

DEPT. NAT. RES & ENV



PE900183

ADDENDUM 2

W783 W.C.R.

ADDENDUM 2

Phillips Australian Oil Company

DISCOVERY BAY-1

Geoservices Final Well Report

OIL and GAS DIVISION

PHILLIPS Aust. Oil Co.

23 MAR 1983

DISCOVERY BAY # 1

Location

S 38 24' 42.944"
E 141 04' 20.588"

State : VICTORIA

Country : AUSTRALIA

District : Otway Basin

Block : VIC P14

Water depth (MSL): 93.2m (322ft)

Rig

Diamond M Marine Co.
Diamond M Epoch
Semi-submersible type platform
Elevation KB: 23.0 m above MSL

Logging

GEOSERVICES TDC ON-LINE

Total Depth 2776m
Spudded on 21 st September 1982
Reached TD on 12 th October 1982

DISCOVERY BAY 1

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INTRODUCTION

Discovery Bay # 1 was a vertical exploration well drilled west of Portland (Victoria, Australia) in the Otway Basin. The well was located at shot point 1060 on seismic line OP80-17 in Permit VIC/P14.

The main objective was the Curdies-Paarata formation, composed of thick alluvial plain and deltaic plain sand bodies interbedded with thin discontinuous shales. The secondary objective was to test the possibility of hydrocarbons being trapped within sands of the Lower Paarata/Upper Belfast formations, a section of interbedded sandstone and shale.

The well was spudded at 12:00 hrs on Tuesday 21/9/82.

A 36" hole was drilled to 172m using a 26" HTC OSC 3AJ bit plus a 36" Hole opener. The 30" casing was run and the shoe set at 172.2m. A 12 1/4" pilot hole was drilled to 435m then opened out to 26". After conditioning the hole, the 20" casing was run and the shoe set at 423.1m.

Before drilling ahead the BOP was tested and a leak off test performed. The leak off test gave a fracture gradient equivalent to a mud weight of 10.6ppg.

A 12 1/4" hole was then drilled to 1213.4m. An intermediate logging run (GR-SLS-DIL, CST) was made. After this the hole was opened out to 17 1/2" and the 13 3/8" casing was run. The casing seat was set at 1199.4m. A multi shot survey was run. After drilling out the shoe and 5m of new formation a leak off test was performed at 1218m giving a FFG of 12.1 ppg.

A 12 1/4" hole was then drilled from 1218m to 2776m (TD) using seven bits. After a wiper trip and circulation to condition the hole a set of logs (DIL-SLS-GR, LDL-CNL-GR, Velocity Survey, CST) were run. The well was then plugged and abandoned as a dry hole.

PE904322

This is an enclosure indicator page.
The enclosure PE904322 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE904322 has the following characteristics:
ITEM_BARCODE = PE904322
CONTAINER_BARCODE = PE900183
NAME = Discovery Bay 1 Addendum 2 Location Map
BASIN =

Otway

PERMIT = VIC/P14
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Discovery Bay 1 Addendum 2 Location Map
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W783
WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PHILLIPS Aust. Oil Co.

DISCOVERY BAY # 1

BIT RECORD

NUMBER	TYPE	*SIZE	*DEPTH*	*RUN	*FLOW*	PP	*MW	*BOTTOM*	*ROTARY*	JETS/TFA	*WOB*	*RPM*	WEAR	*ROP*	*HYD POWER*	*BIT	*COST*								
*	*	* IN	* M.	*GPM	*psi	*	*HOURS	*HOURS	*1	*2	*3	*4	* lbs	*T*B	* G	* 4/hr	*TTL	*BIT	*/sqi	*EFF	*Y	* S/T			
* 1*	OSC	3AJ	26.00*	120*	51*	1012*	700*	8.6*	11.00*	11.00*	32*	32*	32*	0*	2000*	100*	0*	0*	0.00*	4.64*	413*	85*	0.13*	20.65*	2162*
* 2*	SMITH	SDS	12.25*	172*	263*	558*	499*	8.6*	11.00*	5.24*	32*	32*	32*	0*	4000*	107*	0*	0*	0.00*	50.19*	162*	14*	0.10*	3.81*	498*
* FF # 1*	OSC	3AJ	26.00*	172*	263*	369*	317*	8.6*	10.14*	4.31*	32*	32*	32*	0*	5000*	90*	1*	1*	0.13*	51.02*	414*	54*	0.08*	13.04*	472*
* PP # 2*	SMITH	SDS	12.25*	435*	773*	601*	2024*	8.8*	33.49*	11.22*	15*	15*	15*	0*	17000*	105*	3*	4*	0.00*	69.34*	710*	379*	2.52*	53.38*	390*
* 3*	SDGH	12.25*	1213*	247*	643*	2279*	9.1*	13.49*	7.05*	13*	13*	13*	0*	19000*	100*	6*	4*	0.50*	35.04*	355*	350*	5.67*	99.46*	665*	
* 4*	SDS	12.25*	1460*	214*	630*	2507*	9.1*	14.44*	8.08*	14*	14*	14*	0*	20000*	111*	6*	3*	0.25*	25.49*	995*	743*	4.93*	75.13*	765*	
* 5*	SDGH	12.25*	1674*	211*	633*	2412*	9.3*	13.12*	3.57*	14*	14*	14*	0*	30000*	100*	6*	2*	0.13*	24.62*	891*	616*	4.11*	59.20*	764*	
* 6*	SMITH	F2	12.25*	1886*	253*	639*	2447*	9.3*	24.52*	20.02*	14*	14*	14*	0*	37000*	70*	4*	2*	0.13*	12.54*	399*	608*	4.05*	67.57*	993*
* 7*	SMITH	F3	12.25*	2138*	212*	645*	2568*	9.8*	26.00*	23.00*	14*	14*	14*	0*	30000*	70*	5*	4*	0.00*	9.22*	966*	627*	4.53*	71.11*	1209*
* 8*	SMITH	F2	12.25*	2350*	269*	615*	2612*	9.7*	35.50*	31.00*	14*	14*	14*	0*	40000*	70*	3*	2*	1.00*	3.50*	991*	600*	3.93*	65.42*	1314*
* 9*	SMITH	F3	12.25*	2613*	163*	610*	2690*	9.7*	32.00*	31.00*	14*	14*	14*	0*	40000*	75*	6*	2*	0.25*	5.26*	954*	575*	3.83*	60.33*	2007*

REMARKS

Bit # 1 +H/O STC 36"
 Bit # 2:Drill 12.25"Pilot hole
 Bit RR#1:Reaming 12.25"to26"
 RR#2:Drill 12.25"Pilot hole.

MUD RECAP FOR in. PHASE WATER BASE

DEPTH	*TEMP*	M.W	*VIS*	PV	YP	GELS		*FILTRATE*	FILT.	*FILTRATE*	ANALYSIS			*SAND*	RETORT	ANALYSIS*				
* MET	*degC*	ppg	*sec*	cp*	*10	10	* API	*	*Ca	ppm	Cl	ppm	* %	* OIL	WATER	SOLS*	DR	* DR*	HF*	
*	*	*	*	*	*sec	mn	* cc	* CAKE	*	*	*	*	*	%	%	%	*	*	*	

* 943*	28*	9.10*	33*	4*	9*	4*	12*	0.0	*	0/32*	168	* 15000	* Trc*	0	*	93	*	7	* 9.0*0.1*0.1*	10*
* 1213*	23*	9.00*	38*	7*	4*	3*	21*	14.0	*	2/32*	88	* 14000	* Trc*	0	*	93	*	7	* 9.0*0.0*0.7*	10*
* 677*	22*	9.00*	33*	6*	5*	2*	18*	2.4	*	2/32*	88	* 13000	* Trc*	0	*	94	*	6	* 9.0*0.1*0.7*	10*
* 723*	20*	9.00*	33*	7*	4*	2*	21*	25.0	*	2/32*	48	* 13000	* Trc*	0	*	94	*	6	* 9.5*0.2*0.2*	10*
* 310*	20*	9.00*	35*	5*	4*	3*	24*	4.4	*	2/32*	48	* 14000	* Trc*	0	*	94	*	6	* 9.0*0.0*0.3*	10*
* 910*	22*	9.00*	33*	6*	3*	3*	22*	0.0	*	2/32*	88	* 14000	* Trc*	0	*	94	*	6	* 9.0*0.0*0.3*	12*
* 1213*	24*	9.10*	35*	6*	4*	3*	23*	0.0	*	2/32*	88	* 14000	* Trc*	0	*	94	*	6	* 9.0*0.0*0.3*	10*
* 1187*	21*	9.00*	30*	6*	3*	1*	18*	0.0	*	0/32*	88	* 14000	* Trc*	0	*	95	*	5	* 3.5*0.1*0.2*	10*
* 1242*	26*	9.00*	45*	15*	27*	11*	38*	13.0	*	1/32*	152	* 21000	* Trc*	0	*	97	*	3	* 10.0*0.4*1.0*	0*
* 1400*	30*	9.10*	41*	13*	21*	2*	3*	10.0	*	1/32*	176	* 0	* Trc*	0	*	97	*	3	* 9.0*0.1*0.3*	2*
* 1650*	33*	9.30*	40*	12*	18*	2*	3*	11.0	*	1/32*	176	* 23600	* Trc*	0	*	97	*	3	* 9.5*0.2*0.4*	2*
* 1850*	32*	9.40*	39*	10*	7*	2*	5*	14.0	*	2/32*	176	* 22000	* Trc*	0	*	97	*	3	* 9.0*0.0*0.3*	4*
* 1905*	32*	9.50*	37*	9*	6*	2*	5*	15.0	*	2/32*	176	* 22000	* Trc*	0	*	97	*	3	* 3.5*0.1*0.3*	5*
* 2040*	39*	9.70*	40*	10*	10*	2*	3*	17.0	*	1/32*	96	* 22000	* Trc*	0	*	96	*	4	* 3.5*0.1*0.2*	5*
* 2138*	38*	9.70*	39*	10*	9*	2*	7*	12.0	*	1/32*	120	* 20000	* Trc*	0	*	96	*	4	* 9.0*0.2*0.3*	5*
* 2210*	39*	9.70*	39*	3*	9*	2*	7*	12.0	*	0/32*	176	* 24000	* Trc*	0	*	96	*	4	* 9.5*0.2*0.3*	5*
* 2295*	40*	9.70*	41*	12*	12*	3*	5*	10.5	*	1/32*	8	* 17000	* Trc*	0	*	96	*	4	* 9.0*0.1*0.2*	7*
* 2334*	41*	9.70*	40*	12*	11*	3*	5*	11.0	*	1/32*	40	* 17000	* Trc*	0	*	96	*	4	* 3.5*0.0*0.3*	7*
* 2395*	38*	9.80*	40*	12*	12*	3*	5*	10.0	*	1/32*	240	* 22000	* Trc*	0	*	96	*	4	* 9.5*0.1*0.2*	7*
* 2496*	39*	9.80*	41*	12*	12*	3*	6*	9.0	*	1/32*	200	* 20000	* Trc*	0	*	96	*	4	* 9.0*0.1*0.3*	5*
* 2577*	39*	9.80*	41*	12*	12*	3*	6*	9.0	*	1/32*	200	* 20000	* Trc*	0	*	96	*	4	* 9.0*0.1*0.3*	5*
* 2591*	38*	9.70*	40*	11*	10*	2*	5*	10.0	*	0/32*	208	* 23000	* Trc*	0	*	96	*	4	* 9.0*0.0*0.0*	5*
* 2646*	38*	9.70*	40*	10*	10*	3*	6*	10.0	*	0/32*	96	* 3400	* Trc*	0	*	96	*	4	* 9.5*0.0*0.2*	5*
* 2750*	42*	9.80*	37*	9*	9*	2*	4*	10.0	*	1/32*	240	* 15000	* Trc*	0	*	96	*	4	* 3.5*0.0*0.2*	5*

Elevation KB 22.3 m above MSL
Sea bed at 98.2 m below MSL

Hole 36"
at 172.3 m

30" Casing shoe at 172.3 m

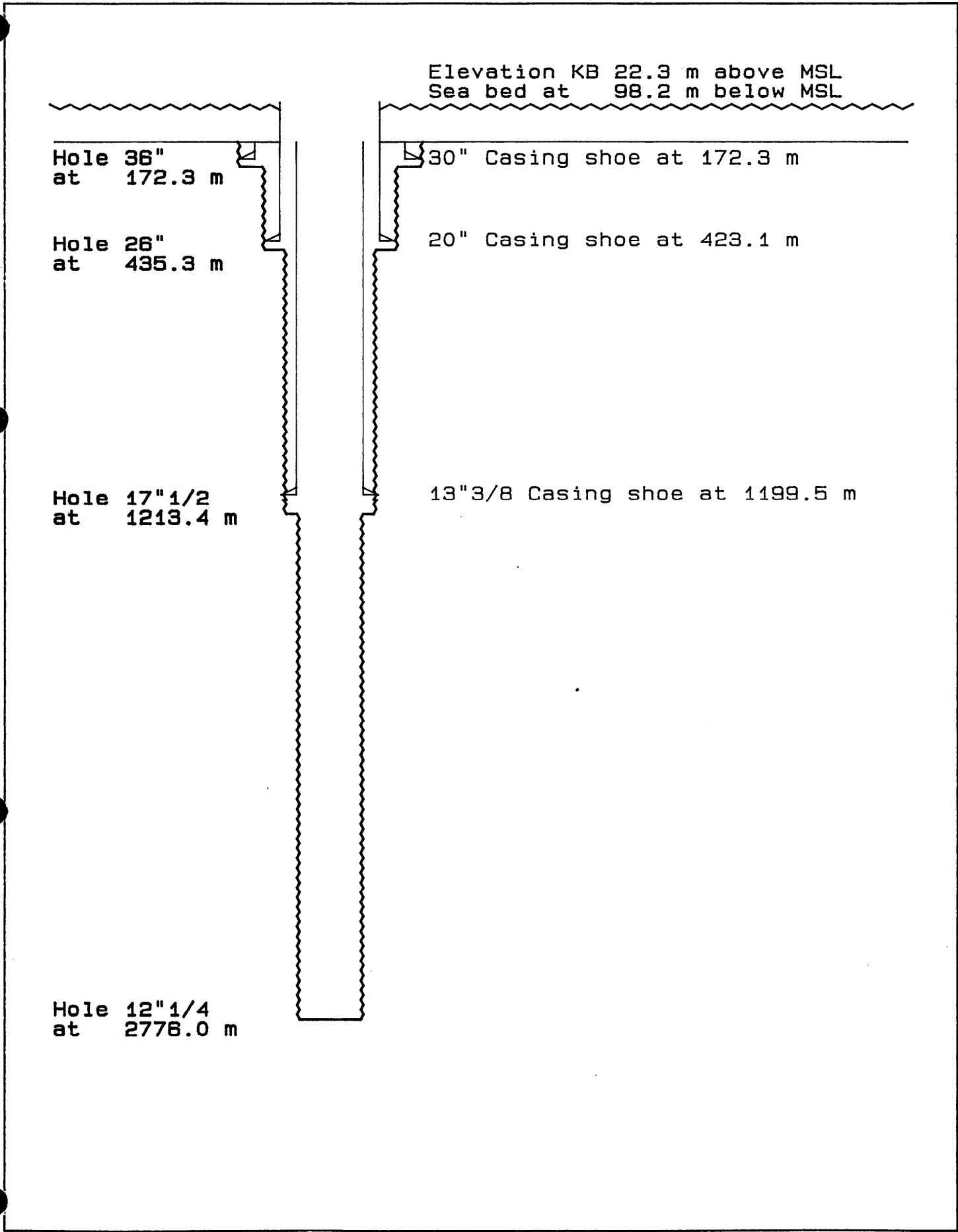
Hole 26"
at 435.3 m

20" Casing shoe at 423.1 m

Hole 17" 1/2
at 1213.4 m

13" 3/8 Casing shoe at 1199.5 m

Hole 12" 1/4
at 2776.0 m



GEOSERVICES T.D.C

PHILLIPS Aust. Pet.

DISCOVERY BAY # 1

22/9/82

CASING LIST

CASING SIZE: 30 TYPE: 1" Wall WEIGHT(lbs/ft): 310

CASING LENGTH: 140.32

SHOE DEPTH : 565.00

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*****
* Jt # * LENGTH * TOTAL LENGTH * Depth From KB * Remarks *
*****
* * 2.26 * 2.26 * 562.74 * Csg Shoe *
* 1 * 39.10 * 41.36 * 523.64 * *
* 2 * 43.66 * 85.02 * 479.98 * *
* 3 * 41.50 * 126.52 * 438.48 * *
* * 13.30 * 140.32 * 424.63 * Well Head *
*****
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GEO SERVICES T.D.C

PHILLIPS Aust. Pet. DISCOVERY BAY # 1

24/9/82

CASING LIST

CASING SIZE: 20 TYPE: JV Type LW WEIGHT(lbs/ft): 133

CASING LENGTH: 1004.69

SHOE DEPTH : 1388.18

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*****
* Jt # * LENGTH * TOTAL LENGTH * Depth From KB *      Remarks      *
*****
*      * 1.28 *      1.28      *      1386.90      *Guide Shoe      *
*      * 4.46 *      5.74      *      1382.44      *Pup Joint      *
*      * 2.25 *      7.99      *      1380.19      *Float Collar      *
*      * 33.81 *      41.80      *      1346.38      *Shoe Joint      *
*    1 * 39.06 *      80.86      *      1307.32      *      *
*    2 * 39.06 *     119.92      *      1268.26      *      *
*    3 * 39.03 *     158.95      *      1229.23      *      *
*    4 * 39.01 *     197.96      *      1190.22      *      *
*    5 * 39.06 *     237.02      *      1151.16      *      *
*    6 * 39.09 *     276.11      *      1112.07      *      *
*    7 * 39.06 *     315.17      *      1073.01      *      *
*    8 * 39.07 *     354.24      *      1033.94      *      *
*    9 * 39.11 *     393.35      *      994.83      *      *
*   10 * 38.94 *     432.29      *      955.89      *      *
*   11 * 39.06 *     471.35      *      916.83      *      *
*   12 * 39.07 *     510.42      *      877.76      *      *
*   13 * 39.03 *     549.45      *      838.73      *      *
*   14 * 39.06 *     588.51      *      799.67      *      *
*   15 * 39.07 *     627.53      *      760.60      *      *
*   16 * 39.07 *     666.65      *      721.53      *      *
*   17 * 39.06 *     705.71      *      682.47      *      *
*   18 * 39.07 *     744.78      *      643.40      *      *
*   19 * 39.08 *     783.86      *      604.32      *      *
*   20 * 39.09 *     822.95      *      565.23      *      *
*   21 * 39.05 *     862.00      *      526.13      *      *
*   22 * 39.04 *     901.04      *      487.14      *      *
*   23 * 39.08 *     940.12      *      448.06      *      *
*      * 38.60 *     978.72      *      409.46      *Well Head X-over *
*      * 25.97 * 1004.69      *      383.49      *Well Head      *
*****
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GEOSERVICES T.D.C

PHILLIPS Aust. Pet.

DISCOVERY BAY # 1

30/9/82

CASING LIST

CASING SIZE: 13.375 TYPE: N 80 WEIGHT(lbs/Et): 72

CASING LENGTH: 3546.85

SHOE DEPTH : 3935.00

* Jt #	* LENGTH	* TOTAL LENGTH	* Depth From KB	* Remarks	*

*	* 1.65	* 1.65	* 3933.35	*Guide Shoe	*
*	* 37.46	* 39.11	* 3895.89	*Shoe Joint	*
*	* 1.75	* 40.86	* 3894.14	*Float Collar	*
*	* 37.90	* 78.76	* 3856.24	*Collar Joint	*
*	1 * 33.65	* 117.41	* 3817.59	*Stabilizer	*
*	2 * 33.33	* 155.74	* 3779.26	*	*
*	3 * 38.67	* 194.41	* 3740.59	*Stabilizer	*
*	4 * 38.46	* 232.87	* 3702.13	*	*
*	5 * 37.82	* 270.69	* 3664.31	*Stabilizer	*
*	6 * 38.14	* 308.83	* 3626.17	*	*
*	7 * 39.01	* 347.84	* 3587.16	*Stabilizer	*
*	8 * 38.97	* 386.81	* 3548.19	*	*
*	9 * 38.65	* 425.46	* 3509.54	*Stabilizer	*
*	10 * 38.38	* 463.84	* 3471.16	*	*
*	11 * 37.89	* 501.73	* 3433.27	*	*
*	12 * 38.84	* 540.57	* 3394.43	*	*
*	13 * 37.75	* 578.32	* 3356.68	*	*
*	14 * 37.27	* 615.59	* 3319.41	*	*
*	15 * 38.90	* 654.49	* 3280.51	*	*
*	16 * 38.13	* 692.62	* 3242.38	*	*
*	17 * 38.43	* 731.05	* 3203.95	*	*
*	18 * 38.65	* 769.70	* 3165.30	*	*
*	19 * 37.89	* 807.59	* 3127.41	*	*
*	20 * 38.52	* 846.11	* 3088.89	*	*
*	21 * 38.53	* 884.64	* 3050.36	*	*
*	22 * 37.47	* 922.11	* 3012.89	*	*
*	23 * 38.74	* 960.85	* 2974.15	*	*
*	24 * 33.17	* 999.02	* 2935.98	*	*
*	25 * 38.81	* 1037.83	* 2897.17	*	*
*	26 * 37.90	* 1075.73	* 2859.27	*	*
*	27 * 37.90	* 1113.63	* 2821.37	*	*
*	28 * 33.36	* 1151.99	* 2783.01	*	*
*	29 * 37.40	* 1189.39	* 2745.61	*	*
*	30 * 37.61	* 1227.00	* 2708.00	*	*
*	31 * 39.27	* 1266.27	* 2668.73	*	*
*	32 * 39.36	* 1305.63	* 2629.37	*	*
*	33 * 38.89	* 1344.52	* 2590.48	*	*
*	34 * 38.39	* 1383.41	* 2551.59	*	*
*	35 * 39.32	* 1422.73	* 2512.27	*	*
*	36 * 38.29	* 1461.02	* 2473.98	*	*

GEO-SERVICES T.D.C

PHILLIPS Aust. Pet.

DISCOVERY BAY # 1

30/9/82

CASING LIST

CASING SIZE: 13.375

TYPE: N 80

WEIGHT(lbs/ft): 72

CASING LENGTH: 3546.85

SHOE DEPTH : 3935.00

* Jt #	* LENGTH	* TOTAL LENGTH	* Depth From KB	* Remarks	*****	
* 37	* 38.28	* 1499.30	* 2435.70	*	*****	
* 38	* 38.55	* 1537.85	* 2397.15	*	*****	
* 39	* 38.89	* 1576.74	* 2358.26	*	*****	
* 40	* 37.65	* 1614.39	* 2320.61	*	*****	
* 41	* 38.11	* 1652.50	* 2282.50	*	*****	
* 42	* 38.27	* 1690.77	* 2244.23	*	*****	
* 43	* 38.77	* 1729.54	* 2205.46	*	*****	
* 44	* 38.61	* 1768.15	* 2166.85	*	*****	
* 45	* 39.11	* 1807.26	* 2127.74	*	*****	
* 46	* 38.93	* 1846.19	* 2088.81	*	*****	
* 47	* 37.69	* 1883.88	* 2051.12	*	*****	
* 48	* 38.92	* 1922.80	* 2012.20	*	*****	
* 49	* 38.27	* 1961.07	* 1973.93	*	*****	
* 50	* 38.68	* 1999.75	* 1935.25	*	*****	
* 51	* 39.21	* 2038.96	* 1896.04	*	*****	
* 52	* 38.55	* 2077.51	* 1857.49	*	*****	
* 53	* 38.32	* 2115.83	* 1819.17	*	*****	
* 54	* 38.14	* 2153.97	* 1781.03	*	*****	
* 55	* 38.88	* 2192.85	* 1742.15	*	*****	
* 56	* 38.28	* 2231.13	* 1703.87	*	*****	
* 57	* 39.38	* 2270.51	* 1664.49	*	*****	
* 58	* 37.52	* 2308.03	* 1626.97	*	*****	
* 59	* 37.82	* 2345.85	* 1589.15	*	*****	
* 60	* 38.59	* 2384.44	* 1550.56	*	*****	
* 61	* 38.49	* 2422.93	* 1512.07	*	*****	
* 62	* 37.20	* 2460.13	* 1474.87	*	*****	
* 63	* 37.54	* 2497.67	* 1437.33	*	*****	
* 64	* 39.03	* 2536.70	* 1398.30	*	*****	
* 65	* 38.98	* 2575.68	* 1359.32	*	*****	
* 66	* 37.23	* 2612.91	* 1322.09	*	*****	
* 67	* 37.39	* 2650.30	* 1284.70	*	*****	
* 68	* 38.20	* 2688.50	* 1246.50	*	*****	
* 69	* 38.82	* 2727.32	* 1207.68	*	*****	
* 70	* 38.79	* 2766.11	* 1168.89	*	*****	
* 71	* 38.65	* 2804.76	* 1130.24	*	*****	
* 72	* 38.85	* 2843.61	* 1091.39	*	*****	
* 73	* 38.26	* 2881.87	* 1053.13	*	*****	
* 74	* 38.29	* 2920.16	* 1014.84	*	*****	
* 75	* 38.46	* 2958.62	* 976.38	*	*****	
* 76	* 38.98	* 2997.60	* 937.40	*	*****	

GEOSSERVICES T.D.C

PHILLIPS Aust. Pet.

DISCOVERY BAY # 1

30/9/82

CASING LIST

CASING SIZE: 13.375 TYPE: N 80 WEIGHT(lbs/Ft): 72

CASING LENGTH: 3546.85

SHOE DEPTH : 3935.00

```
*****
* Jt # * LENGTH * TOTAL LENGTH * Depth From KB *      Remarks      *
*****
* 77 * 38.65 * 3036.25 * 898.75 *
* 78 * 38.78 * 3075.03 * 859.97 *
* 79 * 38.18 * 3113.21 * 821.79 *
* 80 * 38.31 * 3151.52 * 783.48 *
* 81 * 39.00 * 3190.52 * 744.48 *
* 82 * 37.40 * 3227.92 * 707.08 *
* 83 * 38.32 * 3266.24 * 668.76 *
* 84 * 38.67 * 3304.91 * 630.09 *
* 85 * 39.00 * 3343.91 * 591.09 *
* 86 * 38.70 * 3382.61 * 552.39 *
* 87 * 38.20 * 3420.81 * 514.19 *
* 88 * 37.69 * 3458.50 * 476.50 *
* 89 * 39.10 * 3497.60 * 437.40 *
* 90 * 38.02 * 3535.62 * 399.38 *
* 91 * 11.23 * 3546.85 * 388.15 *Csg Hanger *
*****
```

GEOSERVICES TDC.

DISCOVERY BAY # 1

36" PHASE

SUMMARY:

The 36" hole ,from sea bed(120m from KB) to 172.2m,was drilled with bit # 1,OSC 3AJ,no jets,26" + Hole opener.Drilling was done with sea water,but at each connection,20 bbls of viscous mud were pumped to clean the hole.At bottom,172m,a circulation bottoms up was made and 210 bbls of high viscosity mud were spotted.A survey at 161m showed a drift of 1 deg.At 172m,the deviation was 1 deg.The 30" casing was run and cemented.

WOB/RPM/ROP Practice

The bit# 1,OSC 3AJ,26" diam.,no jets,with an hole opener of 36", 3*22/32 jets,drilled this part of the well in 6h 30 mn(drilling time), the averaged ROP being 3 m/h(7.5 mn/m).Bottom time was 18h30mn,including one trip to retrieve survey tool,and circulation time.The WOB was kept between 0 and 5 klbs.RPM averaged 100,flow,880 gpm.

HYDRAULICS

Sea water was used to drill this phase.A high flow rate was kept to remove the large quantity of cuttings due to the important diameter of this section.To help in cleaning the hole,20 bbls of viscous mud were added at each connection.

CASING AND CEMENTATION

The 30" casing was of type 1" wall,weight of 310 lbs/ft.The casing shoe set at 172.2m.

The cement used was of class G . Quantity : 1150 sacks

The pre-flush Type:water

The Lead slurry:1150 sacks of class G cement;weight 14.6ppg

Mixed with sea water.

Additives:1 % CaCl₂

Displacement:18 bbls of sea water.

The estimated top of good cement was 120m.

The procedure for the cementation was as follow:

Start mixing at 18h00 - weight 15.0ppg

Finished mixing at 20h00 - weight 13.8ppg

Start displacement at 20h02

PE602851

This is an enclosure indicator page.
The enclosure PE602851 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602851 has the following characteristics:
ITEM_BARCODE = PE602851
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Drill Curve
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
DESCRIPTION = Discovery Bay 1 Addendum 2 Drill Curve
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PHASE SUMMARIES

GROSERVICES TDC

DISCOVERY BAY # 1

26" PHASE

SUMMARY:

A 12 1/4" hole was drilled from 172m to 435m. One bit, # 2 SMITH SDS, no jets, was used to drilled this section. The hole was reamed to 26" with bit RR#1, OSC 3AJ, 26", no jets.

A circulation was made to clean the hole and 550 bbls of high viscosity mud pumped. After a survey, POOH drill pipe. PIF for wiper trip 350 bbls of high viscosity mud were pumped.

The survey made during the reaming was unsuccessful. The ones made during the 12 1/4" drilling showed: 3/4 deg. at 310m; 1 deg. at 435m. After POOH bit RR#1, the 20" casing was run and cemented.

WOB/RPM/ROP Practice:

The bit # 2, SMITH SDS, 12 1/4", no jets, drilled from 172m to 435m in 5h24mn giving an average ROP of 48.7 m/h (1.4 mn/m). The total bottom time was 11 hours giving an average ROP of 24 m/h (2.5mn/m). FPM averaged 107, WOB 4/5 klbs, flow 559 gpm.

The bit RR#1, OSC 3AJ, 26", no jets reamed in 4h 31mn, thus giving an average ROP of 59 m/h (1 mn/m). Total bottom time was 10h14mn, giving an average ROP of 26m/h (2.3mn/m). The average drilling parameters were: WOB of 1/5klbs, RPM 90, flow 868 gpm.

HYDRAULICS:

As drilling was made with no riser and the mud fluid being sea water it is very difficult to estimate correct hydraulic figures. The flow rate was kept high to remove the cuttings and high viscosity mud was pumped before POOH.

CASING and CEMENTATION:

The 20" casing type was: Cameron JV, LW grade X56
Weight: 133 lbs/ft (see csg tally).

Cement: 1700 sacks of class G cement were used.
1440 bbls of salt water were circulated prior to start the job.
The pre-flush was 20 bbls of sea water.
The lead slurry: 1200 sacks of class G cement mixed with drill water.
Weight: 12.8ppg
2.5 % of gel water were added.
The tail slurry consisted of 500 sacks of class G cement at 15.4ppg.
The displacement was made with 18.1 bbls of sea water.
The estimated top of good cement was: well head.

The procedure for the cementation was as follow:

Start pumping lead at 22h00
Started pumping tail at 23h50
Started displacement at 23h53

GEO SERVICES TDC.

DISCOVERY BAY # 1

17 1/2" PHASE

SUMMARY:

A 12 1/4" pilot hole was drilled from 435m to 1213m. The bit used was # 2 rerun, SMITH SDS, 3*15/32 jets. A circulation bottoms up was made then followed by a short trip to condition the hole for Electric logging. The deviation survey at 1213m gave 2 deg. ; Schlumberger runs consisted of: GP-SLS-DIL and CST. The hole was reamed to 17 1/2" by using bit RR#2 and an under-reamer. The under-reamer's arms were changed twice (3 runs).

After conditioning the mud, the 13 3/8" casing was run and cemented. Casing shoe at 1199.39m. A multishot survey was made, showing a drift of 3 deg from 1097m to 1158m (Refer to deviation table and plot). The cement was tag at 1187m. The casing test at 2000 psi.

WOB/RPM/ROP Practice:

This phase was completed with one bit and 3 runs with a SERVCO under-reamer.

BIT RR # 2, SMITH SDS, 12 1/4", 3*15/32 jets, drilled from 435m to 1213m in 11h22mn, giving an ROP of 68 m/h (.85 mn/m). Total bottom time was 33h49mn, ROP 22 m/h (3mn/m). The average drilling parameters during the run were: WOB 16.8 klbs, RPM 105. The WOB from 435m to 1124m varied from 0 to 10 klbs but increased to 20/40 klbs from 1124m to 1213m, due to the formation becoming shaly. The ROP in this section decreased from an average value of 150m/h (.4mn/m) to 40 m/h (1.5mn/m). The bit after pull out was out of gauge (8/8), Teeth wear 6/8, Bearing wear 4/8.

BIT RR # 2 + Under-reamer SEPVCO (run # 1)

An under-reamer SEPVCO 17 1/2" was used to ream the hole to 17 1/2". The first run, from 435m to 685m was reamed in 3h 51mn, giving an average ROP of 64 m/h (1.6 mn/m). Total bottom time was 8h38mn reducing the average ROP to 29m/h (2 mn/m). The WOB was 0 to 4 klbs, RPM 90.

The ROP slowed down considerably from 656m to 685m. The WOB had to be increased, resulting in an increase of torque. The bit + UR were pulled out and the UR's arms changed.

BIT RR # 2 + UR (run # 2)

From 685m to 892m. This section was reamed in 5h39mn, the ROP being 35 m/h (1.7 mn/m). From 685m to about 798m, WOB was kept at an average value of 15 klbs. From 798m to 892m it decreased to 3 klbs. RPM was kept at 90. From 882m, ROP slowing down and the torque increasing, the bit + UR were pulled-out and the UR's arms changed again.

BIT RR # 2 + UR (run # 3)

From 892m to 1213m. This section was reamed in 4h42mn, ROP thus being 58 m/h (.8 mn/m). Bottom time in hole was 11h10, giving an average ROP of 28 m/h (2.5 mn/m). The WOB was kept at an average value of 5.25klbs. RPM 91.

HYDRAULICS

The mud used during this phase was sea water plus bentonite. The mud weight varied from 8.6 to 9.03ppg.

The bit RR#2 was run with 3*15/32 nozzles, and a flow rate of 600 gpm, producing a bit efficiency of 62 % which is a good HHP ratio. The resulting bit horsepower per sq. in. was 3.3.

Bit RR#2 + under-reamer was run with 3*15/32 nozzles for the two first run. Then 2*15/32 + 1*32/32 for the last run.

With 3*15/32 nozzles and an average flow of 520 gpm, the bit efficiency was 54/65 % but the bit horsepower per sq. in. only 1.05.

With 2x15+1x32 nozzles and a flow rate of 640gpm, the bit efficiency decreased to 27% giving a bit HP (per sq in) of only .5. In both cases the flow in the annulus was turbulent.

DISCOVERY BAY # 1

12 1/4" PHASE.

SUMMARY:

After installing and testing the BOP stack the cement was tagged at 1187m and drilled out to 1195. The casing was then tested to 2000psi. A Baracarb-brine mud was mixed, then displaced. The cement and casing shoe were drilled out, and after drilling to 1218m a leak off test was performed. Mud weight was 9ppg and pressure was 640psi giving a fracture gradient of 12.1ppg.

The 12 1/4" hole was drilled from 1213 to 2776 metres a total of 1553m. Seven bits were used in an overall drilling time of 129 hours, giving an average ROP of 12.1 m/hr.

Surveys run during this phase gave the following results:-
3 deg at 1309m, 3 deg at 1460m, 3 3/4 deg at 1673m, 2 deg at 1885m,
1 deg at 2138m, 1 1/2 deg at 2350m, 1 3/4 deg at 2614m, 2 deg at 2776m.

Total depth (2776m) was reached on 12/10/82, drilling day 22.

On reaching TD a wiper trip was made and a final suite of logs was run. These were; DIL-SLS-GR, LDL-CNL-GR, HDT, VELOCITY SURVEY (SSL), CST (two runs).

WOB/RPM/ROP

This phase can be divided into two halves. In the first (bits 3-5), conventional milled tooth bits were used with weights of 19-30000lbs and RPM of 100-110. High rates of penetration were attained, largely because the formations were relatively soft. The second half, in contrast, was characterised by the use of journal bearing insert bits (Smith F2, F3) at lower PPM and considerably higher weights; 70-75 RPM and 37-40000lbs respectively. The drilling rate was considerably lower; 5-12 m/hr instead of 24-86 m/hr. However, again the hardness of the formations is significant as an unconformity was encountered at 1850m. As can be seen from the D exponent the formations below the unconformity were considerably harder to drill.

BIT # 3, SMITH SDGH, 3x13 nozzles.

Drilled from 1213m to 1460m at an average ROP of 1.72 mn/m or 35 m/hr. Total bottom time was 13.49 hrs, giving an average ROP of 3.35 mn/m or 18 m/hr. Average drilling parameters for the run were WOB 19000lbs, RPM 100. The Bit was pulled due to increased torque. Wear was T6 B4 G1/2.

BIT # 4, SMITH SDS, 3x14 nozzles.

Drilled from 1460m to 1674m at an average ROP of 26 m/hr. It was necessary to ream down from 1412 to 1460m. Average drilling parameters were; WOB 19600lbs, RPM 111. Bit wear was T6 B3 G1/4.

BIT # 5, SMITH SDGU, 3x14 nozzles.

Drilled from 1674m to 1885m, average ROP was 24m/hr. Again it was necessary to ream down from 1650 to 1674m as the previous bit was out of gauge. Average drilling parameters were WOB 30000lbs, RPM 100. Bit wear was: T6 B2 G1/8.

BIT # 6, SMITH F2, 3x14 nozzles.

Reamed from 1968m to 1885m then drilled from 1885 to 2138m at an average ROP of 13m/hr. Drilling parameters were WOB 37000lbs, RPM 70. The bit was pulled due to increases in torque. Bit wear was T4 B2 G1/8

BIT # 7 SMITH F3, 3x14 nozzles.

Drilled from 2138 to 2350 at an average ROP of 9.2m/hr. Drilling parameters were WOB 40000lbs RPM 70. Torque remained steady apart from a sharp increase between 2302 and 2337m. Bit wear was T5 B4 G1/8.

BIT # 8, SMITH F2, 3x14 nozzles.

Reamed from 2293 to 2350m, then drilled to 2613m. Average ROP was 8.5m/hr. Drilling parameters were WOB 40000lbs RPM 70. Bit Wear was only T3 B2 G1/8.

BIT # 9, SMITH F3, 3x14 nozzles.

Drilled from 2613m to 2776m(TD). Average ROP was 5.4m/hr. However actual ROP varied from 1.3-20m/hr. Drilling parameters were:- WOB 40-50000lbs, RPM 75. No exceptional variations in torque were recorded. However despite a short run of 163m bit wear was T6 B3 G1/4.

HYDRAULICS

The mud used to drill the 12 1/4" hole was a Baracarb-brine mud. The mud weight initially was 9.1ppg rising to 9.7/9.8ppg. PV, YP GEL were held around 10, 10, 3 respectively. Except for Bit 3 all the bits had 3x14 jets in conjunction with flow rates of 610-680gpm.

Bit 3, as a result of having 3x13 jets had an hydraulic horsepower ratio of 72 and a Bit hydraulic horsepower of 8.6hp/sq in.

For Bits 4-9 the figures were as follows:

Bit 4: Average flow 680 gpm; HP ratio 65% Bit H.H.P 6.8/sq in.

Bit 5: Average flow 650 gpm; HP ratio 62% Bit H.H.P. 5.7/sq in

Bit 6: Average flow 630 gpm; HP ratio 62% Bit H.H.P. 5.9/sq in.

Bit 7: Average flow 645 gpm; HP ratio 60% Bit H.H.P. 5.9/sq in.

Bit 8: Average flow 615 gpm; HP ratio 58% Bit H.H.P. 5.1/sq in

Bit 9: Average flow 610 gpm; HP ratio 58% Bit H.H.P. 4.8/sq in.

DAILY WELL DIARY

GECSERVICES TDC

DISCOVERY BAY # 1

WELL DIARY

DAY # 1 - 21/9/82

Re-arrange deck and gather tools and pipe needed for spudding in. Pick up 30" running tool and 18 JTS DP. Assemble PGB and attach guide line and angle indicator. Pick up BHA. Tag bottom at 120.4m.

Drill 36" hole down to 141.1m. Survey at 120m (failed to retrieve tool). POOH and retrieve survey; RIH.

Ream 36" hole from 133m to 142m. Drill 36" hole from 142m to 152.1m. Survey at 142m: 1 deg.

DAY # 2 - 22/9/82

Drill 36" hole down to 161.2m. Run survey (1 deg). Drill down to 172.2m. Run survey (1 deg). Circulate and spot 210 bbls of high viscosity mud. POOH.

Rig up casing equipment. RIH with 30" casing and landing string. Circulate. Pressure test lines at 2000psi. Cement 30" casing. POOH landing string, 30" running tool and stinger.

DAY # 3 - 23/9/82

Pick up 12 1/4" BHA. RIH and tag cement at 164.5m. Drill 12 1/4" hole. Run survey at 310 m (3/4 deg). Drill down to 435m and spot 250 bbls high viscosity mud. Survey at 435m : 1 deg. POOH.

Pick up 26" bit (OSC 3AJ RR # 1) and BHA. Drill down to 220m.

DAY # 4 - 24/9/82

Drill from 220m to 435m. Circulate to clean hole. Displace sea water with high viscosity pill (550 bbls). Drop survey. POOH; recover survey. POOH. RIH down to 435m and pump 350 bbls of high viscosity mud. Drop survey (no result on recovery). POOH to run 20" casing. Rig up to run 20" casing. RIH 20" casing. Rig up cementing equipment. Test line at 1000 psi. Cement casing. Pump 20 bbls to check stab in test line.

DAY # 5 - 25/9/82

Pull up 9m above float shoe and circulate pipe with 400 bbls of sea water. POOH with stinger and centraliser. Lay down 26" bit and stabilizer. Make up 12 1/4" bit and BHA. Pick up riser and run with BOP. Test choke and kill line. Pick up slip joint; install tension lines, choke and kill line. Latch BOP's on well head. Pick up and install diverter and safety lines. Test BOP's.

DAY # 6 - 26/9/82

Test BOP's: Hydril → 2500psi, Rams → 5000psi. Pick up 12 1/4" BHA and RIH. Tag cement at 417m. Test 20" casing (600psi) and drill cement. Circulate hole clean prior to LOT @ 10.7 ppg. After LOT, Drilling 12 1/4" hole from 435m to 608m. Deviation survey at 608m: 1 deg.

Resume drilling; drill from 608m to 672m. Repair on compensators hoses. Drilling from 672m to 836m.

DAY # 7 - 27/9/82

Drilling from 836m to 912m. Survey at 912m : 3/4 deg. Drilling from 912m to 1213m. Circulate bottoms up. Pull up to 20" casing shoe; RIH, circulate, bottoms up, drop survey, slug pipe. POOH. Survey at 1213m: 2 deg. Rig up Schlumberger. Run GR-SLS-DIL. Rig down and rig up CST.

DAY # 8 - 28/9/82

Run Schlumberger CST. Run in hole to lay down pipe. Lay down 12 1/4" bit, N/B stab and jars. Make up under reamer and stab; surface check. RIH. Tag cement at 417m. Peaming 12 1/4" hole to 17 1/2" from 417m to 686m. POOH.

DAY # 9 - 29/9/82

POOH. Change under-reamer. RIH. Peaming from 685m to 760m. POOH to 20" casing shoe and wait on weather. RIH and ream from 760m to 833m.

DAY # 10 - 30/9/82

Reaming to 892m. POOH to change under-reamer; RIH and continue opening to 17 1/2". Condition mud for casing run. Pump slug and POOH. RIH and pull wear bushing. Pig up cement head and running tool and hanger. Start running casing 13 3/8".

DAY # 11 - 01/10/82

Running casing and wait on weather. RIH casing. Circulate and rig up chiksan. Test chiksan to 3000 psi and cement. Make up jet tool and RIH. POOH jet tool.

DAY # 12 - 02/10/82

Rig up and run multishot survey. Lay down drill collar. Make up bit and BHA. RIH. Tag cement at 1187m. Drill cement. Test casing to 2000psi. Clean out pipe and make up KCL mud (Baracarb-brine mud).

DAY # 13 - 03/10/82

Mixing mud. Start circulating. Displace mud. Start drilling cement from 1195m to shoe, 1199.4m. Drill formation from 1213m to 1218m. Pull back and circulate bottoms up prior to L.O.T. Leak off test made with mud 9 ppg; pressure: 640 psi (intake formation pressure). Drill ahead from 1218m to 1308m. Drilling break: circulate bottoms up. Drill from 1308m to 1460m. Drop survey (3 deg). POOH.

RIH with bit # 4, SMITH SDS.

DAY # 14 - 04/10/82

RIH with bit # 4. Peaming from 1412m to 1460m. Drill 12 1/4" hole from 1460m to 1674m. Drop survey (3 3/4 deg), slug pipe and POOH. Lay down 49 joints of S 135 drill pipes. Make up Bit + BHA. RIH with bit # 5 SMITH SDGH. Pick up 49 joints of grade E pipe.

DAY # 15 - 05/10/82

RIH. Ream from 1650m to 1674m. Drill 12 1/4" hole from 1674m to 1885m. Drop survey (2 deg), slug pipe and POOH. Make up 12 1/4" bit. RIH with bit # 6, SMITH F2. Slip and cut line. Tag undergauge hole at 1868m. Reaming. Then drill 12 1/4" hole from 1885m to 1905m.

DAY # 16 - 06/10/82

Drill 12 1/4" hole from 1905m to 2138m. Circulation bottoms up. Drop survey, slug pipe and POOH.

DAY # 17 - 07/10/82

POOH Bit # 6.Recover survey(1 deg).Make up Bit # 7 and RIE to 2138m.Pick up Kelly,wash to bottom and drill from 2138 to 2293m.

DAY # 18 - 08/10/82

Drill 12 1/4" hole from 2293-2349m.Drop survey,slug pipe,and POOH.Recover survey;1 1/2 deg.PIH with Bit # 8,Smith F2,3x14 jets.Ream down from 2334-2350m,drill ahead from 2350m.

DAY # 19 - 09/10/82

Drilling ahead from 2395m.High torque at 2520m,lift off bottom and work back to bottom.Drill ahead from 2520 to 2575m.

DAY # 20 - 10/10/82

Drill 12 1/4" hole from 2576 to 2613m.Drop survey,slug pipe, POOH.Recover survey;1 3/4 deg.Make up new bit (# 9 Smith F3,3x14) Make up test plug on BHA and RIE.Test BOPs,upper,middle and lower pipe rams to 5000 psi.Test inner and outer kill,inner and outer choke,and choke manifold valves to 5000 psi.Test upper and lower Hydril to 2500 psi.

POOH and lay down test plug.RIE to 2599m.Wash and ream from 2599 to 2613m.Drill 12 1/4"hole from 2613 to 2646m.

DAY # 21 - 11/10/82

Drill 12 1/4"hole from 2646 to 2750m.

DAY # 22 - 12/10/82

Drill ahead from 2750 to 2776m.Circulate bottoms up.Make 15 stand wiper trip.RIE to bottom circulate and condition hole for two hours.Drop survey,(2 deg) and POOH.Rig up and run Schlumberger Run DIL-SLS-GR.

DAY # 23 - 13/10/82

Continue to run Schlumberger.Rig up LDL-CNL-GR.Run LDL-CNL-GR rig down LDL-CNL-GR,rig up and run HDT.Rig down HDT,rig up and run Velocity survey.Run CST;two runs.Pig down Schlumberger.PIH with BHA

DAY # 24 - 14/10/82

PIW with BHA. POOH, laying down 7 3/4" DC, Stabs, Jars. PIW open ended to 2444m. Rig up Cement Head and lines, circulate at 2444m. Test cement lines to 3000psi and cement. Lay down Cement Head and pull up 10 stands. Rig up Cement head and reverse out. Slug pipe, POOH, lay down DP. Rig up and circulate out unbalanced mud. Slug pipe and POOH, laying down DP. Circulate and condition mud due to back flow at 1350m. Rig up Cement Head and surface lines. Test to 3000psi then set Plug # 2. POOH 10 stands, reverse out. POOH, leave 43 stands in derrick, lay down excess. Rig up Schlumberger, set EZ Drill packer at 1132m. Test packer to 1000psi, rig down Schlumberger. Pick up stinger and strap in hole.

OVERPRESSURE SURVEY

Formation pressure was monitored throughout the well. The principal means used to achieve this were firstly, continuous computation of the D exponent, and secondly the monitoring of other indicators of abnormal pressure notably; -connection gas, overpull, and lithological changes.

In the event formation pressures proved to be normal, no gas was detected, and no significant overpull was encountered.

However the D exponent plot did show excellent correlation with changes in lithology, showing the changes quite distinctly. Significant markers picked out were:

- The lower intra Wangerrip marker.
- The top of the Sherbrook formation.
- The Upper Sherbrook unconformity.

The hole can be divided into three sections. From the sea bed to the top of the Sherbrook, from the top of the Sherbrook to 1850 metres (the Upper Sherbrook unconformity) and from 1850m down to 2776 metres.

TOP SECTION.

The top part of this section, from 95m to 628m (Upper and lower Heytesbury) consisted of soft, fast drilling carbonates. Below this, the Lower Tertiary Carbonates were slower drilling.

Immediately below the Tertiary Carbonates lie the Mirranda and the Wangerrip groups, predominantly loose sands, very fast drilling.

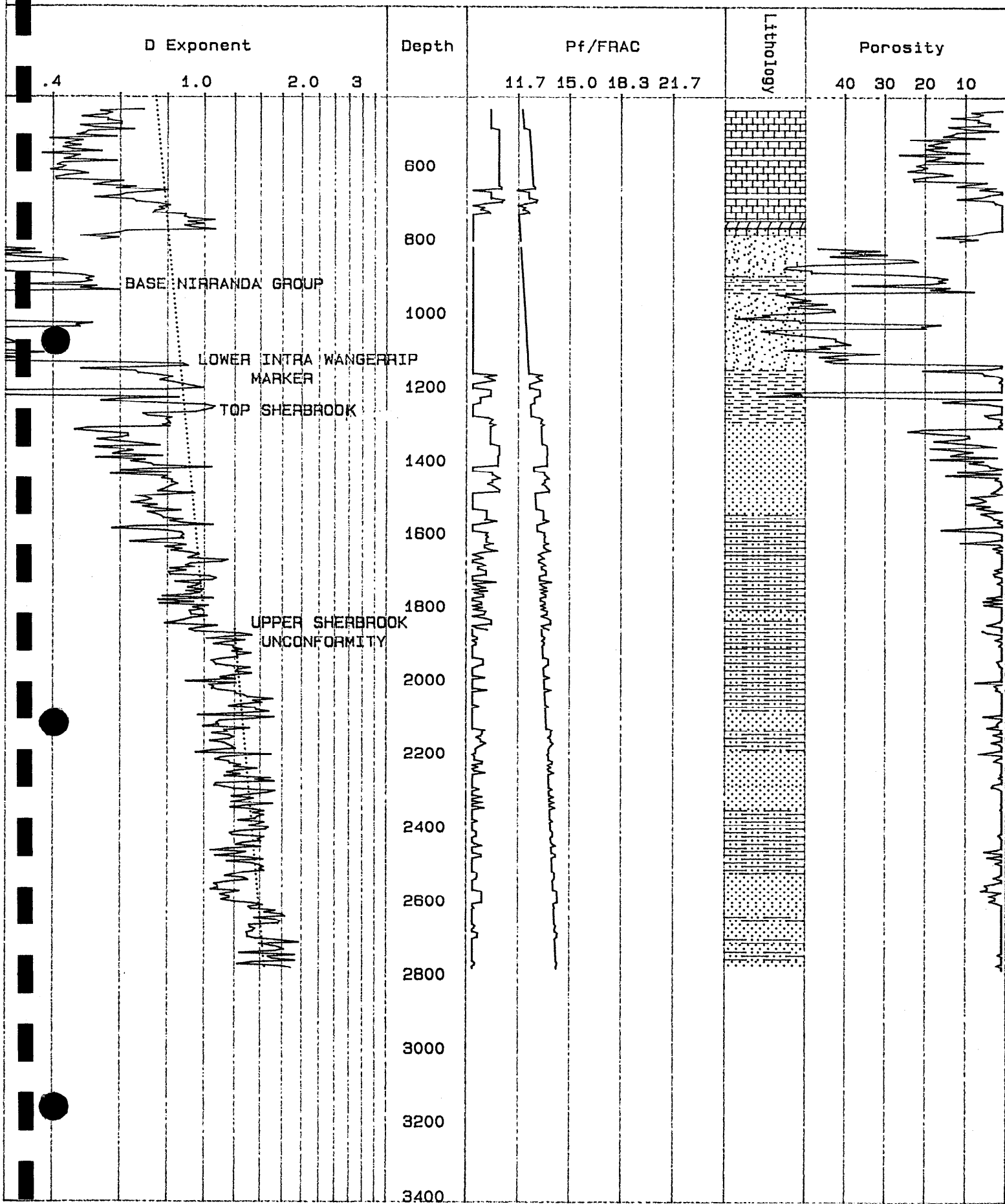
MID SECTION.

The top of the Sherbrook group is marked by a change to Claystone and generally slower drilling rates. The sandstone between 1300 and 1520 initially shows faster drilling but soon reverts to trend.

LOWER SECTION.

At 1850m the Upper Sherbrook unconformity produces a sharp rightward shift in the D exponent which persists until TD, indicating that the formations below the unconformity are generally harder. The initial trend chosen for the D exponent (.8 at 750m, .86 at 1100m) was shifted to 1.2 at 1850m and 1.4 at 2630m to allow for this.

PHILLIPS DISCOVERY BAY # 1



PE602852

This is an enclosure indicator page.
The enclosure PE602852 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602852 has the following characteristics:

ITEM_BARCODE = PE602852
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 D Exponent
 Log 1/10000
 BASIN = Otway
 PERMIT = VIC/P14
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 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 D Exponent
 Log 1/10000
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 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602853

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The enclosure PE602853 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602853 has the following characteristics:

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 PERMIT = VIC/P14
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 Log 1/5000
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 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602854

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The enclosure PE602854 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602854 has the following characteristics:

ITEM_BARCODE = PE602854
CONTAINER_BARCODE = PE900183
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 Log 1/5000
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 D Exponent
 Log 1/5000
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602855

This is an enclosure indicator page.
The enclosure PE602855 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602855 has the following characteristics:

ITEM_BARCODE = PE602855
CONTAINER_BARCODE = PE900183
NAME = Discovery Bay 1 Addendum 2 Temperature
report
BASIN = Otway
PERMIT = VIC/P14
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Discovery Bay 1 Addendum 2 Temperature
report
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W783
WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602856

This is an enclosure indicator page.
The enclosure PE602856 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602856 has the following characteristics:
ITEM_BARCODE = PE602856
CONTAINER_BARCODE = PE900183
NAME = Discovery Bay 1 Addendum 2 Stress Ratio
BASIN =

Otway

PERMIT = VIC/P14
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Discovery Bay 1 Addendum 2 Stress Ratio
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W783
WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602857

This is an enclosure indicator page.
The enclosure PE602857 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602857 has the following characteristics:

ITEM_BARCODE = PE602857
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Poissons
 Ratio
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 Poissons
 Ratio
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602858

This is an enclosure indicator page.
The enclosure PE602858 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602858 has the following characteristics:

ITEM_BARCODE = PE602858
CONTAINER_BARCODE = PE900183
NAME = Discovery Bay 1 Addendum 2 Leak Off
Test
BASIN = Otway
PERMIT = VIC/P14
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Discovery Bay 1 Addendum 2 Leak Off
Test
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W783
WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602859

This is an enclosure indicator page.
The enclosure PE602859 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602859 has the following characteristics:

ITEM_BARCODE = PE602859
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Leak Off
 Test
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 Leak Off
 Test
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

KICK TOLERANCE

Casing Shoe Depth : 3935

Formation Frac. Grd :12.10

Mud Density : 9.00

Safety Factor : 0.50

TRIP MARGIN : 0.50

* DEPTH *	* KT *	** DEPTH *	* KT *	** DEPTH *	* KT *	** DEPTH *	* KT *	** DEPTH *	* KT *	** DEPTH *	* KT *	** DEPTH *	* KT *
* 4000 *	* 2.06 *	** 4100 *	* 2.00 *	** 4200 *	* 1.94 *	** 4300 *	* 1.88 *	** 4400 *	* 1.83 *	** 4500 *	* 1.77 *		
* 4600 *	* 1.72 *	** 4700 *	* 1.68 *	** 4800 *	* 1.63 *	** 4900 *	* 1.59 *	** 5000 *	* 1.55 *	** 5100 *	* 1.51 *		
* 5200 *	* 1.47 *	** 5300 *	* 1.43 *	** 5400 *	* 1.39 *	** 5500 *	* 1.36 *	** 5600 *	* 1.33 *	** 5700 *	* 1.29 *		
* 5800 *	* 1.26 *	** 5900 *	* 1.23 *	** 6000 *	* 1.21 *	** 6100 *	* 1.13 *	** 6200 *	* 1.15 *	** 6300 *	* 1.12 *		
* 6400 *	* 1.10 *	** 6500 *	* 1.07 *	** 6600 *	* 1.05 *	** 6700 *	* 1.03 *	** 6800 *	* 1.00 *	** 6900 *	* 0.98 *		
* 7000 *	* 0.96 *	** 7100 *	* 0.94 *	** 7200 *	* 0.92 *	** 7300 *	* 0.90 *	** 7400 *	* 0.88 *	** 7500 *	* 0.86 *		
* 7600 *	* 0.85 *	** 7700 *	* 0.83 *	** 7800 *	* 0.81 *	** 7900 *	* 0.80 *	** 8000 *	* 0.78 *	** 8100 *	* 0.76 *		
* 8200 *	* 0.75 *	** 8300 *	* 0.73 *	** 8400 *	* 0.72 *	** 8500 *	* 0.70 *	** 8600 *	* 0.69 *	** 8700 *	* 0.68 *		
* 8800 *	* 0.66 *	** 8900 *	* 0.65 *	** 9000 *	* 0.64 *	** 9100 *	* 0.62 *	** 9200 *	* 0.61 *	** 9300 *	* 0.60 *		
* 9400 *	* 0.59 *	** 9500 *	* 0.58 *	** 9600 *	* 0.57 *	** 9700 *	* 0.55 *	** 9800 *	* 0.54 *	** 9900 *	* 0.53 *		

PE602860

This is an enclosure indicator page.
The enclosure PE602860 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602860 has the following characteristics:

ITEM_BARCODE = PE602860
CONTAINER_BARCODE = PE900183
NAME = Discovery Bay 1 Addendum 2 Kick
Tolerance
BASIN = Otway
PERMIT = VIC/P14
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Discovery Bay 1 Addendum 2 Kick
Tolerance
REMARKS =
DATE_CREATED =
DATE_RECEIVED =
W_NO = W783
WELL_NAME = Discovery Bay 1
CONTRACTOR = Geoservices
CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

DISCOVERY BAY # 1

* DEPTH	* DRIFT	* BEARING	* Vertical	* Depth	* NORTH	* SOUTH	* WEST	* EAST	* Dog leg	* File

* 400.0*	0.25*	63.5*	400.00*	0.00*	*	*	0.00*	*	0.00*	1*
* 500.0*	0.25*	198.5*	500.00*	*	*	0.29*	*	0.33*	0.46*	2*
* 600.0*	0.25*	241.3*	600.00*	*	*	0.62*	*	0.05*	0.18*	3*
* 700.0*	0.25*	308.3*	700.00*	*	*	0.53*	0.39*	*	0.28*	4*
* 800.0*	0.25*	301.0*	800.00*	*	*	0.34*	0.74*	*	0.03*	5*
* 900.0*	0.25*	341.0*	900.00*	0.00*	*	*	1.02*	*	0.17*	6*
* 1000.0*	0.25*	355.0*	999.99*	0.43*	*	*	1.11*	*	0.06*	7*
* 1100.0*	0.25*	342.8*	1099.99*	0.86*	*	*	1.19*	*	0.05*	8*
* 1200.0*	0.25*	343.8*	1199.99*	1.27*	*	*	1.32*	*	0.00*	9*
* 1300.0*	0.25*	341.5*	1299.99*	1.69*	*	*	1.45*	*	0.01*	10*
* 1400.0*	0.75*	45.5*	1399.99*	2.54*	*	*	1.25*	*	0.68*	11*
* 1500.0*	0.50*	73.3*	1499.99*	3.10*	*	*	0.31*	*	0.39*	12*
* 1600.0*	0.25*	143.3*	1599.99*	2.89*	*	*	*	0.31*	0.48*	13*
* 1700.0*	0.25*	30.0*	1699.98*	2.92*	*	*	*	0.75*	0.42*	14*
* 1800.0*	0.50*	52.0*	1799.98*	3.41*	*	*	*	1.18*	0.28*	15*
* 1900.0*	0.25*	44.8*	1899.97*	3.84*	*	*	*	1.67*	0.25*	16*
* 2000.0*	0.50*	84.8*	1999.97*	4.12*	*	*	*	2.26*	0.35*	17*
* 2100.0*	0.25*	58.5*	2099.97*	4.33*	*	*	*	2.38*	0.30*	18*
* 2200.0*	0.25*	96.5*	2199.97*	4.42*	*	*	*	3.31*	0.16*	19*
* 2300.0*	0.25*	354.5*	2299.97*	4.73*	*	*	*	3.62*	0.39*	20*
* 2400.0*	0.50*	339.3*	2399.97*	5.37*	*	*	*	3.47*	0.27*	21*
* 2500.0*	0.75*	329.0*	2499.96*	6.35*	*	*	*	2.99*	0.27*	22*
* 2600.0*	0.50*	326.0*	2599.95*	7.27*	*	*	*	2.41*	0.25*	23*
* 2700.0*	0.50*	333.0*	2699.95*	8.02*	*	*	*	1.96*	0.06*	24*
* 2800.0*	0.50*	342.8*	2799.95*	8.83*	*	*	*	1.64*	0.08*	25*
* 2900.0*	0.75*	340.8*	2899.94*	9.87*	*	*	*	1.29*	0.25*	26*
* 3000.0*	0.75*	337.8*	2999.93*	11.09*	*	*	*	0.83*	0.04*	27*
* 3100.0*	1.00*	264.5*	3099.92*	11.83*	*	*	0.48*	*	1.06*	28*
* 3200.0*	1.75*	254.5*	3199.89*	11.44*	*	*	2.84*	*	0.78*	29*
* 3300.0*	2.50*	245.5*	3299.82*	10.17*	*	*	6.32*	*	0.82*	30*
* 3400.0*	2.50*	238.5*	3399.73*	8.13*	*	*	10.17*	*	0.31*	31*
* 3500.0*	2.75*	239.3*	3499.62*	5.76*	*	*	14.09*	*	0.25*	32*
* 3600.0*	3.00*	236.3*	3599.50*	3.08*	*	*	18.33*	*	0.29*	33*
* 3700.0*	3.00*	234.0*	3699.36*	0.09*	*	*	22.63*	*	0.12*	34*
* 3800.0*	3.00*	235.8*	3799.22*	*	*	2.92*	26.91*	*	0.09*	35*

PE602861

This is an enclosure indicator page.
The enclosure PE602861 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602861 has the following characteristics:

ITEM_BARCODE = PE602861
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Deviation
 Log
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 Deviation
 Log
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602862

This is an enclosure indicator page.
The enclosure PE602862 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602862 has the following characteristics:

ITEM_BARCODE = PE602862
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Deviation
 Log
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 Deviation
 Log
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

PE602863

This is an enclosure indicator page.
The enclosure PE602863 is enclosed within the
container PE900183 at this location in this
document.

The enclosure PE602863 has the following characteristics:

ITEM_BARCODE = PE602863
CONTAINER_BARCODE = PE900183
 NAME = Discovery Bay 1 Addendum 2 Lithology
 Report
 BASIN = Otway
 PERMIT = VIC/P14
 TYPE = WELL
 SUBTYPE = WELL_LOG
 DESCRIPTION = Discovery Bay 1 Addendum 2 Lithology
 Report
 REMARKS =
 DATE_CREATED =
 DATE_RECEIVED =
 W_NO = W783
 WELL_NAME = Discovery Bay 1
 CONTRACTOR = Geoservices
 CLIENT_OP_CO = PHILLIPS AUSTRALIAN OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)

GEOSERVICES
ON-LINE TDC

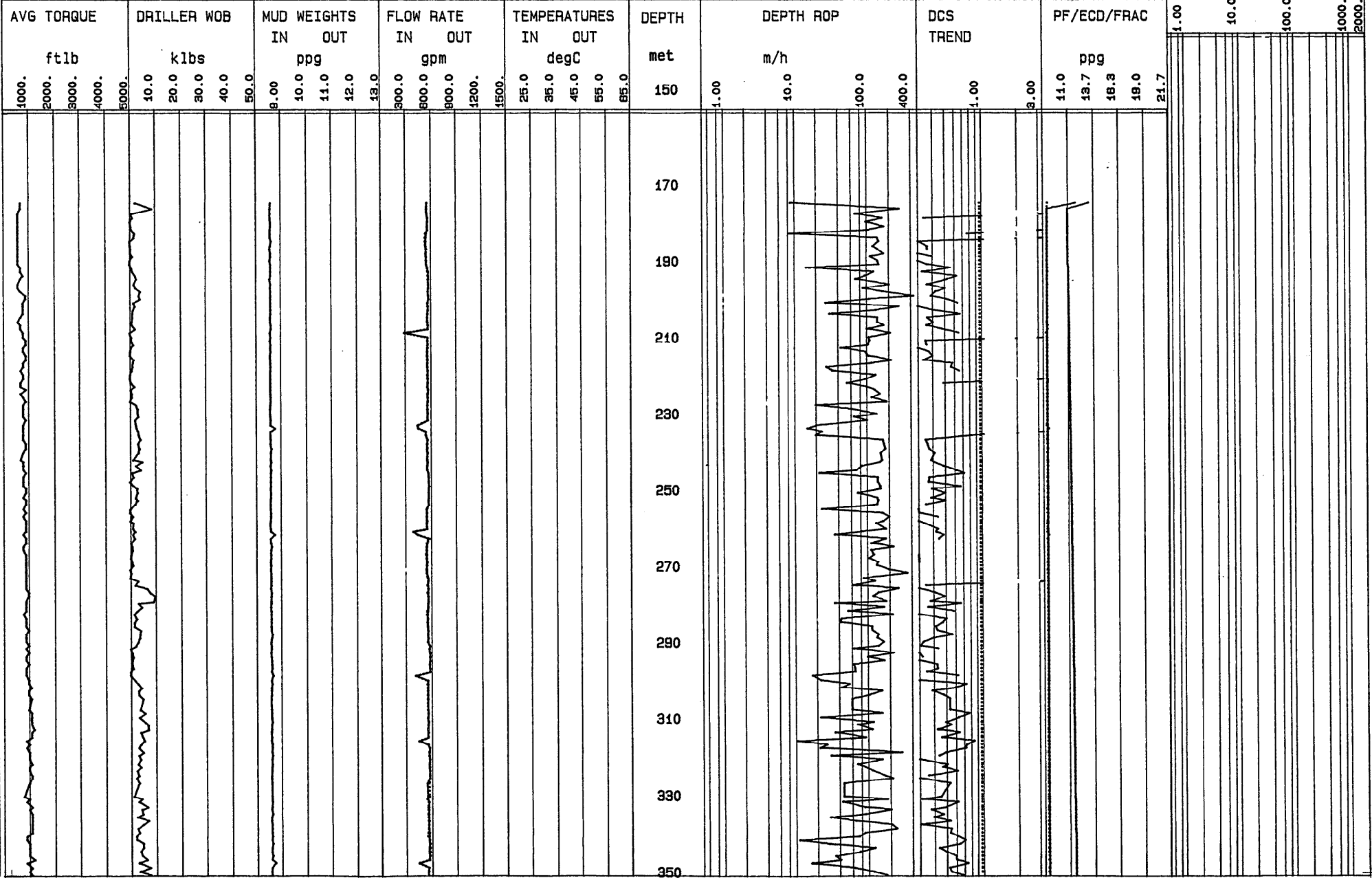
REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

23/ 9/ 82 BIT # 2 SMITH SDS 12 1/4" DISCOVERY BAY #1

units



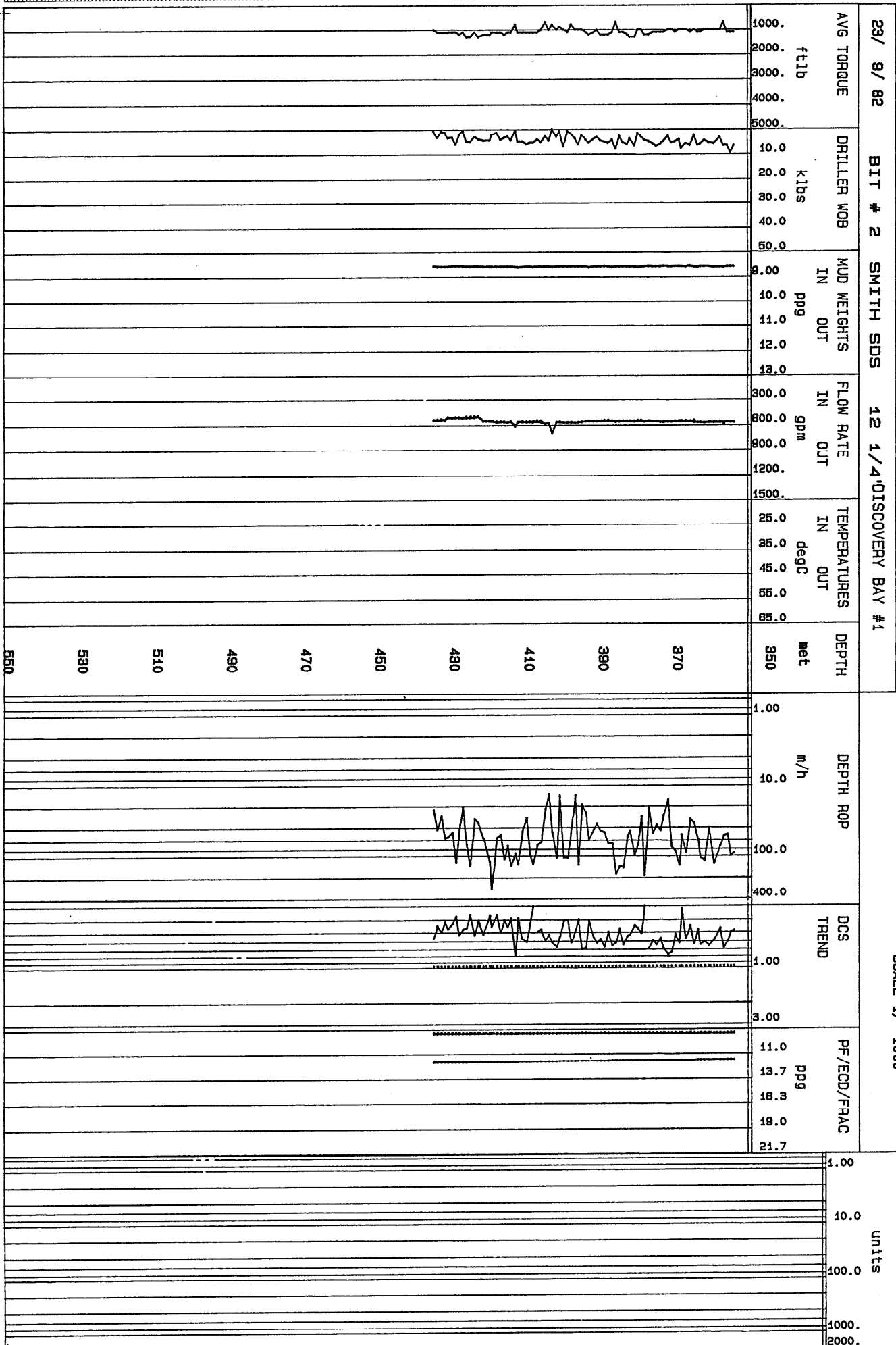
Geoservices overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000



ZERO

Geoservices overseas S.A.

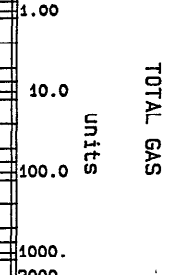
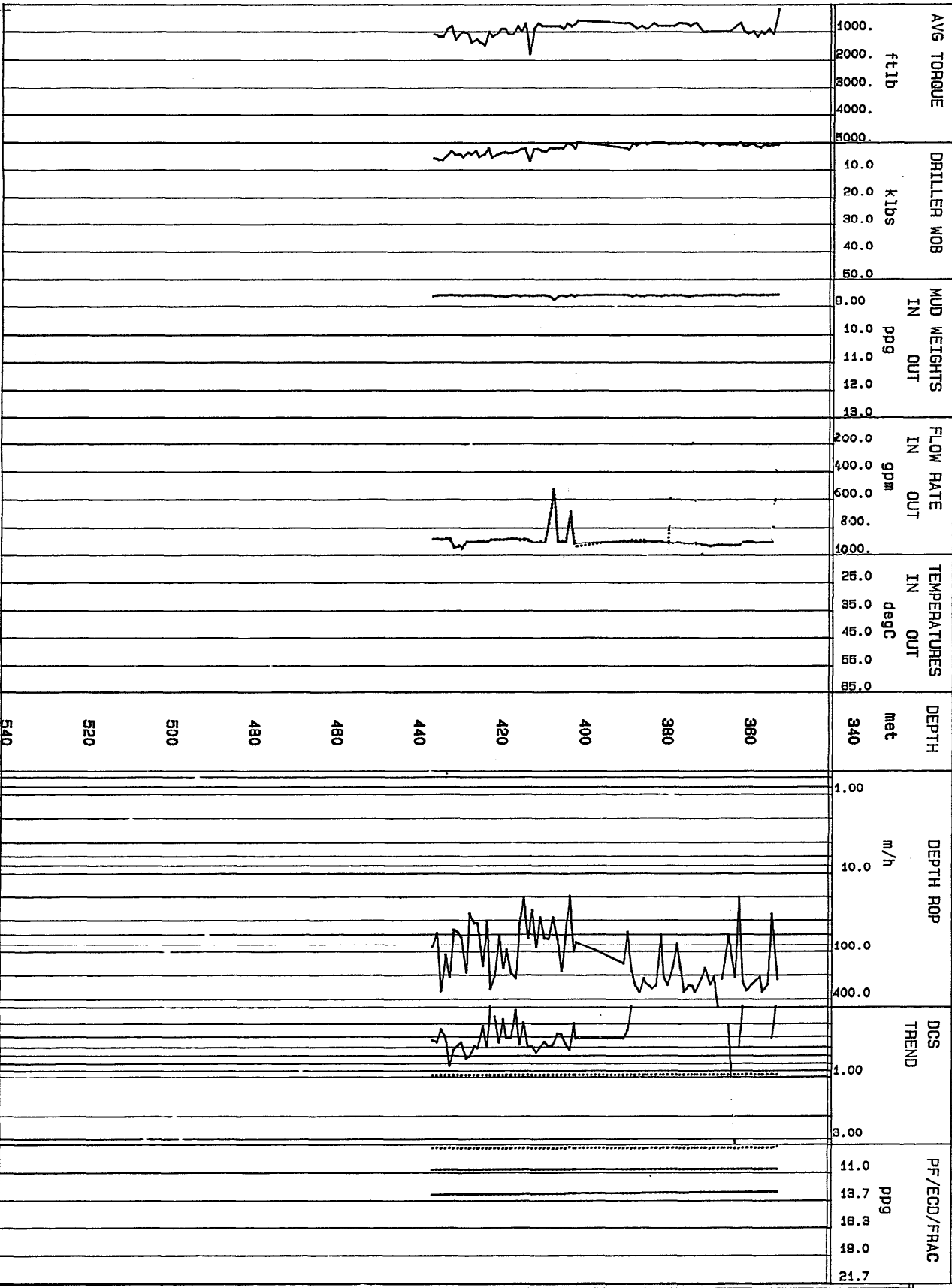
GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

24/ 9/ 82 BIT RPR # 1 26" REAMING

DISCOVERY BAY #1



GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL LOGS

28/ 9/ 82					BIT RR # 2 12 1/4"					DISCOVERY BAY #1								TOTAL LOGS																																
AVG TORQUE					DRILLER WOB					MUD WEIGHTS				FLOW RATE				TEMPERATURES				DEPTH				DEPTH ROP				DCS TREND				PF/ECD/FRAC																
ftlb					kibs					ppg				gpm				degC				met				m/h								ppg																
1000.	2000.	3000.	4000.	5000.	10.0	20.0	30.0	40.0	50.0	8.00	10.0	11.0	12.0	13.0	300.0	800.0	900.0	1200.	1500.	25.0	35.0	45.0	55.0	65.0	430	1.00	10.0	100.0	400.0	1.00	3.00	11.0	13.7	16.8	18.0	21.7	1.00	10.0	100.0	1.00	10.0	100.0								
																						450																												
																									470																									
																									480																									
																									510																									
																									530																									
																									550																									
																									570																									
																									590																									
																									810																									
																									830																									

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

28/ 9/ 82 BIT RR # 2 12 1/4"

DISCOVERY BAY #1

AVG TORQUE					DRILLER WOB					MUD WEIGHTS					FLOW RATE					TEMPERATURES					DEPTH	DEPTH ROP				DCS TREND	PF/ECD/FRAC				TOTAL GAS					
ftlb					klbs					ppg					gpm					degC						met	m/h				ppg				1.00	10.0	100.0			
1000.	2000.	3000.	4000.	5000.	10.0	20.0	30.0	40.0	50.0	8.00	10.0	11.0	12.0	13.0	300.0	800.0	800.0	1200.	1500.	25.0	35.0	45.0	55.0	65.0	830	1.00	10.0	300.0	400.0	1.00	3.00	11.0	13.7	18.3	19.0	21.7				
																									850															
																									870															
																									890															
																									910															
																									930															
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																									990															
																									1010															
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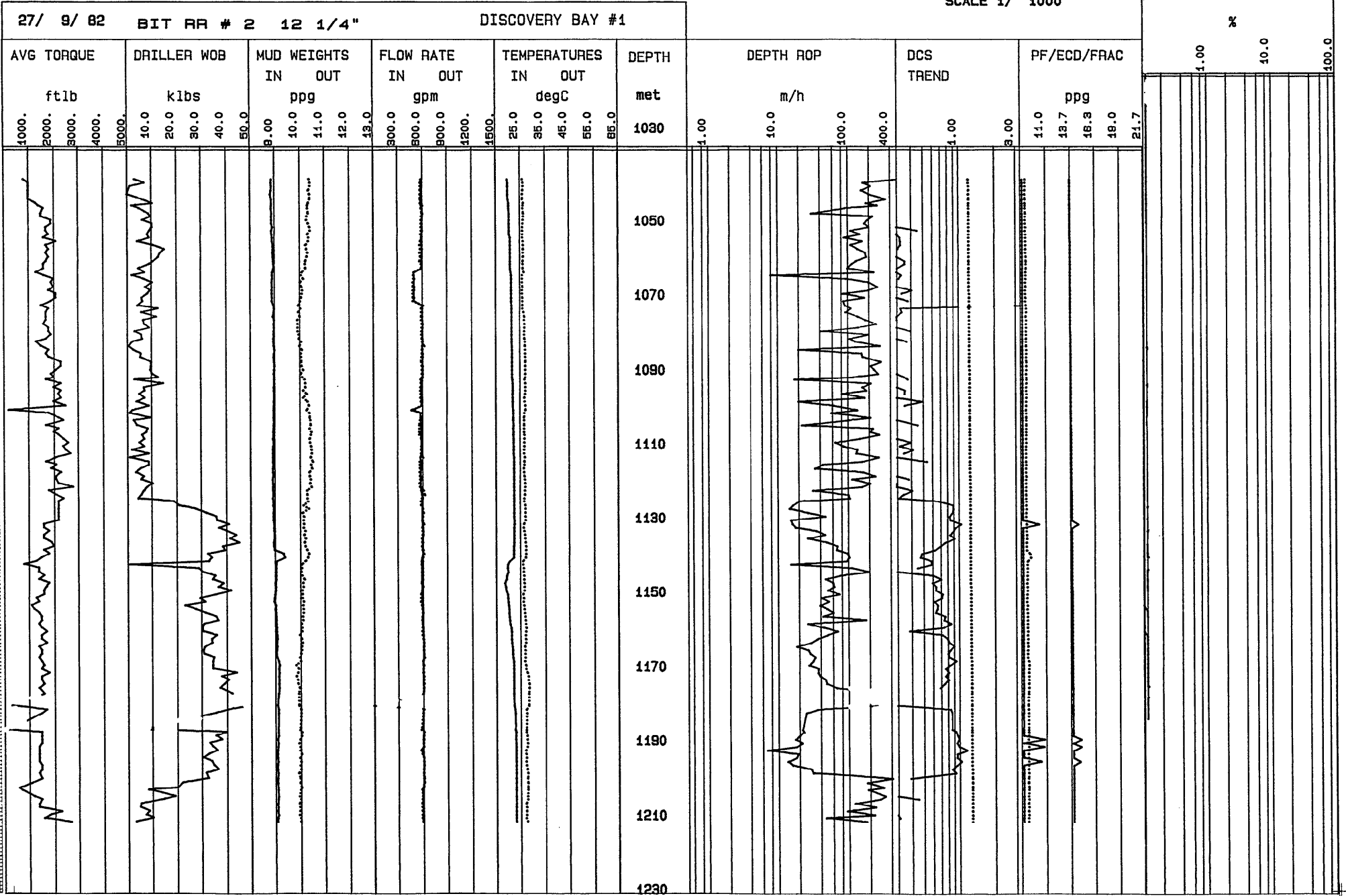
Geoservices overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000



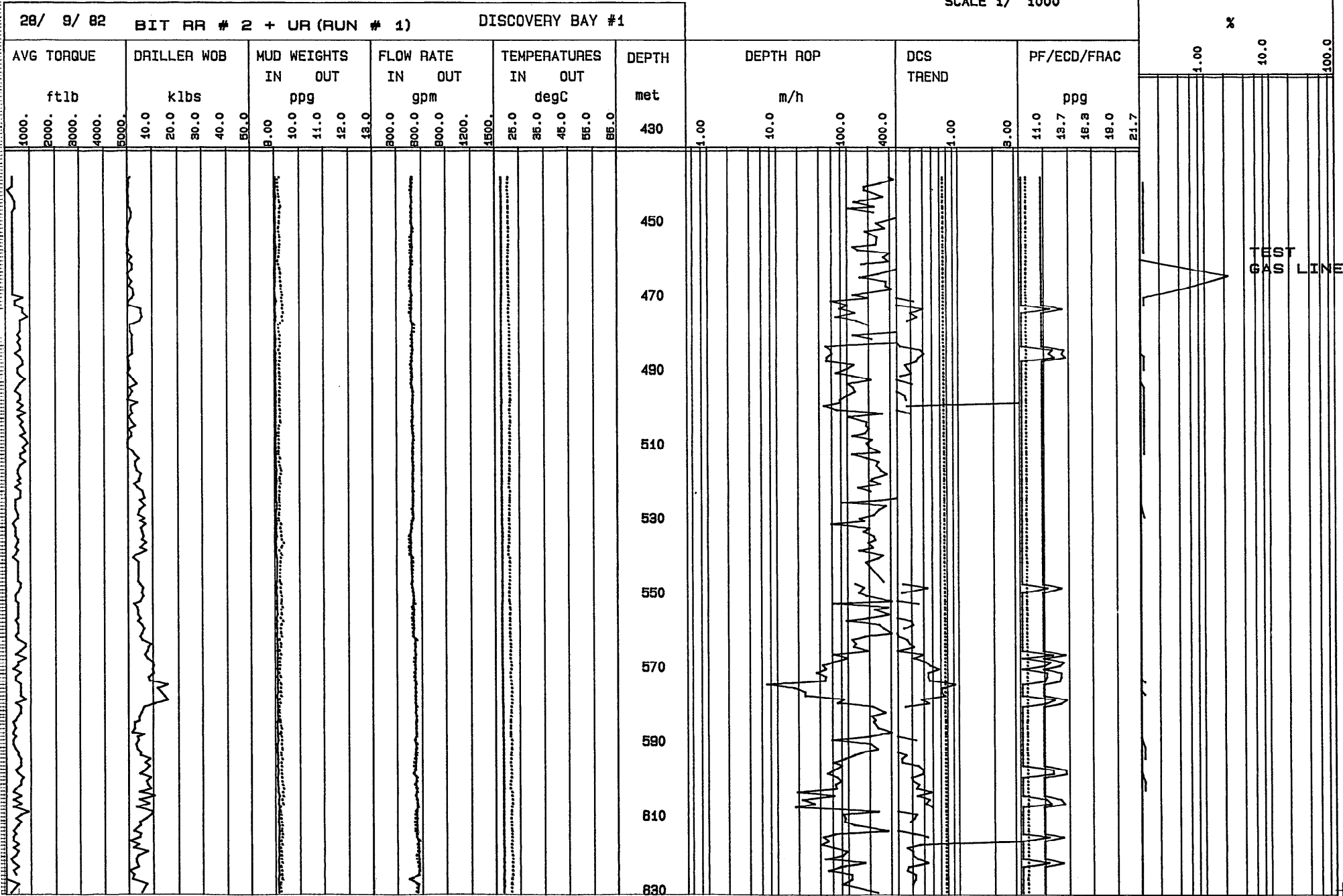
GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

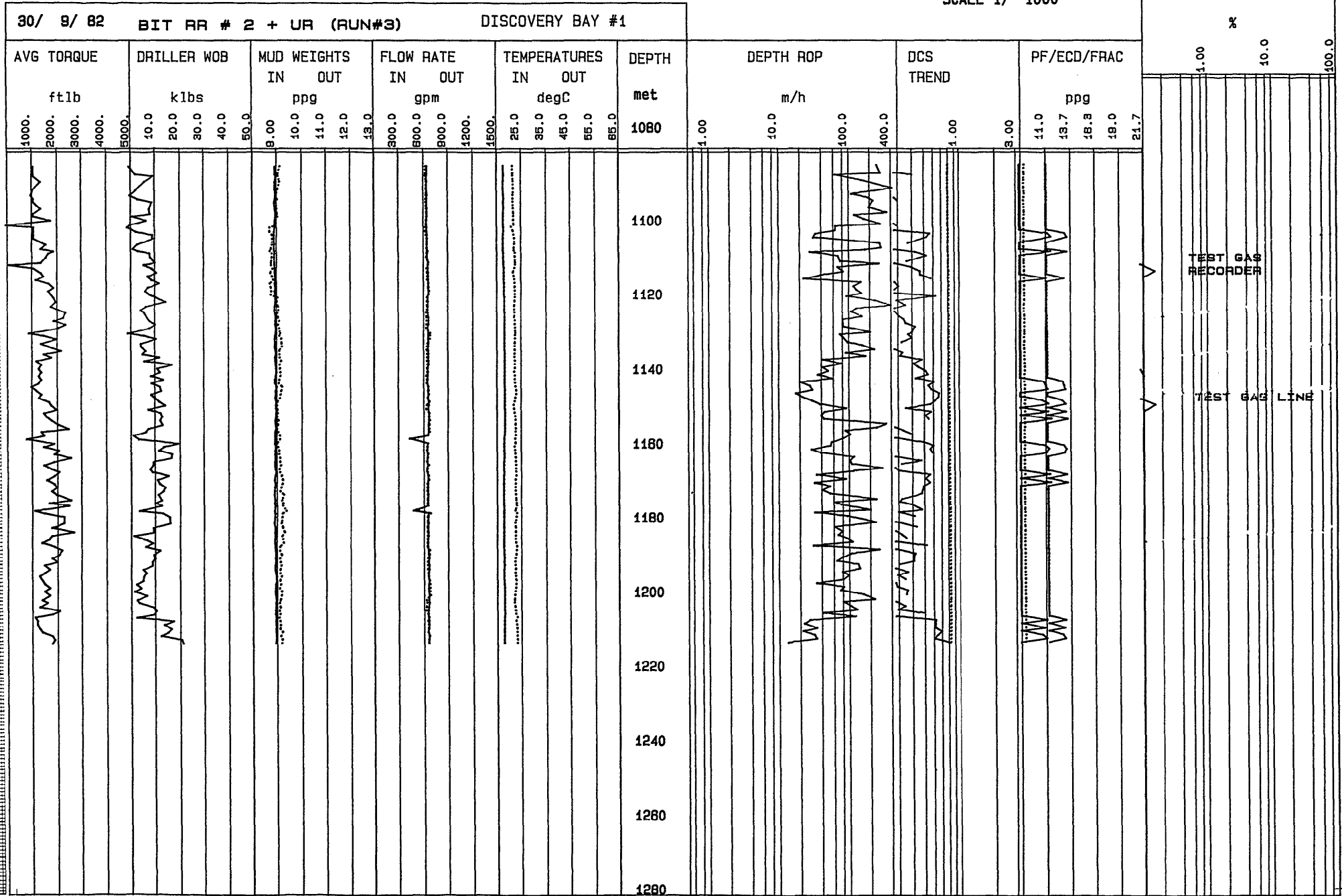


ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000



GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

1.00
10.0
100.0

30/ 9/ 82		BIT RR # 2 + UR (RUN # 3)				DISCOVERY BAY #1																												
AVG TORQUE		DRILLER WOB		MUD WEIGHTS		FLOW RATE		TEMPERATURES		DEPTH		DEPTH ROP		DCS TREND		PF/ECD/FRAC		TOTAL GAS																
ftlb		klbs		ppg		gpm		degC		met		m/h				ppg		%																
1000.	2000.	3000.	4000.	5000.	8.00	10.0	11.0	12.0	13.0	300.0	800.0	900.0	1200.	1500.	25.0	35.0	45.0	55.0	55.0	880	1.00	10.0	100.0	400.0	1.00	3.00	11.0	13.7	16.8	18.0	21.7	1.00	10.0	100.0
										880																								
										900																								
										920																								
										940																								
										960																								
										980																								
										1000																								
										1020																								
										1040																								
										1060																								
										1080																								

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

1.00

10.0

100.0

3/ 10/ 82 BIT # 3 SMITH SDGH 12 1/4"

DISCOVERY BAY #1

AVG TORQUE		DRILLER WOB				MUD WEIGHTS				FLOW RATE				TEMPERATURES				DEPTH	DEPTH ROP			DCS TREND	PF/ECD/FRAC				TOTAL GAS											
ftlb		klbs				ppg				gpm				degC					met	mn/m			ppg				%											
1000.	2000.	3000.	4000.	5000.	10.0	20.0	30.0	40.0	50.0	8.00	10.0	11.0	12.0	13.0	300.0	600.0	800.0	1200.	1500.	25.0	35.0	45.0	55.0	65.0	1400	1.00	10.0	40.0	1.00	8.00	14.0	18.7	18.8	18.0	21.7	1.00	10.0	100.0
																		1400																				
														1420																								
														1440																								
														1480																								
														1480																								
														1500																								
														1520																								
														1540																								
														1580																								
														1580																								
														1600																								

Geoservices overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

4/ 10/ 82		BIT # 4 SMITH SDS 12 1/4"		DISCOVERY BAY #1																																			
AVG TORQUE		DRILLER WOB		MUD WEIGHTS		FLOW RATE		TEMPERATURES		DEPTH	DEPTH ROP		DCS TREND	PF/ECD/FRAC		TOTAL GAS																							
ftlb		klbs		ppg		gpm		degC		met	mn/m			ppg		%																							
1000.	2000.	3000.	4000.	5000.	10.0	20.0	30.0	40.0	50.0	8.00	10.0	11.0	12.0	13.0	300.0	800.0	800.0	1200.	1500.	26.0	36.0	45.0	55.0	65.0	1480	1.00	10.0	40.0	1.00	3.00	11.0	13.7	16.3	19.0	21.7	1.00	10.0	100.0	
										1480																													
										1500																													
										1520																													
										1540																													
										1560																													
										1580																													
										1600																													
										1620																													
										1640																													
										1660																													

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

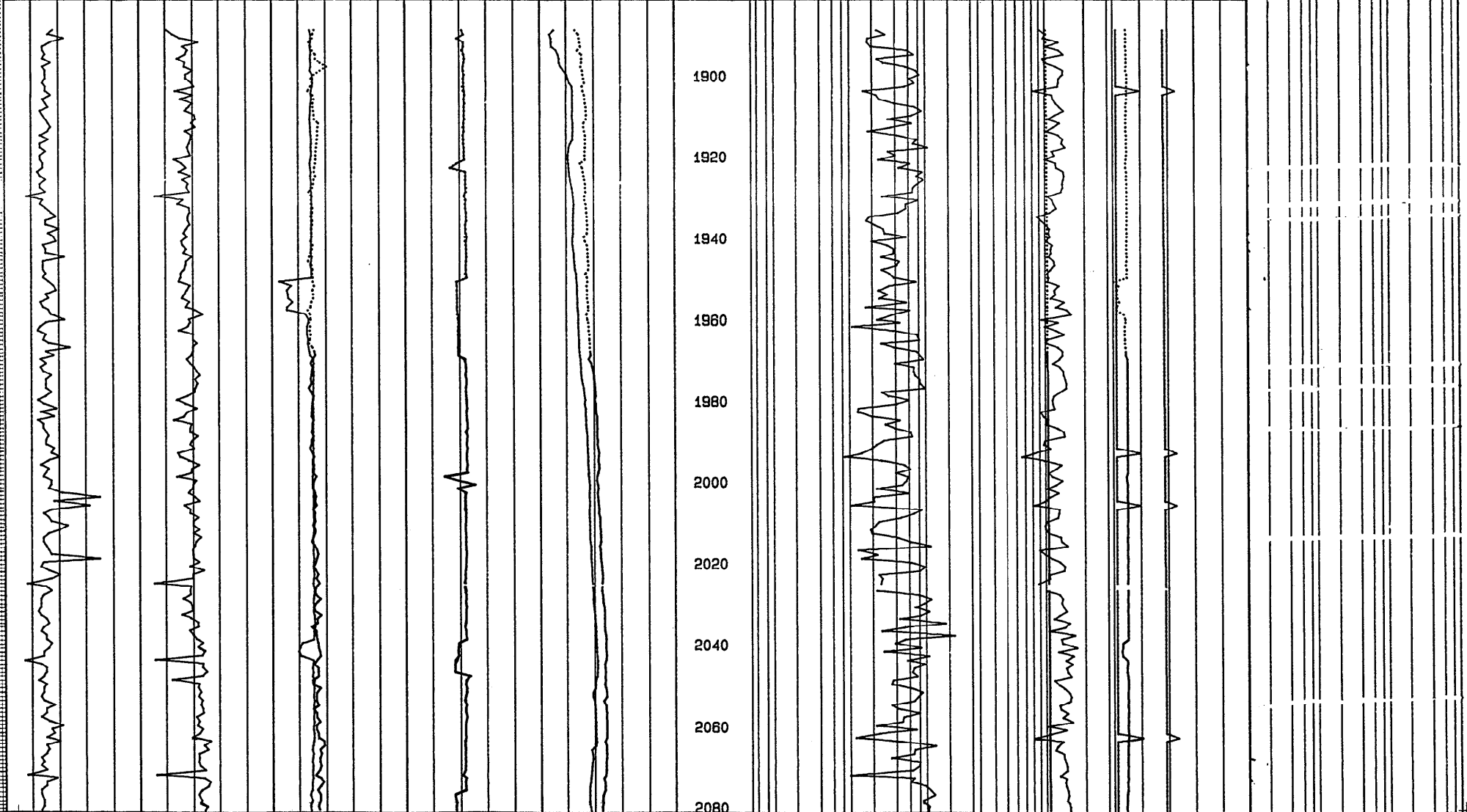
5/ 10/ 82 BIT # 6 SMITH F2 12 1/4" DISCOVERY BAY #1

AVG TORQUE		DRILLER WOB		MUD WEIGHTS		FLOW RATE		TEMPERATURES		DEPTH
ftlb		klbs		IN	OUT	IN	OUT	IN	OUT	met
1000.	2000.	20.0	40.0	8.00	10.0	800.0	800.0	25.0	35.0	1880
3000.	4000.	60.0	80.0	10.0	11.0	900.0	1200.	45.0	55.0	
5000.		12.0	13.0	1400.0		1500.		65.0		

DEPTH ROP		DCS	PF/ECD/FRAC	
mn/m		TREND	ppg	
1.00	10.0	1.00	11.0	13.7
40.0		3.00	18.3	18.0
			21.7	

TOTAL GAS

%		
1.00	10.0	100.0



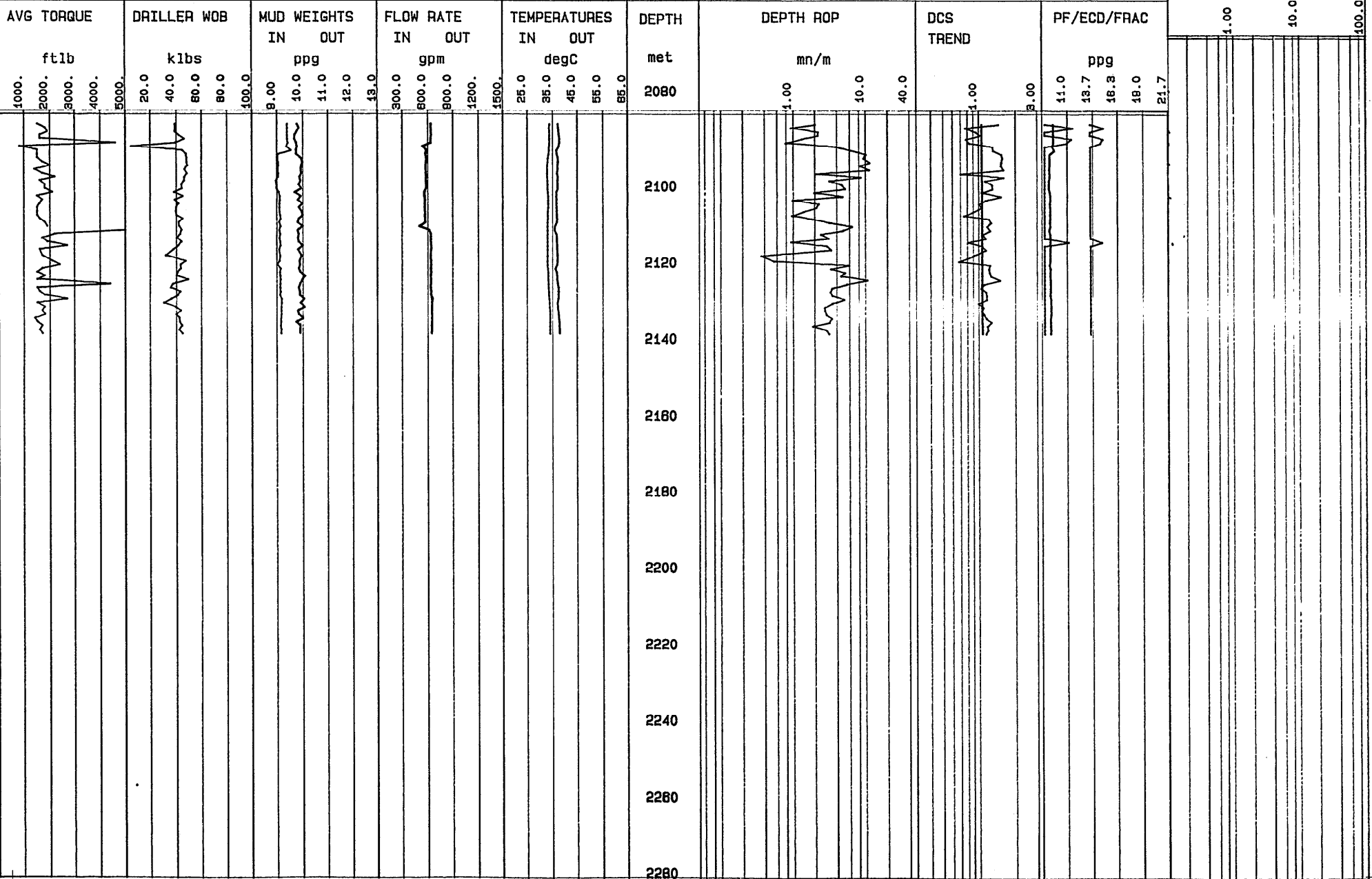
GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GRS

6/ 10/ 82 BIT # 6 SMITH F2 12 1/ DISCOVERY BAY #1



Geoservices overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

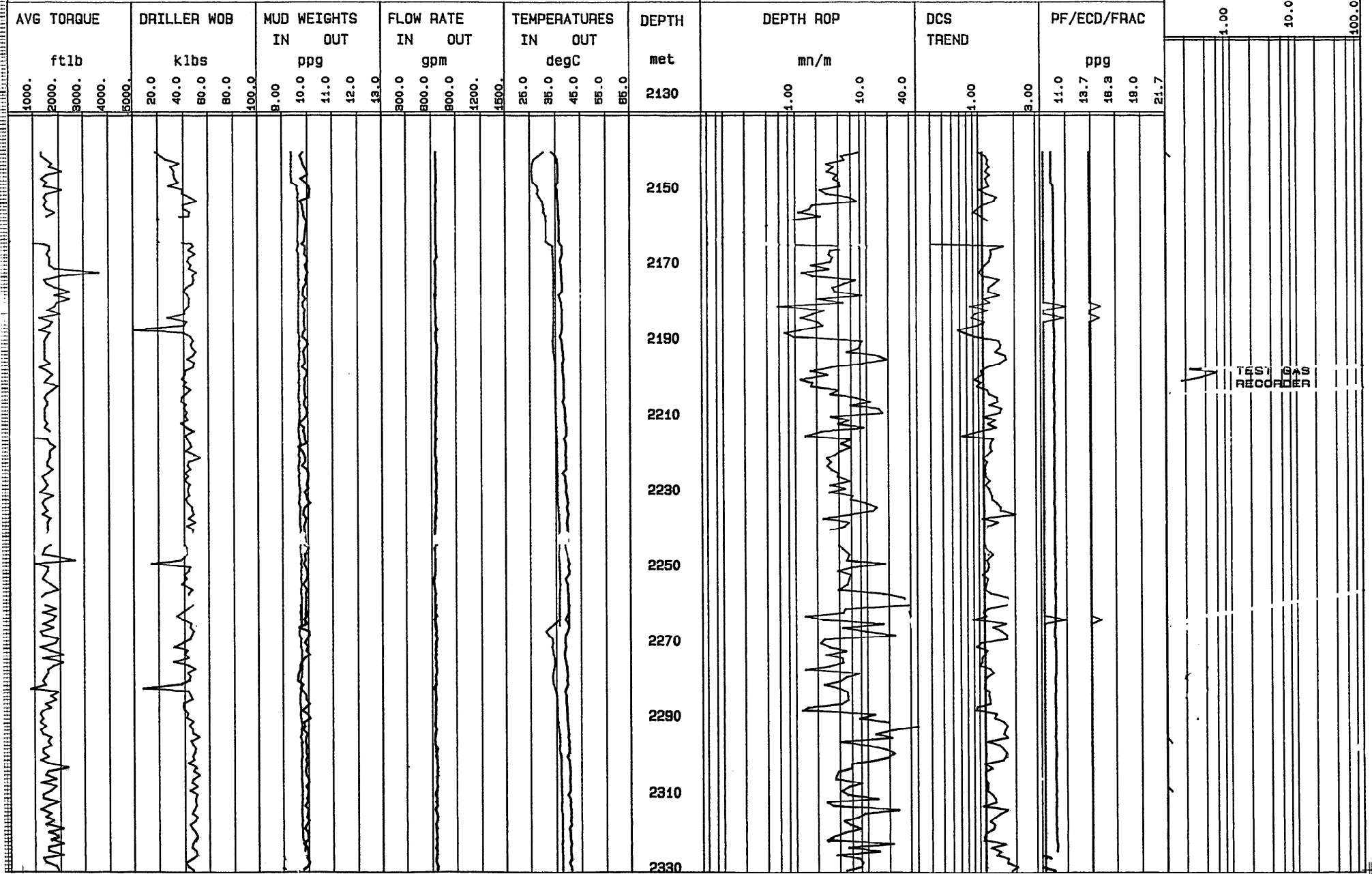
SCALE 1/ 1000

TOTAL GAS

%

1.00 10.0 100.0

7/ 10/ 82 BIT # 7 SMITH F3 12 1/4" DISCOVERY BAY #1



TEST GAS RECORDER

Geoservices Overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

8/ 10/ 82 BIT # 7 SMITH F3 12 1/4" DISCOVERY BAY #1

AVG TORQUE		DRILLER WOB				MUD WEIGHTS				FLOW RATE				TEMPERATURES					DEPTH	DEPTH ROP			DCS TREND	PF/ECD/FRAC					TOTAL GAS									
ftlb		klbs				ppg				gpm				degC					met	mn/m			TREND	ppg					%									
1000.	2000.	3000.	4000.	5000.	20.0	40.0	60.0	80.0	100.0	8.00	10.0	11.0	12.0	13.0	300.0	600.0	900.0	1200.	1500.	25.0	35.0	45.0	55.0	65.0	2330	1.00	10.0	40.0	1.00	3.00	11.0	13.7	16.3	19.0	21.7	1.00	10.0	100.0
																			2330																			
																			2350																			
																			2370																			
																			2390																			
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																			2470																			
																			2490																			
																			2510																			
																			2530																			

Geoservices overseas S.A.

ZERO

GEOSERVICES
ON-LINE TDC

REAL TIME DEPTH PLOT

SCALE 1/ 1000

TOTAL GAS

%

9/ 10/ 82		BIT # 8 SMITH F2 12 1/4"				DISCOVERY BAY #1							TOTAL GAS																												
AVG TORQUE		DRILLER WOB		MUD WEIGHTS		FLOW RATE		TEMPERATURES		DEPTH	DEPTH ROP		DCS TREND	PF/ECD/FRAC			1.00	10.0	100.0																						
ftlb		klbs		ppg		gpm		degC		met	mn/m			ppg																											
1000.	2000.	3000.	4000.	5000.	20.0	40.0	80.0	80.0	100.0	8.00	10.0	11.0	12.0	13.0	800.0	800.0	800.0	1200.	1500.	25.0	35.0	45.0	55.0	65.0	2550	1.00	10.0	40.0	1.00	3.00	11.0	13.7	16.3	18.0	21.7						
										2570																															
										2590																															
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