DEPLOYMENT OF USBL POLE.	R. M'QUEEN	[signature]	
CRANE HOOK UP & LOWER	C. RAWLINSON	[signature]	
POLE INTO WATER	R. GLANVILLE.	[signature]	
	R. BROINSMA	[signature]	
	T. HANSEN	[signature]	

HSE SUPERVISOR ____________

DATED ____________

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Aug 2001

APPENDIX M2

SAFETY MEETING MINUTES

PROJECT MEETING AND HSE INDUCTION
MV Mermaid Raider, Geelong Port, 13th January 2003

HY16526
Scallop-1 Site Survey

Meeting commenced at 1530hrs.

Attendees:

Name	Position
Ian Hobbs	Project Manager
Robert Bruinsma	Party Chief / Geophysicist
Rick Glanville	Client Representative
Simon Feldman	Master, MV Mermaid Raider
Brett Sellers	Surveyor
Tom Hansen	Surveyor
Leigh Clark	Technician
Ben Mannion	Technician
Steve Davis	Mate
Cameron Rawlinson	Vessel Crew
Rosco McQeen	Vessel Crew

1. The meeting was opened by the Project Manger who gave a brief Project overview and discussed the following topics:
   - Project Objectives
   - Engineering requirements
   - Fugro Safety and work practices
   - Weather considerations for the project area

On the above, specific discussion was held on each topic with special emphasis on project related application.

2. The survey priorities were discussed to clarify the operating strategy and programme. Specific points discussed, particular to the survey project were:
   - Use of X-Star sub-bottom Profiling instead of more weather dependent surface-tow boomer
   - Runline grid orientation and line spacing
   - Seabed sampling requirements
   - The requirement to conduct a side scan sonar towfish verification test at a known wellhead location prior to survey operations.
   - The requirement to produce a field report on completion of all survey operations.

3. PPE requirements for the project were discussed and established as follows:
   - Flotation vest to be worn on the backdeck aft of the survey container
   - Overalls and boots to be worn at all times
   - Gloves for wire or cable wire handling works
   - Hard hats where overhead operations/equipment in operation.
   - Safety glasses as required.

4. The JHA's for all aspects of the project operations were reviewed with special emphasis on the following:

- Deployment of the over-the-side mounted echo sounder and USBL pole usingthe ship's crane
- Deployment of the X-Star towfish and the assistance of the necessary vessel crew.
- Seabed sampling techniques and the assistance of the necessary vessel crew

The following additional project specific were discussed:

- Operations in vicinity of wellheads
- Cetaceans and reporting requirements

5. Duty roster and responsibilities for Fugro Survey team were presented and agreed.

6. A sailing time was agreed. Safety drills / meeting times were agreed to be held during transit to site. The intention of the vessel demobilisation to take place alongside Geelong Port was briefly discussed.

Meeting concluded at 1640hrs.

Project Manager
I. Hobbs

Party Chief
R. Bruinsma

PROJECT CLOSE-OUT & PRE-DEMOBILISATION MEETING
MV Mermaid Raider, 17th January 2003

HY16526
Scallop-1 Site Survey

Meeting commenced at 1300hrs.

Attendees:

Name	Position
Robert Bruinsma	Party Chief / Geophysicist
Rick Glanville	Client Representative
Simon Feldman	Master, MV Mermaid Raider
Brett Sellers	Surveyor
Tom Hansen	Surveyor
Leigh Clark	Technician
Ben Mannion	Technician
Cameron Rawlinson	Vessel Crew
Rosco McQeen	Vessel Crew
Harry Jones	Vessel Cook

1. The meeting was opened by the Party Chief who thanked everybody for their efforts during the Project with specific reference to the following:
   - Fulfilment of Project Objectives with zero LTI
   - Assistance offered by the vessel crew during back deck operations
   - Flexibility shown by the vessel cook, in light of limited on-shift crew and 24-hr operations

2. The HS&E concerns for the forthcoming demobilisation of all survey equipment from the vessel was discussed with specific reference to the following items:
   - All personnel must wear port authority-provided day-glo vests, as well as full PPE, whilst working on the quayside
   - Dangers of cutting container deck-braces, etc.
   - ESSO maximum work height policy and the impact on demobilisation of container-top mounted antennas and cabling.

3. The Party Chief discussed the plan for demobilisation of equipment and safe work practises while the vessel was in transit to Geelong Port with the Fugro personnel.

4. The Client Representative closed-out the meeting by thanking all involved with the Project and re-iterated the importance of observing ESSO's maximum work height policy during transit as well as once the vessel was alongside.

5. An ETA was established for the vessel by the vessel Master to be alongside Geelong Port.

Meeting concluded at 1335hrs.

Party Chief
Fugro Survey
R. Bruinsma

APPENDIX M3

VESSEL EMERGENCY CHECKLSTS

FORM REF MMA SM08-11-01

MERMAID MARINE AUSTRALIA LIMITED

VESSEL NAME: MERMAID RAIDER

DATE: 14/01/03

EMERGENCY CHECKLIST – MANOVERBOARD

ACTION	PERSON	CHECK
INFORM OOW AND WHICH SIDE	WITNESS	✓
MUSTER ALL PERSONNEL	ALL	✓
WHEEL OVER TO SAME SIDE AS MANOVERBOARD	OOW	✓
RELEASE MANOVERBOARD LIGHT/SMOKE ON BRIDGEWING	OOW	✓
SOUND ALARM	OOW	✓
LOOKOUT TO MAINTAIN WATCH ON MAN	LOOKOUT	✓
STEADY COURSE 60 DEG FROM ORIGINAL	OOW	✓
INFORM ENGINE ROOM	MASTER	✓
PREPARE FOR ENGINE MANOEUVRE	ENG	✓
POST EXTRA LOOKOUTS	OOW	✓
RELIABLE HELMSMAN ON HAND STEERING	OOW	✓
INFORM POSITION OF R/O/GMDSS OP.	OOW	✓
CARRY OUT WILLIAMSON TURN	MASTER	✓
REDUCE SPEED	MASTER	✓
PREPARE RESCUE BOAT	MATE	✓
PREPARE COMMUNICATIONS	OOW	✓
SEND DISTRESS	MASTER	✓
WARN LOCAL TRAFFIC	MASTER	✓
IF MANOVERBOARD SIGHTED PREPARE A LEE FOR RESCUE BOAT	MASTER	✓
PREPARE MEDICAL AID/BLANKETS	COOK	✓
LAUNCH RESCUE BOAT	MATE	✓
MAINTAIN COMMUNICATIONS	MATE/MASTER	✓
IF SUCCESSFUL INFORM ALL PARTIES	MASTER	✓
CO-ORDINATE SEARCH WITH AUTHORITIES/OTHER VESSELS	MASTER	✓
IF MANOVERBOARD BUT TIME UNKNOWN OBTAIN TIME OF LAST SIGHTING AND OTHER INFORMATION	MASTER	✓
RELAY TO AUTHORITIES AND CONSULT MERSAR FOR SEARCH PATTERN	MASTER	✓
INFORM COMPANY	MASTER	✓
IF RESCUED REFER TO CHECKLIST FOR MEDICAL ASSISTANCE	MASTER	✓

CREW ATTENDANCE:

NAME	SIGNATURE	NAME	SIGNATURE
S. DAVIS	[signature]		
R. GLANVILLE (ESSO)	[signature]		
R BRUINSMA (FUGRO)	[signature]		

Signed: [signature]

JAN 2001

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MERMAID MARINE AUSTRALIA LIMITED

VESSEL NAME: MERMAID RAIDER

DATE: 14/01/03

EMERGENCY CHECKLIST – FIRE

ACTION	PERSON	CHECK
SOUND ALARM	WITNESS	
MUSTER ALL PERSONNEL	ALL	
IF FIRE SMALL WITNESS TO MAKE DECISION TO EXTINGUISH	WITNESS	
INFORM BRIDGE OF FIRE LOCATION	WITNESS	
INFORM EMERGENCY PARTIES OF FIRE LOCATION AND DUTIES	MASTER	
INFORM R/O OF VESSEL POSITION	OOW	
SEND DISTRESS	MASTER	
IN CHARGE OF EMERGENCY TEAM	MATE	
IN CHARGE OF EMERGENCY TEAM	ENG IN E.R.	
IN CHARGE OF BACKUP TEAM	2/0	
START FIRE PUMP	ENG	
CONTROL COMMUNICATIONS	MASTER	
CAN SMOTHERING SYSTEM BE USED	MASTER	
IF SO IS SPACE EVACUATED?	ENG/MATE	
ARE PERSONS INJURED?	ENG/MATE	
PREPARE MEDICAL BACKUP	COOK	
ARRANGE INJURED PERSON EVACUATION	MASTER	
MANOEUVRE VESSEL IF POSSIBLE TO PUT FIRE TO LEE SIDE	MASTER	
IN PORT CONTACT LOCAL AUTHORITIES	MASTER	
IN PORT PREPARE FOR EMERGENCY SAILING	MASTER/MATE	
AT SEA PREPARE LIFEBOATS/RAFTS	MATE	
LIAISE WITH RESCUERS	MASTER	
IN PORT BRIEF FIRECHIEF AND GIVE HIM COPY 'SHIPS SAFETY PLAN'	MASTER/MATE	
IF LARGE QUANTITIES OF WATER USED – IS STABILITY IN DANGER?	MASTER	
CAN VESSEL BE MANOEUVRED TO AID/PROTECT EVACUATION?	MASTER	
REPORT TO COMPANY	MASTER	

CREW ATTENDANCE:

NAME	SIGNATURE	NAME	SIGNATURE
S. DAVIS	[signature]		
R. GLANVILLE (ESSO)	[signature]		
R. BRUINSMA (FUGRO)	[signature]		

Signed: [signature]

JAN 2001

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Blue Copy – Vessel

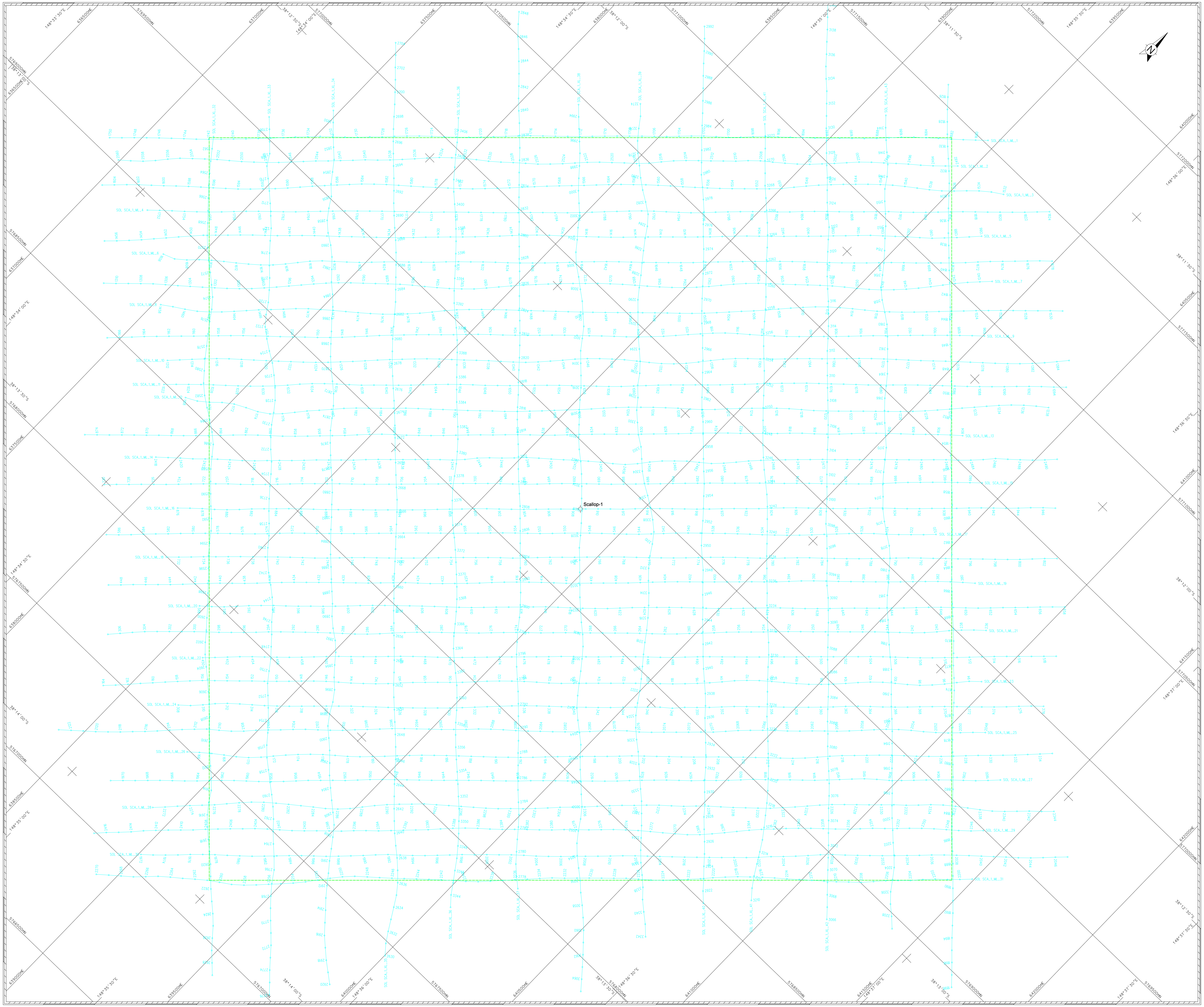
FORM REF MMA SM08-17-01

MERMAID MARINE AUSTRALIA LIMITED
EMERGENCY DRILL – MINUTES / COMMENTS

VESSEL / SUPPLY BASE:	MERMAID RAIDER
DATE OF DRILL:	14/01/03
DRILL COMPLETED:	1345

ITEM No.	COMMENTS / REMARKS / MINUTES
1/	RAISE ALARM, FIRE IN FUGRO SURVEY SHACK, INFORM MASTER.
1303	SOUND EMERGENCY STATIONS MUSTER ALARM.
1305	HEAD COUNT, ALL P/N ACCOUNTED FOR AND WEARING LIFE JACKETS.
1306	ALL P/N INFORMED OF FIRE, ENGINEERS TO ENGINE ROOM, START FIRE PUMP.
	TWO FIRE TEAMS GIVEN HAND HELD RADIO'S.
	FIRE TEAM '1' TWO SHIPS CREW, 1 FUGRO P/N TO CONNECT FIRE HOSE.
	FIRE TEAM '2' TWO SHIPS CREW, 1 FUGRO P/N TO COLLECT FIRE EXTINGUISHERS.
1315	FIRE DEEMED TO BE OUT, HOSES AND EXTINGUISHERS STOWED AWAY.
2/	MEETING IN MESS TO DISCUSS DRILL.
A.	TYPE OF EXTINGUISHERS TO BE USED.
B.	ISOLATE POWER TO SURVEY SHACK AND ALL DECK EQUIPMENT.
C.	POSSABILITY OF B.A. SETS TO ENTER SURVEY SHACK.
D.	CONNECTING MORE FIRE HOSES TO FIGHT FIRE.
E.	CLOSE UP SHACK AND ALLOW FIRE TO BURN OUT.
F.	READ THROUGH FIRE CHECKLIST.
3/	MAN OVERBOARD CHECK LIST DISCUSSED.
4/	RUN THROUGH DRILL PROCEDURE.
A/	OVERALL V/GOOD, P/N MUSTERED QUICKLY WITH LIFE JACKETS.
B/	FIRE TEAMS QUICK TO HAVE FIRE PUMP & WATER RUNNING.
C/	EXTINGUISHERS QUICKLY TO TO SCEANE OF FIRE
D/	GOOD INPUT BY ALL PERSONAL.

SIGNED (MASTER) (QC/HSE MANAGER)



LEGEND:

- Vessel track of the CRP position, showing runline name and fix number
- Proposed drill location - Scallop-1 coordinates 639316mE 5769300mN
- Limit of survey area defined by Esso

NOTES:

1) Positioning Systems: Starfix Spot & MRDGPS and Nautronix ATS II towfish positioning
2) Tracks represent the Common Reference Point (CRP) location on MV Mermaid Raider

GEODETIC PARAMETERS:

HORIZONTAL COORDINATE SYSTEM

GEODETIC DATUM	:	Geocentric Datum of Australia (GDA94)
ELLIPSOID	:	Geocentric Reference System 1980 (GRS80)
Semi major axis	:	6378137.000 m
Inverse flattening	:	298.2572221010
PROJECTION	:	Universal Transverse Mercator (UTM)
Central Meridian (CM)	:	147°E (Zone 55)
Latitude of Origin	:	0°N
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Scale factor at CM	:	0.9996
DATUM TRANSFORMATION	:	
(From WGS84)	:	dX = 0.000 m dY = 0.000 m dZ = 0.000 m
	:	rX = 0.0000" rY = 0.0000" rZ = 0.0000"
	:	dS = 0.00000ppm
VERTICAL DATUM	:	Mean Sea Level

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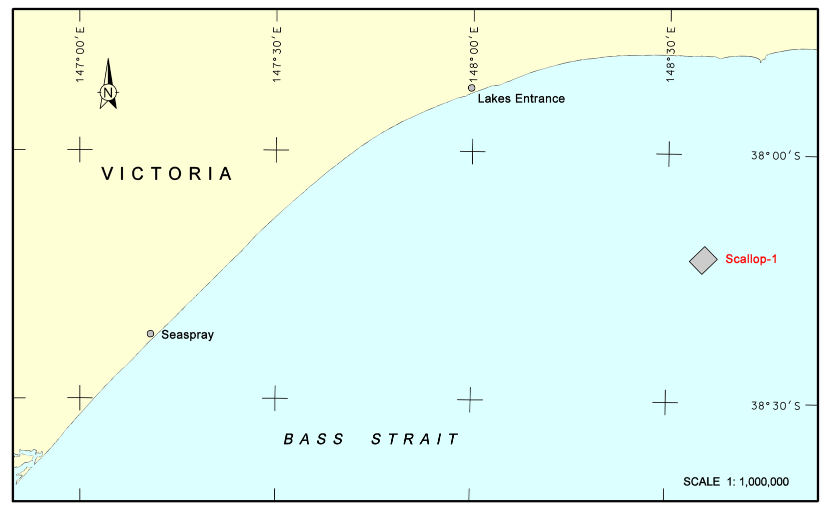

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benchmark IN QUALITY ISO 9001

SITE SURVEY

SCALLOP-1 LOCATION - GIPPSLAND BASIN

CRP TRACKPLOT

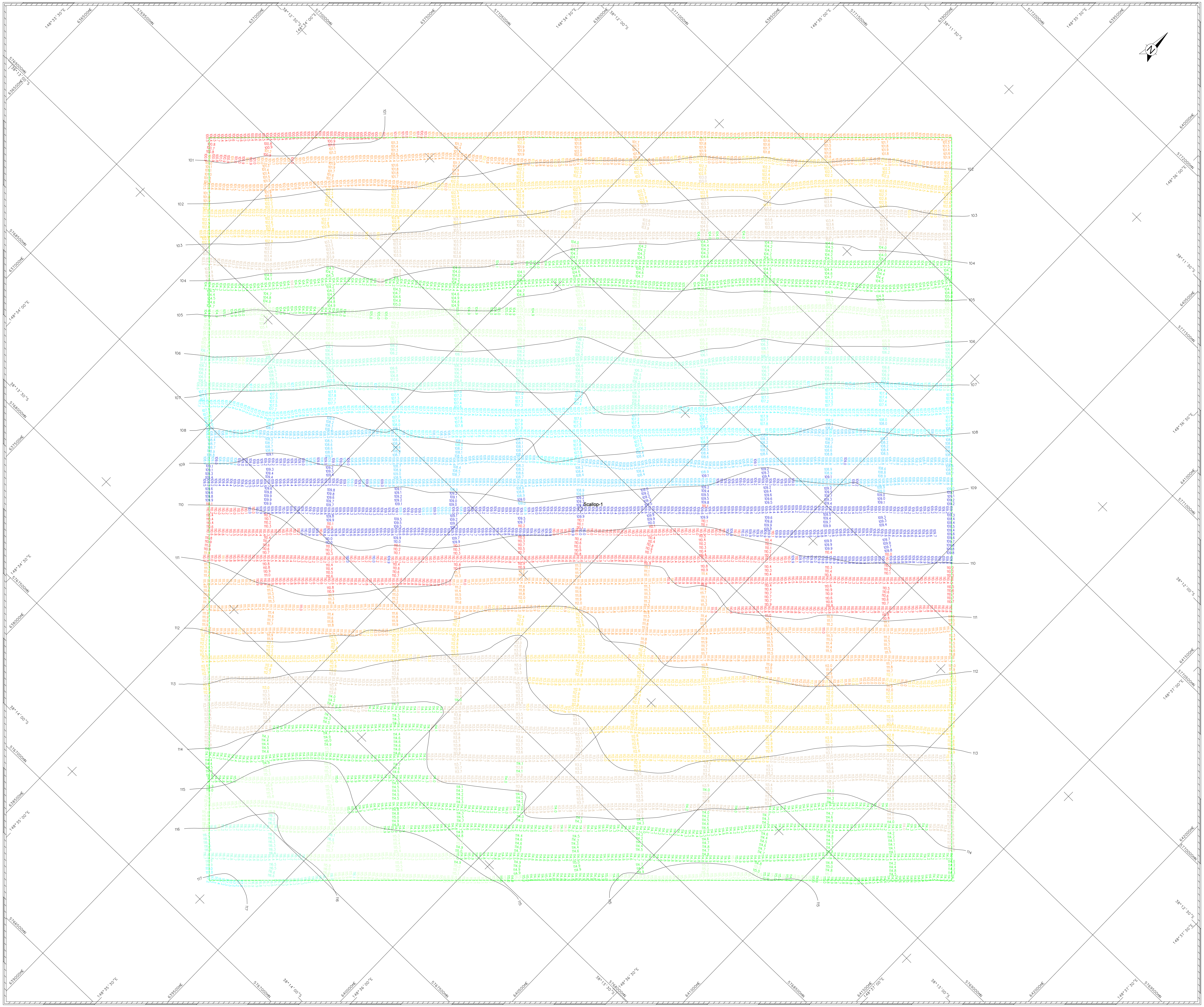
SCALE: **1: 5,000**

100m 0m 100m 200m 300m 400m 500m

Vessel: MV MERMAID RAIDER | **Survey Date:** 13 - 18 JANUARY 2003 | **Project Ref:** HY16526

Issue No:	Date:	Description:	Surv:	Interpr:	Drawn:	Chkd:	Appr:
0	03/02/2003	Final	TH/BS	RB	TH/IRA		

Client Ref:	Drawing No:	Chart:	Encl:
	16526_01	1 of 5	5



LEGEND:

- Bathymetric soundings in metres (colour banded at one metre intervals)
- Bathymetric contours at 1 metre intervals, indexed every 5 metres
- Proposed drill location - Scallop-1 coordinates 639316mE 5769300mN
- Limit of survey area defined by Esso

NOTES:

1) Positioning Systems: Starfix Spot & MRDGPS and Nautronix ATS II towfish positioning
2) Bathymetry data acquired with dual frequency ODOM Echotrac DF3200 MKII single beam echosounder. Soundings shown are from the HF (200kHz) transducer
3) Bathymetry data reduced to Mean Sea Level, using predicted tides for Scallop-1 site supplied by Esso

GEODETIC PARAMETERS:

HORIZONTAL COORDINATE SYSTEM

GEODETIC DATUM	:	Geocentric Datum of Australia (GDA94)
ELLIPSOID	:	Geocentric Reference System 1980 (GRS80)
Semi major axis	:	6378137.000 m
Inverse flattening	:	298.2572221010
PROJECTION	:	Universal Transverse Mercator (UTM)
Central Meridian (CM)	:	147°E (Zone 55)
Latitude of Origin	:	0°N
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Scale factor at CM	:	0.9996
DATUM TRANSFORMATION (From WGS84)	:	dX = 0.000 m dY = 0.000 m dZ = 0.000 m rX = 0.0000" rY = 0.0000" rZ = 0.0000" dS = 0.00000ppm
VERTICAL DATUM	:	Mean Sea Level

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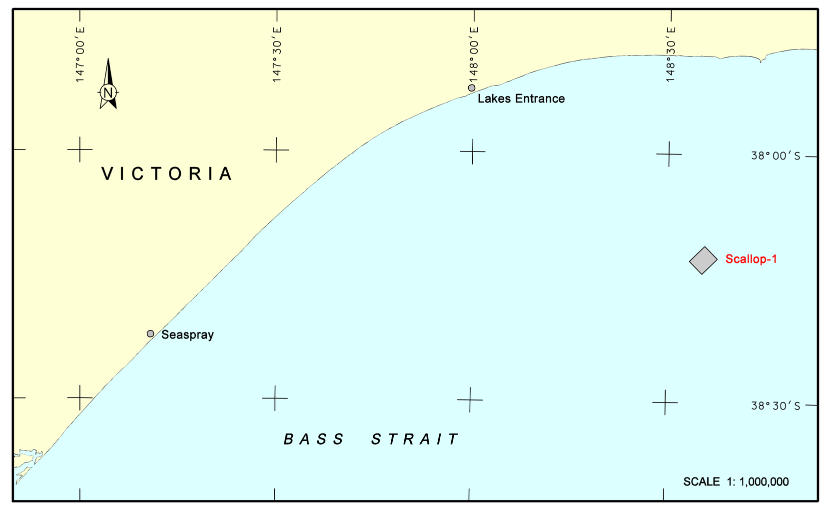

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benchmark IN QUALITY ISO 9001

SITE SURVEY
SCALLOP-1 LOCATION - GIPPSLAND BASIN
BATHYMETRY

SCALE: 1: 5,000

100m 0m 100m 200m 300m 400m 500m

Vessel: MV MERMAID RAIDER | **Survey Date:** 13 - 18 JANUARY 2003 | **Project Ref:** HY16526

Issue No:	Date:	Description:	Surv:	Interpr:	Drawn:	Chkd:	Appr:
0	03/02/2003	Final	TH/BS	RB	TH/IRA		

Client Ref:	Drawing No:	Chart:	Encl:
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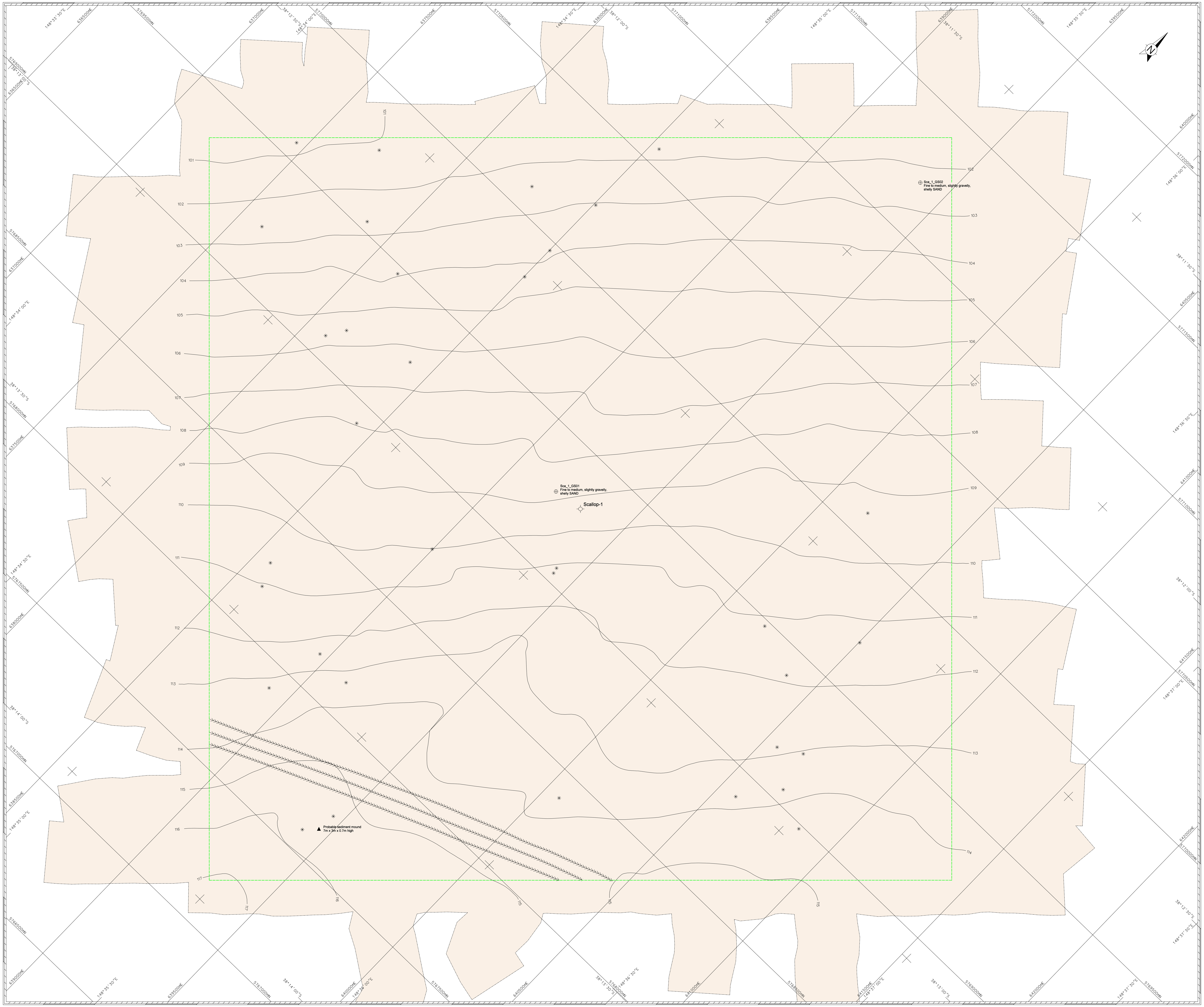

LEGEND:

104 / 105	Bathymetric contours at 1 metre intervals, indexed every 5 metres
	Proposed drill location - Scallop-1 coordinates 639316mE 5769300mN
	Limit of survey area defined by Esso
	Limit of side scan sonar coverage
	Prominent trawl scar
	Isolated minor patches of coarse sediments (GRAVEL, SHELLS)
	Object (with dimensions in metres)
	Sediment sample location with identifier and description
	Uniform moderate acoustic reflectivity seabed - interpreted to represent fine to medium SAND

NOTES:

1) Positioning Systems: Starfix Spot & MRDGPS and Nautronix ATS II towfish positioning
2) Bathymetry data acquired with dual frequency ODOM Echotrac DF3200 MKII single beam echosounder. Contours are derived from HF (200kHz) soundings
3) Bathymetry data reduced to Mean Sea Level, using predicted tides for Scallop-1 site supplied by Esso
4) Seabed features interpreted from data acquired with GeoAcoustics SS941 100kHz side scan sonar system

GEODETIC PARAMETERS:

HORIZONTAL COORDINATE SYSTEM

GEODETIC DATUM	:	Geocentric Datum of Australia (GDA94)
ELLIPSOID	:	Geocentric Reference System 1980 (GRS80)
Semi major axis	:	6378137.000 m
Inverse flattening	:	298.2572221010
PROJECTION	:	Universal Transverse Mercator (UTM)
Central Meridian (CM)	:	147°E (Zone 55)
Latitude of Origin	:	0°N
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Scale factor at CM	:	0.9996
DATUM TRANSFORMATION	:	
(From WGS84)	:	dX = 0.000 m dY = 0.000 m dZ = 0.000 m
	:	rX = 0.0000" rY = 0.0000" rZ = 0.0000"
	:	dS = 0.00000ppm
VERTICAL DATUM	:	Mean Sea Level

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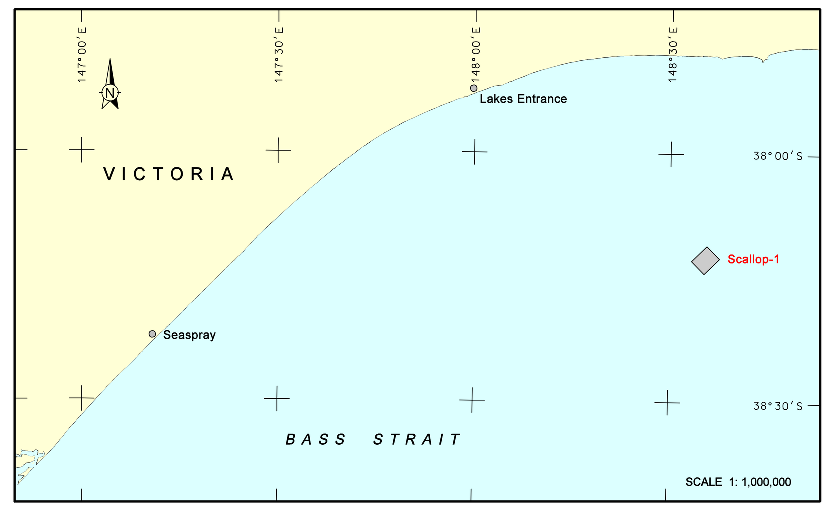

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SITE SURVEY

SCALLOP-1 LOCATION - GIPPSLAND BASIN

SEABED FEATURES

SCALE: 1: 5,000

100m 0m 100m 200m 300m 400m 500m

Vessel: MV MERMAID RAIDER	Survey Date: 13 - 18 JANUARY 2003	Project Ref: HY16526

Issue No:	Date:	Description:	Surv:	Interpr:	Drawn:	Chkd:	Appr:
0	03/02/2003	Final	TH/BS	RB	TH/IRA		

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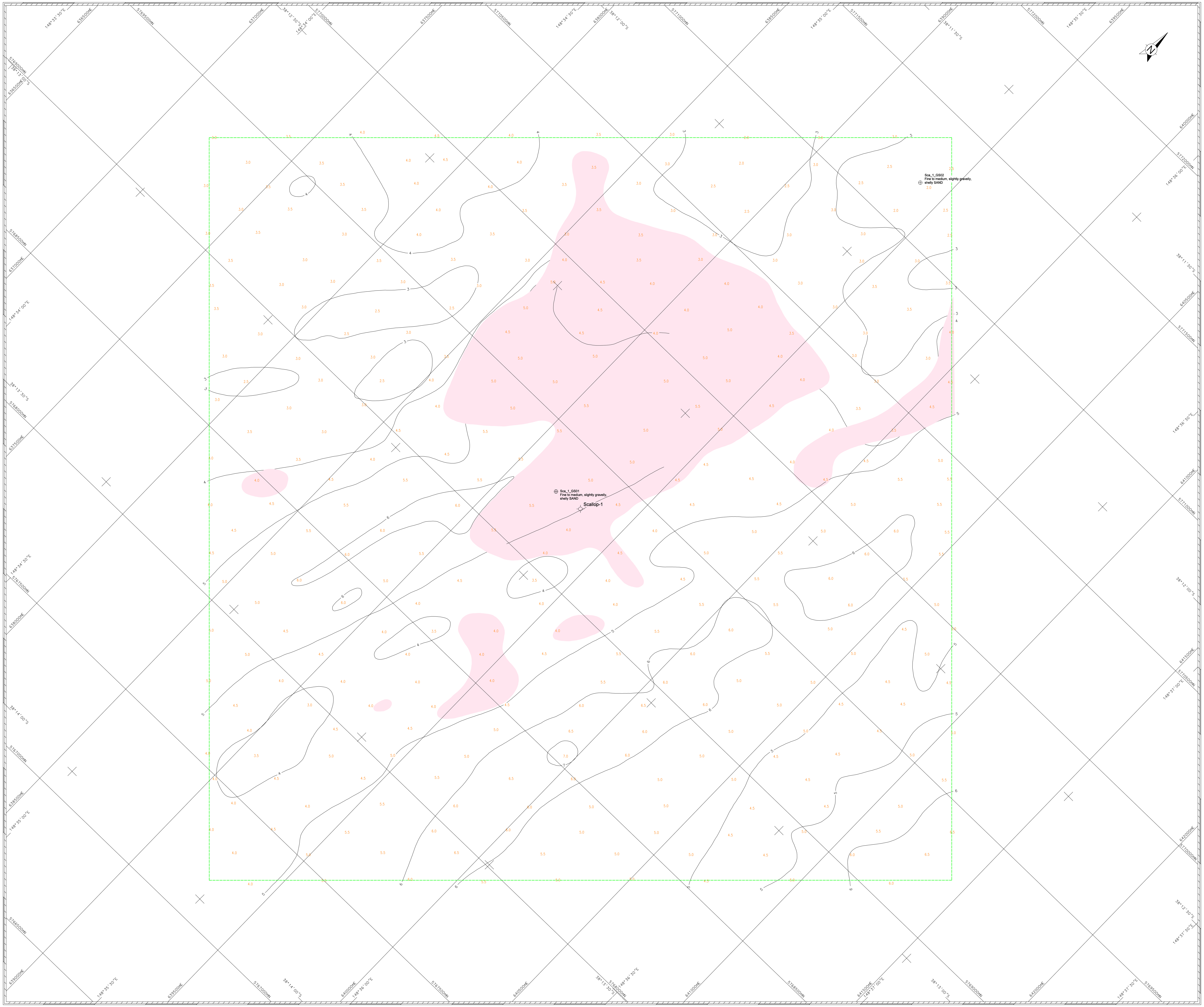

LEGEND:

- Proposed drill location - Scallop-1 coordinates 639316mE 5769300mN
- Limit of survey area defined by Esso
- Sediment sample location with identifier and description
- Isopach to base of unconsolidated surficial sediment unit (Unit A)
- 3.0 Representative spot depth to base of Unit A in metres below seabed
- Zone of acoustically strong reflectors at top of Unit B (base of Unit A), indicative of well-indurated sediments

NOTES:

1) Positioning Systems: Starfix Spot & MRDGPS and Nautronix ATS II towfish positioning
2) Shallow geology data acquired using X-Star (Geo Chirp) sub-bottom profiler, operating at 1.5kHz to 7.5kHz bandpass filter, at 100% power
3) Seismic travel times have been converted to depth using an assumed acoustic velocity of 1650 m/s

GEODETIC PARAMETERS:

HORIZONTAL COORDINATE SYSTEM

GEODETIC DATUM	:	Geocentric Datum of Australia (GDA94)
ELLIPSOID	:	Geocentric Reference System 1980 (GRS80)
Semi major axis	:	6378137.000 m
Inverse flattening	:	298.2572221010
PROJECTION	:	Universal Transverse Mercator (UTM)
Central Meridian (CM)	:	147°E (Zone 55)
Latitude of Origin	:	0°N
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Scale factor at CM	:	0.9996
DATUM TRANSFORMATION	:	
(From WGS84)	:	dX = 0.000 m dY = 0.000 m dZ = 0.000 m
	:	rX = 0.0000" rY = 0.0000" rZ = 0.0000"
	:	dS = 0.00000ppm
VERTICAL DATUM	:	Mean Sea Level

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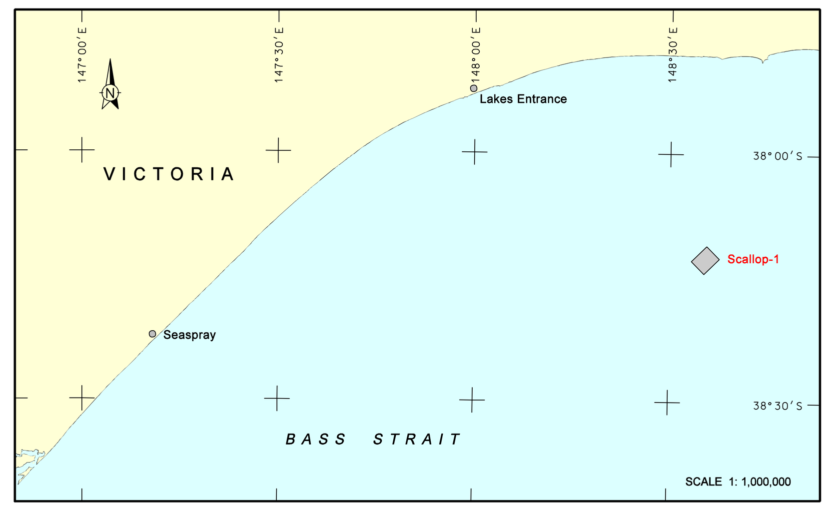

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SITE SURVEY

SCALLOP-1 LOCATION - GIPPSLAND BASIN

ISOPACHS TO BASE OF UNIT A

SCALE: 1: 5,000

100m 0m 100m 200m 300m 400m 500m

Vessel: MV MERMAID RAIDER | **Survey Date:** 13 - 18 JANUARY 2003 | **Project Ref:** HY16526

Issue No:	Date:	Description:	Surv:	Interpr:	Drawn:	Chkd:	Appr:
0	03/02/2003	Final	TH/BS	RB	TH/IRA		

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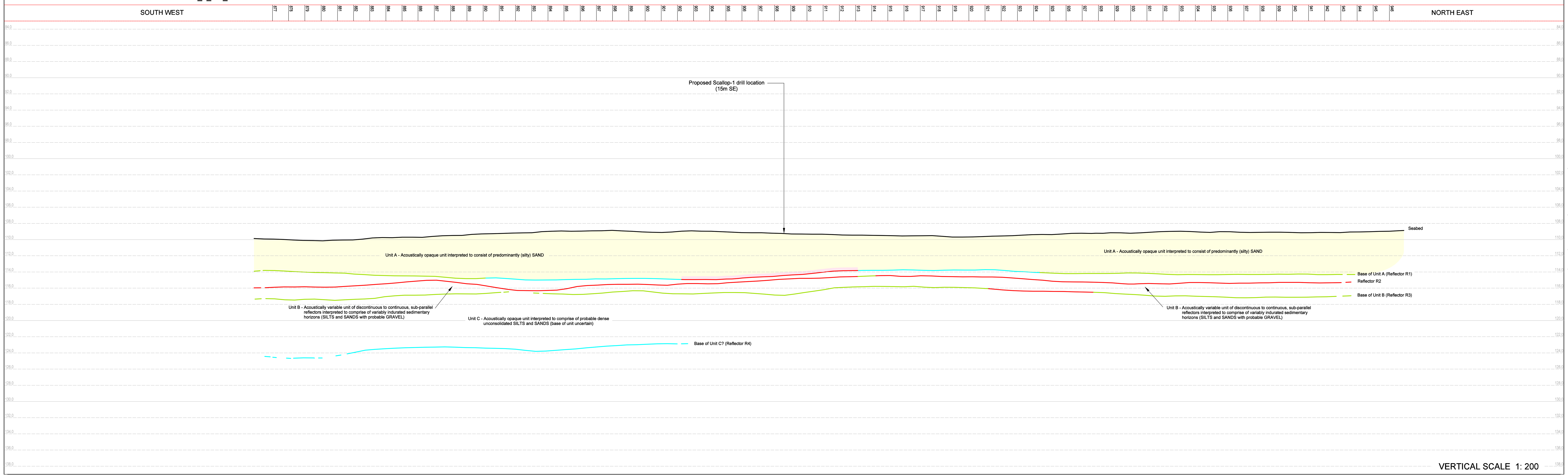
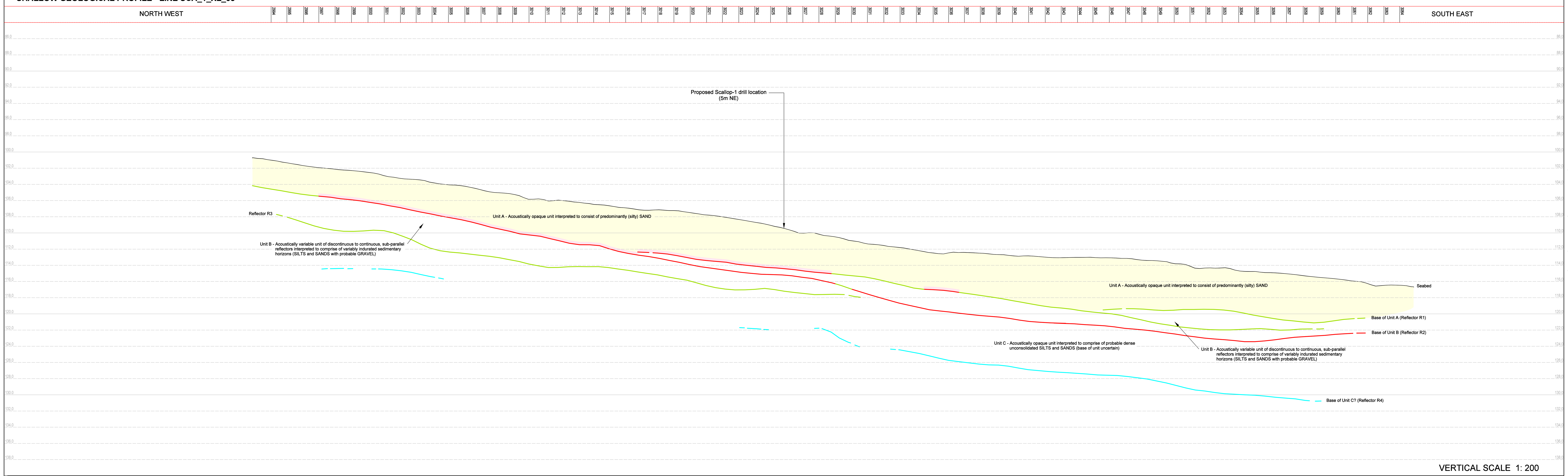
	16526_04	4 of 5	5

SHALLOW GEOLOGICAL PROFILE - LINE SCA_1_ML_16



SHALLOW GEOLOGICAL PROFILE - LINE SCA_1_XL_38



LEGEND:

- Position fix number - Common Reference Point (CRP) position
- Seabed
- Strong or continuous seismic reflector
- Moderate, continuous to discontinuous seismic reflector
- Weak or discontinuous seismic reflector
- Unconsolidated sediments
- Zone of acoustically strong reflection, indicative of well-indurated sediments (see isopach chart No. 16526_04)

NOTES:

1) Positioning Systems: Starfix Spot & MRDGPS and Nautronix ATS II towfish positioning
2) Bathymetry data acquired with dual frequency ODOM Echotrac DF3200 MKII single beam echosounder
3) Bathymetry data reduced to Mean Sea Level, using predicted tides for Scallop-1 site supplied by Esso
4) Shallow geology data acquired using X-Star (Geo Chirp) sub-bottom profiler, operating at 1.5kHz to 7.5kHz bandpass filter, at 100% power
5) Seismic travel times have been converted to depth using an assumed velocity of 1650 m/s

GEODETIC PARAMETERS:

HORIZONTAL COORDINATE SYSTEM

GEODETIC DATUM	:	Geocentric Datum of Australia (GDA94)
ELLIPSOID	:	Geocentric Reference System 1980 (GRS80)
Semi major axis	:	6378137.000 m
Inverse flattening	:	298.2572221010
PROJECTION	:	Universal Transverse Mercator (UTM)
Central Meridian (CM)	:	147°E (Zone 55)
Latitude of Origin	:	0°N
False Easting	:	500 000 m
False Northing	:	10 000 000 m
Scale factor at CM	:	0.9996
DATUM TRANSFORMATION	:	
(From WGS84)	:	dX = 0.000 m dY = 0.000 m dZ = 0.000 m
	:	rX = 0.0000" rY = 0.0000" rZ = 0.0000"
	:	dS = 0.00000ppm
VERTICAL DATUM	:	Mean Sea Level

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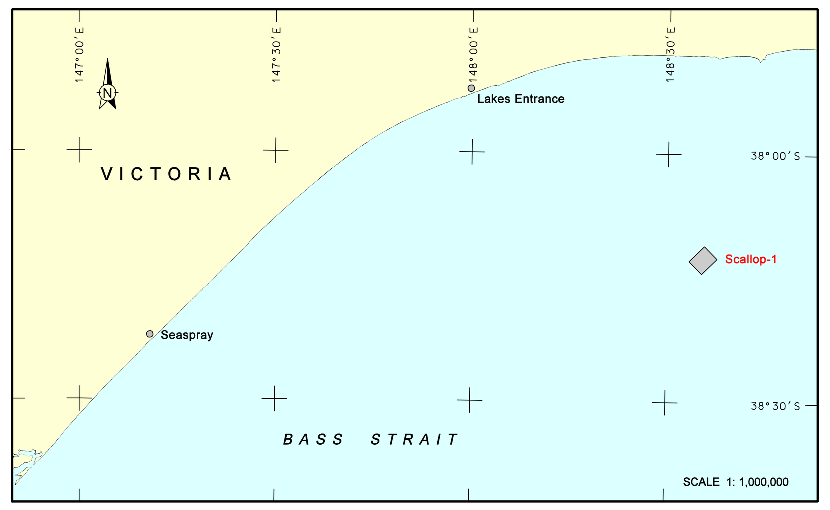

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SITE SURVEY
SCALLOP-1 LOCATION - GIPPSLAND BASIN
SHALLOW GEOLOGICAL PROFILES

SCALE: 1: 5,000

100m 0m 100m 200m 300m 400m 500m

Vessel: MV MERMAID RAIDER | **Survey Date:** 13 - 18 JANUARY 2003 | **Project Ref:** HY16526

Issue No:	Date:	Description:	Surv:	Interpr:	Drawn:	Chkd:	Appr:
0	03/02/2003	Final	TH/BS	RB	TH/IRA		

Client Ref:	Drawing No:	Chart:	Encl:
	16526_05	5 of 5	5

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1505 HIGHWAY 6 SOUTH, SUITE 120
HOUSTON, TEXAS 77077

PHONE: 281-589-1999
TELEFAX: 281-589-8115
E-MAIL: JLAserv@johnlebourhis.com

DATE: JANUARY 20, 2003

NO: TRA03-0059

TO: TRANSOCEAN/PERTH

ATTN: MR. BLUE O'SHEA/RIG MANAGER

CC MR. BILL CLEAL/RIG MANAGER/PERTH
MR. COLIN NELSON/MARINE DEPT./SINGAPORE
MS. BETSY KELLY/INSURANCE MANAGER/HOUSTON
MR. JAMES MITCHELL/RISK MANAGER/HOUSTON
MR. TOMMY EBNER/McGRIFF, SEIBELS & WIILLIAMS

REF: 01/19/03 CORRESPONDENCE

SUBJ: SEMISUBMERSIBLE **"SEDCO 702"** – RELOCATION MOVE #03-01W AUSTRALIA BASS STRAIT VIC/9L – SCALLOP #1 NEW LOCATION CERTIFICATE OF WARRANTY APPROVAL NO. TRA03-01/702
REVISION #1

This document supersedes the certificate issued 01/13/03 no. TRA03-0039.

Please be informed that forthcoming 325 nautical mile relocation move proposed for the semisubmersible unit "SEDCO 702" within Australia Bass Strait, from present Minerva #3 location in Otway Basin block VIC/P31 to new drilling location Scallop #1 in block VIC/9L at latitude 38° 12' 48.6" South and longitude 148° 35' 28.9" East by 110 meters of water depth is approved by this office, provided that all recommendations included in the attached Certificate are complied with.

Regards,

Captain John LeBourhis
JOHN LEBOURHIS & ASSOCIATES, INC.

:ch

CERTIFICATE OF APPROVAL

NO.: TRA03-01/702
REVISION #1

SEMISUBMERSIBLE OFFSHORE DRILLING UNIT

"SEDCO 702"

LOCATION:	Australia Bass Strait Block VIC/9l Scallop #1 new drilling location	
COORDINATES:	Latitude: Longitude:	38° 12' 48.6" South 148° 35' 28.9" East

THIS IS TO CERTIFY THAT THIS OFFICE, ACTING ON BEHALF OF THE OWNERS AND INTERESTED UNDERWRITERS HAS REVIEWED DATA PERTAINING TO THE ABOVE LOCATION.

THEREFORE, THE PROPOSED LOCATION IS HEREBY APPROVED FOR THE ABOVE DRILLING UNIT SUBJECT TO THE ATTACHED LIMITATIONS AND RECOMMENDATIONS.

A FACSIMILE OF APPROVAL WAS SENT TO THE INTERESTED PARTIES ON:

01/20/03 - DOCUMENT NO. TRA03-0059

THIS CERTIFICATE OF APPROVAL IS ISSUED WITHOUT PREJUDICE TO THE TERMS AND CONDITIONS OF THE INSURANCE AND/OR TO THE INTERESTS OF ANY OR ALL PARTIES INVOLVED.

JOHN LEBOURHIS & ASSOCIATES, INC.

DATE: January 20, 2003

JOHN LEBOURHIS & ASSOCIATES, INC., 1505 HIGHWAY 6 SOUTH, SUITE 120, HOUSTON, TEXAS 77077
TELEPHONE: 281-589-1999 FAX: 281-589-8115 E-MAIL: JLAserv@johnlebourhis.com

REVIEW OF DATA AND RECOMMENDATIONS

SEMISUBMERSIBLE TYPE UNITS

1. UNIT CHARACTERISTICS AND LIMITATIONS

OWNER:	TRANSOCEAN, INC.
TYPE:	Propulsion Assisted Semisubmersible Offshore Drilling Rig
DESIGN:	Earl & Wright SEDCO 700 Series
BUILDING PLACE AND DATE:	1973 at Avondale Shipyards, New Orleans, Louisiana
FLAG:	Liberia
OFFICIAL NUMBER:	9404
GROSS TONNAGE:	7,731
NET TONNAGE:	6,786
LIGHTSHIP WEIGHT:	13,799 Short Tons
PROPULSION, TYPE, HP:	Four (4) Pleuger/Baylor azimuthing thrusters, @ 1600 hp.
CLASSIFICATION:	ABS ✠ A1 CSDU AMS ACCU
FITNESS CERTIFICATES:	ABS, LIBERIA, SOLAS
MAXIMUM DRILLING WATER DEPTH:	2,000 feet as presently fitted
OVERALL LENGTH/WIDTH:	295 feet x 245 feet
DEPTH AND WIDTH OF HULLS:	Two (2) hulls 295 ft. x 54 ft. x 21 ft.

1. **UNIT CHARACTERISTICS AND LIMITATIONS** (CONT'D)

KEEL TO MAIN DECK:	130 feet
NUMBER AND DIAMETER OF THE STABILITY COLUMNS:	Four (4) corner columns @ 30 feet diameter and Four (4) inner columns @ 18 feet diameter.
MAXIMUM VARIABLE LOAD:	3,400 s.t. deck load/6,180 s.t. payload at 80 ft. draft.
ENVIRONMENTAL DESIGN CRITERIA:	Survival @ 100 kt. Wind and 110 ft./18 sec. wave plus 2.4 kt. Current.
NUMBER/TYPE OF MOORING LINES:	Eight (8) chain mooring lines
AVERAGE LENGTH AND SIZE:	Eight (8) x 4,300 ft. x 3" ORQ chains
ANCHOR TYPE AND WEIGHT:	Eight (8) @12 ton Stevpris anchors
ANCHOR BUOYS OR CHASER:	Permanent chaser system
DYNAMIC POSITIONING:	N/A

2. **PROPOSED NEW LOCATION**

DESIGNATION:	Australia Bass Strait
AREA AND BLOCK NO.:	Block VIC/9L Scallop #1 drilling location
LATITUDE:	38° 12' 48.6" South
LONGITUDE:	148° 35' 28.9" East
WATER DEPTH:	± 110 m.
REPORTED BOTTOM DATA:	Slightly gravelly, fine to medium carbonate sands
RISER, FLAG OR ELSE:	New drilling location
OPERATOR:	ESSO Energy Ltd.
PROPOSED HEADING:	210°
AVERAGE SCOPE OF PROPOSED ANCHOR PATTERN:	-Eight (8) lines @ 3,000 ft. of 3" ORQ chain deployed -As per mooring plan

3. ENVIRONMENTAL DATA

REGION: Bass Strait Eastern Entrance
YEAR RETURN: 10-Year

	MAXIMUM STORM CONDITIONS
MAX. SUSTAINED WIND (1minute):	47.8 m./sec
MAX. GUST: (3 sec.)	58.3 m./sec
SIG. WAVE HEIGHT AND PERIOD: (max. wave height = sig. wave height x 1.8)	9.5 m./15.2 sec
MAX. SURGE (STORM OR OTHER):	1.2 m.
SPRING TIDAL RANGE:	0.5 m
TIDAL CURRENT:	0.77 m./sec
OTHER CURRENT:	1.08 m./sec
ICEBERG:	N/A
ICING:	N/A

4. SEABED DATA

SOURCE OF INFORMATION:	FUGRO Survey Pty Ltd (Report no. HY16526 dated January 17, 2003)
METHOD OF SURVEY:	Bathymetry, side scan sonar and sub-bottom profiling (over a 3 km x 3 km area)
NATURE OF SEABED:	Slightly gravelly, fine to medium carbonate sands with shell fragments
GRADIENT AND CONFIGURATION:	Shelving very gently towards the southeast
PIPELINES OR WELL HEADS:	East Pilchard #1 wellhead @3,000 m. to northwest Kipper #1 wellhead @4,300 m. to north/northeast Kipper #2 wellhead @3,200 m. to northeast
OTHER OBSTRUCTIONS:	None reported within the anchor pattern
SUB BOTTOM PROFILE:	No geological anomalies reported
PREVIOUS ACTIVITY AT LOCATION:	Previously in the field

5. **ANCHORING AT NEW LOCATION**

ANCHOR TYPE AND WEIGHT:	Eight (8) @12 mt. Stevpris anchors with PCC System
FLUKE ANGLE:	To be set at 32° angle
MINIMUM SCOPE AT DROP POINT:	As per proposed plan
MINIMUM TEST TENSION:	N/A
MINIMUM DURATION OF TEST:	N/A
MINIMUM SCOPE AFTER TEST:	915 meters (3,000 ft.) deployed from fairleader
PIGGY BACKS TYPE WEIGHT:	Stevin Mk3 @ 9 mt..
NUMBER OF PIGGY BACK AVAILABLE:	Four (4) sets if needed
CONNECTING SHACKLE:	N/A
TAIL CHAIN AND SHACKLE:	N/A

6. **FIELD TOWING REQUIREMENTS:**

- 100% Propulsion assisted (if needed)
- Following vessels to tow and/or to handle anchors:

-AHTS "PACIFIC CHALLENGER" @8,400 hp for towing and anchor handling operations
-AHTS "PACIFIC FRONTIER" @12,240 hp for towing and anchor handling operations

7. **WEATHER COVER:**

Bureau of Meteorology (including cyclone advisory service and Special Services)

Alternate source of weather forecasting to be provided

8. **ICEBERG PROCEDURES:**

N/A

9. RECOMMENDATIONS

- To strictly comply with the TRANSOCEAN Marine procedures, the guidelines of the "SEDCO 702" Marine Operation Manual as well as all applicable rules and guidelines from the Australian Maritime Safety Authority, Occupational Safety and Health Services and the other relevant regulatory agencies.

- The Rig Move Procedures (702-RMP-101 Revision 00 issued January 12, 2003) established specifically for "SEDCO 702" relocation move from Minerva #3 present location to new drilling location Scallop #1 have been reviewed and should be followed.

- Mr. J. J. Dibon as OIM in charge onboard during the move assisted by Mr. T. Phipps as Barge Master.

- A pre-towage safety meeting should be held onboard the rig between the OIM, the Barge Master, the rig's key personnel and the captains of the two towing vessels to review and agree upon the proposed rig move procedures. During the meeting, procedures to reconnect of a parted tow wire should be agreed upon.

- The two towing/anchor handling vessels "PACIFIC CHALLENGER" and "PACIFIC FRONTIER" should be found to be fully operational prior to departure. One of the vessels should be designated as "Tow Leader" in charge of navigation and communications with the rig. Every half hour the Lead Tug should broadcast the position/course/speed of the tow to the surrounding traffic.

- Weather and forecast should be favorable during the anchor handling operations at both departure and arrival.

- Towage with "PACIFIC CHALLENGER" connected to #2 anchor chain and "PACIFIC FRONTIER" connected to #3 anchor chain.

- Routes should adhere to the Traffic Separation Scheme south of the Wilsons Promontory and also at the Bass Strait lights and should take a wide berth around the areas of offshore drilling/production/export/construction.

- "SEDCO 702" should follow the International Rules and Regulations for the Prevention of Collision at Sea (day marks, lights, sounds and signals).

- The rig's thrusters should be used to assist as necessary during anchor retrieving operations, during the towage and the mooring operations at the Scallop #1 new location.

- A Contingency Plan should be established jointly with ESSO Energy Ltd. to address any emergency situation, which could occur while the unit is operating at the Scallop #1 location.

- To e-mail this office a copy of the log.

ALL DATA, LIMITATIONS AND RECOMMENDATIONS INCLUDED IN THE ABOVE REPORT AS SUPPORTING DOCUMENTATION FOR A LOCATION APPROVAL ARE ISSUED WITHOUT PREJUDICE TO THE TERMS AND CONDITIONS OF THE INSURANCE AND/OR TO THE INTERESTS OF ANY OR ALL PARTIES CONCERNED.

DATE: January 20, 2003
JOHN LEBOURHIS & ASSOCIATES, INC.

DISTRIBUTION:

- Mr. Blue O'Shea/Rig Manager/Perth
- The OIM in charge onboard "SEDCO 702"
- Mr. Colin Nelson/Marine Department/Singapore
- Mr. James Mitchell & Ms. Betsy Kelly/Houston
- Mr. Tommy Ebner/McGriff, Seibels and Williams of Texas, Inc.
- JOHN LEBOURHIS & ASSOCIATES, INC. (Files)

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003
ITEM	DATE	INITIALS	COMMENTS

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ITEM	DATE	INITIALS	COMMENTS
A. Derrick, Hoisting, and Rotary Equipment			
1. Derrick and Substructure (Visual Inspection)			
Check warning beacon operates and has battery back up			Operates OK, on the emergency bus, but no battery backup
Inspect all legs, trusses, girders and bracing for bends, bows, and cracks			OK
Inspect pin holes for enlargement			OK
Verify that all pins are in place and filled with keepers			OK
Inspect derrick for loose bolts			None found
Visually inspect welds for cracks			OK
Counterweight climbing assist is installed or derrick ladder caged			Caged ladder with fall safety wire. Last top section had fall arrester installed on 1st February '03
Belt, line and counterweight rollers are in good condition			Not applicable
Ensure lighting is adequate, explosion proof and equipped with safety cables			OK
Inspect handrails and ladders for damage			OK
Inspect working and racking platforms for damage, obstructions, etc.			OK
Inspect stabbing board cables and general board condition			OK. MPI October 2002
Verify that all stabbing board guards are installed			OK
Operate board up and down			Function tested board, needed some greasing. Has the required safety locks.
Verify safety lines are attached to tugger line sheaves			Yes
Hand rail in place and secure at crown			Crown platform in compliance. At service deck just below crown a more stable guard, chain / rail was installed at inner side of walk way. 1st Feb 03
No loose items in crown area			OK
All steps on ladders in place and secure			OK
Monkey board in good condition			OK
Fingers in good condition			OK
Tarp for heat shield from flare boom rigged up at monkey board			Wind wall already present.
Mud hose secure with safety sling			Yes
2. Block, Hook and Swivel			
Visually check sheaves of block for wear, damage and misalignment			OK, checked with API sheave gauge

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ITEM	DATE	INITIALS	COMMENTS
Check grease fittings to verify proper lubrication			OK
Raise and lower blocks numerous times, observe for any unusual noise or movement on tracking system			OK Run drawworks in all clutch modes
Visually check guide rails for wear			OK
Check sheaves for wobble, wear and play			OK.
Inspect the tongue and latch mechanism on hook for wear, damage, and freedom of operation			Not applicable, Beckett clamp installed. Was inspected with MPI in July 2002
Check all bolts and fasteners for wear			OK
Rotate hook, check for ease of movement			N/A
Check hook-lock system in every position			N/A
MPI hook, eyes, elevators, and bails (spot check items previously inspected by contractor) as per API RP-8B. Get copy of reports			Reconditioned Traveling block installed in October 1999. MPI on pins/ bracket in 5/ 7/ 02.
Visually check guide rails for wear and loose bolts			OK
Inspect swivel for wear, damage corrosion, etc.			OK, integrated with top drive.
MPI inspection of swivel bail			OK- October 2002
MPI and dimensionally check conventional swivel left-hand thread connection			OK, MPI during top drive inspection May 2002
3. Dead Line Anchor and Sensor			
Wireline anchor type:			National
Visually check all bolts and welds			OK
Visually check for cracks at base			OK
Inspect brass on tie down clamp			OK
Check sensor gap.			OK, 5/8”
Check weight indicator system for leaks			No leaks
Check anchor drum for wear			OK
MPI high stress area and hold down bolts			MPI in October 2002
Verify there is an installed back up safety clamp			Not installed.
4. Top Drive System			
Type:			TDS 4. Complete MPI in May 2002
Monkey board camera/screen working			OK, also stabbing board, moon pool
PVT / FLO-SHO monitor working and unit grounded			OK.
Rig floor camera working			OK
Geolograph working			OK 7-pen

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ITEM	DATE	INITIALS	COMMENTS
Check Guide Rail System alignment and dolly alignment on top drive			OK, safety catcher plates under wheels.
Check for hydraulic leaks			OK
Check for installation damage			All equipment functional
Observe Make-up and Break-out functions			OK
Check Remote Actuated Valve for smoothness of operation			Operates correctly
Pressure test hydraulic IBOP to 250 and working pressure high psi.			OK Completed 1-2-03 5000 psi
5. Rotary Table			
Rotary Table:			Run in both directions
Check oil level. Assure that oil is free of water or other contaminants			OK
Check torque limiter			N/A
Operate rotary 2 hours while observing for noise, oil leaks, vibrations, etc. Check operation of brake frequently Use both high and low gears during this test Determine accuracy of rotary speed indicator and recorder			Note: Master bushing inserts to be replaced. Throat diameter in excess of 11”. Maximum allowable is 10 7/8” Rotated, no unusual noise. Checked brakes, air + manual. Gears OK RPM gauge in use. Geolograph
Operate rotary in reverse			OK
Check recorder for RPM record calibration			N/A
Rotary Amp gauge reads Amps & Torque			Reads Amps.
Check bushing rollers for smooth operation			OK
6. Rotary			
Function test iron roughneck			OK
Anti skid rubber mat in place at rotary			OK
Inspect drive pins and drive hole bushings			Not Applicable
Rotary bushing locked & indicator installed			Not Applicable
7. Drawworks			
Visually inspect all chains for wear or damage			Drive chain on motor A excess play.
Visually check alignment of sprockets, bearing, and shafts			OK
Check all air connections and hoses for leaks and repair as necessary			OK
Engage and disengage air clutches several times to verify that they will operate smoothly without slippage or overheating			OK, all clutches verified
Check operation of drum drive clutches and ensure there is not slippage or overheating			OK
Function in both low and high gear.			Run in Hi/Hi, Hi/Lo, Lo/HI, Lo/Lo
Check auxiliary brake lubrication			Normal greasing

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ITEM	DATE	INITIALS	COMMENTS
Visually check wear on main drum, brake bands and brake linings			OK
Visually inspect drum grooving wear ring or kick back rollers			OK
Check tightness of brake lining blocks, bolts, and drum brake adjustment			OK
Remove brake bands and perform a full MPI of eye, linkages, bars, and pins			Completed. Found crack in brake band adjusting bolt. Replaced.
Check for cables rubbing derrick			OK
Run blocks up and down several times and check overall operation of hoisting equipment Listen for bearing noise			OK. Excess play in equalizer bar mounting
Operate catheads. Check overall operation.			OK, sensor hose needed new fitting
Check that catheads are smooth with rope divider installed			N/A
Operate auxiliary brake			Tested Elmagco by dropping blocks, stopping on Elmagco only.
Inspect lubrication system and check for leaks			OK
Check spear connections to the drum shaft and auxiliary brake, verify packing condition, and check for leaks			OK
Function the Crown-O-Matic with the blocks moving and determine if effective			OK, full stop.
Observe water pressure to brake drums and check for leaks			OK
Confirm that the water supply system will deliver sufficient water to the brake rims and the auxiliary brake			OK
Function all air controls at driller's station independently and check for leaks			OK
Verify proper operation of deadline and fast line stabilizers and counter weights and that safety cables are installed			Wire line roller guide removed. Not necessary.
Verify a locking system to prevent auxiliary brake from becoming disengaged			Splined clutch lever bolt locked in place
8. Crown Block			
Crown protection installed			Crown- O- Matic and wooden bumper bars installed.
Sheaves are proper size			OK
Visually inspect sheaves for wear, cracks and misalignment			OK
Check all grease fittings to verify proper lubrication			OK
Run blocks up and down while visually observing for worn bearings or misalignment.			Block installed December 1999.New sheaves, bearings.

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ITEM	DATE	INITIALS	COMMENTS
Ensure safety device in place to prevent wire from leaving sheave			Yes, 3 jumper bars,
Check sheaves for play. (If 1/8” or more bearings or spacers may be bad).			Checked for wobble, OK Checked grooves with API gauge, OK
Visually check all bolts, welds and fasteners			OK
Verify that bumper blocks are installed			Yes, wrapped with wire mesh and safety cables.
9. Air Hoists			
Air hoists are properly mounted and secured			Bolted down, base plates welded / inspected.
Wireline in good condition (not exceeding 9 months usage)			Wire rope on PS after tugger to be replaced. (Crushed spots) Wire on order
Drum guard or guide lines installed			OK
Chain or hook is properly installed			OK
Air hoist is clearly marked with SWL			OK
Auto brake installed on air hoist used to transport personnel			OK
A dedicated man-rider hoist should be provided			OK, however 2ea rated for 1400 lbs, and 1ea for 150kg
B. BOP and Well Control Equipment			
1. BOP Lifting System			
BOP skidding system operational			Moved via a pair of L.C.Moore overhead cranes. 65 Ton each. OK
Ensure safe working load is stenciled on each system and is readily visible			OK
Verify the total safe working load is two (2) times the maximum total weight of the BOP system (BOP, bell nipple, mud cross, DSA's, spacer and adapter spools, etc.).			BOP and LMRP are lifted separately, then latched together in the moon pool
Winches for system are in good working order			Hydraulic winches.
Safety Locks in place			Brake bands in good order.
Ensure all components are visually checked for corrosion, excessive wear, kinks, twists, etc.			Crane lifting wires replaced every 12 month. Done in August and October 2002.
Framework assembled properly			OK
PM includes periodic MPI in high stress areas			OK
Documented slip & cut schedule for wire rope			N/A
2. Diverter			
Type of diverter:			Regan KFDS
List age, type, and condition of element			Outer seals OK, bore OK, insert recommend to replace. Excess ID.

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ITEM	DATE	INITIALS	COMMENTS
Determine bore I.D. and check bore for damage			Insert Bore ID is 11-1/2. When new this is 10”. Drill pipe had been rotated with element closed.
Check body, ring grooves, and studs for welding			OK
Check ring grooves and studs on diverter and spools for corrosion, pitting, wear, etc.			N/A
Check I.D. of diverter spools, DSA & and related equipment to ensure full bore			23” ID. Diverter lines were 12”
Check internal cylinder walls for scoring if diverter is opened			N/A
Check piston surfaces for scoring or pitting if diverter is opened			N/A
Replace sealing element if not in "new" condition			Insert outer surface acceptable condition but bore too large. Flow line seals acceptable.
Function test diverter and valves Record annular closing and valve opening times on morning report			Function tested diverter after spending several hours of trouble shooting. The insert closes in less then 45 seconds. Bore is 11-1/2” when new this is 10”
Pump though diverter and lines before and after closing annular and opening valves			Pumped through, PS and SB discharge.
3. Annular BOPs			
Annular preventers will only be disassembled if there is visual damage, improper operation, or has a natural rubber element			OK. No damage sighted.
State type of element (nitrile, neoprene, or camlest):			Nitrile
List age, and condition of element: __________________________________ Elements should be renewed if in service for more than 12 months			Condition OK Lower: 28-5-2002 Upper: 29-6-2002
Determine I.D. and visually inspect bore for damage			!8-3/4” Bore, bottom, top no visible damage
Check piping on stripping bottles			OK
Caliper bore for wear			OK
Check body and ring grooves for welding			N/A
Check ring grooves and studs in annular for corrosion, pitting, wear, etc.			N/A
Drift test each annular Each must return to full bore within 30 minutes			OK 5 minutes
Check piston surfaces for scoring or pitting.			N/A
Check internal cylinder walls for scoring			N/A

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ITEM	DATE	INITIALS	COMMENTS
Sealing element replaced if not in "new" condition			N/A
Verify ring gaskets are 304 / 316 Stainless for sour service			316 SS
Function test presenter and record closing time: Closing Time (Annular):____________ Closing Time (Rams): ______________			Closing both annulars in 45seconds. Open to 95% in 60 seconds, full opening in 5 minutes.
Pressure test to 250 psi low and working psi high for 10 minutes Note: All pressure test will be done with freshwater and chart recorder			Tested to 250 and 3500psi. OK Chart recorded. Retested annulars to comply with 10 minutes for each test, low and high.
4. Ram BOPs			
Check ram rubbers Ram rubbers are to be replaced if there is visible damage			OK, good condition.
Check bonnet seal areas and grooves			OK. Stainless inlay
Replace bonnet seals, if required Bonnets Replaced (Yes/No):			Bonnet seals replaced. No damage to the previous seals. Sealing area OK
Check piston rods for scoring			OK, very good.
MPI exposed rod components			OK, no cracks found
Check bore for damage or wear			Lower double cavities are in excess of Cameron specs. Maximum 12.060”. Measured 12.075” – 12.100”. Upper double OK.
Check ram blocks for damage or wear			OK
MPI ram blocks			OK, no cracks found
Check clearance between top of ram block and seal seat according to manufacturer's tolerances			Rams are all 12. 00”, so 0.075 to 0.100” clearance.
Ensure that proper torque is applied to bonnet bolts and correct makeup procedures are used			Hytorq tool. Torque as per Cameron instructions.
Verify secondary seal on ram BOP'S not energized			OK
Install VBRs as required and record placement :			3-1/2” – 7-5/8” in Upper rams
Pressure test all rams to 250 psi low for 5 minutes and working psi high for 10 minutes Rams should be tested with locking system engaged and closing pressure vented to zero VBRs should be tested against the largest and smallest size of drill pipe to be used			Rams tested as per instructions. Tested failsafe valves from top of C/K lines Chart recorded.
5. Choke and Kill Line Valves			
List valve type(s):			Cameron FC

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ITEM	DATE	INITIALS	COMMENTS
Visually inspect sealing areas on all hydraulic choke/kill lines			Stabs, male / female in good condition.
Verify components rated for sour service			OK
Verify ring gaskets are 304 / 316 Stainless for sour service			316 SS
Pressure test all valves, spools, etc. to 250 psi low and working psi high for 15 minutes			OK
Choke/kill valves tested from top and bottom at low and high pressures			OK
Function test each hydraulic choke/kill valve twice from each pod Record closing and opening times and volumes			Complete function test performed from both pods. All closing and opening times + volumes recorded. Will be in report
Hydraulic choke/kill valves are failsafe closed			OK + fail safe assist
Assure that the manual valve(s) on BOP is positioned outboard of the HCR valve			N/A. Subsea BOP
Verify kill line side has HCV next to BOP outlet or check valve (with check) installed downstream of manual valves			N/A. Subsea BOP
Check valves internally if disassembled			N/A
6. Flex joints/Ball joints			
Visually inspect internal bore for wear			Flex joint on diverter and LMRP OK
Measure and record ID of wear ring			Wear ring 18-3/4”
7. LMRP, Stack, and Choke/Kill Line Connectors			
Disconnect LMRP and inspect sealing areas between LMRP and BOP			Sealing area OK
Visually check exposed vertical bore and components (dogs, ring retainers, etc.)			OK
Function and hydro-test			3000 psi open / close side
Pressure test each connector to 250 psi low for 5 minutes and max psi for 10 minutes			Tested OK. LMRP connector pre-load very low. 0.250”
Function test each connector once from each pod Record closing and opening times and volumes			Completed OK
MPI inspect connector flange/hub weld and mating mandrel			N/A
Pilot operated check valve on lock side of wellhead connector			OK. Note that POC valves are only recommended if the connector suffers from back driving. Factory tested.
By-pass ball valve installed around pilot operated check valve			N/A
By-pass valve clearly marked and ROV attainable			N/A
8. BOP Control System			

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ITEM	DATE	INITIALS	COMMENTS
Well control chart located on rig floor			OK
Verify precharge on stack mounted accumulator bottles (1000 psi + hydrostatic pressure of proposed water depth)			OK. 1000 on surface 1150 on stack mounted bottles.
Verify precharge on surface accumulator bottles (1000 psi)			OK.1000 on surface.
Charge accumulator system to 3000 psi Record time for each 200 psi change			Total system from 0-3000 psi took 14 minutes.
Verify that all bottles are usable and capacity meets Exxon's minimum. Calculate bottles required			Available total: 63ea -10gall+ 10ea -15gall on surface 25ea -10gall on Stack
Ram labels are visible			OK
Ram size labels are available on site			OK
Ensure regulators have manual over rides			OK. TR-5 type.
Ensure system is 3000 psi with 1500 psi manifold pressure and 1500 psi on annular manifold			OK
Accumulators contain 1.5 times the useable volume required to open and close all preventers and retain 1200 psi on the system without pump assistance Verify this by opening and closing all stack functions and checking that accumulator volume can maintain 1500 psi on system without pump assistance If this test is satisfactory, the extra 300 psi will satisfactorily do the half function			Available accumulator volume in compliance with API 16D 2.2.2.5.1 (50% extra and keeping closed versus maximum well bore pressure) Verified on 7 february ’03. Final pressure was 1490 psi, without pumps on line.
Verify cover installed on blind ram operating handles (main & remote units)			OK, fools cap installed.
Flush main control lines			Pilot lines flushed through.
List the type of control fluid Stack magic See latest test reports			Stack Magic
Check that sample from control fluid reserve tank is contaminant free			OK
List the type of hydraulic oil			N/A
Check that all strainers on control unit are of size recommended by manufacturer			OK
Visually inspect all areas of pods and hose fittings for corrosion, damage, or leaks			Overall in good condition. No pitting or deep corrosion damage sighted.
Operate hose reels forward and reverse			OK, however sprocket worn on blue reel drive.
Isolate accumulator bottles from the operating system and pressure test the system and BOP hydraulic functions to 3000 psi			OK

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ITEM	DATE	INITIALS	COMMENTS
Isolate accumulator bottles from system and close an annular on drill pipe and open upper chokes Pumps must complete functions in two minutes or less while maintaining 1200 psi on the closing system			OK Test took 1 minute .
Function accumulator charging pumps (triplex and air) independently to determine effective operation Triplex pumps set to come on at 2700 psi and off at 3000 psi Air pumps set to come on at 2400 psi and off at 2700 psi Relief valves set to vent at 3500 psi			Lead pump 2750-3050 psi Slave / second pump 2500- 2850 psi Air pumps 2300- 2700 psi Relief valves set at 3300, as per manufacturer. Only Cameron panels are set for 3500 psi.
Function BOP operating fluid pumps independently to determine effective operation (On at 2700 psi, off at 3000 psi.)			OK, see above.
Check that all gauges and switches are labeled			OK
Check that auxiliary tie in with valve is available on closing unit manifold			N/A Unit provides hydraulic supply to diverter panel.
Verify two independent power supplies to control unit (air / electric, air / air w/appropriate volume bottles and isolation)			OK. Electric / Air. Nitrogen back up
If electric pumps used, check for signs indicating "Automatic starting equipment"			OK.
Function alarms if installed on BOP panel for: 1. Low accumulator pressure 2. Low fluid level 3. Low rig air 4. Loss of energy supply			Alarms installed. Pressure and fluid level
Operate all hydraulic functions from remote panels			OK. Drillers and office panel.
9. Flexible Choke/Kill Lines on LMRP and in Moonpool			
Inspected and tested per original equipment manufacturer specifications			Kill line new. One hose send in for testing, will be rotated to choke upon return.
Pressure test each hose to 250 psi low for 5 min and max psi high for 10 min			Tested to 250 and 5000 psi. Both 10 minutes test.
10. Riser			
Inspect 25% of riser joints, pup joints, and adapters Percentage subject to change if visual inspection, UT, or MPI tests indicate possible problems			OK. No damage sighted. MPI inspections performed in Oct ‘02

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BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Clean and visually inspect for wear, pitting, and corrosion: 1. Riser inside and outside 2. Riser bolts (dogs & clamps) after removing from box 3. Riser O-ring groove (replace O-rings as necessary) Polypac style 4. Choke and kill line seal areas (replace box/pin packing as necessary)			OK OK Lip seals OK Poly packs OK
Clean and inspect with ultrasonics: 1. Riser wall thickness 2. Choke/Kill line tube wall thickness Done randomly			OK, Reports were sighted Riser average:17.5 mm Choke line average 18.2 mm
Clean and inspect for cracks with MPI: 1. Riser pin and pin grooves 2. Riser pin to tube weld 3. Riser box to tube weld 4. Riser box to dog window 5. Riser box dog/clamp grooves 6. Choke/Kill line pin to tube weld 7. Choke/Kill line box to tube weld			OK reports sighted.
11. Slip Joint			
Visually inspect inner barrel for excessive wear			OK, needs some greasing
MPI pad-eyes on tensioner ring			OK
MPI bolts used to retain unit collapsed			New installed Oct-2002
Remove and inspect packing element Replace packing element as necessary and hydraulically pressure test			Dual packer. New Installed in January 2002 Top one in use, currently at 75 psi.
Test slip joint packer(s) to 35 psi and 75 psi for 10 minutes			OK .Was tested on deck.
12. Tensioner and Guideline System			
Check contractor's maintenance program on tensioner and guideline systems Slip and cut tensioner lines as necessary			OK Not necessary.
Visually inspect all guidelines Replace as required			OK
Check all tensioner rods for scoring			Good condition.
Check wear and alignment of sheaves			Minor wear, alignment OK
Check for bearing wear or seizing			OK
Check for indications of hydraulic fluid leaks around tensioner systems If evidence of leaks are found, activate tensioners to check seal integrity			OK No leaks were noted.
13. Choke Manifold			

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ITEM	DATE	INITIALS	COMMENTS
Verify that all required components are rated for sour service			OK
Determine that layout is acceptable (Minimum: 3 chokes, 1 remote, 1 manual)			2ea Manual and 2ea Hydraulic chokes installed.
Verify layout meets minimum ExxonMobil standards and has 2 manual and 1 hydraulic chokes List all non-compliances			OK Entry to all chokes is a single line.
Verify ring gaskets are 304 / 316 Stainless for sour service			316 SS
Verify a return line is installed from the downstream side of the choke manifold to the trip tank			The returns from the choke manifold are to the poorboy, mounted above trip tank, and to direct overboard.
Verify permanently installed piping to burner booms			Partial sections available from drill floor to test area.
Pressure gauges for pump and annular pressures are installed on manifold (for manual chokes)			OK
Verify all turns are properly targeted			OK
Check that all connections are welded or flanged			Welded / flanged
Assure that choke manifold and related piping agrees with rig drawings			OK
Pressure test all upstream valves to 250 psi low and working psi high. (Flush choke manifold with water until clean before testing.) Note: All pressure test will be done with freshwater and chart recorder			OK. Low press. 250 psi Tested to 10.000 psi upstream of chokes and 5000 psi downstream
All valves not successfully tested are repaired and retested			N/A
Check that mud leg height on the mud/gas separator is adequate Actual is			The effective mud seal is 15 feet.
Disassemble and inspect the hydraulic choke			OK
Disassemble and inspect one random valve, unless a valve was disassembled for repair			N/A
Circulate water through choke manifold at up to 3500 psi (upstream of chokes), through poor-boy degasser for 15 minutes. Function all chokes			All chokes functioned. Flushed through with cement pump.
Open choke and circulate throught poor-boy degasser @ 8 BPM for 15 minutes			
Circulate down flare line(s) and check (visual) for leaks			N/A
Observe proper operation of gauges, stroke counters and choke position indicator on choke operating panel (Flush system with fresh water upon finish)			Completed OK

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Verify additional stems and seats available for adjustable chokes			Spare manual choke stem with bean available.
Verify seat opening is minimum of 1" on adjustable chokes			OK
Verify additional seats available for hydraulic choke			Spare gate and seat available.
High pressure side of choke manifold shall have at least two valves upstream of each choke			Due to set up each choke has its “own valve” upstream and a common valve for all 4ea chokes.
Check stroke counters on hydraulic choke panel work for pump 1, pump 2, and both pumps 1 & 2			OK
Check ease of operation of choke manifold valves			OK
Verify hydraulic choke panel has auxiliary (manual) pump capability if power supply lost			OK
14. Misc. Well Control Equip.			
Note the manufacturer for kelly and safety valves and inside BOPs for each size on site			Hydril
Test the following to 250 psi low and working psi high with fresh water and chart recorder: Lower kelly valve ________________ Upper kelly valve __________________ Inside BOP ________________________ Rig floor safety valves _______________ Manual top drive valves ______________			Completed 1st Feb-03 Rotary hose + swivel 5000 psi 5000 psi 5000 psi 5000 psi TIW and Grey valve 5000 psi
C. Mud Pumping, Storage, Treatment, and Transfer System			
1. Mud Pumps, Charging, and Transfer Pumps			
Check precharge of suction dampeners. Inspect fluid ends internally			Dampeners installed, pressure not known
Check precharge of discharge dampeners. Inspect fluid ends internally			OK, 650psi
Open fluid ends of each pump and check for corrosion, wear, and damage			OK
Determine liner sizes available and list:			5-1/2", 6”, 6-1/2"

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Determine operating hours for pistons, liners, valves, and seats			Module # 1 2 3 1 2 3 Pump #1 5-1/2” 5-1/2” 5-1/2” 6-1/2” 6-1/2” 6-1/2” Swabs 520 520 471 0 383 159 Liners 831 521 522 640 122 151 Suction Valve 186 186 186 576 273 576 Disch. Valve 909 475 186 390 24 576 Suction Seat 186 475 186 576 276 576

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003
ITEM	**DATE**	**INITIALS**	**COMMENTS**
			Pump #2 Swabs 800 124 7 377 377 217 Liners 840 124 7 556 618 151 Suction Valve 162 162 162 243 34 517 Disch. Valve 597 795 597 243 34 357 Suction Seat 162 597 162 243 34 517 Disch. Seat 597 795 795 243 34 358

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
			Pump #3 Swabs 68 77 269 8 0 45 Liners 68 658 269 8 742 46 Suction Valve 140 458 22 317 634 199 Disch. Valve 141 181 141 318 158 178 Suction Seat 181 169 442 358 346 619 Disch. Seat 141 169 672 317 347 21

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Verify relief valves are piped back to mud pits, adequately secured and sloped downward into pit for line drainage			Yes
Check suction strainers and note strainer mesh __________________			Expanded steel, approximately ¾"opening.
Check discharge strainers and note strainer mesh ______________			Strainers fitted at the manifold, below the rig floor.
Observe for unusual noise or vibration			None, when running top hole
Visually inspect power end: crossheads, gears, sprockets, and chains			Pump 2 OK. Pump 3 worn main bearing, worn drive chain, damaged cross head guide.
Determine that a liner and rod lubrication system are functioning and is a closed system			Yes
Pressure test each pump pop off to 200 psi over anticipated drilling pressure to ensure pop out will blow			Each valve dismantled and tested 31st January
Pressure test lines			Yes, to 5000psi
Use mud pumps to pump through all normal lines and attempt to determine volumetric efficiency			Pumped through OK.
Determine that the mud pump lubrication system is adequate for long term slow pump rates			Yes, no historic problems, Electric pump system runs constant flow.
Check operation of charging pumps Disassemble and inspect if discharge pressures leave doubt as to condition of impeller or housing			Three charging pumps run with adequate supply pressure to the mud pumps, >40psi.
Operate pumps under load (3000 psi and 1000 gpm) for 2 hours			Drilling operation.
Verify rotary and vibrator hoses are fitted with safety lines at each end			Yes
Assure standpipe is clamped and secured			Yes
Determine type of seals (mechanical) or packing used (water lubricated or sealed)			Packing seals on the precharge pumps.
2. Mud Pits and Transfer System			
Pressure test standpipe manifold, rotary hose, swivel, piping, and valves back to pump discharge to 5000 psi. *Warning: Note liner pressure rating			Standpipe manifold, pipe and valves back to the mud pumps have been tested 1 Feb. Rotary hose and swivel still waiting.

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Calculate total mud pit volumes			Tank Volume in bbl Active #1 496 Active #2 467 Reserve #3 467 Reserve #4 496 Slug Pit 58.4 Sand trap 116 Sand trap 116 Degasser #1 135 Degasser #2 135 TOTAL 2486.4
Obtain flow diagrams (suction and discharge)			OK
Assure handles are on all valves.			Yes to all.
Verify smooth operation of all gates			OK
Verify operation of mud guns			OK
Verify mud gun lines can be isolated from solids removal section (solids removal tanks can be gunned with liquid from the solids removal section)			OK

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Inspect mud tanks for rust and other debris accumulation			Tanks full
Ensure there are adequate number and size of water discharge points (minimum is 2" at shakers, 4" at slug pit and two (2) 4" for suction pits)			Yes, 3” fresh water, 6” seawater to each pit.
Verify maximum flow of water into the pits (minimum should be 10 bbls/min. through all water outlets)			OK, ample available.
Ensure redundant pump capability for transferring water to the mud pits			Yes
Operate all mud agitators; note any problems or excess noise			All operating satisfactorily
Fill each mud pit independently with seawater and check for leaks in piping, valves, dumps, frames, etc.			All pits filled, unable to check.
Use different pumps to transfer fluid from pit to pit. Observe PVT calibration.			OK, PVT calibrated by elecs.
Verify shearing capabilities:			No
Diesel to cmt unit availability			Yes, using a jumper hose, not fully piped.
Check operation of mixing hoppers			OK
Measure rate of transfer from rig systems to cement unit for drill water, seawater and fluid from mud pits (Minimum 10 bbls/min)			Centrifugals 8 x 6 used.
Check operation of all pumps			OK
Determine if caustic barrel is acceptable			OK
3. Trip Tank			
Measure and verify the calibration of the level indicator and recorder in each tank			Manual (float type) indicator only, no recording device fitted.
Determine alternate means of filling hole should tank pump(s) fail			OK
Verify independent line available to pump fluid from trip tank direct to mud tanks			OK, overflow line
Verify two compartments (+/-50 bbls each)			No, one compartment of 26 bbl
Verify agitation in each tank			Not Applicable
Operate trip tank in normal fashion of usage. Note any stiffness or error of level indicator			OK. Level indicator operates smooth.
Determine rate of fluid transfer (minimum should be 3 bbls/min. at bell nipple w/18.0mud)			Mission pump 3 x 2
4. Mud Processing Equipment			

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
List the types and ratings of: Shale Shakers : Desander: Mud Cleaner: Degasser: Desander Pump: Degasser Feed Pump: Trip Tank Pump:			Shale Shakers: 3 off, Thule, VSM 100, Dual Deck Desander: Pioneer S 312 1500gpm Desilter: Pioneer T 16 – 4 Degasser; Swaco G11-80 1000gpm Degasser feed: 60hp Trip tank Pump: Mission 3x2 140gpm @ 55ft head.
Flow show installed and calibrated			Yes
Gumbo trap installed			Yes
Type and number scalper shakers and flowline cleaners:			None / None
Number and size screens kept on location			Size No. In Stock 84 7 105 8 110 3 120 10 145 13 165 12 180 21 230 12
Tarp is in place at shakers			Not Applicable
Number and size of desander cones:			3 x 12”

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Number and size of desilter cones:			16 x 4”
Number and size of mud cleaner cones ____________________			Not Applicable
Type of degasser:			Swaco G1180
Verify desander pump discharge pressure (75' of head) ______________________			
Verify desilter pump discharge pressure (75' of head) ______________________			
Verify mud cleaner pump discharge pressure (75' of head) _____________			Not applicable
Verify correct placement of degasser feed pump: ________________			OK
Run shale shakers for a minimum of ½ hour. Immediately afterwards, check motors and bearings for overheating			OK
Verify ease of operation for leveling device (up and down) on flowline cleaner			Not Applicable
Check shaker mounts for wear			OK
Check for wear on deck rubbers for screens and replace as required			OK
Inspect tension rails and bolts			OK
Verify degasser and mud/gas separator are properly vented (150' minimum from well for sour service)			Mud / Gas separator line run to the crown, degasser run to below the main deck.
Run desander with water: Verify proper discharge patterns. Verify manifold pressure equal to manufacturer spec's			
Run desilter with water: Verify proper discharge patterns. Verify manifold pressure equal to manufacturer spec's			
Run mud cleaner with water. Verify proper discharge patterns. Verify manifold pressure equal to manufacturer spec's			Not applicable
Inspect degasser float mechanism for free movement			OK
Operate degasser. Record vacuum developed			OK.
Check drill cutting disposal troughs			Open chute to the sea, with seawater flushing lines.

D. Bulk Tank and Air Systems

1. Cement and Barite Storage and Transfer Systems

ITEM	DATE	INITIALS	COMMENTS
Ensure relief Valve Testing requirements and Documentation			Last test ashore July 2002

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Determine operating pressure <u> 40 psi</u>			45psi relief valve setting, 35psi normal operating pressure.
Obtain Piping Diagram of bulk system			OK
List the capacity of each system: Cement: Gel: Barite:			Cement: 4 x 1900cuft Barite: 2 x 1900cuft Gel: 2 x 1900cuft, Gel and Barite are interchangeable.
Pressure test bulk system: all lines, valves, and pods to rated working pressure with air (Progressively, from pod to pod, checking valves between each pod)			Tested OK, Any valves found leaking during operation would generally be replaced before the end of the next shift.
Check air compressor and air drier			Reducing station from rig air, rig air dryer in use at all times.
Inspect all cement pod fluffers for caked cement			Spider system
Verify all bulk lines are clear: including loading lines, all transfer lines to surge pods, and all related vent lines			Yes
All bulk storage tanks to be equipped with safety valves or rupture disk to prevent excessive working pressure			Safety valves, set to 45psi
Determine transfer rates between cement pods and cement unit			> 1000 sacks / hour
Determine transfer rate between barite pod and barite surge pod			> 1000 sacks / hour
Determine positive means to isolate cement from barite loading systems			Systems are completely separate, no common pipework.
E. Pipe Handling Equipment			
1. Rotary Slips, Bushings			
Check dimensions on master bushing and inserts			Inserts worn diameter. Over 11”, maximum 10-7/8”
Rotary slip dies sharp and pins in good condition			OK
Inventory spare jaw segments			Jaws in use were replaced due to dies having excess clearance.
MPI high stress areas on slips			OK
Verify proper size slips for all sizes of drill pipe and drill collars to be used			OK
2. Tongs			
Visually inspect that tongs are free of field welds and cracks			OK
Verify that tong dies are sharp			OK
Verify that die keepers are installed			OK
Assure that handle safety pin is in place, no bolt substituted			OK

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Assure that tong counter weights are safe and snubbed to prevent falling			OK, on guide rods
Inspect condition of snub lines and posts			OK. MPI done.
Ensure there is a policy for removing and replacing snub lines			OK
MPI complete tongs (full body)			OK
Verify proper size tong heads available for all sizes of drill string and BHA that will be used			All sizes available.
3. Spinning Wrench			
Operate spinning wrench in both directions			Included on Iron Roughneck
4. Elevators			
Visually inspect that elevators are free of field welds and cracks			OK
Inspect hinge pins for wear and corrosion			In Progress
MPI elevator ears and handles			In Progress
Verify "stop" installed at bottom of elevators for hinge pin (drill pipe elevators)			OK
Verify proper size elevator available for drill string and BHA			OK
5. Dog Collars			
Verify proper sizes for all BHA components			OK
Verify keepers for inserts installed			OK
Verify proper wrenches available			OK
F. Power Systems: Engines and Generators			
Engines and generators free of major oil leaks and drip pans in place			Yes
Determine for each engine: 1. Current hours: 2. Last major overhaul: 3. Last cooling system flush:			(see engine table below)
Pressure cooling system is intact and free of leaks			Yes
Air filters clean			Yes
Fuel filters clean			Yes
Verify centrifuges for fuel (yes / no) ______________			Yes
Fuel line water trap working			Yes

	Current Hrs	Last O/Haul
1	127,374	126,400
2	139,370	121,503
3	135,766	133,273

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Function test each engine for pressurization of cooling, and cooling system antifreeze percentage			OK, not anti-freeze, but a recognized coolant additive.
Operate engine under at least 70% load for 45 minutes or up to reaching stable in and out water temperature, whichever comes last			Unable to obtain the engine loading during the survey period. No recorded cooling problems.
Operate all generators at overload Verify overspeed and overload trips operate satisfactorily			Tested Engine trips, and all found to operate satisfactorily. Recorded history of testing was available.
Bearing and shafts free of noise			OK
Fuses are proper type and size			OK
Cables and leads are in good condition			OK
All equipment properly grounded			Yes
Cable is properly placed in trays			Yes
Electrical terminations are properly connected			Yes
Plugs are properly installed (wires not pulled from connections, etc.)			Yes
Check for emergency lighting in SCR house			Yes
Check to see if switchboards in good condition and safety devices are not bypassed			Yes
G. Survey Equipment			
Check operation of clocks			
Insure equipment is available to drop and recover or run survey on .092" wireline			Totco tool
Insure crossovers are available to recover survey using sand line			No sand line in use.
Operate wireline unit Insure depth counter is operating properly and wireline is in good condition			Mathey unit, hydraulic pump. Wire in good condition, regularly slipped
Inspect sheaves for wireline Verify that 15,000' of .092 line is available			OK Approximately 19.000 ft
Insure swivel components are free and workable			OK
Verify adequate replacement parts available on location or that there is a second complete survey tool			
H. Instrumentation			
Observe effective operation of pit volume totalizer			Pit 3 not functional
Check flow meter and alarm.			Flo-Sho functional

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Check operation for the following functions on the drilling recorder: 1. weight indicator 2. RPM (If switchable, test both table and TDS systems while testing rotary) 3. rotary torque (If switchable, test both table and TDS systems with rig tongs)			7 Pen recorder. Hookload, ROP, Pressure, Torq, SPM 1+ 2, RPM
Pump Pressure in psi ____________ (done while circulating through choke manifold)			Drilling mode
Pump Stroke Rate ________________			Drilling mode
Verify that tong line load cells are free of leaks and compatible with console gauge			OK
Calibrate EZ-Torq gauge against tong line load cell			OK
I. Drill String			
1. Inspection			
Verify T. H. Hill's Standard DS-1 is utilized for inspections (Drill Collars, Heviwates, Crossovers, Drill Pipe, Other contractor supplied rotary connection equipment) If not used, what specifications are used?			All done in November 2002 Standard DS-1, Category 3-5 Inspection
Rotating hours since last inspection on drill collars ________________			219
Rotating hours since last inspection on HWDP __________			219
Rotating hours since last inspection on downhole crossovers __________			Only a few used, Maximum hours approximately 100.
Date stabilizers last inspected ______________			Client Supplied item
Rotating hours since last drill pipe inspection ___________________			334
J. Miscellaneous Drilling Equipment			
1. Slings			
Verify slings are certified and proper documentation available			Yes, control room filing cabinet
Review recertification procedures for all slings			OK
Verify proper storage for slings			OK
2. Cranes			
List types & ratings: 128' booms			National OS 435, 43.5T
Check sheaves and wire for wear and corrosion (Port, Starboard, Forward)			OK
Test all limit switches (Port, Starboard)			OK
Calibrate crane load gauges (Port, Starboard)			Re-calibrated during the survey OK

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Review records for last test. If out of date, repeat test (Port, Starboard)			OK, last load test 2002
Check hook and hook safety latches			OK
Check sling condition and hook for rating tags _________________			OK
Check for engine and hydraulic leaks			OK
MPI crane pedestal welds			OK
Review PM documents and how work is documented			OK. Supervised by a dedicated maintenance supervisor
3. Rig Hydraulic System			
Operate rig hydraulic system			Various systems OK
Check for leaks			OK
4. Potable Water Makers			
Run each unit independently for 24 hours and measure output. #1______#2______			#1 inoperative awaiting parts. Historically produces 20-25 ton per day dependent on engine loading. #2 operating OK, 22-24 ton per day logged for previous week.
5. Cement Unit & Discharge Line			
Test cement unit by mixing 16.0 ppg cement at 8 BPM			Pressure tests + cement job performed as per well programme.
Check for pressure relief valves on pumps			OK
Test cement unit, valves, and lines to 250/10,000 psi.			OK
6. Deepwell Pumps			
Check Deepwell pumps are working without any mechanical problems			N/A
Check pump is capable of pumping enough water to pits to run both mud pumps at maximum speed			N/A
K. Stability and Loading			
1. Calculations			
Confirm available variable load margin at time of move-in			10 Ton margin
Verify that the variable load calculations are done daily			Yes, by barge captain.
Check that tank sounding is done daily if no remote tank level indicators exist			Weekly manual checks to verify remote gauges.
Check internal draft gauge accuracy			OK, Compared with manual sighting daily.
Verify that variable load calculations account for storm conditions			OK
Verify that a documented procedure exists for getting to survival conditions			OK

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Verify that a procedure exists for logging incoming and departing weights			OK
2. Equipment			
Verify that all sounding tubes are operational			Not all, Some blocked tubes
Verify that all remote tank level indicators are operational and are calibrated against manual soundings			All operational, some minor discrepancies were known to the BCO.
Check that watertight doors are normally closed			Yes
Test manual override at hydraulic watertight doors for proper operation			Not Applicable.
Function test primary and back-up bilge pumps			Operated briefly due to lack of bilge contents.
3. Ballast System			
Inspect sea chest strainer/baskets (PORT/STBD)			Last cleaned 19 Jan, on a monthly basis
Check the sea chest valves for leaks from inside the pump room.			OK, no leaks in the pump rooms at all.
Function test remote-operated valves (PORT/STBD); Ballast system valves, Drill. Water system valves, and Fire Operation system valves.			OK
Check the remote operated valves for fail-safe operation associated with the loss of power to the control system			Electric actuated valves remain in original position, except sea suctions, which close using air pressure.
Take manual tank soundings of all tanks, voids, etc. and compare with remote tank soundings where possible.			OK
Confirm that Operating Manual states maximum angle of inclination at which ballast pumps can deballast corner tanks with the primary and back-up pumps.			No mention of this as operating limits. The secondary ballast pumps are listed as being usable "if sufficient trim by the bow" has caused the loss of suction with the main pumps.
Test operate ballast pump with emergency generator			Engine loaded satisfactorily, pump tested OK.
Check that sea chest pump output is adequate to supply cooling water for engines and maintain enough volume in the mud pits to run both mud pumps at maximum rated speed with liners used to drill 26" hole			OK
L. Towing and Anchoring			
Inspect the primary tow components			New tow bridle on board, to be installed.
Determine where the back-up tow equipment is stored			Emergency tow bridle fitted, Spare parts held on board, including pennants.

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Determine the type, size, breaking strength, and length of the tow components provided:			Primary : 3" 150’ forerunner to a fish plate with two 200’,3” pennants, 15’ 3”chain to the Smit brackets. Back-up: Same
Determine the minimum required towboat power for towing: By one towboat: 7500 hp By two towboats __________________			One vessel towing – 150 ton bollard pull Two vessels towing – 85 ton each bollard pull
Verify that all shackles, swivels, and other jewelry are of forged construction			Yes
Check each windlass and winch for proper operation			Inspected in operation.
Check that bits, cleats, padeyes, etc. are in good condition			Yes
Check for emergency release on tow and anchor systems			No emergency tow release available. Remote release of moorings possible with power available, unlikely if in a blackout.
Check line out and tension measuring systems			OK
Check that mooring chain is in good condition			Several sections were corroded beyond API 2I limits, wich specifies maximum 10% cross sectional area loss. IE 72mm from 76mm nominal.
M. Life Saving Equipment and Emergency Preparedness			
1. Emergency Preparedness			
Spill Prevention Control and Containment plan			Yes
Air Breathing Units			Yes
Air Compressor			Yes
2. Lifeboats (150% crew complement) 200% required MODU IMO 1989			
Check general condition of lifeboats			OK
Review lifeboat maintenance records			OK
Each lifeboat equipped with emergency position indicating radio beacon or radar transponder.			Each boat is fitted with EPIRB, Radar transponders at the control room exits.
Each lifeboat equipped with VHF radio and radios are operational			Hand held radios taken to the boat as required.
Adequate for all persons on rig			Yes, with qualifications-see ModuSpec report.
Start each lifeboat engine using primary and backup starting system (Port & Starboard)			All tested 26 Jan, satisfactory.
Launch and recover each lifeboat			Not possible due to sea state
Test davits			Three davits were in survey, one awaiting ABS surveyor attendance to re-certify.

Rig Acceptance Checklist			
BASS STRAIT	**RIG: SEDCO 702**	**WELL: SCALLOP-1**	**JANUARY 2003**

ITEM	DATE	INITIALS	COMMENTS
Test bilge pumps			OK
Test hook release mechanism			Unable to operate 1,2,3 due to weather, #4 tested on deck satisfactorily
Check that muster list is kept up to date at all times			Yes
Determine if qualified lifeboat crews are assigned for abandonment			Yes, several personnel on board with coxswains certificates.
Verify that contractors conduct onboard training on operation of the lifeboats			Yes
Check records of previous lifeboat launches			Yes, approximately 6 monthly.
3. Man Overboard Boat			
Check general condition of MOB			No MOB is fitted, #2 lifeboat is designated as rescue boat.
Equipped with operational VHF radio			Portable
Qualified crew on each tour			Yes
MOB drills are conducted routinely			Yes, but not using the boat
Review MOB rescue procedures			OK
Test bilge pump			OK
Launch and recover MOB			Not performed due to sea state.
4. Life Rafts			
Verify all service dates are valid			Yes
Verify that spare life rafts are supplied when life rafts are removed for servicing			Yes, spare raft is part of rig equipment, and rotated through as others are serviced.
Verify that launch path is free from obstruction			Yes, with qualifications – See ModuSpec report.
5. Life Jackets			
Verify 200% capacity exist: 100% in quarters; 100% at lifeboats			OK, 255 Jackets for 100 max POB
Check condition of a random sample of life jackets			OK
N. Alarms, Gas Detection, and Communications			
1. Gas Detection			
Check existence and condition of portable gas detectors			Yes, Three units available
Equipment for measuring and warning of H_2S shall be installed with detectors situated in the same places as the gas detectors			Yes
Test all installed gas and H_2S detectors and alarms to ExxonMobil specified limits			Yes. CH_4 limits are 20%LEL, 40%LEL H_2S set to 10ppm, 20ppm
Test the general alarm			OK
2. Communications			

Rig Acceptance Checklist			
BASS STRAIT RIG: SEDCO 702		WELL: SCALLOP-1	JANUARY 2003
ITEM	**DATE**	**INITIALS**	**COMMENTS**
Verify the existence and operability of: Intercom system Portable Radios Single Side Band Radio			All OK
Verify the existence of primary and backup communication means for: Rig to shorebase Rig to workboats Rig to helicopters Crane to workboats Crane to interrig comm.			Satellite telephone, Inmarsat, VHF, HF radio Aero VHF base and portable VHF Intercomm system/ telephone
O. Contractor Safety Program			
1. Meetings			
Specify, if not policy, weekly General Safety Meetings (minimum)			Yes
Specify, if not policy, pre-tour safety meetings for each roustabout and floor crew			Yes
2. Drills			
Emergency drills are conducted weekly in accordance with IADC guidelines for fire fighting and abandon ship: -Verify that station bill outlines responsibilities in case of fire and abandon -Review fire drill procedure - Review abandon ship drill procedure			Emergency drills usually comprise fire drill, followed by abandon drill. OK OK
Review how blowout and trip drills are conducted and modify as required			OK
Verify that command station is designated and on station bill			Yes
Verify that assembly point(s) and safe briefing areas are designated and on station bill			Yes
Verify that well control procedures are posted on the rig floor			Yes
Review how H_2S drills are conducted and modify accordingly			Yes
3. Administrative			
Contractor has a safety manual			Yes
Contractor has an accident reporting procedure			Yes
Ensure a procedure is in place to report and investigate all accidents			Yes
A Hot and Cold Work Permit or other systems for tracking such work exist			Yes

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003
ITEM	**DATE**	**INITIALS**	**COMMENTS**
Review Tag & Lock Out Procedures and Permit System used			Yes
P. Fire Fighting			
1. Equipment and Alarms			
Test each fire pump for adequate output pressure (Pressure measured exceeds 90 psi at any fire station and exceeds 50 psi at the nozzle--as measured with a pilot tube gauge with each pump operating independently and two nozzles open) Check for leaks			OK No leaks
Determine how the pumps are actuated			Local start, remote start fron the switchboard or ballast control room.
Test helideck foam monitors Determine how the monitors are actuated			Two local starters at either side of the helideck, local and ballast control room.
Check that the foam system capacity is 250 liters			Yes, over 500 litres
All fire extinguishers present and properly charged and tagged			Yes
Fire extinguisher locations protected and accessible			Yes
Verify all extinguisher locations are marked and extinguishers are properly stored			Yes
Verify a fixed main fire extinguishing means is fitted in the engine room			Yes, CO_2
Fire extinguisher locations adequate			Yes
Identify and test any installed fire detectors			Yes
Inspect the installed inert gas systems			OK
Verify that areas protected by inert gas systems are marked as such			Yes
Visually check fire hoses for wear and proper storage for deployment			OK
Verify that redundant fire detection systems exist in the main and emergency generator rooms			No, Several detector heads were present, but all on the same loop. None were addressable heads.
Verify visible alarms are installed in high noise areas such as the engine room			Yes
Observe for warning signs on fuel tanks and transfer lines			Yes
Check for "No Smoking" signs			Yes
Verify first aid kits are present and contain a fire fighting suit, axe, and pry bar			First aid kits OK, but no fire suit, pry bar or axe. These items are located in the emergency response lockers.
Welding gas bottles are fitted with caps, labeled, stored upright, and kept segregated			Yes

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Verify that paint locker fire prevention, fire detection, and fire fighting equipment is adequate			Yes
Q. General Safety and Work Environment			
1. First aid			
First aid kits available and complete on rig floor			Yes
Stretcher on rig floor			Yes
Eyewash stations present and functional at mixing hoppers, rig floor, and mud processing area			Yes
30 minute SCBA's and equipment operational and properly stored			Yes
Information on toxicological materials on location and available (MSDS)			Yes
Stretchers present and in good condition			Yes
Verify cleanliness of clinic and inventory is complete			Yes
Oxygen equipment available			Yes
Communication link to doctor or local hospital available			Yes
Treatment log book up to date			Yes
Medic qualified (experience level, recent training, and type)			Medic was a Registered Nurse, 10yrs remote area industrial medicine, Paramedic trained.
2. General Safety			
Helideck lighting fully operational			Yes
Helicopter departure assembly area defined			Yes
Non-slip surfaces, toe guards and handrails on walkways, stairs, and decks			OK
Hard hats / safety glasses available and being used			Yes
Safety boots available and being used			Yes
Work gloves available			Yes
Safety harnesses or lifelines used (not riding belts) when working at height greater than 6' Inspect for wear and proper storage			Yes
Inspect riding belts			OK
Adequate anti-fall devices installed on permanent ladders (derrick, barite and cement bulk tanks, etc.)			Fixed taut wire system with removable sliders fitted to all ladders.
Specialized protective equipment is available and being used in areas where noxious substances or other hazards exist			Yes
Ear protection is available and being utilized in high noise areas			Yes

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
High noise areas properly identified (signs)			Yes
Diesel tanks and other flammable containers properly identified (signs)			Yes
Paint, paint thinners, etc. properly stored (own storage container located 150' from well) with adequate fire protection			Separate locker at forward port corner of rig. Approximately 100’ from well centre.
Non-slip surface installed on rig floor			Yes
Assure certified derrick escape mechanism is installed			Yes, Geronimo line to port forward corner.
Check for loose items such as tools in derrick			OK
Hand tools in good condition and adequate quantity			OK
Tag lines being used on crane loads			Yes, on lifts within the rig, and from the supply boat, not when sending lifts to the boats.
Proper ventilation exists in mud processing area			Yes
Adequate bug blowers available			Yes
V-door guard device available			Single chain only
Fuel tank overflow prevention or catch-pan			Yes
Guards on all motors and shafts			Yes
Ventilation system constructed to prevent poisonous or noxious gases from penetrating the living quarters			Yes, intakes are forward, and fitted with gas sensors.
Deck drains collected in a skimmer system			Drill floor only. All others drain to sea
Procedure in place to assure that doors are properly closed in emergency situations			Yes.
3. Living Environment			
Air conditioning of offices is functional			Yes
Quarters generally orderly			Yes
Galley using hot water in dishwasher 120 degree F, 50^0C			Yes
Plumbing and sewage is functional and free of leaks.			Yes
Internal communication system is functional and adequate			Yes
Guards on all motors and shafts			OK
Observe system established for monitoring personnel on location.			Yes
Adequate ventilation in galley			Yes
4. Permit System			
Permit system in place for the operations listed on page 7-4 of the SMP Manual			Yes
Standard work permit forms include the items listed on page 7-4 of the SMP Manual			Yes

Rig Acceptance Checklist			
BASS STRAIT RIG: SEDCO 702		WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Work permits are logged, closed out, filed, and posted as described on page 7-4 and 7-5 of the SMP Manual			Yes
R. Emergency Power			
Verify that the emergency generator is tested weekly			Yes
Confirm that Operating Manual states maximum angle of inclination (list and trim) at which the emergency generator will operate			No mention.
Verify that the emergency generator automatically starts			Yes, Tested 28 Jan.
Test and list the emergency power source for the following equipment: 1. Helideck lighting _________________ 2. Navigation lights _________________ 3. Fog horn _________________________ 4. Fire pump ________________________ 5. Fire & gas detectors________________ 6. Emergency alarms_________________ 7. Internal Communications ___________ 8. External Communications___________			Fire pump is supplied directly from the emergency bus. All else is supplied via batteries, with the chargers supplied from the emergency bus.
S. Electrical			
Necessary high voltage warning signs posted in English			Yes
All electrical equipment is explosion and vapor proof: 1. In derrick 2. On rig floor 3. Within 5' of mud pits			Yes, to all
All rig lighting fixtures and components are properly grounded			Yes
Verify safety cable installed on all light fixtures in derrick, on rig floor			Yes
Rig wiring installed so it is protected from abrasion, trampling or burning Insulation is intact			Yes
Floodlights mounted so they do not blind persons approaching or leaving			Yes
Electrical motors fitted with lockout or kill switch			Yes, DC motors AC motors are isolatable at the MCCs
Rubber or non-conductive mats installed in generator and SCR areas			Yes
Switches and panels labeled			Yes
Emergency shut down of engines at driller's panel			Yes

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Emergency lighting is battery powered			Yes, with additional lighting supplied from the emergency bus.
Verify flashing warning light on crown is working			Yes
All electrical outlets in good condition and guarded against ambient elements			Yes
Lock out/Tag out system in use in SCR			Yes
Hooks or special rubber gloves available in SCR			Yes
1. Personnel			
Ensure that records regarding personnel qualifications and training are maintained and current			Yes, maintained but not all current due to crew transfers.
Ensure that adequate job descriptions exist for all key personnel on the rig			Yes
2. Materials			
Ensure materials transfer control records are complete and maintained on the rig			Yes
Ensure transfer and receipt of all dangerous goods are accompanied by separate manifests that are correctly completed & checked by both the matl's man and the rig medic			Reported to Safety Officer when dangerous goods are loaded. Not always on a separate manifest.
Ensure a spare parts storage system has been established in order to maintain document control over rig inventory			Yes
U. Mobile Offshore Unit Marine Safety			
1. Fundamental Premises			
MOU structurally sound and in full compliance with applicable national regulations and classification society rules			Yes
MOU has an Emergency Response Organization, contingency plans and trained personnel to deal with emergencies that could occur			Yes
Ensure emergency response organization are documented in a brief Station Bill, which is unambiguous, conspicuously posted, with the MOU emergency chain of command including backups for emergency team leaders.			Yes
Ensure that the Station Bill is posted in language(s) understood by the entire crew and shall include muster assignments, emergency duties, and emergency signals			Yes

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Ensure that the MOU has adopted a program of emergency scenario drills consistent with the 1985 IADC Guidelines and the 1989 IMO MODU Code			Yes
MOU has an Evacuation Escape Rescue Plan			No, Personnel were unaware of any such plan on board.
Are MOU key personnel trained and experienced to carry out critical marine and emergency activities in accordance with approved procedures			Yes
2. Stability			
Ensure system provide stabilitity within limits approved in the MOU operating manual over the full range of drafts			Yes
Ensure tanks are manually sounded weekly and soundings are compared to remote tank indicator gauges			Yes
Ensure MOU has documented on board up-to-date lightship weight and center of gravity values which reflect any changes since the last inclining test			Yes
3. Ballast Control			
Ensure ballast system is capable of restoring the MOU to a draft not exceeding the limiting draft specified in the operating manual, with no trim or list, after damage to and flooding of any single watertight compartment or space			Yes
Ensure ballast system can prevent the uncontrolled flow of water between ballast spaces in event of power failure			No –manual intervention is required if transfers were in progress at the time of power failure. Valves default to no change from their previous setting.
Ensure operated ballast valves other than sea chest valves shall be fail-safe closed			No, see above
Ensure chain lockers are fitted with either flood detection systems and permanently installed efficient means to pump out water, or effective means of preventing flooding through the chain pipe			No, No alarm or sounding tube fitted, drainage not possible at drilling draft, without opening tank lid and draining to the compartment bilge.
Ensure markings on the hull are clearly marked and visible.			Yes, Feet markings on the main legs
Ensure semisubmersible units are equipped with remote-reading draft gauges			Yes
Ensure two ballast pumps are available to pump out every ballast tank and that these pump can be separated so that loss of or damage to one pump will not result in the loss of or damage to the other pump			Yes
4. Fire Protection System			

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Ensure systems provided for detecting combustible gas, for detecting fire and smoke, and for extinguishing fires			Yes
Ensure there are two independent fire pumps, including two independent water supply sources, physically separated so that loss of or damage to one pump will not result in loss of or damage to the other pump			Yes
Ensure that it is possible to attack fire in any space in which fire is likely to occur on the MOU with two fire hoses attached to two separate hydrants			Yes
Ensure that smoke detectors are installed in each compartment in the living quarters. They may be battery powered or powered by main generator if provided with emergency power back up			Mains powered centralized detector system, powered from the emergency bus. Non-addressable system
Ensure two types of fire detectors (heat, flame, or smoke) are installed in machinery spaces			Yes
Ensure fixed inert gas extinguishing systems are installed in paint lockers and spaces containing internal combustion machinery with aggregate power of 1000 hp (750 kw) or more			Yes
Ensure a fixed foam fire fighting system is installed to attach helideck fires if the MOU has helicopter refueling capable			Yes
Ensure at least four fireman's outfits are on board the MOU and stored at the fire team's muster stations. These include bunker coats, helmets with face shield, boots, gloves, self-contained breathing apparatuses (SCBA) and flashlights. Each fire team shall have a safety line and harness. There shall be three spare air bottles for each SCBA			Yes
5. Emergency Power System			
Ensure that a system is installed to provide an emergency source of power for control and communication systems, and for critical marine and emergency equipment in the event of a loss of main power or main power distribution system			Yes
Ensure emergency generators are run for one hour each week under 50% of its rated load or full emergency load, whichever is greater			Yes
Ensure emergency power is available for at least 18 hours after main power source has been disabled			Yes
Ensure emergency power is available within 45 seconds after failure of main power supply			Yes

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Ensure emergency power system is provided simultaneously and directly from the emergency switchboard for the following equipment: 1. Navigation/helideck lights 2. Emergency lighting in machinery spaces, accommodations, passageways, control stations, stairways, and exits 3. general alarm system 4. Internal and external communications 5. Combustible gas detection, fire detection, alarm and fire extinguishing systems 6. One fire pump (if electric) 7. Abandonment systems, where electrical power is required for use, including lighting at the embarkation areas 8. BOP control and riser disconnect systems (if electric) 9. One bilge pump and one ballast pump for each hull 10. Starter for emergency generator 11. Navigation and steering equipment 12. Ballast control system (if electric) 13. Personnel transfer cranes, with only one crane operating at any time 14. Ballast valves (if electric) 15. Personnel elevators giving access to areas not accessible by stairways 16. Computers necessary for MOU emergency operations 17. Flooding alarms 18. Public address system			Yes to all.
6. Communications and Alarms			
Ensure hand-held VHF radios are installed in battery chargers at every muster station; however, lifeboat stations may rely on the lifeboat VHF radios.			No, radios are taken to the muster station from the radio room as required.
Ensure the emergency/rescue teams have intrinsically safe radios			Yes
Ensure there are two independent means of communicating from the MOU to surface vessels, aircraft and an emergency control center off the MOU			Yes
Ensure public address system is audible throughout the MOU			Yes

Rig Acceptance Checklist

BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Ensure general alarm is audible throughout the MOU. The audible alarm should be supplemented with visual signals in high noise areas			Yes
Ensure pump rooms and thruster rooms have flooding alarms			Yes, displayed in the ballast control room
Ensure gas detectors are installed at the bell nipple, shale shaker, rig floor, in enclosed pit rooms and at any other locations where gas may accumulate			Yes to all locations, and accommodation intakes
Ensure fire, gas, and flooding alarms panels are located in a continuously manned space			Yes, in the ballast control room
7. Escape, Evacuation and Rescue System (EER)			
Ensure that the MOU EER System is designed according to an EER strategy consistent with an EER analysis applicable to that particular MOU			No records of analysis were available.
Ensure EER system encompasses escape pathways, evacuation methods and devices, and an emergency response organization that includes a command and control structure, station bill, muster, emergency teams and contingency plans			As above
Ensure there are two independent exits from every normally manned space, and at least two routes leading from each exit to the abandonment embarkation points			Yes
Ensure that two independent methods (e.g. helicopters, supply boat, lifeboats) will enable evacuation to proceed in an orderly, controlled manner			Yes
Ensure Escape route diagrams are conspicuously posted			No, escape doors are noted on a diagram on the station bill.
Ensure escape routes are clearly marked as such and have emergency lighting and arrows indicating preferred direction of travel.			Yes
8. TEMPSC / Lifeboat			
Ensure the number and location of TEMPSCs are established by EER analysis such that there will be at least one seat available for everyone on board the MOU under the emergency scenarios requiring evacuation as identified in the EER analysis			200 seats available in four boats. Maximum rig capacity is 100.
Ensure TEMPSCs are equipped with external strobe lights, Emergency Position Indicating Radio Beacons (EPIRBS) and permanently installed marine VHF radios connected to trickle chargers			Lights, and EPIRBs, but hand held radios only.

Rig Acceptance Checklist			
BASS STRAIT	RIG: SEDCO 702	WELL: SCALLOP-1	JANUARY 2003

ITEM	DATE	INITIALS	COMMENTS
Ensure TEMPSCs are inherently self righting when loaded with full or partial personnel complement, secured with seat belts, and with entrances and openings closed watertight			Yes
Ensure TEMPSCs are equipped with self contained air support and fire protection sprinkler systems			Yes, temporarily disabled on the #4 boat as air cylinders were ashore for hydrostatic testing.
Ensure TEMPSCs release mechanisms are normally release "off load" with "on load" release backup capability			Yes
Ensure life rafts are davit launched but can be deployed in the throw over mode			Throw over only
Ensure there are devices (e.g. abseilers, ladders) to assist direct entry to the sea by personnel who may have no other means of evacuating the MOU			Ladders are fitted to the legs.
If decent ropes are used, ensure they are used with personal abseilers			N/A
Ensure lifejackets are available in the living quarters for all personnel on board			Yes
Ensure sufficient lifejackets are available at the TEMPSCs as determined by the EER analysis			Yes
Ensure TEMPScs are launched, operated and emergency equipment tested at least quarterly			Not quarterly, but at least six monthly.
9. Personnel Qualifications / Training / Manning			
Ensure all personnel are in compliance with personnel qualifications, training, and manning requirements as listed in the Drilling Contract.			Yes

EMDC OPERATIONS SUPV: on field copy DATE: ______

SEDCO 702 OIM: ______ DATE: ______

EMDC OPERATIONS SUPT: [signature] DATE: 18/02/2003

EXXONMOBIL EXPLORATION COMPANY

Shallow Drilling Hazards Evaluation

Scallop-1 Well
Gippsland Basin
AUSTRALIA

By

Mike Sarginson

EMEC/TECHNOLOGY
GEOSCIENCE RESOURCE OPERATIONS/OPERATIONS GEOLOGY/Site Investigation
Jan. 9th, 2003

ExxonMobil Proprietary

EXXONMOBIL EXPLORATION COMPANY

Shallow Drilling Hazards Evaluation

Scallop-1 Well
Gippsland Basin
AUSTRALIA

Prepared by:

(Jan 9th, 2003)

Mike Sarginson, Site Investigation Specialist

Reviewed by:

Jan 9, 2003

James E. Corthay, EMEC Site Investigation Specialist

Approved by:

Jan 10, '03

EMEC Operations Geology Skill Area Coordinator

EMEC/TECHNOLOGY
GEOSCIENCE RESOURCE OPERATIONS/OPERATIONS GEOLOGY
January 9, 2003

SCALLOP-1
GIPPSLAND BASIN, AUSTRALIA
Shallow Drilling Hazards Evaluation

On December 22nd 2002, the Esso Australia Gippsland Group requested an accelerated OIMS Shallow Drilling Hazards Evaluation at the proposed Scallop-1 exploration well which has a proposed spud date in February 2003. This request was designed to support well planning and ensure compliance with the EMDC Drilling OIMS Manual and with EMEC's OIMS Shallow Hazards Identification and Communication Process.

Summary of Results:
The proposed wellsite is in an area that is regarded as benign with respect to Top-Hole drilling hazards. The Top-Hole is considered to be the zone above the setting depth for the 13 $^{3}/_{8}$" casing shoe (825m subsea), though the benign nature of the sedimentary sequence is expected to extend to the base of the Gippsland Limestone at approximately 1200 meters subsea.

1. **There is no Probability ("None") of overpressured shallow gas within the top-hole sedimentary section at the proposed Scallop-1 well, for the following reasons:**
   - There is no known occurrence of shallow gas in any of the offset wells, several of which are within 5 kilometers of the proposed well. Drill gas values within the Gippsland Limestone from near-offset wells, are reported to be in the range 0-0.9%.
   - The top-hole section above 1300 meters subsea is a massive carbonate sequence (Gippsland Limestone) comprising marls with interbedded limestones and calcarenites. This sequence is not expected to provide good potential reservoirs for overpressured shallow gas.
   - There is no evidence of any faulting extending into the tophole in the vicinity of the proposed wellsite, which could provide a conduit for deeper sourced overpressured hydrocarbons.
   - No geophysical anomalies or attributes indicative of shallow gas and/or overpressures are observed in the seismic sections through the proposed location. The seismic character at the nearby Kipper-1 and East Pilchard-1 wells are very similar, and the topholes for these wells were drilled without indication of shallow gas.
   - The Well is to be drilled from a semi-submersible in an expected water depth of 117 meters.

2. **There is no Probability ("None") of other shallow drilling hazards or constraints within the top-hole sedimentary section at the proposed Scallop-1 well, for the following reasons:**
   - Top-hole drilling in the near-offset Kipper-1 and East Pilchard-1 wells occurred without incident. The Scallop-1 well is anticipated to have the same top-hole lithologies and conditions.
   - A normal pore-pressure profile is anticipated to at least 1000 meters BML.
   - There is no known occurrence of significant reactive clays in the Gippsland Limestone, in any of the offset wells.

3. **A Low Probability of occurrence of seabed obstructions or significant topographic features that could interfere with anchor or conductor casing emplacement, is assigned for the following reasons:**
    - No seabed survey information is currently available for the proposed anchoring and drilling area.
    - Information supplied does indicate that the anchoring radius will not encompass existing wellsites and is not close to existing hydrocarbon production and export infrastructure.

It is understood that efforts are being made to commission a seabed survey (bathymetry / sidescan sonar / shallow profiler) within the short time available before the well spuds. If this information is available in time then it may be possible to reduce this Probability to **None**.

Background

The proposed Scallop-1 well is located within the Gippsland Basin offshore South-Eastern Australia. Extensive drilling has already taken place in this basin which is infilled by a thick carbonate sequence, the Gippsland Limestone (Miocene-Recent). Early wells were drilled with a pilot hole in the tophole sequence but no drilling problems were encountered and recent wells have abandoned this practice. The only deeper problems noted have been instances of tight-hole within reactive clays/claystones in the Lakes Entrance Formation (Oligocene-Miocene) which underlies the Gippsland Limestone. This Formation is not predicted until approximately 1200 meters subsea at the proposed Scallop-1 Well therefore is below the zone of interest for shallow drilling hazards.

Scope of Work and Data Resources

The purpose of this assessment is to identify any shallow top-hole conditions that could impact the safety of the drilling operation and to determine if additional site-specific field surveys are necessary.

The assessment included a review of the following:

- An “Authorization To Drill” report dated December 2002 which includes background information on the local geology; a review of potential drilling hazards and constraints; and a review of potential abnormal pressures (Authors: S.J. Grope and M.J. Ryan).
- Regional maps showing the contoured area bathymetry and the existing wellsites and infrastructure.
- Images showing seabed topography/bathymetry extracted from the 3D seismic.
- A predicted lithology and stratigraphy for the proposed well, including correlation to eight offset wells.
- Graphical drilling history summaries from five offset wells.
- A Well Plan for Scallop-1 showing casing seats and expected Formation Tops.
- Pore pressure predictions which incorporate Formation Integrity Test information from the nearby East Pilchard-1 well.
- Good quality seismic profile data through the proposed location in strike and dip directions, and ties to the nearby Kipper-1 and East Pilchard-1 wells.
- Seismic time-slices from selected levels.

In addition to the above, a communication was received from Esso Australia (S. Grope, January 9, 2003) stating that a Voxelgeo project was created and scanned for anomalous amplitudes. No significant differences were observed in the proposed Scallop-1 well relative to the other six wells in the area, which were all successfully drilled without encountering shallow gas.

Surface Location:

The proposed Scallop-1 well is located at the intersection of In-line 1025 and Crossline 1330 (Kipper G99A, 3D seismic survey), defined by the following coordinates:

X= 639316m E; Y=5769300m N
Latitude = 38º 12' 48.6"N Longitude = 148º 35' 28.9"E

Projection:	UTM	False Easting:	500,000
Spheroid:	ANS (UTM Zone 55)	False Northing:	10,000,000
Datum:	GDA94	Scale Factor at CM:	0.9996
Central Meridian:	147º East	Units:	Meters

Water depth at the proposed wellsite is quoted as 117 meters.

Evaluation:

The seismic facies character of the top-hole section at the proposed Scallop-1 well appears to be nearly identical to that observed at various nearby offset wells drilled within the Gippsland Basin. A similar lithologic section (ie. massive carbonate sequence of Marls interbedded with Limestones and Calcarenites) is therefore anticipated. This lithological section is expected to be benign and present no hazards or constraints to drilling the top-hole. This benign sequence extends to approximately 1200 meters subsea, which is substantially below the setting depth of the surface casing shoe at approximately 825 meters subsea.

EMEC Operations Geology
Site Investigation Group
January 9, 2003

ENCLOSURE:

OIMS Shallow Hazards Identification Process: Hazard/Constraint Definitions and Probability Classifications.

OIMS Shallow Hazards Identification Process

Hazard/Constraint Definitions and Probability Classifications

Hazards are defined as geological, man-made, or environmental features/conditions that could compromise personnel safety, result in catastrophic damage/loss of facilities, equipment, and materials, and/or environmental damage unless sufficient mitigation measures are implemented. Examples include overpressured* shallow gas, overpressured shallow aquifers, incipient slope failure, shallow buried channels, and proximal subsea pipelines.

* **Overpressure** (abnormal pressure) is defined as formation fluid pressure, at any given depth, in excess of the hydrostatic pressure (normal pore-pressure). It can also be defined as a fluid pressure gradient in excess of the hydrostatic pressure gradient. This condition may or may not have operational significance depending on the mitigation measures taken.

Constraints are defined as geological, man-made, or environmental features/conditions that could incur significant cost overruns, delay operations, and/or result in minor damage/loss of equipment and materials unless sufficient mitigation measures are implemented. Examples include extremely weak seafloor soils, near-seafloor boulders, reactive clays, and faults.

The **probability of occurrence** of a particular Hazard or Constraint at a proposed drilling or development location is assessed, in qualitative terms, under the following classifications:

High: Probable presence or occurrence; plausible; likely to happen; mitigation measures highly recommended

Moderate: Possible presence or occurrence; potential; capable of favorable development; mitigation measures recommended

Low: Unlikely presence or occurrence; not significant or important; negligible

None: Not present or no possibility of occurrence

Weatherford
Asia Pacific

DHS FIELD RESUME

W/O or DT #
STORE Perth

CUSTOMER	Esso Australia	SERVICE TICKET NO	PR0497
RIG NAME	Sedco 702	CONTRACT/ORDER NO	
RIG TYPE	Semi-Submersible	TYPE OF CONTRACT	
LOCATION	Bass Straits	RESERVOIR TYPE	
WELL TYPE	EXPLORATION	WELL NO	Scallop 1
WELL DEPTH	3126 MT	ESTIMATED DIRECT COST	
SUPERVISOR RATE	$950.00	ESTIMATED DIRECT REVENUE	
ORDERED BY	George K. Sharkey	TYPE OF JOB	P&A

SUPERVISOR	DATE OUT			DATE IN			DAYS CHARGED
	DAY	MONTH	YEAR	DAY	MONTH	YEAR	
GEORGE MCKINLAY	23	02	03	3	03	03	9

RESUME

DATE	TIME	DESCRIPTION
23/02	10-15	DEPART PERTH FOR MELBOURNE @ 10-15HRS
24/02	01-30	DEPART MELBOURNE FOR SALE, ARRIVE ON LOCATION
		@ 14-00 HRS. ATTEND RIG INDUCTIONS, CHECK IN
		WITH COMPANY MAN, CHECK + CALIPER TOOLS,
		RIG RUNNING LOGS.
25/02		STD BY DUE TO RIG OPERATIONS (LOGGING)
26/02		STD BY DUE TO RIG OPERATIONS (LOGGING)
27/02		STD BY DUE TO RIG OPERATIONS (CMT PLUGS)
28/02		STD BY DUE TO RIG OPERATIONS (RUN BRIDGE PLUGS+CMT)
1/03		
00-00	16-00	CONT W/ P.A CEMENT PROGRAMME, L/D EXCESS PIPE.
16-00	16-30	P/U + M/U WEAR BUSHING RETRIEVAL TOOL, R.I.H + STAB
		INTO WEAR BUSHING, PULL WEAR BUSHING FREE W/60,000lbs
		OVERPULL, B/O + L/D SAME.
16-30	18-30	R/U STACK + RISER PULLING EQUIPMENT, REMOVE DIVERTOR
		P/U + M/U LANDING JOINT
18-30	24-00	UNLATCH + PULL RISER + B.O.P's

Customer Comments and Work Rating - 1 (poor) to 5 (excellent)							
Supervisor Work Knowledge		Supervisor Work Performance		Condition& Performance of Equipment		Safety Performance	

Supervisor Signature

G.K. Sharkey
Drilling Supervisor Name (print)

Drilling Supervisor Signature

ORIGINAL - Office

Weatherford
Asia Pacific

DHS FIELD RESUME

W/O or DT #
STORE Perth
Page 2 of 3

CUSTOMER	Esso Australia	SERVICE TICKET NO	PR0497
RIG NAME	Sedco 702	CONTRACT/ORDER NO	
RIG TYPE	Semi Submersible	TYPE OF JOB	P&A

RESUME

DATE	TIME	DESCRIPTION
2/3		
00-00	02-15	CONT TO N/D BOP'S
02-15	02-45	P/U + M/U M.O.S.T TOOL ASSEMBLY
02-45	03-00	FUNCTION TEST M-24 CSG CUTTER w/ 70SPM, 250GPM @ 450 P.S.I.
03-00	04-00	CONT TO M/U M.O.S.T TOOL ASSEMBLY, SECURE GUIDE ROPES TO P.G.B. GUIDE WIRES, R.I.H w/ ASSY TO WELLHEADS @ 131.77m.
04-00	04-30	M/U TOP DRIVE + OPEN COMPENSATORS, STING INTO WELLHEAD LAND OUT MOST TOOL HOUSING w/ 15,000lbs DOWN ON MARINE SWIVEL. FILL STRING SLOWLY, STR WT 150,000lbs, ROT WT 130,000lbs, RPM 80, 2000Ft/lbs 50 Amps
04-30	08-45	CUT 20" + 30" CSG @ 137.08m. WITH INITIAL PARA'S, 80 RPM, 2000Ft/lbs, 25 SPM, 100GPM @ 500 P.S.I. (SEE SEPERATE CUTTING SHEET ATTACHED)
08-45	09-45	P/U STRING TO ENGAGE MOST TOOL (NEG), STRING TAKING O/PULL, PULL 60,000lbs OVER STRING WT, POSSIBLE KNIVE TRAPPED IN CUT, STRING FREE, ATTEMPT TO ENGAGE MOST TOOL NEG, HOUSING + WELLHEADS ON SLIGHT ANGLE, TAKE TENSION ON GUIDEBASE WIRES, ATTEMPT TO SET WEIGHT ON HOUSING WITH MARINE SWIVEL (NEG) TAKING WT ON RESTRICTION @ CUT 137.08m. UNABLE TO LAND ON MARINE SWIVEL, TRY SEVERAL ATTEMPTS TO LATCH MOST TOOL. (NEG)
09-45	10-45	P.O.O.H w/ MOST TOOL ASSY, 1 KNIVE MISSING, SCARRING ON BULLNOSE, BULLNOSE PLUGGED, MEASURE INDICATIONS ON KNIVES, ACHEIVED FULL CUT + SWEEP 47.50" B/O + L/D M-24 CSG CUTTER + BULLNOSE.
10-45	12-00	SET MOST TOOL IN UNLATCHED POSITION, M/U MOST TOOL BHA + R.I.H TO WELLHEAD @ 131.77m

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Weatherford
Asia Pacific

DHS FIELD RESUME

W/O or DT #
STORE Perth
Page of

CUSTOMER	Esso Australia	SERVICE TICKET NO	PR0497
RIG NAME	Sedco 702	CONTRACT/ORDER NO	
RIG TYPE	Semi Submersible	TYPE OF JOB	P&A

[redacted]

[redacted]							
	CUTTING PARAMETERS.						
	TIME	RPM	TRQ Ft/lbs	Amps	SPM	GPM	PSI
	04-30	80	2½-3,000	100	32	115	825
	05-00	100	3,000	100	32	115	825
	05-15	100	3-4,000	110	32	115	850
	05-25	100	3-7,000	100/200	32	115	850
		POSSIBLE 20" CUT					
	05-30	100	3-3,500	100/150	32	115	850
	05-45	100	3½-4,000	100/150	32	115	850
	06-00	100	3½-4,000	100/150	32	115	850
	06-30	100	2-8,000	50/250	32	115	825
	06-45	100	3-5,000	100/200	32	115	825
	07-00	100	3-5,000	100/200	32	115	825
	07-30	100	3-5,000	100/200	32	115	825
	07-45	100	3-4,000	100/150	32	115	825
	07-55	NOTED SEDIMENT SLOUGHING F/ BEHIND 30"					
	08-00	100	4-6,000	150/200	32	115	825
	08-15	100	3½-4,500	100/150	32	115	825
	08-30	100	3½-5,000	100/200	32	115	825
	08-35	NOTED ERATIC TORQ 1-8,000 Ft/lbs PRESSURE SPIKING F/					
		700 PSI TO 800 P.S.I. GUIDE BASE ROCKING & INCREASE					
		IN SEA BED SLOUGHING.					
		POSSIBLE 30" CUT.					

DHS - FIELD REPORT - 001/98/6

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Asia Pacific

DHS FIELD RESUME

W/O or DT #
STORE Perth
Page 3 of 3

CUSTOMER	Esso Australia	SERVICE TICKET NO	PR0497
RIG NAME	Sedco 702	CONTRACT/ORDER NO	
RIG TYPE	Semi Submersible	TYPE OF JOB	P&A

RESUME

DATE	TIME	DESCRIPTION
2/3		
12-00	12-30	M/U TOP DRIVE + OPEN COMPENSATORS, STING INTO WELLHEAD
		@ 131.77m, SET DOWN ON MOST HOUSING W/ MARINE
		SWIVEL W/ 15,000lbs, ATTEMPT TO LATCH + PULL WELLHEADS
		(NEG) SET DOWN ON MOST HOUSING W/ 15,000lbs, HARD
		SET DOWN, LATCH WELLHEADS, PULL BACK STRING,
		TAKING O/PULL, PULL BACK W/ 20,000lbs, MOST TOOL
		LATCHED, LOCK MOST TOOL + SET DOWN W/ 8,000lbs
		TO CONFIRM LOCK (OK.) PULL BACK TO 250,000lbs
		(80,000lbs O/PULL) WAIT 2-3 MINS, PULL BACK TO 270,000lbs
		(100,000lbs O/PULL) WAIT 2-3 MINS, PULL BACK TO 300,000lbs
		(130,000lbs O/PULL) WAIT 5 MINS. RESET COMPENSATORS
		PULLED TO 330,000lbs (160,000lbs O/PULL) WITH BLOCKS
		STRING PULLED FREE, GUIDE BASE CLEAR OF SEA BED
12-30	13-00	P.ULL BACK MOST TOOL + GUIDE BASE ASSY, CLEAR
		OF SPLASH ZONE
13-00	14-00	R/U TO LAND GUIDE BASE ON MOON POOL BEAMS +
		SECURE SAME,
14-00	14-30	RELEASE MOST TOOL F/ WELLHEADS, P.O.O.H B/O + L/D
		SAME.
14-30		B/O WELLHEADS F/ GUIDE BASE, L/O SAME.
		STD BY ON RIG FOR CHOPPER TO BASE.
3/3		DEPART LOCATION FOR SALE BASE.
		DEPART SALE BASE FOR MELBOURNE.
		DEPART MELBOURNE FOR PERTH.

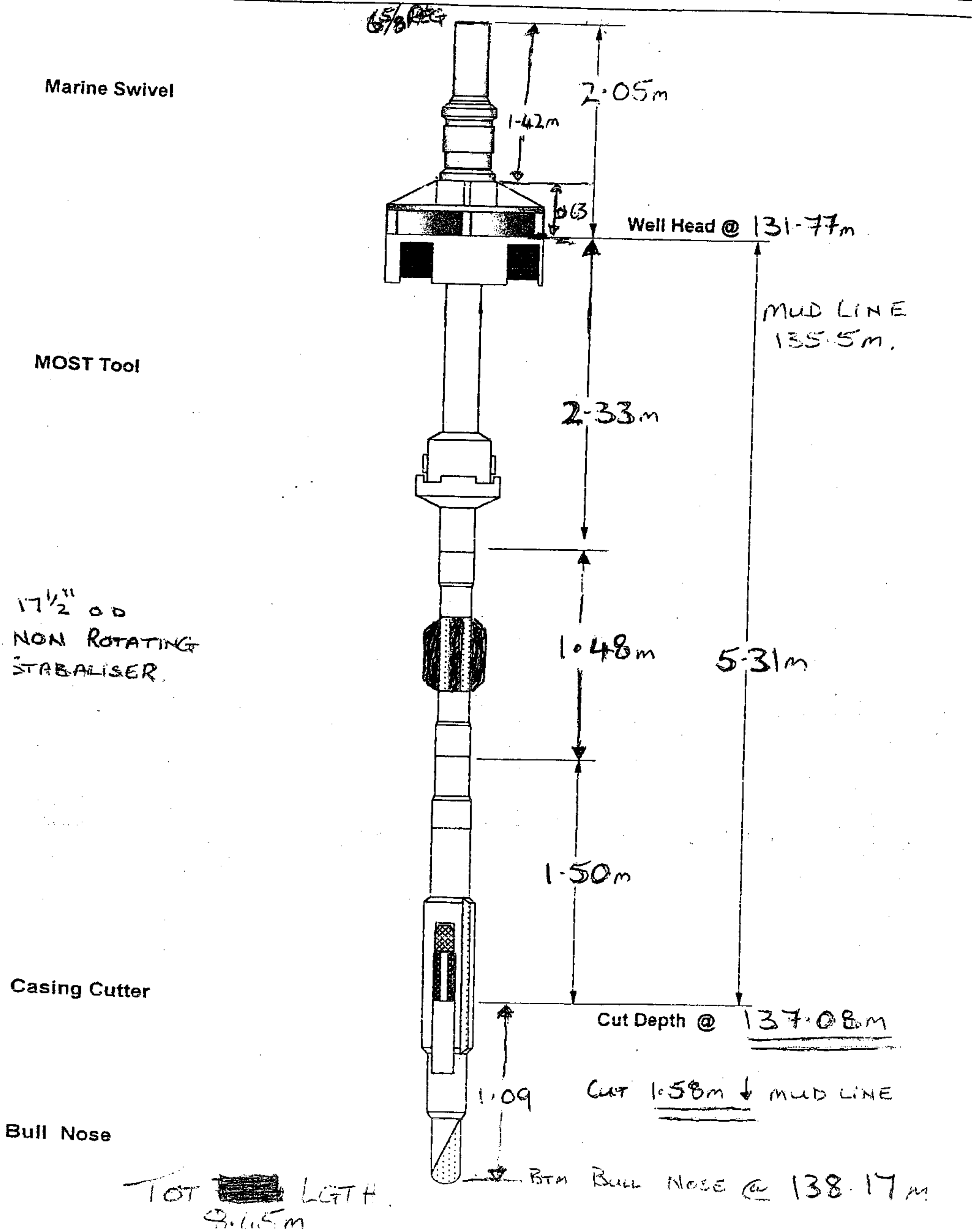
g

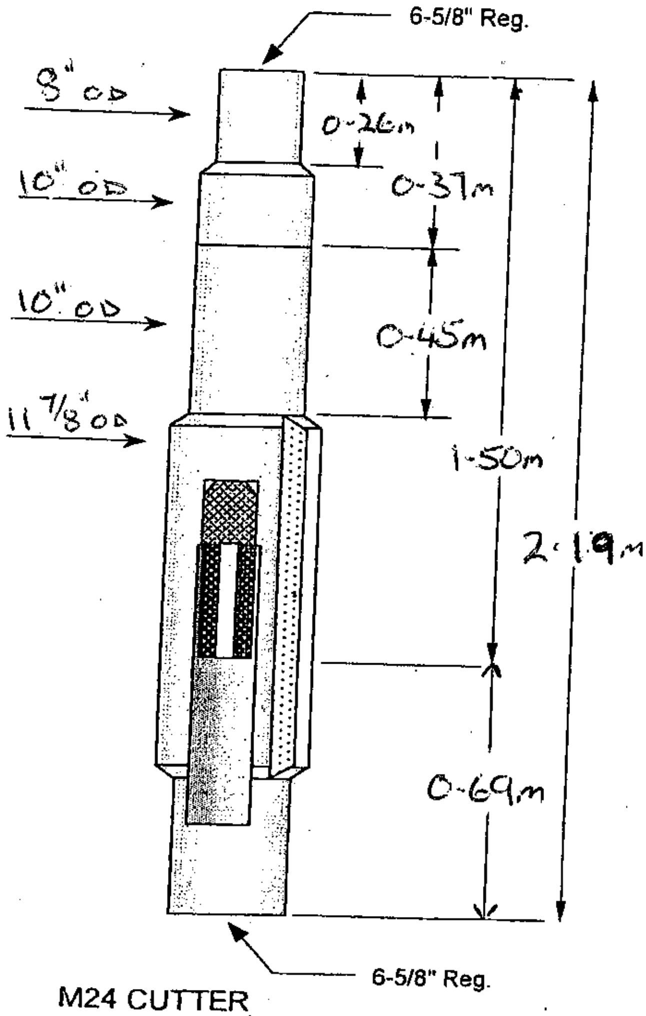
Well name	Scallop #1
Bit Run#	
Bit Type	
Jets	
Make	
Date	1-3-03

Prepared by		DC Wt in air (lb)		Bouyed (lb)	
Checked by	Driller	HWDP Wt in air (lb)		Bouyed (lb)	
Final Checked by	ARS	Wt below Jars (lb)		Bouyed (lb)	
		Total BHA Length	186.72m	Mud Wt PPG	Sea Water

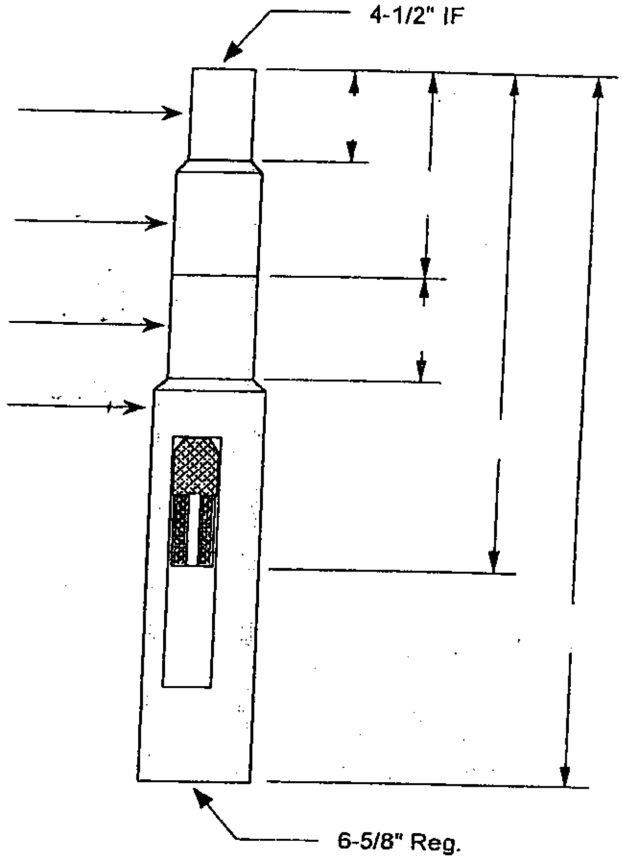
Tool	LENGTH	Cumulative Length	S/N	Box Conn.	Pin Conn.	OD	ID	Fish Neck Length	Fish Neck OD	O/SHOT Size	GRAPPLE Size	Tool Hours
M-24 CSG CUTTER	2-59	2-59	231199	6 5/8 REG	–	11 7/8"	–	0-26	8"			
17½" NON ROT STAB	1-48	4-07	234152	6 5/8 REG	6 5/8 REG	17½"	2 7/8"	0-49	7 7/8"			
MOST TOOL	2-33	6-40	230930	6 5/8 REG	6 5/8 REG	17"	2½"	1-18	8"			
1400 MARINE SWIVEL	2-04	8-44	235692	6 5/8 REG	6 5/8 REG	14"	2 5/16"	0-66	8¾"			
8¼" D.C #1	8-98	17-42	93807	6 5/8 REG	6 5/8 REG	8¼"	2 7/8"	1-07	8¼"			
#2	9-44	26-86	95825	6 5/8 REG	6 5/8 REG	8¼"	2 7/8"	1-09	8¼"			
#3	9-22	36-08	8800	6 5/8 REG	6 5/8 REG	8¼"	2 7/8"	1-05	8¼"			
#4	9-11	45-19	8809	6 5/8 REG	6 5/8 REG	8¼"	3"	1-03	8¼"			
#5	9-10	54-29	85869	6 5/8 REG	6 5/8 REG	8¼"	3"	1-03	8¼"			
#6	9-44	63-73	93093	6 5/8 REG	6 5/8 REG	8¼"	2 7/8"	1-09	8¼"			
X/O 6 5/8 Rx 4½ IF	0-61	64-34	MSO-275	4½ IF	6 5/8 REG.	8¼"	2 13/16"	0-61	8"			
5" HWDP 1	9-15	73-49	56366	4½ IF	4½ IF	5"	3"	0-63	6 5/8"			
xx 2	8-97	82-46	43581	4½ IF	4½ IF	5"	3"	0-57	6 5/8"			
1 3	9-21	91-67	56376	4½ IF	4½ IF	5"	3"	0-60	6 5/8"			
x 4	9-39	101-06	78615	4½ IF	4½ IF	5"	3"	0-53	6 5/8"			
xx 5	9-00	110-06	43582	4½ IF	4½ IF	5"	3"	0-56	6 5/8"			
2 6	9-00	119-06	43557	4½ IF	4½ IF	5"	3"	0-55	6 5/8"			
x 7	9-38	128-44	78607	4½ IF	4½ IF	5"	3"	0-53	6 5/8"			
xx 8	9-35	137-79	76014	4½ IF	4½ IF	5"	3"	0-53	6 5/8"			
3 9	8-93	146-72	44083	4½ IF	4½ IF	5"	3"	0-46	6 5/8"			
TOTAL BHA		146-72 mt										

Marine Swivel / MOST Tool to cut [redacted]" CASING	Weatherford

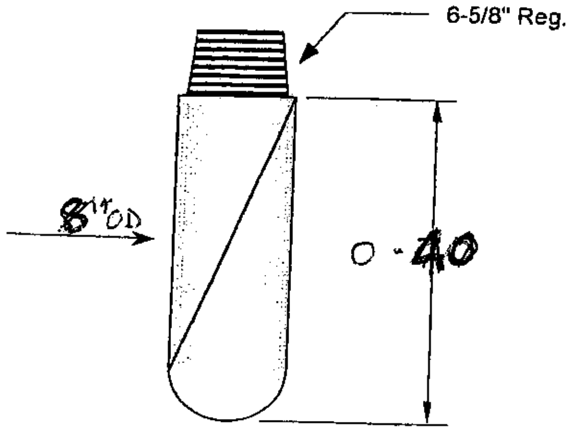




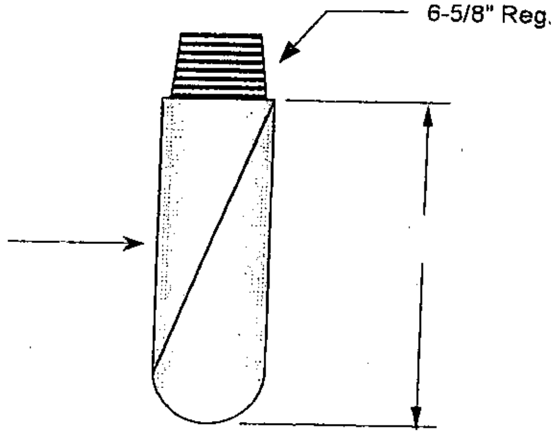
M24 CUTTER
S/N : 231199



M23 CUTTER
S/N :

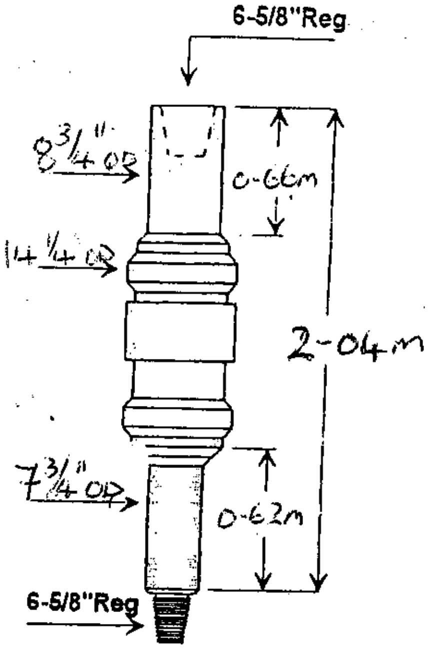


BULL NOSE
S/N : 230084

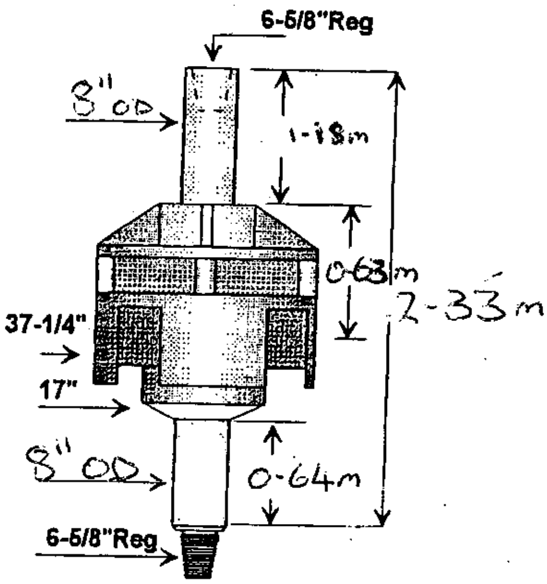


BULL NOSE
S/N :

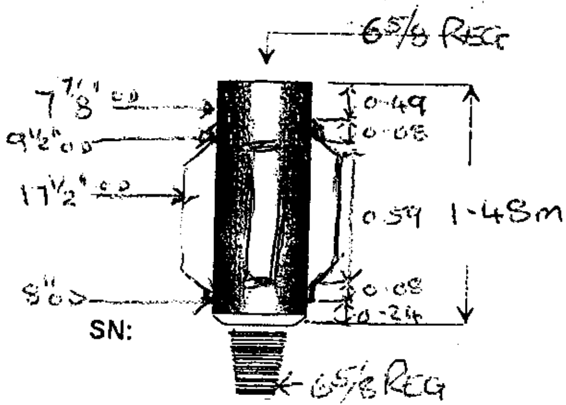
1400 SERIES
MARINE SWIVEL
SER Nº 235692



M.O.S.T. TOOL
DRESSED w/ 18 3/4"
CAMERON HUB ARMS
SER Nº 230930



17 1/2" OD
NON ROTATING
STABALISER
SER Nº 234152.



Weatherford	DHS Well Abandonment Information Form	Australia

WELL ABANDONMENT INFORMATION FORM (SEMI SUBMERSIBLES)

<table>
<tr><td colspan="3">COMPANY:
Esso Australia Pty Ltd</td><td>DATE:
30-Jan-03</td></tr>
<tr><td colspan="3">RIG NAME/NUMBER:
Transocean Sedco 702</td><td>WELL NAME/NUMBER:
Scallop-1 Exploration Well</td></tr>
<tr><td colspan="3">WELLHEAD TYPE:
Dril Quip SS-10C w/ CIW Hub/Collet Profile Top (ref to attached Doc)
CASING HANGER TYPE:
7" 9 5/8"
N/A Only if well Suspended
10 ¾" 13 3/8":
N/A N/A, Csg is swedged from 20" to 13-3/8"</td><td>WELLHEAD PROFILE:
VETCO H4 ☐
Cameron Hub ☒ refer to attached Doc
Dril-Quip HAC System ☐
OTHER: ☐
Please Specify:</td></tr>
<tr><td>WATER DEPTH:
110m</td><td>DATUM:
MSL @ 25.9m below RT</td><td>RIG DRAUGHT (While Cutting):
Drilling Draft of 25.9m but check at wellsite</td><td>CASING SIZES, WEIGHT & GRADE:
Refer to attached Casing Design Programme & Material List
" lbs.</td></tr>
</table>

SPECIAL INSTRUCTIONS

<table>
<tr><td>WILL LOCK RINGS BE RUN?
Most likely it will be engaged. This have to be confirmed at the wellsite with the drilling supervisor.</td><td>WILL THERE BE ANY CEMENT IN THE ANNULUS AT CUT DEPTH? Plan is to cement to surface and for there to be cement between the 30" and 20"x13-3/8" surface casing annulus.</td></tr>
<tr><td>WILL THE 30/36" CEMENT JOB BE TOPPED UP?
Plan is to cement to surface. Wells in the past which have been cemented to surface have observed cement to surface. The 30" may be grouted if required.</td><td>IS THERE A DRAWING OF WELLHEAD AND CASING HANGERS AVAILABLE FOR OUR REFERENCE?
(With lengths, dimensions, location of ribs, and connector info) Refer to attached drawing. Please advise if a more detailed drawing is required.
IF SO FROM WHOM?</td></tr>
<tr><td>IS WELLHEAD SWEDGED?
Yes, 20" 20ft extension before swedging down to 13-3/8" surface casing. Refer to Dril-Quip documentation
DEPTH OF SWEDGED CASING FROM TOP OF WELLHEAD
20ft noting that there will be 25" x 20" centraliser blades/fins welded immediately above the 20" x 13-3/8" casing swedge. Position of swedge & dimensions of fins are to be confirmed at the wellsite but they should be 25" long x 2.5" high x 1" thick with a 45 degree chamfer on either end.</td><td>IS/ARE THERE MIXED CASINGS SIZES?
20" x 13 3/8" - 20" x 9 5/8" - 10 ¾" x 9 5/8"
Yes, Surf Csg N/A N/A
OTHER:
30" x 20" Conductor casing</td></tr>
<tr><td colspan="2">ABANDONMENT WORK STRING?: Will have 5" HWDP & 5" DP, 9-1/2" & 8-1/4" DC's as required
DRILL PIPE OD: 5" DRILL COLLAR OD: 9-1/2" & 8-1/4"
CONNECTION : 4-1/2" IF/NC50 CONNECTION : 7-5/8" Reg & 6-5/8" Reg</td></tr>
</table>

CONTACT PERSON:	Rudolf M Fürchtenicht/ Chris Meakin (Engineering) Rex Roylance (Logistics)	**FORM INITIATED BY:**	Herschell Breland
TELEPHONE NO.:	+61-3-9270-3612 +61-3-9270-3536	**CUSTOMER PO/AFE NO.**	L7401 D001
EQUIPMENT LOADED FROM:	Delivery Location will be BBMT, Victoria	**TRANSPORT PROVIDED BY:**	Toll Energy Quote # S605

SCALLOP-1 - RECOVERED WELLHEAD & CASING PHOTOS

Figure #1 - Recovered Permanent Guide Base (PGB)
Note: *No cement was found around PGB when recovered.*

Figure #2 - Photo of recovered 18-3/4" Wellhead Housing.

Figure #3 - Photo of recovered 30" and 18-3/4" Wellhead Housing.

Figure #4 - Weatherford multi-string casing cutter used to cut the 20" and 30" casing strings.

Figure #5 - Internal view of cut 20" and 30" casing strings.
Note: *No cement was found between casing strings upon recovery at surface.*

Figure #6 - External view of cut 20" and 30" casing strings, including wellhead housings.

Figure #7 - Close up view of cut 20" and 30" casing strings.

Transocean "Sedco 702" Anchor Log Sheet - Recovery Operations

Departure **Minerva #3A**

Commence time/date	29/01/03 4:15
Completed time/date	29/01/03 22:55
Elapsed time	00:18:40
Actual time taken	00:16:44

Anchor Number	#4	Anchor Number	# 8	Anchor Number	#1	Anchor Number	#5
AHTV	P. Frontier	AHTV	P. Frontier	AHTV	P. Frontier	AHTV	P. Frontier
PCC to AHTV	04:15	PCC to AHTV	05:47	PCC to AHTV	07:38	PCC to AHTV	09:20
AHTV at Anchor	04:32	AHTV at Anchor	06:05	AHTV at Anchor	07:59	AHTV at Anchor	09:40
Commenced Heaving in	04:37	Commenced Heaving in	06:09	Commenced Heaving in	08:03	Commenced Heaving in	09:48
Anchor Racked	05:20	Anchor Racked	07:09	Anchor Racked	08:55	Anchor Racked	10:40
PCC back to rig	05:29	PCC back to rig	07:14	PCC back to rig	09:00	PCC back to rig	10:48
Time taken	00:01:14	Time taken	00:01:27	Time taken	00:01:22	Time taken	00:01:28

Anchor Number	#6	Anchor Number	#2	Anchor Number	#3	Anchor Number	#7
AHTV	P. Frontier	AHTV	P. Challenger	AHTV	P. Frontier	AHTV	S702
PCC to AHTV	12:16	PCC to AHTV	18:05	PCC to AHTV	18:47	Start heave in	21:57
AHTV at Anchor	12:36	AHTV at Anchor	18:20	AHTV at Anchor	21:00		
Commenced Heaving in	14:25	Commenced Heaving in	18:23	Commenced Heaving in	21:03		
Anchor Racked	16:28	Anchor Racked	18:35	Anchor Racked	21:55	Anchor off bottom	22:50
PCC back to rig	16:36	PCC back to rig	20:50	PCC back to rig	21:57	Anchor racked	22:55
Time taken	00:04:20	Time taken	00:02:45	Time taken	00:03:10	Time taken	00:00:58

Note: Anchor #6 was decked by P. Frontier and a new Collar, Pear Link and shackle installed. Some welding was done to the spreader bar.
Note: Anchor #2 was decked by P. Challenger and the anchor disconnected and passed up to the rig for repairs. It was kept on the rig for the tow.
Note: Anchor #3 was delayed in its recovery due to having to wait for P. Challenger to go on static tow on #2 before #3 could be worked.

Transocean "Sedco 702" Anchor Log Sheet - Running Operations

Arrival | **Scallop-1**

Commence time/date	01/02/03 4:19
Completed time/date	01/02/03 17:55
Elapsed time	00:13:36
Actual time taken	00:10:01

Anchor Number	#7	Anchor Number	#3	Anchor Number	#6	Anchor Number	#2
AHTV	Rig	AHTV	P. Frontier	AHTV	P. Frontier	AHTV	P. Challenger
Anchor on Bottom	04:19	PCC to AHTV	05:45	PCC to AHTV	07:34	PCC to AHTV	07:30
		Commence payout	05:45	Commence payout	07:56	Commence payout	08:40
		Anchor on bottom	06:22	Anchor on bottom	08:25	Anchor on bottom	09:10
		Commence stripping	06:28	Commence stripping	08:30	Commence stripping	09:14
Payout stopped	04:49	PCC back to rig	06:50	PCC back to rig	08:55	PCC back to rig	09:36
Time taken	00:00:30	Time taken	00:01:05	Time taken	00:01:21	Time taken	00:02:06

Anchor Number	#5	Anchor Number	#4	Anchor Number	#8	Anchor Number	#1
AHTV	P. Frontier	AHTV	P. Frontier	AHTV	P. Frontier	AHTV	P. Frontier
PCC to AHTV	09:30	PCC to AHTV	12:20	PCC to AHTV	14:43	PCC to AHTV	16:25
Commence payout	09:40	Commence payout	12:35	Commence payout	14:55	Commence payout	16:40
Anchor on bottom	10:14	Anchor on bottom	13:10	Anchor on bottom	15:32	Anchor on bottom	17:15
Commence stripping	10:18	Commence stripping	13:14	Commence stripping	15:35	Commence stripping	17:18
PCC back to rig	10:41	PCC back to rig	13:35	PCC back to rig	16:01	PCC back to rig	17:40
Time taken	00:01:11	Time taken	00:01:15	Time taken	00:01:18	Time taken	00:01:15

Note: #2 anchor was passed down to boat from rigs deck after repairs were carried out and reconnected then run as normal.
Note: All anchors pre-tensioned to 350 kips.

Transocean "Sedco 702" Anchor Log Sheet - Recovery Operations

Departure **Scallop-1**

Commence time/date	03/03/03 9:55
Completed time/date	04/03/03 0:00
Elapsed time	00:14:05
Actual time taken	00:16:13

Anchor Number	#8	Anchor Number	#4	Anchor Number	#1	Anchor Number	#5
AHTV	P. Challenger	AHTV	P. Frontier	AHTV	P. Challenger	AHTV	P. Frontier
PCC to AHTV	09:55	PCC to AHTV	10:17	PCC to AHTV	12:21	PCC to AHTV	12:22
AHTV at Anchor	10:24	AHTV at Anchor	10:58	AHTV at Anchor	12:47	AHTV at Anchor	12:55
Commenced Heaving in	10:40	Commenced Heaving in	11:05	Commenced Heaving in	12:57	Commenced Heaving in	13:03
Anchor Racked	10:49	Anchor Racked		Anchor Racked	13:05	Anchor Racked	13:05
PCC back to rig	11:58	PCC back to rig	12:00	PCC back to rig	14:15	PCC back to rig	14:15
Time taken	00:02:03	Time taken	00:01:43	Time taken	00:01:54	Time taken	00:01:53

Anchor Number	#3	Anchor Number	#7	Anchor Number	#2	Anchor Number	#6
AHTV	P. Frontier	AHTV	P. Challenger	AHTV	P. Challenger	AHTV	S702
PCC to AHTV	14:40	PCC to AHTV	14:40	PCC to AHTV	16:44	Start heave in	21:35
AHTV at Anchor	15:09	AHTV at Anchor	15:04	AHTV at Anchor	17:12	Start Debalast	18:00
Commenced Heaving in	15:17	Commenced Heaving in	15:13	Commenced Heaving in	18:37	Complete Debalast	21:35
Anchor Racked		Anchor Racked	15:24	Anchor Racked			
Anchor on Deck	16:00	PCC back to rig	16:26	Anchor on Deck	19:53	Anchor racked	00:00
Time taken	00:01:20	Time taken	00:01:46	Time taken	00:03:09	Time taken	00:02:25

Note: Anchor #3 was decked by P. Frontier. PF set up for for tow on anchor chains.
Note: Anchor #2 was decked by P. Challenger. PC set up for for tow on anchor chains.

File Reference: Scallop-1_Anchor_Handling_Times_Recovery.xls
Tab Reference: Acnhor Recovery

Dull Grade Report
HYCALOG Y11C

Serial Number 2566
Scallop 1 Well

Y11 came out in excellent condition with no overly detrimental wear and can be re used

Dull Grading

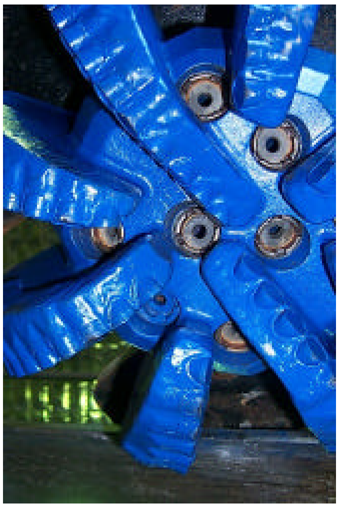
(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)
1	1	WT	A	E	IN	No	TD

Depth In: 135 meters MD
Depth Out: 179 meters MD
Meters Drilled: 43 m
Hours Drilled: 2
Rate of Penetration 21.1 m/h

Formation: Tertiary Limestones
Good Run
Nozzles: 3 x 22; 1 x 18; TFA: 1.36

Dull Grade Report
HYCALOG DS34HF+G

Serial Number 24400
Scallop 1 Well


Bit is painted after use but has not been refurbished as it came out in near excellent condition, with one cutter on nose being slightly chipped; bit absolutely able to be used again with no prejudice.

Dull Grading

(A)	(A)	(B)	(C)	(D)	(E)	(B)	(F)
1	**0**	**CT**	**N**	**X**	**IN**	**No**	**TD**

Depth In: 179 meters MD
Depth Out: 917 meters MD
Meters Drilled: 738 m
Hours Drilled: 21
Rate of Penetration 35.1 m/h

Formation: Tertiary Limestones
Nozzles: 8 x 14/32"; TFA 1.21
Best Performance in Application to Date

SMITH INTERNATIONAL, INC.

ENGINEERING REPORT

12-1/4" MA89PXX

Bit Size and Type:	12 ¼" MA89PXX
Serial Number:	JT0152
IADC	M223
Well Number:	SCALLOP-1
Country:	Australia (Offshore)
Operator:	Esso Australia
Rig:	Sedco 702

Prepared For:
Rudolf Furchtenicht
Drilling Engineer
Esso Australia, Melbourne

Cc: Hugh Donald – Area Manager , Smith Bits Australasia

Prepared By: ____________________________

Stephen Lewis
Technical Services Engineer
Smith Bits, Australasia
Tel: 61 89 486 1400
Fax: 61 89 486 1411

Date : 8th May 2003

1. Executive Summary :

Following the conclusion of Scallop-1 a request was made by Esso Australia's Drilling Engineering Staff to examine and investigate the suitability of the PDC Design to the Formation Application in which it was applied.

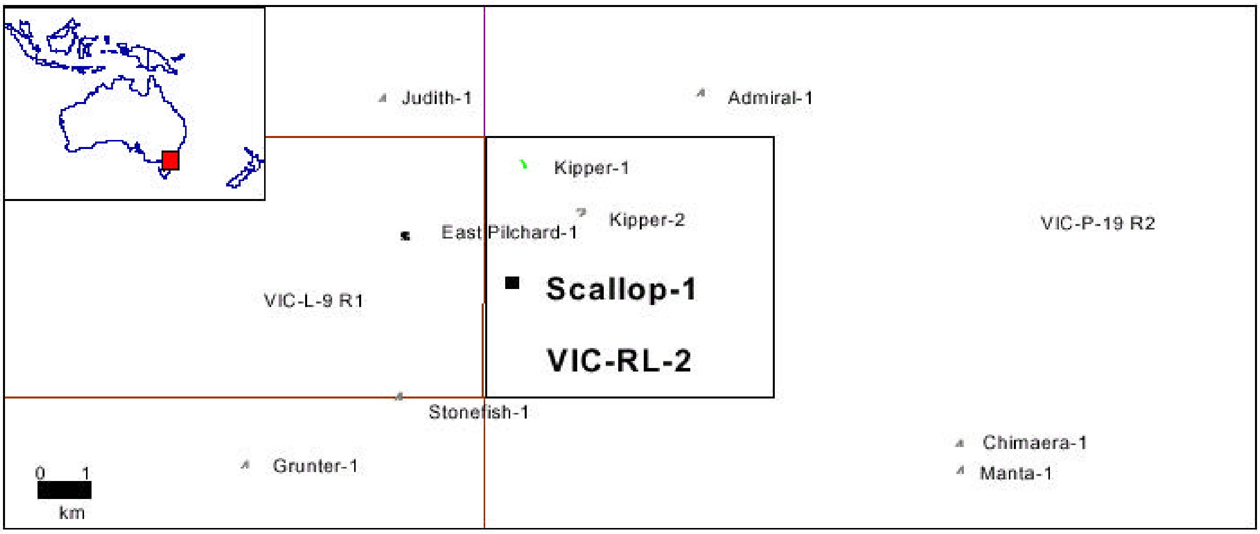
This Engineering Report attempts to discuss the performance of the 12.25" MA89PXXBit relative to the Drilling Ascii Data and E-Log Data received. A DBOS Plot (an acronym for '*Drill Bit Optimisation System*'), of recorded parameters and computed unconfined compressive strength of host lithologies was also used to gain an understanding of the drilling environment application.

Whilst Smith Bits retain a fairly knowledgeable background of Formation Applications within the Bass Straits, the accompanying Data Tabulation (Attachment-1) lists the data made available and which was used in compilation of this Report.

It is hoped that this Post-Well Review of the 12.25" MA89PXX Bit Run will be viewed as an additional step in implementing a continuous improvement cycle for any future drilling operations in the Bass Strait and in particular in the vicinity of Scallop-1 (Vic RL-2).

It is genuinely hoped that the constructive comments within this Report will be taken in context and a more formal working relationship developed whereby access to relevant Ascii Data can be secured.

This Report Document serves two purposes in conveying a reasonably thorough critique of the Bit Performance & Formation Application from both a Customer and Internal Smith International perspective.



Data Set for Post-Well Dull Grade Report

Intervals Drilled		SCALLOP-1
Spud Date		February 2nd 2003
RKB		
17.5”	X	Not Applicable
12.25”		Interval 917m – 2618m
TD Date		February 24th 2003
Geology		
Mud Log	✓	
Wellsite Geology Log		
Composite Log		
Formation Tops	✓	
Drill Data (Ascii)		
Rate of Penetration	✓	261m – 3174m
WOB / RPM	✓	261m – 3174m
GPM / SPP	✓	261m – 3174m
TQ (~~Min~~ / Avg / ~~Max~~)	✓	261m – 3174m
MW	✓	261m – 3174m
MWD (Ascii)		
Vibration Data (Print)		
E-Logs (Ascii)		
Dt	✓	848m – 3180m
GR	✓	848m – 3180m
RHOB	✓	848m – 3180m
Caliper	✓	848m – 3180m
NPHI	✓	848m – 3180m
Records		
Bit Record	✓	
Bit Photographs	✓	
BHA Record	✓	
Reports		
Daily Drilling		
Daily Mud		
Motor / Directional		
Dull Bit		
Mud Logging		
MWD		
Vibration		
Well Completion		
Final Well Report		

Attachment-1

2. *Bit Run Summary :*

2.1 Geology :

The lithologies drilled during the 12.25” MA89PXX Bit Run comprised initially of argillaceous calcilutite of the Gippsland and Lakes Entrance Formations, which graded into a more uniform marl lithology with increased depth within the Lakes Entrance Formation.
Both these Formation are typically described as soft to firm and are ideal applications in which PDC Bits should be run (the presence of fissile or layered platelets within the argillaceous type lithologies enabling shear to be readily accomplished).

The Latrobe Formation encountered at 1723m comprises a cyclic sequence of claystones, siltstones, sandstones and coals with argillaceous material generally being predominant. A conglomerate was encountered at 1986m which would have presented a hurdle for any PDC Cutting Structure used.

A Volcanics Intrusive section was encountered at 2612m in which Rate of Penetration fell to unacceptable levels (< 2 m/hr) and the Bit was pulled at 2618m presumably over concerns for the integrity of the PDC Cutting Structure.

Examination of the Post Well DBOS Plot reveals that over the initial interval drilled the unconfined compressive strength of rocks generally had little variance and typically averaged between 1 and 4Kpsi within the Gippsland and Lakes Entrance Formations (with rare peaks to 5 and 7Kpsi).
The unconfined compressive strengths of the lithologies encountered within the Latrobe Group typically varied from 4 to 9Kpsi with occasional / rare peaks to 14 and 20Kpsi. Towards the onset of the Volcanic Intrusive then unconfined compressive rock strength became increasingly ratty with peaks of upto 30Kpsi noted ……and the Bit slowed considerably within one such volcanic layer / lense.

2.2. Bit Performance :

The Drilling Performance of the 12.25” MA89PXX is summarised on the accompanying Attachment (Attachment 2)

Several Photographs were made available by ESSO following the Bit Run, and (in the absence of the subject Bit) these have been used in conjunction with a thorough critique of Drilling Ascii Data to postulate the likely mode of PDC Cutter damage observed on the Dull.

Aside from encountering a conglomeratic layer (1986m) and the Volcanic Intrusive (2612m), both of which a generally accepted as incompatible to PDC Cutting mechanism, review of Mud Logging Ascii Data reveals that there were several instances of torsional vibration during the Bit Run that would have marred the performance attained and contributed to premature damage of the PDC Cutting Structure.

SCALLOP-1 Bit Record

Bit No:	3	
Run No:	1	
Size:	12.25”	
Manufacturer:	Smith	
Type:	MA89PXX	
Gauge Length:	2" ?	
Serial No:	JT0152	
Depth In:	917m	917m TVD
Depth Out:	2618m	2617m TVD
Interval:	1701m	
On Bottom Hrs:	127.8 hrs	
Circulating Hrs:	145.3 hrs.	
ROP:	13.3 m/hr	
WOB:	2 - 20Klb	
RPM:	80 - 150 Surface	
DHRPM	No Motor employed	
Flow:	800 - 1014 GpM	
SPP:	3300 psi	
Nozzles:	7x14 (1052 sq ins)	
Inclination In:	0.39º	
Inclination Out:	1.26º	
Azimuth In:	329.98º	
Azimuth Out:	336.84º	
BHA:	Packed Assembly	
Mud Type:	KCL/Polymer/Glycol-CP	
Mud Weight:	1.08 – 1.23 SG	
Formation:	Gippsland, Lakes Entrance, 7m Volcanics	
Condition:	2:4:CT:S:X:In:BT:PR	

Comments:

Drilled Casing ShoeTrack (type and manufacturer not known).
Bit Run on Packed BHA (NBRR and x2 String Stabilisers).
Bit pulled for slow RoP on entry into Volcanic Layer.

2.3 Bit Condition :

The Bit was apparently hoisted following a consistent drop in rate of penetration having drilled through a sequence of volcanics.

Out of Hole the Bit was graded in accordance with IADC Practice as :-

2 : 4 : CT : S : X : In : BT : PR

Photographs of the Dull are included on the accompanying Bit Run Summary Sheet (Attachment 2).

The most obvious and apparent damage from examination of the photographs is the chipping and loss of several PDC Cutters over the taper and shoulder profile. Close examination of the photographs also reveals damage to the matrix body at the rear of the Blades

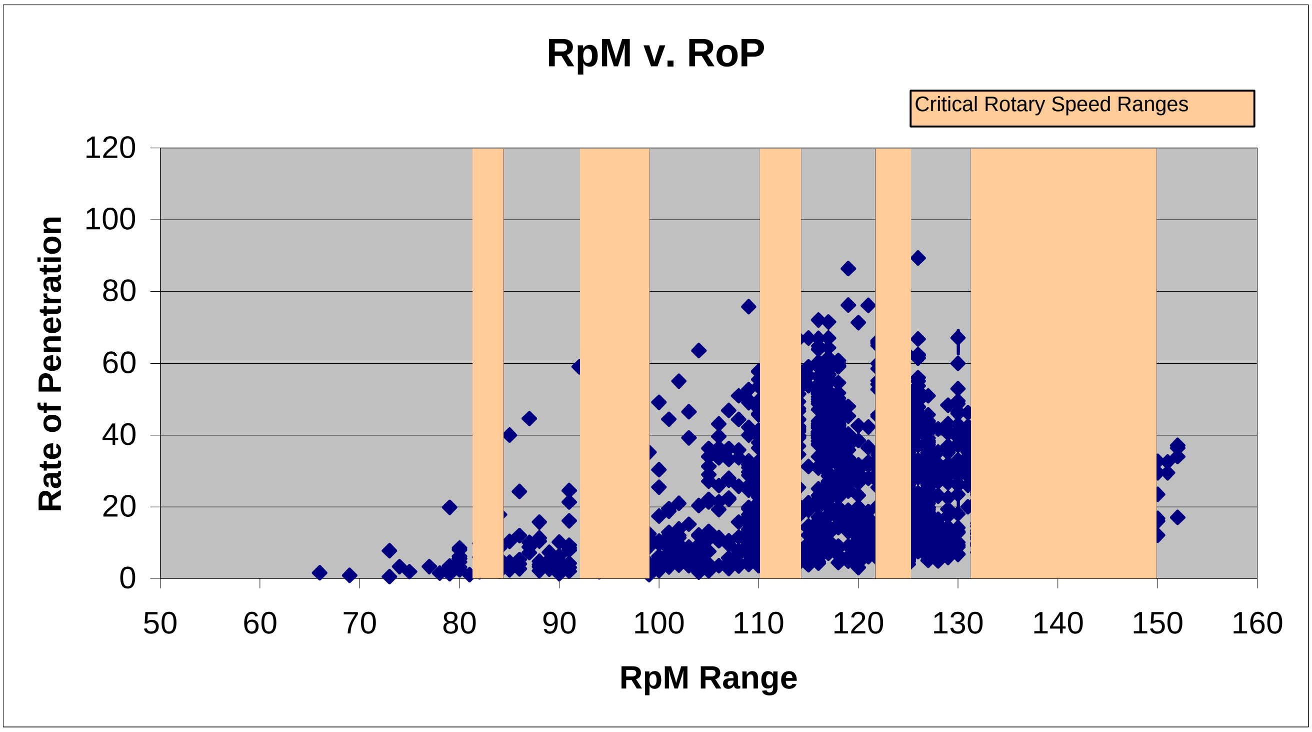
The primary cause of such ‘peripheral’ damage is either lateral vibration or torsional vibration where the Bit ‘walks’ around the Wellbore and induces a backwards momentum.

2.4 BHA Analysis :

The accompanying BHA Analysis Summary Attached (Table 1) is a brief summary and critique of the drilling parameters and BHA used during the 12.25" MA89PXX Bit Run.

The Program used by *Smith Bit's* models the tendency of a BHA and Drillstring to deform axially, torsionally and laterally and has some limitations in application –particularly when Hole Angle drift is included in computation (in directional Wells Critical Rotary Speed and Buckling is affected by gravitational affects with the drillstring effectively lying on the low side of the Hole - and as a result modelling CRS resonance and drillstring buckling is somewhat compromised due to the unknown extent of wellbore interaction).

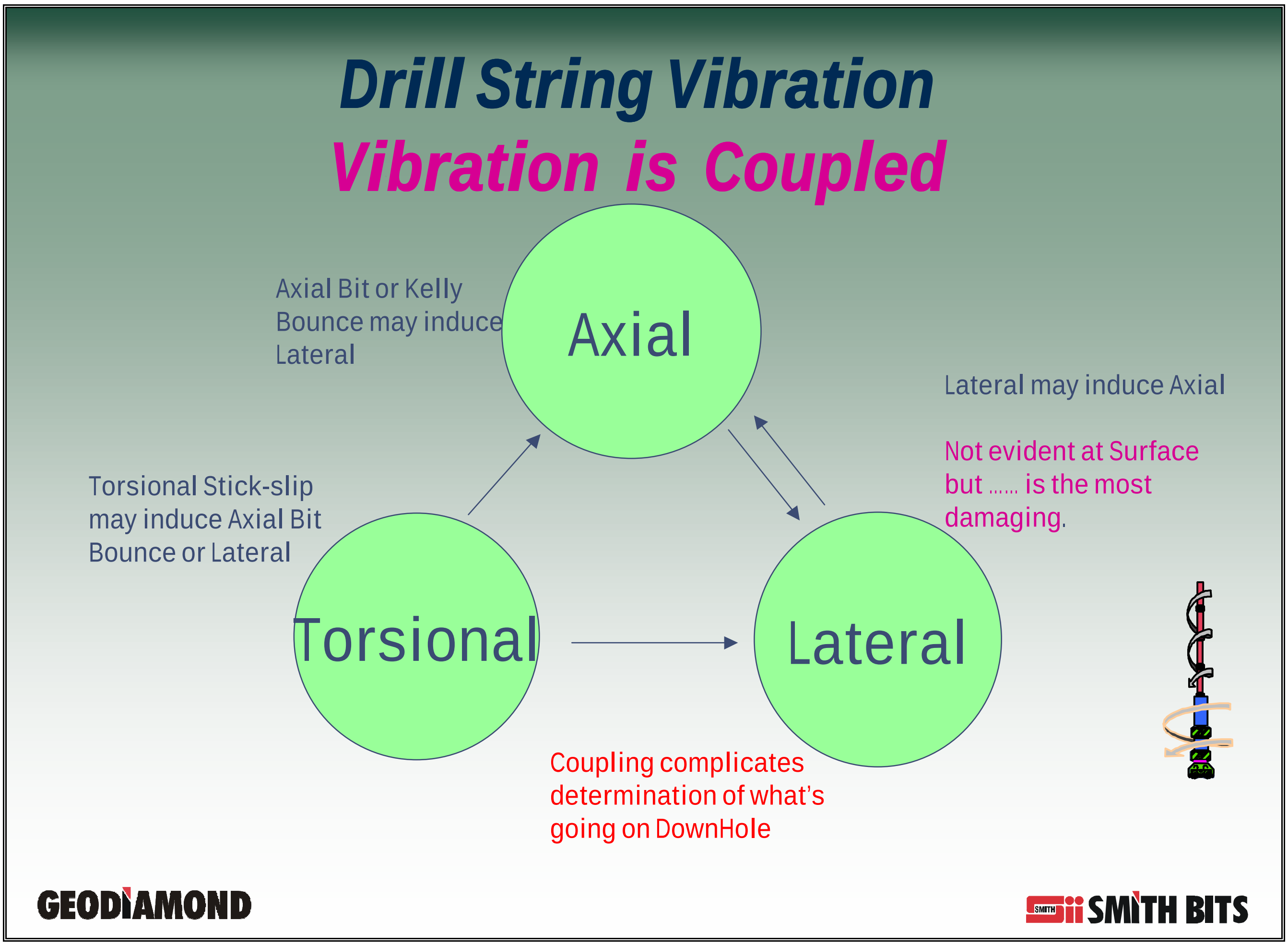
The 12.25" MA89PXX was run on a reasonably packed BHA and in a vertical Hole, and computation of drill string dynamics "suggests" that the Bit was frequently used within ranges of Critical Rotary Speed 'resonance' that are potentially damaging.
The Scatter Plot below is annotated with bands of Critical (unstable) Rotary Speed Resonance.



Applying RpM's within Critical Rotary Speed 'bands' or ranges is basically inefficient and has the potential to prematurely damage PDC Cutting structures. The above Scatter Plot also implies this inference as there is clearly a cluster of high RoP's within the range of 98 to 110 RpM.
Statistically, Smith Bits have calculated that 41% of the Interval was drilled within a potential critical rotary speed environment - where potentially damaging harmonics were present.

Despite the eccentric stators within DownHole Motors inducing their own unbalanced mass to Bottom Hole Assemblies, the use of a DownHole Motor effectively decouples the Bit from the affects of BHA Resonance and excesses of torsional and lateral vibration, and is recommended for such applications where PDC Cutting structures readily fail the rock in shear.

The inclusion of a NearBit RollerReamer within the 12.25" MA89PXX BHA undoubtedly helped minimise any tendency for torsional dysfunction as the cutting elements of the Roller Reamer do not grab and engage the Wellbore in the manner that stabilizers will. The likelihood of coupled vibration (whereby torsional vibration will induce lateral vibration) is markedly reduced. Replacing the other x2 String Stabilisers with RollerReamers within the BHA configuration should be given due consideration in order to eliminate or further minimize the likelihood of generating potentially damaging harmonics.
You will note from the accompanying Tabulation (Table 1) the relative safe RpM "windows" for both the 12.25" MA89PXX that was used during the Scallop-1 Well.



	Post-drill Review	
Well	Scallop-1	
Field	Bass Strait (Vic RL-2)	
Company	Esso Australia Ltd.	
Analysis Date	15-05-03	
	Configuration	Lengths (Actual)
BHA	**12.25" MA89PXX**	**0.31**
	Near Bit Roller	**2.51**
	Reamer	**3.0**
	AnderDrift	**2.25**
	String Stabiliser (12.25")	**9.33**
	1x 8.25" Drill Collar	**1.80**
	String Stabiliser (12.25")	**26.87**
	3x 8.25" D. Collars	**0.61**
	Cross-over	**18.51**
	2 x HWDP	**9.94**
	Jars	**219.83**
	25 x HWDP	
BHA Type	**Packed Rotary**	
Modelled Parameters		
WoB (Klb)	20	
RpM	120 - 140	
Mud Wt (ppg)	10.25 (1.23 SG)	
PV (cp)	20	
Hole Angle (in)	0.5º	
Hole Angle (out)	0.5º	
Critical Speed (Windows)	75 – 82 , 85 – 92 , 100 – 110 , 115 – 122 126 – 132 , 150 – 165 , 170 - 185	
Axial Vibration	**72 – 74 , 135 - 140**	
Onset of Drill String Buckling	30K lb	
Comments	Drilled out Casing ShoeTrack Equipment. KCL Polymer Mud System used. RoP reduced from < 2 m/h.	
Dull Grade	2 : 4 : CT: S : X : In : BT : PR	
Comments	Damage sustained to periphery of Bit. Ascii Drilling Data implies Torsional Vibration present for significant intervals.	

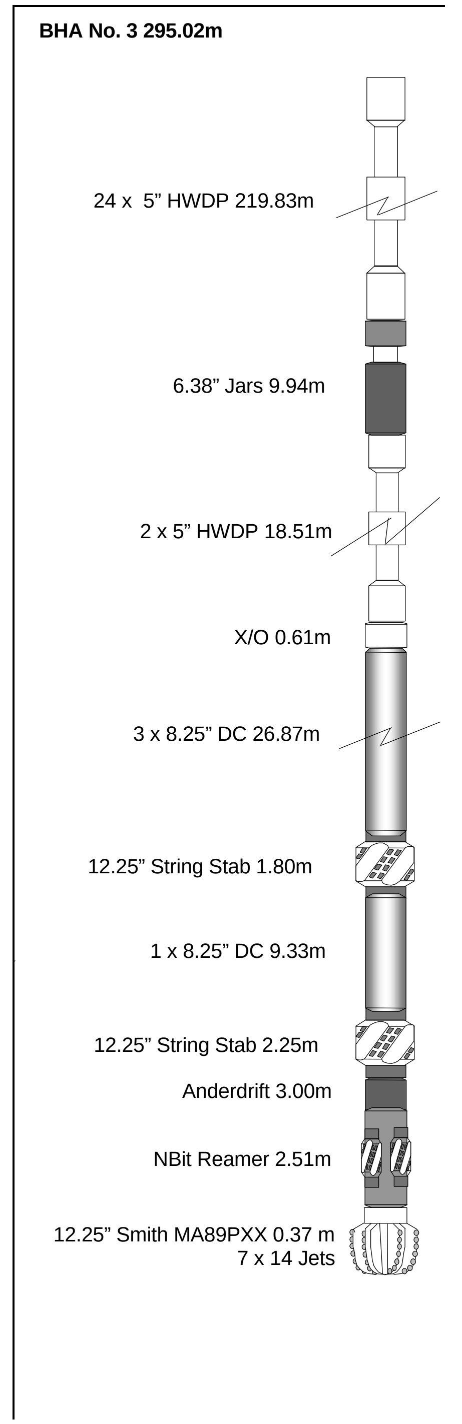
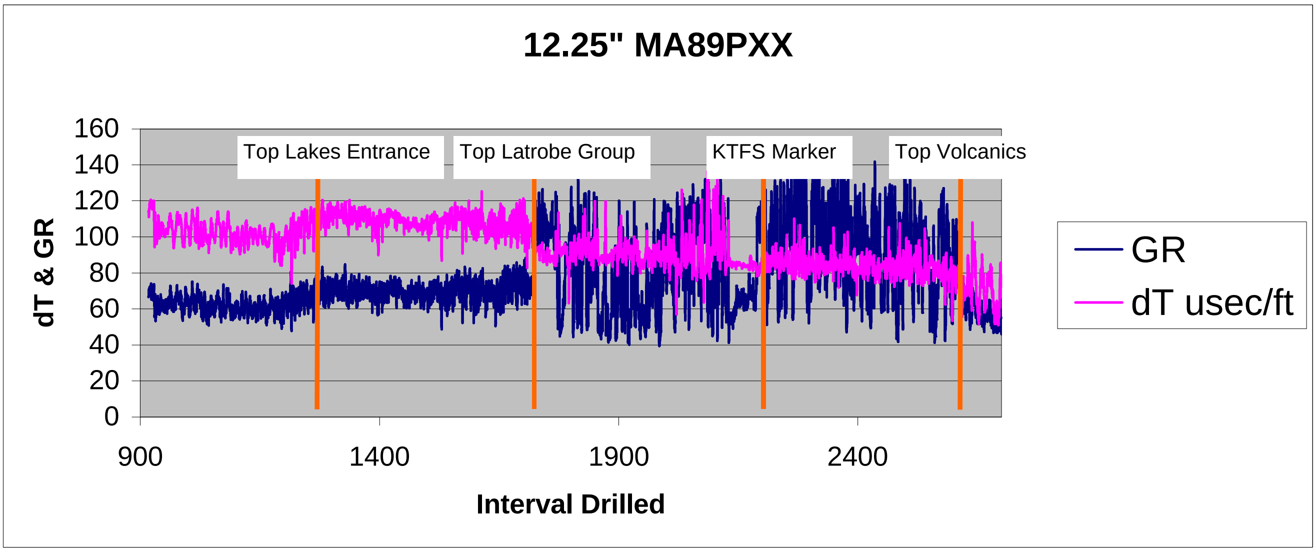


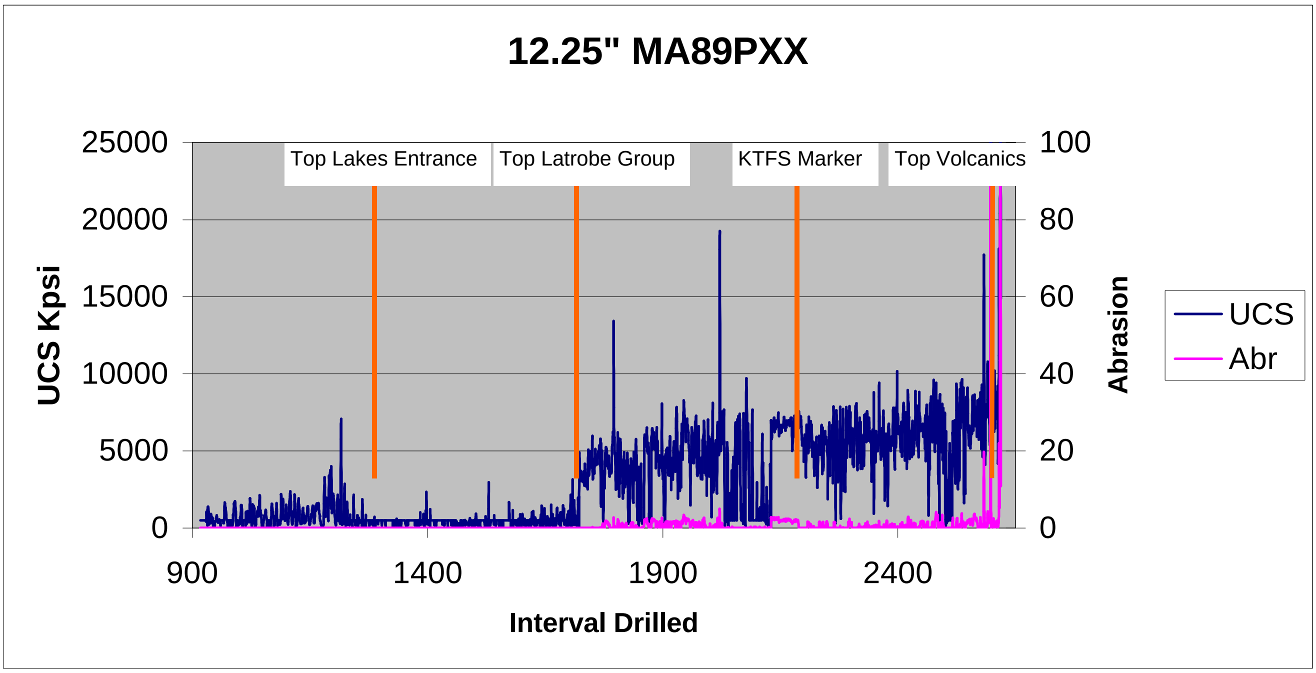
TABLE –1

2.5 Review of Ascii Data :

In addition to the DBOS Plot constructed with the use of E-Log Data made available following the conclusion of Scallop-1 , the accompanying Plots (Plots 1 through 4) illustrate to drilling environment on a microscale.



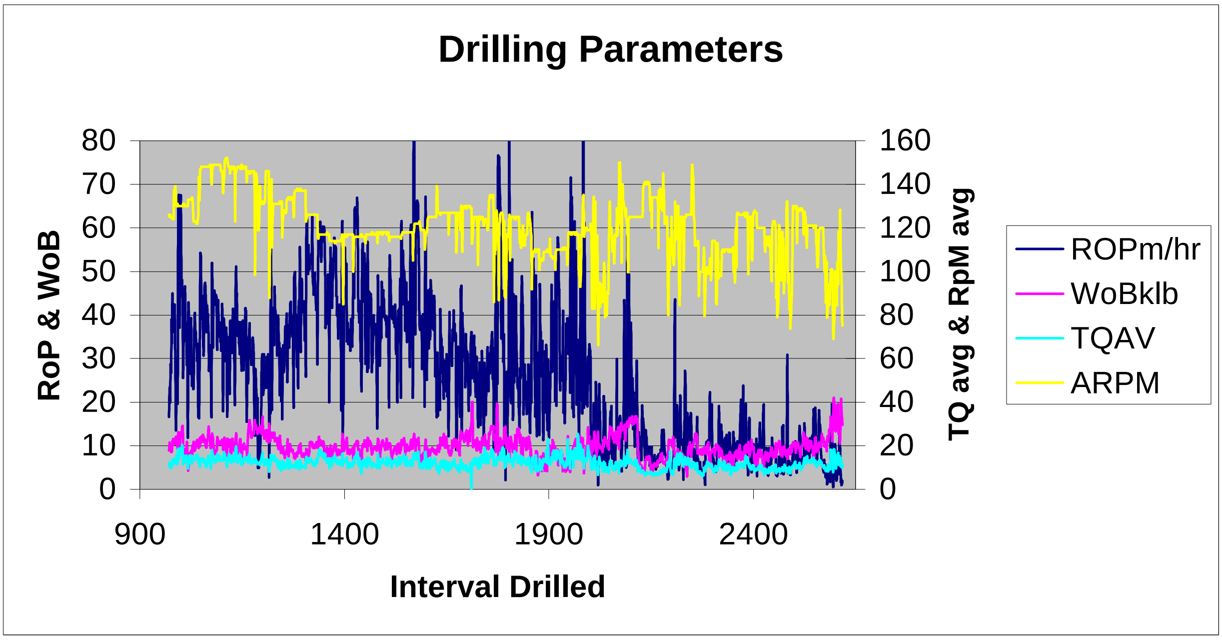
Plot 1



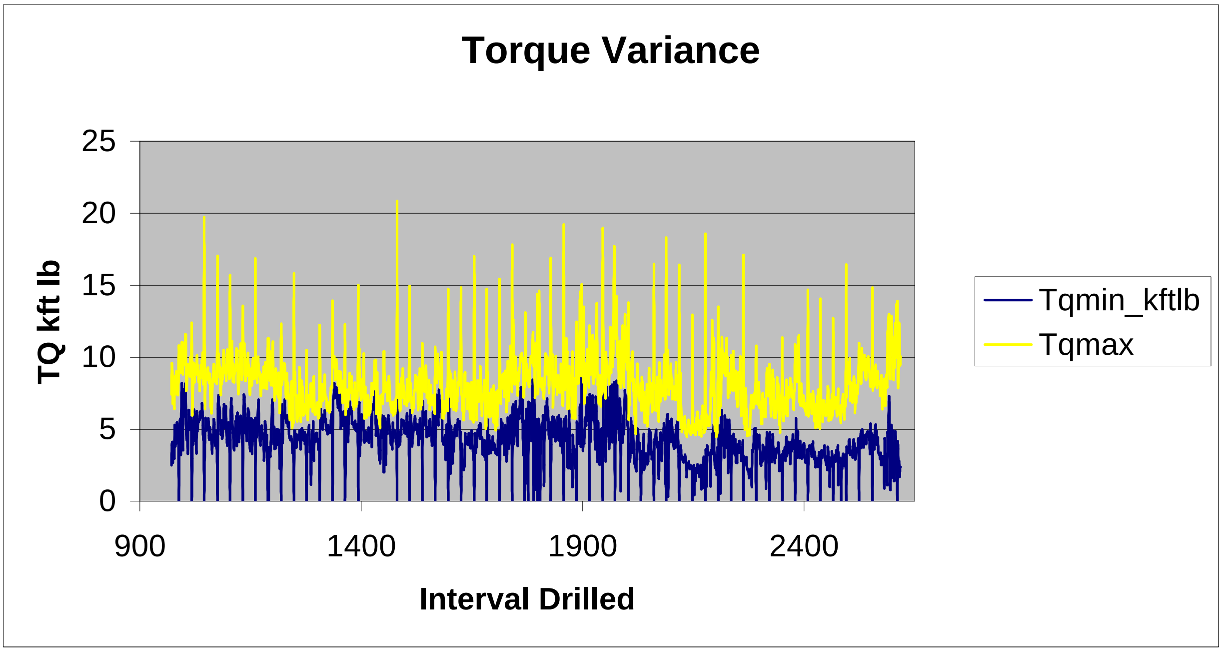
Plot 2

The above Plots illustrate Sonic Transit Time (usec/ft) and Gamma Ray (Plot 1), and calculated Unconfined Compressive Strength (psi) and Abrasion Index (Plot 2).
Plots No. 1 indicates relatively little variance in Sonic Transit Time within the Gippsland and Lakes Entrance Formations, greater span variance within the interbedded Latrobe sequence , and a decay within the Volcanic Intrusions layer toward TD for the Bit Run.
The high amplitude in GR variance within the Latrobe illustrates the proportion of claystone mineralogy which readily shears with PDC Bit Cutting Structure. The interval 2218m to 2195m appears to be anomalous within this interval and presumably coincides with either a coal or sandstone sequence (the Mud Log data however does not confirm this).

Plot No.2 illustrates both Unconfined Compressive Strength and Abrasion Index computations. For the most part the Unconfined Compressive Strength is relatively low (< 10,000 psi) and similarly the (Relative) Abrasion Index is consistently low – other than a sharp and abrupt increase within the Volcanic Lenses at Total Depth for the Bit Run.



Plot 3



Plot 4

Plot No. 3 traces various Drilling Parameters over the drilled interval, and Plot No.2 traces the Drilling Torque Variance (minimum and maximum) over the Bit Run.
The latter Plot is particularly interesting as large divergence of min & max Torque is indicative of Torsional Vibration. Clearly there were several and long instances of Torsional Vibration

with constant wrap and unwrap of the Drill String. Such vibration modes or harmonics are detrimental to PDC Cutters as these can become damaged during the backwards rotation phase ..ie unwrap (PDC Cutters work optimally under compression or forward rotation and can suffer damage under tension (backwards rotation).

2.6 Concluding Remarks & Recommendations *:*

A thorough review of both Drilling and E-Log Ascii Data reveals that the application in which the 12.25" MA89PXX was applied was fairly homogeneous for the most part - certainly until volcanic stringers were encountered toward the end of the Bit Run.

As stated within the Text of this Document, damage or loss of PDC Cutters occurring on the periphery of PDC Bits (taper – shoulder-gauge profiles) is indicative of a vibration component being induced. Ordinarily the use of a Packed BHA would limit the opportunity or likelihood of such damaging harmonics from occurring and the incorporation of String Roller Reamers further reduces this possibility.

Several minor hard stringers or lenses were identified within the drilled interval (including a conglomerate at 1986m) and these could be the precipitate cause of peripheral damage to PDC Cutters from either lateral or torsional vibration being initiated during rapid deceleration.

The identification / recognition of torsional vibration is viewed as fairly critical in the successful application of any PDC Bit (see Plot No. 4) – particularly where there are numerous stringers or interbeds of lithology. Management of vibration through the use of downhole monitoring is recommended in any future Wells in the area so that remedial action can be taken to preserve PDC Cutting structures and ensuring longevity.

Had recognition and prudent management of downhole vibration been undertaken then there is a reasonable likelihood that the 12.25" MA89PXX PDC Cutting Structure would have been preserved and the Bit Run would have been further extended into the volcanic intrusive sequence.

In the absence of Vibration monitoring equipment (SperrySun or Baker Inteq) then examination of minimum & maximum drilling torque may suffice. SPE Paper 28908 describes the technique of ensuring PDC Bit longevity in similar such interbedded Applications.

Despite this thorough review of Drilling data, no precise point in time could be determined where the onset of critical damage to PDC Cutter components occurred though it is evident that torsional vibration was present.

Given the material examined then Smith Bits is confident hat the 12.25" MA89PXX is a suitable Design for the Application, and should a similar such Well be envisaged by Esso Australia then an improved performance can be anticipated should vibration monitoring techniques be employed. Prudent, cautionary drilling practices will minimise premature Bit Damage and increase the likelihood of remaining sharp and drilling an extended interval of the Volcanic Intrusives.

Esso

TERRASCIENCES

DBOS™ SERVICES
Drill Bit Optimization System

SMITH INTERNATIONAL, INC.

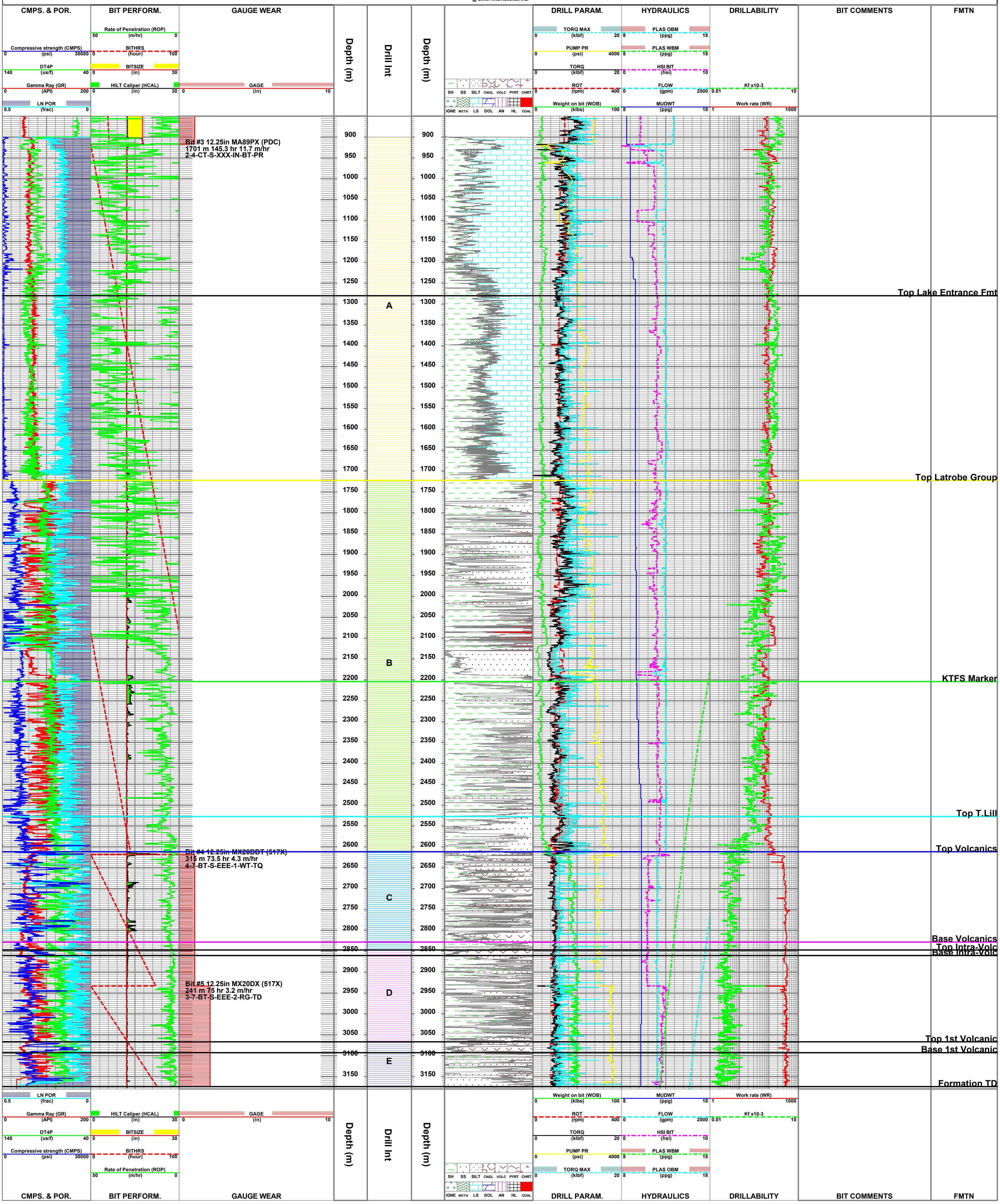
Customer Name	:	Esso Australia
Field Name	:	Scallop
Area/Country	:	Bass Strait ,Australia
Well Name	:	Scallop-1
RKB Elevation	:	25m

Offset Bit Performance
Copyright @2001
Prepared - 29/May/03

OFFSET BIT PERFORMANCE PLOT

Drill Bit Optimization System

@ Smith International, Inc.



Esso

TERRASCIENCES

DBOS™ SERVICES
Drill Bit Optimization System

SMITH INTERNATIONAL, INC.

Customer Name	:	Esso Australia
Field Name	:	Scallop
Area/Country	:	Bass Strait ,Australia
Well Name	:	Scallop-1
RKB Elevation	:	25m

Fixed Cutter Bit Selector
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Prepared - 29/May/03

FIXED CUTTER BIT SELECTOR

Drill Bit Optimization System
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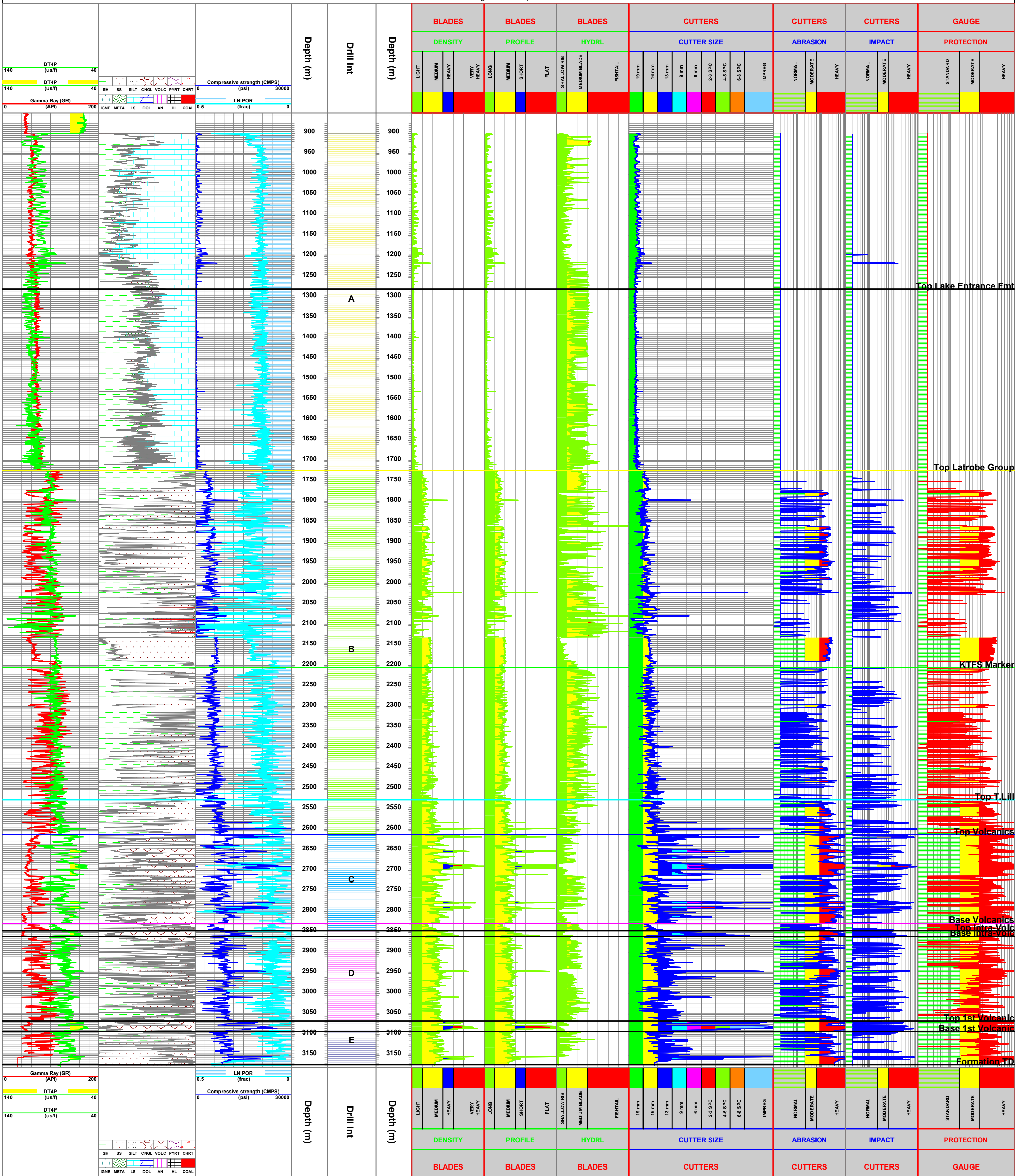

SMITH BITS
A Business Unit of Smith International, Inc.

Esso

TERRASCIENCES

DBOS™ SERVICES
Drill Bit Optimization System

SMITH INTERNATIONAL, INC.

Customer Name	:	Esso Australia
Field Name	:	Scallop
Area/Country	:	Bass Strait ,Australia
Well Name	:	Scallop-1
RKB Elevation	:	25m

Rock Bit Selector
Copyright @2001
Prepared - 29/May/03

ROCK BIT SELECTOR

Drill Bit Optimization System

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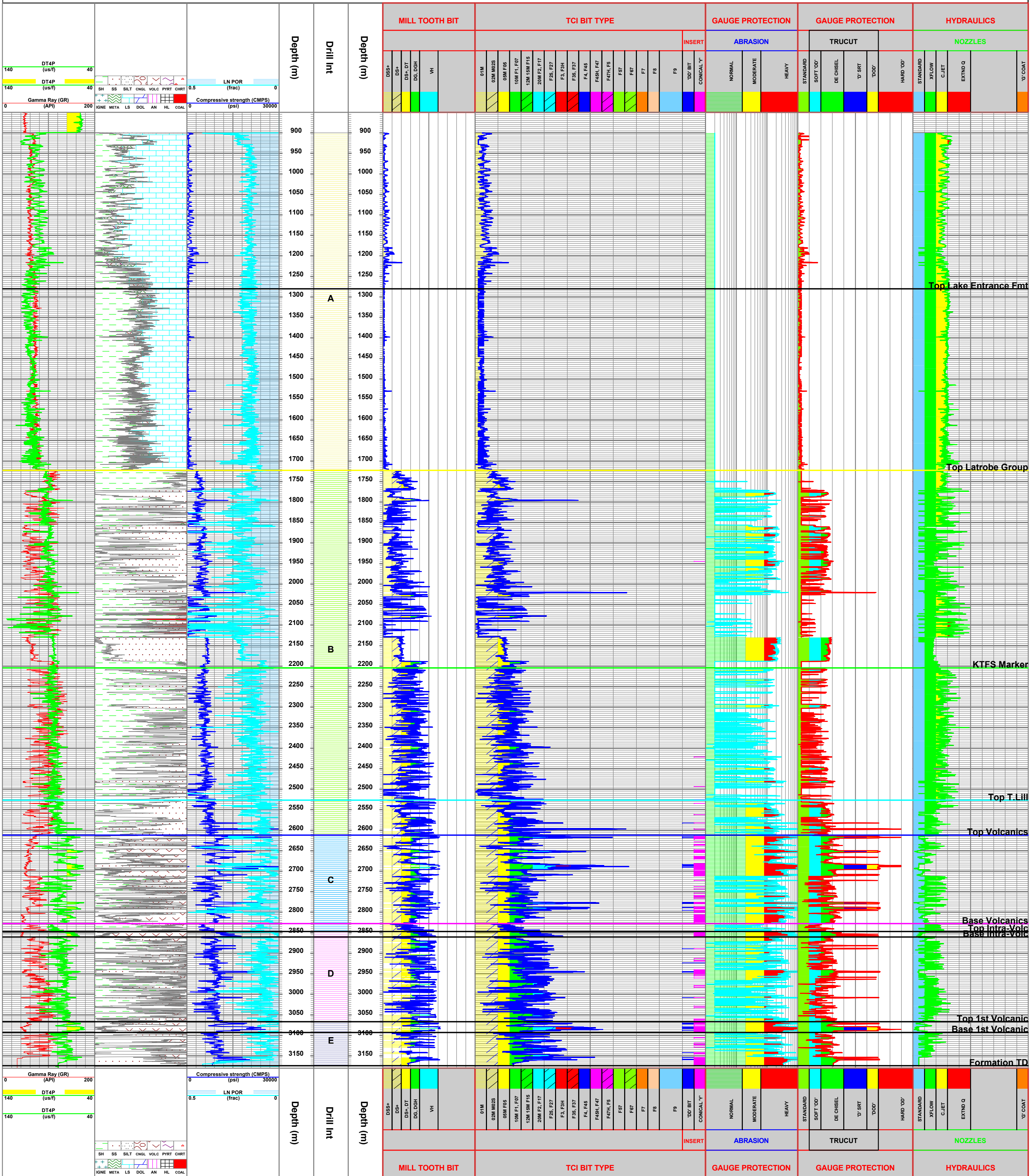

SMITH BITS
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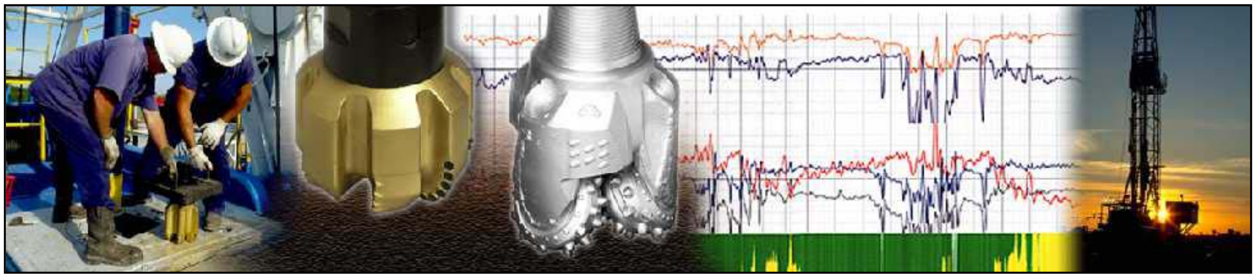
Proposal Prepared for

ESSO Australia Pty Ltd



Scallop 1

DRILL BIT RECAP

Prepared by : Gary Carter
May 2003

BAKER HUGHES

Hughes Christensen

Hughes Christensen

Contents

Hughes Christensen

Esso Australia Pty Ltd,
12 Riverside Quay,
Southbank, 3006
Melbourne,
Victoria
19 May, 2003

Attention : Mr Rudolph Furchtenicht

Dear Sir,

Re : Drill Bit Recap - Scallop 1

Please find enclosed the above document, the contents of which are self explanatory.

As well as bit-specific drill bit recap sheets we have in addition undertaken a comparison of the performance with that recorded on the most recent offset well. To this end we have reviewed all the comparable data – bit record data, as well as rock strength plots undertaken on the E-Log data.

As with our original pre-well recommendations, particular emphasis has been placed on the East Pilchard 1 data. This well was drilled in 2001, whilst all the other offset wells were drilled in the mid 1980's. As such the earlier ones are of little relevance from a drill bit performance comparison standpoint.

We thank you for giving us the business with these 2 x 12 ¼" TCI tricone runs, together with the opportunity to furnish you with our post-well report.

We trust the contents meet with your approval, and look forward to your comments.

Yours faithfully,

Gary Carter

Hughes Christensen
A Division of Baker Hughes Australia Pty. Ltd., ABN 20 224 752 050 004
Level 10, Mount Newman House, 200 St Georges Terrace, Perth, Western Australia 6004
Tel: 61 8 9320 7004, Fax: 61 8 9320 7099

Well: Scallop-1

Bit Run Summary

Bit No: / Run No	4 / 1
Size:	12 ¼"
Manufacturer:	HCC
Type:	MX-20DDT
Serial No:	6007902
IADC	5-1-7
Meterage	
In:	2618
Out:	2933
Elapsed :	315
Hours	
IADC	73.5
On Bottom	69.1
ROP	
IADC	4.3
On Bottom	4.6
BHA	Rotary
WOB:	45 – 50 Klb
RPM	90 - 120
Inclination :	Vertical
Hydraulics	
Flow :	820 – 830 gpm
SPP:	2800 – 3000 psi
Nozzles	3 x 20
HSI	2.78
Mud Type:	KCl/PHPA/Glycol
Mud Weight:	1.22 SG
Lithology	Volcanics, clst, sst
Dull Grade	
Rig :	4-7-BT-S-E-1-WT-TQ
HCC :	3-7-BT-G-E-1-OC-TD

Comments: Inserts' breakage is the dominant dull condition. Some of the broken surfaces are well polished, suggesting the breakage occurred fairly early in the run. Insert failure planes are directed along the direction of cone rotation, possibly an indicator of bit bounce combined with formation parameters. Off-centre wear is apparent from the tilt-crested wear in the middle rows, combined with 2 central inserts loss on cones 1 and 2. Heel row loss indicates possibly excessive RPM. Junk damage is also apparent from the deep marks on the legs. This could have slowed down the bit and eventually caused the torque for which the bit was pulled.

Well: Scallop-1

Bit Run Summary

Bit No / Run No :	5 / 1
Size:	12 ¼”
Manufacturer:	HCC
Type:	MX-20DX
Serial No:	W42DV
IADC :	5-1-7
Meterage	
In	2933
Out	3174
Elapsed	241
Hours	
IADC	75
On Bottom	69.3
ROP	
IADC	3.2
On Bottom	3.5
BHA	Rotary
WOB	35 - 55
RPM	75 - 131
Inclination	Vertical
Hydraulics	
Flow:	750 – 825 gpm
SPP:	3400 – 3500 psi
Nozzles	3 x 18
HSI	3.2 – 4.2
Mud Type:	KCL/PHPA/Glycol
Mud Weight:	1.22 SG
Lithology	Volcanics, clst, sst
Dull Grade	
Rig :	3-7-BT-S-E-2-RG-TD
HCC :	2-7-BT-H,G-BT-E-2-RG-TD

Comments: Broken inserts in the gauge and heels suggest possible excessive RPM. Off-centre wear is apparent from the tilt-crested wear combined with rounded gauge and wear patterns at the top of the nozzle protection BOSS pads. Bit bounce is indicated by the inserts’ failure planes, concurrent with the direction of the cones’ rotation. As with the previous bit run there are indications of possible junk in the hole at some stage of the run.

Overview

The 2 x 12 ¼" Hughes TCI tricone bits drilled the intervals 2618 – 2933 – 3174m. Total tricone interval 556 metres, 2 bits – both IADC 5-1-7 with diamond gauge. Both were pulled undergauge (1/16" and 2/16" respectively) with effective bearings.

Whilst Scallop 1 has multiple offset wells, only one – East Pilchard 1 – is considered valid from a drill bit comparison standpoint since this is the only recent (2001) well. All the others were drilled in the mid 1980's.

On East Pilchard 1, a total of 5 TCI tricone bits were used (all were IADC 5-1-7 with diamond gauge) to drill a total section of 1084* metres from 2054m to 3138m.

* Strictly speaking this is only 1077 metres; an aborted 7 metre PDC run was made in between the first and second roller cone bit runs.

Of the 5 bits, 3 were pulled undergauge (1/16") and 2 had failed bearings.

Probably the best well to well comparison of the relative roller cone bit performance is to compare the 2 runs on Scallop 1 with the final 3 runs on East Pilchard 1 – this gives an approximately similar depth interval, as per the comparison table shown overleaf :

	East Pilchard 1	Scallop 1
Meterage		
From	2471	2618
To	3138	3174
Elapsed	667	556
Number of bits	3	2
Hours (IADC)	174.7	148.5
Average m/hour	3.8	3.7
Average m/bit	222	278
Operational Timings		
Hours (IADC)		
Drilling	175	149
Tripping	18.8	9.6
Total	194	158
Costs (all in USD)		
Rig	1,734,647	1,417,301
Bits	70,680	57,360
Total	1,805,327	1,474,661
USD / m	2,707	2,652
Constants Used		
Trip time	1,000 ft / hour	
Rig Costs		
AUD / day	331,000	
USD / day	215,150	
USD / hour	8,965	
Rock Strength Parameters		
Sonic (msec/ft)		
Average	77	74
Minimum	57	50
UCS (psi)		
Average	5,600	8,800
Maximum	9,600	32,000
Friction Angle		
Average	28	37
Maximum	42	47

The bits used on Scallop 1 are shown in the table to have been economically superior to those run on East Pilchard 1.

Another way of looking at it is that by using 2 bits instead of 3 across the approximately similar intervals, the saving of a bit trip alone equates to some 9 hours or so of rig time, a direct operational saving of AUD 125,000.

The section drilled on Scallop appears to be demonstrably harder than that of East Pilchard 1, as determined by the respective rock strength plots – see Sections 4 and 5.

This is further proven by a statistical analysis of the rock strength parameters – again, see Sections 4 and 5. The final 6 data items on the table have been drawn from these pages.

This would appear to justify the Operator’s specification for the heavier levels of diamond gauge protection.

The 12 ¼” MX-20DX and 12 ¼” MX-20DDT appear close to optimum choices for the well and are recommended without reservation for future similar wells and applications.

Logging Data and Drilling Parameters

Scallop-1 WEll, Esso Australia Ltd.

Hughes Christensen

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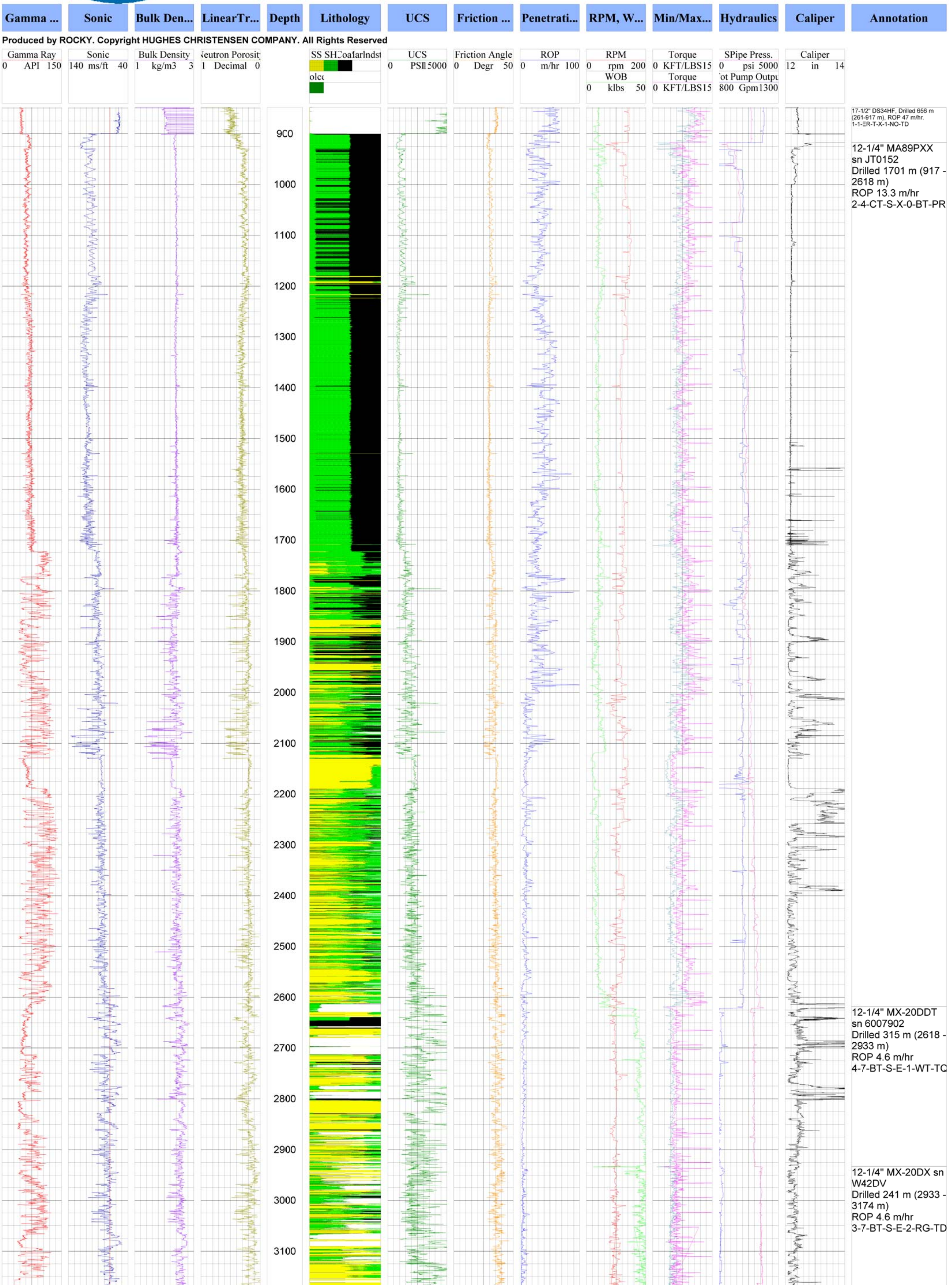

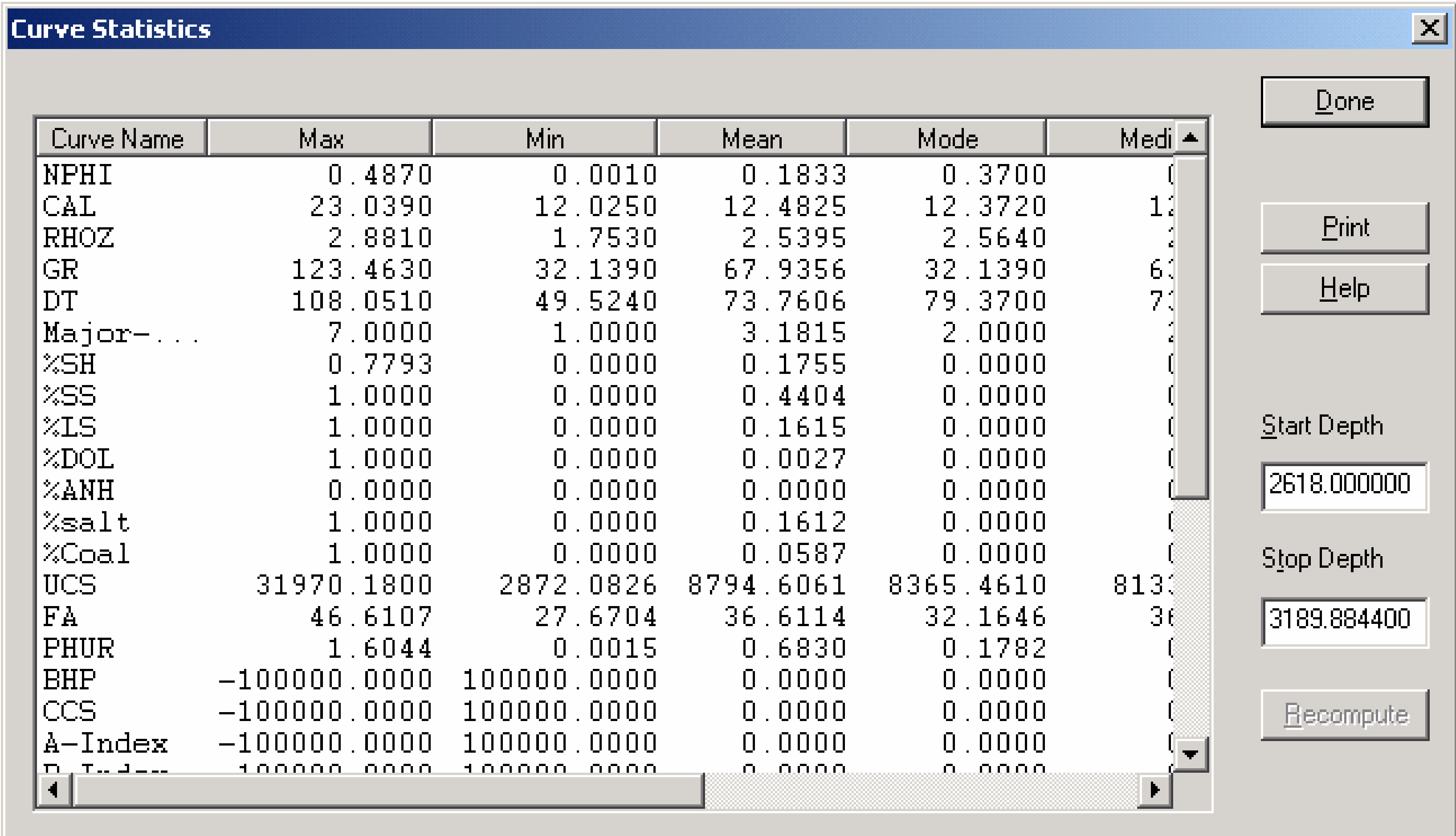
Curve Statistics
Curve Name | Max | Min | Mean | Mode | Medi
NPHI 0.4870 0.0010 0.1833 0.3700
CAL 23.0390 12.0250 12.4825 12.3720
RHOZ 2.8810 1.7530 2.5395 2.5640
GR 123.4630 32.1390 67.9356 32.1390
DT 108.0510 49.5240 73.7606 79.3700
Major-... 7.0000 1.0000 3.1815 2.0000
%SH 0.7793 0.0000 0.1755 0.0000
%SS 1.0000 0.0000 0.4404 0.0000
%LS 1.0000 0.0000 0.1615 0.0000
%DOL 1.0000 0.0000 0.0027 0.0000
%ANH 0.0000 0.0000 0.0000 0.0000
%salt 1.0000 0.0000 0.1612 0.0000
%Coal 1.0000 0.0000 0.0587 0.0000
UCS 31970.1800 2872.0826 8794.6061 8365.4610
FA 46.6107 27.6704 36.6114 32.1646
PHUR 1.6044 0.0015 0.6830 0.1782
BHP -100000.0000 100000.0000 0.0000 0.0000
CCS -100000.0000 100000.0000 0.0000 0.0000
A-Index -100000.0000 100000.0000 0.0000 0.0000
Done
Print
Help
Start Depth
2618.000000
Stop Depth
3189.884400
Recompute

Scallop - 1

East Pilchard 1 Well Log Lithology Interpretation.

Esso Australia Limited Pty. Bass Strait, VIC

Hughes Christensen

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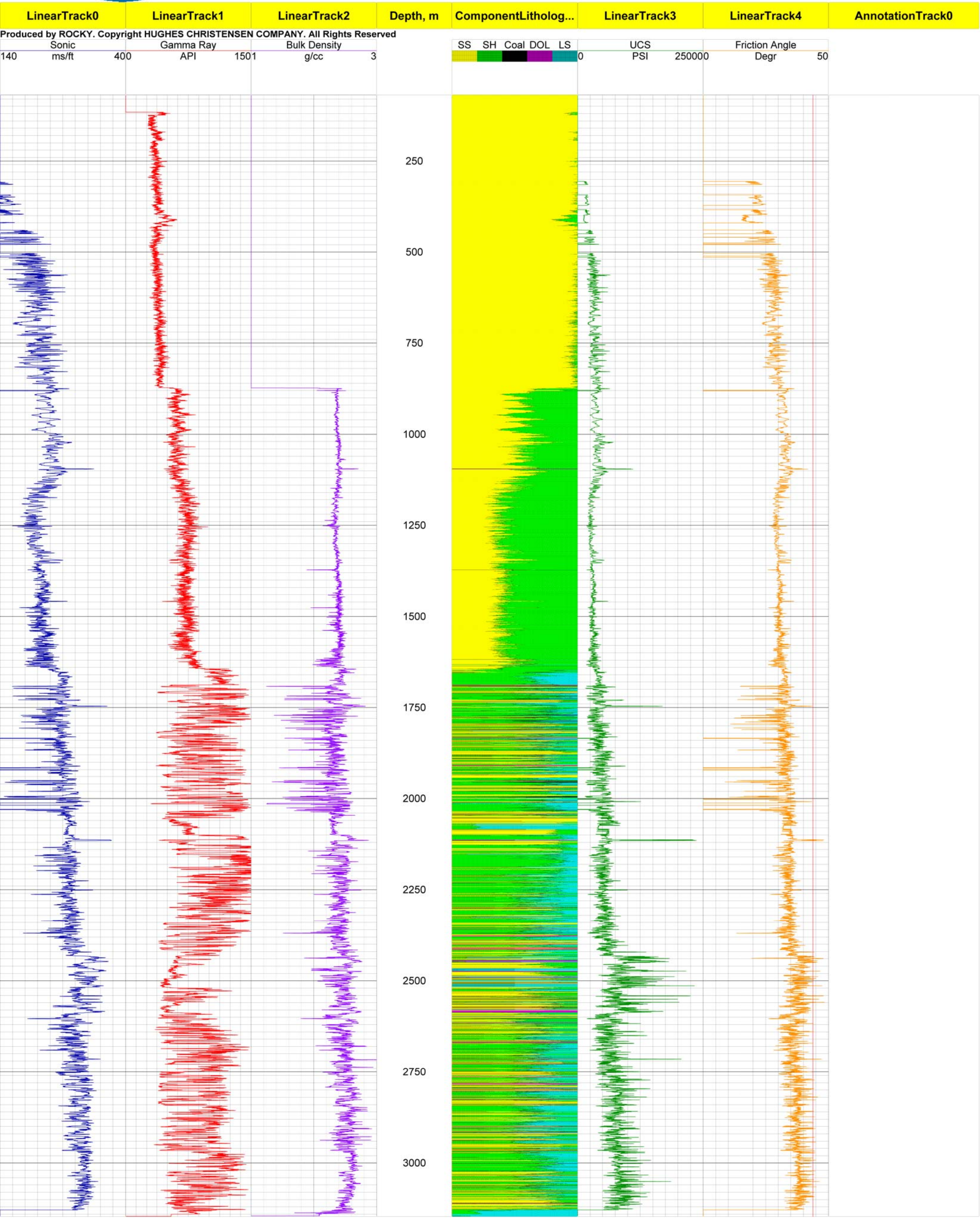

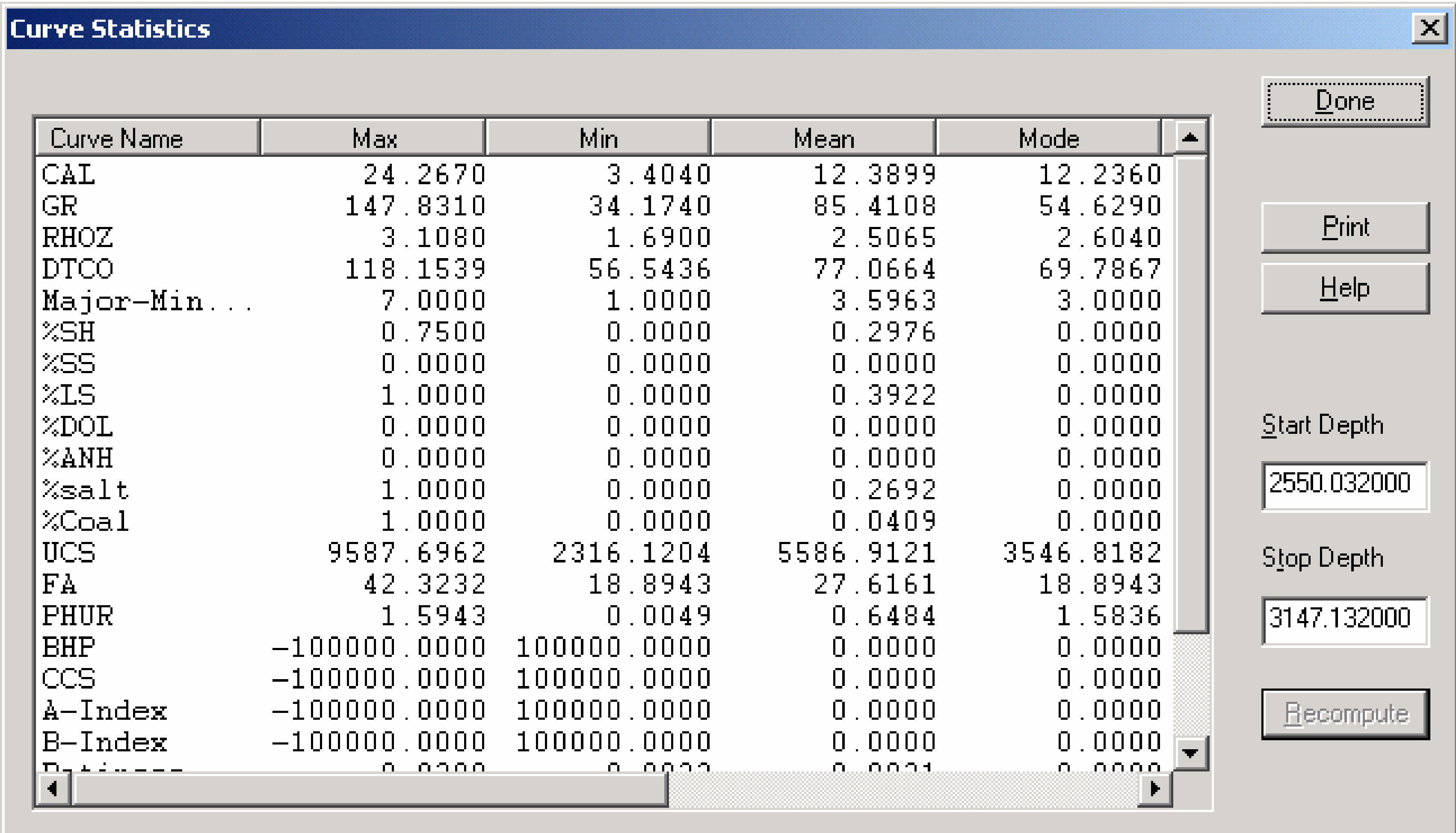

Curve Name	Max	Min	Mean	Mode
CAL	24.2670	3.4040	12.3899	12.2360
GR	147.8310	34.1740	85.4108	54.6290
RHOZ	3.1080	1.6900	2.5065	2.6040
DTCO	118.1539	56.5436	77.0664	69.7867
Major-Min...	7.0000	1.0000	3.5963	3.0000
%SH	0.7500	0.0000	0.2976	0.0000
%SS	0.0000	0.0000	0.0000	0.0000
%LS	1.0000	0.0000	0.3922	0.0000
%DOL	0.0000	0.0000	0.0000	0.0000
%ANH	0.0000	0.0000	0.0000	0.0000
%salt	1.0000	0.0000	0.2692	0.0000
%Coal	1.0000	0.0000	0.0409	0.0000
UCS	9587.6962	2316.1204	5586.9121	3546.8182
FA	42.3232	18.8943	27.6161	18.8943
PHUR	1.5943	0.0049	0.6484	1.5836
BHP	-100000.0000	100000.0000	0.0000	0.0000
CCS	-100000.0000	100000.0000	0.0000	0.0000
A-Index	-100000.0000	100000.0000	0.0000	0.0000
B-Index	-100000.0000	100000.0000	0.0000	0.0000

East Pitchard - 1