Dory-1

Vic/P59

Well Completion Report

Basic Data

May 2009

GENERAL DATA SHEET

Well:	Dory-1	**Partners:**	Apache Northwest Pty Ltd (Operator) Kufpec Australia Pty Ltd
Well Type:	Exploration		
Basin:	Gippsland		
Sub-basin:			
Tenement:	VIC/P59		
Status:	Plugged and Abandoned		
Spudded:	03:30 hrs 5 November, 2008	**Latitude:**	38° 35' 19.75" S
TD Reached:	00:00 hrs 16 November, 2008	**Longitude:**	148° 32' 51.925" E
Rig Released:	19:00 hrs 25 November, 2008	**Northing:**	5,727,714.9 mN
Total Depth:	-3791.2 mTVDAHD (3814.0 mMDRT)	**Easting:**	634,798.9 mE
RT Elevation:	21.5 m above AHD	**Datum:**	GDA94
Water Depth:	496.5 m below AHD	**Projection:**	MGA94, UTM Zone 55, C.M.147° E
Drill. Contr.:	Diamond Offshore		
Rig (Type):	Ocean Patriot (Semi-sub)		

Hole and Casing Details

Hole Size (mm)	Interval (mMDRT)	Interval (mTVDAHD)	Casing Size (mm)	Depth (mMDRT)	Depth (mTVDAHD)
660 x 914	538.8 to 585.0	-517.3 to -563.5	762	585.0	-563.5
406	586.5.0 to 1537.0	-565.0 to -1515.4	508 x 340	1534.1	-1512.5
216	1537.0 to 3814.0	-1515.4 to -3791.2			

MWD/LWD Logs

Run No.	Log Suite	Interval mTVDAHD (mMDRT)	Max °C	Hole Size (mm)	Remarks
1	DGR-EWR-BAT-PCD	-565.0 to -1515.4 (586.5.0 to 1537.0)	28.0	406	
3	DGR-EWR-PDW-ALD-CNP-BAT-AFR-CAL-PCD	-1515.4 to -2932.4 (1537.0 to 2955.0)	49.0	216	AFR pulsed medium resistivity data stuck at constant value from 2284.0 mMDRT.
4	DGR-EWR-PDW-ALD-CNP-BAT-AFR-CAL-PCD	-2932.4 to -3791.2 (2955.0 to 3814.0)	55.0	216	Tool failed during wipe. No RT LWD data acquired. No AFR/CNP/GR/Res recorded data recovered.

*****Run 2 not counted as official run due to problems encountered with Shallow Pulse test.

Wireline Logs

Suite	Run	Log Suite	Interval mTVDAHD (mMDRT)	BHT (°C)	Hrs *	Remarks
1	1	Grand Slam	-2737.4 to -3791.2 (2760.0 to 3814.0)	84.4	16.83	Main pass interrupted due to mis-spool. Main log repeated over section for splicing of data.
	2	RCI	-2785.3 to -3077.2 (2807.9 to 3099.8)	71.7	41.65	Conducted 54 Pretests - 42 good tests, 6 Curtailed tests, 5 no seal, 1 aborted test. 4 formation samples taken.
	3	RCOR	N/A	N/A	50.50	Hydraulic module failed at core point #2. No cores recovered. POOH to troubleshoot.
	4	RCOR	N/A	72.2	53.92	Tool communication failed at 3060.0 mMDRT during first core. Broke off core bit and POOH. Surface analysis showed a failed enhancer above the hydraulic jar.
	5	Checkshot VSP	-1343.4 to -3757.2 (1365.0 to 3780.0)	N/A	N/A	Excessive noise encountered from top shuttle. Used data from 1 shuttle over 30 m intervals from 3585.0 to 3525.0 mMDRT. Total of 9 checkshots acquired prior to VSP being cancelled due to whales sighted in the area.

* Hours since circulation stopped.

Cement Plugs

Plug No.	Interval mTVDAHD (mMDRT)	Tagged
1	-3071.4 to -2971.4 (3094.0 to 2994.0)	N
2	-2857.4 to -2757.4 (2880.0 to 2780.0)	N
3	-1573.4 to -1493.4 (1595.0 to 1515.0)	Y
4	-596.5 to -566.5 (618.0 to 588.0)	N

Testing: No testing carried out.

Coring: No conventional cores were cut. No cores recovered on wireline due to tool failure.

Comments: The Dory-1 surface location is 2.1 m on a bearing of 183.4° (T) from the intended location.

DIAMOND
OFFSHORE

Ocean Patriot

1,500 FSW Semisubmersible

General Description

Design	Trosvik Bingo 3000
Dimensions	334'6" x 239'5"
Normal Operating draft	77'
Towing Draft	33'
VDL Drilling	5,793,748 lbs
VDL Transit	4,272,559 lbs
VDL Survival	4,735,529 lbs
Quarters Capacity	100
Outfitted water depth	1,500 fsw
Minimum water depth	230 fsw
Usable deck space	

Drilling Equipment

Derrick	Unite D'ingen 185' 1,000,000lbs, 14 lines
Drawworks	Oilwell E-3000, 3,000hp Rated depth 25,000'
Rotary Table	Oilwell A49 ½,
Top Drive	Varco TDS-4S
Motion Compensator	Rucker Model 18-400 400,000lb capacity
Pipehandling	Maritime Hydraulic Racking System Varco AR3200 Iron Roughneck

Mud Circulating System

Mud Pumps	3 x National / Oilwell Triplex 1,600hp
Solids Control	4 x Thule VSM 100 shale shakers

Storage Capacities

Liquid mud – surface	1900 bbls
Liquid Mud – Total	2329 bbls
Base Oil	N/A
Brine	N/A
Bulk Sack Storage	540,000lbs
Bulk P Tanks	20,000 cu ft

Power Equipment

Main Power	4 x EMD L12-645 F178 7600KW
Emergency Power	1 x SSCM Poyaud 520KW

Subsea Equipment

BOP's	2 x Cameron UII Double 18 ¾" 15,000 psi
Annulars	2 x Cameron D Type 18 ¾" 10,000 psi
Riser	30 jts 50' Regan FCH-8
Tensioners	6 x double 80,000lbs Rucker/Shaffer 50' stroke. Total 960,000lbs

Cranes

2 x Liebherr BOS 1500/50 43.34 mt boom

1 x Normar BOP Carrier

Mooring System

5 x 12 Ton Bruce .
3 x 12 Ton Stevpris
8 x 5,250' 84mm K3 stud link chain
4 x Pusnes double windlass winches

Miscellaneous

* Rig has worked in WD approaching 3,000 fsw in past

* Rig is well equipped for Xmas tree handling

* For rig move – Minimum of 1 x 125 ST bollard pull AHT required

Contact Information

John Atkinson
Director Contracts & Marketing

Simon Johnson
Manager Contracts & Marketing

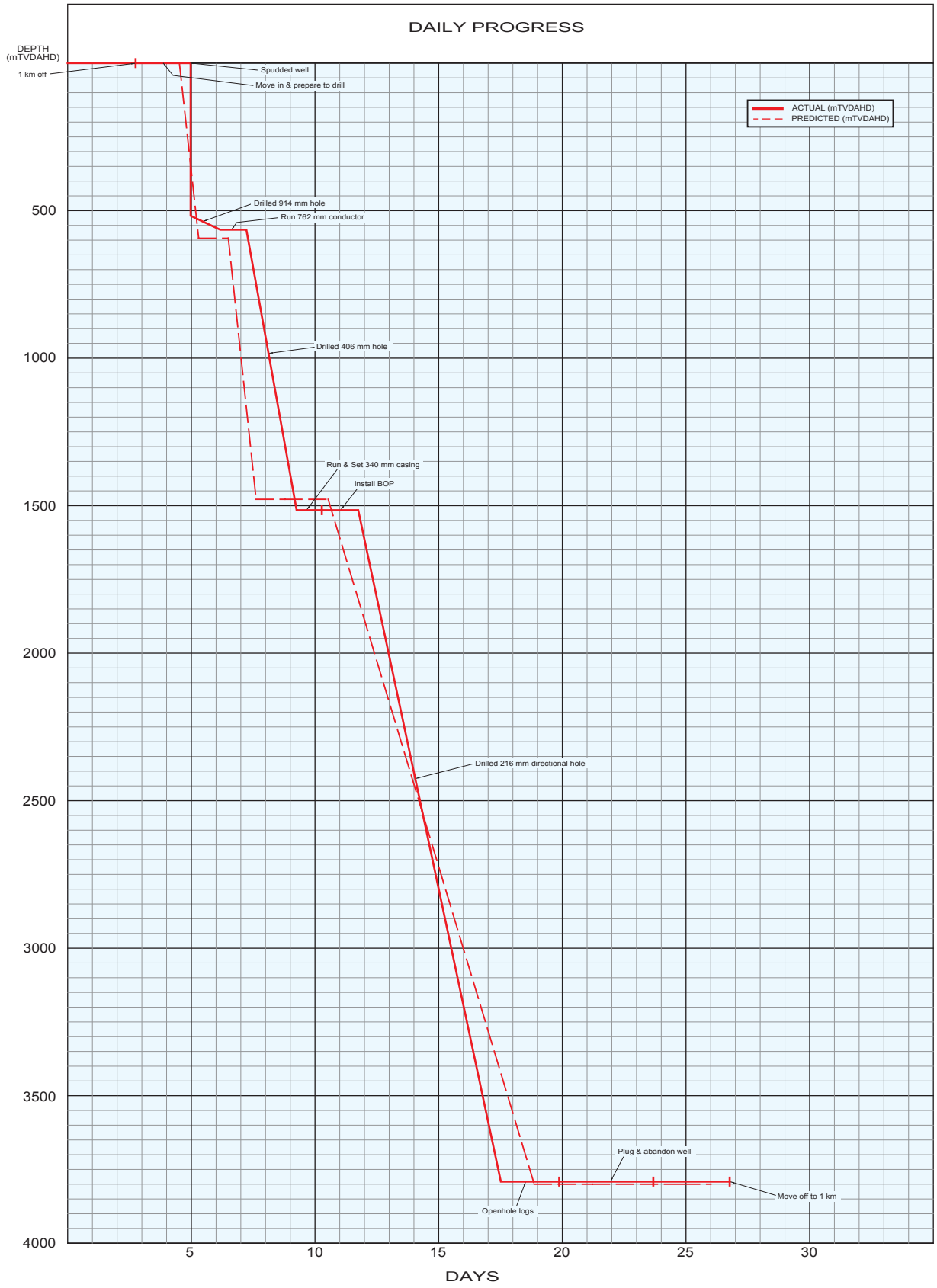
Unit 2, 5 Turner Avenue
Bentley Western Australia 6102
Phone : +61 8 6363 8900
Fax : +61 8 6363 8998

Mobile: 0411 600 454
Email: jatkinson@dodi.com

Mobile: 0411 600 429
Email: sjohnson@dodi.com

Web : www.diamondoffshore.com

Dory-1



LATITUDE :	38°35' 19.75" S	UTM:	5,727,714.9 mN
LONGITUDE :	148°32' 51.925" E		634,798.9 mE

SPUD DATE :	5 November 2008, 03:30 hrs
REACHED T.D.:	16 November 2008, 00:00 hrs
ELEVATION R.T.:	21.5 m above AHD
WATER DEPTH :	496.5 m below AHD
SEA BED :	518.0 m below R.T.
STATUS :	Plugged & Abandoned
RIG :	Ocean Patriot
RIG RELEASED :	25 November 2008, 19:00 hrs

Apache Energy

Vic/P 59

GIPPSLAND BASIN

Dory-1

WELL HISTORY

Author :	WCR	Date :	29 August 2007
Drawn :	Perth Exploration Dept.	Plan No.	WHu10855

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				29-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	1

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	0.02 (days)	0.00 (days)	550.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER		

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC:	DHC:
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL:	TOTAL:

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)		VIC-P59		

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 3,821.50 (m) **INC** 0.00° **AZM** 0.00°	(sg)		

CURRENT OPERATIONS: Ocean Patriot under tow to Dory-1 location.

24 HR SUMMARY: Ocean Patriot handed over to Apache at 23:30hrs.

24 HR FORECAST: Continue tow to Dory-1 location.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
23:30	0:00	0.50	R-MOB-DEM OB	RIGTOW	PP		---------- Start of Ocean Patriot Contract. ---------- ---------- Start of Dory-1. ---------- Ocean Patriot handed over to Apache at 23:30hrs. Start of contract. Rig under tow to Dory-1 location.

0.50 = Total Hours Today

06:00 UPDATE

0000-0600 00:00 - 06:00hrs: Rig under tow to Dory-1 location.

HSE: No accidents, incidents or pollution reported.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				30-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	2

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	1.02 (days)	(days)	550.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 1,314,698	DHC: 1,314,698
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 1,314,698	TOTAL: 1,314,698

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	30/10/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM** 0.97°	(sg)		

CURRENT OPERATIONS: Ocean Patriot under tow to Dory-1 location.

24 HR SUMMARY: Ocean Patriot under tow to Dory-1 location. Distance travelled 96.7 nm.

24 HR FORECAST: Ocean Patriot under tow to Dory-1 location. Continue with pre planned rig maintaince. ETA at current speed to Dory-1 location Sunday 2nd Nov at 01:00 hrs.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:00	24.00	R-MOB-DEM OB	RIGTOW	PP		Ocean Patriot under tow to Dory-1 location with "Far Sky" on Tow Bridle. Position at 06:00 hrs. Lat - 38, 52.6' S Long 143, 0.5' E Heading 115 / average speed 3.65 k/hr. Distance travelled 23 nm. Distance to travel 268 nm. Line pull, 70 MT. Position at 12:00 hrs. Lat - 39, 00.9' S Long 143, 34.5' E Heading 0.098 / average speed 4.12 k/hr. Distance travelled 46.7 nm. Distance to travel 242.3 nm. Line pull, 80 MT. Position at 18:00 hrs. Lat - 39, 04' S Long 143, 58.5' E Heading 097 / average speed 3.65 k/hr. Distance travelled 67.5 nm. Distance to travel 224.0 nm. Line pull, 80 MT. Position at 24:00 hrs. Lat - 39, 06.2' S Long 144, 37.3' E Heading 097 / average speed 3.94 k/hr. Distance travelled 96.7 nm. Distance to travel 194.8 nm. Line pull, 80 MT. ETA at current speed to Dory-1 location Sunday 2nd Nov at 01:00 hrs. Rig activities: Installed sensors for MWD & Mud loggers. Removed wild cat from # 7 Anchor winch. Continued to reassemble LMRP. Inspected mud pump fluid ends. Completed Guide line replacement on all 4 winches. Commenced installation of casing stabbing arm. Vetco pressure tested 762 mm (30") smac joint internal lines to 10342 Kpa (1500psi). Vetco pressure tested PGB internal lines to 10342 Kpa (1500psi).

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				30-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	2

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Dowell pressure tested Cmt unit to 68950 Kpa, 10,000psi for 10 mins. leak observed through low torque valve.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 06:00hrs: Ocean Patriot under tow to Dory-1 location with "Far Sky" on Tow Bridle.
Position at 06:00 hrs.
Lat - 39, 11' S Long 145, 16.5' E
Heading 097 / average speed 5.0 k/hr.
Distance travelled 127.4 nm.
Distance to travel 164.1 nm. ETA at Dory -1 14:30 hrs Sat 1Nov.
Line pull, 70 MT.

HSE: No accidents, incidents or pollution reported. (JSA-17)-(PTW-17)
(Total stop cards - 64 unsafe acts -17 safe acts - 47).

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Catering	8		Diamond offshore extra	10	
Dowell	1		Diamond Offshore	43	
Sperry	3		TMT	6	
Tri Serv	2		Apache	4	
BHI	1		Caprock	2	
Brandt	4		Vetco	2	
Baker Atlas	3		BJ	2	
Rheochem	1		Go Offshore	1	
Viper casing	1				

TOTAL PERSONNEL ON BOARD: 94

SUPPORT CRAFT

TYPE	REMARKS
S-76	2 x Helecopters Pax in 9, Pax out 10.
Far grip	On Running standby
Nor Captain	In Portland
Far Sky	On tow bridle

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		54	BENTONITE	MT		31
CEMENT	MT		30	DIESEL	m3		342
WATER, POTABLE	m3		294	WATER, DRILLING	m3		487

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
	/ /	/ /	/	22.0	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
	1538	1865			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				30-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	2

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

No incidents reported.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				31-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	3

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	2.02 (days)	(days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 1,370,908	DHC: 2,740,206
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 1,370,908	TOTAL: 2,740,206

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	31/10/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM** 0.97°	(sg)		

CURRENT OPERATIONS: Ocean Patriot under tow to Dory-1 location.

24 HR SUMMARY: Ocean Patriot continued under tow to Dory-1 location. Continued with pre planned rig preparation & maintenance. Distance travelled last 24 hrs 223.60 nm. ETA at current speed to Dory-1 location 1420 hrs on 1st November..

24 HR FORECAST: Continue under tow to Dory-1 location. Continue with pre planned rig preparation & maintenance. ETA at current speed to Dory-1 location 1420 hrs on 1st November. Position rig, Commence anchor handling operations, prepare rig for drilling.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:00	24.00	R-MOB-DEM OB	RIGTOW	PP		Ocean Patriot under tow to Dory-1 location with "Far Sky" on Tow Bridle. Position at 06:00 hrs. Lat - 39°, 11' S Long 145°, 16..5' E Heading 097° / average speed 5 k/hr. Distance travelled 127.4 nm. Distance to travel 164 nm. Line pull, 70 MT. Position at 12:00 hrs. Lat - 39°, 15.0' S Long 145°, 56.2' E Heading 0.097° / average speed 5.43 k/hr. Distance travelled 159 nm. Distance to travel 132.5 nm. Line pull, 60 MT. Position at 18:00 hrs. Lat - 39°, 13.7' S Long 146°, 38.6' E Heading 065° / average speed 5.73 k/hr. Distance travelled 192.4 nm. Distance to travel 99.1 nm. Line pull, 70 MT. Position at 00:00 hrs. Lat - 39 °, 03.1' S Long 147 °, 15.1' E Heading 070 ° / average speed 4.61 k/hr. Distance travelled 223.6 nm. Distance to travel 67.9 nm. Line pull, 65 MT. ETA at current speed to Dory-1 location Saturday 1st Nov at 14:20 hrs. Rig activities: Re-installed wild cat on # 7 Anchor winch. Installed casing stabbing arm in derrick (still to run service lines) Installed valve in Sea water service line. Continued to reassemble LMRP. Pressure tested C&K manifold to 103425 Kpa (15,000 psi). Pressure tested TDS IBOP's & circulating hose to 1725/34475 Kpa (250/5000psi) for 5 mins low, 10 mins high.

Daily Drilling Report

WELL NAME				DATE
DORY-1				31-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	3

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Replaced wireline on 2 x pod line winches. Vetco installed 477mm (18 3/4") Nominal bore protector in Wellhead. ID= 312mm (12 5/16") Installed CART with lifting sub in wellhead for handling purposes. Inspected Shear rams. Continued with BOP maintenance. Commenced to reinstall TDS pipe handler. Commenced to prepare BHA. Dowell changed out low torque valve & pressure tested unit/valve to 34475 kpa (5000psi). Cut off transport pad eyes from 762mm (30'' casing). Baker atlas wireline R/U 95% complete. Triserv R/U 100% complete. Sperry MWD R/U 100% complete. AIS 90% complete on installation.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00-0600
Position at 00:00 hrs.
Lat - 39 °, 03.1' S Long 147 °, 15.1' E
Heading 070 ° / average speed 4.61 k/hr.
Distance travelled 223.6 nm.
Distance to travel 67.9 nm.
Line pull, 65 MT.

Position at 06:00 hrs.
Lat - 38 °, 52.5' S Long 147 °, 50.9' E
Heading 070 ° / average speed 5.43 k/hr.
Distance travelled 253.70 nm.
Distance to travel 37.8 nm.
Line pull, 65 MT.
ETA Dory 1, 12:25 hrs Nov 1 2008.

HSE: No accidents, incidents or pollution reported. (JSA-22)-(PTW-15)
(Total stop cards - 76 unsafe acts -28 safe acts - 48).

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
Tie On	0.00	0.00	0.97	0.00	0.00	0.00	0.00	0.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Sperry	3		Visian	1	
Caprock	2		BHI	1	
Diamond offshore extra	10		Vetco	2	
TMT	6		Go Offshore	1	
Diamond Offshore	43		Viper casing	1	
Baker Atlas	1		Tri Serv	2	
Brandt	4		Grn	1	
Kemtech	2		Apache	3	
BJ	2		Dowell	1	
Catering	8				

TOTAL PERSONNEL ON BOARD: 94

SUPPORT CRAFT

TYPE	REMARKS

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				31-10-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	3

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		54	BENTONITE	MT		31
CEMENT	MT		30	DIESEL	m3		331
WATER, POTABLE	m3	29	277	WATER, DRILLING	m3	24	463

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	/ /	/ /	/	22.0	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
	1538	1865			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				23-10-2008		31-10-2008	23-10-2200

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

No incidents reported.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
BENTONITE (BULK)	MT		0.00	31.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	9.00
BARITE (bulk)	MT		0.00	54.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				01-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	4

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	3.02 (days)	(days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 839,183	DHC: 3,579,389
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 839,183	TOTAL: 3,579,389

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	1/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM** 0.97°	(sg)		

CURRENT OPERATIONS: Running Anchors.

24 HR SUMMARY: Ocean Patriot completed tow to Dory-1 location turning point at 15:45 hrs, Positioned rig, commenced anchor handling activities.

24 HR FORECAST: Continue with anchor handling activities & installation of third party equipment, prepare rig for drilling.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	14:00	14.00	R-MOB-DEM OB	RIGTOW	PP		Ocean Patriot under tow to Dory-1 location with "Far Sky" on Tow Bridle. Position at 00:00 hrs. Lat - 39 °, 03.1' S Long 147 °, 15.1' E Heading 070 ° / average speed 4.61 k/hr. Distance travelled 223.6 nm. Distance to travel 67.9 nm. Line pull, 65 MT. Position at 06:00 hrs. Lat - 38 °, 52.5' S Long 147 °, 50.9' E Heading 070 ° / average speed 5.43 k/hr. Distance travelled 253.70 nm. Distance to travel 37.8 nm. Line pull, 65 MT. Position at 12:00 hrs. Lat - 38 °, 42.0' S Long 148 °, 24.3' E Heading 059 ° / average speed 4.66 k/hr. Distance travelled 282.10 nm. Distance to travel 8.5 nm. Line pull, 75 MT.
14:00	16:00	2.00	R-MOB-DEM OB	RIGTOW	PP		Arrived at vicinity of Dory 1 location, Far Sky shortened tow wire.
16:00	16:30	0.50	R-MOB-DEM OB	RIGTOW	PP		Far Sky at turning point. Commenced to slow down.
16:30	23:00	6.50	R-MOB-DEM OB	ANCHOR	PP		Anchor handling activities: 16:20 hrs. Rig passed # 5 PCC to Far Grip 19:46 hrs # 5 anchor on bottom. 1400 m anchor chain run out. 20:20 hrs # 5 anchor slipping. Lifted & repositioned Anchor. 21:04 hrs # 5 Anchor back on bottom, 220 MT tension applied. 1135m chain, 290° heading. 22:33 hrs # 5 PCC passed back to rig. 22:58 hrs # 1 PCC passed to Far Grip. NOTE: Inspected # 6 anchor damanged from previous Santos location, minor damage on chain chaser stop plate, "suitable to re-run".
23:00	0:00	1.00	R-MOB-DEM OB	ANCHOR	PN	WOE	Far Grip running out 73 mm (2 7/8") work wire to re-spool. (Downtime). Rig activities last 24 hrs. Reinstalled TDS pipe handler. Cut and slipped drilling line.

Daily Drilling Report

WELL NAME				DATE
DORY-1				01-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	4

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Changed out rig floor tong hang off lines. Pressure tested 4 x IBOP's to 1723 /34475 Kpa (300 psi/5000 psi) 5 mins low, 10 mins high. Assisted with installation of BJ casing stabbing arm service lines. Functioned all mud pumps. Filled compensator with oil. Repaired iron roughneck die retainers. Installed 127mm (5'') pipe rams in BOP. Inspected upper pipe rams, inspected BOP rubber goods. Welder Installed camera mounting brackets on Anchor 7-8 Bolster. (Presently unable to continue on next 3 Bolsters due to weather conditions).

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 00:00-00:30. Far Grip completed running out 73 mm (2 7/8") work wire to re-spool. (Down time)
0030-05:30.
01:41 hrs # 1 Anc on bottom. 1254m chain, 291° heading.
02:59 hrs # 1 PCC recovered.
03:15 hrs # 4 PCC passed to far Grip.
03:36 hrs Commenced to run chain on # 4.
04:00 hrs Heaving in on # 5.
04:59 hrs All stop on 5, 189 MT tension.
05:20 No power to rig # 4 anchor. Trouble shoot problem.
05:30-06:00 Operations shut down due to problems with # 4 Anchor winch
HSE: No accidents, incidents or pollution reported. (JSA-19)-(PTW-12)
(Total stop cards - 63 unsafe acts -18, safe acts - 45).

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Viper casing	1		Vetco	2	
Grn	1		BHI	1	
Visian	1		Apache	3	
Caprock	2		Baker Atlas	1	
TMT	6		BJ	2	
Tri Serv	2		Kemtech	2	
Dowell	1		Catering	8	
Diamond offshore extra	10		Sperry	3	
Diamond Offshore	43		Go Offshore	1	
Brandt	4				

TOTAL PERSONNEL ON BOARD: 94

SUPPORT CRAFT

TYPE	REMARKS

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		54	BENTONITE	MT		31
CEMENT	MT		30	DIESEL	m3		320
WATER, POTABLE	m3	26	271	WATER, DRILLING	m3		463

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
23:00	/ /	/ /	/	22.0	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
	1538	1865			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				01-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	4

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				23-10-2008			23-10-2200

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

No Incidents reported.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CAUSTIC SODA - NaOH	25.00 kg			9.00
BARITE (bulk)	MT			54.00
BENTONITE (BULK)	MT			31.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				02-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	5

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	4.02 (days)	(days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 839,183	DHC: 4,418,572
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 839,183	TOTAL: 4,418,572

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	1/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM** 0.97°	(sg)		

CURRENT OPERATIONS: Anchor handling, working # 7 & 3.

24 HR SUMMARY: Continued to run Anchors and prepare rig for drilling. Total of six anchors run. Continued with installation of third party equipment.

24 HR FORECAST: Complete running anchors, check orientation of # 5 & reset same, cross tension all anchors, ballast rig to drilling draftt, prepare for drilling operations, M/U 762mm (30") Conductor , install in PGB, Set back in moonpool..

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:30	0.50	R-MOB-DEM OB	ANCHOR	PN	WOE	DOWNTIME:Far Grip completed running out 73 mm (2 7/8") work wire to re-spool. Note: Work wire on Far Grip has 520m of work wire on winch and a 450m section added to allow for working anchors at Dory-1 location.
0:30	5:30	5.00	R-MOB-DEM OB	ANCHOR	PP		01:41 hrs # 1 anchor on bottom. 1325m chain, 290° heading. 02:59 hrs # 1 PCC recovered. 03:15 hrs # 4 PCC passed to far Grip. 03:36 hrs Commenced to run chain on # 4. 04:00 hrs Heaving in on # 5. 04:59 hrs All stop on 5, 189 MT tension. 05:20 No power to rig # 4 anchor. Trouble shoot problem.
5:30	7:30	2.00	R-MOB-DEM OB	ANCHOR	PN	EF	DOWNTIME: Operations shut down due to electrical problems with # 4 Anchor winch.
7:30	0:00	16.50	R-MOB-DEM OB				09:25 hrs # 4 anchor on bottom. 1135m chain out, 290° heading. 11:31 hrs # 8 PCC passed to Far Grip. 14:01 hrs # 8 anchor on bottom. 1400m chain out, 234° heading. 15:30 hrs: Far Sky passed tow bridle back to Rig. 15:50 hrs # 8 PCC passed back to rig. 16:02 hrs # 6 PCC passed to Far Grip. 17:30 hrs # 2 PCC passed to the Far Sky. 18:50 hrs # 6 Anchor on bottom.1406m chain out, 144° heading. 20:11 hrs # 6 PCC passed back to rig. 20:38 hrs # 7 PCC passed to Far Grip. 21:34 hrs # 2 Anchor on bottom.1403m chain out, 234° heading. 22:40 hrs # 2 PCC passed back to rig. 23:11 hrs # 3 PCC passed to Far sky. Changed out damaged pendent wire on boat prior to running anchor. 24:00 hrs # Currently working # 7 & # 3 anchor. Rig activities last 24 hrs: Changed out all slings in derrick. Assisted with installation of BJ casing stabbing arm service lines. Painted stabbing arm with Fluorescent paint top aid visual identification for driller. Continued to inspect BOP internal areas. Lubricated and functioned failsafe valves. Changed pod lock valve on mini panel. Repaired leaks on Koomey unit. Electrician replaced faulty amp meter on for # 4 Anchor winch. Mechanic fitted pilot valve on Derrick upper racking arm to prevent arm from creeping out.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				02-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	5

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Welder completed installing Camera brackets on all 4 Anchor bolsters. Third party installations: Automatic identification system (AIS) installation 95% complete. (09:45 hrs AIS recon sending signal only). Not configured correctly. Brandt centrifuge 80% complete. BJ casing stabbing arm 98% complete.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00- 06:00. Continued with Anchor handling activities.
01:07 hrs # 7 Anchor on bottom.
02:31 hrs # 7 PCC recovered.
02:52 hrs # 1 PCC passed to Far Grip. Anchor #3 current set distance to short due to #5 anchor was slipping while running #1.
03:31 hrs Far Grip at # 1 Anchor.
03:32 hrs # 1 Anchor off bottom.
04:50 hrs # 1 Anchor on bottom.
05:09 hrs # 3 Anchor on bottom.
05:51 hrs # 1 PCC passed to rig.
Note: At 03:00 hrs attempted to place PGB in BOP carrier in moonpool, Support beam on Gimbal 89mm (3 ½'') too big to sit in carrier , removed PGB, installed BOP support beams , reinstalled PGB measured PGB for modifications.

HSE: No accidents, incidents or pollution reported. (JSA-27)-(PTW-9)
(Total stop cards - 71 unsafe acts -31, safe acts - 40).

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Caprock	2		BHI	2	
Baker Atlas	1		Go Offshore	1	
Catering	8		Apache	3	
TMT	6		BJ	2	
Brandt	4		Sub Sea WFD	1	
Grn	1		Sperry	3	
Kemtech	2		Diamond offshore extra	10	
Vetco	2		Dowell	1	
Diamond Offshore	43		Visian	1	
Tri Serv	2		Viper casing	1	
BJ Casing	2				

TOTAL PERSONNEL ON BOARD: 98

SUPPORT CRAFT

TYPE	REMARKS
S-76	1 x helecoptor today
Far grip	Anchor handling
Nor Captain	Working rig, offloading drilling Equip.
Far Sky	Anchor handling

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		54	BENTONITE	MT		31
CEMENT	MT		30	DIESEL	m3		315
WATER, POTABLE	m3	19	276	WATER, DRILLING	m3	12	451

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
23:00	/ /	/ /	/	22.0	

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				02-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	5

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
	1538	1865			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				23-10-2008			23-10-2200

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

No incidents reported.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				03-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	6

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	5.02 (days)	(days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 853,684	DHC: 5,268,320
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 853,684	TOTAL: 5,268,320

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	2/11/2008	VIC-P59		

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM**	0.97°	(sg)		

CURRENT OPERATIONS: Picking up 127mm (5") drillpipe.

24 HR SUMMARY: Completed Anchor handling activities , ballasted down to drilling draft of 23.5m, Installed PGB in moonpool, commenced to install plug set in 476mm (18 ¾'') wellhead x casing swedged joint. Commenced to build Spud mud.

24 HR FORECAST: Cont Install plug set in 476mm (18 ¾'') wellhead x casing swedged joint. M/U Jar stand, P/U drillpipe, P/U 762mm (30"0 conductor), install in PGB, rack back in moonpool. M/U spud drilling assembly, RIH, Commence to drill 660mm x 915m(26" x 36") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	5:00	5.00	R-MOB-DEM OB	ANCHOR			Continued with Anchor handling activities. 01:07 hrs # 7 Anchor on bottom.1378m chain out, 204° heading. 02:31 hrs # 7 PCC recovered. 02:52 hrs # 1 PCC passed to Far Grip. Anchor #3 current set distance to short due to #5 anchor was slipping while running #1. 03:31 hrs Far Grip at # 1 Anchor. 03:32 hrs # 1 Anchor off bottom. 05:09 hrs # 3 Anchor on bottom.1405m chain out, 024° heading
5:00	13:00	8.00	R-MOB-DEM OB	ANCHOR	PN	EF	05:51 hrs # 1 PCC passed to rig. 06:15 hrs # 3 PCC passed back to rig. 06:37 hrs # 5 PCC passed to Far Sky. 07:30 hrs # 5 Anchor off bottom. Note: When inspected Anchor observed to be orientated incorrectly & was upside down. 12:42 hrs # 5 Anchor on bottom. 1390m chain out, 115° heading
13:00	17:00	4.00	R-MOB-DEM OB	ANCHOR	PP		13:22 hrs Anchors 3 & 7 cross tensioned to 250 MT. 13:49 hrs # 5 PCC passed back to rig. 14:20 hrs Anchors 4 & 8 cross tensioned to 250 MT. 15:10 hrs Anchors 6 & 2 cross tensioned to 250 MT. 15:51 hrs Anchors 5 & 1 cross tensioned to 250 MT. Note cross tensioning complete.
17:00	23:00	6.00	R-MOB-DEM OB	ANCHOR	PP		16:58 hrs. Commenced ballasting rig to drilling draft. Commence to position rig over location. 17:40 hrs. Rig Positioned over Location 20:30 hrs Rig at critical draft of 17m 21:45 hrs Rig at survival draft of 20m 22:45 hrs Rig at drilling draft of 23.5m. Note: "Nor captain" supply vessel stopped offloading cargo at 18:30 hrs due to weather conditions. Rig activities last 23 hrs: Note: At 03:00 hrs attempted to place PGB in carrier in moonpool, Support beam on Gimbal 89mm (3 ½'') too big to sit in carrier , removed PGB, installed BOP support beams re-installed PGB & measured for modifications. removed support beams, placed PGB on Aft deck, made modifications & reinstalled in Moonpool carrier at 12:00 hrs. Continued to change out safety slings in derrick. Changed out Derrick fall arrester. Offloaded cargo off "Nor captain". Third party installations:

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				03-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	6

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Automatic identification system (AIS) installation 95% complete. (09:45 hrs AIS recon sending signal only). Not configured correctly. Brandt centrifuge 100% complete. BJ casing stabbing arm 100% complete rig up, Currently troubleshooting software problem. baker atlas Jettison bunkers for explosives 70% complete.
23:00	0:00	1.00	R-MOB-DEM OB	WLHEAD	PP		P/U 476mm (18 ¾'') Vetco wellhead complete with 508mm (20'') x 340mm (13 3/8'') casing swedge joint. Installed in rotary, removed running tool. P/U 476mm (18 ¾'') running tool & made up Weatherford 340mm (13 3/8'') wiper plug assembly, installed in wellhead, (Plugs tight in Swedged crossover). Attempted to engage CART in wellhead, could not engage anti rotation dog, Rigged up pull down sheave to assist engagement.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00-01:00.Continued to install plug set in 476mm (18 ¾'') wellhead x casing swedged joint. Assisted engagement of cart with pull down slings to engage anti rotation pin, M/U cart with 5 turns to the left, verified engagement, backed out tool and re engaged cart again to verify OK. L/O 476mm (18 ¾'') wellhead x casing swedged joint & plug set assembly complete.
01:00- 01:30 Removed rigging, prepared to P/U drill pipe.
01:30- 06:00 P/U 127mm (5'') drillpipe.

HSE: No accidents, incidents or pollution reported. (JSA-31)-(PTW-15)
(Total stop cards - 72 unsafe acts -31, safe acts - 41).
ROV activities:
ROV deployed at 16:40 hours, fault observed at 16:50 hrs (lost power), Recovered ROV to surface, wire observed to have vibrated loose and shorted power, replaced various electronic components, Deployed ROV at 02:20 hrs, Commenced seabed survey at 03:00 hrs.
Visibility Good, Seabed sandy, silt with no obstructions, survey completed at 05:00 hrs. Surveys at 30-50-100m radius on Sonar, 50m visual radius.

Co-ordinates will be forth coming when 26" bit touches seabed.

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BHI	2		Kemtech	2	
Catering	8		TMT	6	
Viper casing	1		Brandt	2	
Sperry	3		Go Offshore	2	
Tri Serv	2		Diamond Offshore	44	
Caprock	2		Visian	1	
Apache	3		Vetco	2	
Sub Sea WFD	1		Dowell	2	
Baker Atlas	1		BJ	2	
BJ Casing	2		Diamond offshore extra	10	

TOTAL PERSONNEL ON BOARD: 98

SUPPORT CRAFT

TYPE	REMARKS
S-76	1 x helecoptor today Pax in 4, Pax off 4
Far grip	Anchor handling
Nor Captain	At Loc, will not come in due to high winds.
Far Sky	Anchor handling

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		54	BENTONITE	MT		31
CEMENT	MT		30	DIESEL	m3		307
WATER, POTABLE	m3	30	279	WATER, DRILLING	m3	60	391

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				03-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	6

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
23:00	/ /	/ /	/	22.0	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1686	1886			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

No incidents reported. Held Shallow gas drill and emergency Helecopter evacuation.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
GUAR GUM	25.00 kg		0.00	168.00
BARITE (bulk)	MT	3.00	841.83	51.00
BENTONITE (BULK)	MT	1.00	367.28	30.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	9.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	28.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				04-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	7

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	3.40 (days)	(days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
		PAT BROWN / KERRY PARKER	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 915,112	DHC: 6,183,432
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 915,112	TOTAL: 6,183,432

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	4/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	0.00 (m)	**INC**	0.00°	**AZM** 0.97°	(sg)		

CURRENT OPERATIONS: Displacing well at section TD - 586.48m.

24 HR SUMMARY: Installed plugs in 495mm (18 ¾") well-head and casing swedge joint. M/U DP and racked in derrick, M/U 762mm (30") conductor string. Installed in PGB and set back in moon pool. M/U spud BHA. MWD failed. Continued M/U spud assembly to 26m.

24 HR FORECAST: Spud well. Drill 914mm (36") hole to approx. 585m (46.5m below sea-bed). Displace hole to 1.04sg Hi-Vis PHG mud, POOH and rig up to run and cement 30" conductor.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	1:00	1.00	C-NUP	RU_RD	PP		Continued to install plug set in 476mm (18 3/4") wellhead x casing swedged joint. Assisted engagement of CART with pull down slings to engage anti-rotation pin , M/U CART with 5 turns to left, verified engagement, backed out tool and re-ingaged CART again to verify OK. L/O 476mm (18 3/4") wellhead x casing swedged joint and plug set assembly complete.
1:00	1:30	0.50	C-NUP	RU_RD	PP		Removed rigging, held JSA and prepared to P/U drill pipe.
1:30	5:30	4.00	C-NUP	RU_RD	PP		P/U and RIH with 461m of 127mm (5") drill pipe.
5:30	6:30	1.00	C-NUP	RIHPOOH	PP		POOH racking back drill pipe.
6:30	7:00	0.50	C-NUP	RU_RD	PP		P/U 127mm (5") drill pipe and RIH to 173m.
7:00	7:30	0.50	C-NUP	RIHPOOH	PP		POOH racking back drill pipe.
7:30	12:00	4.50	C-NUP	RU_RD	PP		P/U 111m of DP and racked back #2 stand in derrick.
12:00	14:00	2.00	C-NUP	RIHPOOH	PP		P/U and RIH with 21 joints of 127mm (5") HWDP to 196m and drifted each joint.
14:00	14:30	0.50	C-NUP	RU_RD	PP		Tested rig water supply (sea-water) with rig pumps through drill string at 5,678Lpm (1,500gpm) and 22,063kPa (3,200psi) at 224m.
14:30	15:00	0.50	C-NUP	RIHPOOH	PP		POOH from 224m to surface with 7 stands of HWDP and 2 stands of 8" DC and racked back in derrick.
15:00	15:30	0.50	C-NUP	SFTY	PP		Held JSA, R/U to run 762mm (30") conductor.
15:30	18:30	3.00	C-NUP	RIHPOOH	PP		RIH with joint 762mm (30") LPWH, joint 762mm (30") conductor and joint 508mm x 762mm (20" x 30") X/O shoe. Applied grease to 762mm (30") casing above SMAC joint.
18:30	19:30	1.00	C-NUP	RU_RD	PP		P/U 762mm (30") CART, M/U to 762mm (30") LPWHH. Lowered 762mm (30") (indicator weight 180klb). Engaged PGB in moonpool - 30" weight = 50klbs. Released and POOH with CART tool. Racked PGB to starboard side in moonpool and installed guide lines.
19:30	20:00	0.50	C-NUP	RU_RD	PP		Rigged down 762mm (30") conductor handling equipment. Held JSA for P/U and RIH with 914mm (36") BHA.
20:00	22:00	2.00	C-DRL	RU_RD	PP		M/U 660mm x 914mm (26" x 36") spud BHA to 23m.
22:00	23:30	1.50	C-DRL	RU_RD	PN	DE	Plugged into MWD to get communication - first attempt failed. Attempted to remedy: changed comms cable, changed booster box, changed computer, ran deck cable, ran spare cable, changed external probe on MWD - all failed.
23:30	0:00	0.50	C-DRL	RU_RD	PP		Continued to M/U 660mm x 914mm (26" x 36") spud BHA to 26m.

24.00 = Total Hours Today

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				04-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	7

06:00 UPDATE

0000-0600

00:00 - 02:30 - Continued M/U BHA and RIH from 26.12m to 382.55m.
Note: filled string and established circulation with whilst moving rig 3m to starboard.
02:30 - 03:30 - RIH from 382.55m to the mud-line at 539.98m (tide corrected) - steel measurement 541.18m. Tagged sea-bed - observed with ROV. Water depth = 517.25m.
03:30 - 06:00 - Drilled 660mm x 914mm (26" x 36") hole from 539.98m to 586.48m (TD). Confirmed TD by ROV observing pre-installed mark on drill string. Average ROP= 18.6m/hr.
Note: sea-bed solid from commencement. Jetted 0.5m. Pump #3 reported as having module problem whilst staging up pump with 4,675Lpm (1,235gpm) and 24,339kPa (3,530psi). Continued drilling with 2 pumps.
Parameters: Rotating/Up/Down-Weight 111.1MT (245klb); WOB 0.9 - 2.3MT (2 - 5klb); 120rpm; torque 2,712 - 6,779N.m (2 - 5kft/lb); 226spm; SPP= 24,063kPa (3,490psi), 4,191Lpm (1,107gpm) with 2 pumps.

Note: Final Co-ordinates:
Latitude: 38° 35´ 19.759 South
Longitude: 148° 32´ 51.925 East
Easting: 634 798.9m
Northing: 5 727 714.9m
The observed rig heading was 264.5° True.
Dory-1 DGPS surface position of the Ocean Patriot drill stem was 2.1m on a bearing of 183.4° (True) from the intended Dory-1 location.

HSE: 1 incident - sub-sea engineer skinned knuckle on left hand. No pollution reported. (JSA-23)-(PTW-12).
(Total stop cards - 74 unsafe acts - 26, safe acts 48).

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BHI	2		Baker Atlas	1	
Diamond Offshore	44		Sub Sea WFD	1	
TMT	6		BJ Casing	2	
Tri Serv	2		Visian	1	
BJ	2		Dowell	2	
Apache	6		Diamond Offshorte Other	5	
Sperry	3		Catering	8	
Viper casing	1		Diamond Offshore Extra	3	
Vetco	2		Kemtech	2	
Grn	1				

TOTAL PERSONNEL ON BOARD: 94

SUPPORT CRAFT

TYPE	REMARKS
S-76	
Far Grip	Departed 21:22 for Barry's Beach (ETA 05:30 05/11/08).
S-76	
Nor Captain	On port side off-loading deck cargo at 24:00.
Far Sky	Off location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT	40	56	BENTONITE	MT	24	48
CEMENT	MT		118	DIESEL	m3		372
WATER, POTABLE	m3	29	282	WATER, DRILLING	m3	223	475

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	4.00/23.00	0.50/23.00/3	/	16.5/23.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2064	2560			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				04-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	(m)	(m)	7

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

One incident reported. Sub sea hand reported skinned Knuckle.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
BARITE (bulk)	MT	39.00	10,943.79	54.00
CAUSTIC SODA - NaOH	25.00 kg	5.00	165.55	4.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg	4.00	84.12	24.00
GUAR GUM	25.00 kg		0.00	168.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
BENTONITE (BULK)	MT	23.00	8,447.44	48.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				05-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	586.46 (m)	586.46 (m)	8

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	4.40 (days)	0.85 (days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 987,949	DHC: 7,171,381
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 987,949	TOTAL: 7,171,381

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	5/11/2008	VIC-P59		

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 0.00 (m) **INC** 0.00° **AZM** 0.97°	(sg)		

CURRENT OPERATIONS: L/O 762mm (30") CART to pipe deck. Breaking out failed Sperry HOC.

24 HR SUMMARY: Drilled 914mm (36") hole from 539.98m to section TD at 586.48m. POOH. RIH with 762mm (30") conductor and PGB. Installed cement hose and skidded rig to reduce PGB inclination prior to cementing 762mm (30") conductor. WOC.

24 HR FORECAST: M/U and RIH 406mm (16") BHA. Drill 406mm (16") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	2:30	2.50	C-DRL	TRIPBHA	PP		Continued make up BHA and RIH from 26.12m to 382.55m. Note: Filled string and established circulation whilst moving rig 3m to starboard.
2:30	3:30	1.00	C-DRL	TRIP	PP		RIH from 382.55m to tag seabed at 539.98m (tide corrected). Confirmed same with ROV. 517.25m water depth at Dory-1 location. (DORY-1 SPUD 0330hrs 5th Nov 2008)
3:30	6:00	2.50	C-DRL	DRLG	PP		Drilled 660mm x 914mm (26" x 36") hole from 539.98m to 586.48m (section TD) - returns throughout section. Ave ROP 18.6m/hr. Section TD confirmed by ROV with pre-marked white line on drill pipe. Note: Jetted 0.5m after tag, seabed solid for remainder of hole section. Mud pump #3 experienced module problems whilst staging up pump with 4.68m³/min (1235gpm) and 24,339kPa (3530psi). Continued drilling with 2 pumps.
6:00	6:30	0.50	C-DRL	CIRC	PP		Swept hole with 15.9m3 (100bbls) hi-vis PHG and displaced same to 47.7m3 (300bbls) hi-vis PHG.
6:30	7:00	0.50	C-DRL	TRIP	PP		POH from 586.48m to HWDP.
7:00	10:30	3.50	C-DRL	TRIPBHA	PP		Racked back HWDP and DC's in derrick. Laid down bit sub, 914mm (36") hole opener and 660mm (26") bit.
10:30	12:00	1.50	C-CSG	WLHEAD	PP		Skidded PGB and conductor string over well centre in moonpool. Terminated guidewires.
12:00	15:00	3.00	C-CSG	CSG	PP		RIH 762mm (30") conductor and PGB to seabed at 515m. Recorded bullseye readings: Port Aft bullseye 0.5° Stb Aft, Fwd bullseye 0.65° Aft. Stabbed into 914mm (36") hole and continued RIH to 545m Note: Tagged section TD and picked up 0.5m. Installed cement hose on cement stand before making up.
15:00	20:00	5.00	C-CSG	WLHEAD	PP		Skidded rig 11m Port Fwd (bearing 200° T) and attempted to reduce PGB inclination to <1°. Port Aft bullseye - 0.75° Aft, Fwd bullseye - 0.75° Aft. Continued to skid rig a further 6m Port Fwd (bearing 200° T). Port Aft bullseye - 0.7° Aft, Fwd bullseye - 0.5° Aft. Rig held off location 17m Port Aft (bearing 200° T) total.
20:00	20:30	0.50	C-CSG	CIRC	PP		Circulated 762mm (30") conductor with 9.54m3 (60bbls) seawater at 2.08m³/min (550gpm).
20:30	21:30	1.00	C-CSG	CMT	PP		Lined up to Dowell. Pumped 0.16m³ (10bbls) seawater fluorescene spacer. Pressure tested surface lines to 6,895kPa (1500psi) for 5 minutes - OK. Pumped further 0.32m³ (20bbls) seawater fluorescene spacer. Mixed and pumped 28.46m³ (179bbls) 1.9SG (15.8ppg) cement slurry - fluorescene dye noted at seabed followed by cement returns. Displaced cement to float shoe with 12.56m³ (79bbls) seawater. Checked float holdings - OK, 0.16m³ (1bbl) bled back. Good returns throughout job.
21:30	0:00	2.50	C-CSG	WOC	PP		Waited on cement. Slacked off all block weight and guideline tension.

24.00 = Total Hours Today

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				05-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	586.46 (m)	586.46 (m)	8

06:00 UPDATE

0000-0600

00:00 - 03:00hrs; Continued WOC. Offline: Picked up 127mm (5") DP. Repaired BJ stabbing arm.
03:00 - 03:30hrs: Skidded rig back over well centre. Observed bullseyes at all times while moving rig to confirm PGB inclination - Port Aft bullseye 0.75° STB, Fwd bullseye 0°.
03:30 - 04:00hrs: Released 762mm (30") CART with Vetco instructions. Dropped drill pipe wiper ball and displaced same. Flushed LPWHH.
Recorded SPP's (stinger at 545m): 2.27m³/min (600gpm) - 1,725kPa (250psi), 3.03m³/min (800gpm) - 3,445kPa (500psi), 3.79m³/min (1000gpm) - 4,825kPa (700psi), 4.54m/min (1200gpm) - 7,240kPa (1050psi)
04:00 - 06:00hrs: POH and laid out 762mm (30") CART to pipe deck. Note: problems encountered due to failure of hydraulic elevators. Changed out same.

HSE: No incidents, accidents or pollution reported.
(JSA-29)-(PTW-14).(Total stop cards - 58 unsafe acts - 18, safe acts 40).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
1 / 1	660.4	SMITH	MZ176	MZ176		539.98 / 05-11-2008	- - - - - -

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
1/1			0.00		0				0.00	0.00	0.0

MUD PROPERTIES

LCM: | MUD TYPE: FRESHWATER GEL

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
120	8/52	33/34		4									

Density (sg)	1.05			PP		DAILY COST	0	CUM COST	20,850	%OIL	

BHA / HOLE CONDITIONS

BHA	1	JAR S/N	17602018	JAR HRS		BIT	1

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	(kN-m)	372.94 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Tri-Cone Bit	1	0.60	660.40			
Hole Opener	1	2.82	914.40			
Bit Sub	1	1.21	247.65	76.20		
Logging While Drilling	1	7.43	241.30	76.20		
Logging While Drilling	1	4.80	241.30	82.55		
Logging While Drilling	1	6.84	279.40	92.08		
	1	2.42	406.40	76.20		
Non-Mag Drill Collar	1	9.31	241.30	76.20		
Cross Over	1	1.12	238.12	76.20		
Drill Collar	12	111.00				
Cross Over	1	1.07	200.02	73.02		
Heavy Weight Drill Pipe	6	56.17	166.69			
	1	9.36	158.75	69.85		
Heavy Weight Drill Pipe	0	158.79				

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80			
# 2	304.80			
# 3	304.80			

SPP:

HP: 0.000 (kW/cm²)

SPR

	SPM	PPSR

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				05-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	(m)	586.46 (m)	586.46 (m)	8

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Sperry	3		BJ	2	
BJ Casing	2		Apache	6	
Diamond Offshore	44		Kemtech	2	
TMT	6		Sub Sea WFD	1	
Diamond Offshore Extra	3		Grn	1	
Dowell	2		BHI	2	
Catering	8		Vetco	2	
Diamond Offshorte Other	5				

TOTAL PERSONNEL ON BOARD: 89

SUPPORT CRAFT

TYPE	REMARKS
S-76	10:11 Pax On:1; 10:22 Pax Off:6
Nor Captain	Off location for Geelong 07:00 07/11/08 130m3 .
Far Sky	On location on port side off-loading deck cargo.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		81
CEMENT	MT	36	158	DIESEL	m3	17	355
WATER, POTABLE	m3	30	284	WATER, DRILLING	m3	118	487

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/350.00/2	0.30/350.00/2	/	5.7/350.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2330	2330	2560			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	4.00
GUAR GUM	25.00 kg		0.00	168.00
BARITE (bulk)	MT		0.00	54.00
BENTONITE (BULK)	MT		0.00	90.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	24.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				06-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	248.54 (m)	835.00 (m)	834.94 (m)	9

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	5.40 (days)	1.85 (days)	517.00 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 881,019	DHC: 8,052,400
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 881,019	TOTAL: 8,052,400

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	6/11/2008	VIC-P59		3.50

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	815.76 (m)	**INC**	1.05°	**AZM** 343.05°	(sg)	762.000 mm @ 585.0 m	340.000 mm @ 1,532.0 m

CURRENT OPERATIONS: Drilling 406mm (16") hole at 1052m.

24 HR SUMMARY: WOC. Released CART, flushed LPWHH and POH. M/U and RIH 406mm (16") BHA. Repaired TDS hydraulic leak. Drilled out 508mm (20") float shoe. Drilled 406mm (16") hole from 585m to 835m. Ave ROP 50m/hr.

24 HR FORECAST: Drill 406mm (16") hole to section TD. Sweep hole with hi-vis PHG and displace same to 1.15SG WBM. POH. Run and cement 340mm (13-3/8") casing.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	3:00	3.00	C-CSG	WOC	PP		Continued to WOC. Offline: Picked up 9 stands 127mm (5") DP and racked back in derrick. Repaired BJ stabbing arm and conducted sensor calibration - OK.
3:00	3:30	0.50	C-CSG	WOC	PP		Skidded rig back over well centre. Observed bullseyes at all times while moving rig to confirm PGB inclination - Port Aft bullseye 0.75° STB, Bow bullseye 0°.
3:30	4:00	0.50	C-CSG	CIRC	PP		Released 762mm (30") CART with Vetco instructions. Dropped drill pipe wiper ball and displaced same with seawater. Flushed LPWHH. Recorded SPP's (stinger at 545m): 2.27m³/min. (600gpm); 1,725 kPa (250psi); 3.03m³/min. (800gpm); 3,445kPa (500psi); 3.79m³/min. (1000gpm); 4,825kPa (700psi); 4.54m³/min. (1,200gpm); 7,2140kPa (1,050psi).
4:00	6:00	2.00	C-CSG	RIHPOOH	PP		POH and laid out 762mm (30") CART to pipe deck. Note: Encountered problems with hydraulic elevators. Changed out same.
6:00	8:00	2.00	S-DRL	TRIPBHA	PP		Picked up and RIH MWD tools from derrick. Made up 127mm (5") HWDP handling joint and laid out Sperry RLL and HOC.
8:00	8:30	0.50	S-DRL	TRIPBHA	PP		Broke out side entry sub cementing assembly. Laid out 2 x TIW valves and side entry sub. Made up stand and racked back same while changing out Sperry MWD pulsar on catwalk.
8:30	10:00	1.50	S-DRL	TRIPBHA	PP		Picked up preassembled 406mm (16") packed sub assembly consisting of 406mm (16") bit, 406mm (16") near-bit stabiliser, pony DC and 406mm (16") string stabiliser. Made up Sperry RLL and HOC. Attached guide ropes in moonpool to 406mm (16") BHA. Note: Checked torque on all connections in sub assembly.
10:00	10:30	0.50	S-DRL	TRIPBHA	PP		Plugged into MWD tool and initialised same.
10:30	12:30	2.00	S-DRL	TRIPBHA	PP		Made up and RIH 406mm (16") BHA to 133m.
12:30	13:00	0.50	S-DRL	CIRC	PP		Shallow tested MWD with 3.41m³/min (900gpm) and 7,585kPa (1100psi) - OK
13:00	13:30	0.50	S-DRL	TRIPBHA	PP		RIH 406mm (16") BHA on 127mm (5") HWDP to 377m.
13:30	16:00	2.50	S-DRL	TRIP	PP		Picked up 14 stands 127mm (5") DP and racked back. Continued to RIH to 530m.
16:00	17:00	1.00	S-DRL	TRIP	PP		406mm (16") BHA off-centre at LPWHH with guide wire #2 wrapped around BHA. ROV untangled same while skidding rig 6m Port Fwd and stabbed 406mm (16") BHA into LPWHH with ROV assistance. Continued RIH to 570m.
17:00	18:00	1.00	S-DRL	RIGSER	PN	TD	DOWNTIME: Hydraulic hose failure on TDS. Repaired same.
18:00	18:30	0.50	S-DRL	RMWASH	PP		Held JSA as per DODI shallow gas procedures. Made up TDS and washed down from 570m to tag float shoe at 585m with 4.5MT (10klbs).
18:30	19:00	0.50	S-DRL	DRLCMT	PP		Drilled out 508mm float shoe. Worked through shoe track three times to confirm clear.
19:00	0:00	5.00	S-DRL	DRLG	PP		Drilled 406mm (16") hole riserless from 585m to 835m. Ave ROP 50m/hr. Pumped 7.95m³ (50bbls) PHG mid-stand and spotted 7.95m³ (50bbls) PHG around BHA on

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				06-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	248.54 (m)	835.00 (m)	834.94 (m)	9

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							connections. Surveys recorded on connections only. Note: 2 x gasket seals failed on mud pump #3 suction. Pump offline from 20:15 to 21:30 while replacing gaskets and 4 x valve/seat sets. Drilled with 3.41m³/min (900gpm) on two pumps - lost detection and surveys due to insufficient flow rate.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 Drilled 406mm (16") hole from 835m to 1052m. Ave ROP 36.2m/hr.
Pumped 7.95m³ (50bbls) hi-vis guar gum sweeps mid-stand and 7.95m³ (50bbls) hi-vis PHG spotted around BHA on connections.
Note: Poor real-time detection with Sperry tools. No problems getting surveys.

HSE: 1 FAC reported (24hrs late): IP presented to medic with injured foot from previous day's tour. Stepped on clamp on main deck and injured foot but failed to report immediately. IP being sent into town for further investigation.
(JSA-34)-(PTW-13).(Total stop cards - 44 unsafe acts - 14, safe acts 30).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
1 / 2	406.0	SMITH	TCT+CR	MZ7899	1x22, 4x22	586.48 / 06-11-2008	- - - - - -

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
1/2	18/18	180/180	4,921.00	27,235	2703	2.50	205.00	82.0	2.50	205.00	82.0

MOTOR OUTPUT

RPG: | ROTARY CURRENT: 180 | TOTAL RPM: 360

MUD PROPERTIES

LCM: | MUD TYPE: FRESHWATER GEL

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
120	10/66	33/34		4									

Density (sg)	1.05			PP		DAILY COST	3805	CUM COST	24,655	%OIL	

BHA	2	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS		BIT	1

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	5 (kN-m)	377.35 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.75	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Cross Over	1	1.07	200.02	73.02		
Drill Collar	12	111.00	209.50	69.85		
Cross Over	1	1.12	238.12	76.20		
Non-Mag Drill Collar	1	9.31	241.30	76.20		
Integral Blade Stabilizer	1	2.42	406.40	76.20		
Logging While Drilling	1	6.84	279.40	92.08		
Logging While Drilling	1	4.80	241.30	82.55		
Logging While Drilling	1	7.43	241.30	76.20		
Integral Blade Stabilizer	1	2.53	241.30	76.20		7 5/8 REG
Non-Mag Pony Collar	1	3.25	241.30	76.20		
Near Bit Stabilizer	1	2.83	241.30	76.20		7 5/8 REG

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				06-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	248.54 (m)	835.00 (m)	834.94 (m)	9

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Tri-Cone Bit	1	0.43	660.40			

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	538.75	0.00	0.00	538.75	0.00	0.00	0.00	0.00
NORMAL	613.93	1.24	346.95	613.92	0.79	-0.18	0.81	0.50
NORMAL	641.31	1.32	347.27	641.30	1.39	-0.32	1.43	0.09
NORMAL	729.08	1.27	349.67	729.04	3.34	-0.72	3.41	0.03
NORMAL	758.04	1.30	347.73	758.00	3.97	-0.85	4.06	0.05
NORMAL	815.76	1.05	343.05	815.71	5.12	-1.14	5.24	0.14

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	97	152.40	1553
# 2	304.80	102	152.40	1633
# 3	304.80	105	152.40	1681

SPP: 27,235 (kPa)

HP: 0.171 (kW/cm²)

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Diamond Offshore Extra	3		BJ	2	
Diamond Offshorte Other	3		Catering	8	
Sub Sea WFD	1		Dowell	2	
Grn	2		Apache	7	
Sperry	3		Diamond Offshore	45	
TMT	6		Vetco	2	
BHI	2		Kemtech	2	
BJ Casing	2				

TOTAL PERSONNEL ON BOARD: 90

SUPPORT CRAFT

TYPE	REMARKS
Far Grip	To running standby.
Nor Captain	

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		81
CEMENT	MT		158	DIESEL	m3		337
WATER, POTABLE	m3	22	290	WATER, DRILLING	m3	112	529

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.50/230.00/3	0.30/230.00/3	/	10.3/230.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2335	2335	2560			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				06-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	248.54 (m)	835.00 (m)	834.94 (m)	9

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE FIRST AID LOST TIME? NO

INCIDENTS DESCRIPTION

IP presented to medic with injured foot from previous day's tour. Stepped on clamp on main deck but failed to report immediately. IP being sent into town for further investigation.

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
BENTONITE (BULK)	MT	10.00	3,672.80	71.00
BARITE (bulk)	MT		0.00	54.00
GUAR GUM	25.00 kg		0.00	168.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	24.00
CAUSTIC SODA - NaOH	25.00 kg	4.00	132.44	22.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				07-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	694.00 (m)	1,529.00 (m)	1,528.92 (m)	10

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	6.40 (days)	2.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 880,006	DHC: 8,932,406
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 880,006	TOTAL: 8,932,406

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	7/11/2008	VIC-P59		29.00

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 1,507.71 (m) **INC** 0.41° **AZM** 345.24°	(sg)	340.000 mm @ 1,534.2 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: POH and rack back 406mm (16") BHA.

24 HR SUMMARY: Drilled 406mm (16") hole section riserless from 835m to 1529m. Ave ROP 28.9m/hr.

24 HR FORECAST: POH 406mm (16") BHA. Run and cement 13-3/8" casing. Run BOP and marine riser.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	6:00	6.00	S-DRL	DRLG	PP		Drilled 406mm (16") hole riserless from 835m to 1052m. Ave ROP 36.2m/hr. Pumped 7.95m³ (50bbls) hi-vis guar gum sweeps mid-stand and 7.95m³ (50bbls) hi-vis PHG spotted around BHA on connections. Good returns noted at seabed with ROV. Note: Poor real-time detection with Sperry tools. Obtained surveys without problems.
6:00	0:00	18.00	S-DRL	DRLG	PP		Drilled 406mm (16") hole riserless from 1052m to 1529m. Ave ROP 26.5m/hr. Pumped 7.95m³ (50bbls) hi-vis guar gum sweeps mid-stand and 7.95m³ (50bbls) hi-vis PHG spotted around BHA on connections. Good returns noted at seabed with ROV. Note: Ongoing detection issues while drilling with Sperry tools. Obtained surveys without problems.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 00:30hrs: Drilled 406mm (16") hole from 1529m to section TD at 1537m. Ave ROP 16m/hr.
00:30 - 02:00hrs: Pumped 23.85m³ (150bbls) hi-vis PHG sweep. Chased same with 174.9m³ (1100bbls) 1.15SG (9.58ppg) hi-vis PHG and displaced well.
Offline: Made up cement head stand and racked back same. Obtained TD survey - 1519.19m MDRT, 0.33° Inc, 354.14° Azi.
02:00 - 05:30hrs: Locked compensator. POH 406mm (16") BHA from 1537m to BHA at 377m. Ave tripping speed 331m/hr. Note: Hole tight from 1511m to 1319m with 31.7MT (70klbs) max overpull. Worked singles as required and wiped tight hole. Jetted LPWHH with bit on trip out.
05:30 - 06:00hrs: POH and racked back 127mm (5") HWDP and drilling jar stand.

HSE: No accidents, incidents or pollution reported.
(JSA-24)-(PTW-12).(Total stop cards - 79 unsafe acts - 33, safe acts 46).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
1 / 2	406.0	SMITH	TCT+CR	MZ7899	1x22, 4x22	586.48 / 06-11-2008	1-1-WT-A-E-I-NO-TD

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
1/2	29/34	100/200	4,531.62	29,510	2304	18.09	699.00	38.6	20.59	904.00	43.9

MUD PROPERTIES

LCM: | MUD TYPE: FRESHWATER GEL

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
120	10/66	33/34		4									

Density (sg)	1.04			PP		DAILY COST	11,632	CUM COST	36,287	%OIL	

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				07-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	694.00 (m)	1,529.00 (m)	1,528.92 (m)	10

BHA	2	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS	29.00	BIT	1

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
38 (tonne)	136 (tonne)	133 (tonne)	134 (tonne)	20 (kN-m)	377.35 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.75	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Cross Over	1	1.07	200.02	73.02		
Drill Collar	12	111.00	209.50	69.85		
Cross Over	1	1.12	238.12	76.20		
Non-Mag Drill Collar	1	9.31	241.30	76.20		
Integral Blade Stabilizer	1	2.42	406.40	76.20		
Logging While Drilling	1	6.84	279.40	92.08		
Logging While Drilling	1	4.80	241.30	82.55		
Logging While Drilling	1	7.43	241.30	76.20		
Integral Blade Stabilizer	1	2.53	241.30	76.20		7 5/8 REG
Non-Mag Pony Collar	1	3.25	241.30	76.20		
Near Bit Stabilizer	1	2.83	241.30	76.20		7 5/8 REG
Tri-Cone Bit	1	0.43	660.40			

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	844.38	0.97	344.98	844.32	5.60	-1.28	5.75	0.09
NORMAL	901.69	0.83	347.84	901.62	6.48	-1.49	6.65	0.08
NORMAL	1,016.72	0.47	350.84	1,016.65	7.76	-1.74	7.95	0.09
NORMAL	1,074.58	0.45	1.50	1,074.50	8.22	-1.77	8.40	0.05
NORMAL	1,132.15	0.26	336.38	1,132.07	8.57	-1.82	8.75	0.13
NORMAL	1,160.99	0.25	342.45	1,160.91	8.69	-1.87	8.88	0.03
NORMAL	1,189.79	0.28	339.34	1,189.71	8.81	-1.91	9.01	0.03
NORMAL	1,218.51	0.36	337.60	1,218.43	8.96	-1.97	9.17	0.08
NORMAL	1,247.27	0.31	352.14	1,247.19	9.12	-2.01	9.34	0.10
NORMAL	1,275.84	0.35	336.74	1,275.76	9.28	-2.06	9.50	0.10
NORMAL	1,333.43	0.45	337.84	1,333.35	9.65	-2.21	9.90	0.05
NORMAL	1,362.39	0.36	331.14	1,362.31	9.83	-2.30	10.10	0.11
NORMAL	1,391.37	0.38	337.89	1,391.29	10.00	-2.38	10.28	0.05
NORMAL	1,478.77	0.44	339.78	1,478.69	10.58	-2.60	10.90	0.02
NORMAL	1,507.71	0.41	345.24	1,507.63	10.79	-2.67	11.11	0.05

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	92	152.40	1489
# 2	304.80	90	152.40	1456
# 3	304.80	101	152.40	1634

SPP: 29,510 (kPa)

HP: 0.134 (kW/cm²)

SPR

	SPM	PPSR

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				07-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	694.00 (m)	1,529.00 (m)	1,528.92 (m)	10

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BJ Casing	2		Diamond Offshorte Other	3	
Vetco	1		Apache	7	
BHI	2		Diamond Offshore	45	
Weatherford	1		Catering	8	
Kemtech	2		Dowell	2	
Sperry	3		TMT	6	
BJ	3		Diamond Offshore Extra	4	

TOTAL PERSONNEL ON BOARD: 89

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
JYN	Pax On - 8, Pax Off - 9
NOR CAPTAIN	In Geelong.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		53
CEMENT	MT		158	DIESEL	m3		321
WATER, POTABLE	m3	29	298	WATER, DRILLING	m3	187	872

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
	1.50/230.00/3	0.80/25.00/3	/	15.4/25.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2290	2290	2560			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	192	2	190	3	162
4	164	5	182	6	185
7	192	8	183	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				07-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	694.00 (m)	1,529.00 (m)	1,528.92 (m)	10

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
SAPP	25.00 kg		0.00	0.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SOLTEX	25.00 kg		0.00	0.00
CIRCAL 60/16	25.00 kg		0.00	0.00
DRISPAC SL	25.00 kg		0.00	0.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	24.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	22.00
BENTONITE (BULK)	MT	19.00	6,978.32	52.00
CIRCAL 1000	25.00 kg		0.00	0.00
GUAR GUM	25.00 kg	56.00	4,653.60	0.00
BARITE (bulk)	MT		0.00	54.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				08-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	8.00 (m)	1,537.00 (m)	1,536.91 (m)	11

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	7.40 (days)	3.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 1,425,876	DHC: 10,358,282
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 1,425,876	TOTAL: 10,358,282

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	8/11/2008	VIC-P59		34.50

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	1,519.19 (m)	**INC**	0.33°	**AZM**	354.14°	(sg)	340.000 mm @ 1,534.2 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: L/O Weatherford cement head.

24 HR SUMMARY: Drilled 406mm (16") hole to section TD at 1537m. POH. R/U 340mm (13-3/8") casing equipment. RIH 340mm (13-3/8") casing. M/U and RIH 476mm (18-3/4") HPWHH.

24 HR FORECAST: Run BOP/LMRP and marine riser. P/U and RIH 216mm (8-1/2") BHA.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:30	0.50	S-DRL	DRLG	PP		Drilled 406mm (16") hole riserless from 1529m to section TD at 1537m. Ave ROP 16m/hr.
0:30	2:00	1.50	S-DRL	CIRC	PP		Pumped 23.85m³ (150bbls) hi-vis PHG sweep. Chased same with 174.9m³ (1100bbls) 1.15SG (9.58ppg) hi-vis PHG and displaced well. Offline: Made up cement head stand and racked back same. Obtained TD survey.
2:00	5:30	3.50	S-DRL	TRIP	PP		POH 406mm (16") BHA from 1537m to BHA at 377m. Ave tripping speed 331m/hr. Note: Hole tight from 1511m to 1319m with 31.7MT (70klbs) max overpull. Worked singles as required and wiped tight hole. Jetted LPWHH with bit on trip out.
5:30	6:00	0.50	S-DRL	TRIPBHA	PP		POH and racked back 127mm (5") HWDP and drilling jar stand.
6:00	8:00	2.00	S-DRL	TRIPBHA	PP		POH and racked back remaining 406mm (16") BHA in derrick. Plugged into BAT sonic tool and downloaded same in rotary table (15 minutes). Broke off bit and laid out. Laid out 406mm (16") packed sub assembly consisting of 406mm (16") near-bit stabiliser, pony DC and 406mm (16") string stabiliser.
8:00	10:00	2.00	S-CSG	RU_RD	PP		Held JSA. Rigged up 340mm (13-3/8") casing handling equipment.
10:00	11:30	1.50	S-CSG	CSG	PP		Picked up and made up 340mm (13-3/8") shoe joint, float collar joint and first casing joint. Bakerlocked same. Flow checked floats - OK. Attached guide ropes in moonpool. Filled string with seawater.
11:30	14:00	2.50	S-CSG	CSG	PP		RIH 340mm (13-3/8") casing to 303m. Ave running speed 8.5 joints/hr. Filled casing with seawater every 5 joints.
14:00	14:30	0.50	S-CSG	WOO	PN	WOW	Waited on weather. Cranes shutdown due to 74km/hr (40knots) wind speed gusting to 102km/hr (55knots). Offline: Serviced TDS.
14:30	16:00	1.50	S-CSG	CSG	PP		RIH 340mm (13-3/8") casing from 303m to 520m. Ave running speed 11.5 joints/hr. Filled casing with seawater every 5 joints.
16:00	16:30	0.50	S-CSG	CSG	PN	SC	Unable to stab casing into LPWHH. 2 x guide ropes snapped and shoe track tangled in guide line #2. Rig found to be 20m off location, bearing 239°. Winched rig back to 2m from well centre. Skidded rig and stabbed casing into LPWHH with ROV assistance.
16:30	18:30	2.00	S-CSG	CSG	PP		RIH 340mm (13-3/8") casing from 520m to 809m. Ave running speed 11.5 joints/hr. Filled casing with seawater every 5 joints.
18:30	19:30	1.00	S-CSG	RU_RD	PN	SO	Troubleshot BJ FMS control panel. Air side unable to maintain sufficient feed. Rigged down FMS and installed master bushings. Continued with manual hand slips.
19:30	21:00	1.50	S-CSG	CSG	PP		RIH 340mm (13-3/8") casing from 809m to 985m. Ave running speed 9.3 joints/hr. Filled casing with seawater every 5 joints.
21:00	21:30	0.50	S-CSG	RU_RD	PP		Rigged down BJ hydraulic elevators. Rigged up 127mm (5") drill pipe handling equipment.
21:30	22:00	0.50	S-CSG	WLHEAD	PP		Picked up and made up 476mm (18-3/4") HPWHH. Cement plugs and CART previously installed.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				08-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	8.00 (m)	1,537.00 (m)	1,536.91 (m)	11

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
22:00	0:00	2.00	S-CSG	RIH	PP		RIH 340mm (13-3/8") casing string on 127mm (5") DP from 1002m to 1520m. Made up TDS every 7 stands and filled string with seawater.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 01:00hrs: Picked up and made up 127mm (5") drill pipe pup joint. Made up cement hose and Lo-torq valve to cement head and made up same to string. Made up TDS and broke circulation. Unlocked compensator and washed down to land HPWHH with ROV assistance. Confirmed latch with 22.6MT (50klbs) overpull. 340mm (13-3/8") shoe depth 1534.28m.
01:00 - 01:30hrs: Circulated 110% casing volume at 2.27m³ (600gpm) and 3,585kPa (520psi) with good returns.
01:30 - 03:30hrs: LIned up to Dowell. Pumped 1.6m³ (10bbls) seawater and pressure tested lines to 27,580kPa (4000psi) - OK. Weatherford dropped bottom plug dart and displaced same with 5.1m³ (32bbls) seawater from cement unit - positive indications of plug release at surface with 5,515kPa (800psi) pressure increase observed. Mixed and pumped 52.2m³ (328bbls) 1.5SG (12.5ppg) G class lead cement slurry followed by 9.7m³ (61bbls) 1.9SG (15.8ppg) G class tail cement slurry. Weatherford dropped top plug dart and displaced same with 6.4m³ (40bbls) seawater - no indications of plug release at surface.
03:30 - 04:30hrs: Switched over to rig pumps and displaced cement with 75.5m³ (475bbls) seawater. Bumped plug with 17,235kPa (2500psi) for 5 minutes - OK. Checked floats holding - OK. Good returns during cement job and displacement.
04:30 - 05:00hrs: Released 476mm (18-3/4") HPWHH CART with Vetco instructions and ROV assistance. Picked up out of HPWHH and flushed through cement head. Racked back cement head stand in derrick and laid out 127mm (5") pup joint.
05:00 - 06:00hrs: POH 127mm (5") drill pipe landing string. Laid out 476mm (18-3/4") HPWHH CART to pipe deck.

HSE: No accidents, incidents or pollution reported.
(JSA-33)-(PTW-15).(Total stop cards - 109, unsafe acts - 35, safe acts 74).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
1 / 2	406.0	SMITH	TCT+CR	MZ7899	1x22, 4x22	586.48 / 06-11-2008	1-1-WT-A-E-I-NO-TD

MUD PROPERTIES

LCM: | MUD TYPE: FRESHWATER GEL

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
131	9/31	33/35	15	3/6									2

Density (sg)	1.15			PP		DAILY COST	0	CUM COST	36,287	%OIL	

BHA / HOLE CONDITIONS

BHA	2	JAR S/N	17602018	JAR HRS	34.50	BIT	1

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	(kN-m)	377.35 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.75	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Cross Over	1	1.07	200.02	73.02		
Drill Collar	12	111.00	209.50	69.85		
Cross Over	1	1.12	238.12	76.20		
Non-Mag Drill Collar	1	9.31	241.30	76.20		
Integral Blade Stabilizer	1	2.42	406.40	76.20		
Logging While Drilling	1	6.84	279.40	92.08		
Logging While Drilling	1	4.80	241.30	82.55		
Logging While Drilling	1	7.43	241.30	76.20		
Integral Blade Stabilizer	1	2.53	241.30	76.20		7 5/8 REG
Non-Mag Pony Collar	1	3.25	241.30	76.20		
Near Bit Stabilizer	1	2.83	241.30	76.20		7 5/8 REG

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				08-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	8.00 (m)	1,537.00 (m)	1,536.91 (m)	11

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Tri-Cone Bit	1	0.43	660.40			

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	1,519.19	0.33	354.14	1,519.11	10.86	-2.68	11.19	0.27

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
Diamond Offshore Extra	4		BHI	2	
Apache	8		Catering	8	
Sperry	3		TMT	6	
BJ Casing	2		Diamond Offshore	45	
Weatherford	1		Vetco	1	
Diamond Offshorte Other	3		BJ	3	
Kemtech	2		Dowell	2	

TOTAL PERSONNEL ON BOARD: 90

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
NOR CAPTAIN	Enroute to Ocean Patriot.
JYN	Pax On - 3, Pax Off - 2.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		47
CEMENT	MT		158	DIESEL	m3		299
WATER, POTABLE	m3	24	307	WATER, DRILLING	m3	96	776

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
	4.50/250.00/3	1.50/250.00/4	/	25.7/250.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2154	2560			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
31-10-2008	31-10-2008				03-11-2008			03-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

Daily Drilling Report

WELL NAME				DATE
DORY-1				08-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	8.00 (m)	1,537.00 (m)	1,536.91 (m)	11

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	194	2	192	3	160
4	163	5	180	6	183
7	196	8	188	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CIRCAL 1000	25.00 kg		0.00	0.00
BENTONITE (BULK)	MT		0.00	52.00
SOLTEX	25.00 kg		0.00	0.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	22.00
BARITE (bulk)	MT		0.00	54.00
DRISPAC SL	25.00 kg		0.00	0.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
CIRCAL 60/16	25.00 kg		0.00	0.00
SAPP	25.00 kg		0.00	0.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	24.00
GUAR GUM	25.00 kg		0.00	0.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				09-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	12

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	8.40 (days)	4.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 890,822	DHC: 11,249,104
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 890,822	TOTAL: 11,249,104

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	9/11/2008	VIC-P59		

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	1,519.19 (m)	**INC**	0.33°	**AZM**	354.14°	(sg)	340.000 mm @ 1,534.2 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: Installing choke and kill line goosenecks and storm loops.

24 HR SUMMARY: RIH and landed HPWHH. Circulated and cemented 340mm (13-3/8") casing. Released CART and POH landing string. L/O 476mm (18-3/4") CART and cement head. M/U marine riser double BOP and ran through splash zone. Continued running BOP on marine riser to 350m.

24 HR FORECAST: Land and latch BOP. Pressure test connector and function test BOP. P/U 127mm (5") DP and M/U 216mm (8-1/2") BHA. RIH and drill out 340mm (13-3/8") shoe. Conduct LOT. Drill 216mm (8-1/2") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	1:00	1.00	S-CSG	RIH	PP		Picked up and made up 127mm (5") drill pipe pup joint. Made up cement hose and Lo-torq valve to cement head and made up same to string. Made up TDS and broke circulation with seawater. Unlocked compensator and washed down to land HPWHH with ROV assistance. Confirmed latch with 22.6MT (50klbs) overpull. 340mm (13-3/8") shoe depth 1534.28m.
1:00	1:30	0.50	S-CSG	CIRC	PP		Circulated 110% casing volume with seawater at 2271 LPM (600gpm) and 3,585kPa (520psi) with good returns.
1:30	3:30	2.00	S-CSG	CMT	PP		Lined up to Dowell. Pumped 1.6m³ (10bbls) seawater and pressure tested lines to 27,580kPa (4000psi) - OK. Weatherford dropped bottom plug dart and displaced same with 5.1m³ (32bbls) seawater from cement unit - positive indications of plug release at surface with 5,515kPa (800psi) pressure increase observed. Mixed and pumped 52.2m³ (328bbls) 1.5SG (12.5ppg) class G lead cement slurry followed by 9.7m³ (61bbls) 1.9SG (15.8ppg) class G tail cement slurry. Weatherford dropped top plug dart and displaced same with 6.4m³ (40bbls) seawater - no indications of plug release at surface.
3:30	4:30	1.00	S-CSG	CMT	PP		Switched over to rig pumps and displaced cement with 75.5m³ (475bbls) seawater. Bumped plug with 17,235kPa (2500psi) for 5 minutes - OK. Checked floats holding - OK. Good returns during cement job and displacement.
4:30	5:00	0.50	S-CSG	WLHEAD	PP		Released 476mm (18-3/4") HPWHH CART with Vetco instructions and ROV assistance. Picked up out of HPWHH and flushed through cement head. Rigged down cementing hose and racked back cement head stand in derrick
5:00	6:30	1.50	S-CSG	POOH	PP		Laid out 127mm (5") pup joint. POH 127mm (5") drill pipe landing string. Laid out 476mm (18-3/4") HPWHH CART to pipe deck.
6:30	7:00	0.50	S-CSG	RU_RD	PP		Laid out Weatherford cementing head to pipe deck.
7:00	8:30	1.50	S-NUP	RU_RD	PP		Held JSA. Rigged up riser handling equipment. Winched rig 20m off location
8:30	10:30	2.00	S-NUP	RISER	PP		Held JSA. Picked up and made up marine riser double.
10:30	12:00	1.50	S-NUP	BOPS	PP		Held JSA. Skidded rig back onto location. Installed guidelines.
12:00	14:00	2.00	S-NUP	BOPS	PP		Held JSA with oncoming crews. Installed podlines and clamps. Made up marine riser double to LMRP. Activated BOP beacons and lowered stack through splash zone. Note: BOP fully pressure tested on test stump offline.
14:00	14:30	0.50	S-NUP	PRESS	PP		Made up pressure testing cap. Pressure tested choke and kill lines to 1,379kPa (200psi) Low for 5 minutes and 41,370kPa (6000psi) High for 10 minutes - OK. Rigged down pressure testing cap.
14:30	21:30	7.00	S-NUP	RISER	PP		RIH BOP/LMRP on 14 joints of marine riser from 45m to 252m. Ave running speed 2 joints/hr. Installed podline clamps every third joint.
21:30	22:00	0.50	S-NUP	PRESS	PP		Made up pressure testing cap. Pressure tested choke and kill lines to 1,379kPa (200psi)

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				09-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	12

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							Low for 5 minutes and 41,370kPa (6000psi) High for 10 minutes - OK. Rigged down pressure testing cap.
22:00	0:00	2.00	S-NUP	RISER	PP		Continued to run BOP/LMRP on 6 joints of marine riser from 252m to 343m. Ave running speed 3 joints/hr. Installed podline clamps every third joint.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 04:30hrs: Continued to run BOP/LMRP on 10 joints and 2 pup joints of marine riser from 343m to 525m. Ave running speed 3 joints/hr. Installed podline clamps every third joint.
04:30 - 05:00hrs: Made up pressure testing cap. Pressure tested choke and kill lines to 1,379kPa (200psi) Low for 5 minutes and 41,370kPa (6000psi) High for 10 minutes - OK. Rigged down pressure testing cap.
05:00 - 06:00hrs: Picked up and made up slip joint and BOP landing joint. Offline: Prepared KCL WBM offline.

HSE: No accidents, incidents or pollution reported.
(JSA-21)-(PTW-14).(Total stop cards - 64, unsafe acts - 41, safe acts 23).

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80			
# 2	304.80	66	152.40	1068
# 3	304.80	76	152.40	1230

SPP:

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BJ Casing	1		Diamond Offshore Extra	4	
Diamond Offshore	45		Dowell	2	
BHI	2		Apache	8	
Diamond Offshorte Other	3		Sperry	3	
TMT	6		Vetco	1	
Kemtech	2		Catering	8	

TOTAL PERSONNEL ON BOARD: 85

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
JYN	Pax On - 0, Pax Off - 5.
NOR CAPTAIN	On Location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		47
CEMENT	MT	56	102	DIESEL	m3	11	288
WATER, POTABLE	m3	27	313	WATER, DRILLING	m3	108	668

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	4.50/250.00/3	1.50/250.00/4	/	25.7/250.00	

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				09-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	12

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2017	2017			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008	09-11-2008				09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	188	2	187	3	165
4	164	5	179	6	180
7	195	8	187	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CIRCAL 1000	25.00 kg			0.00
BARITE (bulk)	MT			54.00
SAPP	25.00 kg			0.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg			24.00
SOLTEX	25.00 kg			0.00
GUAR GUM	25.00 kg			0.00
BENTONITE (BULK)	MT			52.00
DRISPAC SL	25.00 kg			0.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
CIRCAL 60/16	25.00 kg			0.00
CAUSTIC SODA - NaOH	25.00 kg			22.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				10-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	13

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	9.40 (days)	5.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 650,730	DHC: 11,872,637
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 650,730	TOTAL: 11,872,637

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	11/10/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	1,519.19 (m)	**INC**	0.33°	**AZM** 354.14°	(sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: Preparing to shallow test MWD/LWD tools.

24 HR SUMMARY: Ran BOP/LMRP on marine riser. Installed goosenecks, MRT's and pod line saddles. Rigged up storm loops. Landed and latched stack. Function BOP/LMRP and pressure tested connector. P/U drill pipe and M/U 216mm (8-1/2") BHA.

24 HR FORECAST: RIH BHA. Drill out shoe track and conduct LOT. Drill 216mm (8-1/2") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	4:30	4.50	S-NUP	RISER	PP		Continued to run BOP/LMRP on 10 joints and 2 pup joints of marine riser from 343m to 525m. Avg running speed 3 joints/hr. Installed podline clamps every third joint.
4:30	5:00	0.50	S-NUP	PRESS	PP		Made up pressure testing cap. Pressure tested choke and kill lines to 1,379kPa (200psi) Low for 5 minutes and 41,370kPa (6000psi) High for 10 minutes - OK. Rigged down pressure testing cap.
5:00	6:00	1.00	S-NUP	RISER	PP		Picked up and made up slip joint and BOP landing joint. Offline: Prepared KCL WBM offline.
6:00	7:00	1.00	S-NUP	RU_RD	PP		Installed riser boost line, choke and kill line goosenecks. Rigged up storm loops.
7:00	7:30	0.50	S-NUP	PRESS	PP		Pressure tested choke and kill lines and moonpool jumper hoses to 1,379kPa (200psi) Low for 5 minutes and 41,370kPa (6000psi) High for 10 minutes - OK.
7:30	9:00	1.50	S-NUP	RU_RD	PP		Installed marine riser tensioner wires to SDL ring on slip joint. Installed slip joint packing control lines. Offline: Winched rig onto location and increased tension on guidelines in preparation for landing BOP stack.
9:00	9:30	0.50	S-NUP	BOPS	PP		Landed BOP stack and latched same using Blue pod. Confirmed latch with ROV and conducted 22.6MT (50klbs) overpull test - OK. Bullseyes before landing: BOP - 0°, LMRP - 0.25° Fwd, Flex joint - 0.5° Stb Fwd. Bullseyes after landing: BOP - 0.5° Port Fwd, LMRP - 0.6° Port Fwd, Flex joint - 0°
9:30	11:00	1.50	S-NUP	RU_RD	PP		Rigged up pod line saddles. Installed RBQ plates onto pod line reels.
11:00	11:30	0.50	S-NUP	PRESS	PP		Closed BSR's. Pumped down kill line and up choke line to confirm circulation. Pressure tested wellhead connector against BSR's and 340mm (13-3/8") casing to 2,070kPa (300psi) Low for 5 minutes and 17,235kPa (2500psi) High for 10 minutes - OK. Note: Dowell pumped 0.84m³ (5.3bbls) to obtain 17,235kPa (2500psi) pressure test.
11:30	12:00	0.50	S-NUP	BOPS	PP		Changed to Yellow pod - ROV confirmed BOP remained latched. Conducted 22.6MT (50klbs) overpull test - OK.
12:00	14:30	2.50	S-NUP	BOPS	PP		Unpinned slip joint and scoped out same. Laid out riser landing joint. Changed elevators and picked up diverter. Installed same and confirmed latched with 6.8MT (15klbs) overpull.
14:30	16:00	1.50	S-NUP	RU_RD	PP		Rigged down riser handling equipment. Cleared drill floor and prepared to pick up 127mm (5") drill pipe.
16:00	18:30	2.50	S-NUP	TRIP	PP		Picked up and RIH 60 x 127mm (5") drill pipe singles from catwalk.
18:30	20:00	1.50	S-NUP	BOPS	PP		Conducted full BOP function test on Blue pod from Driller's panel and Yellow pod from T/P remote panel - OK.
20:00	20:30	0.50	S-NUP	BOPS	PP		Function tested diverter and flushed overboard lines - OK.
20:30	21:00	0.50	S-NUP	RIGSER	PP		Serviced TDS while troubleshooting failed latch mechanism on hydraulic elevators. Changed out same to manual elevators.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				10-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	13

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
21:00	21:30	0.50	S-NUP	TRIP	PP		POH and racked back 127mm (5") DP in derrick.
21:30	0:00	2.50	P-DRL	TRIPBHA	PP		Picked up and made up new PDC bit and 216mm (8-1/2") packed BHA. Picked up and made up PM collar, AFR + RLL, PWD, ALD + CNP, SDC and IXO. Cleaned all wet-connects and rotary shoulders prior to make up.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 00:30hrs: Plugged into MWD/LWD tool string and initialized same.
00:30 - 01:00hrs: Uploaded RA sources to ALD and CNP LWD tools.
01:00 - 01:30hrs: Picked up and made up float sub (ported float), BAT Sonic and ACAL (note: both tools in recorded mode only) and 216mm (8-1/2") string stabiliser.
01:30 - 03:30hrs: Picked up and made up 12 x 171mm (6-3/4") drill collars.
03:30 - 04:30hrs: RIH 216mm (8-1/2") BHA on 127mm (5") HWDP from 161m to 385m. Note: Drilling jar run in HWDP - 226m from bit.
04:30 - 06:00hrs: Picked up 127mm (5") drill pipe singles from catwalk and RIH same from 385m to 613m. Avg tripping speed 152m/hr.

HSE: No accidents, incidents or pollution reported.
(JSA-36)-(PTW-10).(Total stop cards - 68, unsafe acts - 30, safe acts 38).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
3 / 3	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 10-11-2008	- - - - - -

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
46	9/11	4/6	6	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	117,741	CUM COST	154,028	%OIL	

BHA / HOLE CONDITIONS

BHA	3	JAR S/N	17602018	JAR HRS		BIT	3

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	(kN-m)	385.44 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.56	171.40	47.63		
Pulser Sub	1	3.47	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.36	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				10-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	13

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Near Bit Stabilizer	1	1.81	214.30	73.02		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02		

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
Tie On	1,519.19	0.33	354.14	1,519.11	10.86	-2.68	11.19	0.00

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
NOPSA	2		DOWELL	2	
BHI	2		VETCO	1	
APACHE	6		DODI	62	
TMT	6		SUBSEA 7	3	
BJ CASING	1		SPERRY SUN	4	
KEMTECH	2				

TOTAL PERSONNEL ON BOARD: 91

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	Enroute to Geelong.
JYN	Pax On - 8; Pax Off - 2.
NOR CAPTAIN	On Location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		56	BENTONITE	MT		47
CEMENT	MT		102	DIESEL	m3		418
WATER, POTABLE	m3	25	318	WATER, DRILLING	m3	96	782

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
	0.70/ /3	1.50/250.00/4	/	5.1	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1829	1829			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008	09-11-2008	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				10-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	1,537.00 (m)	1,536.91 (m)	13

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	186	2	185	3	167
4	164	5	180	6	182
7	194	8	186	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
FLOWZAN	25.00 kg	26.00	7,080.58	-26.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
DRISPAC SL	25.00 kg	37.00	4,521.03	3.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	22.00
CIRCAL 1000	25.00 kg		0.00	0.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	24.00
SAPP	25.00 kg		0.00	0.00
GUAR GUM	25.00 kg		0.00	0.00
BENTONITE (BULK)	MT		0.00	52.00
CITRIC ACID	25.00 kg		0.00	0.00
CIRCAL 60/16	25.00 kg	120.00	2,122.80	168.00
SOLTEX	25.00 kg	80.00	7,093.60	-80.00
BARITE (bulk)	MT	10.70	3,002.53	43.30
SAFE-CIDE	25.00 l		0.00	0.00
KCL BRINE (1.15SG)	1.00 bbl	957.00	93,919.98	-957.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME	DATE
DORY-1	11-11-2008

API #	24 HRS PROG	TMD	TVD	REPT NO
OH	3.00 (m)	1,540.00 (m)	1,539.91 (m)	14

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	10.40 (days)	6.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 919,199	DHC: 12,791,836
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 919,199	TOTAL: 12,791,836

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	11/11/2008	VIC-P59		2.50

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	1,519.19 (m)	**INC**	0.33°	**AZM** 354.14°	1.31 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: Drilling 216mm (8-1/2") hole at 1651m.

24 HR SUMMARY: M/U and RIH 216mm (8-1/2") BHA. Sperry tools failed shallow test. POH and changed out pulsar assembly. RIH 216mm (8-1/2") BHA from derrick. Shallow tested - OK. RIH P/U 127mm (5") DP. Drilled shoe track and conducted LOT.

24 HR FORECAST: Drill 216mm (8-1/2") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:30	0.50	P-DRL	LWD	PP		Plugged into MWD/LWD tool string and initialized same.
0:30	1:00	0.50	P-DRL	LWD	PP		Uploaded RA sources to ALD and CNP LWD tools.
1:00	1:30	0.50	P-DRL	LWD	PP		Picked up and made up float sub (ported float), BAT Sonic and ACAL (note: both tools in recorded mode only) and 216mm (8-1/2") string stabilizer.
1:30	3:30	2.00	P-DRL	TRIPBHA	PP		Picked up and made up 12 x 171mm (6-3/4") drill collars.
3:30	4:30	1.00	P-DRL	TRIPBHA	PP		RIH 216mm (8-1/2") BHA on 127mm (5") HWDP from 161m to 385m. Note: Drilling jar run in HWDP - 226m from bit.
4:30	6:00	1.50	P-DRL	TRIP	PP		Picked up 127mm (5") drill pipe singles from catwalk and RIH same from 385m to 613m. Avg tripping speed 152m/hr.
6:00	7:00	1.00	P-DRL	CIRC	PN	LE	Attempted to shallow test Sperry MWD/LWD tool string - unsuccessful. Troubleshot same with 2.46m³/min (650gpm) and 12,411kPa (1800psi) to 3.03m³/min (800gpm) and 20,685kPa (3000psi) without success.
7:00	7:30	0.50	P-DRL	CIRC	PN	LE	Conducted mode switch on HCIM. Attempted to shallow test - unsuccessful. No detection.
7:30	8:00	0.50	P-DRL	TRIP	PN	LE	POH 127mm (5") drill pipe from 613m to BHA at 385m and racked back in derrick.
8:00	9:30	1.50	P-DRL	TRIPBHA	PN	LE	POH and racked back 127mm (5") drill pipe and 171mm (6-3/4") drill collars.
9:30	10:30	1.00	P-DRL	LWD	PN	LE	Removed RA sources. Plugged into and downloaded MWD/LWD tools.
10:30	11:30	1.00	P-DRL	LWD	PN	LE	Laid out BAT, ACAL and float sub. Laid out IXO and SDC (negative pulse) to pipe deck.
11:30	12:00	0.50	P-DRL	LWD	PN	LE	Picked up and made up HOC (positive pulse). Plugged into HCIM and initialized same.
12:00	13:00	1.00	P-DRL	LWD	PN	LE	Made up float sub, BAT and ACAL. Installed RA sources.
13:00	13:30	0.50	P-DRL	LWD	PN	LE	Shallow tested Sperry MWD/LWD tool string with 2.27m³/min (600gpm) and 8,274 kPa (1200psi) - OK.
13:30	14:30	1.00	P-DRL	TRIPBHA	PN	LE	Picked up and RIH remaining 216mm BHA to 384m.
14:30	20:00	5.50	P-DRL	TRIP	PP		Picked up 127mm (5") drill pipe singles from catwalk and RIH same from 384m to 1507m. Avg tripping speed 204m/hr.
20:00	22:00	2.00	P-DRL	DRLCMT	PP		Made up TDS and washed down to tag cement at 1518.9m. Drilled out cement plugs and float collar at 1520.9m - commenced displacing well to 1.15SG WBM. Drilled out shoe track and cleaned out rathole to 1537m. Drilled 3m of new formation to 1540m. Washed and reamed through shoe track and rathole to clear debris.
22:00	22:30	0.50	P-DRL	CIRC	PP		Continued to circulate well to even mud weight in preparation for LOT. Pulled bit back inside shoe.
22:30	23:30	1.00	P-DRL	LKOFF	PP		Lined up to Dowell. Shut-in well on upper annular and lined up down drill pipe and choke and kill lines simultaneously. Pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Conducted LOT with 1.15SG WBM. Maximum surface pressure 10,853kPa

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				11-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	3.00 (m)	1,540.00 (m)	1,539.91 (m)	14

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							(1574psi) prior to formation breakdown - 1.87SG (15.57ppg) EMW. Held surface pressure on well for 10 minutes with final stable leak-off pressure of 2,524kPa (366psi) corresponding to 1.31SG (10.91ppg) EMW.
23:30	0:00	0.50	P-DRL	LKOFF	PN	WC	Recorded CLF's. Prepared to commence drilling. Following discussion with Perth office, lined up rig pumps down drill pipe and choke and kill lines. Shut-in well on upper annular. Conducted second LOT with 1.15SG WBM. Maximum surface pressure 3,930kPa (570psi) prior to leak-off - 1.41SG (11.74ppg) EMW. Held surface pressure on well for 5 minutes with final stable leak-off pressure of 2,896kPa (420psi) corresponding to 1.34SG (11.16ppg) EMW.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 00:00 - 06:00hrs: Recorded SCR's. Drilled 216mm (8-1/2") hole from 1540m to 1651m. Avg ROP 18.5m/hr. 4.5 - 6.8MT (10 - 15klbs) WOB, 100 - 150 rpm, 8.1 - 10.8kN.m (6 - 8kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 20,857kPa (3025psi) SPP, 124.7MT (275klbs) string weight up, 124.7MT (275klbs) string weight down, 124.7MT (275klbs) string weight rotating.

HSE: No accidents, incidents or pollution reported.
(JSA-23)-(PTW-14).(Total stop cards - 64, unsafe acts - 25, safe acts 39).

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
3 / 3	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 10-11-2008	0-0-NO-A-X-I-NO-BHA
3RR / 4	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 11-11-2008	- - - - - -

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
3RR/4	2/3	80/90	2,912.33	20,340	8588	2.30	4.00	1.7	2.30	4.00	1.7

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
54	13/20	5/7	6	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	31,380	CUM COST	185,408	%OIL	

BHA	4	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS	2.50	BIT	3RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
23 (tonne)	125 (tonne)	125 (tonne)	125 (tonne)	11 (kN-m)	384.17 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.36	171.40	47.63		

Daily Drilling Report

WELL NAME				DATE
DORY-1				11-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	3.00 (m)	1,540.00 (m)	1,539.91 (m)	14

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.81	214.30	73.02		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02		

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	92	152.40	1489
# 2	304.80	88	152.40	1424
# 3	304.80			

SPP: 20,340 (kPa)

HP: 1.138 (kW/cm²)

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
VETCO	1		KEMTECH	2	
DOWELL	2		TMT	6	
NOPSA	2		BJ	1	
DODI	62		BHI	4	
APACHE	6		SPERRY SUN	4	
SUBSEA 7	8				

TOTAL PERSONNEL ON BOARD: 98

SUPPORT CRAFT

TYPE	REMARKS
JYN	Pax On - 1, Pax Off - 8.
FAR GRIP	Enroute to Geelong.
NOR CAPTAIN	On Location.
FAR SKY	On Location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		114	BENTONITE	MT		47
CEMENT	MT		102	DIESEL	m3		407
WATER, POTABLE	m3	26	323	WATER, DRILLING	m3	18	764

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2088	2088			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				11-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	3.00 (m)	1,540.00 (m)	1,539.91 (m)	14

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008	09-11-2008	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	185	2	183	3	164
4	165	5	181	6	183
7	196	8	187	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
SAPP	25.00 kg		0.00	40.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
FLOWZAN	25.00 kg	28.00	7,625.24	106.00
KCL BRINE (1.15SG)	1.00 bbl	212.00	20,805.68	147.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
DRISPAC SL	25.00 kg	6.00	733.14	120.00
GUAR GUM	25.00 kg		0.00	0.00
CIRCAL 60/16	25.00 kg		0.00	312.00
BENTONITE (BULK)	MT		0.00	47.00
CIRCAL 1000	25.00 kg	98.00	1,733.62	94.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SAFE-CIDE	25.00 l	2.00	201.58	16.00
SOLTEX	25.00 kg		0.00	320.00
CITRIC ACID	25.00 kg		0.00	40.00
BARITE (bulk)	MT	1.00	280.61	100.30

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				12-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	976.00 (m)	2,516.00 (m)	2,515.10 (m)	15

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	11.40 (days)	7.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 948,914	DHC: 13,740,750
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 948,914	TOTAL: 13,740,750

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	12/11/2008	VIC-P59		26.50

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	2,505.87 (m)	**INC**	1.62°	**AZM** 34.79°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: Drilling 216mm (8-1/2") hole at 2804m.

24 HR SUMMARY: Drilled 216mm (8-1/2") hole from 1540m to 1765m. Avg ROP 18.5m/hr. Conducted 3rd LOT. Drilled 216mm (8-1/2") hole from 1765m to 2516m. Avg ROP 55.6m/hr.

24 HR FORECAST: Drill 216mm (8-1/2") hole. POH.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	9:30	9.50	P-DRL	DRLG	PP		Recorded SCR's. Drilled 216mm (8-1/2") hole from 1540m to 1765m. Avg ROP 18.5m/hr. 4.5 - 6.8MT (10 - 15klbs) WOB, 100 - 150 rpm, 8.1 - 10.8kN.m (6 - 8kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 20,857kPa (3025psi) SPP, 124.7MT (275klbs) string weight up, 124.7MT (275klbs) string weight down, 124.7MT (275klbs) string weight rotating.
9:30	10:30	1.00	P-DRL	LKOFF	PP		Spaced out and shut-in well on lower annular. Conducted third LOT with 1.15SG WBM. Maximum surface pressure 3,654kPa (530psi) prior to leak-off - 1.39SG (11.58ppg) EMW. Held surface pressure on well for 5 minutes with final stable leak-off pressure of 2,275kPa (330psi) corresponding to 1.30SG (10.83ppg) EMW.
10:30	0:00	13.50	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 1765m to 2516m. Avg ROP 55.6m/hr. 4.5 - 15.8MT (10 - 35klbs) WOB, 100 - 180 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 26,201kPa (3800psi) SPP, 129.3MT (285klbs) string weight up, 127MT (280klbs) string weight down, 122.5MT (270klbs) string weight rotating. AFR real-time signal lost while drilling at 2272m.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 04:00hrs: Recorded SCR's. Drilled 216mm (8-1/2") hole from 2516m to 2719m. Ave ROP 50.7m/hr.
4.5 - 15.8MT (10 - 35klbs) WOB, 100 - 180 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 27,925kPa (4050psi) SPP, 154.2MT (340klbs) string weight up, 149.7MT (330klbs) string weight down, 145.1MT (320klbs) string weight rotating.
Note: 2,758kPa (400psi) SPP increase while drilling at 2546m - hole exhibiting signs of pack-off. Picked up off bottom and backreamed from 2546m to 2521m twice. Recorded string weights: Rotating Up - 145.1MT (320klbs), Rotating Down - 145.1MT (320klbs), Straight Up (No pump or rotation) - 154.2MT (340klbs), Straight Down - 149.7MT (330klbs).
04:00 - 04:30hrs: Backreamed stand once from 2719m to 2691m to monitor hole conditions. Rotating string weights: Up - 145.1MT (320klbs), Down - 145.1MT (320klbs). POH from 2719m to 2662m (2 stands) without pump or rotation to monitor hole conditions prior to intersecting primary target. String weights: Up - 158.7MT (350klbs), Down - 154.2MT (340klbs). Correct hole fill recorded. No gas peaks encountered above background levels while drilling Angler Sub-Group, no indications of sloughing or evidence of cavings or splintered cuttings over shakers. Hole conditions good with no drag.
04:30 - 06:00hrs: Drilled 216mm (8-1/2") hole from 2719m to 2804m. Ave ROP 56.7m/hr.
9.1 - 15.8MT (20 - 35klbs) WOB, 160 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 29,821kPa (4325psi) SPP, 158.7MT (350klbs) string weight up, 154.2MT (340klbs) string weight down, 145.1MT (320klbs) string weight rotating.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 51 (23 unsafe, 28 safe).
JSA - 28, PTW - 13.

Daily Drilling Report

WELL NAME				DATE
DORY-1				12-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	976.00 (m)	2,516.00 (m)	2,515.10 (m)	15

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
3RR / 4	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 11-11-2008	- - - - - -

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
3RR/4	7/14	110/180	2,909.50	27,924	8571	23.00	919.00	40.0	25.30	923.00	36.5

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
54	12/26	8/9	5	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	82,987	CUM COST	268,395	%OIL	

BHA	4	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS	26.50	BIT	3RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	147 (tonne)	143 (tonne)	141 (tonne)	16 (kN-m)	384.17 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.36	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.81	214.30	73.02		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02		

Daily Drilling Report

WELL NAME				DATE
DORY-1				12-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	976.00 (m)	2,516.00 (m)	2,515.10 (m)	15

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	1,555.75	0.62	360.00	1,555.66	11.16	-2.69	3.63	0.24
NORMAL	1,584.25	0.70	360.00	1,584.16	11.49	-2.69	3.66	0.08
NORMAL	1,612.64	0.68	350.69	1,612.55	11.83	-2.72	3.72	0.12
NORMAL	1,641.01	0.96	329.53	1,640.92	12.20	-2.87	3.90	0.43
NORMAL	1,669.49	1.05	321.20	1,669.39	12.61	-3.15	4.21	0.18
NORMAL	1,698.35	1.42	301.03	1,698.25	13.00	-3.63	4.72	0.59
NORMAL	1,727.22	1.69	294.67	1,727.11	13.36	-4.32	5.44	0.33
NORMAL	1,756.10	1.86	285.87	1,755.97	13.67	-5.16	6.30	0.33
NORMAL	1,785.36	1.99	276.46	1,785.22	13.86	-6.12	7.27	0.35
NORMAL	1,814.48	2.04	256.82	1,814.32	13.80	-7.13	8.27	0.71
NORMAL	1,843.69	2.24	226.11	1,843.51	13.28	-8.04	9.14	1.18
NORMAL	1,872.67	3.45	210.48	1,872.45	12.14	-8.89	9.89	1.48
NORMAL	1,901.62	3.83	211.01	1,901.34	10.56	-9.83	10.70	0.40
NORMAL	1,930.53	3.89	212.01	1,930.19	8.90	-10.85	11.57	0.09
NORMAL	1,959.26	3.88	211.43	1,958.85	7.24	-11.87	12.45	0.04
NORMAL	1,988.14	3.81	360.00	1,987.71	7.37	-12.38	12.97	7.69
NORMAL	2,017.06	3.95	200.39	2,016.60	7.40	-12.73	13.31	7.92
NORMAL	2,045.65	3.97	192.82	2,045.13	5.51	-13.29	13.71	0.55
NORMAL	2,074.48	4.05	182.58	2,073.89	3.52	-13.56	13.81	0.75
NORMAL	2,103.17	3.74	182.81	2,102.51	1.57	-13.65	13.74	0.32
NORMAL	2,131.89	3.28	185.32	2,131.18	-0.18	-13.78	13.71	0.51
NORMAL	2,160.61	3.01	186.95	2,159.85	-1.75	-13.94	13.74	0.30
NORMAL	2,189.20	2.79	187.90	2,188.41	-3.18	-14.13	13.81	0.24
NORMAL	2,246.65	1.80	180.38	2,245.81	-5.47	-14.33	13.81	0.54
NORMAL	2,275.29	1.31	173.59	2,274.44	-6.25	-14.29	13.71	0.55
NORMAL	2,304.03	0.83	157.48	2,303.17	-6.76	-14.18	13.55	0.59
NORMAL	2,332.80	0.61	126.88	2,331.94	-7.05	-13.97	13.33	0.45
NORMAL	2,361.43	0.50	77.92	2,360.57	-7.11	-13.73	13.08	0.49
NORMAL	2,390.38	0.55	67.90	2,389.52	-7.04	-13.48	12.83	0.11
NORMAL	2,419.35	1.41	42.83	2,418.48	-6.72	-13.11	12.49	0.97
NORMAL	2,448.20	1.36	46.46	2,447.33	-6.23	-12.62	12.04	0.10
NORMAL	2,477.02	1.39	40.13	2,476.14	-5.72	-12.14	11.61	0.16
NORMAL	2,505.87	1.62	34.79	2,504.98	-5.12	-11.69	11.21	0.28

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80			0
# 2	304.80			0
# 3	304.80			0

SPP: 27,924 (kPa)

HP: 1.135 (kW/cm²)

SPR

	SPM	PPSR

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				12-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	976.00 (m)	2,516.00 (m)	2,515.10 (m)	15

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BRANDT	1		SPERRY SUN	4	
SUBSEA 7	10		BHI	4	
DOWELL	2		VETCO	1	
DODI	61		APACHE	6	
BJ	1		KEMTECH	2	
TMT	3				

TOTAL PERSONNEL ON BOARD: 95

SUPPORT CRAFT

TYPE	REMARKS
CALYPSO STAR	
FAR GRIP	In Geelong.
NOR CAPTAIN	On Location.
FAR SKY	Enroute to Rig.
HELICOPTER	JYN (Pax On - 7, Pax Off - 10).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT	48	66	BENTONITE	MT	3	43
CEMENT	MT		102	DIESEL	m3		385
WATER, POTABLE	m3	28	329	WATER, DRILLING	m3	84	680

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1954	1954			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008 / 41,370	09-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	186	2	182	3	165
4	167	5	182	6	181
7	196	8	188	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				12-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	976.00 (m)	2,516.00 (m)	2,515.10 (m)	15

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
BENTONITE (BULK)	MT		0.00	47.00
SAPP	25.00 kg		0.00	40.00
KWIKSEAL (F)	40.00 lbs		0.00	54.00
CIRCAL 60/16	25.00 kg	80.00	1,415.20	232.00
CIRCAL 1000	25.00 kg		0.00	94.00
FLOWZAN	25.00 kg	32.00	8,714.56	74.00
CITRIC ACID	25.00 kg		0.00	40.00
CIRCAL Y	25.00 kg		0.00	96.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
KWIKSEAL (M)	40.00 lbs		0.00	54.00
SOLTEX	25.00 kg	80.00	7,093.60	240.00
BARITE (bulk)	MT	48.00	13,469.28	52.30
KCL BRINE (1.15SG)	1.00 bbl	481.00	47,205.34	0.00
DRISPAC SL	25.00 kg	40.00	4,887.60	80.00
GUAR GUM	25.00 kg		0.00	0.00
SAFE-CIDE	25.00 l	2.00	201.58	30.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				13-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	439.00 (m)	2,955.00 (m)	2,953.96 (m)	16

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	12.40 (days)	8.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008	25/11/2008	PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 933,237	DHC: 14,673,987
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 933,237	TOTAL: 14,673,987

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	13/11/2008	VIC-P59		41.50

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	2,938.52 (m)	**INC**	1.23°	**AZM**	64.27°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: RIH 127mm (5") drill pipe.

24 HR SUMMARY: Drilled 216mm (8-1/2") hole from 2516m to 2719m. Conducted check trip - hole condition good. Drilled 216mm (8-1/2") hole from 2719m to 2892m. Backreamed from 2892m to 2400m. RIH and drilled 216mm (8-1/2") hole from 2892m to 2955m. POH to surface.

24 HR FORECAST: RIH to 340mm (13-3/8") casing shoe. Slip and cut drilling line. RIH and drill 216mm (8-1/2") hole.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	4:00	4.00	P-DRL	DRLG	PP		Recorded SCR's. Drilled 216mm (8-1/2") hole from 2516m to 2719m. Ave ROP 50.7m/hr. 4.5 - 15.8MT (10 - 35klbs) WOB, 100 - 180 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 27,925kPa (4050psi) SPP, 154.2MT (340klbs) string weight up, 149.7MT (330klbs) string weight down, 145.1MT (320klbs) string weight rotating. Note: 2,758kPa (400psi) SPP increase while drilling at 2546m - hole exhibiting signs of pack-off. Picked up off bottom and backreamed from 2546m to 2521m twice. Recorded string weights: Rotating Up - 145.1MT (320klbs), Rotating Down - 145.1MT (320klbs), Straight Up (No pump or rotation) - 154.2MT (340klbs), Straight Down - 149.7MT (330klbs).
4:00	4:30	0.50	P-DRL	RMWASH	PP		Backreamed stand once from 2719m to 2691m to monitor hole conditions. Rotating string weights: Up - 145.1MT (320klbs), Down - 145.1MT (320klbs). POH from 2719m to 2662m (2 stands) without pump or rotation to monitor hole conditions prior to intersecting primary target. String weights: Up - 158.7MT (350klbs), Down - 154.2MT (340klbs). Correct hole fill recorded. No gas peaks encountered above background levels while drilling Angler Sub-Group, no indications of sloughing or evidence of cavings or splintered cuttings over shakers. Hole conditions good with no drag.
4:30	7:30	3.00	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 2719m to 2892m. Ave ROP 57.6m/hr. 9.1 - 15.8MT (20 - 35klbs) WOB, 160 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.91m³/min (770gpm) flow rate, 29,821kPa (4325psi) SPP, 158.7MT (350klbs) string weight up, 154.2MT (340klbs) string weight down, 145.1MT (320klbs) string weight rotating.
7:30	8:00	0.50	P-DRL	CIRC	PN	FP	Recorded 10% gas peak while drilling at 2892m. Picked up off bottom and circulated gas from well - no mud cut observed.
8:00	10:30	2.50	P-DRL	RMWASH	PP		Conducted flow check - well static. Backreamed out of hole from 2892m to 2400m. No overpull observed.
10:30	11:00	0.50	P-DRL	RIGSER	PP		Serviced TDS and travelling block while circulating.
11:00	12:00	1.00	P-DRL	RIH	PP		RIH from 2400m to 2892m - no drag or fill on bottom observed.
12:00	15:00	3.00	P-DRL				Drilled 216mm (8-1/2") hole from 2892m to 2955m. Ave ROP 21m/hr. ROP decreased to <4m/hr. 9.1 - 18.1MT (20 - 40klbs) WOB, 100 - 165 rpm, 8.1 - 19.0kN.m (6 - 14kft.lbs) torque, 2.86m³/min (755gpm) flow rate, 30,338kPa (4400psi) SPP.
15:00	19:30	4.50	P-DRL	TRIP	PP		Conducted flow check - well static. POH 127mm (5") drill pipe from 2955 to 1509m - tight hole encountered at 2393m and 2212m with 22.7MT (50klbs) overpull. Worked pipe once through tight hole - drag returned to normal. Ave tripping speed 321m/hr.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				13-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	439.00 (m)	2,955.00 (m)	2,953.96 (m)	16

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
19:30	21:00	1.50	P-DRL	TRIPBHA	PP		POH 127mm (5") DP from 1509m to BHA at 384m. Ave tripping speed 750m/hr.
21:00	22:30	1.50	P-DRL	TRIPBHA	PP		POH and racked back 127mm (5") HWDP. POH and racked back 171mm (6-3/4") drill collars.
22:30	0:00	1.50	P-DRL	LWD	PP		Removed RA sources from ALD and CNP LWD tools (20 mins). Laid down BAT, ACAL and float sub to pipe deck to download memory data. Picked up 127mm(5") DP single and made up to tool string for finger board space out. Plugged into MWD/LWD and downloaded data from AFR tool (required prior to breaking and laying out same). Racked back LWD in derrick to complete downloading offline.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 01:00hrs: POH to bit. Near bit stabiliser 25mm (1") undergauge and bit rung out. Broke off bit and near bit stabiliser and laid out same (Bit graded 4-8-RO-S-X-1-BT-PR). Made up new 214mm (8-7/16") near bit stabiliser and bit and RIH. Offline: Downloaded memory data from BAT tool.
01:00 - 01:30hrs: Broke out failed AFR tool and laid out. Picked up and made up back-up. Offline: Assessed AFR memory data - spurious below 1900m.
01:30 - 02:00hrs: Picked up MWD/LWD stand from derrick consisting of PWD, ALD + CNP and HOC. Cleaned wet connects prior to make up.
02:00 - 03:00hrs: Plugged into HOC and AFR tools. Checked tool string - OK. Initialised same.
03:00 - 04:00hrs: Made up float sub with re-dress ported float. Picked up back-up BAT. Broke off back-up ACAL and laid out. Made up primary ACAL.
Note: Back-up BAT tool needed following difficulties with downloading useable data from primary tool. No batteries for back-up ACAL - primary ACAL broken off primary BAT and made up to tool string. Laid out 127mm drill pipe single to pipe deck.
04:00 - 04:30hrs: Loaded RA sources into ALD and CNP LWD tools.
04:30 - 05:00hrs: Picked up 1 x stand 127mm (5") DP. Made up TDS and shallow tested MWD at 2.65m³/min (700gpm) - OK.
05:00 - 06:00hrs: Picked up and RIH 171mm (6-3/4") drill collars and 127mm (5") HWDP from derrick.

HSE: 1 FAC reported. Report to follow.
Total Stop cards - 83 (30 unsafe, 53 safe).
JSA - 32, PTW - 17.

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
3RR / 4	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 11-11-2008	4-8-RO-S-X-1-BT-PR

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
3RR/4	5/14	100/180	2,812.50	27,752	8009	3.00			28.30	923.00	32.6

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
53	12/28	9/10	76	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	37,293	CUM COST	305,688	%OIL	

BHA / HOLE CONDITIONS

BHA	4	JAR S/N	17602018	JAR HRS	80.50	BIT	3RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
23 (tonne)	154 (tonne)	150 (tonne)	147 (tonne)	12 (kN-m)	384.17 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				13-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	439.00 (m)	2,955.00 (m)	2,953.96 (m)	16

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.36	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.81	214.30	73.02		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02		

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	2,534.92	1.73	35.80	2,534.01	-4.43	-11.20	-5.40	0.12
NORMAL	2,563.90	1.80	33.67	2,562.98	-3.69	-10.69	-4.63	0.10
NORMAL	2,592.89	1.74	25.08	2,591.96	-2.92	-10.25	-3.82	0.28
NORMAL	2,621.85	1.54	25.98	2,620.91	-2.17	-9.89	-3.04	0.21
NORMAL	2,650.67	1.53	25.37	2,649.72	-1.47	-9.56	-2.32	0.02
NORMAL	2,679.36	1.32	23.81	2,678.40	-0.82	-9.26	-1.64	0.22
NORMAL	2,736.48	1.19	38.56	2,735.50	0.24	-8.62	-0.53	0.18
NORMAL	2,765.32	1.50	54.76	2,764.34	0.69	-8.13	-0.03	0.51
NORMAL	2,794.00	1.49	54.96	2,793.01	1.12	-7.52	0.45	0.01
NORMAL	2,823.06	1.51	57.63	2,822.06	1.55	-6.88	0.93	0.08
NORMAL	2,851.45	1.44	61.34	2,850.44	1.92	-6.26	1.35	0.13
NORMAL	2,909.60	1.41	63.70	2,908.57	2.59	-4.97	2.13	0.03
NORMAL	2,938.52	1.23	64.27	2,937.48	2.88	-4.37	2.48	0.19

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	30	152.40	485
# 2	304.80	50	152.40	809
# 3	304.80	35	152.40	566

SPP: 27,752 (kPa)

HP: 1.025 (kW/cm²)

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BHI	4		BAKER ATLAS	6	
BJ	1		KEMTECH	2	
BRANDT	1		VETCO	1	
SUBSEA 7	10		SPERRY SUN	4	
APACHE	5		DOWELL	2	
DODI	59				

TOTAL PERSONNEL ON BOARD: 95

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	In Geelong.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				13-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	439.00 (m)	2,955.00 (m)	2,953.96 (m)	16

SUPPORT CRAFT

TYPE	REMARKS
SWISSCO 168	On Location.
HELICOPTER	JYN (Pax On - 7, Pax Off - 7).
NOR CAPTAIN	Enroute to Geelong.
FAR SKY	On Location.
HELICOPTER	

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT	3	99	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		369
WATER, POTABLE	m3	26	335	WATER, DRILLING	m3	96	584

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2038	2038			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008 / 41,370	09-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE **FIRST AID** **LOST TIME?** **NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	186	2	182	3	165
4	167	5	182	6	181
7	196	8	188	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				13-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	439.00 (m)	2,955.00 (m)	2,953.96 (m)	16

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
SAFE-CIDE	25.00 l		0.00	48.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
KCL BRINE (1.15SG)	1.00 bbl	265.00	26,007.10	0.00
GUAR GUM	25.00 kg		0.00	0.00
FLOWZAN	25.00 kg	15.00	4,084.95	59.00
POLYSAl	25.00 kg		0.00	60.00
BARITE (bulk)	MT	3.00	841.83	85.30
CIRCAL 1000	25.00 kg		0.00	94.00
CIRCAL 60/16	25.00 kg	44.00	778.36	188.00
BENTONITE (BULK)	MT		0.00	47.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SOLTEX	25.00 kg	34.00	3,014.78	206.00
DRISPAC SL	25.00 kg	21.00	2,565.99	59.00
SAPP	25.00 kg		0.00	40.00
CIRCAL Y	25.00 kg		0.00	96.00
CITRIC ACID	25.00 kg		0.00	40.00
KWIKSEAL (M)	40.00 lbs		0.00	54.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	40.00
KWIKSEAL (F)	40.00 lbs		0.00	54.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				14-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	263.00 (m)	3,218.00 (m)	3,216.93 (m)	17

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	13.40 (days)	9.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 918,632	DHC: 15,592,619
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 918,632	TOTAL: 15,592,619

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	14/11/2008	VIC-P59		11.00

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	2,938.52 (m)	**INC**	1.23°	**AZM**	64.27°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: Drilling 216mm (8-1/2") hole at 3436m.

24 HR SUMMARY: M/U RR bit and NB stab. RIH Quad Combo BHA and shallow tested same - OK. RIH to shoe, slipped and cut drilling line. RIH and conducted MAD run from 2780m to 2875m. RIH and drilled 216mm (8-1/2") hole from 2955m to 3218m. Avg ROP 35.1m/hr.

24 HR FORECAST: Drill 216mm (8-1/2") hole. POH.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	1:00	1.00	P-DRL	TRIPBHA	PP		POOH to bit. Near bit stabiliser 25mm (1") undergauge at bottom of blades and bit rung out. Broke off bit and near bit stabilizer and laid out same. Made up new 214mm (8-7/16") near bit stabilizer and re-run bit and RIH. Offline: Downloaded memory data from BAT tool.
1:00	1:30	0.50	P-DRL	LWD	PN	MW	Broke out failed AFR tool and laid out. Picked up and made up back-up. Offline: Assessed AFR memory data - questionable below 1900m.
1:30	2:00	0.50	P-DRL	LWD	PP		Picked up MWD/LWD stand from derrick consisting of PWD, ALD + CNP and HOC. Cleaned wet connects prior to make up.
2:00	3:00	1.00	P-DRL	LWD	PP		Plugged into HOC and AFR tools. Checked tool string - OK. Initialized same.
3:00	4:00	1.00	P-DRL	LWD	PN	MW	Made up float sub with re-dressed ported float. Picked up back-up BAT. Broke off back-up ACAL and laid out. Made up primary ACAL. Note: Back-up BAT tool needed due to difficulties with downloading useable data from primary tool. No batteries for back-up ACAL - primary ACAL broken off primary BAT and made up to tool string. Laid out 127mm drill pipe single to pipe deck.
4:00	4:30	0.50	P-DRL	LWD	PP		Loaded RA sources into ALD and CNP LWD tools.
4:30	5:00	0.50	P-DRL	TRIPBHA	PP		Picked up and RIH 2 x stands 171mm (6-3/4") drill collars.
5:00	5:30	0.50	P-DRL	LWD	PP		Picked up 1 x stand 127mm (5") DP. Made up TDS and shallow tested MWD at 2.65m³/min (700gpm) - OK.
5:30	6:00	0.50	P-DRL	TRIPBHA	PP		Picked up and RIH 2 x stands 171mm (6-3/4") drill collars and 127mm (5") HWDP (including drilling jar) from derrick to 383m.
6:00	7:00	1.00	P-DRL	TRIP	PP		Picked up 18 joints 127mm (5") drill pipe from pipe deck and RIH BHA from 383m to 553m.
7:00	8:30	1.50	P-DRL	TRIP	PP		RIH 127mm (5") drill pipe from 553m to 1507m. Avg tripping speed 636m/hr.
8:30	9:00	0.50	P-DRL	CUTDL	PP		Held JSA. Made up TIW valve and side-entry sub. Rigged up surface lines for circulating during slip and cut. Rigged up to hang off block.
9:00	11:00	2.00	P-DRL	CUTDL	PP		Slipped and cut 27m drilling line. Function tested crown-o-matic. Note: Circulated through side-entry sub at 2.27m³/min (600gpm).
11:00	13:00	2.00	P-DRL	TRIP	PP		RIH 127mm (5") drill pipe from 1507m to 2780m. Avg tripping speed 636m/hr.
13:00	16:00	3.00	P-DRL	SLOG	PN	MW	Conducted MAD run from 2780m to 2875m at controlled rate of 50m/hr with 2.27m³/min (600gpm) and 60 rpm.
16:00	16:30	0.50	P-DRL	RMWASH	PP		Washed and reamed from 2875m down to 2955m - hole condition good. Note: MWD/LWD tools failed while washing to bottom. Pulse detected at surface but no useable signal from tool string decoded. Cycled pumps (2-2-2 cycle) and attempted to mode switch HCIM - unsuccessful.
16:30	0:00	7.50	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 2955m to 3218m. Avg ROP 35.1m/hr. Boosted riser

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				14-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	263.00 (m)	3,218.00 (m)	3,216.93 (m)	17

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							while drilling with 1.51m³/min (400gpm) and 2,068kPa (300psi). 11.3 - 18.1MT (25 - 40klbs) WOB, 60 - 120 rpm, 10.8 - 19.0kN.m (8 - 14kft.lbs) torque, 2.82m³/min (745gpm) flow rate, 27,752kPa (4025psi) SPP, 172.4MT (380klbs) string weight up, 161.1MT (355klbs) string weight down, 165.6MT (365klbs) string weight rotating.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 00:00 - 06:00hrs: Drilled 216mm (8-1/2") hole from 3218m to 3436m. Ave ROP 36.3m/hr.

11.3 - 18.1MT (25 - 40klbs) WOB, 60 - 120 rpm, 10.8 - 36.6kN.m (8 - 27kft.lbs) torque, 2.82m³/min (745gpm) flow rate, 28,200kPa (4090psi) SPP, 176.9MT (390klbs) string weight up, 167.8MT (370klbs) string weight down, 172.4MT (380klbs) string weight rotating.

Note: String rotation stalled while drilling at 3285m - no increase in standpipe pressure. Worked torque out of string and worked pipe with 22.6MT (50klbs) overpull. Regained rotation and reamed single from 3285m to 3276m. Washed and reamed back to bottom - hole condition good.

HSE: 1 FAC reported. Welder had piece of debris lodge in eye despite appropriate PPE being worn. Report to follow.
Total Stop cards - 76 (21 unsafe, 55 safe).
JSA - 30, PTW - 11.

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
3RR / 4	216.0	SMITH	Mi519BPX	JX5589	5x13	1,537.00 / 11-11-2008	4-8-RO-S-X-1-BT-PR
4RR / 5	216.0	HUGHES CHRISTENSEN	HC506ZX	7211635	6x14	2,955.00 / 14-11-2008	5-2-CR-N-X-I-BT-TD

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
4RR/5	19/14	80/100	2,797.40	26,615	4091	3.58	114.00	31.8	3.58	114.00	31.8

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
53	13/26	9/10	76	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	3507	CUM COST	309,195	%OIL	

BHA	5	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS	91.50	BIT	4RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
23 (tonne)	170 (tonne)	156 (tonne)	163 (tonne)	16 (kN-m)	383.80 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				14-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	263.00 (m)	3,218.00 (m)	3,216.93 (m)	17

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Logging While Drilling	1	9.57	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.17	214.30	73.02		
Polycrystalline Diamond Bit	1	0.33	216.00	73.02		

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	40	152.40	647
# 2	304.80	30	152.40	485
# 3	304.80	94	152.40	1521

SPP: 26,615 (kPa)

HP: 0.521 (kW/cm²)

SPR

	SPM	PPSR
PUMPS # 1	86/30/40/50	26,615/2,482/3,172/3,930
PUMPS # 2	87/30/40/50	26,615/2,482/3,241/4,068

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BRANDT	1		SUBSEA 7	8	
BAKER ATLAS	8		KEMTECH	2	
DOWELL	2		DODI	56	
SPERRY SUN	4		BJ CASING	2	
BHI	4		VETCO	1	
APACHE	5				

TOTAL PERSONNEL ON BOARD: 93

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
NOR CAPTAIN	In Geelong.
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 5, Pax Off - 7).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		498
WATER, POTABLE	m3	29	338	WATER, DRILLING	m3	35	789

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2082	2082			

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				14-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	263.00 (m)	3,218.00 (m)	3,216.93 (m)	17

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008 / 41,370	09-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE FIRST AID LOST TIME? NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	185	2	183	3	164
4	165	5	183	6	182
7	195	8	188	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CIRCAL Y	25.00 kg		0.00	96.00
SOLTEX	25.00 kg	26.00	2,305.42	180.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
POLYSAI	25.00 kg		0.00	60.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
DRISPAC SL	25.00 kg	5.00	610.95	174.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	40.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
DEFOAM A	25.00 l		0.00	0.00
FLOWZAN	25.00 kg		0.00	94.00
			0.00	0.00
CIRCAL 60/16	25.00 kg	22.00	389.18	166.00
CITRIC ACID	25.00 kg		0.00	40.00
SAFE-CIDE	25.00 l	2.00	201.58	46.00
SAPP	25.00 kg		0.00	40.00
OMYACARB 10	25.00 kg		0.00	0.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
BARITE (bulk)	MT		0.00	85.30
KWIKSEAL (M)	40.00 lbs		0.00	90.00
CIRCAL 1000	25.00 kg		0.00	94.00
NUT PLUG	25.00 kg		0.00	0.00
BENTONITE (BULK)	MT		0.00	47.00
GUAR GUM	25.00 kg		0.00	0.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				15-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	596.00 (m)	3,814.00 (m)	3,812.77 (m)	18

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	14.40 (days)	10.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 943,192	DHC: 16,535,811
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 943,192	TOTAL: 16,535,811

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	15/11/2008	VIC-P59		35.00

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 2,938.52 (m) **INC** 1.23° **AZM** 64.27°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: POH 127mm drill pipe and rack back in derrick.

24 HR SUMMARY: Drilled 216mm (8-1/2") hole from 3218m to 3814m TD. Avg ROP 24.8m/hr.

24 HR FORECAST: Circulate hole clean. POH and rack back BHA. L/O MWD/LWD tools. R/U electric line sheaves and commence formation evaluation operations.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	6:00	6.00	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 3218m to 3436m. Avg ROP 36.3m/hr. 11.3 - 18.1MT (25 - 40klbs) WOB, 60 - 120 rpm, 10.8 - 36.6kN.m (8 - 27kft.lbs) torque, 2.82m³/min (745gpm) flow rate, 28,200kPa (4090psi) SPP, 176.9MT (390klbs) string weight up, 167.8MT (370klbs) string weight down, 172.4MT (380klbs) string weight rotating. Note: String rotation stalled while drilling at 3285m - no increase in standpipe pressure. Worked torque out of string and worked pipe with 22.6MT (50klbs) overpull. Regained rotation and reamed single from 3285m to 3276m. Washed and reamed back to bottom - hole condition good.
6:00	21:30	15.50	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 3436m to 3804m . Avg ROP 23.7m/hr. 13.6 - 22.6MT (30 - 50klbs) WOB, 85 - 100 rpm, 5.4 - 36.6kN.m (4 - 27kft.lbs) torque, 2.75m³/min (726gpm) flow rate, 28,890kPa (4190psi) SPP, 186.9MT (410klbs) string weight up, 176.9MT (390klbs) string weight down, 176.9MT (390klbs) string weight rotating.
21:30	22:30	1.00	P-DRL	DRLG	PP		Hard stringer encountered at 3804m with ROP decreasing to <1m/hr. Drilled 216mm (8-1/2") hole to 3805m. Note: Pumped 9.54m³ calcium carbonate pill at 22:00hrs (commenced preparations to POH). Continued drilling on stringer while sweeping hole with pill. No increase in cuttings volume accompanied pill on bottom's up.
22:30	0:00	1.50	P-DRL	DRLG	PP		Drilled 216mm (8-1/2") hole from 3805m to 3814m TD. Avg ROP 6m/hr. Confirmed TD with Perth office. 13.6 - 22.6MT (30 - 50klbs) WOB, 40 - 100 rpm, 5.4 - 36.6kN.m (4 - 27kft.lbs) torque, 2.75m³/min (726gpm) flow rate, 28,890kPa (4190psi) SPP, 186.9MT (410klbs) string weight up, 176.9MT (390klbs) string weight down, 176.9MT (390klbs) string weight rotating.

24.00 = Total Hours Today

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				15-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	596.00 (m)	3,814.00 (m)	3,812.77 (m)	18

06:00 UPDATE

0000-0600

00:00 - 02:30hrs: Pumped 9.54m³ calcium carbonate pill and swept same from hole. No increase in cuttings volume accompanied pill on bottom's up. Continued circulating at 2.75m³/min (726gpm) and 28,890kPa (4190psi) until shakers clean (total ~3 bottom's up since encountering stringer at 3804m). Reciprocated and rotated pipe while circulating.
02:30 - 06:00hrs: POH 127mm (5") drill pipe from 3814m to 2570m. Encountered several tight spots from 3525m to 2981m - max overpull 40.8MT (90klbs), max drag 27.2MT (60klbs). Worked pipe in singles as required. Tight hole wiped clean. Avg tripping speed 355m/hr.

HSE: 1 incident reported. While spotting ROV on Port Aft deck, boom on Port crane continued to lower at slow speed until ROV landed on ROV platform. Emergency stop was functioned. Boom came to rest on ROV winch guide frame. Whip line ball and main block came to rest on ROV work deck. No injuries to personnel or damage to equipment. Report to follow.
Total Stop cards - 76 (21 unsafe, 55 safe).
JSA - 30, PTW - 11.

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
4RR / 5	216.0	HUGHES CHRISTENSEN	HC506ZX	7211635	6x14, 6x14	2,955.00 / 14-11-2008	5-2-CR-N-X-I-BT-TD

BIT OPERATIONS

BIT / RUN	WOB	RPM	FLOW	PRESS	P BIT	HRS	24 Hr PROG	24 HR ROP	CUM HRS	CUM PROG	CUM ROP
4RR/5	15/21	40/95	2,764.00	29,580	3994	20.83	517.00	24.8	30.83	859.00	27.9

MUD PROPERTIES

LCM: | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
56	14/28	10/11	4	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	14,819	CUM COST	324,014	%OIL	

BHA / HOLE CONDITIONS

BHA	5	JAR S/N	17602018	JAR HRS	115.50	BIT	4RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
23 (tonne)	175 (tonne)	166 (tonne)	172 (tonne)	16 (kN-m)	383.80 (m)
23 (tonne)	191 (tonne)	181 (tonne)	186 (tonne)	16 (kN-m)	383.80 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.57	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.17	214.30	73.02		
Polycrystalline Diamond Bit	1	0.33	216.00	73.02		

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				15-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	596.00 (m)	3,814.00 (m)	3,812.77 (m)	18

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	84	152.40	1359
# 2	304.80	40	152.40	647
# 3	304.80	94	152.40	1521

SPP: 29,580 (kPa)

HP: 0.502 (kW/cm²)

SPR

	SPM	PPSR
PUMPS # 2	90/30/40/50	27,856/3,448/4,137/5,171

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BHI	4		DOWELL	2	
BAKER ATLAS	8		KEMTECH	2	
BRANDT	1		VETCO	1	
APACHE	5		BJ CASING	2	
DODI	56		SUBSEA 7	8	
SPERRY SUN	4				

TOTAL PERSONNEL ON BOARD: 93

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	At Barry Beach Marine Terminal.
NOR CAPTAIN	On Location.
FAR SKY	Enroute to Geelong.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		476
WATER, POTABLE	m3	22	349	WATER, DRILLING	m3	84	705

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2083	2083			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
09-11-2008 / 41,370	09-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	09-11-2008			09-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

Daily Drilling Report

WELL NAME				DATE
DORY-1				15-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	596.00 (m)	3,814.00 (m)	3,812.77 (m)	18

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	187	2	185	3	163
4	164	5	182	6	180
7	198	8	192	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
DEFOAM A	25.00 l		0.00	24.00
CIRCAL Y	25.00 kg		0.00	96.00
BENTONITE (BULK)	MT		0.00	47.00
POLYSAI	25.00 kg	30.00	1,061.40	30.00
DRISPAC SL	25.00 kg	26.00	3,176.94	228.00
OMYACARB 10	25.00 kg		0.00	96.00
KWIKSEAL (M)	40.00 lbs		0.00	90.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	40.00
BARITE (bulk)	MT		0.00	140.30
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SAPP	25.00 kg		0.00	40.00
NUT PLUG	25.00 kg		0.00	28.00
FLOWZAN	25.00 kg	7.00	1,906.31	87.00
CIRCAL 1000	25.00 kg		0.00	94.00
CITRIC ACID	25.00 kg		0.00	40.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
SAFE-CIDE	25.00 l	2.00	201.58	44.00
			0.00	0.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
GUAR GUM	25.00 kg		0.00	0.00
CIRCAL 60/16	25.00 kg	88.00	1,556.72	78.00
SOLTEX	25.00 kg	78.00	6,916.26	182.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				16-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	19

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	15.40 (days)	11.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 1,212,142	DHC: 17,747,953
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 1,212,142	TOTAL: 17,747,953

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	16/11/2008	VIC-P59		35.00

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: Conducting first correlation pass prior to Performing Pressure Data Collection.

24 HR SUMMARY: Circulated hole clean. POOH BHA. L/O MWD/LWD tools to pipe deck. R/U electric line sheaves. P/U GSLAM tool string. RIH and conducted Logging Run #1 - GSLAM.

24 HR FORECAST: Conduct Logging Run #2 - RCI

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	2:30	2.50	P-DRL	CIRC	PP		Pumped 9.54m³ calcium carbonate pill and swept same from hole. No increase in cuttings volume accompanied pill on bottom's up. Continued circulating at 2.75m³/min (726gpm) and 28,890kPa (4190psi) until shakers clean (total ~3 bottom's up since encountering stringer at 3804m). Reciprocated and rotated pipe while circulating.
2:30	9:30	7.00	P-DRL	TRIP	PP		Conducted flow check - well static. POH 127mm (5") drill pipe from 3814m to BHA at 383m. Encountered several tight spots from 3525m to 2981m - max overpull 40.8MT (90klbs), max drag 27.2MT (60klbs). Worked pipe in singles as required. Tight hole wiped clean. Hole condition good from 2981m to 340mm casing shoe. Ave tripping speed 490m/hr.
9:30	10:30	1.00	P-DRL	TRIPBHA	PP		POH and racked back 127mm (5") HWDP and 171mm (6-3/4") drill collars.
10:30	11:00	0.50	P-DRL	LWD	PP		Removed RA sources to ALD and CNP LWD tools. Plugged into and switched off tools.
11:00	13:00	2.00	P-DRL	LWD	PP		POH and laid out BAT+ACAL, HOC, HCIM, ALD+CNP, PWD and AFR + RLL. Laid out bit and stabilisers.
13:00	14:00	1.00	P-EVAL	LOG	PP		Held JSA. Rigged up Baker Atlas electric line sheaves. Rigged up compensator wire.
14:00	16:30	2.50	P-EVAL	LOG	PP		Picked up and made up Tool String #1 - GSLAM Quad Combo. Installed RA sources.
16:30	0:00	7.50	P-EVAL	LOG	PP		Conducted Logging Run #1 - GSLAM. Tag bottom at 3800m WLM. Hole condition good.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 00:30hrs: Completed Logging Run #1 - GSLAM. POH tool string to surface.
00:30 - 02:00hrs: Laid out GSLAM tool string to pipe deck.
02:00 - 04:00hrs: Picked up and made up Tool String #2 - RCI. Function tested tool string (including pad) at surface - OK.
04:00 - 06:00hrs: Conducted Logging Run #2 - RCI. Commenced recording pressure points as per programme (43 pressures and 6 samples planned). Hole condition good.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 66 (25 unsafe, 41 safe).
JSA - 31, PTW - 15.

BIT DATA

BIT / RUN	SIZE (mm)	MANUFACTURER	TYPE	SERIAL NO	JETS OR TFA	DEPTH IN / DATE IN	I-O-D-L-B-G-O-R
4RR / 5	216.0	HUGHES CHRISTENSEN	HC506ZX	7211635	6x14	2,955.00 / 14-11-2008	5-2-CR-N-X-I-BT-TD

Daily Drilling Report

WELL NAME				DATE
DORY-1				16-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	19

LCM: | MUD PROPERTIES | MUD TYPE: KCL/POLYMER

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)
54	14/28	10/11	4	1/3		0							2

Density (sg)	1.15			PP		DAILY COST	1008	CUM COST	325,022	%OIL	

BHA	5	JAR S/N	17602018	BHA / HOLE CONDITIONS	JAR HRS	115.50	BIT	4RR

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	(kN-m)	383.80 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Heavy Weight Drill Pipe	17	158.79	127.00	79.38		
Hydraulic Jar	1	9.36	158.70	69.85		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38		
Spiral Drill Collar	12	112.92	171.40	69.85		
Integral Blade Stabilizer	1	1.78	216.00	73.02		
Logging While Drilling	1	8.65	171.40	47.63		
Float Sub	1	0.78	171.40	73.02		
Pulser Sub	1	3.06	171.40	47.63		
Pulser Sub	1	2.70	171.40	47.63		
Logging While Drilling	1	7.89	171.40	47.63		
MWD Tool	1	2.51	171.40	47.63		
Integral Blade Stabilizer	1	1.22	212.70	73.02		
Logging While Drilling	1	9.57	171.40	47.63		
MWD Tool	1	2.70	171.40	73.02		
Integral Blade Stabilizer	1	1.67	214.30	73.02		
Pony Drill Collar	1	2.53	171.40	47.63		
Near Bit Stabilizer	1	1.17	214.30	73.02		
Polycrystalline Diamond Bit	1	0.33	216.00	73.02		

Daily Drilling Report

WELL NAME				DATE
DORY-1				16-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	19

SURVEY

TYPE	MD (m)	DEG (°)	AZI (°)	TVD (m)	+N/-S (m)	+E/-W (m)	V.SECT (m)	D.L (°/30m)
NORMAL	2,950.00	1.27	51.57	2,948.96	3.01	-4.16	2.55	0.73
NORMAL	2,980.00	1.03	53.95	2,978.95	3.37	-3.69	2.96	0.25
NORMAL	3,010.00	0.94	52.27	3,008.95	3.68	-3.28	3.31	0.09
NORMAL	3,040.00	0.63	53.63	3,038.94	3.93	-2.95	3.59	0.31
NORMAL	3,070.00	0.86	37.91	3,068.94	4.21	-2.67	3.90	0.30
NORMAL	3,100.00	0.73	54.92	3,098.94	4.49	-2.38	4.21	0.27
NORMAL	3,130.00	0.43	47.37	3,128.94	4.68	-2.14	4.42	0.30
NORMAL	3,160.00	1.17	44.45	3,158.93	4.97	-1.85	4.75	0.74
NORMAL	3,190.00	0.75	51.59	3,188.93	5.31	-1.48	5.13	0.43
NORMAL	3,220.00	1.05	38.82	3,218.93	5.65	-1.15	5.50	0.36
NORMAL	3,250.00	0.96	33.78	3,248.92	6.07	-0.84	5.95	0.13
NORMAL	3,280.00	1.21	30.66	3,278.92	6.56	-0.54	6.46	0.26
NORMAL	3,310.00	1.32	18.11	3,308.91	7.16	-0.27	7.09	0.30
NORMAL	3,340.00	1.02	22.49	3,338.90	7.73	-0.06	7.68	0.31
NORMAL	3,370.00	1.15	21.81	3,368.90	8.26	0.15	8.23	0.13
NORMAL	3,400.00	1.37	22.63	3,398.89	8.87	0.40	8.86	0.22
NORMAL	3,430.00	1.46	24.67	3,428.88	9.55	0.70	9.57	0.10
NORMAL	3,460.00	1.40	22.22	3,458.87	10.23	1.00	10.28	0.08
NORMAL	3,490.00	1.50	18.29	3,488.86	10.95	1.26	11.02	0.14
NORMAL	3,520.00	1.73	17.74	3,518.85	11.75	1.52	11.85	0.23
NORMAL	3,550.00	1.63	19.50	3,548.84	12.59	1.80	12.71	0.11
NORMAL	3,580.00	1.49	11.69	3,578.83	13.37	2.03	13.51	0.25
NORMAL	3,610.00	1.45	9.25	3,608.82	14.13	2.17	14.28	0.08
NORMAL	3,640.00	1.39	2.62	3,638.81	14.86	2.24	15.02	0.17
NORMAL	3,670.00	1.16	2.55	3,668.80	15.53	2.27	15.68	0.22
NORMAL	3,700.00	1.17	354.39	3,698.79	16.14	2.26	16.29	0.17
NORMAL	3,730.00	1.23	349.70	3,728.79	16.76	2.17	16.89	0.11
NORMAL	3,760.00	1.19	346.64	3,758.78	17.37	2.04	17.49	0.07
NORMAL	3,780.00	1.21	338.12	3,778.78	17.77	1.91	17.88	0.27

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	88	152.40	1424
# 2	304.80	82	152.40	1327
# 3	304.80	101	152.40	1634

SPP:

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
DOWELL	2		BRANDT	2	
SPERRY SUN	4		BJ CASING	2	
DODI	57		APACHE	5	
BAKER ATLAS	10		VETCO	1	
KEMTECH	2		SUBSEA 7	7	
BHI	4				

TOTAL PERSONNEL ON BOARD: 96

SUPPORT CRAFT

TYPE	REMARKS
HELICOPTER	JYN (Pax On - 4, Pax Off - 1).
FAR GRIP	At Barry Beach Marine Terminal.

Daily Drilling Report

WELL NAME				DATE
DORY-1				16-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	19

SUPPORT CRAFT

TYPE	REMARKS
NOR CAPTAIN	On Location.
FAR SKY	In Geelong.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		460
WATER, POTABLE	m3	23	357	WATER, DRILLING	m3	12	693

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2044	2044			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	185	2	185	3	164
4	162	5	180	6	180
7	196	8	190	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				16-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	19

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
OMYACARB 10	25.00 kg		0.00	96.00
CIRCAL 1000	25.00 kg		0.00	94.00
DRISPAC SL	25.00 kg		0.00	228.00
			0.00	0.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
FLOWZAN	25.00 kg		0.00	87.00
SAPP	25.00 kg		0.00	40.00
POLYSAl	25.00 kg		0.00	30.00
BARITE (bulk)	MT		0.00	140.30
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
SOLTEX	25.00 kg		0.00	182.00
CIRCAL Y	25.00 kg		0.00	96.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
NUT PLUG	25.00 kg		0.00	28.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
BENTONITE (BULK)	MT		0.00	47.00
CITRIC ACID	25.00 kg		0.00	40.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	40.00
GUAR GUM	25.00 kg		0.00	0.00
DEFOAM A	25.00 l		0.00	24.00
SAFE-CIDE	25.00 l	10.00	1,007.90	34.00
CIRCAL 60/16	25.00 kg		0.00	78.00
KWIKSEAL (M)	40.00 lbs		0.00	90.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				17-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	20

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	16.40 (days)	12.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 874,985	DHC: 18,622,938
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 874,985	TOTAL: 18,622,938

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	17/11/2008	VIC-P59		

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM**	338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: POH Tool String #3 - RCOR due to loss of hydraulic pressure.

24 HR SUMMARY: Completed Logging Run #1 - GSLAM. L/O tool string to pipe deck. M/U and RIH Tool String #2 - RCI. Completed Logging Run #2 - RCI and POH same.

24 HR FORECAST: Conduct Looging Run #3 - RCOR.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:30	0.50	P-EVAL	LOG	PP		Completed Logging Run #1 - GSLAM. POH tool string to surface.
0:30	2:00	1.50	P-EVAL	LOG	PP		Laid out GSLAM tool string to pipe deck.
2:00	4:00	2.00	P-EVAL	LOG	PP		Picked up and made up Tool String #2 - RCI. Function tested tool string (including pad) at surface - OK.
4:00	0:00	20.00	P-EVAL	LOG	PP		Conducted Logging Run #2 - RCI. Conducted 54 pressure points (42 good, 7 tight, 5 no seal) and 4 samples. Hole condition good. Note: Obtained sample at 2845.4m (tool stationary for 45 minutes) - unable to work tool free with 0.86MT (1900lbs) string weight down. Applied 0.95MT (2100lbs) overpull to free tool. Obtained sample at 3066.7m (tool stationary for 16 minutes) - unable to work tool free with 0.86MT (1900lbs) string weight down. Applied 0.0.5MT (1100lbs) overpull to free tool. No other overpull observed.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 02:00hrs: Laid out Tool String #2 - RCI to pipe deck.
02:00 - 03:00hrs: Made up and RIH Tool String #3 - RCOR. Function tested same - OK.
03:00 - 05:00hrs: RIH RCOR. Correlated same and placed on depth to cut first core at 2799.3m. Unable to cut first core due to hole washout. RIH and placed on depth to cut second core at 2804.9m.
05:00 - 06:00hrs: Tool lost hydraulic pressure and unable to function inner mandrel push rod or extend pads or probe. Troubleshot same - unsuccessful. POH Tool String #3 to change out hydraulic module.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 55 (22 unsafe, 33 safe).
JSA - 22, PTW - 22.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				17-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	20

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
APACHE	5		BAKER ATLAS	10	
DODI	60		SUBSEA 7	5	
SPERRY SUN	4		BJ CASING	2	
BHI	3		PETROTECH	1	
KEMTECH	2		DOWELL	2	

TOTAL PERSONNEL ON BOARD: 94

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
NOR CAPTAIN	In Geelong.
FAR SKY	Enroute to Rig.
HELICOPTER	JYN (Pax On - 6, Pax Off - 8).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		455
WATER, POTABLE	m3	27	365	WATER, DRILLING	m3	30	661

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2012	2012			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	185	2	183	3	164
4	165	5	181	6	183
7	196	8	186	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				17-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	20

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
POLYSAl	25.00 kg			30.00
OMYACARB 10	25.00 kg			96.00
SAFE-CIDE	25.00 l			34.00
SOLTEX	25.00 kg			182.00
BENTONITE (BULK)	MT			47.00
CIRCAL 60/16	25.00 kg			78.00
DRISPAC SL	25.00 kg			228.00
BARITE (bulk)	MT			140.30
SAPP	25.00 kg			40.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
CIRCAL 1000	25.00 kg			94.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
KWIKSEAL (F)	40.00 lbs			90.00
				0.00
CIRCAL Y	25.00 kg			96.00
NUT PLUG	25.00 kg			28.00
CITRIC ACID	25.00 kg			40.00
SODIUM BICARBONATE - NaHCO3	25.00 kg			40.00
KWIKSEAL (M)	40.00 lbs			90.00
GUAR GUM	25.00 kg			0.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg			23.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
FLOWZAN	25.00 kg			87.00
DEFOAM A	25.00 l			24.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME	DATE
DORY-1	18-11-2008

API #	24 HRS PROG	TMD	TVD	REPT NO
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	21

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	17.40 (days)	13.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 903,865	DHC: 19,526,803
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 903,865	TOTAL: 19,526,803

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	18/11/2008	VIC-P59		

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 3,780.00 (m) **INC** 1.21° **AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: RIH 114mm (4-1/2") cementing stinger and TAM bridge plug at 2480m.

24 HR SUMMARY: L/O RCI. R/U RCOR and RIH. Tool hydraulic failure - POH. RIH B/U RCOR. Lost communication with tool. POH and L/O RCOR. P/U VSP and RIH. Conducted VSP. POH due to whales. Commenced P&A operations.

24 HR FORECAST: P&A Dory-1. Prepare to pull BOP and L/O marine riser.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	2:00	2.00	P-EVAL	LOG	PP		Laid out RCI tool string to pipe deck.
2:00	3:00	1.00	P-EVAL	LOG	PP		Made up and RIH Tool String #3 - RCOR. Function tested same - OK.
3:00	5:00	2.00	P-EVAL	LOG	PP		RIH RCOR. Correlated same and placed on depth to cut first core at 2799.3m. Unable to cut first core due to hole washout (228mm / 9" at core point). RIH and placed on depth to cut second core at 2804.9m.
5:00	6:00	1.00	P-EVAL	LOG	PN	LE	Tool lost hydraulic pressure and unable to function inner mandrel push rod or extend pads or probe. Troubleshot same - unsuccessful. POH Tool String #3 to change out hydraulic module.
6:00	7:00	1.00	P-EVAL	LOG	PN	LE	Laid out falied hydraulic module to pipe deck. Picked up and made up back-up hydraulic module and function tested same - OK.
7:00	9:00	2.00	P-EVAL	LOG	PN	LE	RIH RCOR. Correlated same and placed on depth to cut second core at 2804.9m.
9:00	9:30	0.50	P-EVAL	LOG	PN	LE	Commenced cutting core #2. Lost communication with RCOR tool after 33 minutes of cutting 25mm (1") of core. Discussed options with Perth office and RCOR logging run abandoned. Applied 1.1MT (2500lbs) overpull and sheared off core barrel bit - 70mm (2.75") LIH.
9:30	10:30	1.00	P-EVAL	LOG	PP		POOH RCOR tool string to surface.
10:30	11:30	1.00	P-EVAL	LOG	PP		Laid out RCOR tool string to pipe deck.
11:30	12:00	0.50	P-EVAL	LOG	PP		Made up and RIH Tool String #4 - VSP. Lowered guns into water and conducted soft start operations. Note: Whale watchers in place.
12:00	19:00	7.00	P-EVAL	LOG	PP		Conducted Logging Run #4 - VSP. Tagged bottom at 3789m WLM. Commenced checkshots at 30m interval from 3765m to 3525m - 10 levels recorded. Note: Noise problems experienced with upper geophone.
19:00	20:00	1.00	P-EVAL	LOG	PP		Whales sighted off Port side and VSP operations suspended. Discussed options with Perth office - VSP logging programme cut short. POOH VSP tool string to surface.
20:00	20:30	0.50	P-EVAL	LOG	PP		Laid out VSP tool string to pipe deck.
20:30	21:00	0.50	P-EVAL	LOG	PP		Rigged down electric line sheaves and compensator wire. Cleared Baker Atlas equipment from catwalk.
21:00	21:30	0.50	P-DRL	RIGSER	PP		Carried out TDS service.
21:30	0:00	2.50	P-DRL	PLUGA	PP		Rigged up 114mm (4-1/2") handling equipment. Picked up and made up 114mm (4-1/2") PH-6 tailpipe assembly. Rigged down 114mm (4-1/2") handling equipment and rigged up for 127mm (5") drill pipe. Picked up and made up TAM inflatable bridge plug. Checked running tool for correct make-up and pumped through tool to confirm flow path - OK. Inspected element for damage - OK.

24.00 = Total Hours Today

Daily Drilling Report

WELL NAME				DATE
DORY-1				18-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	21

06:00 UPDATE

0000-0600 00:00 - 06:00hrs: RIH 127mm drill pipe from derrick from 37m to 2480m. Avg tripping speed 407m/hr. Drifted drill pipe in derrick with 67mm (2-5/8") drift prior to RIH.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 56 (16 unsafe, 40 safe).
JSA - 21, PTW - 13.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
TAM INTL	1		BAKER ATLAS	10	
APACHE	5		SUBSEA 7	5	
SMITH SERVICES	1		SPERRY SUN	4	
BHI	3		PETROTECH	1	
KEMTECH	2		DODI	62	
VETCO	1		BJ CASING	2	
DOWELL	2				

TOTAL PERSONNEL ON BOARD: 99

SUPPORT CRAFT

TYPE	REMARKS
HELICOPTER	JYN (Pax On - 9, Pax Off - 10).
FAR GRIP	On Location.
NOR CAPTAIN	In Geelong.
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 6, Pax Off - 0).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		102	DIESEL	m3		507
WATER, POTABLE	m3	23	377	WATER, DRILLING	m3	24	637

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2007	2007			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

Daily Drilling Report

WELL NAME				DATE
DORY-1				18-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	21

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	183	2	185	3	165
4	167	5	180	6	182
7	195	8	187	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
SOLTEX	25.00 kg		0.00	182.00
CIRCAL 1000	25.00 kg		0.00	94.00
SAFE-CIDE	25.00 l		0.00	34.00
POLYSAI	25.00 kg		0.00	30.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	40.00
CIRCAL 60/16	25.00 kg		0.00	78.00
GUAR GUM	25.00 kg		0.00	0.00
CIRCAL Y	25.00 kg		0.00	96.00
BARITE (bulk)	MT	1.00	280.61	139.30
FLOWZAN	25.00 kg	2.00	544.66	85.00
			0.00	0.00
NUT PLUG	25.00 kg		0.00	28.00
OMYACARB 10	25.00 kg		0.00	96.00
KWIKSEAL (M)	40.00 lbs		0.00	90.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
DRISPAC SL	25.00 kg		0.00	228.00
BENTONITE (BULK)	MT	4.00	1,469.12	43.00
SAPP	25.00 kg		0.00	40.00
DEFOAM A	25.00 l		0.00	24.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
CITRIC ACID	25.00 kg		0.00	40.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME	DATE
DORY-1	19-11-2008

API #	24 HRS PROG	TMD	TVD	REPT NO
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	22

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	18.40 (days)	14.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	DENNIS GORE	1,515.00 (m)

REGION	DISTRICT	STATE / PROV	RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA	(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 1,213,537	DHC: 20,740,340
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 1,213,537	TOTAL: 20,740,340

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	19/11/2008	VIC-P59		

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 3,780.00 (m) **INC** 1.21° **AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	177.800 mm @ 3,800.0 m

CURRENT OPERATIONS: RIH 127mm (5") drill pipe from derrick to pull wear bushing.

24 HR SUMMARY: Set Balanced Cement Plugs #1, #2 and #3. Attempted to set TAM bridge plug inside 340mm (13-3/8") casing - unsuccessful. POH failed bridge plug.

24 HR FORECAST: Pull wear bushing and L/O drill pipe. Pull BOP and L/O marine riser.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	8:30	8.50	PA-PLUG	TRIP	PP		RIH 114mm (4-1/2") cementing stinger and TAM bridge plug 127mm (5") drill pipe from derrick from 37m to 3195m. Avg tripping speed 372m/hr. Drifted drill pipe in derrick with 67mm (2-5/8") drift prior to RIH.
8:30	9:00	0.50	PA-PLUG	CIRC	PP		Pumped 3.97m³ (25bbls) hi-vis PHG. Displaced same with 29.6m³ (186bbls) 1.15SG WBM at 0.81m³/min (214gpm) and 3,792kPa (550psi) and spotted same from 3195m to 3095m.
9:00	9:30	0.50	PA-PLUG	TRIP	PP		POH 127mm (5") drill pipe from 3195m to 3094m.
9:30	10:30	1.00	PA-PLUG	SPOTCMT	PP		Made up pump-in sub, rigged up surface lines and lined up to Dowell. Pumped 1.6m³ (10bbls) drill water and pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Pumped 1.6m³ (10bbls) drill water followed by 3.66m³ (23bbls) 1.98SG G cement slurry. Displaced slurry with 0.89m³ (5.6bbls) drill water followed by 29.6m³ (186bbls) 1.15SG WBM and set Balanced Cement Plug #1 from 3094m to 2994m.
10:30	11:00	0.50	PA-PLUG	TRIP	PP		POH 127mm (5") drill pipe from 3094m to 2990m.
11:00	11:30	0.50	PA-PLUG	CIRC	PP		Pumped 4.13m³ (26bbls) hi-vis PHG. Displaced same with 27.7m³ (174bbls) 1.15SG WBM at 0.81m³/min (214gpm) and 3,792kPa (550psi) and spotted same from 2990m to 2880m.
11:30	12:00	0.50	PA-PLUG	TRIP	PP		POOH 127mm (5") drill pipe from 2990m to 2880m.
12:00	13:00	1.00	PA-PLUG	SPOTCMT	PP		Made up pump-in sub, rigged up surface lines and lined up to Dowell. Pumped 1.6m³ (10bbls) drill water and pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Pumped 1.6m³ (10bbls) drill water followed by 3.66m³ (23bbls) 1.98SG G cement slurry. Displaced slurry with 0.89m³ (5.6bbls) drill water followed by 23.9m³ (150bbls) 1.15SG WBM and set Balanced Cement Plug #2 from 2880m to 2780m.
13:00	14:30	1.50	PA-PLUG	TRIP	PP		POOH 127mm (5") drill pipe from 2880m to 2630m. Pumped 3.2m³ (20bbls) 1.15SG WBM through drill pipe followed by 3.2m³ (20bbls) 1.38SG WBM.
14:30	17:30	3.00	PA-PLUG	TRIP	PP		POOH from 2630m to 1595m and laid out 108 joints 127mm (5") drill pipe to pipe deck.
17:30	18:30	1.00	PA-PLUG	SPOTCMT	PP		Made up pump-in sub, rigged up surface lines and lined up to Dowell. Pumped 1.6m³ (10bbls) drill water and pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Pumped 1.6m³ (10bbls) drill water followed by 3.66m³ (23bbls) 1.9SG G cement slurry. Displaced slurry with 0.45m³ (2.8bbls) drill water followed by 12.7m³ (80bbls) 1.15SG WBM and set Balanced Cement Plug #3 from 1595m to 1515m. POH 127mm (5") drill pipe from 1595m to 1509m.
18:30	19:30	1.00	PA-PLUG	CIRC	PP		As per TAM instructions, dropped 1st dart and displaced same with 0.79m³ (5bbls) WBM. Dropped 2nd dart and lined up to Dowell. Dowell displaced same with WBM at 0.64m³/min (4bpm) and 2,069kPa (300psi), increased rate to 0.95m³/min (6bpm) and 2,482kPa (360psi) under TAM instructions. Indication of 1st dart landing after 11.0m³ (69.3bbls) pumped with 3,448kPa (500psi) pressure increase - theoretical volume to land 1st dart 12.1m³ (76bbls).
19:30	20:00	0.50	PA-PLUG	SETPLUG	PP		Commenced TAM procedure to inflate packer. Pumped further 0.35m³ (2.2bbls) with no indication of inflation.
20:00	20:30	0.50	PA-PLUG	SETPLUG	PN	EF	Worked with caution 1 x 127mm (5") drill pipe single to confirm bridge plug set. No

Daily Drilling Report

WELL NAME				DATE
DORY-1				19-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	22

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							overpull or reduction in string weight observed - bridge plug not set. Commenced troubleshooting TAM bridge plug in attempt to release from same. Increased pressure with Dowell to 17,238kPa (2500psi) - actuated shuttle valve in plug and pressure bled off rapidly. Continued pumping with Dowell unit but unable to increase pressure. 1.13m³ (7.1bbls) pumped. Note: Total displacement pumped 12.5m³ (78.6bbls). Theoretical volume to land 2nd dart 12.9m³ (81bbls).
20:30	21:00	0.50	PA-PLUG	SETPLUG	PN	EF	Attempted to pump weighted pill in preparation to POOH and observed 8,274kPa (1200psi) trapped pressure - indication of 2nd dart landing. Bled off trapped pressure. Continued troubleshooting TAM bridge plug in attempt to release from same. Dropped 54mm (2-1/8") ball under TAM instructions. Increased pressure on same to 17,238kPa (2500psi) with 0.25m³ (1.6bbls) pumped - pressure holding. Bled off trapped pressure. Note: Sliding sleeve pinned at 15,169kPa (2200psi) to mechanically release from tool. Increased pressure to 27,580kPa (4000psi) with 0.35m³ (2.2bbls) pumped - pressure holding. Bled off trapped pressure. No indications of successful mechanical release.
21:00	0:00	3.00	PA-PLUG	TRIP	PN	EF	POH wet 127mm (5") drill pipe from 1509m to failed TAM bridge plug at 28m.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 01:00hrs: Laid out failed TAM bridge plug. Made up 114mm (4-1/2") IF x 114mm (4-1/2") PH-6 X/O.
01:00 - 02:30hrs: RIH 114mm (4-1/2") PH-6 cementing stinger on 127mm (5") drill pipe from 28m to 689m.
02:30 - 03:00hrs: Spaced out and shut-in well on lower annular. Lined up Dowell to kill line. Pressure tested Balanced Cement Plug #3 to 6,206kPa (900psi) for 10 minutes - OK.
03:00 - 03:30hrs: POH 127mm drill pipe from 689mm to 618m.
03:30 - 04:30hrs: Made up pump-in sub, rigged up surface lines and lined up to Dowell. Pumped 1.6m³ (10bbls) drill water and pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Pumped 1.6m³ (10bbls) drill water followed by 2.4m³ (15bbls) 1.9SG G cement slurry. Displaced slurry with 0.45m³ (2.8bbls) drill water followed by 4.45m³ (28bbls) 1.15SG WBM and set Balanced Cement Plug #4 from 618m to 588m.
04:30 - 05:30hrs: POH from 618m to 588m and laid out 3 joints 127mm (5") drill pipe to pipe deck. Displaced well and marine riser to seawater.
05:30 - 06:00hrs: POH from 588m to 530m and laid out 6 joints 127mm (5") drill pipe to pipe deck.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 54 (24 unsafe, 30 safe).
JSA - 33, PTW - 7.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BJ CASING	2		APACHE	3	
DOWELL	2		SPERRY SUN	2	
BAKER ATLAS	3		BHI	3	
DODI	62		KEMTECH	2	
SMITH SERVICES	1		VETCO	1	
TAM INTL	1		SUBSEA 7	5	

TOTAL PERSONNEL ON BOARD: 87

SUPPORT CRAFT

TYPE	REMARKS
HELICOPTER	JYN (Pax On - 6, Pax Off - 10).
FAR GRIP	In Geelong.
SWISSCO 168	On Location.
NOR CAPTAIN	Enroute to Rig.
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 0, Pax Off - 8).

Daily Drilling Report

WELL NAME				DATE
DORY-1				19-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	22

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT	13	89	DIESEL	m3	14	493
WATER, POTABLE	m3	23	356	WATER, DRILLING	m3	46	619

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/45.00/3	0.20/45.00/3	/	9.8/45.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1948	1948			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	182	2	186	3	167
4	165	5	181	6	182
7	194	8	185	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				19-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	22

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
			0.00	0.00
GUAR GUM	25.00 kg		0.00	0.00
DRISPAC SL	25.00 kg		0.00	228.00
BARITE (bulk)	MT		0.00	139.30
KWIKSEAL (M)	40.00 lbs		0.00	90.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
POLYSAl	25.00 kg		0.00	30.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
CITRIC ACID	25.00 kg	14.00	619.50	26.00
SAFE-CIDE	25.00 l		0.00	34.00
OMYACARB 10	25.00 kg		0.00	96.00
DEFOAM A	25.00 l		0.00	24.00
FLOWZAN	25.00 kg	1.00	272.33	84.00
CIRCAL Y	25.00 kg		0.00	96.00
SOLTEX	25.00 kg		0.00	182.00
NUT PLUG	25.00 kg		0.00	28.00
BENTONITE (BULK)	MT		0.00	43.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
SAPP	25.00 kg		0.00	40.00
SODIUM BICARBONATE - NaHCO3	25.00 kg	40.00	714.40	0.00
CIRCAL 1000	25.00 kg		0.00	94.00
CIRCAL 60/16	25.00 kg		0.00	78.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				20-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	23

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	19.40 (days)	15.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 879,012	DHC: 21,619,352
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 879,012	TOTAL: 21,619,352

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	20/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: L/O diverter and P/U riser landing joint.

24 HR SUMMARY: L/O failed TAM plug. RIH and pressure tested Balanced Cement Plugs #3 - OK. POH and set Balanced Cement Plug #4. Displaced well and riser. L/O DP. RIH and pulled WB, POH and L/O HWDP and DP. WOW.

24 HR FORECAST: Unlatch BOP and pull same. L/O marine riser.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	1:00	1.00	PA-PLUG	TRIPBHA	PN	EF	Laid out failed TAM bridge plug. Made up 114mm (4-1/2") IF x 114mm (4-1/2") PH-6 X/O.
1:00	2:30	1.50	PA-PLUG	TRIP	PN	EF	RIH 3 joint 114mm (4-1/2") PH-6 cementing stinger on 127mm (5") drill pipe from 28m to 618m. Surface cement samples still green. Continued RIH from 618m to 689m.
2:30	3:00	0.50	PA-PLUG	PRESS	PP		Spaced out and shut-in well on lower annular. Lined up Dowell to kill line. Pressure tested Balanced Cement Plug #3 to 6,206kPa (900psi) for 10 minutes with 1.15SG WBM - OK.
3:00	3:30	0.50	PA-PLUG	TRIP	PP		POH 127mm drill pipe from 689mm to 618m.
3:30	4:30	1.00	PA-PLUG	SPOTCMT	PP		Made up pump-in sub, rigged up surface lines and lined up to Dowell. Pumped 1.6m³ (10bbls) drill water and pressure tested surface lines to 13,790kPa (2000psi) for 5 minutes - OK. Pumped 1.6m³ (10bbls) drill water followed by 2.4m³ (15bbls) 1.9SG G cement slurry. Displaced slurry with 0.45m³ (2.8bbls) drill water followed by 4.45m³ (28bbls) 1.15SG WBM and set Balanced Cement Plug #4 from 618m to 588m.
4:30	5:30	1.00	PA-PLUG	CIRC	PP		POOH from 618m to 588m and laid out 3 joints 127mm (5") drill pipe to pipe deck. Displaced well and marine riser to seawater. No cement noted in returns.
5:30	8:30	3.00	PA-PLUG	TRIP	PP		POOH from 588m to 28m and laid out 58 joints 127mm (5") drill pipe to pipe deck. Offline: Discharged WBM to Far Sky.
8:30	9:00	0.50	PA-PLUG	TRIPBHA	PN	EF	Rigged up 114mm (4-1/2") handling equipment. POOH and laid out 2 x 114mm (4-1/2") tubing joints and mule shoe. Rigged down handling equipment.
9:00	9:30	0.50	PA-PLUG	WLHEAD	PP		Picked up jet sub and WBRT.
9:30	11:00	1.50	PA-PLUG	TRIP	PP		RIH WBRT and jetting sub on 127mm (5") HWDP to 256m. Continued RIH on 127mm (5") drill pipe to 555m.
11:00	11:30	0.50	PA-PLUG	CIRC	PP		Jetted wellhead and BOP cavity at 3.24m³ (855gpm) and 6,895kPa (1000psi). Latched into wear bushing and pulled same with 6.8MT (15klbs) overpull.
11:30	14:30	3.00	PA-PLUG	TRIP	PP		POOH from 555m to 256m and laid out 31 joints 127mm (5") drill pipe to pipe deck. Continued POOH from 256m and laid out 24 joints 127mm (5") HWDP.
14:30	15:00	0.50	PA-PLUG	WLHEAD	PP		Laid out WBRT, wear bushing and jet sub to pipe deck.
15:00	17:00	2.00	PA-PLUG	TRIP	PP		RIH 165mm (6-1/2") drilling jar HWDP stand. POOH and laid out same. RIH 30 joints 127mm (5") drill pipe from derrick to 288m. POH and laid out same to pipe deck. Note: 46 stands 127mm (5") drill pipe, 4 stands 209mm drill collars, 4 stands 171mm (6-3/4") drill collars and 1 241mm (9-1/2") MWD stand left in derrick.
17:00	17:30	0.50	PA-PLUG	RU_RD	PP		Rigged up marine riser handling equipment. Prepared to unlatch BOP and pull same.
17:30	0:00	6.50	PA-PLUG	BOPS	PN	WOW	DOWNTIME: Waited on weather. Cranes shutdown due to 83km/hr (45knot) winds with 93km/hr (50knot) gusts. 2.5 - 3.5m swell.

24.00 = Total Hours Today

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				20-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	23

06:00 UPDATE

0000-0600 00:00 - 05:00hrs: Continued Waiting on weather. Weather conditions and metocean conditions remained unchanged. 83km/hr (45knot) winds with 93km/hr (50knot) gusts. 2.5 - 3.5m swell.
05:00 - 06:00hrs: Rigged up marine riser spider. Picked up diverter RT and made up same. Pulled diverter.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 36 (16 unsafe, 20 safe).
JSA - 33, PTW - 10.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BAKER ATLAS	3		SPERRY SUN	2	
KEMTECH	2		VETCO	1	
DODI	61		DOWELL	2	
BHI	3		APACHE	3	
SUBSEA 7	7		BJ CASING	2	
SMITH SERVICES	1				

TOTAL PERSONNEL ON BOARD: 87

SUPPORT CRAFT

TYPE	REMARKS
HELICOPTER	JYN (Pax On - 2, Pax Off - 0).
FAR GRIP	Enroute to Rig.
SWISSCO 168	On Location.
NOR CAPTAIN	On Location.
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 7, Pax Off - 9).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT	6	83	DIESEL	m3	17	476
WATER, POTABLE	m3	25	331	WATER, DRILLING	m3	49	601

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/250.00/3	0.20/45.00/3	/	28.3/250.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1996	1996			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				20-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	23

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	182	2	186	3	167
4	165	5	181	6	182
7	194	8	185	9	
10		11		12	

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
SOLTEX	25.00 kg		0.00	182.00
BENTONITE (BULK)	MT		0.00	43.00
KCL BRINE (1.15SG)	1.00 bbl		0.00	0.00
CIRCAL 60/16	25.00 kg		0.00	78.00
NUT PLUG	25.00 kg		0.00	28.00
DEFOAM A	25.00 l		0.00	24.00
CIRCAL Y	25.00 kg		0.00	96.00
CAUSTIC SODA - NaOH	25.00 kg		0.00	20.00
FLOWZAN	25.00 kg		0.00	84.00
SAFE-CIDE	25.00 l	4.00	403.16	30.00
KWIKSEAL (M)	40.00 lbs		0.00	90.00
DRISPAC SL	25.00 kg		0.00	228.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg		0.00	23.00
CIRCAL 1000	25.00 kg		0.00	94.00
CITRIC ACID	25.00 kg		0.00	26.00
POLYSAI	25.00 kg		0.00	30.00
			0.00	0.00
CALCIUM CHLORIDE 74-77%	25.00 kg		0.00	80.00
BARITE (bulk)	MT		0.00	139.30
GUAR GUM	25.00 kg		0.00	0.00
KWIKSEAL (F)	40.00 lbs		0.00	90.00
OMYACARB 10	25.00 kg		0.00	96.00
SAPP	25.00 kg		0.00	40.00
SODIUM BICARBONATE - NaHCO3	25.00 kg		0.00	0.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				21-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	24

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	20.40 (days)	16.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 864,657	DHC: 22,484,009
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 864,657	TOTAL: 22,484,009

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	21/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: M/U 209mm drill collar stand to casing cutting assembly.

24 HR SUMMARY: WOW. Pulled and L/O diverter. P/U landing jnt and locked slip joint. R/D storm loops, saddles and goosenecks. Disconnected MRT's. Pulled BOP stack and L/O marine riser to pipe deck. Prepared BOP trolley in moonpool.

24 HR FORECAST: RIH casing cutting asssembly. Function SMAC joint and cut 340mm (13-3/8") casing. Pull and recover LPWHH, HPWHH and PGB. Assess metocean conditions before anchor pulling operations.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	5:00	5.00	PA-PLUG	BOPS	PN	WOW	Continued Waiting on weather. Metocean conditions remained unchanged. 83km/hr (45knot) winds with 93km/hr (50knot) gusts. 2.5 - 3.5m swell.
5:00	5:30	0.50	PA-PLUG	RU_RD	PP		Continued to rig up marine riser handling equipment. Rigged up marine riser spider. De-energised flow line seals and slip joint packing.
5:30	6:30	1.00	PA-PLUG	BOPS	PP		Picked up diverter RT and made up same. Pulled diverter and laid out same to pipe deck.
6:30	8:00	1.50	PA-PLUG	BOPS	PP		Picked up and made up BOP landing joint. Scoped in and locked slip joint. Confirmed locked with 9.1MT (20klbs) overpull.
8:00	11:00	3.00	PA-PLUG	BOPS	PP		Functioned H4 connector to unlock position and confirmed same with ROV. Lifted BOP stack clear of PGB guide posts. Rigged down pod line saddles and storm loops. Disconnected riser boost line, choke and kill line goosenecks. Removed slip joint packing control lines and rigged down marine riser tensioner wires from SDL ring on slip joint.
11:00	12:00	1.00	PA-PLUG	RISER	PP		Pulled and laid out BOP landing joint and slip joint to pipe deck.
12:00	23:00	11.00	PA-PLUG	RIGSER	PP		Pulled and laid out 29 joints of marine riser to pipe deck. Ave pulling speed 2.6 joints/hr.
23:00	0:00	1.00	PA-PLUG	BOPS	PP		Removed skid cart from moonpool and prepared BOP trolley for landing BOP stack.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600

00:00 - 02:30hrs: Pulled BOP through splash zone and landed same on BOP trolley funnels. Removed radio beacon and pod line clamps. Removed guidelines from BOP guide posts. Skidded BOP from under rotary to storage area.
02:30 - 03:30hrs: Laid out marine riser double and riser RT to pipe deck. Rigged down riser spider and laid out same.
03:30 - 04:30hrs: Held JSA. Rigged down riser handling equipment. Changed out 500MT bails for 350MT drilling bails. Installed master bushings and rigged up manual 127mm (5") elevators.
04:30 - 06:00hrs: Picked up casing cutter and rotating spear assembly. Made up service breaks on same. Picked up stand of 127mm (5") drill pipe from derrick and RIH cutting assembly to moonpool. Flow and function tested same - OK. POH and racked back 127mm (5") drill pipe stand and reset cutter assembly.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 39 (11 unsafe, 28 safe).
JSA - 25, PTW - 9.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

Daily Drilling Report

WELL NAME				DATE
DORY-1				21-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	24

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
BHI	2		GO OFFSHORE	2	
SPERRY SUN	2		DODI	62	
APACHE	3		TRI-SURV	2	
BJ CASING	2		SUBSEA 7	7	
VETCO	1		SMITH SERVICES	1	
KEMTECH	2		DOWELL	2	

TOTAL PERSONNEL ON BOARD: 88

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	Enroute to Rig.
SWISSCO 168	On Location.
NOR CAPTAIN	Enroute to Geelong.
HELICOPTER	JYN (Pax On - 4, Pax Off - 0).
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 9, Pax Off - 12).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		83	DIESEL	m3		471
WATER, POTABLE	m3	26	305	WATER, DRILLING	m3	30	601

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	1.00/250.00/3	0.20/45.00/3	/	28.3/250.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	1829	1829			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	183	2	185	3	165
4	167	5	182	6	183
7	196	8	185	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				21-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,812.77 (m)	24

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
				0.00
GUAR GUM	25.00 kg			0.00
NUT PLUG	25.00 kg			28.00
SAFE-CIDE	25.00 l			30.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
KWIKSEAL (M)	40.00 lbs			90.00
CIRCAL 60/16	25.00 kg			78.00
SOLTEX	25.00 kg			182.00
DEFOAM A	25.00 l			24.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
POLYSAl	25.00 kg			30.00
SODIUM BICARBONATE - NaHCO3	25.00 kg			0.00
CIRCAL Y	25.00 kg			96.00
OMYACARB 10	25.00 kg			96.00
CITRIC ACID	25.00 kg			26.00
DRISPAC SL	25.00 kg			228.00
BENTONITE (BULK)	MT			43.00
SAPP	25.00 kg			40.00
CIRCAL 1000	25.00 kg			94.00
KWIKSEAL (F)	40.00 lbs			90.00
FLOWZAN	25.00 kg			84.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg			23.00
BARITE (bulk)	MT			139.30

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				22-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	25

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	21.40 (days)	17.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 909,262	DHC: 23,393,271
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 909,262	TOTAL: 23,393,271

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	22/11/2008	VIC-P59		

LAST SURVEY						LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM**	338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: WOW.

24 HR SUMMARY: Secured BOP in storage area in moonpool. R/D riser equipment. P/U and RIH casing cutting assembly. Cut and pulled wellhead assembly and recovered same to moonpool. L/O HPWHH. Commenced WOW.

24 HR FORECAST: WOW. Commence anchor pulling operations as metocean conditions dictate.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	2:30	2.50	PA-PLUG	BOPS	PP		Pulled BOP through splash zone and landed same on BOP trolley funnels. Removed radio beacon and pod line clamps. Removed guidelines from BOP guide posts. Skidded BOP from under rotary to storage area.
2:30	3:30	1.00	PA-PLUG	RISER	PP		Laid out marine riser double and riser RT to pipe deck. Rigged down riser spider and laid out same.
3:30	4:30	1.00	PA-PLUG	RU_RD	PP		Held JSA. Rigged down riser handling equipment. Changed out 500MT bails for 350MT drilling bails. Installed master bushings and rigged up manual 127mm (5") elevators.
4:30	6:30	2.00	PA-PLUG	TRIPBHA	PP		Picked up 298mm (11-3/4") casing cutter and 476mm (18-3/4") rotating spear assembly. Made up service breaks on same. Picked up stand of 127mm (5") drill pipe from derrick and RIH cutting assembly to moonpool. Flow and function tested same - OK. POH and racked back 127mm (5") drill pipe stand and reset cutter assembly. Made up 1 x 209mm drill collar stand and attached guide ropes in moonpool. RIH same to 42m.
6:30	8:00	1.50	PA-PLUG	TRIP	PP		RIH casing cutting assembly on 127mm (5") drill pipe to 480m. Offline: Functioned SMAC with ROV hot-stab - OK.
8:00	8:30	0.50	PA-PLUG	ROVDIV	PN	SO	ROV lost visual on wellhead and unable to reacquire same. Note: ROV sonar system not operational. Recovered ROV to 128m and reacquired visual on guidlines. Followed same back to wellhead.
8:30	9:00	0.50	PA-PLUG	FISHPLN	PP		RIH and landed rotating spear into HPWHH with 9.1MT (20klbs) set down weight. Applied 22.7MT (50klbs) to confirm latched - OK. Cut 340mm (13-3/8") casing at 551m with 0.89m³/min (235gpm), 4,137kPa (600psi) and 9.1MT (20klbs) tension at spear grapple. Indications of successful cut after 5 minutes. Applied 68MT (150klbs) overpull and observed HPWHH unlatch from LPWHH. Set down 9.1MT (20klbs) and latched HPWHH to LPWHH. Applied 72.5MT (160klbs) overpull and pulled HPWHH, LPWHH and PGB clear of seabed. Large amount of cement surrounding wellhead assembly. Note: Anchor handling operations suspended pending favourable metocean conditions for rig move to Madfish-1 location.
9:00	11:00	2.00	PA-PLUG	TRIP	PP		POH and recovered HPWHH, LPWHH and PGB to moonpool and landed same on moonpool trolley. Spooled in guidelines while POH.
11:00	16:00	5.00	PA-PLUG	WLHEAD	PP		Removed cement from wellhead assembly. Secured PGB to moonpool trolley and released rotating spear grapple from HPWHH. Picked up 476mm (18-3/4") CART, RIH and pulled HPWHH, extension joint and cut-off. Laid out same to pipe deck. Unable to release LPWHH from PGB - suspected cementation between LPWHH and PGB. Wind speed exceeding 74km/hr (40knots)
16:00	20:00	4.00	R-MOB-DEM OB	ANCHOR	PN	WOW	Commenced WOW. Anchor handling and deck operations suspended. 83km/hr (40knot) winds with 93km/hr (45knot) gusts. 2 - 3m combined sea and swell.
20:00	0:00	4.00	R-MOB-DEM OB	ANCHOR	PN	WOW	WOW. Metocean conditions deteriorated further as per forecast. At 00:00hrs, 130km/hr (70knot) winds with 148km/hr (80knot) gusts. 5 - 7m combined sea and swell.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				22-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	25

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 WOW. Metocean conditions deteriorated further as per forecast. At 06:00hrs, 130km/hr (70knot) winds with 148km/hr (80knot) gusts. 5 - 7m combined sea and swell.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 49 (14 unsafe, 35 safe).
JSA - 28, PTW - 13.

MUD PROPERTIES

LCM: | MUD TYPE:

VIS (s/l)	PV/YP (cp) / (Pa)	GELS (Pa)	WL/HTHP (ml/30 min)	FC/T.SOL (mm) / (%)	OIL/WAT (%)	% SAND/MBT (%)/(sg)	pH/Pm (mL)	Pf/Mf (mL)	Cl (ppm)	Ca (ppm)	H2S (%)	KCL (ppm)	LGS (%)

PP		DAILY COST	0	CUM COST	329,326	%OIL	

BHA / HOLE CONDITIONS

BHA	6	JAR S/N		JAR HRS		BIT	

BHA WT BELOW JARS	STRING WT UP	STRING WT DN	STRING WT ROT	TORQUE/UNITS	BHA LENGTH
(tonne)	(tonne)	(tonne)	(tonne)	(kN-m)	42.64 (m)

ITEM DESCRIPTION	NO JTS	LENGTH	O.D	I.D	CONN SIZE	CONN TYPE
Cross Over	1	1.15	209.55			
Spiral Drill Collar	3	27.75	209.55			
Unknown	1	2.79	476.25			
Cross Over	1	0.40	209.55			
Bumper Sub	1	5.17	209.55			
Pony Drill Collar	1	2.65	209.55			
Unknown	1	2.43	298.45			
Muleshoe Sub	1	0.30	209.55			

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

MUD PUMPS/HYDRAULICS

	STROKE	SPM	LINER	FLOW
# 1	304.80	55	152.40	890
# 2	304.80			
# 3	304.80			

SPP:

SPR

	SPM	PPSR

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
GO OFFSHORE	2		APACHE	3	
SPERRY SUN	2		BHI	2	
VETCO	1		SUBSEA 7	7	
DOWELL	2		KEMTECH	2	
TRI-SURV	2		SMITH SERVICES	1	
DODI	62		BJ CASING	2	

TOTAL PERSONNEL ON BOARD: 88

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
SWISSCO 168	At Eden.
NOR CAPTAIN	In Geelong.

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				22-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	25

SUPPORT CRAFT

TYPE	REMARKS
FAR SKY	On Location

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		83	DIESEL	m3		460
WATER, POTABLE	m3	8	305	WATER, DRILLING	m3	22	601

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	/ /250.00/12	5.00/180.00/3	/	28.3/250.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2125	2125			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	180	2	181	3	164
4	164	5	188	6	190
7	198	8	190	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				22-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	25

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
FLOWZAN	25.00 kg			84.00
DRISPAC SL	25.00 kg			228.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg			23.00
SAPP	25.00 kg			40.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
BARITE (bulk)	MT			139.30
CIRCAL 1000	25.00 kg			94.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
CIRCAL Y	25.00 kg			96.00
CITRIC ACID	25.00 kg			26.00
POLYSAl	25.00 kg			30.00
KWIKSEAL (M)	40.00 lbs			90.00
CIRCAL 60/16	25.00 kg			78.00
DEFOAM A	25.00 l			24.00
BENTONITE (BULK)	MT			43.00
SOLTEX	25.00 kg			182.00
SODIUM BICARBONATE - NaHCO3	25.00 kg			0.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
				0.00
KWIKSEAL (F)	40.00 lbs			90.00
GUAR GUM	25.00 kg			0.00
OMYACARB 10	25.00 kg			96.00
NUT PLUG	25.00 kg			28.00
SAFE-CIDE	25.00 l			30.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				23-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	26

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	22.40 (days)	18.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 846,081	DHC: 24,239,352
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 846,081	TOTAL: 24,239,352

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	23/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: Preparing to commence pulling secondary anchors with Far Grip and Far Sky.

24 HR SUMMARY: WOW.

24 HR FORECAST: Pull anchors and move off Dory-1 location.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:00	24.00	R-MOB-DEM OB	ANCHOR	PN	WOW	WOW. 06:00hrs: 130km/hr (70knot) winds with 148km/hr (80knot) gusts. 5 - 7m combined sea and swell. 12:00hrs: 61km/hr (33knot) winds with 74km/hr (40knot) gusts. 7 - 9m combined sea and swell. 18:00hrs: 65km/hr (35knot) winds with 83km/hr (45knot) gusts. 8 - 10m combined sea and swell. 00:00hrs: 56km/hr (30knot) winds with 70km/hr (38knot) gusts. 6 - 9m combined sea and swell. While WOW: Prepared 762mm (30") conductor and LPWHH on pipe deck. Pressure tested SMAC joint and confirmed in locked position - OK. Pressure tested hot stab line on PGB - OK. Carried out PM on TDS. Picked up 476mm (18-3/4") CART and made up to 127mm (5") drill pipe single and 127mm (5") drill pipe pup joint and laid out same to catwalk. Picked up and made up cementing stand and racked back in derrick.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 WOW. Metocean conditions inproving as per forecast.

03:00hrs: 56km/hr (30knot) winds with 70km/hr (38knot) gusts. 6 - 9m combined sea and swell.
06:00hrs: 46km/hr (25knot) winds with 65km/hr (35knot) gusts. 3 - 5m combined sea and swell.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 43 (15 unsafe, 28 safe).
JSA - 19, PTW - 15.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				23-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	26

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
SUBSEA 7	7		KEMTECH	2	
TRI-SURV	2		GO OFFSHORE	2	
BHI	2		DODI	62	
SPERRY SUN	2		VETCO	1	
DOWELL	2		SMITH SERVICES	1	
APACHE	3		BJ CASING	2	

TOTAL PERSONNEL ON BOARD: 88

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
SWISSCO 168	Enroute to Rig.
NOR CAPTAIN	Enroute to Rig.
FAR SKY	On Location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		83	DIESEL	m3		455
WATER, POTABLE	m3	38	302	WATER, DRILLING	m3	54	547

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	/ /250.00/12	5.00/180.00/3	/	28.3/250.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2004	2004			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
16-11-2008 / 41,370	16-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	16-11-2008			16-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	190	2	193	3	189
4	177	5	168	6	189
7	194	8	194	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				23-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	26

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
				0.00
SAFE-CIDE	25.00 l			30.00
NUT PLUG	25.00 kg			28.00
SOLTEX	25.00 kg			182.00
BARITE (bulk)	MT			139.30
OMYACARB 10	25.00 kg			96.00
FLOWZAN	25.00 kg			84.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
GUAR GUM	25.00 kg			0.00
BENTONITE (BULK)	MT			43.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg			23.00
CIRCAL 60/16	25.00 kg			78.00
KWIKSEAL (F)	40.00 lbs			90.00
CITRIC ACID	25.00 kg			26.00
DRISPAC SL	25.00 kg			228.00
CIRCAL 1000	25.00 kg			94.00
DEFOAM A	25.00 l			24.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
POLYSAI	25.00 kg			30.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
CIRCAL Y	25.00 kg			96.00
SAPP	25.00 kg			40.00
SODIUM BICARBONATE - NaHCO3	25.00 kg			0.00
KWIKSEAL (M)	40.00 lbs			90.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				24-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	27

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	23.40 (days)	19.85 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008		PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 838,251	DHC: 25,077,603
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 838,251	TOTAL: 25,077,603

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	24/11/2008	VIC-P59		

LAST SURVEY	LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD 3,780.00 (m) **INC** 1.21° **AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: Commencing anchor handling operations.

24 HR SUMMARY: WOW. Metocean conditions unfavourable for anchor handling operations.

24 HR FORECAST: Anchor handling operations.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	0:00	24.00	R-MOB-DEM OB	ANCHOR	PN	WOW	WOW. Metocean conditions inproving as per forecast. 03:00hrs: 56km/hr (30knot) winds with 70km/hr (38knot) gusts. 6 - 9m combined sea and swell. 06:00hrs: 46km/hr (25knot) winds with 65km/hr (35knot) gusts. 3 - 5m combined sea and swell. 12:00hrs: 46km/hr (25knot) winds with 56km/hr (30knot) gusts. 3 - 5m combined sea and swell. 18:00hrs: 46km/hr (25knot) winds with 56km/hr (30knot) gusts. 3 - 4m combined sea and swell. 00:00hrs: 46km/hr (25knot) winds with 56km/hr (30knot) gusts. 3 - 4m combined sea and swell Note: Boats came along side every 2 hrs checking on conditions for anchor handling.

24.00 = Total Hours Today

06:00 UPDATE

0000-0600 WOW. 37km/hr (20knot) winds with 46km/hr (25knot) gusts. 3 - 4m combined sea and swell. Successfully lifted spare anchor from Far Grip.

HSE: No accidents, incidents or pollution reported.
Total Stop cards - 45 (24 unsafe, 21 safe).
JSA - 29, PTW - 5.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				24-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	27

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
SUBSEA 7	7		KEMTECH	2	
VETCO	1		DODI	61	
TRI-SURV	2		BHI	2	
SPERRY SUN	2		BJ CASING	2	
GO OFFSHORE	2		APACHE	4	
DOWELL	2				

TOTAL PERSONNEL ON BOARD: 87

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
SWISSCO 168	On Location.
NOR CAPTAIN	On Location.
HELICOPTER	JYN (Pax On - 2,Pax Off - 3).
FAR SKY	On Location.

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		83	DIESEL	m3		446
WATER, POTABLE	m3	21	315	WATER, DRILLING	m3	50	497

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	/ /145.00/12	5.00/180.00/3	/	18.0/145.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2004	2004			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
24-11-2008 / 41,370	24-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	24-11-2008			24-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME? NO** **INCIDENTS DESCRIPTION**

ANCHOR TENSION DATA

ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION	ANCHOR NO	CURRENT TENSION
1	189	2	191	3	190
4	176	5	169	6	190
7	188	8	192	9	
10		11		12	

Daily Drilling Report

WELL NAME				DATE
DORY-1				24-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	27

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
BENTONITE (BULK)	MT			43.00
DRISPAC SL	25.00 kg			228.00
BARITE (bulk)	MT			139.30
				0.00
SOLTEX	25.00 kg			182.00
GUAR GUM	25.00 kg			0.00
CIRCAL 60/16	25.00 kg			78.00
DEFOAM A	25.00 l			24.00
KWIKSEAL (M)	40.00 lbs			90.00
CIRCAL Y	25.00 kg			96.00
POLYSAl	25.00 kg			30.00
SAPP	25.00 kg			40.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
NUT PLUG	25.00 kg			28.00
CITRIC ACID	25.00 kg			26.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
OMYACARB 10	25.00 kg			96.00
SODIUM BICARBONATE - NaHCO3	25.00 kg			0.00
SODA ASH- SOD.CARBONATE-Na2CO3	25.00 kg			23.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
SAFE-CIDE	25.00 l			30.00
CIRCAL 1000	25.00 kg			94.00
FLOWZAN	25.00 kg			84.00
KWIKSEAL (F)	40.00 lbs			90.00

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				25-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	28

RIG NAME NO	FIELD NAME	AUTH TMD	PLANNED DOW	DOL	DFS / KO	WATER DEPTH
OCEAN PATRIOT	DORY	3,821.50 (m)	26.02 (days)	25.19 (days)	21.64 (days)	518.48 (m)

SPUD DATE	Rig Release	WELL SUPERVISOR	OIM	PBTMD
04-11-2008	25/11/2008	PAT BROWN / DAVID SYMINGTON	ROD DOTSON	588.00 (m)

REGION	DISTRICT	STATE / PROV		RIG PHONE NO	RIG FAX NO
AUSTRALIA	OFFSHORE	VICTORIA		(08) 9338 5640	

AFE # 096 08EE6	AFE COSTS	DAILY COSTS	CUMULATIVE COSTS
DESCRIPTION:	DHC: 26,682,148	DHC: 678,267	DHC: 25,755,870
Vertical Exploration Well.	DCC:	DCC:	DCC:
	CWC:	CWC:	CWC:
	Others:	Others:	Others:
	TOTAL: 26,682,148	TOTAL: 678,267	TOTAL: 25,755,870

DEFAULT DATUM / ELEVATION	LAST SAFETY MEETING	BLOCK	FORMATION	BHA HRS OF SERVICE
ROTARY TABLE / 21.50 (m)	25/11/2008	VIC-P59		

LAST SURVEY					LAST CSG SHOE TEST (EMW)	LAST CASING	NEXT CASING
MD	3,780.00 (m)	**INC**	1.21°	**AZM** 338.12°	1.34 (sg)	340.000 mm @ 1,534.1 m	

CURRENT OPERATIONS: EOW. See Madfish-1 for further detail.

24 HR SUMMARY: WOW. Pulled secondary anchors. Pulled primary anchors. Moved rig 1km off location and commenced tight tow to Madfish-1 location at 1900 hrs 25 November 2008.

24 HR FORECAST: EOW. See Madfish-1 for further detail.

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
0:00	6:00	6.00	R-MOB-DEM OB	ANCHOR	PN	WOW	WOW. 03:00hrs: 37km/hr (20knot) winds with 46km/hr (25knot) gusts. 3 - 4m combined sea and swell. 03:00hrs: 37km/hr (20knot) winds with 46km/hr (25knot) gusts. 3m combined sea and swell. Successfully lifted spare anchor from Far Grip at 05:00hrs.
6:00	13:00	7.00	R-MOB-DEM OB	ANCHOR	PP		Pulled secondary anchors. Anchor #2: 06:03hrs: PCC passed to Far Grip 07:40hrs: Anchor off bottom. 09:35hrs: Anchor bolstered. 09:48hrs: PCC passed to rig. Anchor #6: 06:21hrs: PCC passed to Far Sky. 08:10hrs: Anchor off bottom. 09:40hrs: Anchor bolstered. 09:50hrs: PCC passed to rig. Anchor #3: 09:57hrs: PCC passed to Far Grip. 10:38hrs: Anchor off bottom. 12:35hrs: Anchor bolstered. 12:40hrs: PCC passed to rig. Anchor #7: 10:12hrs: PCC passed to Far Sky. 11:10hrs: Anchor off bottom. 13:10hrs: Anchor bolstered. 13:11hrs: PCC passed to rig. 12:55hrs: Nor Captain connected to main tow bridle.
13:00	19:00	6.00	R-MOB-DEM OB	ANCHOR	PP		Pulled primary anchors. Anchor #1: 12:54hrs: PCC passed to Far Grip 13:36hrs: Anchor off bottom.

Daily Drilling Report

WELL NAME				DATE
DORY-1				25-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	28

OPERATION SUMMARY

From	To	HRS	Phase	Operation	PT/NPT	NPT CODES	ACTIVITY SUMMARY
							15:35hrs: Anchor bolstered. 15:41hrs: PCC passed to rig. Anchor #5: 13:24hrs: PCC passed to Far Sky. 14:21hrs: Anchor off bottom. 16:20hrs: Anchor bolstered. 16:24hrs: PCC passed to rig. Anchor #8: 16:00hrs: PCC passed to Far Grip 17:35hrs: Anchor off bottom. Anchor #4: 16:45hrs: PCC passed to Far Sky. 18:45hrs: Anchor off bottom. 1km off Dory-1 location at 19:00 hrs and commenced tight tow to Madfish-1 location. ---------- End of Dory-1. ----------

19.00 = Total Hours Today

06:00 UPDATE

0000-0600 HSE: No accidents, incidents or pollution reported.
Total Stop cards - 24 (10 unsafe, 10 safe).
JSA - 24, PTW - 13.

CASING

S/T	DESCRIPTION	SIZE	WEIGHT	GRADE	SETTING DEPTH
OH	SURFACE	340.00			1,534.14
OH	CONDUCTOR	762.00			585.00

PERSONNEL DATA

COMPANY	QTY	HRS	COMPANY	QTY	HRS
VETCO	1		BJ CASING	2	
TRI-SURV	2		BHI	2	
GO OFFSHORE	2		DOWELL	2	
SPERRY SUN	2		SUBSEA 7	7	
APACHE	3		KEMTECH	2	
DODI	65				

TOTAL PERSONNEL ON BOARD: 90

SUPPORT CRAFT

TYPE	REMARKS
FAR GRIP	On Location.
SWISSCO 168	On Location.
NOR CAPTAIN	On Location.
FAR SKY	On Location.
HELICOPTER	JYN (Pax On - 9, Pax Off - 6).

MATERIALS/CONSUMPTION

ITEM	UNITS	USAGE	ON HAND	ITEM	UNITS	USAGE	ON HAND
BARITE BULK	MT		139	BENTONITE	MT		43
CEMENT	MT		83	DIESEL	m3		438
WATER, POTABLE	m3	21	326	WATER, DRILLING	m3		497

APACHE CORPORATION

Daily Drilling Report

WELL NAME				DATE
DORY-1				25-11-2008
API #	**24 HRS PROG**	**TMD**	**TVD**	**REPT NO**
OH	0.00 (m)	3,814.00 (m)	3,814.00 (m)	28

WEATHER

TIME	SWELL HT/DIR/PER	WAVE HT/DIR/PER	WIND SPEED/DIR	GUST SPEED/DIR	TEMP
00:00	/ /145.00/12	2.00/180.00/3	/	10.3/145.00	

DECKLOG

MAX VDL	ACT VDL	AVG VDL	LEG PEN (BOW)	LEG PEN (PORT)	LEG PEN (S BOARD)
2560	2004	2004			

SAFETY DRILLS

RAMS (kPa)	ANNULARS (kPa)	CASING	LAST BOP DRILL	NEXT BOP PRESS TEST	FIRE DRILL	H2S DRILL	MAN OVERBRD	ABND. DRILL
24-11-2008 / 41,370	24-11-2008 / 41,370	10-11-2008 / 17,238	10-11-2007	24-11-2007	24-11-2008			24-11-2008

INCIDENT REPORT

INCIDENTS TYPE NONE **LOST TIME?** NO **INCIDENTS DESCRIPTION**

MUD INVENTORY

ITEM	UNIT	USAGE	Day Cost ($)	ON HAND
SODIUM BICARBONATE - NaHCO3	25.00 kg			0.00
SAFE-CIDE	25.00 l			30.00
BARITE (bulk)	MT			139.30
CIRCAL Y	25.00 kg			96.00
FLOWZAN	25.00 kg			84.00
BENTONITE (BULK)	MT			43.00
DRISPAC SL	25.00 kg			228.00
CALCIUM CHLORIDE 74-77%	25.00 kg			80.00
CIRCAL 60/16	25.00 kg			78.00
KWIKSEAL (F)	40.00 lbs			90.00
NUT PLUG	25.00 kg			28.00
KWIKSEAL (M)	40.00 lbs			90.00
KCL BRINE (1.15SG)	1.00 bbl			0.00
CITRIC ACID	25.00 kg			26.00
OMYACARB 10	25.00 kg			96.00
				0.00
GUAR GUM	25.00 kg			0.00
DEFOAM A	25.00 l			24.00
CIRCAL 1000	25.00 kg			94.00
SODA ASH-SOD.CARBONATE-Na2CO3	25.00 kg			23.00
POLYSAl	25.00 kg			30.00
SAPP	25.00 kg			40.00
CAUSTIC SODA - NaOH	25.00 kg			20.00
SOLTEX	25.00 kg			182.00

AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

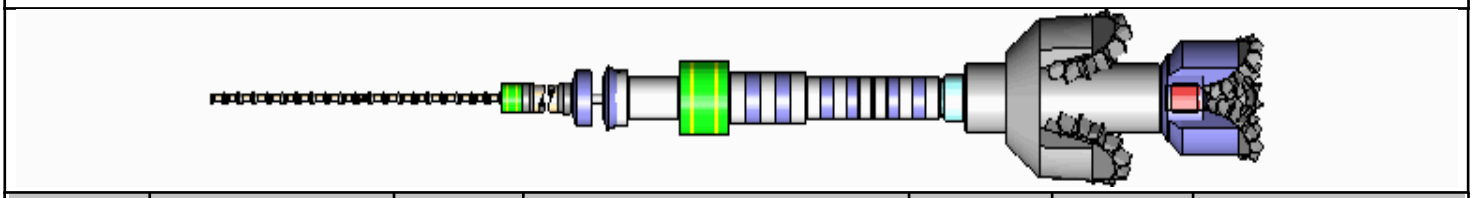
BHA # 1

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
CONDUCTOR	1		539.98	586.48	372.94

Date/Time In:	11/4/2008 8:00PM	Hole Size:	914.00 (mm)	Pred. Performance:	
Date/Time Out:	11/5/2008 10:30AM	Min ID:		Act Performance:	
In Air:		Below Jars:			
Total Rotating:	0.00 (hr)	Total Sliding:	0.00 (hr)	Total Circulating:	0.00 (hr)
Total Rotating Footage:	0.00 (m)	Total Sliding Footage:	0.00 (m)		

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection		Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck	
					OD (mm)	Name						Length (m)	OD (mm)
Heavy Weight Drill Pipe	17	158.79									N		
Heavy Weight Drill Pipe	6	56.17	166.69								N		
Cross Over	1	1.07	200.02	73.02						186-0058	N		
Drill Collar	12	111.00									N		
Cross Over	1	1.12	238.12	76.20						S18819-9	N		
Non-Mag Drill Collar	1	9.31	241.30	76.20						10987804	N		
Logging While Drilling	1	6.84	279.40	92.08						9019015809	N		
Logging While Drilling	1	4.80	241.30	82.55						sgs-29-08-08	N		
Logging While Drilling	1	7.43	241.30	76.20						PA9018 5969	N		
Bit Sub	1	1.21	247.65	76.20						507A51	N		
Hole Opener	1	2.82	914.40							27519	N		
Tri-Cone Bit	1	0.60	660.40							MZ1716	N		

BHA Length (m) : 372.94



MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne)			Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m)	
			Up	Down	Rot			On	Off

There is no data in this section.

AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

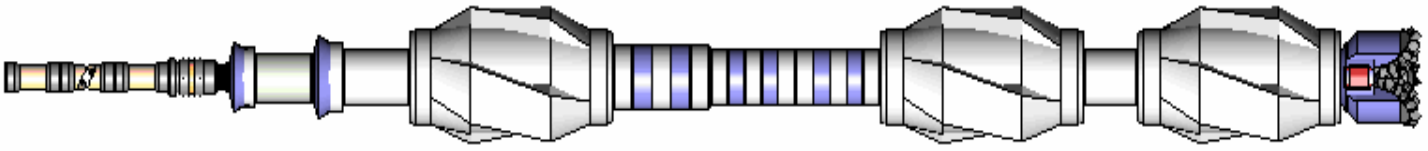
BHA # 2

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
SURFACE	2		586.48	1,537.00	377.35

Date/Time In:	11/6/2008 12:00AM	Hole Size:	406.00 (mm)	Pred. Performance:	
Date/Time Out:	11/8/2008 8:00AM	Min ID:		Act Performance:	
In Air:		Below Jars:			
Total Rotating:	0.00 (hr)	Total Sliding:	0.00 (hr)	Total Circulating:	2.50 (hr)
Total Rotating Footage:	950.52 (m)	Total Sliding Footage:	0.00 (m)		

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection		Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck	
					OD (mm)	Name						Length (m)	OD (mm)
Heavy Weight Drill Pipe	17	158.79	127.00	79.38							N		
Hydraulic Jar	1	9.36	158.75	69.85						17602018	N		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38							N		
Cross Over	1	1.07	200.02	73.02						186-0058	N		
Drill Collar	12	111.00	209.50	69.85							N		
Cross Over	1	1.12	238.12	76.20						S18819-9	N		
Non-Mag Drill Collar	1	9.31	241.30	76.20						10987804	N		
Integral Blade Stabilizer	1	2.42	406.40	76.20						10837152	N		
Logging While Drilling	1	6.84	279.40	92.08						9019015809	N		
Logging While Drilling	1	4.80	241.30	82.55						sgs-29-08-08	N		
Logging While Drilling	1	7.43	241.30	76.20						PA9018 5969	N		
Integral Blade Stabilizer	1	2.53	406.00	76.20		7 5/8 REG		4145H MOD			N	0.61	
Non-Mag Pony Collar	1	3.25	241.30	76.20						DA9055	N		
Near Bit Stabilizer	1	2.83	406.00	76.20		7 5/8 REG		4145H MOD		207A116	N	0.91	
Tri-Cone Bit	1	0.43	406.00							MZ7899	N		

BHA Length (m) : 377.35



MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne)			Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m)	
			Up	Down	Rot			On	Off
790.00	11/6/2008 11:00PM	98	98	98	98	0	0	5	4
1,489.00	11/7/2008 10:00PM	104	136	133	134	2	0	20	9
1,537.00	11/8/2008 12:25AM	107	138	135	136	2		20	9

AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

BHA # 3

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
PRODUCTION 1	3		1,537.00	1,537.00	385.44

Date/Time In:	11/10/2008 9:30PM	Hole Size:	216.00 (mm)	Pred. Performance:	
Date/Time Out:	11/11/2008 11:30AM	Min ID:	47.63 (mm)	Act Performance:	
In Air:		Below Jars:			
Total Rotating:	0.00 (hr)	Total Sliding:	0.00 (hr)	Total Circulating:	0.00 (hr)
Total Rotating Footage:	0.00 (m)	Total Sliding Footage:	0.00 (m)		

Comments

MWD pulser failure on shallow test. POH and swapped out same.

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection		Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck	
					OD (mm)	Name						Length (m)	OD (mm)
Heavy Weight Drill Pipe	17	158.79	127.00	79.38							N		
Hydraulic Jar	1	9.36	158.70	69.85						17602018	N		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38							N		
Spiral Drill Collar	12	112.92	171.40	69.85							N		
Integral Blade Stabilizer	1	1.78	216.00	73.02						A286	N		
Logging While Drilling	1	8.65	171.40	47.63						90185212	N		
Float Sub	1	0.78	171.40	73.02						DA6016	N		
Pulser Sub	1	3.56	171.40	47.63						90191578	N		
Pulser Sub	1	3.47	171.40	47.63						90191579	N		
Logging While Drilling	1	7.89	171.40	47.63						90189910	N		
MWD Tool	1	2.51	171.40	47.63						90189421	N		
Integral Blade Stabilizer	1	1.22	212.70	73.02						11226020	N		
Logging While Drilling	1	9.36	171.40	47.63						90189909	N		
MWD Tool	1	2.70	171.40	73.02						106317	N		
Integral Blade Stabilizer	1	1.67	214.30	73.02						DA8504	N		
Pony Drill Collar	1	2.53	171.40	47.63						30608	N		
Near Bit Stabilizer	1	1.81	214.30	73.02						47695	N		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02						JX5589	N		

BHA Length (m) : 385.44

AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne)			Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m)	
			Up	Down	Rot			On	Off

There is no data in this section.

BHA # 4

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
PRODUCTION 1	3RR		1,537.00	2,955.00	384.17

Date/Time In:	11/11/2008 11:30AM	Hole Size:	216.00 (mm)	Pred. Performance:	
Date/Time Out:	11/14/2008 12:30AM	Min ID:	47.63 (mm)	Act Performance:	
In Air:		Below Jars:			
Total Rotating:	0.00 (hr)	Total Sliding:	0.00 (hr)	Total Circulating:	2.30 (hr)
Total Rotating Footage:	1,067.00 (m)	Total Sliding Footage:	0.00 (m)		

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection		Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck	
					OD (mm)	Name						Length (m)	OD (mm)
Heavy Weight Drill Pipe	17	158.79	127.00	79.38							N		
Hydraulic Jar	1	9.36	158.70	69.85						17602018	N		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38							N		
Spiral Drill Collar	12	112.92	171.40	69.85							N		
Integral Blade Stabilizer	1	1.78	216.00	73.02						A286	N		
Logging While Drilling	1	8.65	171.40	47.63						90185212	N		
Float Sub	1	0.78	171.40	73.02						DA6016	N		
Pulser Sub	1	3.06	171.40	47.63						11207201	N		
Pulser Sub	1	2.70	171.40	47.63						90191573	N		
Logging While Drilling	1	7.89	171.40	47.63						90189910	N		
MWD Tool	1	2.51	171.40	47.63						90189421	N		
Integral Blade Stabilizer	1	1.22	212.70	73.02						11226020	N		
Logging While Drilling	1	9.36	171.40	47.63						90189909	N		
MWD Tool	1	2.70	171.40	73.02						106317	N		
Integral Blade Stabilizer	1	1.67	214.30	73.02						DA8504	N		
Pony Drill Collar	1	2.53	171.40	47.63						30608	N		
Near Bit Stabilizer	1	1.81	214.30	73.02						47695	N		
Polycrystalline Diamond Bit	1	0.27	216.00	73.02						JX5589	N		

BHA Length (m) : 384.17

AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne)			Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m)	
			Up	Down	Rot			On	Off
1,540.00	11/11/2008 9:47PM	118	125	125	125	0	0	11	8
2,459.00	11/12/2008 11:00PM	136	147	143	141	7	6	16	4
2,604.00	11/13/2008 2:00AM	141	154	150	147	7		12	5

BHA # 5

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
PRODUCTION 1	4RR		2,955.00	3,814.00	383.80

Date/Time In:	11/14/2008 1:00AM	Hole Size:	216.00 (mm)	Pred. Performance:	
Date/Time Out:	11/16/2008 1:00PM	Min ID:	47.63 (mm)	Act Performance:	
In Air:		Below Jars:			
Total Rotating:	0.00 (hr)	Total Sliding:	0.00 (hr)	Total Circulating:	0.00 (hr)
Total Rotating Footage:	833.00 (m)	Total Sliding Footage:	0.00 (m)		

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection		Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck	
					OD (mm)	Name						Length (m)	OD (mm)
Heavy Weight Drill Pipe	17	158.79	127.00	79.38							N		
Hydraulic Jar	1	9.36	158.70	69.85						17602018	N		
Heavy Weight Drill Pipe	6	56.17	127.00	79.38							N		
Spiral Drill Collar	12	112.92	171.40	69.85							N		
Integral Blade Stabilizer	1	1.78	216.00	73.02						A286	N		
Logging While Drilling	1	8.65	171.40	47.63						90185212	N		
Float Sub	1	0.78	171.40	73.02						DA6016	N		
Pulser Sub	1	3.06	171.40	47.63						11207201	N		
Pulser Sub	1	2.70	171.40	47.63						90191573	N		
Logging While Drilling	1	7.89	171.40	47.63						90189910	N		
MWD Tool	1	2.51	171.40	47.63						90189421	N		
Integral Blade Stabilizer	1	1.22	212.70	73.02						11226020	N		
Logging While Drilling	1	9.57	171.40	47.63						90189909	N		
MWD Tool	1	2.70	171.40	73.02						106317	N		
Integral Blade Stabilizer	1	1.67	214.30	73.02						DA8504	N		
Pony Drill Collar	1	2.53	171.40	47.63						30608	N		

AUSTRALIA

BHA Summary Report

Well: DORY-1

Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection OD (mm)	Connection Name	Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck Length (m)	Fish Neck OD (mm)
Near Bit Stabilizer	1	1.17	214.30	73.02						47695	N		
Polycrystalline Diamond Bit	1	0.33	216.00	73.02						7211635	N		

BHA Length (m) : 383.80

MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne) Up	String Weight (tonne) Down	String Weight (tonne) Rot	Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m) On	Torque (kN-m) Off
3,069.00	11/14/2008 8:05PM	145	170	156	163	7		16	7
3,297.00	11/15/2008 2:30AM	154	175	166	172	3		16	5
3,788.00	11/15/2008 9:00PM	168	191	181	186	5		16	7

BHA # 6

Assembly Name	Bit No.	Purpose	MD In (m)	MD Out (m)	BHA Length (m)
PLUG BACK			588.00	588.00	42.64

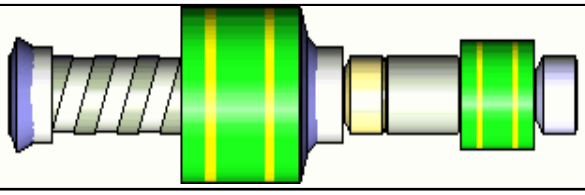
Date/Time In: 11/22/2008 4:30AM
Date/Time Out: 11/22/2008 11:00AM
In Air:
Total Rotating: 0.00 (hr)
Total Rotating Footage: -38.00 (m)

Hole Size: 317.12 (mm)
Min ID:
Below Jars:
Total Sliding: 0.00 (hr)
Total Sliding Footage: 0.00 (m)

Pred. Performance:
Act Performance:
Total Circulating: 0.00 (hr)

Component Type	Number of Joints	Length (m)	OD (mm)	ID (mm)	Connection OD (mm)	Connection Name	Weight (kg/m)	Grade	Pin Box	Serial No.	Left Or Right Spiral	Fish Neck Length (m)	Fish Neck OD (mm)
Cross Over	1	1.15	209.55								N		
Spiral Drill Collar	3	27.75	209.55								N		
Unknown	1	2.79	476.25								N		
Cross Over	1	0.40	209.55								N		
Bumper Sub	1	5.17	209.55								N		
Pony Drill Collar	1	2.65	209.55								N		
Unknown	1	2.43	298.45								N		
Muleshoe Sub	1	0.30	209.55								N		

BHA Length (m) : 42.64



AUSTRALIA

BHA Summary Report

Well: DORY-1			
Project: VIC-P59	Site: DORY-1		Rig Name/No.: OCEAN PATRIOT/0
Event: OFFSHORE-ORIG DRLG	Start Date: 10/29/2008	End Date: 11/25/2008	Spud Date: 11/2/2008
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1	

MD (m)	Check Date/Time	Act Hook Load (tonne)	String Weight (tonne)			Drag (tonne)	Max Over Pull (tonne)	Torque (kN-m)	
			Up	Down	Rot			On	Off
550.00	11/22/2008 8:46AM					0			

DAILY GEOLOGICAL REPORT

Date:	05 November 2008	**Rig:**	Ocean Patriot
Report Number:	7	**Bit Diameter:**	914 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	N/A
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	0.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	586.5 mMDRT -565.0 mTVDAHD	**ECD:**	N/A
		Mud Type:	Sea Water with Gel Sweeps
Lag Depth:	586.5 mMDRT	**Mud Chlorides:**	N/A
Last Depth:	N/A	**Est. Pore Pressure:**	N/A
Progress:	586.5 m	**Last Survey:**	N/A
GL Elevation:	0.0 m	**Deviation:**	N/A
RT:	21.5 m		

OPERATIONS SUMMARY

24 HOUR SUMMARY: Continued to rig up in preparation for spud. Spudded Dory-1 and drilled to section TD of 586.5 mMDRT.

NEXT 24 HOURS: Displace hole to 1.04 SG Hi-vis mud, pull out of hole and rig up to run and cement 762 mm conductor.

CURRENT OPERATION @ 06:00 HRS (05-Nov-2008): Displacing well to 1.04 SG Hi-Vis PHG mud.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 540.0 to 586.5 mMDRT (-540.0 to -586.5 mTVDAHD)
ROP (Range): 11.6 to 126.0 m/h
Av. ROP: 47.0 m/h
Returns to Seabed

MUDLOGGING EQUIPMENT / PERSONNEL

All systems operational. Running virus check. Will complete a gas check later today.

MWD

MWD tool failed to initialize. Unable to troubleshoot problem online (changed communications cable, changed booster box, changed computer, ran deck cable, ran spare cable, changed external probe). Currently trouble shooting issues using the backup tool on deck and further investigation and service to be performed on failed tool following completion of 660 mm hole section and racking back of BHA.

REMARKS

This is the first Daily Geological Report for Dory-1. The report number matches the Daily Drilling Report number.

The Ocean Epoch came on hire for Dory-1 at 23:30 hours on 29th October 2008. Anchors were run and set, with the preliminary rig position of:

Latitude 38° 35' 19.759" South
Longitude 148° 32' 51.925" East

Easting 634798.9 mE
Northing 5727714.9 mN

This position is 2.1 m on a bearing of 183.4°(T) from the intended location. Final rig heading is 264.5°(T).

Preliminary Rig elevation:

RT to AHD	21.5 m
Water Depth	518.5 m
RT to Seabed	540.0 m

A 660 mm (26") bit with 914 mm (36") hole opener was picked up and run in hole, tagging the sea bed at 540.0 mMDRT (tide corrected). Dory-1 was spudded at 03:30 hours on 05 November 2008 and the 914 mm hole was drilled from 540.0 to 586.5 mMDRT.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	06 November 2008	**Rig:**	Ocean Patriot
Report Number:	8	**Bit Diameter:**	N/A
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	30" @ 586.5 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	1.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	586.5 mMDRT -565.0 mTVDAHD	**ECD:**	N/A
		Mud Type:	Sea Water with Gel Sweeps
Lag Depth:	586.5 mMDRT	**Mud Chlorides:**	N/A
Last Depth:	586.5 mMDRT		
Progress:	0.0 m	**Last Survey:**	N/A
Water Depth:	517.3 m	**Deviation:**	N/A
RT:	21.5 m		

OPERATIONS SUMMARY

24 HOUR SUMMARY: Pulled out of hole 914 mm drilling assembly. Ran and cemented 762 mm x 508 mm conductor and shoe.

NEXT 24 HOURS: Pick up 406 mm drilling assembly and run in hole to drill out shoe track. Drill ahead 406 mm (16") hole to section TD (~1540.0 mMDRT).

CURRENT OPERATION @ 06:00 HRS (06-Nov-2008): Laying out 762 mm (30") CART.

GEOLOGICAL SUMMARY

LITHOLOGY
No new lithology drilled

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Gas check performed - Good test.

MWD
Changing out 9.5” tool stator / pulser for adjusted flow rates.

REMARKS
Pulled out of hole with 914 mm drilling assembly. Ran and cemented 762 mm x 508 mm conductor and TGB (Temporary Guide Base). Skidded rig to reduce TGB inclination prior to cementing. Pulled out with 726 mm CART and laid out.

Final Rig elevation:

RT to AHD	21.5 m
Water Depth	517.25 m
RT to Seabed	538.75 m (tide corrected)

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	07 November 2008	**Rig:**	Ocean Patriot
Report Number:	9	**Bit Diameter:**	406 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	762 mm @ 585.0 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	2.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	1052.0 mMDRT -1030.4 mTVDAHD	**ECD:**	1.08 sg
		Mud Type:	Sea Water with Gel Sweeps
Lag Depth:	N/A	**Mud Chlorides:**	N/A
Last Depth:	586.5 mMDRT	**Est. Pore Pressure:**	N/A
Progress:	465.5 m	**Last Survey:**	1016.72 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.47° Az. 350.84°
RT:	21.5 m		

OPERATIONS SUMMARY

24 HOUR SUMMARY: Picked up 406 mm BHA and MWD / LWD tools. Ran in hole and drilled out 762 mm casing shoe. Drilled ahead 406 mm (16”) hole to 1052.0 mMDRT.

NEXT 24 HOURS: Drill 406mm (16") hole to section TD. Sweep hole with hi-vis PHG and displace same to 1.15 SG WBM. Pull out of hole. Run and cement 340mm (13-3/8") casing.

CURRENT OPERATION @ 06:00 HRS (07-Nov-2008): Drilling ahead 406 mm hole at 1052.0 mMDRT.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 586.5 to 1052.0 mMDRT (-565.0 to -1030.4 mTVDAHD)
ROP (Range): 8.0 to 234.0 m/h
Av. ROP: 77.0 m/h

Returns to seabed.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational.

MWD
Changed out 9.5" tool stator / pulser for adjusted flow rates.
Serviced pump #2 sensor for noise minimisation.
Unable to receive real time data signal due to excessive down hole noise. No problems getting surveys.

REMARKS
Picked up 406 mm BHA and MWD / LWD tools, shallow tested - good. Ran in hole and drilled out 762 mm casing shoe. Drilled ahead 406 mm hole to 1052.0 mMDRT.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	08 November 2008	**Rig:**	Ocean Patriot
Report Number:	10	**Bit Diameter:**	406 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	30" @ 585.0 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	N/A
Days From Spud:	3.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	1537.0 mMDRT -1515.4 mTVDAHD	**ECD:**	N/A
		Mud Type:	Sea Water with Gel Sweeps
Lag Depth:	1537.0 mMDRT	**Mud Chlorides:**	N/A
Last Depth:	1052.0 mMDRT		
Progress:	485.0 m	**Last Survey:**	1519.07 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.33°
RT:	21.5 m		Az. 354.14°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled ahead 406 mm hole from 1052.0 to 1537.0 mMDRT. Displaced hole to hi-vis mud and pulled out of hole.

NEXT 24 HOURS: Pull out of hole with 406 mm BHA. Run and cement 340 mm surface casing. Run BOP and marine riser.

CURRENT OPERATION @ 06:00 HRS (08-Nov-2008): Pulling out of hole and racking back 406 mm BHA.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 1052.0 to 1537.0 mMDRT (-1030.4 to -1515.4 mTVDAHD)
ROP (Range): 12.0 to 117.0 m/h
Av. ROP: 39.0 m/h

Returns to Seabed.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Mudloggers booked out for Tuesday.

MWD
Unable to receive real time data signal due to excessive down hole noise. No problems getting surveys.

WIRELINE
DLL-XMAC-ZDL-CN tools, RA sources and seismic tools en route to rig. RCI, RCOR and a back up drum of cable to be dispatched early next week.

REMARKS
Continued to drill ahead 406 mm hole from 1052.0 to 1537.0 mMDRT. Circulated hole clean and displaced hole to hi-vis mud. Pulled out of hole and racked back 406 mm BHA and LWD / MWD tools.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	09 November 2008	**Rig:**	Ocean Patriot
Report Number:	11	**Bit Diameter:**	No bit in hole
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	4.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	1537.0 mMDRT -1515.4 mTVDAHD	**ECD:** **Mud Type:**	 Sea Water
Lag Depth:	N/A	**Mud Chlorides:**	
Last Depth:	1537.0 mMDRT		
Progress:	0 m	**Last Survey:**	1519.07 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.33°
RT:	21.5 m		Az. 354.14°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Pulled out of hole with 406 mm drilling assembly. Ran and cemented 340 mm casing as per program. Pulled out of hole with landing string.

NEXT 24 HOURS: Run BOP and marine riser.

CURRENT OPERATION @ 06:00 HRS (09-Nov-2008): Laying out cement head. Preparing to run BOP and marine riser.

GEOLOGICAL SUMMARY

LITHOLOGY
No new formation drilled.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Mudloggers booked out for Tuesday.

REMARKS
Pulled out of the hole with 406 mm drilling assembly at section TD of 1537.0 mMDRT. Ran and cemented 340 mm casing as per program, setting the shoe at 1534.1 mMDRT. Pulled out of the hole with landing string, laid out cement head and prepared to run BOPs and marine riser.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	10 November 2008	**Rig:**	Ocean Patriot
Report Number:	12	**Bit Diameter:**	N/A
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	5.1	**Mud Weight:**	1.05 sg
Depth @ 0600 Hrs:	1537.0 mMDRT -1515.4 mTVDAHD	**ECD:**	N/A
		Mud Type:	Sea Water
Lag Depth:	N/A	**Mud Chlorides:**	N/A
Last Depth:	1537.0 mMDRT	**Est. Pore Pressure:**	N/A
Progress:	0 m	**Last Survey:**	1519.07 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.33° Az. 354.14°
RT:	21.5 m		

OPERATIONS SUMMARY

24 HOUR SUMMARY: Finished laying out cement head. Ran BOP and Marine Riser.

NEXT 24 HOURS: Land and latch BOP. Pressure test connector and function test BOP. Pick up 127mm (5") DP and make up 216mm (8-1/2") BHA. Run in hole and drill out 340mm (13-3/8") shoe. Conduct LOT. Drill 216mm (8-1/2") hole.

CURRENT OPERATION @ 06:00 HRS (10-Nov-2008): Installing choke and kill line goosenecks and storm loops.

GEOLOGICAL SUMMARY

LITHOLOGY
No new formation drilled.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Mudloggers booked out for Tuesday. Gas system being calibrated today.

MWD
Tools tested and ready. Working on data configuration scenarios for image log.

REMARKS
Finished laying out cement head. Ran BOP and Marine Riser to 525.0 mMDRT. Picked up and made up slip joint and BOP landing joint.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	11 November 2008	**Rig:**	Ocean Patriot
Report Number:	13	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**Integrity Test:**	N/A
Days From Spud:	6.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	1537.0 mMDRT -1515.4 mTVDAHD	**ECD:**	N/A
		Mud Type:	KCL / Polymer
Lag Depth:	N/A	**Mud Chlorides:**	60000.00 mg/L
Last Depth:	1537.0 mMDRT		
Progress:	0 m	**Last Survey:**	1519.07 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.33°
RT:	21.5 m		Az. 354.14°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Installed choke and kill line goosenecks and storm loops. Landed and latched stack, function tested BOPs. Picked up drill pipe, made up 216 mm (8-1/2") BHA, ran in hole to 613.0 mMDRT.

NEXT 24 HOURS: Shallow test LWD tools, continue in hole to top of cement. Drill out 340 mm (13-3/8") shoe. Conduct LOT. Drill ahead 216 mm (8-1/2") hole.

CURRENT OPERATION @ 06:00 HRS (11-Nov-2008): Preparing to shallow test MWD/LWD tools.

GEOLOGICAL SUMMARY

LITHOLOGY
No new formation drilled.

MWD
Run #3, Bit Run #3: 216 mm LWD Tool offsets to bit:

Tool	Serial #	Distance to bit (m)
Direction and Inclination	PCDC MWD	7.40
Azimuthal Focused Res	AFR LWD	11.10
Gamma Ray	DGR LWD	13.86
Resistivity	EWR LWD	16.18
Pressure w/- Drilling	PWD LWD	21.05
Neutron Density	ALD LWD	26.20
Neutron Porosity	CNP LWD	28.81
BAT Sonic	BAT LWD	41.40
Acoustic Caliper	ACAL LWD	45.17

REMARKS
The BOP was landed and latched with connectors pressure tested prior to function testing. The marine riser slip joint was then scoped and the diverter installed. 20 stands of 127mm (5") DP were made up and racked back prior to picking up and initialising the LWD / MWD tools. A 216 mm (8 1/2") drilling assembly consisting of a Smith Mi519BPX PDC bit and LWD tools for the acquisition of gamma ray, resistivity, neutron density, neutron porosity, sonic and directional data were picked up and run in hole to 613.0 mMDRT in preparation for shallow test.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	12 November 2008	**Rig:**	Ocean Patriot
Report Number:	14	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	7.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	1651.0 mMDRT -1629.4 mTVDAHD	**ECD:**	1.19 sg
		Mud Type:	KCL / Polymer
Lag Depth:	1620.0 mMDRT	**Mud Chlorides:**	60000.00 mg/L
Last Depth:	1537.0 mMDRT	**Est. Pore Pressure:**	1.08 sg
Progress:	114.0 m	**Last Survey:**	1641.01 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 0.96°
RT:	21.5 m		Az. 329.53°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Shallow tested LWD tools - failed. Pulled out of hole, changed out LWD telemetry module, shallow tested - good and ran in hole. Drilled out shoe track plus 3 m of new formation and conducted LOT. Drilled ahead 216 mm (8 1/2") hole to 1651.0m MDRT.

NEXT 24 HOURS: Drill 216 mm hole.

CURRENT OPERATION @ 06:00 HRS (12-Nov-2008): Drilling ahead in 216 mm hole at 1651.0 mMDRT.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 1537.0 to 1620.0 mMDRT (-1515.4 to -1598.4 mTVDAHD)
ROP (Range): 6.0 to 71.0 m/h
Av. ROP: 27.0 m/h

Massive CALCILUTITE with thin DOLOMITIC CLAYSTONE stringers.
CALCILUTITE (95 to 100%): light grey, light greenish grey, light grey to off white, medium green grey, common argillaceous matrix, occasional fine quartz grains, common dark lithics, common glauconitic material, occasional micro-fossils, firm to moderately hard, sub-blocky to blocky.
DOLOMITIC CLAYSTONE (Trace to 5%): light yellow, orange, abundant calcareous material, minor lithics, moderately hard to hard, sub-blocky.

GAS SUMMARY

Background Gas							
INTERVAL (mMDRT)	**Total Gas (%)**	**C1 (ppm)**	**C2 (ppm)**	**C3 (ppm)**	**iC4 (ppm)**	**nC4 (ppm)**	**C5 (ppm)**
1537.0 - 1620.0	0.03	318	0	0	0	0	0

SAMPLE QUALITY
Collected 10.0 m sample intervals from 1537.0 to 1620.0 mMDRT.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Currently using backup depth system whilst repairs made to geolograph. Carbide tested gas line integrity from gas trap - good response.

MWD
Run #4, Bit Run #3: 216 mm LWD Tool offsets to bit:

Tool	Serial #	Distance to bit (m)
Direction and Inclination	PCDC MWD	7.40
Azimuthal Focused Res	AFR LWD	11.10
Gamma Ray	DGR LWD	13.86
Resistivity	EWR LWD	16.18
Pressure w/- Drilling	PWD	21.05
Neutron Density	ALD LWD	26.20
Neutron Porosity	CNP LWD	28.81
BAT Sonic	BAT LWD	39.95
Acoustic Caliper	ACAL LWD	43.72

Replaced IXO negative pulse for positive pulse tool.
Currently servicing geolograph due to broken shaft and line.

Rmf: 0.04 @ 30°C
Rm: 0.058 @ 30°C
Rmc 0.07 @ 30°C

REMARKS
Shallow tested LWD tool at 613.0 mMDRT - no communication established. Trouble shot same but failed to rectify problem. Conducted mode switch on HCIM and attempted to shallow test - unsuccessful. Pulled out of hole and changed out LWD telemetry module. (Removed RA sources. Plugged into and downloaded MWD/LWD tools. Laid out BAT, ACAL and float sub. Laid out IXO and SDC (negative pulse), picked up and made up HOC (positive pulse). Plugged into HCIM and initialised same. Made up float sub, BAT and ACAL. Installed RA sources). Shallow tested Sperry MWD/LWD tool string - good. Ran in hole and tagged top of cement at 1518.9 mMDRT. Drilled out cement plugs and float collar, displaced well to WBM, and drilled out shoe track plus 3 m of new formation. Performed LOT (1.34 sg EMW with 1.15 sg MW to 2524 kPa). Drilled ahead 216 mm (8 1/2") hole to 1651.0m MDRT.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	13 November 2008	**Rig:**	Ocean Patriot
Report Number:	15	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	8.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	2804.0 mMDRT -2781.4 mTVDAHD	**ECD:**	1.18 sg
		Mud Type:	KCL / Polymer
Lag Depth:	2720.0 mMDRT	**Mud Chlorides:**	550000.00 mg/L
Last Depth:	1651.0 mMDRT		
Progress:	1153.0 m	**Last Survey:**	2794.00 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 1.49°
RT:	21.5 m		Az. 54.96°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled ahead 216mm hole to 2719.0 mMDRT. Performed 2 stand wiper trip. Drilled ahead to 2804.0 mMDRT.

NEXT 24 HOURS: Drill ahead 8 1/2" hole to TD.

CURRENT OPERATION @ 06:00 HRS (13-Nov-2008): Drilling ahead 8 1/2" hole in the Gurnard Formation.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 1620.0 to 2396.0 mMDRT (-1598.4 to -2373.6 mTVDAHD)
ROP (Range): 16.0 to 201.0 m/h
Av. ROP: 87.0 m/h

Massive CALCILUTITE and CALCISILTITE with minor CALCARENTITE and thin DOLOMITE stringers.
CALCILUTITE (5 to 100%): Light grey to medium light grey, light olive grey to greenish grey, minor fine quartz grains, common dark lithics and glauconitic material, minor fossils, trace carbonaceous material, grades to CALCISILTITE in part, minor dispersive, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky to blocky, minor amorphous, nil visible porosity.
CALCISILTITE (15 to 90%): Light grey to medium light grey, light olive grey to greenish grey, abundant matrix and grading to CALCILUTITE in part, common quartz grains, minor to common dark lithics and glauconitic material, minor fossils, trace carbonaceous material, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky to blocky, nil visible porosity.
CALCARENITE (Trace to 40%): Medium light grey to medium grey, very fine, well sorted, angular to sub-angular, abundant argillaceous and micritic matrix, rarely microcrystalline, trace lithics, minor fossils, brittle to moderately hard, dominantly nil to very poor visible porosity, trace moldic porosity, no show.
DOLOMITE (Trace to 5%): Medium dark grey to dark grey, microcrystalline, trace glauconitic material, very hard, angular.

INTERVAL: 2396.0 to 2613.0 mMDRT (-2373.6 to -2590.5 mTVDAHD)
ROP (Range): 29.0 to 160.0 m/h
Av. ROP: 99.0 m/h

Massive interbedded CALICILUTITE and CALCISILTITE.
CALCISILTITE (10 to 40%): olive grey, light greenish grey, light grey to off white, common argillaceous matrix and locally grades to CALCILUTITE in part, locally arenaceous, minor very fine dark lithics, minor very fine floating quartz grains, trace very fine glauconite, hard to very hard, sub-blocky, nil visible porosity, no show.
CALCILUTITE (60 to 90%): Olive grey, greenish grey, light olive grey, occasional very fine dark lithics, occasional glauconitic material, trace very fine floating quartz grains, minor microcrystalline fragments,

moderately hard to hard, sub-blocky to blocky, nil visible porosity, no show.

INTERVAL: 2613.0 to 2720.0 mMDRT (-2590.5 to -2697.5 mTVDAHD)
ROP (Range): 45.0 to 149.0 m/h
Av. ROP: 92.0 m/h

Massive CALICILUTITE with minor interbedded CALCISILTITE.
CALCILUTITE (90 to 100% : Very light olive grey, light greenish grey, light grey to off white, occasional glauconitic material, rare ooids, rare carbonaceous material, minor very fine to fine floating quartz grains, minor nodular and disseminated pyrite, moderately hard to hard, very hard in part, sub-blocky to blocky, nil visible porosity, no show.
CALCISILTITE (5 to 10%): olive grey, light greenish grey, light grey to off white, common argillaceous matrix and locally grades to CALCILUTITE in part, locally arenaceous, minor very fine dark lithics, minor very fine floating quartz grains, trace very fine glauconite, hard to very hard, sub-blocky, nil visible porosity, no show.

GAS SUMMARY

Background Gas							
INTERVAL (mMDRT)	**Total Gas (%)**	**C1 (ppm)**	**C2 (ppm)**	**C3 (ppm)**	**iC4 (ppm)**	**nC4 (ppm)**	**C5 (ppm)**
1620.0 - 2396.0	0.05	438	1	1	0	0	0
2396.0 - 2613.0	0.03	340	1	2	0	0	0
2613.0 - 2720.0	0.03	336	2	1	0	0	0

SAMPLE QUALITY
Collected 10.0 m sample intervals from 1620.0 to 1780.0 mMDRT.
Collected 20.0 m sample intervals from 1780.0 to 2720.0 mMDRT.

MUDLOGGING EQUIPMENT / PERSONNEL
Currently using backup depth system whilst repairs made to geolograph.
Chromatograph calibration file has become corrupted. Gas windows require constant resetting. Recalibration required at next available opportunity.
Ran carbide at 2658.0 mMDRT.

MWD
Run #4, Bit Run #3: 216 mm LWD Tool offsets to bit:

Tool	**Serial #**	**Distance to bit (m)**
Direction and Inclination	PCDC MWD	7.40
Azimuthal Focused Res	AFR LWD	11.10
Gamma Ray	DGR LWD	13.86
Resistivity	EWR LWD	16.18
Pressure w/- Drilling	PWD LWD	21.05
Neutron Density	ALD LWD	26.20
Neutron Porosity	CNP LWD	28.81
BAT Sonic	BAT LWD	39.95
Acoustic Caliper	ACAL LWD	43.72

Continue to troubleshoot pump stroke sensor and geolograph.

AFR tool Real Time signal lost while drilling at 2272.0 mMDRT.

REMARKS
Drilled ahead 216mm (8-1/2") hole from 1651.0 m 1765.0 mMDRT. Conducted third LOT to 1.39 sg EMW and drilled ahead from 1765.0 m to 2719.0 mMDRT. Flow checked well and performed 2 stand wiper trip prior to entering primary target. Drilled ahead to 2804.0 mMDRT.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	14 November 2008	**Rig:**	Ocean Patriot
Report Number:	16	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	9.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	2955.0 mMDRT	**ECD:**	N/A
	-2932.4 mTVDAHD	**Mud Type:**	KCL / Polymer
Lag Depth:	N/A	**Mud Chlorides:**	550000.00 mg/L
Last Depth:	2804.0 mMDRT		
Progress:	151.0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled ahead 216mm hole to 2892.0 mMDRT. Performed 17 stand wiper trip. Drilled ahead to 2955.0 mMDRT. Pulled out of hole. Picked up new bit #4 and backup LWD tools and commenced running in the hole.

NEXT 24 HOURS: Continue to run in hole to 340mm casing shoe. Slip and cut drilling line. Run in hole and drill ahead new 216mm (8-1/2") hole to TD.

CURRENT OPERATION @ 06:00 HRS (14-Nov-2008): Running in the hole with new bit #4 and LWD / MWD tools.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 2720.0 to 2765.0 mMDRT (-2697.4 to -2742.4 mTVDAHD)
ROP (Range): 73.0 to 168.0 m/h
Av. ROP: 109.0 m/h

Massive CALCAREOUS CLAYSTONE
CALCAREOUS CLAYSTONE (100%): Olive grey, minor medium light grey to medium grey, trace to minor micromicaceous, trace very fine to fine floating quartz grains, trace ooids and fossils, rare carbonaceous material, trace nodular and disseminated pyrite, nil to trace glauconite, firm to hard, dominantly firm, common brittle, minor hard, very hard in part, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.

INTERVAL: 2765.0 to 2815.0 mMDRT (-2745.4 to -2792.4 mTVDAHD)
ROP (Range): 66.0 to 170.0 m/h
Av. ROP: 99.0 m/h

CALCAREOUS CLAYSTONE with interbedded SILTSTONE and SANDSTONE at the base
CALCAREOUS CLAYSTONE (35 to 90%): Olive grey to medium dark grey, dominantly medium grey, trace to minor micromicaceous, nil to common silt, trace very fine to fine floating quartz grains, rare carbonaceous material, trace nodular and disseminated pyrite, trace glauconite, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.
SILTSTONE (5 to 50%): Dominantly olive black, common dusky yellowish brown to brownish black, arenaceous grading to argillaceous in part, abundant very fine to coarse glauconite, grades to GLAUCONITIC SILTSTONE, minor micromicaceous, trace very fine floating quartz grains, rare mica flakes, trace pyrite, trace ammonites, trace ooids, soft to firm, sub-blocky.
SANDSTONE (Nil to 20%): Clear to translucent, very fine to very coarse, dominantly very fine to fine, trace medium to very coarse, moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, minor angular and rounded, trace strong pyrite cement/matrix, trace argillaceous cement/matrix in part and

grading to ARGILLACEOUS SANDSTONE, abundant glauconite, very hard aggregates where pyrite cement, soft aggregates where argillaceous cement, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.

INTERVAL: 2815.0 to 2845.0 mMDRT (-2792.4 to -2822.4 mTVDAHD)
ROP (Range): 57.0 to 247.0 m/h
Av. ROP: 138.0 m/h

SANDSTONE with SILTSTONE and CALCAREOUS CLAYSTONE interbeds
SANDSTONE (30 to 40%): Clear to translucent, very fine to very coarse (coarsening with depth), dominantly very fine to fine, trace to abundant medium, nil to minor coarse to very coarse, dominantly moderately sorted to well sorted, sub-angular to rounded, dominantly sub-rounded, common sub-angular, abundant rounded, nil to common well rounded (coarse to very coarse grains), trace to rare strong pyrite cement/matrix, dominantly nil to trace moderate siliceous cement, trace pyrite and glauconite inclusions, abundant glauconite, trace brittle to very hard aggregates where pyrite cement, dominantly disaggregated, nil visible porosity, poor to fair inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (30 to 35%): Dominantly olive black, common dusky yellowish brown to brownish black, arenaceous in upper part grading to argillaceous with depth, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace very fine floating quartz grains, rare to minor mica flakes, trace pyrite, trace ammonites and ooids, soft to firm, sub-blocky.
CALCAREOUS CLAYSTONE (10 to 35%): Medium light grey to medium dark grey, dominantly medium grey, minor to common olive grey, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace glauconite, grades to CALCILUTITE in part, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.

INTERVAL: 2845.0 to 2900.0 mMDRT (-2822.4 to -2877.4 mTVDAHD)
ROP (Range): 17.0 to 208.0 m/h
Av. ROP: 110.0 m/h

Massive SANDSTONE with minor SILTSTONE and CALCAREOUS CLAYSTONE beds
SANDSTONE (70 to 90%): Clear to translucent, common opaque, fine to very coarse, dominantly coarse to very coarse, minor to common fine, abundant medium, moderately sorted to well sorted, sub-angular to well rounded, dominantly sub-rounded, abundant sub-angular, abundant rounded, minor well rounded (coarse to very coarse grains), trace strong calcareous cement, trace strong pyrite cement/matrix, nil to trace strong siliceous cement with fused grain boundaries, abundant glauconite and rarely grading to GLAUCONITIC SANDSTONE in part, trace pyrite and glauconite inclusions, rare fissile quartz shards, nil to trace mica flakes with depth, nil to trace fossils, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, good to very good inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (5 to 25%): Dominantly olive black, common dusky yellowish brown, dominantly argillaceous, common arenaceous, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace very fine floating quartz grains, minor mica flakes, trace pyrite, trace ammonites and ooids, soft to firm, sub-blocky.
CALCAREOUS CLAYSTONE (5%): Medium light grey to medium dark grey, dominantly medium grey, minor olive grey, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace glauconite, grades to CALCILUTITE in part, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.

INTERVAL: 2900.0 to 2952.0mMDRT (-2877.4 to -2929.4mTVDAHD)
ROP (Range): 23.0 to 203.0 m/h
Av. ROP: 82.0 m/h

SANDSTONE and GLAUCONITIC SANDSTONE with minor SILTSTONE and CLAYSTONE interbeds
SANDSTONE (20 to 70%): Clear to translucent, abundant opaque, medium to very coarse, dominantly coarse to very coarse, abundant medium, well sorted, sub-angular to well rounded, dominantly sub-rounded to rounded, common sub-angular, abundant well rounded, trace strong calcareous cement, trace pyrite cement/matrix, trace glauconite and glauconitic staining, trace pyrite lens and inclusions, trace mica flakes, rare fissile quartz shards, brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, very good inferred porosity, no hydrocarbon fluorescence.
GLAUCONITIC SANDSTONE (10 to 50%): Medium dark grey to olive black, common medium grey, dark

greenish grey in upper section, clear to translucent, very fine to medium, dominantly very fine to fine aggregates, dominantly medium disaggregated grains, well sorted, sub-angular to rounded, dominantly sub-rounded to sub-angular, common rounded, minor moderately strong calcareous cement, minor moderately strong siliceous cement, trace argillaceous cement/matrix and grading to ARGILLACEOUS SANDSTONE, common to abundant light grey argillaceous matrix, common brownish grey silty matrix in part, very fine to medium glauconite grading to GREENSAND in part, trace mica flakes, trace fine pyrite nodules, trace lithics, trace carbonaceous material, abundant friable to moderately hard aggregates, dominantly brittle to moderately hard, rarely friable, firm where argillaceous and silty, disaggregated, nil to very poor visible porosity, poor inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (10 to 15%): Dominantly olive black, common dusky yellowish brown, greenish black in part, common medium dark grey with depth, argillaceous and grading to SILTY CLAYSTONE in part, common arenaceous becoming dominantly arenaceous with depth, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace to abundant very fine floating quartz grains and grading to SILTY SANDSTONE, trace to minor mica flakes, trace pyrite, soft to brittle, dominantly firm, sub-blocky.
CLAYSTONE (5 to 15%): Medium dark grey to olive grey, minor to common medium light grey, moderately calcareous to common non calcareous in part with depth, trace micromicaceous, trace very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace carbonaceous material and laminae, brittle to hard, blocky to fissile, dominantly sub-fissile, trace blocky, common sub-blocky, common fissile to splintery.

GAS SUMMARY

Background Gas

INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
2720.0 - 2765.0	0.04	450	3	2	0	0	0
2765.0 - 2815.0	0.11	828	40	14	3	3	1
2815.0 - 2845.0	6.2	6738	3283	927	163	154	59
2845.0 - 2900.0	0.16	1045	126	66	16	20	12
2900.0 - 2952.0	0.02	90	25	9	1	2	1

Gas Peak

INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
2828.5	10	12729	6203	1790	325	312	125
2843.5	4.83	40390	2750	826	149	145	57
2853.5	5.1	6767	2216	673	126	121	33

SAMPLE QUALITY

Collected 20.0 m sample intervals from 2720.0 to 2780.0 mMDRT.
Collected 10.0 m sample intervals from 2780.0 to 2800.0 mMDRT.
Collected 5.0 m sample intervals from 2800.0 to 2850.0 mMDRT.
Collected 10.0 m sample intervals from 2850.0 to 2900.0 mMDRT.
Collected 5.0 m sample intervals from 2900.0 to 2910.0 mMDRT.
Collected 10.0 m sample intervals from 2910.0 to 2952.0 mMDRT.

Isotube samples collected -

Depth	Max Gas
1. 2818.0 mMDRT	5.3%
2. 2825.0 mMDRT	8.0%
3. 2829.0 mMDRT	10.03%

MUDLOGGING EQUIPMENT / PERSONNEL
Currently using backup depth system whilst repairs made to geolograph.
Chromatograph recalibrated during wiper trip.

MWD
Run #5, Bit Run #4: 216 mm LWD Tool offsets to bit to be advised.
Replaced faulty AFR with backup tool.
Debug of Bat Sonic data processing required. Debug software supplied from Sperry Houston. Bat Sonic backup tool run in current string to preserve recorded data for processing.

WIRELINE

Wireline logging crew on site. Wireline tools to arrive this afternoon.

REMARKS
Drilled ahead 216mm (8 1/2") hole to 2892.0 mMDRT. Circulated out high gas at the Gurnard Formation target. The well was flow checked and a 17 stand wiper trip was conducted for hole conditioning and investigation of well stability. Drilling of the 216 mm hole then continued to 2955.0 mMDRT where low ROP indicated a bit replacement was required. The bit was pulled from the hole. The BHA was racked back while the Bat Sonic and AFR tools were laid out and replaced with backup tools. The LWD / MWD recorded data was recovered for processing. New Bit #4, a Hughes HC506-ZX PDC, was made up with the BHA and LWD/MWD tools and commenced running in the hole.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	15 November 2008	**Rig:**	Ocean Patriot
Report Number:	17	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	10.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	3436.0 mMDRT -3413.3 mTVDAHD	**ECD:**	1.21 sg
		Mud Type:	KCL / Polymer
Lag Depth:	3340.0 mMDRT	**Mud Chlorides:**	550000.00 mg/L
Last Depth:	2955.0 mMDRT	**Est. Pore Pressure:**	1.08 sg
Progress:	481.0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Ran in hole and conducted MAD logging pass from 2780.0 m to 2910.0 mMDRT. Ran in hole to bottom and drilled 216mm (8 1/2") hole from 2955.0 to 3436.0 mMDRT.

NEXT 24 HOURS: Drill ahead new 216mm (8 1/2") hole to TD. Pull out of hole.

CURRENT OPERATION @ 06:00 HRS (15-Nov-2008): Drilling ahead 216 mm (8 1/2") open hole at 3436.0 mMDRT.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 2952.0 to 3130.0 mMDRT (-2929.4 to -3107.3 mTVDAHD)
ROP (Range): 5.0 to 142.0 m/h
Av. ROP: 56.0 m/h

Massive SANDSTONE with minor interbedded SILTSTONE, GLAUCONITIC SANDSTONE and CLAYSTONE
SANDSTONE (50 to 90%): clear to translucent, frosted, dominantly coarse to very coarse, commonly fine to medium grains, poor to moderately well sorted, angular to sub-angular, sub-rounded where fine to medium grained, trace weak calcareous cement, nil visible matrix, generally clean disaggregated grains, very good inferred porosity.
SILTSTONE (10 to 15%): medium dark grey brown, olive black, slightly arenaceous, common fine to medium glauconite grains, common tan lithics, minor micromicaceous, trace to minor nodular and disseminated pyrite, moderately hard to hard, sub-blocky.
GLAUCONITIC SANDSTONE (3 to 15%): Medium grey, light olive grey, very fine to fine, dominantly fine, well sorted, round to sub-rounded, minor moderately strong calcareous cement, common argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, common to locally abundant very fine to medium glauconite grains, trace mica flakes, occasional fine pyrite nodules, trace lithics, trace carbonaceous material, friable to moderately hard aggregates, hard in part, very poor visible porosity, no hydrocarbon fluorescence.
CLAYSTONE (5 to 20%): light bluish grey, light grey, light greenish grey, siliceous, minor calcareous material, common off white lithics, commonly micromicaceous, hard to very hard, sub-fissile to sub-blocky.

INTERVAL: 3130.0 to 3240.0 mMDRT (-3107.3 to -3217.3 mTVDAHD)
ROP (Range): 14.0 to 95.0 m/h
Av. ROP: 53.0 m/h

Massive SANDSTONE with minor SILTSTONE interbeds and thin COAL stringers
SANDSTONE (70 to 80%): clear to translucent, off white, dominantly medium, commonly very fine to fine and common coarse to very coarse fractured grains, angular to sub-rounded, dominantly sub-angular,

common strong siliceous cement and occasional fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional carbonaceous specks, common nodular pyrite, rare glauconite nodules, common chert fragments, common friable to moderately hard fine grained aggregates, generally clean disaggregated coarse grains and fractured quartzite shards, poor to fair visible porosity in fine aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (18 to 30%): medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.
COAL (Trace to 2%): black, olive black, vitreous to sub-vitreous, common silty laminations and commonly grading to a CARBONACEOUS SILTSTONE, hackly in part, hard to very hard, sub-conchoidal to sub-blocky.

INTERVAL: 3240.0 to 3340.0 mMDRT (-3217.3 to -3317.3 mTVDAHD)
ROP (Range): 11.0 to 130.0 m/h
Av. ROP: 61.0 m/h

SANDSTONE with minor SILTSTONE stringers
SANDSTONE (65 to 75%): clear to translucent, frosted, off white to pale grey in part, fine to very coarse, dominantly fine to medium, common coarse angular grains, poor sorted, dominantly sub-angular to sub-rounded, common angular, common strong siliceous cement and fused grain boundaries where medium to coarse grained, minor strong pyritic cement, trace weak calcareous cement, common off white to pale grey brown argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to ARENACEOUS SILTSTONE, common silty and carbonaceous laminations, common nodular pyrite, common friable to very hard fine to medium grained aggregates, generally clean disaggregated grains, poor to fair visible porosity in fine aggregates, poor to generally fair inferred porosity.
SILTSTONE (25 to 35%): medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.

HYDROCARBON FLUORESCENCE
2952.0 to 3130.0 mMDRT (0 - 0.1%) Moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.

3240.0 to 3320.0 mMDRT (0.1 - 5%) Bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green ring residue.

GAS SUMMARY

Background Gas

INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
2952.0 - 3130.0	0.03	179	37	19	2	4	2
3130.0 - 3240.0	0.09	559	98	49	6	11	4
3240.0 - 3340.0	0.07	213	56	29	4	10	6

Gas Peak

INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
3081.5	0.29	1950	299	143	18	33	15
3140.0	0.52	3108	530	263	32	62	28
3198.0	0.33	1652	369	245	41	81	47
3235.0	0.28	1414	248	157	27	56	38
3266.0	0.32	749	282	155	6	18	4

SAMPLE QUALITY
Collected 10.0 m sample intervals from 2952.0 to 3220.0 mMDRT.
Collected 20.0 m sample intervals from 3220.0 to 3340.0 mMDRT.

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational.
Chromatograph gas windows constantly drifting out of sync. Problem needs to be rectified. System was checked and looked at during trip, but still not resolved.

MWD
Run #5, Bit Run #4: 216 mm LWD Tool offsets to bit:

Tool	Serial #	Distance to bit (m)
Direction and Inclination	PCDC MWD	6.82
Azimuthal Focused Res	AFR LWD	10.70
Gamma Ray	DGR LWD	13.43
Resistivity	EWR LWD	15.79
Pressure w/- Drilling	PWD LWD	20.69
Neutron Density	ALD LWD	25.64
Neutron Porosity	CNP LWD	28.25
BAT Sonic	BAT LWD	39.58
Acoustic Caliper	ACAL LWD	43.35

MWD/LWD tools failed while washing to bottom. Pulse detected at surface but no useable signal from tool string decoded. Cycled pumps (2-2-2 cycle) and attempted to mode switch HCIM - unsuccessful. The suspected problem is most likely a short in the toolstring, leading to high current arbitration of the lower bus, eventually shutting down all the sensors. Drilled ahead without LWD.

In terms of recorded data acquisition, the following is the most likely scenario:

BAT Sonic, ACAL, and ALD (Density) tools have their own batteries and memory boards, and will be unaffected by this problem. It is expected that recorded data will be retrieved from these tools.

It is unlikely that data from EWR-R4 resistivity tool will be retrieved, and there will be no recorded data available for the DGR (Gamma Ray), Neutron Porosity (CNP) and AFR (Azimuthal Resistivity) from 16:10 hours onwards. Survey data from the PCD-C will not be available, as the tool will not be able to determine pump status through the HCIM.

WIRELINE

Wireline logging crew on site. Wireline Currently rigging up and testing tools. Waiting on backup RSWC and PSC tools to arrive.

REMARKS
Ran in hole to 2780.0 mMDRT and conducted MAD logging pass at 50 m/hr from 2780.0 m to 2910.0 mMDRT (LWD sensor depth). Washed and reamed from 2910.0 mMDRT down to 2955.0 mMDRT - hole condition good. Drilled new 216mm (8 1/2") hole from 2955.0m to 3436.0 mMDRT.

WELLSITE GEOLOGISTS
Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	16 November 2008	**Rig:**	Ocean Patriot
Report Number:	18	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	11.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	3814.0 mMDRT -3791.2 mTVDAHD	**ECD:**	1.21 sg
		Mud Type:	KCL / Polymer
Lag Depth:	3814.0 mMDRT	**Mud Chlorides:**	540000.00 mg/L
Last Depth:	3436.0 mMDRT		
Progress:	378.0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	517.3 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Drilled ahead 216mm hole from 3436.0 m to TD at 3814.0 mMDRT. Circulated hole clean and commenced pulling out of hole.

NEXT 24 HOURS: Pull out of hole. Rig up and run Wireline logs.

CURRENT OPERATION @ 06:00 HRS (16-Nov-2008): Pulling out of the hole to run Wireline logs.

GEOLOGICAL SUMMARY

LITHOLOGY

INTERVAL: 3340.0 to 3515.0 mMDRT (-3317.3 to -3492.2 mTVDAHD)
ROP (Range): 5.0 to 114.0 m/h
Av. ROP: 55.0 m/h

Massive SANDSTONE with SILTSTONE interbeds and minor CLAYSTONE stringers towards the base

SANDSTONE (45 to 100%): Clear to translucent, abundant opaque, medium light grey to medium grey aggregates, fine to very coarse, dominantly medium to coarse, dominantly fine to medium with depth, abundant fine, rare to abundant very coarse, aggregates are fine, very poorly to moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, common angular and rounded, rare moderate siliceous cement, rare pyrite cement, abundant white argillaceous matrix (dispersive in part) and grading to ARGILLACEOUS SANDSTONE, minor brownish black silty matrix and grading to SILTY SANDSTONE, minor to abundant nodular pyrite, common lithics and carbonaceous specks, nil to trace chert, nil to trace mica flakes, trace glauconite or possible chlorite in aggregates, trace calcareous fragments, dominantly disaggregated, minor brittle to very hard aggregates, friable with depth, nil to dominantly poor visible porosity, fair visible porosity in part, good inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (Nil to 50%): Dark grey to olive black becoming dominantly olive grey with depth, common medium dark grey, arenaceous and grading to SILTY SANDSTONE in part, minor argillaceous becoming dominantly argillaceous with depth and grading to SILTY CLAYSTONE, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, nil to trace mica flakes, soft to hard, dominantly firm, common soft, minor moderately hard to hard, sub-blocky, sub-fissile in part.
CLAYSTONE (Nil to 5%): Medium grey, minor olive grey, siliceous in part, silty in part and grading to SILTY CLAYSTONE, micromicaceous, brittle, fissile to splintery, firm and sub-blocky where silty.

INTERVAL: 3515.0 to 3580.0 mMDRT (-3492.2 to -3557.2 mTVDAHD)
ROP (Range): 8.0 to 82.0 m/h
Av. ROP: 36.0 m/h

SANDSTONE with interbedded CLAYSTONE and SILTSTONE
SANDSTONE (50 to 60%): Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak siliceous cement, minor to common pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, minor to abundant nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to brittle aggregates, poor visible and poor to fair inferred porosity, hydrocarbon fluorescence, mineral fluorescence.
SILTSTONE (10 to 30%): Dominantly olive grey, minor dark grey to olive black, argillaceous and grading to SILTY CLAYSTONE, minor arenaceous, rarely carbonaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, nil to trace mica flakes, trace very fine glauconite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.
CLAYSTONE (10 to 30%): Medium grey to olive grey, with depth becoming dominantly olive grey, silty in part and grading to SILTY CLAYSTONE, siliceous in part, nil to in part common micromicaceous, trace to minor carbonaceous laminae and material, trace lithics, trace disseminated and nodular pyrite, nil to trace very fine glauconite, weakly calcareous in part, soft to firm, brittle in part, sub-blocky to sub-fissile, minor fissile where siliceous.

INTERVAL: 3580.0 to 3750.0 mMDRT (-3557.2 to -3727.2 mTVDAHD)
ROP (Range): 4.0 to 78.0 m/h
Av. ROP: 38.0 m/h

Interbedded SANDSTONE and SILTSTONE with minor CLAYSTONE
SANDSTONE (30 to 85%): Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to coarse, dominantly fine to medium, common very fine, rare coarse, well sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, trace pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common silty matrix and grading to SILTY SANDSTONE, trace dispersive calcareous matrix, trace nodular pyrite, common lithics and carbonaceous specks, trace glauconite, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (15 to 60%): Dominantly olive black, minor olive grey, arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminae and material, micromicaceous, common lithics, trace nodular and disseminated pyrite, trace very fine glauconite, common argillaceous matrix, soft to brittle, dominantly soft to firm, common brittle, sub-blocky.
CLAYSTONE (10 to 15%): Olive grey, olive black in part, silty and grading to SILTY CLAYSTONE, pyritic in part, common micromicaceous, minor carbonaceous laminae and material, common lithics, abundant disseminated pyrite, soft to firm, brittle in part, sub-blocky to sub-fissile.

INTERVAL: 3750.0 to 3814.0 mMDRT (-3727.2 to -3791.2 mTVDAHD)
ROP (Range): 2.0 to 65.0 m/h
Av. ROP: 32.0 m/h

Massive SANDSTONE with minor SILTSTONES and CLAYSTONE interbeds
SANDSTONE (74 to 84%) : Off white, translucent and frosted, very fine to very coarse, dominantly fine to medium, angular to sub-angular, poorly sorted, common strong siliceous cement, minor weak calcareous cement and locally common strong pyritic cement, common to abundant off white argillaceous matrix with common carbonaceous micro laminations where very fine to fine grained aggregates, abundant angular fractured very coarse shards with occasional fused grain boundaries, abundant nodular pyrite, occasional lithics and carbonaceous specks, trace rock flour and bit metamorphics, very poor visible porosity in hard to very hard fine grained aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.
SILTSTONE (15 to 60%): Light to medium brown, medium brown, olive grey, pale grey, arenaceous and common grading to a very fine SILTY SANDSTONE, common arenaceous laminations, common micromicaceous, minor carbonaceous specks, moderately hard to hard, sub-blocky to sub-fissile.

CLAYSTONE (1 to 5%): light bluish green, siliceous, occasional very fine lithics, trace micromicaceous, moderately hard to hard, very hard in part, sub-fissile.

HYDROCARBON FLUORESCENCE

3515.0 to 3520.0 mMDRT (Trace) Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.

3520.0 to 3525.0 mMDRT (5%) Dominantly dull to minor moderately bright yellowish green patchy fluorescence associated with calcareous cemented grains, very slow milky white diffuse cut, moderately thick bluish white ring residue.

3525.0 to 3555.0 mMDRT (5 to 10%) Dull to minor moderately bright yellowish green to pale orange patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.

3555.0 to 3580.0 mMDRT (Trace to 5%) Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and slow crush cut, moderately thick yellowish green ring to patchy film residue.

GAS SUMMARY

Background Gas							
INTERVAL (mMDRT)	**Total Gas (%)**	**C1 (ppm)**	**C2 (ppm)**	**C3 (ppm)**	**iC4 (ppm)**	**nC4 (ppm)**	**C5 (ppm)**
3340.0 - 3515.0	0.06	353	44	20	3	7	5
3515.0 - 3580.0	0.03	215	28	11	2	4	0
3580.0 - 3750.0	0.04	313	27	10	1	2	0
3750.0 - 3814.0	0.03	257	18	7	0	1	0

SAMPLE QUALITY

Collected 20.0 m sample intervals from 3340.0 to 3440.0 mMDRT.
Collected 10.0 m sample intervals from 3440.0 to 3510.0 mMDRT.
Collected 5.0 m sample intervals from 3510.0 to 3560.0 mMDRT.
Collected 10.0 m sample intervals from 3560.0 to 3814.0 mMDRT.

MUDLOGGING EQUIPMENT / PERSONNEL

All systems operational bar ongoing chromatograph issue. This will be investigated during wireline logging phase. One and possibly two mudloggers departing rig on Monday to standby in Sale due to bed space issues.

MWD

Run #5, Bit Run #4: 216 mm LWD Tool offsets to bit:

Tool	Serial #	Distance to bit (m)
Direction and Inclination	PCDC MWD	6.82
Azimuthal Focused Res	AFR LWD	10.70
Gamma Ray	DGR LWD	13.43
Resistivity	EWR LWD	15.79
Pressure w/- Drilling	PWD LWD	20.69
Neutron Density	ALD LWD	25.64
Neutron Porosity	CNP LWD	28.25
BAT Sonic	BAT LWD	39.58
Acoustic Caliper	ACAL LWD	43.35

MWD/LWD tools failed while washing to bottom. Pulse detected at surface but no useable signal from tool string decoded. Cycled pumps (2-2-2 cycle) and attempted to mode switch HCIM - unsuccessful. The suspected problem is most likely a short in the toolstring, leading to high current arbitration of the lower bus, eventually shutting down all the sensors. Drilled ahead without LWD.

In terms of recorded data acquisition, the following is the most likely scenario:

BAT Sonic, ACAL, and ALD (Density) tools have their own batteries and memory boards, and will be unaffected by this problem. It is expected that recorded data will be retrieved from these tools.

It is unlikely that data from EWR-R4 resistivity tool will be retrieved, and there will be no recorded data available for the DGR (Gamma Ray), Neutron Porosity (CNP) and AFR (Azimuthal Resistivity) from 16:10hrs onwards. Survey data from the PCD-C will not be available, as the tool will not be able to determine pump status through the HCIM.

WIRELINE

Grand Slam tool and backup tested. RCI tool and backup tested. Waiting on RCOR tool
VSP tool and specialist engineer arriving today. Petrotech engineer to arrive today also.

REMARKS

Drilled ahead new 216 mm (8 1/2") hole from 3436.0 to 3814.0 mMDRT. TD was called due to low ROP. Circulated hole clean and commenced pulling out of hole.

Dory-1 reached a total depth of 3814.0 mMDRT at 00:00 on the 16 November, 2008.

WELLSITE GEOLOGISTS

Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	17 November 2008	**Rig:**	Ocean Patriot
Report Number:	19	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	12.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	3814.0 mMDRT	**ECD:**	N/A
	-3791.2 mTVDAHD	**Mud Type:**	KCL / Polymer
Lag Depth:	N/A	**Mud Chlorides:**	540000.00 mg/L
Last Depth:	3814.0 mMDRT		
Progress:	0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	518.5 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Pulled out of hole and racked back BHA. Laid out LWD / MWD tools for data acquisition. Commenced Wireline logging Suite #1.

NEXT 24 HOURS: Continue Wireline logging operations.

CURRENT OPERATION @ 06:00 HRS (17-Nov-2008): Conducting Wireline Suite #1 - Run #2:- RCI

GEOLOGICAL SUMMARY

MUDLOGGING EQUIPMENT / PERSONNEL

All systems operational. Acquiring calcimetry data. One mudlogger departing rig for standby in Sale.

MWD

Run # 5 tools laid out and data recovered for final run. Acquired data for Bat Sonic and ALD only.

WIRELINE

Suite #1 - Run #1: Full Quad Combo - TD to 2760.0 mMDRT (50.0 m above pay zone) including Spectral Gamma. Logged down from shoe to 3800.0 mMDRT.

RUN SUMMARY

Run #	Tool String	Log From Depth (m)	Log To Depth (m)	Repeat From Depth (m)	Repeat To Depth (m)	Comments
1	Grand Slam	3814.0	2760.0	2900.0	2760.0	Main pass logged section from 3800.0 to 2711.0 mMDRT. Main log files spliced together. Repeat pass log over reservoir section from 2875.0 to 2810.0 mMDRT
2	RCI	TBA	TBA	N/A	N/A	Conducting correlation pass 1.

TEMPERATURE DATA

Date Mud Checked:	15-Nov-2008
Date Time Circulation Stopped:	16-Nov-2008 02:30 AM
Circulation Time:	35.31 h

Run #	Run Date	Tool String	Max BHT (°C)	Max BHT Depth (m)	Date Time Logger on Bottom	Time Since Circ. Stopped (h)
1	16/11/2008	Grand Slam	84.40	3744.2	16-Nov-2008 19:20	16.83
2	16/11/2008	RCI	N/A	N/A	17-Nov-2008 05:55	27.42

REMARKS

Pulled out of hole and racked back BHA. Laid out LWD / MWD tools for data acquisition. Commenced Wireline logging Suite #1.

WELLSITE GEOLOGISTS

Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	18 November 2008	**Rig:**	Ocean Patriot
Report Number:	20	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	13.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	3814.0 mMDRT	**ECD:**	N/A
	-3791.2 mTVDAHD	**Mud Type:**	KCL / Polymer
Lag Depth:	N/A	**Mud Chlorides:**	540000.00 mg/L
Last Depth:	3814.0 mMDRT		
Progress:	0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	518.5 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Conducted Wireline logging Suite #1 Run #2 - RCI and Run #3 - RCOR.

NEXT 24 HOURS: Continue Wireline logging operations Suite #1 Run #4 - RCOR (second attempt) and Run #5 - VSP.

CURRENT OPERATION @ 06:00 HRS (18-Nov-2008): Pulling out of hole with RCOR due to loss of hydraulic pressure in tool.

GEOLOGICAL SUMMARY

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Mudloggers departing rig.

MWD
Backloading 2 x AFR tools. Personnel departing rig tomorrow.

WIRELINE

Suite #1 Run #2: RCI - Conducted 54 Pretests - 42 good tests, 6 Curtailed tests, 5 no seal, 1 aborted test. 4 formation samples taken.

Suite #1 Run #3: RCOR - Tool pressure module failed prior to core samples taken. POOH to replace module. New module tested ok.

RUN SUMMARY

Run #	Tool String	Log From Depth (m)	Log To Depth (m)	Repeat From Depth (m)	Repeat To Depth (m)	Comments
1	Grand Slam	3814.0	2760.0	2900.0	2760.0	Main pass logged section from 3800.0 to 2711.0 mMDRT. Main log files spliced together. Repeat pass log over reservoir section from 2875.0 to 2810.0 mMDRT
2	RCI	2807.9	3099.8	0.0	0.0	RCI - Conducted 54 Pretests - 42 good tests, 6 Curtailed tests, 5 no seal, 1 aborted test. 4 formation samples taken.
3	RCOR	0.0	0.0	0.0	0.0	RCOR - 26 cores programmed.

						RCOR hydraulic module failed at core point #2. No cores recovered. POOH to troubleshoot.

TEMPERATURE DATA

Date Mud Checked: 15-Nov-2008
Date Time Circulation Stopped: 16-Nov-2008 02:30 AM
Circulation Time: 35.31 h

Run #	Run Date	Tool String	Max BHT (°C)	Max BHT Depth (m)	Date Time Logger on Bottom	Time Since Circ. Stopped (h)
1	16/11/2008	Grand Slam	84.40	3744.2	16-Nov-2008 19:20	16.83
2	16/11/2008	RCI	71.70	3099.8	17-Nov-2008 20:09	41.65
3	17/11/2008	RCOR	0.00	0.0	18-Nov-2008 05:00	50.50

REMARKS

Conducted Wireline logging Suite #1 Run #2 - RCI. Conducted 53 Pretests - 42 good tests, 6 curtailed tests and 5 no seal. 4 Formation samples taken. Completed RCI logging run and pulled out of hole for Run #3 - RCOR. Made up and ran in hole with RCOR. Correlated same and placed on depth to cut first core at 2799.3m. Unable to cut first core due to hole washout. Ran in hole and placed on depth to cut second core at 2804.9m. Tool lost hydraulic pressure and unable to function inner mandrel push rod or extend pads or probe. Troubleshot same - unsuccessful. Pulled out of hole to change out hydraulic module.

WELLSITE GEOLOGISTS

Greg Fawns / Adam Cruickshank

DAILY GEOLOGICAL REPORT

Date:	19 November 2008	**Rig:**	Ocean Patriot
Report Number:	21	**Bit Diameter:**	216 mm
Report Period:	06:00 - 06:00 Hours	**Last Casing:**	340 mm Casing @ 1534.1 mMDRT
Spud Date:	05-Nov-2008 03:30 Hours	**LOT:**	1.34 sg EMW @ 1534.1 mMDRT
Days From Spud:	14.1	**Mud Weight:**	1.15 sg
Depth @ 0600 Hrs:	3814.0 mMDRT -3791.2 mTVDAHD	**ECD:**	N/A
		Mud Type:	KCL / Polymer
Lag Depth:	N/A	**Mud Chlorides:**	540000.0 mg/L
Last Depth:	3814.0 mMDRT		
Progress:	0.0 m	**Last Survey:**	2938.52 mMDRT
Water Depth:	518.5 m	**Deviation:**	Inc. 1.23°
RT:	21.5 m		Az. 64.27°

OPERATIONS SUMMARY

24 HOUR SUMMARY: Completed Wireline logging Suite #1. VSP cancelled due to whale activity. Commenced Plug and Abandonment program.

NEXT 24 HOURS: Complete Plug and Abandonment program. Rig down marine riser and BOP. Cut casing, recover well head, release anchors and pull off location.

CURRENT OPERATION @ 06:00 HRS (19-Nov-2008): Running in the hole with 4 1/2" cement stinger.

GEOLOGICAL SUMMARY

MUDLOGGING EQUIPMENT / PERSONNEL
All systems operational. Mudloggers departing rig Friday 18th November.

WIRELINE
Wireline logging Suite #1 complete. Tools rigged down. All RCOR & RCI tools prepared for back loading to town for service.

RUN SUMMARY

Run #	Tool String	Log From Depth (m)	Log To Depth (m)	Repeat From Depth (m)	Repeat To Depth (m)	Comments
4	RCOR	0.0	0.0	0.0	0.0	RCOR - 26 cores programmed. Tool communication failed at 3060.0 mMDRT during first core. Broke off core bit and POOH. Surface analysis showed a failed enhancer above the hydraulic jar.
5	VSP	1365.0	3780.0	0.0	0.0	VSP/checkshot survey Environmental Mitigation procedures enacted. Excessive noise encountered from top shuttle. Used data from 1 shuttle over 30m intervals from 3585.0 to 3525.0 mMDRT. VSP cancelled due to whales sighted in the area. Ran total of 9 checkshots.

TEMPERATURE DATA

Date Mud Checked: 15-Nov-2008
Date Time Circulation Stopped: 16-Nov-2008 02:30 AM
Circulation Time: 35.31 h

Run #	Run Date	Tool String	Max BHT (℃)	Max BHT Depth (m)	Date Time Logger on Bottom	Time Since Circ. Stopped (h)
1	16/11/2008	Grand Slam	84.40	3744.2	16-Nov-2008 19:20	16.83
2	16/11/2008	RCI	71.70	3099.8	17-Nov-2008 20:09	41.65
4	18/11/2008	RCOR	72.20	2865.0	18-Nov-2008 08:25	53.92

VSP and Environmental Mitigation Measures

Start date/time of whale observation prior to start of seismic source (at least 15 mins)	18/11/08 at 11:00 hours
Start date/time seismic source	18/11/08 at 12:00 hours
Was soft start used?	Yes, build up over 10 minutes
Were whales seen within 3 km prior to VSP starting?	No
Did whales move in within 3 km once VSP started?	Yes 18/11/08 at 18:10 hours
Did VSP stop due to whales?	Yes
End date/time seismic source	18/11/08 at 18:54 hours
Whale sighting sheet filled in?	Yes
Weather & visibility	Calm, good visibility
Additional comments	Nil

NB: VSP cannot commence or must be shutdown if whales are sighted within 3 km of the rig.

MWD

Back loading 2 X AFR tools. Personnel departing rig tomorrow.

REMARKS

Continued Wireline logging Suite #1. Run #4 - RCOR. Lost tool communications whilst cutting core #1. POOH to surface. Trouble shooting found a failed enhancer (tool electronics) above the hydraulic jar - not related to the coring tool itself. RCOR program was subsequently cancelled. Rigged up and commenced Run #5 - VSP, conducted checkshot survey over 30 m intervals from 3585.0 to 3525.0 mMDRT. Poor signal encountered in top shuttle. VSP then cancelled due to whale activity close to the rig.- 9 shot points taken only. POOH and laid out wireline tools. Rigged up 4 1/2" cement stinger on drill pipe and commenced running in the hole for the Plug and Abandonment program.

This is the final Daily Geological Report for Dory - 1.

WELLSITE GEOLOGISTS

Greg Fawns / Adam Cruickshank

Bit Performance Summary

OPERATOR:	APACHE ENERGY	COUNTRY:	AUSTRALIA	STATE:	WESTERN AUSTRALIA
CONTRACTOR:	OCEAN DRILLING	RIG NAME:	Patriot	DATE PULLED:	5/11/2008

Dory 1

RUN INFORMATION

PROD	Bit Size (in)	Bit Mfg	Bit Type	IADC Code	Serial #	NOZZLES (32nd's) N1	N2	N3	N4	N5	N6	N7	N8	N9	Depth In (m)	Depth Out (m)	Meters Drilled (m)	HOURS	ROPs (m/hr)	WOB (klbs)	Motor RPM	Total RPM	Rot Type	DEV (°)	Pump Press (psi)	Volume (gpm)	MW (sg)	PV / YP	H.S.I
MT	26.00	STC	XR+C	115	MZ1716	22	22	22							540	587	47	2.5	18.8 37				RS				1.05	8 52	
						TFA = 1.114																							

DULL BIT PHOTOS

NO PHOTOS AVAILABLE

BOTTOM HOLE ASSEMBLY

Rotary Assembly w/ 36" Hole Opener

COMMENTS

Cutting Structure: **Other Dull Conditions:** Gage pad: **Condition:**

IADC DULL GRADE

CUTTING STRUCTURE				BEARINGS			REMARKS		
INSIDE	OUTSIDE	DULL	LOCATION	1	2	3	GAGE	OTHER	REASON
O	O	NO	A	E	E	E	I	NO	TD

Bit Performance Summary

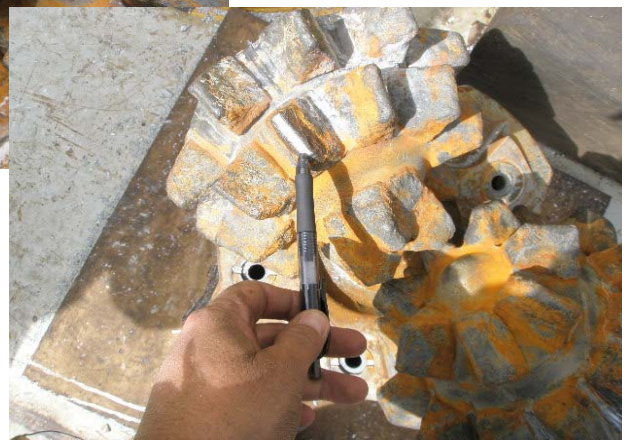
OPERATOR:	APACHE ENERGY	COUNTRY:	AUSTRALIA	STATE:	WESTERN AUSTRALIA
CONTRACTOR:	OCEAN DRILLING	RIG NAME:	Patriot	DATE PULLED:	7/11/2008

Dory 1

RUN INFORMATION

PROD	Bit Size (in)	Bit Mfg	Bit Type	IADC Code	Serial #	NOZZLES (32nd's) N1	N2	N3	N4	N5	N6	N7	N8	N9	Depth In (m)	Depth Out (m)	Meters Drilled (m)	HOURS	ROPs (m/hr)	WOB (klbs)	Motor RPM	Total RPM	Rot Type	DEV (°)	Pump Press (psi)	Volume (gpm)	MW (sg)	PV / YP	H.S.I
TCT	16.00	STC	TCT+CR	117	MZ7899	22	22	22	22						587	1537	950	29.5	32.2 45.4	29 34		100 200	RS	0.4	4280	1300	1.05	10 66	1.49
						TFA = 1.485																							

DULL BIT PHOTOS



BOTTOM HOLE ASSEMBLY
Semi-Packed

COMMENTS
The cutting structure is in good shape as seen in the photos. The ROP was average compared to older offsest, but slow compared to the Madfish and Elver sections drilled.

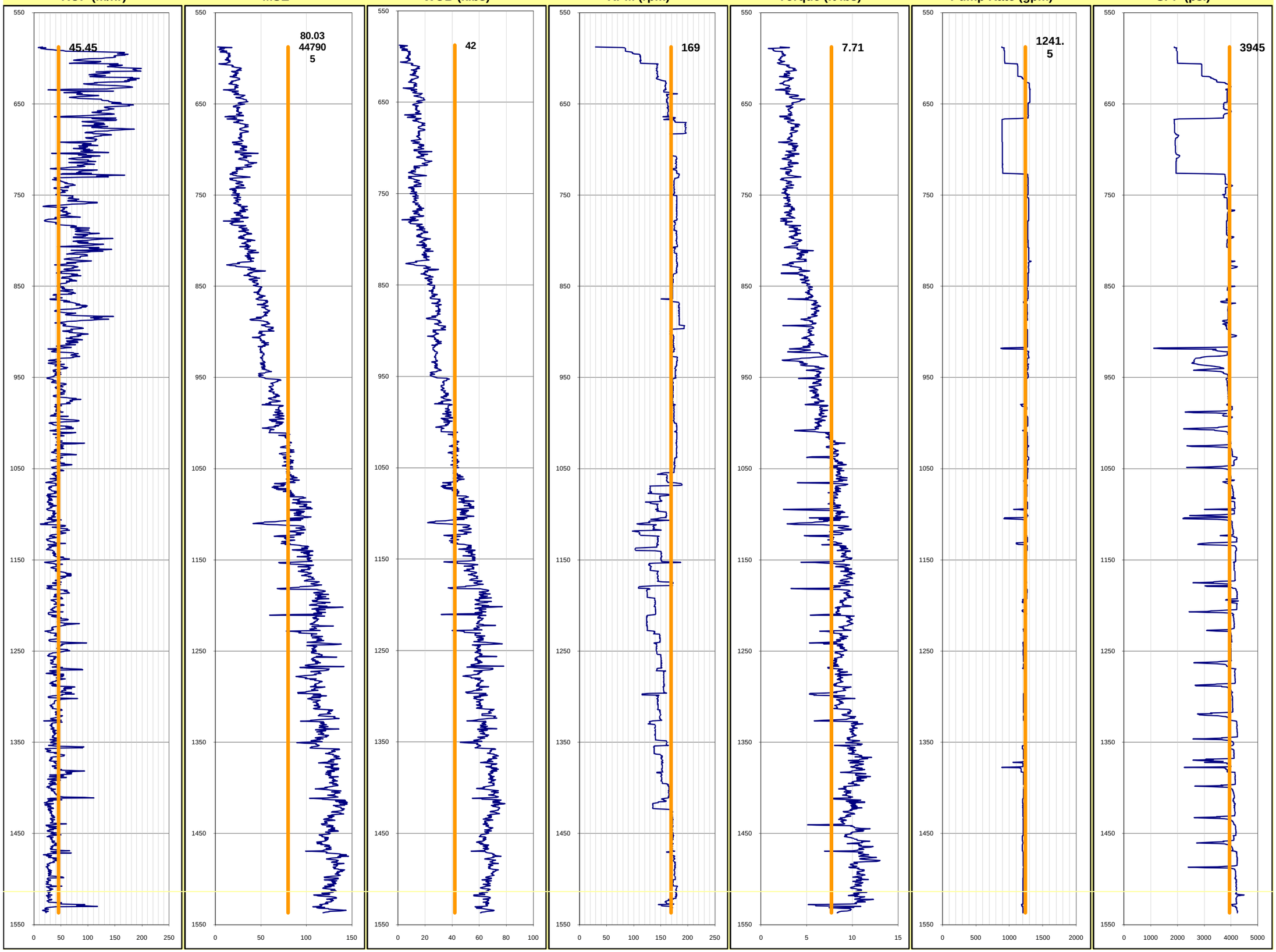
IADC DULL GRADE

CUTTING STRUCTURE				BEARINGS			REMARKS		
INSIDE	OUTSIDE	DULL	LOCATION	1	2	3	GAGE	OTHER	REASON
O	O	NO	A	E	E	X	I	NO	TD

Dory - 1

16" Hole Section

ROP (m/hr)	MSE	WOB (klbs)	RPM (rpm)	Torque (ft lbs)	Pump Rate (gpm)	SPP (psi)
45.45	80.03 44790 5	42	169	7.71	1241. 5	3945



Gippsland Basin Study - Ocean Patriot Program

16" Offset Upper Hole Sections

WELL NAME -BIT TYPE

ZaneGrey 1 (16 GXiV+C) | Speke S 1 (16 GX-C1V) | Dory-1 (16 TCT+CR) | Madfish-1 (16 T11C) | Elver (16 MDi619HPX)

DEPTH INTERVAL

0 | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000

PENETRATION RATE

120 | 100 | 80 | 60 | 40 | 20 | 0

	ZaneGrey 1 (16 GXiV+C)	Speke S 1 (16 GX-C1V)	Dory-1 (16 TCT+CR)	Madfish-1 (16 T11C)	Elver (16 MDi619HPX)
Depth In	130	185	587	461	573
Depth Out	1095	903	1537	1551	1742
Gippsland Limestone	Gippsland Limestone	Gippsland Limestone			
ROP	26.8	24.8	32.2	49.5	37.1
BH ROP	43.1	38.6	45.4	104.1	93.8

PDC BIT ON BHPDM - DIRECTIONAL SECTION

1,1,NO,A,E,I,NO,TD | 1,1,WT,A,E,I,NO,TD | 0,0,NO,A,E,I,NO,TD | 0,0,NO,A,E,I,NO,TD | 1,3,CT,S,X,I,WT,TD

DULL GRADE

Depth Out | Depth In | ROP | BH ROP

Bit Performance Summary

OPERATOR:	APACHE ENERGY	COUNTRY:	AUSTRALIA	STATE:	WESTERN AUSTRALIA
CONTRACTOR:	OCEAN DRILLING	RIG NAME:	Patriot	DATE PULLED:	14/01/2008

Dory 1

RUN INFORMATION

PROD	Bit Size (in)	Bit Mfg	Bit Type	IADC Code	Serial #	NOZZLES (32nd's) N1	N2	N3	N4	N5	N6	N7	N8	N9	Depth In (m)	Depth Out (m)	Meters Drilled (m)	HOURS	ROPs (m/hr)	WOB (klbs)	Motor RPM	Total RPM	Rot Type	DEV (°)	Pump Press (psi)	Volume (gpm)	MW (sg)	PV / YP	H.S.I
PDC	8.50	STC	Mi519BPX	M222	JY5589	13	13	13	13	13					1537	2955	1418	33	43.0 91.1	7 14		110 180	RS	1.2	4050	768	1.15	12 26	9.80
						TFA = 0.648																							

DULL BIT PHOTOS

BOTTOM HOLE ASSEMBLY

Semi-Packed

COMMENTS

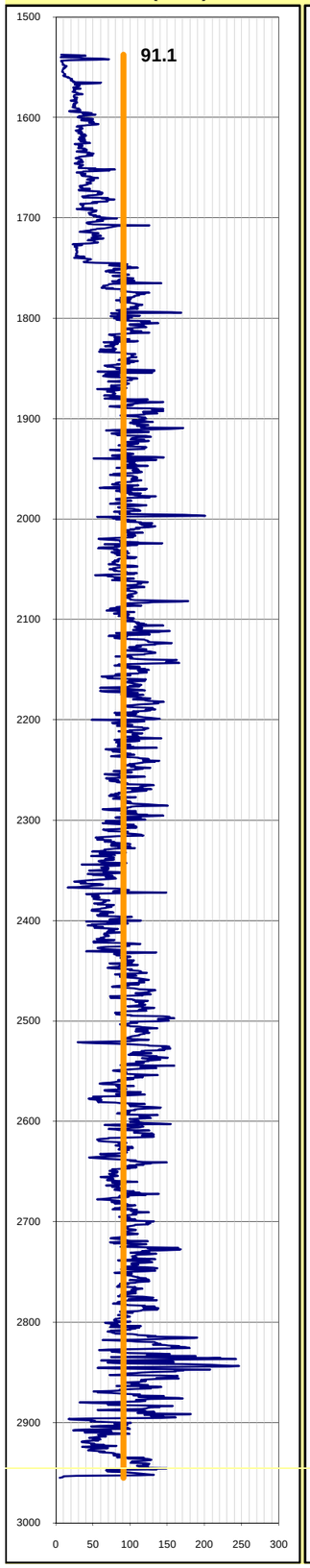
The ROP was exceptional up to the end of the run based on the offsets. Although a less aggressive bit may be more suitable to eliminate a trip with a minimal drop in ROP. Additional blades and smaller cutters are recommended with the WOB and RPM parameters applied.

IADC DULL GRADE

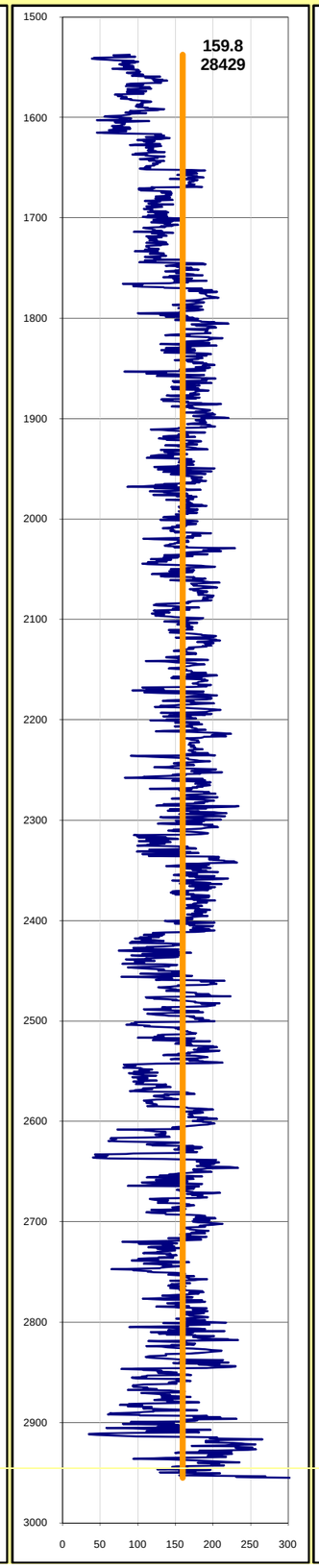
CUTTING STRUCTURE				BEARINGS			REMARKS		
INSIDE	OUTSIDE	DULL	LOCATION	1	2	3	GAGE	OTHER	REASON
4	7	RO	S	X	X	X	1	BT	PR

Dory - 1

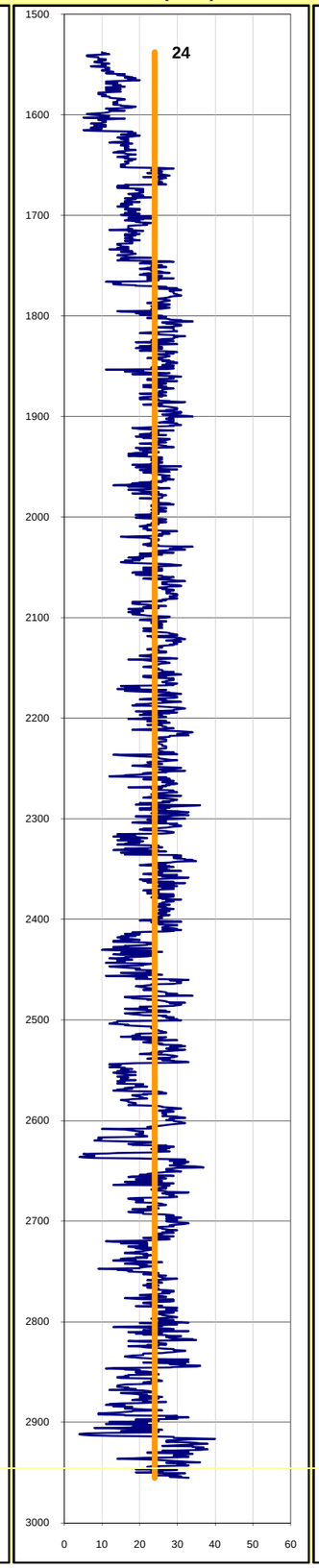
ROP (m/hr)



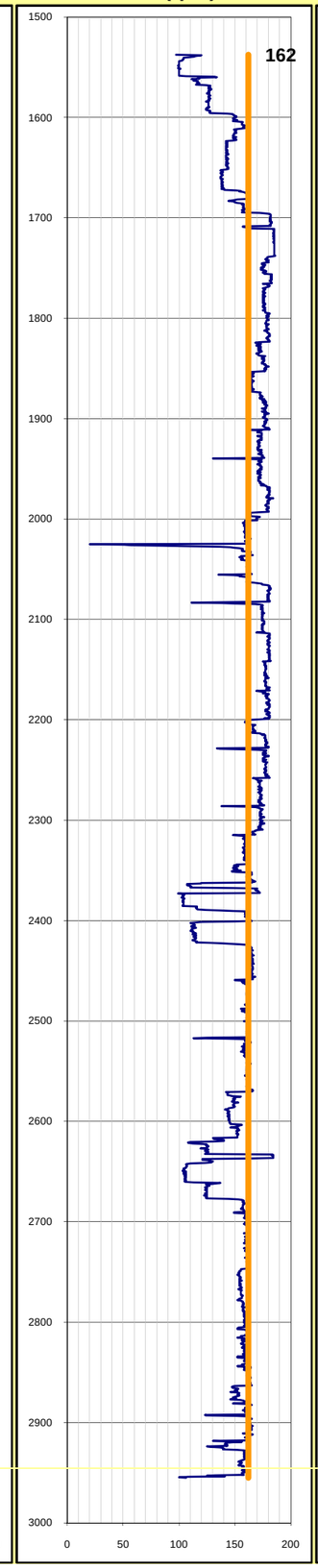
VIC- P59
MSE



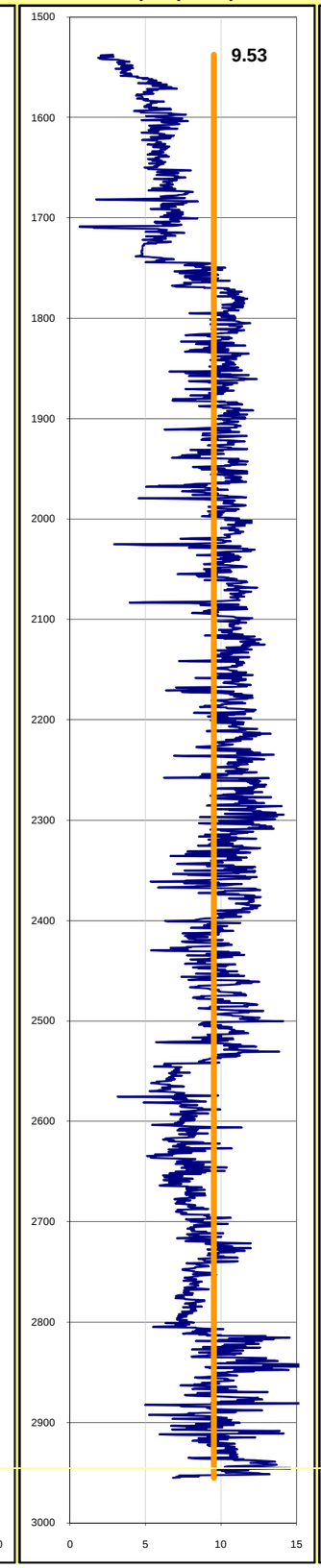
Apache
WOB (klbs)



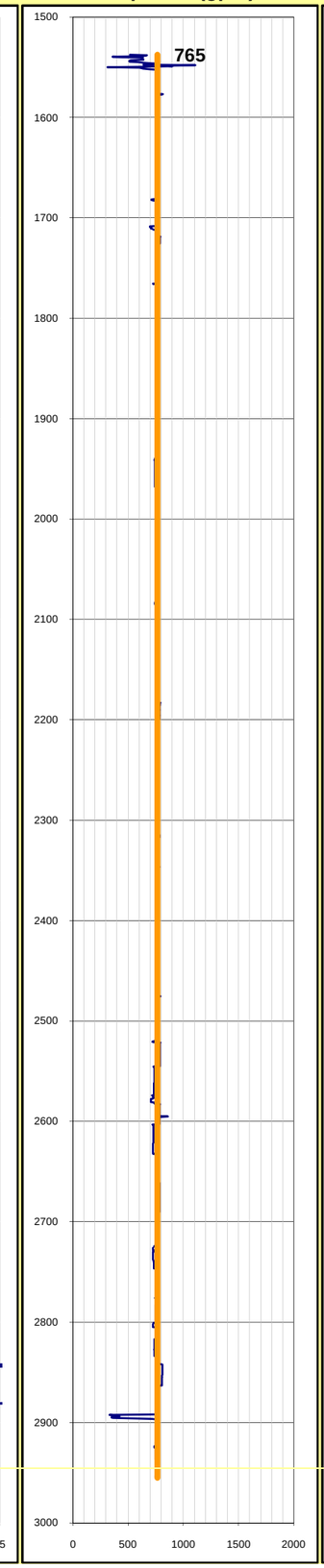
8.5" Hole Section
RPM (rpm)



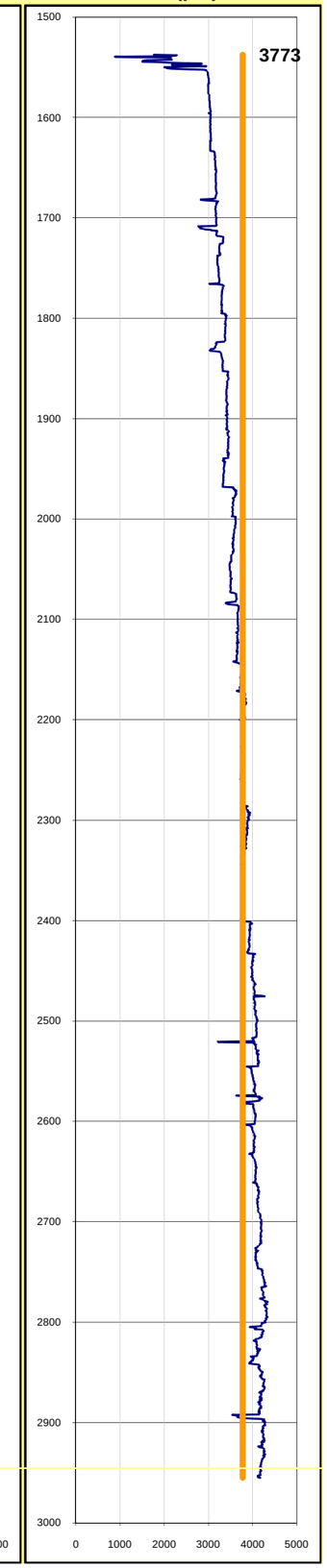
Torque (ft lbs)



Pump Rate (gpm)



SPP (psi)



Bit Performance Summary

OPERATOR:	APACHE ENERGY	COUNTRY:	AUSTRALIA	STATE:	WESTERN AUSTRALIA
CONTRACTOR:	OCEAN DRILLING	RIG NAME:	Patriot	DATE PULLED:	15/11/2008

Dory 1

RUN INFORMATION

PROD	Bit Size (in)	Bit Mfg	Bit Type	IADC Code	Serial #	NOZZLES (32nd's) N1	N2	N3	N4	N5	N6	N7	N8	N9	Depth In (m)	Depth Out (m)	Meters Drilled (m)	HOURS	ROPs (m/hr)	WOB (klbs)	Motor RPM	Total RPM	Rot Type	DEV (°)	Pump Press (psi)	Volume (gpm)	MW (sg)	PV / YP	H.S.I
PDC	8.50	HCC	HC506ZX	M323	7211635	14	14	14	14	14	14				2955	3814	859	31.5	27.3 46.3	14 19		80 100	RS	n/a	4295	739	1.15	13 26	4.50
						TFA = 0.902																							

DULL BIT PHOTOS

BOTTOM HOLE ASSEMBLY

Semi-Packed

COMMENTS

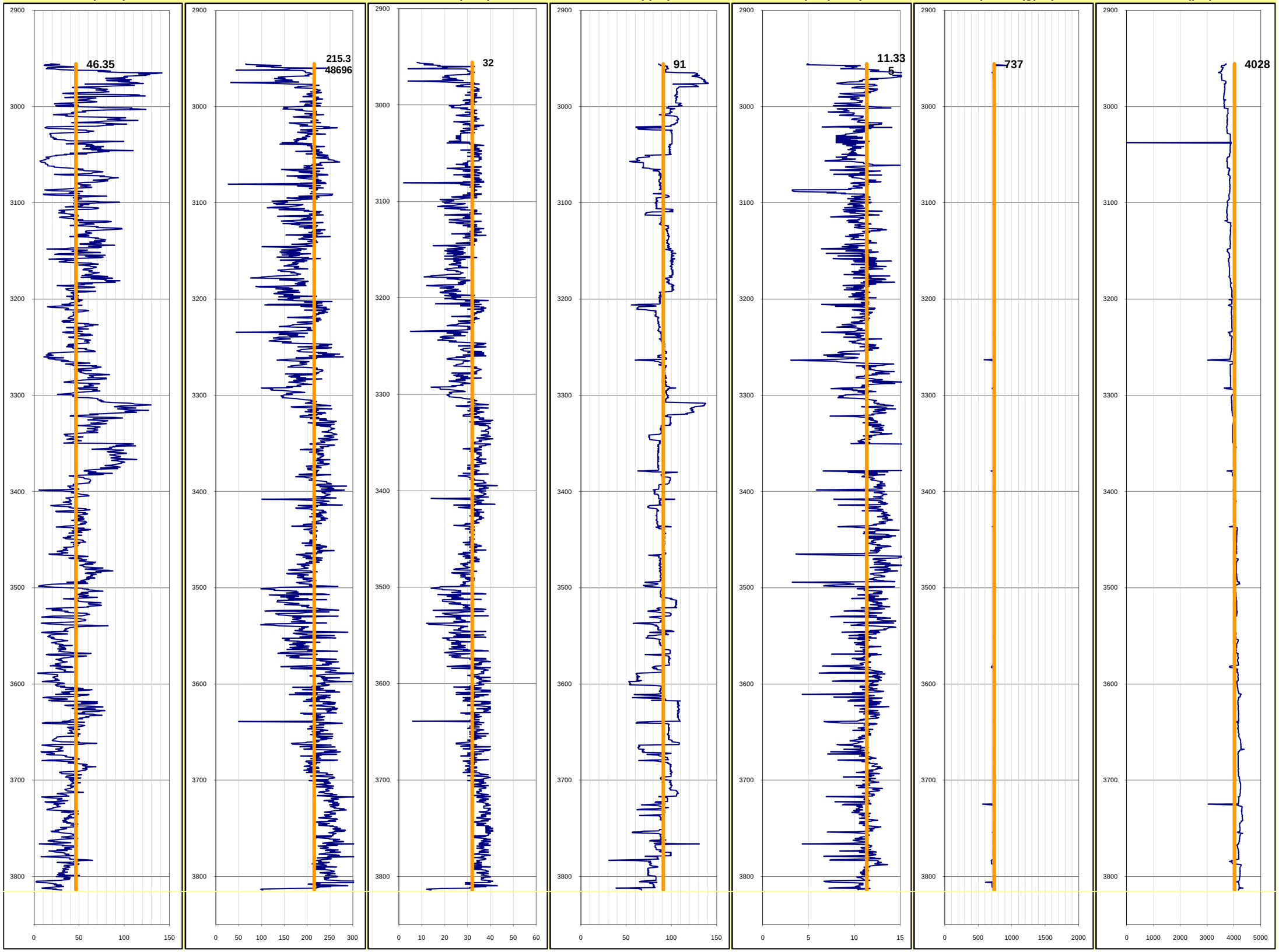
The previous bit was a 519 type and was run with median WOB of 23 klbs and RPM of 122. The RPM on this run was slowed to 90 and WOB was increased to 32 klbs. The heavy wear from blade contact could be a result of high WOB with the slower RPM.

IADC DULL GRADE

CUTTING STRUCTURE				BEARINGS			REMARKS		
INSIDE	OUTSIDE	DULL	LOCATION	1	2	3	GAGE	OTHER	REASON
5	2	WT	A	X	X	X	I	ER	TD

Dory - 1

ROP (m/hr)	MSE	WOB (klbs)	RPM (rpm)	Torque (ft lbs)	Pump Rate (gpm)	SPP (psi)
46.35	215.3 48696	32	91	11.33 5	737	4028



Gippsland Basin Study - Ocean Patriot Program

8 1/2" Hole Sections - Measured Depths (m)

WELL NAME -BIT TYPE

ZaneGrey 1 (12.25 FSX563) | ZaneGrey 1 (12.25 XL12) | ZaneGrey 1 (8.5 RSX162DGW) | ZaneGrey 1 (8.5 RSX613) | ZaneGrey 1 Total (8.5) | Coelacanth 1 (8.5 RSX616M-D3) | Coelacanth 1 (8.5 RSX616M-D3) | Coelacanth 1 (8.5 RSX519M-A5) | Coelacanth 1 (8.5 HC506ZX) | Coelacanth 1 Total (8.5) | Speke S 1 (8.5 HC605Z) | Speke S 1 (8.5 HC506ZX) | Speke S 1 Total (8.5) | Dory-1 (8.5 Mi519BPX) | Dory-1 (8.5 HC506ZX) | Madfish-1 (8.5 MI716PX) | Madfish-1 (8.5 Mi716PX - RR) | Elver-1 (8.5 Mi716VWEBPX) | Elver-1 (8.5 HC506ZX)

KCL/Polymer/Glycol, BHPDM, Directional | **KCL/Polymer, SHPDM, Straight** | **KCL/Polymer, Semi-Packed, Straight** | **KCL/Polymer, XCEED, Directional**

1095 | 2702 | 2170 | 3092 | 1095 | 907 | 1995 | 2116 | 2700 | 907 | 906 | 2940 | 906 | 1537 | 2955 | 3000 | 3337 | 3718 | 3252 | 4433

2702 | 2772 | 3107 | 3675 | 3675 | 1995 | 2116 | 3074 | 3074 | 2940 | 3137 | 3137 | 4800 | 4720 | 4433 | 5270

1560 - Lakes Entrance | 2513 - Gurnard | 3508 - Kate Shale | 3547 - Valador | 1448 - Lakes Entrance | 2497 - Lakes Entrance | 2538 - Gurnard | 2718 - Valador | 2893 - Intra-Valador | 1798 - Lakes Entrance | 1853 - Gurnard | 2198 - U. Latrobe | 2553 - L. U. Latrobe | 2878 - Volcanics | 2888 - Golden Beach | 3259 - Selene SS | 3724 - Volcanics | 3780 - Golden Beach | 4503 - Chimaera | 2541 - Lakes Entrance | 2811 - Gurnard | 2872 - Valador

39.9 | 6.5 | 14.2 | 24.9 | 61.2 | 19.2 | 53.3 | 50.9 | 76.9 | 33.7 | 91.1 | 46.3 | 43.9 | 51.7 | 30.4 | 22.7

25.1 | 4.4 | 10.2 | 16.7 | 12.5 | 29.0 | 12.1 | 22.5 | 31.2 | 25.4 | 35.4 | 24.6 | 34.1 | 43.0 | 27.3 | 22.4 | 23.9 | 14.3 | 11.2

2,3,BT,G,X,4,WT,PR | 3,3,BT,M,E,I,WT,TD | LIH | 2,3,WT,A,X,I,BU,TD | 1,0,CT,N,X,I,BU,PR | 1,1,CT,A,X,I,BU,PR | 1,3,BU,A,X,I,WT,PR | 0,0,NO,A,X,I,NO,TD | 8,8,RO,G,X,1,WT,PR | 1,1,WT,A,X,I,CT,TD | 4,7,RO,S,X,1,BT,PR | 5,2,WT,A,X,I,ER,TD | 0,0,ER,C,X,I,NO,DTF | 3,5,WT,A,X,I,CT,TD | 3,1,CT,A,X,I,BU,PR | 0,1,NO,A,X,I,PN,TD

DEPTH INTERVAL

500 | 1500 | 2500 | 3500 | 4500 | 5500 | 6500

PENETRATION RATE

100 | 90 | 80 | 70 | 60 | 50 | 40 | 30 | 20 | 10 | 0

DULL GRADE

Depth Out | Depth In | ROP | BH ROP

KEMTECH DRILLING FLUIDS RECAP

APACHE ENERGY LIMITED

Well Number – Dory - 1

Well Type – Exploration

Revision No. 1

Prepared by: Bill Thompson
Mike Morris
Tom Roszel
Shayam Kadir

GENERAL WELL SUMMARY DATA

Block / Location	Vic-P59	*Kemtech Mud Engineers*
Well Number	Dory - 1	Mike Morris
Spud Date	4th November, 2008	Bill Thompson
TD Date	16th November 2008	Shayam Kadir
Completion Date	20th November 2008	Tom Roszel

Hole Size ins	36”	16”	8-1/2”		
Mud System	SW / Gel sweeps	SW / Gel sweeps	KCl/KlaStop/ Polymer		
Hole Angle, degree	Vertical	Vertical	Vertical		
Start Depth meters	540	586.5	1537		
End Depth meters	586.5	1537	3816		
Meters Drilled, m	46.5	950.5	2279		
Casing Size ins	30”	13-3/8”	NA: P&A		
Casing Shoe @	586.5	1533	NA		
Days on Interval	2	4	11		
Interval Fluid Cost $	20,937.26	17,339.78	298,408.73		
Total Volume Bbl’s	734	5317	4061		
Fluid Cost / Bbl $	28.52	3.26	73.48		
Fluid Cost / meter $	450.25	18.24	130.94		

INTERVAL 1 : 36" HOLE SECTION

Mud Type : Seawater/Hi-Vis Gel Sweeps

Operations Summary

The Ocean Patriot arrived on location on 1 November 2008. After running anchors the well was spudded in at 03:00 on 5 November.

The hole was drilled with a 26" bit and 36" hole opener from 540m seafloor to 586.5m casing point without incident. The 30" casing was then run to 586m and cemented with good returns.

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Drilling Fluid Comments

Seawater was used for drilling. Hi-Vis pre-hydrated Bentonite was used as sweeps for hole cleaning and spotted in the hole for stability. 50 bbl sweeps were pumped mid stand and 50 bbl pills were on connections. A 100 bbl sweep was pumped at TD and displaced with seawater. 300 bbls of the same Hi-Vis fluid was spotted in the hole prior to running the casing.

A total of 1304 bbls of PHG was prepared in the pits prior to drilling. An additional 521 bbls of 1.35 sg mud was mixed in reserve in pits 1 and 2 as potential kill mud or to be used to prepare displacement fluid for the next section. Remaining 1091 bbls of Hi-Vis was transferred to 16" interval.

Problems Summary

There were no drilling or hole problems, however there were problems with the bull's-eye being off center. No MWD was available for drilling due to technical problems.

Recommendations for improvement

- None

INTERVAL 2 : 16" HOLE SECTION

Mud Type : Seawater/Hi-Vis Gel Sweeps

Operations Summary

A 16" BHA was run in to drill the cement and shoe before drilling a vertical well to TD at 1537m using seawater and Hi-Vis sweeps. 50 bbls guar gum/seawater sweeps were pumped at mid-stand and 50 bbls PHB sweeps were pumped just prior to connection. At TD, 150 bbls of hi-vis chased with 950 bbls of 1.15 sg displacement fluid were spotted in the hole at 1 ½ times hole volume. There were a few small tight spots pulling out of the hole at first but 13 3/8" casing was run to bottom at 1533m trouble free. The hole was circulated with seawater before pumping cement with good returns and bumping the plug.

The average ROP was only around 30 meters per hour due to the bit trying to walk and the MWD having problems picking up signals.

Drilling Fluid Comments

Hi-Vis pre-hydrated Bentonite was used in conjunction with guar gum/seawater sweeps with 50 bbl guar gum sweeps pumped mid stand for hole cleaning and 50 bbl PHB spotted prior to connections for hole stability. At TD a 150 bbl sweep was pumped chased with 950 bbls of weighted pre-hydrated Bentonite, (at 1.15 sg) spotted in the hole.

While drilling, pits #3 and 5 were used for storing 1.15 sg displacement PHB, pit #4 for mixing pre-hydrated Bentonite, pit #1 was used for guar gum sweeps, and pit #2 held the 1.33 sg kill mud. By continuously mixing in pit 4 and #1, a constant reserve volume of about 650 bbls was maintained which was the best case scenario for the Ocean Patriots small pit system.

The 1.15 sg displacement fluid was mixed rapidly during drilling of the last stand, by blending the 1.33 sg kill mud in reserve in pit #2 with pit # 4 PHB and already having displacement fluid in pits #3 and #5. By having this double strength weighted mud in reserve, we saved pit space during drilling and also had the reserve capacity to supply another displacement pill if required.

The Drilling Fluids program requested pre hydrated bentonite be diluted with sea water in a 60/40 ratio and flocculated with lime before pumping downhole. This was in an effort to save on drill water. Due to operational and logistical restraints, however, this process was not carried out and as stated above, neat prehydrated bentonite sweeps were pumped.

The mud program also called for 5% KCl be added to the pad mud before spotting in the open hole for running casing. Since the formation drilled was mainly limestone, it was decided to omit the KCl addition to the pad mud.

Problems Summary

- Slow ROP
- Could only detect MWD signal at Kelly down. This entailed pumping the sweep off bottom attempting to regain signal.

Recommendations for Improvement

- Apparently it needs to be confirmed that the rig has 5000+ bbls of drillwater prior to drilling the 16" section.

- With the ROP achieved on this well, mixing PHG in only one 500 bbl pit is not a problem. That leaves the 235 bbl pit free to mix guar gum for mid stand sweeps at a high rate.

Cost, Actual versus Programme:

The programme cost for this 16" section and the previous 36" one was **$35,876**. The actual mud cost was **$38,277** for building 6051 bbls of sweeps, displacement, and weighted mud. Cost per bbl equals **$6.32**. Cost savings averaging $3,792 will be realised on the next well as 600 bbls of the displacement fluid will be back loaded to the boat which will even out the estimated cost for well.

INTERVAL 3 : 8-1/2" HOLE SECTION

Mud Type : KCL/Polymer/Klastop

Operations Summary:

The BOP and riser was run to 530 meters and function tested. An 8 ½" PDC bit and stiff BHA to drill the vertical well was made up and run in the hole but had to be pulled back out due to a MWD failure. The problem was fixed so that the drill string was run back into the hole to drill the shoe collar with seawater before displacing to 1.15sg KCL/Klastop mud for drilling the cement and 3m of new hole. A leak off test was performed and the shoe broke down at 1.32sg.

It was decided to drill ahead in the formation that was predominately limestone and some claystone to just inside the sand reservoir at 2892m at which point gas was circulated out with a 10% max peak. A short trip was made to 2400m without problems. Drilling continued in the predominately sand and occasional claystone until the bit stopped at 2955m. A trip was made for a new bit and dysfunctional MWD tool that could not pick up signals.

After running back in the hole to 2775m, the hole was washed down as a precautionary measure. Drilling ahead continued vertically at a fast rate to almost TD where the bit gave up at 3816 meters just 4 meters from the projected TD. A 100 bbls calcium carbonate coarse pill at 30 ppb was pumped around without any noticeable increase in cuttings indicating that the hole was clean and two bottoms were circulated until the shakers cleaned up. No downhole losses or gains were observed while drilling or circulating.

The drill string was pulled out of the hole for logging with a couple of tight spots that were wiped near bottom at a 50k overpull, probably in a coal stringer ledge, but without any backreaming.

Four logging runs were scheduled with the first basic one getting to bottom in a slick and trouble free hole. The second one took formation samples.

After logging, four cement plugs were set at the following depths to abandon the well:

- 3094m to 2994m
- 2873m to 2773m
- 1595m to 1515m
- 648m to 618m.

The riser was then displaced to sea water and the rig prepared for moving.

Drilling Fluid Comments

While running the riser etc, 1920 bbls of 1.15sg KCl polymer mud was mixed to drilling specifications and 200 pumpable barrels of 30 ppb calcium carbonate course was built in the smallest pit #1. Due to the shortage of pit space on the Ocean Patriot, a double concentration of Drispac SL(4ppb) and Circal 60/16(10ppb) with a single concentration of Flowzan(0.75ppb) and a half concentration of Soltex(2ppb) had to be mixed in the two largest tanks #5 and #4 with drillwater and then transferred to the other pits at 50% volume before taking on the 50% concentrated KCL/Klastop brine which complimented the mixture at 100%. After circulating the

pits and checking/correcting the weights to 1.15sg, an additional .75 ppb Flowzan was added to increase the rheology for drilling.

The choke, kill, and booster lines were charged with 104 bbls, the casing and riser were displaced to 1150 bbls mud and it was necessary to dump 166 bbls of mud due to interface contamination due to stopping the pumps a couple of times. It took all of the pits, #1 through #5, to displace the riser and casing while leaving the active pit #3 full. The boat with the brine was called along side the rig right before the displacing took place to recharge pits #2, 4, and 5 while keeping pit#2 as the dedicated pure brine and using #4 and 5 as premixes.

It was also observed that some of the Soltex went over the 80 API mesh shaker screens due to the new mud not being heated or sheared yet.

As drilling progressed, the mud was treated with an additional 2 PPB of Soltex to increase the concentration to the desired 4 PPB. Two sacks each of Soltex and Circal 60/16 were added hourly to maintain the depleted concentration and bridge the sands while running the centrifuge. The mud stayed very stable as per specifications with the proper dilution and solids control equipment.

Hole cleaning was not a problem due to both the aggressive hydraulics which were run at 775 gpm on the bit and keeping the 6 RPM around 10. There was no need for hi-vis sweeps.

In conclusion, it can be said that the mud performed well on this hole for the following reasons:

- All trips were problem free. No excess resistance on trip out or in.
- All assemblies pulled were clean
- There were no sloughing formation across the shakers
- The maximum MBT recorded was 2.5 PPB.
- The four logging runs were made without problems
- The calliper of the hole from the logs was 8.5".
-

Fluid specifications:

Weight	1.15 sg
Yield point	20 – 30
6 RPM	8 – 12
Fluid loss	< 5
KCL %wt	12 – 14
LGS %vol	< 6
MBT	< 10
CaCO3	5 ppb

Solids Control

The 4 BEM 650 Swaco shakers worked alright for only pulling 5 g's and were dressed with 20 API mesh scalpers and 70 to 80 API mesh primary screens. Finer screens could not be put on due to the very strong flow rate of 1200 gpm of which 775 gpm went to the hole and 425 gpm went to the booster line which left only about a 5% beach.

The Brandt big bowl 2172 centrifuge was used on the active system continuously to control the LGS and mud weight at 1.15 sg. The parameters were 150 gpm at 2500 RPM with an average effluent weight of 1.10 sg.

Mud losses to the solids control system were normal during drilling with not too much whole loss over the shakers and fairly wet solids from the centrifuge at 150 gpm.

Problems Summary

There were no problems during drilling or logging of the interval.

Recommendations for Improvement

- Do not premix Soltex in new mud for displacement
- Do not use finer shaker screens than 80 API mesh unless the booster pump can be turned down by 50% or so.
-

Cost, Actual versus Programme:

The programme cost for this 8.5" section was **$521,328**. The actual mud cost was **$298,408.73** for building 4061 bbls mud. Note that the volume built included the 1915 bbls of Klastop brine that were received form the mud plant. Cost per bbl equals **$ 73.48** and cost per metre was **$130.71**.
A total of 1754 bbls of 9.6 PPG mud was transferred to the next well: Madfish 1. The cost of this fluid, using **$71.00** per barrel is approximately $**124,534**. This reduction in cost will be reflected on the next well.

Attachment A: Mud Material Reconciliation & Costs by Well

Operator	Apache	Field Name	Vic-P59	Well Number	Dory-1	Rig	Ocean Patriot

Materials								36" Hole		16" Hole		8 1/2"						Testing / Completion		Well Totals	
Items			Reconciliation					$ 20,937.26		$ 17,339.78		$ 298,408.73		$ -		$ -		$ -		$ 336,685.77	
Description	Unit	Unit Price $	Start	Rec'd	Used	Ret.	End	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost
AMC PAC-LV	25 kg sx																				$ -
ASPHASOL SUPREME	50 lb sx																				$ -
BARITE BULK	1.0 MT	280.61	54	191	106	139		42	11,785.62			63.70	17,874.86							105.7	$ 29,660.48
BARITE BULK, VIETNAM	1.0 MT																				$ -
CaCl2 74 - 77%	25 kg sx	16.43		80		80															$ -
CALCIUM CARBONATE C	25 kg sx																				$ -
CAUSTIC SODA	25 kg sx	33.11	9	24	13	20		7	231.77	6.00	198.66									13.0	$ 430.43
CIRCAL (60/16)	25 kg sx	17.69		528	402	126						402.00	7,111.38							402.0	$ 7,111.38
CIRCAL 1000	25 kg sx	17.69		192	98	94						98.00	1,733.62							98.0	$ 1,733.62
CITRIC ACID	25 kg sx	44.25		120	14	106						14.00	619.50							14.0	$ 619.50
Defoam A	5 gal cac	94.50		24		24															$ -
DRISPAC R	50 lb sx																				$ -
DRISPAC SL	50 lb sx	122.19		440	172	268						172.00	21,016.68							172.0	$ 21,016.68
DUOVIS	25 kg sx																				$ -
ECOTROL RD	25 kg sx																				$ -
FLOWVIS PLUS	25 kg sx																				$ -
FLOWZAN	25 kg sx	272.33		265	111	154						111.00	30,228.63							111.0	$ 30,228.63
FORM-A-SQUEEZE	40 lb sx																				$ -
GLUTE 25 (BIOCIDE)	25 kg sx																				$ -
GUAR GUM	25 kg sx	83.10		168	56	112				56.00	4,653.60									56.0	$ 4,653.60
HIBTROL	25 kg sx																				$ -
HRP	190 kg dr																				$ -
KCL	1.0 MT BB																				$ -
KCL	1.5 MT BB																				$ -
KCl Brine (1.15 sg)	1 BBL	98.14		1915	1915							1,915.00	187,938.10							1915.0	$ 187,938.10
KLA STOP	55 gal dr																				$ -
KLEEN UP	25 kg sx																				$ -
KWIK SEAL FINE	40 lb sx																				$ -
KWIK SEAL MEDIUM	40 lb sx																				$ -
LAO C14/16/18	1.0 BBL																				$ -
LIME	18.5 lb sx																				$ -
LIMESTONE LSC	25 kg sx																				$ -
M-I GEL SX	25 kg sx																				$ -
M-I GEL BULK	1.0 MT	367.28	31	74	62	43		24	8,814.72	34.00	12,487.52	4.00	1,469.12							62.0	$ 22,771.36
MIX II FINE	25 kg sx																				$ -
MIX II MEDIUM	25 kg sx																				$ -
NaCl Brine (1.18 sg)	1 BBL																				$ -
NaCl Salt	1.0 MT BB																				$ -
NOVAPRO 50:50	1 BBL																				$ -
NOVATEC F	195 lb dr																				$ -
NOVATEC P	190 lb dr																				$ -
NOVATEC S	190 lb dr																				$ -
NOVATEC SYSTEM (70:30)	1 BBL																				$ -
NOVATEC SYSTEM (80:20)	1 BBL																				$ -
NOVATHIN	190 lb dr																				$ -
Nut Plug Fine	50 lb sx	21.14		28		28															$ -
OMYACARB 8	25 kg sx																				$ -
OMYACARB 10	25 kg sx	16.93		96		96															$ -
OMYACARB 40	25 kg sx																				$ -
OS-1	25 kg sx																				$ -
PIPE-LAX W	55 gal dr																				$ -
POLYPLUS	25 kg sx																				$ -
POTASSIUM HYDROXIDE	25 kg sx																				$ -
Polysal T	25 kg sx	35.38		60	30	30						30.00	1,061.40							30.0	$ 1,061.40
SAFE SOLV E	55 gal dr																				$ -
SAFE SOLV OM	55 gal dr																				$ -
SAFE SURF O	55 gal dr																				$ -
SAFE-CIDE	5 gal cac	100.79		36	22	14						22.00	2,217.38							22.0	$ 2,217.38
SAFECOR	55 gal dr																				$ -
SAPP	25 kg sx																				$ -
SODA ASH	25 kg sx	21.03		28	5	23		5	105.15											5.0	$ 105.15
SODIUM BICARBONATE	25 kg sx	17.86		80	40	40						40.00	714.40							40.0	$ 714.40
SOLTEX	55 lb sxs	88.67		600	298	302						298.00	26,423.66							298.0	$ 26,423.66
STONEDUST 500	25 kg sx																				$ -
VERSAGEL HT	25 kg sx																				$ -
VERSATROL	50 lb sx																				$ -
VERSAMOD	55 gal dr																				$ -
VERSAWET	55 gal dr																				$ -
CALCIUM CHLORIDE BIG BAGS	1 MT																				$ -
MICA(F)	25 kg sx			90		90															$ -
MICA(M)	25 kg sx			90		90															$ -
CIRCAL Y	25 kg sx	20.31		96		96															$ -
OMNYCARB 20	25 kg sx																				$ -
																					$ -

Attachment B: Shale Shaker Screen Consumption & Costs by Well

Operator	Apache	Field Name	Vic-P59	Well Number	Dory-1	Rig	Ocean Epoch

SHAKER TYPE - 4 X BRANDT VSM-300							16" Hole		12 1/4" Hole		8 1/2" Hole						Completion		Well Totals	
Items		Reconciliation					$ -		$ -		$ 14,271.00		$ -		$ -		$ -		$ 14,271.00	
Description	Unit Price $	Start	Rec'd	Used	Ret.	End	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost	Used	Cost
SCALPING SCREENS - BEM650																				
Swaco scalpers 10 mesh	326.00	13	8			21												$ -		$ -
Swaco scalpers 20 mesh	326.00	8	16	2		22					2	652.00						$ -	2	$ 652.00
Swaco scalpers 30 mesh	326.00	11	8			19												$ -		$ -
																		$ -		$ -
PRIMARY SCREENS - BEM650																				
Swaco XL 50 (40 mesh)	440.00	16				16												$ -		$ -
Swaco 84 HC (60 mesh)	440.00	88		4		84					4	1760.00						$ -	4	$ 1,760.00
Swaco 105 HC (70 mesh)	475.00	12				12												$ -		$ -
Swaco 105 XL (80 API)	370.00	32	16	12		36					12	4440.00						$ -	12	$ 4,440.00
Swaco 120 XL (100 API)	379.00	58	39	1		96					1	379.00						$ -	1	$ 379.00
Swaco 165 XL (120API)	440.00	74	34	16		92					16	7040.00						$ -	16	$ 7,040.00
Swaco HC 270 (170 API)	444.00	68				68												$ -		$ -
Swaco 270XL (200 API)		16				16												$ -		$ -
																		$ -		$ -
																		$ -		$ -

Attachment C: Mud Volume Reconciliation by Well

Operator	Apache	Field Name	Vic-P59	Well Number	Dory-1	Rig	Ocean Patriot

Interval	36"	16"	8 1/2"			Well Totals
Fluid Type	SW/Sweeps	SW/Sweeps	KCL/Polymer			All
Meters Drilled	46.5	951	2279			3277

Total Volume Reconciliation

Description	Volume	Volume	Volume	Volume	Volume	Volume
Volume On Rig at Start of Interval						
Volume Received / Transferred In		1091	1915			3006
Volume Built on the Rig	1825	4226	2146			8197
Total Volume Lost Surface	734	4717	1121			6572
Total Volume Lost Sub-Surface			1186			1186
Volume Backloaded / Transfer out	1091	600	1754			3445
Volume On Rig at End Of Interval						
Total Fluid Loss Volume	734	4717	2307			7758
Total Surface Losses bbls/m	15.78	4.96	0.49			2.01
Total Sub-Surface Losses bbls/m			0.52			0.36
Total All Losses bbls/m	15.78	4.96	1.01			2.37

Analysis of Volume Losses - Surface Losses

Accidental Discharge (SBM)						
Mud on Cuttings (SBM)						
Centrifuges			378			378
Shakers			466			466
Desander						
Mud Cleaner						
Solids Residue (SBM)						
Dumped (WBM)		95	277			372
Evaporation						
Sweeps	734	4622				5356
Flared Off						
Total Surface Losses bbls/m	15.78	4.96	0.49			2.01

Analysis of Volume Losses - Sub-Surface Losses

Lost Circulation						
Sweeps to Seabed						
Seepage Losses			72			72
Left Behind Casing						
Left in Hole			1114			1114
Disposed (Injected)						
Total Sub-Surface Losses			1186			1186

Attachment D: Mud Properties by Interval 36"

Mud Properties										
Date	4-Nov-08	5-Nov-08								
Report #	3	4								
Sample From	Pit	Pit								
Time	8:00	21:00								
Depth (meters)										
Temperature ^{0}F										
Mud SG	1.055	1.055								
Gradient psi/meter	1.501	1.501								
Funnel Vis Sec/qt.	120+	120+								
PV cps @ 120 ^{0}F	9	8								
YP lbs/100 ft2	43	52								
Gels 0/10/30 Min										
pH	9.5	9.5								
API / HTHP @ 250 ^{0}F										
API / HTHPCake 32nd ins.										
Pm										
Alkalinity Pf/Mf										
Chlorides mg/l	1,200	1,000								
Total Hardness as mg/l Ca	50	60								
Calcium mg/l	50	60								
Magnesium mg/l										
KCl ppB										
NaCl ppB										
Sand Content %										
Water %										
Lubricant Aquac %										
Retort Corr Solids %										
MBT ppB										
Avg. SG Suspended Solids										
HGS % / LGS %										
HGS ppB / LGS ppB										
600 RPM / 300 RPM	61 / 52	68 / 60								
200 RPM / 100 RPM										
6 RPM / 3 RPM	49 / 42	51 / 47								
Soluble Salts %										
KCL %										

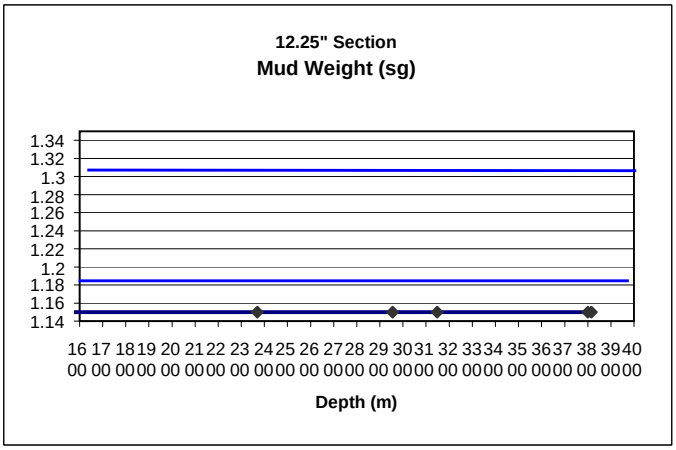
Attachment D: Mud Properties by Interval 16"

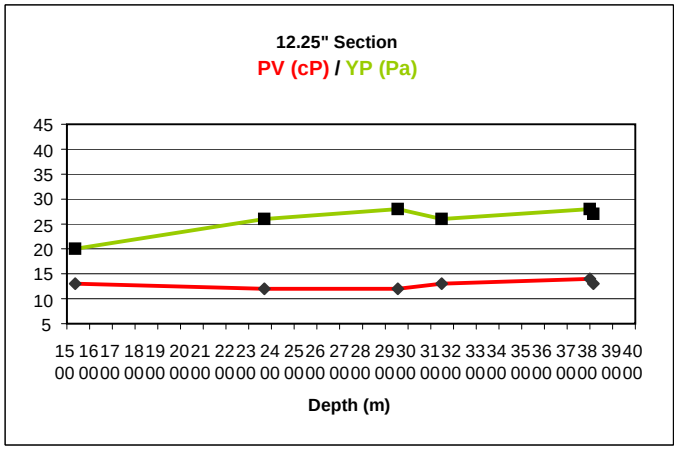
Mud Properties										
Date										
Report #										
Sample From										
Time										
Depth (meters)										
Temperature 0F										
Mud SG										
Gradient psi/meter										
Funnel Vis Sec/qt.										
PV cps @ 120º F										
YP lbs/100 ft2										
Gels 0/10/30 Min										
pH										
API / HTHP @ 250º F										
API / HTHPCake 32nd ins.										
Alkalinity Pf										
Alkalinity Mf										
Chlorides mg/l										
Total Hardness as mg/l Ca										
Calcium mg/l										
Magnesium mg/l										
KCl ppB										
NaCl ppB										
Sand Content %										
Water %										
Lubricant Aquac %										
Retort Corr Solids %										
MBT ppB										
Avg. SG Suspended Solids										
HGS % / LGS %										
HGS ppB / LGS ppB										
600 RPM / 300 RPM										
200 RPM / 100 RPM										
6 RPM / 3 RPM										
Soluble Salts %										
KCL %										

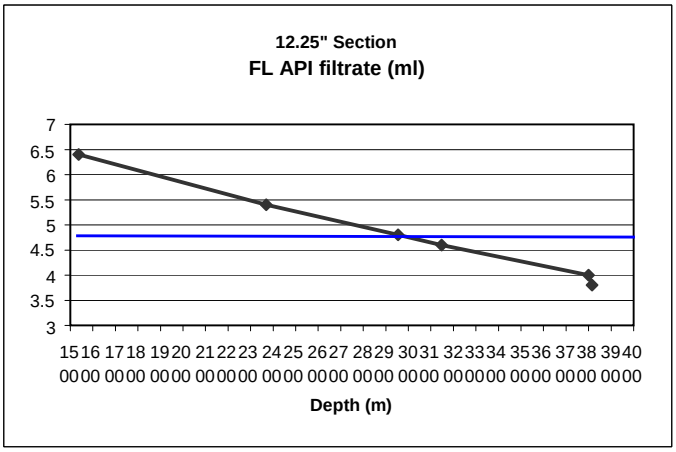
Attachment D: Mud Properties by Interval - 8.5"

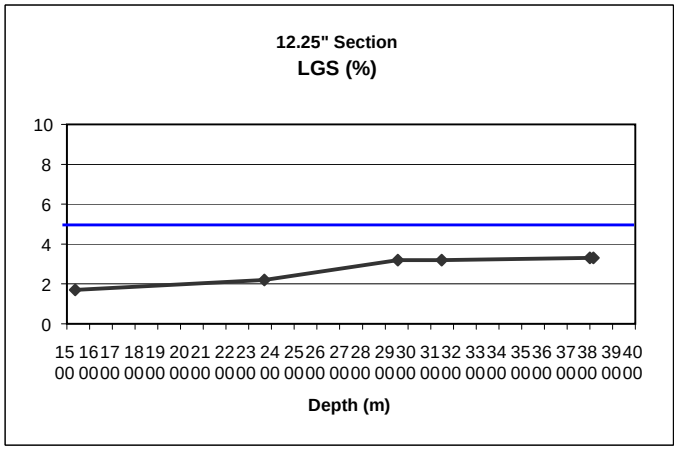
Mud Properties										
Date	10-Nov-08	11-Nov-08	12-Nov-08	13-Nov-08	14-Nov-08	15-Nov-08	16-Nov-08	17-Nov-08	18-Nov-08	19-Nov-08
Report #	9	10	11	12	13	14	15	16	17	18
Sample From	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit
Time	23:00	22:00	22:00	22:00	22:00	22:00	22:00	22:00	22:00	22:00
Depth (meters)	1537	1539	2369	2955	3148	3816	3816	3816	3816	3816
Temperature °F			85							
Mud SG	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150	1.150
Gradient psi/meter	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636	1.636
Funnel Vis Sec/qt.	46	54	52	53	53	56	54	53	53	53
PV cps @ 120 °F	9	13	12	12	13	14	13	13	13	13
YP lbs/100 ft2	11	20	26	28	26	28	27	28.0	28.0	28.0
Gels 0/10/30 Min	4/6/6	5/7/7	8/9/9	9/10/11	9/10/11	10/11/12	10/11/12	9/10/12	9/10/12	9/10/12
pH	11.0	11.0	11.0	11.1	11.0	10.8	10.8	10.8	10.8	10.8
API / HTHP @ 250 °F	6.4	6.4	5.4	4.8	4.6	4.0	3.8	3.8 / 12	3.8 / 12	4.40
API / HTHPCake 32nd ins.	1	1	1	1	1	1	1	1 / 2	1 / 2	1.00
Pf	4.30	4.30	4.50	3.50	3.50	3.00	2.80	3	3	3
Alkalinity Mf	6.80	6.80	7.30	6.50	6.40	5.20	5.00	5.2	5.2	5.2
Chlorides mg/l	60000	60000	55000	55000	55000	54000	54000	54000	54000	54000
Total Hardness as mg/l Ca	280	280	180	160	180	160	160	160	160	280
Calcium mg/l	280	280	180	160	180	160	160	160	160	280
Magnesium mg/l										
KCl ppB	44	44	40	40	40	39	39	39	39	39
NaCl ppB	0.2	0.2	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6
Sand Content %	TR	TR	0.2	0.2	0.2	0.75	0.5	0.5	0.5	0.5
Water %	90	90	90	89.5	89.5	89.5	89.5	89.50	89.50	89.50
Lubricant Aquac %	2	2	2	2	2	2	2	2.0	2.0	2.0
Retort Corr Solids %	3.25	3.25	3.70	4.22	4.22	4.32	4.32	4.32	4.32	4.32
MBT ppB				1.3	1.3	2.5	2.5	2.5	2.5	3
Avg. SG Suspended Solids	3.40	3.40	3.28	3.00	3.00	2.99	2.99	3	3	3
HGS % / LGS %	1.6/1.7	1.6/1.7	1.5/2.2	1/3.2	1/3.2	1/3.3	1/3.3	1/3.3	1/3.3	1/3.3
HGS ppB / LGS ppB	23/15	23/15	23/20	15/29	15/29	15/30	15/30	15/30	15/30	15/30
600 RPM / 300 RPM	29/20	46/33	50/38	52/40	52/39	56/42	53/40	54/41	54/41	54/41
200 RPM / 100 RPM	15/10	26/19	30/22	30/25	29/24	34/28	32/26	33/26	33/26	33/26
6 RPM / 3 RPM	3/2	6/4	9/8	10/9	10/9	10/9	10/9	10/9	10/9	10/9
Soluble Salts %	4.8	4.8	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
KCL %	11	11	11	11	11	11	11	10.9	10.9	10.9

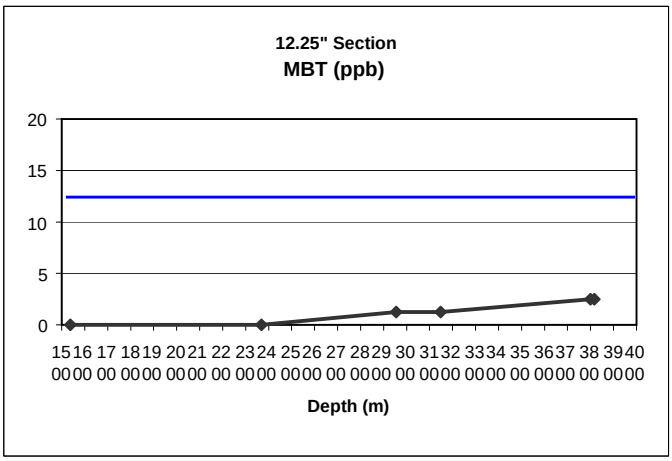
Dory 1 Trends

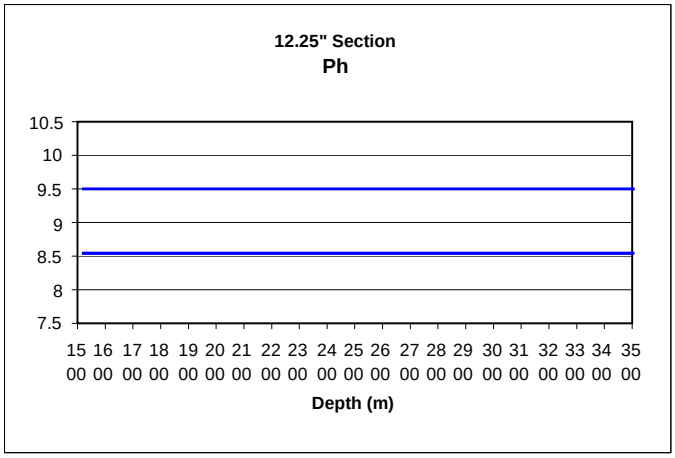


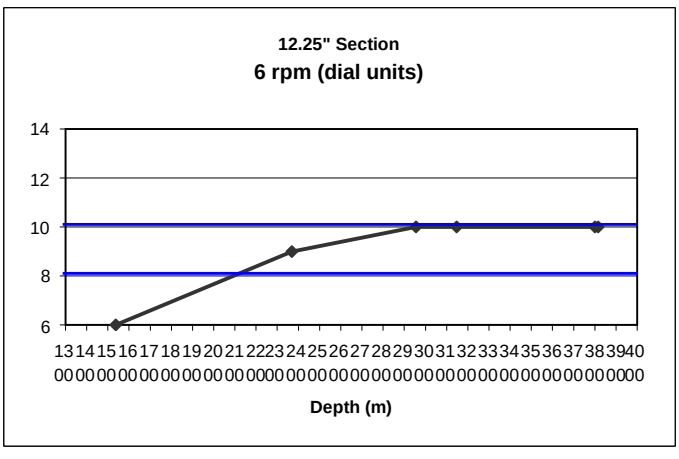


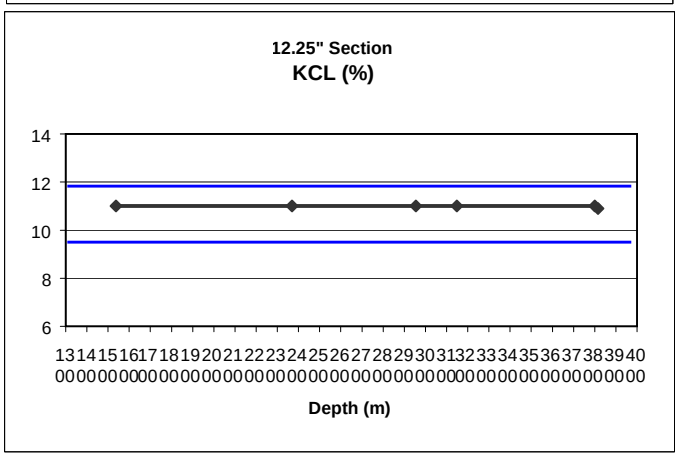












Dory 1 Trends

Depth	Wt (Sg)	PV	YP	dial 6	LGS	Ph	FL	MBT	KCL
1537	1.15	13	20	6	1.7	11	6.4	0	11
2369	1.15	12	26	9	2.2	11	5.4	0	11
2955	1.15	12	28	10	3.2	11.1	4.8	1.25	11
3148	1.15	13	26	10	3.2	11	4.6	1.25	11
3800	1.15	14	28	10	3.3	10.8	4	2.5	11
3816	1.15	13	27	10	3.3	10.8	3.8	2.5	10.9

Operator Apache Energy
Well: Dory 1
Rig: Ocean Patriot

Sweep			Depth	ROP	Flow	Angle	Vol.	Density	FV	Increase	Cavings size	Cuttings/cavings shape	Observations
No:	Date	Time	TD m	m/hr	rate gpm	°	Bbls	SG	sec	%	range in mm	ang, rounded, etc.	% cavings etc
12 1/4" Interval													
8 1/2" Interval													
1	15-Nov	22:30	3805	35	727	3	50	1.15	58	0	0	NA	Pill was mixed with 30 PPB CaCO3
2	16-Nov	1:30	3816	4	727	3	100	1.15	58	0	0	NA	Pill was mixed with 30 PPB CaCO3
6" Interval													

* Add/remove rows as required

NAME OF WELL: Dory 1 **Apache Supervisors :** Pat Brown

Start Date : 2-Nov-08 David Symington

End Date : 25-Nov-08

PART A: Information on well, supervisors and daily information on drilling fluid, pipedope and drill cuttings

Date on Location	2/11/08	3/11/08	4/11/08	5/11/08	6/11/08	7/11/08	8/11/08	9/11/08	10/11/08	11/11/08	12/11/08	13/11/08	14/11/08	15/11/08	16/11/08	17/11/08	18/11/08	19/11/08	20/11/08	21/11/08	22/11/08	23/11/08	24/11/08	25/11/08	26/11/08	27/11/08	28/11/08	29/11/08	####	#####		
Days on Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27					**Total**
Water Based Muds																																
Volume **water based drilling fluid disposed into the ocean** (m^3)	0.0	0.0	0.0	116.8	136.6	381.0	218.0	0.0	0.0	26.4	28.0	35.0	17.3	51.2	5.3	8.6	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0								**1033.1 m3**
Volume of **drill cuttings using WBM disposed to the seabed** (m^3)	0.0	0.0	0.0	31.5	32.3	90.0	1.0	0.0	0.0	0.7	35.8	16.0	9.5	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								**238.7 m3**
Volume of **drill cuttings using WBM injected into the annulus** (m^3)																																**0.0 m3**
Synthetic Based Muds																																
Volume of **drill cuttings using SBM disposed to the seabed** (m^3)																																**0.0 m3**
Volume **synthetic based drilling fluid disposed to the seabed** (m^3)																																**0.0 m3**
Volume of **base oil disposed to the seabed (m3)**																																**0.0 m3**
Volume of **SBM injected into the annulus** (m^3)																																**0.0 m3**
Volume of **SBM discharged to sea** due to reinjection failure (m3)																																**0.0 m3**
Oil on cuttings % (daily average) from VertiG dryer																																
Oil on cuttings % (daily average) from Centrifuge 1 (discharge to annulus)																																
Oil on cuttings % (daily average) from Centrifuge 2 (active mud system)																																
Pipe Dope																																
Volume of **pipe dope** used (L) (End of hole estimate OK)																																**0 ltr**

PART B: Information on volume and type of waste taken off rig

Volume **waste oil** removed from rig (drums)																																**0 drums**
Quantity **solid wastes** removed from rig (skips)																																**0 drums**
Quantity **scrap metal** removed from rig (skips)																																**0 drums**
Other (specify type)																																
Quantity (how much & units)																																

PART C: General Information on spills, sewage discharge, flaring, quarantine and whale / turtle sightings

Oil /Chemical Spills

Were there any **oil / chemical spills** that discharged to the marine environment? (Y/N)																															
Details if yes < type date of spill & information on type, amount & cause >																															

Sewage Disposal

Were there any problems with the sewage plant that resulted in the **discharge of untreated sewage** to the marine environment? (Y/N)																															
Details if yes < type date of spill & information on type, amount & cause >																															

Flaring Data (if applicable)

Total volume of gas flared (m^3)																															**0.0 m3**
Total volume of oil flared (m^3)																															**0.0 m3**
Was there any fallout during flaring ? (Y/N)																															
Details if yes < type date of spill & information on type, amount & cause >																															

Quarantine

Were the bait stations checked each day? (Y/N)																															

Whale & Turtle Sightings

Were any whales / turtles sighted and observation data sheets completed ? (Y/N)																															

(If yes, please attach data sheets or forward to Environment Branch. Data sheets are contained in the Environment Plan appendices for the well)

DRILLING INFORMATION FOR ENVIRONMENT BRANCH

NAME OF WELL:	Dory 1	Apache Supervisors :	Pat Brown
Start Date :	02-Nov-08		David Symington
End Date :	25-Nov-08		0

WATER BASED MUD		
Volume water based drilling fluid disposed into the ocean (m3)	Volume of drill cuttings using WBM disposed to the seabed (m3)	Volume of drill cuttings using WBM injected into the annulus (m3)
1033.14	238.73	0

SYNTHETIC BASED MUD				
Volume of drill cuttings using SBM disposed to the seabed (m3)	Volume synthetic based drilling fluid disposed to the seabed (m3)	Volume of base oil disposed to the seabed (m3)	Volume of SBM injected into the annulus (m3)	Volume of SBM discharged to sea due to reinjection failure (m3)
0	0	0	0	0

Volume waste oil removed from rig (drums)	Quantity solid wastes removed from rig (skips)	Quantity scrap metal removed from rig (skips)		Other (specify type)	Quantity (how much & units)
0	0	0		none	

Volume of pipe dope used (L) (End of hole estimate OK)
0

Oil /Chemical Spills	No
Sewage Disposal	No

Flaring Data (if applicable)	Total volume of gas flared (m3)	Total volume of oil flared (m3)		Was there any fallout during flaring ? (Y/N)
	0	0		No

Whale & Turtle Sightings	No

MI SWACO

Drilling Fluids Price Summary
Well : Dory 1
Rig : Ocean Patroit

Prepared date/by:	Jason Mills / John Astleford	All depths in Metres, Measured Depth BRT	
Verified date/by:	John Astleford / Victor Hester	Rotary Table to MSL :	21.5
Approved date/by:	John Astleford / Victor Hester	Water Depth :	550

Date :	27-Oct-08		
Rev. No:	2		
Total cost	US$:	557,265	

Apache ENERGY

36 " Section: Seawater / Hi Vis Sweeps

Depth meters	MW sg	Funnel Visc, sec.	6 rpm	pH	Gel 10s lb/100sqft	Gel 10m lb/100sqft
571.5	1.04 alap	>100	> 40	9 - 10	>20	>40
615						

COMMENTS: This section will be drilled with Seawater and high viscosity Pre Hydrated Gel (PHG) sweeps at a rate of 50 bbl every 15 m, or as necessary to prevent pack-offs. Ensure that PHG is around the BHA at connections and surveys. Guar Gum will be held in contingency for Hi Vis Sweeps and used if required. Note Guar gum is subject to bacterial decay - use immediately or treat with biocide. All sweeps should be diluted with seawater at a ratio of 60/40 - 70/30 , add a sack of lime/pit over the grating just prior to use. Ensure the required viscosity is reached by adjusting the percentage of seawater used (note: once the lime has been added the fluid will loose its viscosity after about 5-6 hours or sooner if the mix line is on therefore do not add lime too early !). As soon as the lime is added shut down all mixing and agitation in the pit to prevent aggregation of clay particles and consequent loss of viscosity. A separate pit should be used for flocculation to avoid contamination while mixing further batches of pre hydrated Gel. Sweep the hole w/ 150 bbls high vis sweep at TD and finally displace the open hole to Hi - Vis displacement fluid, Spot 2 x theoretical hole volume to account for hole washout. This displacement fluid should not be treated with lime as a reduction with viscosity over time is not acceptable. Ensure adequate supplies of Gel & Drillwater are loaded out on vessels for this and the next section.

Length: 43.5

36 "Hole TD Displacement Fluid

Displ Fluid MW sg	6 rpm	pH	Gel 10s lb/100sqft	Gel 10m lb/100sq/ft
1.04 alap	>25	9 - 10.5	>20	>10

PRODUCTS — Concentrations — VOLUMES

TYPE	Unit	Size	Sweeps	Displ Vol	Tot Unit		bbl
Bentonite	mt	1	25.0		3	DISPL. VOL. X 2.0	360
Caustic Soda	kg	25	0.2		1		
Soda Ash	kg	25	0.2		1		
						SWEEPS	250
Displacement Fluid							
Bentonite	mt	1		25.0	4	**TOT. VOL.**	**610**
Caustic Soda	kg	25		0.2	1		
Soda Ash	kg	25		0.2	1	**NEW MUD**	**610**
Contingency Products						Cost/m	$61.59
Guar Gum	kg	25			80	Cost/bbl	$4.39
Total section cost				US$	2,679	Dilut. fac	n/a

16.0 " Section: Seawater / Hi Vis Sweeps

Depth meters	MW sg	Funnel Visc, sec.	6 rpm	pH	Gel 10s lb/100sqft	Gel 10m lb/100sqft
615	1.04 alap	>100	> 40	9 - 10	>20	>40
1500						

COMMENTS: This section will be drilled with Seawater and high viscosity Pre Hydrated Gel (PHG) sweeps at a rate of 50 bbl every 15 m, or as necessary to prevent pack-offs. Ensure that PHG is around the BHA at connections and surveys. Guar Gum will be held in contingency for Hi Vis Sweeps and used if required. Note Guar gum is subject to bacterial decay - use immediately or treat with biocide. All sweeps should be diluted with seawater at a ratio of 60/40 - 70/30 , add a sack of lime/pit over the grating just prior to use. For optimum results, allow bentonite to hydrate for as long as possible prior to flocculating (6 - 8 hours recommended). Ensure the required viscosity is reached by adjusting the percentage of seawater used (note: once the lime has been added the fluid will loose its viscosity after about 5-6 hours or sooner if the mix line is on therefore do not add lime too early !). As soon as lime is added shut down all mixing and agitation to prevent aggregation of clay particles and consequent loss of viscosity. A separate pit should be used for flocculation to avoid contamination while mixing further batches of pre hydrated Gel. Sweep the hole w/ 150 bbls high vis sweep at TD and finally displace the open hole to Hi - Vis displacement fluid weighted to 1.15 sg with a KCl concentration of 5%, do not add Lime to this displacement fluid, Pump 2 x theoretical hole volume to account for hole washout.

Length: 885

16.0 "Hole TD Displacement Fluid

Displ Fluid MW sg	6 rpm	pH	Gel 10s lb/100sqft	Gel 10m lb/100sq/ft	KCl %
1.15	>25	9 - 10.5	>20	>10	5

PRODUCTS — Concentrations — VOLUMES

TYPE	Unit	Size	Sweeps	Displ Vol	Tot Unit		bbl
Bentonite	mt	1	25.0		29	DISPL. VOL. X 1.5	1084
Caustic Soda	kg	25	0.2		9		
Soda Ash	kg	25	0.2		9		
						SWEEPS	2533
Displacement Fluid							
Bentonite	mt	1		25.0	12	**TOT. VOL.**	**3718**
Caustic Soda	kg	25		0.2	4		
Soda Ash	kg	25		0.2	4	**NEW MUD**	**3718**
KCl	mt	1		18.0	9		
Barite	mt	1		56.0	28		
						Cost/m	$37.51
Contingency Products						Cost/bbl	$8.93
Guar Gum	kg	25			80		
Total section cost				US$	33,197	Dilut. fac	n/a

8.5 " Section: KCl / POLYMER / Klastop

Depth meters	MW sg	YP lb/100sqft	PV cP	Gels lb/100sqft	6 rpm	pH	API FL ml	Ca ++ mg/l	KCl % wt	Klastop vol%	LGS % vol	MBT ppb	$CaCO_3$ content
1500	1.15 -1.20	20 - 30 @120 F	alap	Flat and non progressive	8-12 @ 120F	9.5 -10.5	< 5 ml <4 in reservoir	< 200	12 - 14	2	< 6	< 10	5 ppb
3821													

COMMENTS: This section will be drilled with an inhibitive KCl / Polymer / Klastop / $CaCO_3$ Bridging Fluid designed to effectively inhibit the shales, bridge off permeable sands, provide low HTHP fluid loss and premium hole condtions for drilling, tripping, logging and running Liner (if applicable). Displace to 1.15 SG mud just prior to drilling shoe to minimise cement contamination - pretreat with Bicarb and Citric Acid as necessary. Maintain mud density at 1.15 SG unless hole conditions dictate otherwise. Maintain HTHP fluid loss ALAP (below 15 cc) with Drispac SL and bridging agents. Soltex should be maintained at 4ppb to help stabilise any shales and randomly occuring coals. Soltex is a water dispersible sulfonated asphalt used in stabilizing shale and coal sections (see Apache Coal Drilling Guidelines). Pretreat active system with 5 ppb Circal 60/16 bridging agent prior to drilling out and maintain $CaCO_3$ content by regular additions, ie 2 - 3 sx Circal 60/16 per stand. Dress shakers with no finer than 140 mesh (API 13C) screens to minimise stripping of $CaCO_3$. Minimise centrifuge(s) and desilter / desander to preserve $CaCO_3$ content and particle size range in the active system. Monitor hydraulics closely for ECD and hole cleaning. Inhibition will be achieved through the maintenance of 2% Klastop and a minimum of 12% KCl. Increase KCl to 14% if clay cuttings integrity poor or hole conditions dictate. At TD, pump a 50 bbls high vis or hi weight sweep (as directed) to assist hole cleaning and circulate the hole thoroughly clean. Maintain adequate stocks of Citric Acid and SAPP for mixing a differential sticking pill. Ensure a concentrated $CaCO_3$ LCM pill is mixed in reserve containing at least 30 ppb course calcium carbonate. Maintain adequate stocks of acid soluble LCM and Kwikseal to combat severe down hole losses should they occur. If there is any evidence of coal destabilisation the fluid loss should be tightened, pilot test and use starch (polysal T) if cost effective.

Length: 2321

PRODUCTS — Concentrations — VOLUMES

TYPE	Unit	Size	New	Maint	Tot Units		bbl
KCl	mt	1	45.0	5.0	127	SURFACE	450
Caustic Soda	kg	25	0.2		20	CASING	471
Soda Ash	kg	25	0.2		20	OPEN HOLE	534
Drispac SL	lbs	50	2.0	1.0	336	DILUTION	3482
Flowzan	kg	25	1.5	0.5	203	HOLE TOT	1671
Klastop	gal	55	2%		112	**TOT. VOL.**	**5602**
Soltex	lbs	50	4.0	2.0	672	RECEIVED	0
Barite	mt	1.0	50.0		127	**NEW MUD**	**5602**
Circal 60/16	kg	25		5.0	508	MUD LEFT	2121
Contingency Products						Cost/m	$224.64
Safecide	lt	25			24	Cost/bbl	$93.07
Starglide	gal	55			8		
Polysal T	kg	25			70		
Total section cost				US$	521,388	Dilut. fac	1.50

Statement of Fact

Mud material and equipment transfer from Santos to Apache at the conclusion of Henry 2 ST-1 (rig handover)

Name	Unit	Onhand
Bulk Barite (Ocean Patriot rig)	MT	53.67
Bulk Barite (Far Grip boat)	MT	41
Bentonite (Ocean Patriot rig)	MT	30.66
Bentonite (FarGrip boat)	MT	59
Bentonite (Nor Captain)	MT	42
Caustic Soda	25kg drum	9
Shaker screens(Swaco)		
105XL (70API)		24pcs
120XL (100API)		32pcs
165XL (120API)		16pcs
270XL (200API)		16pcs

Signed

Peter Devine (Santos) 27/10/08

Ivan Parkhurst (Apache) 27/10/08

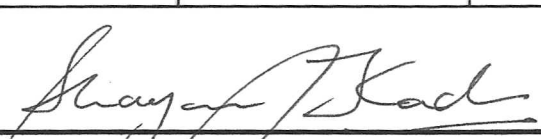
Mike Morris

Mike Morris (Rheochem) 27/10/08

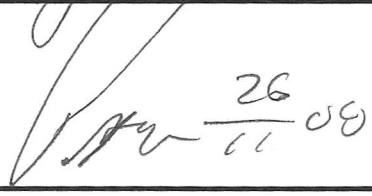
STATEMENT OF FACT

Operator	Rig	Well Name	Date
Apache	Ocean Patriot	Dory 1	25-Nov-08
Apache Owned chemicals onboard rig Diamond Ocean Patriot			
Product	**Unit Size**	**Quantity**	**Location**
Barite (Bulk)	MT	139	Ocean Patriot
Bentonite (Bulk)	MT	43	Ocean Patriot
Calcium Chloride 97%	25 kg sx	80	Ocean Patriot
Caustic Soda	25 kg can	20	Ocean Patriot
Circal 60/16	25 kg sx	126	Ocean Patriot
Circal 1000	25 kg sx	94	Ocean Patriot
Circal Y	25 kg sx	96	Ocean Patriot
Citric Acid	25 kg sx	106	Ocean Patriot
Defoam A	5 gal can	24	Ocean Patriot
Drispac Superlo	25 kg sx	268	Ocean Patriot
Flowzan	25 kg sx	154	Ocean Patriot
Kwik Seal (F)	40 lb sx	90	Ocean Patriot
Kwik Seal (M)	40 lb sx	90	Ocean Patriot
Nutplug	25 lb sx	28	Ocean Patriot
Omyacarb 10	25 kg sx	96	Ocean Patriot
Polysal T	25 kg sx	30	Ocean Patriot
Safe-Cide	25 ltr can	14	Ocean Patriot
SAPP	25 kg sx	40	Ocean Patriot
Sodium Bicarbonate	25 kg sx	40	Ocean Patriot
Soda Ash	25 kg sx	23	Ocean Patriot
Soltex	25 kg sx	302	Ocean Patriot
	SHAKER SCREENS		
Scalper 10 M		21	Ocean Patriot
Scalper 20 M		24	Ocean Patriot
Scalper 30 M		19	Ocean Patriot
API 40 M		16	Ocean Patriot
API 60 M		84	Ocean Patriot
API 70 M		12	Ocean Patriot
API 80 M		36	Ocean Patriot
API 100 M		96	Ocean Patriot
API 120 M		76	Ocean Patriot
API 170 M		68	Ocean Patriot
API 200 M		16	Ocean Patriot

Prepared by:
Shayam Kadir
Tom Roszel

Signature 

Operator Representative :
Apache Energy
Pat Brown / D. Symington.

Signature 

AUSTRALIA

Casing Report

Well: DORY-1				Report No.: 1	Report Date: 5/11/2008
Project: VIC-P59	Site: DORY-1			Rig Name/No.: OCEAN PATRIOT	
Event: OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008		Spud Date: 2/11/2008	
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1			

General Information

Assembly Name:	CONDUCTOR	Tubing/Casing Size:	762.00(mm)	Hole MD/TVD:	585.00 (m) / 585.00 (m)	Hole Size:	914.00 (mm)
MD Top:	0.00(m)	Landed MD/TVD:	585.00 (m) / 585.00 (m)	Ground Elevation:	518.48 (m)	Liner Overlap:	
Weight in Slips:		Max Hole Angle:		Hours Circ:		Vol Fluid Lost:	

Casing Flange/Wellhead

Manufacturer:	VECTO GRAY	Model:	VETCO MS700	Size/Rating:	762.00 (mm)/
Hanger Model:		Packoff Model:		Base Size/Rating:	

Integral Casing Detail

Component Type	Body ID (mm)	Item Description	Body OD (mm)	Weight (kg/m)	Grade	Drift (mm)	Connection	Connection OD		No Jts	Length (m)	MD TOP (m)	MU Torque (kN-m)	THD	Manufacturer	Model No.	Cond	Max OD (mm)	Min ID (mm)
								Bottom (mm)	Top (mm)										
Casing Shoe		Casing Shoe, Casing Shoe, , kg/m, ,	762.00							1	12.64	572.36		N					
Casing		Casing, Casing, , kg/m, ,	762.00							1	12.05	560.31		N					
Casing		Casing, Casing, , kg/m, ,	762.00							1	12.05	548.26		N					
Casing		Casing, Casing, , kg/m, ,	762.00							1	11.70	536.56		N					

Jewelry

Accessory Name	Accessory Group	Manufacturer	Num	Spacing (m)	Interval		Fastener Type	How Fixed	Attach Pattern
					MD Top (m)	MD Base (m)			

Comments

AUSTRALIA

Casing Report

Well: DORY-1				Report No.: 2	Report Date: 9/11/2008
Project: VIC-P59	Site: DORY-1			Rig Name/No.: OCEAN PATRIOT	
Event: OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008		Spud Date: 2/11/2008	
Active Datum: ROTARY TABLE @21.50m (above Mean Sea Level)		UWI: DORY-1			

General Information

Assembly Name:	SURFACE	Tubing/Casing Size:	340.00(mm)	Hole MD/TVD:	1,537.00 (m) / 1,536.91 (m)	Hole Size:	406.00 (mm)
MD Top:	0.00(m)	Landed MD/TVD:	1,534.14 (m) / 1,534.05 (m)	Ground Elevation:	518.48 (m)	Liner Overlap:	
Weight in Slips:		Max Hole Angle:		Hours Circ:	3.00 (hr)	Vol Fluid Lost:	

Casing Flange/Wellhead

Manufacturer:	VECTO GRAY	Model:	VETCO MS700	Size/Rating:	476.25 (mm)/68,948 (kPa)
Hanger Model:		Packoff Model:		Base Size/Rating:	476.00 (mm)/68,948 (kPa)

Integral Casing Detail

Component Type	Body ID (mm)	Item Description	Body OD (mm)	Weight (kg/m)	Grade	Drift (mm)	Connection	Connection OD		No Jts	Length (m)	MD TOP (m)	MU Torque (kN-m)	THD	Manufacturer	Model No.	Cond	Max OD (mm)	Min ID (mm)
								Bottom (mm)	Top (mm)										
Casing Shoe		Casing Shoe, Casing Shoe, , kg/m, ,	340.00	101.20	N-80	315.00				1	13.19	1,520.95		N	NKK STEEL CO		NEW	340.00	315.00
Float Collar		Float Collar, Float Collar, , kg/m, ,	340.00	101.20	N-80	315.00				1	13.07	1,507.88		N	NKK STEEL CO		NEW	340.00	315.00
Casing		Casing, Casing, , kg/m, ,	340.00	101.20	N-80	315.00				76	959.93	547.95		N	NKK STEEL CO		NEW	340.00	315.00
Casing Hanger		Casing, Casing Hanger, , kg/m, ,	508.00	101.20		315.00				1	9.82	538.13		N	VARREL		NEW	340.00	315.00

Jewelry

Accessory Name	Accessory Group	Manufacturer	Num	Spacing (m)	Interval		Fastener Type	How Fixed	Attach Pattern
					MD Top (m)	MD Base (m)			

Comments

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 1	Report Date: 5/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Primary	Job Desc:	762mm (30") Conductor Cement Job.	Cement Job Start Date/Time:	5/11/2008 8:30PM	Job End Date/Time:		N2 Used: N CO2: N	Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	CONDUCTOR			Tubing/Casing Size:	762.00 (mm)	MD Landed:	585.00 (m)	Hole Size:	914.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT				
Rotating Date/Time (start-End):		Rotating RPM:		Rotating Torque (init/avg/max):	(kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down:	- (tonne)	SPM:	Stroke Length:

Shoetrack Cement

Shoetrack Top MD:	Shoetrack Drill Date/Time:	Shoetrack Drill MD:

Fluids (1 of 3)

Fluid Name:	**SW & FLUORESCENE**
Fluid Type:	SW

Fluids (2 of 3)

Fluid Name:	**TAIL**						
Fluid Type:	CEMENT SLURRY						
Purpose:	CONDUCTOR SUPPORT	Class:	G	Density:	1.90 (sg)	Description:	
Yield:	0.79 (m³/tonne)	Mix Water Ratio:	0.48 (m³/tonne)				
Cement Used Volume:	28 (m³)	Total Water Volume Used:	17 (m³)				
Total Sacks Used:	36.03	Other Amount Used:	0 (m³)	Total Slurry Volume:	28 (m³)	Excess Slurry Volume:	71 (m³)

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	ANTIFOAM			0.010	GAL/SK
D185	DISPERSANT			0.120	GAL/SK
D186	ACCELERATOR			0.080	GAL/SK

Fluids (3 of 3)

Fluid Name:	**SW**
Fluid Type:	SW

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 1	Report Date: 5/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)
1	PRIM CMT 1ST STAGE	534.56	585.00	914.00						

Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)
SW - SW	13	1270						5/11/2008 9:23PM	5/11/2008 9:34PM			N		
SW & FLUORESCENE - SW	3	1270						5/11/2008 8:45PM	5/11/2008 8:56PM			N		
TAIL - CEMENT SLURRY	28	1270						5/11/2008 8:56PM	5/11/2008 9:23PM			N		

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 2	Report Date: 9/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Primary	Job Desc:	340mm (13-3/8") Cement Job.	Cement Job Start Date/Time:	9/11/2008 12:00AM	Job End Date/Time:		N2 Used: N CO2: N	Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	SURFACE			Tubing/Casing Size:	340.00 (mm)	MD Landed:	1,534.14 (m)	Hole Size:	406.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT		
Rotating Date/Time (start-End):		Rotating RPM:	Rotating Torque (init/avg/max): (kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down: - (tonne)	SPM: Stroke Length:

Shoetrack Cement

Shoetrack Top MD:	Shoetrack Drill Date/Time:	Shoetrack Drill MD:

Fluids (1 of 4)

Fluid Name: SW

Fluid Type: SW

Fluids (2 of 4)

Fluid Name: LEAD

Fluid Type: CEMENT

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	ANTIFOAM			0.010	GAL/SK
D075	EXTENDER			0.500	GAL/SK
D168	FLUID LOSS ADDITIVE			0.300	GAL/SK
D081	RETARDER			0.050	GAL/SK

Fluids (3 of 4)

Fluid Name: TAIL

Fluid Type: CEMENT

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 2	Report Date: 9/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008	Spud Date:	2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI: DORY-1			

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	ANTIFOAM			0.010	GAL/SK
D145A	DISPERSANT			0.080	GAL/SK
D168	FLUID LOSS ADDITIVE			0.200	GAL/SK
D081	RETARDER			0.020	GAL/SK

Fluid Name: **SW** **Fluids (4 of 4)**

Fluid Type: SW

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)

Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)

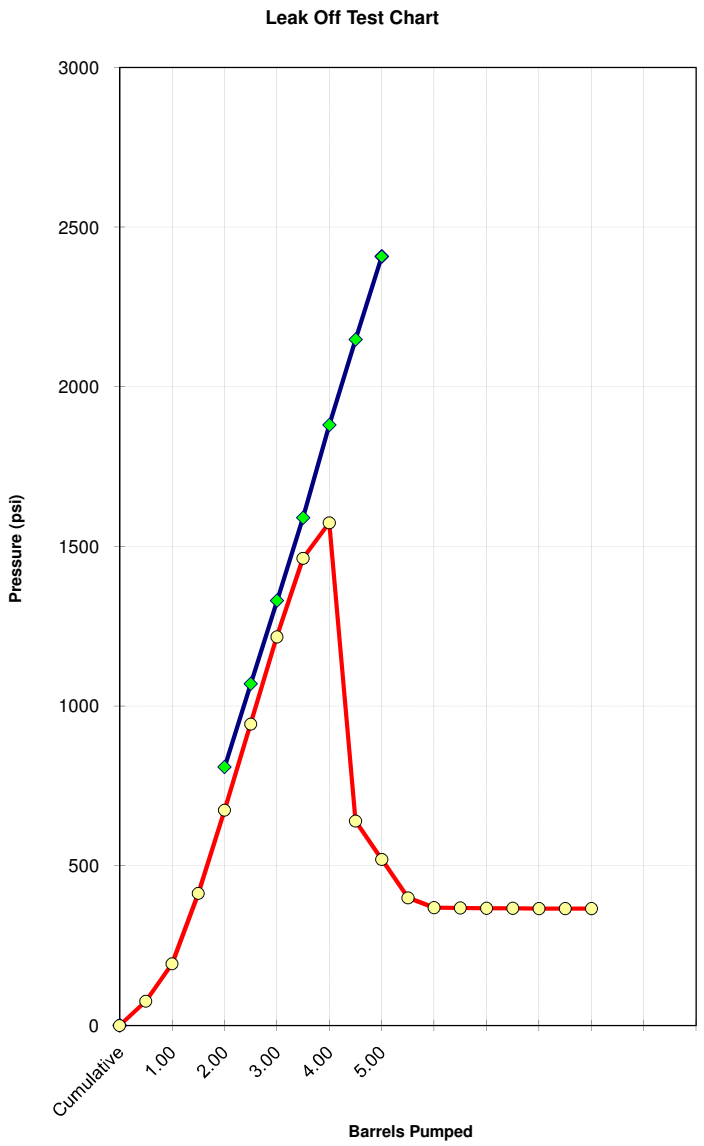
13.3/8" Leak Off Test Report

Well Name : Dory-1 | Rig Name : Diamond Offshore - Ocean Patriot | Date 11-Nov-08

1. CASING DETAILS:					
Size (in) :	13.375"	Weight :	68	Grade :	L-80
Shoe depth (m MD) :	1534			Shoe depth (m TVD) :	1534
2. LOCATION DETAILS:					
Water Depth (m) :	518.48			RKB-MSL (m) :	21.5
3. OPEN HOLE DETAILS					
Size (in) :	8.5	Depth (m MD) :	1360	Depth (m TVD) :	1540
Formation Type :				Formation Age :	
4. MUD DETAILS					
Type : OBM		Density (ppg):	9.6	PV/YP :	9 / 11
5. TEST DATA					

Time	Volume (bbl)		Casing Test	LOT / FIT	Bled
(min)	Pumped	Cumulative	(psi)	(psi)	Off
	0.50	0.50		76	
	0.50	1.00		193	
	0.50	1.50		414	
	0.50	2.00	809	674	
	0.50	2.50	1070	944	
	0.50	3.00	1330	1217	
	0.50	3.50	1590	1463	
	0.50	4.00	1880	1574	
	0.50	4.50	2148	640	
	0.50	5.00	2408	520	
Bled/Off	0.50	5.50		400	
1.0				369	
2.0				368	
3.0				367	
4.0				367	
5.0				366	
6.0				366	
7.0				366	
8.0					
9.0					
10.0					

6. DATA ANALYSIS					
Total Volume Pumped :	4	bbls	Maximum Pressure Record	1574	psi
Leak off Observed :	Yes		Leak off Pressure :	366	psi
Volume on Bleed Back :	1.75	bbls			
Leak Off EMW :	**11.0**	ppg	Rock Strength (ML to shoe)	**0.651**	psi/ft



AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 3	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Plug	Job Desc:	Balanced P&A Cement Plug #1.	Cement Job Start Date/Time:	19/11/2008 9:30AM	Job End Date/Time:	19/11/2008 10:30AM	N2 Used: N	CO2: N Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	SURFACE			Tubing/Casing Size:	340.00 (mm)	MD Landed:	1,534.14 (m)	Hole Size:	406.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT		
Rotating Date/Time (start-End):		Rotating RPM:	Rotating Torque (init/avg/max): (kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down: - (tonne)	SPM: Stroke Length:

Plug Detail

Plug Type:	ABANDONMENT	Plug MD Top:	2,994.00 (m)	Plug MD Base:	3,094.00 (m)	Drilled Out:	Drilled Out Date:
Pipe Pull Rate:				Pipe Pulled Wet:		WOC Time:	

Plug Status

Stage No.	Top (m)	Base (m)	Date	Status	Comments

No Record Found.

Fluid Name: DRILL WATER — **Fluids (1 of 3)**

Fluid Type: WATER

Fluid Name: CEMENT — **Fluids (2 of 3)**

Fluid Type: CEMENT

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	DEFOAMER			0.010	GAL/SK
D193	FLUID LOSS			0.350	GAL/SK
D145A	DISPERSANT			0.120	GAL/SK

Fluid Name: DRILL WATER — **Fluids (3 of 3)**

Fluid Type: WATER

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 3	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008	Spud Date:	2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI: DORY-1			

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)

Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 4	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Plug	Job Desc:	Balanced P&A Cement Plug #2.	Cement Job Start Date/Time:	19/11/2008 12:00PM	Job End Date/Time:	19/11/2008 1:00PM	N2 Used: N	CO2: N Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	SURFACE			Tubing/Casing Size:	340.00 (mm)	MD Landed:	1,534.14 (m)	Hole Size:	406.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT		
Rotating Date/Time (start-End):		Rotating RPM:	Rotating Torque (init/avg/max): (kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down: - (tonne)	SPM: Stroke Length:

Plug Detail

Plug Type:	ABANDONMENT	Plug MD Top:	2,780.00 (m)	Plug MD Base:	2,880.00 (m)	Drilled Out:	Drilled Out Date:
Pipe Pull Rate:				Pipe Pulled Wet:		WOC Time:	

Plug Status

Stage No.	Top (m)	Base (m)	Date	Status	Comments

No Record Found.

Fluid Name: DRILL WATER — **Fluids (1 of 3)**

Fluid Type: WATER

Fluid Name: CEMENT — **Fluids (2 of 3)**

Fluid Type: CEMENT

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	DEFOAMER			0.010	GAL/SK
D193	FLUID LOSS			0.350	GAL/SK
D145A	DISPERSANT			0.120	GAL/SK

Fluid Name: DRILL WATER — **Fluids (3 of 3)**

Fluid Type: WATER

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 4	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008	Spud Date:	2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI: DORY-1			

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)

Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 5	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Plug	Job Desc:	Balanced P&A Cement Plug #3.	Cement Job Start Date/Time:	19/11/2008 5:30PM	Job End Date/Time:	19/11/2008 6:30PM	N2 Used: N	CO2: N Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	SURFACE			Tubing/Casing Size:	340.00 (mm)	MD Landed:	1,534.14 (m)	Hole Size:	406.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT		
Rotating Date/Time (start-End):		Rotating RPM:	Rotating Torque (init/avg/max): (kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down: - (tonne)	SPM: Stroke Length:

Plug Detail

Plug Type:	ABANDONMENT	Plug MD Top:	1,515.00 (m)	Plug MD Base:	1,595.00 (m)	Drilled Out:	Drilled Out Date:
Pipe Pull Rate:				Pipe Pulled Wet:		WOC Time:	

Plug Status

Stage No.	Top (m)	Base (m)	Date	Status	Comments

No Record Found.

Fluid Name: DRILL WATER — **Fluids (1 of 3)**

Fluid Type: WATER

Fluid Name: CEMENT — **Fluids (2 of 3)**

Fluid Type: CEMENT

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	DEFOAMER			0.010	GAL/SK
D193	FLUID LOSS			0.200	GAL/SK
D145A	DISPERSANT			0.040	GAL/SK

Fluid Name: DRILL WATER — **Fluids (3 of 3)**

Fluid Type: WATER

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 5	Report Date: 19/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008	Spud Date:	2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI: DORY-1			

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)

Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 6	Report Date: 20/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date:	29/10/2008	End Date: 25/11/2008	Spud Date: 2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI:	DORY-1		

General Information

Job Type:	Plug	Job Desc:	Balanced P&A Cement Plug #4.	Cement Job Start Date/Time:	20/11/2008 3:30AM	Job End Date/Time:	20/11/2008 4:30AM	N2 Used: N	CO2: N Zone Isolated: N
Contractor:	DOWELL SCHLUMBERGER			Arrival Date/Time:		Foreman:	P. BROWN / D. SYMINGTON		
Assembly:	SURFACE			Tubing/Casing Size:	340.00 (mm)	MD Landed:	1,534.14 (m)	Hole Size:	406.00 (mm)
Ground Temp:		Air Temp:		Seabed Temp:		Annulus Temp:		BHT:	

Pipe Movement

Pipe Movement:	NO MOVEMENT		
Rotating Date/Time (start-End):		Rotating RPM:	Rotating Torque (init/avg/max): (kN-m)
Reciprocating Date/Time (start-End):		Recip Drag Up/Down: - (tonne)	SPM: Stroke Length:

Plug Detail

Plug Type:	ABANDONMENT	Plug MD Top:	588.00 (m)	Plug MD Base:	618.00 (m)	Drilled Out:	Drilled Out Date:
Pipe Pull Rate:				Pipe Pulled Wet:		WOC Time:	

Plug Status

Stage No.	Top (m)	Base (m)	Date	Status	Comments

No Record Found.

Fluids (1 of 3)

Fluid Name: DRILL WATER

Fluid Type: WATER

Fluids (2 of 3)

Fluid Name: CEMENT

Fluid Type: CEMENT

Additives

Name	Type	Amount	Units	Concentration (Pa)	Concentration Unit
D047	DEFOAMER			0.010	GAL/SK
D145A	DISPERSANT			0.035	GAL/SK

Fluids (3 of 3)

Fluid Name: DRILL WATER

Fluid Type: WATER

AUSTRALIA

Cementing Report

Well:	DORY-1			Report No.: 6	Report Date: 20/11/2008
Project:	VIC-P59	Site:	DORY-1	Rig Name/No.:	OCEAN PATRIOT
Event:	OFFSHORE - ORIG DRLG	Start Date: 29/10/2008	End Date: 25/11/2008	Spud Date:	2/11/2008
Active Datum:	ROTARY TABLE @21.50m (above Mean Sea Level)	UWI: DORY-1			

Stages

Stage No.	Type	MD Top (m)	MD Base (m)	Hole Size (mm)	Initial/Final Casing Pressure (kPa)	Circulate Flow Rate (L/min)	Circulate Press (kPa)	Circulate Prior (hr)	Vol Returns (m³)	Volume Lost (m³)

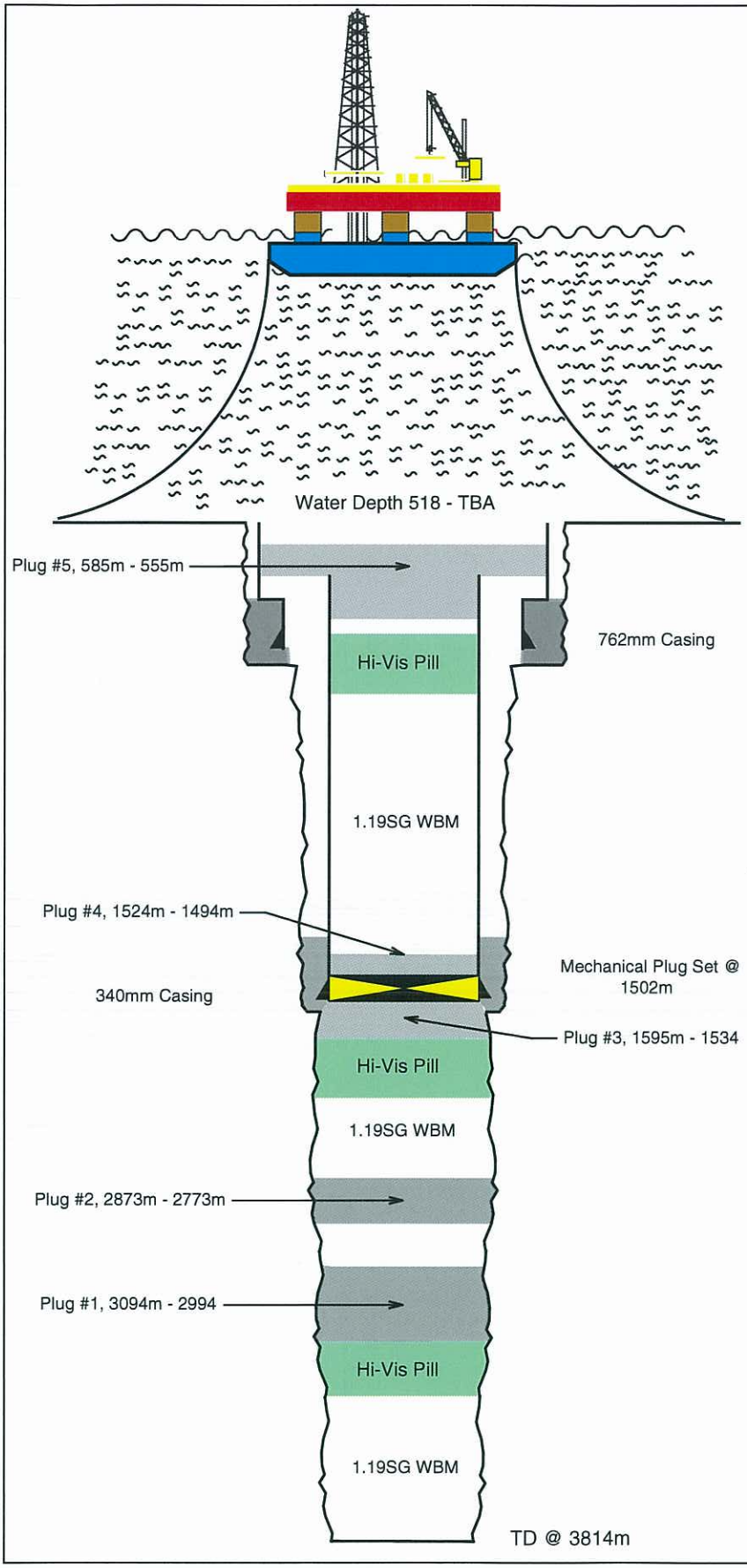
Pumping Schedule

Fluid Pumped	Volume (m³)	Rate (L/min)	Slurry Top MD (m)	Slurry Base MD (m)	Disp Rate Final (L/min)	Disp Pressure Final (kPa)	Top Of Fluid (m)	Pumping Start Date/Time	Pumping End Date/Time	Operation	Shutdown Time (min)	Foam Job	Foam Gas Type	Foam Gas Vol Used (scm)

VIC-P59

DORY-1

PLUG AND ABANDONMENT



LOCATION

Lat:	38°35'19.69S
Long:	148°32'51.39E

ELEVATIONS

RT to AHD Elevation:	21.5 m
Water Depth (AHD):	518m

WELL TRACK DETAILS

914 mm Hole to:	585m
762mm Casing at:	585m
406 mm Hole to:	1537m
340 mm Casing at:	1534m
216 mm Hole to:	3814m

ABANDONMENT PLUGS

P&A Plug No5:	585m - 555m
P&A Plug No4:	1524m - 1494m
P&A Plug No3:	1595m - 1534m
P&A Plug No2:	2873m - 2773m
P&A Plug No1:	3094m - 2994m

ADDITIONAL INFORMATION

Mechanical Plug Set@ 1502M
Plug Pressure Tested - 3447Kpa Above LOT.

Approval- Name & Signature

Engineer: Casey Galloway

Signature:

Drill Manager: Mitch Elkins

Signature:

All depths MDRT	Scale: NOT TO SCALE
Drawn by: G.COOKS	Date: NOVEMBER 2008
File Name: Abandonment VIC-P59.DGN	

Neptune Geomatics
ABN 47 108 312 787
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA
T: +61 8 9450 9111
F: +61 8 9450 9110

Dory-1 Positioning Report of the Ocean Patriot

Prepared for:
Apache Energy Limited

Report No.: 8A297-RR-001-R0
Revision No.: 0
Date: 3 December 2008

www.neptunems.com
A Neptune Marine Services Company

Dory-1 Positioning
Report of the Ocean Patriot

Prepared for
Apache Energy Limited

Report No.: 8A297-RR-001-R0
Revision No.: 0
Date: 03 December 2008

Neptune Geomatics
A Neptune Marine Services Company
ABN 47 108 312 787
10 Belmont Avenue
Belmont, Western Australia 6104
T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

0	03-12-2008	First Issue	PB	VK	AK
REV	**DATE**	**REVISION**	**BY**	**CHK**	**APP**

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ABSTRACT

Neptune Geomatics *was contracted by Apache Energy Limited (Apache) to provide survey and positioning services for the semi-submersible drilling rig Ocean Patriot and the associated work boats Far Grip and Far Sky. Positioning services for the Ocean Patriot move to the Dory-1 location were supplied for the period 28 October to 04 November 2008. The* ***Neptune Geomatics*** *survey equipment was mobilised following demobilisation of Fugro Survey when the rig was 1 mile from the Henry-2DW location. The Dory-1 location is situated within Permit VIC/P59 in the Bass Strait, Victoria.*

The final surface position of the Ocean Patriot drill stem at the Dory-1 location was computed by QINSy Positioning Software from Veripos Standard DGPS measurements recorded between 0322 and 0422 on the 05 November 2008, immediately after spudding the Dory-1 well.

Dory-1 Surface Position

The final Dory-1 Differential GPS surface position of the Ocean Patriot drill stem is:

Datum:	***Geocentric Datum of Australia 1994 (GDA94)***
Latitude:	*38° 35´ 19.76˝ South*
Longitude:	*148° 32´ 51.93˝ East*
Projection:	***Map Grid of Australia (MGA) Zone 55 C.M. 147° East***
Easting:	*634 798.9m*
Northing:	*5 727 714.9m*

Dory-1 DGPS surface position of the Ocean Patriot drill stem was 2.1m on a bearing of 183.4° (True) from the intended Dory-1 location.

The observed rig heading was 264.5° True.

All times quoted in this report are Australian Eastern Daylight Time (UTC + 11 hours).

LOCATION DIAGRAM

1 SURVEY RESULTS

Surface positioning of the Ocean Patriot during and after the rig move was provided using QINSy Positioning Software, Veripos Standard Differential GPS and a SGBrown Gyrocompass.

1.1 Final Dory-1 Differential GPS Surface Positions of the Drill Stem

The Dory-1 DGPS surface position of the Ocean Patriot drill stem was computed between 0322 and 0422 on 05 November 2008.

The GPS data were recorded immediately after spudding the well.

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 35´ 19.76˝ South
Longitude	:	148° 32´ 51.93˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 C.M. 147° East**
Easting	:	634 798.9m
Northing	:	5 727 714.9m

1.2 Final Dory-1 Anchor Positions

The final anchor positions, corrected for anchor catenary are as follows:

Datum : Geocentric Datum of Australia 1994 (GDA94)
Projection : Map Grid of Australia (MGA) Zone 55 C.M. 147° East

Anchor	Easting (m)	Northing (m)	Anchor Distance (m)	Anchor Bearing (True)
1	633624	5728265	1244	294
2	634044	5728770	1250	324
3	635320	5728835	1197	24
4	635792	5728435	1188	54
5	635886	5727170	1175	115
6	635512	5726705	1194	144
7	634240	5726572	1222	204
8	633799	5727010	1168	234

Table 1-1 Dory-1 anchor positions

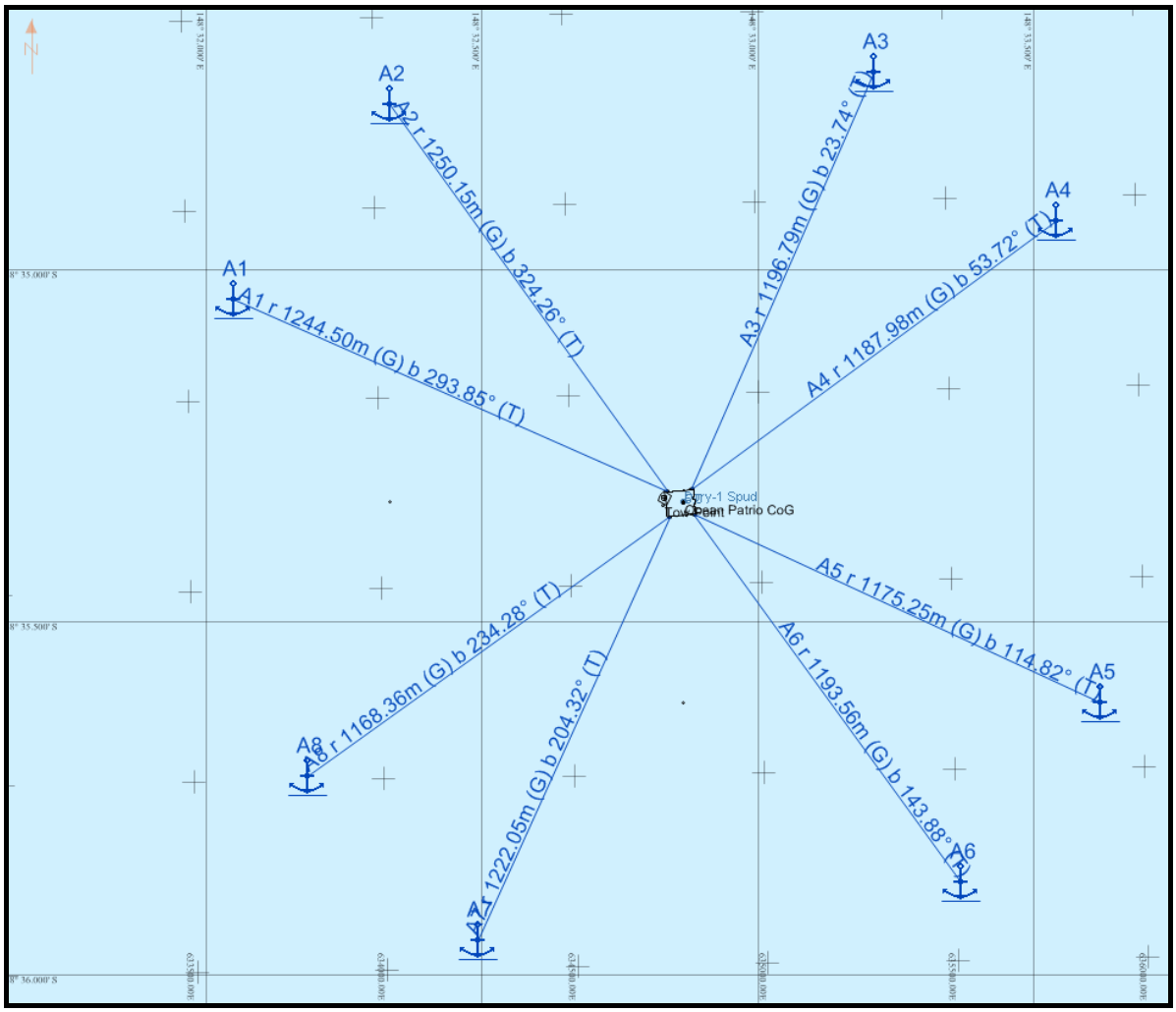


Figure 1-1 Dory-1 anchor locations

2 HEALTH SAFETY AND ENVIRONMENT

2.1 Health Safety and Environment Goals

The following ***Neptune Geomatics*** Health Safety and Environment goals were achieved for this project:

- ***Neptune Geomatics*** personnel were not involved in any Health or Safety incidents.
- Project operations did not involve any reportable Environmental incidents.
- All Health Safety and Environment related events (Project Briefings / Inductions, Job Safety Analysis Reports, Safety Meetings etc) have been documented within this report.

2.2 Health Safety and Environment Documentation

The following Health Safety and Environment Documents were referred to during the Dory-1 positioning.

Neptune Geomatics **Document Title**	**Document Number**	**Revision**
Neptune Geomatics Quality Manual	QM-01	Revision 7
Neptune Geomatics Project Briefing Form	QF-04-02	Revision 0
Neptune Geomatics Job Safety Analysis Report	QF-05-03	Revision 1
Neptune Geomatics Hazard Identification Record	QF-05-05	Revision 1
Neptune Geomatics Incident Report	QF-08-02	Revision 0
Neptune Geomatics Injury Report	QF-08-03	Revision 0
Neptune Geomatics Project Debriefing Form	QF-07-03	Revision 0

Table 2-1 *Neptune Geomatics* health safety and environment documents

2.3 Project Briefings and Inductions

The following Project Briefings and Inductions were undertaken throughout the Dory-1 positioning.

Date	**Project / Briefing**	**Location**
24 October 2008	***Neptune Geomatics*** Project Briefing	***Neptune Geomatics***, Perth
28 October 2008	Bristow Helicopters Pre-Flight Safety Briefing P. Barry, S. Harris	Bristow's, Melbourne
28 October 2008	Ocean Patriot Rig Induction P. Barry, S. Harris	Ocean Patriot
29 October 2008	Pre-Rig move meeting	Ocean Patriot
05 November 2008	Bristow Helicopters Pre-Flight Safety Briefing P. Barry & S. Harris	Ocean Patriot

Table 2-2 Schedule of Project Briefings and Inductions

2.4 Safety Meetings and Exercises

Safety Meetings and Safety Exercises conducted onboard the Ocean Patriot throughout the Dory-1 positioning is documented within the Daily Operations Reports. The Daily Operations Reports are included within Appendix E of this Report.

3 SURVEY OPERATIONS

3.1 Scope of Work

Neptune Geomatics is contracted by Apache to provide survey and positioning services in connection with the semi-submersible drilling rig, the Ocean Patriot, for the move from Henry-2DW to Dory-1.

Neptune Geomatics provided GPS Positioning Services for the Ocean Patriot, Far Grip and Far Sky during the Dory-1 positioning.

The objectives of the survey and positioning services include:

a. Operation of QINSy Positioning Software, Differential GPS Systems (Veripos Standard, CSI Vector Pro), Heading Systems (SGBrown Gyrocompass, CSI Vector Pro) onboard the Ocean Patriot.
b. Operation of QINSy Positioning Software, Differential GPS and Heading System (CSI Vector Pro) onboard the work boats Far Grip and Far Sky.
c. Real time positioning of the Ocean Patriot, Far Grip and Far Sky during the tow from 1 nautical mile from the previous Henry-2DW location and on approach to the Dory-1 location.
d. QINSy display of the Ocean Patriot tow route, as provided by the Tow Master, to the Dory-1 location.
e. QINSy display of the intended location of the Ocean Patriot drill-stem at the Dory-1 location.
f. Final surface positioning of the Ocean Patriot drill-stem at the Dory-1 location.
g. Preparation of a comprehensive Final Positioning Report which includes the surface position of the drill-stem.

3.2 Differential GPS Surface Position

Final Dory-1 Differential GPS Surface Position of the Ocean Patriot Drill-Stem:

The final surface position of the Ocean Patriot drill-stem at the Dory-1 location was determined between 0410 and 0512 on 04 November 2008. Veripos Standard Differential GPS measurements were recorded and processed within QINSy Positioning Software to determine the final surface position of the Ocean Patriot drill-stem at the Dory-1 location (Appendix A).

Dory-1 location DGPS Surface Position of the Ocean Patriot Drill Stem:

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 35´ 19.76˝ South
Longitude	:	148° 32´ 51.93˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 C.M. 147° East**
Easting	:	634 798.9m
Northing	:	5 727 714.9m

The Intended Dory-1 location was:

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 35´ 19.69˝ South
Longitude	:	148° 32´ 51.93˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 C.M. 147° East**
Easting	:	634 799m
Northing	:	5 727 717m

Dory-1 DGPS surface position of the Ocean Patriot drill stem was 2.1m on a bearing of 183.4° (True) from the intended Dory-1 location.

Final rig heading was 264.5° True.

3.3 Anchor Positions

Eight anchors were laid for the Ocean Patriot at the Dory-1 location using the Far Grip and Far Sky AHV's. The final anchor positions, corrected for anchor catenary are as follows:

Datum : Geocentric Datum of Australia 1994 (GDA94)
Projection : Map Grid of Australia (MGA) Zone 55 C.M. 147° East

Anchor	Easting (m)	Northing (m)	Anchor Distance (m)	Anchor Bearing (True)
1	633624	5728265	1244	294
2	634044	5728770	1250	324
3	635320	5728835	1197	24
4	635792	5728435	1188	54
5	635886	5727170	1175	115
6	635512	5726705	1194	144
7	634240	5726572	1222	204
8	633799	5727010	1168	234

Table 3-1 Dory-1 anchor positions

4 VESSEL SENSOR OFFSETS

Vessel sensor offsets on the Ocean Patriot were observed during project mobilisation during the tow to Dory-1.

Vessel offsets for the Ocean Patriot are detailed below. A vessel offset diagram is included in Appendix B of this Report.

The QINSy Survey Configuration is included as Appendix C of this Report.

Ocean Patriot Sensor Offsets (QINSy Convention)			
Sensor	**X Offset (m)**	**Y Offset (m)**	**Z Offset (m)**
Ocean Patriot Drill-Stem	00.00	00.00	-
Veripos LD2 GPS Antenna	-11.80	+39.70	-
CSI Vector Pro Primary GPS Antenna	-13.80	+38.70	-
Winch 1	33.50	42.00	-
Winch 2	33.50	39.00	-
Winch 3	33.50	-24.00	-
Winch 4	33.50	-27.00	-
Winch 5	-33.50	-27.00	-
Winch 6	-33.50	-24.00	-
Winch 7	-33.50	39.00	-
Winch 8	-33.50	42.00	-

Table 4-1 Vessel sensor offsets for the Ocean Patriot

4.1 Software Offset Conventions

Note: All vessel offsets were accounted for within QINSy Survey.

4.1.1 QINSy Survey

The following conventions for vessel sensor offsets are used within QINSy Survey:

1. X offset denotes measurements along the port / starboard axis from the reference point, positive to starboard.
2. Y offset denotes measurements along the fore / aft axis from the reference point, positive forward.
3. Z offset denotes measurements vertically above / below the reference point, positive above.

5 CALIBRATIONS AND CHECKS

5.1 Gyrocompass Check

The TSS Meridian Gyrocompass and Hemisphere Crescent VS110 installed onboard the Ocean Patriot were checked between 1645 and 1719 on 02 November 2008. The gyrocompass check was undertaken at the Dory-1 location during anchor operations.

Horizontal direction observations were recorded between the centreline of the Ocean Patriot and the sun. ***Neptune Geomatics'*** Solar Azimuth Observation Spreadsheet was used to determine the Calculated (C) azimuth of the Ocean Patriot. TSS Meridian Gyrocompass and Hemisphere Crescent VS110 data were simultaneously logged within QINSy Positioning Software during the period of terrestrial observations to determine the Observed (O) rig heading. The following results were obtained:

Sensor	C-O
TSS Meridian	+2.39°
Hemisphere	-0.39°

Table 5-1 Ocean Patriot gyrocompass check results 02 November 2008

Observations and data reduction for the Gyrocompass Checks undertaken onboard the Ocean Patriot are included in Appendix D of this report.

5.2 Veripos Standard Differential GPS Check

As the Ocean Patriot was in transit before the survey spread was mobilised it was not possible to log a static DGPS check. However the offsets of the two antennas to the Ocean Patriot CRP (drill-stem) were measured and the application of the offsets in QINSy was verified. The difference between the primary system (Veripos Standard DGPS) and the secondary system (Hemisphere DGPS) was seen to be less than 2m at all times during the transit and rig positioning at the Dory-1 location.

6 GEODETIC PARAMETERS

The geodetic datum for the Dory-1 well is the Geocentric Datum of Australia 1994 (GDA94). The Global Positioning System (GPS) is referenced to the World Geodetic System 1984 (WGS84). The Differential GPS positioning systems used by ***Neptune Geomatics*** are referenced to the International Terrestrial Reference Frame 2000 (ITRF2000). Due to the continual refinement of the WGS84 reference frame, the WGS84 and ITRF2000 reference frames are considered to be the same.

6.1 ITRF2000 Datum and Projection

Datum	:	**ITRF2000**
Ellipsoid	:	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	:	**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.

6.2 GDA94 Datum and Projection

Datum	:	**Geocentric Datum of Australia 1994 (GDA94)**
Ellipsoid	:	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)
MGA 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.

6.3 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 origin of the GDA94 datum is moving with the Australian tectonic plate in a north northeast direction at a rate of approximately 7 centimetres per year.

The following 7-parameter datum transformation is used to convert ITRF2000 coordinates to GDA94 coordinates:

Epoch	**=**	**2008.5**
Dx	=	+0.01740m
Dy	=	-0.04835m
Dz	=	-0.10350m
Rx	=	+0.017 554"
Ry	=	+0.015 065"
Rz	=	+0.018 157"
Scale	=	+0.003 362 p.p.m.

The sign convention used 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).

6.4 Datum Transformation Worked Example

The following Datum Transformation Worked Example was used to verify the input of Geodetic Datum and Transformation Parameters within the QINSy Positioning System. A screen image of the QINSy Computation is included as Figure 6-1.

Datum	**:**	**International Terrestrial Reference Frame 2000**
Latitude	:	37° 49' 45.87642" South
Longitude	:	144° 58' 31.21792" East
Ellipsoidal Height	:	40.744m
Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	37º 49' 45.90234" South
Longitude	:	144º 58' 31.20540" East
Ellipsoidal Height	:	40.798m
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	321 819.563m
Northing	:	5 811 179.929m

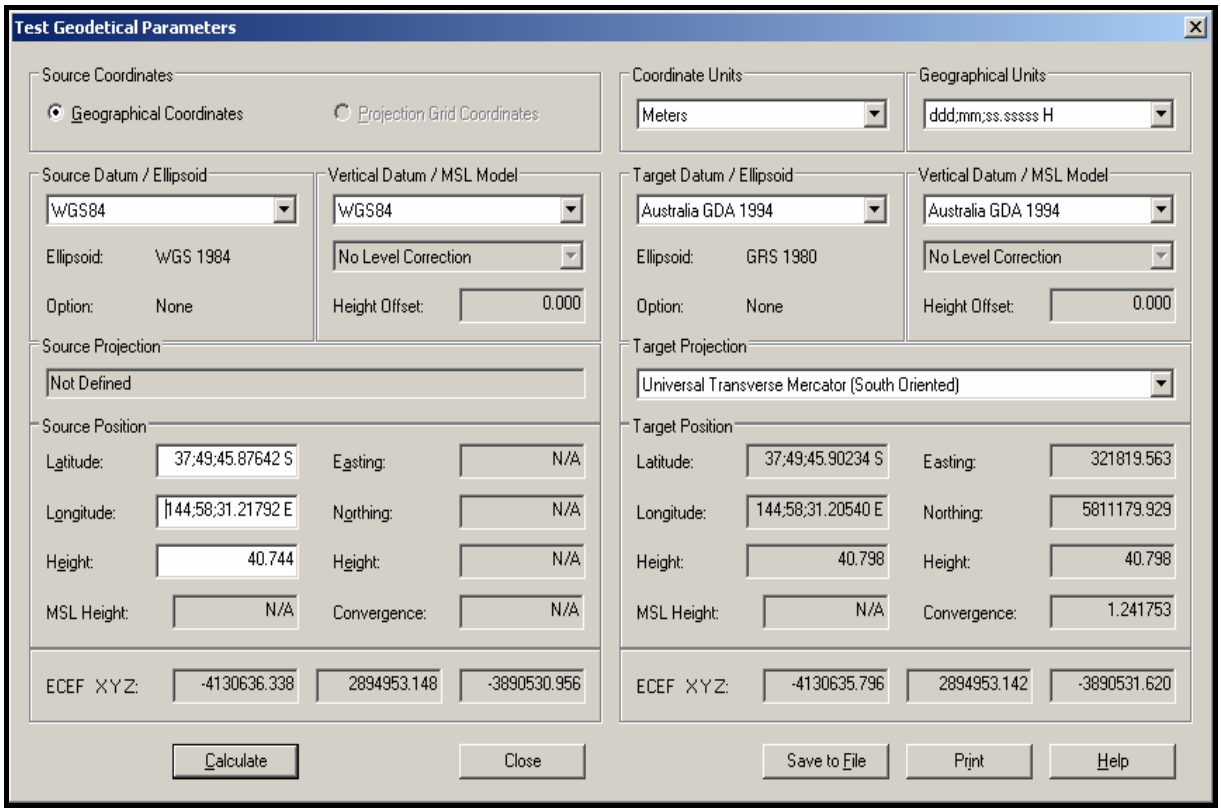


Figure 6-1 Geodetic transformation check

7 PERSONNEL AND EQUIPMENT

7.1 Personnel

7.1.1 Onshore

Operations Manager	Jason French

7.1.2 Offshore (Ocean Patriot)

Surveyor	Paul Barry
Survey Engineer	Steve Harris

7.2 Equipment

7.2.1 Ocean Patriot

Positioning Software

- QINSy Positioning Software
- QINSy Remote Positioning Display
- Verify Multiple Reference Station Quality Control Software

Positioning Systems

- Veripos Standard Differential GPS (Primary Positioning Source)
- Hemisphere Differential GPS (Secondary Positioning Source)

Heading Systems

- TSS Meridian Gyrocompass (Primary Heading Source)
- Hemisphere (Secondary Heading Source)

Terrestrial Survey Systems

- Topcon Total Station Instrument

Auxiliary Systems

- LAN PC Interconnectivity
- Satel 3Asd Radio Modem Telemetry
- Uninterruptible Power Supply
- Wireless LAN

7.2.2 Anchor Handling Vessels – Far Grip & Far Sky

Positioning Software

- QINSy Positioning Software

Positioning Systems

- CSI Vector Pro Differential GPS

Heading Systems

- CSI Vector Pro Heading Source

Auxiliary Systems

- Uninterruptible Power Supply
- Satel 3Asd Radio Modem Telemetry
- Wireless LAN

8 DISTRIBUTION

Copies of this report have been distributed as follows:

Apache Energy Limited	:	1 Hard copy
Attention: Mr Andre Bilstein	:	1 Electronic copy
Neptune Geomatics	:	1 Hard copy
	:	1 Electronic copy

APPENDIX A - FINAL SURFACE POSITIONING NOTICE

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

SEMI-SUBMERSIBLE SURFACE POSITIONING NOTICE

Dory-1 DGPS Surface Position

To: **Apache Energy Limited**
Level 3
256 St Georges Terrace
Perth WA 6000

Date: **5th November 2008**

Attn.: **Apache Company Man** **Onboard Ocean Patriot**

Copy: **Ocean Patriot OIM** **Onboard Ocean Patriot**

From: **Tri-Surv Geomatics**
Job No.: **8A297**
Signed:

Paul Barry
Surveyor

A. DGPS Surface Position of the Ocean Patriot Drill Stem

The final surface position of the Ocean Patriot drill stem at the Dory-1 location was computed from Veripos Standard Differential GPS data recorded between 0322 and 0422 on 5 November 2008. The GPS data were recorded immediately after spudding the well.

Final Dory-1 location GPS Surface Position of the Ocean Patriot Drill Stem:

Datum: **Geocentric Datum of Australia 1994 (GDA94)**
Latitude: 38° 35′ 19.759″ South
Longitude: 148° 32′ 51.925″ East

Projection: **Map Grid of Australia (MGA) Zone 55 C.M. 147° East**
Easting: 634 798.9m
Northing: 5 727 714.9m

The final Dory-1 Location Differential GPS surface position of the Ocean Patriot drill stem was 2.1m on a bearing of 183.4° (True) from the intended Dory-1 location.

The observed rig heading was 264.5° True.

Note: The following 7-parameter datum transformation was used to convert ITRF2000 coordinates to GDA94 coordinates (Epoch 2008.5):

Dx	=	+0.017 40m
Dy	=	-0.048 35m
Dz	=	-0.103 50m
Rx	=	+0.017 554"
Ry	=	+0.015 065"
Rz	=	+0.018 157"
Scale	=	+0.003 362 p.p.m.

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

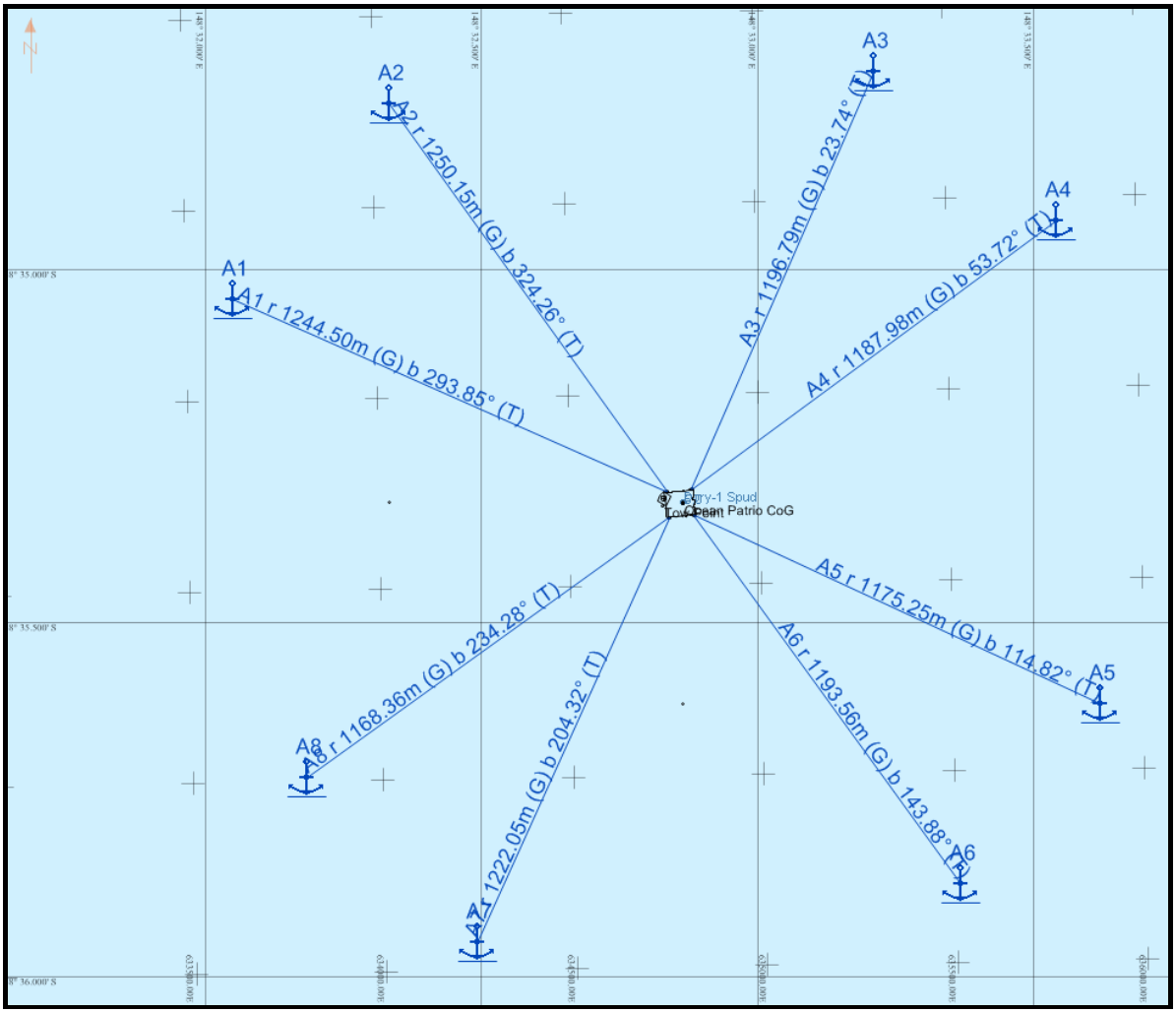
B. Ocean Patriot Anchor Positions

The final anchor positions corrected for catenary are as follows:

Datum: GDA94, Projection: MGA Zone 55, CM 147° East.

Anchor	Easting	Northing	Length (m)	Brg	Chain Out (m)	Depth (m)	Tension (t)
1	633624	5728265	1244	294	1424	515	200
2	634044	5728770	1250	324	1424	500	190
3	635320	5728835	1197	24	1404	515	160
4	635792	5728435	1188	54	1394	565	160
5	635886	5727170	1175	115	1377	565	185
6	635512	5726705	1194	144	1380	532	180
7	634240	5726572	1222	204	1337	489	195
8	633799	5727010	1168	234	1337	501	190

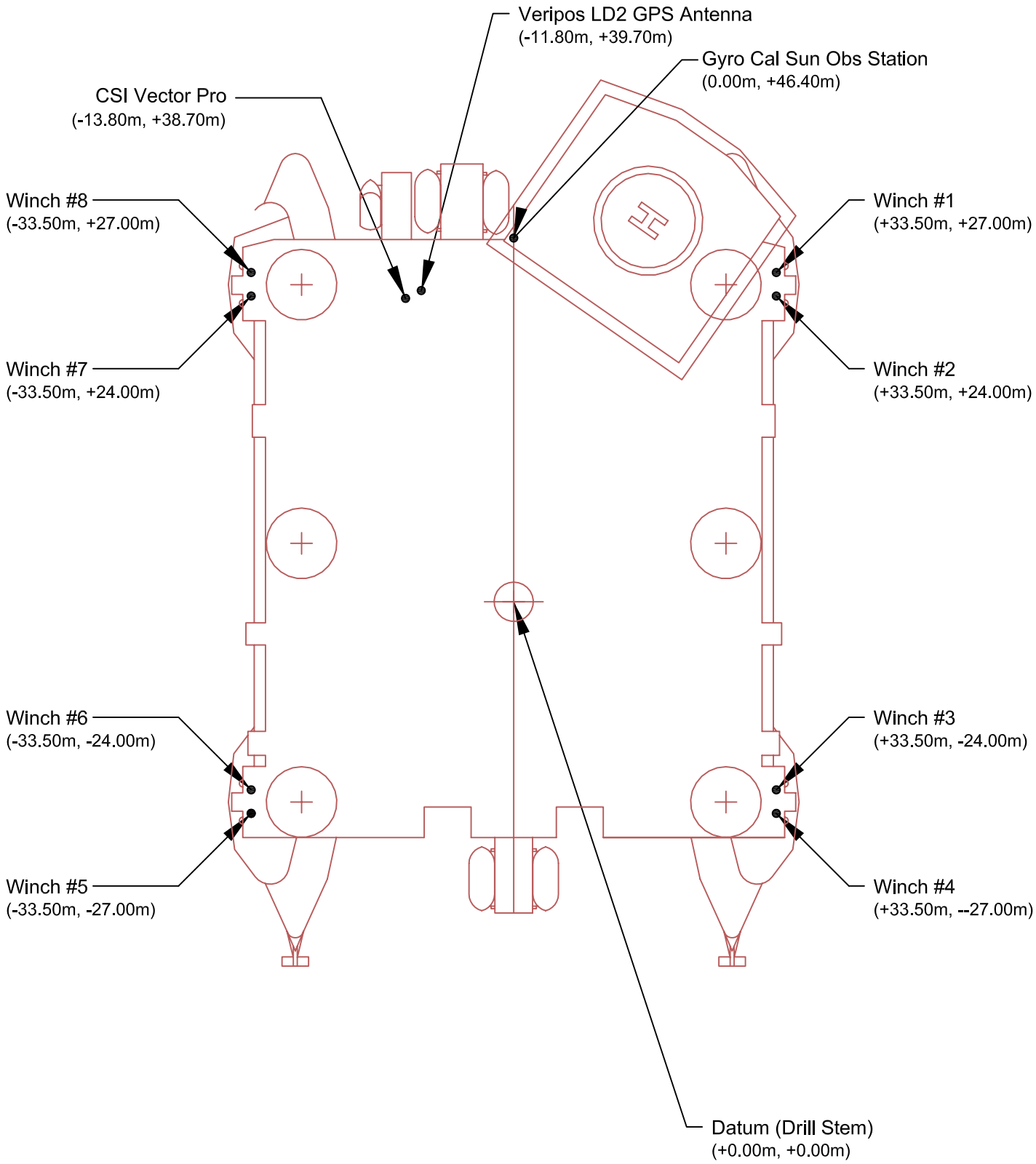
NB: Calculations were made with the most up to date information available at the time.



Paul Barry
Surveyor

Date: 05 November 2008

APPENDIX B - OCEAN PATRIOT OFFSET DIAGRAM



Neptune Geomatics
A Neptune Marine Services Company
ABN: 47 108 312 787
T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

Title:
Ocean Patriot Offset Diagram

Client:
Apache Energy Ltd

Drawing No.: Ocean Patriot-OS
Revision No.: 0
Date: 06 November 2008

APPENDIX C - QINSY CONFIGURATION

SURVEY DEFINITIONS

General Definitions

Line sequence number	:	1
Line description	:	
UTC to GPS time correction	:	14.00 s
Survey Unit Name	:	Meters
Conversion factor to meters	:	1.00000000

Geodetic Definitions

Magnetic Variation Information

Undefined

Datum Definitions

Additional Datum	:	WGS84
Spheroid name	:	WGS 1984
Semi-major axis (a)	:	6378137.000 m
Semi-minor axis (b)	:	6356752.314 m
Conversion factor to meters	:	1.000000
Inverse flattening (1/f)	:	298.25722356
First eccentricity (e**2)	:	0.00669438
Second eccentricity (e'**2)	:	0.00673950
Survey Datum	:	Australia GDA 1994
Spheroid name	:	GRS 1980
Semi-major axis (a)	:	6378137.000 m
Semi-minor axis (b)	:	6356752.314 m
Conversion factor to meters	:	1.000000
Inverse flattening (1/f)	:	298.25722210
First eccentricity (e**2)	:	0.00669438
Second eccentricity (e'**2)	:	0.00673950

Datum Shift Definitions

WGS84 to Australia GDA 1994

Position vector rotation			Arc Seconds		
X shift	:	0.0174 m	X rotation	:	-0.017554 "
Y shift	:	-0.0485 m	Y rotation	:	-0.015065 "
Z shift	:	-0.1030 m	Z rotation	:	-0.018157 "
Scale correction	:	0.00336200 ppm			

Rotation center point : Not Defined

Height Datum Definition

Vertical datum	:	Australia GDA 1994
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m
MSL model	:	Horizontal Datum
MSL file	:	N/A
MSL level	:	No Level Correction
MSL file	:	N/A
MSL offset	:	0.000 m
MSL st.dev.	:	0.000 m
DTM mode	:	Absolute DTM's
DTM datum	:	Australia GDA 1994
DTM file	:	N/A
DTM level	:	No Level Correction
DTM file	:	N/A
DTM offset	:	0.000 m

Projection Definition

Projection type	:	002
Projection name	:	Universal Transverse Mercator (South Oriented)
Conversion factor to meters	:	1.000000
UTM zone number	:	55
Latitude of grid origin	:	0;00;00.000 N
Longitude of grid origin	:	147;00;00.000 E
Grid Easting at grid origin	:	500000.000 E
Grid Northing at grid origin	:	10000000.000 N
Scale factor at longitude of origin	:	0.999600

Local Construction Grid Definition

Not Applicable

Offset Convention

Offset mode	:	Rectangular
Offset distances units	:	Meters
Offset angles units	:	Degrees

OBJECT DEFINITIONS

General Summary Information

Number of survey vessels or objects	:	3
Number of relay vessels or buoys	:	0
Number of external network nodes	:	0
Number of datums/spheroids defined	:	2

Vessel Definitions

Ocean Patriot

Streamers	: 0	Gun arrays	: 0
Buoys	: 0	Echosounders	: 0
Satellite receivers	: 0	USBL systems	: 0
Network nodes	: 12	No Pitch/Roll/Heave sensors	

Correction to GMT : 0.00 h
Correction to master vessel's time : 0.000000 s

Height above draft reference : 0.000 m
Ocean Patrio CoG

SHAPE	Point	X	Y	Z	Pen	Fill	Style
	1	-1.2	46.2	0.0	Up	Off	Solid
	2	-30.6	46.2	0.0	Down	Off	Solid
	3	-34.6	45.2	0.0	Down	Off	Solid
	4	-34.6	41.6	0.0	Down	Off	Solid
	5	-36.0	41.6	0.0	Down	Off	Solid
	6	-36.0	39.2	0.0	Down	Off	Solid
	7	-34.6	39.2	0.0	Down	Off	Solid
	8	-34.6	35.8	0.0	Down	Off	Solid
	9	-31.7	35.8	0.0	Down	Off	Solid
	10	-31.7	25.1	0.0	Down	Off	Solid
	11	-33.3	25.1	0.0	Down	Off	Solid
	12	-33.3	21.0	0.0	Down	Off	Solid
	13	-31.7	21.0	0.0	Down	Off	Solid
	14	-31.7	-2.7	0.0	Down	Off	Solid
	15	-34.2	-2.7	0.0	Down	Off	Solid
	16	-34.2	-5.5	0.0	Down	Off	Solid
	17	-31.7	-5.5	0.0	Down	Off	Solid
	18	-31.7	-16.5	0.0	Down	Off	Solid
	19	-33.9	-16.5	0.0	Down	Off	Solid
	20	-33.9	-19.6	0.0	Down	Off	Solid
	21	-31.7	-19.6	0.0	Down	Off	Solid
	22	-31.7	-21.0	0.0	Down	Off	Solid
	23	-34.6	-21.0	0.0	Down	Off	Solid
	24	-34.6	-24.4	0.0	Down	Off	Solid
	25	-36.0	-24.4	0.0	Down	Off	Solid
	26	-36.0	-26.7	0.0	Down	Off	Solid
	27	-34.6	-26.7	0.0	Down	Off	Solid
	28	-34.6	-30.1	0.0	Down	Off	Solid
	29	-11.4	-30.1	0.0	Down	Off	Solid
	30	-11.4	-26.2	0.0	Down	Off	Solid
	31	-5.4	-26.2	0.0	Down	Off	Solid
	32	-5.4	-30.1	0.0	Down	Off	Solid
	33	0.0	-30.1	0.0	Down	Off	Solid
	34	5.4	-30.1	0.0	Down	Off	Solid
	35	5.4	-26.2	0.0	Down	Off	Solid
	36	11.4	-26.2	0.0	Down	Off	Solid
	37	11.4	-30.1	0.0	Down	Off	Solid
	38	11.4	-30.1	0.0	Down	Off	Solid
	39	34.6	-30.1	0.0	Down	Off	Solid
	40	34.6	-26.7	0.0	Down	Off	Solid
	41	36.0	-26.7	0.0	Down	Off	Solid
	42	36.0	-24.4	0.0	Down	Off	Solid
	43	34.6	-24.4	0.0	Down	Off	Solid
	44	34.6	-21.0	0.0	Down	Off	Solid
	45	31.7	-21.0	0.0	Down	Off	Solid
	46	31.7	-19.6	0.0	Down	Off	Solid
	47	33.9	-19.6	0.0	Down	Off	Solid
	48	33.9	-16.5	0.0	Down	Off	Solid
	49	31.7	-16.5	0.0	Down	Off	Solid
	50	31.7	-5.5	0.0	Down	Off	Solid

Vessel Definitions (continued)

51	34.2	-5.5	0.0	Down	Off	Solid
52	34.2	-2.7	0.0	Down	Off	Solid
53	31.7	-2.7	0.0	Down	Off	Solid
54	31.7	21.0	0.0	Down	Off	Solid
55	33.3	21.0	0.0	Down	Off	Solid
56	33.3	25.1	0.0	Down	Off	Solid
57	31.7	25.1	0.0	Down	Off	Solid
58	31.7	35.8	0.0	Down	Off	Solid
59	34.6	35.8	0.0	Down	Off	Solid
60	34.6	39.2	0.0	Down	Off	Solid
61	36.0	39.2	0.0	Down	Off	Solid
62	36.0	41.6	0.0	Down	Off	Solid
63	34.6	41.6	0.0	Down	Off	Solid
64	34.6	46.2	0.0	Down	Off	Solid
65	31.8	45.9	0.0	Up	Off	Solid
66	34.0	49.1	0.0	Up	Off	Solid
67	21.1	30.5	0.0	Down	Off	Solid
68	-1.3	46.0	0.0	Down	Off	Solid
69	11.7	64.7	0.0	Down	Off	Solid
70	20.7	61.4	0.0	Down	Off	Solid
71	27.8	56.5	0.0	Down	Off	Solid
72	34.0	49.1	0.0	Up	Off	Solid
73	18.0	46.2	0.0	Up	Off	Solid
74	14.6	48.6	0.0	Down	Off	Solid
75	15.1	49.2	0.0	Down	Off	Solid
76	16.3	48.3	0.0	Down	Off	Solid
77	17.2	49.5	0.0	Down	Off	Solid
78	15.9	50.4	0.0	Down	Off	Solid
79	16.3	51.0	0.0	Down	Off	Solid
80	19.7	48.6	0.0	Down	Off	Solid
81	19.3	48.0	0.0	Down	Off	Solid
82	18.0	48.9	0.0	Down	Off	Solid
83	17.2	47.7	0.0	Down	Off	Solid
84	18.4	46.8	0.0	Up	Off	Solid
85	17.2	55.6	0.0	Up	Off	Solid
86	18.9	55.4	0.0	Down	Off	Solid
87	20.5	54.7	0.0	Down	Off	Solid
88	21.9	53.7	0.0	Down	Off	Solid
89	23.0	52.3	0.0	Down	Off	Solid
90	23.8	50.8	0.0	Down	Off	Solid
91	24.1	49.0	0.0	Down	Off	Solid
92	24.0	47.3	0.0	Down	Off	Solid
93	23.5	45.6	0.0	Down	Off	Solid
94	22.5	44.2	0.0	Down	Off	Solid
95	21.3	43.0	0.0	Down	Off	Solid
96	19.7	42.1	0.0	Down	Off	Solid
97	18.0	41.7	0.0	Down	Off	Solid
98	16.3	41.7	0.0	Down	Off	Solid
99	14.6	42.1	0.0	Down	Off	Solid
100	13.1	43.0	0.0	Down	Off	Solid
101	11.8	44.2	0.0	Down	Off	Solid
102	10.9	45.6	0.0	Down	Off	Solid
103	10.3	47.3	0.0	Down	Off	Solid
104	10.2	49.0	0.0	Down	Off	Solid
105	10.5	50.8	0.0	Down	Off	Solid
106	11.3	52.3	0.0	Down	Off	Solid
107	12.4	53.7	0.0	Down	Off	Solid
108	13.8	54.7	0.0	Down	Off	Solid
109	15.4	55.4	0.0	Down	Off	Solid
110	17.2	55.6	0.0	Up	Off	Solid

Vessel Definitions (continued)

Far Grip

Streamers	:	0	Gun arrays	:	0
Buoys	:	0	Echosounders	:	0
Satellite receivers	:	0	USBL systems	:	0
Network nodes	:	1	No Pitch/Roll/Heave sensors		

Correction to GMT : 0.00 h
Correction to master vessel's time : 0.000000 s

Height above draft reference : 0.000 m
Far Grip CS

SHAPE	Point	X	Y	Z	Pen	Fill	Style
	1	9.0	0.0	0.0	Up	On	Solid
	2	9.0	65.0	0.0	Down	On	Solid
	3	0.0	74.5	0.0	Down	On	Solid
	4	-9.0	65.0	0.0	Down	On	Solid
	5	-9.0	0.0	0.0	Down	On	Solid

Far Sky

Streamers	:	0	Gun arrays	:	0
Buoys	:	0	Echosounders	:	0
Satellite receivers	:	0	USBL systems	:	0
Network nodes	:	1	No Pitch/Roll/Heave sensors		

Correction to GMT : 0.00 h
Correction to master vessel's time : 0.000000 s

Height above draft reference : 0.000 m
Far Sky CS

SHAPE	Point	X	Y	Z	Pen	Fill	Style
	1	0.0	0.0	0.0	Up	On	Solid
	2	-8.2	0.0	0.0	Down	On	Solid
	3	-8.2	63.6	0.0	Down	On	Solid
	4	0.0	73.6	0.0	Down	On	Solid
	5	8.2	63.6	0.0	Down	On	Solid
	6	8.2	0.0	0.0	Down	On	Solid

Gun Array Definitions

NETWORK DEFINITIONS

Fixed Node Definitions

Variable Node Definitions

Ocean Patrio CoG

Object location	:	Ocean Patriot
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m

Far Grip CS

Object location	:	Far Grip
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m

Fairlead 1

Object location	:	Ocean Patriot
X (Stbd = Positive):	:	33.500 m
Y (Bow = Positive):	:	42.000 m
Z (Up = Positive):	:	0.000 m

Variable Node Definitions (continued)

Fairlead 2
Object location : Ocean Patriot
X (Stbd = Positive): : 33.500 m
Y (Bow = Positive): : 39.000 m
Z (Up = Positive): : 0.000 m

Fairlead 3
Object location : Ocean Patriot
X (Stbd = Positive): : 33.500 m
Y (Bow = Positive): : -24.000 m
Z (Up = Positive): : 0.000 m

Fairlead 4
Object location : Ocean Patriot
X (Stbd = Positive): : 33.500 m
Y (Bow = Positive): : -27.000 m
Z (Up = Positive): : 0.000 m

Fairlead 5
Object location : Ocean Patriot
X (Stbd = Positive): : -33.500 m
Y (Bow = Positive): : -27.000 m
Z (Up = Positive): : 0.000 m

Fairlead 6
Object location : Ocean Patriot
X (Stbd = Positive): : -33.500 m
Y (Bow = Positive): : -24.000 m
Z (Up = Positive): : 0.000 m

Fairlead 7
Object location : Ocean Patriot
X (Stbd = Positive): : -33.500 m
Y (Bow = Positive): : 39.000 m
Z (Up = Positive): : 0.000 m

Fairlead 8
Object location : Ocean Patriot
X (Stbd = Positive): : -33.500 m
Y (Bow = Positive): : 42.000 m
Z (Up = Positive): : 0.000 m

Tow Point
Object location : Ocean Patriot
X (Stbd = Positive): : 0.000 m
Y (Bow = Positive): : 54.500 m
Z (Up = Positive): : 0.000 m

Far Sky CS
Object location : Far Sky
X (Stbd = Positive): : 0.000 m
Y (Bow = Positive): : 0.000 m
Z (Up = Positive): : 0.000 m

LD2
Object location : Ocean Patriot
X (Stbd = Positive): : -11.800 m
Y (Bow = Positive): : 39.700 m
Z (Up = Positive): : 0.000 m

Hemisphere
Object location : Ocean Patriot
X (Stbd = Positive): : -13.800 m
Y (Bow = Positive): : 38.700 m
Z (Up = Positive): : 0.000 m

Observation Definitions

Far Grip HDT GPS	:	Bearing (True)
"At" node	:	Far Grip CS
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	Far Grip HDT GPSGate
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Far Sky HDT GPSG	:	Bearing (True)
"At" node	:	Far Sky CS
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	Far Sky HDT GPSGate
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

FarGrip Hdt (Sat	:	Bearing (True)
"At" node	:	Far Grip CS
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	FarGrip Hdt (Satel)
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Far Sky HDT Sate	:	Bearing (True)
"At" node	:	Far Sky CS
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	Far Sky HDT Satel
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Meridian Gyro	:	Bearing (True)
"At" node	:	Ocean Patrio CoG
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	Meridian Gyro
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	2.39000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Observation Definitions (continued)

VS110 HDT	:	Bearing (True)
"At" node	:	Ocean Patrio CoG
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	VS110 HDT
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	-0.3900000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Reference Station Definitions

SYSTEM DEFINITIONS

Position Navigation System

LD2 Pos

Interfacing

Type	:	Position Navigation System			
Driver	:	NMEA Position (GPGGA)			
Executable and Cmdlin	:	DrvNMEA0183.exe MSL			
Port	:	18			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	0
Receiver description	:	
Node identifier	:	LD2
Object location	:	Ocean Patriot
X (Stbd = Positive):	:	-11.800 m
Y (Bow = Positive):	:	39.700 m
Z (Up = Positive):	:	0.000 m
Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

Meridian Gyro

Interfacing

Type	:	Gyros and Compasses			
Driver	:	NMEA Compass ($--HDT)			
Executable and Cmdlin	:	DrvGyroNMEA.exe 8			
Port	:	5			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

Meridian Gyro : Bearing (True)

Connected Nodes

Ocean Patrio CoG : Ocean Patriot

Offset System

Offset System

Interfacing

Type	:	Offset System
Driver	:	Unknown Driver (0)
Executable and Cmdlin	:	

Position Navigation System

FarGrip Pos (Satel)

Interfacing

Type	:	Position Navigation System			
Driver	:	Subsea Telemetry			
Executable and Cmdlin	:	DrvSubseaTelemetry.exe SUBSEA			
Port	:	7			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	3
Receiver description	:	
Node identifier	:	Far Grip CS
Object location	:	Far Grip
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m
Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

FarGrip Hdt (Satel)

Interfacing

Type	:	Gyros and Compasses			
Driver	:	Subsea Telemetry (Heading)			
Executable and Cmdlin	:	DrvSubseaTelemetry.exe SUBSEA			
Port	:	7			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

FarGrip Hdt (Sat	:	Bearing (True)
Slot 1	:	3

Connected Nodes

Far Grip CS	:	Far Grip

Output System

Anchor Output

Interfacing

Type	:	Output System
Driver	:	Network - Anchor Output (UDP)
Executable and Cmdlin	:	DrvOutAnchors.exe
Port	:	1234
IP address	:	192.168. 0.255
Update rate	:	1.000

Position Navigation System

VS110 pos

Interfacing

Type	:	Position Navigation System			
Driver	:	POS M/V (NMEA GGA GST GSA and Heading)			
Executable and Cmdlin	:	DrvPositionNMEA.exe			
Port	:	8			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	1
Receiver description	:	
Node identifier	:	Hemisphere
Object location	:	Ocean Patriot
X (Stbd = Positive):	:	-13.800 m
Y (Bow = Positive):	:	38.700 m
Z (Up = Positive):	:	0.000 m

Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

VS110 HDT

Interfacing

Type	:	Gyros and Compasses			
Driver	:	NMEA Compass ($--HDT)			
Executable and Cmdlin	:	DrvGyroNMEA.exe 8			
Port	:	9			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

VS110 HDT	:	Bearing (True)

Connected Nodes

Ocean Patrio CoG	:	Ocean Patriot

Output System

Satel Output

Interfacing

Type	:	Output System			
Driver	:	Subsea Telemetry			
Executable and Cmdlin	:	DrvOutMultiPositionUI.exe SUBSEA			
Port	:	6			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	1.000 s	Latency	:	0.000 s

Output System

GpsGate Output

Interfacing

Type	:	Output System			
Driver	:	NMEA			
Executable and Cmdlin	:	DrvOutMultiNMEAUI.exe			
Port	:	19			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	1.000 s	Latency	:	0.000 s

Position Navigation System

Far Grip Pos GPSGate

Interfacing

Type	:	Position Navigation System			
Driver	:	NMEA Position and Heading (CheckSum)			
Executable and Cmdlin	:	DrvPositionNMEA.exe			
Port	:	21			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	0
Receiver description	:	
Node identifier	:	Far Grip CS
Object location	:	Far Grip
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m
Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

Far Grip HDT GPSGate

Interfacing

Type	:	Gyros and Compasses			
Driver	:	NMEA Position and Heading (CheckSum)			
Executable and Cmdlin	:	DrvPositionNMEA.exe			
Port	:	21			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

Far Grip HDT GPS	:	Bearing (True)

Connected Nodes

Far Grip CS	:	Far Grip

Position Navigation System

Far Sky Pos GPSGate

Interfacing

Type	:	Position Navigation System			
Driver	:	NMEA Position and Heading (CheckSum)			
Executable and Cmdlin	:	DrvPositionNMEA.exe			
Port	:	22			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	0
Receiver description	:	
Node identifier	:	Far Sky CS
Object location	:	Far Sky
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m
Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

Far Sky HDT GPSGate

Interfacing

Type	:	Gyros and Compasses			
Driver	:	NMEA Position and Heading (CheckSum)			
Executable and Cmdlin	:	DrvPositionNMEA.exe			
Port	:	22			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

Far Sky HDT GPSG	:	Bearing (True)

Connected Nodes

Far Sky CS	:	Far Sky

Position Navigation System

Far Sky Pos Satel

Interfacing

Type	:	Position Navigation System			
Driver	:	Subsea Telemetry			
Executable and Cmdlin	:	DrvSubseaTelemetry.exe SUBSEA			
Port	:	7			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	2
Receiver description	:	
Node identifier	:	Far Sky CS
Object location	:	Far Sky
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m
Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

Far Sky HDT Satel

Interfacing

Type	:	Gyros and Compasses			
Driver	:	Subsea Telemetry (Heading)			
Executable and Cmdlin	:	DrvSubseaTelemetry.exe SUBSEA			
Port	:	7			
Baud rate	:	19200	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

Far Sky HDT Sate	:	Bearing (True)
Slot 1	:	2

Connected Nodes

Far Sky CS	:	Far Sky

APPENDIX D - HEADING SENSOR CALIBRATION

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

Solar Observation for Azimuth (Hour Angle) 2008

Job Number: 8A297
Job Description: Dory-1
Client: Apache Energy Limited
Surveyor: P, Barry
Vessel: Ocean Patriot
Date: 2 November 2008

Control Point Co-ordinates

Datum: World Geodetic System 1984 (WGS84)

Latitude (DMS): -038 35 22
Longitude (DMS): 148 32 48
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	16	46	20	180	00	00	192	53	08	265.20
Right	16	49	30	000	00	00	012	35	04	
Left	16	53	17	180	00	00	191	29	05	265.30
Right	16	54	52	000	00	00	011	28	01	
Left	16	58	55	180	00	00	190	54	16	264.40
Right	17	00	44	000	00	00	009	40	50	
Left	17	05	17	180	00	00	189	33	09	264.10
Right	17	06	30	000	00	00	009	52	39	
Left	17	07	50	180	00	00	189	19	18	264.50
Right	17	09	20	000	00	00	008	57	54	
Left	17	10	30	180	00	00	188	41	22	264.20
Right	17	11	25	000	00	00	009	56	37	
Left	17	15	09	180	00	00	188	34	05	265.20
Right	17	16	05	000	00	00	008	39	48	
Left	17	17	04	180	00	00	188	01	09	264.70
Right	17	18	09	000	00	00	008	37	16	
Left										
Right										
Left										
Right										
Left										
Right										
Left										
Right										

Paul Barry
Senior Surveyor

Client Representative

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

Solar Observation for Azimuth (Hour Angle) 2008

Job Number: 8A297
Job Description: Dory-1
Client: Apache Energy Limited
Surveyor: P, Barry
Vessel: Ocean Patriot
Date: 2 November 2008

Datum: World Geodetic System 1984 (WGS84)

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)
16	47	55.0	192	44	06	277	07	06	264	23	00	264.38	265.20	-0.82
16	54	04.5	191	28	33	276	04	08	264	35	35	264.59	265.30	-0.71
16	59	49.5	190	17	33	275	06	19	264	48	46	264.81	264.40	0.41
17	05	53.5	189	42	54	274	06	11	264	23	17	264.39	264.10	0.29
17	08	35.0	189	08	36	273	39	47	264	31	11	264.52	264.50	0.02
17	10	57.5	189	19	00	273	16	37	263	57	37	263.96	264.20	-0.24
17	15	37.0	188	36	57	272	31	30	263	54	34	263.91	265.20	-1.29
17	17	36.5	188	19	13	272	12	21	263	53	09	263.89	264.70	-0.81

Mean C-O **-0.39°**
St Dev **0.61°**

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

Solar Observation for Azimuth (Hour Angle) 2008

Job Number: 8A297
Job Description: Dory-1
Client: Apache Energy Limited
Surveyor: P, Barry
Vessel: Ocean Patriot
Date: 2 November 2008

Control Point Co-ordinates

Datum: World Geodetic System 1984 (WGS84)

Latitude (DMS): -038 35 22
Longitude (DMS): 148 32 48
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	16	46	20	180	00	00	192	53	08	262.00
Right	16	49	30	000	00	00	012	35	04	
Left	16	53	17	180	00	00	191	29	05	261.70
Right	16	54	52	000	00	00	011	28	01	
Left	16	58	55	180	00	00	190	54	16	262.10
Right	17	00	44	000	00	00	009	40	50	
Left	17	05	17	180	00	00	189	33	09	262.10
Right	17	06	30	000	00	00	009	52	39	
Left	17	07	50	180	00	00	189	19	18	262.20
Right	17	09	20	000	00	00	008	57	54	
Left	17	10	30	180	00	00	188	41	22	261.90
Right	17	11	25	000	00	00	009	56	37	
Left	17	15	09	180	00	00	188	34	05	261.70
Right	17	16	05	000	00	00	008	39	48	
Left	17	17	04	180	00	00	188	01	09	261.60
Right	17	18	09	000	00	00	008	37	16	
Left										
Right										
Left										
Right										
Left										
Right										
Left										
Right										

Paul Barry

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

Solar Observation for Azimuth (Hour Angle) 2008

Job Number: 8A297
Job Description: Dory-1
Client: Apache Energy Limited
Surveyor: P, Barry
Vessel: Ocean Patriot
Date: 2 November 2008

Datum: World Geodetic System 1984 (WGS84)

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)
16	47	55.0	192	44	06	277	07	06	264	23	00	264.38	262.00	2.38
16	54	04.5	191	28	33	276	04	08	264	35	35	264.59	261.70	2.89
16	59	49.5	190	17	33	275	06	19	264	48	46	264.81	262.10	2.71
17	05	53.5	189	42	54	274	06	11	264	23	17	264.39	262.10	2.29
17	08	35.0	189	08	36	273	39	47	264	31	11	264.52	262.20	2.32
17	10	57.5	189	19	00	273	16	37	263	57	37	263.96	261.90	2.06
17	15	37.0	188	36	57	272	31	30	263	54	34	263.91	261.70	2.21
17	17	36.5	188	19	13	272	12	21	263	53	09	263.89	261.60	2.29

Mean C-O **2.39°**
St Dev **0.27°**

APPENDIX E - DAILY OPERATIONS REPORTS

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
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DAILY PROJECT REPORT

Ocean Patriot – Rig Move to Dory-1

To: **Tri-Surv Geomatics**
Apache Energy Limited

From: **Tri-Surv Geomatics**
Job No.: **8A297**
Signed:

Paul Barry
Surveyor

Dates: **26 October – 05 November 2008**

Date/Time From	To	Operational Summary
Sunday 26 October 2008		
1810	2330	Tri-Surv personnel Paul Barry (PB) & Aaron Bainbridge (AB) travel Perth to Melbourne
2330	2400	Stand by at Holiday Inn, Melbourne Airport
Monday 27 October 2008		
0000	0820	Stand by at Holiday Inn, Melbourne Airport
0820	0930	Collected from hotel and transferred to Bristows. Informed that flight has been changed to next day
0930	2400	PB + AB stand by at Holiday Inn, Melbourne Airport
Tuesday 28 October 2008		
0000	0830	PB and AB Standing by at Holiday Inn
0130	0530	Steve Harris (SH) travels Perth to Melbourne
0830	0900	PB and SH depart hotel and transfer to Bristows
0900	1000	Attend heli briefing
1000	1200	Transfer to Ocean Patriot (OP) by helicopter
1200	1400	Attend rig induction
1400	1800	Locate survey equipment container and check equipment
Wednesday 29 October 2008		
0000	0800	Stand by to mobilise Far Grip
0800	0815	Attend Billy Pugh JSA
0815	0830	PB and SH transfer to Far Grip
0830	0900	Wrong equipment box onboard Far Grip. Return to OP to change over equipment
0900	0930	Locate correct tug equipment and transfer back to Far Grip
0930	1400	Mobilise Far Grip remote nav spread and measure antenna offsets
1400	1430	PH and SH transfer to OP
1430	1800	Preparing for equipment mobilisation
2300		OP 1 mile from location. Santos Handover to Apache
1800	2400	Standing by for Fugro personnel to demob
Thursday 30 October 2008		
0000	0130	PB and SH woken at company mans request to start mobilisation
0130	1700	Mobilisation activities
1700	2400	Pause mobilisation for the day. DGPS, Gyro, Nav PC's and telemetry mobilised
Friday 31 October 2008		
0000	0600	Stand by to continue mobilisation
0600	1800	Continue mobilisation activities
1100		Confirmed Dory-1 coordinates with company rep
Friday 31 October 2008 (Cont.)		
1300		Antenna & Fairlead offsets measured
1700		Rig anchor pattern and approach route confirmed with tow master

Neptune Geomatics
10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
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1800	2400	Continue rig tow to Dory-1 location

Saturday 01 November 2008	
0000	Rig under tow to Dory-1 Location
1407	Start logging prior to rig approach to location – Run In.db
1410	Far Sky commence shortening up tow
1628	Anchor #5 pennant passed to Far Grip
1633	Change logging file to Anchor Ops.db
1645	Pay out 200m on Anchor #5
1730	OP 100m from Dory-1 Location
1735	Lower Anchor #5
1928	1400m out on Anchor #5 stop winching. Far Grip lower Anchor to seabed
1946	Anchor #5 on bottom – Far Grip centre stern 636342mE, 5726947mN
2020	Anchor not holding. FG chasing back out to re-run
2045	Anchor #5 off bottom
2104	Anchor 5 on Bottom – FG centre stern 636394mE, 5726952mN
2232	Anchor #5 pennant passed back to rig
2300	Anchor #1 pennant passed to FG
2320	Start running Anchor #1
2400	Continue running anchor #1

Sunday 02 November 2008	
0000	Continue running anchor #1
0134	Anchor #5 slipping, 1100m chain out on anchor #1
0141	Anchor #1 on bottom, 633449.88mE, 5728337.49mN, 1135m chain out, Anchor #1 302°T from rig, 1275m on nav display
0147	Begin chasing back #1
0310	Pennant #1 passed back to rig
0315	Pennant #4 passed to Far Grip
0324	Far Grip pay out 175m wire
0337	Paying out #4 chain
0341	New log file 0005 – Anchor Ops.db
0350	200m chain out on #4
0351	Begin heaving out on #1 and heaving in on #5 to bring rig back to centre location
0450	Far Grip re-tensioning wire
0530	Far Grip finished re-tensioning wire. Electrical problem with winch
0727	#4 Winch fixed. Start paying out #4 chain
0920	1400m chain out on #4. Start lowering to seabed
0926	Anchor #4 on bottom – FG centre stern 636221mE, 5728733mN, 1400m chain out 054°T from rig.
0940	Anchor #4 holding. FG chase back to rig
1054	Pennant #4 passed back to rig
1055	New log file 0006-Anchor ops. db
1138	Pennant #8 passed to FG
1142	Pay out 200mof #8 anchor chain
1233	Commence running #8 anchor
1355	Stop paying out Anchor #8. Start lowering to seabed
1401	Anchor #8 on seabed – FG centre stern 633414mE, 5726738mN, 1340m chain out 235° (T) from rig
1410	Anchor #8 holding. FG chasing back to rig
1426	Pay out #8 chain to 1400m
1530	Far Sky released from tow bridle
1543	Start new log file – 0007-anchor ops.db
1550	Pennant #8 passed back to rig
1610	#6 pennant passed to FG
1645	Commence gyro calibration by sun azimuth observation
1709	Begin paying out #6 chain
1717	Complete gyro cal. SGBrown C-O: +2.39° CSI C-O: -0.39°
1745	Pennant #2 passed to FS
1750	Paying out #2, 100m, begin re-spooling drum
1850	Anchor #6 on bottom – FG centre stern 635828mE, 5726265mN, 1290m chain out

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10 Belmont Avenue
Belmont WA 6104
AUSTRALIA

T: +61 (0) 8 9450 9111
F: +61 (0) 8 9450 9110
www.neptunems.com

	144° from rig
1856	Anchor #6 holding. FG chasing back to rig
1956	#2 paying out chain
2011	#7 pennant on FG
2134	#2 on the bottom, 633784.75mE, 5729150.77mN, 1420m chain out
2156	Far Sky begin recovering work wire
2240	#2 pennant passed back to rig
2300	Commence running anchor #7
2339	Paying out #7 chain
2342	New #3 pennant passed to Far Sky, changing out old pennant

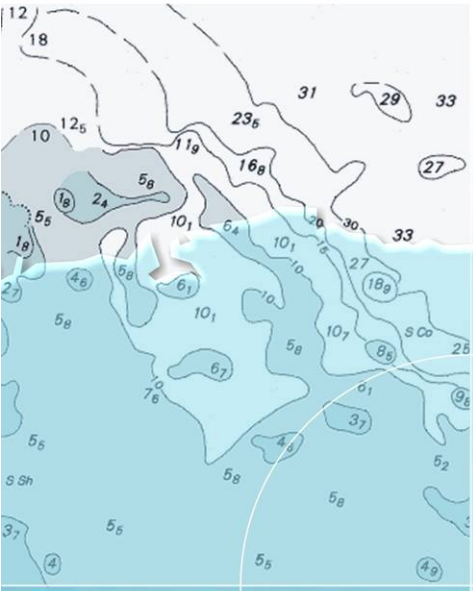
Monday 03 November 2008	
0105	#7 on the bottom, 634083mE, 5726230mN, 680m wire out, 1401m chain out
0125	Anchor #3 on deck, changing out wire
0300	#1 passed to Far Grip, chasing out
0308	Paying out #3
0400	#1 on the bottom, 633167mE, 5728478mN, 1406m chain out, begin chasing back
0450	#3 on bottom, 635425mE, 5729070mN.
0455	#3 too short, chain out 20m, Far Sky to pickup anchor and redeploy
0508	#3 on the bottom, 635426mE, 5729059mN, 1400m chain out
	#1 passed back to rig
0615	#3 passed back to rig
0640	Input gyro C-O's into Quinsy
0641	Start new logging session 0008 – Anchor Ops.db
0650	#5 pennant passed to FS. Start chasing out chain to re-run anchor #5
0720	FS at anchor #5. start breaking out the anchor
0729	Anchor #5 off bottom. Heave up to stern roller to check anchor orientation
0825	Anchor #5 not orientated correctly. Haul in chain to correct orientation
1004	Stop hauling in #5, 200m chain out. Orientate anchor correctly
1026	Anchor #5 orientation good. Start paying out chain
1231	1400m out on #5. start lowering to seabed
1242	Anchor #5 on bottom. FS centre stern 636327mE 5726959mN 1400m chain out
1247	Anchor #5 holding. FS chasing back to rig
1310	Commence pre-tension operations
1348	Pennant #5 passed back to rig
1600	Pre-tension complete
1612	Commence skidding onto location
1730	Begin ballasting down
2245	Complete ballast down. Rig in final position

Tuesday 04 November 2008	
0409	Commence logging final position fix
0410	Final Anchor coordinates calculated
0511	Stop logging final fix. Issue field reports and backup data.
0800	Rig has moved outside position tolerance due to weather conditions. Bumped off helicopter to take final fix after spudding in.

Wednesday 05 November 2008	
0200	Skidding rig onto location prior to spudding in
0241	Rig position good. Waiting to spud in
0322	Drill tagging bottom. Start logging final fix
0422	Stop logging. Compile position report
1030	P. Barry & S. Harris depart Ocean Patriot for return to Perth.

Tri-Surv Pty Ltd
ABN 47 108 312 787
8-12 Stafford Street
Midland WA 6056 AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
W: www.tri-surv.com



Dory-1 Site Survey Report

Prepared for:
Apache Energy Limited

Report No.: 8A270-RR-001-R0
Revision No.: 0
Date: 20 August 2008

Dory-1
Site Survey Report

Prepared for
Apache Energy Limited

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Tri-Surv Pty Ltd
ABN 47 108 312 787
8-12 Stafford Street
Midland WA 6056
AUSTRALIA
T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

0	20-08-2008	First Issue	RB	VK	AK
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ABSTRACT

*Tri-Surv Geomatics (**Tri-Surv**) was contracted by Apache Energy Limited (Apache) to provide geophysical survey services for the Dory-1 Site Survey. The Dory-1 site is located within permit VIC/P59 in the Bass Strait, offshore Victoria approximately 490km east of Melbourne (port of mobilisation). The objective is to determine suitability of the site for proposed semi-submersible drilling operations.*

Geophysical survey services for the Dory-1 Site Survey were supplied for the period 12 to 30 July 2008 onboard the supply vessel Pacific Crest.

This report contains the results of the Dory-1 Site Survey with respect to bathymetry, seabed features and shallow geology. The 1:10,000 scale drawing includes bathymetry and contours, sun illuminated image, shallow geology isopach and geological features.

The proposed Dory-1 drilling location is located in 518m LAT water depth. Within a 1200m radius of the proposed drilling location, the water depth ranges from 487m LAT to 584m LAT. The site is characterised by numerous very steep scarps, the most significant of which has a maximum associated gradient of 31º.

The shallow geology across the Dory-1 site is interpreted to consist of near surface unconsolidated sandy silts, with sediments becoming more indurated with depth. Three main features have been identified across the Dory-1 site:

- *A ridge in the southwest of the site with an associated reflector*
- *A sediment slump feature close to the Dory-1 proposed well location*
- *A sediment "wedge" in the north west of the site*

Using the method of shallow gas risk assessment outlined in Section 3.6 of this report, the risk of shallow gas is defined as slight risk (shallow gas unlikely) at the proposed Dory-1 location.

Due to the variable high relief of the bathymetry across the Dory-1 site, sidescan sonar coverage was unachievable.

All times quoted in this report are Eastern Standard Time (UTC + 10.0 hours).

LOCATION DIAGRAM

1 INTRODUCTION

Tri-Surv Geomatics (***Tri-Surv***) was contracted by Apache Energy Limited (Apache) to provide geophysical survey services for the Dory-1 Site Survey. The Dory-1 site is located within permit VIC/P59 in the Bass Strait, offshore Victoria approximately 490km East of Melbourne (port of mobilisation). The objective is to determine suitability of the site for proposed semi-submersible drilling operations.

Geophysical survey services for the Dory-1 Site Survey were supplied for the period 12 to 30 July 2008. The supply vessel Pacific Crest was mobilised for a series of geophysical operations at number 27 South Wharf, Port of Melbourne between 11 and 14 July 2008. The vessel departed 27 South Wharf on 15 July 2008, returning 06 August 2008 and operations included:

- Mobilisation
- Vessel Transit Port of Melbourne to Dory-1
- Dory-1 / Nemo-1 Site Survey acquisition (25, 26, 27, 29 and 30 July)
- Vessel Transit Dory-1 to Elver-1 to Eden to Elver-1 to Melbourne

Survey data acquisition during the Dory-1 Site Survey included:

- Veripos Standard Differential GPS and the Verify Multiple Reference Station Quality Control Software surface positioning
- Reson 8160 Multi Beam Echo Sounder bathymetry
- SG Brown Meridian Gyrocompass and Coda Octopus F180 heading systems
- Coda Octopus F180 Attitude vessel motion system
- Monopulser V2 Sparker sub-bottom profiler system

Positioning, bathymetry and motion data were acquired using QINSy Survey Positioning Software and processed using Caris HIPS. Sub-bottom profiler data were acquired and processed using Dr Geo.

All data processing, reporting and drawing preparation was undertaken at ***Tri-Surv***'s offices in Perth, Western Australia.

This report contains the results of the Dory-1 Site Survey with respect to bathymetry, seabed features and shallow geology. The 1:10,000 scale drawing includes bathymetry and contours, sun illuminated image, shallow geology isopach and geological features.

All times quoted in this report are Eastern Standard Time (UTC + 10.0 hours).

2 SURVEY OPERATIONS

2.1 Dory-1 Site Survey

Apache provided ***Tri-Surv*** with the following site survey information.

Site : **Dory-1**

Permit : **VIC/P59**

Size : **4km x 4km**

Dory-1 Site Centre Location

Datum : **Geocentric Datum of Australia 1994 (GDA94)**
Latitude : 38° 35´ 19.7˝ South
Longitude : 148° 32´ 51.9˝ East

Projection : **Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting : 634 799.0m
Northing : 5 727 717.0m

Dory-1 Survey Limits

Datum : **Geocentric Datum of Australia 1994 (GDA94)**
Projection : **Map Grid of Australia (MGA) Zone 55 CM 147° East**

Location	Latitude (South)	Longitude (East)
NW	38° 34’ 15.9”	148° 31’ 27.9”
NE	38° 34´ 13.7˝	148° 34´ 13.2˝
SE	38° 36´ 23.5˝	148° 34´ 16.0˝
SW	38° 36´ 25.6˝	148° 31´ 30.7˝

Location	Easting (m)	Northing (m)
NW	632 799	5 729 717
NE	636 799	5 729 717
SE	636 799	5 725 717
SW	632 799	5 725 717

2.2 Dory-1 Site Survey Acquisition

Survey data acquisition on the Dory-1 Site Survey included:

- Veripos Standard Differential GPS and the Verify Multiple Reference Station Quality Control Software surface positioning
- Reson 8160 Multi Beam Echo Sounder bathymetry
- SG Brown Meridian Gyrocompass and Coda Octopus F180 heading systems
- Coda Octopus F180 Attitude vessel motion system
- Monopulser V2 Sparker sub-bottom profiler system

Survey acquisition was undertaken according to the following parameters:

1. Reson 8160 Multi Beam Echo Sounder and Monopulser V2 Sparker data acquired at 100 metre line spacing in the primary survey line direction of 000°/180°.
2. Reson 8160 Multi Beam Echo Sounder and Monopulser V2 Sparker data acquired at 500 metre line spacing on cross lines, in a direction perpendicular to the primary survey line direction.

The primary objective of the Dory-1 Site Survey is to determine suitability of the site for proposed semi-sub drilling operations.

3 SURVEY RESULTS

3.1 Sound Speed Profile

A sound speed profile was recorded at the Dory-1 location, using a Valeport Midas CTD SVP on 25 July 2008, at the following position:

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 37´ 32.0˝ South
Longitude	:	148° 34´ 43.0˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147˚ East**
Easting	:	637 416m
Northing	:	5 723 593m

The Valeport Midas CTD SVP was configured and downloaded using Valeport's Datalog Express software. The sound velocity profile is displayed in Figure 3-1.

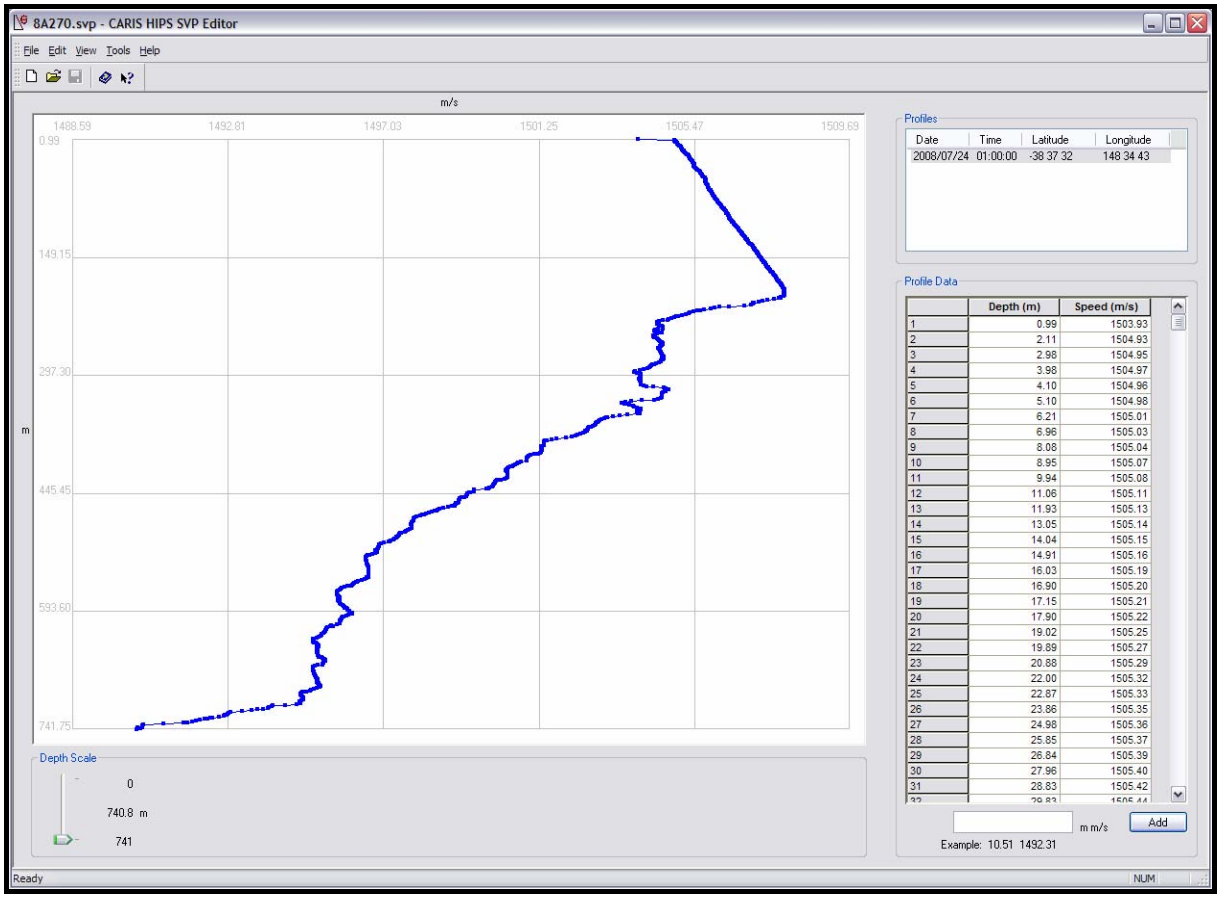

Figure 3-1 Dory-1 Sound Velocity Profile

3.2 Predicted Tides

Bathymetry for the Dory-1 Site Survey was processed within Caris HIPS and reduced to Lowest Astronomical Tide (LAT) using predicted tidal corrections obtained from MetOcean Engineers.

Dory-1 Tide Data

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 39´ 25˝ South
Longitude	:	148° 31’ 25˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	632 570m
Northing	:	5 720 190m
Vertical Datum	**:**	**Lowest Astronomical Tide (LAT)**
Mean Sea Level	:	Approximately 1.05m above LAT

A graphical display of the predicted tide data is provided in Figure 3-2 for the duration of the Dory-1 Site Survey.

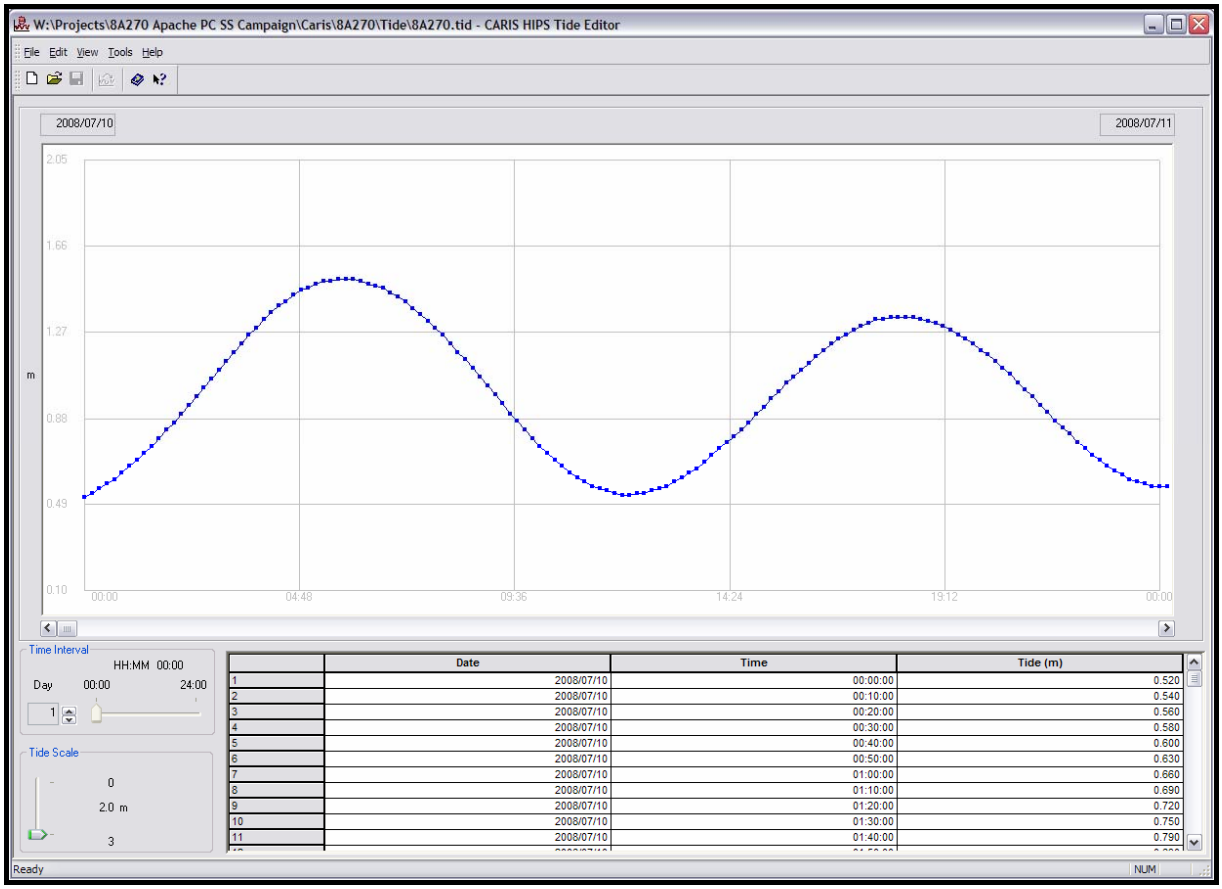

Figure 3-2 Dory-1 Predicted Tide Data

3.3 Bathymetry

Soundings were selected within the Caris Fieldsheet Editor using a shoal biased search radius of one sounding per 5mm at drawing (chart) scale. Contours were generated within Caris GIS from the charted soundings at a twenty metre contour interval, indexed at hundred metre intervals.

The final bathymetric soundings and contours for the Dory-1 Site Survey are presented on the Bathymetry and Contours drawing 8A270-DD-001-R0.

The seabed within the Dory-1 site shoals gently (3.3°) from the southeast to the northwest. The water depth ranges from a minimum of 335.0m LAT at the north western limit to a maximum of 653.8m LAT at the south eastern limit.

The proposed Dory-1 drilling location is located in 518m LAT water depth. Within a 1200m radius of the proposed drilling location, the water depth ranges from 487m LAT to 584m LAT, sloping gently (3.4º) towards the southeast (drawing 8A270-DD-001-R0).

The site is characterised by numerous scarps. Towards the north of the site there is a scarp with a steep gradient (10º) sloping to depth in the south. The second, is located in the north-western quadrant of the site, and slopes very steeply to depth in the southeast, with a maximum associated gradient of 19.3º. The third, in the southwest of the site, slopes very steeply to depth in the north and has a maximum associated gradient of 30º. The most significant of these is in the east-northeast, measuring 950m and ranging in depth from 559m to 631m at the steepest. A very steep gradient of 31º is associated with this scarp. These features are presented in drawing 8A270-DD-004-R0.

There are no bathymetric features observed within the Dory-1 site that would be considered hazardous to semi-submersible drilling rig operations.

3.4 Seabed Features

The Dory-1 site is located on the edge of the upper continental slope within 30km of the well known Bass Canyon. Within the site surveyed, a high degree of vertical relief was observed with canyons and slump features on a scale of tens to a hundred metres vertically. The edge of the upper continental slope is an approximate boundary that follows the 500 metre depth contour. This contour runs roughly from the northeast corner of the Dory-1 site, through the center of the site towards the south. The difference in upper continental slope and middle continental slope bathymetry gradients can easily be seen in this dataset within the transects running East-West. The North-South transects show plateaus, canyons, ridges and sediment slump features as the dominant seafloor features.

Due to the nature of the bathymetry across the Dory-1 site, sidescan sonar coverage was unachievable. Scouting lines were run prior to survey to assess any potential risks and hazards to towed survey equipment. The presence, and in particular, the irregular orientation of significant bathymetric features such as ridges and canyons meant that the use of sidescan sonar equipment was deemed unsafe.

3.5 Shallow Geology

The analogue seismic data was acquired using a Monopulser V2 Sparker operating at 400J. Maximum seismic penetration was achieved to a depth of approximately 100m below seabed.

The near surface and seabed sediments are likely to comprise unconsolidated sandy silt becoming more indurated with depth. The sediments at, and along the walls of the canyons are interpreted as cemented silts to fine sands. Unconsolidated sandy debris most probably forms the slump sediment structures on the seabed. Several prominent sub-bottom reflectors were observed, indicating a change in material properties. In most cases this implies a change from less consolidated to more indurated sediments. These prominent horizons outcrop across the site.

The sub-bottom data for this survey was fair to good in quality. Penetration of near 100 metres was observed in some areas of the site. The high degree of vertical relief across the site sometimes made interpretation difficult due to out of plane acoustic returns from topographic peaks and ridges in close proximity to the seismic transect.

Figure 3-3 shows an east-west transect with the vertical scale exaggerated. The change in slope angle is easily seen, as well as the change in sub-bottom character. The main feature shown is the steeper mid-slope geology which exhibits few continuous reflectors. Shallow, steeply dipping reflectors often outcrop at the seabed in this region.

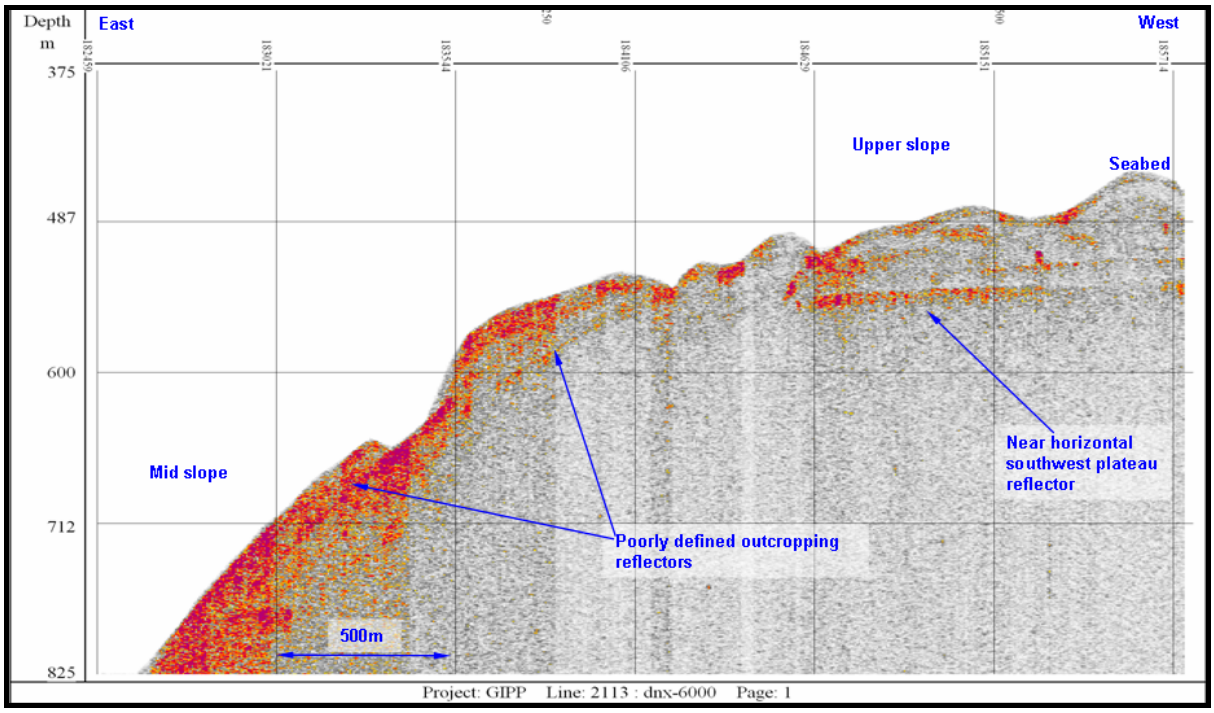

Figure 3-3 East-west line illustrating the southwest plateau and mid-slope sub-bottom features

North-south survey lines on the upper slope show a high degree of vertical relief. These canyons, ridges and sediment slump features with associated sub-bottom reflectors can be seen in Figure 3-4. The following features are labelled:

- A ridge in the southwest of the site with an associated reflector.
- A sediment slump feature where presumably unconsolidated sediments rest on a harder substrate.
- A sediment “wedge” at the far northwest of the site.

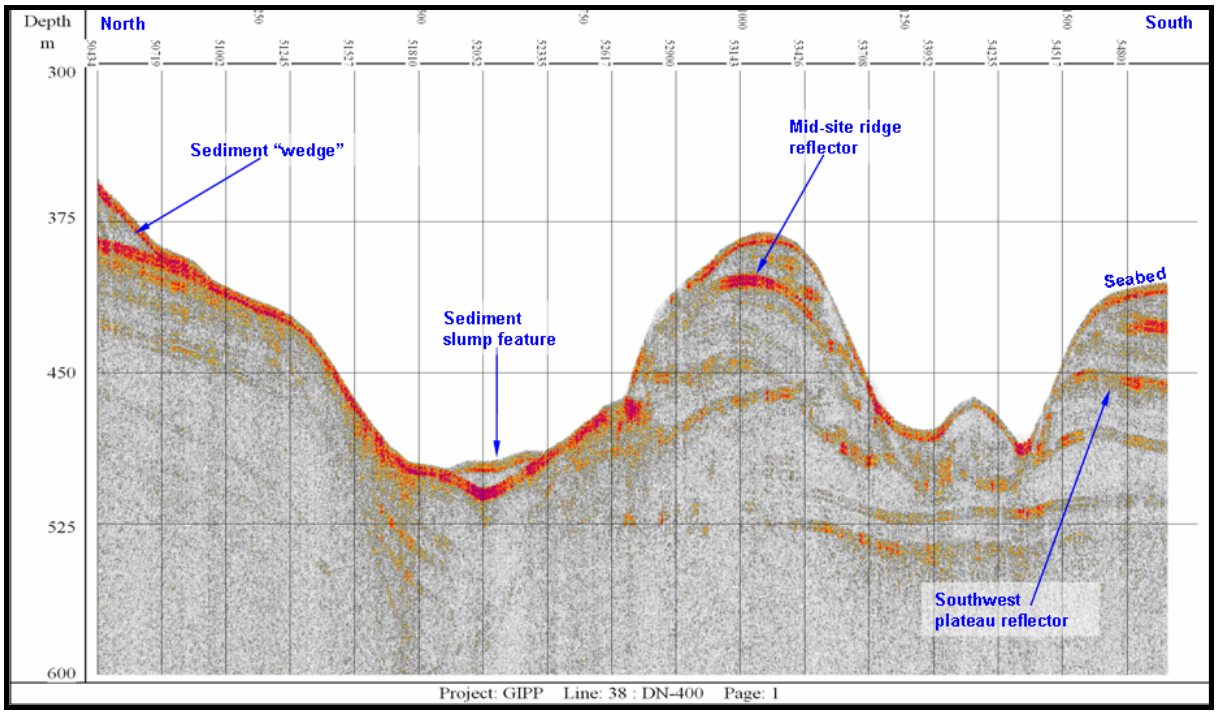

Figure 3-4 North-south line illustrating the sediment wedge and slump deposits within the Dory-1 Site

These features and bathymetry contours are shown in plan view in Figure 3-5 and the geological features are presented on drawing 8A270-DD-004-R0. The mid-slope portion of the survey area is also delineated, where no continuous reflectors were mapped.

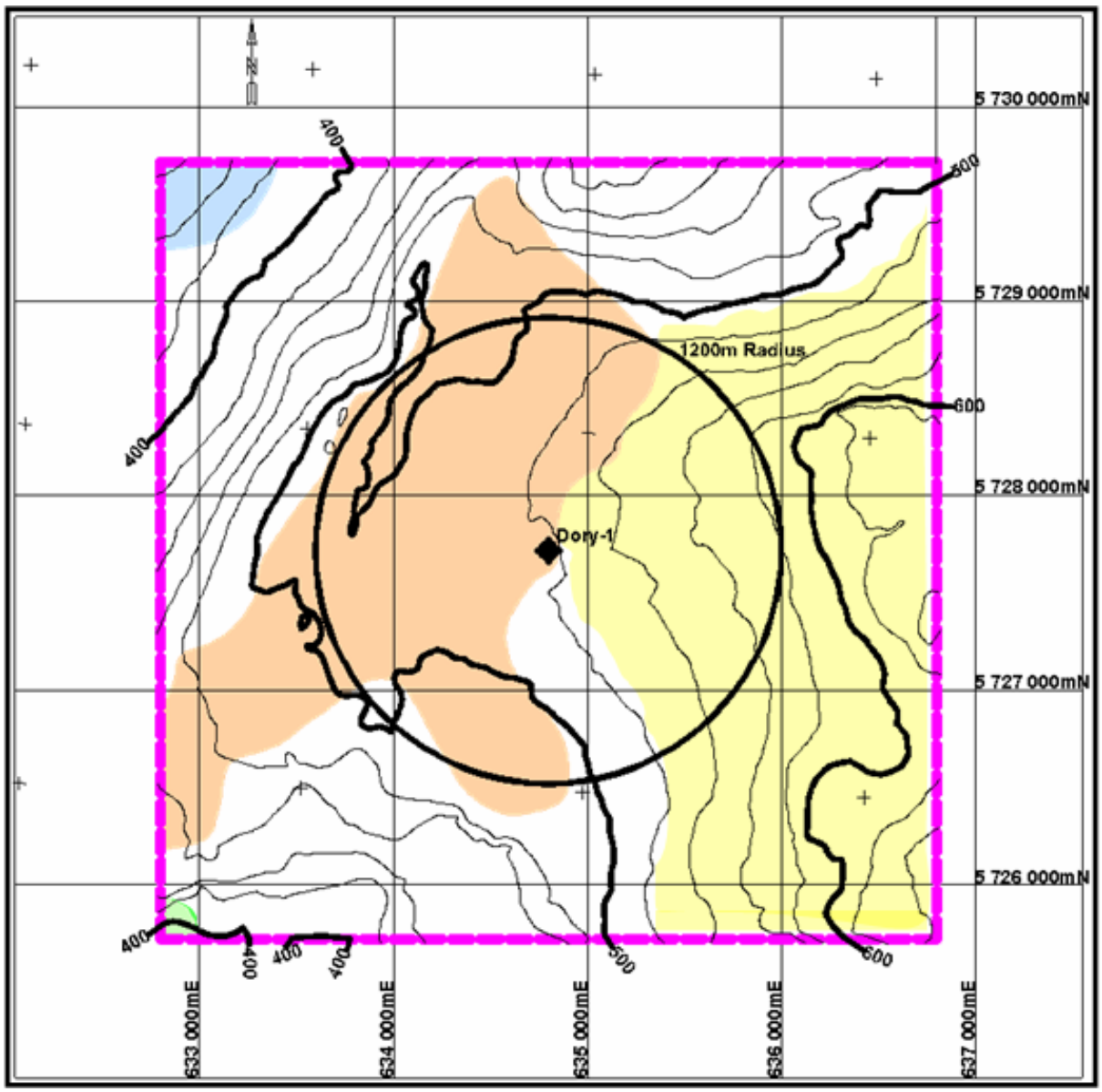

Figure 3-5 Plan View of Dory-1 Site illustrating the sub-seabed geological features

The following geological features are represented in Figure 3-5 as:

- Green – Mid ridge sub-bottom Reflector
- Brown – Sediment slump feature
- Blue – Northwest sediment "wedge"
- Yellow – Mid-slope area with shallow dipping reflectors.

It should be noted that in areas other than those delineated in Figure 3-5, sub-bottom reflector mapping was not possible, either due to a lack of reflective horizons or due to the non-ideal geometry of the steep canyon walls.

Where possible, the sub-bottom reflectors in Figure 3-5 were mapped and an isopach of overlying sediment thickness was produced in drawing 8A270-DD-003-R0, with the same colour scheme as seen above.

Proposed Dory-1 Location Shallow Geology Detail

The proposed Dory-1 well site is located on the edge of the upper and mid continental slopes, adjacent to the sediment slump feature seen in Figure 3-4. Figures 3-6 and 3-7 show this location in some detail.

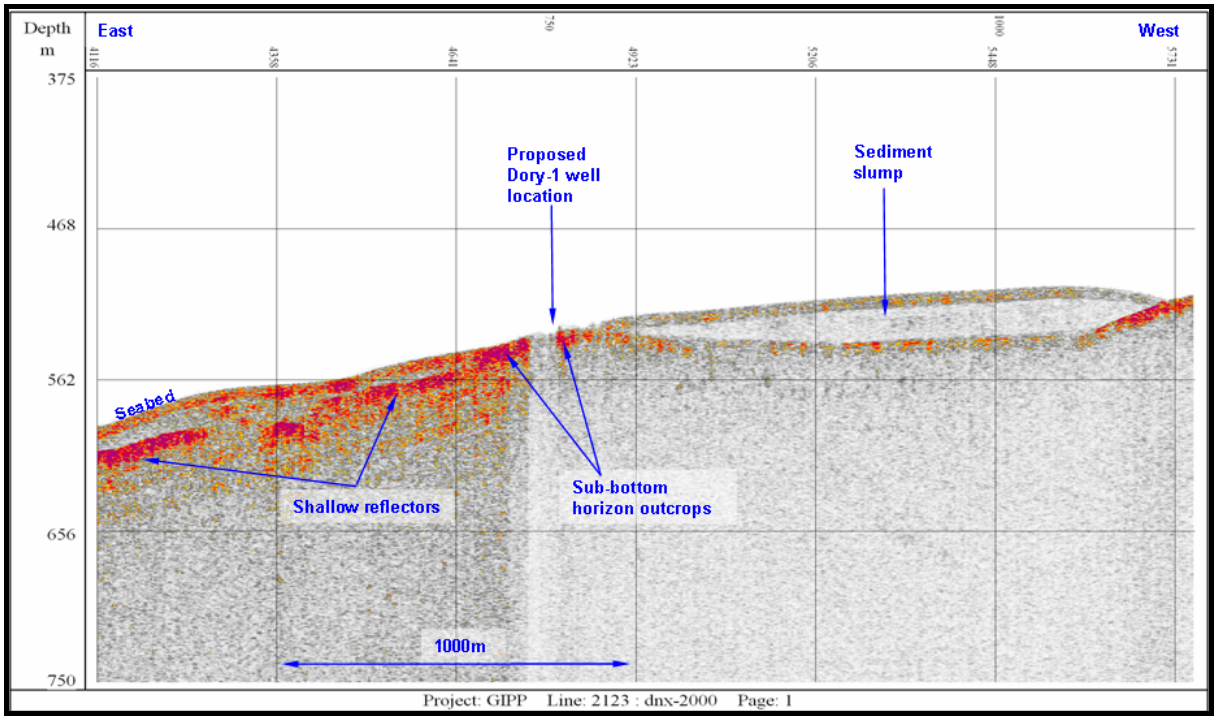

Figure 3-6 East-west transect illustrating the Dory-1 proposed well location shallow geology detail

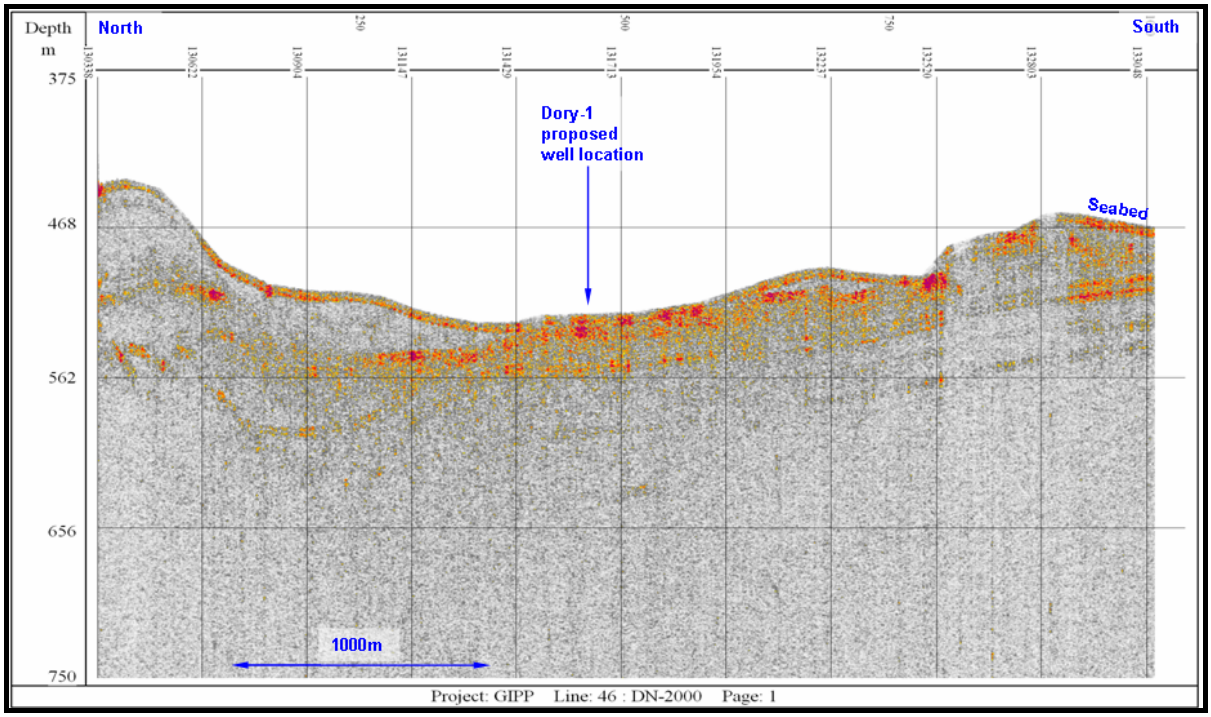

Figure 3-7 North-south transect illustrating the Dory-1 proposed well location shallow geology detail

As can be seen in the above figures, the proposed Dory-1 well is at the eastern edge (the "toe") of a significant geologic slump feature. The seabed or near sub-bottom at this location is composed of outcrops of a strong reflective horizon (most probably a semi-consolidated or well indurated horizon). The stability of the sediment slump feature should be considered for this location, as there are two types of sediments in close proximity on either side of the proposed well location. Finally, some minor anomalous reflector amplitudes were seen in the data near the well location, which indicates a low probability of shallow gas at the proposed well site.

Seabed sediments are interpreted to be unconsolidated and pose no discernable risk to anchor emplacement. No obvious hazards such as gas pockets, mud filled depressions or other drastic material property changes in the vicinity of the proposed Dory-1 location were observed in the data.

Disclaimer

Any assumptions concerning the material properties of the geology here are based on available literature and acoustic characteristics of the seismic returns only.

3.6 Shallow Gas Risk Assessment

3.6.1 Standard Method of Shallow Gas Risk Assessment

The shallow gas hazard assessment consists of the analysis of sub-bottom profile data for the following:

- Disturbed seabed and / or numerous pockmarks.
- Evidence of gas within the water column.
- Anomalously high amplitude reflectors - High acoustic impedance contrast.
- Acoustic blanking - High signal attenuation.
- Velocity pull down - Velocity reduction.
- Phase reversal - Negative reflection coefficient.
- Edge effects - Diffraction hyperbolae.

Using the items above, a level of risk can be assigned for the probability of shallow gas as follows:

1) High risk (Shallow gas probable) - High relative reflector amplitude with 3 or 4 other well defined features.
2) Moderate risk (Shallow gas likely) – High relative reflector amplitude with 2 other subsidiary gas-like features.
3) Low risk (Shallow gas possible) - Moderate relative reflector amplitude with 1 or 2 other features of very high amplitude.
4) Slight risk (Shallow gas unlikely) - Subsidiary gas-like features, but without high relative reflector amplitude.

3.6.2 Risk of Shallow Gas

The limit of penetration reached with the sub-bottom profiler (or the limit of useful acoustic penetration) was up to 100m. No interpretable data was recorded below 100m.

Using the above method of shallow gas risk assessment, within the limit of useful sub-bottom profiler penetration, the risk of shallow gas is defined as slight risk (shallow gas unlikely) at the proposed Dory-1 Location.

4 HEALTH SAFETY AND ENVIRONMENT

4.1 Health Safety and Environment Documentation

The following Health Safety and Environment Documents were available during the project:

Tri-Surv **Document Title**	**Document Number**	**Revision**
Tri-Surv Quality Manual	QM-01	Revision 7
Tri-Surv Project Briefing Form	QF-04-02	Revision 0
Tri-Surv Job Safety Analysis Report	QF-05-03	Revision 1
Tri-Surv Hazard Identification Record	QF-05-05	Revision 1
Tri-Surv Incident Report	QF-08-02	Revision 0
Tri-Surv Injury Report	QF-08-03	Revision 0
Tri-Surv Project Debriefing Form	QF-07-03	Revision 0

Table 4-1 *Tri-Surv* Health Safety and Environment Documents

4.2 Project Briefings and Inductions

The following Project Briefings and Inductions were undertaken throughout the project:

Date	**Briefing / Induction**	**Location**
9 July 2008	***Tri-Surv*** project briefing (relevant ***Tri-Surv*** personnel)	***Tri-Surv***, Perth

Table 4-2 Schedule of Project Briefings and Inductions

4.3 Job Safety Analysis Reporting

Job Safety Analysis Reports were generated for survey activities listed in Table 4-3 during the Dory-1 Site Survey. The Job Safety Analysis Reports were reviewed during subsequent operations involving the deployment and recovery of survey equipment from the Pacific Crest. Job Safety Analysis Reports are included as Appendix A of this Report.

Date	**Job Safety Analysis Requirement**	**Location**
12 July 2008	General Mobilisation JSA (all ***Tri-Surv*** personnel)	Pacific Crest, Port of Melbourne
12 July 2008	MBES Installation JSA	Pacific Crest, Port of Melbourne
13 July 2008	USBL Brace Plate Installation JSA	Pacific Crest, Port of Melbourne
14 July 2008	Wielding Operations JSA	Pacific Crest, Port of Melbourne
16 July 2008	USBL Pole Deployment and Recovery JSA	Pacific Crest, Bass Strait
16 July 2008	Compatt Deployment JSA	Pacific Crest, Bass Strait
17 July 2008	SSS Deployment and Recovery JSA	Pacific Crest, Bass Strait
17 July 2008	Compatt Recovery JSA	Pacific Crest, Bass Strait

Table 4-3 Project Job Safety Analysis Records

4.4 Safety Meetings and Exercises

Safety Meetings and Exercises conducted onboard the Pacific Crest throughout the Dory-1 Site Survey are listed in Table 4-4 below. Safety Meetings and Exercises have been documented within the Daily Operations Reports. Copies of the Daily Operations Reports are included within Appendix H of this report.

Date	Safety Meeting / Exercise	Location
12/07/08	Mobilisation safety meeting	Pacific Crest, Port of Melbourne
27/08/08	Safety drill and meeting	Pacific Crest, Bass Strait
18/07/08	Safety drill	Pacific Crest, Bass Strait

Table 4-4 Safety Meetings and Exercises

5 VESSEL CONFIGURATION

5.1 Vessel Sensor Offsets

5.1.1 Coda Octopus F180

Sensor	X Offset (m)	Y Offset (m)	Z Offset (m)
Coda Octopus F180 IMU	0.00	0.00	0.00
Primary GPS Antenna	-2.87	9.14	-10.79

5.1.2 QINSy

Sensor	X Offset (m)	Y Offset (m)	Z Offset (m)
Coda Octopus F180 IMU	0.00	0.00	0.00
Reson 8160 Multi Beam Transducer	-0.50	1.93	-5.44
Sonardyne USBL Transducer	-5.95	0.94	-6.79
Veripos LD2 Antenna	-2.26	5.79	10.79
Monopulser Sparker CDP	-1.90	-31.90	0.00
Side Scan Sonar Towpoint	-1.90	-11.90	0.00

5.1.3 Caris HIPS

Sensor	X Offset (m)	Y Offset (m)	Z Offset (m)
Coda Octopus F180 IMU	0.00	0.00	0.00
Reson 8160 Multi Beam Transducer	-2.26	5.79	5.44
Veripos LD2 Antenna	1.08	1.22	-10.79
Vessel Waterline	N/A	N/A	1.43

Note: The Reson 8160 transducer draft was recorded:

- By direct offset measurement as 4.01m during mobilisation 15 July 2008 at 27 South Wharf, Port of Melbourne.

- An echo sounder transducer draft of 4.01m was adopted for Dory-1 data acquisition period. This results in a Caris vessel waterline offset of 1.43m

The QINSy Survey Configuration is located in Appendix B and a vessel offset diagram in Appendix C of this report.

5.2 Software/Hardware Offset Conventions

The following sign conventions are used for vessel sensor offsets, where:

- X offset denotes measurements along the port/starboard axis from the reference point.
- Y offset denotes measurements along the fore/aft axis from the reference point.
- Z offset denotes measurements vertically above/below the reference point.

System	X	Y	Z
QINSy Survey	Starboard Positive	Forward Positive	Above Positive
Caris HIPS and SIPS	Starboard Positive	Forward Positive	Below Positive

The Coda Octopus F180 uses the following sign conventions for vessel offsets:

- X offset denotes measurements along the fore/aft axis from the reference point.
- Y offset denotes measurements along the port/starboard axis from the reference point.
- Z offset denotes measurements vertically above/below the reference point.

System	X	Y	Z
Coda Octopus F180	Forward Positive	Starboard Positive	Below Positive

5.3 Software/Hardware Rotation Conventions

The following conventions are used for hardware/software rotations, where:

- Roll denotes rotation referenced to the fore/aft axis.
- Pitch denotes rotation referenced to the port/starboard axis.
- Heading denotes rotation referenced to the vertical axis.

System	Roll	Pitch	Heading
Coda Octopus F180	Starboard Down Positive	Bow Upward Positive	Clockwise Positive
QINSy Survey	Starboard Down Positive	Bow Upward Positive	Clockwise Positive
Caris HIPS and SIPS	Port Down Positive	Bow Down Positive	Clockwise Positive

6 SURVEY CONTROL

The following survey marks were used to calibrate the gyrocompass and perform a DGPS position check for the mobilisation of the Pacific Crest at 27 South Wharf, Port of Melbourne. Refer to Appendix D for Survey Mark Summary Sheets.

Horizontal Details

Survey Mark	***:***	***South Wharf 32084***
Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	37° 49′ 12.090″ South
Longitude	:	144° 55′ 22.479″ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	317 182.312m
Northing	:	5 812 120.828m
Survey Mark	***:***	***South Wharf 32085***
Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	37° 49′ 12.169″ South
Longitude	:	144° 55′ 13.878″ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	316 972.052m
Northing	:	5 812 113.729m
Traverse Survey Mark	***:***	***South Wharf PMT-01***
Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	37° 49′ 12.123″ South
Longitude	:	144° 55′ 19.579″ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	317 111.433m
Northing	:	5 812 118.233m

7 CALIBRATIONS AND CHECKS

7.1 Heading Sensor Calibrations

The SG Brown Meridian Gyrocompass installed onboard the Pacific Crest was calibrated 13 July 2008 at 27 South Wharf, Port of Melbourne. The Coda F180 heading sensor system was calibrated by comparison with the gyrocompass during transit to the Dory-1 Site.

SG Brown Gyrocompass

Terrestrial observations from the survey control marks 32084 and 32085 to reflective prisms installed at the bow and stern of the vessel were recorded and used to calculate the Computed (C) azimuth of the Pacific Crest. Observations from the SG Brown gyrocompass were recorded to provide the Observed (O) azimuth of the vessel. The difference between Computed and Observed (C-O) azimuths was used to determine the C-O calibration value for the gyrocompass.

SG Brown C-O calibration value: -0.38°

The resulting C-O values were entered into the QINSy Survey System. Observations and results are presented in Appendix E.

7.2 Veripos Standard Differential GPS Check

A Static Differential GPS Check of the Veripos Standard Positioning System onboard the Pacific Crest was undertaken on 15 July 2008 at 27 South Wharf, Port of Melbourne.

Terrestrial observations from the survey control marks 32084 and PMT-01 to a reflective prism mounted adjacent to the primary GPS antenna were recorded and used to compute Calculated (C) coordinates of the antenna. This was compared to the Observed (O) position of the GPS antenna as computed using the QINSy Survey system. Results are presented below.

Mean Linear Misclose	1.59m
Standard Deviation	0.22m

The QINSy Survey System was accepted as operating correctly. Observations and results are presented in Appendix F.

7.3 EdgeTech 4200-FS Digital Sidescan Sonar Rub and Wet Test

A sidescan sonar rub test was performed on the EdgeTech 4200-FS digital towfish (Serial Number 35441) at 2356 on 14 July 2008. A sidescan sonar rub test was performed on the EdgeTech 4200-FS digital towfish (Serial Number 37757) at 1440 on 15 July 2008. The sidescan sonar rub tests were performed while the Pacific Crest was located at 27 South Wharf, Port Melbourne.

The EdgeTech 4200-FS digital towfish was connected to the sidescan sonar winch cable and interfaced to Coda GeoSurvey via the EdgeTech 4200 DL-701 topside processor. The port side of the sidescan sonar transducer was rubbed and the data examined within the Coda GeoSurvey software. A response was initiated on the port channel within the Coda GeoSurvey software. The procedure was repeated for the starboard side of the sidescan sonar transducer. The results confirmed that the EdgeTech 4200-FS digital towfish and sidescan sonar winch cable terminations were correctly configured.

The sidescan sonar rub tests for EdgeTech 4200-FS Serial Number 35441 is presented in Figure 7-1. The sidescan sonar rub tests for EdgeTech 4200-FS Serial Number 37757 is presented in Figure 7-3.

A sidescan sonar wet test was conducted using the EdgeTech 4200-FS digital towfish (Serial Number 35441) at 1440 on 15 July 2008. A sidescan sonar wet test was conducted using the EdgeTech 4200-FS digital towfish (Serial Number 37757) at 1148 on 15 July 2008 The procedure confirmed the correct operation of the digital towfish and sidescan sonar winch prior to the commencement of survey acquisition.

The sidescan sonar wet test for EdgeTech 4200-FS Serial Number 35441 is presented in Figure 7-2. The sidescan sonar wet test for EdgeTech 4200-FS Serial Number 37757 is presented in Figure 7-4.

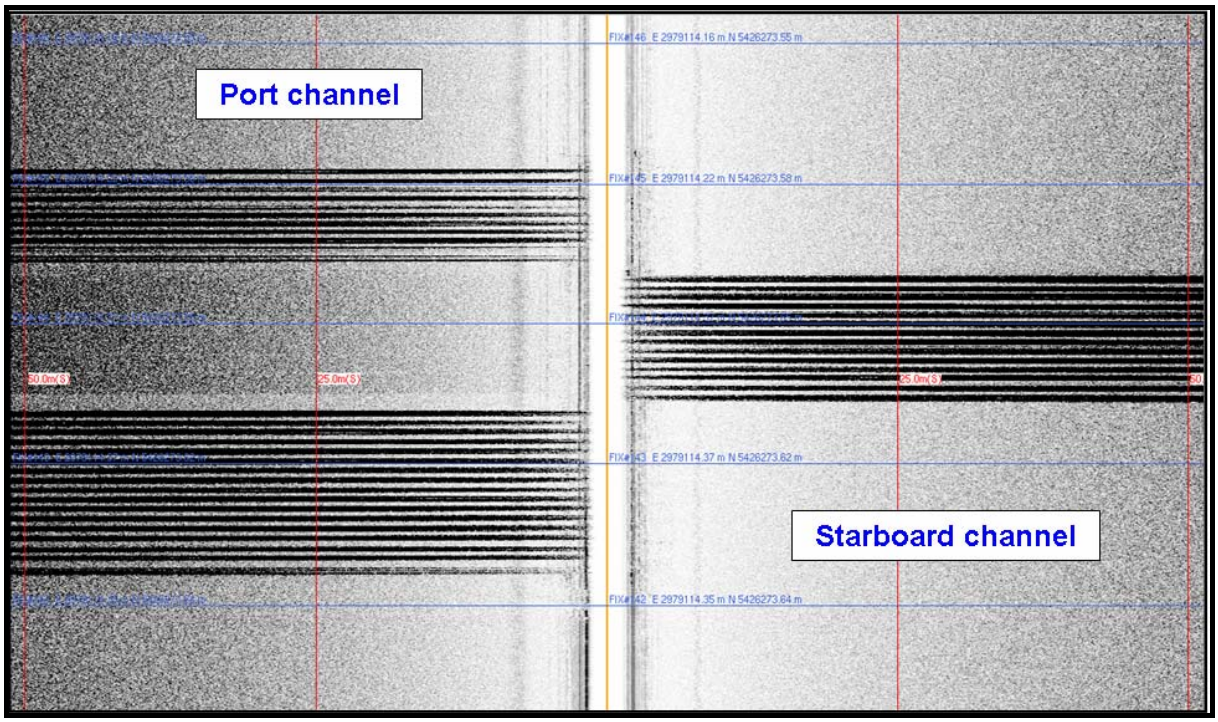

Figure 7-1 EdgeTech 4200-FS Digital Sidescan Sonar Rub Test (SN35441)

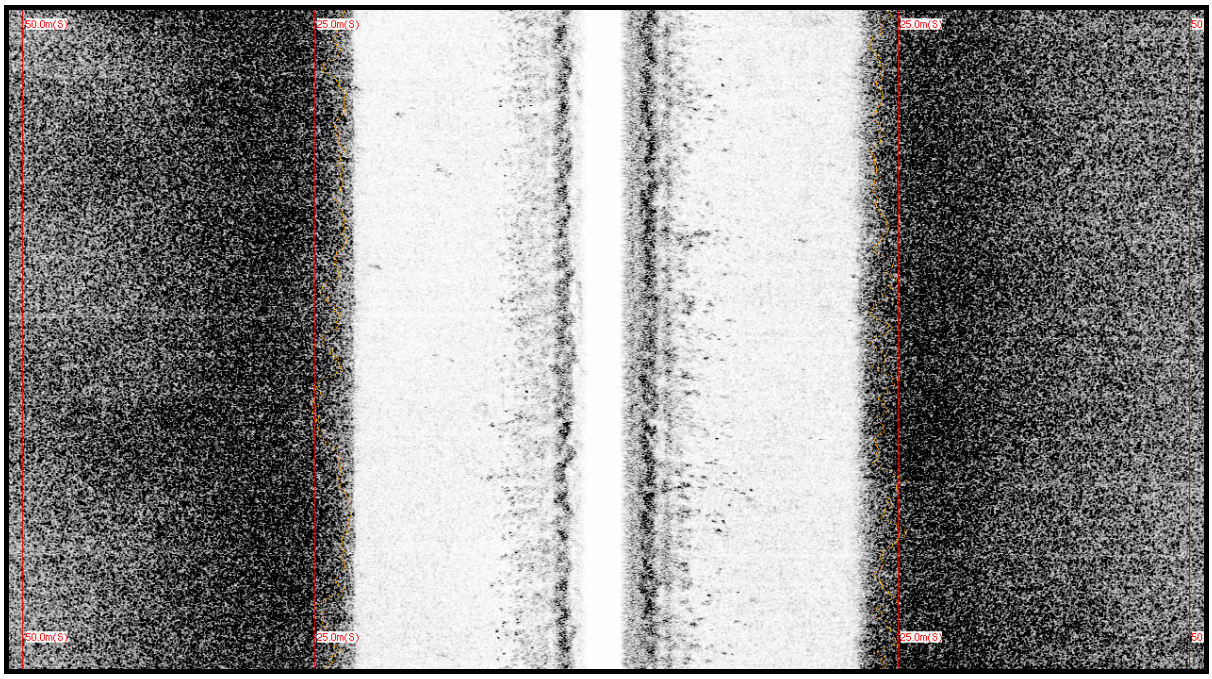

Figure 7-2 EdgeTech 4200-FS Digital Sidescan Sonar Wet Test (SN35441)

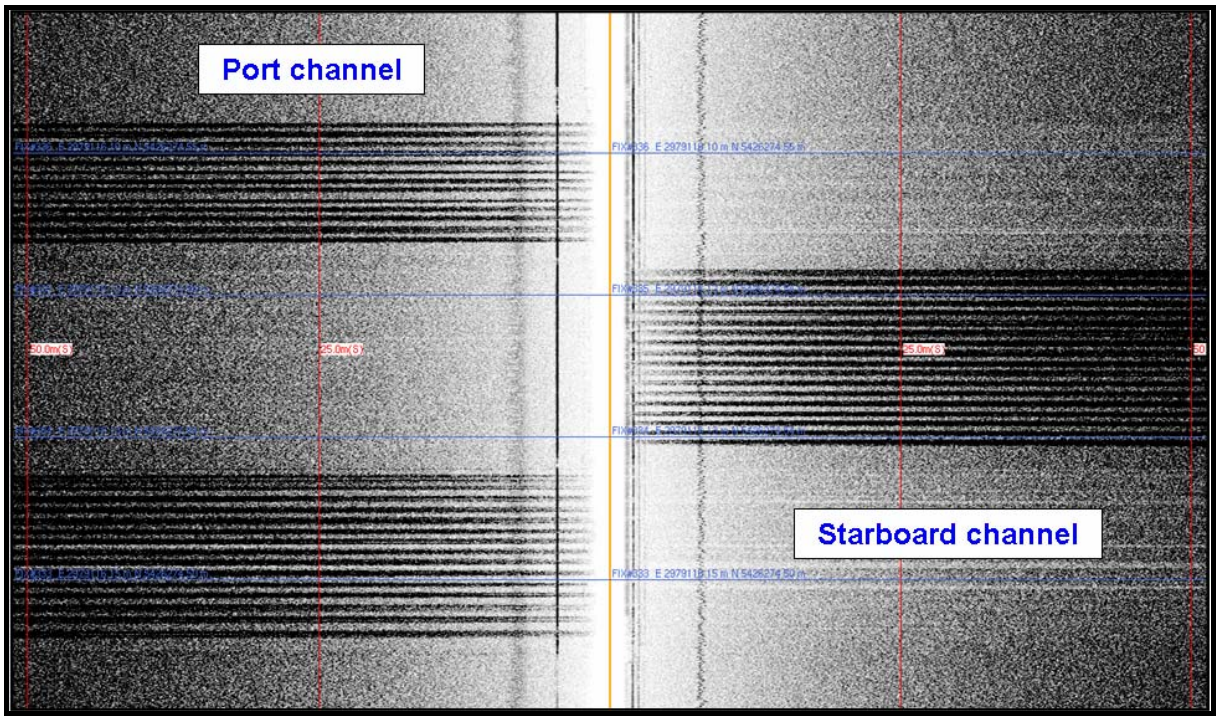

Figure 7-3 EdgeTech 4200-FS Digital Sidescan Sonar Rub Test (SN37757)

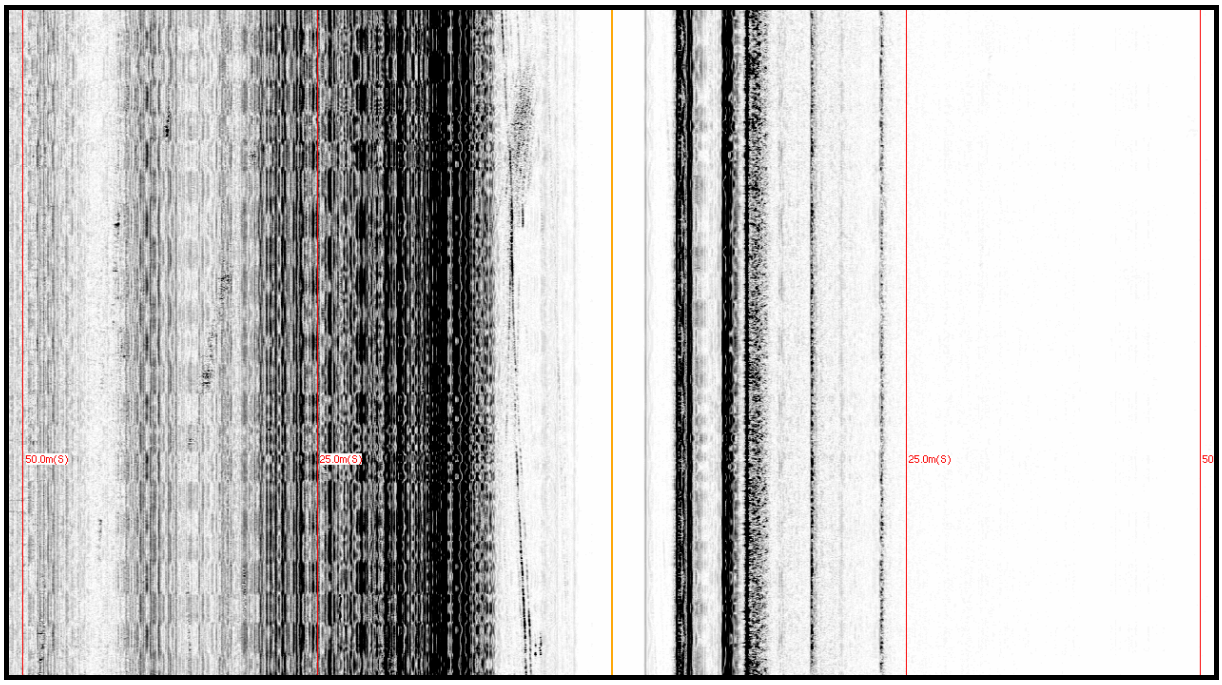

Figure 7-4 EdgeTech 4200-FS Digital Sidescan Sonar Wet Test (SN37757)

7.4 Applied Acoustics 301 Boomer Sub-Bottom Profiler Wet Test

The Monopulser V2 Sparker sub-bottom Profiling system was tested during project mobilisation at Port Melbourne. The Monopulser V2 Sparker electrode and the Geosonics Hydrophone were deployed from the stern of the Pacific Crest at 1241 on 14 July 2008.

The Monopulser V2 Sparker sub-bottom profiling system was interfaced to Dr Geo acquisition systems during the wet test. Dr Geo provided the internal trigger to the Geosonics PSU and Monopulser V2 Sparker unit. The Geosonics Hydrophone was interfaced to Dr Geo. The results of the tap test performed on the hydrophone are shown in Figure 7-5.

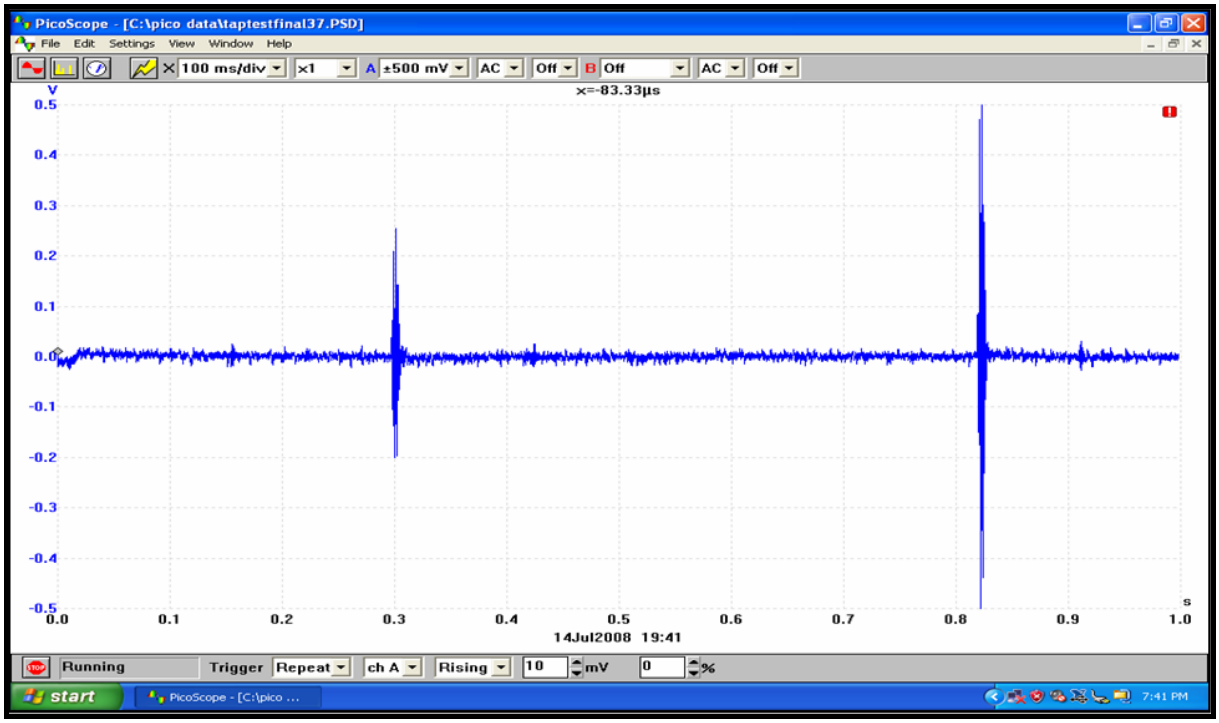

Figure 7-5 Geosonics hydrophone tap test

7.5 Sonardyne Fusion USBL Calibration

The Sonardyne Fusion USBL system installed onboard the Pacific Crest was calibrated offshore between 2130 on 16 July and 0500 on 17 July 2008.

The Sonardyne Fusion system received Veripos Standard Differential GPS data direct from Verify Multiple Reference Station Quality Control software. Motion and heading data was received from the Coda Octopus F180 Inertial Attitude and Heading System.

The F180 pitch and roll installation angles were measured with respect to the Sonardyne Fusion transducer's internal motion reference unit (MRU) at 1655 on 24 February 2008. The measurements were recorded in Port of Melbourne and subsequently entered as initial estimates of the Transceiver to Ship Grid Corrections within the Fusion software. The initial pitch and roll corrections obtained were 31.76° and -1.54° respectively.

A sound velocity profile was recorded at 1930 on 16 July 2008 using the Valeport Midas CTD SVP sound speed sensor. The SVP profile was undertaken at the following approximate location:

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 51´ 32.746˝ South
Longitude	:	148° 20´ 42.047˝ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	616 700.00m
Northing	:	5 698 000.00m

The sound velocity profile was input to the Sonardyne Fusion software (Figure 7-6).

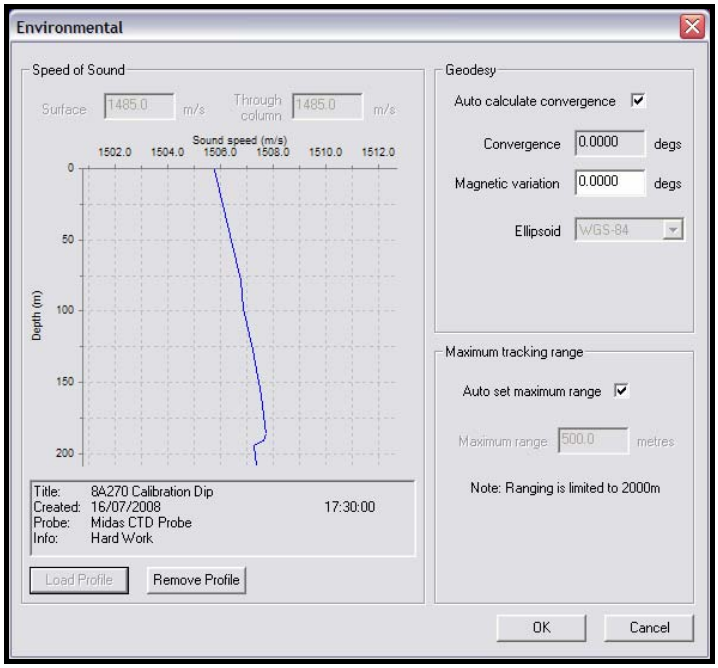

Figure 7-6 Valeport Midas CTD SVP Sound Speed Profile for USBL Calibration

A Sonardyne Compatt MkV Beacon was deployed in approximately 200 metres water depth. The approximate position of the Sonardyne Compatt MkV Beacon was recorded as:

Datum : Geocentric Datum of Australia 1994 (GDA94)
Latitude : 38° 51´ 07.212˝ South
Longitude : 148° 20´ 38.795˝ East

Projection : Map Grid of Australia (MGA) Zone 55 CM 147° East
Easting : 616 633.20m
Northing : 5 698 788.27m

The Pacific Crest acquired calibration data using the Tilted Head Run Line Method. Acquisition included 6 transit lines acquired on reciprocal bearings of 000°/180° Grid. The horizontal distance from the USBL transceiver to transponder was approximately 200 metres during each transit adjacent the beacon. The vessel heading remained relatively constant during the calibration procedure.

The USBL Calibration data was processed within the Casius Calibration Utility. Casius determined the following Transceiver to Ship Grid Corrections:

Roll Correction	Pitch Correction	Heading Correction
1.89°	33.60°	3.37°

The calibrated beacon position was determined as:

Datum : Geocentric Datum of Australia 1994 (GDA94)
Latitude : 38° 51´ 07.147˝ South
Longitude : 148° 20´ 38.833˝ East

Projection : Map Grid of Australia (MGA) Zone 55 CM 147° East
Easting : 616 634.14m
Northing : 5 698 790.26m

The Casius USBL Calibration Report is included within Appendix G of this report.

Following the USBL Calibration, the Pacific Crest conducted a USBL position check. Acquisition included 4 transit lines acquired on reciprocal bearings of 000°/180° and 090°/270° Grid. The horizontal distance from the USBL transceiver to transponder was approximately 200 metres during each transit adjacent the calculated beacon position. The USBL postion check was undertaken between 0300 and 0430 on 17 July 2008 to verify the pitch, roll and heading calibration values obtained from the previous Casius calibration. The USBL position check also provided a check on the vessel offsets entered within the QINSy Positioning System.

The results of the position check including the Calibration Scatter Plot (Figure 7-7) within QINSy Survey are provided:

Datum : Geocentric Datum of Australia 1994 (GDA94)
Latitude : 38° 51´ 07.207˝ South
Longitude : 148° 20´ 38.795˝ East

Projection : Map Grid of Australia (MGA) Zone 55 CM 147° East
Easting : 616 633.20m (Standard Deviation 1.28m)
Northing : 5 698 788.27m (Standard Deviation 1.26m)

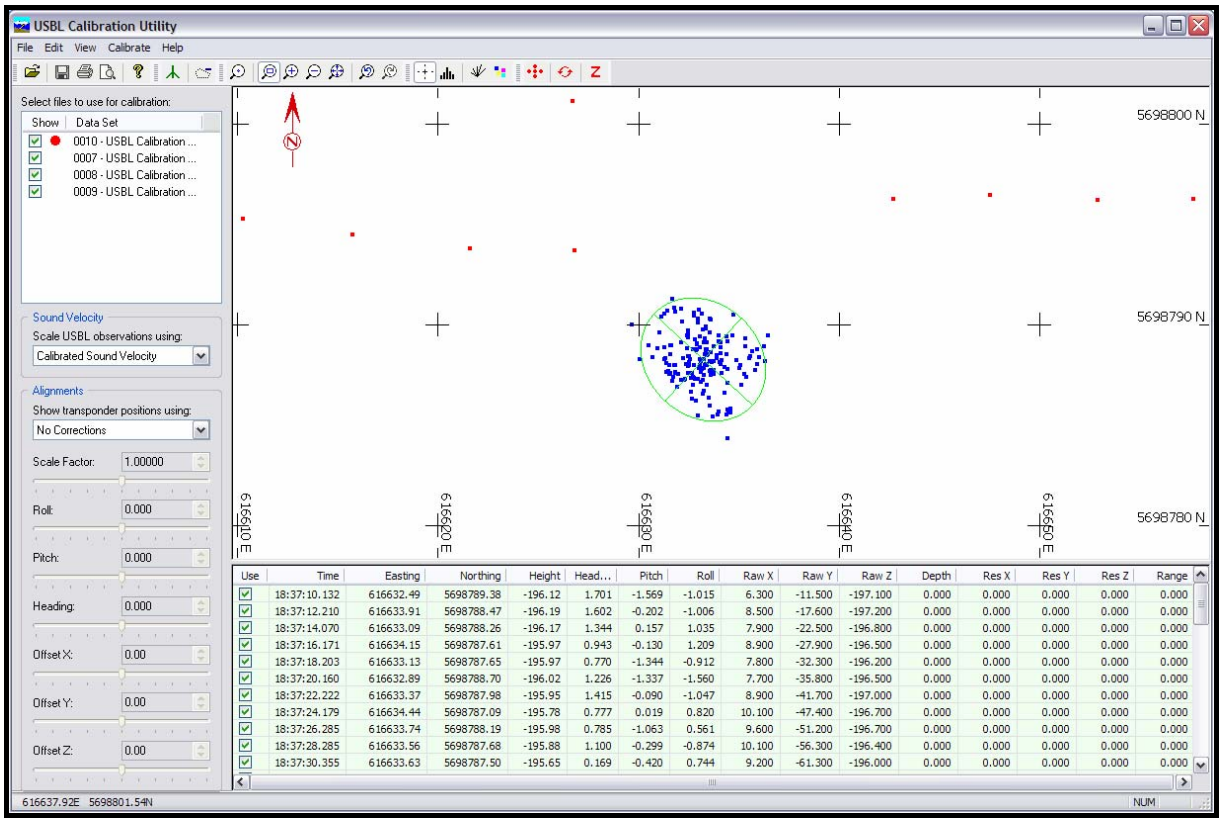

Figure 7-7 USBL Spin Test Scatter Plot Results 17 July 2008

7.6 Reson SeaBat 8160 Multibeam Echo Sounder Calibration

The Reson 8160 Multibeam Echo Sounder transducer installed onboard the Pacific Crest was calibrated using survey data acquired between 0800 and 0950 on 26 July 2008. The Multibeam patch test calibration was undertaken across a feature located near the Dory-1 location.

The coordinate details of the Multibeam patch test calibration target are provided below (Refer to Figure 7-8).

Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	38° 39′ 11.481″ South
Longitude	:	148° 35′ 10.636″ East
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	638 031.37m
Northing	:	5 720 514.59m
Water Depth (LAT)	**:**	880m
Target Dimensions		
Length	:	400m
Width	:	400m
Height	:	100m

The following survey lines were acquired perpendicular to the feature during the Multibeam patch test calibration to resolve minor sensor misalignment between the Reson SeaBat 8160 transducer and the Coda Octopus F180 Inertial Measurement Unit:

Navigation: Coincident survey lines acquired at different velocities in the same direction.
Pitch: Coincident survey lines acquired at the same velocity in opposite directions.
Azimuth: Parallel offset survey lines acquired at the same velocity in opposite directions.
Roll: Coincident survey lines acquired at the same velocity in opposite directions.

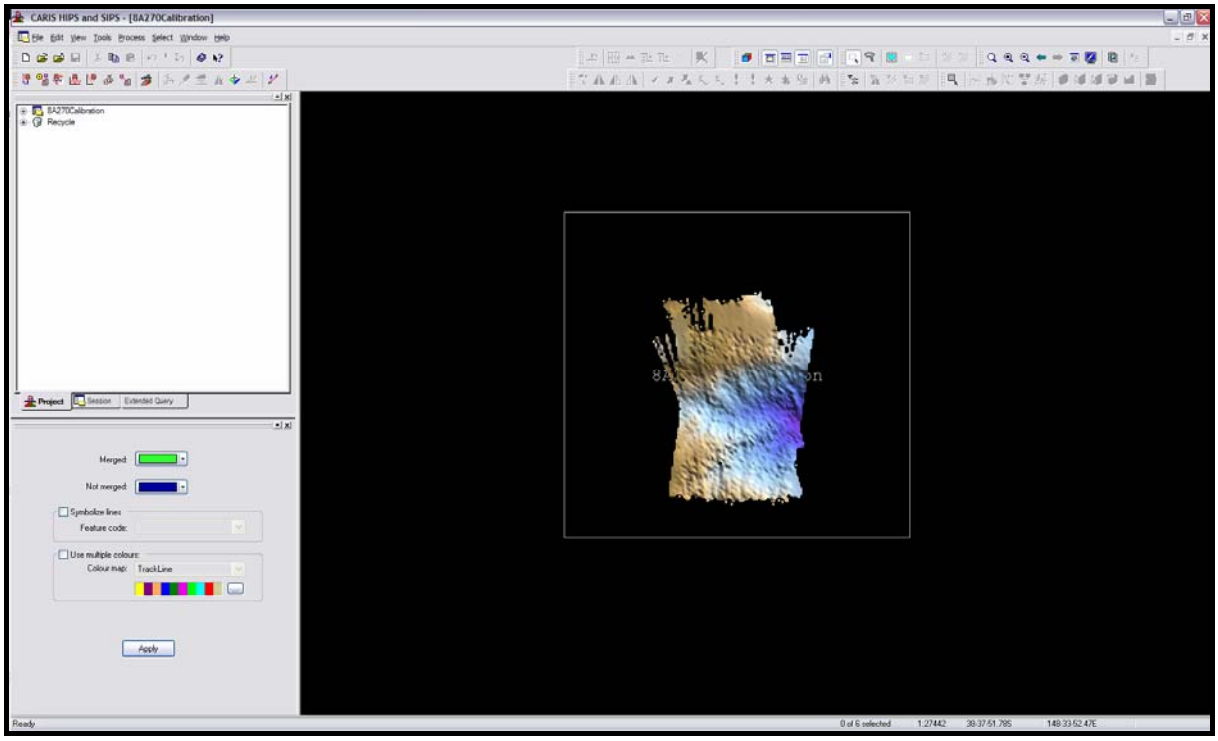

Figure 7-8 Multibeam Patch Test Calibration

Table 7-1 summarises the corrections determined during the Multibeam patch calibration for the Apache work scope. The alignment corrections were determined within the Caris HIPS Calibration Utility. The alignment corrections were entered into the Caris Vessel Configuration File and applied during subsequent processing of Multibeam bathymetry data.

Parameter	QINSy Survey Database	Alignment Correction
Navigation	2008-206 0030 - Patch Test	0.00 seconds
	2008-206 0031 - Patch Test	
Pitch	2008-206 0026 - Patch Test	0.16°
	2008-206 0027 - Patch Test	
Azimuth	2008-206 0028 - Patch Test +50	6.40°
	2008-206 0029 - Patch Test -50	
Roll	2008-206 0026 - Patch Test	-1.30°
	2008-206 0027 - Patch Test	

Table 7-1 Multibeam Patch Test Calibration Transducer Alignment Corrections

Figures 7-9 to 7-16 illustrate the Multibeam data following application of the patch test calibration corrections.

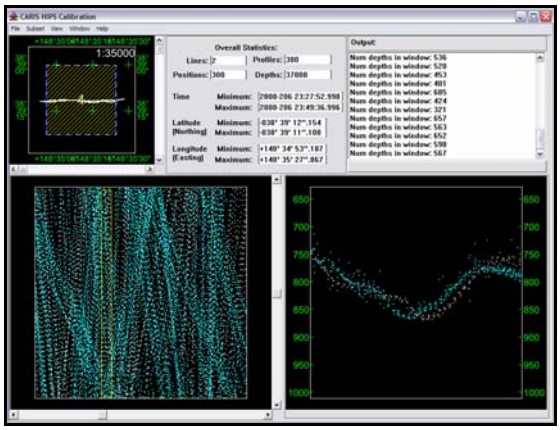

Figure 7-9 Navigation Uncorrected

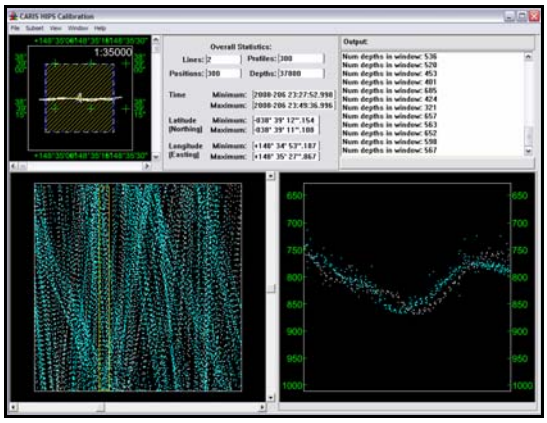

Figure 7-10 Navigation Corrected

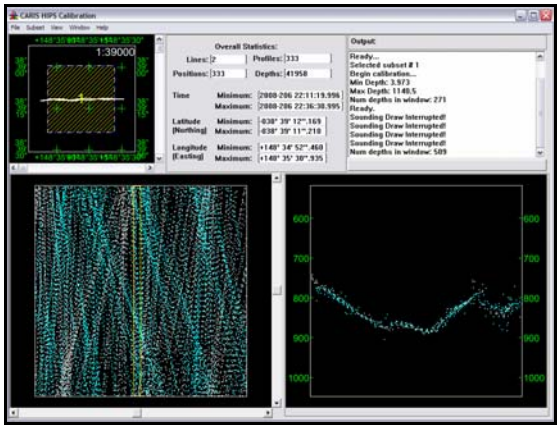

Figure 7-11 Pitch Uncorrected

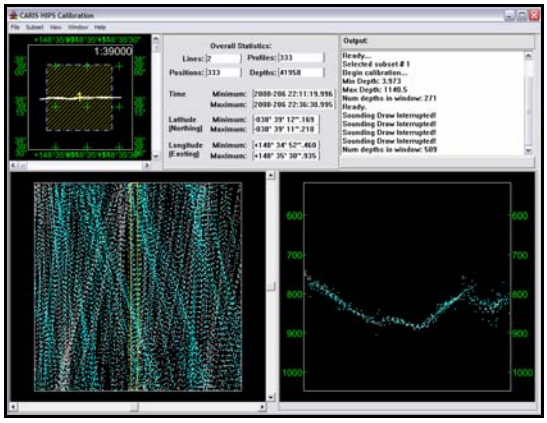

Figure 7-12 Pitch Corrected

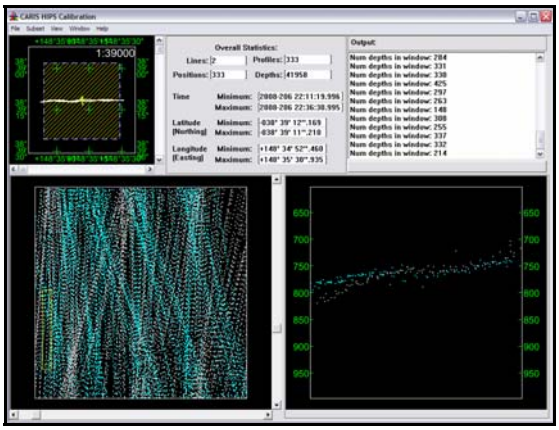

Figure 7-13 Roll Uncorrected

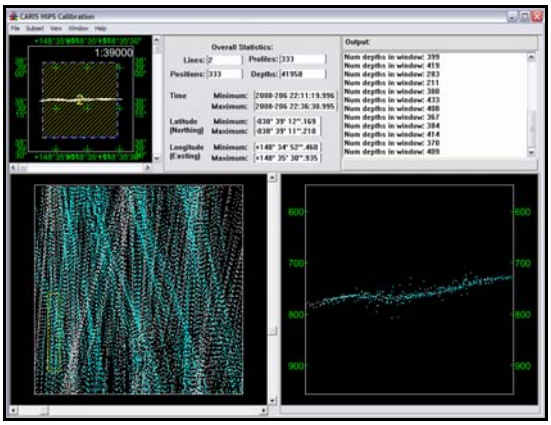

Figure 7-14 Roll Corrected

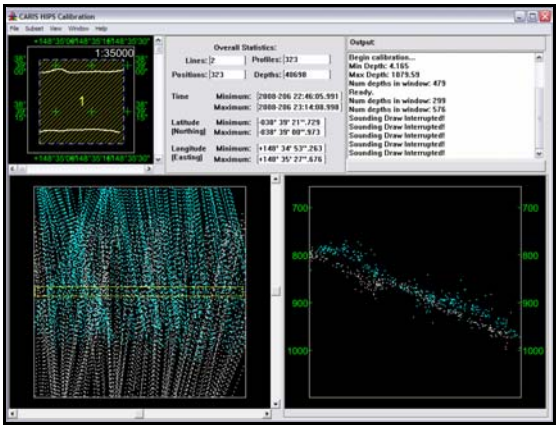

Figure 7-15 Azimuth Uncorrected

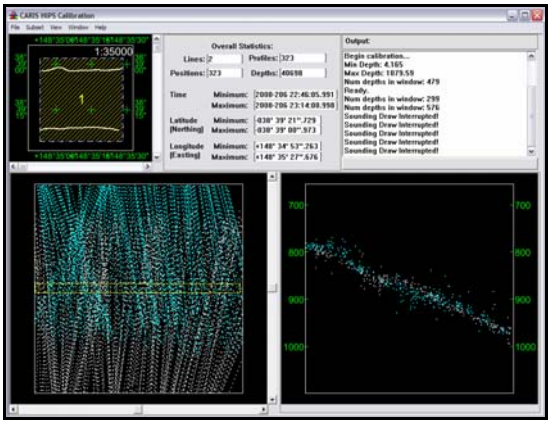

Figure 7-16 Azimuth Corrected

8 GEODETIC PARAMETERS

The geodetic datum for the Geophysical Site Survey Campaign is the Geocentric Datum of Australia 1994 (GDA94). The Global Positioning System (GPS) is referenced to the World Geodetic System 1984 (WGS84). The Differential GPS positioning systems used by ***Tri-Surv*** are referenced to the International Terrestrial Reference Frame 2000 (ITRF2000). Due to the continual refinement of the WGS84 reference frame, the WGS84 and ITRF2000 reference frames are considered to be the same.

8.1 ITRF2000 Datum and Projection

Datum	:	**ITRF2000**
Ellipsoid	:	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	:	**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	:	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)
MGA 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.

8.3 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 since the Australian tectonic plate is moving in a north northeast direction at a rate of approximately 7 centimetres per year, the relationship between the GDA94 Datum and the ITRF2000 Datum is changing at a similar rate.

The following 7-parameter datum transformation is used to convert ITRF2000 coordinates to GDA94 coordinates:

Epoch	**=**	**2008.5**
Dx	=	+0.01740m
Dy	=	-0.04835m
Dz	=	-0.10350m
Rx	=	+0.017 554"
Ry	=	+0.015 065"
Rz	=	+0.018 157"
Scale	=	+0.003 362 p.p.m.

The sign convention used 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).

8.4 Datum Transformation Worked Example

The following Datum Transformation Worked Example was used to verify the input and application of Geodetic Datum and Transformation Parameters within positioning software. A screen image of the QINSy Computation is included.

Melbourne ARGN Site

Datum	**:**	**International Terrestrial Reference Frame 2000**
Latitude	:	37° 49’ 45.87642” South
Longitude	:	144° 58’ 31.21792” East
Ellipsoidal Height	:	40.744m
Datum	**:**	**Geocentric Datum of Australia 1994 (GDA94)**
Latitude	:	37º 49’ 45.90236” South
Longitude	:	144º 58’ 31.20539” East
Ellipsoidal Height	:	40.798m
Projection	**:**	**Map Grid of Australia (MGA) Zone 55 CM 147° East**
Easting	:	321 819.563m
Northing	:	5 811 179.929m

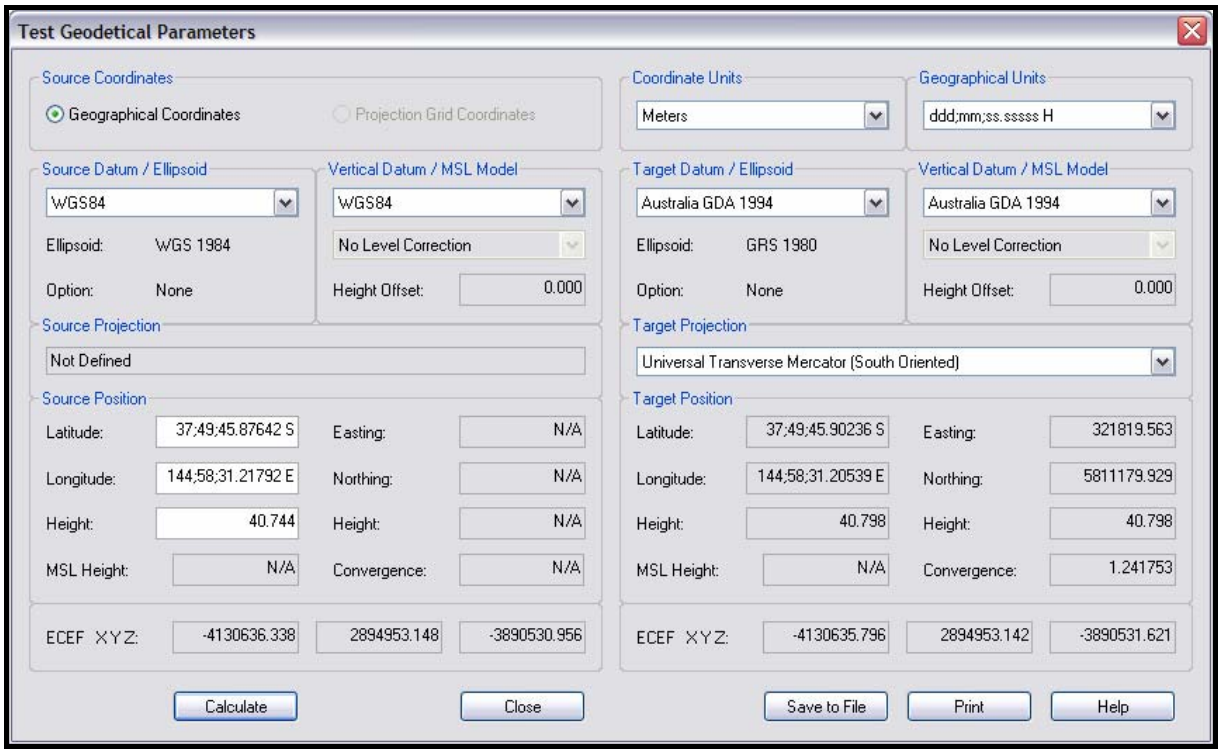

Figure 8-1 ITRF2000 to GDA94 Datum Transformation Worked Example

9 PERSONNEL AND EQUIPMENT

9.1 Personnel

9.1.1 Onshore

Operations Manager	Jason French

9.1.2 Offshore (Pacific Crest)

Surveyor / Party Chief	Russell Burder
Surveyor	Peter Gillespie
Surveyor	Hao Zhang
Survey Engineer	Adam Bush
Survey Engineer	David McCracken
Geophysicist	Adam Culley

9.2 Equipment

9.2.1 Pacific Crest

Positioning Systems

- QINSy Survey Positioning and Acquisition Software
- Verify Multiple Reference Station Quality Control Software
- Veripos LD2 Standard Differential GPS
- Coda Octopus F180 Attitude and Positioning System

Heading Systems

- SG Brown Meridian Gyrocompass
- Coda Octopus F180 Attitude and Positioning System

Echo Sounder System

- Reson 8160 Multi Beam Echo Sounder

Sidescan Sonar System

- EdgeTech 4200-FS Digital Sidescan Sonar System
- EdgeTech 701-DL Topside Processor
- EdgeTech Discover Software
- Coda DA2000 Sidescan Sonar Acquisition System
- Sidescan Sonar Winch

Sub-bottom profiler System

- Monopulser V2 Power Supply
- Monopulser V2 Sparker
- Monopulser V2 Boomer Plate
- Monopulser V2 Hydrophone
- Dr Geo Acquisition System

Processing Systems

- Caris HIPS and SIPS
- Coda GeoSurvey and Mosaic

Ancillary Equipment

- Valeport Midas CTD SVP

10 DISTRIBUTION

Copies of this report have been distributed as follows:

Apache Energy Limited	:	2 Hard copies
Attention: A. Billstein	:	2 Electronic copies
***Tri-Surv* Geomatics**	:	1 Hard copy
	:	1 Electronic copy

APPENDIX A - JOB SAFETY ANALYSIS DOCUMENTS

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

JOB SAFETY ANALYSIS RECORD

Tri-Surv Project No: **8A270**
Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-001**
Date: **12 July 2008**
General Activity Description: **Vessel Mobilisation**
Personnel in Attendance: **RB, AC, AB, PG, DM, AH, HZ (Tri-Surv)**
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Mobilisation – Loading of equipment to vessel, welding of brackets and sea fastenings, setting up of equipment.	Back injuries, trip hazards, incorrect use of tools, crusing, equipment damage, electrocution.	PPE to be worn worn at all times, correct lifting methods to be practiced, Hyab to be used where possible. Ensure work area is kept clen and tidy and unused tools put away, permit ro work to be filled in.	All
2	Crane Limitations	Port quarter crane reach capability to aft deck and port side for transducer installation.	Crane reach tested with respect to transducer securing bracket prior to rigging transducer pole for lift	All
3	Rigging Methodology	Incorrect rigging results in difficulty managing load.	Survey personnel communicated installation requirements (ie orientation) of transducer Tag line to be attached to padeye at base of transducer pole to control transducer movement during lift	All
4	Personnel Safety	Injury to personnel during lifting operations.	All personnel within swing radius of crane to be correctly attired with safety helmet and boots Non essential personnel to remain clear of load during lifting operations	All

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Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-002**
Date: **12 July 2008**
General Activity Description: **MBES Transducer Head Installation**
Personnel in Attendance: **RB, AB, (Tri-Surv)**
Scuba Diving Crew
OPC
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Mobilisation – Loading of equipment to vessel, welding of brackets and sea fastenings, setting up of equipment.	Back injuries, trip hazards, incorrect use of tools, crusing, equipment damage, electrocution.	PPE to be worn worn at all times, correct lifting methods to be practiced, Hyab to be used where possible. Ensure work area is kept clen and tidy and unused tools put away, permit ro work to be filled in.	All
2	Crane Limitations	Wharf crane reach capability.	Crane reach tested with respect to MBES transducer head placement in the water.	OPC
3	Rigging Methodology	Incorrect rigging results in difficulty managing load	Survey personnel communicated installation requirements (ie orientation) of MBES transducer head, floatation to be added to MBES transducer head to keep it steady and neutrally buoyant, tag line to be attached to MBES transducer head to control movement during lift.	All
4	MBES transducer head installation	Damage to MBES transducer head	No tension to be applied to MBES cables at any time, connectors to be water tight, turn radius of the cables to be no less than 3ft, MBES transducer head to be protected.	Tri-Surv, Dive Crew
5	Personnel Safety	Injury to personnel during lifting operations	All personnel within swing radius of crane to be correctly attired with safety helmet and boots Non essential personnel to remain clear of	All

			load during lifting operations	
6	**Personnel Safety**	**Diver injuries**	**Good communications between dive crew and surface dive supervisor, divers to be in dive pairs during installation operations, vessel prop to be isolated while divers are in the water, all personnel to be aware that divers are in the water**	**Dive Crew**

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Tri-Surv Project No: **8A270**
Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-003**
Date: **13 July 2008**
General Activity Description: **USBL Brace Plate Installation**
Personnel in Attendance: **RB, AB, (Tri-Surv)**
Scuba Diving Crew
OPC
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Mobilisation – Loading of equipment to vessel, welding of brackets and sea fastenings, setting up of equipment.	Back injuries, trip hazards, incorrect use of tools, crusing, equipment damage, electrocution.	PPE to be worn worn at all times, correct lifting methods to be practiced, Hyab to be used where possible. Ensure work area is kept clen and tidy and unused tools put away, permit ro work to be filled in.	All
2	Crane Limitations	Wharf crane reach capability.	Crane reach tested with respect to MBES transducer head placement in the water.	OPC
3	Rigging Methodology	Incorrect rigging results in difficulty managing load	Survey personnel communicated installation requirements (ie orientation) of USBL brace plate. Floatation to be added to USBL brace plate keep steady neutral buoyancy. Tag line to be attached to USBL brace plate to control movement during lift.	All
4	Personnel Safety	Injury to personnel during lifting operations	All personnel within swing radius of crane to be correctly attired with safety helmet and boots Non essential personnel to remain clear of load during lifting operations	All
5	Personnel Safety	Diver injuries	Good communications between dive crew and surface dive supervisor, divers to be in dive pairs during installation operations, vessel prop to be isolated while divers are in the	Dive Crew

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AUSTRALIA

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			water, all personnel to be aware that divers are in the water	

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F: +61 (0) 8 9250 6922
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Tri-Surv Project No: **8A270**
Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-004**
Date: **14 July 2008**
General Activity Description: **Wielding Operations**
Personnel in Attendance: **RB, AB, DM (Tri-Surv)**
Wielder (OPC)
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Mobilisation – Loading of equipment to vessel, wielding of brackets and sea fastenings, setting up of equipment.	Back injuries, trip hazards, incorrect use of tools, crusing, equipment damage, electrocution.	PPE to be worn worn at all times, correct lifting methods to be practiced, Hyab to be used where possible. Ensure work area is kept clen and tidy and unused tools put away, permit ro work to be filled in.	All
2	Crane Limitations	Wharf crane reach capability.	Crane reach tested with respect to SSS Winch placement on the vessel aft deck.	OPC
3	Wielding Operations	Hot work	Hot work permit to be open and cleared with Dalmark Marine Master, fire extinguisher to be located next to the wielding operation.	All
4	Personnel Safety	Injury to personnel during lifting and wielding operations	All personnel within swing radius of crane to be correctly attired with safety helmet and boots, non essential personnel to remain clear of load during lifting operations. Eye protection/face mask to be worn while wielding, non essential personnel to remain clear of wielding operations	All

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Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-005**
Date: **16 July 2008**
General Activity Description: **USBL Pole Deplyment/Recovery**
Personnel in Attendance: **RB, AB, DM, PG, AH (Tri-Surv)**
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Crane Limitations	Hyab crane reach capability.	Crane reach tested with respect to pole deployment.	Dalmark Marine Crew
2	Deploy/Recover USBL Pole	Man overboard, Crane work, Trapped fingers	Life Vests, 2 persons deploy/recover, radio comms deck-bridge, life ring and vessel stationary on comfortable heading.	All
3	Personnel Safety	Injury to personnel during lifting and wielding operations	All personnel within swing radius of crane to be correctly attired with safety helmet and boots, non essential personnel to remain clear of load during lifting operations.	All

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Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-006**
Date: **16 July 2008**
General Activity Description: **Sonardyne Compatt Beacon Deployment**
Personnel in Attendance: **RB, AC, HZ, AB (Tri-Surv)**
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	USBL Compatt Beacon Deployment	Personnel overboard vessel	Personnel invlolved in physical deployment of Compatt Beacon to wear life vests.	RB, AB (Tri-Surv)
			Dedicated personnel to observe deck operations	Dalmark Marine Crew RB (Tri-Surv)
			Bhagwan personnel prepared to assist with deployment of life preservers, maintaining visibility and raising alarm in event of incident	Dalmark Marine Crew
			Personnel not to be positioned between Compatt arrangement and stern of vessel during deployment operations.	RB, AB (Tri-Surv)
		Damage to Compatt arrangement	Bhagwan personnel to assist with rigging of Compatt arrangement	Dalmark Marine Crew
			Vessel to move slowly forward during deployment of Compatt	Dalmark Marine Crew
			Radio communications between vessel deck and bridge during deployment operations	Dalmark Marine Crew RB (Tri-Surv)
		Injury to personnel during operations	Safety equipment including overalls, safety boots, life vests and gloves to be provided.	All

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Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
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Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-007**
Date: **17 July 2008**
General Activity Description: **SSS Deplyment/Recovery**
Personnel in Attendance: **RB, AB, DM, PG, AH, HZ, AC (Tri-Surv)**
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Deploy/Recover SSS	Man overboard	Life Vests, Harness, 2 persons deploy/recover, radio comms deck-bridge, life ring at stern, take time and stop if required.	All
		Electrical Hazard	Power system after deployment and before recovery	Tri-Surv Crew
		Injury to personnel	Personnel to remain clear of deck winch during deployment and recovery ops	Tri-Surv Crew
			Gloves to handle SSS wire	All
		Damage to equipment	Survey personnel to advise bridge at all times of deployment and recovery operations.	All
			Equipment rigging to be checked by all personnel present, prior to deployment to ensure all fastenings are secure	Tri-Surv Crew
			Steady speed (3 – 3.5 knots) Good communication required. Aware of other vessels near rig.	All

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JOB SAFETY ANALYSIS RECORD

Tri-Surv Project No: **8A270**
Client: **Apache Energy Ltd**
Project: **Dory/Nemo-1 Site Survey**
Location: **Bass Straight, Victoria**
Prepared By:

Russell Burder
Party Chief

JSA Reference No.: **8A270-JSA-008**
Date: **17 July 2008**
General Activity Description: **USBL Pole Deplyment/Recovery**
Personnel in Attendance: **RB, AB, DM, PG, AH (Tri-Surv)**
Dalmark Marine Crew

No.	Specific Activity / Job Description	Potential Safety Hazard or Accident	Planned Mitigation / Risk Reducing Measures.	Personnel Involved.
1	Vessel Positioning	Compatt surfaces beneath vessel hull	Vessel Master to position vessel approximately 100m upcurrent of the Compatt seabed location	Dalmark Marine Crew
2	Dedicated Observers	Compatt beacon lost during recovery	Vessel bow directed at estimated beacon surfacing location Observers to be located on port/starboard side of bridge to maintain visual watch	Dalmark Marine Crew
3	Communications	Beacon released prematurely	Radio communications between brideg and survey container to ensure timing of Compatt release is correct	RB (Tri-Surv) Dalmark Marine Crew
4	Compatt beacon recovery	Injury to personnel through recovery of heavy load	Awareness of correct lifting techniques Grappling hook and boat hook to assist with recovery of beacon	All
		Man overboard	Personnel operating at stern of vessel during recovery are required to wear life vests Life buoys located at port and starboard quarters.	All

APPENDIX B - QINSY CONFIGURATION

SURVEY DEFINITIONS

General Definitions

Line sequence number	:	1
Line description	:	
UTC to GPS time correction	:	14.00 s
Survey Unit Name	:	Meters
Conversion factor to meters	:	1.00000000

Geodetic Definitions

Magnetic Variation Information

Undefined

Datum Definitions

Additional Datum	:	WGS84
Spheroid name	:	WGS 1984
Semi-major axis (a)	:	6378137.000 m
Semi-minor axis (b)	:	6356752.314 m
Conversion factor to meters	:	1.000000
Inverse flattening (1/f)	:	298.25722356
First eccentricity (e**2)	:	0.00669438
Second eccentricity (e'**2)	:	0.00673950
Survey Datum	:	Australia GDA 1994
Spheroid name	:	GRS 1980
Semi-major axis (a)	:	6378137.000 m
Semi-minor axis (b)	:	6356752.314 m
Conversion factor to meters	:	1.000000
Inverse flattening (1/f)	:	298.25722210
First eccentricity (e**2)	:	0.00669438
Second eccentricity (e'**2)	:	0.00673950

Datum Shift Definitions

WGS84 to Australia GDA 1994

X shift	:	0.0174 m	X rotation	:	-0.017554 "
Y shift	:	-0.0484 m	Y rotation	:	-0.015065 "
Z shift	:	-0.1035 m	Z rotation	:	-0.018157 "
Scale correction	:	0.00336200 ppm	Position vector rotation Arc Seconds		

Rotation center point : Not Defined

Height Datum Definition

Vertical datum	:	Australia GDA 1994
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m
MSL model	:	Horizontal Datum
MSL file	:	N/A
MSL level	:	No Level Correction
MSL file	:	N/A
MSL offset	:	0.000 m
MSL st.dev.	:	0.000 m
DTM mode	:	Absolute DTM's
DTM datum	:	Australia GDA 1994
DTM file	:	N/A
DTM level	:	No Level Correction
DTM file	:	N/A
DTM offset	:	0.000 m

Projection Definition

Projection name	:	Universal Transverse Mercator (South Oriented)
Conversion factor to meters	:	1.000000
UTM zone number	:	55
Latitude of grid origin	:	0;00;00.000 N
Longitude of grid origin	:	147;00;00.000 E
Grid Easting at grid origin	:	500000.000 E
Grid Northing at grid origin	:	10000000.000 N
Scale factor at longitude of origin	:	0.999600

Offset Convention

Offset mode	:	Rectangular
Offset distances units	:	Meters
Offset angles units	:	Degrees

OBJECT DEFINITIONS

General Summary Information

Number of survey vessels or objects	:	2
Number of relay vessels or buoys	:	0
Number of external network nodes	:	0
Number of datums/spheroids defined	:	2

Vessel Definitions

Pacific Crest

Streamers	:	0	Gun arrays	:	0
Buoys	:	0	Echosounders	:	0
Satellite receivers	:	0	USBL systems	:	1
Network nodes	:	9	Pitch/Roll/Heave sensors		

Correction to GMT : 0.00 h
Correction to master vessel's time : 0.000000 s

Height above draft reference : 1.805 m
Pacific Cres CoG

SHAPE	Point	X	Y	Z	Pen	Fill	Style
	1	2.7	-6.6	0.0	Up	On	Solid
	2	1.8	-10.4	0.0	Down	On	Solid
	3	1.2	-11.2	0.0	Down	On	Solid
	4	0.2	-11.9	0.0	Down	On	Solid
	5	-3.2	-11.9	0.0	Down	On	Solid
	6	-4.2	-11.2	0.0	Down	On	Solid
	7	-4.8	-10.4	0.0	Down	On	Solid
	8	-5.7	-6.6	0.0	Down	On	Solid
	9	-5.7	8.4	0.0	Down	On	Solid
	10	-4.0	13.9	0.0	Down	On	Solid
	11	-2.0	17.2	0.0	Down	On	Solid
	12	-1.5	17.5	0.0	Down	On	Solid
	13	-1.0	17.2	0.0	Down	On	Solid
	14	1.2	13.9	0.0	Down	On	Solid
	15	2.7	8.4	0.0	Down	On	Solid
	16	2.7	-6.6	0.0	Down	On	Solid

EdgeTech SSS

Streamers	:	0	Gun arrays	:	0
Buoys	:	0	Echosounders	:	1
Satellite receivers	:	0	USBL systems	:	0
Network nodes	:	1	No Pitch/Roll/Heave sensors		

Correction to GMT : 0.00 h
Correction to master vessel's time : 0.000000 s

Height above draft reference : 0.000 m
EdgeTech SSS CoG

SHAPE	Point	X	Y	Z	Pen	Fill	Style
	1	0.5	0.0	0.0	Up	Off	Solid
	2	-0.5	0.0	0.0	Down	Off	Solid
	3	-0.5	3.0	0.0	Down	Off	Solid
	4	0.5	3.0	0.0	Down	Off	Solid
	5	0.5	0.0	0.0	Down	Off	Solid

Gun Array Definitions

NETWORK DEFINITIONS

Fixed Node Definitions

Variable Node Definitions

Pacific Cres CoG

Object location	:	Pacific Crest
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m

Variable Node Definitions (continued)

AD410		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-2.260 m
Y (Bow = Positive):	:	5.785 m
Z (Up = Positive):	:	10.790 m
Centre Stern		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-1.460 m
Y (Bow = Positive):	:	-11.900 m
Z (Up = Positive):	:	0.000 m
Sparker (Stb)		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	2.590 m
Y (Bow = Positive):	:	-9.800 m
Z (Up = Positive):	:	0.000 m
Reson 8160		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-0.500 m
Y (Bow = Positive):	:	1.930 m
Z (Up = Positive):	:	-5.440 m
USBL Head		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-5.950 m
Y (Bow = Positive):	:	0.940 m
Z (Up = Positive):	:	-6.200 m
EdgeTech SSS CoG		
Object location	:	EdgeTech SSS
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m
Hydrophone (Port		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-5.510 m
Y (Bow = Positive):	:	-9.940 m
Z (Up = Positive):	:	0.000 m
F180 Primary Ant		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-2.870 m
Y (Bow = Positive):	:	9.135 m
Z (Up = Positive):	:	10.790 m
Sparker CDP		
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-1.460 m
Y (Bow = Positive):	:	-31.900 m
Z (Up = Positive):	:	0.000 m

Observation Definitions

F180 Heading	:	Bearing (True)
"At" node	:	Pacific Cres CoG
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	F180 Heading
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Meridian	:	Bearing (True)
"At" node	:	Pacific Cres CoG
"To" node 1	:	
Measurement unit code	:	Degrees
System description	:	Meridian
Propagation speed	:	0.0000000000 m/s
Lanewidth on baseline	:	0.0000000000 m/s
Scale factor	:	1.0000000000
Fixed system (C-O)	:	0.00000000 °
Variable (C-O)	:	0.000000 °
A priori SD	:	0.50 °
Quality indicator	:	No quality info recorded

Reference Station Definitions

SYSTEM DEFINITIONS

Gyros and Compasses

Meridian

Interfacing

Type	:	Gyros and Compasses			
Driver	:	NMEA Compass ($--HDT)			
Executable and Cmdlin	:	DrvGyroNMEA.exe 8			
Port	:	5			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Connected Observations

Meridian	:	Bearing (True)

Connected Nodes

Pacific Cres CoG	:	Pacific Crest

Offset System

Offset System

Interfacing

Type	:	Offset System
Driver	:	Unknown Driver (0)
Executable and Cmdlin	:	

Output System

Coda Sidescan

Interfacing

Type	:	Output System			
Driver	:	Coda Navigation Format			
Executable and Cmdlin	:	DrvOutSubspection.exe CODA			
Port	:	9			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	1.000 s	Latency	:	0.000 s

Position Navigation System

Position Standard

Interfacing

Type	:	Position Navigation System			
Driver	:	NMEA Position (GPGGA)			
Executable and Cmdlin	:	DrvNMEA0183.exe MSL			
Port	:	7			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	0
Receiver description	:	
Node identifier	:	AD410
Object location	:	Pacific Crest
X (Stbd = Positive):	:	-2.260 m
Y (Bow = Positive):	:	5.785 m
Z (Up = Positive):	:	10.790 m

Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Output System

Subbottom

Interfacing

Type	:	Output System			
Driver	:	NMEA GPGGA			
Executable and Cmdlin	:	DrvOutNMEA.exe 1			
Port	:	17			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	1.000 s	Latency	:	0.000 s

Position Navigation System

F180 Position

Interfacing

Type	:	Position Navigation System
Driver	:	Coda Octopus F180 Position (Network with UTC)
Executable and Cmdlin	:	DrvQPSCountedUDP.exe F180 PPS
Port	:	3000

Satellite System Definition

Position datum	:	WGS84
Satellite system name	:	WGS84

Satellite Receiver Definition

Receiver number	:	0
Receiver description	:	
Node identifier	:	Pacific Cres CoG
Object location	:	Pacific Crest
X (Stbd = Positive):	:	0.000 m
Y (Bow = Positive):	:	0.000 m
Z (Up = Positive):	:	0.000 m

Horizontal datum	:	WGS84
Vertical datum	:	WGS84
Height file	:	N/A
Height level	:	No Level Correction
Height file	:	N/A
Height offset	:	0.000 m

Connected Observations

Connected Nodes

Gyros and Compasses

F180 Heading

Interfacing

Type	:	Gyros and Compasses
Driver	:	Coda Octopus F180 Heading (Network with UTC)
Executable and Cmdlin	:	DrvQPSCountedUDP.exe F180 PPS
Port	:	3000

Connected Observations

F180 Heading : Bearing (True)

Connected Nodes

Pacific Cres CoG : Pacific Crest

Pitch, Roll and Heave Sensor

F180 Motion

Interfacing

Type	:	Pitch, Roll and Heave Sensor
Driver	:	Coda Octopus F180 R-P-H (Network with UTC)
Executable and Cmdlin	:	DrvQPSCountedUDP.exe F180 PPS
Port	:	3000

System Parameters

F180 Motion

Object	:	Pacific Crest
Location on object (Lever arm)	:	Pacific Cres CoG
PRH sensor reference number	:	2
Rotation convention pitch	:	Positive bow up
Rotation convention roll	:	Positive heeling to starboard
Angular variable measured	:	HPR (roll first)
Angular measurement units	:	Degrees
Sign convention heave	:	Positive upwards
Measurement units heave	:	Meters
Quality indicator type pitch and roll	:	No quality info recorded
Quality indicator type heave	:	No quality info recorded
(C-O) pitch offset	:	0.000000
(C-O) roll offset	:	0.000000
(C-O) heave offset	:	0.000000

Description of pitch, roll and heave system

F180 Motion

Multibeam Echosounder

Reson 8160

Interfacing

Type	:	Multibeam Echosounder
Driver	:	Reson Seabat 81xx/900x (Network)
Executable and Cmdlin	:	DrvSeabatSocket.exe
Port	:	1028

System Parameters

Reson 8160

Object	:	Pacific Crest
Number of transducers	:	Single
Transducer node 1	:	Reson 8160
Heading offset	:	0.000 °
Roll offset	:	0.000 °
Pitch offset	:	0.000 °
Maximum number of beams per ping	:	126
Unit is roll stabilized	:	No
Unit is pitch stabilized	:	No
Unit is heave compensated	:	No
Use sound velocity from unit	:	Yes

USBL System

USBL

Interfacing

Type	:	USBL System			
Driver	:	Nautronics ATS (ASCII)			
Executable and Cmdlin	:	DrvUsblTerminated.exe NAUTRONICS_ATS_ASCII			
Port	:	1			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

System Parameters

USBL

Object	:	Pacific Crest
USBL system reference number	:	1
Quality indicator type	:	No quality info recorded
Sign convention for Z-axis data	:	Positive downward (depth)
Measurement units X,Y,Z	:	Meters
Turn around delays	:	Not corrected
Velocity of propagation	:	Assumed
Roll alignment	:	Corrected VRU
Pitch alignment	:	Corrected VRU
Horizontal alignment	:	No
Reduction to ship's reference point	:	No
Transducer	:	USBL Head
Sign convention roll offset	:	Positive heeling to starboard
Sign convention pitch offset	:	Positive bow up
Sign convention heading offset	:	Positive to starboard
Roll alignment offset	:	0.000000 °
Pitch alignment offset	:	0.000000 °
Heading alignment offset	:	0.000000 °
Assumed velocity of propagation	:	1485.000000 Meters/s
Calibrated velocity of propagation	:	1485.000000 Meters/s
Turn around delay	:	0.000000 ms

Connected Targets

EdgeTech SSS CoG			:	EdgeTech SSS
Slot 1	:	4		

Singlebeam Echosounder

Echo Sounder

Interfacing

Type	:	Singlebeam Echosounder
Driver	:	Manual Driver
Executable and Cmdlin	:	DrvManualGeneric.exe

System Parameters

Echo Sounder [0]

Echosounder reference number	:	1
Object	:	EdgeTech SSS
Transducer	:	EdgeTech SSS CoG
Transducer offset X	:	0.000 m
Transducer offset Y	:	0.000 m
Transducer offset Z	:	0.000 m
Propagation velocity used	:	1542.00 Meters/s
Calibrated propagation velocity	:	1542.00 Meters/s
Draft Correction	:	Not Corrected
Unit is roll stabilized	:	No
Unit is pitch stabilized	:	No
Unit is heave compensated	:	No
Beam angle width applied	:	No
Beam angle width	:	10.0000 °
Processing Mode	:	Depths normally processed

PPS System

Verify ZDA

Interfacing

Type	:	PPS System			
Driver	:	NMEA ZDA PPS (No TTL)			
Executable and Cmdlin	:	DrvPpsNoTTL.exe ZDA			
Port	:	11			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	0.000 s	Latency	:	0.000 s

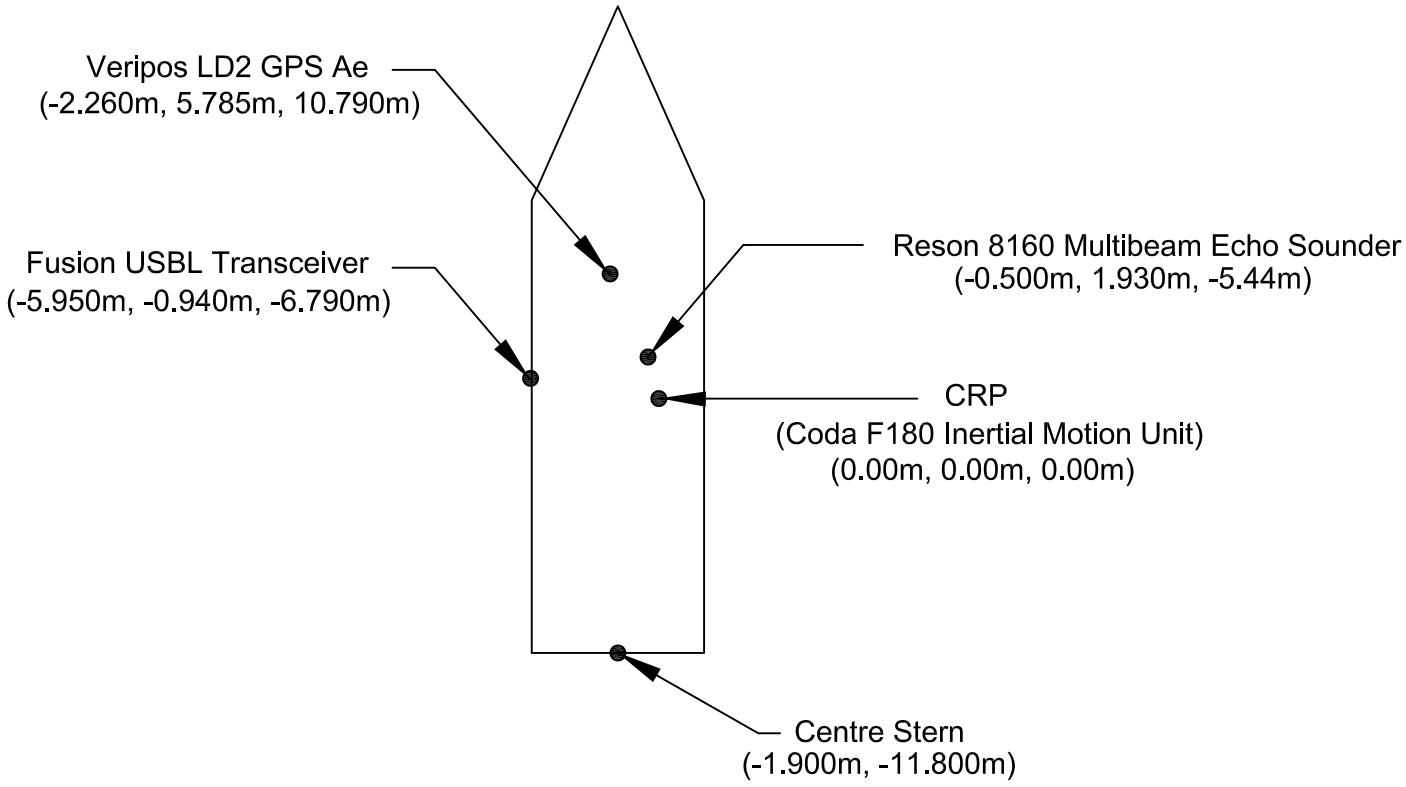
Output System

SBP

Interfacing

Type	:	Output System			
Driver	:	NMEA GPGGA			
Executable and Cmdlin	:	DrvOutNMEA.exe 1			
Port	:	16			
Baud rate	:	9600	Data bits	:	8
Parity	:	None	Stop bits	:	1
Update rate	:	1.000 s	Latency	:	0.000 s

APPENDIX C - VESSEL OFFSET DIAGRAM



Monopulser Sparker CDP
(-1.330m, -34.195m)

Notes:

1. The Reson 8160 transducer draft was recorded as 1.43m on 15 July 2008 at 27 South Wharf, port of Melbourne, Victoria using direct offset measurements.

Offset Convention: port/stbd (+ve stbd), fwd/aft (+ve fwd), up/down (+ve up)

Tri-Surv Geomatics
8-12 Stafford St, MIDLAND WA 6056
ABN: 47 108 312 787
T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
W: www.tri-surv.com

Title: Pacific Crest Offset Diagram

Client: Apache Energy Ltd

Drawing No.: Pacific Crest Offsets
Revision No.: 0
Date: 17 July 2008
Tri-Surv Project No.: 8A270

APPENDIX D - GEODETIC CONTROL INFORMATION

SURVEY MARK SUMMARY SHEET

Tri-Surv Geomatics
8-12 Stafford Street
MIDLAND WA 6056
ABN: 47 108 312 787
T: 61 (0) 8 9250 2744
F: 61 (0 8 9250 6922
W: www.tri-surv.com

Station Identifier	Station Code	Location	ID
Victorian Channels Authority - 32084	32084	28 South Wharf, Port of Melbourne	55

Survey Mark Description

Surveyor	Survey Date	Tri-Surv Report Number
VCA		-

HORIZONTAL DETAILS

Datum	Datum
Geocentric Datum of Australia 1994	
Latitude	**Latitude**
37° 49' 12.090" South	
Longitude	**Longitude**
144° 55' 22.479" East	
Projection	**Projection**
Map Grid of Australia 1994	
Easting	**Easting**
317 182.312m	
Northing	**Northing**
5 812 120.828m	

VERTICAL DETAILS

AHD Height	
-	
Ellipsoidal Height	**Ellipsoidal Height**
-	-
AUSGeoid98 Separation	
-	

GEODETIC DATUMS

Spheroid (Primary)	Semi-Major Axis	Flattening
Geodetic Reference System 1980	6 378 137.000	298.257 222 101

Projection Type	Zone	Central Meridian	Scale Factor at CM	False Easting	False Northing
Universal Transverse Mercator	55	147 East	0.9996	500 000m	10 000 000m

Spheroid (Secondary)	Semi-Major Axis	Flattening

Projection Type	Zone	Central Meridian	Scale Factor on CM	False Easting	False Northing

TRANSFORMATION PARAMETERS

rx	ry	rz

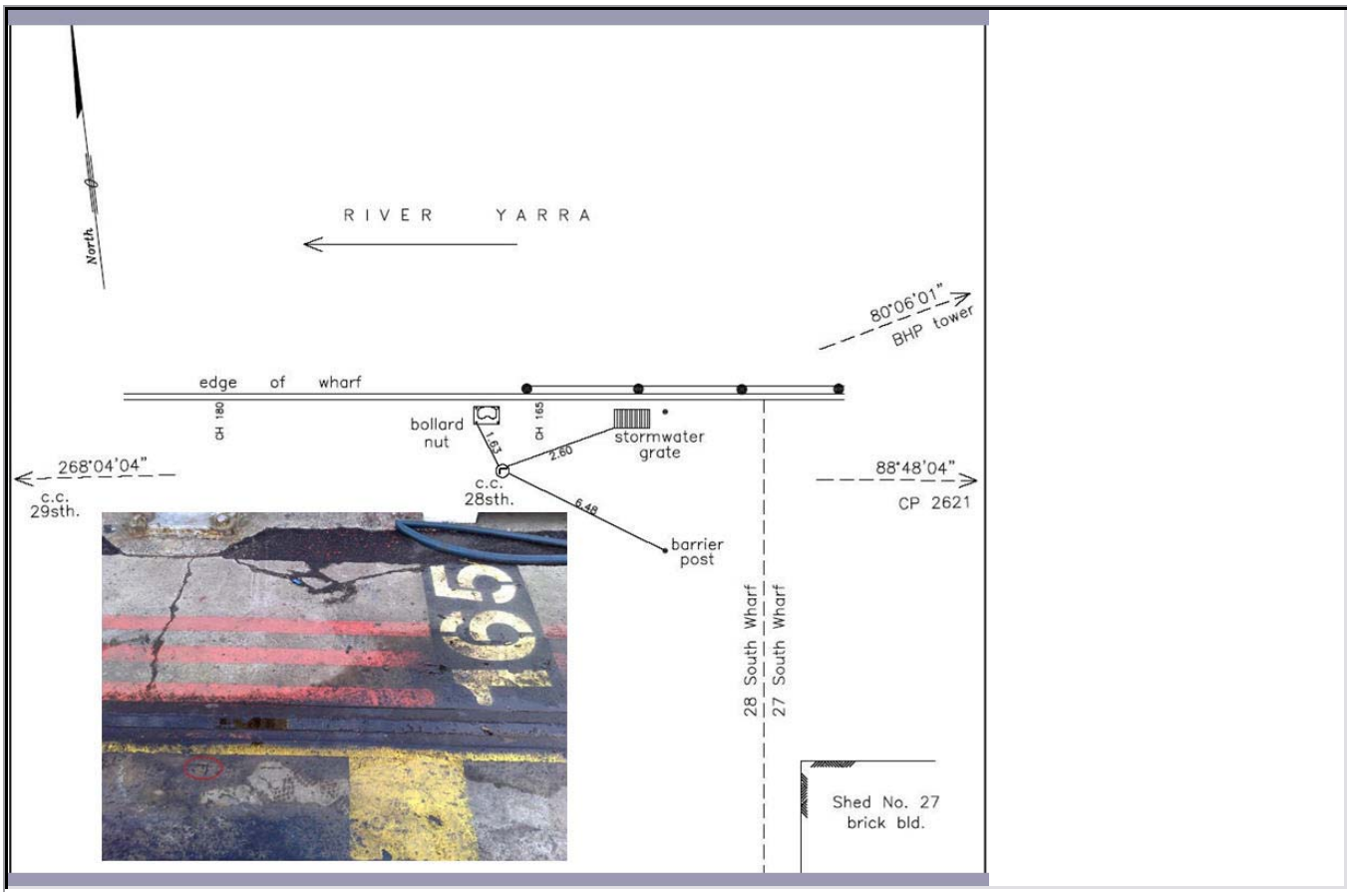
dx	dy	dz	scale

SURVEY MARK SUMMARY SHEET

Tri-Surv Geomatics
8-12 Stafford Street
MIDLAND WA 6056
ABN: 47 108 312 787
T: 61 (0) 8 9250 2744
F: 61 (0 8 9250 6922
W: www.tri-surv.com

SITE INFORMATION

Site Photograph



Comments

Tuesday, 19 August 2008

SURVEY MARK SUMMARY SHEET

Tri-Surv Geomatics
8-12 Stafford Street
MIDLAND WA 6056
ABN: 47 108 312 787
T: 61 (0) 8 9250 2744
F: 61 (0 8 9250 6922
W: www.tri-surv.com

Station Identifier	Station Code	Location	ID
Victorian Channels Authority - 32085	32085	29 South Wharf, Port of Melbourne	56

Survey Mark Description

Surveyor	Survey Date	Tri-Surv Report Number
VCA		-

HORIZONTAL DETAILS

Datum	Datum
Geocentric Datum of Australia 1994	
Latitude	**Latitude**
37° 49' 12.169" South	
Longitude	**Longitude**
144° 55' 13.878" East	
Projection	**Projection**
Map Grid of Australia 1994	
Easting	**Easting**
316 972.052m	
Northing	**Northing**
5 812 113.729m	

VERTICAL DETAILS

AHD Height

Ellipsoidal Height: -

Ellipsoidal Height

AUSGeoid98 Separation

GEODETIC DATUMS

Spheroid (Primary)	Semi-Major Axis	Flattening

Projection Type	Zone	Central Meridian	Scale Factor at CM	False Easting	False Northing
Universal Transverse Mercator	55	147 East	0.9996	500 000m	10 000 000m

Spheroid (Secondary)	Semi-Major Axis	Flattening

Projection Type	Zone	Central Meridian	Scale Factor on CM	False Easting	False Northing

TRANSFORMATION PARAMETERS

rx	ry	rz

dx	dy	dz	scale

SURVEY MARK SUMMARY SHEET

Tri-Surv Geomatics
8-12 Stafford Street
MIDLAND WA 6056
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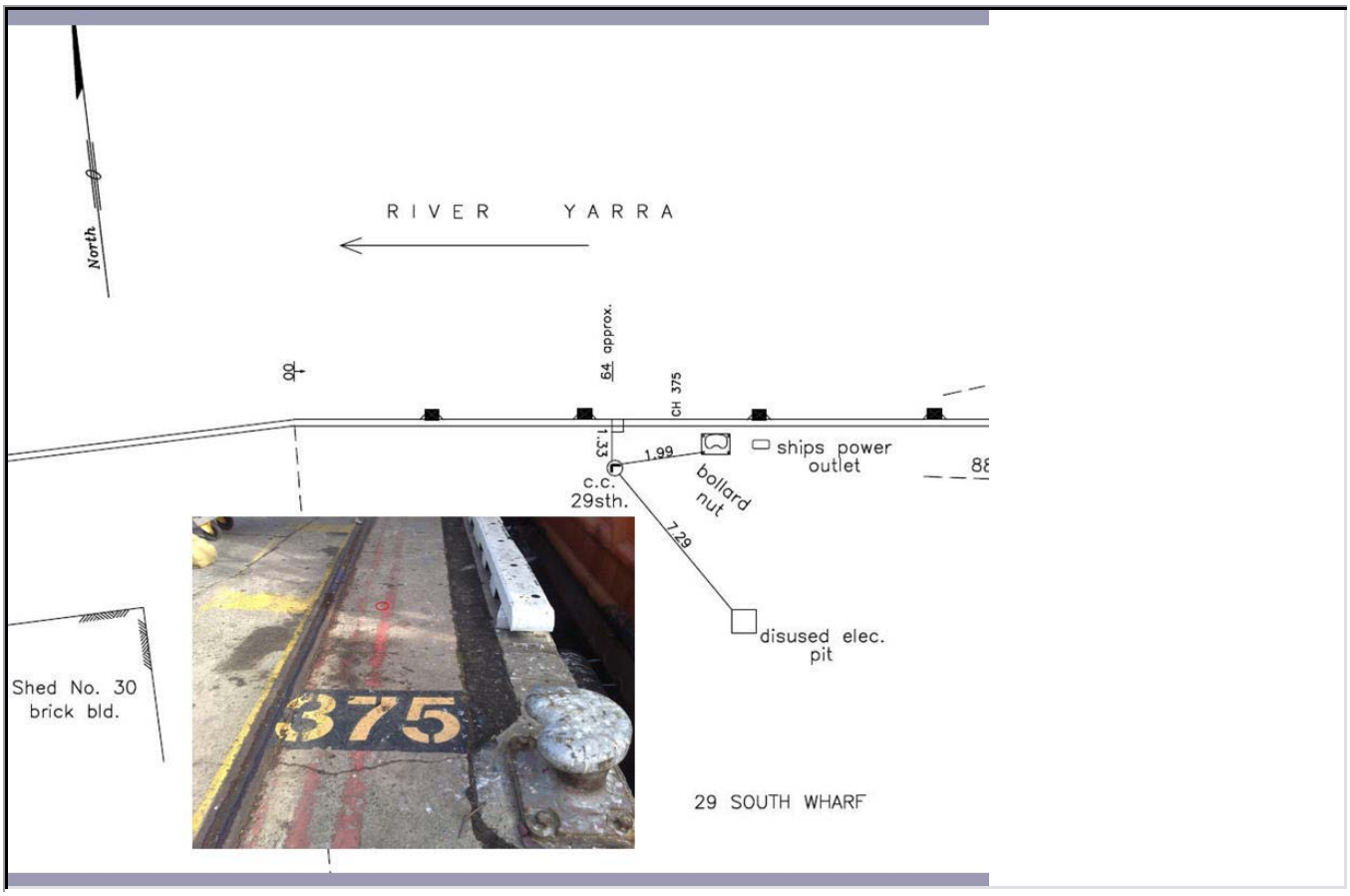
T: 61 (0) 8 9250 2744
F: 61 (0 8 9250 6922
W: www.tri-surv.com

SITE INFORMATION

Site Photograph



Comments

APPENDIX E - HEADING SENSOR CALIBRATION

Tri-Surv Pty Ltd
Suite 8-12 Stafford Street
Midland WA 6056
Australia

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

Static Differential GPS Check
Veripos Standard

Tri-Surv Job Number:	8A270
Job Description:	Dory-1 Site Survey
Client:	Apache Energy Limited
Party Chief:	Russell Burder
Surveyor:	Peter Gillespie
Wharf:	Port of Melbourne South Wharf 28
Vessel:	Pacific Crest
Date:	15 July 2008

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55 CM 147 East

Instrument Station:	32084	Easting (m):	317 182.312
		Northing (m):	5 812 120.828
		Height (m):	0.000
Backsight Station:	PMT-01	Easting (m):	317 111.433
		Northing (m):	5 812 118.233
		Height (m):	0.000

Calculated Grid Bearing (DMS):	267	54	11	
Calculated Grid Convergence (DMS):	001	16	26	Negative-Grid North East of True North

Observations To: **LD2 Antenna**

Backsight Observation (DMS): 000 00 00

Time UTC (hh:mm:ss)	Observed Distance (m)	Observed Direction (DMS)			Positioning System DGPS Co-ordinates	
					Easting (m)	Northing (m)
22:33:04	26.400	019	20	22	317 155.247	5 812 128.463
22:33:27	26.416	019	22	59	317 155.270	5 812 128.525
22:33:45	26.404	019	12	58	317 155.271	5 812 128.464
22:34:06	26.393	019	16	01	317 155.347	5 812 128.373
22:34:28	26.423	019	30	51	317 155.960	5 812 128.343
22:34:44	26.419	019	20	44	317 155.491	5 812 128.469
22:35:10	26.428	019	14	39	317 155.565	5 812 128.439
22:35:30	26.420	019	07	57	317 155.567	5 812 128.378
22:35:52	26.430	019	14	44	317 155.616	5 812 128.379
22:36:35	26.434	019	18	25	317 155.817	5 812 128.137

Russell Burder
Surveyor/PC

Tri-Surv Pty Ltd
Suite 8-12 Stafford Street
Midland WA 6056
Australia

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

Static Differential GPS Check
Veripos Standard

Tri-Surv Job Number: 8A270
Job Description: Dory-1 Site Survey
Client: Apache Energy Limited
Party Chief: Russell Burder
Surveyor: Peter Gillespie
Wharf: Port of Melbourne South Wharf 28
Vessel: Pacific Crest
Date: 15 July 2008

Datum: GDA94 Projection: MGA Zone 55 CM 147 East

Observations To: **LD2 Antenna**

Time (hh:mm:ss)	Observed Direction (DMS)			Observed Distance (m)	Plane Bearing (DMS)			Plane Distance (m)	Calculated Co-ordinates		Positioning System DGPS Co-ordinates		Linear Misclose (m)
									Easting (m)	Northing (m)	Easting (m)	Northing (m)	
22:33:04	019	20	22	26.400	287	14	33	26.400	317 157.098	5 812 128.653	317 155.247	5 812 128.463	1.86
22:33:27	019	22	59	26.416	287	14	33	26.416	317 157.089	5 812 128.677	317 155.270	5 812 128.525	1.83
22:33:45	019	12	58	26.404	287	14	33	26.404	317 157.078	5 812 128.600	317 155.271	5 812 128.464	1.81
22:34:06	019	16	01	26.393	287	10	12	26.393	317 157.095	5 812 128.619	317 155.347	5 812 128.373	1.77
22:34:28	019	30	51	26.423	287	25	02	26.423	317 157.100	5 812 128.737	317 155.960	5 812 128.343	1.21
22:34:44	019	20	44	26.419	287	14	55	26.419	317 157.081	5 812 128.662	317 155.491	5 812 128.469	1.60
22:35:10	019	14	39	26.428	287	08	50	26.428	317 157.058	5 812 128.620	317 155.565	5 812 128.439	1.50
22:35:30	019	07	57	26.420	287	02	08	26.420	317 157.051	5 812 128.568	317 155.567	5 812 128.378	1.50
22:35:52	019	14	44	26.430	287	08	55	26.430	317 157.057	5 812 128.621	317 155.616	5 812 128.379	1.46
22:36:35	019	18	25	26.434	287	12	36	26.434	317 157.061	5 812 128.649	317 155.817	5 812 128.137	1.35

Mean Linear Misclose (m) **1.59**
Std Deviation **0.22**

APPENDIX F - STATIC DIFFERENTIAL GPS CHECK

Tri-Surv Pty Ltd
Suite 8-12 Stafford Street
Midland WA 6056
Australia

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

Static Differential GPS Check
Veripos Standard

Tri-Surv Job Number:	8A270
Job Description:	Dory-1 Site Survey
Client:	Apache Energy Limited
Party Chief:	Russell Burder
Surveyor:	Peter Gillespie
Wharf:	Port of Melbourne South Wharf 28
Vessel:	Pacific Crest
Date:	15 July 2008

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55 CM 147 East

Instrument Station:	32084	Easting (m):	317 182.312
		Northing (m):	5 812 120.828
		Height (m):	0.000
Backsight Station:	PMT-01	Easting (m):	317 111.433
		Northing (m):	5 812 118.233
		Height (m):	0.000

Calculated Grid Bearing (DMS):	267	54	11	
Calculated Grid Convergence (DMS):	001	16	26	Negative-Grid North East of True North

Observations To: **LD2 Antenna**

Backsight Observation (DMS): 000 00 00

Time UTC (hh:mm:ss)	Observed Distance (m)	Observed Direction (DMS)			Positioning System DGPS Co-ordinates	
					Easting (m)	Northing (m)
22:33:04	26.400	019	20	22	317 155.247	5 812 128.463
22:33:27	26.416	019	22	59	317 155.270	5 812 128.525
22:33:45	26.404	019	12	58	317 155.271	5 812 128.464
22:34:06	26.393	019	16	01	317 155.347	5 812 128.373
22:34:28	26.423	019	30	51	317 155.960	5 812 128.343
22:34:44	26.419	019	20	44	317 155.491	5 812 128.469
22:35:10	26.428	019	14	39	317 155.565	5 812 128.439
22:35:30	26.420	019	07	57	317 155.567	5 812 128.378
22:35:52	26.430	019	14	44	317 155.616	5 812 128.379
22:36:35	26.434	019	18	25	317 155.817	5 812 128.137

Russell Burder
Surveyor/PC

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Static Differential GPS Check
Veripos Standard

Tri-Surv Job Number: 8A270
Job Description: Dory-1 Site Survey
Client: Apache Energy Limited
Party Chief: Russell Burder
Surveyor: Peter Gillespie
Wharf: Port of Melbourne South Wharf 28
Vessel: Pacific Crest
Date: 15 July 2008

Datum: GDA94 Projection: MGA Zone 55 CM 147 East

Observations To: **LD2 Antenna**

Time (hh:mm:ss)	Observed Direction (DMS)			Observed Distance (m)	Plane Bearing (DMS)			Plane Distance (m)	Calculated Co-ordinates		Positioning System DGPS Co-ordinates		Linear Misclose (m)
									Easting (m)	Northing (m)	Easting (m)	Northing (m)	
22:33:04	019	20	22	26.400	287	14	33	26.400	317 157.098	5 812 128.653	317 155.247	5 812 128.463	1.86
22:33:27	019	22	59	26.416	287	14	33	26.416	317 157.089	5 812 128.677	317 155.270	5 812 128.525	1.83
22:33:45	019	12	58	26.404	287	14	33	26.404	317 157.078	5 812 128.600	317 155.271	5 812 128.464	1.81
22:34:06	019	16	01	26.393	287	10	12	26.393	317 157.095	5 812 128.619	317 155.347	5 812 128.373	1.77
22:34:28	019	30	51	26.423	287	25	02	26.423	317 157.100	5 812 128.737	317 155.960	5 812 128.343	1.21
22:34:44	019	20	44	26.419	287	14	55	26.419	317 157.081	5 812 128.662	317 155.491	5 812 128.469	1.60
22:35:10	019	14	39	26.428	287	08	50	26.428	317 157.058	5 812 128.620	317 155.565	5 812 128.439	1.50
22:35:30	019	07	57	26.420	287	02	08	26.420	317 157.051	5 812 128.568	317 155.567	5 812 128.378	1.50
22:35:52	019	14	44	26.430	287	08	55	26.430	317 157.057	5 812 128.621	317 155.616	5 812 128.379	1.46
22:36:35	019	18	25	26.434	287	12	36	26.434	317 157.061	5 812 128.649	317 155.817	5 812 128.137	1.35

Mean Linear Misclose (m) **1.59**
Std Deviation **0.22**

APPENDIX G - USBL CALIBRATION

CASIUS Calibration Report

Vessel: Pacific Crest **Device No:** 1 **Date/Time:** 16 July 2008 06:23:48

Settings:

Initial Estimates for BoxIn	
Transceiver depth offset	5.360m
Transceiver depth	5.360m
Antenna starboard offset	-2.260m
Antenna forward offset	5.790m
Antenna height offset	12.220m

Error Estimates for BoxIn	
DGPS lags USBL	0.00s
Range measurement	0.2m
Range gate	1.0m
DGPS position	2.0m
Beacon position	10.0m
Beacon depth	5.0m
Sound velocity	5.0m/s
Transceiver depth	0.5m
Transceiver offset	1.0m

Transceiver & Beacon	
Transceiver Index	11
Beacon Name	711
Turn Around Time	125.0ms

Depth Aiding	
Boresight Angle Limit	22.0º
Depth Difference Limit	1.0m

Transceiver Attitude Calculation Inputs	
Angle Gate	2.0º
Known Heading Correction	n/a

Values Used During Data Collection	
Transceiver Pitch Correction	31.76º
Transceiver Roll Correction	1.54º
Transceiver Heading Correction	0.00º
Sound Velocity	1506.9m/s

Results:

Beacon BoxIn	Beacon Eastings	Beacon Northings	Beacon Depth	Sound Velocity	Transceiver Starboard Offset	Transceiver Forward Offset
Before	616632.60m	5698791.50m	206.10m	1506.94m/s	-5.95m	0.94m
Calculated	616634.14m	5698790.26m	202.90m	1508.43m/s	-5.41m	0.71m
Calculated Accuracy	0.06m	0.04m	0.10m	0.38m/s	0.05m	0.10m

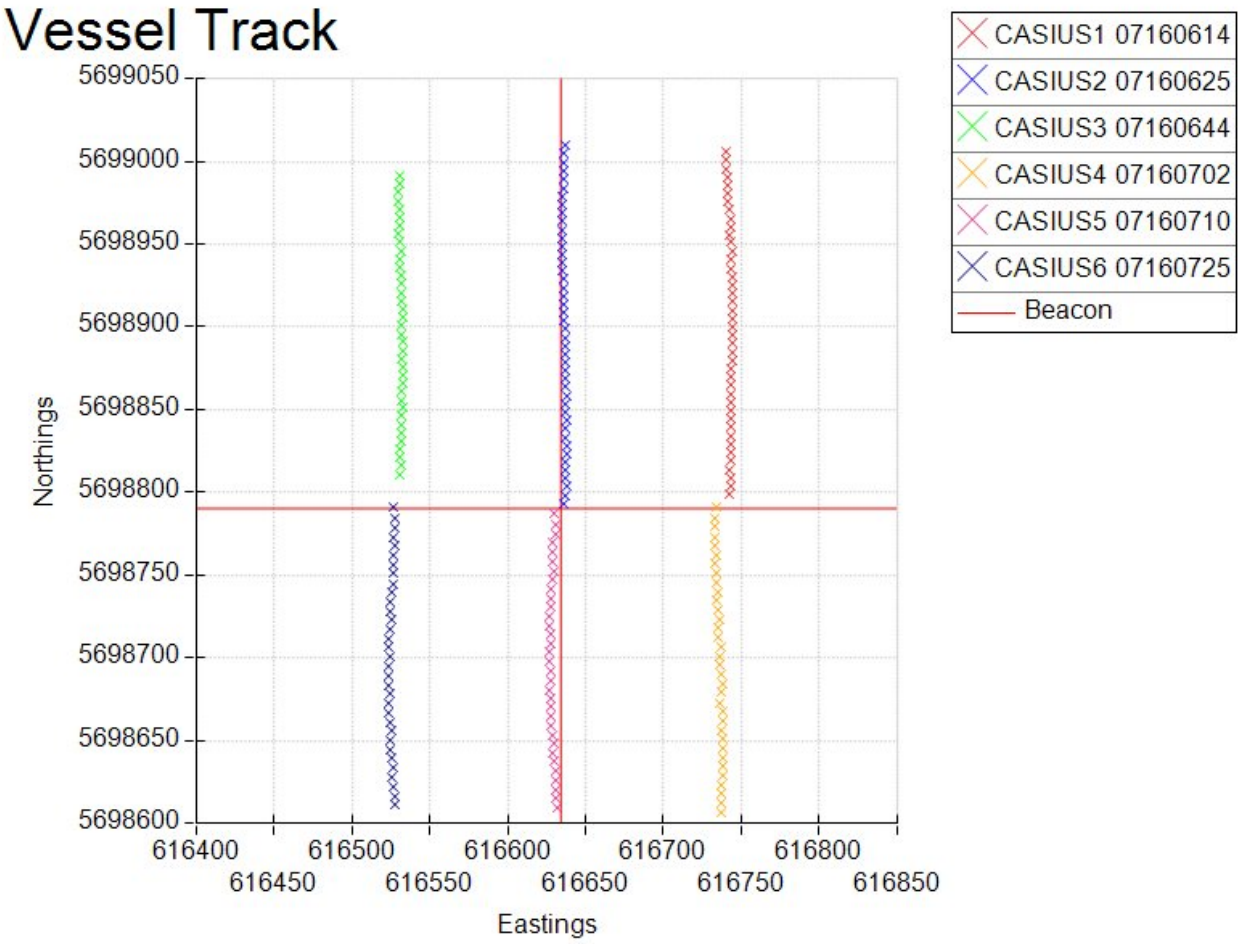
Transceiver Attitude	Pitch Correction	Roll Correction	Heading Correction
Before	31.76º	1.54º	0.00º
Calculated	**33.60º**	**1.89º**	**3.37º**
Calculated Accuracy	0.01º	0.02º	0.03º

Statistics:

	Before CASIUS (distance)	After CASIUS (distance)	Before CASIUS (% depth)	After CASIUS (% depth)
39.4% Beacon Positions (1 sigma)	10.7m	0.8m	5.26	0.40
50.0% Beacon Positions (CEP)	12.2m	0.9m	6.02	0.46
63.2% Beacon Positions (1 Drms)	13.3m	1.2m	6.56	0.57
86.5% Beacon Positions (2 sigma)	16.0m	1.6m	7.87	0.79
98.2% Beacon Positions (2 Drms)	18.2m	2.1m	8.95	1.05

General:

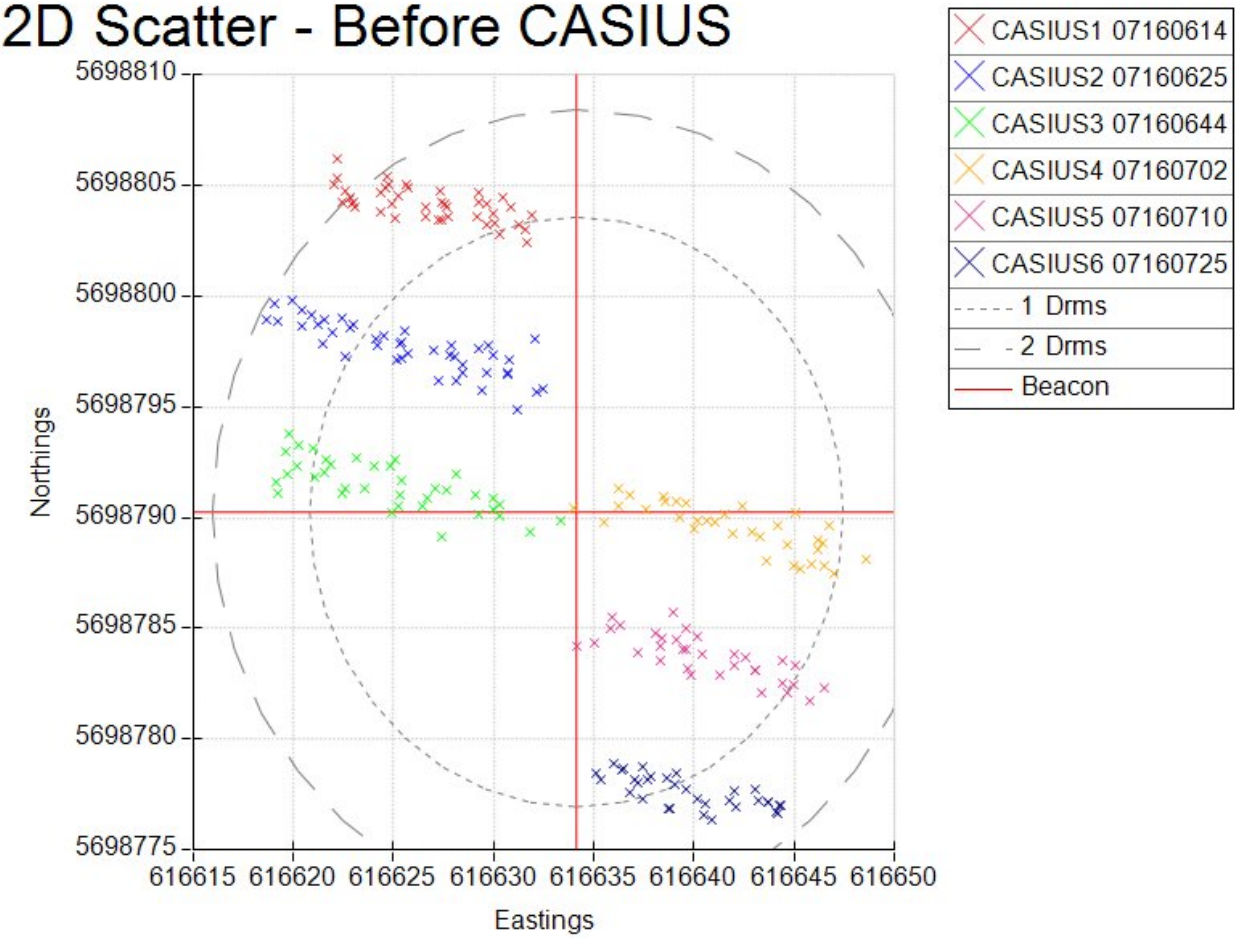
	Beacon BoxIn	Transceiver Attitude
Number of Iterations	3	15
Number of Fixes Used	223	223
Number Depth Aided		64
Average weighted residuals	0.021	0.172



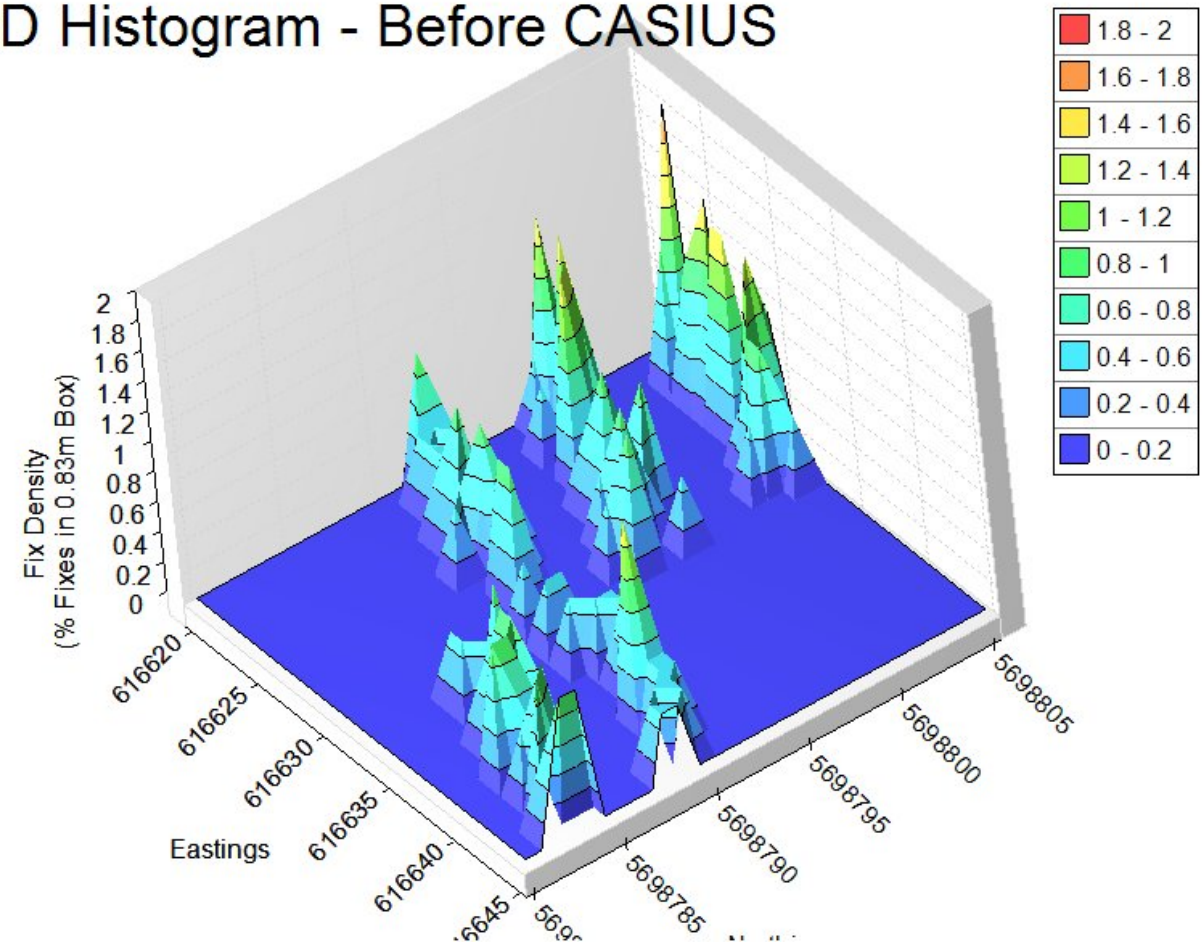
Data used:

Name	Filename	Start	End	#Acoustic	#Position
CASIUS1 07160614	C:\Ranger Files\CASIUS\0716_0614\CASIUS1 07160614.csv	16/07/2008 06:23:48	16/07/2008 06:25:11	42	86
CASIUS2 07160625	C:\Ranger Files\CASIUS\0716_0614\CASIUS2 07160625.csv	16/07/2008 06:42:39	16/07/2008 06:44:07	45	89
CASIUS3 07160644	C:\Ranger Files\CASIUS\0716_0614\CASIUS3 07160644.csv	16/07/2008 07:01:18	16/07/2008 07:02:34	39	76
CASIUS4 07160702	C:\Ranger Files\CASIUS\0716_0614\CASIUS4 07160702.csv	16/07/2008 07:09:39	16/07/2008 07:10:46	34	70
CASIUS5 07160710	C:\Ranger Files\CASIUS\0716_0614\CASIUS5 07160710.csv	16/07/2008 07:24:14	16/07/2008 07:25:21	34	68
CASIUS6 07160725	C:\Ranger Files\CASIUS\0716_0614\CASIUS6 07160725.csv	16/07/2008 07:41:17	16/07/2008 07:42:24	34	68

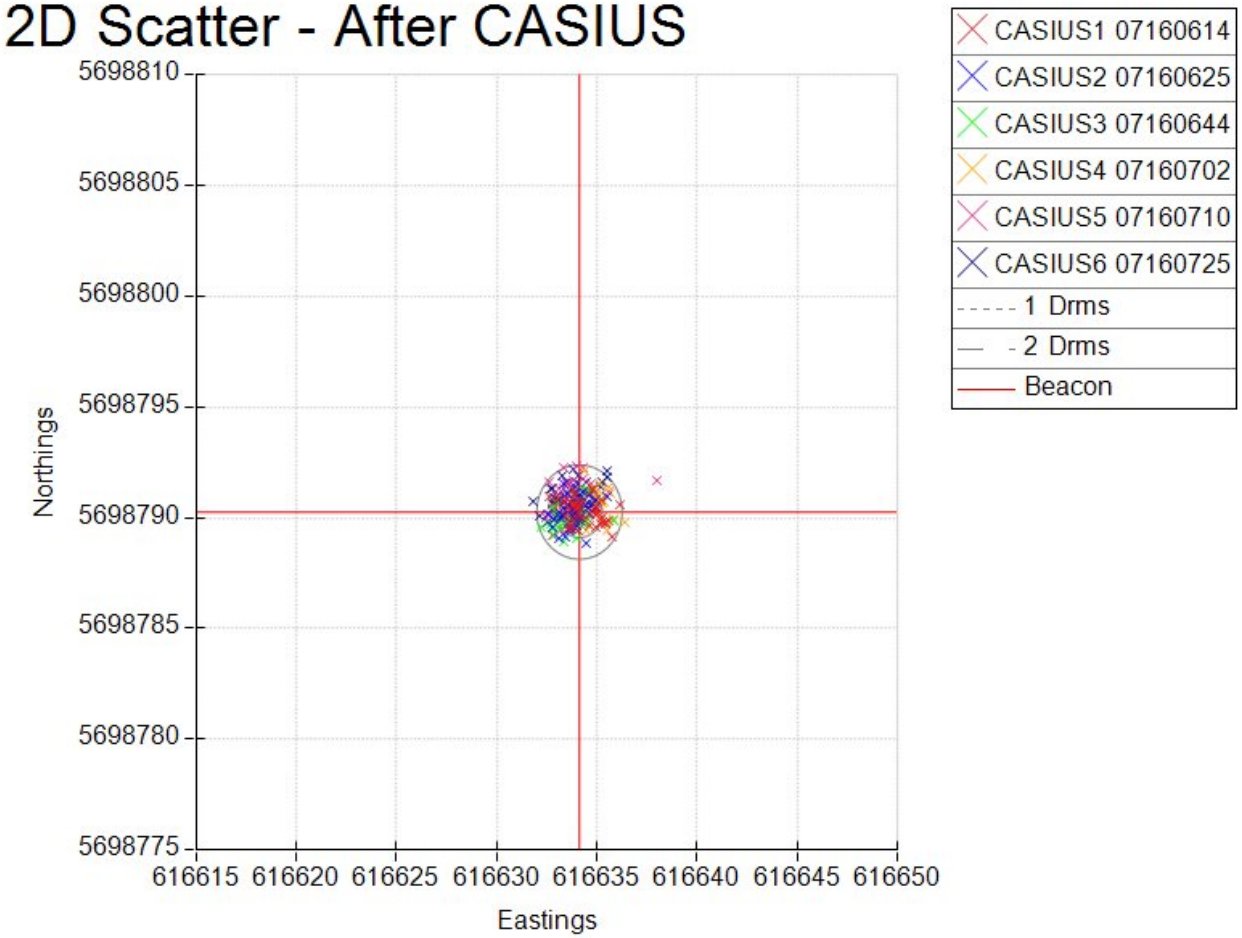
2D Scatter - Before CASIUS



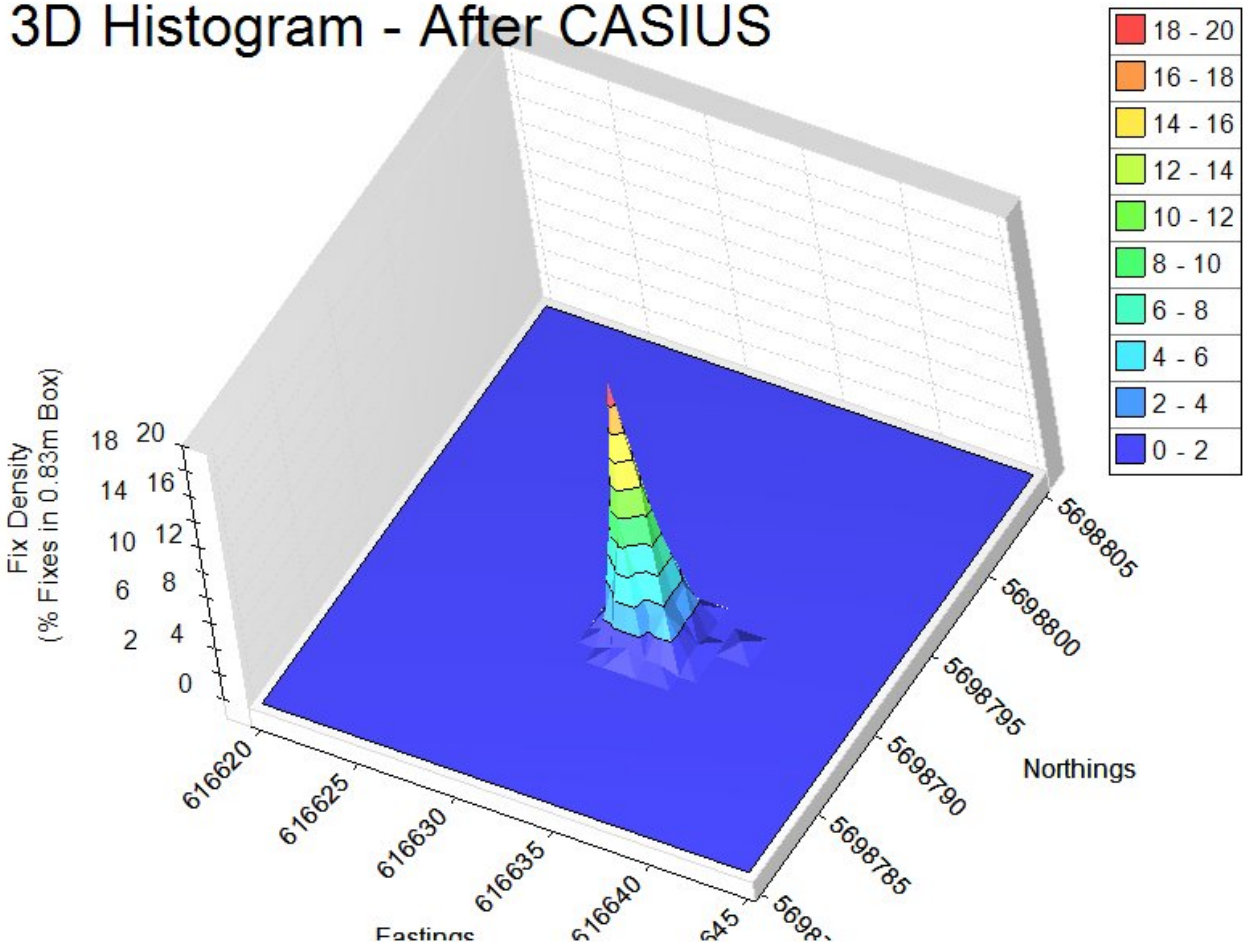
3D Histogram - Before CASIUS



2D Scatter - After CASIUS



3D Histogram - After CASIUS



No Calibrations Performed

Sound Velocity

Scale Factor

USBL Observations	**Calibrated Sound Velocity**

QINSy Database Settings

Parameter	Value		Factor
System-Used Velocity	**1485.00**	m/s	**1.00000**
Calibrated Velocity	**1485.00**	m/s	**1.00000**

0010 - USBL Calibration Check S-N
0007 - USBL Calibration Check W-E
0008 - USBL Calibration Check E-W
0009 - USBL Calibration Check N-S

Alignments

USBL Transponder Positions

Error Ellipse	95 %		SD	
Easting Center	**616633.20**	m	**1.28**	m
Northing Center	**5698788.27**	m	**1.26**	m
Semi-Major Axis	**3.37**	m	**1.38**	m
Semi-Minor Axis	**2.81**	m	**1.15**	m
Azimuth Major Axis	**132.719**	°		

QINSy Database Settings

Parameter	Value		SD	
Scale Factor	**1.00000**		**N/A**	
Roll Angle	**0.000**	°	**0.050**	°
Pitch Angle	**0.000**	°	**0.050**	°
Heading Angle	**0.000**	°	**0.500**	°

0010 - USBL Calibration Check S-N
0007 - USBL Calibration Check W-E
0008 - USBL Calibration Check E-W
0009 - USBL Calibration Check N-S

APPENDIX H - DAILY PROJECT REPORTS

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 001

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **12 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Saturday 12 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0700	Personnel on standby at hotel.
OP	0700	0800	Vessel Induction
OP	0800	0900	Toolbox and general JSA on mobilization.
OP	0900	1200	Mobilization underway
OP	1200	1245	JSA conducted with divers and applicable crew with regards to Multibeam head Intallation on hull.
OP	1245	2100	Mobilization continued
OP	2100	2400	Personnel resting at hotel

Tri-Surv Pty Ltd
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Midland WA 6056
AUSTRALIA

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www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**0.00**	24.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**0.00**	**24.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	To Be Completed		
QINSy Survey Remote Positioning Software	To Be Completed		
Verify Multiple Reference Station Quality Control Software	To Be Completed		
Veripos Standard DGPS Positioning System	To Be Completed		
Coda F180 Attitude and Positioning System	To Be Completed		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	To Be Completed		
SG Brown Meridian Gyrocompass	To Be Completed		
Reson 8160 Multibeam Echo Sounder	To Be Completed		
Sonardyne Fusion USBL System	To Be Completed		
Coda DA2000 Sidescan Acquisition System (x2)	To Be Completed		
Coda DA50 Sidescan Acquisition System	To Be Completed		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	To Be Completed		
Boomer/Sparker Sub Bottom Profiling System	To Be Completed		
Deep Sea Sidescan Sonar Winch	To Be Completed		
Caris HIPS/SIPS Software	To Be Completed		
Coda GeoKit and Mosaic Software	To Be Completed		
Topcon GTS-6 Total Station Instrument	To Be Completed		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	1	0	1
Project Briefing / Debriefing	1	0	1
Job Hazard Analysis (JHA)	2	0	2
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue Moblisation.

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 12 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 002

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **13 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

Sunday 13 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0700	Personnel resting at hotel.
OP	0700	1130	Mobilization continued
OP	1130	1200	JSA conducted with divers and applicable crew with regards to USBL Pole Sub-Surface brace plate.
OP	1200	2100	Mobilization continued
OP	2100	2400	Personnel resting on the vessel

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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**24.00**	48.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**24.00**	**48.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	To Be Completed		
QINSy Survey Remote Positioning Software	To Be Completed		
Verify Multiple Reference Station Quality Control Software	To Be Completed		
Veripos Standard DGPS Positioning System	To Be Completed		
Coda F180 Attitude and Positioning System	To Be Completed		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	To Be Completed		
SG Brown Meridian Gyrocompass	To Be Completed		
Reson 8160 Multibeam Echo Sounder	To Be Completed		
Sonardyne Fusion USBL System	To Be Completed		
Coda DA2000 Sidescan Acquisition System (x2)	To Be Completed		
Coda DA50 Sidescan Acquisition System	To Be Completed		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	To Be Completed		
Boomer/Sparker Sub Bottom Profiling System	To Be Completed		
Deep Sea Sidescan Sonar Winch	To Be Completed		
Caris HIPS/SIPS Software	To Be Completed		
Coda GeoKit and Mosaic Software	To Be Completed		
Topcon GTS-6 Total Station Instrument	To Be Completed		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	1	2	3
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue Moblisation with the potential to finish.

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 13 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
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DAILY OPERATIONS REPORT 002

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **14 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

Monday 14 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0600	Personnel resting on the vessel.
OP	0600	0800	Mobilization continued
OP	0800	0840	JSA conducted with wielder and applicable crew with regards to wielding the winch to deck.
OP	0840	2400	Mobilization continued

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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**48.00**	72.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**48.00**	**72.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Engineer	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Surveyor	Tri-Surv	11/07//2008	
David McCracken	Surveyor	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	1	3	4
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Finish Mobilisation in the morning and leave the wharf for calibrations and checks on the way to the first site survey.

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder.....
Surveyor / Party Chief

Date: 14 July 2008

Signed:

Andre Billstein.....
Apache Energy Ltd

Tri-Surv Pty Ltd
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AUSTRALIA

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F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 002

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **15 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Tuesday 15 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0400	Personnel resting on the vessel.
OP	0400	1130	Mobilization continued and calibration/checks undertaken
OP	1130	1200	Deck cleared and sea fasterned for transit to site
OP	1200	1330	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	1330	1800	Slowed to 5 kts to conduct Sparker, Boomer and SSS wet tests and checks
OP	1800	2400	Transiting to Dory-1/Nemo-1 Site (full speed)

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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**72.00**	96.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**72.00**	**96.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	4	4
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue transit to Dory-1/Nemo-1 Site. Further testing will be conducted during daylight hours at 5 kts. Then back up to full speed to USBL calibration site for arrival early evening.

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder.....
Surveyor / Party Chief

Date: 15 July 2008

Signed:

Andre Billstein.....
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 005

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **16 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Wednesday 16 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0930	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	0930	1230	Slowed to 5 kts to conduct Sparker, Boomer and SSS wet tests and checks
OP	1230	1700	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	1700	1730	JSA conducted for deploying USBL Pole
OP	1730	1800	USBL Pole deployed
OP	1800	2030	Valeport deck checks conducted and speed of sound profile taken
OP	2030	2100	Vessel moving to 200 metre contour line
OP	2100	2130	JSA conducted for deploying USBL Calibration Compatt. Compatt deployed
OP	2130	2400	USBL Calibration started

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AUSTRALIA

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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**96.00**	120.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**96.00**	**120.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Engineer	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Surveyor	Tri-Surv	11/07//2008	
David McCracken	Surveyor	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	2	4	6
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue and complete USBL calibration, then proceed to MBES patch test and SSS dynamic check

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 16 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 006

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **17 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Thursday 17 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0500	USBL Calibration continued and completed
OP	0500	0530	Deck cleared for SSS deployment
OP	0530	0600	JSA conducted for deploying the SSS Fish
OP	0600	1030	SSS Dynamic finished and SSS recovered
OP	1030	1100	JSA conducted for recovering the USBL Calibration Compatt
OP	1100	1200	Compatt released and recovered to deck
OP	1200	2000	MBES Patch test undertaken and completed
OP	2000	2030	Discussion with master with regards to weather
OP	2030	2100	USBL Pole recovered
OP	2100	2400	Strong wind warning issued transiting to Edan for shelter

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AUSTRALIA

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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**120.00**	144.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**120.00**	**144.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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Midland WA 6056
AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	2	6	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Transiting to Edan for shelter from up and coming weather.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 17 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

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AUSTRALIA

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DAILY OPERATIONS REPORT 007

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **18 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Friday 17 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1230	Transiting to Eden
OP	1230	2400	Standby for weather alongside in Eden

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AUSTRALIA

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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**144.00**	168.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**144.00**	**168.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden for improvement in weather.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 18 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

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8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 008

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **19 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

Saturday 19 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Standby for weather alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**168.00**	192.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**168.00**	**192.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden for improvement in weather.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 19 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 009

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **20 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

Sunday 20 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Standby for weather alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**192.00**	216.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**192.00**	**216.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden for improvement in weather.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 20 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 010

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **21 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Bruce Baker bruce.baker@tri-surv.com

Monday 21 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Standby for weather alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**216.00**	240.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**216.00**	**240.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden.
Intending to sail tomorrow evening weather permitting.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 21 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 011

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **22 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Tuesday 22 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Standby for weather alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**240.00**	264.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**240.00**	**264.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden.
Sailing tomorrow morning weather permitting.

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis.

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 22 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 012

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **23 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Wednesday 23 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0800	Standby for weather alongside in Eden
OP	0800	0830	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	0830	1130	Slowed to 5 kts to conduct Sparker, Boomer and SSS wet tests and checks
OP	1130	1400	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	1400	1435	Problem with vessel's Auto Pilot
OP	1435	1600	Heading to Lakes Entrance for technician and replacement unit
OP	1600		Swell too large for small boat transfer out of Lakes Entrance
OP	1600	2200	Heading back to Eden
OP	2200	2400	Standby for technician and replacement unit

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8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**264.00**	288.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**264.00**	**288.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting alongside in Eden.
Sailing tomorrow pending replacement of vessel's Auto Pilot System

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 23 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 013

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **24 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Thursday 24 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1400	Standby for technician and replacement unit
OP	1400	1615	Auto Pilot unit replaced and in working order
OP	1615	2400	Transiting to Dory-1/Nemo-1 Site (full speed)

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8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**288.00**	312.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**288.00**	**312.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	1	1
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Arrive at Dory-1/Nemo-1 Site and start running main lines after intial scout line and SVP Dip.

GG) Tri-Surv Comments

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 24 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 014

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **25 July 2008**

Attn.: **Andre Billstein** — andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** — bart.vandergroen@tri-surv.com
Mark Lindsay — Mark.lindsay@tri-surv.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Friday 25 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0600	Transiting to Dory-1/Nemo-1 Site (full speed)
OP	0600	0630	Project Brief
OP	0630	0800	SVP Dip undertaken and completed
OP	0800	1200	Scout line: SE-NW completed Multiple ridges and channels were mapped and defined during this line. SSS fish was in the water at the time and on several occasions came close to touching the seabed. An attempt at flying the fish higher was made but to no avail. The gradient of the seabed is too extreme to effectively tow the SSS fish and collect meaningful data.
OP	1200	1800	Scout lines: NE-SW, DN2700, DN3200, DN3700 and DN4200 completed with MBES only Sparker tuning conducted during this period.
OP	1800	2400	Main Lines: DN4700, DN5200, DN4900 and DN4600 completed

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**312.00**	336.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**312.00**	**336.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Engineer	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Surveyor	Tri-Surv	11/07//2008	
David McCracken	Surveyor	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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F: +61 (0) 8 9250 6922
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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	1	1	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue running main lines at Dory-1/Nemo-1 Site.

GG) Tri-Surv Comments

After further Scout Lines it has been found that the ridges and channels randomly scatter the site. It is therefore impossible to orientate the survey lines to effectively fly the fish at the required depth.

Dory-1/Nemo-1 **6% Complete**

HH) Client Comments

Signed:

Russell Burder……
Surveyor / Party Chief

Date: 25 July 2008

Signed:

Andre Billstein.....
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
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DAILY OPERATIONS REPORT 015

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **26 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Saturday 26 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Main Lines: DN4300, DN4000, DN3600, DN3300, DN2500, DN2200, DN1900, DN1600, DN1300, DN1000, DN700, DN400, DN100, DN200, DN500, DN800, DN1100, DN1400, DN1700 and DN2000 completed

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**336.00**	360.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**336.00**	**360.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	0	0
Safety Drills	0	0	0
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue running main lines at Dory-1/Nemo-1 Site.

GG) Tri-Surv Comments

The Bridge has been monitoring shipping around the site survey and has managed to avoid lengthy delays, however some extended line turns have been performed to avoid other vessels.

Dory-1/Nemo-1 **35% Complete**

HH) Client Comments

Signed:

Russell Burder……
Surveyor / Party Chief

Date: 26 July 2008

Signed:

Andre Billstein.....
Apache Energy Ltd

Tri-Surv Pty Ltd
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Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 016

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **27 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Sunday 27 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1845	Main Lines: DN2300, DN2600, DN2900, DN3400, DN4100, DN4400, DN4500, DN4800, DN5100, DN5400, DN5300, DN5000, DN3900, DN4200, DN3700, DN3800, DN3500, DN3200 and DN3100 completed
OP	1845	1915	Recovering equipment
OP	1915	2400	Weather standby – waiting improvement in weather while in field

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AUSTRALIA

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F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**360.00**	384.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**360.00**	**384.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	1	0	1
Safety Drills	1	0	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting on improvement in weather.

GG) Tri-Surv Comments

Weather will be monitored on a regular basis.

Dory-1/Nemo-1 **60% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 27 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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DAILY OPERATIONS REPORT 017

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **28 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Monday 28 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Weather standby – waiting improvement in weather while in field

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**384.00**	408.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**384.00**	**408.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Waiting on improvement in weather.

GG) Tri-Surv Comments

Weather will be monitored on a regular basis.

Dory-1/Nemo-1 **60% Complete (~30 hours left)**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 28 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 018

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **29 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Bart van der Groen** bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Tuesday 29 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1400	Weather standby – waiting improvement in weather while in field
OP	1400	1430	Equipment deployed
OP	1430	2400	Main Lines: DN2800, DN2700, DN2400, DN2100, DN1800, DN1500, DN1200, DN900 and DN600 completed

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Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**408.00**	432.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**408.00**	**432.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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F: +61 (0) 8 9250 6922
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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Complete Dory-1/Nemo-1 and proceed to Ever-1

GG) Tri-Surv Comments

Dory-1/Nemo-1 **72% Complete (~15 hours left)**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 29 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 019

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **30 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Wednesday 30 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1400	Main Lines: DN300, DN, DNX7400, DNX7000, DNX6500, DNX6000, DNX5500, DNX5000, DNX4500, DNX4000, DNX3500, DNX3000, DNX2500, DNX2000, DNX1500, DNX1000, DNX500 and DNX completed
OP	1400	1420	Equipment Recovered
OP	1420	1620	Transit to Elver-1
OP	1620	1830	Scout Lines: EVS-NW-SE and EVS-NE-SW completed (MBES Only) Multiple ridges and channels were mapped and defined during these lines. The gradient of the seabed is too extreme to effectively tow the SSS fish and collect meaningful data.
OP	1830	2100	SVP Dip undertaken and completed
OP	2100	2130	Equipment deployed
OP	2130	2400	Main lines: EV4000, EV3900 and EV3800 completed

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Midland WA 6056
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F: +61 (0) 8 9250 6922
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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**432.00**	456.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**432.00**	**456.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Continue running survey lines at Elver-1

GG) Tri-Surv Comments

Like the previous site, ridges and channels scatter the site. It is therefore impossible to orientate the survey lines to effectively fly the fish at the required depth.

Dory-1/Nemo-1 **100% Complete**
Elver-1 **6% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 30 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 020

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **31 July 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Thursday 31 July 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1940	Main Lines: EV3700, EV3600, EV3500, EV3400, EV3300, EV3200, EV3100, EV3000, EV2900, EV2800, EV2700, EV2600, EV2500, EV2400, EV2300, EV2200, EV2100, EV2000, EV1900, EV1800, EV1700, EV1600, EV1500, EV1400, EV1300, EV1200, EV1100, EV1000, EV900, EV800, EV700, EV600, EV500 and EV400 completed
OP	1940	2115	Equipment Recovered
OP	2115	2400	Transit to Eden for weather standby

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**456.00**	480.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**456.00**	**480.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Transit to Eden for weather standby

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis

Dory-1/Nemo-1 **100% Complete**
Elver-1 **76% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 31 July 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
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DAILY OPERATIONS REPORT 021

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

Date: **01 August 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Friday 01 August 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1115	Transit to Eden for weather standby
OP	1115	2400	Weather standby alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**480.00**	504.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**480.00**	**504.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	
David McCracken	Engineer	Tri-Surv	11/07//2008	

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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www.tri-surv.com

EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Weather standby alongside at Eden

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis

Dory-1/Nemo-1 **100% Complete**
Elver-1 **76% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 01 August 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 022

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **02 August 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Saturday 02 August 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	2400	Weather standby alongside in Eden

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

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BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**504.00**	528.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**504.00**	**528.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	02/08/2008
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	02/08/2008
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Tom Miller	Surveyor	Tri-Surv	02/08/2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	02/08/2008
David McCracken	Engineer	Tri-Surv	11/07//2008	02/08/2008

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	2	2
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	1	1
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Weather standby alongside at Eden

GG) Tri-Surv Comments

Weather will be reviewed and discussed with master on a regular basis

Dory-1/Nemo-1 **100% Complete**
Elver-1 **76% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 02 August 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 023

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **03 August 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Sunday 03 August 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	1500	Weather standby alongside in Eden
OP	1500	2400	Transit to Elver-1 (full speed)

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8-12 Stafford Street
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AUSTRALIA

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www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**528.00**	552.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**528.00**	**552.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	02/08/2008
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	02/08/2008
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Tom Miller	Surveyor	Tri-Surv	02/08/2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	02/08/2008
David McCracken	Engineer	Tri-Surv	11/07//2008	02/08/2008

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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Midland WA 6056
AUSTRALIA

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	1	2	3
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	1	1	2
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Transit to Elver-1 and finish the site

GG) Tri-Surv Comments

Dory-1/Nemo-1 **100% Complete**
Elver-1 **76% Complete**

HH) Client Comments

Signed:

Russell Burder
Surveyor / Party Chief

Date: 03 August 2008

Signed:

Andre Billstein
Apache Energy Ltd

Tri-Surv Pty Ltd
8-12 Stafford Street
Midland WA 6056
AUSTRALIA

T: +61 (0) 8 9250 2744
F: +61 (0) 8 9250 6922
www.tri-surv.com

DAILY OPERATIONS REPORT 024

Apache Site Survey Campaign 2008

To: **Apache Energy Ltd**
Level 3
256 St Georges Terrace
Perth WA 6009

From: **Tri-Surv Geomatics**
Job No.: **8A270**
Signed:

Russell Burder
Surveyor / Party Chief

Date: **04 August 2008**

Attn.: **Andre Billstein** andre.billstein@aus.apachecorp.com

Copy: **Jason French** Jason.french@tri-surv.com
Bart van der Groen bart.vandergroen@tri-surv.com
Mark Lindsay Mark.lindsay@tri-surv.com

Monday 04 August 2008

AA) Summary of Events

Code	*From*	*To*	
OP	0000	0630	Transit to Elver-1 (full speed)
OP	0630	0700	USBL Pole deployed
OP	0700	0755	Sparker deployed
OP	0755	1045	Main Lines: EV300, E200, EV100 and EV completed.
OP	1045	1830	Cross Lines: EVX4000, EVX3500, EVX3000, EVX2500, EVX2000, EVX1500, EVX1000, EVX500 and EVX completed.
OP	1830	1900	All equipment recovered.
OP	1900	2400	Transit to Melbourne for Demob

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AUSTRALIA

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F: +61 (0) 8 9250 6922
www.tri-surv.com

BB) Summary of Hours

Description	*Code*	*Hrs/Today*	*Hrs/Previous*	*Total Hrs*	*Remarks*
Mobilisation	*M*	**0.00**	**0.00**	0.00	
Standby	*SB*	**0.00**	**0.00**	0.00	
Downtime	*DT*	**0.00**	**0.00**	0.00	
Operational	*OP*	**24.00**	**552.00**	576.00	
Demobilisation	*D*	**0.00**	**0.00**	0.00	
Totals		**24.00**	**552.00**	**576.00**	

CC) Personnel on Project

Name	*Function*	*Company*	*Arrival Date*	*Departure Date*
Russell Burder	Surveyor / Party Chief	Tri-Surv	11/07//2008	
Allan Hundley	Senior Geophysicist	Tri-Surv	11/07//2008	
Adam Culley	Geophysicist	Tri-Surv	11/07//2008	02/08/2008
Peter Gillespie	Surveyor	Tri-Surv	11/07//2008	02/08/2008
Hao Zhang	Surveyor	Tri-Surv	11/07//2008	
Tom Miller	Surveyor	Tri-Surv	02/08/2008	
Adam Bush	Engineer	Tri-Surv	11/07//2008	02/08/2008
David McCracken	Engineer	Tri-Surv	11/07//2008	02/08/2008

DD) Survey Equipment

Summary Description	*Mobilised o/b*	*Demobilised o/b*	*Comments*
QINSy Survey Positioning Software	15/07/2008		
QINSy Survey Remote Positioning Software	15/07/2008		
Verify Multiple Reference Station Quality Control Software	15/07/2008		
Veripos Standard DGPS Positioning System	15/07/2008		
Coda F180 Attitude and Positioning System	15/07/2008		
Octans Subsea Motion Reference Unit / Fibre Optic Gyrocompass	15/07/2008		
SG Brown Meridian Gyrocompass	15/07/2008		
Reson 8160 Multibeam Echo Sounder	15/07/2008		
Sonardyne Fusion USBL System	15/07/2008		
Coda DA2000 Sidescan Acquisition System (x2)	15/07/2008		
Coda DA50 Sidescan Acquisition System	15/07/2008		
Edgetech 4200-FS Digital Sidescan Sonar (x2)	15/07/2008		
Boomer/Sparker Sub Bottom Profiling System	15/07/2008		
Deep Sea Sidescan Sonar Winch	15/07/2008		
Caris HIPS/SIPS Software	15/07/2008		
Coda GeoKit and Mosaic Software	15/07/2008		
Topcon GTS-6 Total Station Instrument	15/07/2008		

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EE) Quality Health Safety and Environment

Type	*Today*	*Previous*	*Total*
Inductions	0	1	1
Project Briefing / Debriefing	0	3	3
Job Hazard Analysis (JHA)	0	8	8
Safety Meetings	0	1	1
Safety Drills	0	2	2
Incidents (Tri-Surv)	0	0	0
Near Misses (Tri-Surv)	0	0	0

FF) Programme for next 24 hours

Transit to Melbourne for Demob

GG) Tri-Surv Comments

Dory-1/Nemo-1 **100% Complete**
Elver-1 **100% Complete**

HH) Client Comments

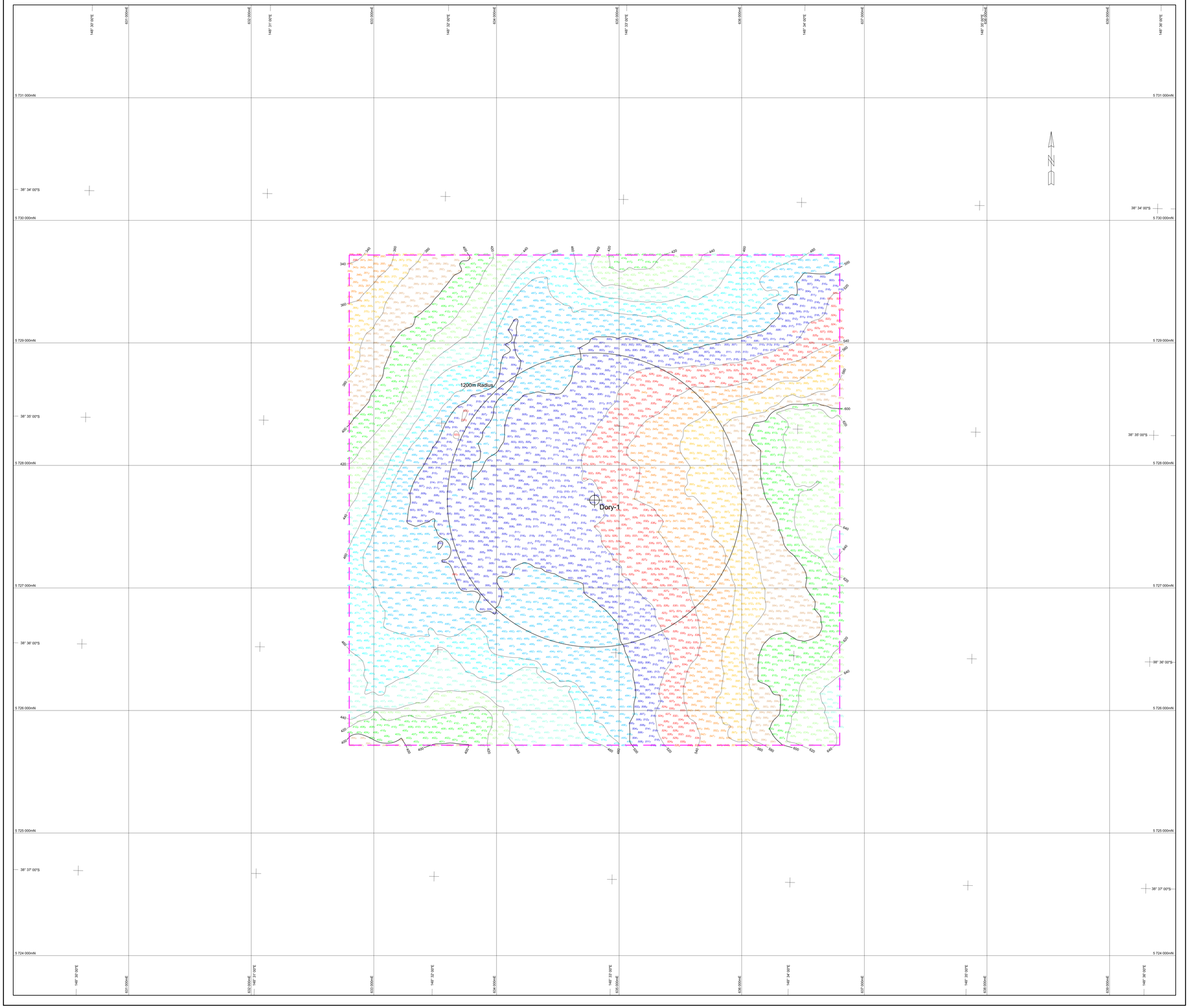
Signed:

Russell Burder
Surveyor / Party Chief

Date: 04 August 2008

Signed:

Andre Billstein
Apache Energy Ltd



1. Vessel Positioning System: Veripos Standard Differential GPS.
2. Bathymetry: Reson 8160 Multibeam Echosounder System.
3. Sub Bottom Profiller: Monopulser V2 Sparker.
4. Bathymetric Soundings were reduced to LAT using predicted tides for the Dory-1 site provided by Metocean Engineers.
5. Speed of sound in seawater profile data were used for bathymetry sounding reduction.
6. Bathymetry processed in Carls HIPS. (Soundings are shoal biased based on weighted mean grid 15m resolution).
7. Seismic travel times have been converted to depths using an assumed velocity of 1600m/s within the sub bottom sediments.

BATHYMETRY: Reduced to Lowest Astronomical Tide (LAT)

GEODETIC INFORMATION :

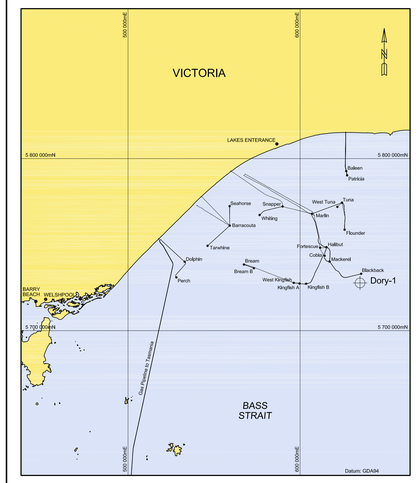
DATUM: Geocentric Datum of Australia 1994 (GDA94)

PROJECTION: Map Grid of Australia (MGA) Zone 55, CM 147° East

400 0 400 800 1 200
Metres

HORIZONTAL SCALE 1 : 10 000

LOCATION DIAGRAM



LEGEND

GENERAL

Proposed Dory-1 location (634 799mE 5 727 717mN)

4km x 4km survey area boundary

BATHYMETRY

518$_0$ Bathymetric Soundings in metres and decimetres

518 Bathymetric Contour with depth in metres

Mean Sea Level
Lowest Astronomical Tide (LAT) =1.05 Metres
Depth (LAT)
Seabed

Tri-Surv Pty Ltd
8 - 12 Stafford Street, MIDLAND WA 6056
Telephone: +61 (0) 8 9250 2744 Fax: +61 (0) 8 9250 6922
ABN 47 108 312 787

QUALITY ASSURED ISO9001:2000

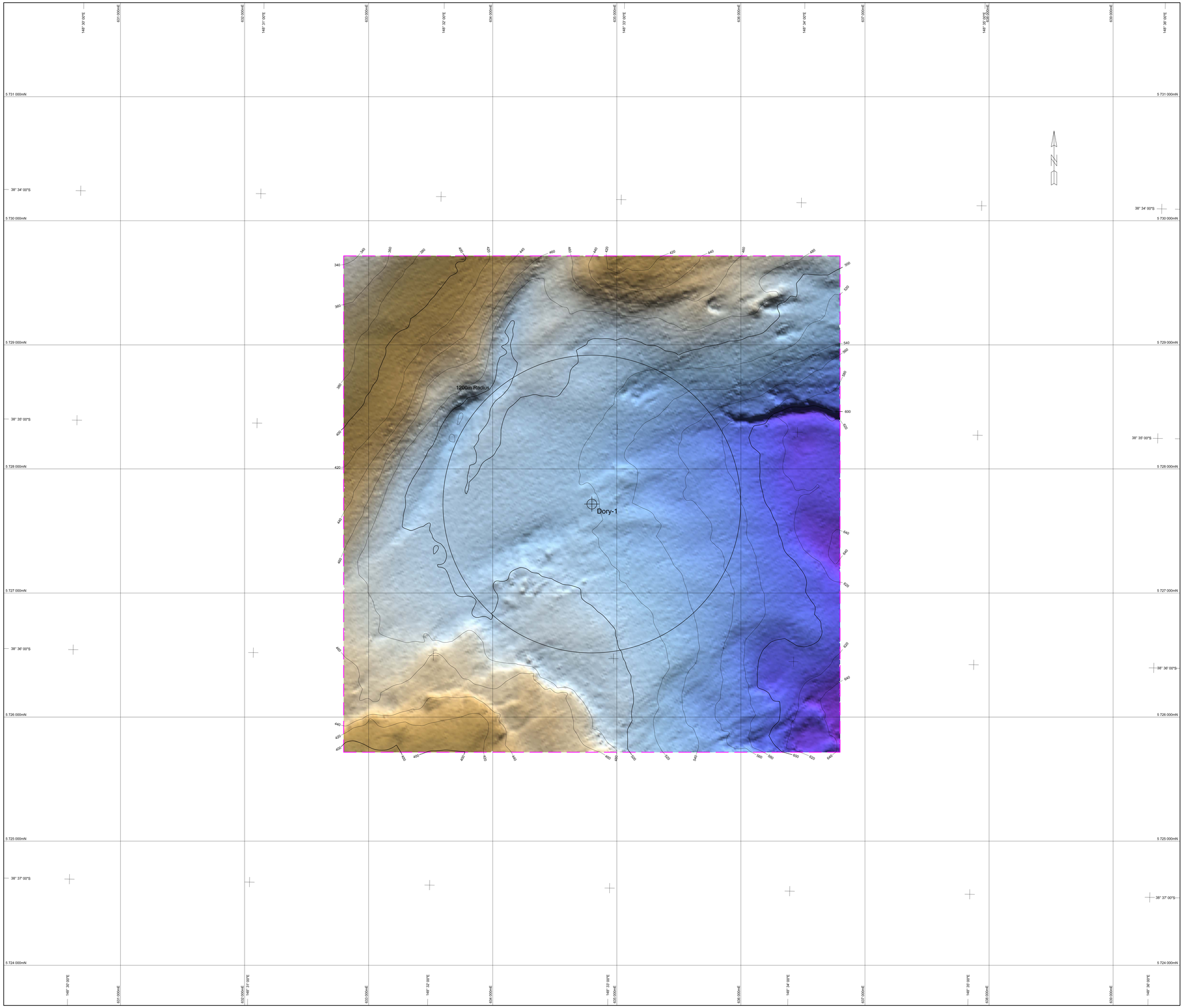
Client:

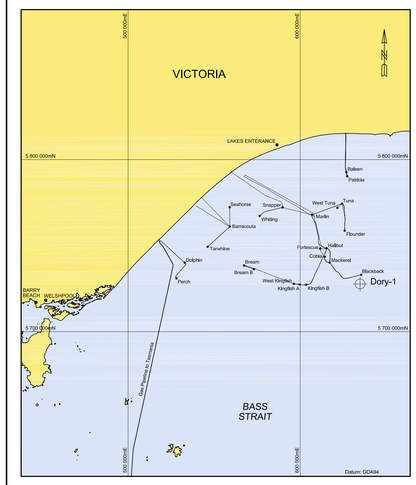
Apache ENERGY LIMITED

Drawing Title:

Dory-1 Site Survey Bathymetry Drawing Drawing 1 of 1

Party Chief: R. Burder	Drawn: V. Knight	Tri-Surv Drawing No: 8A270-DD-001-R0 Sheet 01 of 04	Rev No: 0
Vessel: Pacific Crest	Interpreted: A. Culley		
Survey Date: 25 - 30 July 2008	Checked: R. Burder	Client Drawing No:	Rev No:
Approved Tri-Surv: A. Kerr	Date: 20 August 2008		
Approved Client:	Date:		A0





LEGEND

GENERAL

Proposed Dory-1 location (634 799mE 5 727 717mN)

4km x 4km survey area boundary

BATHYMETRY

518$_5$ Bathymetric Soundings in metres and decimetres

518 Bathymetric Contour with depth in metres

Mean Sea Level

Lowest Astronomical Tide (LAT) — =1.05 Metres

Depth (LAT)

Seabed

SUN ILLUMINATED IMAGE

Azimuth: 8°, Elevation: 40°, Vertical Exaggeration: 2.5x

Depth Colour Palette:

335m — 654m

1. Vessel Positioning System: Veripos Standard Differential GPS,
2. Bathymetry: Reson 8160 Multibeam Echosounder System,
3. Sub Bottom Profiler: Monopulser V2 Sparker,
4. Bathymetric Soundings were reduced to LAT using predicted tides for the Dory-1 site provided by Metocean Engineers,
5. Speed of sound in seawater profile data were used for bathymetry sounding reduction,
6. Bathymetry processed in Carls HIPS, (Soundings are shoal biased based on weighted mean grid 15m resolution),
7. Seismic travel times have been converted to depths using an assumed velocity of 1600m/s within the sub bottom sediments,

BATHYMETRY: Reduced to Lowest Astronomical Tide (LAT)

GEODETIC INFORMATION :

DATUM: Geocentric Datum of Australia 1994 (GDA94)

PROJECTION: Map Grid of Australia (MGA) Zone 55, CM 147° East

400 0 400 800 1 200
Metres

HORIZONTAL SCALE 1 : 10 000

Tri-Surv Pty Ltd
8 - 12 Stafford Street, MIDLAND WA 6056
Telephone: +61 (0) 8 9250 2744 Fax: +61 (0) 8 9250 6922
ABN 47 108 312 787

QUALITY ASSURED ISO9001:2000

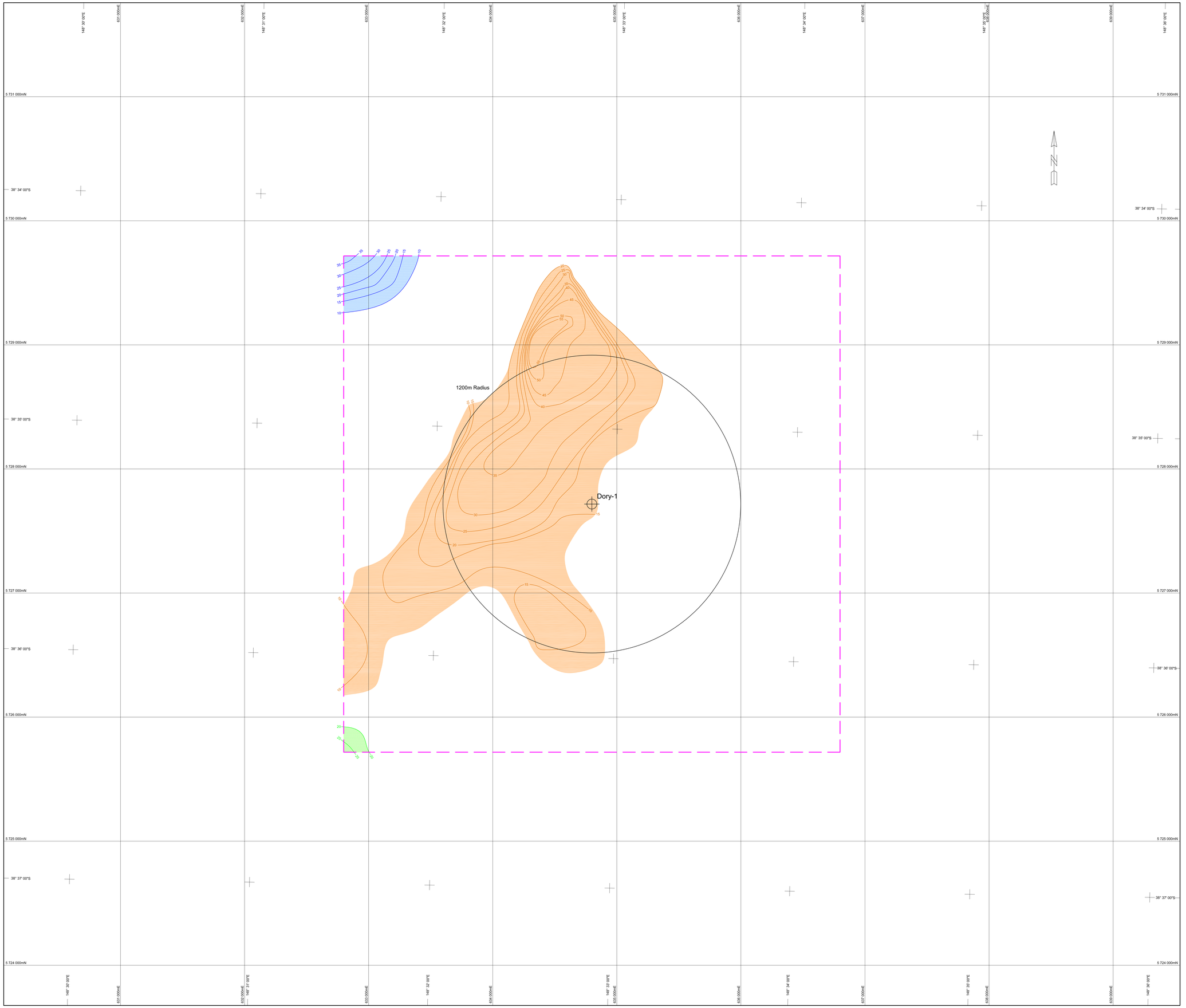
Client:

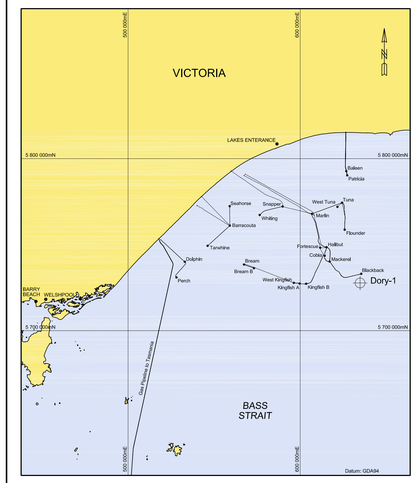
Apache ENERGY LIMITED

Drawing Title:

Dory-1 Site Survey
Sun Illuminated Drawing
Drawing 1 of 1

Party Chief: R. Burder	Drawn: V. Knight	TriSurv Drawing No: 8A270-DD-002-R0	Rev No: 0
Vessel: Pacific Crest	Intercepted: A. Culley	Sheet 02 of 04	
Survey Date: 25 - 30 July 2008	Processed: R. Burder	Client Drawing No:	Rev No:
Approved TriSurv: A. Kerr	Date: 20 August 2008		
Approved Client:	Date:		A0





LEGEND

GENERAL

Proposed Dory-1 location (634 799mE 5 727 717mN)

4km x 4km survey area boundary

SHALLOW GEOLOGY ISOPACH

15 Isopach of sediment slump thickness, depth in metres below seabed

15 Isopach of northwest sediment "wedge" thickness, depth in metres below seabed

15 Isopach of mid-ridge sub-bottom reflector, depth in metres below seabed

GEOLOGICAL FEATURES

Sediment slump

Northwest sediment "wedge"

Mid-ridge sub-bottom reflector

1. Vessel Positioning System: Veripos Standard Differential GPS.
2. Bathymetry: Reson 8160 Multibeam Echosounder System.
3. Sub Bottom Profiler: Monopulser V2 Sparker.
4. Bathymetric Soundings were reduced to LAT using predicted tides for the Dory-1 site provided by Metocean Engineers.
5. Speed of sound in seawater profile data were used for bathymetry sounding reduction.
6. Bathymetry processed in Caris HIPS. (Soundings are shoal biased based on weighted mean grid 15m resolution).
7. Seismic travel times have been converted to depths using an assumed velocity of 1600m/s within the sub bottom sediments.

BATHYMETRY: Reduced to Lowest Astronomical Tide (LAT)

GEODETIC INFORMATION :

DATUM: Geocentric Datum of Australia 1994 (GDA94)

PROJECTION: Map Grid of Australia (MGA) Zone 55, CM 147° East

400 0 400 800 1 200
Metres

HORIZONTAL SCALE 1 : 10 000

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Tri-Surv Pty Ltd
8 - 12 Stafford Street, MIDLAND WA 6056
Telephone: +61 (0) 8 9250 2744 Fax: +61 (0) 8 9250 6922
ABN 47 108 312 787

QUALITY ASSURED ISO9001/2000

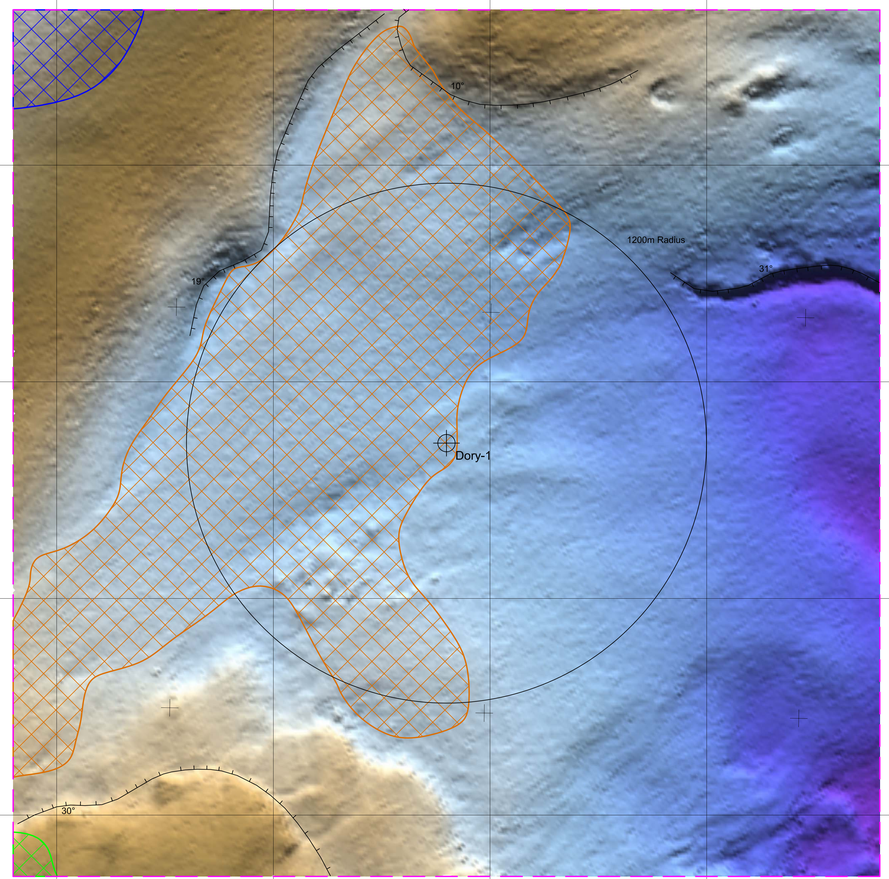
Client:

Apache ENERGY LIMITED

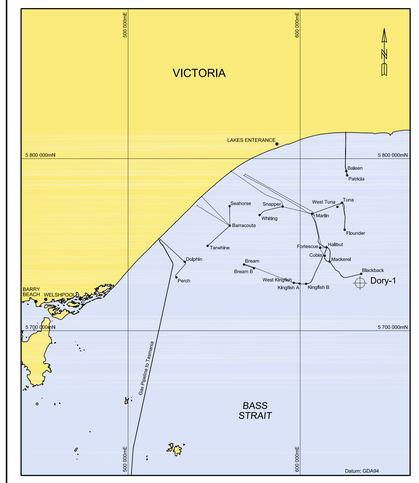
Drawing Title:

Dory-1 Site Survey
Shallow Geology Isopach Drawing
Drawing 1 of 1

Party Chief: R. Burder	Drawn: V. Knight	TriSurv Drawing No: 8A270-DD-003-R0	Rev No: 0
Vessel: Pacific Crest	Interpreted: A. Culley	Sheet 03 of 04	
Survey Date: 25 - 30 July 2008	Checked: R. Burder	Client Drawing No:	Rev No:
Approved TriSurv: A. Kerr	Date: 20 August 2008		
Approved Client:	Date:		A0



LOCATION DIAGRAM



LEGEND

GENERAL

Proposed Dory-1 location (634 799mE 5 727 717mN)

4km x 4km survey area boundary

GEOLOGICAL FEATURES

Sediment slump

Northwest sediment "wedge"

Mid-ridge sub-bottom reflector

Seabed Scarp with associated maximum gradient

SUN ILLUMINATED IMAGE

Azimuth: 8°, Elevation: 40°, Vertical Exaggeration: 2.5x

Depth Colour Palette:

335m — 654m

1. Vessel Positioning System: Veripos Standard Differential GPS,
2. Bathymetry: Reson 8160 Multibeam Echosounder System,
3. Sub Bottom Profiler: Monopulser V2 Sparker,
4. Bathymetric Soundings were reduced to LAT using predicted tides for the Dory-1 site provided by Metocean Engineers,
5. Speed of sound in seawater profile data were used for bathymetry sounding reduction,
6. Bathymetry processed in Caris HIPS, (Soundings are shoal biased based on weighted mean grid 15m resolution),
7. Seismic travel times have been converted to depths using an assumed velocity of 1600m/s within the sub bottom sediments,

BATHYMETRY: Reduced to Lowest Astronomical Tide (LAT)

GEODETIC INFORMATION :

DATUM: Geocentric Datum of Australia 1994 (GDA94)

PROJECTION: Map Grid of Australia (MGA) Zone 55, CM 147° East

400 0 400 800 1 200 Metres

HORIZONTAL SCALE 1 : 10 000

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ABN 47 108 312 787

QUALITY ASSURED ISO9001:2000

Client:

Apache ENERGY LIMITED

Drawing Title:

Dory-1 Site Survey
Geological Features Drawing
Drawing 1 of 1

Party Chief: R. Burder	Drawn: V. Knight	TriSurv Drawing No: 8A270-DD-004-R0 Sheet 04 of 04	Rev No: 0
Vessel: Pacific Crest	Interpreted: A. Culley		
Survey Date: 25 - 30 July 2008	Checked: R. Burder	Client Drawing No:	Rev No:
Approved TriSurv: A. Kerr	Date: 20 August 2008		
Approved Client:	Date:		A0

Apache

Cuttings Descriptions Report

Well Name : Dory-1	**Print Date** 16/11/2008
Wellsite Geologist(s) : A Cruickshank G Fawns	

Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
Main				
1537.0 - 1540.0	85	**CEMENT:** as above		
	10	**CALCILUTITE:** see 1560m sample		
	5	**LCM:** Graphite		
1540.0 - 1550.0	70	**CEMENT:** as above		
	20	**CALCILUTITE:** see 1560m sample		
	10	**LCM:** Graphite and CaCO3		
1550.0 - 1560.0	95	**CALCILUTITE:** light grey, light green grey, light grey to off white, medium greenish grey, common argillaceous matrix, occasional fine quartz grains, common dark lithics, common glauconitic material, occasional micro-fossils, occasional orange calcite fragments, firm to moderately hard, sub-blocky to blocky.		
	5	**DOLOMITIC CLAYSTONE:** light yellow, orange, abundant calcareous material, minor lithics, moderately hard to hard, sub-blocky.		
1560.0 - 1570.0	100	**CALCILUTITE:** light grey, light greenish grey, light grey to off white, medium green grey, common argillaceous matrix, occasional fine quartz grains, common dark lithics, common glauconitic material, occasional micro-fossils, firm to moderately hard, sub-blocky to blocky.		
1570.0 - 1580.0	100	**CALCILUTITE:** light grey, light greenish grey, light grey to off white, medium greenish grey, common argillaceous matrix, occasional fine quartz grains, common dark lithics and glauconitic material, occasional micro-fossils, occasional orange calcite fragments, firm to moderately hard, sub-blocky to blocky.		
1580.0 - 1590.0	99	**CALCILUTITE:** as above		
	1	**DOLOMITIC CLAYSTONE:**		
1590.0 - 1600.0	100	**CALCILUTITE:** light grey, light greenish grey, light grey to off white, medium greenish grey, common argillaceous matrix, occasional to locally common floating fine quartz grains, common dark lithics and glauconitic material, occasional micro-fossils, minor carbonaceous material, firm to moderately hard, sub-blocky to blocky.		
1600.0 - 1610.0	100	**CALCILUTITE:** as above, silty in part and locally grading to an ARGILLACEOUS CALCISILTITE.		
1610.0 - 1620.0	100	**CALCILUTITE:** as above		
1620.0 - 1630.0	70	**CALCILUTITE:** Light grey to medium light grey, light olive grey to greenish grey, minor fine quartz grains, common dark lithics and glauconitic material, minor fossils, trace carbonaceous material, grades to CALCISILTITE in part, minor dispersive, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky to blocky, minor amorphous, nil visible porosity.		
	30	**CALCISILTITE:** Light grey to medium light grey, light olive grey to greenish grey, abundant matrix and grading to CALCILUTITE in part, common quartz grains, minor to common dark lithics and glauconitic material, minor fossils, trace carbonaceous material, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky to blocky, nil visible porosity.		
1630.0 - 1640.0	80	**CALCILUTITE:** As above, increase in carbonaceous material.		
	20	**CALCISILTITE:** as above		
1640.0 - 1650.0	80	**CALCILUTITE:** Very light grey to light grey, common medium light grey, minor light olive grey to greenish grey, minor fine quartz grains, common dark lithics, trace glauconitic material, rare fossils, trace carbonaceous material, trace very coarse calcareous fragments, common dispersive, soft to firm, dominantly soft, sub-blocky to minor amorphous, nil visible porosity.		
	15	**CALCISILTITE:** Medium dark grey, light olive grey to greenish grey, abundant matrix and grading to CALCILUTITE in part, minor quartz grains, minor dark lithics and glauconitic material, minor fossils, trace carbonaceous material, soft to firm,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		dominantly firm, common soft, sub-blocky, nil visible porosity.		
	5	**CALCARENITE:** Medium light grey to medium grey, very fine, well sorted, angular to sub-angular, abundant argillaceous and micritic matrix, rarely microcrystalline, trace lithics, minor fossils, brittle to moderately hard, dominantly nil to very poor visible porosity, trace moldic porosity, no show.		
1650.0 - 1660.0	70	**CALCILUTITE:** as above		
	25	**CALCISILTITE:** as above		
	5	**CALCARENITE:** as above		
1660.0 - 1670.0	60	**CALCILUTITE:** Very light grey to light grey, common medium light grey, minor light olive grey to greenish grey, minor fine quartz grains, abundant very fine dark lithics, trace glauconitic material, rare fossils, minor carbonaceous material, trace very coarse calcareous fragments, common dispersive, soft to firm, dominantly soft, sub-blocky to minor amorphous, nil visible porosity.		
	35	**CALCISILTITE:** Medium grey to medium dark grey, light olive grey to greenish grey, abundant matrix and grading to CALCILUTITE in part, abundant very fine dark lithics, minor fossils, trace pyrite, trace glauconite, trace carbonaceous material, soft to firm, dominantly firm, common soft, sub-blocky, nil visible porosity.		
	5	**CALCARENITE:** Medium light grey to medium grey, very fine, well sorted, angular to sub-angular, abundant argillaceous and micritic matrix, rarely microcrystalline, trace lithics, minor fossils, brittle to moderately hard, dominantly nil visible porosity, no show.		
1670.0 - 1680.0	50	**CALCILUTITE:** as above		
	40	**CALCISILTITE:** as above		
	10	**CALCARENITE:** as above		
1680.0 - 1690.0	50	**CALCILUTITE:** Very light grey to light grey, minor medium light grey, trace fine to very coarse (angular) quartz grains, abundant very fine dark lithics, trace glauconitic material, common fossils, minor carbonaceous material, trace very coarse calcareous fragments, common dispersive, soft to firm, dominantly soft, sub-blocky to minor amorphous, nil visible porosity.		
	45	**CALCISILTITE:** Medium light grey to light olive grey, minor medium grey, abundant matrix and grading to CALCILUTITE in part, grades to CALCARENITE in part, abundant very fine dark lithics, common to abundant fossils (Foraminifera and Ooids), common very fine quartz grains, trace pyrite, trace glauconite, trace carbonaceous material, soft to firm, dominantly firm, common soft, sub-blocky, nil visible porosity.		
	5	**CALCARENITE:** Medium light grey to medium grey, very fine, well sorted, angular to sub-angular, abundant argillaceous and micritic matrix, rarely microcrystalline, trace lithics, common fossils (Ooids), brittle to moderately hard, dominantly nil visible porosity, no show.		
1690.0 - 1700.0	40	**CALCISILTITE:** as above		
	30	**OOLITIC CALCARENITE:** Medium light grey to medium grey, very fine to very coarse, poorly sorted, rounded to sub-angular, abundant argillaceous matrix, rarely microcrystalline, minor quartz grains (very fine to very coarse, well rounded), trace lithics, abundant fossils (Ooids, Foraminifera, Ammonites), minor glauconite, loose, brittle to moderately hard in part, dominantly nil visible porosity, good inferred porosity, no show.		
	30	**CALCILUTITE:** as above		
1700.0 - 1710.0	40	**OOLITIC CALCARENITE:** as above		
	30	**CALCILUTITE:** as above		
	30	**CALCISILTITE:** as above		
1710.0 - 1720.0	50	**CALCISILTITE:** as above		
	30	**CALCILUTITE:** as above		
	20	**CALCARENITE:** as above		
1720.0 - 1730.0	50	**CALCISILTITE:** Medium light grey to light olive grey, minor medium grey, abundant matrix and grading to CALCILUTITE in part, grades to CALCARENITE in part, abundant very fine dark lithics, common fossils (Foraminifera and Ooids), abundant very fine quartz grains, trace glauconite, trace carbonaceous material, soft to brittle, dominantly firm, common soft and brittle, sub-blocky, nil visible porosity, no show.		
	40	**CALCILUTITE:** Very light grey to light grey, minor medium light grey, common very		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fine dark lithics, trace glauconitic material, minor fossils, minor carbonaceous material, common dispersive, soft to firm, dominantly soft, sub-blocky to minor amorphous, nil visible porosity, no show.		
	10	**CALCARENITE:** Medium light grey to medium grey, very fine to fine, well sorted, rounded to sub-angular, abundant argillaceous matrix, rarely microcrystalline, trace lithics, abundant fossils (Ooids, Foraminifera, Ammonites), rare glauconite, loose, brittle to moderately hard in part, very poor visible porosity, trace moldic porosity, no show.		
1730.0 - 1740.0	60	**CALCISILTITE:** Dominantly greenish grey, common medium light grey to light olive grey, trace medium grey, abundant matrix and grading to CALCILUTITE in part, grades to CALCARENITE in part, abundant very fine dark lithics, common to abundant fossils (Ooids), abundant very fine quartz grains, trace glauconite, trace carbonaceous material, soft to brittle, dominantly firm, common soft and brittle, sub-blocky, nil visible porosity, no show.		
	20	**CALCARENITE:** as above		
	20	**CALCILUTITE:** as above		
1740.0 - 1750.0	80	**CALCISILTITE:** as above		
	10	**CALCARENITE:** as above		
	10	**CALCILUTITE:** as above		
1750.0 - 1760.0	95	**CALCISILTITE:** Dominantly greenish grey to light olive grey, common medium light grey to light olive grey, abundant matrix and grading to CALCILUTITE in part, abundant very fine dark lithics, minor fossils (Ooids), abundant very fine quartz grains, trace to common very fine glauconite, trace carbonaceous material, soft to brittle, dominantly firm, minor soft and brittle, sub-blocky, nil visible porosity, no show.		
	5	**CALCARENITE:** as above		
	0	**CALCILUTITE:** Trace only as above.		
1760.0 - 1770.0	95	**CALCISILTITE:** as above		
	5	**CALCARENITE:** as above		
	0	**CALCILUTITE:** as above		
1770.0 - 1780.0	75	**CALCISILTITE:** Dominantly greenish grey to light olive grey, common medium light grey to light olive grey, abundant matrix and grading to CALCILUTITE in part, grading to CALCARENITE in part, common fine dark lithics, minor fossils (Ooids), abundant very fine quartz grains, minor very fine glauconite, trace carbonaceous material, soft to brittle, dominantly firm, minor soft and brittle, sub-blocky, nil visible porosity, no show.		
	20	**CALCARENITE:** Medium light grey to medium grey, very fine to fine, well sorted, rounded to sub-angular, abundant argillaceous matrix, rarely microcrystalline, trace lithics, common fossils (Ooids, Foraminifera, Ammonites), rare glauconite, minor loose, dominantly brittle to moderately hard in part, very poor visible porosity, trace moldic porosity, no show.		
	5	**CALCILUTITE:** Light grey, minor medium light grey, minor fine dark lithics, trace glauconitic material, minor fossils, trace carbonaceous material, firm, sub-blocky, nil visible porosity, no show.		
1780.0 - 1800.0	75	**CALCISILTITE:** as above	90	1
	15	**CALCARENITE:** as above		
	10	**CALCILUTITE:** as above		
1800.0 - 1820.0	75	**CALCISILTITE:** Medium light grey, common light olive grey to light grey, minor olive grey, abundant argillaceous matrix, minor fine dark lithics, minor fossils (Ooids), minor very fine quartz grains, trace glauconite, trace carbonaceous material, soft to brittle, dominantly firm, minor soft and brittle, sub-blocky, nil visible porosity, no show.		
	15	**CALCARENITE:** Medium light grey to medium grey, very fine to fine, well sorted, rounded to sub-angular, abundant argillaceous matrix, rarely microcrystalline, trace lithics, common fossils (Ooids and Foraminifera), rare glauconite, brittle to moderately hard in part, very poor visible porosity, trace moldic porosity, no show.		
	10	**CALCILUTITE:** Light grey, minor medium light grey, minor argillaceous, minor fine dark lithics, trace glauconitic material, minor fossils, trace carbonaceous material, firm, sub-blocky, nil visible porosity, no show.		
1820.0 - 1840.0	90	**CALCISILTITE:** as above	96	1

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
1820.0 - 1840.0	5	**CALCARENITE:** as above	96	1
	5	**CALCILUTITE:** as above		
1840.0 - 1860.0	100	**CALCISILTITE:** Medium light grey, common light olive grey to light grey, minor olive grey, common argillaceous matrix, minor fine dark lithics, minor to common fossils (Ooids), minor to common very fine quartz grains, trace glauconite, trace carbonaceous material, grades to CALCARENITE in part, soft to moderately hard, dominantly firm to brittle, minor soft and moderately hard, sub-blocky, nil to rarely very poor visible porosity, no show.		
1860.0 - 1880.0	100	**CALCISILTITE:** as above	85	1
1880.0 - 1900.0	70	**CALCISILTITE:** Medium light grey, common light olive grey to light grey, minor olive grey, common argillaceous matrix, grades to CALCILUTITE in part, minor fine dark lithics, minor to common fossils (Ooids, trace ammonite), minor very fine quartz grains, trace glauconite, trace carbonaceous material, grades to CALCARENITE in part, soft to moderately hard, dominantly firm to brittle, minor soft and moderately hard, sub-blocky, nil to rarely very poor visible porosity, no show.		
	30	**CALCILUTITE:** Light grey to light olive grey, minor medium grey, common argillaceous material, minor fine dark lithics, trace glauconitic material, minor to common fossils, trace carbonaceous material, firm, sub-blocky to blocky, nil visible porosity, no show.		
1900.0 - 1920.0	50	**CALCISILTITE:** as above, abundant fossil in part.	85	0
	50	**CALCILUTITE:** As above, dominantly medium grey, grades to CALCAREOUS CLAYSTONE in part.		
1920.0 - 1940.0	50	**CALCISILTITE:** Olive grey, abundant argillaceous matrix, grades to CALCILUTITE in part, minor fine dark lithics, minor to common fossils (Ooids, trace ammonite), minor very fine quartz grains, trace glauconitic material, trace carbonaceous material, soft to moderately hard, dominantly firm to brittle, minor soft and moderately hard, sub-blocky, nil visible porosity, no show.		
	45	**CALCILUTITE:** Medium grey, common light grey to light olive grey, common argillaceous material, grades to CALCAREOUS CLAYSTONE in part, minor fine dark lithics, trace glauconitic material, minor to common ooids, trace carbonaceous material, firm, sub-blocky to blocky, nil visible porosity, no show.		
	5	**DOLOMITE:** Medium dark grey to dark grey, microcrystalline, trace glauconitic material, very hard, angular.		
1940.0 - 1960.0	90	**CALCISILTITE:** as above.	83	
	10	**CALCILUTITE:** as above		
	0	**DOLOMITE:** Trace only as above.		
1960.0 - 1980.0	85	**CALCISILTITE:** as above		
	10	**CALCILUTITE:** as above		
	5	**DOLOMITE:** as above		
1980.0 - 2000.0	65	**CALCISILTITE:** Olive grey, abundant argillaceous matrix, grades to CALCILUTITE in part, minor very fine dark lithics, common ooids, trace ammonites, minor very fine quartz grains, trace to common very fine to fine glauconite, trace carbonaceous material, soft to moderately hard, dominantly firm to brittle, minor soft and moderately hard, sub-blocky, nil visible porosity, no show.	81	
	30	**CALCILUTITE:** Olive grey, argillaceous, grades to CALCAREOUS CLAYSTONE in part, minor very fine dark lithics, trace glauconitic material, minor ooids, trace carbonaceous material, firm, sub-blocky, nil visible porosity, no show.		
	5	**DOLOMITE:** Olive grey, microcrystalline, common cryptocrystalline, trace glauconitic material, very hard, angular.		
2000.0 - 2020.0	70	**CALCISILTITE:** as above		
	30	**CALCILUTITE:** as above		
2020.0 - 2040.0	50	**CALCISILTITE:** as above	81	
	50	**CALCILUTITE:** as above		
2040.0 - 2060.0	50	**CALCISILTITE:** Olive grey, abundant argillaceous matrix, grades to CALCILUTITE in part, common very fine dark lithics, trace ooids, minor very fine quartz grains, trace to minor very fine to fine glauconite, trace carbonaceous material, soft to moderately hard, dominantly firm to brittle, minor soft and moderately hard, sub-blocky, nil visible		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		porosity, no show.		
	50	**CALCILUTITE:** Olive grey, argillaceous, abundant very fine dark lithics, trace glauconitic material, trace ooids, trace carbonaceous material, trace very fine quartz grains, firm to brittle, dominantly firm, common brittle, sub-blocky, nil visible porosity, no show.		
2060.0 - 2080.0	60	**CALCISILTITE:** as above, nil ooids.	79	1
	40	**CALCILUTITE:** as above, nil ooids.		
2080.0 - 2100.0	50	**CALCISILTITE:** as above, nil ooids.	79	3
	50	**CALCILUTITE:** as above, nil ooids.		
2100.0 - 2120.0	70	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to off white, common to abundant argillaceous matrix and locally grades to CALCILUTITE in part, common very fine dark lithics, common ooids, minor very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, firm to moderately hard, sub-blocky, nil visible porosity, no show.		
	30	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, abundant very fine dark lithics, occasional glauconitic material, common ooids, trace carbonaceous material, trace very fine floating quartz grains, firm to moderately hard, dominantly firm, sub-blocky, nil visible porosity, no show.		
2120.0 - 2140.0	90	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to off white, commonly arenaceous and locally grades to CALCARENITE, common very fine dark lithics, occasional ooids, locally common very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, firm to moderately hard, sub-blocky, nil visible porosity, no show.	73	1
	10	**CALCILUTITE:** as above		
2140.0 - 2160.0	80	**CALCISILTITE:** as above, increasingly argillaceous.		
	20	**CALCILUTITE:** as above		
2160.0 - 2180.0	90	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to off white, commonly arenaceous and locally grades to CALCARENITE, common very fine dark lithics, occasional ooids, locally common very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, firm to moderately hard, hard to very hard in part, sub-blocky, nil visible porosity, no show.	71	1
	10	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, abundant very fine dark lithics, occasional glauconitic material, common ooids, trace carbonaceous material, trace very fine floating quartz grains, firm to moderately hard, dominantly firm, sub-blocky, nil visible porosity, no show.		
2180.0 - 2200.0	90	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to light brownish grey, locally arenaceous and occasionally grades to a SILTY CALCARENITE, common very fine dark lithics, occasional ooids, locally common very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, firm to moderately hard, hard to very hard in part, sub-blocky, nil visible porosity, no show.		
	10	**CALCILUTITE:** as above		
2200.0 - 2220.0	70	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to off white, common argillaceous matrix and locally grades to CALCILUTITE in part, locally arenaceous, common very fine dark lithics, trace ooids, minor very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, firm to moderately hard, sub-blocky, nil visible porosity, no show.	67	1
	30	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, abundant very fine dark lithics, occasional glauconitic material, common ooids, trace carbonaceous material, trace very fine floating quartz grains, firm to moderately hard, dominantly firm, sub-blocky, nil visible porosity, no show.		
2220.0 - 2240.0	80	**CALCISILTITE:** as above		
	20	**CALCILUTITE:** as above, minor microcrystalline.		
2240.0 - 2260.0	80	**CALCISILTITE:** as above	66	1
	20	**CALCILUTITE:** as above		
2260.0 - 2280.0	90	**CALCISILTITE:** Olive grey, greenish grey, light olive grey to off white, common argillaceous matrix and locally grades to CALCILUTITE in part, locally arenaceous, common very fine dark lithics, trace ooids, minor very fine floating quartz grains, trace very fine glauconite, trace carbonaceous material, moderately hard to hard,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		sub-blocky, nil visible porosity, no show.		
	10	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, abundant very fine dark lithics, occasional glauconitic material, trace ooids, trace carbonaceous material, trace very fine floating quartz grains, minor microcrystalline, moderately hard to hard, sub-blocky, nil visible porosity, no show.		
2280.0 - 2300.0	80	**CALCISILTITE:** as above	65	1
	20	**CALCILUTITE:** as above		
2300.0 - 2320.0	70	**CALCISILTITE:** as above, very hard to hard.		
	30	**CALCILUTITE:** as above, very hard to hard, locally common microcrystalline.		
2320.0 - 2340.0	60	**CALCISILTITE:** as above	65	1
	40	**CALCILUTITE:** as above		
2340.0 - 2360.0	50	**CALCISILTITE:** as above		
	50	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, abundant very fine dark lithics, occasional glauconitic material, trace ooids, trace carbonaceous material, trace very fine floating quartz grains, minor microcrystalline, moderately hard to hard, sub-blocky, nil visible porosity, no show.		
2360.0 - 2370.0	60	**CALCISILTITE:** as above	64	
	40	**CALCILUTITE:** as above		
2370.0 - 2380.0	50	**CALCISILTITE:** as above		
	50	**CALCILUTITE:** as above		
2380.0 - 2400.0	60	**CALCILUTITE:** Olive grey, greenish grey, light olive grey, occasional very fine dark lithics, occasional glauconitic material, trace very fine floating quartz grains, minor microcrystalline fragments, moderately hard to hard, sub-blocky to blocky, nil visible porosity, no show.		
	40	**CALCISILTITE:** olive grey, light greenish grey, light grey to off white, common argillaceous matrix and locally grades to CALCILUTITE in part, locally arenaceous, minor very fine dark lithics, minor very fine floating quartz grains, trace very fine glauconite, hard to very hard, sub-blocky, nil visible porosity, no show.		
2400.0 - 2420.0	70	**CALCILUTITE:** as above, dominantly light olive grey.	63	1
	30	**CALCISILTITE:** as above		
2420.0 - 2440.0	70	**CALCILUTITE:** as above		
	30	**CALCISILTITE:** as above		
2440.0 - 2460.0	80	**CALCILUTITE:** as above	57	1
	20	**CALCISILTITE:** as above		
2460.0 - 2480.0	90	**CALCILUTITE:** Dominantly light olive grey, light greenish grey, olive grey, occasional very fine dark lithics, occasional glauconitic material, rare ooids, rare carbonaceous material, trace very fine floating quartz grains, minor microcrystalline fragments, rare disseminated pyrite, moderately hard to hard, very hard in part, sub-blocky to blocky, nil visible porosity, no show.		
	10	**CALCISILTITE:** as above		
2480.0 - 2500.0	90	**CALCILUTITE:** as above	54	1
	10	**CALCISILTITE:** as above		
2500.0 - 2520.0	85	**CALCILUTITE:** Very light olive grey, light greenish grey, light grey to off white, occasional very fine dark lithics, occasional glauconitic material, rare ooids, rare carbonaceous material, minor very fine to fine floating quartz grains, rare orange calcite fragments, minor nodular and disseminated pyrite, moderately hard to hard, very hard in part, sub-blocky to blocky, nil visible porosity, no show.		
	15	**CALCISILTITE:** as above, locally arenaceous, common fine to medium floating quartz grains.		
2520.0 - 2540.0	85	**CALCAREOUS CLAYSTONE:** Dominantly light olive grey, light greenish grey, olive grey, occasional very fine dark lithics, occasional glauconitic material, minor ooids, rare carbonaceous material, trace very fine floating quartz grains, minor microcrystalline fragments, minor disseminated pyrite, moderately hard to hard, very	46	1

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		hard in part, sub-blocky to blocky.		
	15	**CALCAREOUS SILTSTONE:** olive grey, light greenish grey, light grey to off white, common argillaceous matrix and locally grades to a CALCAREOUS CLAYSTONE in part, locally arenaceous, minor very fine dark lithics, common fine to medium floating quartz grains, trace very fine glauconite, hard to very hard, sub-blocky.		
2540.0 - 2560.0	80	**CALCAREOUS CLAYSTONE:** as above		
	20	**CALCAREOUS SILTSTONE:** as above		
2560.0 - 2580.0	85	**CALCAREOUS CLAYSTONE:** as above, common medium to dark greenish grey, occasionally greyish green.	37	1
	15	**CALCAREOUS SILTSTONE:** as above		
2580.0 - 2600.0	90	**CALCAREOUS CLAYSTONE:** as above		
	10	**CALCAREOUS SILTSTONE:** as above		
2600.0 - 2620.0	90	**CALCAREOUS CLAYSTONE:** as above	32	1
	10	**CALCAREOUS SILTSTONE:** as above		
2620.0 - 2640.0	95	**CALCAREOUS CLAYSTONE:** as above		
	5	**CALCAREOUS SILTSTONE:** as above		
2640.0 - 2660.0	95	**CALCAREOUS CLAYSTONE:** as above	31	1
	5	**CALCAREOUS SILTSTONE:** as above		
2660.0 - 2680.0	100	**CALCAREOUS CLAYSTONE:** Very light olive grey, light greenish grey, light grey to off white, occasional glauconitic material, rare ooids, rare carbonaceous material, minor very fine to fine floating quartz grains, minor nodular and disseminated pyrite, moderately hard to hard, very hard in part, sub-blocky to blocky.		
2680.0 - 2700.0	100	**CALCAREOUS CLAYSTONE:** as above	28	1
2700.0 - 2720.0	100	**CALCAREOUS CLAYSTONE:** as above		
2720.0 - 2740.0	100	**CALCAREOUS CLAYSTONE:** Olive grey, minor medium light grey to medium grey, trace to minor micromicaceous, trace very fine to fine floating quartz grains, trace ooids and fossils, rare carbonaceous material, trace nodular and disseminated pyrite, firm to moderately hard, very hard in part, sub-blocky.	26	1
2740.0 - 2760.0	100	**CALCAREOUS CLAYSTONE:** Olive grey, minor medium light grey to medium grey, trace to minor micromicaceous, trace very fine to fine floating quartz grains, trace ooids and fossils, rare carbonaceous material, trace nodular and disseminated pyrite, trace glauconite, firm to hard, dominantly firm, common brittle, minor hard, very hard in part, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
2760.0 - 2780.0	95	**CALCAREOUS CLAYSTONE:** as above	21	
	5	**SILTSTONE:** Dusky yellowish brown to brownish black, arenaceous, abundant glauconite, trace very fine floating quartz grains, trace very fine calcareous fragments, soft to firm, sub-blocky.		
2780.0 - 2790.0	90	**CALCAREOUS CLAYSTONE:** Olive grey, common medium grey, trace to minor micromicaceous, trace very fine to fine floating quartz grains, rare carbonaceous material, trace nodular and disseminated pyrite, trace glauconite, firm to brittle, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
	10	**SILTSTONE:** As above, olive black in part, trace micromicaceous.		
2790.0 - 2800.0	80	**CALCAREOUS CLAYSTONE:** as above		
	20	**SILTSTONE:** as above		
2800.0 - 2805.0	75	**CALCAREOUS CLAYSTONE:** Olive grey, common medium grey, trace to minor micromicaceous, common silt, trace very fine to fine floating quartz grains, rare carbonaceous material, trace nodular and disseminated pyrite, trace glauconite, firm to brittle, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
	25	**SILTSTONE:** Dusky yellowish brown to brownish black, olive black in part, arenaceous, abundant glauconite, minor micromicaceous, trace very fine floating quartz grains, trace mica flakes, trace pyrite, soft to firm, sub-blocky.		
2805.0 - 2810.0	50	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown to brownish black, arenaceous grading to argillaceous in part, abundant very fine to coarse		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		glauconite, grades to GLAUCONITIC SILTSTONE, minor micromicaceous, trace very fine floating quartz grains, rare mica flakes, trace pyrite, trace ammonites, trace ooids, soft to firm, sub-blocky.		
	35	**CALCAREOUS CLAYSTONE:** Medium light grey to medium dark grey, dominantly medium grey, common olive grey, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace glauconite, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
	15	**SANDSTONE:** Clear to translucent, very fine to very coarse, dominantly very fine to fine, trace medium to very coarse, moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, minor angular and rounded, trace strong pyrite cement/matrix, trace argillaceous cement/matrix in part and grading to ARGILLACEOUS SANDSTONE, abundant glauconite, very hard aggregates where pyrite cement, soft aggregates where argillaceous cement, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
2810.0 - 2815.0	40	**SILTSTONE:** as above		
	40	**CALCAREOUS CLAYSTONE:** as above		
	20	**SANDSTONE:** as above		
2815.0 - 2820.0	35	**SILTSTONE:** as above	18	1
	35	**CALCAREOUS CLAYSTONE:** as above		
	30	**SANDSTONE:** Clear to translucent, very fine to medium, dominantly very fine to fine, trace medium, well sorted, sub-angular to rounded, dominantly sub-rounded, common sub-angular, abundant rounded, trace strong pyrite cement/matrix, abundant glauconite, very hard aggregates where pyrite cement, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
2820.0 - 2825.0	40	**SANDSTONE:** Clear to translucent, very fine to coarse, dominantly very fine to fine, common medium, trace coarse, well sorted, sub-angular to rounded, dominantly sub-rounded, common sub-angular, abundant rounded, trace strong pyrite cement/matrix, trace moderate siliceous cement, abundant glauconite, trace pyrite and glauconite inclusions, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
	35	**SILTSTONE:** as above		
	25	**CALCAREOUS CLAYSTONE:** as above		
2825.0 - 2830.0	50	**SANDSTONE:** Clear to translucent, very fine to very coarse, dominantly very fine to fine, common medium, trace coarse and very coarse, moderately sorted, sub-angular to rounded, dominantly sub-rounded, common sub-angular, abundant rounded, trace strong pyrite cement/matrix, common glauconite, trace pyrite and glauconite inclusions, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
	35	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown to brownish black, arenaceous grading to argillaceous in part, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace very fine floating quartz grains, rare mica flakes, trace pyrite, trace ammonites and ooids, soft to firm, sub-blocky.		
	15	**CALCAREOUS CLAYSTONE:** Medium light grey to medium dark grey, dominantly medium grey, common olive grey, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace glauconite, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
2830.0 - 2835.0	50	**SANDSTONE:** as above, minor coarse to very coarse.		
	35	**SILTSTONE:** as above		
	15	**CALCAREOUS CLAYSTONE:** as above		
2835.0 - 2840.0	50	**SANDSTONE:** Clear to translucent, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse to very coarse, moderately sorted, sub-angular to well rounded, dominantly sub-rounded, abundant sub-angular, abundant rounded, common well rounded (coarse to very coarse grains), rare strong pyrite cement/matrix, common glauconite, trace pyrite and glauconite inclusions, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, fair inferred porosity, no hydrocarbon fluorescence.		
	35	**SILTSTONE:** as above		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2835.0 - 2840.0	15	**CALCAREOUS CLAYSTONE:** as above, grading to CALCILUTITE in part.		
2840.0 - 2845.0	60	**SANDSTONE:** Clear to translucent, very fine to very coarse, dominantly very fine to fine, common medium, minor coarse to very coarse, well sorted, sub-angular to well rounded, dominantly sub-rounded, abundant sub-angular, abundant rounded, minor well rounded (coarse to very coarse grains), rare strong pyrite cement/matrix, common glauconite, trace pyrite and glauconite inclusions, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
	30	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown, dominantly argillaceous, common arenaceous, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace very fine floating quartz grains, minor mica flakes, trace pyrite, trace ammonites and ooids, soft to firm, sub-blocky.		
	10	**CALCAREOUS CLAYSTONE:** Medium light grey to medium dark grey, dominantly medium grey, minor olive grey, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace glauconite, grades to CALCILUTITE in part, soft to moderately hard, dominantly firm to brittle, common soft, minor moderately hard, sub-blocky to sub-fissile, dominantly sub-blocky, minor sub-fissile.		
2845.0 - 2850.0	70	**SANDSTONE:** Clear to translucent, common opaque, fine to very coarse, dominantly medium to coarse, common fine, common very coarse, moderately sorted, sub-angular to well rounded, dominantly sub-rounded, abundant sub-angular, abundant rounded, minor well rounded (coarse to very coarse grains), trace strong calcareous cement, trace strong pyrite cement/matrix, abundant glauconite, trace pyrite and glauconite inclusions, rare fissile quartz shards, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, good inferred porosity, no hydrocarbon fluorescence.		
	25	**SILTSTONE:** as above		
	5	**CALCAREOUS CLAYSTONE:** as above		
2850.0 - 2860.0	75	**SANDSTONE:** Clear to translucent, common opaque, fine to very coarse, dominantly medium to coarse, common fine, common very coarse, moderately sorted, sub-angular to well rounded, dominantly sub-rounded, abundant sub-angular, abundant rounded, minor well rounded (coarse to very coarse grains), trace strong calcareous cement, trace strong pyrite cement/matrix, abundant glauconite grading to GLAUCONITIC SANDSTONE in part, trace pyrite and glauconite inclusions, trace mica flakes, trace fossils, rare fissile quartz shards, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, good inferred porosity, no hydrocarbon fluorescence.	6	
	20	**SILTSTONE:** as above		
	5	**CALCAREOUS CLAYSTONE:** as above		
2860.0 - 2870.0	85	**SANDSTONE:** Clear to translucent, abundant opaque, fine to very coarse, dominantly coarse to very coarse, minor fine, abundant medium, well sorted, sub-angular to well rounded, dominantly sub-rounded to rounded, abundant sub-angular, common well rounded, trace strong calcareous cement, trace strong siliceous cement with fused grain boundaries, abundant glauconite, trace pyrite and glauconite inclusions, trace mica flakes, trace fossils, rare fissile quartz shards, trace brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, very good inferred porosity, no hydrocarbon fluorescence.		
	10	**SILTSTONE:** as above, becoming more arenaceous.		
	5	**CALCAREOUS CLAYSTONE:** as above		
2870.0 - 2880.0	90	**SANDSTONE:** Clear to translucent, abundant opaque, fine to very coarse, dominantly coarse to very coarse, minor fine, abundant medium, well sorted, sub-angular to well rounded, dominantly sub-rounded to rounded, abundant sub-angular, common well rounded, trace strong calcareous cement, trace strong siliceous cement with fused grain boundaries, trace argillaceous matrix, in part abundant argillaceous cement/matrix with fine grains and abundant glauconite and grading to an argillaceous glauconitic sandstone, common glauconite, trace mica flakes, trace fossils, rare fissile quartz shards, brittle to very hard aggregates (10%), dominantly disaggregated (90%), nil visible porosity, very good inferred porosity, no hydrocarbon fluorescence.		
	5	**SILTSTONE:** as above		
	5	**CALCAREOUS CLAYSTONE:** as above		
2880.0 - 2890.0	90	**SANDSTONE:** as above		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2880.0 - 2890.0	5	**SILTSTONE:** as above		
	5	**CALCAREOUS CLAYSTONE:** as above		
2890.0 - 2900.0	50	**GLAUCONITIC SANDSTONE:** Medium grey to dark greenish grey, clear to translucent, very fine to medium, dominantly very fine to fine aggregates, dominantly medium disaggregated grains, well sorted, sub-angular to rounded, dominantly sub-rounded to sub-angular, common rounded, moderately strong calcareous cement, trace strong pyrite cement, trace to abundant argillaceous matrix in part, very fine to medium glauconite grading to GREENSAND in part, trace to minor mica flakes, trace fine pyrite nodules, trace lithics, abundant friable to moderately hard aggregates, dominantly brittle to moderately hard, rarely friable, dominantly disaggregated, nil to very poor visible porosity, fair inferred porosity, no hydrocarbon fluorescence.	5	
	30	**SANDSTONE:** Clear to translucent, abundant opaque, medium to very coarse, dominantly coarse to very coarse, abundant medium, well sorted, sub-angular to well rounded, dominantly sub-rounded to rounded, common sub-angular, abundant well rounded, trace strong calcareous cement, trace pyrite cement/matrix, trace glauconite, trace mica flakes, rare fissile quartz shards, brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, very good inferred porosity, no hydrocarbon fluorescence.		
	10	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown, argillaceous, common arenaceous, dominantly minor to abundant in part very fine to coarse glauconite, minor micromicaceous, trace very fine floating quartz grains, minor mica flakes, trace pyrite, soft to firm, sub-blocky.		
	10	**CLAYSTONE:** Medium dark grey to olive grey, common medium light grey, moderately calcareous, trace micromicaceous, minor very fine to fine floating quartz grains, trace nodular and disseminated pyrite, brittle to hard, blocky to fissile, dominantly sub-fissile, trace blocky, common sub-blocky, common fissile to splintery.		
2900.0 - 2905.0	60	**GLAUCONITIC SANDSTONE:** as above		
	20	**SANDSTONE:** as above		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
2905.0 - 2910.0	50	**SANDSTONE:** as above		
	30	**GLAUCONITIC SANDSTONE:** as above		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
2910.0 - 2920.0	40	**SANDSTONE:** as above		
	40	**GLAUCONITIC SANDSTONE:** as above		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
2920.0 - 2930.0	40	**SANDSTONE:** Clear to translucent, abundant opaque, medium to very coarse, dominantly coarse to very coarse, abundant medium, well sorted, sub-angular to well rounded, dominantly sub-rounded to rounded, common sub-angular, abundant well rounded, trace strong calcareous cement, trace pyrite cement/matrix, trace glauconite and glauconitic staining, trace mica flakes, rare fissile quartz shards, trace pyrite lens and inclusions, brittle to very hard aggregates, dominantly disaggregated, nil visible porosity, very good inferred porosity, no hydrocarbon fluorescence.		
	35	**GLAUCONITIC SANDSTONE:** Medium dark grey to olive black, common medium grey, clear to translucent, very fine to medium, dominantly very fine to fine aggregates, dominantly medium disaggregated grains, well sorted, sub-angular to rounded, dominantly sub-rounded to sub-angular, common rounded, minor moderately strong calcareous cement, minor moderately strong siliceous cement, trace argillaceous cement/matrix and grading to ARGILLACEOUS SANDSTONE, common to abundant light grey argillaceous matrix, common brownish grey silty matrix in part, very fine to medium glauconite grading to GREENSAND in part, trace mica flakes, trace fine pyrite nodules, trace lithics, trace carbonaceous material, abundant friable to moderately hard aggregates, dominantly brittle to moderately hard, rarely friable, firm where argillaceous and silty, disaggregated, nil to very poor visible porosity, poor inferred porosity, no hydrocarbon fluorescence.		
	15	**CLAYSTONE:** Medium dark grey to olive grey, minor medium light grey, moderately calcareous to common non calcareous in part, trace micromicaceous, trace very fine to fine floating quartz grains, trace nodular and disseminated pyrite, trace		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		carbonaceous material and laminae, brittle to hard, blocky to fissile, dominantly sub-fissile, trace blocky, common sub-blocky, common fissile to splintery.		
	10	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown, greenish black in part, argillaceous and grading to SILTY CLAYSTONE in part, common arenaceous, minor glauconite, minor micromicaceous, trace to abundant very fine floating quartz grains and grading to SILTY SANDSTONE, trace mica flakes, trace pyrite, soft to brittle, dominantly firm, sub-blocky.		
2930.0 - 2940.0	50	**SANDSTONE:** as above	4	
	35	**GLAUCONITIC SANDSTONE:** as above		
	10	**SILTSTONE:** as above		
	5	**CLAYSTONE:** as above		
2940.0 - 2950.0	50	**SANDSTONE:** as above		
	30	**GLAUCONITIC SANDSTONE:** as above, decreasing glauconite content.		
	15	**SILTSTONE:** Dominantly olive black, common dusky yellowish brown, greenish black in part, common medium dark grey, dominantly arenaceous, argillaceous and grading to SILTY CLAYSTONE in part, minor glauconite, trace micromicaceous, trace mica flakes, trace to abundant very fine floating quartz grains and grading to SILTY SANDSTONE, trace pyrite, trace carbonaceous material, soft to firm, sub-blocky.		
	5	**CLAYSTONE:** as above		
2950.0 - 2952.0	70	**SANDSTONE:** as above		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
	10	**GLAUCONITIC SANDSTONE:** as above Last sample before POOH		
2952.0 - 2960.0	65	**SANDSTONE:** clear to translucent, frosted, dominantly coarse to very coarse, commonly fine to medium grains, poor to moderately well sorted, angular to sub-angular, sub-rounded where fine to medium grained, trace weak calcareous cement, nil visible matrix, generally clean disaggregated grains, very good inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**GLAUCONITIC SANDSTONE:** Medium grey, light olive grey, very fine to fine, dominantly fine, well sorted, round to sub-rounded, minor moderately strong calcareous cement, common argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, common to locally abundant very fine to medium glauconite grains, trace mica flakes, occasional fine pyrite nodules, trace lithics, trace carbonaceous material, friable to moderately hard aggregates, hard in part, very poor visible porosity, no hydrocarbon fluorescence.		
	10	**SILTSTONE:** medium dark grey brown, olive black, slightly arenaceous, common fine to medium glauconite grains, common tan lithics, minor micromicaceous, trace to minor nodular and disseminated pyrite, moderately hard to hard, sub-blocky.		
	10	**CLAYSTONE:** light bluish grey, light grey, light greenish grey, silicic, minor calcareous material, common off white lithics, commonly micromicaceous, hard to very hard, sub-fissile to sub-blocky.		
2960.0 - 2970.0	50	**SANDSTONE:** as above, minor weak pyritic cement, trace nodular pyrite. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	20	**SILTSTONE:** as above		
	20	**CLAYSTONE:** as above		
	10	**GLAUCONITIC SANDSTONE:** as above		
2970.0 - 2980.0	60	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale green and pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	20	**CLAYSTONE:** as above		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
2970.0 - 2980.0	15	**SILTSTONE:** as above		
	5	**GLAUCONITIC SANDSTONE:** as above, abundant glauconite grains.		
2980.0 - 2990.0	75	**SANDSTONE:** as above, minor fine to medium grains, generally well sorted, occasional nodular pyrite. **FLUORESCENCE : (Trace)** moderately bright pale green and pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
	5	**GLAUCONITIC SANDSTONE:** as above		
2990.0 - 3000.0	65	**SANDSTONE:** as above, increasingly common nodular pyrite and medium glauconite grains. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above		
	15	**CLAYSTONE:** as above		
	5	**GLAUCONITIC SANDSTONE:** as above		
3000.0 - 3010.0	75	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above.		
	5	**GLAUCONITIC SANDSTONE:** as above		
3010.0 - 3020.0	75	**SANDSTONE:** clear to translucent, frosted, dominantly coarse to very coarse, commonly fine to medium grains, poor to locally well sorted, angular to sub-angular, sub-rounded where fine to medium grained, minor weak pyritic cement, trace weak calcareous cement, nil visible matrix, common nodular pyrite cemented around glauconite nodules, common loose medium glauconite grains, generally clean disaggregated grains, very good inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** medium dark grey brown, dark brown, occasionally off white to tan, slightly arenaceous, common fine to medium glauconite grains, common tan lithics, minor micromicaceous, trace to minor nodular and disseminated pyrite, moderately hard to hard, sub-blocky.		
	10	**CLAYSTONE:** light bluish grey, light grey, light greenish grey, silicic, minor calcareous material, common off white lithics, commonly micromicaceous, hard to very hard, sub-fissile to sub-blocky.		
	5	**GLAUCONITIC SANDSTONE:** as above		
3020.0 - 3030.0	70	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
	10	**GLAUCONITIC SANDSTONE:** Medium grey, light olive grey, translucent in part, very fine to fine, dominantly fine, well sorted, round to sub-rounded, minor moderately strong calcareous cement, common argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, abundant very fine to medium glauconite grains, trace mica flakes, occasional fine pyrite nodules, trace lithics, trace carbonaceous material, friable to moderately hard aggregates, hard in part, very poor visible porosity, no hydrocarbon fluorescence.		
3030.0 - 3040.0	80	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		minor slow bleeding cut, thin off white to pale green film residue.		
	10	**CLAYSTONE:** as above		
	7	**SILTSTONE:** as above		
	3	**GLAUCONITIC SANDSTONE:** as above		
3040.0 - 3050.0	80	**SANDSTONE:** as above, occasional strong siliceous cement where fine grained aggregates and associated poor to fair inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** as above, common carbonaceous micro laminations.		
	5	**CLAYSTONE:** as above		
	5	**GLAUCONITIC SANDSTONE:** as above, common off white argillaceous matrix.		
3050.0 - 3060.0	80	**SANDSTONE:** clear to translucent, frosted, dominantly coarse to very coarse, common very fine to medium grains, very poorly sorted, angular to sub-angular, sub-rounded where very fine to medium grained, common strong siliceous cement and common fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine aggregates, nil visible matrix associated with coarse grains, common nodular pyrite, occasional loose medium glauconite grains, rare chert fragments, generally clean disaggregated grains, very good inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** medium dark grey brown, medium brown, occasionally off white to tan, argillaceous in part, occasional fine to medium glauconite grains, common tan lithics, minor micromicaceous, common carbonaceous micro laminations. trace to minor nodular, moderately hard to hard, sub-blocky.		
	5	**CLAYSTONE:** as above, occasional light brownish grey, common carbonaceous micro laminations.		
3060.0 - 3070.0	85	**SANDSTONE:** as above, increasingly common fine to medium aggregates with off white argillaceous matrix, minor carbonaceous laminations and specks. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above		
3070.0 - 3080.0	90	**SANDSTONE:** clear to translucent, off white, frosted, very fine to very coarse, very poorly sorted, angular to sub-angular where coarse, sub-rounded where very fine to medium grained, common strong siliceous cement and common fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, nil visible matrix associated with coarse grains, common nodular pyrite, minor loose medium glauconite grains, common chert fragments, minor carbonaceous material, generally clean disaggregated grains and fractured quartzite shards, poor visible porosity in fine aggregates, fair to good inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	10	**SILTSTONE:** medium brown to tan, medium grey brown, argillaceous and locally grading to a SILTY CLAYSTONE, increasingly common carbonaceous laminations and specks, locally arenaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3080.0 - 3090.0	85	**SANDSTONE:** as above, dominantly fine to medium grains. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above		
3090.0 - 3100.0	85	**SANDSTONE:** off white, clear to translucent, dominantly very fine to medium with common to abundant coarse to very coarse fractured grains, angular to sub-rounded, dominantly sub-angular, common strong siliceous cement and common fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, nil visible matrix associated with coarse grains, increasingly common carbonaceous		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		specks and laminations in fine grained aggregates, common nodular pyrite, rare glauconite nodules, common chert fragments, common friable to moderately hard fine grained aggregates, generally clean disaggregated coarse grains and fractured quartzite shards, poor visible porosity in fine aggregates, generally fair to good inferred porosity. **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above, carbonaceous material locally grading to COAL stringers, occasional arenaceous laminations.		
3100.0 - 3110.0	85	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above		
3110.0 - 3120.0	85	**SANDSTONE:** as above, common coarse to very coarse grains. **FLUORESCENCE : (Trace)**		
	15	**SILTSTONE:** as above		
3120.0 - 3130.0	85	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.		
	15	**SILTSTONE:** as above		
3130.0 - 3140.0	80	**SANDSTONE:** off white, clear to translucent, dominantly very fine to medium with common coarse to very coarse fractured grains, angular to sub-rounded, dominantly sub-angular, common strong siliceous cement and occasional fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional carbonaceous specks, common nodular pyrite, rare glauconite nodules, common chert fragments, common friable to moderately hard fine grained aggregates, generally clean disaggregated coarse grains and fractured quartzite shards, poor to fair visible porosity in fine aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	20	**SILTSTONE:** medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3140.0 - 3150.0	75	**SANDSTONE:** as above		
	25	**SILTSTONE:** as above		
3150.0 - 3160.0	75	**SANDSTONE:** as above		
	25	**SILTSTONE:** as above		
3160.0 - 3170.0	70	**SANDSTONE:** as above		
	30	**SILTSTONE:** medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3170.0 - 3180.0	70	**SANDSTONE:** as above		
	30	**SILTSTONE:** medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3180.0 - 3190.0	80	**SANDSTONE:** clear to translucent, off white, dominantly medium, commonly very fine to fine and common coarse to very coarse fractured grains, angular to sub-rounded, dominantly sub-angular, common strong siliceous cement and occasional fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional carbonaceous specks, common nodular pyrite, rare glauconite nodules, common chert fragments, common friable to moderately hard fine grained aggregates, generally clean disaggregated coarse grains and fractured		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		quartzite shards, poor to fair visible porosity in fine aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	18	**SILTSTONE:** as above, increasingly common COAL stringers		
	2	**COAL:** black, olive black, vitreous to sub-vitreous, common silty laminations and commonly grading to a CARBONACEOUS SILTSTONE, hackly in part, hard to very hard, sub conchoidal to sub-blocky.		
3190.0 - 3200.0	70	**SANDSTONE:** as above		
	29	**SILTSTONE:** as above		
	1	**COAL:** as above		
3200.0 - 3210.0	80	**SANDSTONE:** off white, clear to translucent, very fine to medium, common coarse to very coarse fractured grains, sub-angular to sub-rounded, common strong siliceous cement and occasional fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to a SILTY SANDSTONE, occasional carbonaceous specks, common nodular pyrite, common friable to moderately hard fine grained aggregates, generally clean disaggregated grains, poor to fair visible porosity in fine aggregates, generally fair inferred porosity, no hydrocarbon fluorescence.		
	20	**SILTSTONE:** medium brown, medium grey brown, light olive grey, commonly argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous and grading to a SILTY SANDSTONE in part, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3210.0 - 3220.0	70	**SANDSTONE:** off white , pale brown, clear to translucent, very fine to medium, decreasingly common coarse to very coarse fractured grains, sub-angular to sub-rounded, common strong siliceous cement and occasional fused grain boundaries where coarse grained, trace pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to an ARENACEOUS SILTSTONE, common carbonaceous specks, common nodular pyrite with occasional glauconite grains, common friable to moderately hard fine grained aggregates, generally clean disaggregated grains, poor to fair visible porosity in fine aggregates, poor to generally fair inferred porosity, no hydrocarbon fluorescence.		
	28	**SILTSTONE:** as above		
	2	**COAL:** black, olive black, dark grey, sub-vitreous, dull and silty in part, common silty laminations and commonly grading to a CARBONACEOUS SILTSTONE, hackly in part, hard to very hard, sub conchoidal to sub-blocky.		
3220.0 - 3230.0	70	**SANDSTONE:** as above		
	30	**SILTSTONE:** as above		
3230.0 - 3240.0	70	**SANDSTONE:** as above		
	29	**SILTSTONE:** as above		
	1	**COAL:** as above		
3240.0 - 3250.0	75	**SANDSTONE:** clear to translucent, frosted, off white to pale grey in part, fine to very coarse, dominantly fine to medium, common coarse angular grains, poor sorted, dominantly sub-angular to sub-rounded, common angular, common strong siliceous cement and fused grain boundaries where medium to coarse grained, minor strong pyritic cement, trace weak calcareous cement, common off white to pale grey brown argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to ARENACEOUS SILTSTONE, common silty and carbonaceous laminations, common nodular pyrite, common friable to very hard fine to medium grained aggregates, generally clean disaggregated grains, poor to fair visible porosity in fine aggregates, poor to generally fair inferred porosity. **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	25	**SILTSTONE:** medium brown, medium grey brown, light olive grey, commonly argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous and grading to a SILTY SANDSTONE in part, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.		
3250.0 - 3260.0	70	**SANDSTONE:** as above		
		FLUORESCENCE : (Trace) bright pale blue to off white spotted residual		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	30	**SILTSTONE:** as above		
3260.0 - 3270.0	65	**SANDSTONE:** as above, common rock flour. **FLUORESCENCE : (5%)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	35	**SILTSTONE:** as above		
3270.0 - 3280.0	75	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	25	**SILTSTONE:** as above		
3280.0 - 3290.0	80	**SANDSTONE:** clear to translucent, frosted, off white to pale grey in part, fine to very coarse, dominantly fine to medium, common coarse angular grains, poor sorted, dominantly sub-angular to sub-rounded, common angular, common strong siliceous cement and fused grain boundaries where medium to coarse grained, minor strong pyritic cement, trace weak calcareous cement, common off white to pale grey brown argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to ARENACEOUS SILTSTONE, common silty and carbonaceous laminations, common nodular pyrite, common very hard fine to medium grained aggregates, generally clean disaggregated grains, common rock flour, poor visible porosity in fine aggregates, poor to generally fair inferred porosity. **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	20	**SILTSTONE:** medium brown, medium grey brown, light olive grey, commonly arenaceous and locally grading to a SILTY SANDSTONE, common carbonaceous laminations and specks, locally argillaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-blocky, sub-fissile in part.		
3290.0 - 3300.0	80	**SANDSTONE:** as above, increasingly common coarse to very coarse angular quartz grains. **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	20	**SILTSTONE:** as above		
3300.0 - 3310.0	80	**SANDSTONE:** as above **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	20	**SILTSTONE:** as above		
3310.0 - 3320.0	85	**SANDSTONE:** clear to translucent, frosted, very fine to very coarse, dominantly medium to coarse, poorly sorted, sub-angular to sub-rounded, angular in part, common weak siliceous and calcareous cement, rare pyrite cement, locally common pale brown to off white argillaceous and silty matrix where very fine to fine grained aggregates, common nodular pyrite with occasional glauconitic grains, common lithics and minor carbonaceous specks, generally clean disaggregated grains, minor very hard very fine to fine grained aggregates, good inferred porosity. **FLUORESCENCE : (Trace)** bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green film residue.		
	15	**SILTSTONE:** light to medium grey brown, light olive grey, commonly arenaceous and locally grading to a SILTY SANDSTONE, common carbonaceous laminations and specks, locally argillaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-blocky, sub-fissile in part.		
3320.0 - 3340.0	85	**SANDSTONE:** clear to translucent, frosted, very fine to very coarse, dominantly medium to coarse, poorly sorted, sub-angular to sub-rounded, angular in part, common weak siliceous and calcareous cement, rare pyrite cement, locally common pale brown to off white argillaceous and silty matrix where very fine to fine grained aggregates, common nodular pyrite with occasional glauconitic grains, common lithics and minor carbonaceous specks, generally clean disaggregated grains, minor very hard very fine to fine grained aggregates, good inferred porosity, no hydrocarbon fluorescence.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3320.0 - 3340.0	15	**SILTSTONE:** light to medium grey brown, light olive grey, commonly arenaceous and locally grading to a SILTY SANDSTONE, common carbonaceous laminations and specks, locally argillaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-blocky, sub-fissile in part.		
3340.0 - 3350.0	95	**SANDSTONE:** Clear to translucent, off white, frosted, very fine to very coarse, dominantly medium to coarse, poor to moderately sorted, sub-angular to sub-rounded, angular in part, common weak siliceous and calcareous cement, rare pyrite cement, locally common off white argillaceous fine grained aggregates, minor nodular pyrite, common lithics and carbonaceous specks, generally clean disaggregated grains, minor very hard very fine to fine grained aggregates, good inferred porosity, no hydrocarbon fluorescence.		
	5	**SILTSTONE:** as above Spot sample only		
3350.0 - 3360.0	95	**SANDSTONE:** as above		
	5	**SILTSTONE:** as above		
3360.0 - 3380.0	90	**SANDSTONE:** Clear to translucent, abundant opaque, medium light grey to medium grey aggregates, fine to very coarse, dominantly medium to coarse, abundant fine, abundant very coarse, aggregates are fine, moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, common angular and rounded, rare moderate siliceous cement, rare pyrite cement, white argillaceous matrix, minor nodular pyrite, common lithics and carbonaceous specks, trace chert, trace mica flakes, dominantly disaggregated, minor brittle to very hard aggregates, nil to poor visible porosity and good inferred porosity, no hydrocarbon fluorescence.		
	10	**SILTSTONE:** Dark grey to olive black, common medium dark grey, arenaceous, minor argillaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, trace mica flakes, firm to hard, dominantly moderately hard to hard, abundant firm, sub-blocky, sub-fissile in part.		
3380.0 - 3400.0	90	**SANDSTONE:** as above, dominantly medium, abundant coarse, minor very coarse.		
	10	**SILTSTONE:** as above		
3400.0 - 3420.0	85	**SANDSTONE:** Clear to translucent, abundant opaque, medium light grey to medium grey aggregates, fine to very coarse, dominantly medium to coarse, abundant fine, common very coarse, aggregates (10%) are fine, moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, common angular and rounded, rare moderate siliceous cement, rare pyrite cement, abundant white argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, minor brownish black silty matrix and grading to SILTY SANDSTONE, minor nodular pyrite, common lithics and carbonaceous specks, trace chert, trace mica flakes, trace glauconite in aggregates, dominantly disaggregated, minor brittle to very hard aggregates, poor to in part fair visible porosity and good inferred porosity, no hydrocarbon fluorescence.		
	15	**SILTSTONE:** Dark grey to olive black, common medium dark grey, arenaceous and grading to SILTY SANDSTONE in part, minor argillaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, trace mica flakes, firm to hard, dominantly moderately hard to hard, abundant firm, sub-blocky, sub-fissile in part.		
3420.0 - 3440.0	90	**SANDSTONE:** as above, dominantly coarse.		
	10	**SILTSTONE:** as above		
3440.0 - 3450.0	85	**SANDSTONE:** as above, medium to very coarse, dominantly medium, abundant coarse, minor very coarse, minor fine grained aggregates.		
	15	**SILTSTONE:** as above		
3450.0 - 3460.0	100	**SANDSTONE:** Clear to translucent, abundant opaque, fine to coarse, dominantly medium, abundant fine, common coarse, well sorted, sub-angular to rounded, dominantly sub-rounded to rounded, abundant sub-angular, trace pyrite cement, common nodular pyrite, common lithics and carbonaceous material, trace glauconite or possibly chlorite, trace calcareous fragments, disaggregated, good inferred porosity, no hydrocarbon fluorescence.		
3460.0 - 3470.0	75	**SANDSTONE:** Clear to translucent, abundant opaque, medium light grey to medium grey aggregates, very fine to very coarse, very poorly sorted, angular to rounded, dominantly sub-angular to sub-rounded, common angular and rounded, very fine to fine grains dominantly rounded, trace weak siliceous cement, trace pyrite cement, abundant white dispersive argillaceous matrix and grading to ARGILLACEOUS		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		SANDSTONE, minor nodular pyrite, common lithics and carbonaceous specks, trace calcareous fragments, dominantly disaggregated, minor friable aggregates, poor visible porosity and fair inferred porosity, no hydrocarbon fluorescence.		
	25	**SILTSTONE:** Dark grey to olive black, common medium dark grey, very arenaceous and grading to SILTY SANDSTONE in part, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky.		
3470.0 - 3480.0	70	**SANDSTONE:** Clear to translucent, abundant opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, common coarse, rare very coarse, moderately sorted, angular to rounded, dominantly sub-angular to sub-rounded, common angular and rounded, very fine to fine grains dominantly rounded, trace weak siliceous cement, rare pyrite cement, common white dispersive argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, common to abundant nodular pyrite, common lithics and carbonaceous specks, trace calcareous fragments, trace glauconite or possibly chlorite, dominantly disaggregated, minor friable aggregates, poor visible porosity and fair inferred porosity, no hydrocarbon fluorescence.		
	30	**SILTSTONE:** as above		
3480.0 - 3490.0	50	**SANDSTONE:** As above, common pyrite, trace well rounded, trace quartz shards.		
	50	**SILTSTONE:** Dark grey to olive black, common medium dark grey and olive grey, dominantly very arenaceous and grading to SILTY SANDSTONE in part, minor argillaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky.		
3490.0 - 3500.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, fine to very coarse, dominantly fine to medium, minor coarse to very coarse, moderately sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace well rounded, trace weak siliceous cement, rare pyrite cement, white argillaceous matrix, common nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, dominantly disaggregated, minor friable to brittle aggregates, poor visible porosity and fair inferred porosity, no hydrocarbon fluorescence.		
	45	**SILTSTONE:** Dark grey to olive black, common medium dark grey and olive grey, dominantly arenaceous, common argillaceous and grading to SILTY CLAYSTONE, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, soft to moderately hard, dominantly firm, common soft, minor moderately hard, sub-blocky.		
	5	**CLAYSTONE:** Medium grey, siliceous in part, micromicaceous, common silt in part and grading to SILTY CLAYSTONE, brittle, fissile to splintery.		
3500.0 - 3510.0	50	**SILTSTONE:** as above		
	45	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak siliceous cement, minor pyrite cement, common argillaceous matrix, common to abundant nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, dominantly disaggregated, abundant friable to brittle aggregates, poor visible and inferred porosity, no hydrocarbon fluorescence.		
	5	**CLAYSTONE:** as above		
3510.0 - 3515.0	60	**SANDSTONE:** As above.		
	35	**SILTSTONE:** Dominantly olive grey, minor dark grey to olive black, rare medium dark grey, argillaceous and grading to SILTY CLAYSTONE, abundant arenaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace fine quartz grains, trace nodular and disseminated pyrite, soft to moderately hard, dominantly firm to brittle, minor soft, minor moderately hard, sub-blocky.		
	5	**CLAYSTONE:** Medium grey, minor olive grey, siliceous in part, silty in part and grading to SILTY CLAYSTONE, micromicaceous, brittle, fissile to splintery, firm and sub-blocky where silty.		
3515.0 - 3520.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak siliceous cement, minor pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		minor nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, dominantly disaggregated, abundant friable to brittle aggregates, poor visible and inferred porosity, nil hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (Trace)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	35	**SILTSTONE:** Dominantly olive grey, minor dark grey to olive black, argillaceous and grading to SILTY CLAYSTONE, minor arenaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.		
	15	**CLAYSTONE:** Medium grey to olive grey, silty in part and grading to SILTY CLAYSTONE, micromicaceous, trace carbonaceous laminae and material, soft to firm, sub-blocky to sub-fissile.		
3520.0 - 3525.0	60	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, common pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, abundant nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (5%)** Dominantly dull to minor moderately bright yellowish green patchy fluorescence associated with calcareous cemented grains, very slow milky white diffuse cut, moderately thick bluish white ring residue.		
	30	**SILTSTONE:** as above		
	10	**CLAYSTONE:** as above		
3525.0 - 3530.0	60	**SANDSTONE:** as above, common pyrite nodules, nil hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (5%)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	25	**SILTSTONE:** as above		
	15	**CLAYSTONE:** as above		
3530.0 - 3535.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, minor pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, nil hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (5%)** Dull to minor moderately bright yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	35	**CLAYSTONE:** Medium grey to olive grey, silty in part and grading to SILTY CLAYSTONE, nil to in part common micromicaceous, minor carbonaceous laminae and material, trace lithics, trace pyrite, soft to firm, brittle in part, sub-blocky to sub-fissile.		
	15	**SILTSTONE:** Dominantly olive grey, minor dark grey to olive black, argillaceous and grading to SILTY CLAYSTONE, rare carbonaceous, minor arenaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.		
3535.0 - 3540.0	70	**SANDSTONE:** As above. **FLUORESCENCE : (5%)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	20	**CLAYSTONE:** as above		
	10	**SILTSTONE:** as above, trace glauconite.		
3540.0 - 3545.0	60	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded,		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
		common rounded, trace weak to in part strong siliceous cement, minor pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, nil hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (10%)** Dull to minor moderately bright yellowish green to pale orange patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	20	**SILTSTONE:** Dominantly olive grey, minor dark grey to olive black, argillaceous and grading to SILTY CLAYSTONE, minor arenaceous, common carbonaceous laminations and specks, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, trace mica flakes, trace glauconite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.		
	20	**CLAYSTONE:** Medium grey to olive grey, silty in part and grading to SILTY CLAYSTONE, nil to in part common micromicaceous, minor carbonaceous laminae and material, trace lithics, trace disseminated and nodular pyrite, weakly calcareous, soft to firm, brittle in part, sub-blocky to sub-fissile.		
3545.0 - 3550.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, abundant very fine, minor coarse, rare very coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, rare pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, minor nodular pyrite, common lithics and carbonaceous specks, trace glauconite or possibly chlorite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, nil hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (10%)** Dull to minor moderately bright yellowish green to pale orange patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	30	**CLAYSTONE:** as above		
	20	**SILTSTONE:** as above		
3550.0 - 3555.0	70	**SANDSTONE:** as above, common pyrite. **FLUORESCENCE : (5%)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and nil crush cut, nil ring residue.		
	20	**CLAYSTONE:** as above		
	10	**SILTSTONE:** as above		
3555.0 - 3560.0	60	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, common very fine, minor coarse, rare very coarse, moderately sorted, aggregates are fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, rare pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common nodular pyrite, common lithics and carbonaceous specks, trace glauconite, trace mica flakes, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (5%)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and slow crush cut, moderately thick yellowish green ring residue.		
	25	**CLAYSTONE:** Olive grey, olive black in part, silty in part and grading to SILTY CLAYSTONE, siliceous in part, nil to in part common micromicaceous, minor carbonaceous material, trace lithics, trace disseminated and nodular pyrite, trace very fine glauconite, weakly calcareous, soft to firm, brittle in part, sub-blocky to sub-fissile, minor fissile where siliceous.		
	15	**SILTSTONE:** Olive grey, argillaceous and grading to SILTY CLAYSTONE, minor arenaceous, common carbonaceous laminations and material, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, trace very fine glauconite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.		
3560.0 - 3570.0	50	**SANDSTONE:** as above **FLUORESCENCE : (5%)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and slow crush cut, moderately thick yellowish green film residue.		
	30	**CLAYSTONE:** as above		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3560.0 - 3570.0	20	**SILTSTONE:** as above		
3570.0 - 3580.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to very coarse, dominantly fine to medium, common very fine, rare coarse, trace very coarse, moderately sorted, aggregates are fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, trace pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, minor nodular pyrite, common lithics and carbonaceous specks, trace glauconite, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, hydrocarbon fluorescence, mineral fluorescence. **FLUORESCENCE : (Trace)** Dull yellowish green patchy fluorescence associated with calcareous cemented grains, nil cut and slow crush cut, moderately thick patchy yellowish green film residue.		
	25	**SILTSTONE:** Olive grey, argillaceous and grading to SILTY CLAYSTONE, minor arenaceous, common carbonaceous laminations and material, minor micromicaceous, trace lithics, trace nodular and disseminated pyrite, trace very fine glauconite, soft to brittle, dominantly firm to brittle, minor soft, sub-blocky.		
	25	**CLAYSTONE:** Olive grey, olive black in part, silty in part and grading to SILTY CLAYSTONE, siliceous in part, nil to in part common micromicaceous, minor carbonaceous material, trace lithics, trace disseminated and nodular pyrite, trace very fine glauconite, weakly calcareous, soft to firm, brittle in part, sub-blocky to sub-fissile, minor fissile where siliceous.		
3580.0 - 3590.0	55	**SILTSTONE:** Dominantly olive grey, olive black, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminae and material, micromicaceous, common lithics, trace nodular and disseminated pyrite, trace very fine glauconite, common argillaceous matrix, soft to brittle, dominantly soft to firm, common brittle, sub-blocky.		
	30	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to coarse, dominantly fine, common very fine, abundant medium, rare coarse, moderately sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, trace pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common silty matrix and grading to SILTY SANDSTONE, trace dispersive calcareous matrix, trace nodular pyrite, common lithics and carbonaceous specks, trace glauconite, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, no hydrocarbon fluorescence.		
	15	**CLAYSTONE:** Olive grey, olive black in part, silty and grading to SILTY CLAYSTONE, pyritic in part, common micromicaceous, minor carbonaceous laminae and material, common lithics, abundant disseminated pyrite, soft to firm, brittle in part, sub-blocky to sub-fissile.		
3590.0 - 3600.0	60	**SILTSTONE:** as above		
	30	**SANDSTONE:** as above		
	10	**CLAYSTONE:** as above		
3600.0 - 3610.0	50	**SANDSTONE:** Clear to translucent, common opaque, medium light grey to medium grey aggregates, very fine to coarse, dominantly fine to medium, common very fine, rare coarse, well sorted, aggregates are very fine to fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, trace pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common silty matrix and grading to SILTY SANDSTONE, trace dispersive calcareous matrix, trace nodular pyrite, common lithics and carbonaceous specks, trace glauconite, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, no hydrocarbon fluorescence.		
	50	**SILTSTONE:** Dominantly olive black, minor olive grey, arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminae and material, micromicaceous, common lithics, trace nodular and disseminated pyrite, trace very fine glauconite, common argillaceous matrix, soft to brittle, dominantly soft to firm, common brittle, sub-blocky.		
3610.0 - 3620.0	60	**SILTSTONE:** as above		
	40	**SANDSTONE:** as above		
3620.0 - 3630.0	50	**SANDSTONE:** As above, common pyrite cement.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3620.0 - 3630.0	50	**SILTSTONE:** as above		
3630.0 - 3640.0	60	**SANDSTONE:** Clear to translucent, common opaque, medium dark grey to medium grey aggregates, fine to very coarse, dominantly fine to medium, common coarse, rare very coarse, well sorted, aggregates are fine and well sorted, sub-angular to rounded, dominantly sub-angular to sub-rounded, common rounded, trace weak to in part strong siliceous cement, common pyrite cement, trace strong calcareous cement with fissile aggregates, common argillaceous cement/matrix, common silty matrix and grading to SILTY SANDSTONE, trace dispersive calcareous matrix, common to abundant nodular pyrite, common lithics and carbonaceous specks, trace glauconite, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, no hydrocarbon fluorescence.		
	40	**SILTSTONE:** Dominantly olive black, minor olive grey, arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminae and material, micromicaceous, common lithics, trace nodular and disseminated pyrite, trace very fine glauconite, common argillaceous matrix, soft to brittle, dominantly soft to firm, common brittle, sub-blocky.		
3640.0 - 3650.0	70	**SANDSTONE:** as above, trace dolomite cement.		
	30	**SILTSTONE:** as above, trace mica flakes.		
3650.0 - 3660.0	70	**SANDSTONE:** Clear to translucent, common opaque, medium dark grey to medium grey aggregates, very fine to very coarse, dominantly medium to coarse, common very fine, abundant fine, common very coarse, poorly sorted, aggregates are fine and well sorted, angular to rounded, dominantly sub-angular to sub-rounded, common rounded, minor angular, trace weak to in part strong siliceous cement, minor pyrite cement, trace strong calcareous cement with fissile aggregates, trace dolomitic cement, common argillaceous cement/matrix, common silty matrix and grading to SILTY SANDSTONE, trace dispersive calcareous matrix, minor nodular pyrite, common lithics and carbonaceous specks, trace glauconite, trace quartz shards, dominantly disaggregated, abundant friable to hard aggregates, poor visible and fair inferred porosity, no hydrocarbon fluorescence.		
	30	**SILTSTONE:** Olive black, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminae and material, micromicaceous, abundant lithics, trace nodular and disseminated pyrite, trace very fine glauconite, common argillaceous matrix, soft to brittle, dominantly soft to firm, common brittle, sub-blocky.		
3660.0 - 3670.0	80	**SANDSTONE:** as above		
	20	**SILTSTONE:** as above		
3670.0 - 3680.0	70	**SANDSTONE:** clear to translucent, frosted to off white, generally medium to very coarse, dominantly medium, minor very fine to fine grains, angular to sub-angular, common angular fractured very coarse grains, poorly sorted, common strong siliceous cement, trace weak calcareous, common strong pyritic cement and off white argillaceous matrix in very fine to fine aggregates, common to abundant nodular pyrite, generally disaggregated, very hard very fine to fine grained aggregates, good inferred porosity, no hydrocarbon fluorescence.		
	30	**SILTSTONE:** Olive black, brownish grey, olive grey, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminations and specks, common micromicaceous, abundant lithics, common disseminated pyrite, trace very fine glauconite, moderately hard to hard, sub-blocky.		
3680.0 - 3690.0	70	**SANDSTONE:** as above, dominantly fine to medium grains.		
	30	**SILTSTONE:** as above		
3690.0 - 3700.0	85	**SANDSTONE:** clear to translucent, frosted to off white, generally very fine to medium, dominantly medium, common coarse to very coarse grains, angular to sub-angular, common angular fractured very coarse grains, poorly sorted, common strong siliceous cement, trace weak calcareous, common strong pyritic cement and off white argillaceous matrix in very fine to fine aggregates, localised light brown silty matrix in very fine grained aggregates and grading to an ARENACEOUS SILTSTONE, common to abundant nodular pyrite, common lithics, generally disaggregated, very hard very fine to fine grained aggregates, good inferred porosity, no hydrocarbon fluorescence.		
	15	**SILTSTONE:** light to medium, brownish grey, olive grey, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous laminations and specks, common micromicaceous, abundant lithics, minor disseminated pyrite, trace very fine glauconite, moderately hard to hard, sub-blocky.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3700.0 - 3710.0	80	**SANDSTONE:** as above		
	20	**SILTSTONE:** as above		
3710.0 - 3720.0	80	**SANDSTONE:** as above, increasingly common angular fractured quartzite shards.		
	20	**SILTSTONE:** as above, increasingly common carbonaceous micro laminations, occasional sub-fissile.		
3720.0 - 3730.0	85	**SANDSTONE:** Off white, translucent and frosted, very fine to very coarse, dominantly fine to medium, angular to sub-angular, poorly sorted, common strong siliceous cement, minor weak calcareous cement and locally common strong pyritic cement, common to abundant off white argillaceous matrix where very fine to fine grained aggregates, abundant angular fractured very coarse shards with occasional fused grain boundaries, abundant nodular pyrite, occasional lithics and carbonaceous specks, very poor visible porosity in hard to very hard fine grained aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	15	**SILTSTONE:** light to medium, brownish grey, olive grey, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous micro laminations and specks, commonly micromicaceous, abundant lithics, minor disseminated pyrite, trace very fine glauconite, moderately hard to hard, sub-blocky, minor sub-fissile.		
3730.0 - 3740.0	80	**SANDSTONE:** as above		
	20	**SILTSTONE:** as above		
3740.0 - 3750.0	80	**SANDSTONE:** Off white, translucent and frosted, very fine to very coarse, dominantly fine to medium, angular to sub-angular, poorly sorted, common strong siliceous cement, minor weak calcareous cement and locally common strong pyritic cement, common to abundant off white argillaceous matrix where very fine to fine grained aggregates, abundant angular fractured very coarse shards with occasional fused grain boundaries, abundant nodular pyrite, occasional lithics and carbonaceous specks, very poor visible porosity in hard to very hard fine grained aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	20	**SILTSTONE:** light to medium, brownish grey, olive grey, dominantly arenaceous and grading to SILTY SANDSTONE in part, argillaceous in part and grading to SILTY CLAYSTONE, common carbonaceous micro laminations and specks, commonly micromicaceous, abundant lithics, minor disseminated pyrite, trace very fine glauconite, moderately hard to hard, sub-blocky, minor sub-fissile.		
3750.0 - 3760.0	75	**SANDSTONE:** as above		
	23	**SILTSTONE:** as above		
	2	**CLAYSTONE:** light bluish green, silicic, occasional very fine lithics, trace micromicaceous, moderately hard to hard, very hard in part, sub-fissile.		
3760.0 - 3770.0	80	**SANDSTONE:** as above		
	18	**SILTSTONE:** as above		
	2	**CLAYSTONE:** as above		
3770.0 - 3780.0	74	**SANDSTONE:** Off white, translucent and frosted, very fine to very coarse, dominantly fine to medium, angular to sub-angular, poorly sorted, common strong siliceous cement, minor weak calcareous cement and locally common strong pyritic cement, common to abundant off white argillaceous matrix with common carbonaceous micro laminations where very fine to fine grained aggregates, abundant angular fractured very coarse shards with occasional fused grain boundaries, abundant nodular pyrite, occasional lithics and carbonaceous specks, trace rock flour and bit metamorphics, very poor visible porosity in hard to very hard fine grained aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	25	**SILTSTONE:** light to medium brown, medium brown, olive grey, pale grey, arenaceous and common grading to a very fine SILTY SANDSTONE, common arenaceous laminations, common micromicaceous, minor carbonaceous specks, moderately hard to hard, sub-blocky to sub-fissile.		
	1	**CLAYSTONE:** as above		
3780.0 - 3790.0	75	**SANDSTONE:** as above, rare muscovite micas.		
	20	**SILTSTONE:** as above, common medium to dark brown with common to abundant fine to coarse glauconite grains.		

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Interval (m)	%	Lithology / Show Descriptions	Ca (%)	Mg (%)
3780.0 - 3790.0	5	**CLAYSTONE:** light bluish green, silicic, occasional very fine lithics, trace micromicaceous, moderately hard to hard, very hard in part, sub-fissile.		
3790.0 - 3800.0	65	**SANDSTONE:** as above, dominantly medium to very coarse grains.		
	32	**SILTSTONE:** light to medium brown, olive grey, pale grey, medium to dark brown with common to abundant fine to coarse glauconite grains. arenaceous and common grading to a very fine SILTY SANDSTONE, common arenaceous laminations, common micromicaceous, minor carbonaceous specks, moderately hard to hard, sub-blocky to sub-fissile.		
	3	**CLAYSTONE:** as above		
3800.0 - 3810.0	80	**SANDSTONE:** Off white, translucent and frosted, very fine to very coarse, dominantly medium, angular to sub-angular, poorly sorted, common strong siliceous cement, minor weak calcareous cement and locally minor strong pyritic cement, common to abundant off white argillaceous matrix with common carbonaceous micro laminations where very fine to fine grained aggregates, abundant angular fractured very coarse shards with occasional fused grain boundaries, abundant nodular pyrite, occasional lithics and carbonaceous specks, trace rock flour and bit metamorphics, very poor visible porosity in hard to very hard fine grained aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.		
	18	**SILTSTONE:** as above		
	2	**CLAYSTONE:** light bluish green, silicic, occasional very fine lithics, trace micromicaceous, moderately hard to hard, very hard in part, sub-fissile.		
3810.0 - 3814.0	84	**SANDSTONE:** as above, increasingly common very coarse fractured quartz grains and bit metamorphics.		
	15	**SILTSTONE:** as above		
	1	**CLAYSTONE:** as above		
		TD sample		

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HALLIBURTON

Sperry Drilling Services

Dory-1

LWD End of Well Report

Apache Northwest Pty Ltd

Rig:	**Ocean Patriot**
Field:	**Exploration**
Country:	**Australia**
Job No:	**AU-FE-0006105438**
Date:	**30 Oct 08**

HALLIBURTON

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General Information

Company:	Apache Northwest Pty Ltd
Rig:	Ocean Patriot
Well:	Dory-1
Field:	Exploration
Lease Name:	Vic-P59
State:	Victoria
County:	
Country:	Australia
API Number:	
Sperry-Sun Job Number:	AU-FE-0006105438
Job start date:	30-Oct-08
Job end date:	16-Nov-08
North reference:	Grid
Declination:	13.380 deg
Dip angle:	-68.960 deg
Total magnetic field:	59993 nT
Date of magnetic data:	05 November, 2008
Wellhead coordinates N:	38 deg. 35 min 19.759 sec South
Wellhead coordinates E:	148 deg. 32 min 51.925 sec East
Vertical section direction:	0.00 deg
Unit Number:	300703
MWD Engineers:	M. Lee, J. Albanis, M. George, C. Dobrescu, M. Dillon, J. Lau
Company Representatives:	P. Brown
Company Geologist:	A. Cruikshank, G. Fawns

Operational Overview

Sperry Drilling Services were contracted by Apache Northwest Pty Ltd to provide LWD (Logging While Drilling) services for the drilling of the vertical exploration well Dory-1 on the semi-submersible MODU Ocean Patriot.

406mm (16") Hole Section
This section was drilled utilising a Sperry Drilling Services LWD suite comprising of EWR-P4 (Electromagnetic Wave Resistivity), DGR (Dual Gamma Ray) and BAT sonic (Bimodal Acoustic Tool) for providing formation evaluation data.
A PCD-C was used for wellbore surveying. The section was drilled to 2955.0 mMDRT and POOH for bit change. Refer Service Interrupt Report for AFR sensor failure.
PLEASE NOTE: MWD Run 200 not counted as official run due to problems encountered with Shallow Pulse Test. Refer to Run 200 Service Interrupt Report for more information.

216 mm (8½") Hole Section
This section was drilled utilising a Sperry Drilling Services Quad Combo tool suite, consisting of a DGR (Dual Gamma Ray), EWR-P4 (Electromagnetic Wave Resistivity), CNP (Compensated Neutron Porosity), ALD (Azimuthal Litho-Density) and BAT (Bimodal Acoustic Tool) for providing formation evaluation data. In addition an AFR (Azimuthal Focused Resistivity) sensor was used to obtain welbore imaging. A PCD-C was utilised for well bore surveying. The section was drilled to well TD of 3814.0 mMDRT and POOH for wireline logging. Refer service Interrupt Report for AFR sensor failure.

Summary of MWD runs

Run No.	Bit No.	Hole Size (mm)	MWD Service	Start Depth (m)	End Depth (m)	Drill/Wipe Distance (m)	Run Start Date Time	Run End Date Time	BRT Hrs.	Oper. Hrs.	Circ. Hrs.	Max Temp. (degC)	Serv. Int.	Trip for MWD	Failure Type
100	100	406.00	P4M	586.500	1537.000	950.500	06-Nov-08 10:10	08-Nov-08 08:15	46.08	46.080	27.160	28.00	No	No	
300	300	216.00	P4M	1537.000	2955.000	1418.000	11-Nov-08 12:23	13-Nov-08 23:29	59.10	59.100	32.300	49.00	Yes	No	AFR
400	400	216.00	P4M	2955.000	3814.000	859.000	14-Nov-08 02:37	16-Nov-08 11:07	56.51	56.510	34.980	55.00	Yes	No	AFR / RLL

Bitrun Summary

RUN TIME DATA

MWD Run	: 100	**Run Start**	: 06-Nov-08 10:10	**BRT Hrs**	: 46.08 hr	**Circ. Hrs**	: 27.16 hr
Rig Bit No	: 100	**Run End**	: 08-Nov-08 08:15	**Hole Size**	: 406.00 mm	**Oper. Hrs**	: 46.08 hr

DRILLING DATA

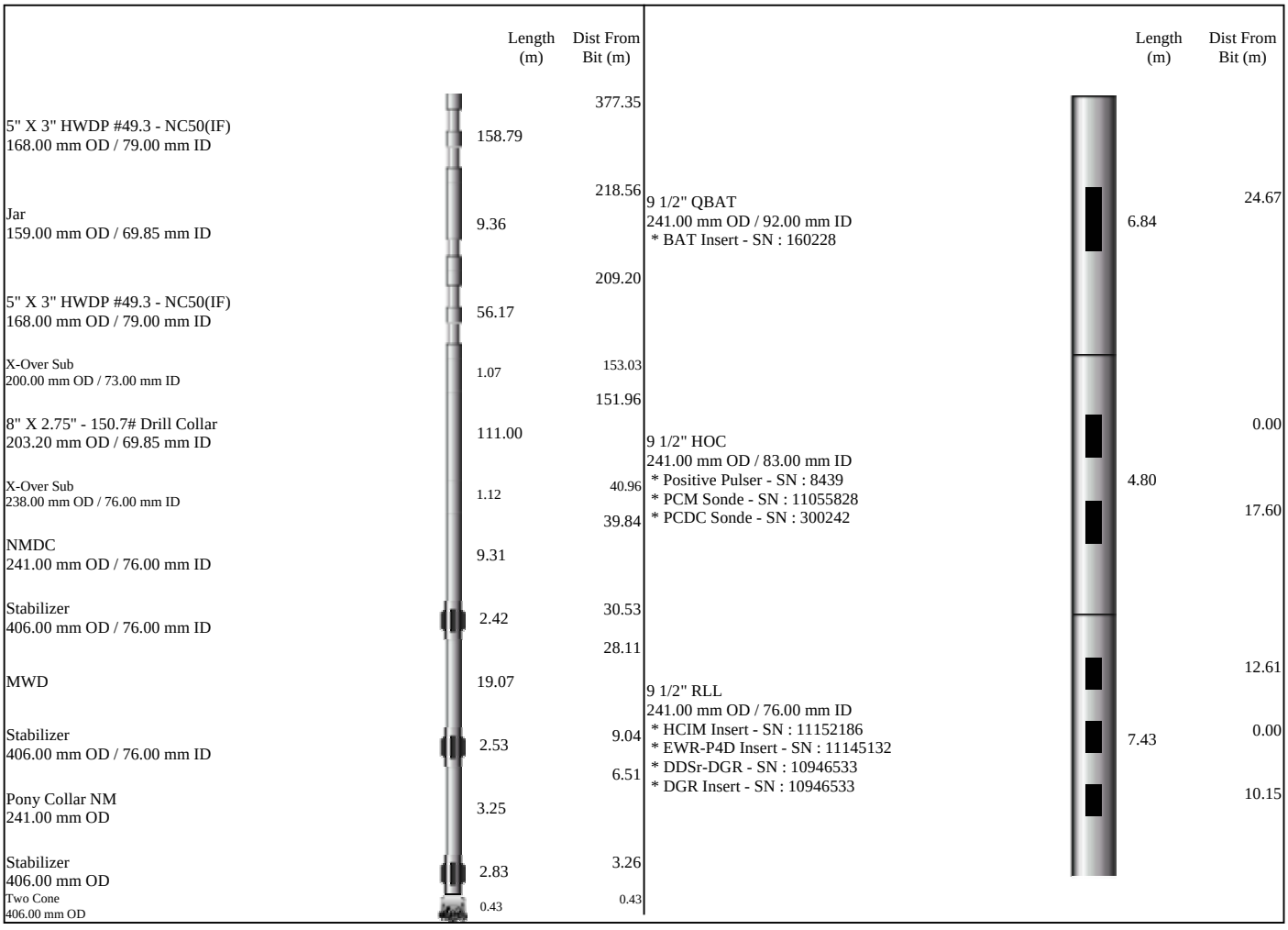
Start Depth	: 586.50 m	**Footage**	: 950.50 m	**Avg RPM**	: 160 rpm	**Avg ROP**	: 43.40 m/hr
End Depth	: 1537.00 m	**Avg Flow Rate**	: 1250.00 gpm	**Avg WOB**	: 42.0 klb	**Avg SPP**	: 3738 psig

MUD DATA

Mud Type	: Salt Water Gel						
Weight	: 1.040 sg	**Viscosity**	: 120.00 spl	**PV**	: 10 cP	**YP**	: 31.70 pa
Chlorides	: 1000.00 ppm	**Max Temp.**	: 28.00 degC	**% Solids**	: 0.00 %	**% Sand**	: 0.00 %
pH	: 0.00 pH	**Fluid Loss**	: 0 cptm	**% Oil**	: 0.00 %	**O:W**	: 0:100

MWD PERFORMANCE

Tool OD	: 241.30 mm	**Type**	: P4M	**Min. Inc.**	: 0.25 deg	**Min. Inc. Depth**	: 1160.990 m
Final Az.	: 354.14 deg	**Max Op. Press.**	: 3877 psig	**Max Inc.**	: 1.32 deg	**Max Inc. Depth**	: 642.310 m
	MWD Real-time %	: 37 %		**MWD Recorded %**	: 100 %		



COMMENTS

The section was drilled to TD at 1537.0 mMDRT.
All recorded data recovered at surface.

Bitrun Summary

RUN TIME DATA

MWD Run	: 300	**Run Start**	: 11-Nov-08 12:23	**BRT Hrs**	: 59.10 hr	**Circ. Hrs**	: 32.30 hr
Rig Bit No	: 300	**Run End**	: 13-Nov-08 23:29	**Hole Size**	: 216.00 mm	**Oper. Hrs**	: 59.10 hr

DRILLING DATA

Start Depth	: 1537.00 m	**Footage**	: 1418.00 m	**Avg RPM**	: 159 rpm	**Avg ROP**	: 67.00 m/hr
End Depth	: 2955.00 m	**Avg Flow Rate**	: 770.00 gpm	**Avg WOB**	: 22.8 klb	**Avg SPP**	: 4100 psig

MUD DATA

Mud Type	: KCL / Polymer						
Weight	: 1.150 sg	**Viscosity**	: 55.00 spl	**PV**	: 13 cP	**YP**	: 12.50 pa
Chlorides	: 47830.00 ppm	**Max Temp.**	: 49.00 degC	**% Solids**	: 4.20 %	**% Sand**	: 0.25 %
pH	: 11.30 pH	**Fluid Loss**	: 5 cptm	**% Oil**	: 0.00 %	**O:W**	: 0:100

MWD PERFORMANCE

Tool OD	: 171.45 mm	**Type**	: P4M	**Min. Inc.**	: 0.50 deg	**Min. Inc. Depth**	: 2361.430 m
Final Az.	: 64.27 deg	**Max Op. Press.**	: 4840 psig	**Max Inc.**	: 4.05 deg	**Max Inc. Depth**	: 2074.480 m
	MWD Real-time %	: 96 %		**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		384.17
17 x 5" Heavy Weight Drill Pipe 127.00 mm OD / 79.38 mm ID	158.79	
		225.38
6-1/4" Jar 158.75 mm OD	9.36	
		216.02
6 X 5" Heavy Weight Drill Pipe 127.00 mm OD / 79.38 mm ID	56.17	
		159.85
12 X 6-3/4" Spiral Drill Collars 171.45 mm OD / 69.85 mm ID	112.92	
8-1/2" String Stabilizer 216.00 mm OD / 73.02 mm ID	1.78	46.93
		45.15
MWD	8.65	
6-3/4" Ported Float Sub 171.45 mm OD / 73.02 mm ID	0.78	36.50
		35.72
MWD	16.16	
8-1/2" Non-Mag In-Line String Stabilizer 212.73 mm OD / 48.77 mm ID	1.22	19.56
		18.34
MWD	12.06	
8-1/2" String Stabilizer 214.31 mm OD / 73.02 mm ID	1.67	6.28
		4.61
Non-Mag Pony Collar 165.10 mm OD / 47.63 mm ID	2.53	
8-1/2" Near Bit Stabilizer 214.31 mm OD / 73.02 mm ID	1.81	2.08
Smith Mi516 216.00 mm OD / 73.02 mm ID	0.27	0.27

	Length (m)	Dist From Bit (m)
6-3/4" ACAL Collar 171.45 mm OD / 48.77 mm ID * ACAL Insert - SN : 123087	1.81	43.72
6-3/4" BAT Collar 171.45 mm OD / 48.77 mm ID * BAT Insert - SN : 169877	6.84	39.95
6-3/4" HOC w/ Positive Pulser 171.45 mm OD / 48.77 mm ID * PCM Sonde - SN : 11145511 * Positive Pulser	3.06	0.00
6-3/4" HCIM Collar 171.45 mm OD / 48.77 mm ID * HCIM Insert - SN : 243942	2.70	32.66
6-3/4" CNP Collar 171.45 mm OD / 48.77 mm ID * CNP Insert - SN : 74905	3.39	28.62
6-3/4" ALD Collar 171.45 mm OD / 48.77 mm ID * ALD Insert - SN : 10503659	4.50	26.01
6-3/4" PWD Collar 171.45 mm OD / 48.77 mm ID * PWD Insert - SN : 809072581011992	2.51	21.06
6-3/4" EWR-P4 Collar 171.45 mm OD / 48.77 mm ID * EWR-P4 Insert - SN : 175801	3.28	16.18
6-3/4" DGR Collar 171.45 mm OD / 48.77 mm ID * DDS Insert * DGR Insert - SN : 10909629	2.13	13.86
6-3/4" AFR Collar 168.15 mm OD / 48.26 mm ID * 6-3/4" AFR Top Stabilizer * 6-3/4" AFR Btm Stabilizer * AFR Insert - SN : 11131147	3.95	11.10
6-3/4" PM Collar 171.45 mm OD / 48.77 mm ID * PCD-C Sonde	2.70	8.98

COMMENTS

RIH with P4M, PWD, ALD/CNP, AFR and recorded BAT/ACAL. Drilled to 2955.0 mMDRT and POOH for bit change.

Bitrun Summary

RUN TIME DATA

MWD Run	: 400	**Run Start**	: 14-Nov-08 02:37	**BRT Hrs**	: 56.51 hr	**Circ. Hrs**	: 34.98 hr
Rig Bit No	: 400	**Run End**	: 16-Nov-08 11:07	**Hole Size**	: 216.00 mm	**Oper. Hrs**	: 56.51 hr

DRILLING DATA

Start Depth	: 2955.00 m	**Footage**	: 859.00 m	**Avg RPM**	: 104 rpm	**Avg ROP**	: 34.90 m/hr
End Depth	: 3814.00 m	**Avg Flow Rate**	: 735.00 gpm	**Avg WOB**	: 31.0 klb	**Avg SPP**	: 3990 psig

MUD DATA

Mud Type	: KCL / Polymer						
Weight	: 1.150 sg	**Viscosity**	: 59.10 spl	**PV**	: 14 cP	**YP**	: 13.40 pa
Chlorides	: 47000.00 ppm	**Max Temp.**	: 55.00 degC	**% Solids**	: 4.32 %	**% Sand**	: 0.75 %
pH	: 10.80 pH	**Fluid Loss**	: 4 cptm	**% Oil**	: 0.00 %	**O:W**	: 0:100

MWD PERFORMANCE

Tool OD	: 171.45 mm	**Type**	: P4M	**Min. Inc.**	: 0.44 deg	**Min. Inc. Depth**	: 3110.000 m
Final Az.	: 352.47 deg	**Max Op. Press.**	: 6200 psig	**Max Inc.**	: 1.76 deg	**Max Inc. Depth**	: 3510.000 m
	MWD Real-time % : 0 %			**MWD Recorded %**	: 100 %		

	Length (m)	Dist From Bit (m)
		383.77
17 x 5" Heavy Weight Drill Pipe 127.00 mm OD / 79.38 mm ID	158.79	
		224.98
6-1/4" Jar 158.75 mm OD	9.36	
		215.62
6 X 5" Heavy Weight Drill Pipe 127.00 mm OD / 79.38 mm ID	56.17	
		159.45
12 X 6-3/4" Spiral Drill Collars 171.45 mm OD / 69.85 mm ID	112.92	
8-1/2" String Stabilizer 216.00 mm OD / 73.02 mm ID	1.78	46.53
		44.75
MWD	8.62	
6-3/4" Ported Float Sub 171.45 mm OD / 73.02 mm ID	0.78	36.13
		35.35
MWD	16.16	
8-1/2" Non-Mag In-Line String Stabilizer 212.73 mm OD / 48.77 mm ID	1.22	19.19
		17.97
MWD	12.27	
8-1/2" String Stabilizer 214.31 mm OD / 73.02 mm ID	1.67	5.70
Non-Mag Pony Collar 165.10 mm OD / 47.63 mm ID	2.53	4.03
8-1/2" Near Bit Stabilizer 214.31 mm OD / 73.02 mm ID	1.17	1.50
HC 506zx 216.00 mm OD / 73.02 mm ID	0.33	0.33

	Length (m)	Dist From Bit (m)
6-3/4" ACAL Collar 171.45 mm OD / 48.77 mm ID * ACAL Insert - SN : 123087	1.78	43.35
6-3/4" BAT Collar 171.45 mm OD / 48.77 mm ID * BAT Insert - SN : 169879	6.84	39.58
6-3/4" HOC w/ Positive Pulser 171.45 mm OD / 48.77 mm ID * PCM Sonde - SN : 11145511 * Positive Pulser	3.06	0.00
6-3/4" HCIM Collar 171.45 mm OD / 48.77 mm ID * HCIM Insert - SN : 243942	2.70	32.29
6-3/4" CNP Collar 171.45 mm OD / 48.77 mm ID * CNP Insert - SN : 74905	3.39	28.25
6-3/4" ALD Collar 171.45 mm OD / 48.77 mm ID * ALD Insert - SN : 10503659	4.50	25.64
6-3/4" PWD Collar 171.45 mm OD / 48.77 mm ID * PWD Insert - SN : 809072581011992	2.51	20.69
6-3/4" EWR-P4 Collar 171.45 mm OD / 48.77 mm ID * EWR-P4 Insert - SN : 241341	3.49	15.79
6-3/4" DGR Collar 171.45 mm OD / 48.77 mm ID * DDS Insert * DGR Insert - SN : 10909629	2.13	13.43
6-3/4" AFR Collar 168.15 mm OD / 48.26 mm ID * 6-3/4" AFR Top Stabilizer * 6-3/4" AFR Btm Stabilizer * AFR Insert - SN : 11131147	3.95	10.70
6-3/4" PM Collar 171.45 mm OD / 48.77 mm ID * PCD-C Sonde	2.70	8.40

COMMENTS

RIH with replacement AFR / RLL and BAT. MAD wipe over 2776.9 to 2899.9 mMDRT. Tool failed just before drilling ahead. Drill ahead without RT LWD data. Recovered recorded BAT/ ACAL / Density data at surface.
TD well 3814.0 mMDRT.

Directional Survey Data

RT - AHD = 23.50 m
Water Depth = 517.30 m

Tie-in

540.800	0.00	0.00	540.800	0.000 N	0.000 E		***

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
613.930	1.24	346.95	613.924	0.780 N	0.181 W	0.679	0.50
641.310	1.32	347.27	641.297	1.377 N	0.317 W	1.200	0.09
729.080	1.27	349.67	729.045	3.324 N	0.715 W	2.913	0.03
758.040	1.30	347.73	757.998	3.961 N	0.843 W	3.475	0.05
815.760	1.05	343.05	815.705	5.104 N	1.135 W	4.462	0.14
844.380	0.97	344.98	844.321	5.588 N	1.274 W	4.874	0.09
901.690	0.83	347.84	901.624	6.458 N	1.486 W	5.630	0.08
1016.720	0.47	350.84	1016.646	7.735 N	1.736 W	6.757	0.09
1074.580	0.45	1.50	1074.505	8.197 N	1.768 W	7.183	0.05
1132.150	0.26	336.38	1132.074	8.543 N	1.815 W	7.496	0.13
1160.990	0.25	342.45	1160.913	8.665 N	1.861 W	7.596	0.03
1189.790	0.28	339.34	1189.713	8.791 N	1.905 W	7.701	0.03
1218.510	0.36	337.60	1218.432	8.939 N	1.963 W	7.822	0.09
1247.270	0.31	352.14	1247.192	9.099 N	2.008 W	7.959	0.10
1275.840	0.35	336.74	1275.762	9.256 N	2.053 W	8.093	0.10
1333.430	0.45	337.84	1333.350	9.626 N	2.208 W	8.393	0.05
1362.390	0.36	331.14	1362.309	9.811 N	2.295 W	8.540	0.10
1391.370	0.38	337.89	1391.289	9.979 N	2.374 W	8.673	0.05
1478.770	0.44	339.78	1478.687	10.557 N	2.597 W	9.148	0.02
1507.710	0.41	345.24	1507.626	10.761 N	2.662 W	9.320	0.05
1519.070	0.33	354.14	1518.985	10.834 N	2.676 W	9.384	0.26
1555.750	0.62	13.67	1555.664	11.132 N	2.640 W	9.678	0.27
1584.250	0.70	1.92	1584.162	11.456 N	2.598 W	9.999	0.17
1612.640	0.68	350.69	1612.550	11.797 N	2.619 W	10.314	0.15
1641.010	0.96	329.53	1640.917	12.167 N	2.766 W	10.617	0.43
1669.490	1.05	321.20	1669.393	12.575 N	3.050 W	10.911	0.18
1698.350	1.42	301.03	1698.246	12.965 N	3.522 W	11.127	0.59
1727.220	1.69	294.67	1727.106	13.327 N	4.215 W	11.245	0.33
1756.100	1.86	285.87	1755.972	13.633 N	5.052 W	11.264	0.33
1785.360	1.99	276.46	1785.216	13.819 N	6.013 W	11.129	0.35
1814.480	2.04	256.82	1814.318	13.758 N	7.022 W	10.745	0.71
1843.690	2.24	226.11	1843.508	13.243 N	7.941 W	9.960	1.18
1872.670	3.45	210.48	1872.453	12.099 N	8.791 W	8.602	1.47
1901.620	3.83	211.01	1901.344	10.519 N	9.732 W	6.803	0.40
1930.530	3.89	212.01	1930.188	8.858 N	10.750 W	4.902	0.09
1959.260	3.88	211.43	1958.852	7.202 N	11.774 W	3.004	0.04
1988.140	3.81	209.64	1987.667	5.534 N	12.758 W	1.107	0.14
2017.060	3.95	200.39	2016.521	3.766 N	13.580 W	-0.832	0.66
2045.650	3.97	192.82	2045.043	1.878 N	14.142 W	-2.800	0.55
2074.480	4.05	182.58	2073.803	0.112 S	14.410 W	-4.770	0.75
2103.170	3.74	182.81	2102.427	2.058 S	14.501 W	-6.641	0.33
2131.890	3.28	185.32	2131.093	3.811 S	14.623 W	-8.339	0.50
2160.610	3.01	186.95	2159.770	5.378 S	14.791 W	-9.876	0.30

Directional Survey Data

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
2189.200	2.79	187.90	2188.323	6.814 S	14.977 W	-11.295	0.24
2246.650	1.80	180.38	2245.726	9.103 S	15.176 W	-13.525	0.54
2275.290	1.31	173.59	2274.356	9.877 S	15.142 W	-14.247	0.55
2304.030	0.83	157.48	2303.091	10.395 S	15.026 W	-14.699	0.59
2332.800	0.61	126.88	2331.859	10.678 S	14.825 W	-14.902	0.45
2361.430	0.50	77.92	2360.487	10.743 S	14.582 W	-14.885	0.49
2390.380	0.55	67.90	2389.436	10.665 S	14.330 W	-14.729	0.11
2419.350	1.41	42.83	2418.402	10.351 S	13.959 W	-14.312	0.97
2448.200	1.36	46.46	2447.243	9.855 S	13.469 W	-13.684	0.10
2477.020	1.39	40.13	2476.055	9.353 S	12.996 W	-13.056	0.16
2505.870	1.62	34.79	2504.895	8.751 S	12.539 W	-12.339	0.28
2534.920	1.73	35.80	2533.932	8.058 S	12.048 W	-11.524	0.12
2563.900	1.80	33.67	2562.899	7.325 S	11.540 W	-10.666	0.10
2592.890	1.74	25.08	2591.875	6.549 S	11.102 W	-9.790	0.28
2621.850	1.54	25.98	2620.823	5.800 S	10.745 W	-8.966	0.21
2650.670	1.53	25.37	2649.633	5.105 S	10.411 W	-8.200	0.02
2679.360	1.32	23.81	2678.314	4.458 S	10.114 W	-7.492	0.22
2736.480	1.19	38.56	2735.421	3.393 S	9.479 W	-6.278	0.18
2765.320	1.50	54.76	2764.253	2.941 S	8.983 W	-5.690	0.51
2794.000	1.49	54.96	2792.923	2.510 S	8.371 W	-5.085	0.01
2823.060	1.51	57.63	2821.973	2.088 S	7.738 W	-4.480	0.07
2851.450	1.44	61.34	2850.353	1.716 S	7.109 W	-3.925	0.13
2909.600	1.41	63.70	2908.486	1.049 S	5.827 W	-2.879	0.03
2938.520	1.23	64.27	2937.398	0.757 S	5.229 W	-2.409	0.19
2940.000	1.43	67.85	2938.877	0.743 S	5.198 W	-2.386	4.35
2950.000	1.27	65.91	2948.875	0.651 S	4.981 W	-2.228	0.50
2960.000	1.17	64.18	2958.872	0.562 S	4.789 W	-2.081	0.32
2970.000	1.04	68.89	2968.870	0.485 S	4.612 W	-1.951	0.47
2980.000	1.03	68.29	2978.869	0.419 S	4.444 W	-1.835	0.06
2990.000	0.95	68.22	2988.868	0.355 S	4.284 W	-1.722	0.23
3000.000	0.99	61.54	2998.866	0.283 S	4.131 W	-1.605	0.36
3010.000	0.94	66.61	3008.865	0.209 S	3.980 W	-1.486	0.29
3020.000	0.84	68.12	3018.863	0.149 S	3.837 W	-1.383	0.31
3030.000	0.79	69.98	3028.862	0.098 S	3.704 W	-1.292	0.17
3040.000	0.63	67.98	3038.862	0.054 S	3.587 W	-1.212	0.48
3050.000	0.68	63.90	3048.861	0.007 S	3.483 W	-1.134	0.19
3060.000	0.77	65.72	3058.860	0.046 N	3.368 W	-1.046	0.29
3070.000	0.86	52.25	3068.859	0.120 N	3.248 W	-0.938	0.63
3080.000	0.47	48.51	3078.859	0.193 N	3.158 W	-0.840	1.19
3090.000	0.53	67.03	3088.858	0.238 N	3.085 W	-0.773	0.52
3100.000	0.73	69.27	3098.858	0.278 N	2.983 W	-0.702	0.59
3110.000	0.44	76.53	3108.857	0.310 N	2.887 W	-0.641	0.88
3120.000	0.79	74.12	3118.856	0.338 N	2.783 W	-0.581	1.06
3130.000	0.43	61.71	3128.856	0.374 N	2.683 W	-0.514	1.16
3140.000	1.00	62.90	3138.855	0.432 N	2.572 W	-0.424	1.71
3150.000	0.84	81.15	3148.854	0.483 N	2.422 W	-0.327	0.99
3160.000	1.17	58.80	3158.852	0.547 N	2.262 W	-0.215	1.51
3170.000	0.98	69.70	3168.851	0.629 N	2.095 W	-0.083	0.83

Directional Survey Data

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
3180.000	0.96	42.99	3178.849	0.720 N	1.958 W	0.048	1.34
3190.000	0.75	65.94	3188.848	0.808 N	1.841 W	0.169	1.19
3200.000	0.84	60.66	3198.847	0.871 N	1.717 W	0.268	0.34
3210.000	0.81	28.84	3208.846	0.969 N	1.619 W	0.393	1.36
3220.000	1.05	53.17	3218.845	1.086 N	1.511 W	0.538	1.37
3230.000	0.89	45.72	3228.843	1.195 N	1.383 W	0.683	0.62
3240.000	1.32	41.52	3238.841	1.335 N	1.251 W	0.858	1.31
3250.000	0.96	48.13	3248.839	1.477 N	1.113 W	1.037	1.13
3260.000	1.21	43.92	3258.838	1.609 N	0.977 W	1.206	0.79
3270.000	1.03	36.83	3268.836	1.757 N	0.850 W	1.387	0.70
3280.000	1.21	45.00	3278.834	1.903 N	0.721 W	1.567	0.73
3290.000	1.13	46.50	3288.832	2.046 N	0.575 W	1.750	0.25
3300.000	1.08	44.10	3298.830	2.181 N	0.438 W	1.922	0.22
3310.000	1.32	32.46	3308.828	2.346 N	0.311 W	2.119	1.03
3320.000	1.00	37.99	3318.826	2.512 N	0.196 W	2.313	1.02
3330.000	1.27	38.79	3328.824	2.667 N	0.072 W	2.500	0.83
3340.000	1.02	36.84	3338.822	2.825 N	0.051 E	2.689	0.76
3350.000	1.14	39.02	3348.820	2.973 N	0.167 E	2.867	0.38
3360.000	1.39	22.11	3358.817	3.163 N	0.275 E	3.082	1.34
3370.000	1.15	36.15	3368.815	3.357 N	0.380 E	3.299	1.17
3380.000	1.32	37.24	3378.813	3.529 N	0.509 E	3.504	0.51
3390.000	1.37	37.71	3388.810	3.715 N	0.652 E	3.726	0.17
3400.000	1.37	36.97	3398.807	3.906 N	0.797 E	3.953	0.05
3410.000	1.35	36.98	3408.804	4.096 N	0.940 E	4.179	0.05
3420.000	1.40	35.37	3418.801	4.290 N	1.082 E	4.409	0.18
3430.000	1.46	39.02	3428.798	4.488 N	1.233 E	4.646	0.32
3440.000	1.44	40.19	3438.795	4.683 N	1.394 E	4.882	0.11
3450.000	1.37	40.87	3448.792	4.869 N	1.553 E	5.110	0.21
3460.000	1.40	36.57	3458.789	5.058 N	1.704 E	5.337	0.33
3470.000	1.46	36.71	3468.786	5.258 N	1.853 E	5.575	0.18
3480.000	1.40	32.98	3478.783	5.463 N	1.996 E	5.815	0.33
3490.000	1.50	32.64	3488.780	5.676 N	2.133 E	6.061	0.31
3500.000	1.70	33.19	3498.776	5.910 N	2.285 E	6.332	0.59
3510.000	1.76	32.41	3508.771	6.164 N	2.448 E	6.625	0.20
3520.000	1.73	32.08	3518.767	6.422 N	2.611 E	6.921	0.09
3530.000	1.68	31.41	3528.762	6.675 N	2.768 E	7.212	0.17
3540.000	1.65	34.48	3538.758	6.919 N	2.925 E	7.493	0.28
3550.000	1.63	33.84	3548.754	7.155 N	3.086 E	7.769	0.08
3560.000	1.55	29.05	3558.750	7.392 N	3.231 E	8.040	0.46
3570.000	1.58	28.23	3568.746	7.631 N	3.362 E	8.309	0.10
3580.000	1.49	26.04	3578.743	7.869 N	3.484 E	8.573	0.31
3590.000	1.46	23.07	3588.739	8.103 N	3.591 E	8.829	0.25
3600.000	1.45	25.76	3598.736	8.334 N	3.696 E	9.082	0.21
3610.000	1.45	23.60	3608.733	8.564 N	3.801 E	9.333	0.16
3620.000	1.46	19.11	3618.730	8.800 N	3.893 E	9.586	0.34
3630.000	1.39	18.56	3628.727	9.035 N	3.974 E	9.835	0.23
3640.000	1.39	16.97	3638.724	9.265 N	4.047 E	10.077	0.12
3650.000	1.31	16.43	3648.721	9.490 N	4.115 E	10.311	0.24

Directional Survey Data

Measured Depth (m)	Inclination (deg)	Direction (deg)	Vertical Depth (m)	Latitude (m)	Departure (m)	Vertical Section (m)	Dogleg (°/30m)
3660.000	1.25	16.45	3658.719	9.704 N	4.178 E	10.534	0.17
3670.000	1.16	16.90	3668.716	9.906 N	4.238 E	10.744	0.25
3680.000	1.12	372.04	3678.714	10.098 N	4.288 E	10.943	0.32
3690.000	1.23	373.40	3688.712	10.298 N	4.334 E	11.147	0.36
3700.000	1.16	368.73	3698.710	10.504 N	4.374 E	11.354	0.36
3710.000	1.17	370.00	3708.708	10.705 N	4.407 E	11.555	0.08
3720.000	1.20	370.40	3718.706	10.908 N	4.444 E	11.760	0.07
3730.000	1.23	364.05	3728.704	11.118 N	4.470 E	11.966	0.41
3740.000	1.23	363.25	3738.701	11.332 N	4.484 E	12.173	0.05
3750.000	1.21	362.77	3748.699	11.544 N	4.495 E	12.377	0.07
3760.000	1.19	360.98	3758.697	11.753 N	4.502 E	12.577	0.13
3770.000	1.11	361.89	3768.695	11.953 N	4.507 E	12.768	0.25
3780.000	1.21	352.47	3778.693	12.155 N	4.496 E	12.956	0.66
3814.000	1.21	352.47	3812.685	12.868 N	4.402 E	13.600	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 0.00 DEGREES(GRID)
A TOTAL CORRECTION OF 14.35 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3814.00 METRES
IS 13.60 METRES ALONG 18.89 DEGREES (GRID)

All surveys are acquired Real-time
and have not been SAG and IFR corrected.
Surveys from 2940.0 to 3780.0 mMDRT are provided by Baker Atlas wireline.
Final survey projected to TD.

HALLIBURTON

FAILURE REPORT

Job # :	AU-FE-0006105438	Customer :	Apache Northwest Pty Ltd
Well :	Dory-1	Rig :	Ocean Patriot
Field :	Exploration	Well Type :	Vertical

Failed Assembly	: IXO-HCIM	Serial Number	: 254110

Failed During	: Run	Originator	: M. Lee
Run Number	: 200	Time/Date of Failure	: 11-Nov-08 06:30
Rig Bit Number	: 3	Depth at time of Failure	: 650.000 m
Run start time/date	: 10-Nov-08 22:11	Lost Rig Hours	: 7.00 hr
Run end time/date	: 10-Nov-08 22:11	Service Interupt	: Yes

RIG ACTIVITY

Shallow pulse MWD tool while tripping in hole with 8½" drilling assembly.

DESCRIPTION OF FAILURE

No pulses were observed at surface.

ACTION TAKEN

Pumps were cycled several times, with varying flow rates and number of pumps. A mode switch was attempted to reset the HCIM, without success.

OPERATION IMPACT

Trip out of hole to change MWD tools.

REASON FOR FAILURE

Communications could not be established to the tool at surface and on deck, making diagnosis difficult. Tool will be sent to R&M for further analysis.

Service Interrupt Report

MWD Run Number	: 300	**Time/Date fo Failure**	: 12-Nov-08 19:28
Rig Bit Number	: 4	**Depth at time fo Failure**	: 2284.000 m
MWD Run start time/date	: 11-Nov-08 12:23	**Lost Rig Hours**	: 4 hr
MWD Run end time/date	: 13-Nov-08 23:29		

RIG ACTIVITY

Drilling ahead

DESCRIPTION OF FAILURE

Pulsed AFR medium resistivity data stuck at a constant value of 5596.35 ohmm.

ACTION TAKEN

Nil

OPERATION IMPACT

Incomplete AFR image was delivered .

REASON FOR FAILURE

TBA

Service Interrupt Report

MWD Run Number	: 400	**Time/Date fo Failure**	: 14-Nov-08 13:20
Rig Bit Number	: 5	**Depth at time fo Failure**	: 2875.000 m
MWD Run start time/date	: 14-Nov-08 02:37	**Lost Rig Hours**	: 0 hr
MWD Run end time/date	: 16-Nov-08 11:07		

RIG ACTIVITY

Relog lost data from the previous run.

DESCRIPTION OF FAILURE

Tool started to pulse no responses during wipe.

ACTION TAKEN

Mode switch tool

OPERATION IMPACT

No realtime LWD data. No AFR / CNP / Gamma and resistivity recorded data was recovered.

REASON FOR FAILURE

Shorted communication bus between tools.

HALLIBURTON

DGR Dual Gamma Ray
EWR Electromagnetic Wave Resistivity
ALD Azimuthal Lithodensity
CNØ Compensated Neutron Porosity
AFR Azimuthal Focused Resistivity

Powered by INSITE™

1 : 200

Sperry Drilling Services

Country : **Australia**
Field : **Exploration**
Location : **Lat: 38° 35' 19.759" South GDA94**
Long: 148° 32' 51.925" East GDA94
Well : **Dory-1**
Company : **Apache Northwest Pty Ltd**
Rig : **Ocean Patriot**

Company : **Apache Northwest Pty Ltd**
Rig : **Ocean Patriot**
Well : **Dory-1**
Field : **Exploration**
Country : **Australia**
DOE Number :

LOCATION
Latitude : **Lat: 38° 35' 19.759" South GDA94**
Longitude : **Long: 148° 32' 51.925" East GDA94**
UTM Easting = **634,798.900 m**
UTM Northing = **5,727,714.900 m**

Other Services
Pressure While Drilling
DDS Drillstring Dynamics

Permanent Datum : **AHD**
Elevation : **0.00 m**
Log Measured From : **Drill Floor** **23.50 m** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **23.50 m**
DF **23.50 m**
GL **0.00 m**
WD **517.30 m**

Depth Logged : **586.50 m** To **3,814.00 m**
Date Logged : **30-Oct-08** To **16-Nov-08**
Total Depth MD : **3,814.00 m** TVD : **3,812.69 m**
Spud Date : **04-Nov-08**

Unit No. : **300703**
Job No. : **AU-FE-0006105438**
Plot Type : **Final**
Plot Date : **27-Jan-09**

Run No.	Borehole Record (MD) Size	From	To
100	406.000 mm	586.50 m	1,537.00 m
300	216.000 mm	1,537.00 m	2,955.00 m
400	216.000 mm	2,955.00 m	3,814.00 m

Run No.	Borehole Record (MD) Size	From	To

Casing Record (MD)

Size	Weight	From	To
762.000 mm	458.00 kgpm	538.00 m	585.00 m
340.000 mm	102.00 kgpm	585.00 m	1,534.14 m

WELL INFORMATION

| MWD Run Number | 100 | 300 | 400 | | |

Max Tool Temp (degC) / Source	28 / EWR-P4D	49 / EWR-P4	55 / ALD		
Rm @ Max Tool Temp (degC)	N/A @ N/A	0.06 @ 49.00	0.05 @ 55.00		
Lead MWD Engineer	M. Lee	M. Lee / J. Lau	J. Lau		
Customer Representative	P. Brown	P. Brown	P. Brown		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM		
Software Version	74.11	74.11	74.11		
Sub Serial Number	11152186	243942	243942		
Insert Serial Number	247975	254110	254110		
Date and Time Initialized	06-Nov-08 10:11	11-Nov-08 12:25	14-Nov-08 02:38		
Date and Time Read	08-Nov-08 08:15	13-Nov-08 23:30	16-Nov-08 14:28		
ECMB SW Version					

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC		
Distance From Bit (m)	17.60	7.40	6.82		
Software Version	6.09	6.09	6.09		
Sub Serial Number	1140619	106317	106317		
Sonde Serial Number	300242	400011	400011		
Sensor ID Number	PCD242	N/A	N/A		
Toolface Offset (deg)	N/A	N/A	N/A		

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR		
Distance From Bit (m)	10.15	13.86	13.43		
Recorded Sample Period (sec)	8	12	12		
Software Version	N/A	N/A	N/A		
Sub Serial Number	10946533	10909629	10909629		
Insert/Sonde Serial Number	262745	253384	253384		

Resistivity Sensor Information

Tool Type	EWR-P4D	EWR-P4	EWR-P4		
Distance From Bit (m)	12.61	16.18	15.79		
Recorded Sample Period (sec)	8	12	12		
Software Version	2.51	1.50	1.50		
Sub Serial Number	11145132	175801	241341		
Receiver Insert Serial Number	239772	113356	205854		
Transmitter Insert Serial Number	11151951	225155	106183		
Receiver Orientation	Down	Down	Down		

Neutron Sensor Information

Tool Type		CNP	CNP		
Distance From Bit (m)		28.62	28.25		
Recorded Sample Period (sec)		12	12		
Sub Serial Number		74905	74905		
Insert Serial Number		117346	117346		
Source Serial Number		1615NN	1615NN		
Source Factor		1.2700	1.2700		
Pin Orientation		Up	Up		

Density Sensor Information

Tool Type		ALD	ALD		
Distance From Bit (m)		26.01	25.64		
Recorded Sample Period (sec)		14	14		
Software Version		3.04	3.04		
Sub Serial Number		10503659	10503659		
Insert Serial Number		202132	202132		
Sensor ID Number		32026	32026		
Source Serial Number		14932B	14932B		
Pin Orientation		Up	Up		
Stabilizer Blade O.D. (mm)		209.55	209.55		
DPA Offset		N/A	N/A		

Pressure Sensor Information

Tool Type		PWD	PWD		
Distance From Bit (m)		21.06	20.69		
Recorded Sample Period (sec)		2	2		
Software Version		3.70	3.70		
Collar Serial Number		N/A	N/A		
Insert Serial Number		N/A	N/A		

Caliper Sensor Information

Tool Type		ACAL	ACAL		
Distance From Bit (m)		43.72	43.35		
Software Version		4.20	4.20		
Sub Serial Number		123087	123087		
Insert Serial Number		94420	94420		

Sonic Sensor Information

Tool Type	BAT	BAT	BAT		
Distance From Bit (m)	24.67	39.95	39.58		
Recorded Sample Period (sec)	10	18	18		
Sub Serial Number	160228	169877	169879		
Receiver Insert Serial Number	165038	186701	186710		
Transmitter Insert Serial Number	175489	116793	116739		
MIT File	QBAT_gs_d9_d4.m	R5Max_Run.mit	R5Max_Run.mit		
Config File	R5Listen_512.cf	R5Max_Run.cfn	R5Max_Run.cfn		
Real-Time Window (uspf)	80.00 - 140.00	80.00 - 140.00	80.00 - 140.00		
Battery Serial Insert Number	N/A	N/A	N/A		
MCM Software Version	5.07	4.45	4.45		
DAQ1/DAQ2 Software Version	2.65 / 2.65	2.65 / 2.65	2.65 / 2.65		
DSM Software Version	2.41	2.37	2.37		

AFR Sensor Information

Tool Type		AFR	AFR		
Tool ID		13	13		
Distance From Bit (m)		11.10	10.70		
Software Version		N/A	N/A		
Recorded Sample Period (sec)		3	3		
Tool Size		6.75	6.75		
Stabilizer Size		209.550	209.550		
Button Blade Size		25.400	25.400		
Collar S/N		11111785	11111785		
Insert S/N		11131147	11131147		
Shallow K Factor		538.00	538.00		
Medium K Factor		780.00	780.00		
Deep K Factor		916.00	916.00		

RAB K Factor		1.00	1.00		
Date & Time Initialized		11-Nov-07 12:23	14-Nov-08 02:37		
Date & Time Read		13-Nov-07 23:29	16-Nov-08 11:07		

REMARKS

1.) All depths are bit depths and are referenced to the driller's pipe tally unless otherwise noted.

2.) AV/CV values are calculated at the LWD collar using the Power Law for water based mud, measured in m/min.

3.) Curve Mnemonics used are:

SGRC - Smoothed Combined Gamma Ray, api
SROP - Smoothed Rate of Penetration, m/hr
SEXP - Smoothed Extra Shallow Phase Shift Resistivity, ohmm
SESP - Smoothed Shallow Phase Shift Resistivity, ohmm
SEMP - Smoothed Medium Phase Shift Resistivity, ohmm
SEDP - Smoothed Deep Phase Shift Resistivity, ohmm
SCO2 - Smoothed Rapid Sample Best Bin Stand Off Correction, grams/cc
SBD2 - Smoothed Rapid Sample Best Bin Bulk Density, grams/cc
SNP2 - Smoothed Rapid Sample Near Detector Pe, barns/electron
NUCL - Smoothed Neutron Projected Porosity, v/v
DTCP - Smoothed Bi-Modal Acoustic Compressional Slowness, us/ft
APPC - Smoothed Acoustic Caliper, in

4.) Environmental parameters used to process Neutron Porosity are as follows:
Mud Density = 1.15 sg
Formation Water Salinity = 25,000 ppm Cl
Matrix = Limestone
Whole Mud Chlorides = 48,700 - 52,100 ppm Cl
Matrix Density = 2.71 g/cc
Fluid Density = 1.00 g/cc
KCl Concentration = 3.0 - 6.0 %
5.) Neutron Porosity data has been reprocessed using hole size from Acoustic Caliper tool.
6.) AFR tool failure at 1864.0 mMDRT during run 300.
7.) AFR data presented from 2766.9 - 2899.9 mMDRT acquired realtime during MAD run 400
8.) Realtime/Recorded SGRC, CNP, AFR and EWR-P4 data unavailable for run 400 after 2900.0 mMDRT due to LWD toolstring failure.
9.) Depth sensor changed from Geolograph to Draw-works encoder from 1556.0 - 2258.0 mMDRT. This does not account for movement of the top drive compensator.

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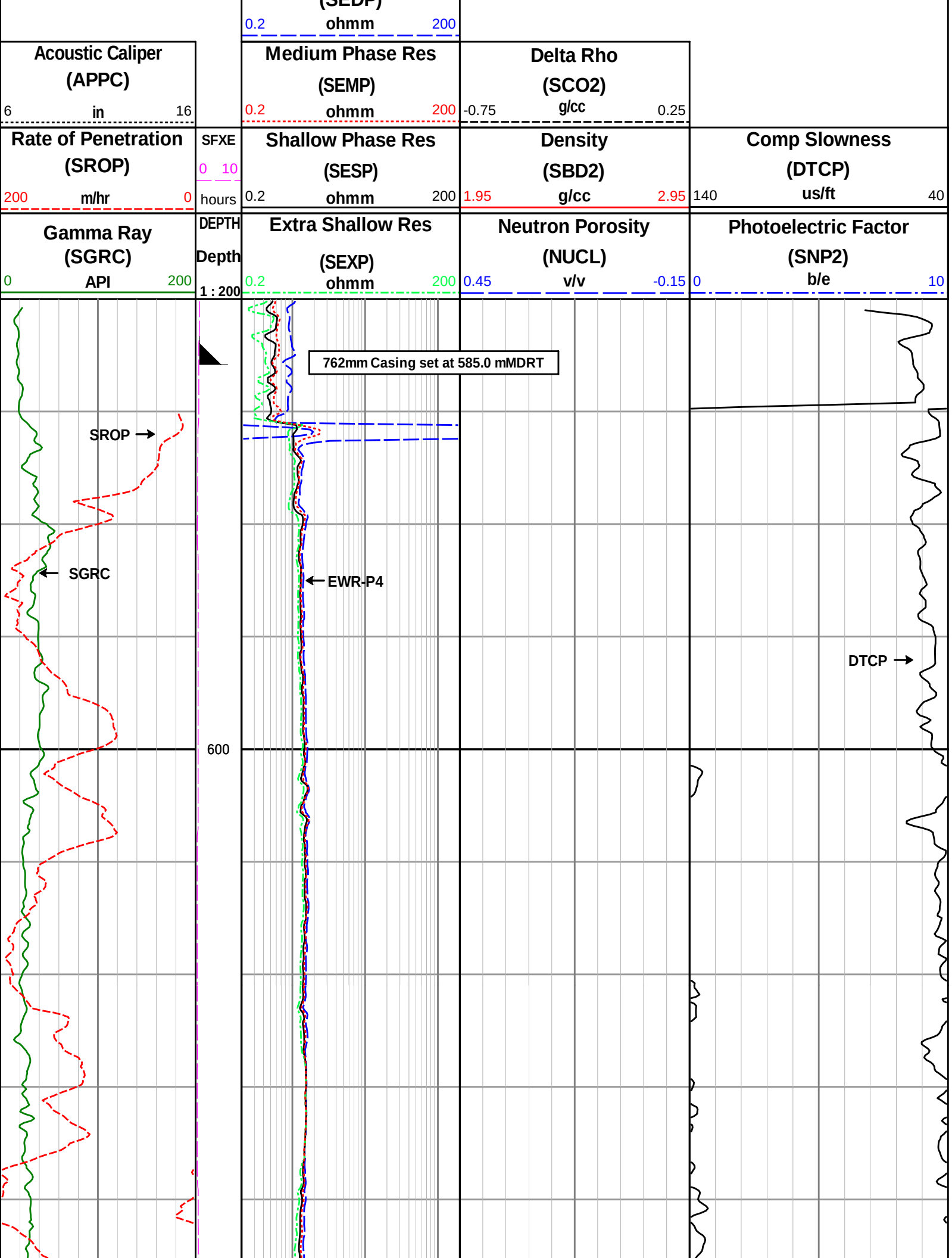
	Deep Phase Res (SEDP)	


(SEDP)
0.2 ohmm 200
Acoustic Caliper
(APPC)
6 in 16
Medium Phase Res
(SEMP)
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Delta Rho
(SCO2)
-0.75 g/cc 0.25
Rate of Penetration
(SROP)
200 m/hr 0
SFXE
0 10
hours
Shallow Phase Res
(SESP)
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Density
(SBD2)
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Comp Slowness
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Gamma Ray
(SGRC)
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DEPTH
Depth
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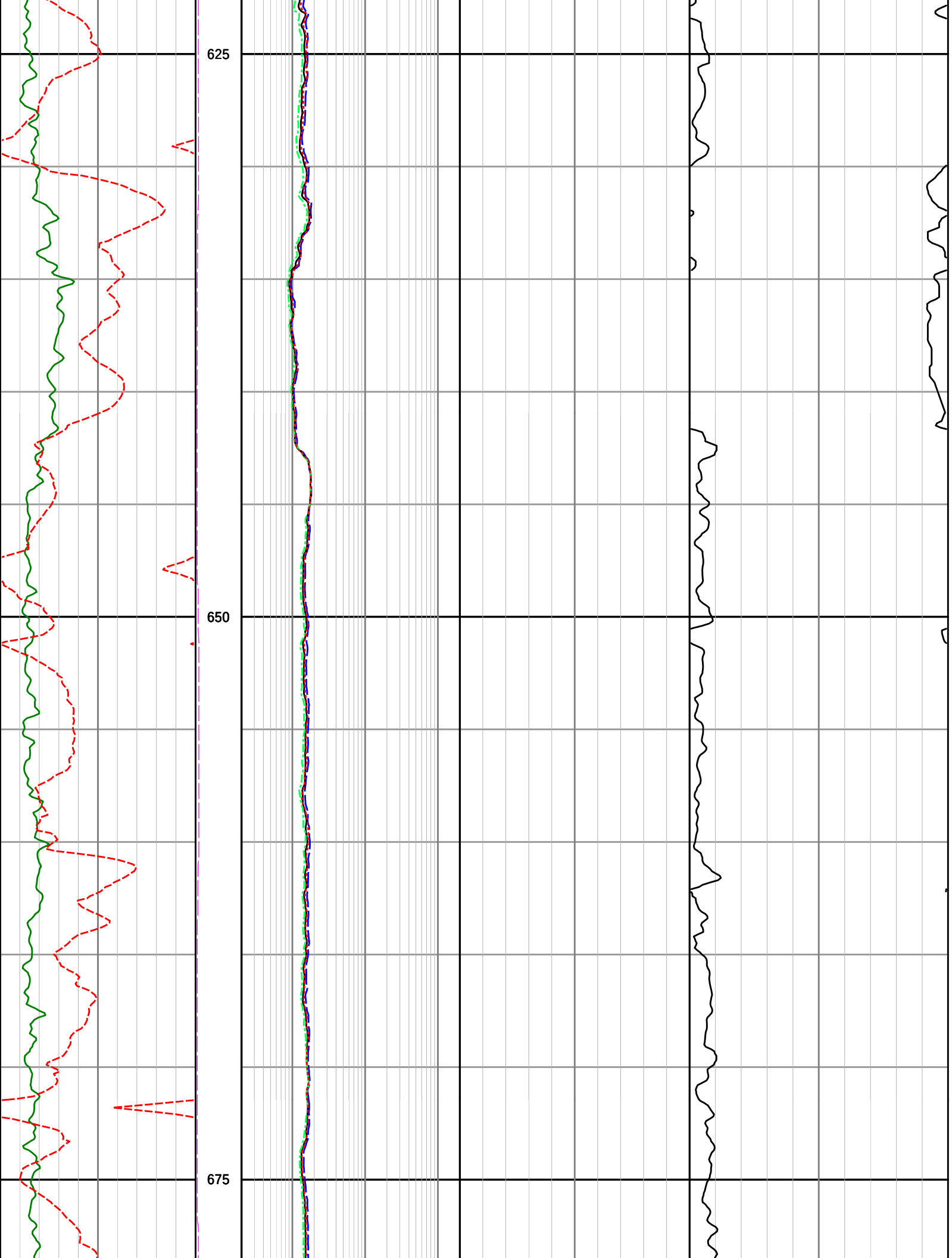
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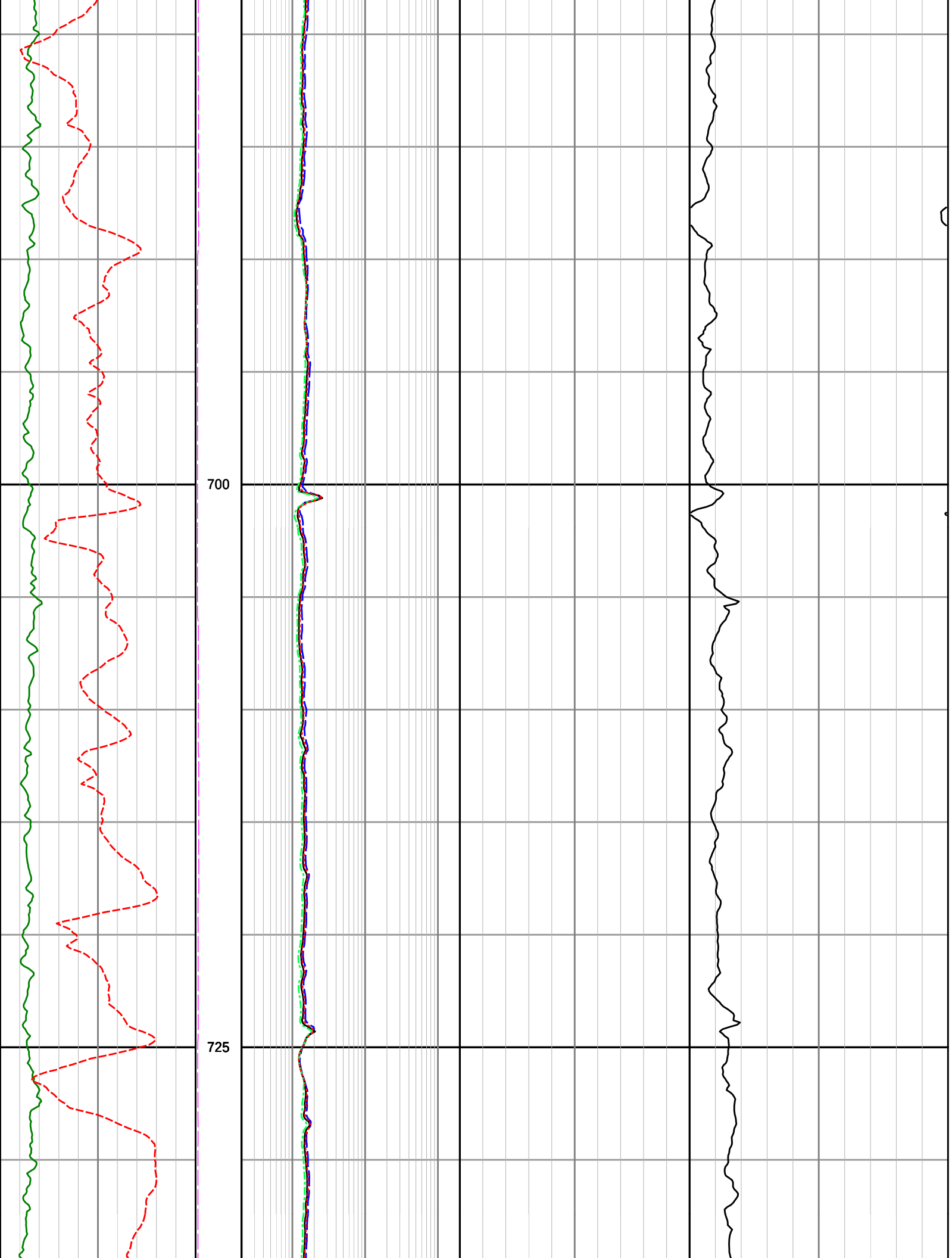
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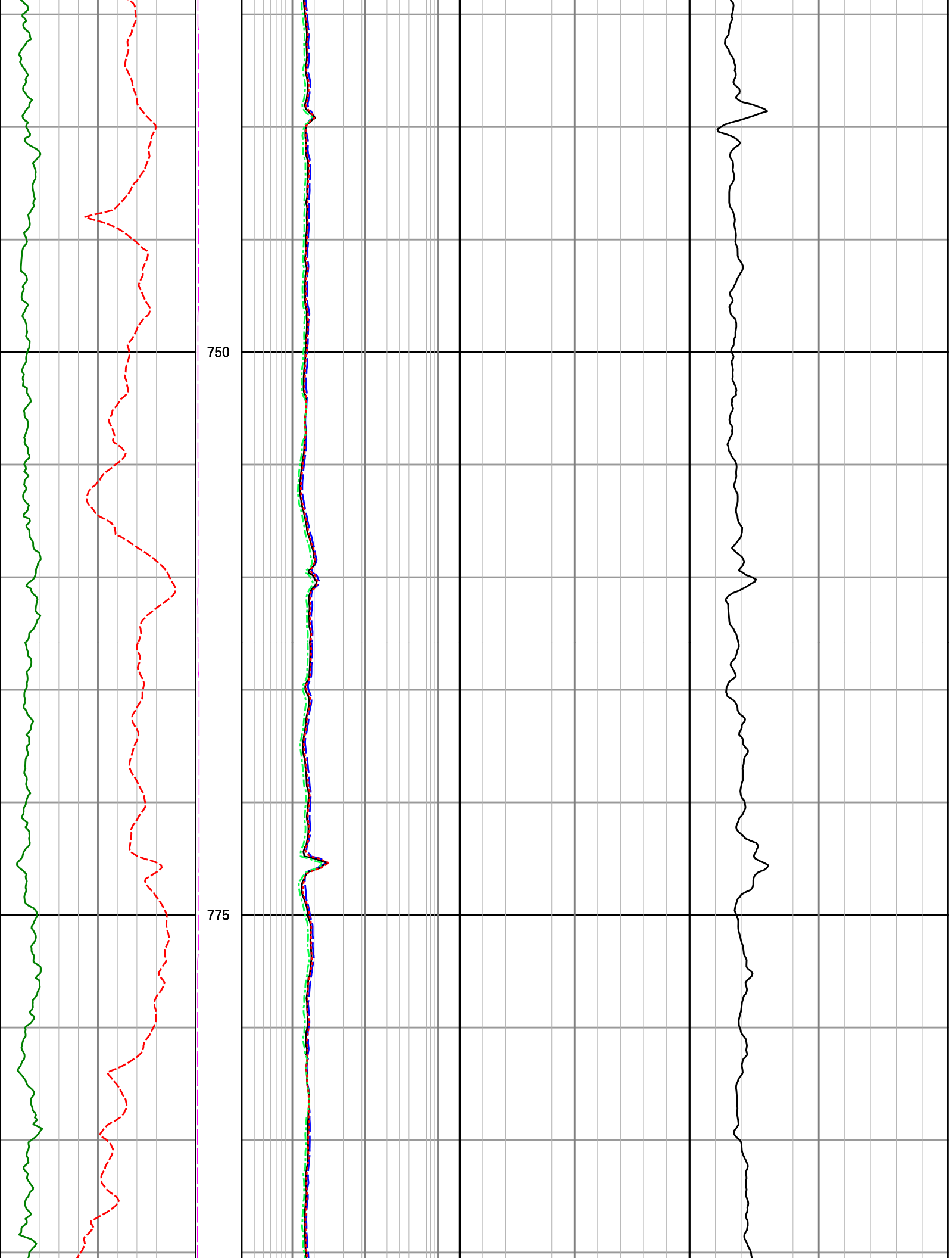
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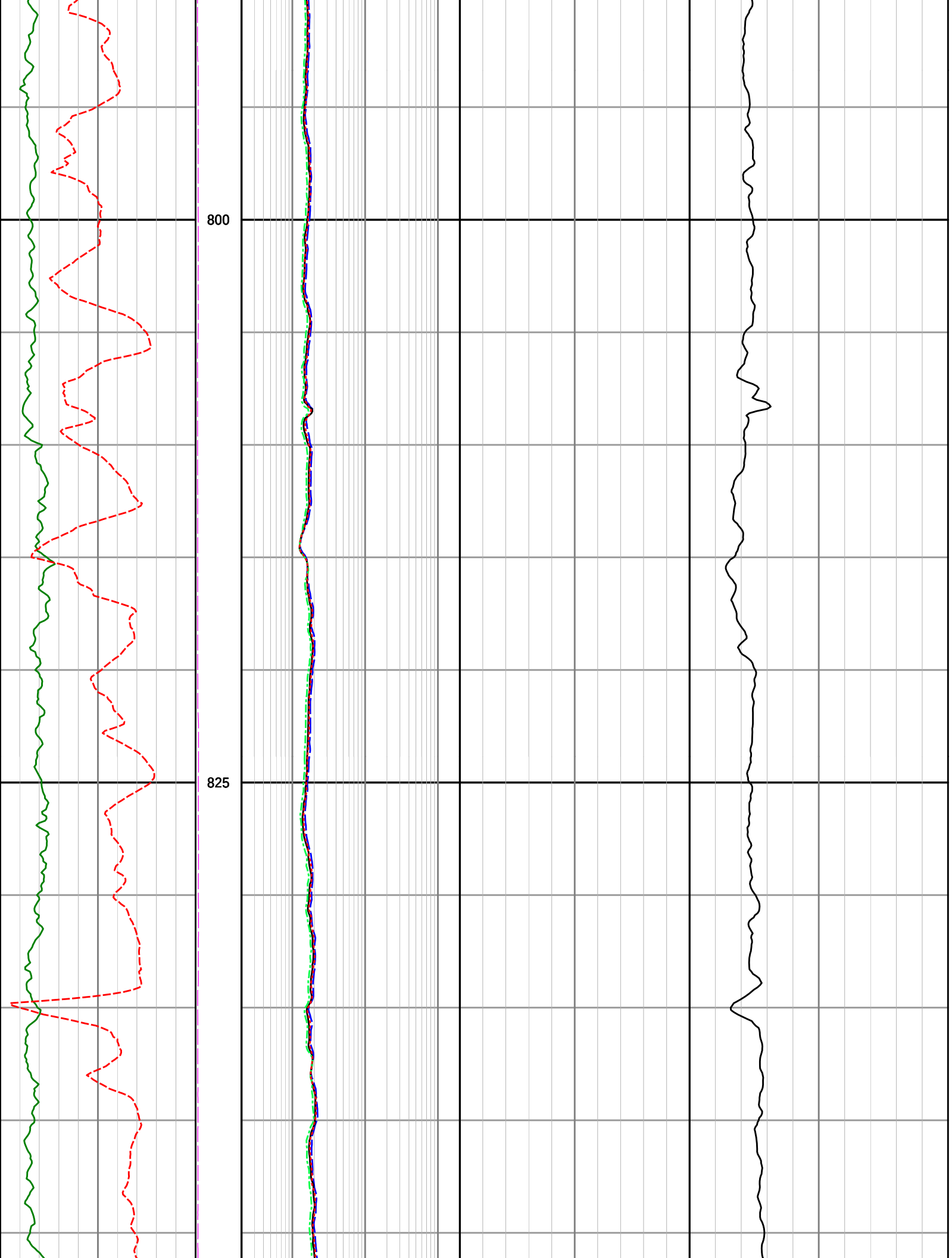
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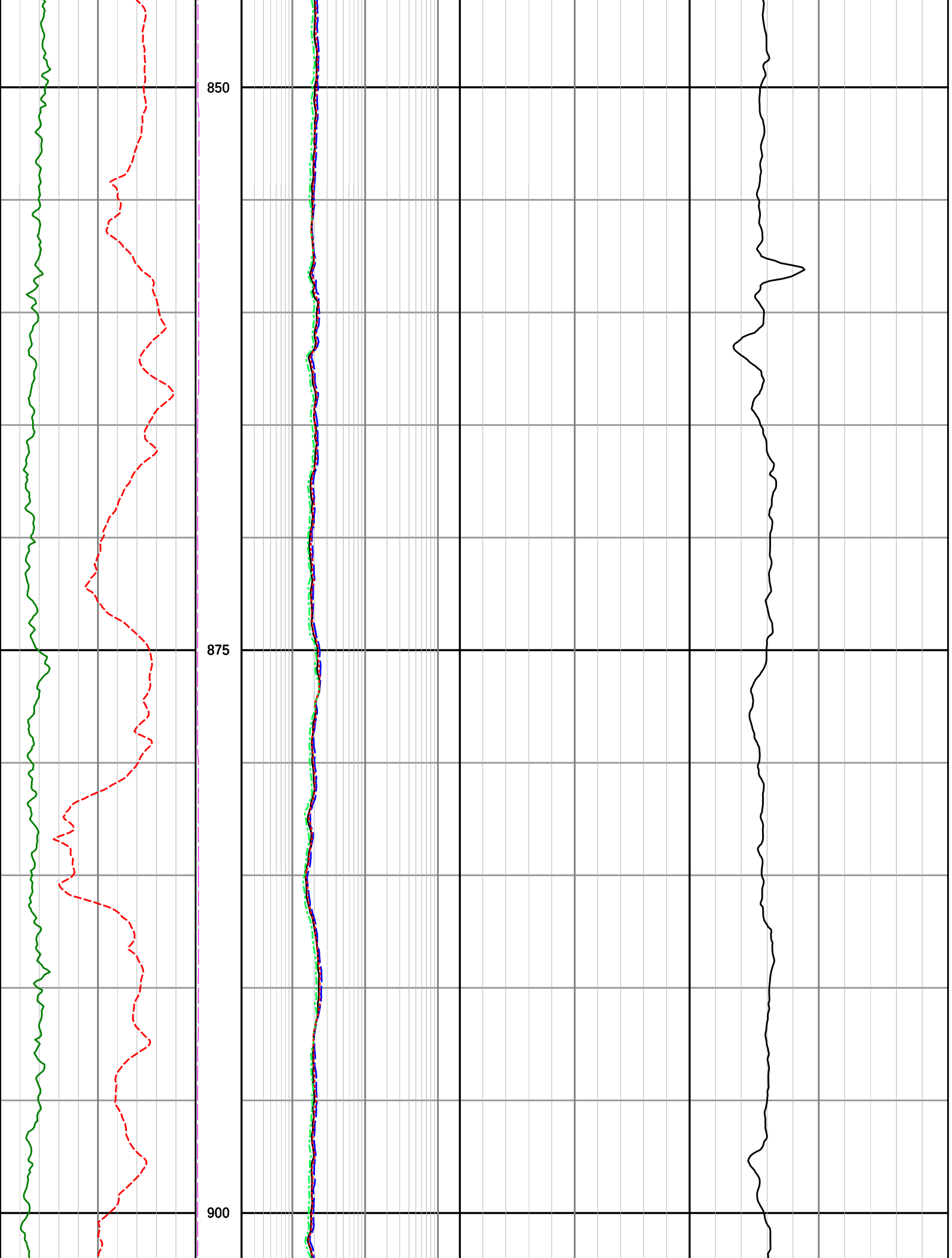
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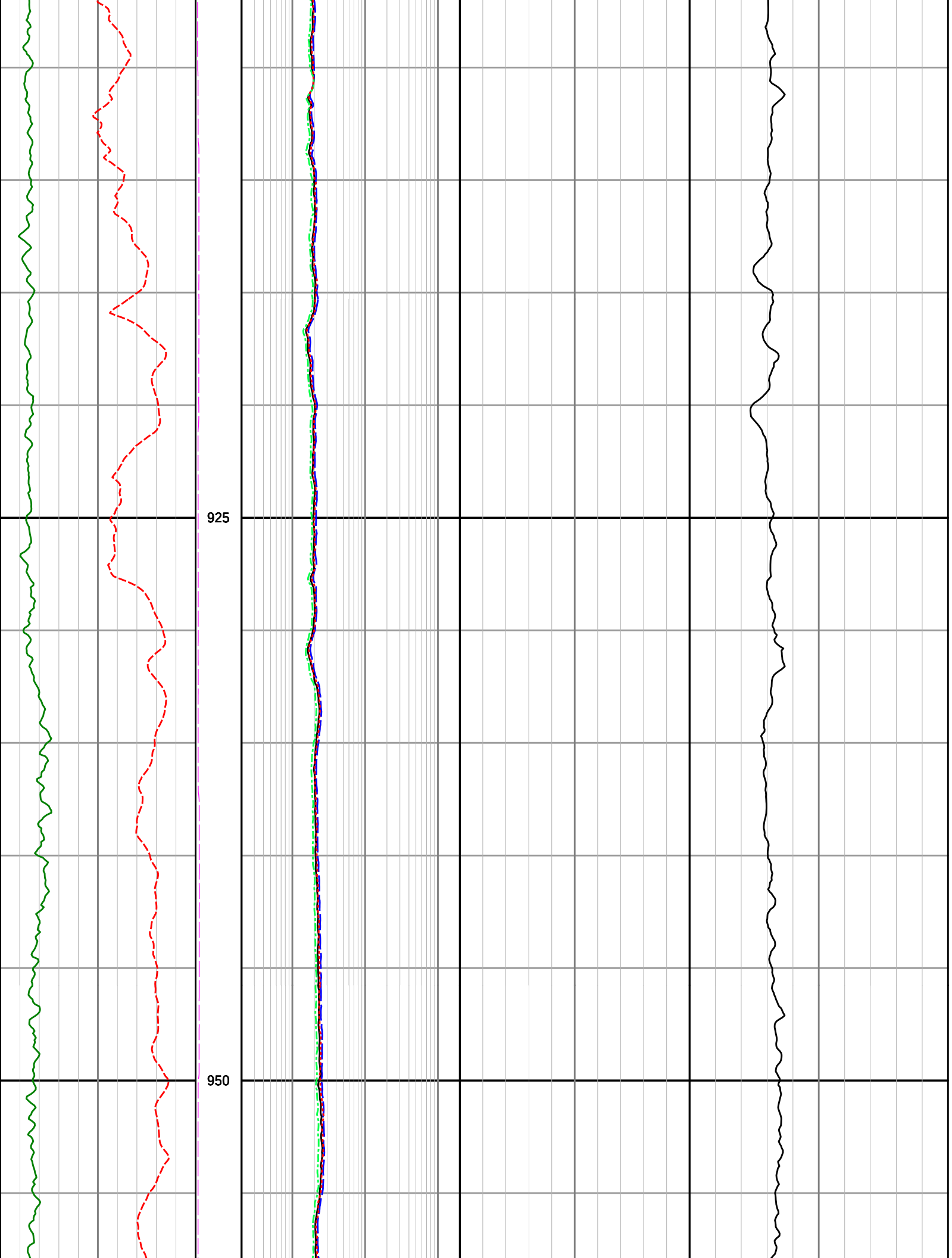
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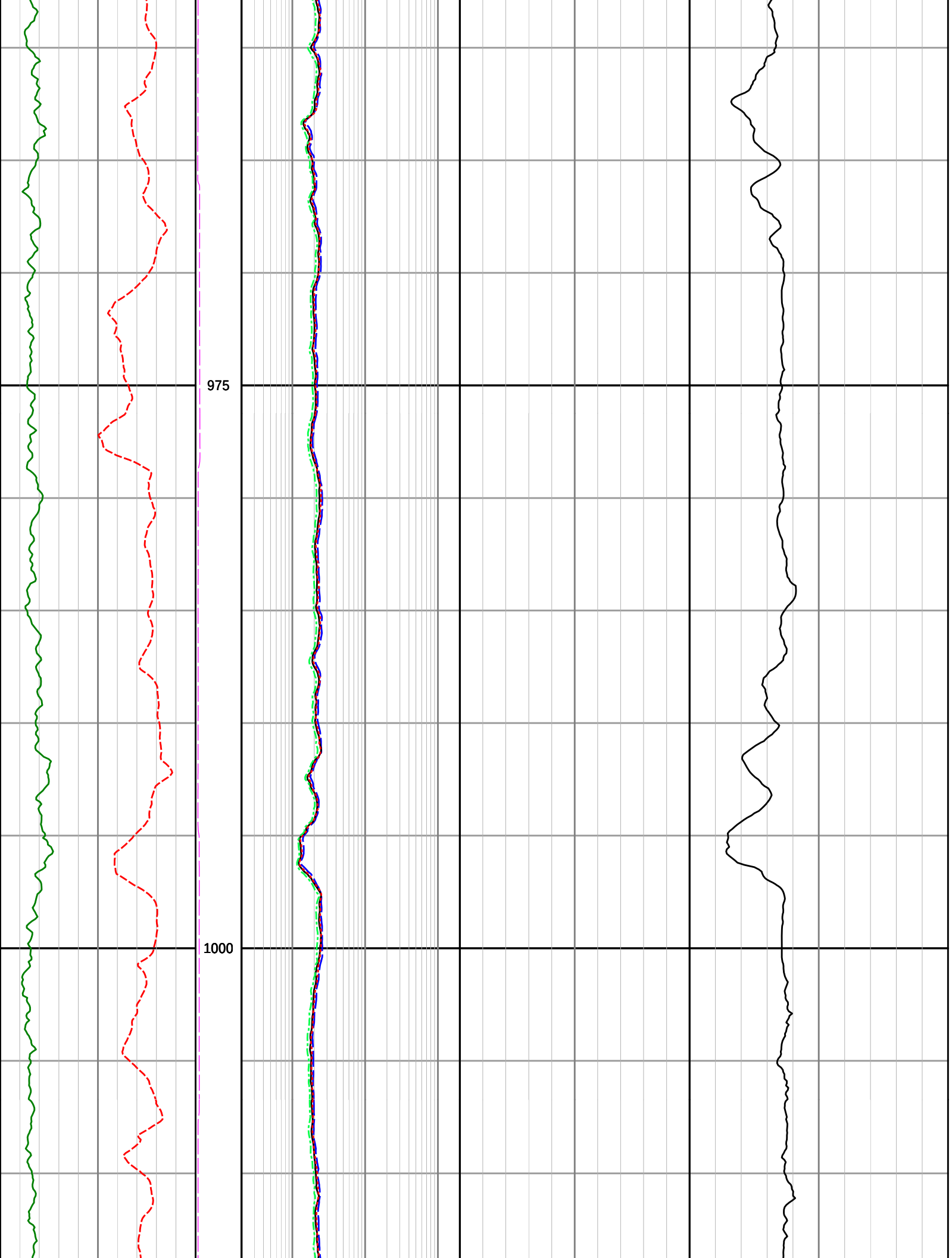
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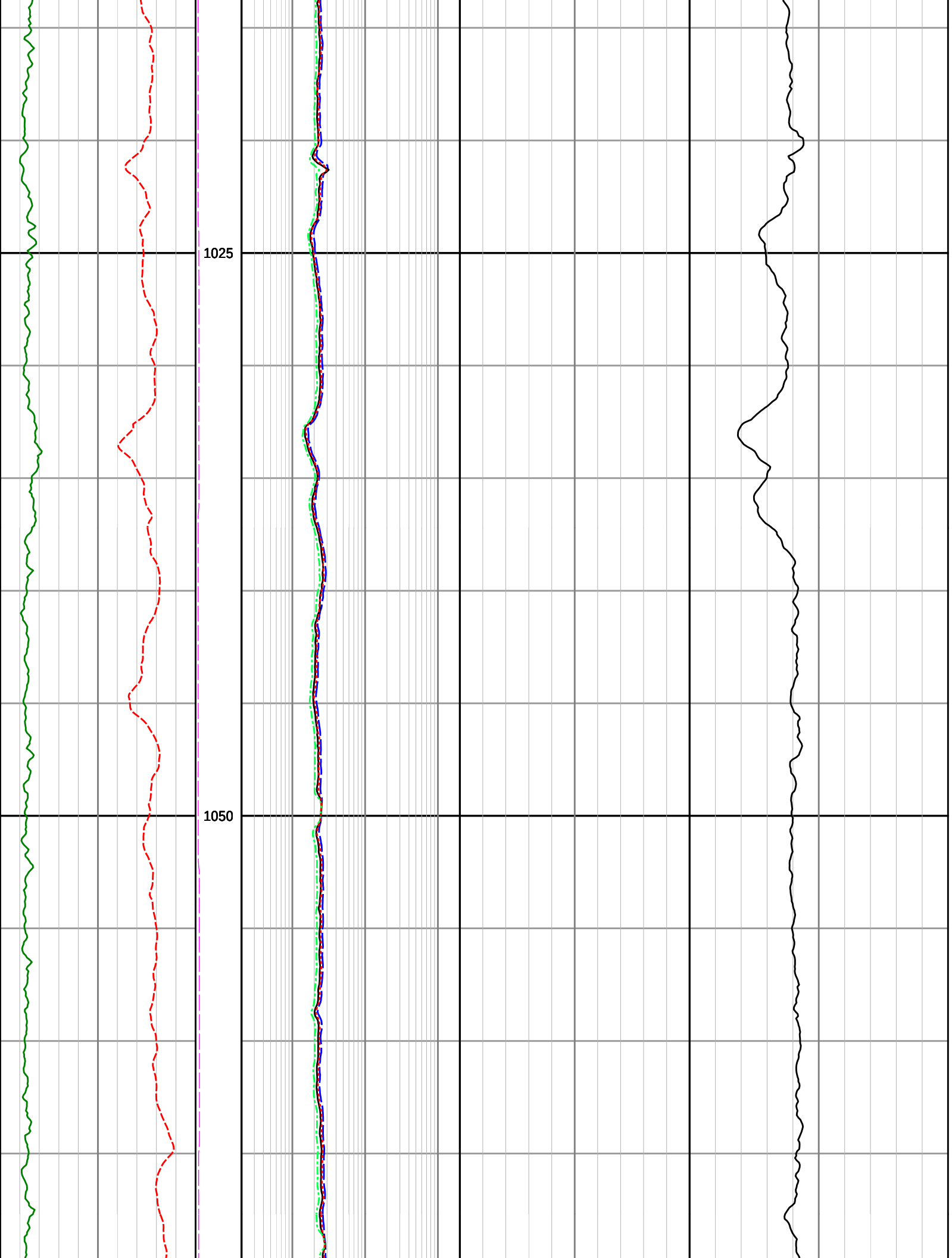
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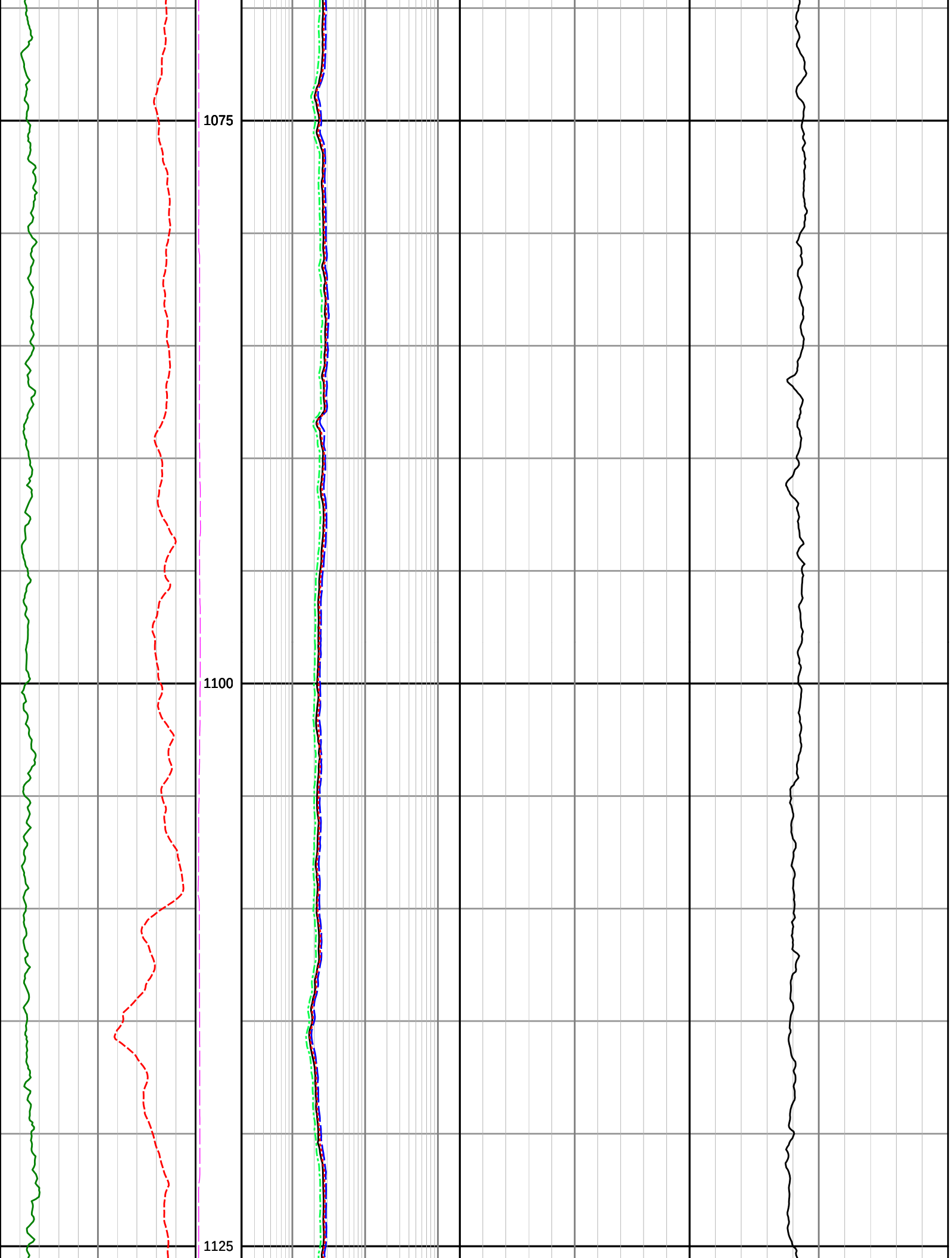
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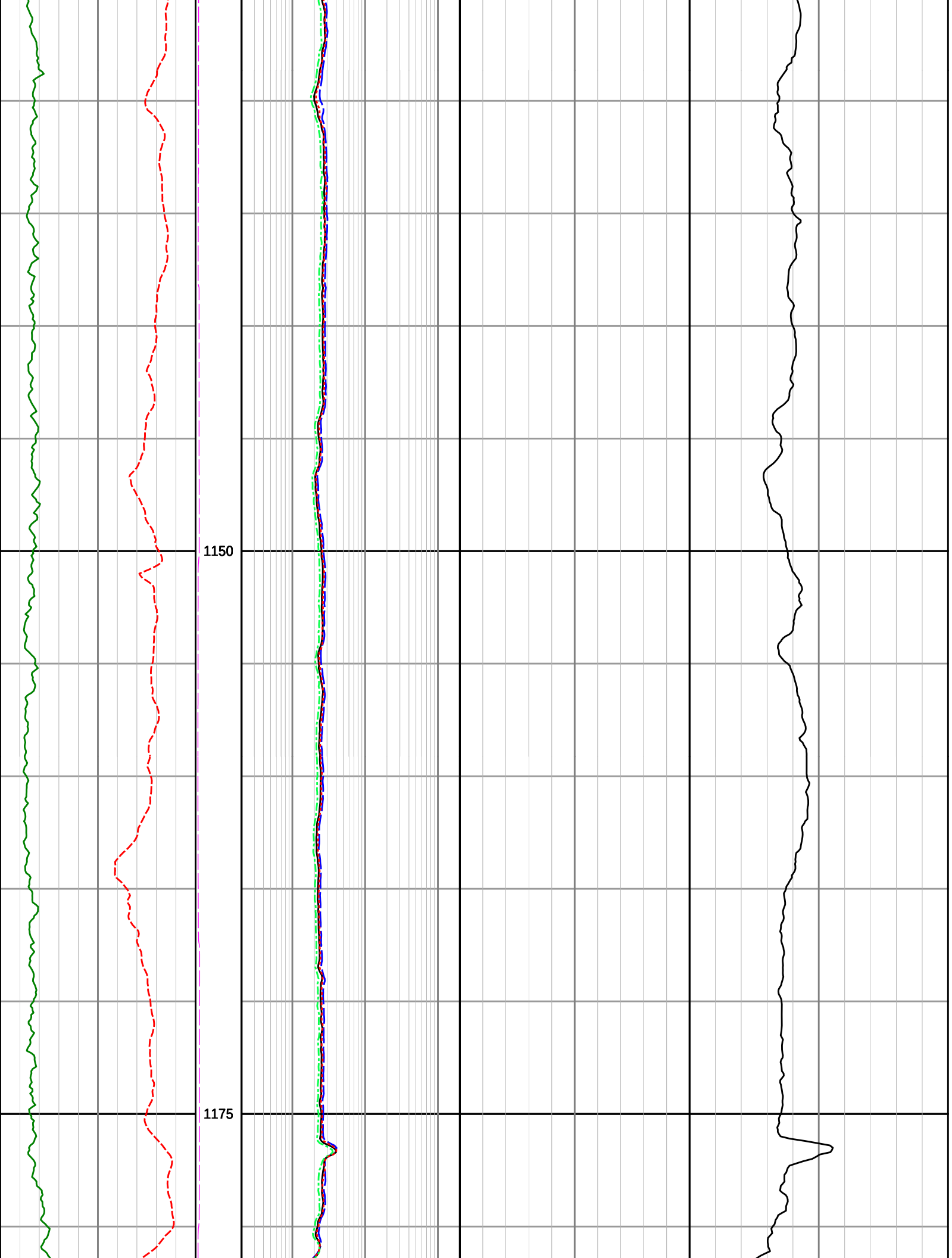
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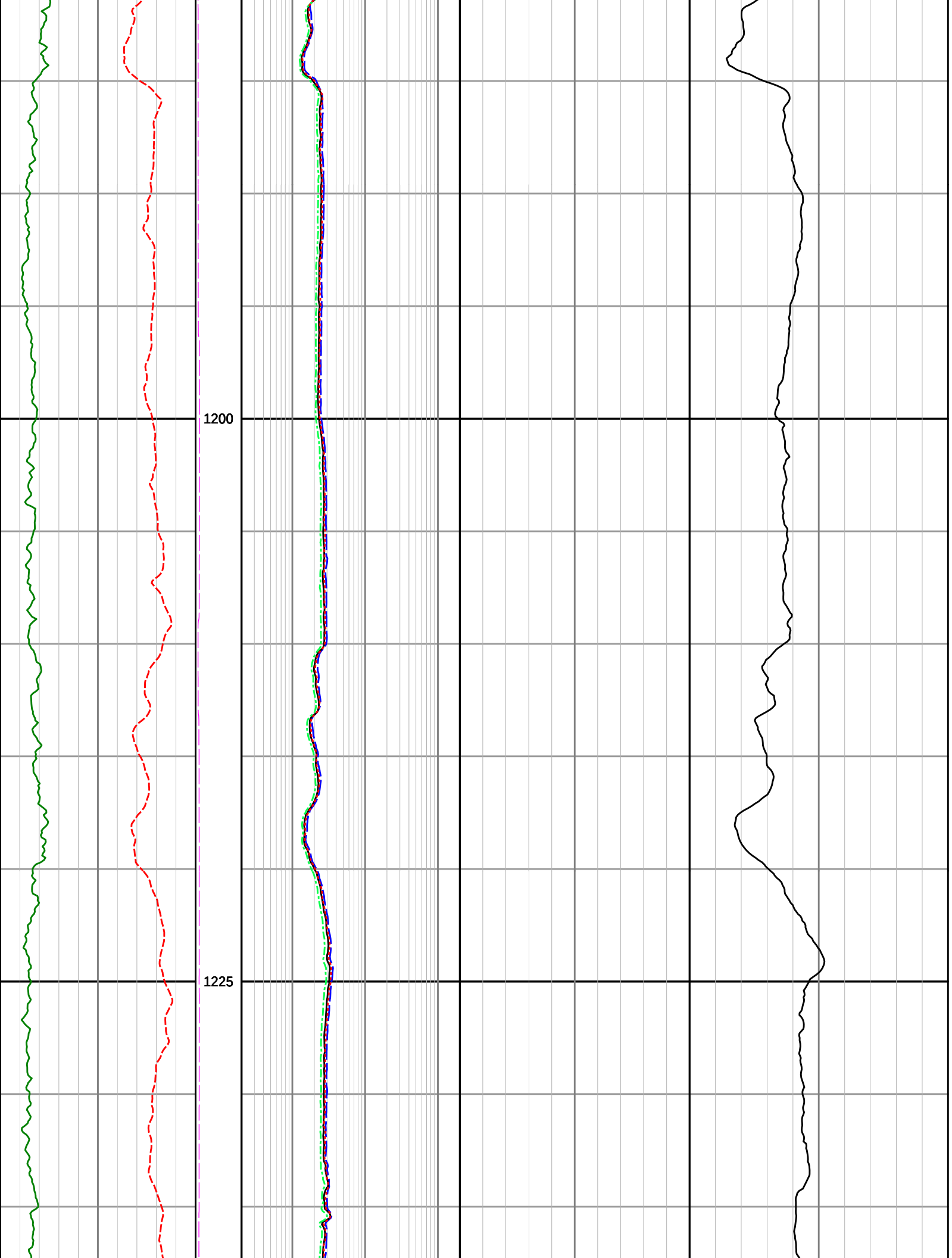
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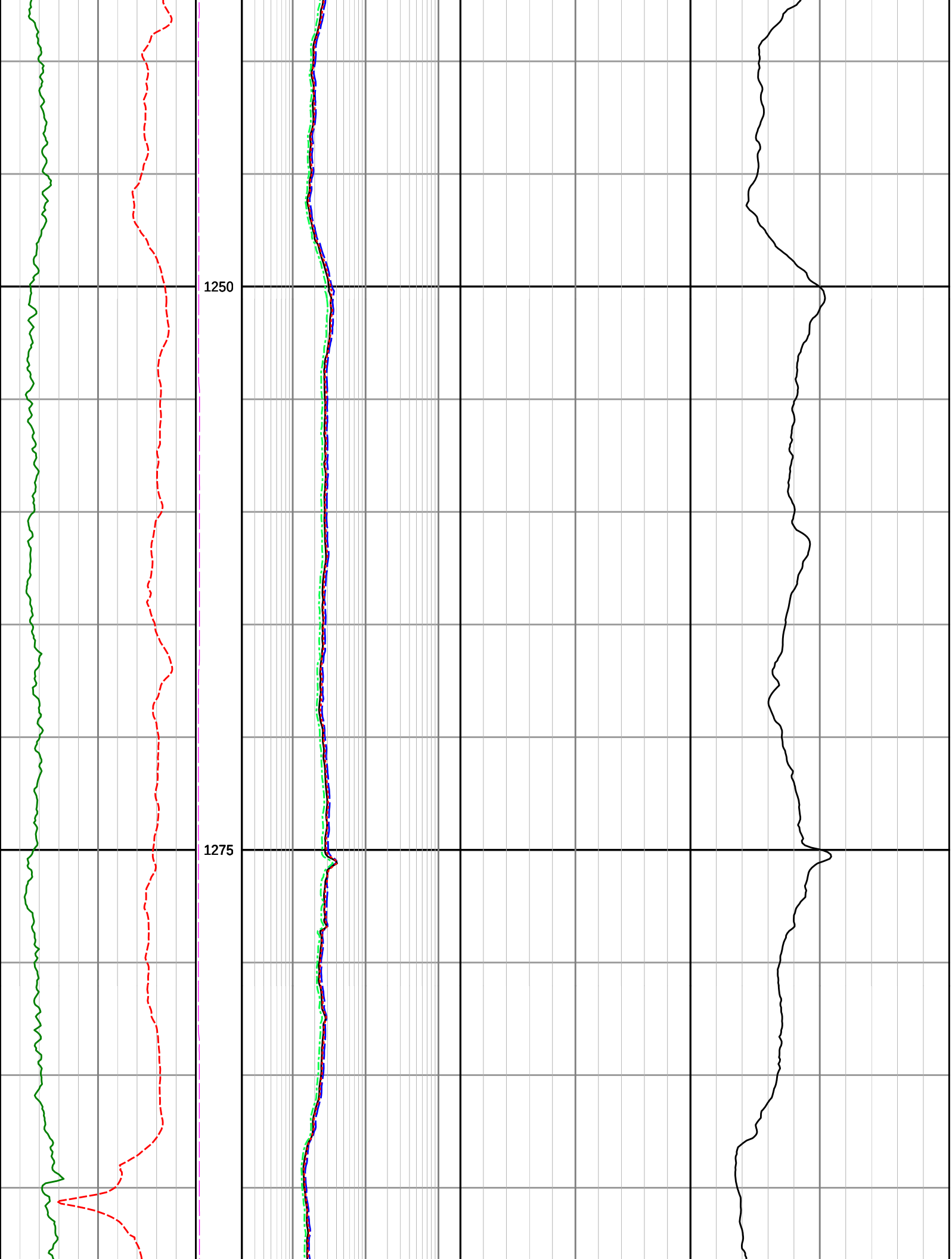
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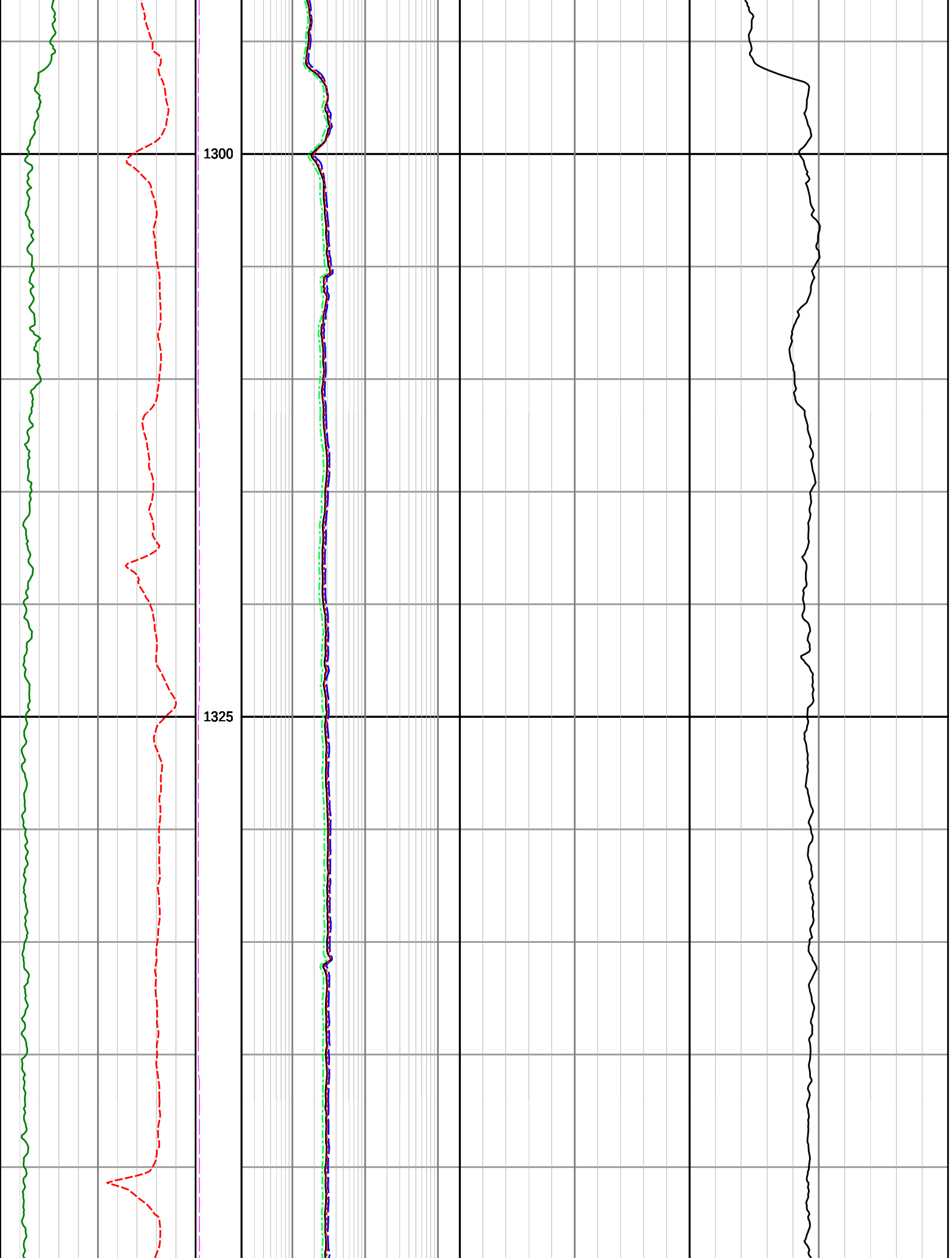
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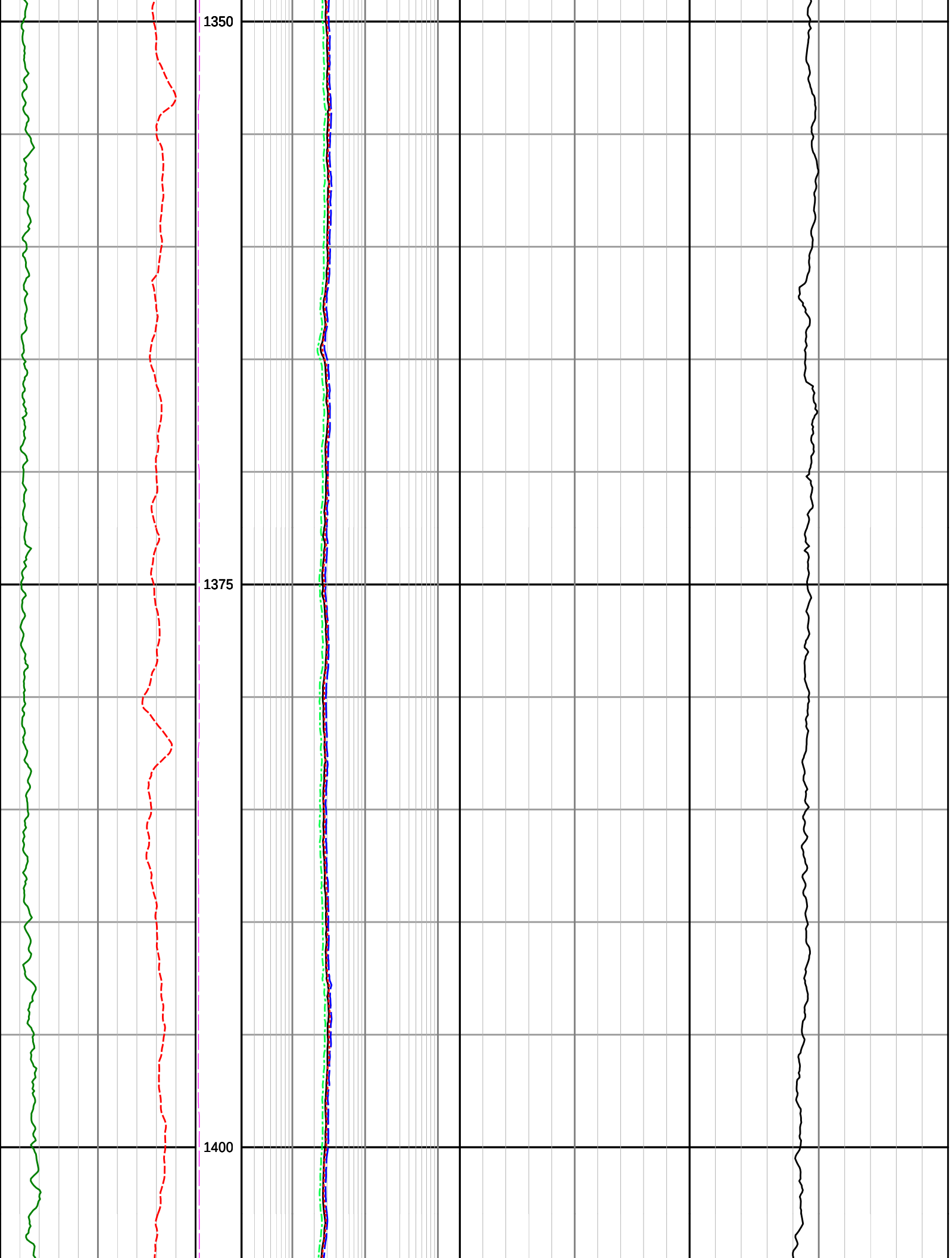
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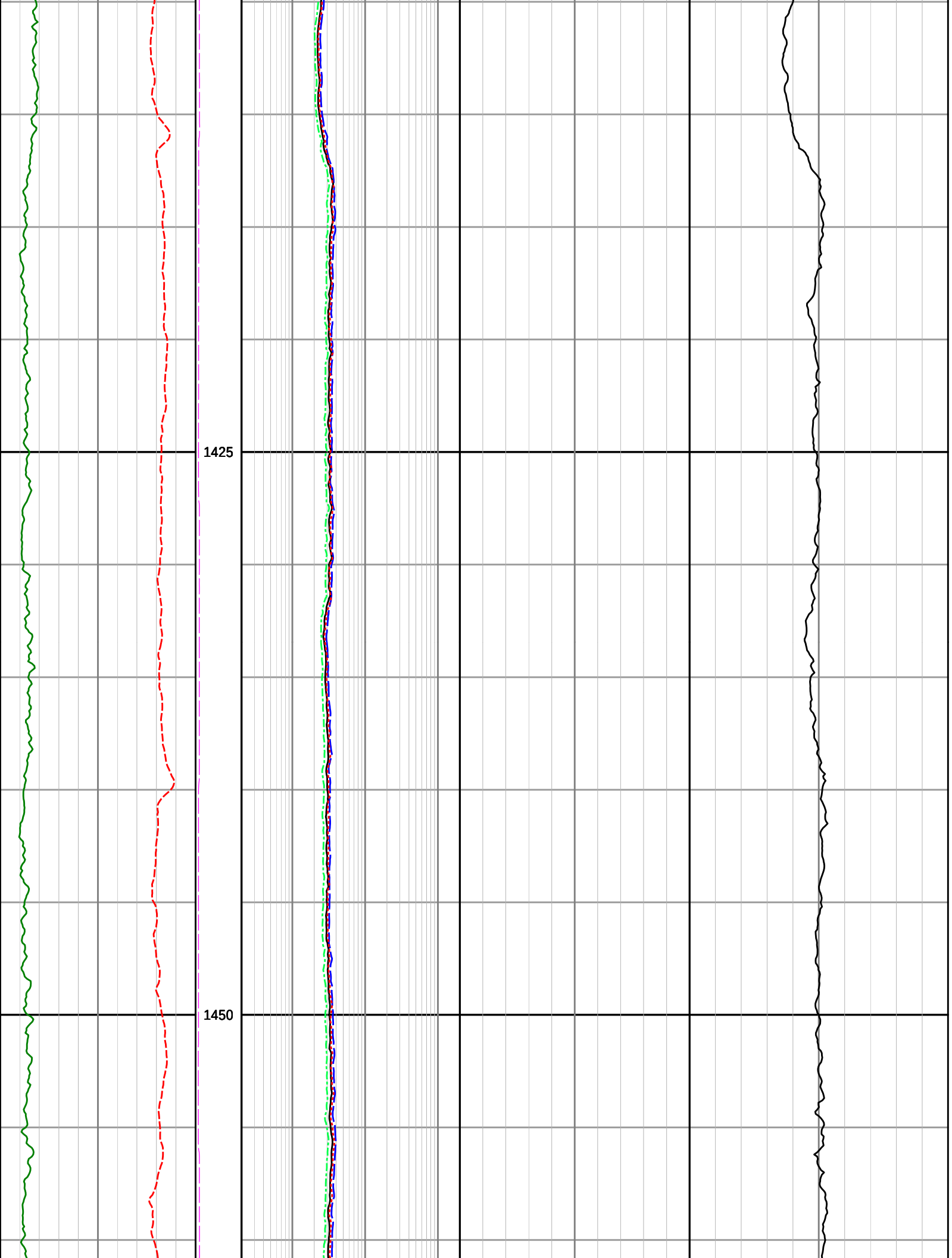
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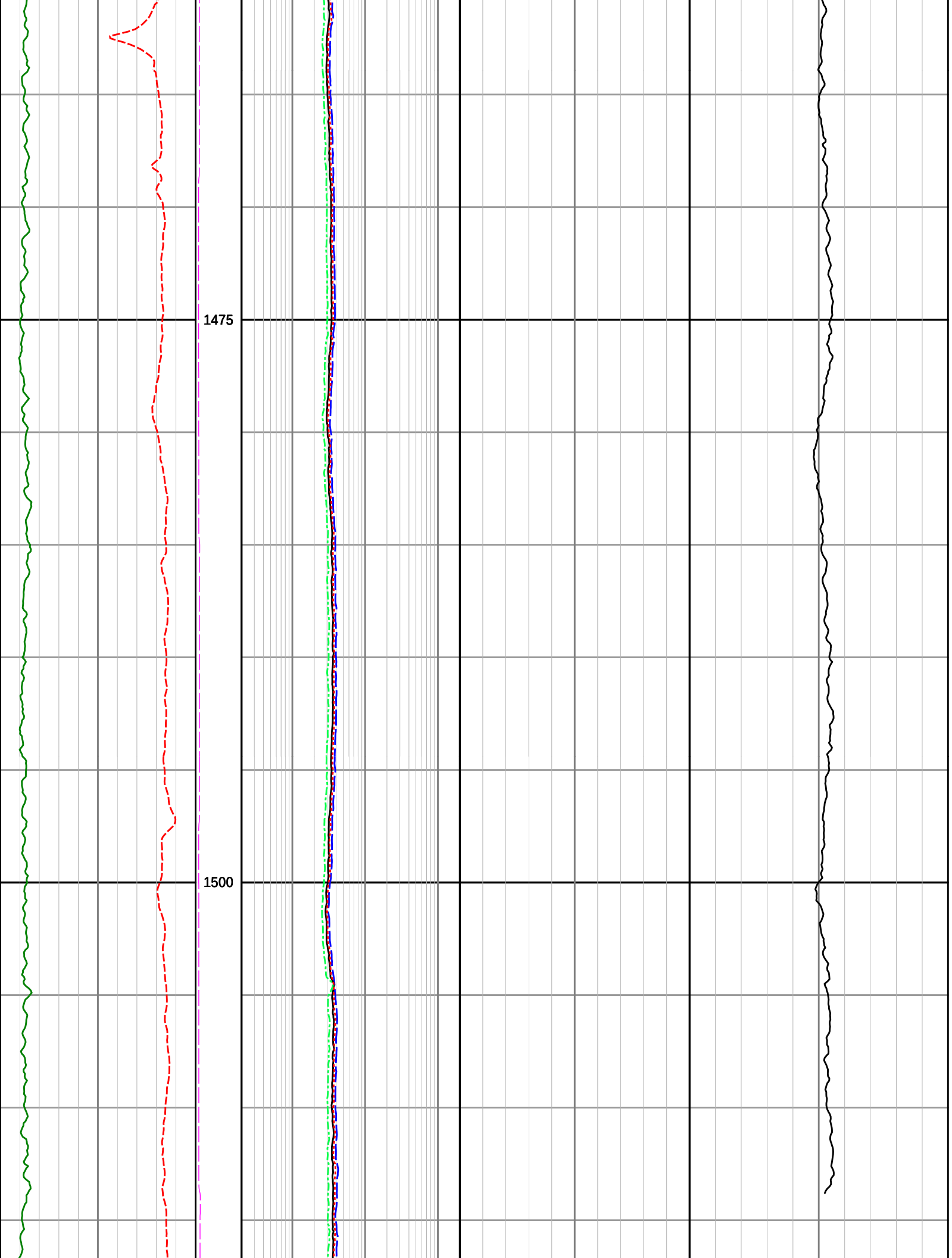
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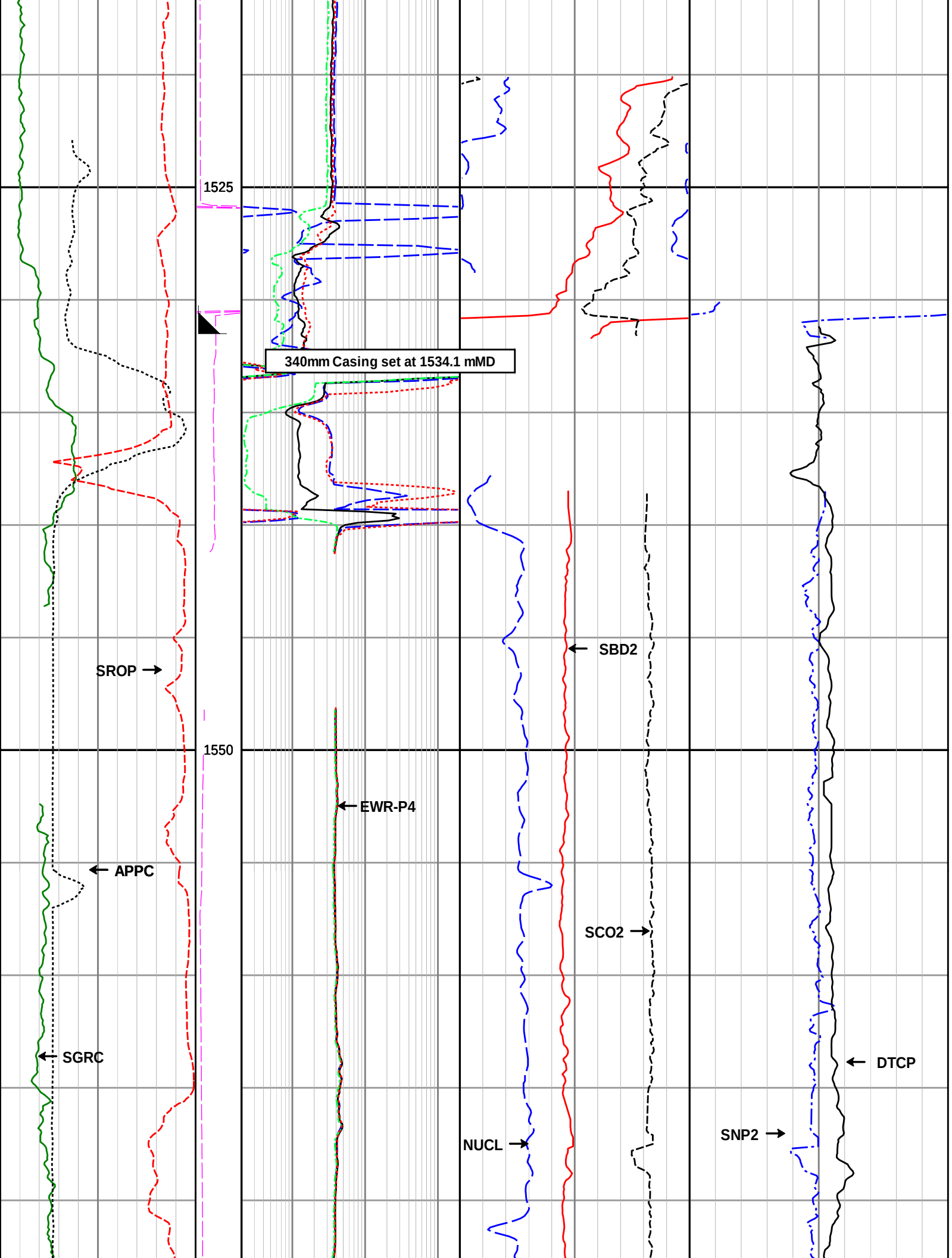
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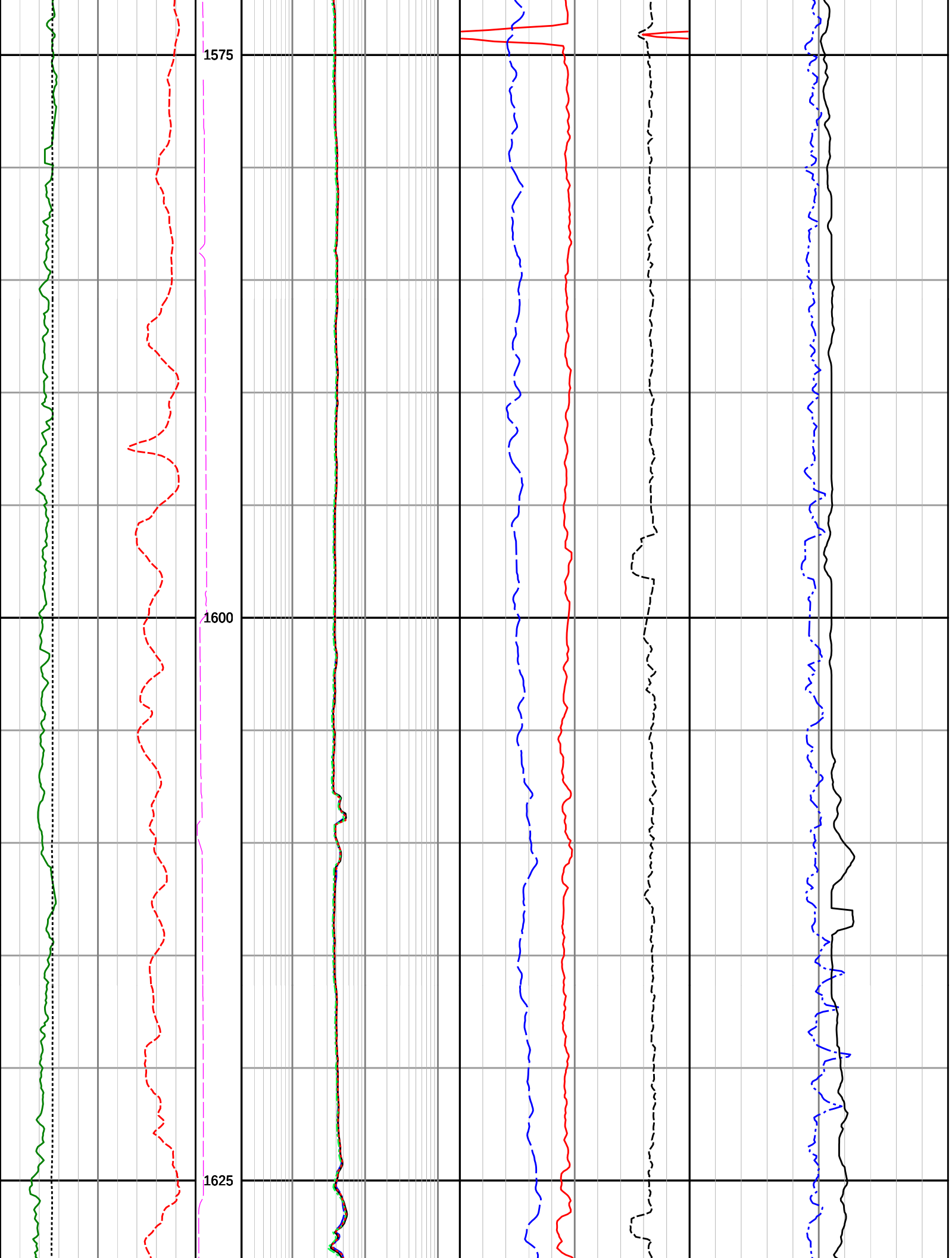
DTCP
NUCL
SNP2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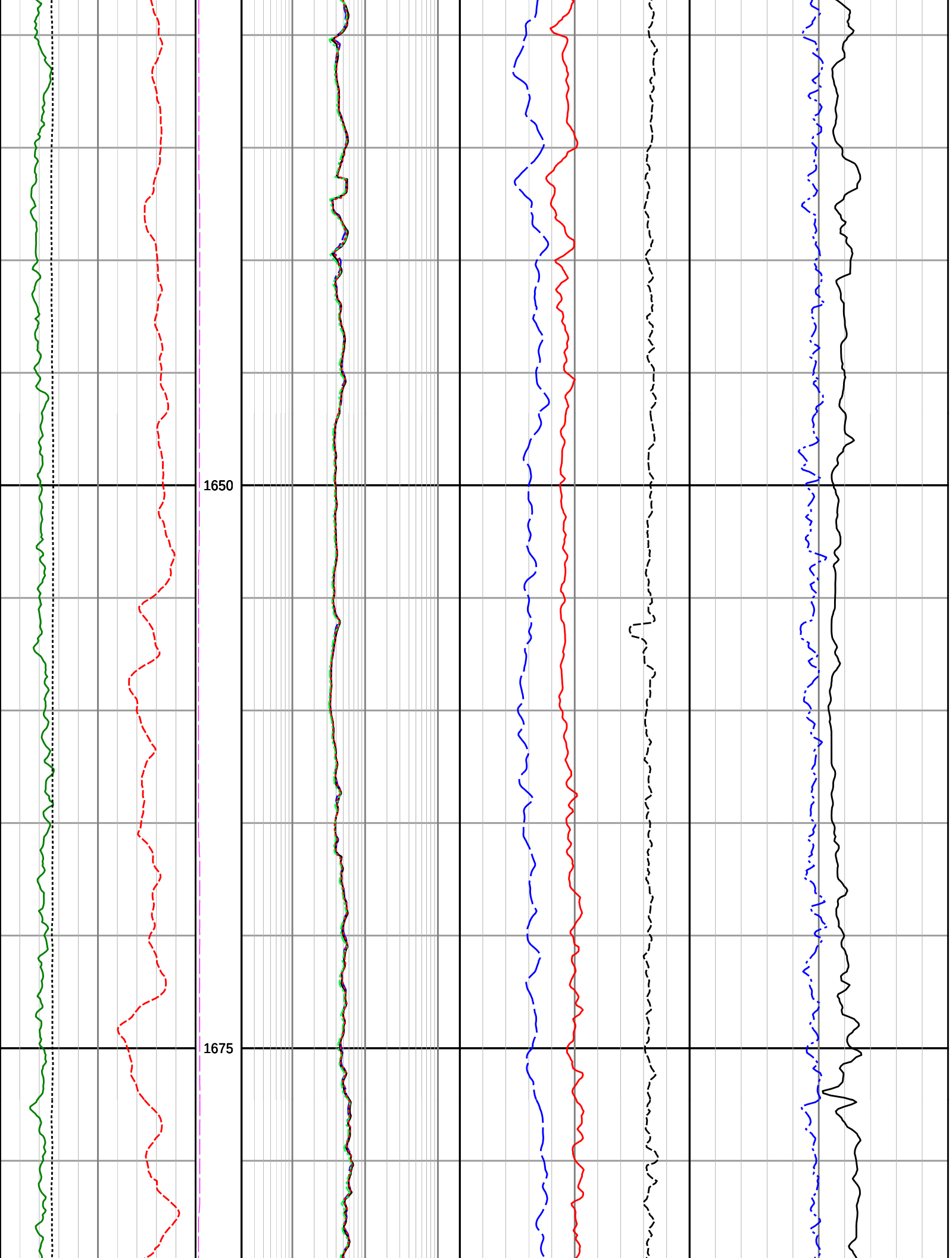
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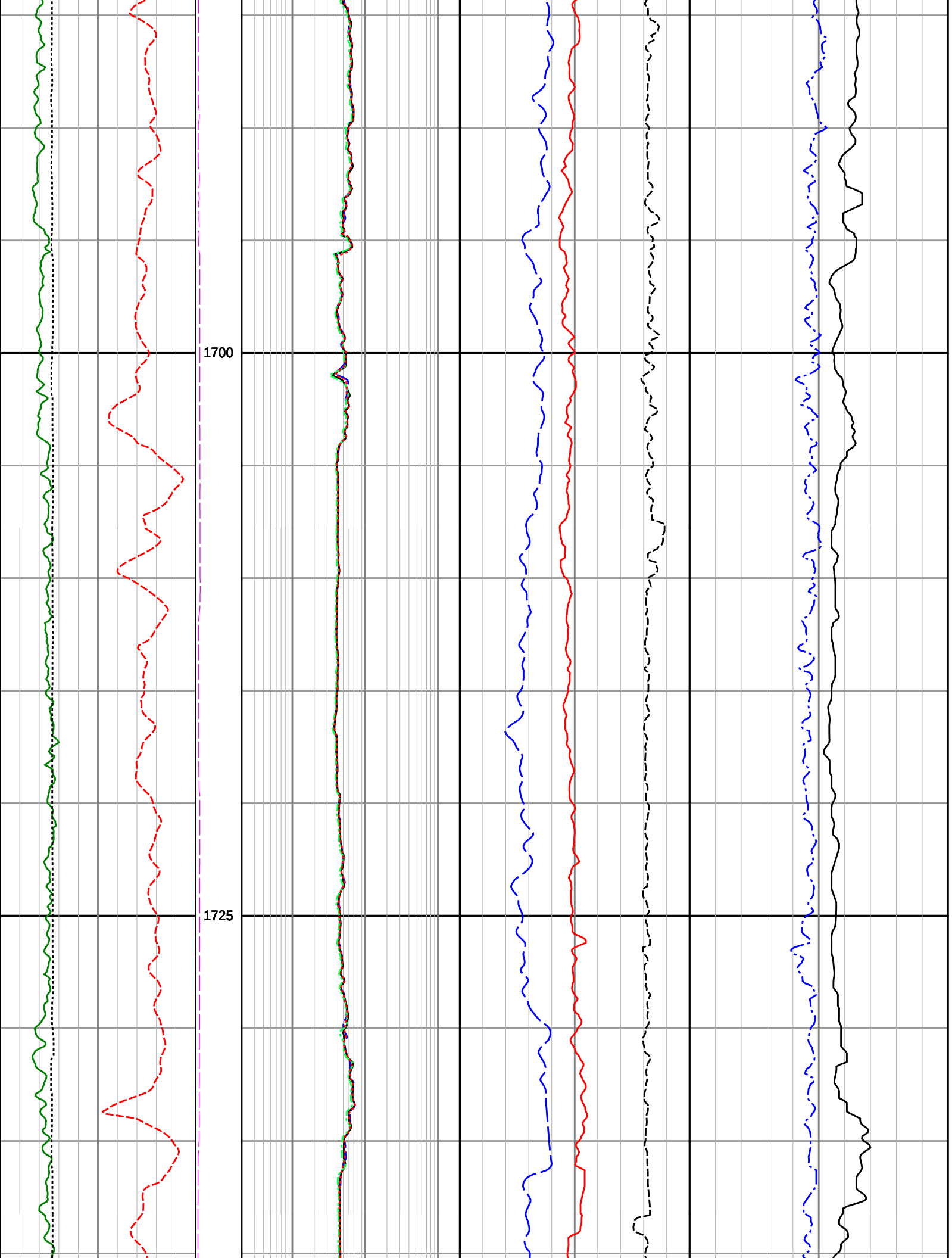
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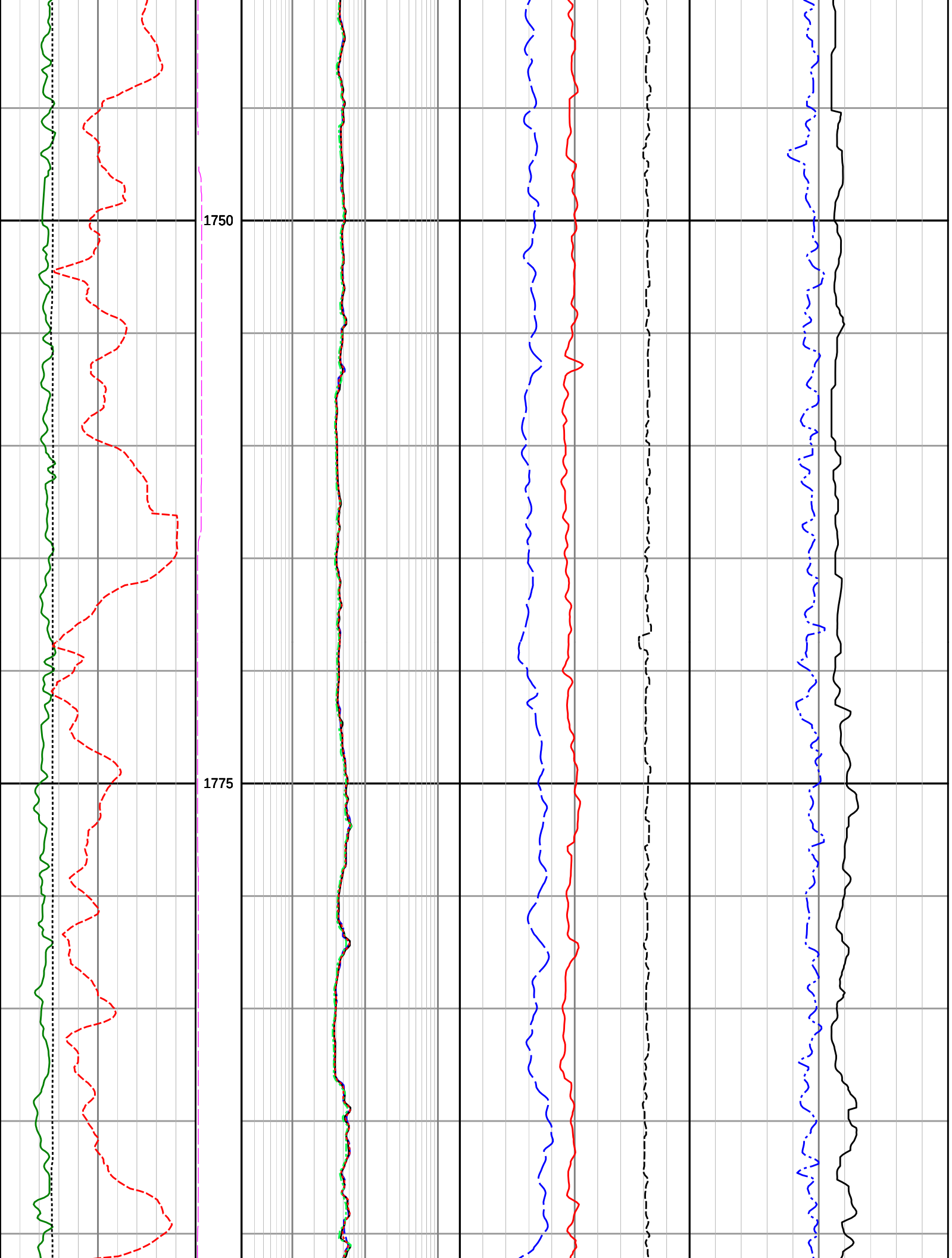
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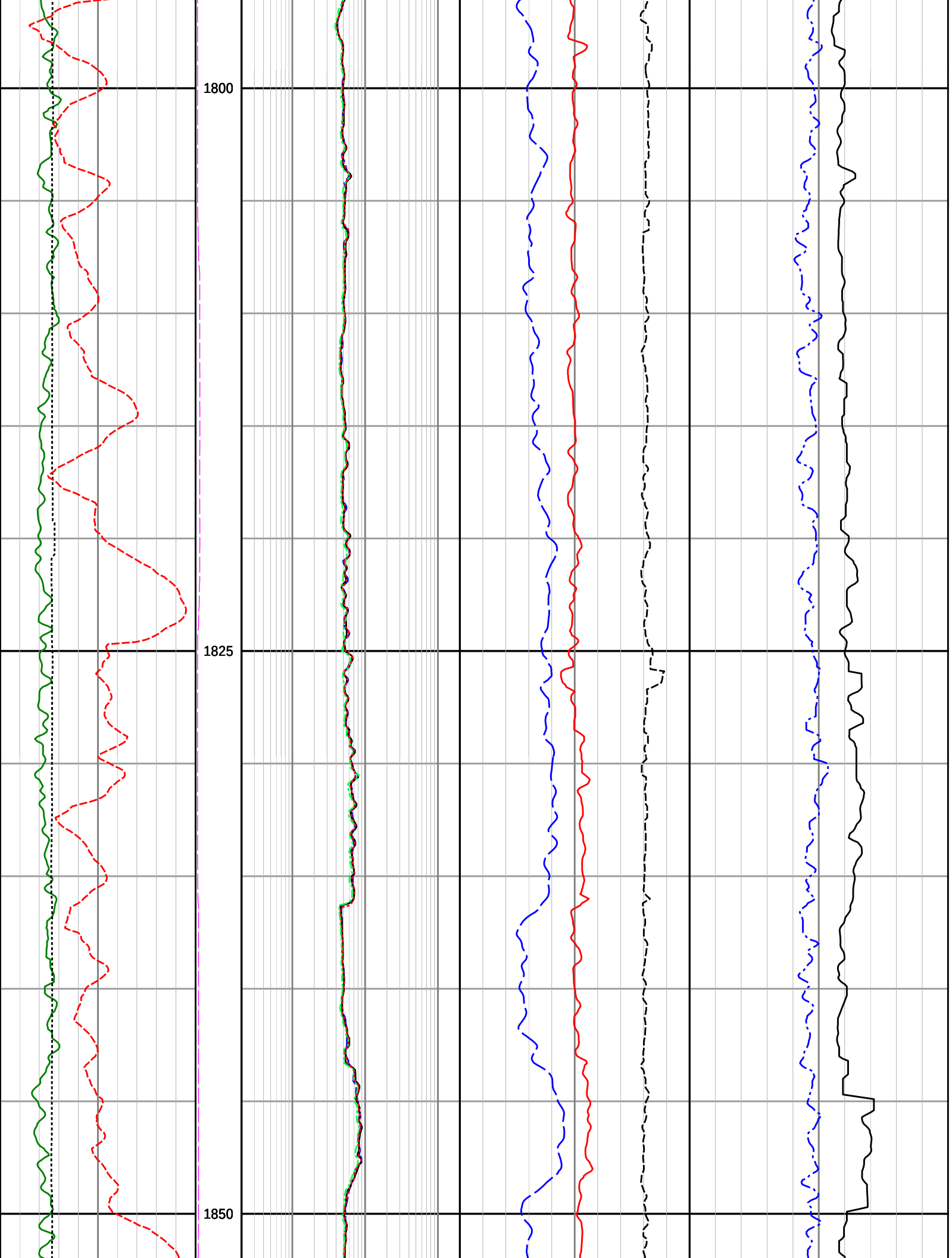
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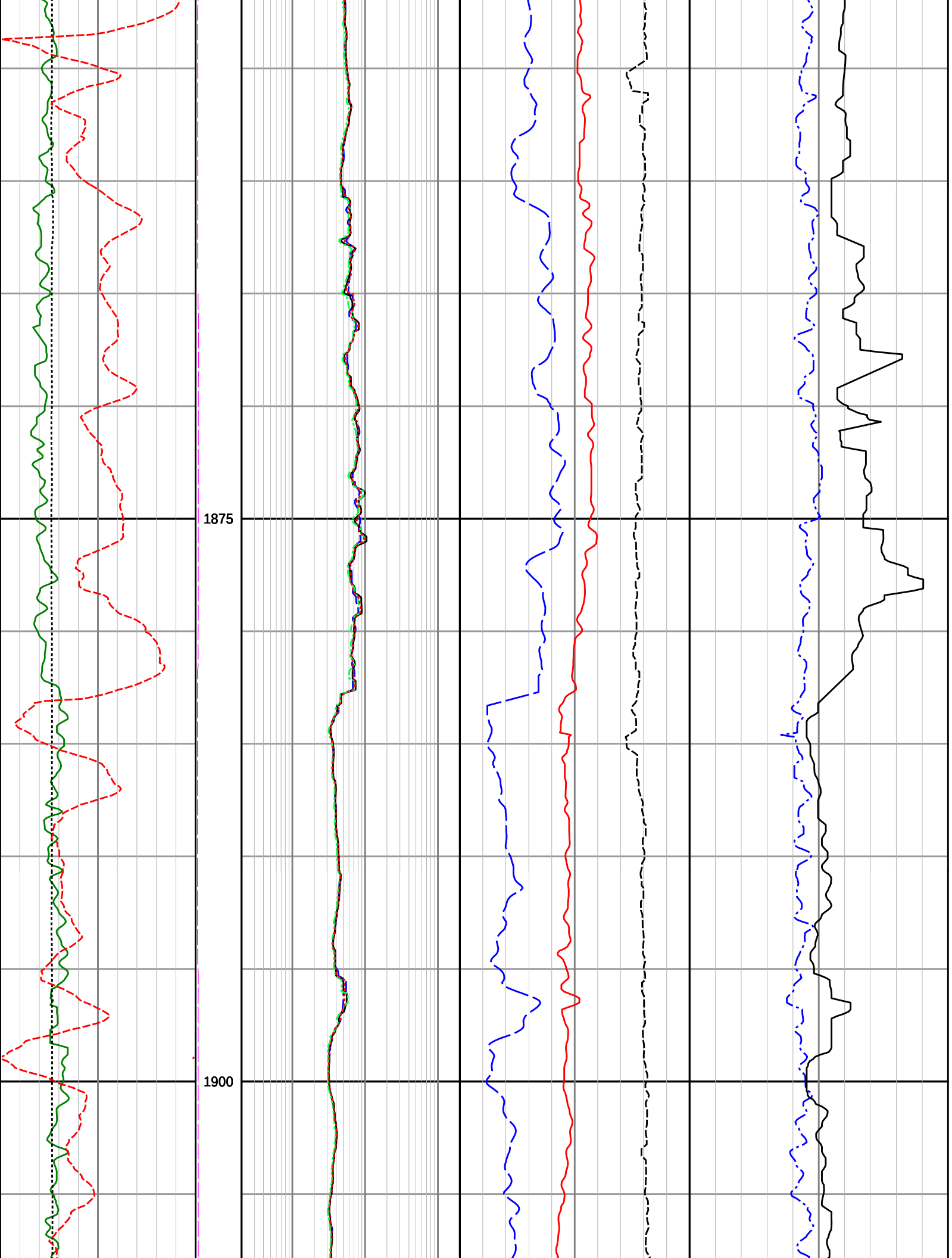
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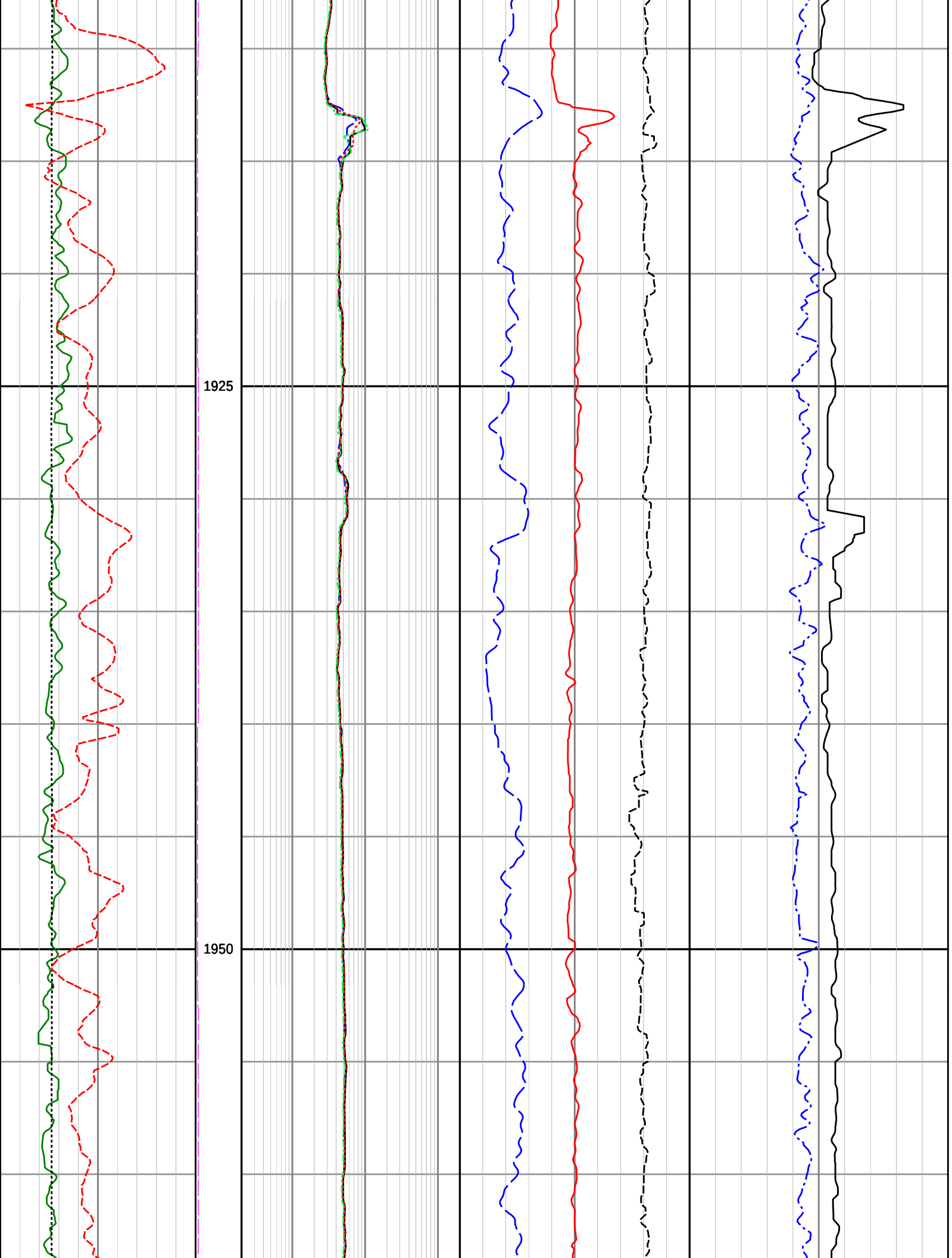
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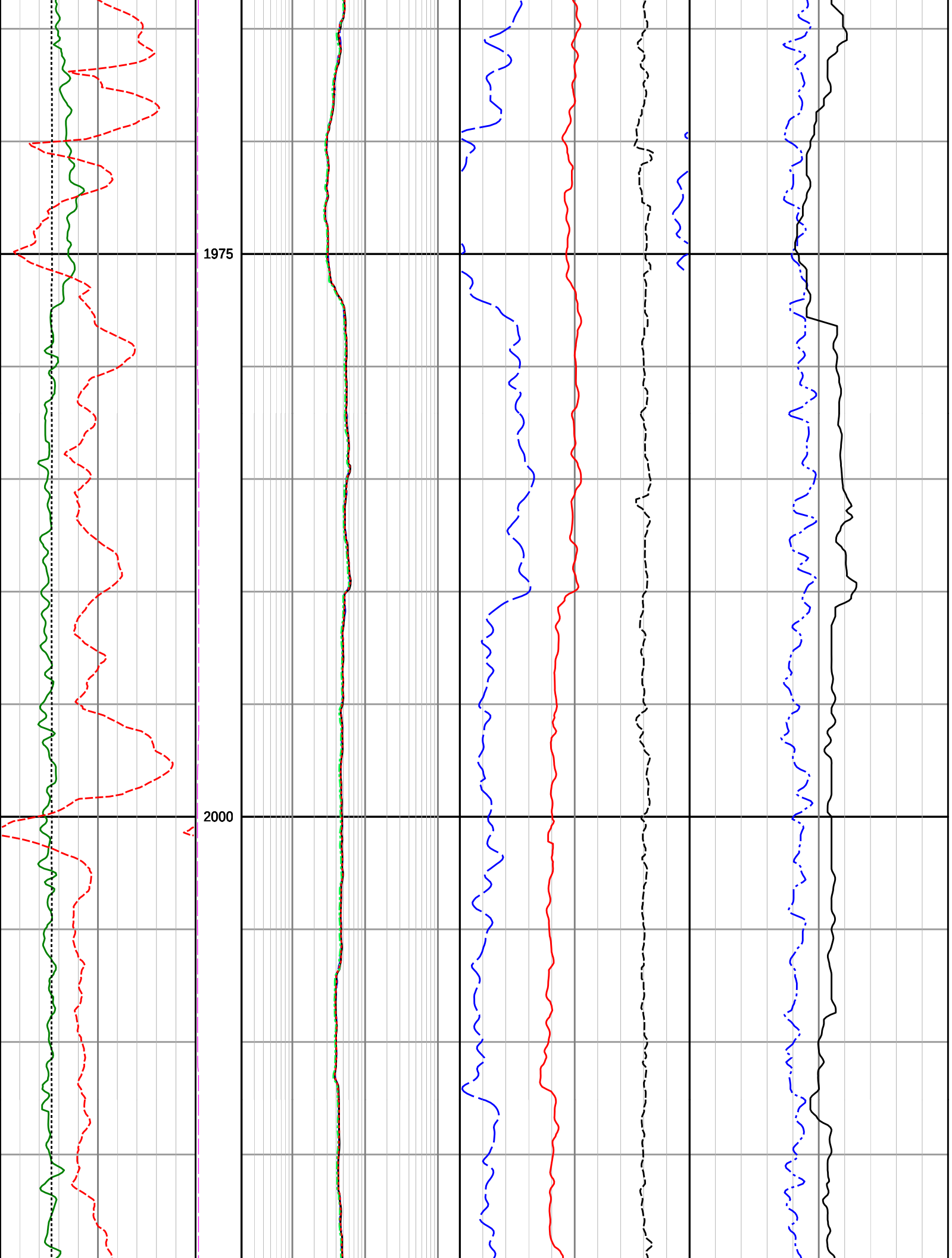
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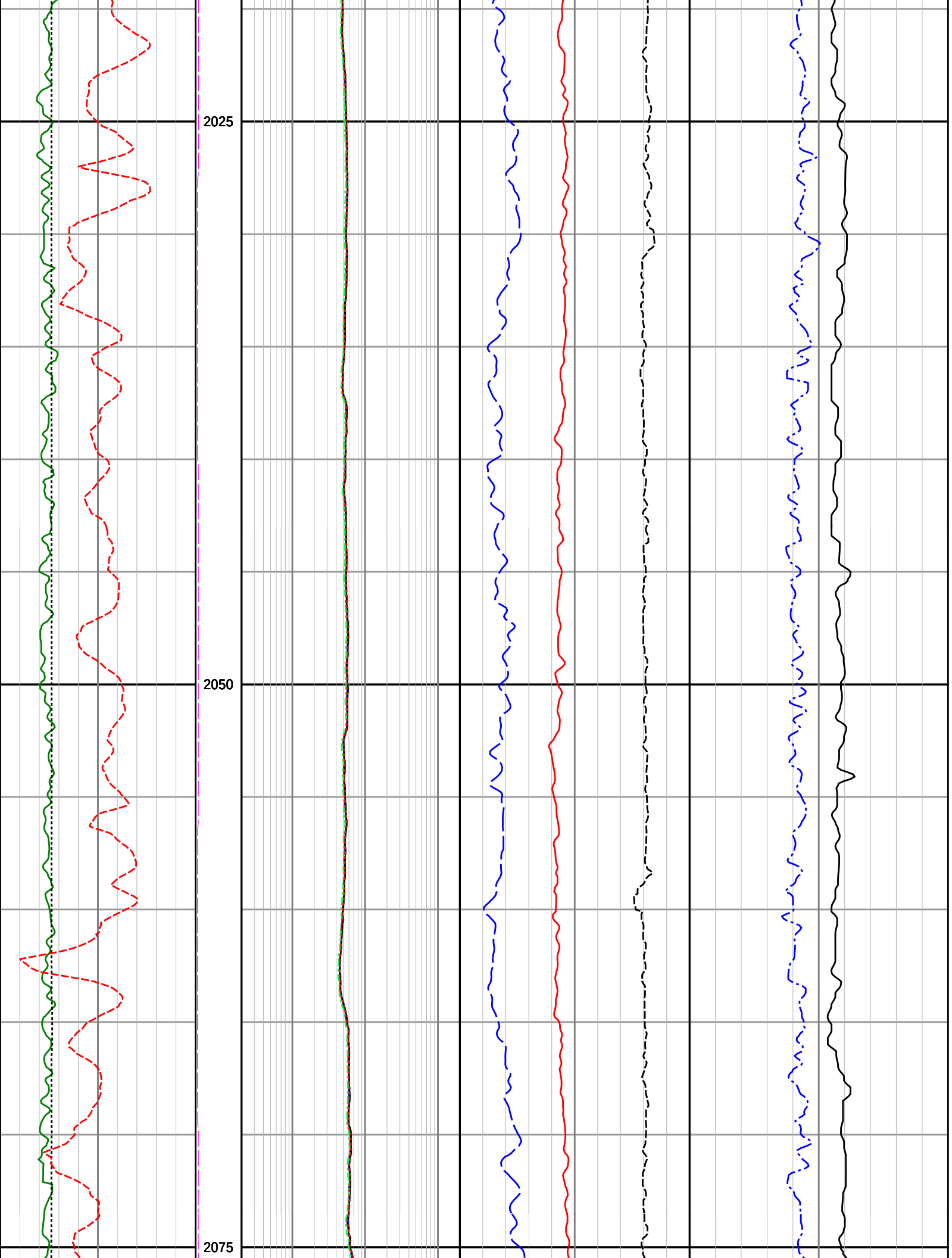
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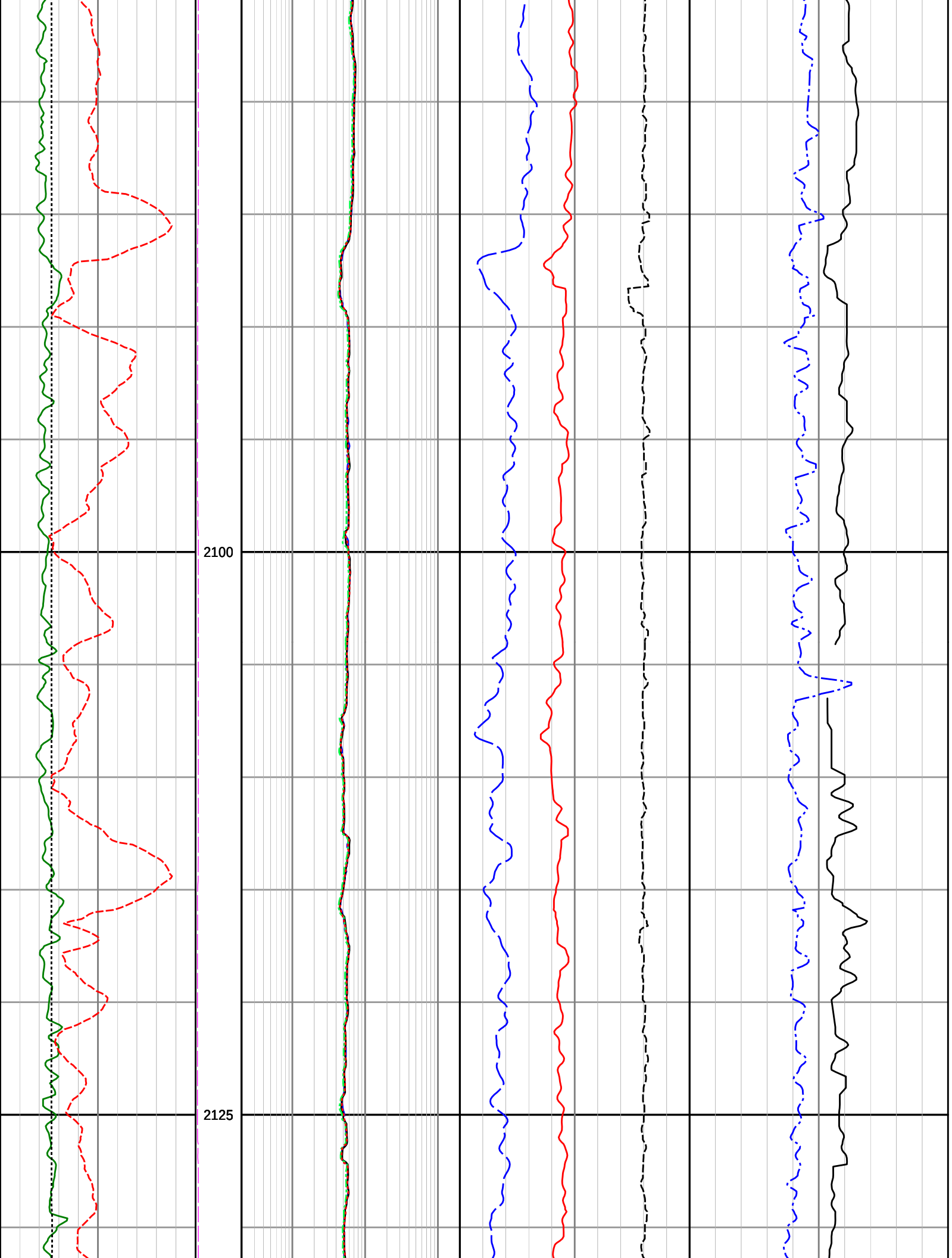
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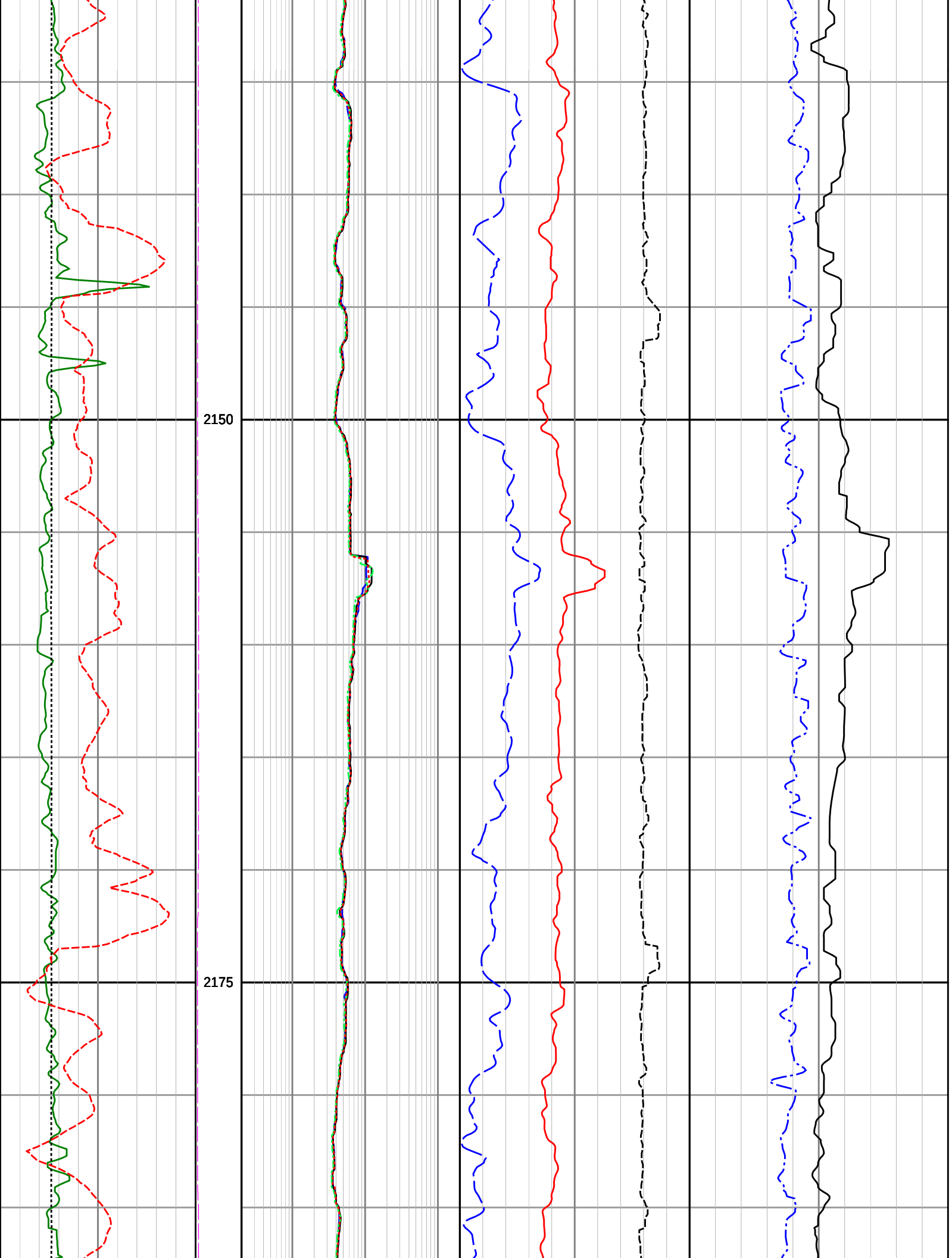
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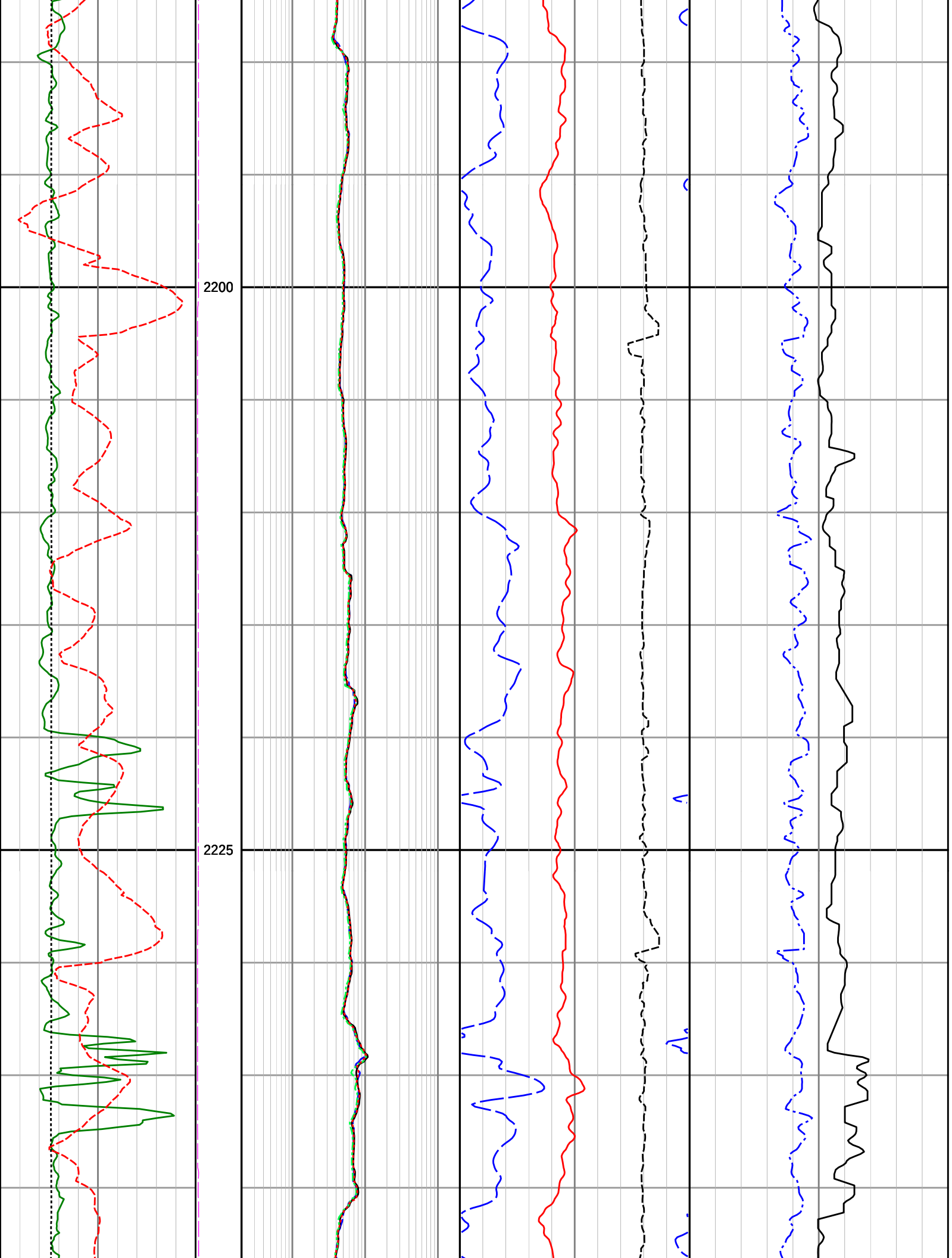
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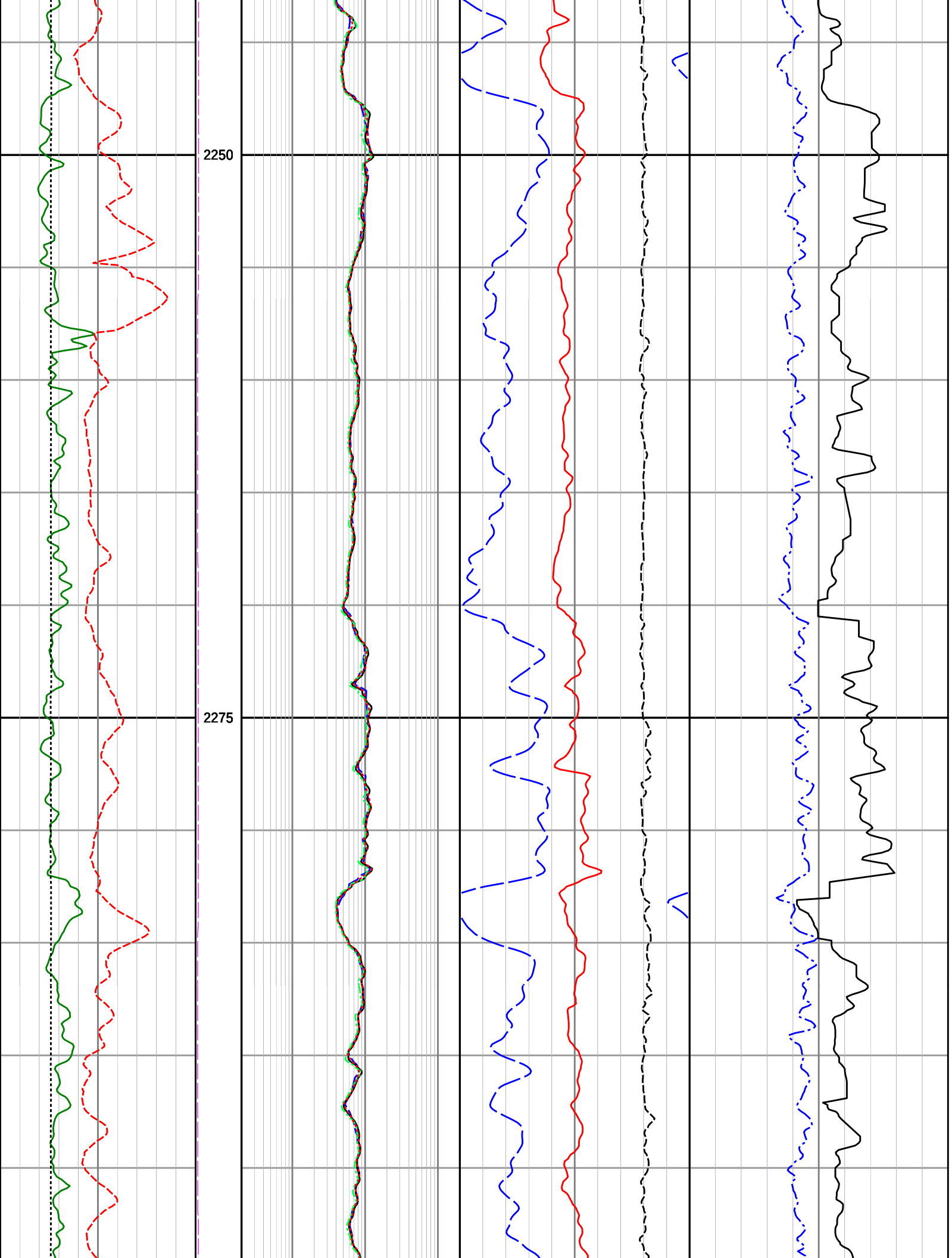
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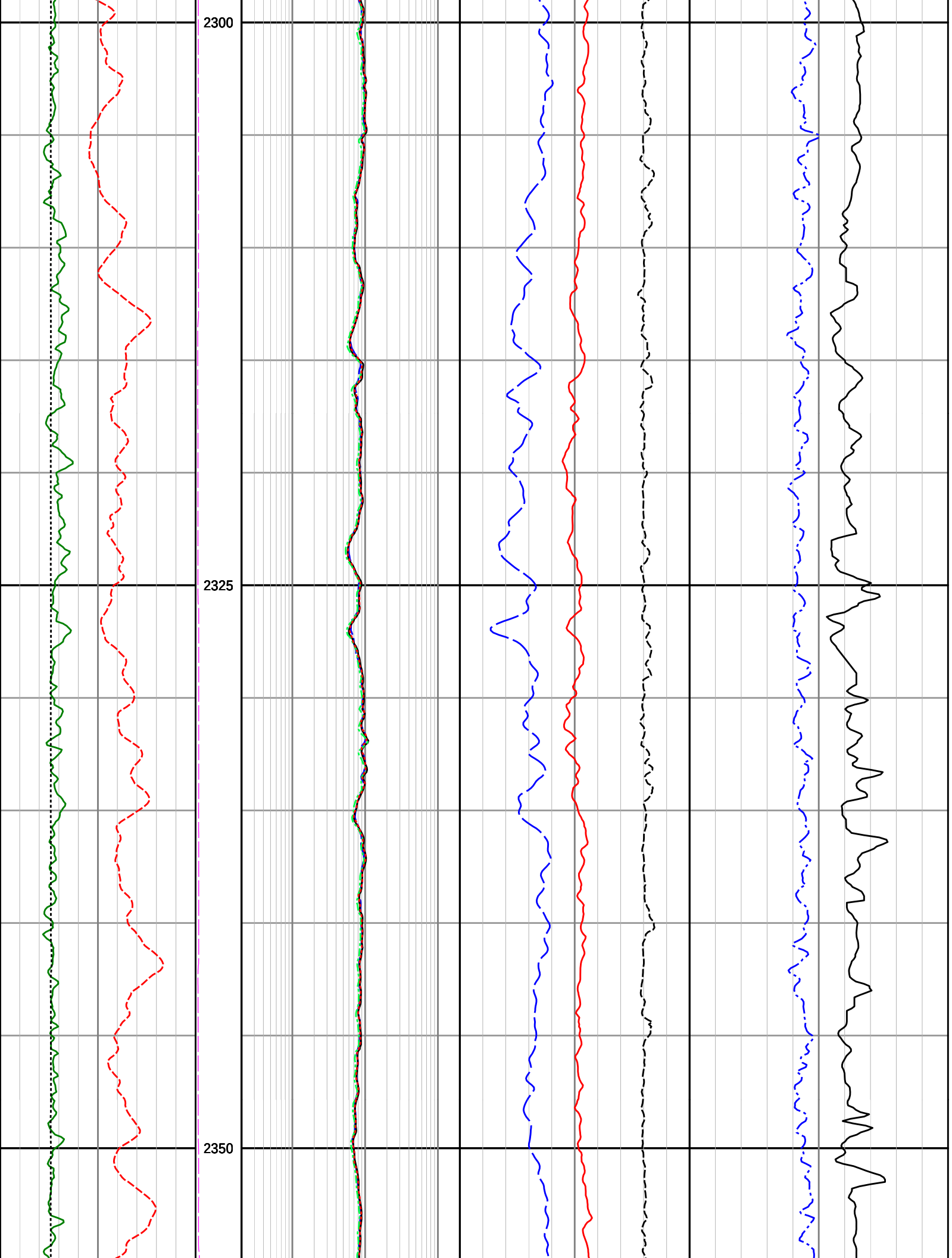
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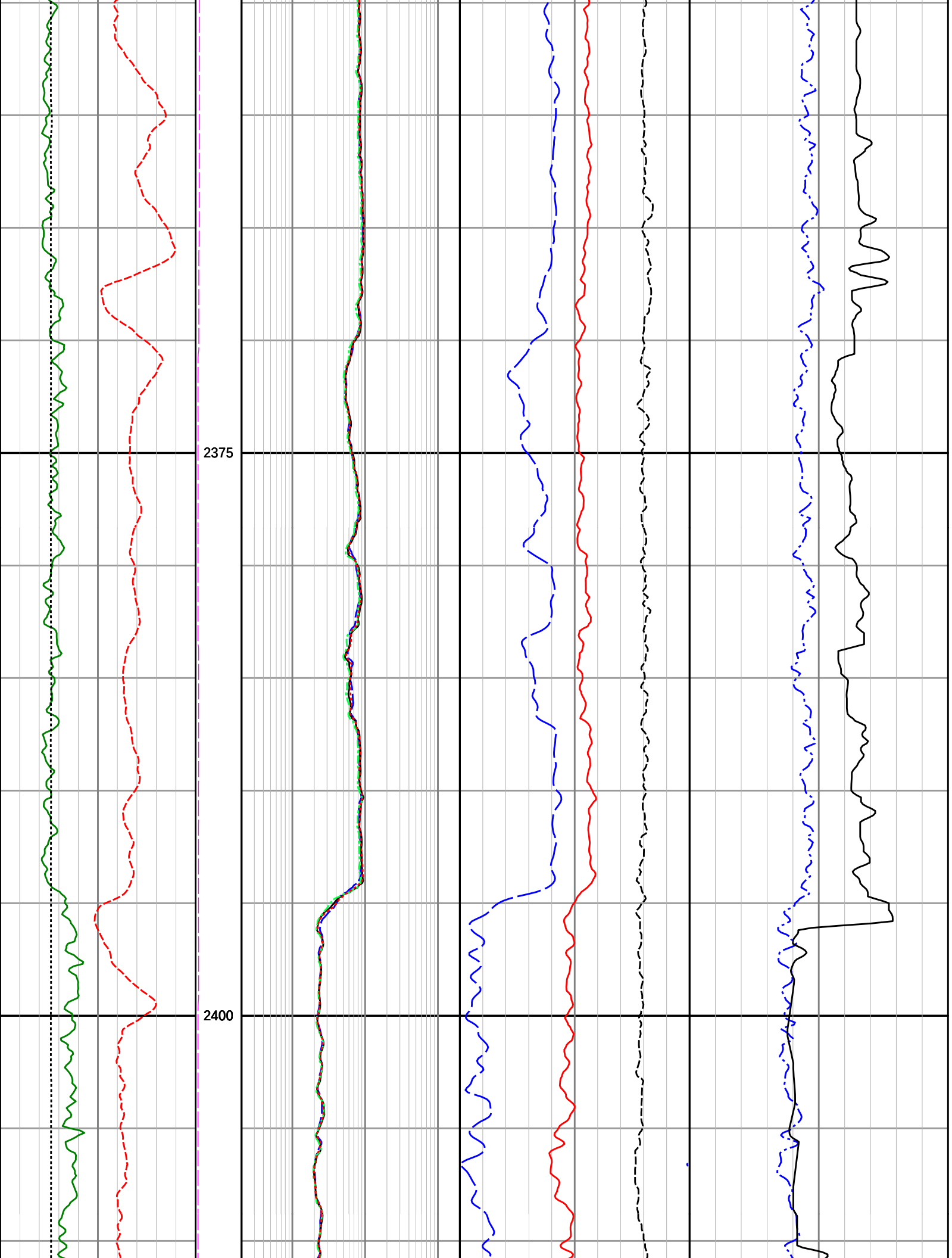
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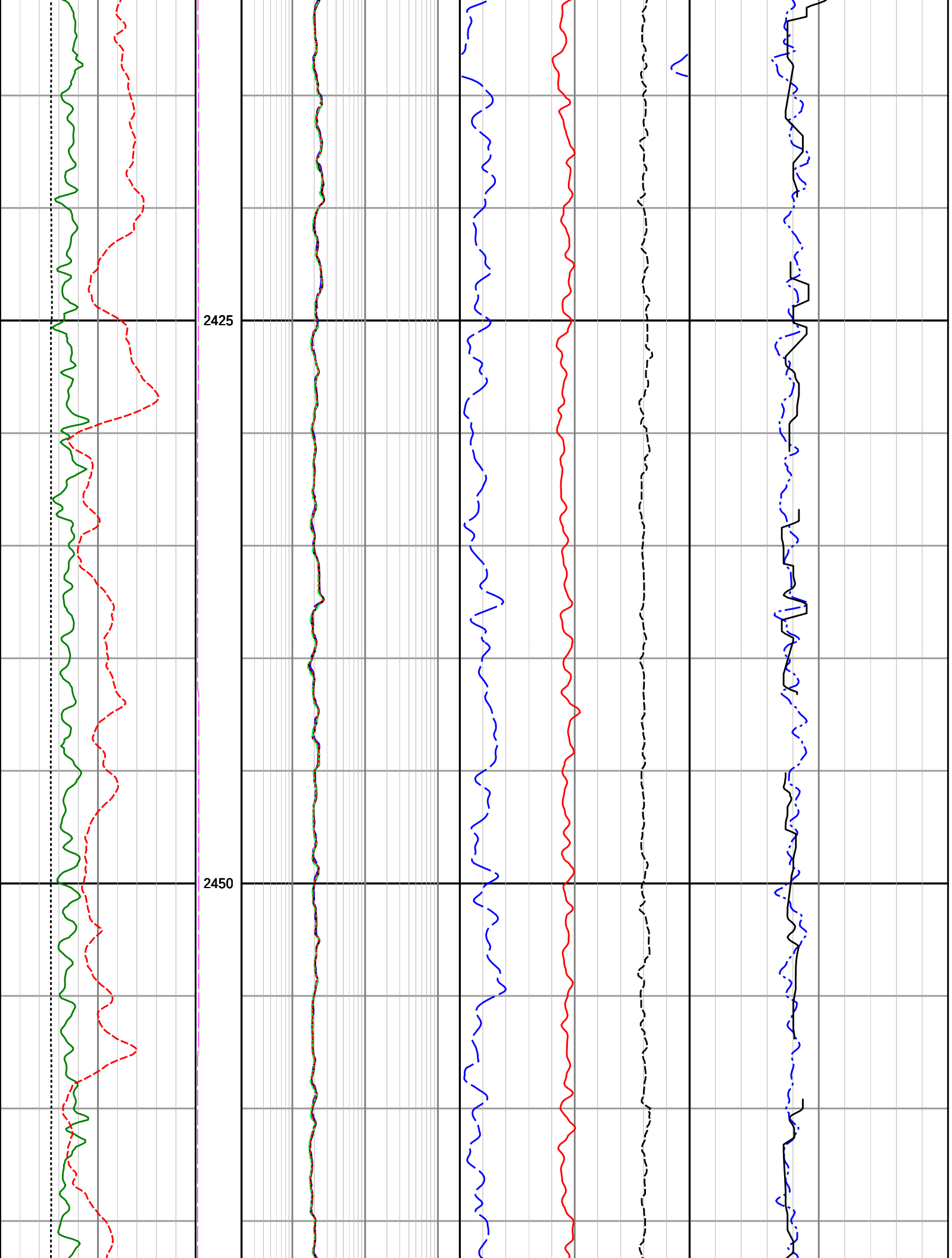
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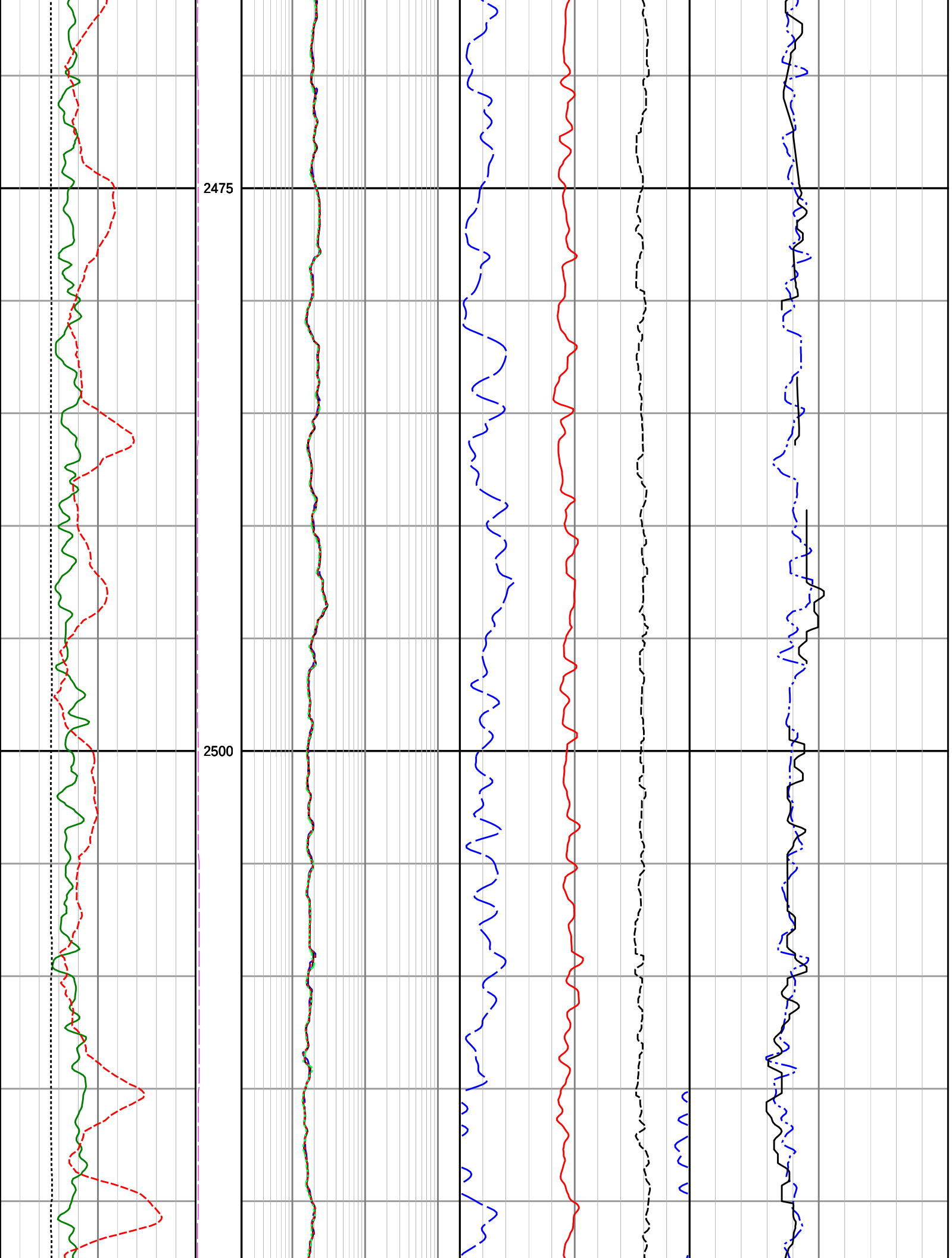
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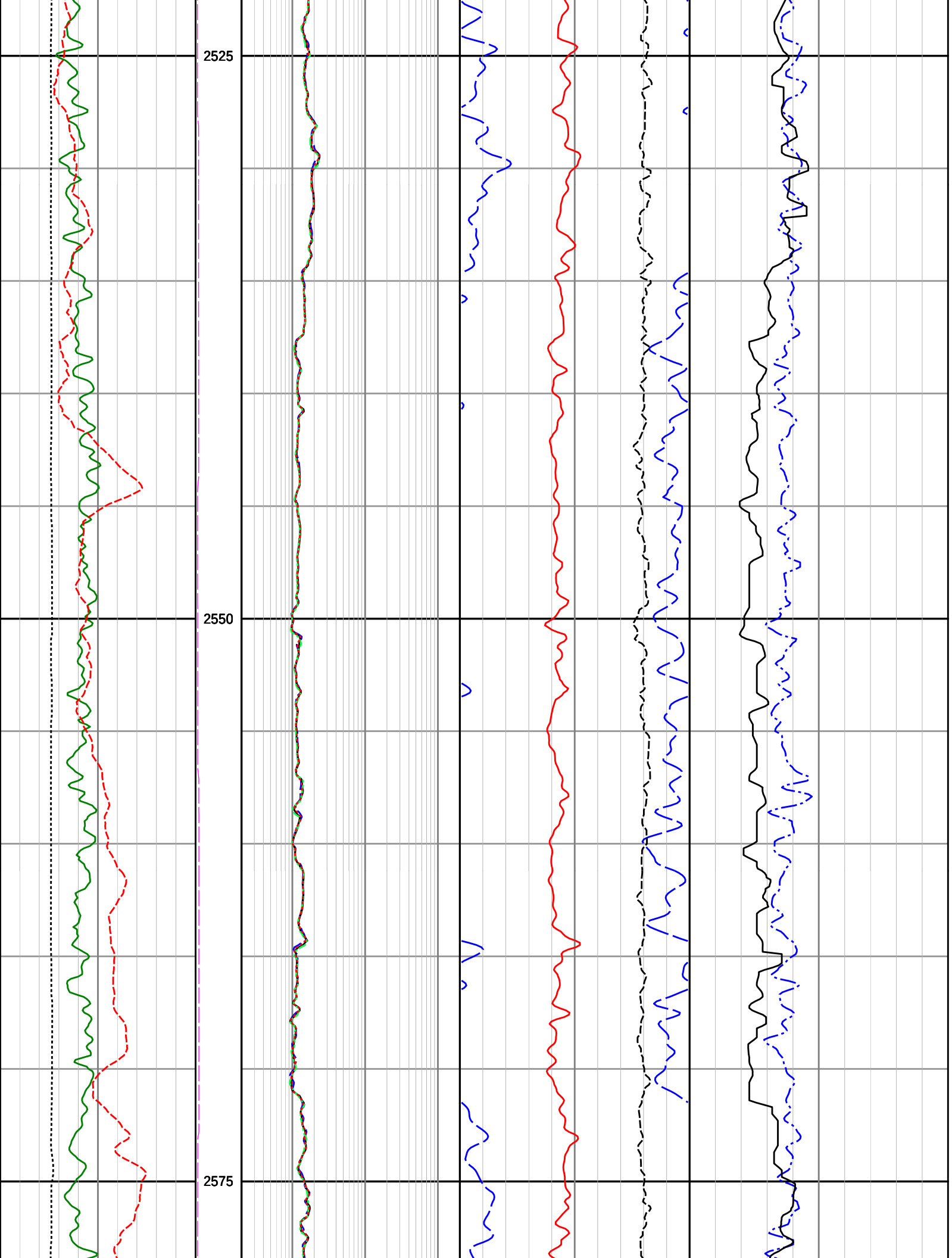
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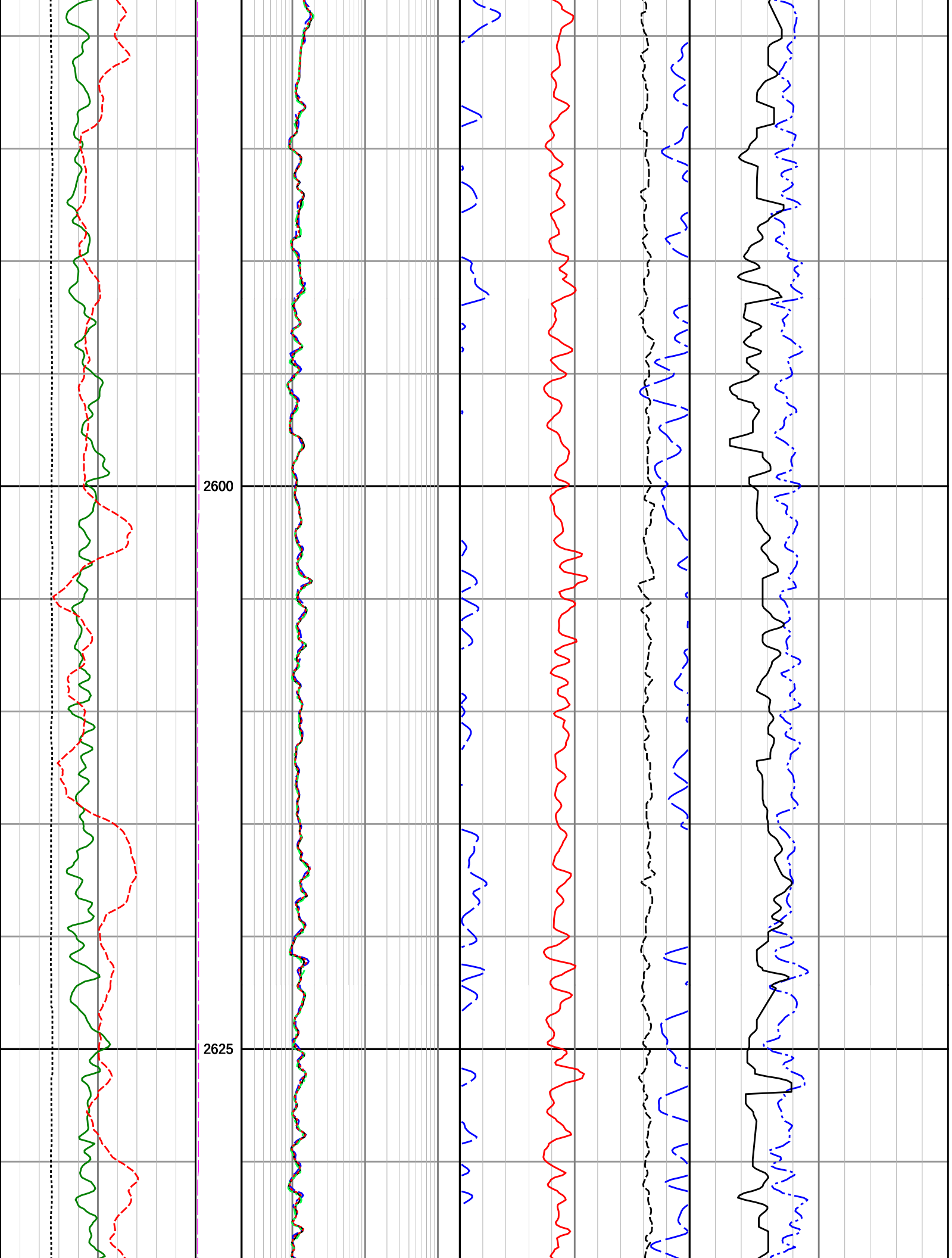
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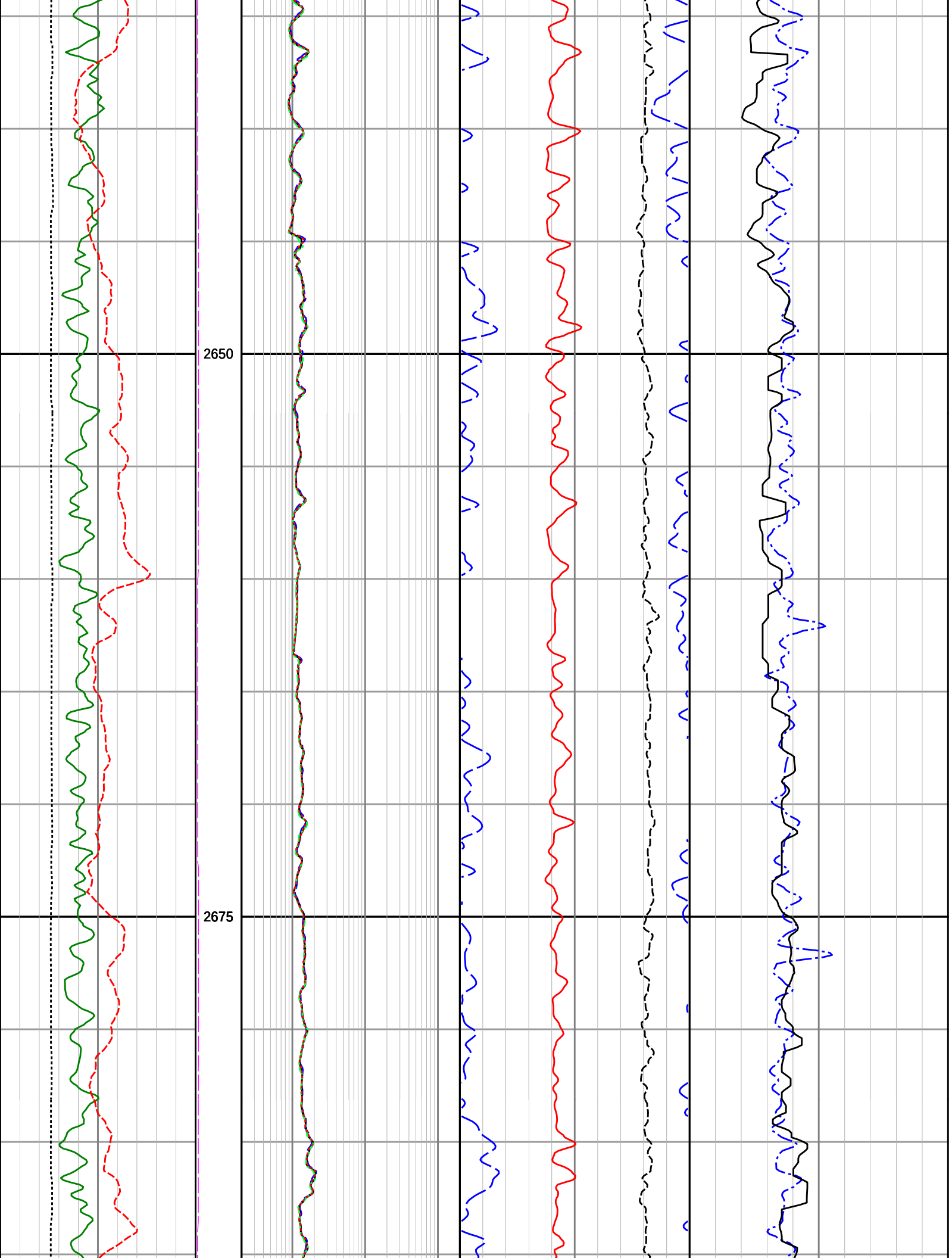
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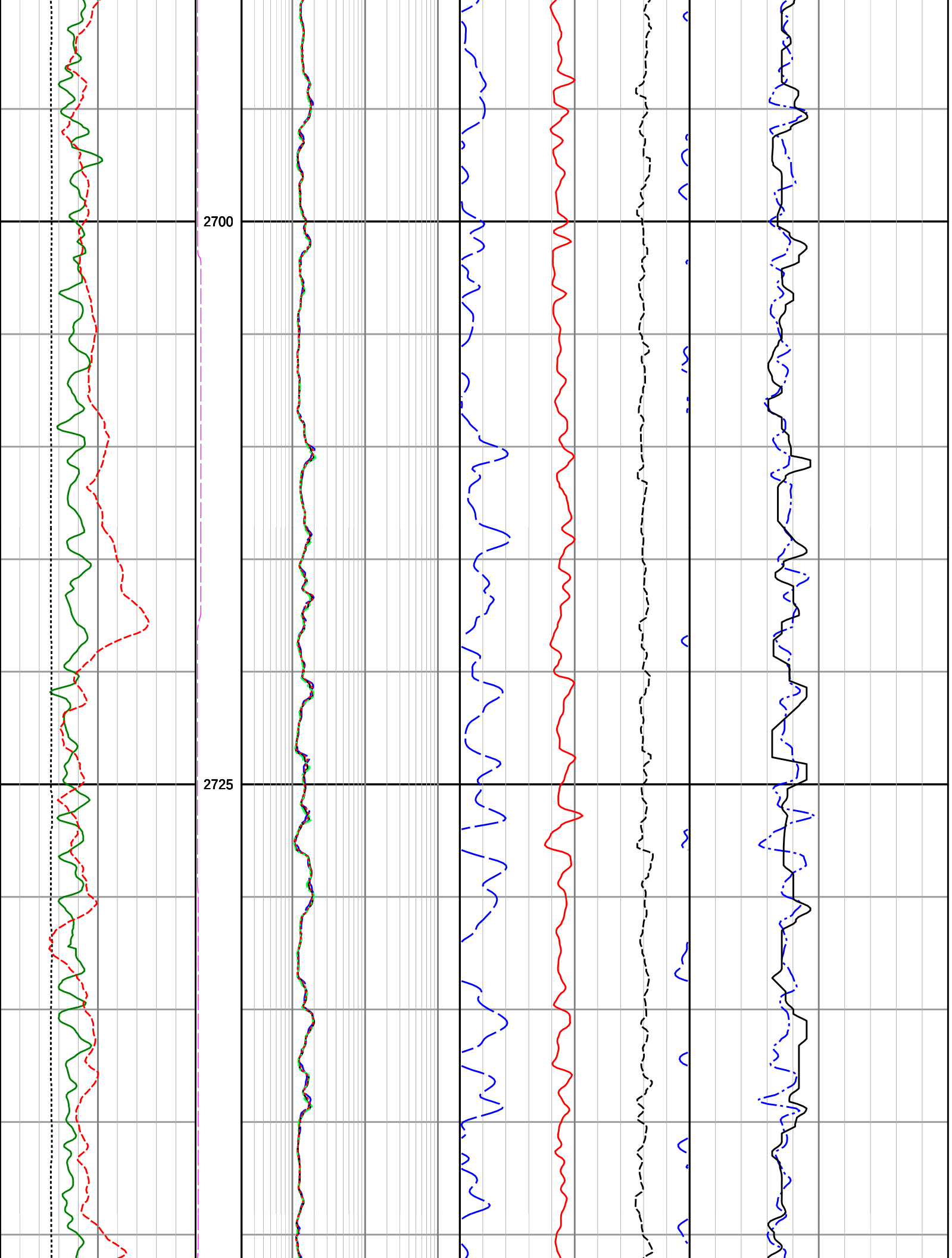
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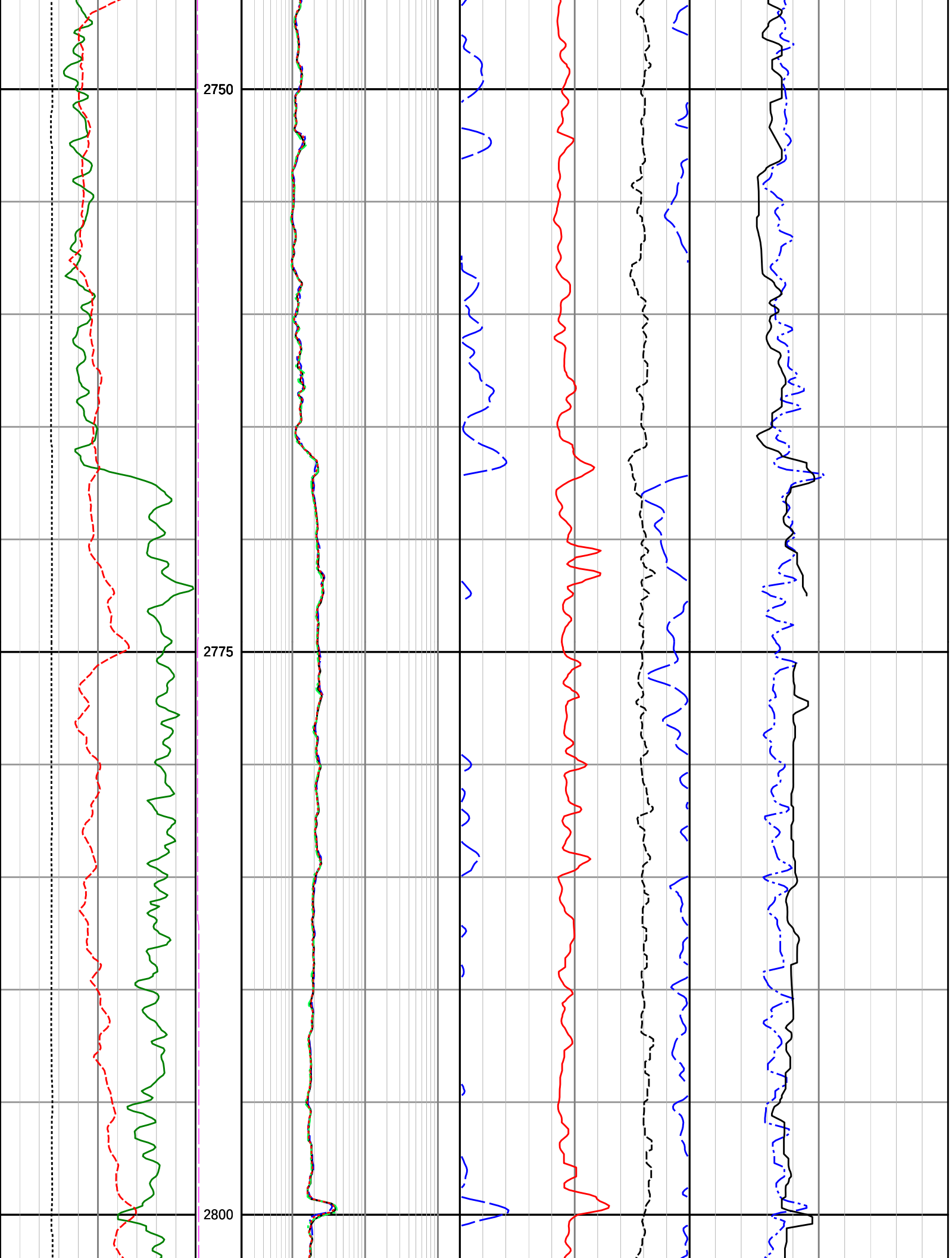
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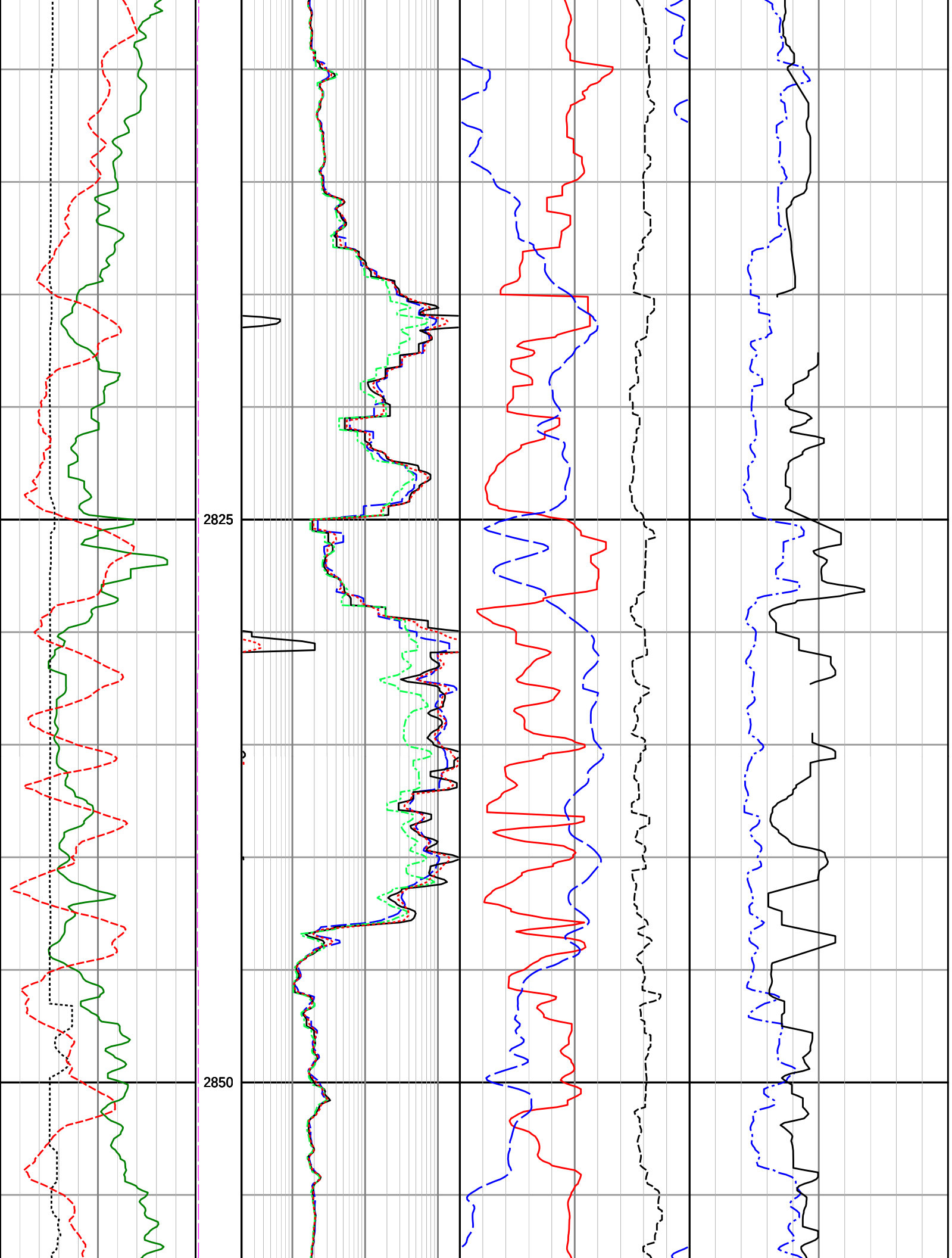
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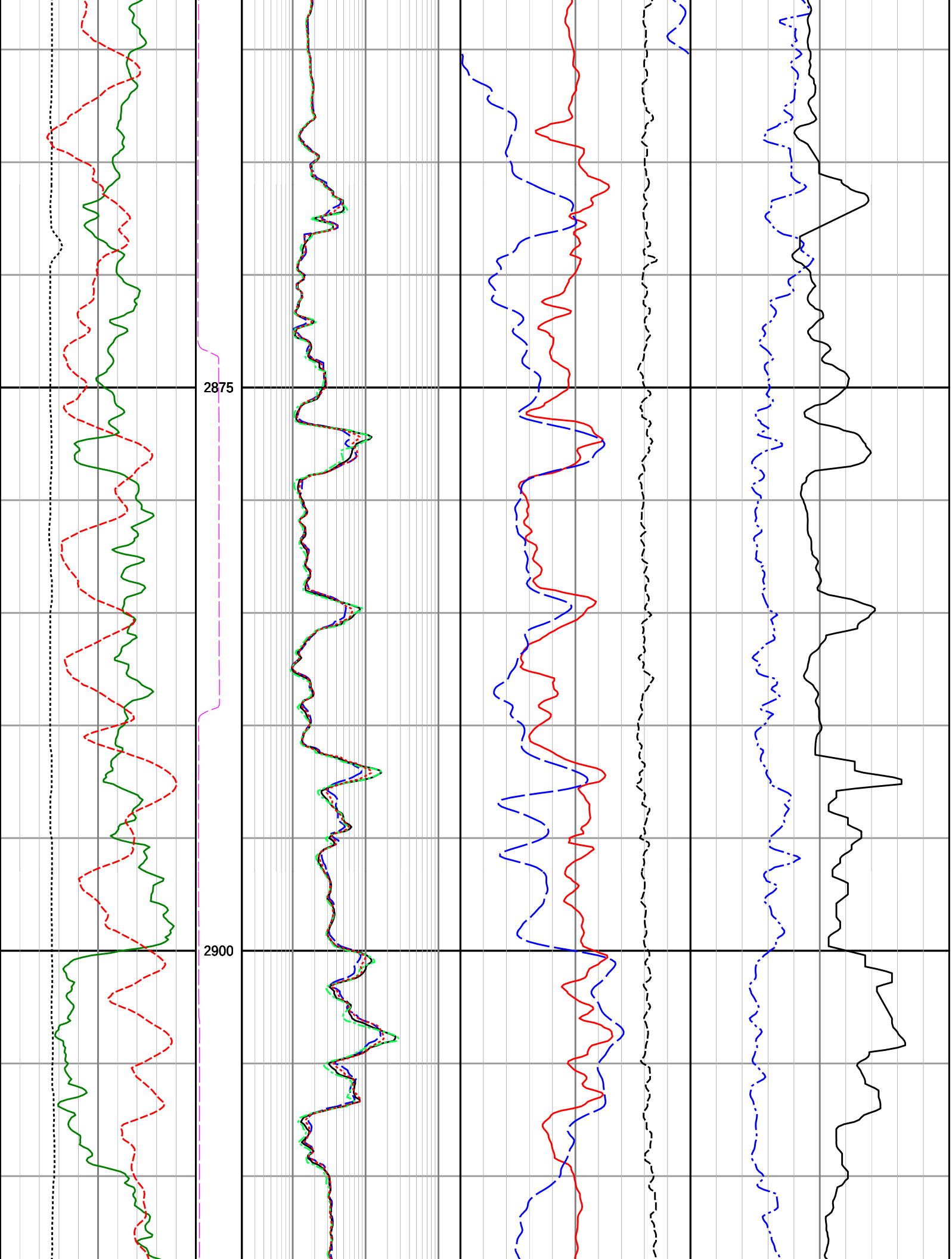
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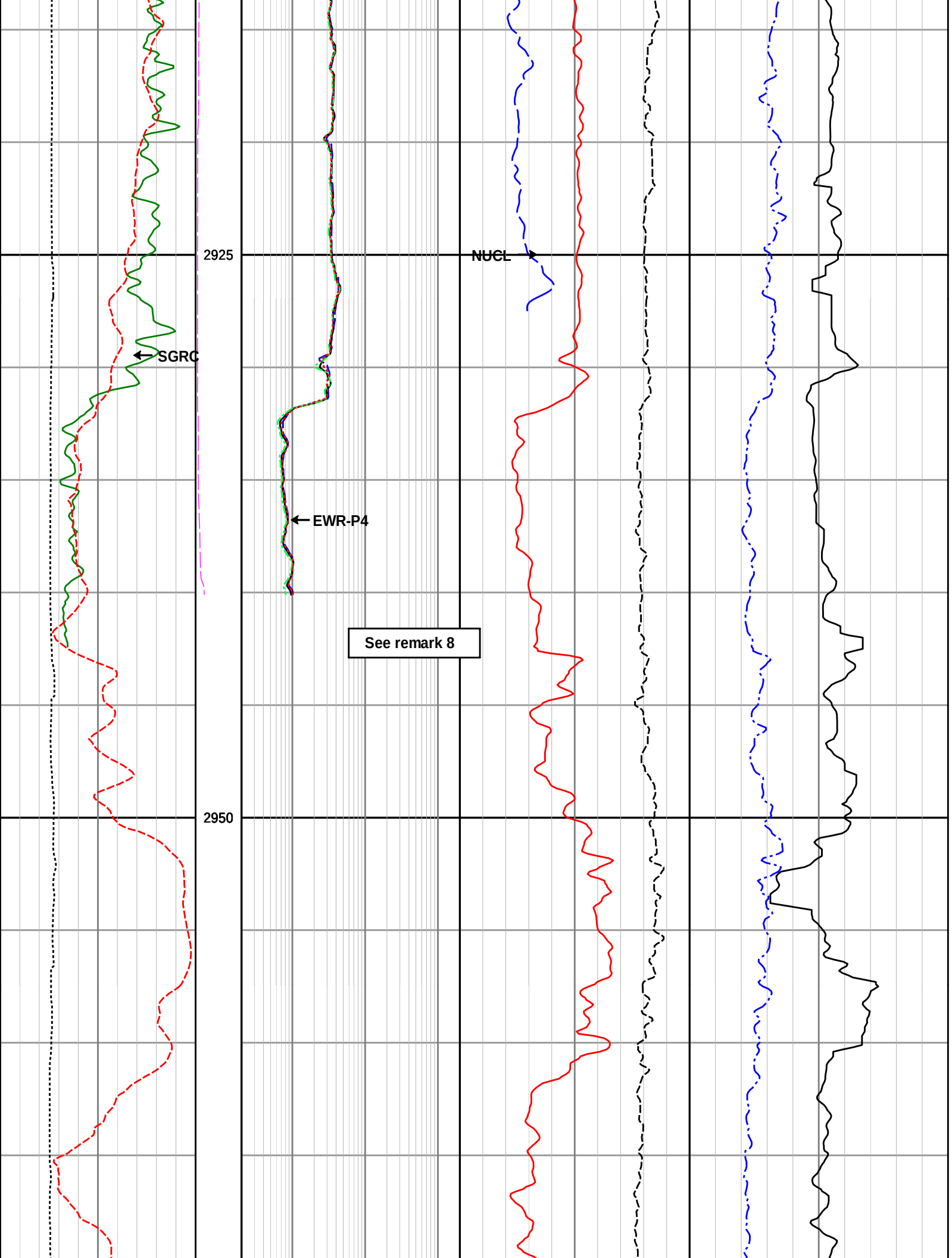
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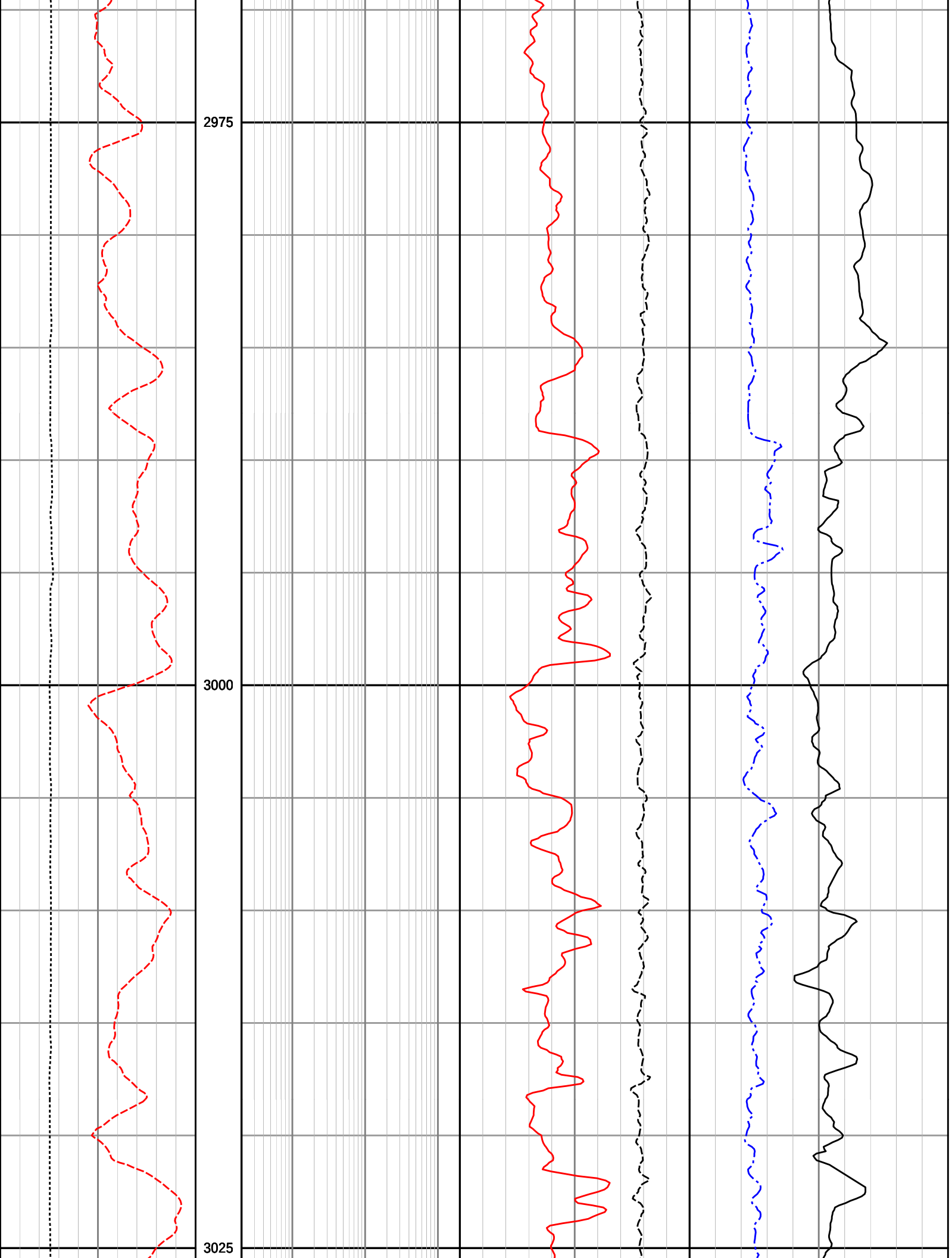
See remark 8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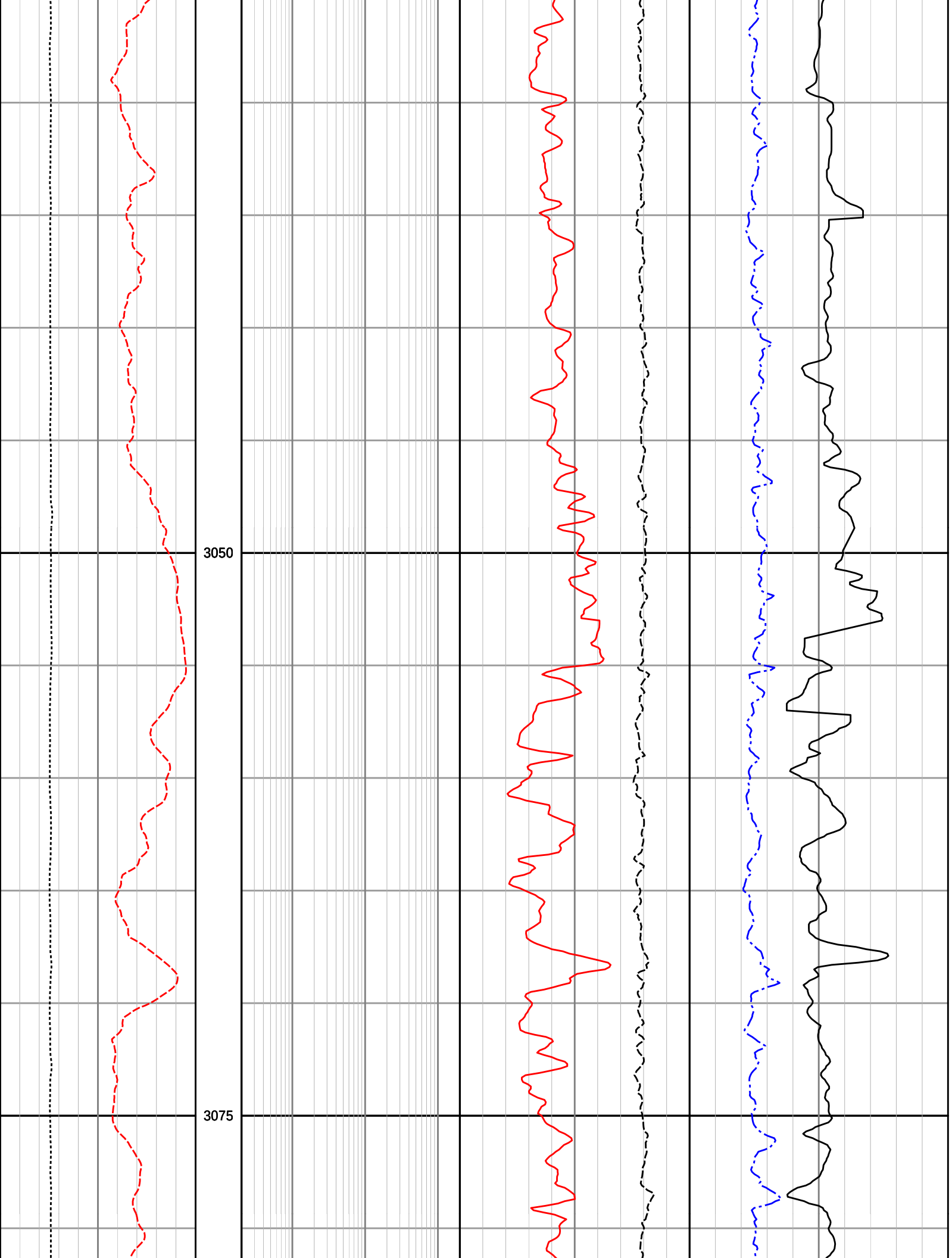
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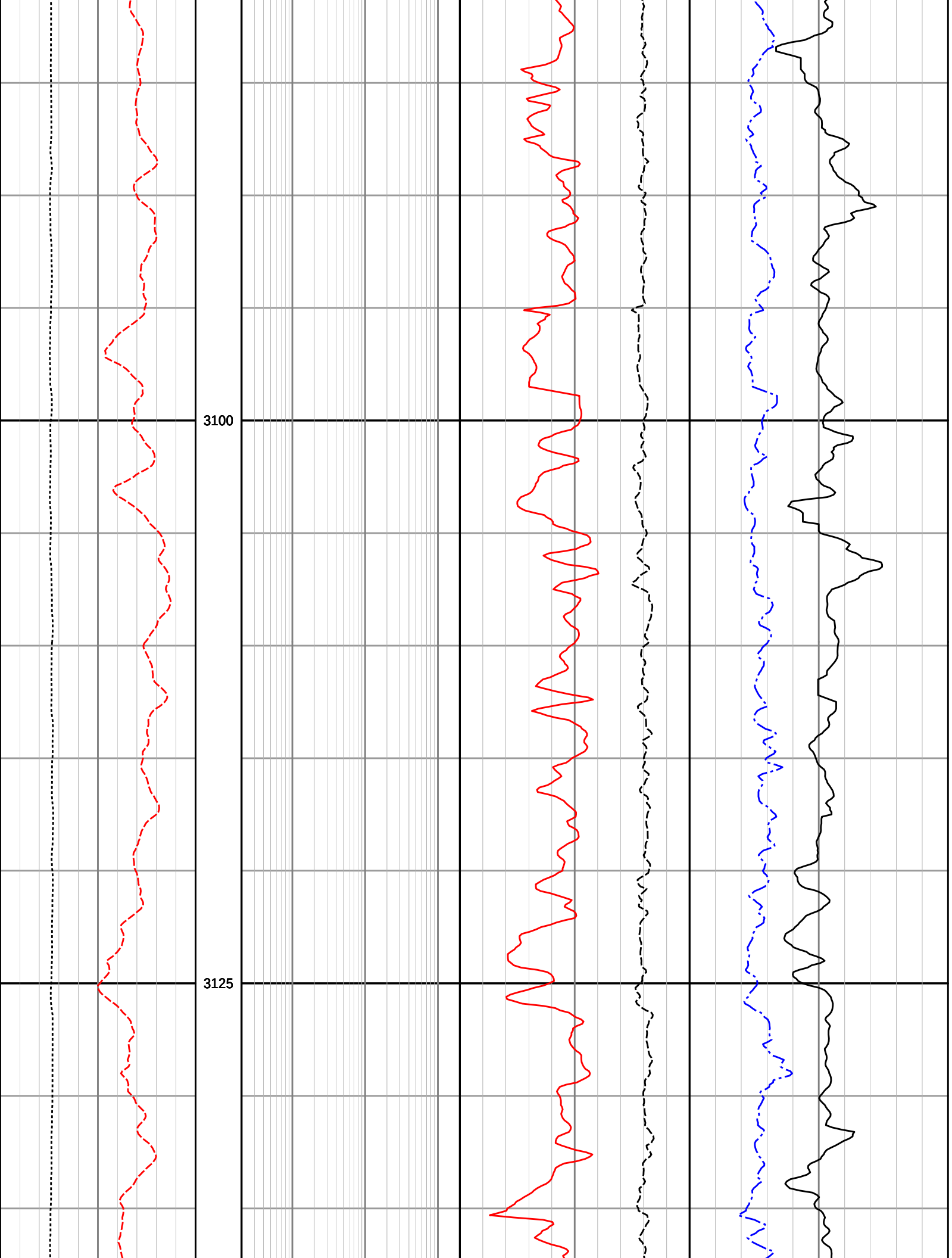
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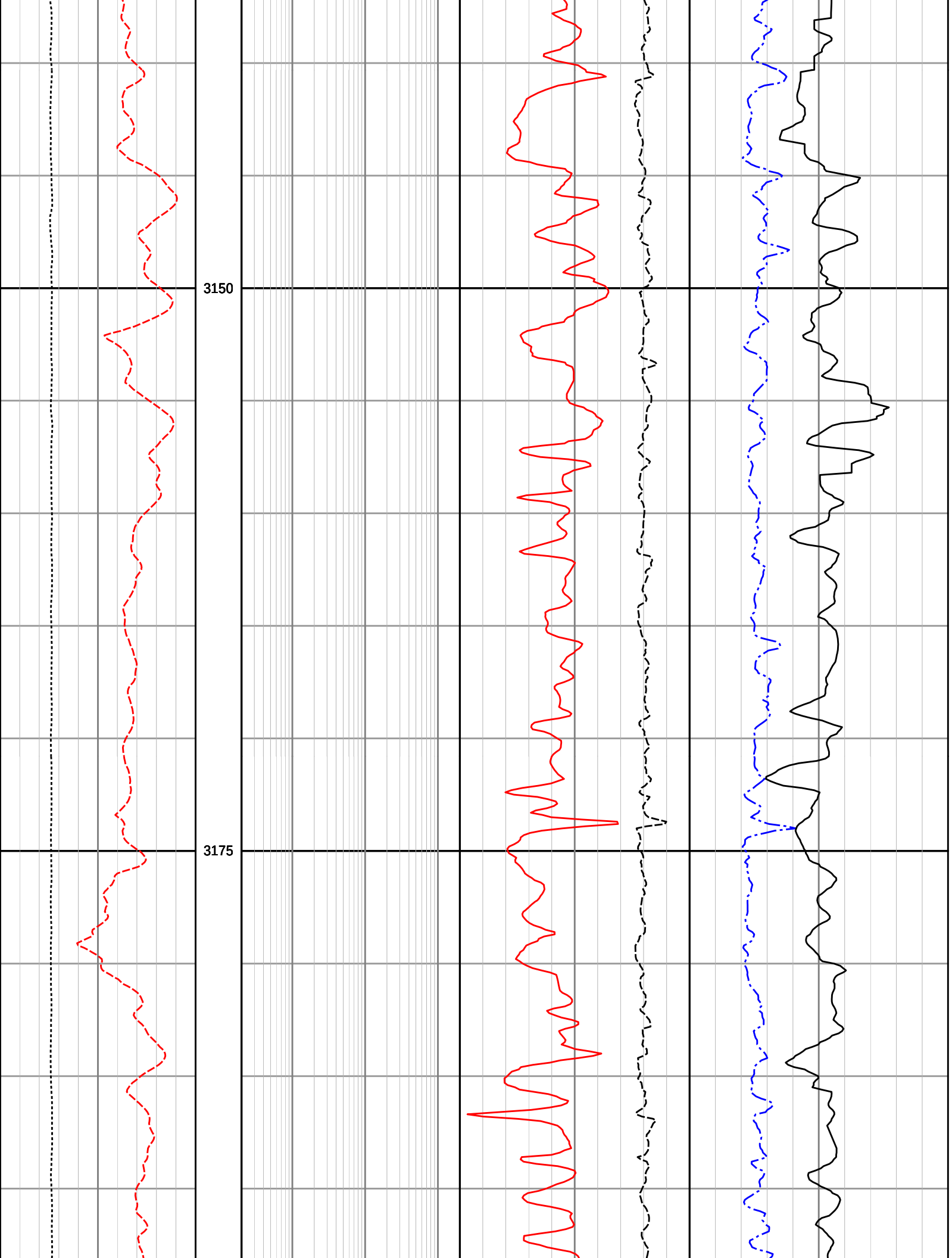
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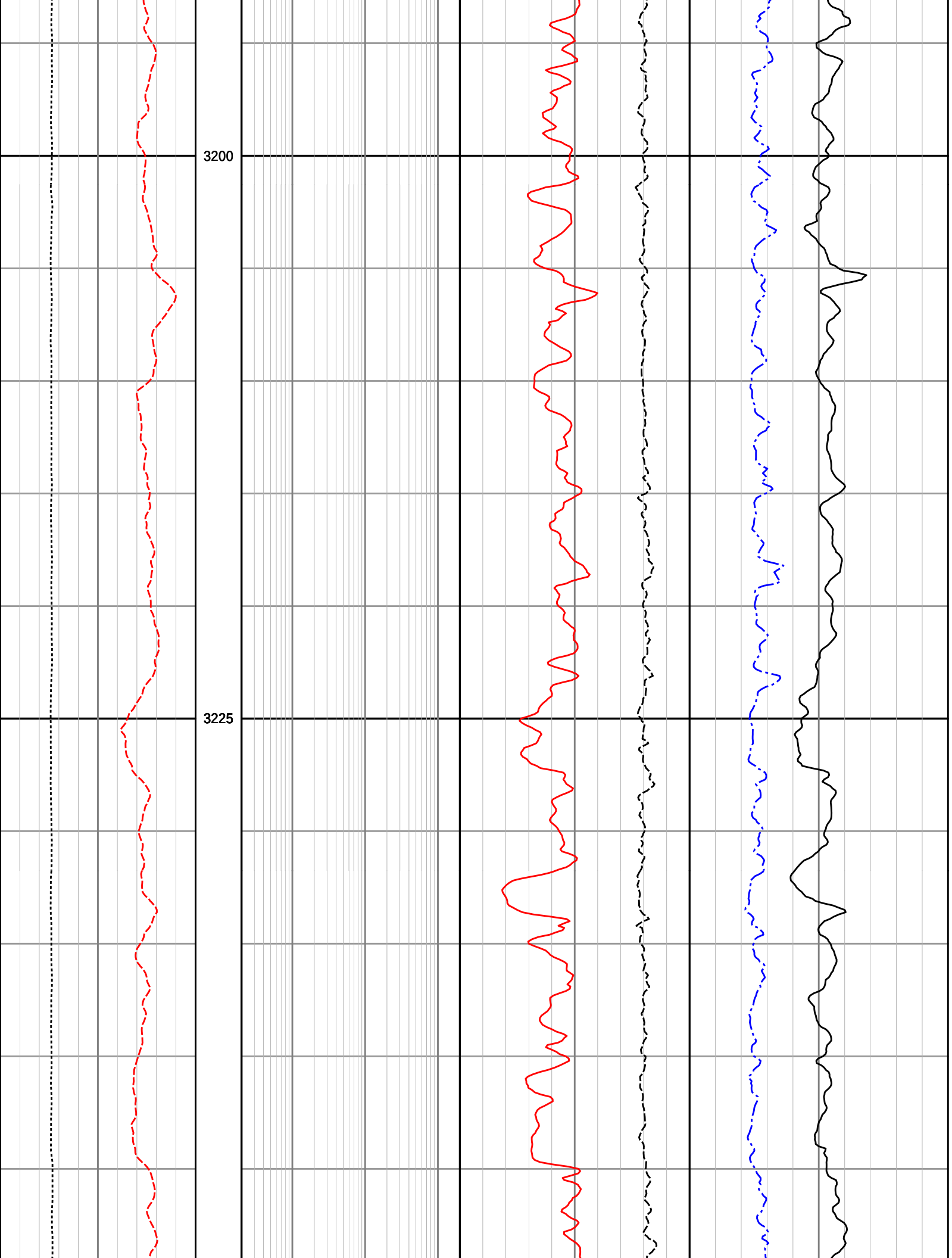
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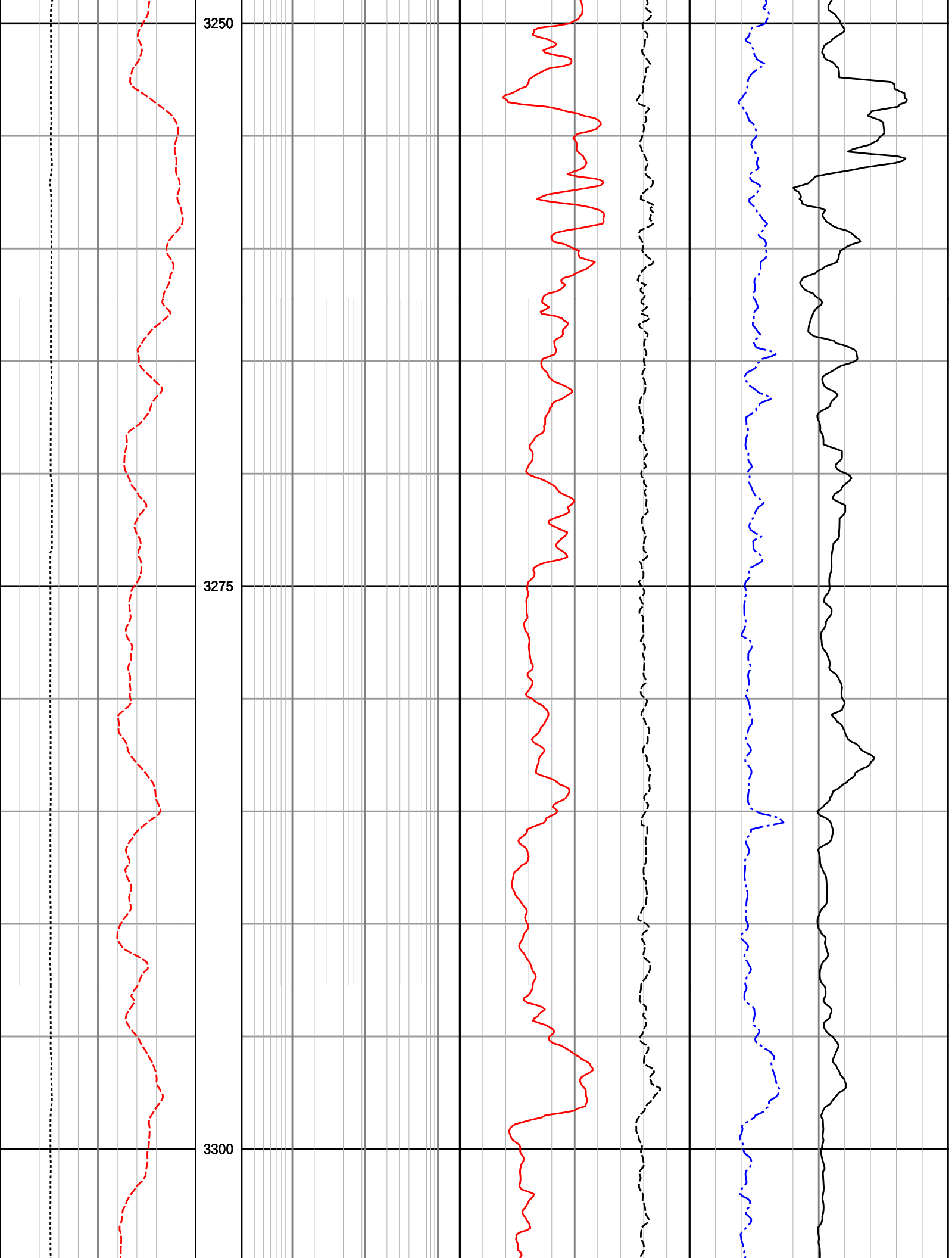
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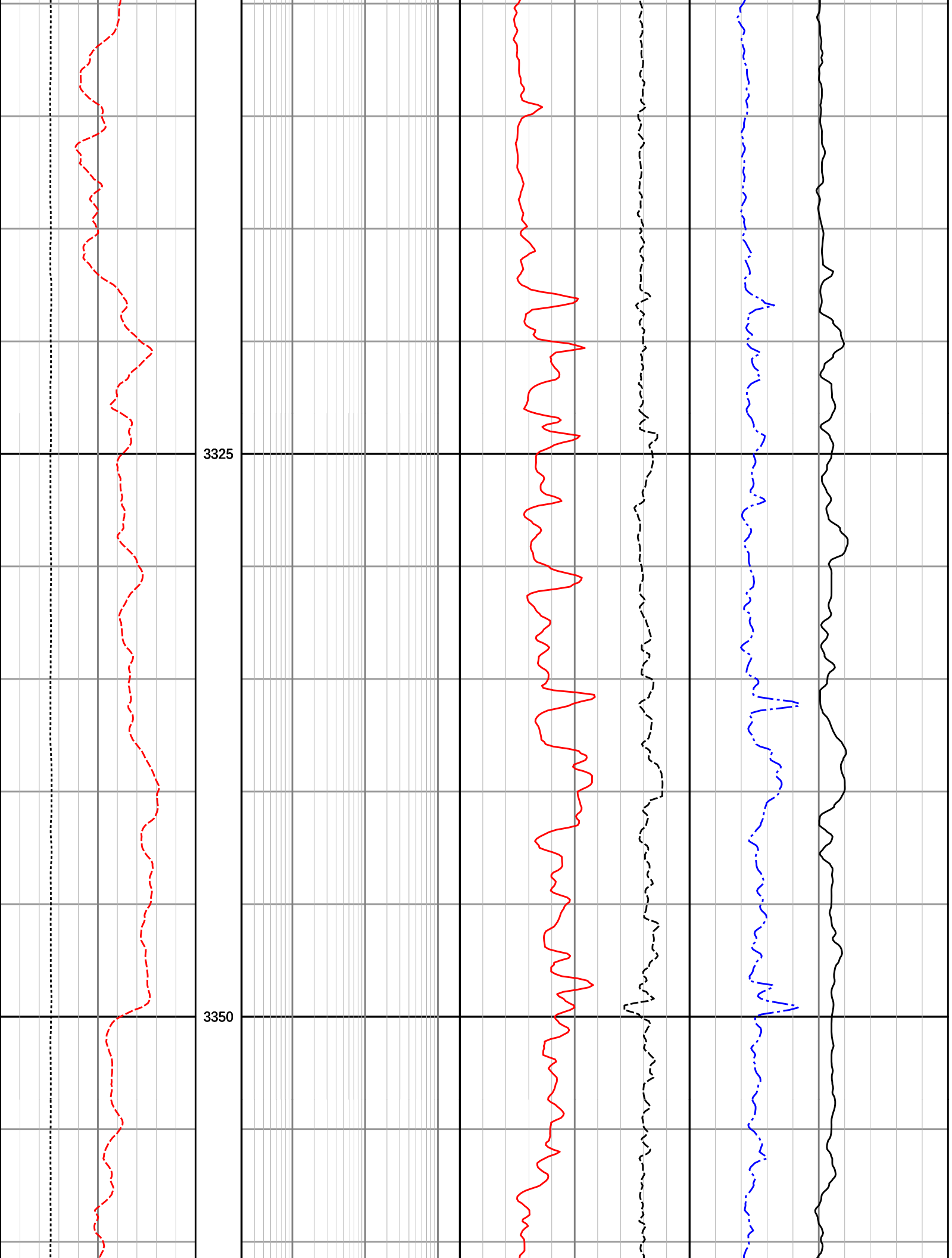
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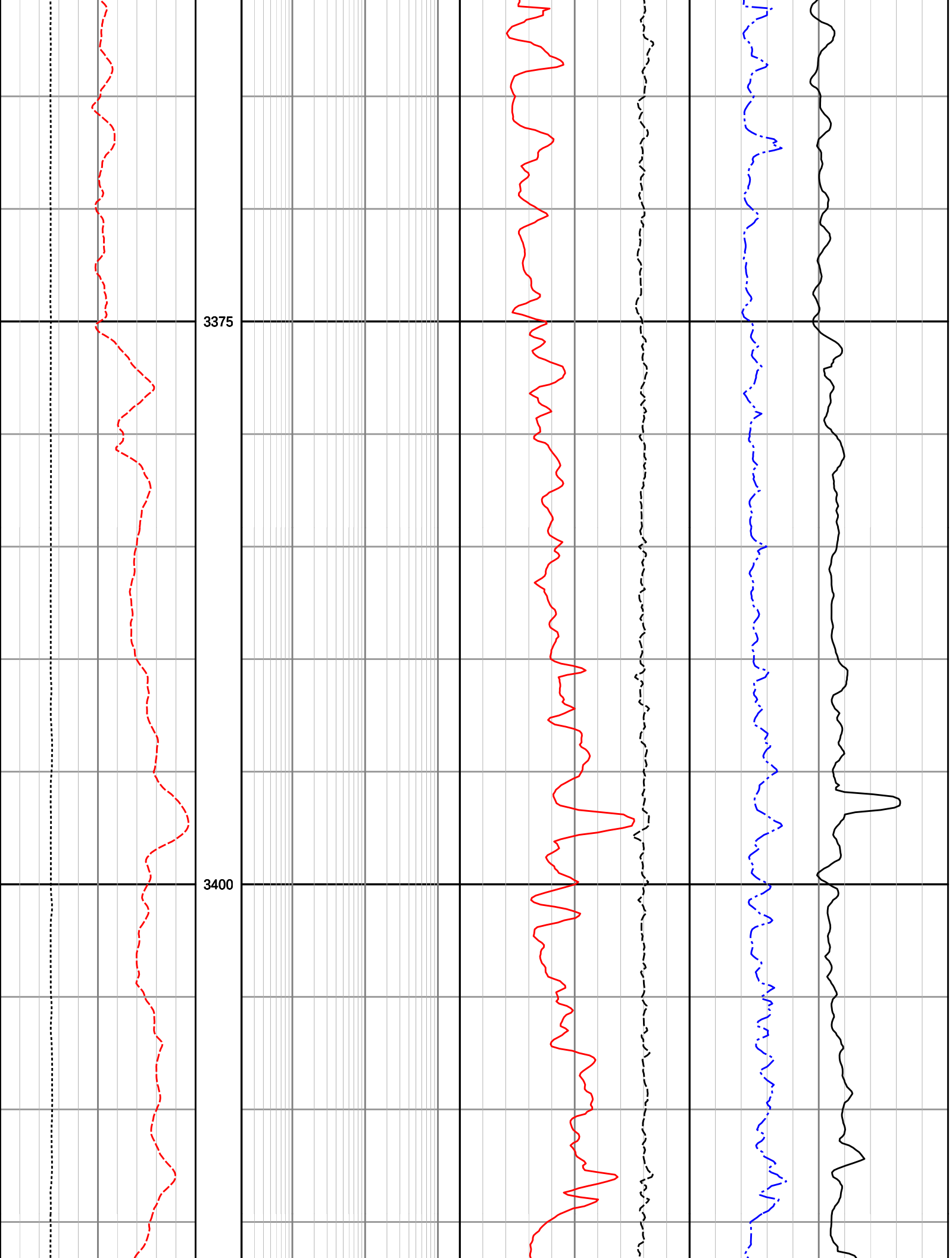
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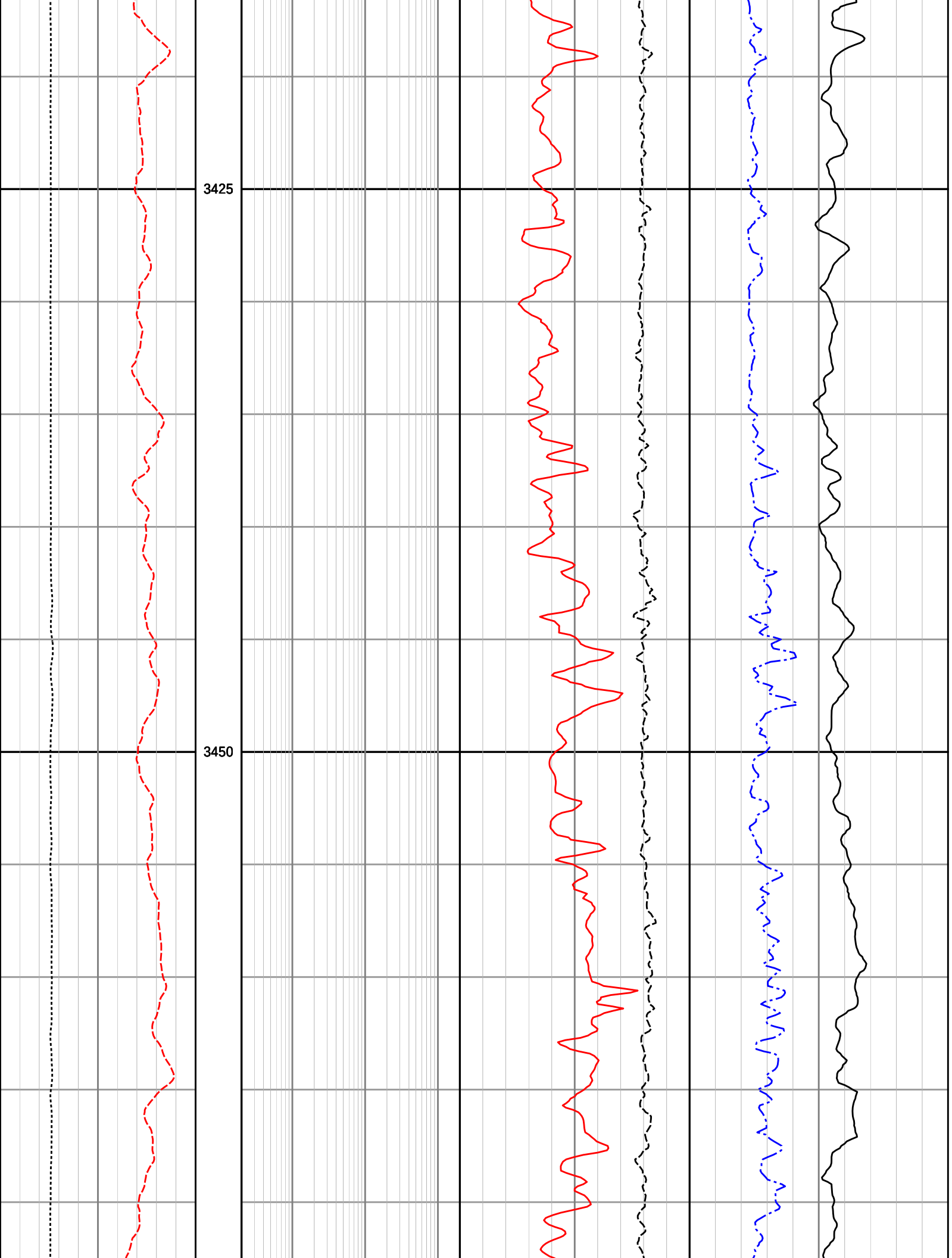
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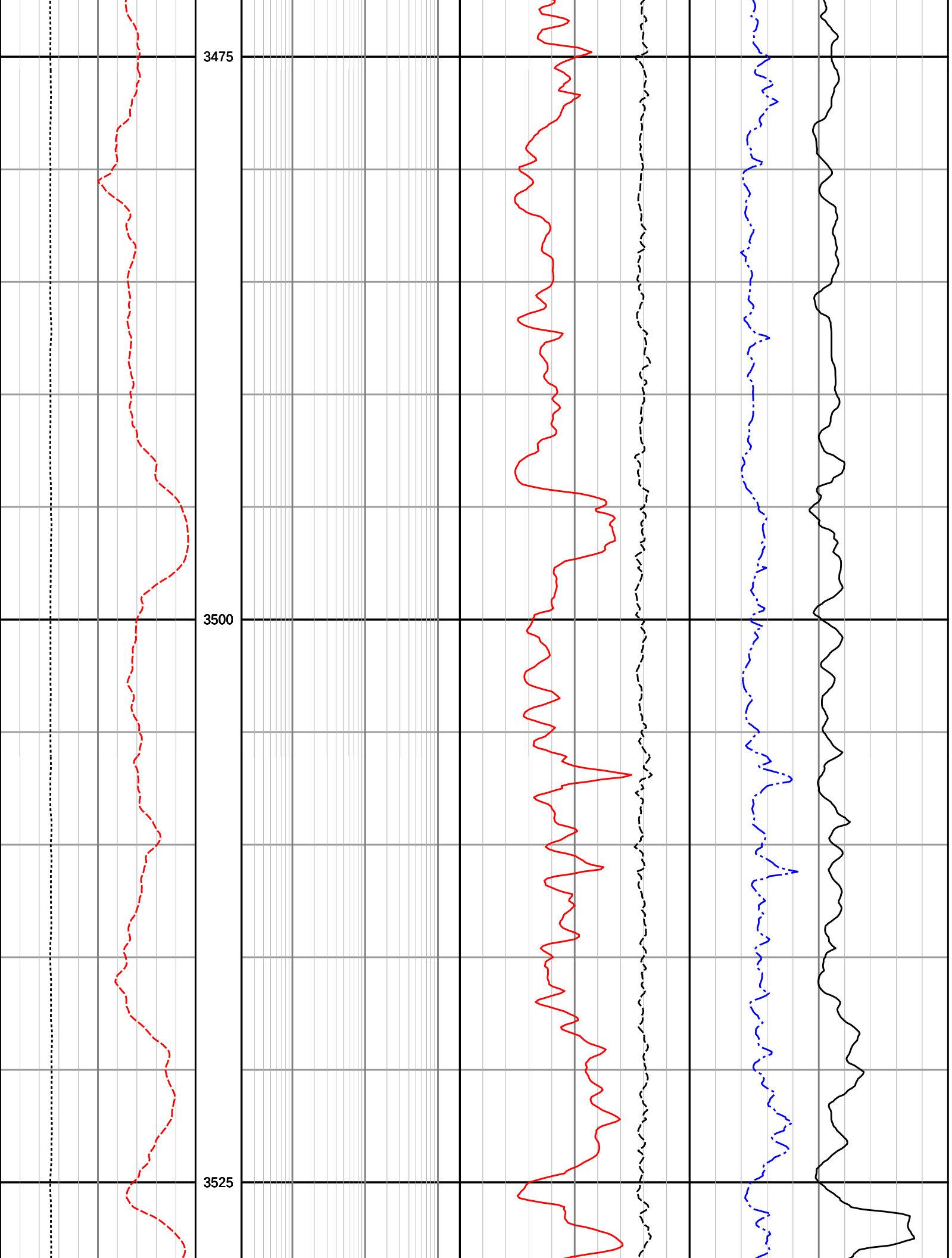
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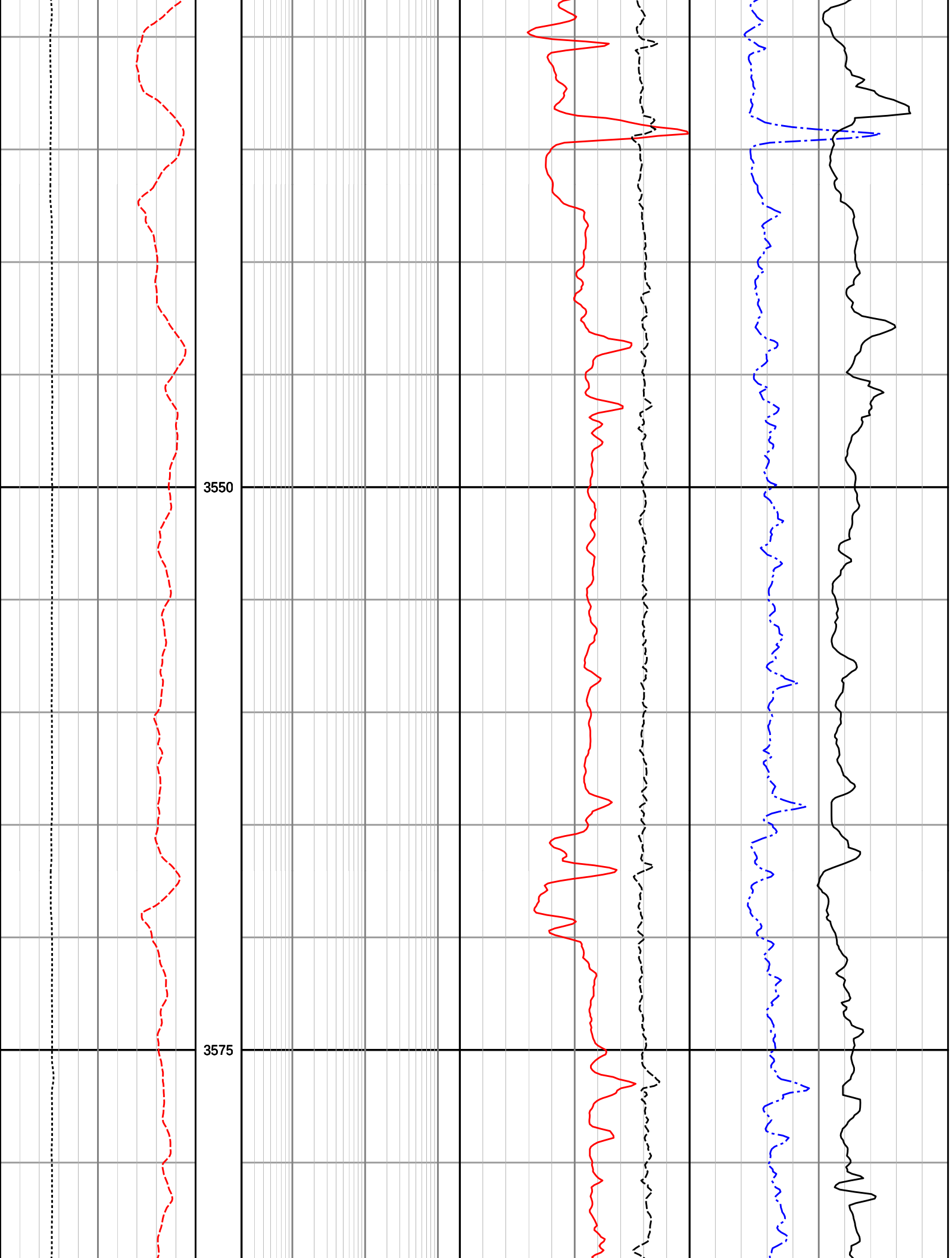
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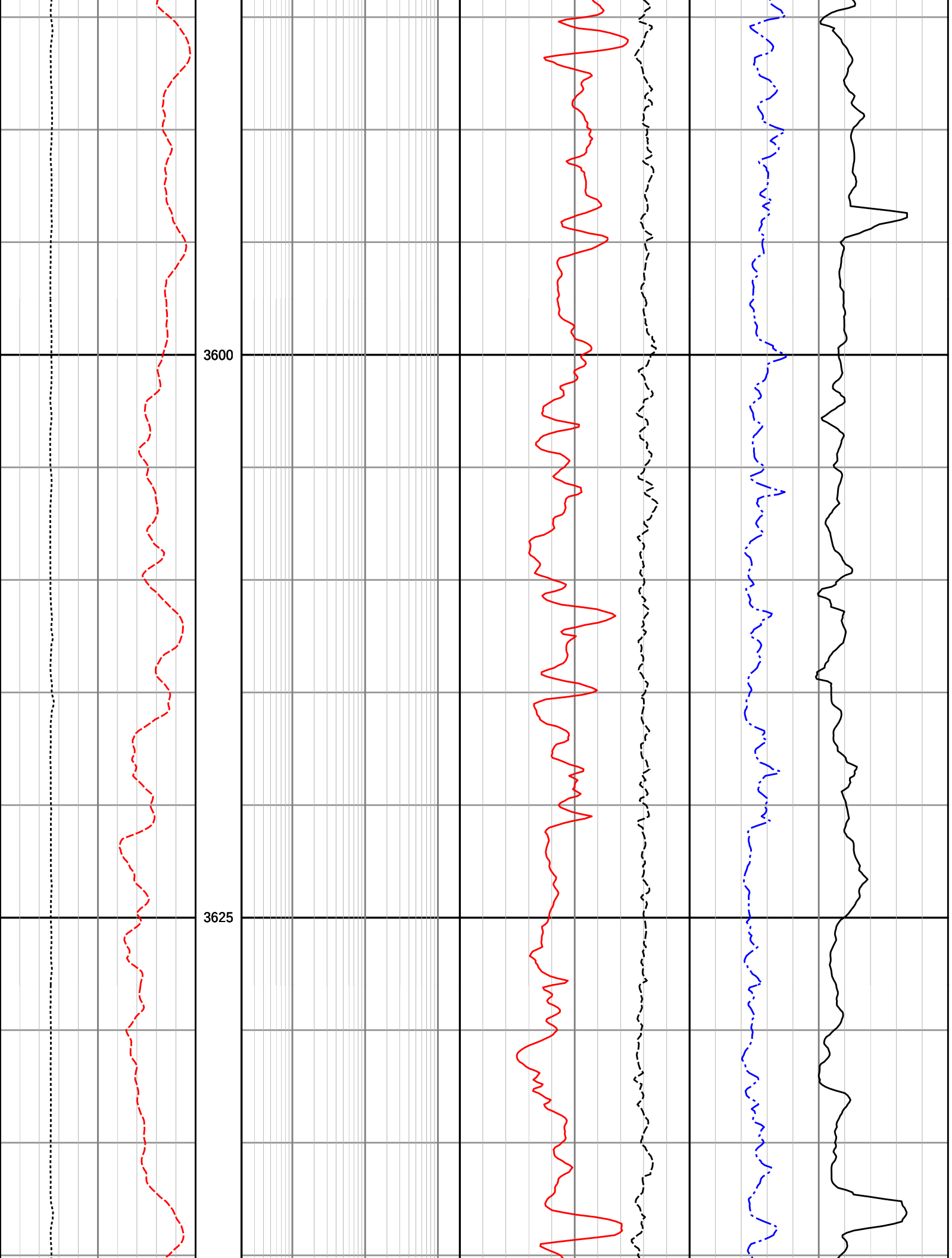
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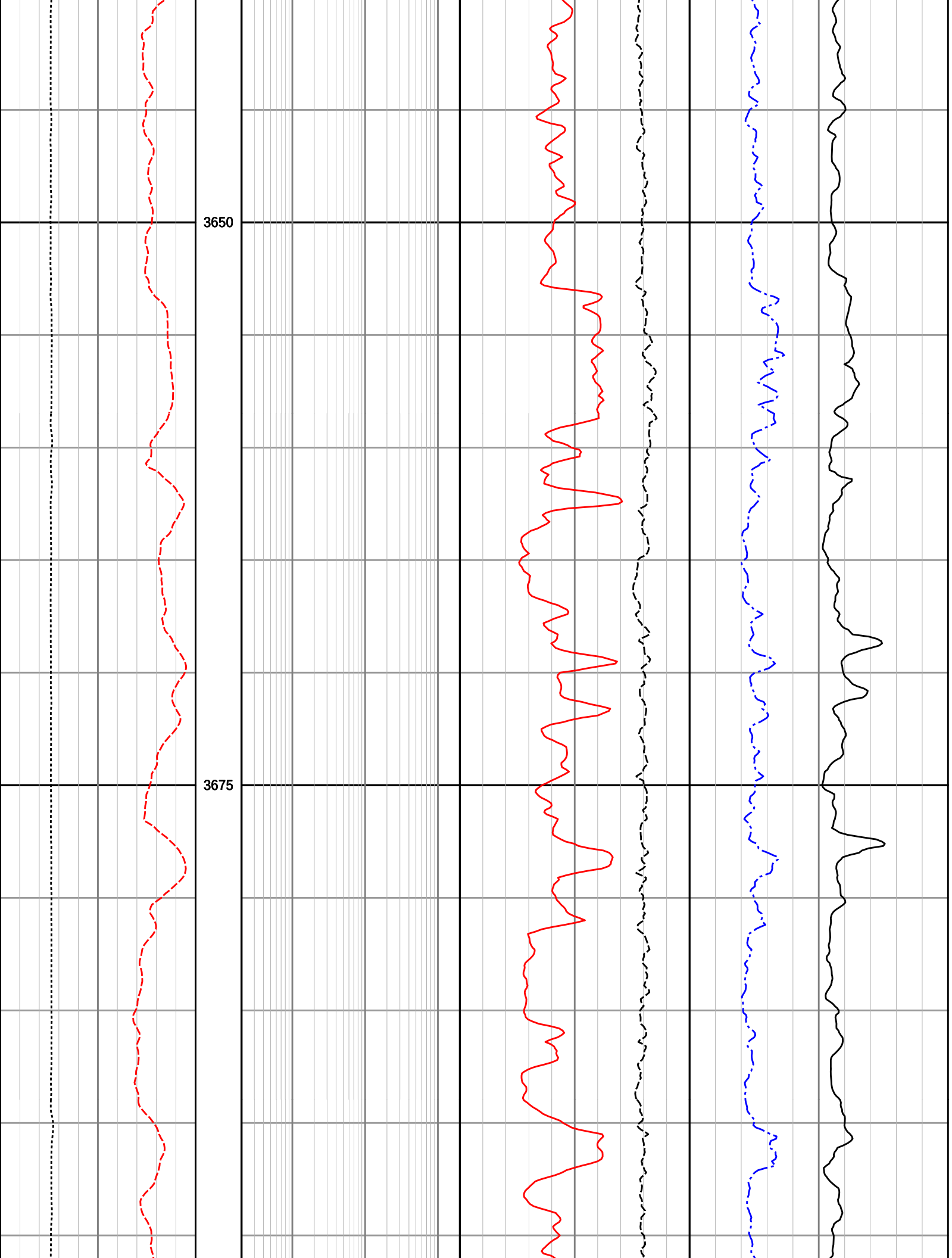
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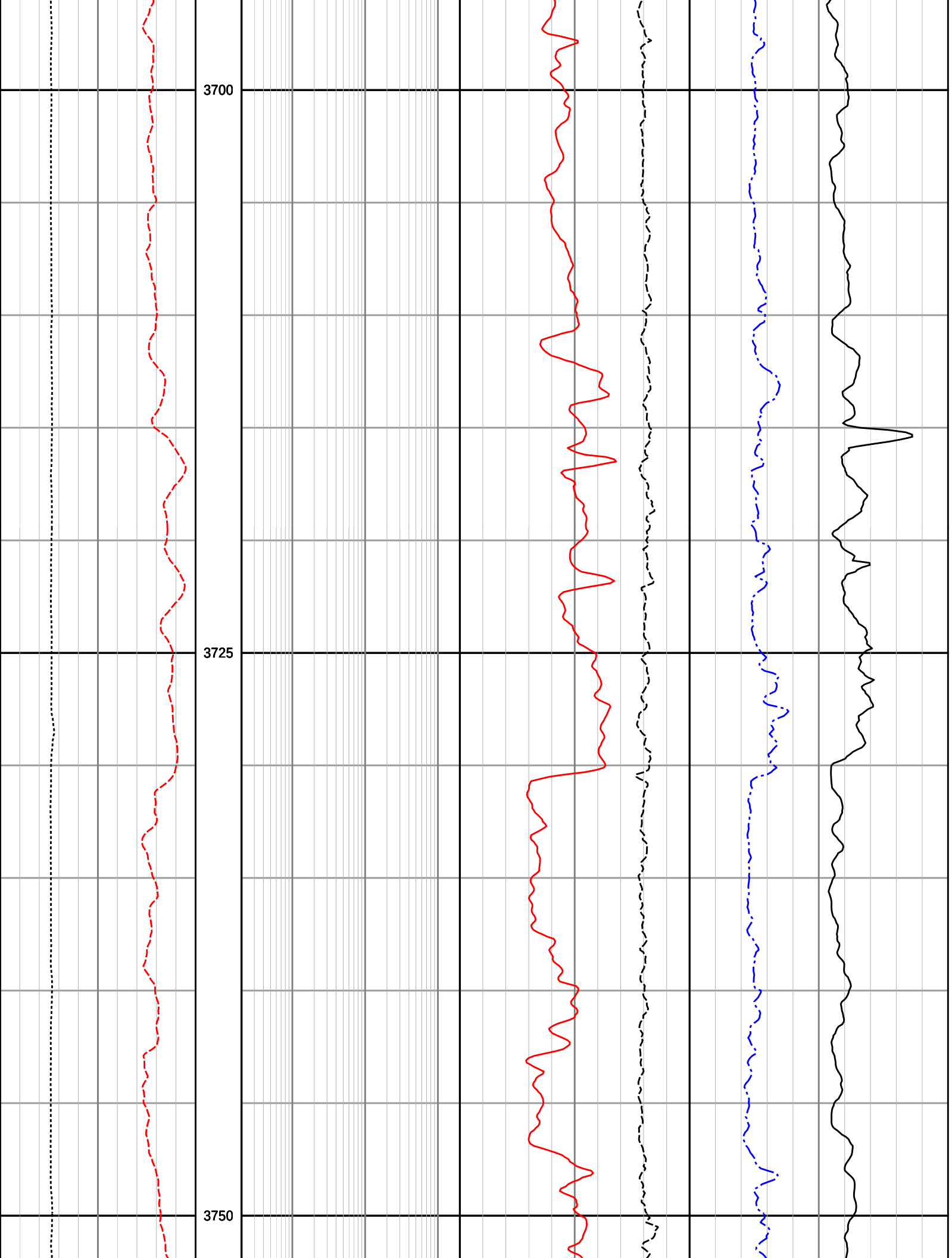
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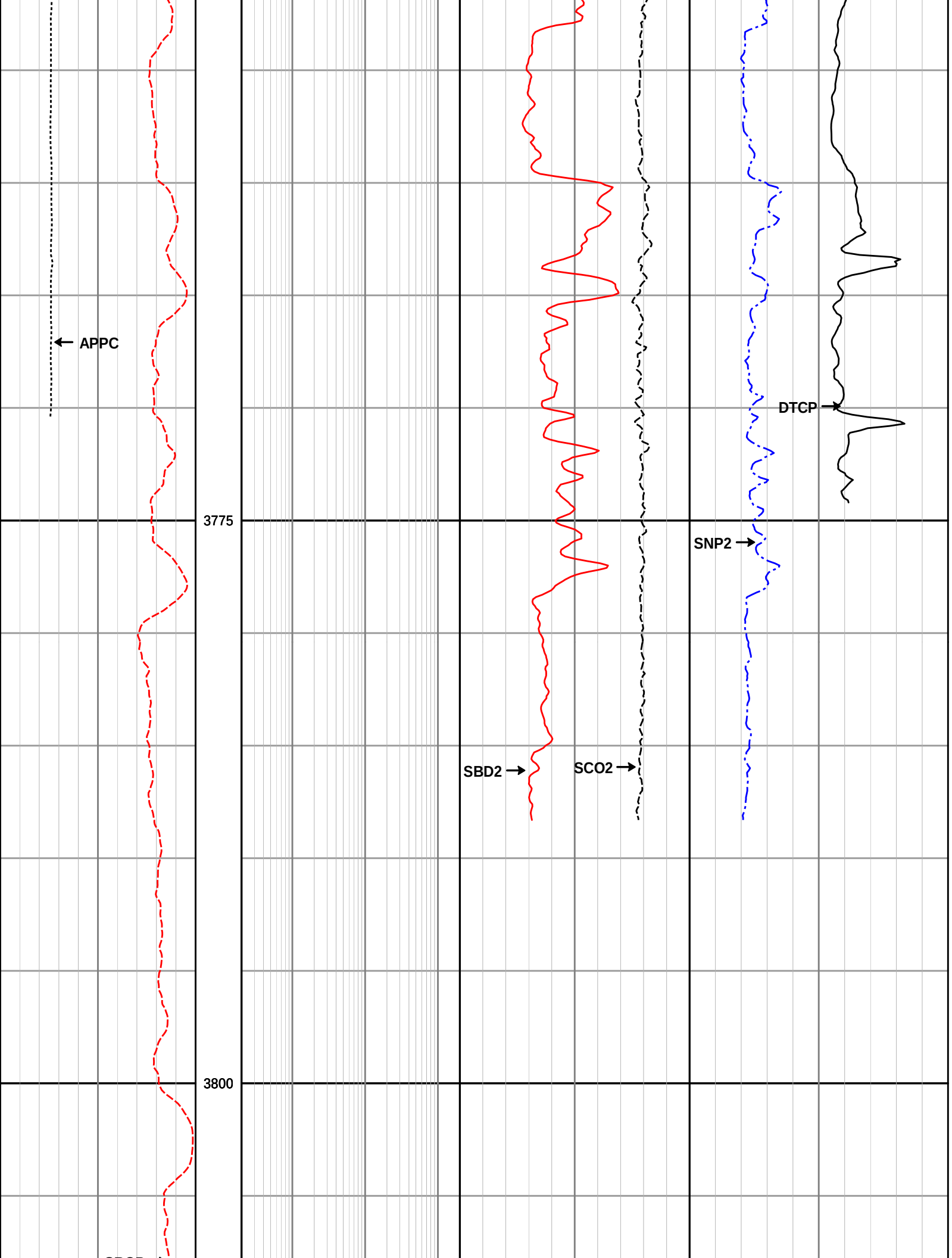
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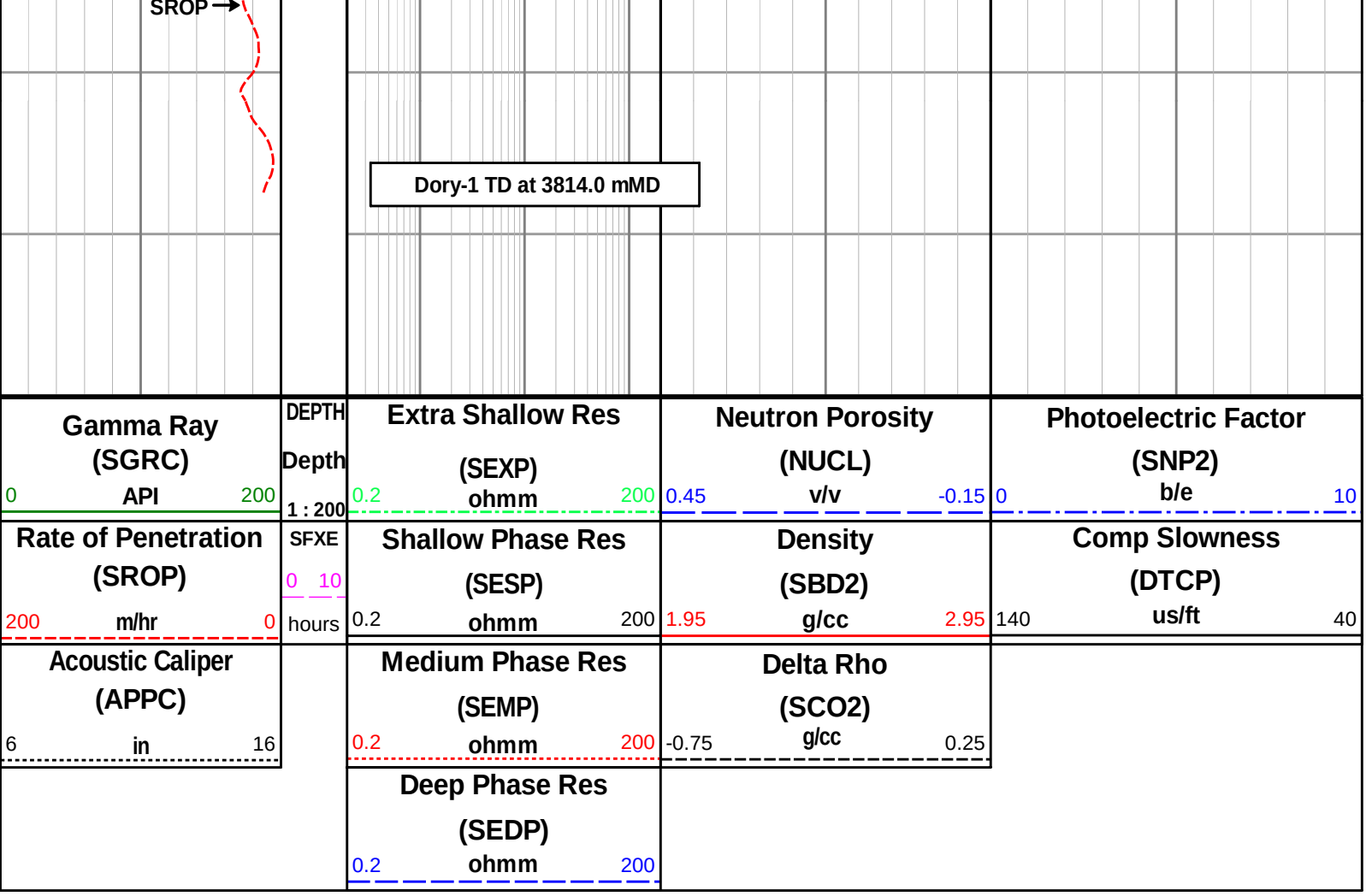


Sperry Drilling Services

DIRECTIONAL SURVEY REPORT

Apache Northwest Pty Ltd
Dory-1
Exploration
Victoria
Australia
AU-FE-000610543
RT - AHD = 23.50 m
Water Depth = 517.30 m
All surveys are acquired Real-Time
and have NOT been SAG or IFR corrected.
Surveys from 2940.0 to 3780.0 mMDRT are provided by Baker Atlas wireline.
Final survey projected to TD.

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*
540.800	0.00	0.00	540.800	0.000 N	0.000 E	0.000	TIE-IN
613.930	1.24	346.95	613.924	0.780 N	0.181 W	0.679	0.50
641.310	1.32	347.27	641.297	1.377 N	0.317 W	1.200	0.09
729.080	1.27	349.67	729.045	3.324 N	0.715 W	2.913	0.03
758.040	1.30	347.73	757.998	3.961 N	0.843 W	3.475	0.05
815.760	1.05	343.05	815.705	5.104 N	1.135 W	4.462	0.14
844.380	0.97	344.98	844.321	5.588 N	1.274 W	4.874	0.09
901.690	0.83	347.84	901.624	6.458 N	1.486 W	5.630	0.08
1016.720	0.47	350.84	1016.646	7.735 N	1.736 W	6.757	0.09
1074.580	0.45	1.50	1074.505	8.197 N	1.768 W	7.183	0.05
1132.150	0.26	336.38	1132.074	8.543 N	1.815 W	7.496	0.13
1160.990	0.25	342.45	1160.913	8.665 N	1.861 W	7.596	0.03
1189.790	0.28	339.34	1189.713	8.791 N	1.905 W	7.701	0.03
1218.510	0.36	337.60	1218.432	8.939 N	1.963 W	7.822	0.09
1247.270	0.31	352.14	1247.192	9.099 N	2.008 W	7.959	0.10

1275.840	0.35	336.74	1275.762	9.256 N	2.053 W	8.093	0.10
1333.430	0.45	337.84	1333.350	9.626 N	2.208 W	8.393	0.05
1362.390	0.36	331.14	1362.309	9.811 N	2.295 W	8.540	0.10
1391.370	0.38	337.89	1391.289	9.979 N	2.374 W	8.673	0.05
1478.770	0.44	339.78	1478.687	10.557 N	2.597 W	9.148	0.02
1507.710	0.41	345.24	1507.626	10.761 N	2.662 W	9.320	0.05
1519.070	0.33	354.14	1518.985	10.834 N	2.676 W	9.384	0.26
1555.750	0.62	13.67	1555.664	11.132 N	2.640 W	9.678	0.27
1584.250	0.70	1.92	1584.162	11.456 N	2.598 W	9.999	0.17
1612.640	0.68	350.69	1612.550	11.797 N	2.619 W	10.314	0.15
1641.010	0.96	329.53	1640.917	12.167 N	2.766 W	10.617	0.43
1669.490	1.05	321.20	1669.393	12.575 N	3.050 W	10.911	0.18
1698.350	1.42	301.03	1698.246	12.965 N	3.522 W	11.127	0.59
1727.220	1.69	294.67	1727.106	13.327 N	4.215 W	11.245	0.33
1756.100	1.86	285.87	1755.972	13.633 N	5.052 W	11.264	0.33
1785.360	1.99	276.46	1785.216	13.819 N	6.013 W	11.129	0.35
1814.480	2.04	256.82	1814.318	13.758 N	7.022 W	10.745	0.71
1843.690	2.24	226.11	1843.508	13.243 N	7.941 W	9.960	1.18
1872.670	3.45	210.48	1872.453	12.099 N	8.791 W	8.602	1.47
1901.620	3.83	211.01	1901.344	10.519 N	9.732 W	6.803	0.40
1930.530	3.89	212.01	1930.188	8.858 N	10.750 W	4.902	0.09
1959.260	3.88	211.43	1958.852	7.202 N	11.774 W	3.004	0.04
1988.140	3.81	209.64	1987.667	5.534 N	12.758 W	1.107	0.14
2017.060	3.95	200.39	2016.521	3.766 N	13.580 W	-0.832	0.66
2045.650	3.97	192.82	2045.043	1.878 N	14.142 W	-2.800	0.55
2074.480	4.05	182.58	2073.803	0.112 S	14.410 W	-4.770	0.75
2103.170	3.74	182.81	2102.427	2.058 S	14.501 W	-6.641	0.33
2131.890	3.28	185.32	2131.093	3.811 S	14.623 W	-8.339	0.50
2160.610	3.01	186.95	2159.770	5.378 S	14.791 W	-9.876	0.30
2189.200	2.79	187.90	2188.323	6.814 S	14.977 W	-11.295	0.24
2246.650	1.80	180.38	2245.726	9.103 S	15.176 W	-13.525	0.54
2275.290	1.31	173.59	2274.356	9.877 S	15.142 W	-14.247	0.55
2304.030	0.83	157.48	2303.091	10.395 S	15.026 W	-14.699	0.59
2332.800	0.61	126.88	2331.859	10.678 S	14.825 W	-14.902	0.45
2361.430	0.50	77.92	2360.487	10.743 S	14.582 W	-14.885	0.49
2390.380	0.55	67.90	2389.436	10.665 S	14.330 W	-14.729	0.11
2419.350	1.41	42.83	2418.402	10.351 S	13.959 W	-14.312	0.97
2448.200	1.36	46.46	2447.243	9.855 S	13.469 W	-13.684	0.10
2477.020	1.39	40.13	2476.055	9.353 S	12.996 W	-13.056	0.16
2505.870	1.62	34.79	2504.895	8.751 S	12.539 W	-12.339	0.28
2534.920	1.73	35.80	2533.932	8.058 S	12.048 W	-11.524	0.12
2563.900	1.80	33.67	2562.899	7.325 S	11.540 W	-10.666	0.10
2592.890	1.74	25.08	2591.875	6.549 S	11.102 W	-9.790	0.28
2621.850	1.54	25.98	2620.823	5.800 S	10.745 W	-8.966	0.21
2650.670	1.53	25.37	2649.633	5.105 S	10.411 W	-8.200	0.02
2679.360	1.32	23.81	2678.314	4.458 S	10.114 W	-7.492	0.22
2736.480	1.19	38.56	2735.421	3.393 S	9.479 W	-6.278	0.18
2765.320	1.50	54.76	2764.253	2.941 S	8.983 W	-5.690	0.51
2794.000	1.49	54.96	2792.923	2.510 S	8.371 W	-5.085	0.01
2823.060	1.51	57.63	2821.973	2.088 S	7.738 W	-4.480	0.07
2851.450	1.44	61.34	2850.353	1.716 S	7.109 W	-3.925	0.13
2909.600	1.41	63.70	2908.486	1.049 S	5.827 W	-2.879	0.03
2938.520	1.23	64.27	2937.398	0.757 S	5.229 W	-2.409	0.19
2940.000	1.43	67.85	2938.877	0.743 S	5.198 W	-2.386	4.35
2950.000	1.27	65.91	2948.875	0.651 S	4.981 W	-2.228	0.50
2960.000	1.17	64.18	2958.872	0.562 S	4.789 W	-2.081	0.32
2970.000	1.04	68.89	2968.870	0.485 S	4.612 W	-1.951	0.47
2980.000	1.03	68.29	2978.869	0.419 S	4.444 W	-1.835	0.06
2990.000	0.95	68.22	2988.868	0.355 S	4.284 W	-1.722	0.23
3000.000	0.99	61.54	2998.866	0.283 S	4.131 W	-1.605	0.36
3010.000	0.94	66.61	3008.865	0.209 S	3.980 W	-1.486	0.29
3020.000	0.84	68.12	3018.863	0.149 S	3.837 W	-1.383	0.31
3030.000	0.79	69.98	3028.862	0.098 S	3.704 W	-1.292	0.17
3040.000	0.63	67.98	3038.862	0.054 S	3.587 W	-1.212	0.48
3050.000	0.68	63.90	3048.861	0.007 S	3.483 W	-1.134	0.19
3060.000	0.77	65.72	3058.860	0.046 N	3.368 W	-1.046	0.29
3070.000	0.86	52.25	3068.859	0.120 N	3.248 W	-0.938	0.63
3080.000	0.47	48.51	3078.859	0.193 N	3.158 W	-0.840	1.19
3090.000	0.53	67.03	3088.858	0.238 N	3.085 W	-0.773	0.52
3100.000	0.73	69.27	3098.858	0.278 N	2.983 W	-0.702	0.59
3110.000	0.44	76.53	3108.857	0.310 N	2.887 W	-0.641	0.88

3120.000	0.79	74.12	3118.856	0.338 N	2.783 W	-0.581	1.06
3130.000	0.43	61.71	3128.856	0.374 N	2.683 W	-0.514	1.16
3140.000	1.00	62.90	3138.855	0.432 N	2.572 W	-0.424	1.71
3150.000	0.84	81.15	3148.854	0.483 N	2.422 W	-0.327	0.99
3160.000	1.17	58.80	3158.852	0.547 N	2.262 W	-0.215	1.51
3170.000	0.98	69.70	3168.851	0.629 N	2.095 W	-0.083	0.83
3180.000	0.96	42.99	3178.849	0.720 N	1.958 W	0.048	1.34
3190.000	0.75	65.94	3188.848	0.808 N	1.841 W	0.169	1.19
3200.000	0.84	60.66	3198.847	0.871 N	1.717 W	0.268	0.34
3210.000	0.81	28.84	3208.846	0.969 N	1.619 W	0.393	1.36
3220.000	1.05	53.17	3218.845	1.086 N	1.511 W	0.538	1.37
3230.000	0.89	45.72	3228.843	1.195 N	1.383 W	0.683	0.62
3240.000	1.32	41.52	3238.841	1.335 N	1.251 W	0.858	1.31
3250.000	0.96	48.13	3248.839	1.477 N	1.113 W	1.037	1.13
3260.000	1.21	43.92	3258.838	1.609 N	0.977 W	1.206	0.79
3270.000	1.03	36.83	3268.836	1.757 N	0.850 W	1.387	0.70
3280.000	1.21	45.00	3278.834	1.903 N	0.721 W	1.567	0.73
3290.000	1.13	46.50	3288.832	2.046 N	0.575 W	1.750	0.25
3300.000	1.08	44.10	3298.830	2.181 N	0.438 W	1.922	0.22
3310.000	1.32	32.46	3308.828	2.346 N	0.311 W	2.119	1.03
3320.000	1.00	37.99	3318.826	2.512 N	0.196 W	2.313	1.02
3330.000	1.27	38.79	3328.824	2.667 N	0.072 W	2.500	0.83
3340.000	1.02	36.84	3338.822	2.825 N	0.051 E	2.689	0.76
3350.000	1.14	39.02	3348.820	2.973 N	0.167 E	2.867	0.38
3360.000	1.39	22.11	3358.817	3.163 N	0.275 E	3.082	1.34
3370.000	1.15	36.15	3368.815	3.357 N	0.380 E	3.299	1.17
3380.000	1.32	37.24	3378.813	3.529 N	0.509 E	3.504	0.51
3390.000	1.37	37.71	3388.810	3.715 N	0.652 E	3.726	0.17
3400.000	1.37	36.97	3398.807	3.906 N	0.797 E	3.953	0.05
3410.000	1.35	36.98	3408.804	4.096 N	0.940 E	4.179	0.05
3420.000	1.40	35.37	3418.801	4.290 N	1.082 E	4.409	0.18
3430.000	1.46	39.02	3428.798	4.488 N	1.233 E	4.646	0.32
3440.000	1.44	40.19	3438.795	4.683 N	1.394 E	4.882	0.11
3450.000	1.37	40.87	3448.792	4.869 N	1.553 E	5.110	0.21
3460.000	1.40	36.57	3458.789	5.058 N	1.704 E	5.337	0.33
3470.000	1.46	36.71	3468.786	5.258 N	1.853 E	5.575	0.18
3480.000	1.40	32.98	3478.783	5.463 N	1.996 E	5.815	0.33
3490.000	1.50	32.64	3488.780	5.676 N	2.133 E	6.061	0.31
3500.000	1.70	33.19	3498.776	5.910 N	2.285 E	6.332	0.59
3510.000	1.76	32.41	3508.771	6.164 N	2.448 E	6.625	0.20
3520.000	1.73	32.08	3518.767	6.422 N	2.611 E	6.921	0.09
3530.000	1.68	31.41	3528.762	6.675 N	2.768 E	7.212	0.17
3540.000	1.65	34.48	3538.758	6.919 N	2.925 E	7.493	0.28
3550.000	1.63	33.84	3548.754	7.155 N	3.086 E	7.769	0.08
3560.000	1.55	29.05	3558.750	7.392 N	3.231 E	8.040	0.46
3570.000	1.58	28.23	3568.746	7.631 N	3.362 E	8.309	0.10
3580.000	1.49	26.04	3578.743	7.869 N	3.484 E	8.573	0.31
3590.000	1.46	23.07	3588.739	8.103 N	3.591 E	8.829	0.25
3600.000	1.45	25.76	3598.736	8.334 N	3.696 E	9.082	0.21
3610.000	1.45	23.60	3608.733	8.564 N	3.801 E	9.333	0.16
3620.000	1.46	19.11	3618.730	8.800 N	3.893 E	9.586	0.34
3630.000	1.39	18.56	3628.727	9.035 N	3.974 E	9.835	0.23
3640.000	1.39	16.97	3638.724	9.265 N	4.047 E	10.077	0.12
3650.000	1.31	16.43	3648.721	9.490 N	4.115 E	10.311	0.24
3660.000	1.25	16.45	3658.719	9.704 N	4.178 E	10.534	0.17
3670.000	1.16	16.90	3668.716	9.906 N	4.238 E	10.744	0.25
3680.000	1.12	372.04	3678.714	10.098 N	4.288 E	10.943	0.32
3690.000	1.23	373.40	3688.712	10.298 N	4.334 E	11.147	0.36
3700.000	1.16	368.73	3698.710	10.504 N	4.374 E	11.354	0.36
3710.000	1.17	370.00	3708.708	10.705 N	4.407 E	11.555	0.08
3720.000	1.20	370.40	3718.706	10.908 N	4.444 E	11.760	0.07
3730.000	1.23	364.05	3728.704	11.118 N	4.470 E	11.966	0.41
3740.000	1.23	363.25	3738.701	11.332 N	4.484 E	12.173	0.05
3750.000	1.21	362.77	3748.699	11.544 N	4.495 E	12.377	0.07
3760.000	1.19	360.98	3758.697	11.753 N	4.502 E	12.577	0.13
3770.000	1.11	361.89	3768.695	11.953 N	4.507 E	12.768	0.25
3780.000	1.21	352.47	3778.693	12.155 N	4.496 E	12.956	0.66
3814.000	1.21	352.47	3812.685	12.868 N	4.402 E	13.600	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A CLOSURE OF 18.89 DEGREES (GRID)
A TOTAL CORRECTION OF 14.35 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3814.000 METRES
IS 13.600 METRES ALONG 18.89 DEGREES (GRID)

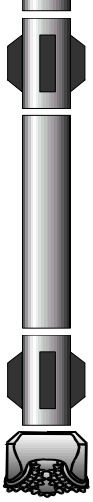
Date Printed:27 January 2009

MWD RUN 100 - BHA

	Component Length (m)
Drill Pipe	158.790
Jar	9.360
Drill Pipe	56.170
Sub	1.070
Collar	111.000
Sub	1.120
Collar	9.310
Stabilizer	2.420
MWD	19.07

MWD RUN 100 - MWD

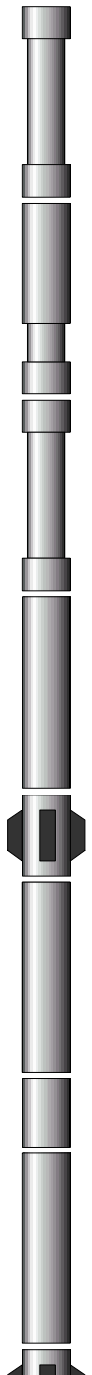
	Sensor Measure Point Distance To Bit (m)
BAT Insert	24.670
Positive Pulser	
PCM Sonde	
PCDC Sonde	17.600
HCIM Insert	
EWR-P4D Insert	12.610



Stabilizer	2.530
Collar	3.250
Stabilizer	2.830
Bit	.430

DDSr-DGR	0
DGR Insert	10.150

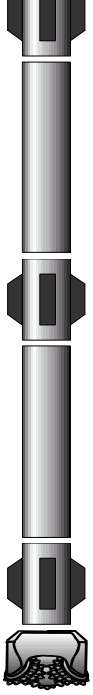
MWD RUN 300 - BHA



Component	Length (m)
Drill Pipe	158.790
Jar	9.360
Drill Pipe	56.170
Collar	112.920
Stabilizer	1.780
MWD	8.65
Sub	.780
MWD	16.16
Stabilizer	

MWD RUN 300 - MWD

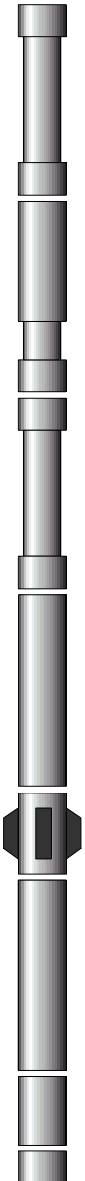
	Sensor Measure Point Distance To Bit (m)
ACAL Insert	43.720
BAT Insert	39.950
PCM Sonde	
Positive Pulser	
HCIM Insert	
CNP Insert	28.620
ALD Insert	26.010
PWD Insert	21.060
EWR-P4 Insert	16.180



	1.220
MWD	12.06
Stabilizer	1.670
Collar	2.530
Stabilizer	1.810
Bit	.270

DDS Insert	
DGR Insert	13.860
AFR Insert	11.100
PCD-C Sonde	

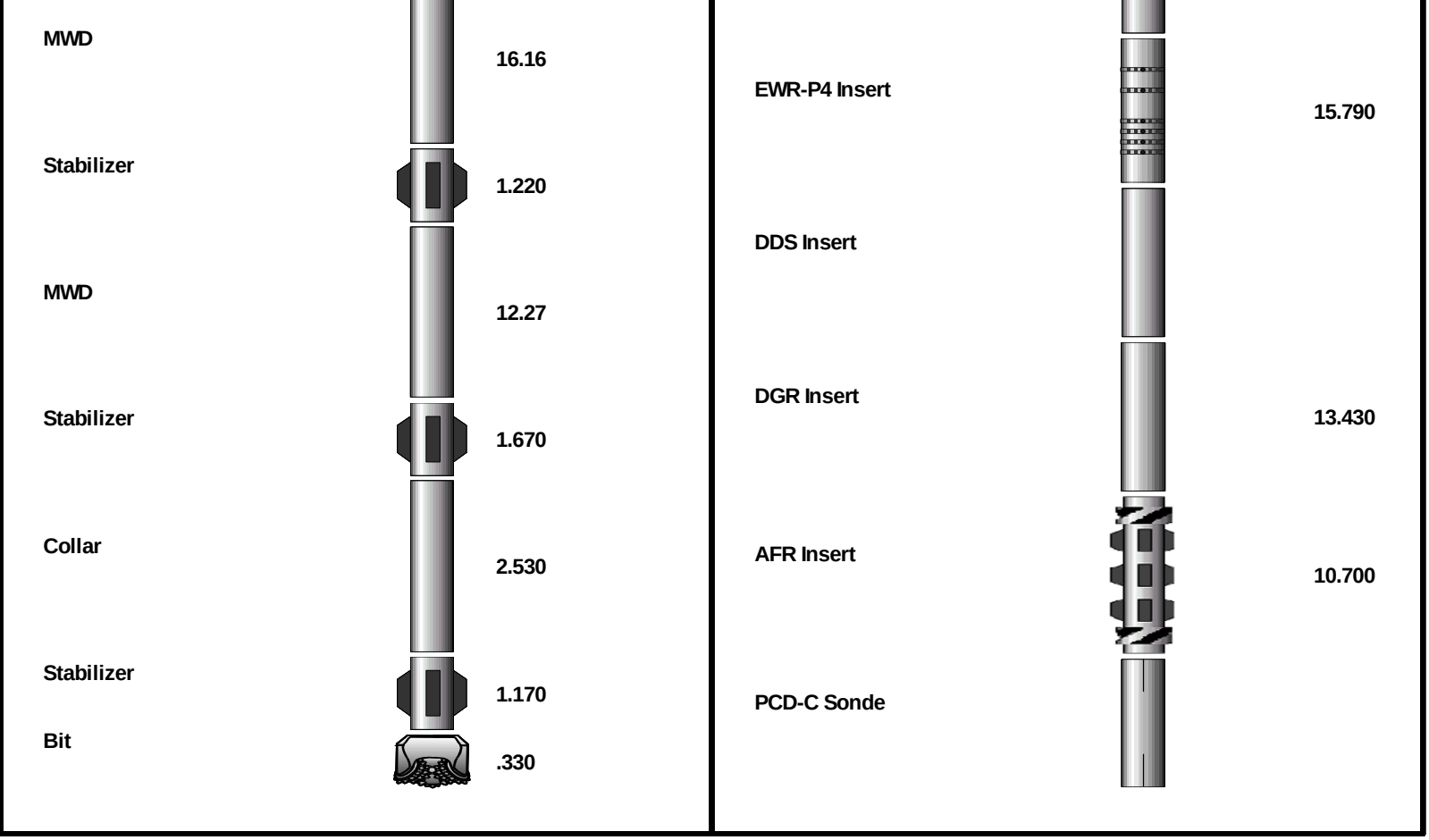
MWD RUN 400 - BHA



	Component Length (m)
Drill Pipe	158.790
Jar	9.360
Drill Pipe	56.170
Collar	112.920
Stabilizer	1.780
MWD	8.62
Sub	.780

MWD RUN 400 - MWD

	Sensor Measure Point Distance To Bit (m)
ACAL Insert	43.350
BAT Insert	39.580
PCM Sonde	
Positive Pulser	
HCIM Insert	
CNP Insert	28.250
ALD Insert	25.640
PWD Insert	20.690


MWD
16.16
Stabilizer
1.220
MWD
12.27
Stabilizer
1.670
Collar
2.530
Stabilizer
1.170
Bit
.330
EWR-P4 Insert
15.790
DDS Insert
DGR Insert
13.430
AFR Insert
10.700
PCD-C Sonde

HALLIBURTON

DGR Dual Gamma Ray
EWR Electromagnetic Wave Resistivity
ALD Azimuthal Lithodensity
CNØ Compensated Neutron Porosity
AFR Azimuthal Focused Resistivity

Powered by INSITE™

1 : 500

Sperry Drilling Services

Country : **Australia**
Field : **Exploration**
Location : **Lat: 38° 35' 19.759" South GDA94**
Long: 148° 32' 51.925" East GDA94
Well : **Dory-1**
Company : **Apache Northwest Pty Ltd**
Rig : **Ocean Patriot**

Company : **Apache Northwest Pty Ltd**
Rig : **Ocean Patriot**
Well : **Dory-1**
Field : **Exploration**
Country : **Australia**
DOE Number :

LOCATION
Latitude : **Lat: 38° 35' 19.759" South GDA94**
Longitude : **Long: 148° 32' 51.925" East GDA94**
UTM Easting = **634,798.900 m**
UTM Northing = **5,727,714.900 m**

Other Services
Pressure While Drilling
DDS Drillstring Dynamics

Permanent Datum : **AHD**
Elevation : **0.00 m**
Log Measured From : **Drill Floor** **23.50 m** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **23.50 m**
DF **23.50 m**
GL **0.00 m**
WD **517.30 m**

Depth Logged : **586.50 m** To **3,814.00 m**
Date Logged : **30-Oct-08** To **16-Nov-08**
Total Depth MD : **3,814.00 m** TVD : **3,812.69 m**
Spud Date : **04-Nov-08**

Unit No. : **300703**
Job No. : **AU-FE-0006105438**
Plot Type : **Final**
Plot Date : **27-Jan-09**

Run No.	Borehole Record (MD) Size	From	To
100	406.000 mm	586.50 m	1,537.00 m
300	216.000 mm	1,537.00 m	2,955.00 m
400	216.000 mm	2,955.00 m	3,814.00 m

Run No.	Borehole Record (MD) Size	From	To

Casing Record (MD)

Size	Weight	From	To
762.000 mm	458.00 kgpm	538.00 m	585.00 m
340.000 mm	102.00 kgpm	585.00 m	1,534.14 m

WELL INFORMATION

| MWD Run Number | 100 | 300 | 400 | | |

Max Tool Temp (degC) / Source	28 / EWR-P4D	49 / EWR-P4	55 / ALD		
Rm @ Max Tool Temp (degC)	N/A @ N/A	0.06 @ 49.00	0.05 @ 55.00		
Lead MWD Engineer	M. Lee	M. Lee / J. Lau	J. Lau		
Customer Representative	P. Brown	P. Brown	P. Brown		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM		
Software Version	74.11	74.11	74.11		
Sub Serial Number	11152186	243942	243942		
Insert Serial Number	247975	254110	254110		
Date and Time Initialized	06-Nov-08 10:11	11-Nov-08 12:25	14-Nov-08 02:38		
Date and Time Read	08-Nov-08 08:15	13-Nov-08 23:30	16-Nov-08 14:28		
ECMB SW Version					

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC		
Distance From Bit (m)	17.60	7.40	6.82		
Software Version	6.09	6.09	6.09		
Sub Serial Number	1140619	106317	106317		
Sonde Serial Number	300242	400011	400011		
Sensor ID Number	PCD242	N/A	N/A		
Toolface Offset (deg)	N/A	N/A	N/A		

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR		
Distance From Bit (m)	10.15	13.86	13.43		
Recorded Sample Period (sec)	8	12	12		
Software Version	N/A	N/A	N/A		
Sub Serial Number	10946533	10909629	10909629		
Insert/Sonde Serial Number	262745	253384	253384		

Resistivity Sensor Information

Tool Type	EWR-P4D	EWR-P4	EWR-P4		
Distance From Bit (m)	12.61	16.18	15.79		
Recorded Sample Period (sec)	8	12	12		
Software Version	2.51	1.50	1.50		
Sub Serial Number	11145132	175801	241341		
Receiver Insert Serial Number	239772	113356	205854		
Transmitter Insert Serial Number	11151951	225155	106183		
Receiver Orientation	Down	Down	Down		

Neutron Sensor Information

Tool Type		CNP	CNP		
Distance From Bit (m)		28.62	28.25		
Recorded Sample Period (sec)		12	12		
Sub Serial Number		74905	74905		
Insert Serial Number		117346	117346		
Source Serial Number		1615NN	1615NN		
Source Factor		1.2700	1.2700		
Pin Orientation		Up	Up		

Density Sensor Information

Tool Type		ALD	ALD		
Distance From Bit (m)		26.01	25.64		
Recorded Sample Period (sec)		14	14		
Software Version		3.04	3.04		
Sub Serial Number		10503659	10503659		
Insert Serial Number		202132	202132		
Sensor ID Number		32026	32026		
Source Serial Number		14932B	14932B		
Pin Orientation		Up	Up		
Stabilizer Blade O.D. (mm)		209.55	209.55		
DPA Offset		N/A	N/A		

Pressure Sensor Information

Tool Type		PWD	PWD		
Distance From Bit (m)		21.06	20.69		
Recorded Sample Period (sec)		2	2		
Software Version		3.70	3.70		
Collar Serial Number		N/A	N/A		
Insert Serial Number		N/A	N/A		

Caliper Sensor Information

Tool Type		ACAL	ACAL		
Distance From Bit (m)		43.72	43.35		
Software Version		4.20	4.20		
Sub Serial Number		123087	123087		
Insert Serial Number		94420	94420		

Sonic Sensor Information

Tool Type	BAT	BAT	BAT		
Distance From Bit (m)	24.67	39.95	39.58		
Recorded Sample Period (sec)	10	18	18		
Sub Serial Number	160228	169877	169879		
Receiver Insert Serial Number	165038	186701	186710		
Transmitter Insert Serial Number	175489	116793	116739		
MIT File	QBAT_gs_d9_d4.m	R5Max_Run.mit	R5Max_Run.mit		
Config File	R5Listen_512.cf	R5Max_Run.cfn	R5Max_Run.cfn		
Real-Time Window (uspf)	80.00 - 140.00	80.00 - 140.00	80.00 - 140.00		
Battery Serial Insert Number	N/A	N/A	N/A		
MCM Software Version	5.07	4.45	4.45		
DAQ1/DAQ2 Software Version	2.65 / 2.65	2.65 / 2.65	2.65 / 2.65		
DSM Software Version	2.41	2.37	2.37		

AFR Sensor Information

Tool Type		AFR	AFR		
Tool ID		13	13		
Distance From Bit (m)		11.10	10.70		
Software Version		N/A	N/A		
Recorded Sample Period (sec)		3	3		
Tool Size		6.75	6.75		
Stabilizer Size		209.550	209.550		
Button Blade Size		25.400	25.400		
Collar S/N		11111785	11111785		
Insert S/N		11131147	11131147		
Shallow K Factor		538.00	538.00		
Medium K Factor		780.00	780.00		
Deep K Factor		916.00	916.00		

RAB K Factor		1.00	1.00		
Date & Time Initialized		11-Nov-07 12:23	14-Nov-08 02:37		
Date & Time Read		13-Nov-07 23:29	16-Nov-08 11:07		

REMARKS

1.) All depths are bit depths and are referenced to the driller's pipe tally unless otherwise noted.

2.) AV/CV values are calculated at the LWD collar using the Power Law for water based mud, measured in m/min.

3.) Curve Mnemonics used are:

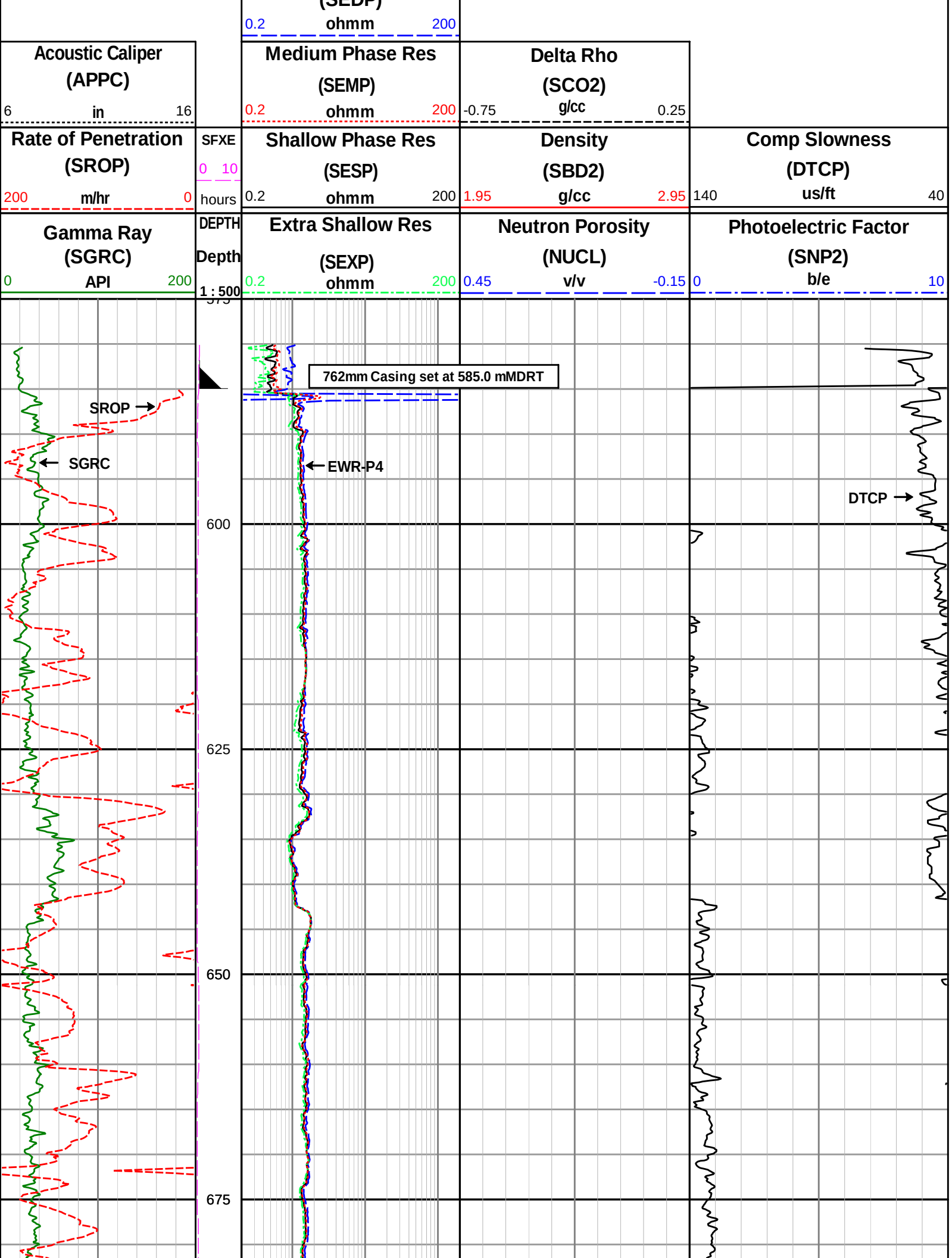
SGRC - Smoothed Combined Gamma Ray, api
SROP - Smoothed Rate of Penetration, m/hr
SEXP - Smoothed Extra Shallow Phase Shift Resistivity, ohmm
SESP - Smoothed Shallow Phase Shift Resistivity, ohmm
SEMP - Smoothed Medium Phase Shift Resistivity, ohmm
SEDP - Smoothed Deep Phase Shift Resistivity, ohmm
SCO2 - Smoothed Rapid Sample Best Bin Stand Off Correction, grams/cc
SBD2 - Smoothed Rapid Sample Best Bin Bulk Density, grams/cc
SNP2 - Smoothed Rapid Sample Near Detector Pe, barns/electron
NUCL - Smoothed Neutron Projected Porosity, v/v
DTCP - Smoothed Bi-Modal Acoustic Compressional Slowness, us/ft
APPC - Smoothed Acoustic Caliper, in

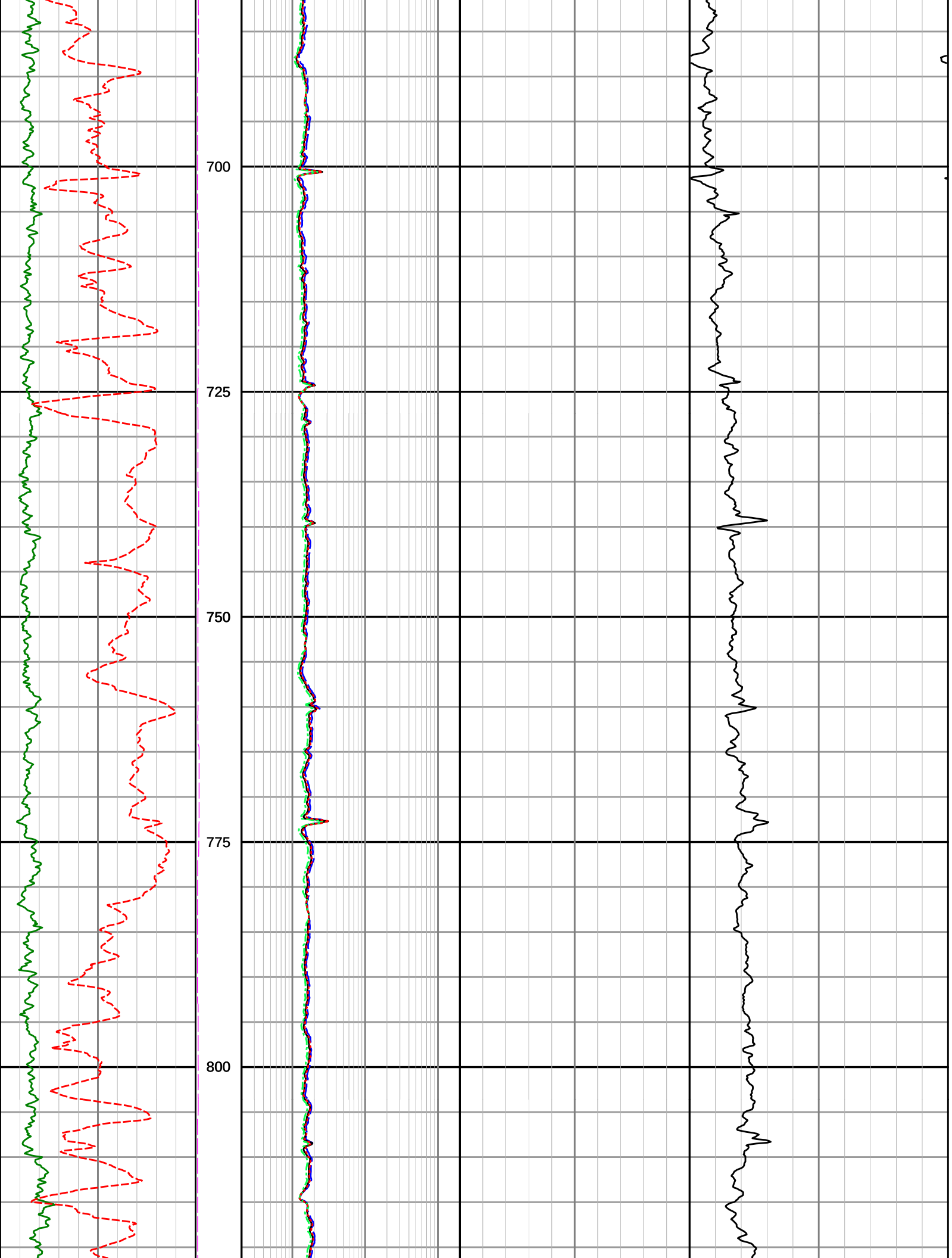
4.) Environmental parameters used to process Neutron Porosity are as follows:
Mud Density = 1.15 sg
Formation Water Salinity = 25,000 ppm Cl
Matrix = Limestone
Whole Mud Chlorides = 48,700 - 52,100 ppm Cl
Matrix Density = 2.71 g/cc
Fluid Density = 1.00 g/cc
KCl Concentration = 3.0 - 6.0 %
5.) Neutron Porosity data has been reprocessed using hole size from Acoustic Caliper tool.
6.) AFR tool failure at 1864.0 mMDRT during run 300.
7.) AFR data presented from 2766.9 - 2899.9 mMDRT acquired realtime during MAD run 400
8.) Realtime/Recorded SGRC, CNP, AFR and EWR-P4 data unavailable for run 400 after 2900.0 mMDRT due to LWD toolstring failure.
9.) Depth sensor changed from Geolograph to Draw-works encoder from 1556.0 - 2258.0 mMDRT. This does not account for movement of the top drive compensator.

WARRANTY

HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.

Deep Phase Res
(SEDP)


(SEDP)
0.2 ohmm 200
Acoustic Caliper
(APPC)
6 in 16
Medium Phase Res
(SEMP)
0.2 ohmm 200
Delta Rho
(SCO2)
-0.75 g/cc 0.25
Rate of Penetration
(SROP)
200 m/hr 0
SFXE
0 10
hours
Shallow Phase Res
(SESP)
0.2 ohmm 200
Density
(SBD2)
1.95 g/cc 2.95
Comp Slowness
(DTCP)
140 us/ft 40
Gamma Ray
(SGRC)
0 API 200
DEPTH
Depth
1 : 500
Extra Shallow Res
(SEXP)
0.2 ohmm 200
Neutron Porosity
(NUCL)
0.45 v/v -0.15
Photoelectric Factor
(SNP2)
0 b/e 10
762mm Casing set at 585.0 mMDRT
SROP
SGRC
EWR-P4
DTCP
600
625
650
675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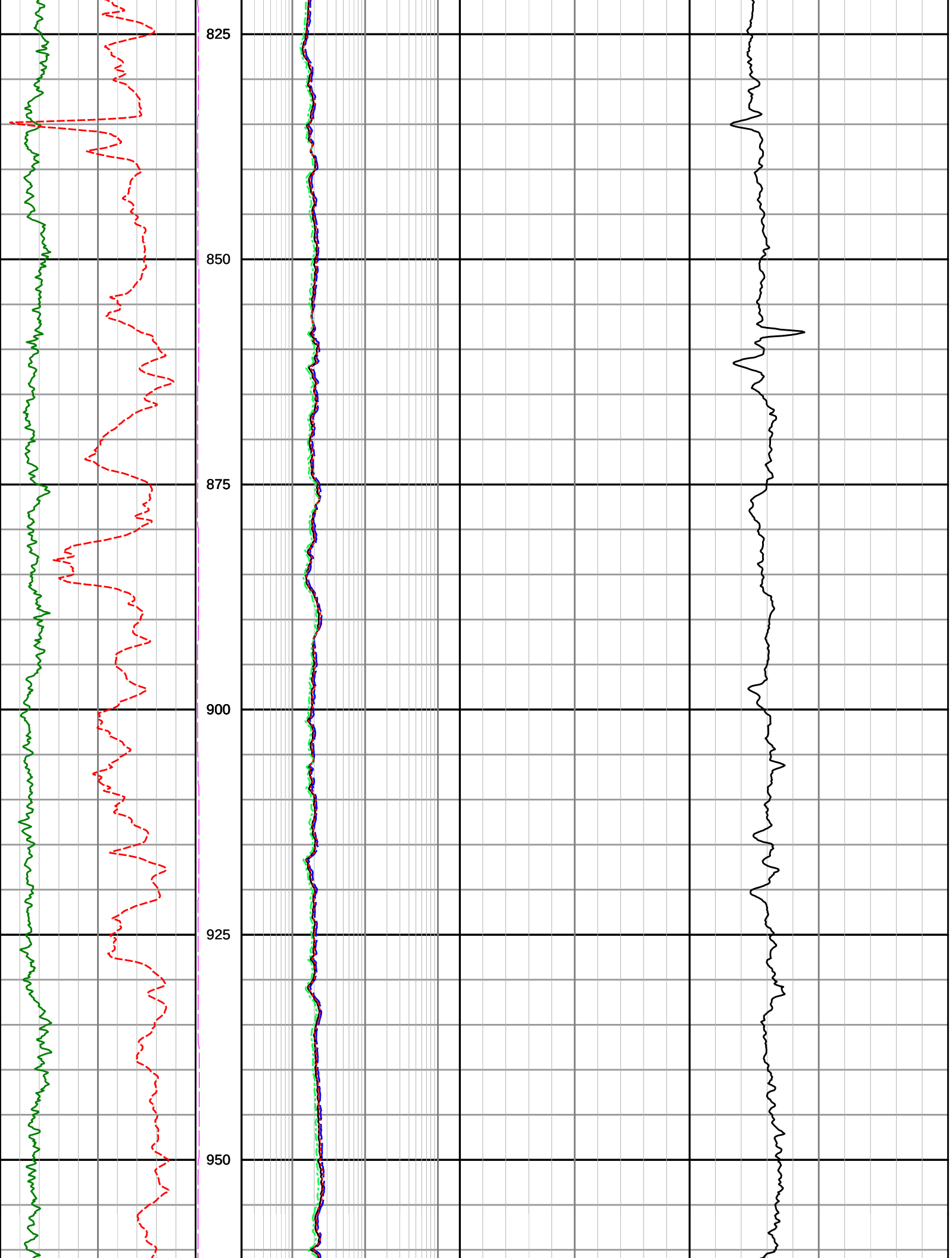
725
750
775
800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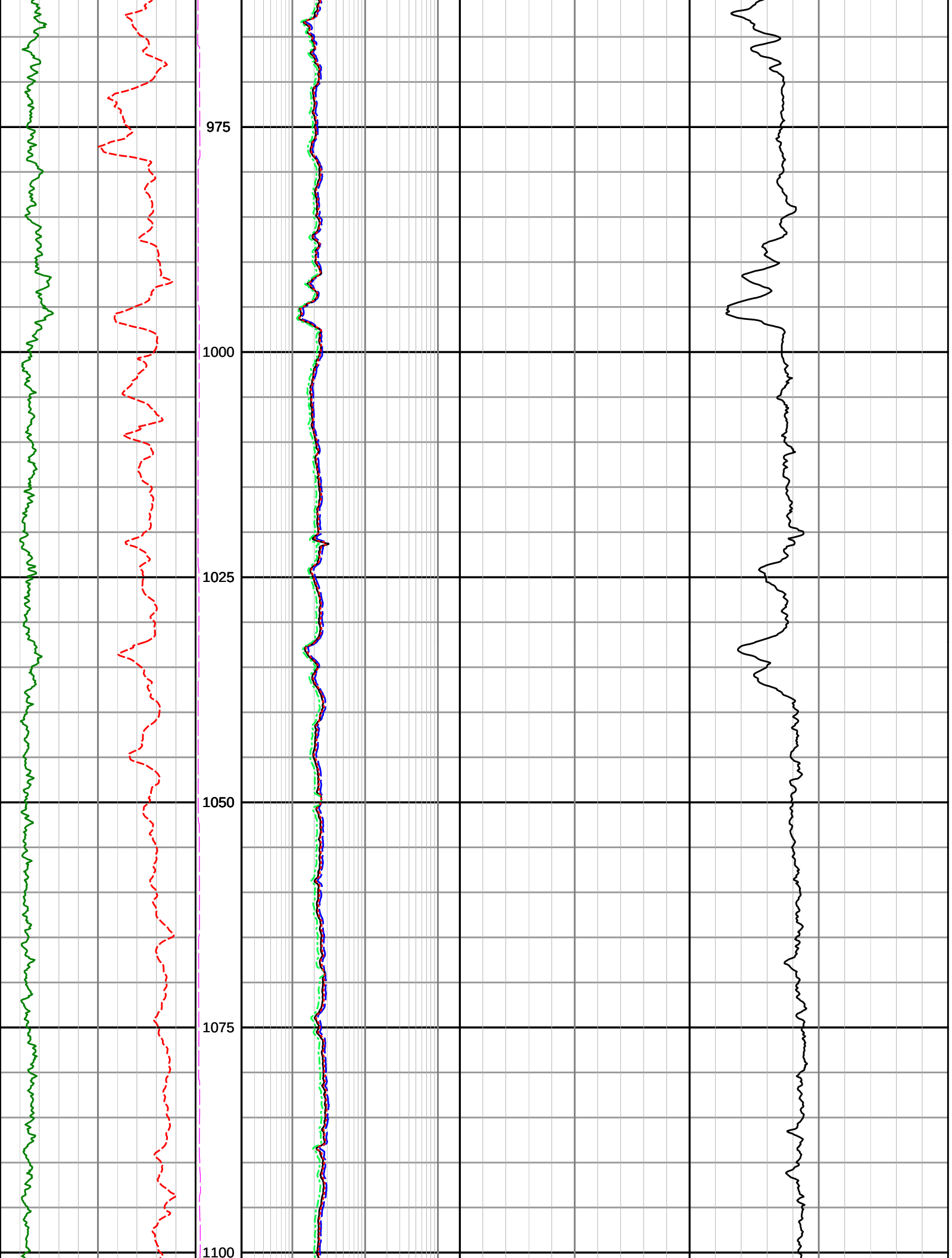
875
900
925
950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1075
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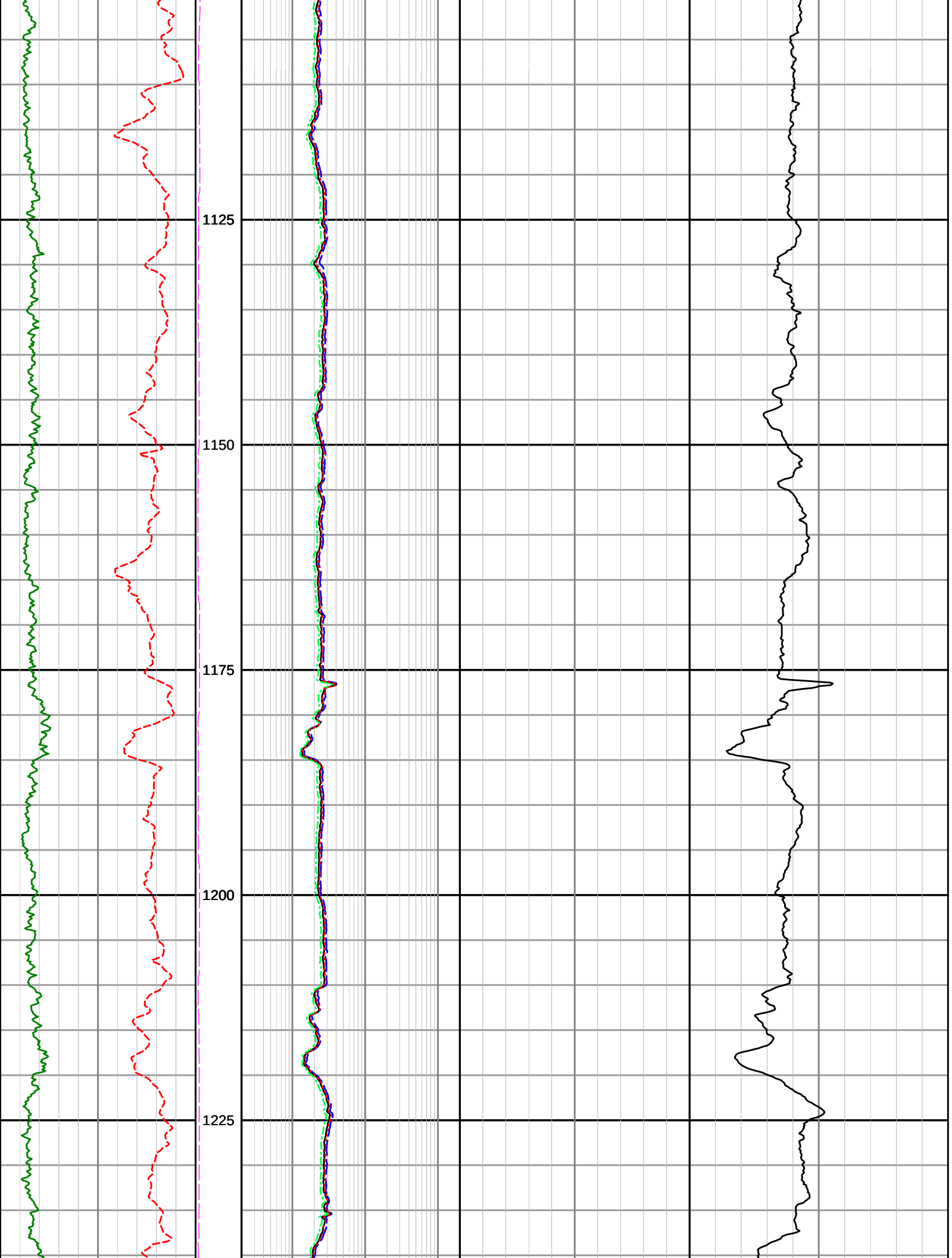
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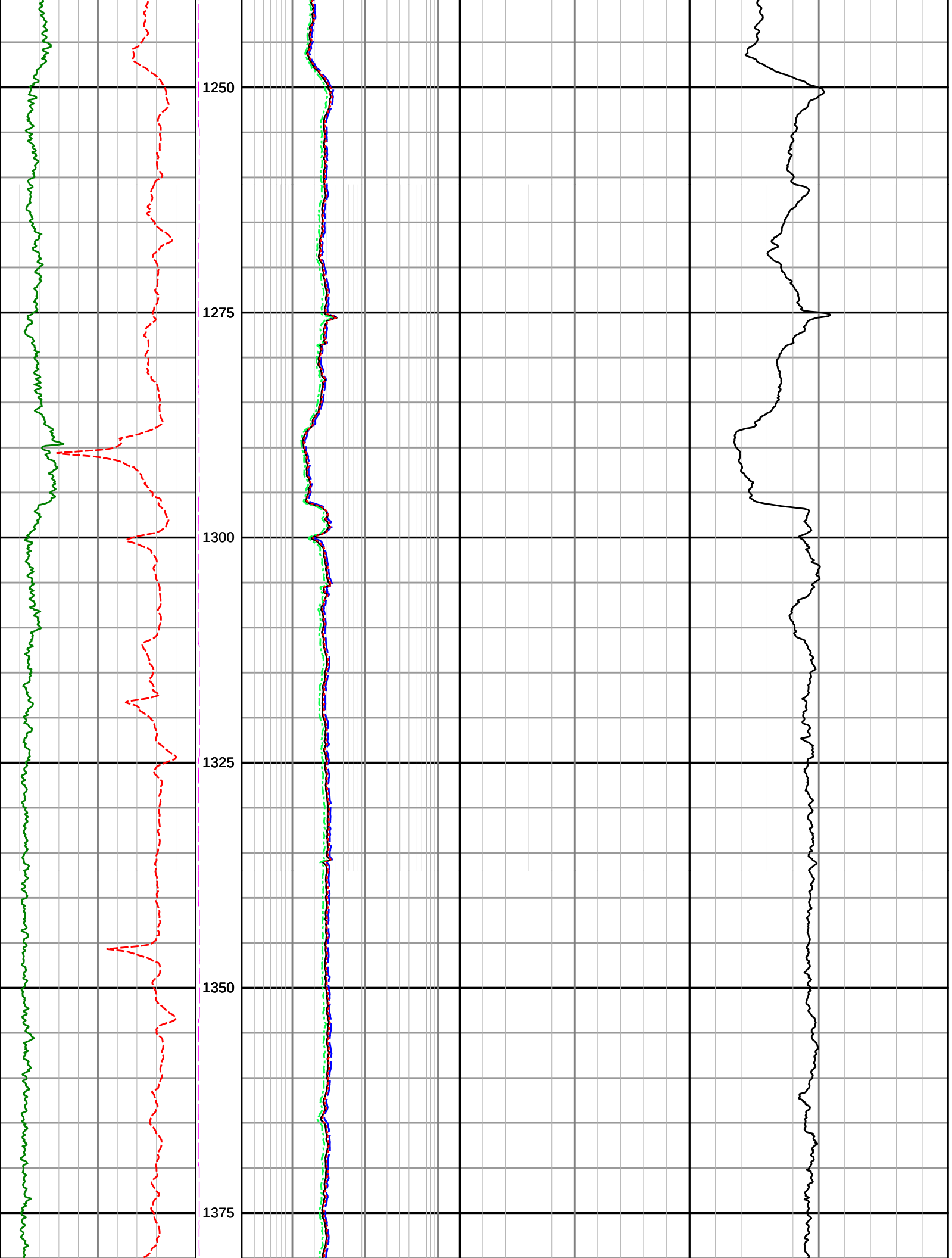
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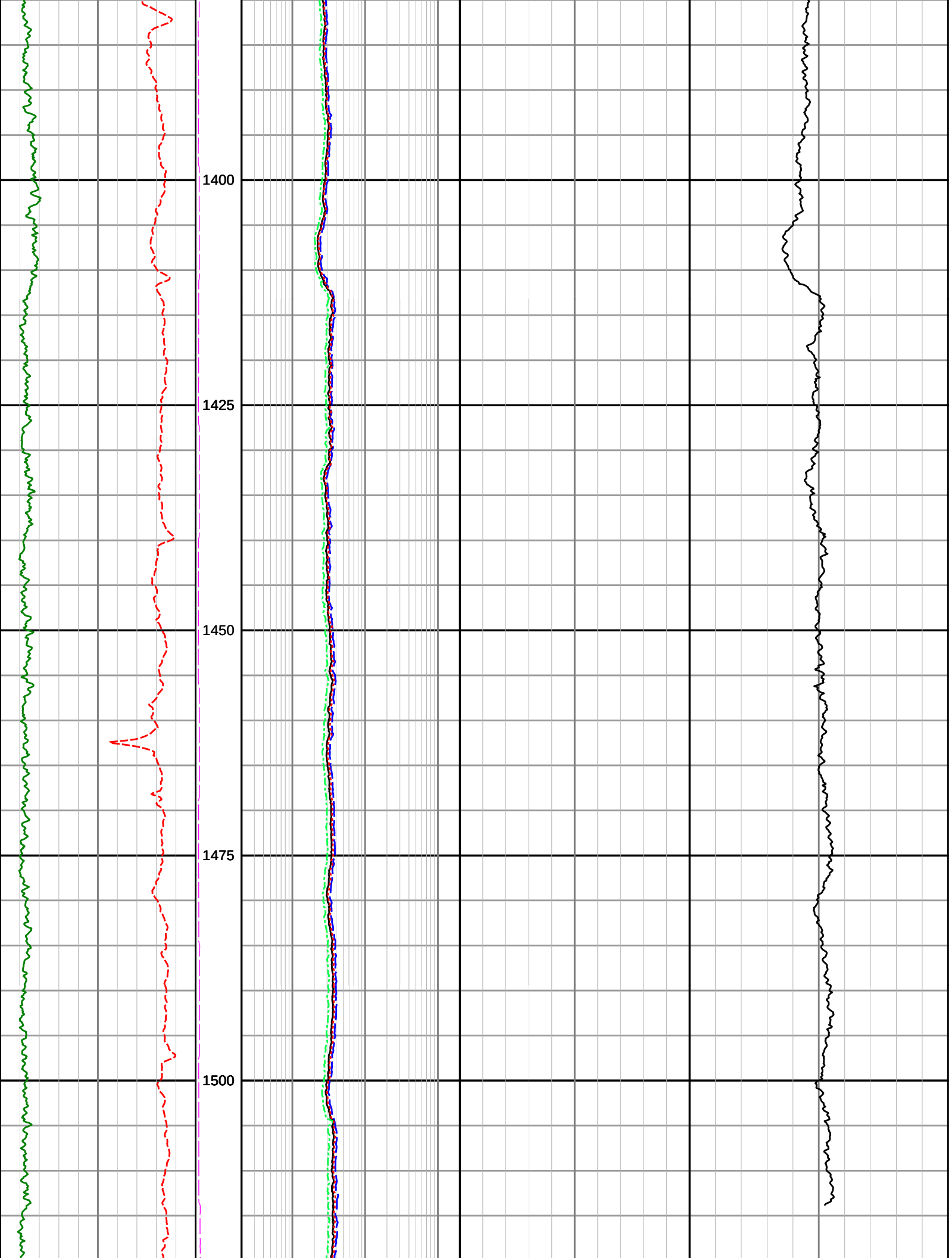
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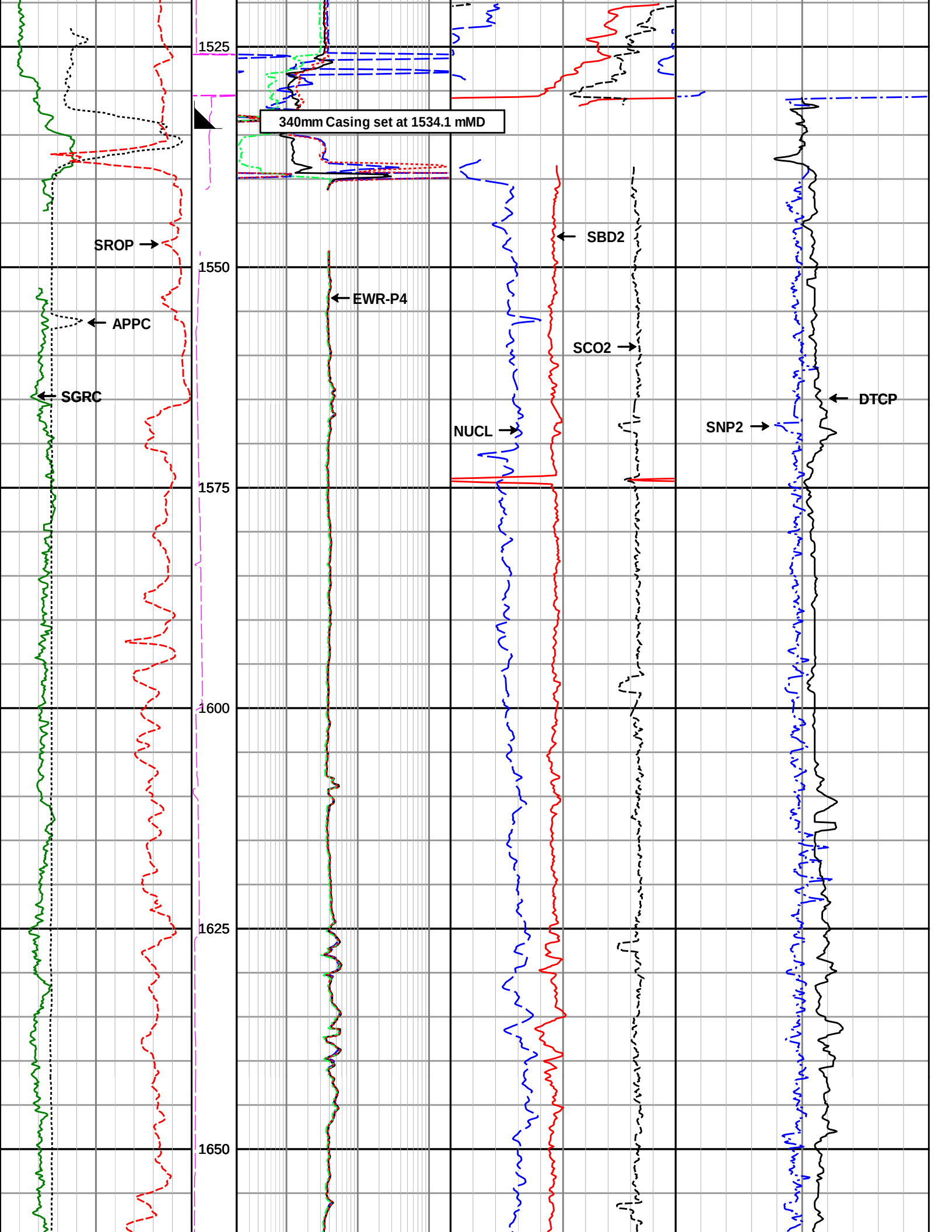
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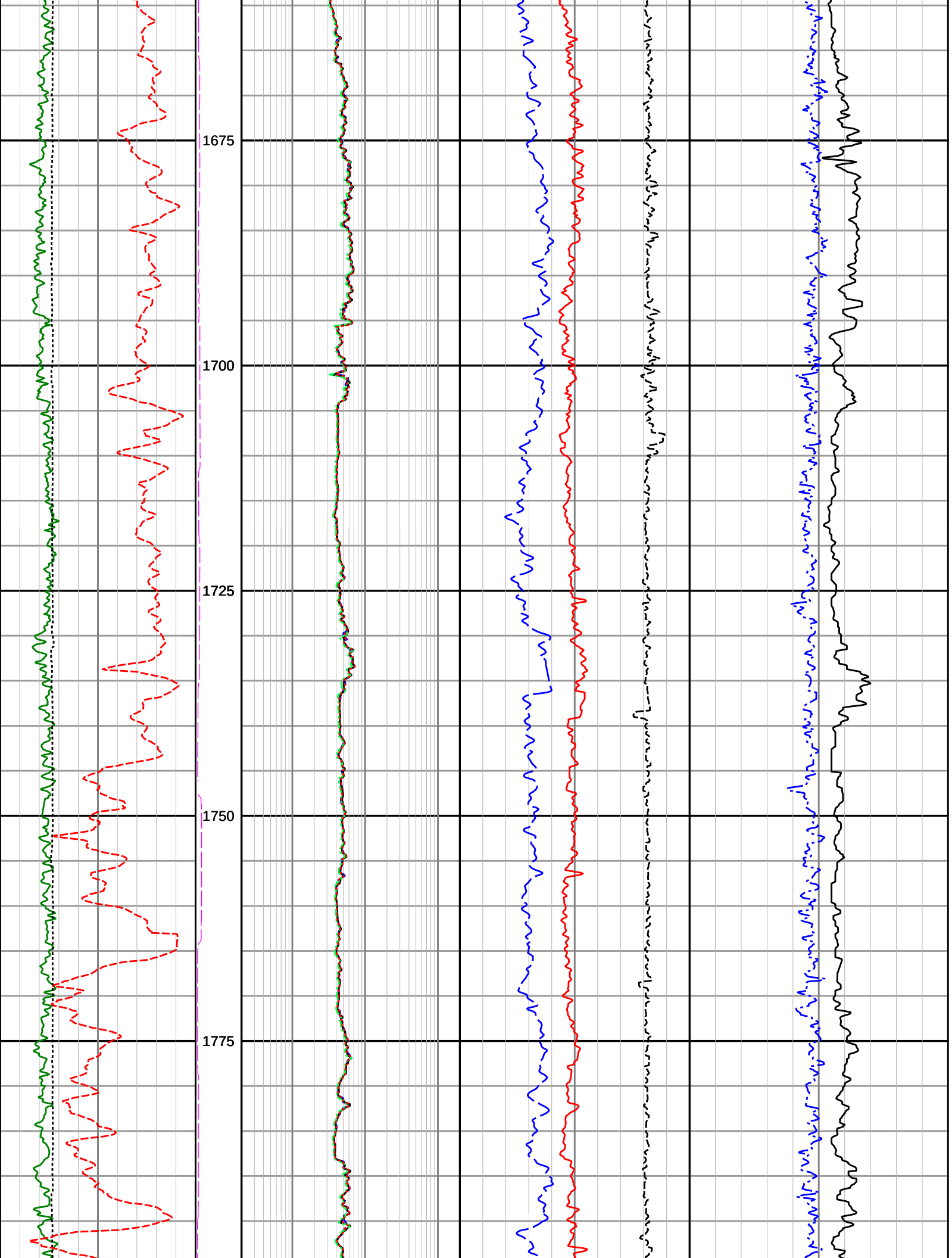
1600
1625
1650
340mm Casing set at 1534.1 mMD
SROP
APPC
SGRC
EWR-P4
SBD2
SCO2
NUCL
SNP2
DTCP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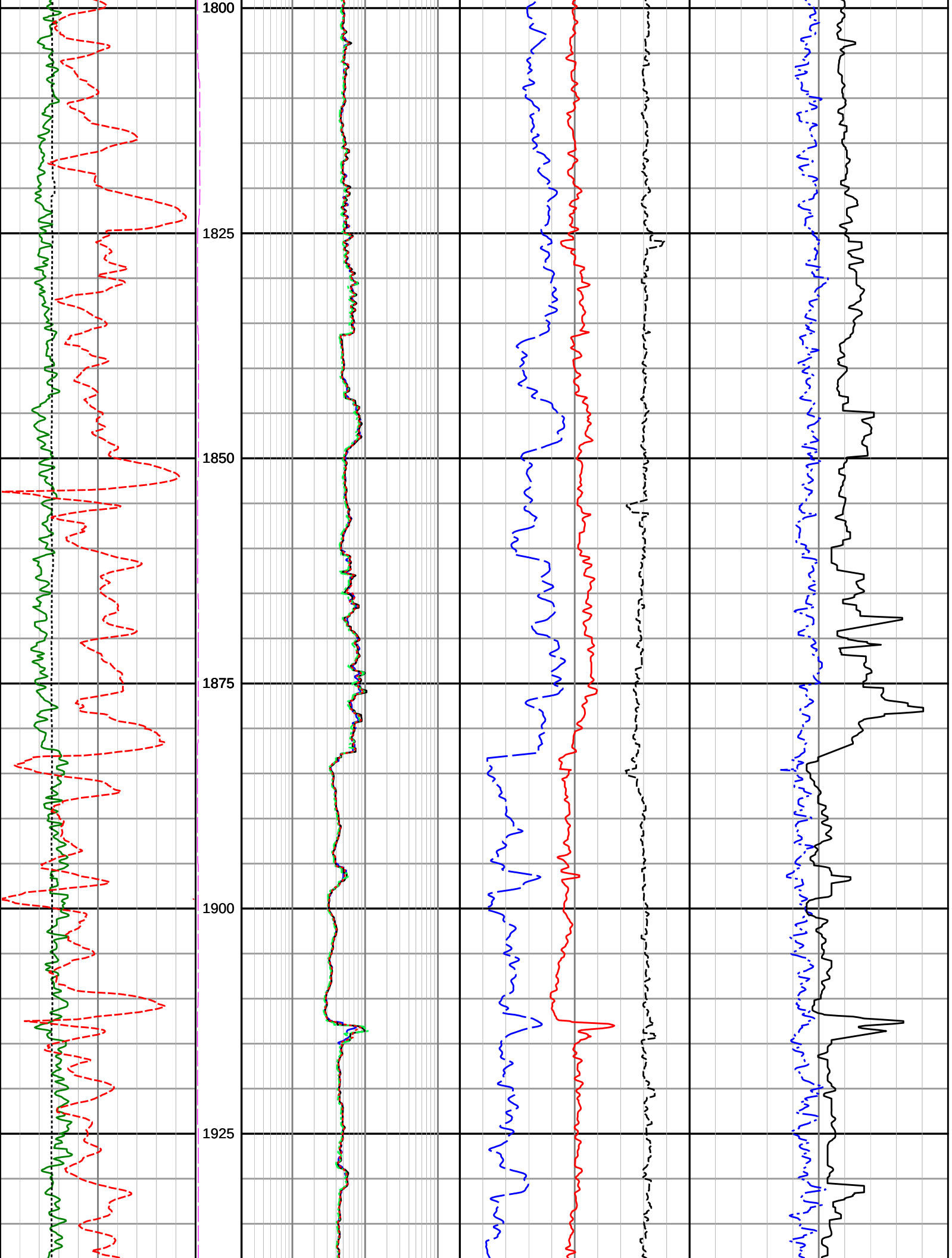
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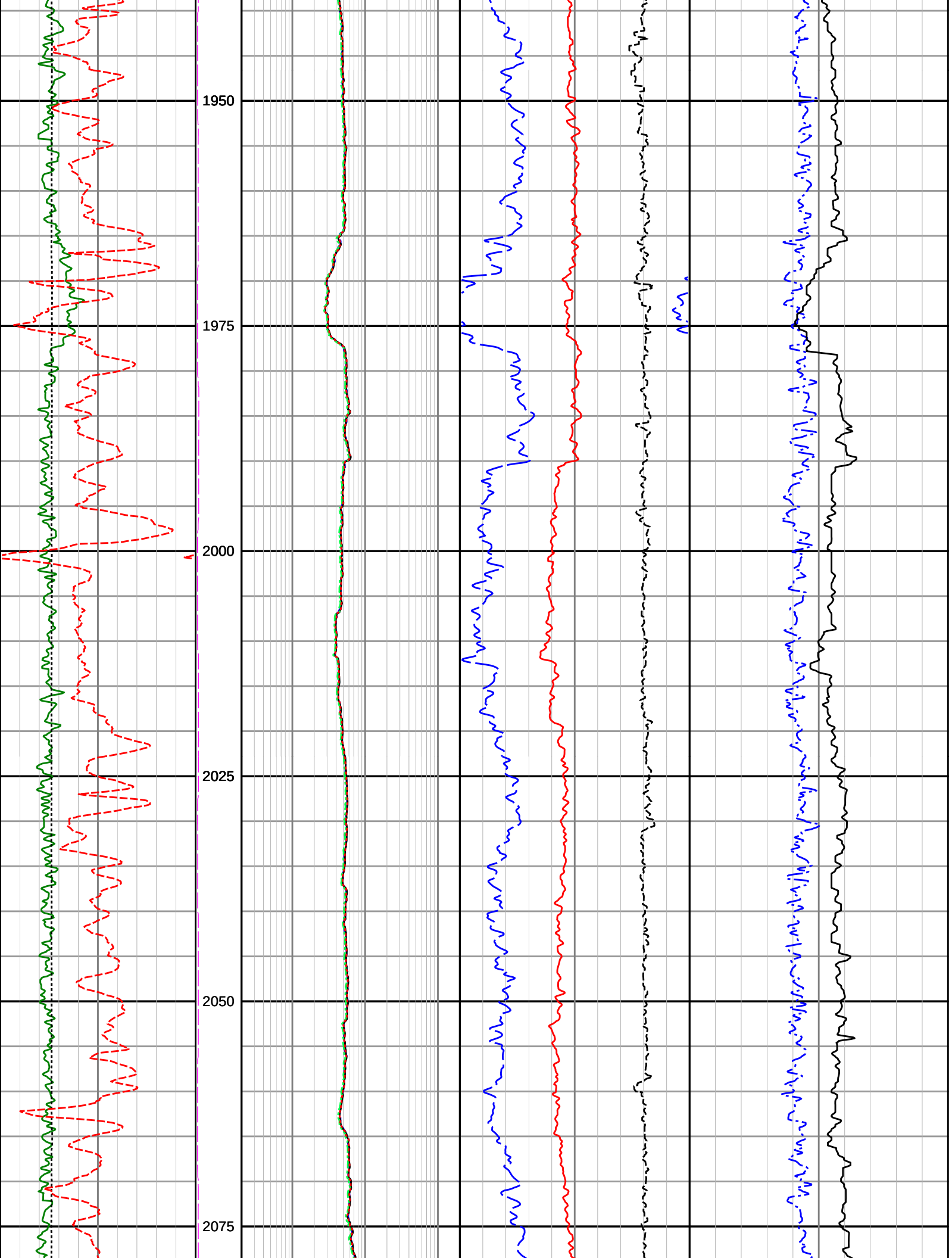
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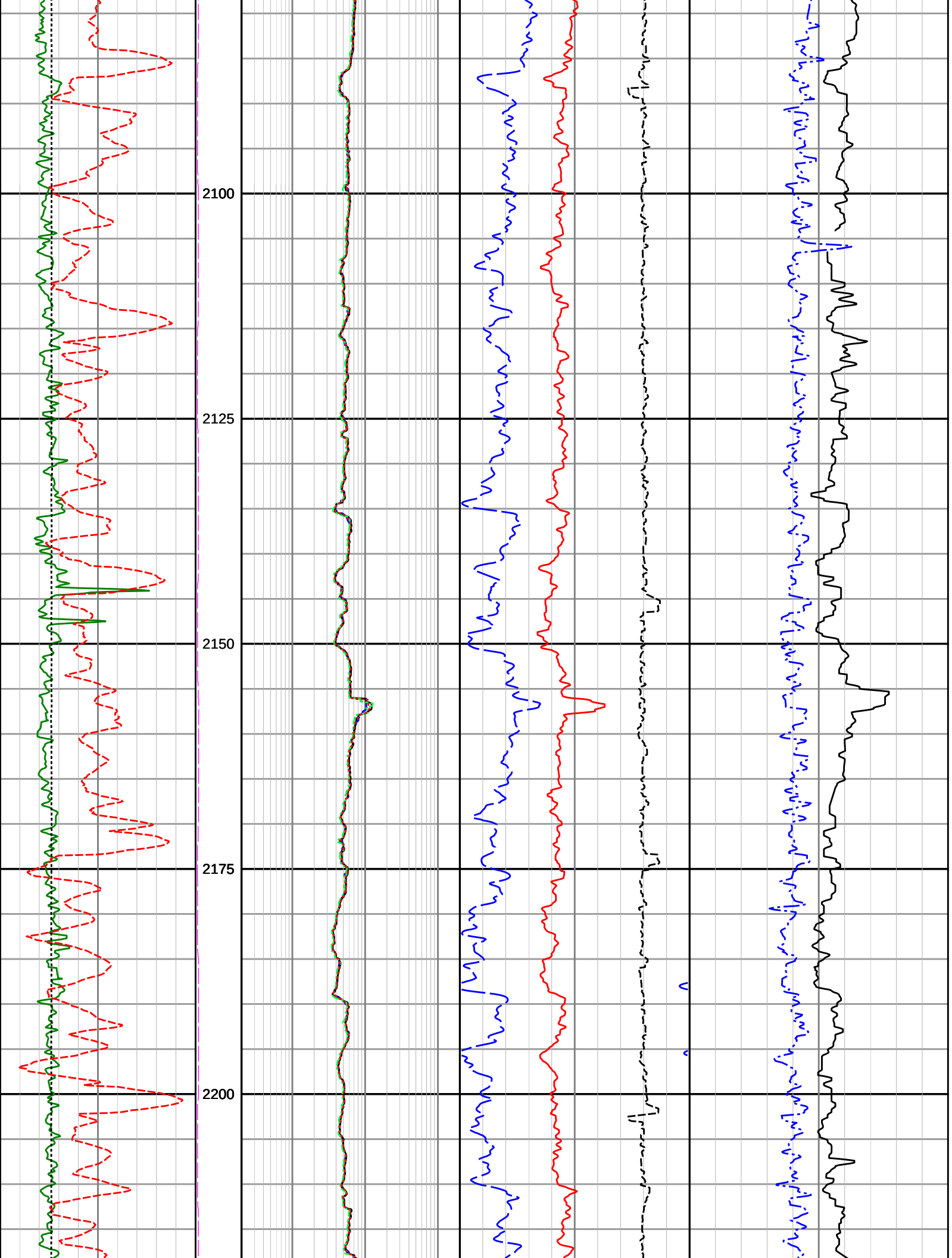
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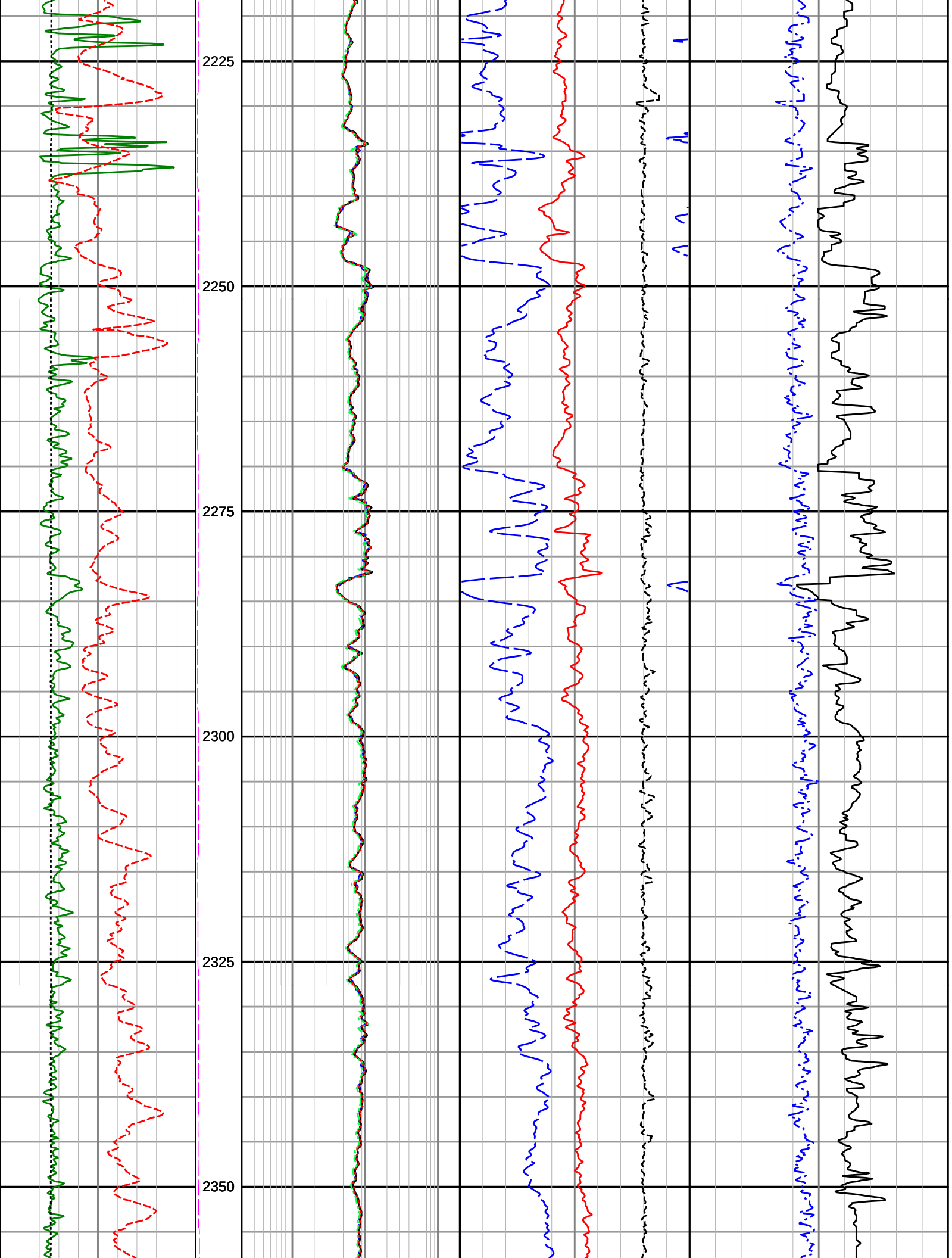
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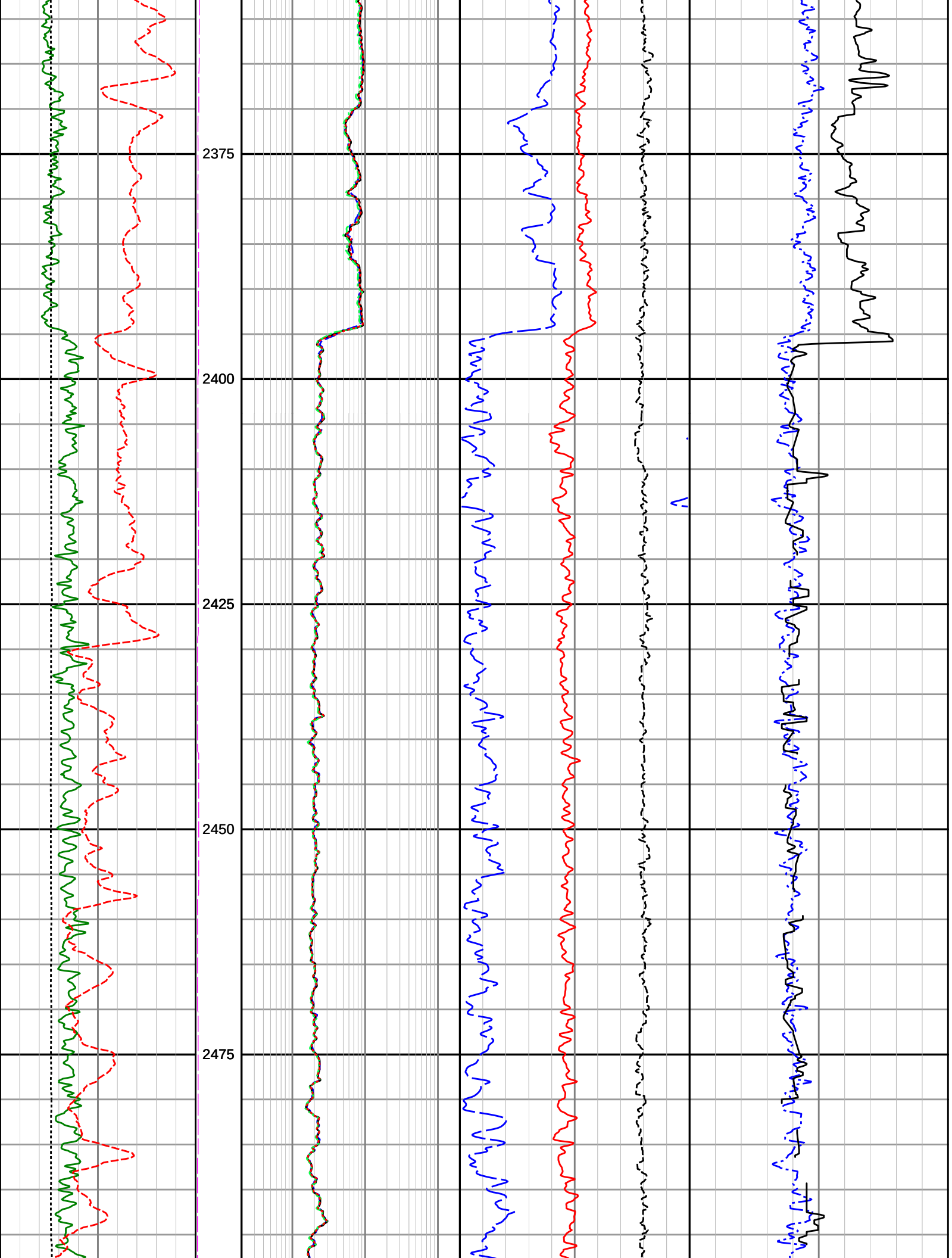
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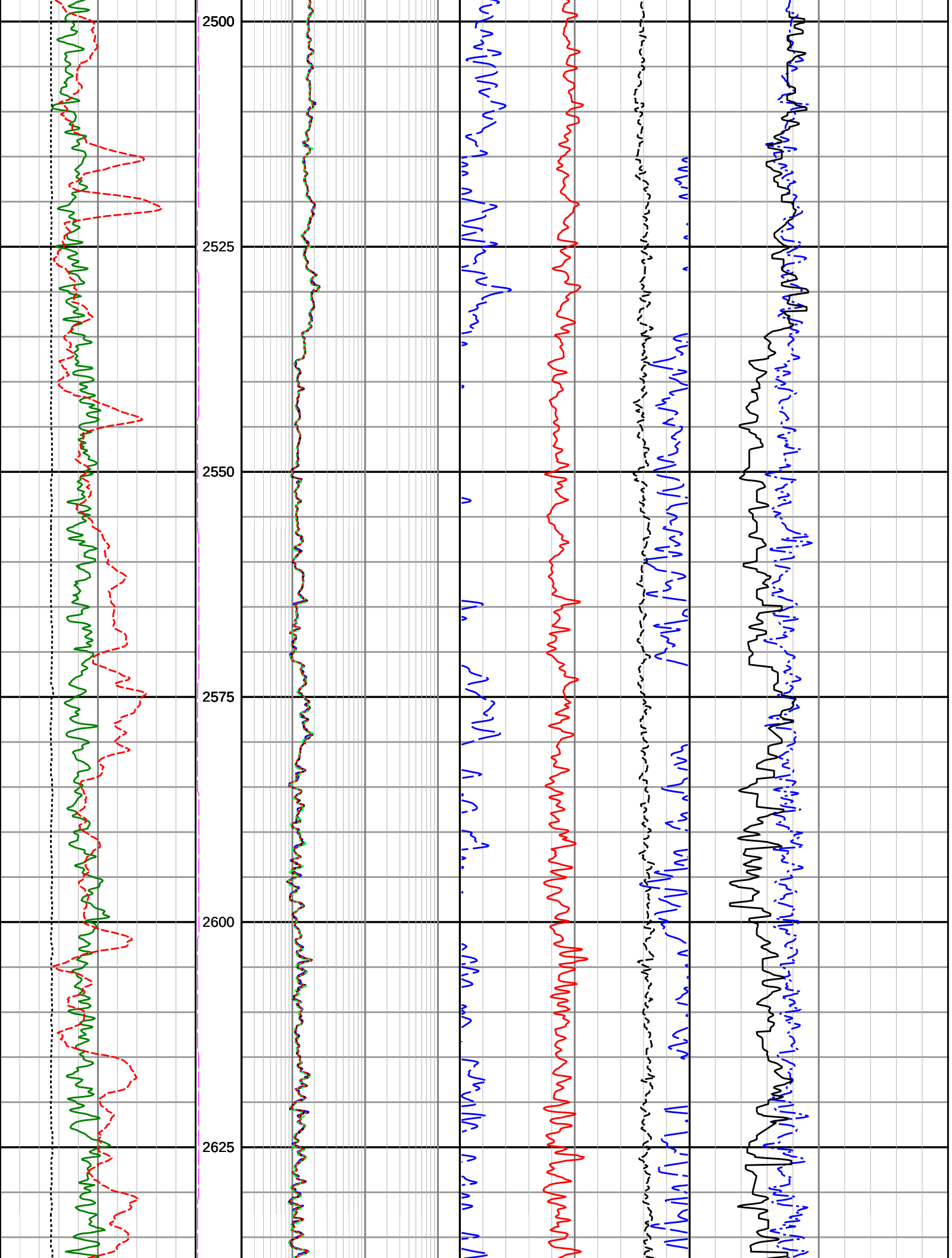
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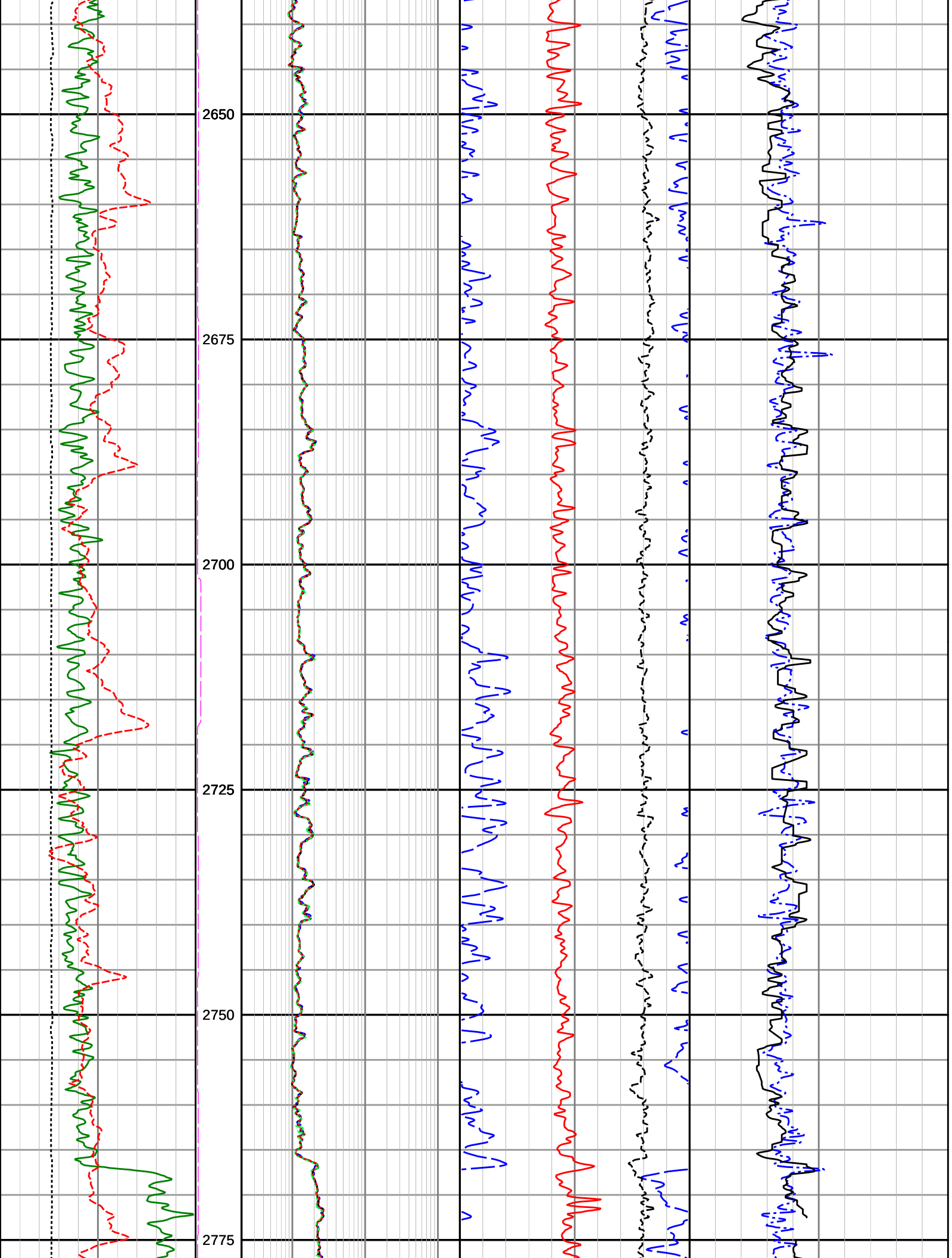
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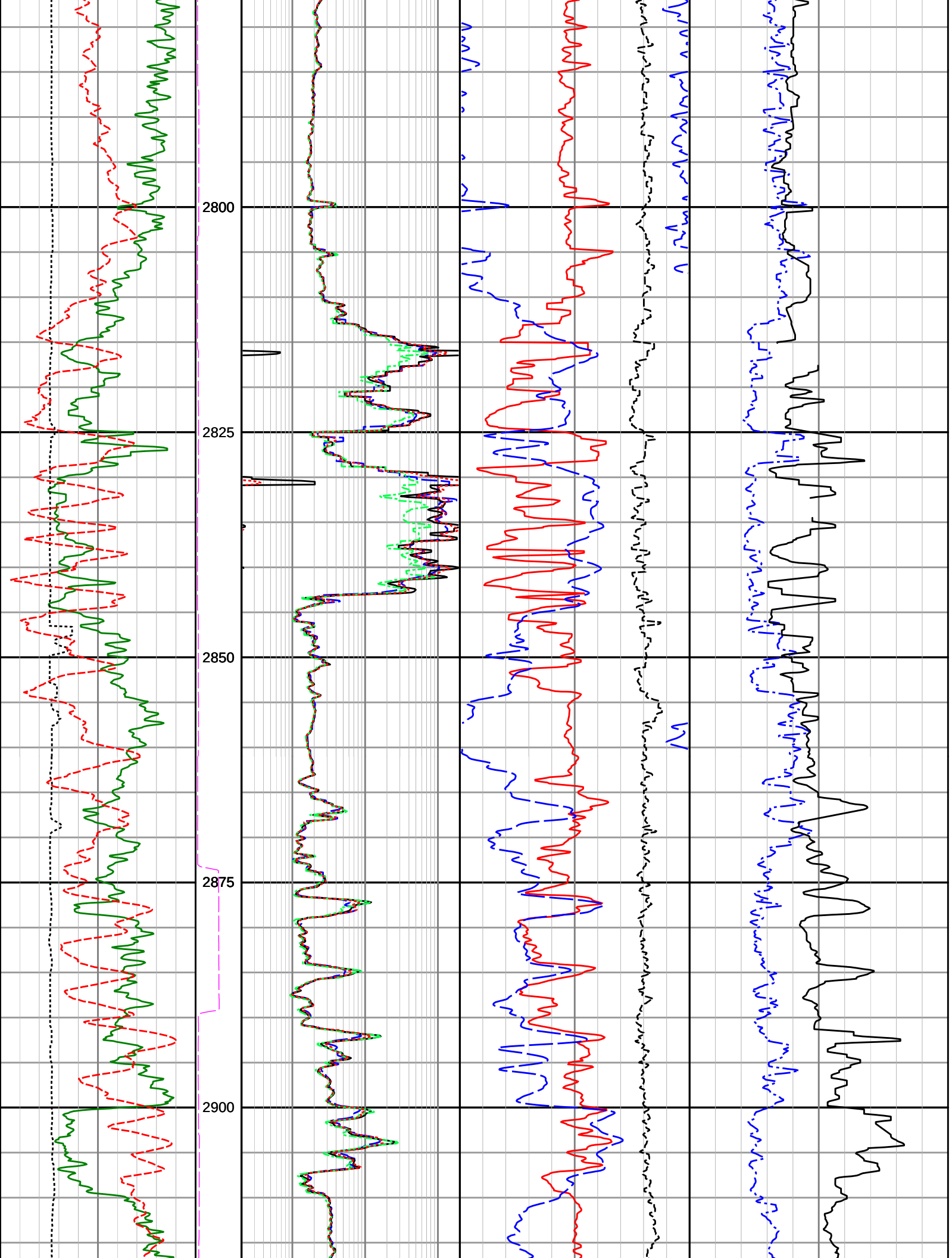
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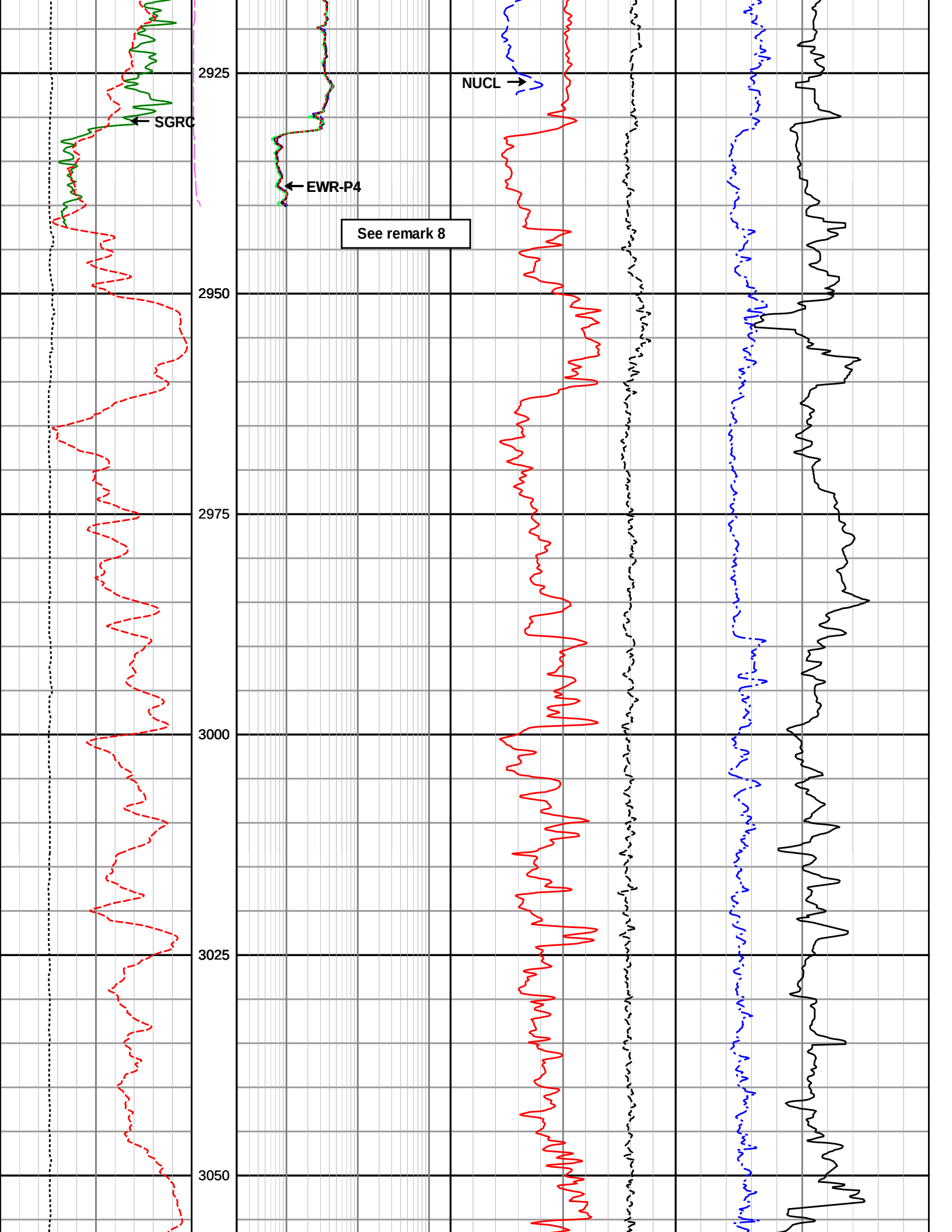
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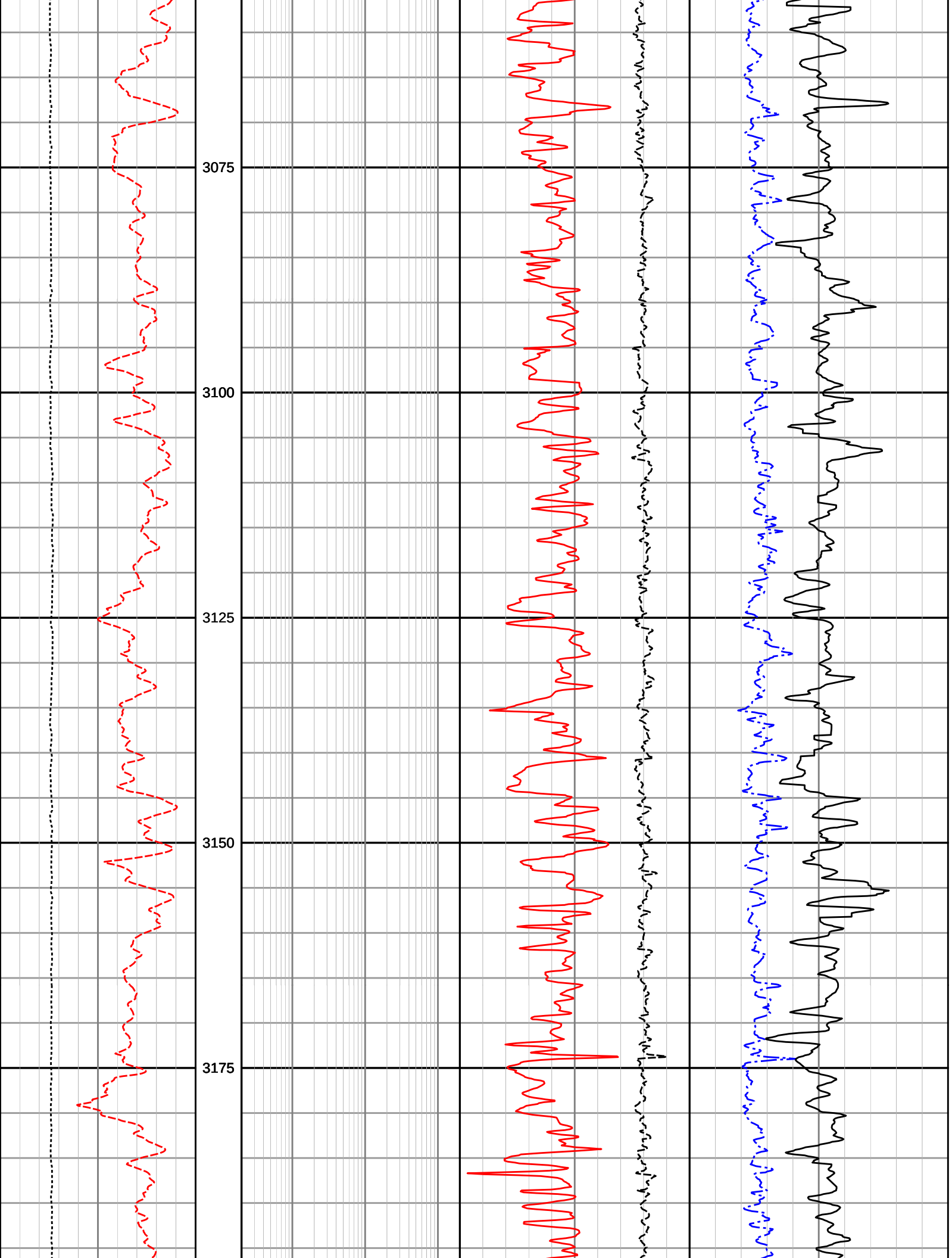
3050
SGRC
EWR-P4
NUCL
See remark 8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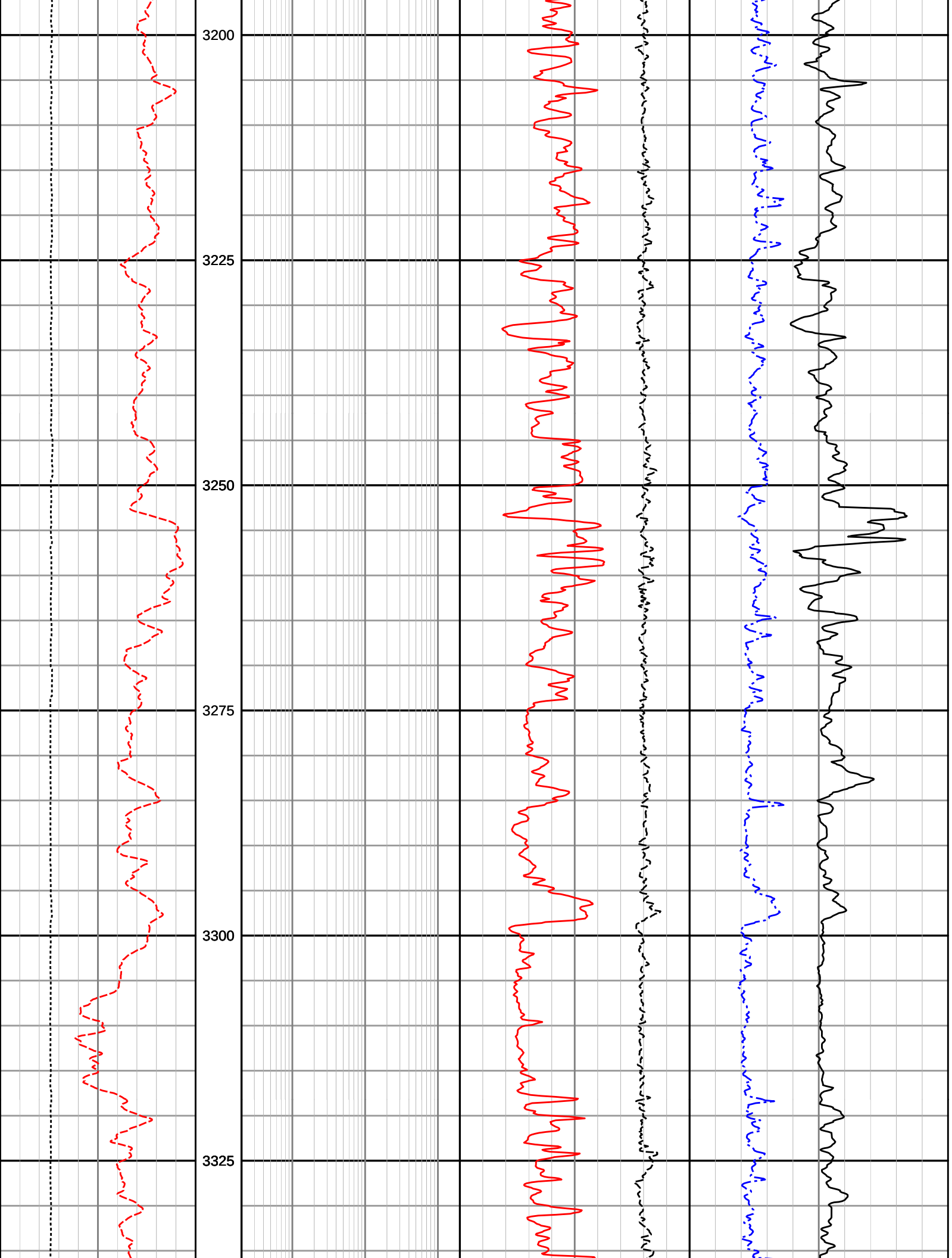
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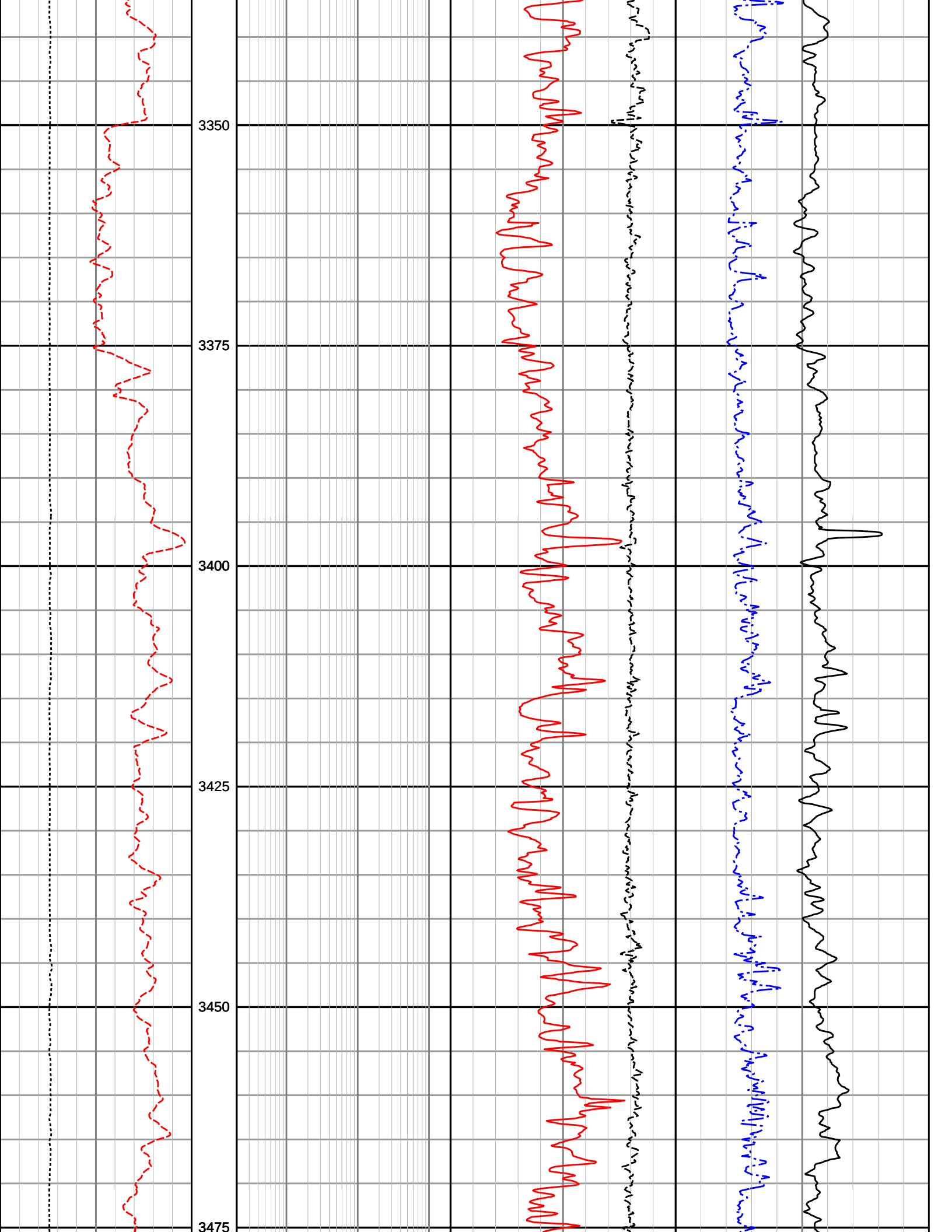
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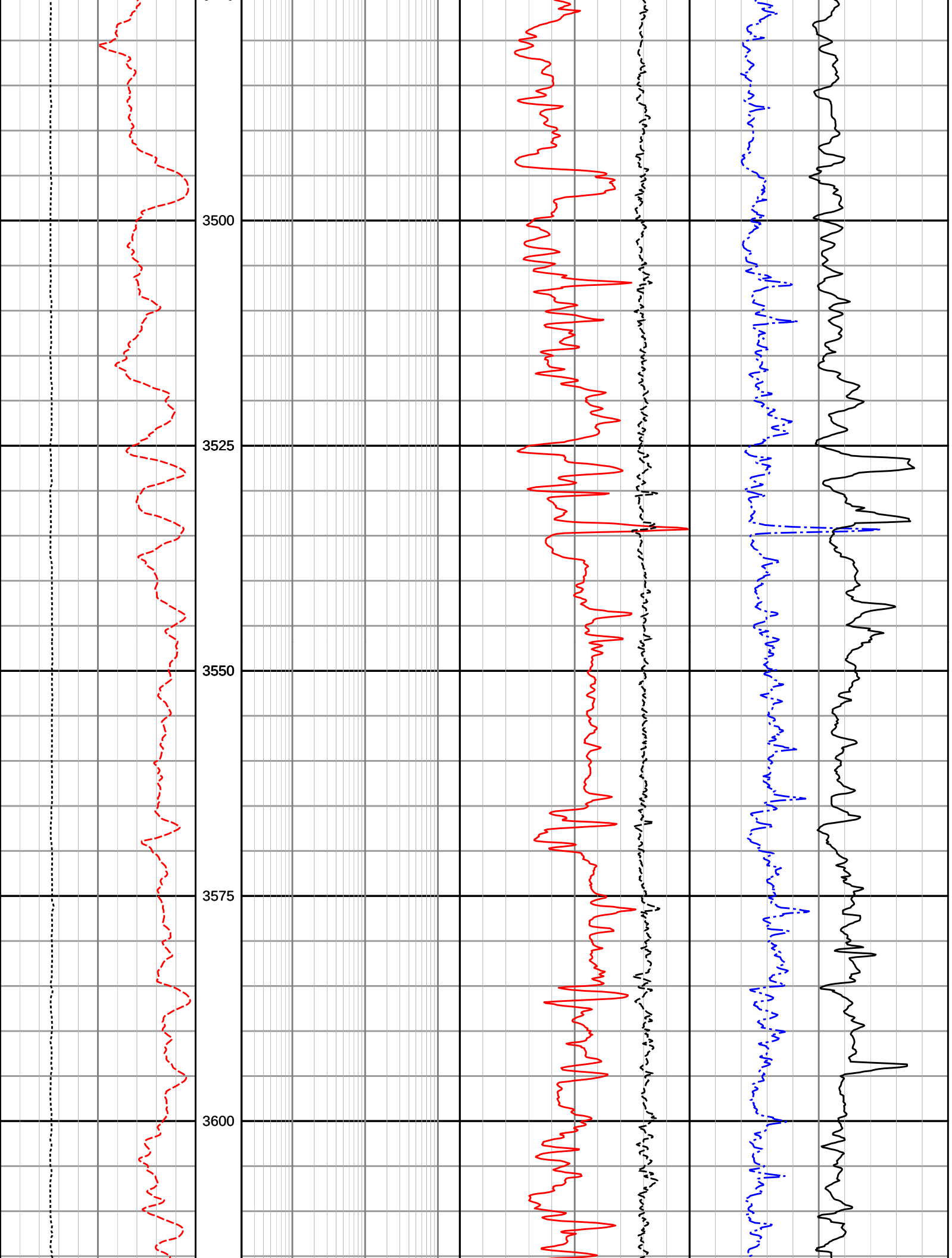
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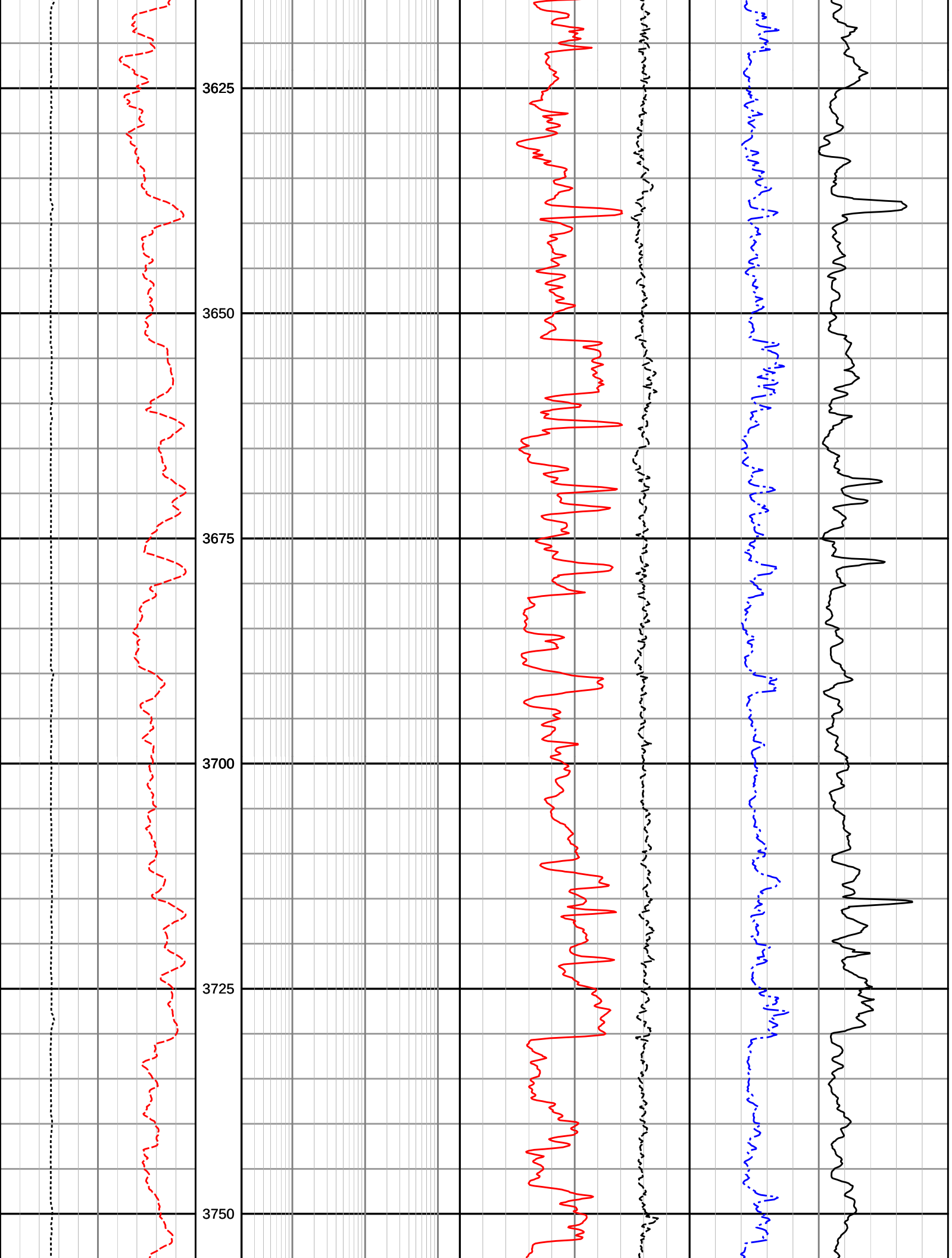
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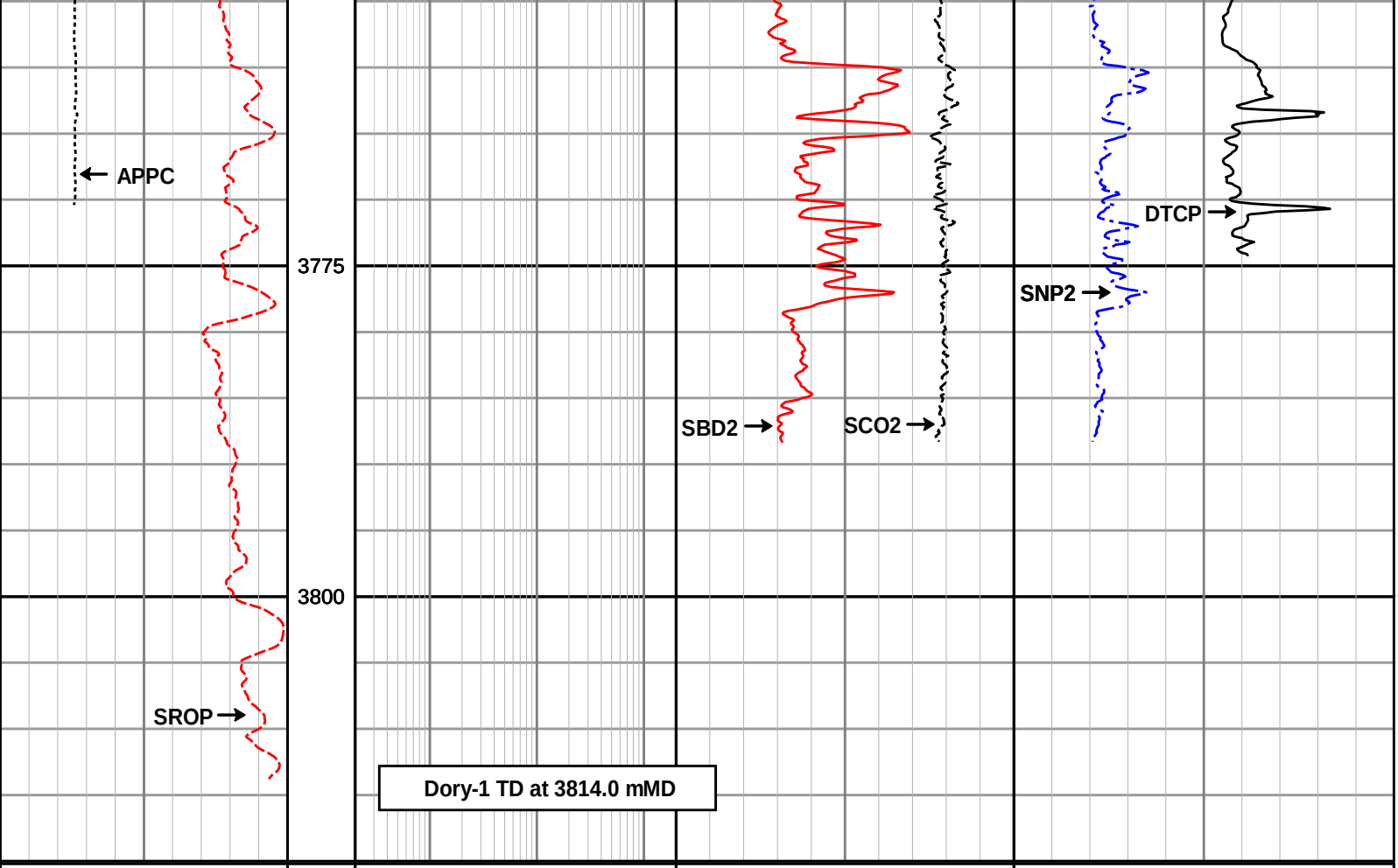


Gamma Ray (SGRC)	DEPTH	Extra Shallow Res (SEXP)	Neutron Porosity (NUCL)	Photoelectric Factor (SNP2)
0 API 200	Depth 1 : 500	0.2 ohmm 200	0.45 v/v -0.15	0 b/e 10
Rate of Penetration (SROP)	**SFXE**	**Shallow Phase Res (SESP)**	**Density (SBD2)**	**Comp Slowness (DTCP)**
200 m/hr 0	0 10 hours	0.2 ohmm 200	1.95 g/cc 2.95	140 us/ft 40
Acoustic Caliper (APPC)		**Medium Phase Res (SEMP)**	**Delta Rho (SCO2)**	
6 in 16		0.2 ohmm 200	-0.75 g/cc 0.25	
		Deep Phase Res (SEDP)		
		0.2 ohmm 200		

Sperry Drilling Services

DIRECTIONAL SURVEY REPORT

Apache Northwest Pty Ltd
Dory-1
Exploration
Victoria
Australia
AU-FE-000610543
RT - AHD = 23.50 m
Water Depth = 517.30 m
All surveys are acquired Real-Time
and have NOT been SAG or IFR corrected.
Surveys from 2940.0 to 3780.0 mMDRT are provided by Baker Atlas wireline.
Final survey projected to TD.

Measured	*Vertical*	*Vertical*

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
540.800	0.00	0.00	540.800	0.000 N	0.000 E	0.000	TIE-IN
613.930	1.24	346.95	613.924	0.780 N	0.181 W	0.679	0.50
641.310	1.32	347.27	641.297	1.377 N	0.317 W	1.200	0.09
729.080	1.27	349.67	729.045	3.324 N	0.715 W	2.913	0.03
758.040	1.30	347.73	757.998	3.961 N	0.843 W	3.475	0.05
815.760	1.05	343.05	815.705	5.104 N	1.135 W	4.462	0.14
844.380	0.97	344.98	844.321	5.588 N	1.274 W	4.874	0.09
901.690	0.83	347.84	901.624	6.458 N	1.486 W	5.630	0.08
1016.720	0.47	350.84	1016.646	7.735 N	1.736 W	6.757	0.09
1074.580	0.45	1.50	1074.505	8.197 N	1.768 W	7.183	0.05
1132.150	0.26	336.38	1132.074	8.543 N	1.815 W	7.496	0.13
1160.990	0.25	342.45	1160.913	8.665 N	1.861 W	7.596	0.03
1189.790	0.28	339.34	1189.713	8.791 N	1.905 W	7.701	0.03
1218.510	0.36	337.60	1218.432	8.939 N	1.963 W	7.822	0.09
1247.270	0.31	352.14	1247.192	9.099 N	2.008 W	7.959	0.10
1275.840	0.35	336.74	1275.762	9.256 N	2.053 W	8.093	0.10
1333.430	0.45	337.84	1333.350	9.626 N	2.208 W	8.393	0.05
1362.390	0.36	331.14	1362.309	9.811 N	2.295 W	8.540	0.10
1391.370	0.38	337.89	1391.289	9.979 N	2.374 W	8.673	0.05
1478.770	0.44	339.78	1478.687	10.557 N	2.597 W	9.148	0.02
1507.710	0.41	345.24	1507.626	10.761 N	2.662 W	9.320	0.05
1519.070	0.33	354.14	1518.985	10.834 N	2.676 W	9.384	0.26
1555.750	0.62	13.67	1555.664	11.132 N	2.640 W	9.678	0.27
1584.250	0.70	1.92	1584.162	11.456 N	2.598 W	9.999	0.17
1612.640	0.68	350.69	1612.550	11.797 N	2.619 W	10.314	0.15
1641.010	0.96	329.53	1640.917	12.167 N	2.766 W	10.617	0.43
1669.490	1.05	321.20	1669.393	12.575 N	3.050 W	10.911	0.18
1698.350	1.42	301.03	1698.246	12.965 N	3.522 W	11.127	0.59
1727.220	1.69	294.67	1727.106	13.327 N	4.215 W	11.245	0.33
1756.100	1.86	285.87	1755.972	13.633 N	5.052 W	11.264	0.33
1785.360	1.99	276.46	1785.216	13.819 N	6.013 W	11.129	0.35
1814.480	2.04	256.82	1814.318	13.758 N	7.022 W	10.745	0.71
1843.690	2.24	226.11	1843.508	13.243 N	7.941 W	9.960	1.18
1872.670	3.45	210.48	1872.453	12.099 N	8.791 W	8.602	1.47
1901.620	3.83	211.01	1901.344	10.519 N	9.732 W	6.803	0.40
1930.530	3.89	212.01	1930.188	8.858 N	10.750 W	4.902	0.09
1959.260	3.88	211.43	1958.852	7.202 N	11.774 W	3.004	0.04
1988.140	3.81	209.64	1987.667	5.534 N	12.758 W	1.107	0.14
2017.060	3.95	200.39	2016.521	3.766 N	13.580 W	-0.832	0.66
2045.650	3.97	192.82	2045.043	1.878 N	14.142 W	-2.800	0.55
2074.480	4.05	182.58	2073.803	0.112 S	14.410 W	-4.770	0.75
2103.170	3.74	182.81	2102.427	2.058 S	14.501 W	-6.641	0.33
2131.890	3.28	185.32	2131.093	3.811 S	14.623 W	-8.339	0.50
2160.610	3.01	186.95	2159.770	5.378 S	14.791 W	-9.876	0.30
2189.200	2.79	187.90	2188.323	6.814 S	14.977 W	-11.295	0.24
2246.650	1.80	180.38	2245.726	9.103 S	15.176 W	-13.525	0.54
2275.290	1.31	173.59	2274.356	9.877 S	15.142 W	-14.247	0.55
2304.030	0.83	157.48	2303.091	10.395 S	15.026 W	-14.699	0.59
2332.800	0.61	126.88	2331.859	10.678 S	14.825 W	-14.902	0.45
2361.430	0.50	77.92	2360.487	10.743 S	14.582 W	-14.885	0.49
2390.380	0.55	67.90	2389.436	10.665 S	14.330 W	-14.729	0.11
2419.350	1.41	42.83	2418.402	10.351 S	13.959 W	-14.312	0.97
2448.200	1.36	46.46	2447.243	9.855 S	13.469 W	-13.684	0.10
2477.020	1.39	40.13	2476.055	9.353 S	12.996 W	-13.056	0.16
2505.870	1.62	34.79	2504.895	8.751 S	12.539 W	-12.339	0.28
2534.920	1.73	35.80	2533.932	8.058 S	12.048 W	-11.524	0.12
2563.900	1.80	33.67	2562.899	7.325 S	11.540 W	-10.666	0.10
2592.890	1.74	25.08	2591.875	6.549 S	11.102 W	-9.790	0.28
2621.850	1.54	25.98	2620.823	5.800 S	10.745 W	-8.966	0.21
2650.670	1.53	25.37	2649.633	5.105 S	10.411 W	-8.200	0.02
2679.360	1.32	23.81	2678.314	4.458 S	10.114 W	-7.492	0.22
2736.480	1.19	38.56	2735.421	3.393 S	9.479 W	-6.278	0.18
2765.320	1.50	54.76	2764.253	2.941 S	8.983 W	-5.690	0.51
2794.000	1.49	54.96	2792.923	2.510 S	8.371 W	-5.085	0.01
2823.060	1.51	57.63	2821.973	2.088 S	7.738 W	-4.480	0.07
2851.450	1.44	61.34	2850.353	1.716 S	7.109 W	-3.925	0.13
2909.600	1.41	63.70	2908.486	1.049 S	5.827 W	-2.879	0.03
2938.520	1.23	64.27	2937.398	0.757 S	5.229 W	-2.409	0.19
2940.000	1.43	67.85	2938.877	0.743 S	5.198 W	-2.386	4.35

2940.000	1.43	67.85	2938.877	0.743 S	5.198 W	-2.380	4.35
2950.000	1.27	65.91	2948.875	0.651 S	4.981 W	-2.228	0.50
2960.000	1.17	64.18	2958.872	0.562 S	4.789 W	-2.081	0.32
2970.000	1.04	68.89	2968.870	0.485 S	4.612 W	-1.951	0.47
2980.000	1.03	68.29	2978.869	0.419 S	4.444 W	-1.835	0.06
2990.000	0.95	68.22	2988.868	0.355 S	4.284 W	-1.722	0.23
3000.000	0.99	61.54	2998.866	0.283 S	4.131 W	-1.605	0.36
3010.000	0.94	66.61	3008.865	0.209 S	3.980 W	-1.486	0.29
3020.000	0.84	68.12	3018.863	0.149 S	3.837 W	-1.383	0.31
3030.000	0.79	69.98	3028.862	0.098 S	3.704 W	-1.292	0.17
3040.000	0.63	67.98	3038.862	0.054 S	3.587 W	-1.212	0.48
3050.000	0.68	63.90	3048.861	0.007 S	3.483 W	-1.134	0.19
3060.000	0.77	65.72	3058.860	0.046 N	3.368 W	-1.046	0.29
3070.000	0.86	52.25	3068.859	0.120 N	3.248 W	-0.938	0.63
3080.000	0.47	48.51	3078.859	0.193 N	3.158 W	-0.840	1.19
3090.000	0.53	67.03	3088.858	0.238 N	3.085 W	-0.773	0.52
3100.000	0.73	69.27	3098.858	0.278 N	2.983 W	-0.702	0.59
3110.000	0.44	76.53	3108.857	0.310 N	2.887 W	-0.641	0.88
3120.000	0.79	74.12	3118.856	0.338 N	2.783 W	-0.581	1.06
3130.000	0.43	61.71	3128.856	0.374 N	2.683 W	-0.514	1.16
3140.000	1.00	62.90	3138.855	0.432 N	2.572 W	-0.424	1.71
3150.000	0.84	81.15	3148.854	0.483 N	2.422 W	-0.327	0.99
3160.000	1.17	58.80	3158.852	0.547 N	2.262 W	-0.215	1.51
3170.000	0.98	69.70	3168.851	0.629 N	2.095 W	-0.083	0.83
3180.000	0.96	42.99	3178.849	0.720 N	1.958 W	0.048	1.34
3190.000	0.75	65.94	3188.848	0.808 N	1.841 W	0.169	1.19
3200.000	0.84	60.66	3198.847	0.871 N	1.717 W	0.268	0.34
3210.000	0.81	28.84	3208.846	0.969 N	1.619 W	0.393	1.36
3220.000	1.05	53.17	3218.845	1.086 N	1.511 W	0.538	1.37
3230.000	0.89	45.72	3228.843	1.195 N	1.383 W	0.683	0.62
3240.000	1.32	41.52	3238.841	1.335 N	1.251 W	0.858	1.31
3250.000	0.96	48.13	3248.839	1.477 N	1.113 W	1.037	1.13
3260.000	1.21	43.92	3258.838	1.609 N	0.977 W	1.206	0.79
3270.000	1.03	36.83	3268.836	1.757 N	0.850 W	1.387	0.70
3280.000	1.21	45.00	3278.834	1.903 N	0.721 W	1.567	0.73
3290.000	1.13	46.50	3288.832	2.046 N	0.575 W	1.750	0.25
3300.000	1.08	44.10	3298.830	2.181 N	0.438 W	1.922	0.22
3310.000	1.32	32.46	3308.828	2.346 N	0.311 W	2.119	1.03
3320.000	1.00	37.99	3318.826	2.512 N	0.196 W	2.313	1.02
3330.000	1.27	38.79	3328.824	2.667 N	0.072 W	2.500	0.83
3340.000	1.02	36.84	3338.822	2.825 N	0.051 E	2.689	0.76
3350.000	1.14	39.02	3348.820	2.973 N	0.167 E	2.867	0.38
3360.000	1.39	22.11	3358.817	3.163 N	0.275 E	3.082	1.34
3370.000	1.15	36.15	3368.815	3.357 N	0.380 E	3.299	1.17
3380.000	1.32	37.24	3378.813	3.529 N	0.509 E	3.504	0.51
3390.000	1.37	37.71	3388.810	3.715 N	0.652 E	3.726	0.17
3400.000	1.37	36.97	3398.807	3.906 N	0.797 E	3.953	0.05
3410.000	1.35	36.98	3408.804	4.096 N	0.940 E	4.179	0.05
3420.000	1.40	35.37	3418.801	4.290 N	1.082 E	4.409	0.18
3430.000	1.46	39.02	3428.798	4.488 N	1.233 E	4.646	0.32
3440.000	1.44	40.19	3438.795	4.683 N	1.394 E	4.882	0.11
3450.000	1.37	40.87	3448.792	4.869 N	1.553 E	5.110	0.21
3460.000	1.40	36.57	3458.789	5.058 N	1.704 E	5.337	0.33
3470.000	1.46	36.71	3468.786	5.258 N	1.853 E	5.575	0.18
3480.000	1.40	32.98	3478.783	5.463 N	1.996 E	5.815	0.33
3490.000	1.50	32.64	3488.780	5.676 N	2.133 E	6.061	0.31
3500.000	1.70	33.19	3498.776	5.910 N	2.285 E	6.332	0.59
3510.000	1.76	32.41	3508.771	6.164 N	2.448 E	6.625	0.20
3520.000	1.73	32.08	3518.767	6.422 N	2.611 E	6.921	0.09
3530.000	1.68	31.41	3528.762	6.675 N	2.768 E	7.212	0.17
3540.000	1.65	34.48	3538.758	6.919 N	2.925 E	7.493	0.28
3550.000	1.63	33.84	3548.754	7.155 N	3.086 E	7.769	0.08
3560.000	1.55	29.05	3558.750	7.392 N	3.231 E	8.040	0.46
3570.000	1.58	28.23	3568.746	7.631 N	3.362 E	8.309	0.10
3580.000	1.49	26.04	3578.743	7.869 N	3.484 E	8.573	0.31
3590.000	1.46	23.07	3588.739	8.103 N	3.591 E	8.829	0.25
3600.000	1.45	25.76	3598.736	8.334 N	3.696 E	9.082	0.21
3610.000	1.45	23.60	3608.733	8.564 N	3.801 E	9.333	0.16
3620.000	1.46	19.11	3618.730	8.800 N	3.893 E	9.586	0.34
3630.000	1.39	18.56	3628.727	9.035 N	3.974 E	9.835	0.23
3640.000	1.39	16.97	3638.724	9.265 N	4.047 E	10.077	0.12
3650.000	1.31	16.43	3648.721	9.490 N	4.115 E	10.311	0.24

3660.000	1.25	16.45	3658.719	9.704 N	4.178 E	10.534	0.17
3670.000	1.16	16.90	3668.716	9.906 N	4.238 E	10.744	0.25
3680.000	1.12	372.04	3678.714	10.098 N	4.288 E	10.943	0.32
3690.000	1.23	373.40	3688.712	10.298 N	4.334 E	11.147	0.36
3700.000	1.16	368.73	3698.710	10.504 N	4.374 E	11.354	0.36
3710.000	1.17	370.00	3708.708	10.705 N	4.407 E	11.555	0.08
3720.000	1.20	370.40	3718.706	10.908 N	4.444 E	11.760	0.07
3730.000	1.23	364.05	3728.704	11.118 N	4.470 E	11.966	0.41
3740.000	1.23	363.25	3738.701	11.332 N	4.484 E	12.173	0.05
3750.000	1.21	362.77	3748.699	11.544 N	4.495 E	12.377	0.07
3760.000	1.19	360.98	3758.697	11.753 N	4.502 E	12.577	0.13
3770.000	1.11	361.89	3768.695	11.953 N	4.507 E	12.768	0.25
3780.000	1.21	352.47	3778.693	12.155 N	4.496 E	12.956	0.66
3814.000	1.21	352.47	3812.685	12.868 N	4.402 E	13.600	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

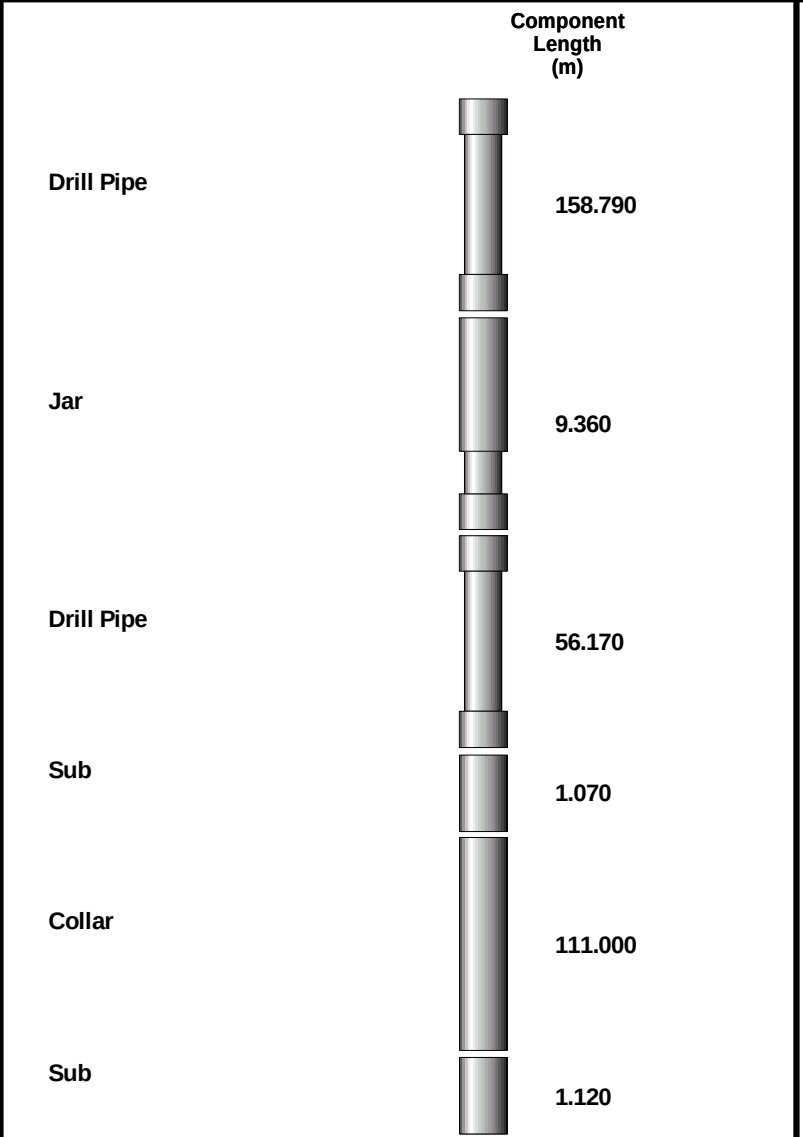
SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A CLOSURE OF 18.89 DEGREES (GRID)
A TOTAL CORRECTION OF 14.35 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

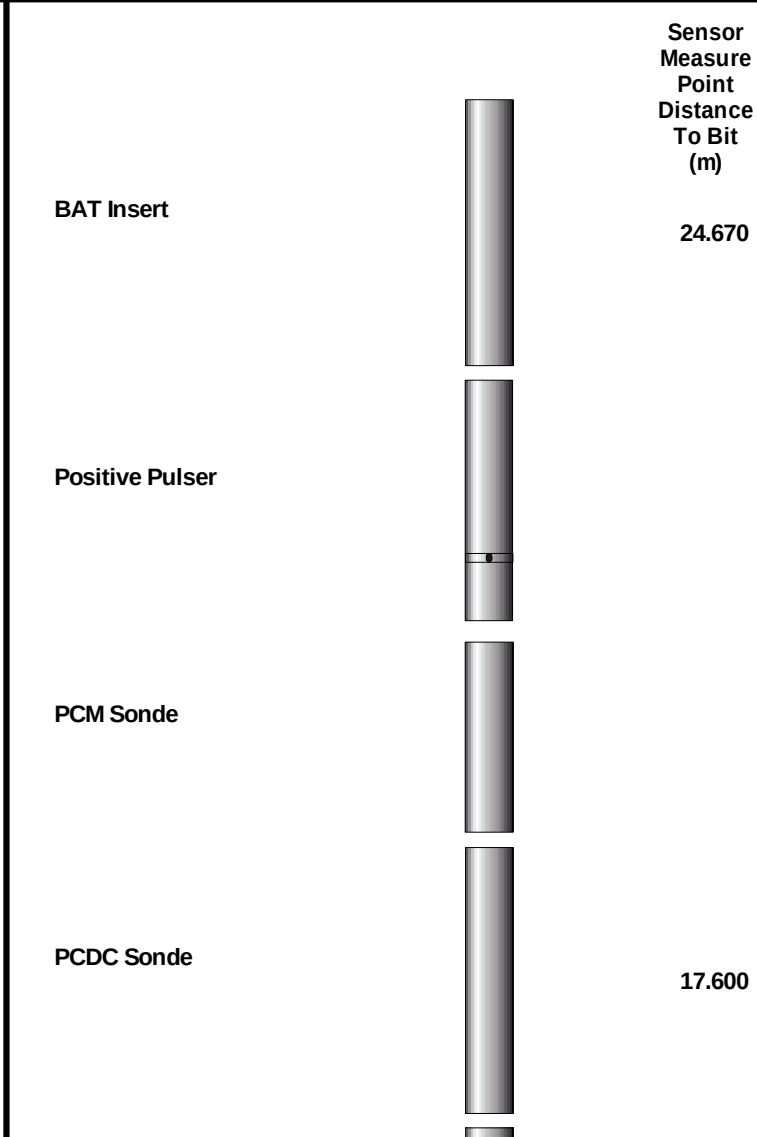
HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3814.000 METRES
IS 13.600 METRES ALONG 18.89 DEGREES (GRID)

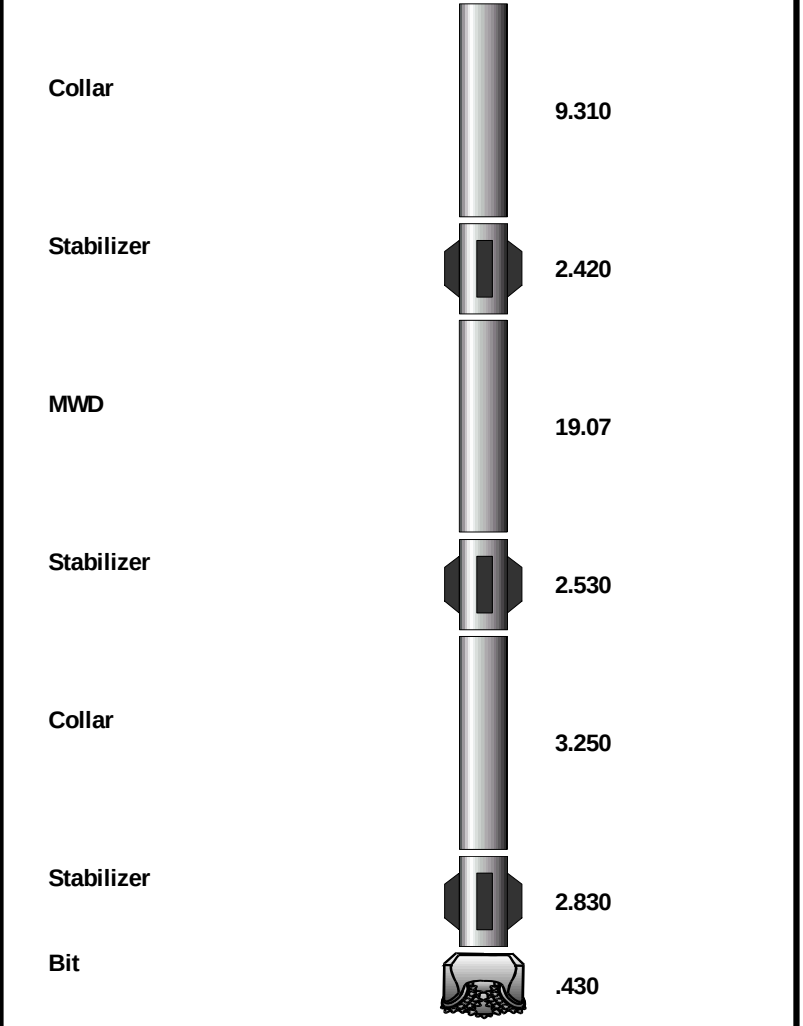
Date Printed:27 January 2009

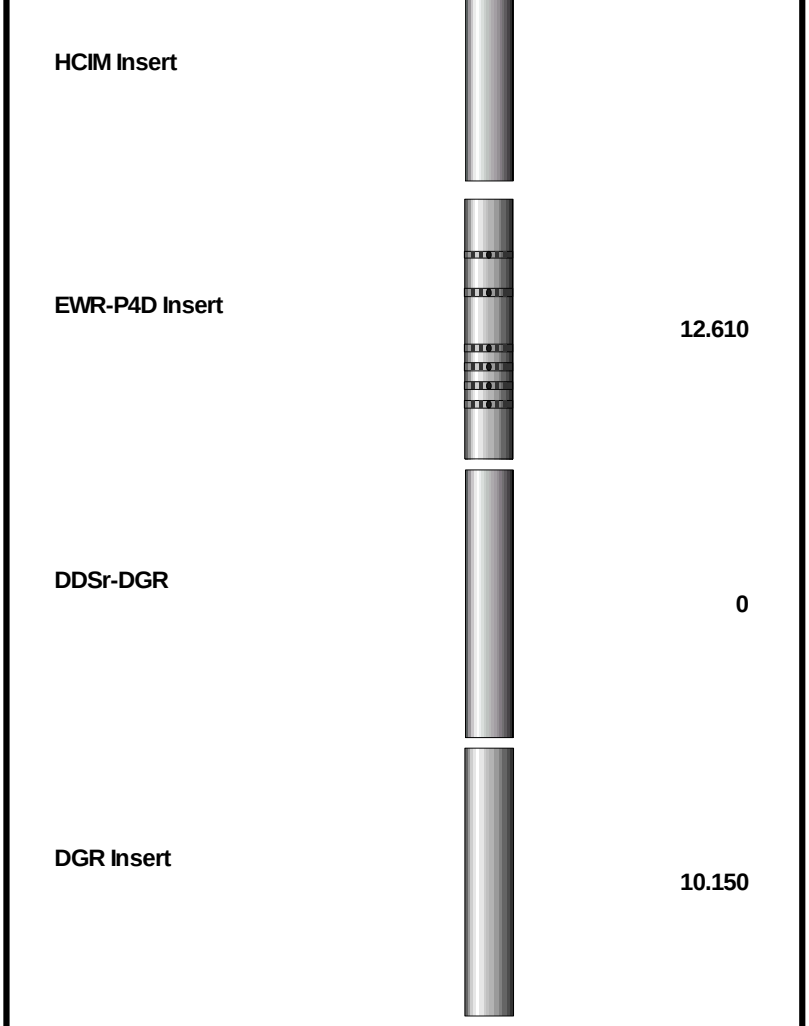
MWD RUN 100 - BHA



MWD RUN 100 - MWD







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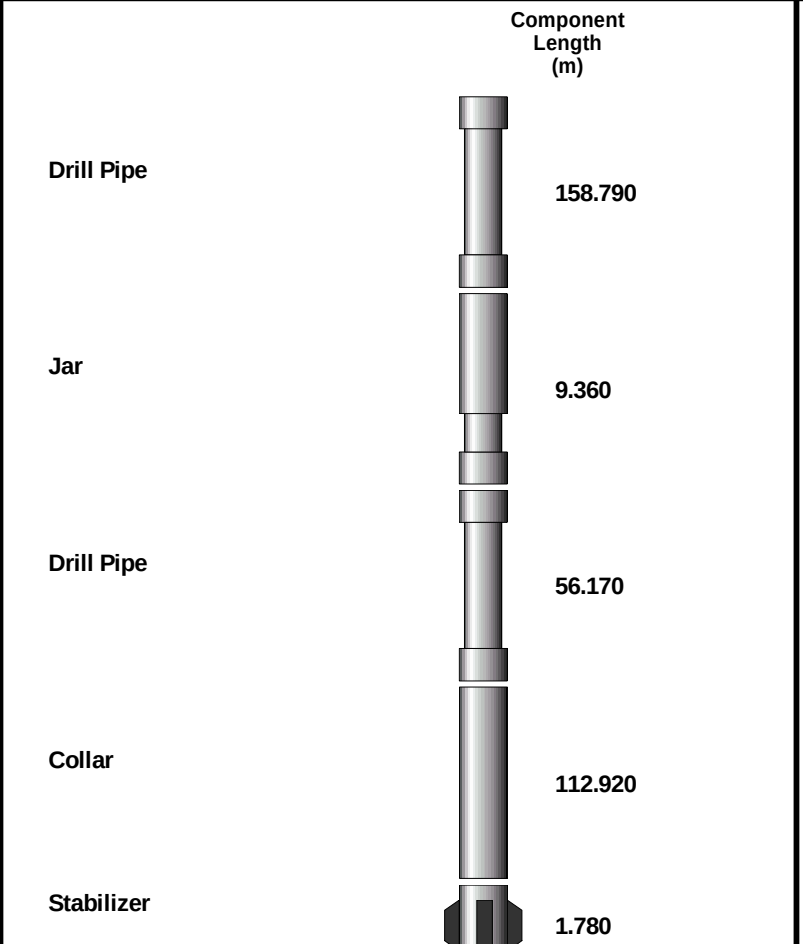
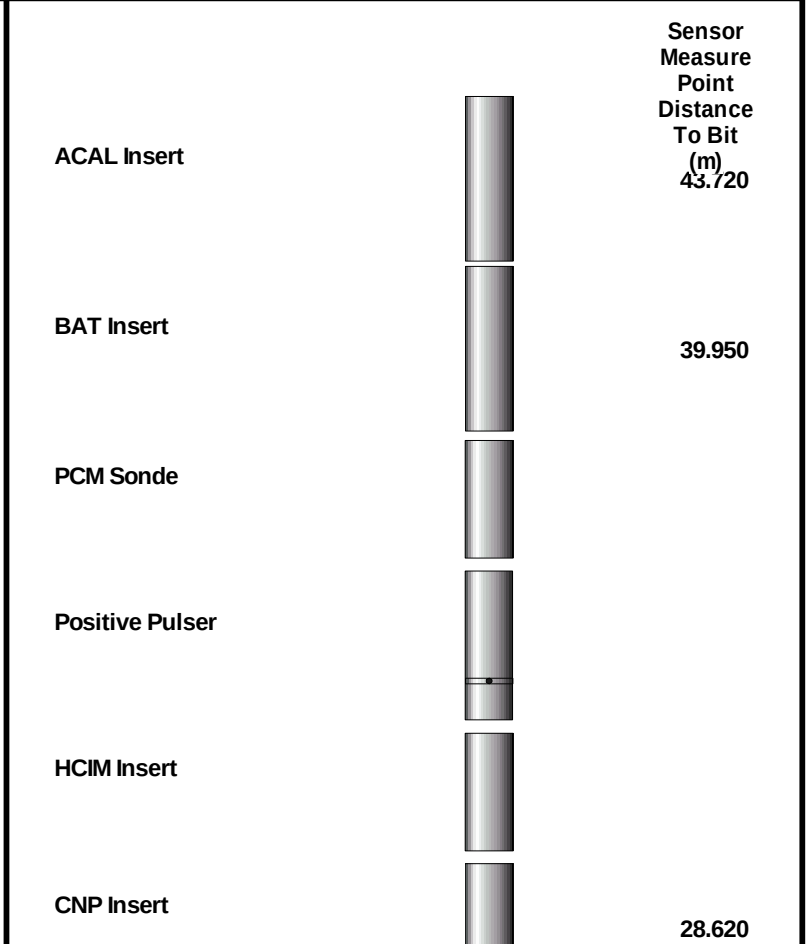
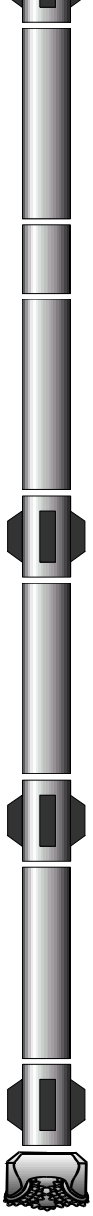
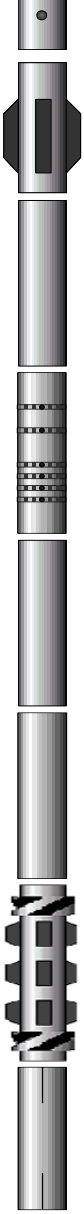


MWD RUN 300 - MWD

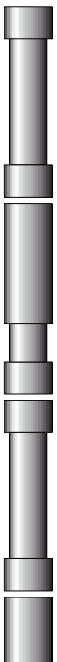


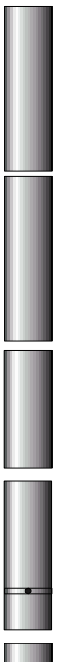


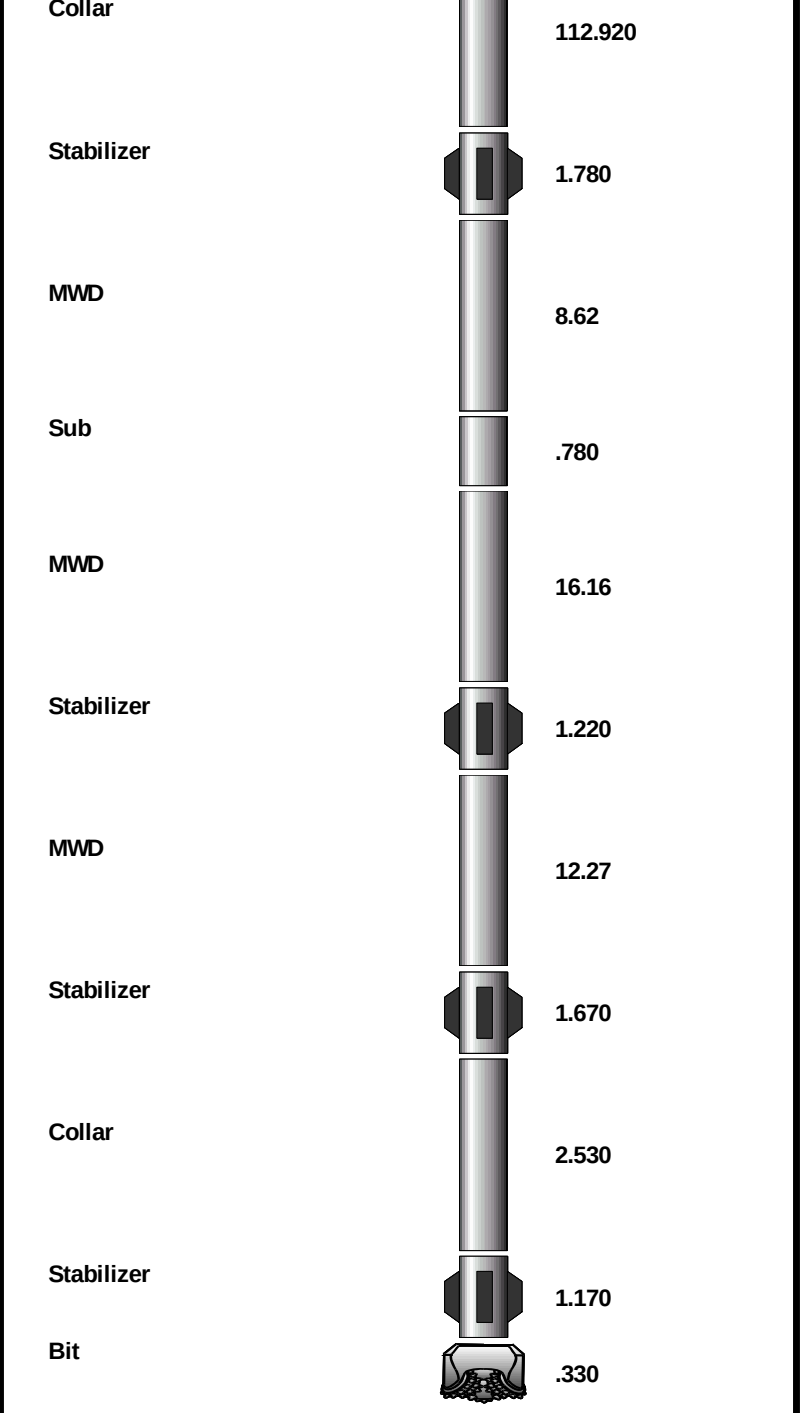


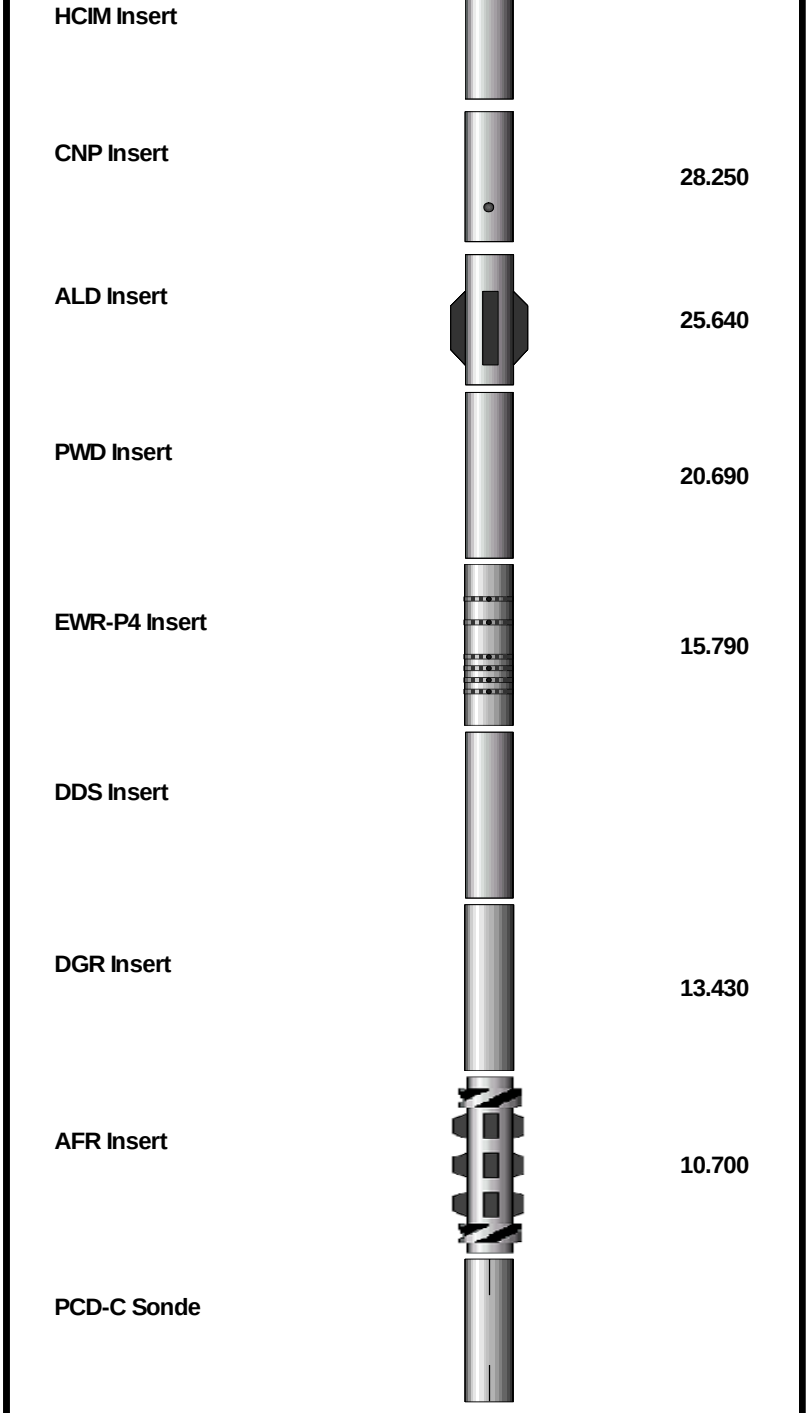
MWD RUN 400 - BHA

MWD RUN 400 - MWD






Collar
112.920
Stabilizer
1.780
MWD
8.62
Sub
.780
MWD
16.16
Stabilizer
1.220
MWD
12.27
Stabilizer
1.670
Collar
2.530
Stabilizer
1.170
Bit
.330


HCIM Insert
CNP Insert
28.250
ALD Insert
25.640
PWD Insert
20.690
EWR-P4 Insert
15.790
DDS Insert
DGR Insert
13.430
AFR Insert
10.700
PCD-C Sonde

HALLIBURTON

AFR Azimuthally Focused Resistivity Imaging

Powered by INSITE™

1 : 500

Sperry Drilling Services

Company	**Apache Northwest Pty Ltd**
Rig	**Ocean Patriot**
Well	**Dory-1**
Field	**Exploration**
Country	**Australia**
DOE Number	

Country : **Australia**
Field : **Exploration**
Location : **Lat: 38° 35' 19.759" South GDA94**
Long: 148° 32' 51.925" East GDA94
Well : **Dory-1**
Company : **Apache Energy Ltd.**
Rig : **Ocean Patriot**

LOCATION
Latitude : **Lat: 38° 35' 19.759" South GDA94**
Longitude : **Long: 148° 32' 51.925" East GDA94**
UTM Easting = **634,798.900 m**
UTM Northing = **5,727,714.900 m**

Other Services
Pressure While Drilling
DDS Drillstring Dynamics

Permanent Datum : **AHD**
Elevation : **0.00 m**
Log Measured From : **Drill Floor** **23.50 m** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **23.50 m**
DF **23.50 m**
GL **0.00 m**
WD **517.3 m**

Depth Logged : **586.50 m** To **3,814.00 m**
Date Logged : **30-Oct-08** To **16-Nov-08**
Total Depth MD : **3,814.00 m** TVD : **3,812.69 m**
Spud Date : **04-Nov-08**

Unit No. : **300703**
Job No. : **AU-FE-0006105438**
Plot Type : **Final**
Plot Date : **04-Dec-08**

Run No.	Borehole Record (MD) Size	From	To
300	216.000 mm	1,537.00 m	2,955.00 m
400	216.000 mm	2,955.00 m	3,814.00 m

Run No.	Borehole Record (MD) Size	From	To

Casing Record (MD)

Size	Weight	From	To
762.000 mm	458.00 kgpm	538.00 m	585.00 m
340.000 mm	102.00 kgpm	585.00 m	1,534.14 m

WELL INFORMATION

MWD Run Number	300	400																											
Date run completed	13-Nov-08	16-Nov-08																											
Rig Bit Number	4	5																											
Bit Size (mm)	216	216																											
Tool Nominal OD (mm)	171	171																											
Log Start Depth (MD, m)	1,537.00	2,955.00																											
Log End Depth (MD, m)	2,955.00	3,814.00																											
Drill or Wipe	Drilling	Wipe/Drilling																											
Drill/Wipe Start Date and Time	11-Nov-08 21:57	14-Nov-08 13:17																											
Drill/Wipe End Date and Time	13-Nov-08 15:03	15-Nov-08 23:57																											
Min Inc (deg) @ Depth (MD, m)	0.50 @ 2,361.43	0.44 @ 3,110.00																											
Max Inc (deg) @ Depth (MD, m)	4.05 @ 2,074.48	1.76 @ 3,510.00																											
Bit TFA(in2) / Bit Type	0.65 / Smith Mi516	0.90 / HC 506zx																											
Flow Rate (gpm)	770	735																											
Max AV (mpm) / CV (mpm) @ MWD	215.4 / 140.4	215.4 / 118.2																											
Fluid Type	KCL/Polymer	KCL/Polymer																											
Density (sg) / Viscosity (spl)	1.1 / 56.0	1.1 / 59.1																											
Filtrate CL (ppm)	47,830	47,000																											
pH / Fluid Loss (cptm)	11.30 / 5.0	10.80 / 4.0																											
PV (cP) / YP (pa)	13 / 12.5	14 / 13.4																											
% Solids / % Sand	4.2 / 0.25	4.32 / .75																											
% Oil / Oil:Water Ratio	0 / 0:100	0 / 0:100																											
Rm @ Measured Temp (degC)	0.09 @ 24.40	0.1 @ 20.00																											
Rmf @ Measured Temp (degC)	0.07 @ 23.90	0.06 @ 21.70																											
Rmc @ Measured Temp (degC)	0.13 @ 21.10	0.14 @ 20.00																											

Max Tool Temp (degC) / Source	49 / EWR-P4	55 / ALD			
Rm @ Max Tool Temp (degC)	0.06 @ 49.00	0.05 @ 55.00			
Lead MWD Engineer	M. Lee / J. Lau	J. Lau			
Customer Representative	P. Brown	P. Brown			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	74.11	74.11			
Sub Serial Number	243942	243942			
Insert Serial Number	254110	254110			
Date and Time Initialized	11-Nov-08 12:25	14-Nov-08 02:38			
Date and Time Read	13-Nov-08 23:30	16-Nov-08 14:28			
ECMB SW Version					

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (m)	7.40	6.82			
Software Version	6.09	6.09			
Sub Serial Number	106317	106317			
Sonde Serial Number	400011	400011			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	N/A	N/A			

AFR Sensor Information

Tool Type	AFR	AFR			
Tool ID	13	13			
Distance From Bit (m)	11.10	10.70			
Software Version	N/A	N/A			
Recorded Sample Period (sec)	3	3			
Tool Size	6.75	6.75			
Stabilizer Size	209.550	209.550			
Button Blade Size	25.400	25.400			
Collar S/N	11111785	11111785			
Insert S/N	11131147	11131147			
Shallow K Factor	538.00	538.00			
Medium K Factor	780.00	780.00			
Deep K Factor	916.00	916.00			
RAB K Factor	1.00	1.00			
Date & Time Initialized	11-Nov-07 12:23	14-Nov-08 02:37			
Date & Time Read	13-Nov-07 23:29	16-Nov-08 11:07			

REMARKS

1.) All depths are bit depths and are referenced to the driller's pipe tally unless otherwise noted.

2.) AV/CV values are calculated at the LWD collar using the Power Law for water based mud, measured in m/min.

3.) Curve Mnemonics used are:

SGRC - Smoothed Combined Gamma Ray, api
SROP - Smoothed Rate of Penetration, m/hr
SEXP - Smoothed Extra Shallow Phase Shift Resistivity, ohmm
SESP - Smoothed Shallow Phase Shift Resistivity, ohmm
SEMP - Smoothed Medium Phase Shift Resistivity, ohmm
SEDP - Smoothed Deep Phase Shift Resistivity, ohmm

SEDP - Smoothed Deep Phase Shift Resistivity, ohmm
SMLT - Smoothed AFR Medium Spacing Low Frequency Resistivity
SCO2 - Smoothed Rapid Sample Best Bin Stand Off Correction, grams/cc
SBD2 - Smoothed Rapid Sample Best Bin Bulk Density, grams/cc
SNP2 - Smoothed Rapid Sample Near Detector Pe, barns/electron
NUCL - Smoothed Neutron Projected Porosity, v/v
APPC - Smoothed Acoustic Caliper, in

4.) AFR tool failure at 1864.0 mMDRT during run 300.
5.) AFR data presented from 2766.9 - 2899.9 mMDRT acquired realtime during MAD run 400
6.) AFR Image presented from 1537m-1864mMD are from Compensated Deep HF Mag Array, Image from 1864mMD onwards are from Deep LT Mag Array

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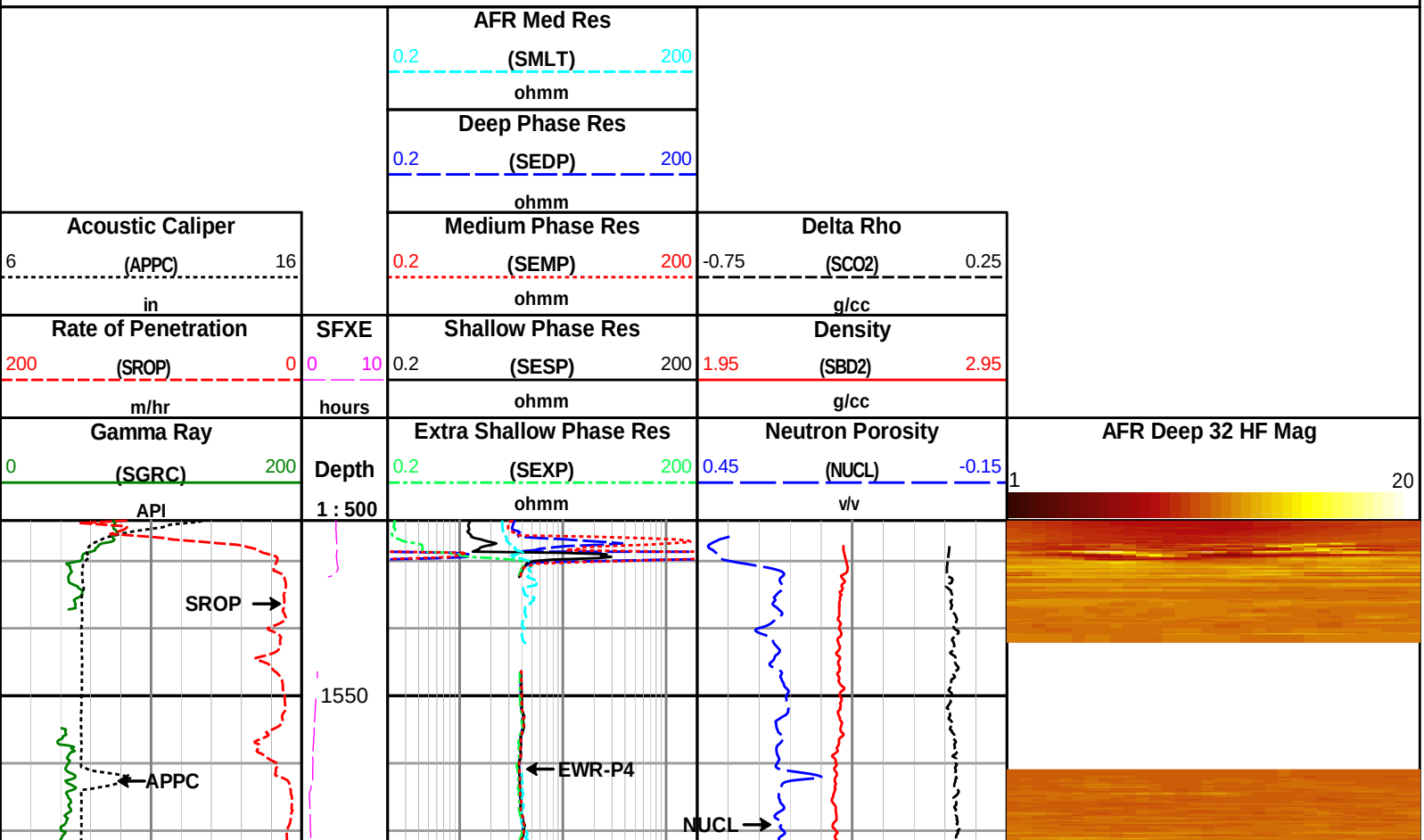
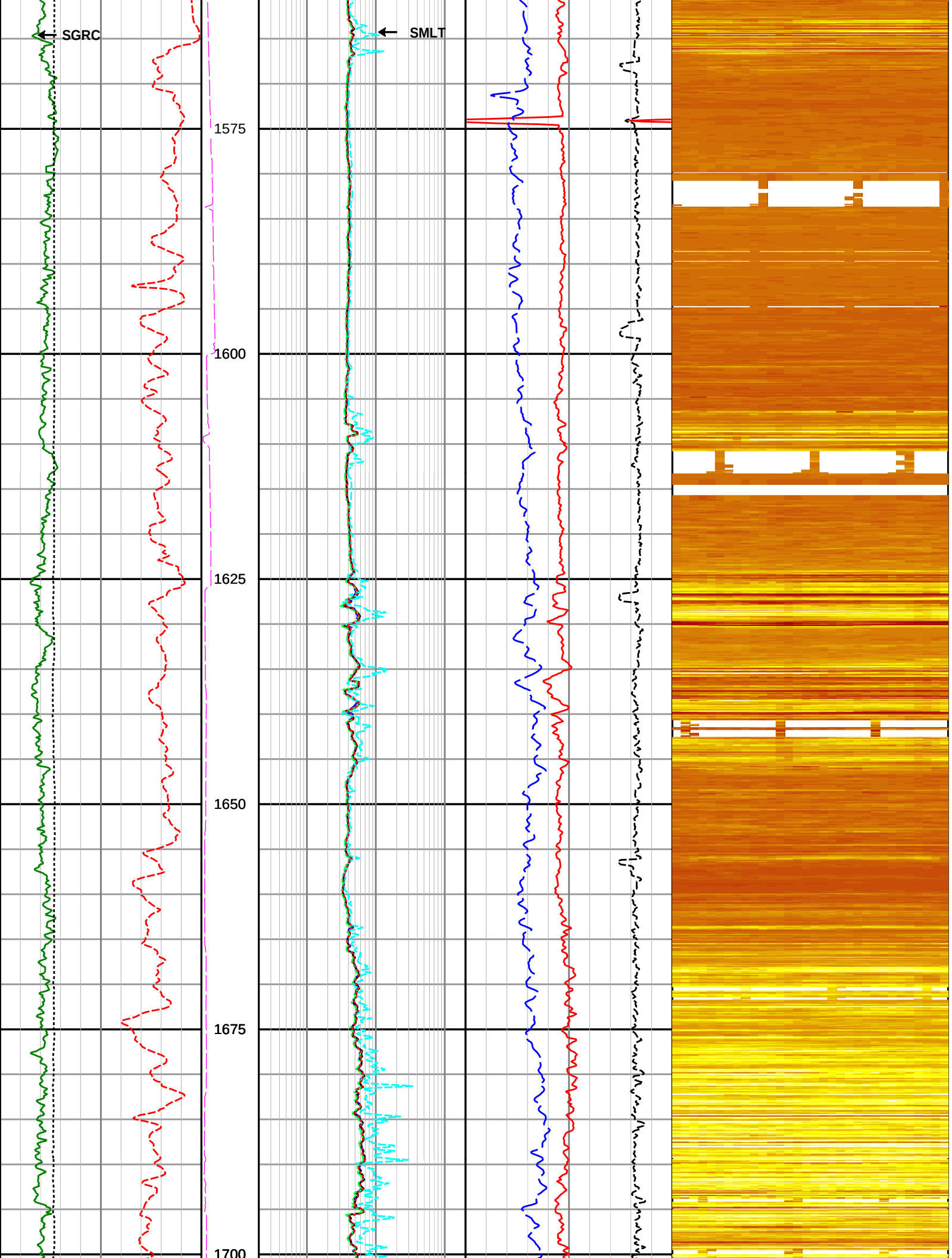
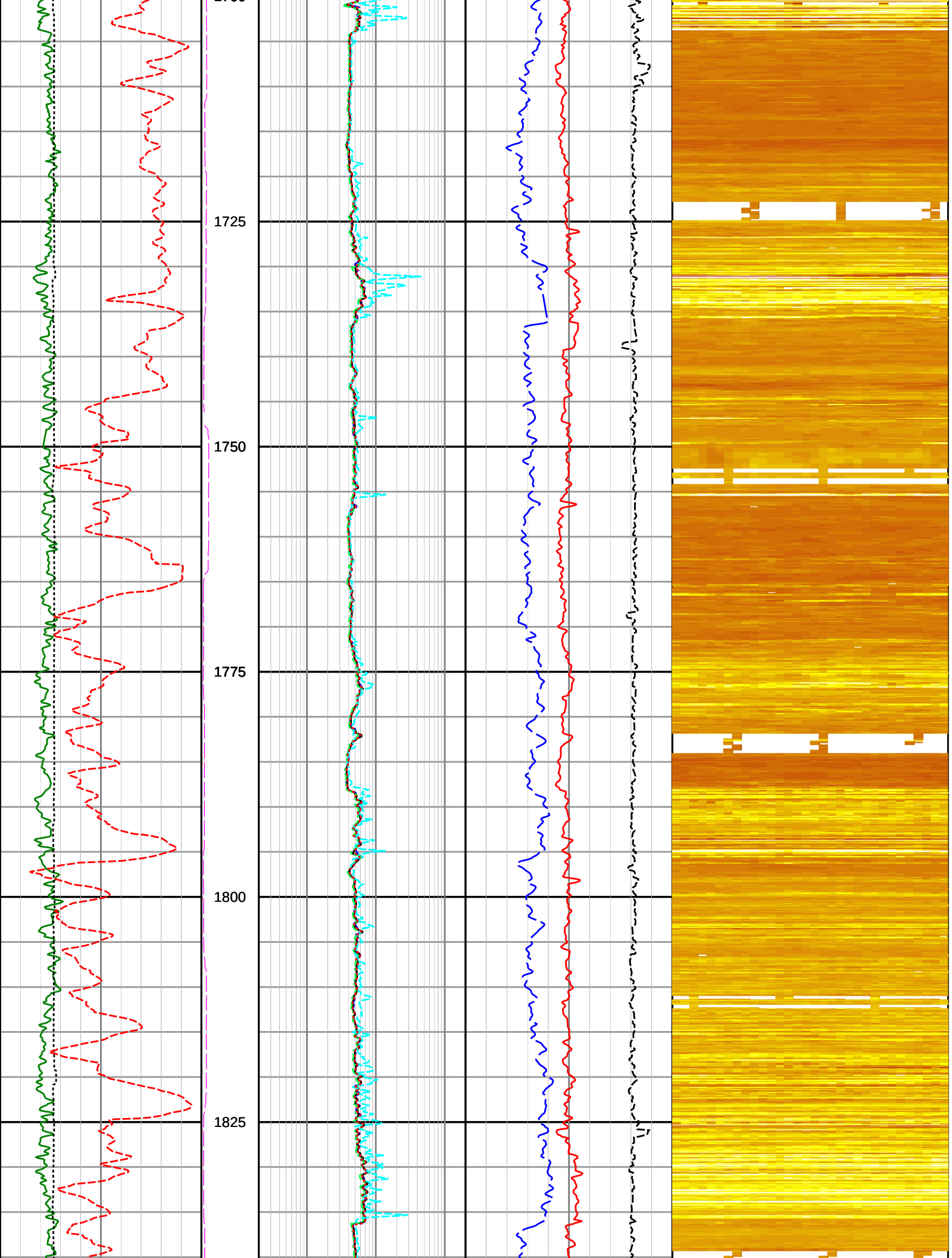
AFR Image
216mm Hole Section




SGRC
SMLT
1575
1600
1625
1650
1675
1700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1750
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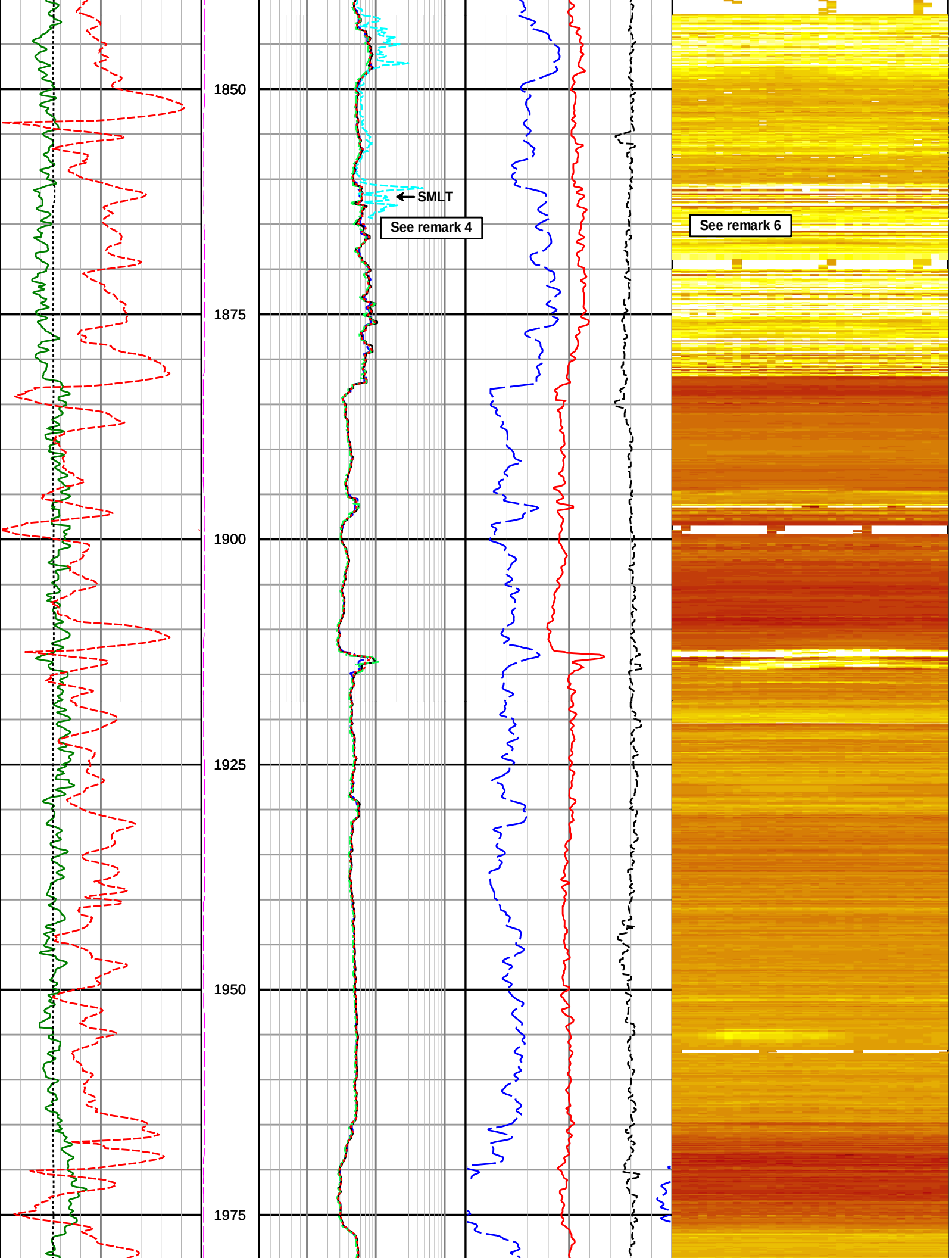
1850
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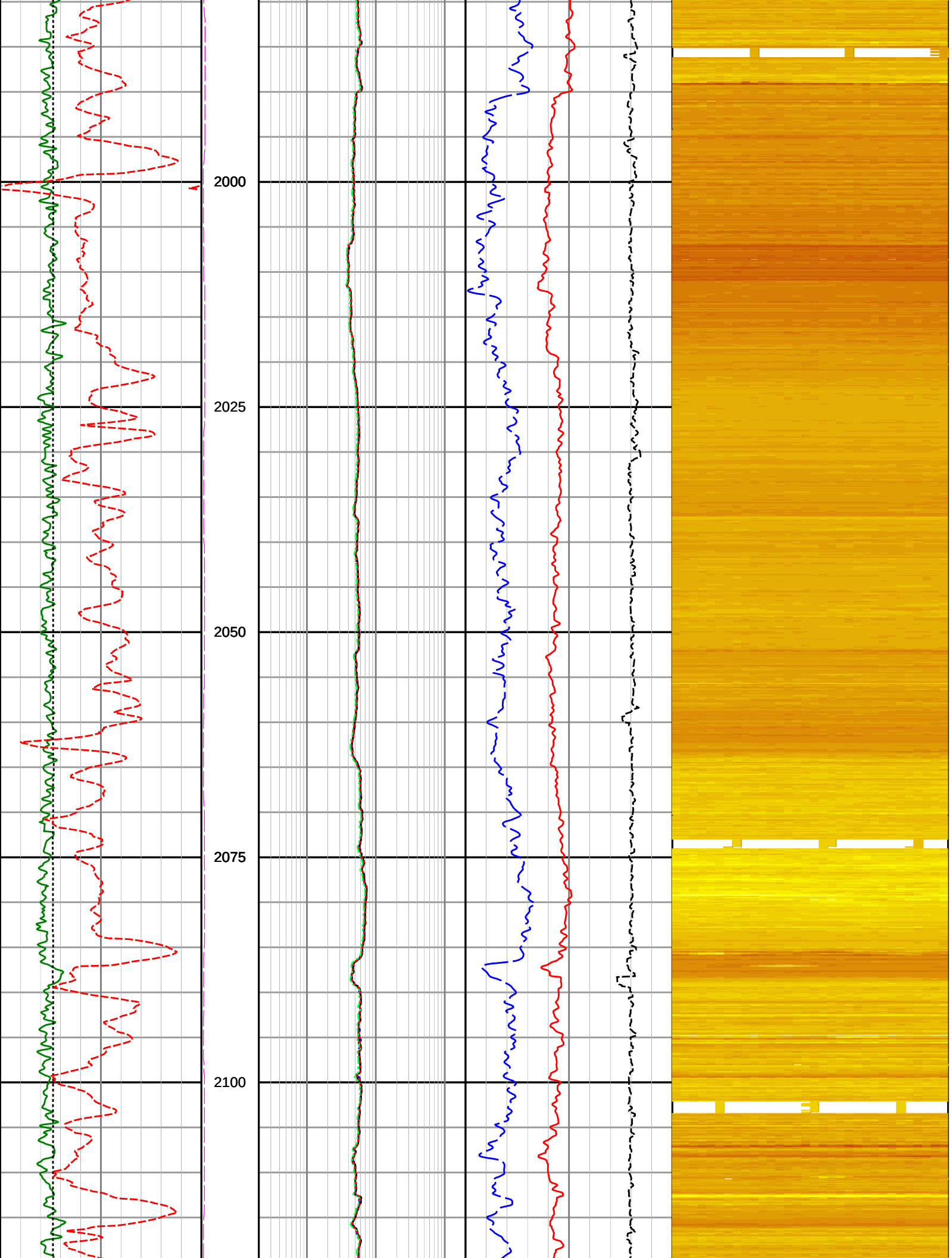
1975
SMLT
See remark 4
See remark 6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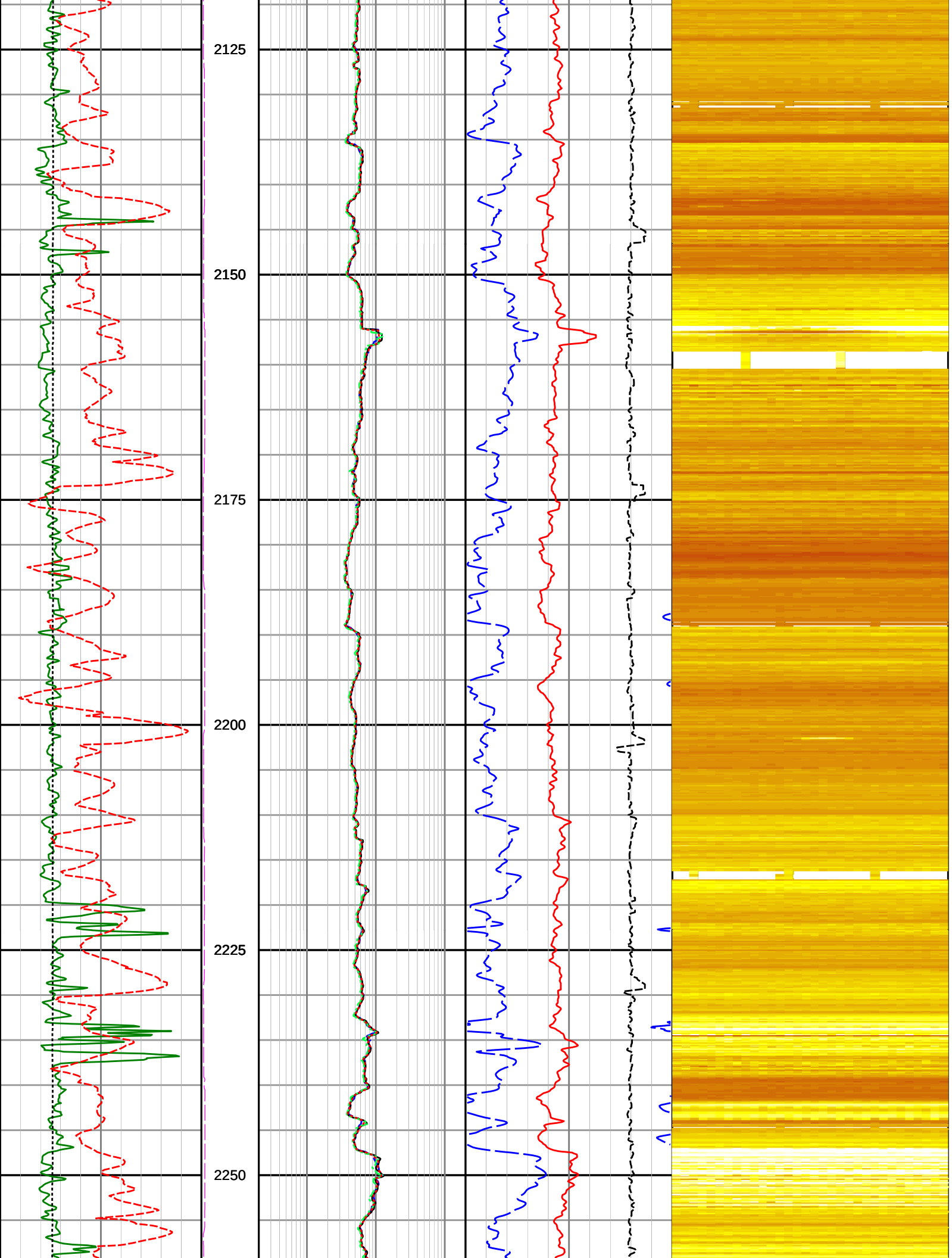
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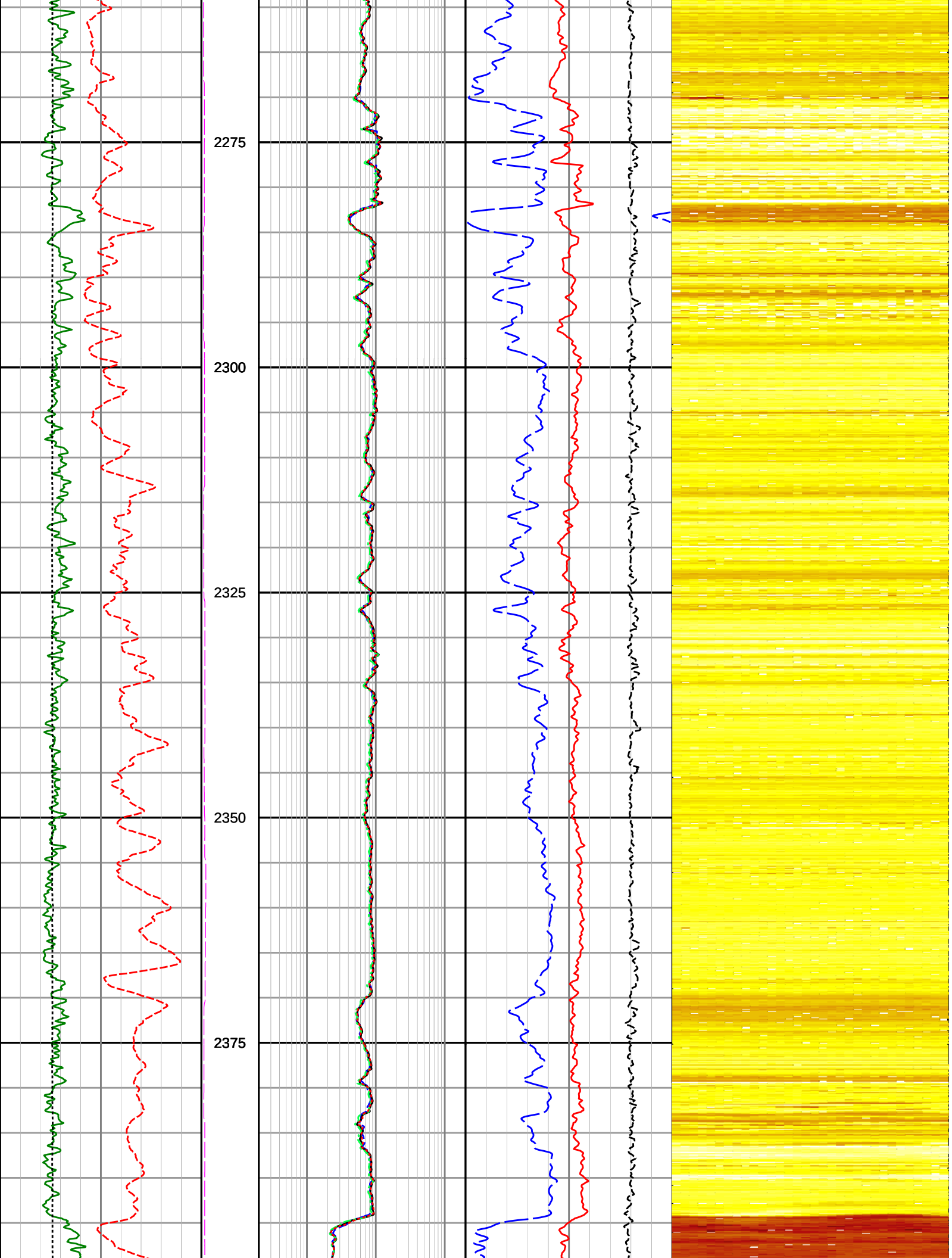
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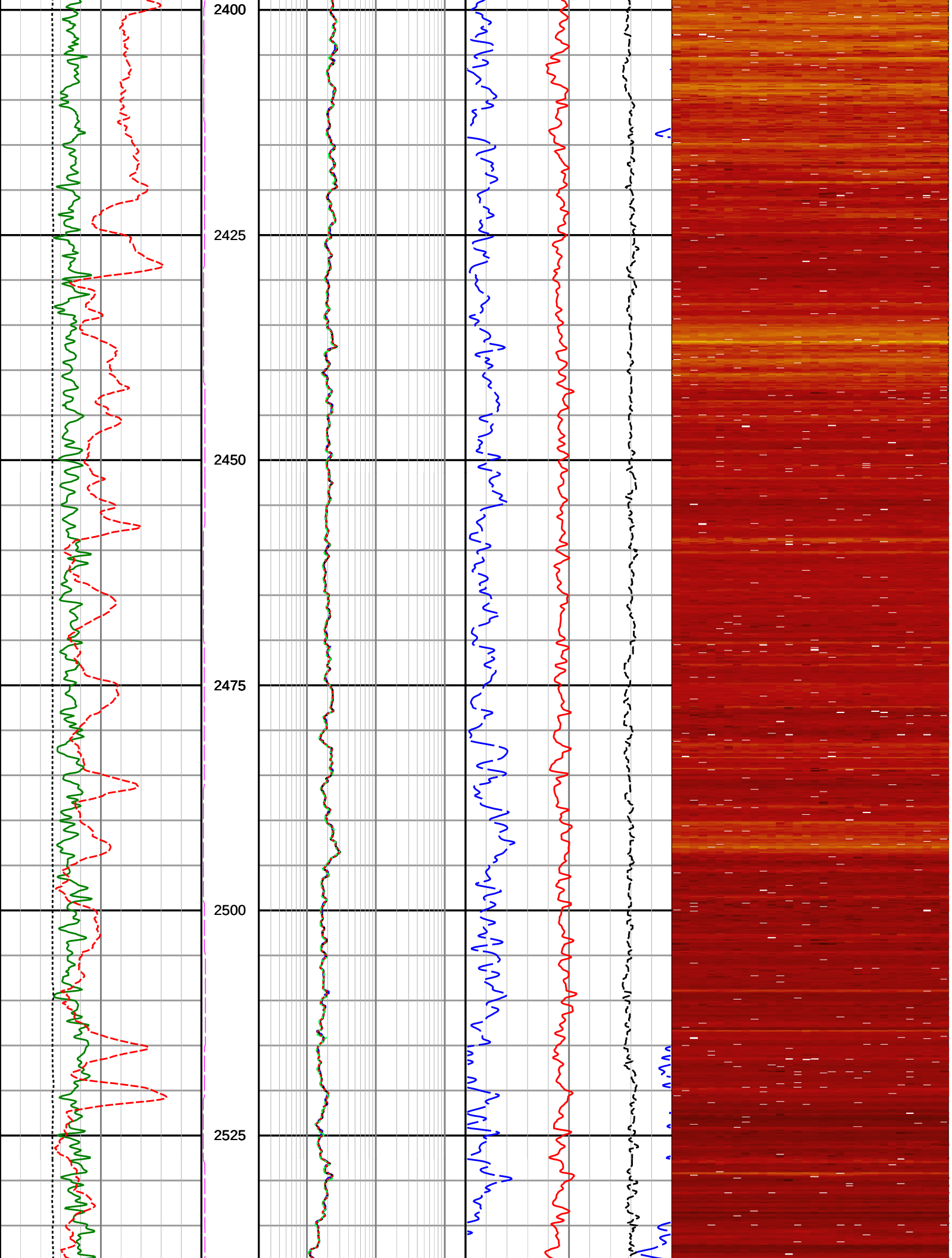
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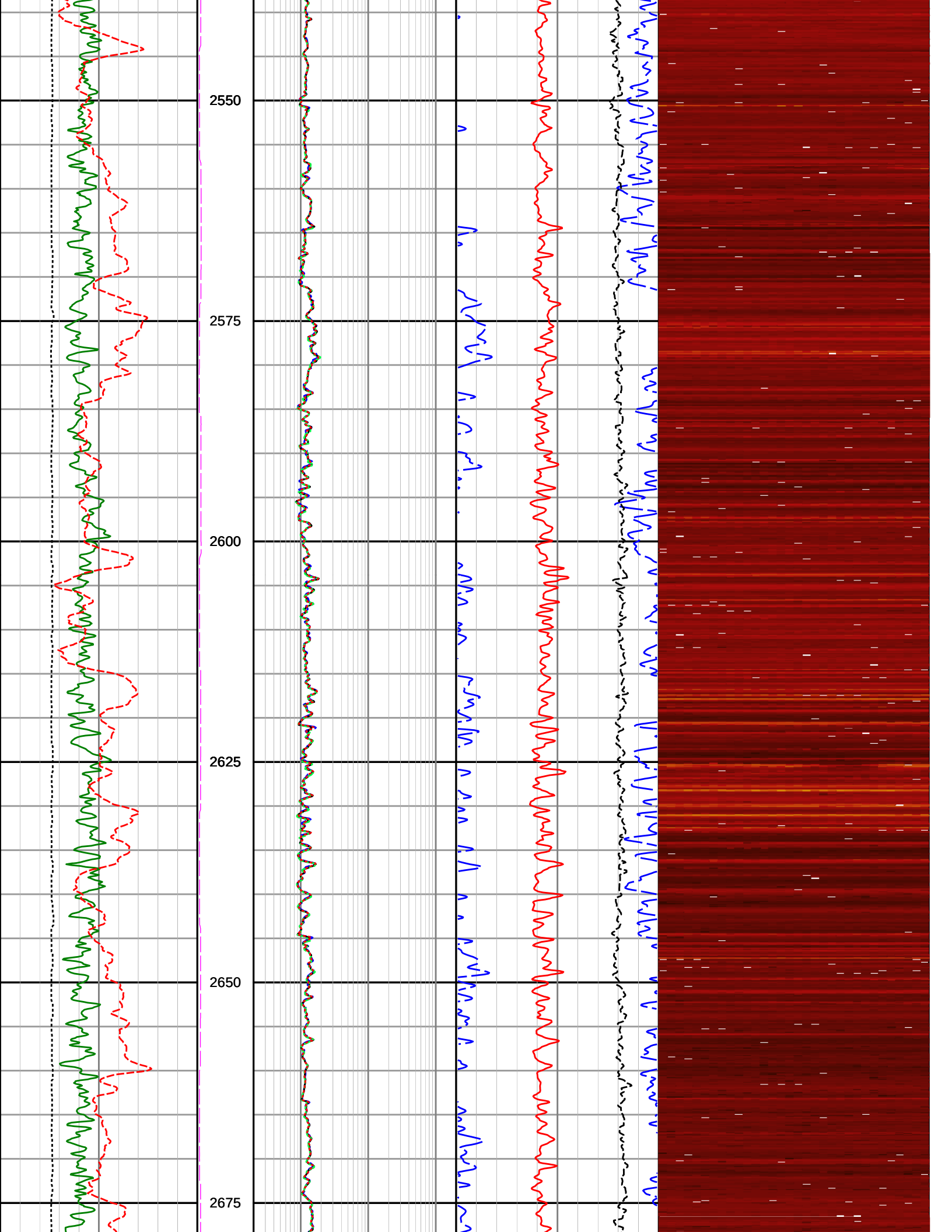
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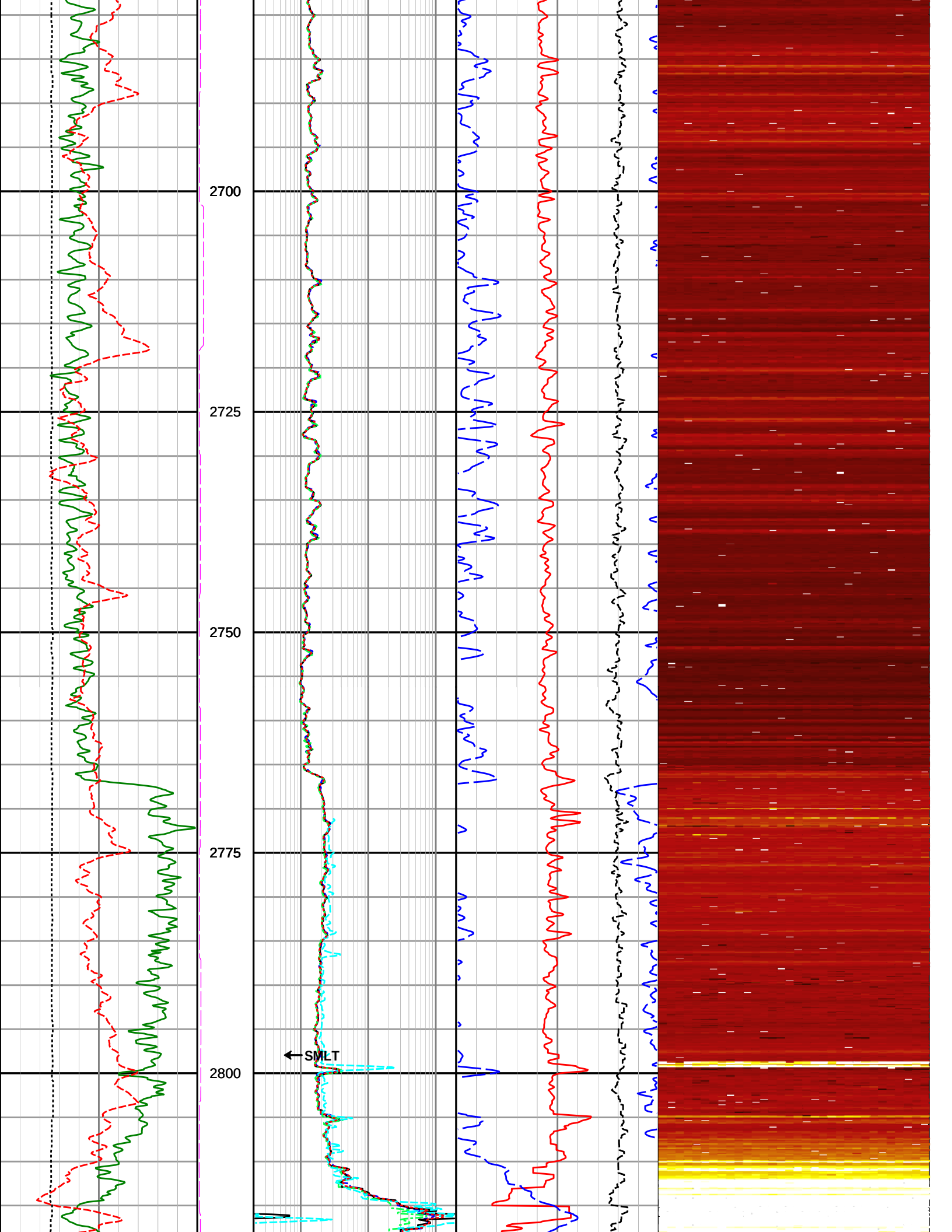
2700
2725
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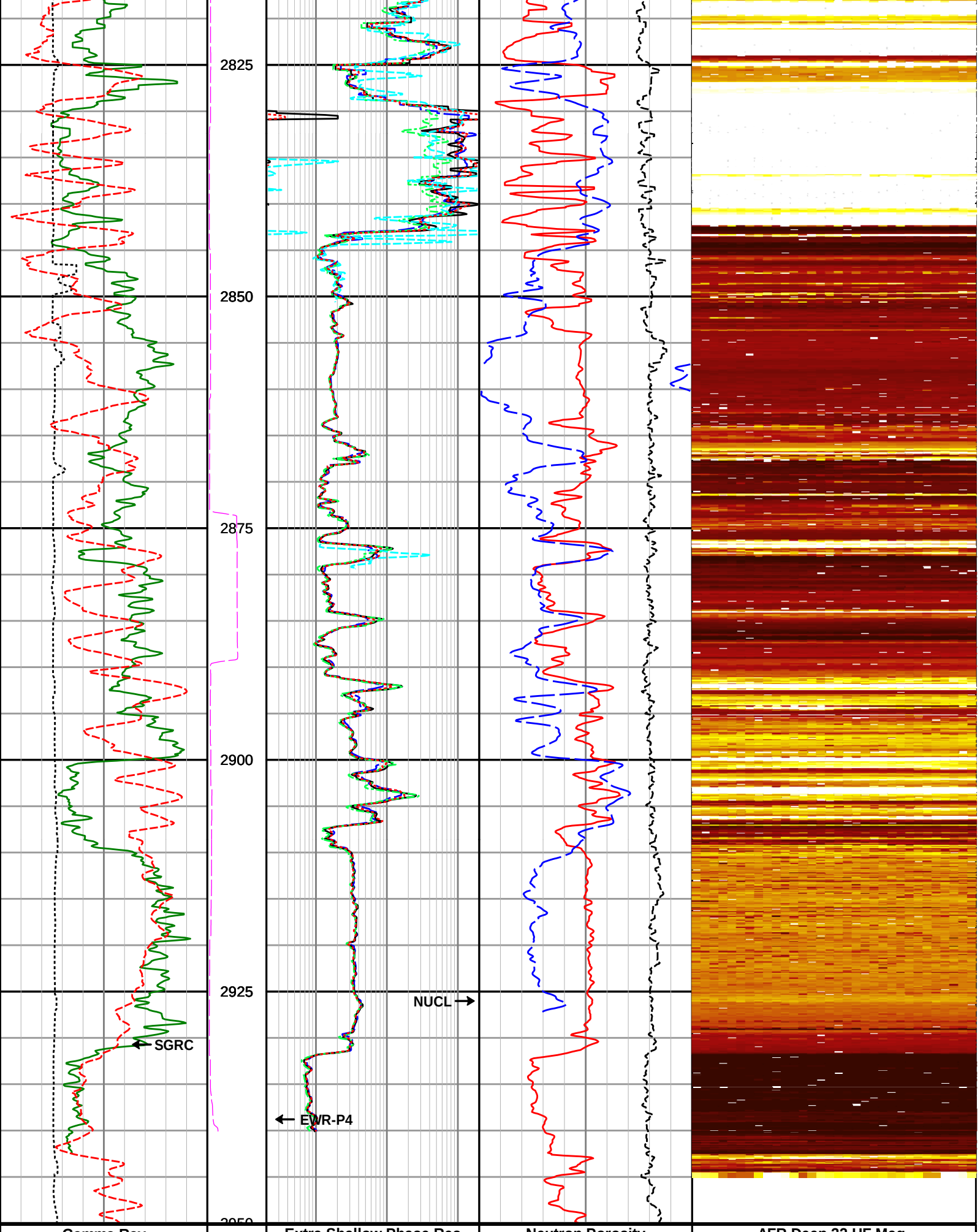
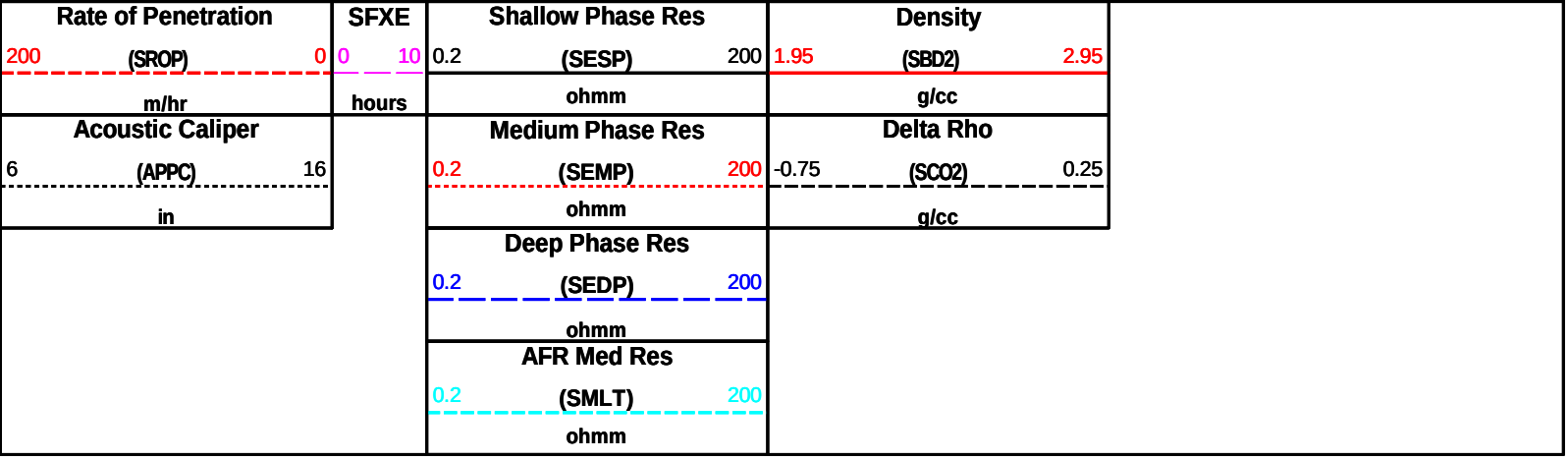
2775
2800
SMLT


2825
2850
2875
2900
2925
SGRC
NUCL
EWR-P4
Gamma Ray
0
(SGRC)
200
API
Depth
1 : 500
Extra Shallow Phase Res
0.2
(SEXP)
200
ohmm
Neutron Porosity
0.45
(NUCL)
-0.15
v/v
AFR Deep 32 HF Mag
1
20


Rate of Penetration
200
(SROP)
0
m/hr
SFXE
0
10
hours
Shallow Phase Res
0.2
(SESP)
200
ohmm
Density
1.95
(SBD2)
2.95
g/cc
Acoustic Caliper
6
(APPC)
16
in
Medium Phase Res
0.2
(SEMP)
200
ohmm
Delta Rho
-0.75
(SCO2)
0.25
g/cc
Deep Phase Res
0.2
(SEDP)
200
ohmm
AFR Med Res
0.2
(SMLT)
200
ohmm

HALLIBURTON

DDS Drillstring Dynamics

Powered by INSITE™

Sperry Drilling Services

Company	**Apache Northwest Pty Ltd**
Rig	**Ocean Patriot**
Well	**Dory-1**
Field	**Exploration**
Country	**Australia**
DOE Number	

Country : **Australia**
Field : **Exploration**
Location : **Lat: 38° 35' 19.759" South GDA94**
Long: 148° 32' 51.925" East GDA94
Well : **Dory-1**
Company : **Apache Northwest Pty Ltd**
Rig : **Ocean Patriot**

LOCATION
Latitude : **Lat: 38° 35' 19.759" South GDA94**
Longitude : **Long: 148° 32' 51.925" East GDA94**
UTM Easting = **634,798.900 m**
UTM Northing = **5,727,714.900 m**

Other Services
Formation Evaluation

Permanent Datum : **AHD**
Elevation : **0.00 m**
Log Measured From : **Drill Floor**
23.50 m Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **23.50 m**
DF **23.50 m**
GL **0.00 m**
WD **517.3 m**

Depth Logged : **586.50 m** To **3,814.00 m**
Date Logged : **30-Oct-08** To **16-Nov-08**
Total Depth MD : **3,814.00 m** TVD : **3,812.69 m**
Spud Date : **04-Nov-08**

Unit No. : **300703**
Job No. : **AU-FE-0006105438**

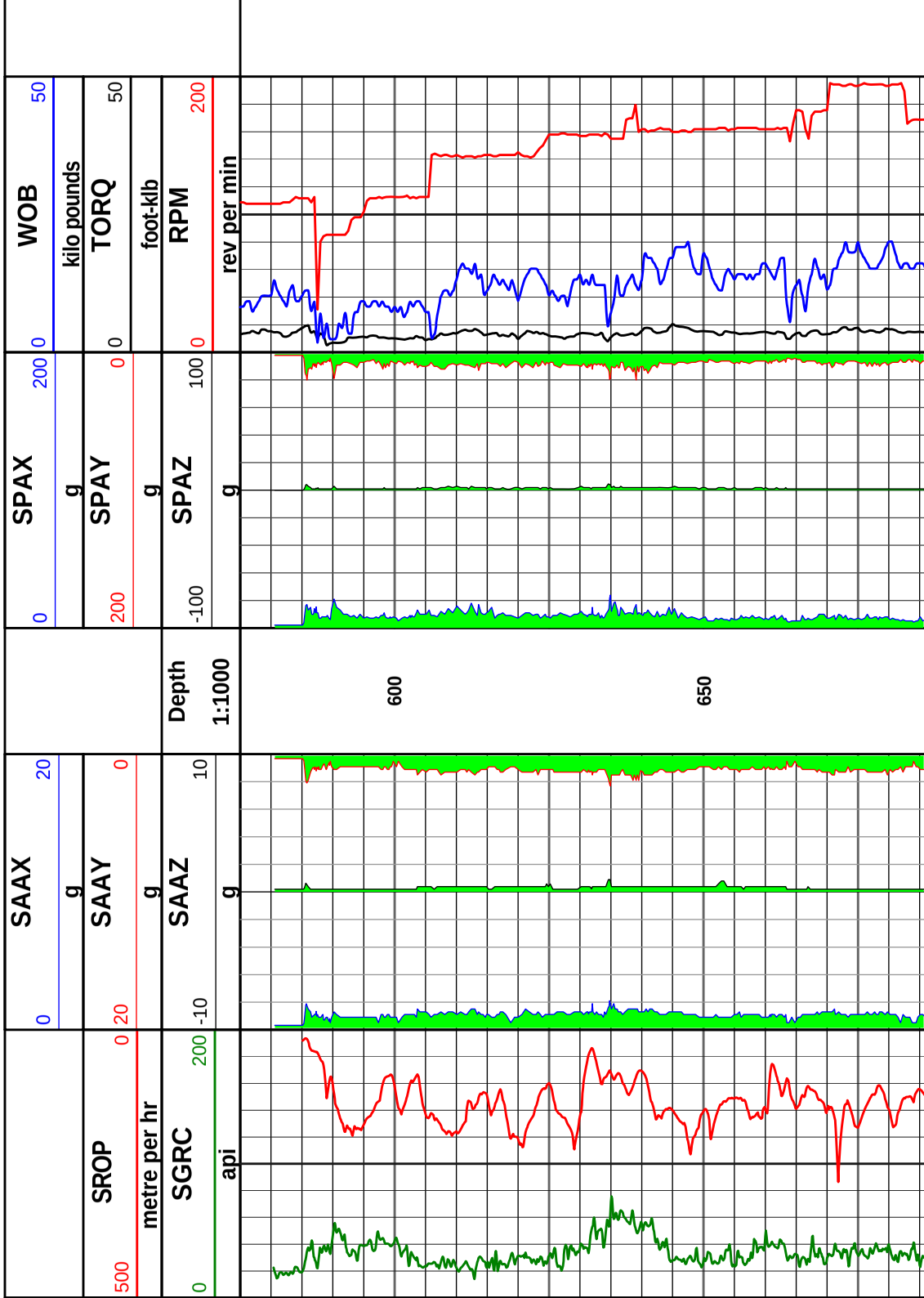
Plot Type : **Final**
Plot Date : **27-Jan-09**

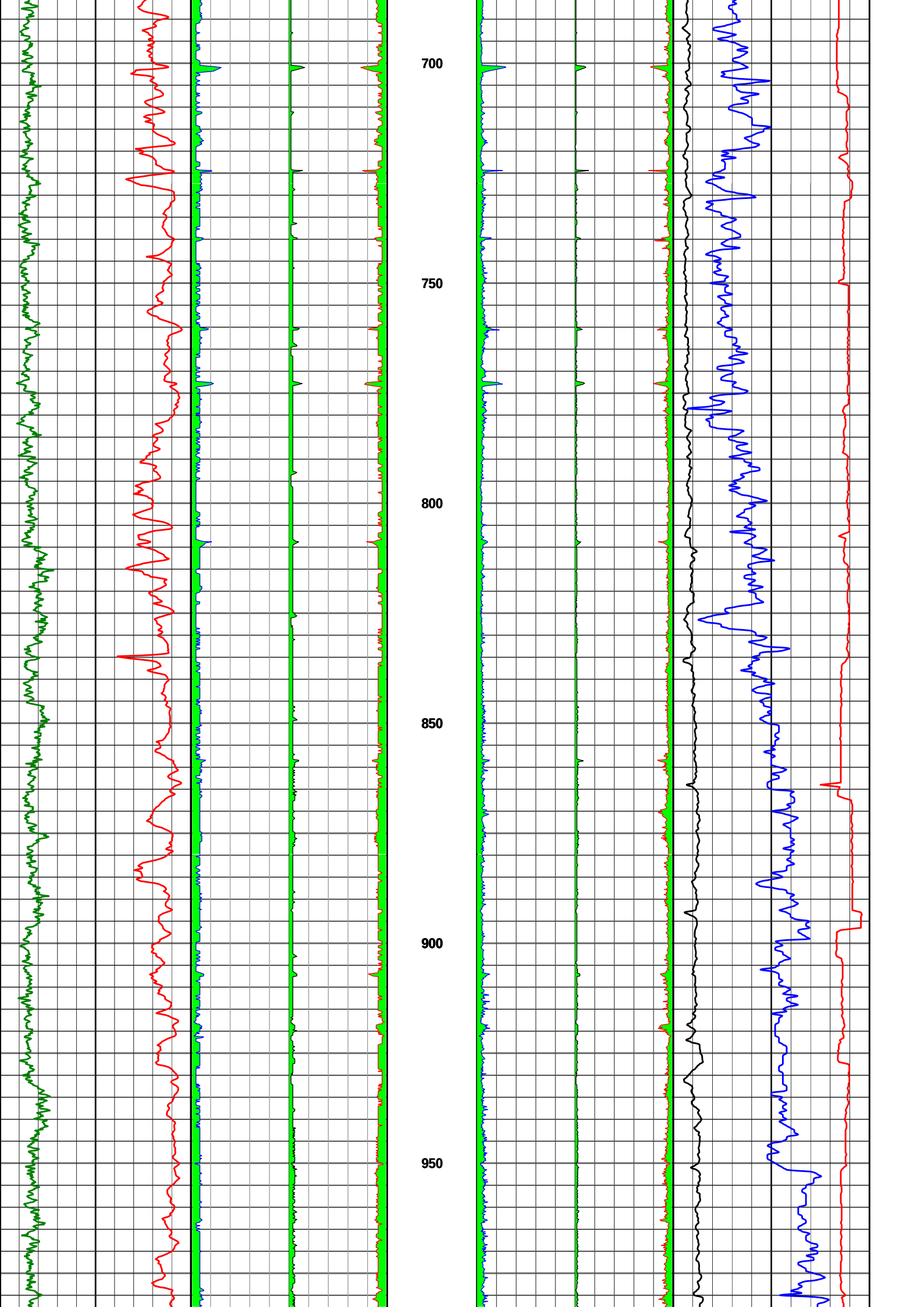
Run No.	Borehole Record (MD) Size	From	To
100	406.000 mm	586.50 m	1,537.00 m
300	216.000 mm	1,537.00 m	2,955.00 m
400	216.000 mm	2,955.00 m	3,814.00 m

Run No.	Borehole Record (MD) Size	From	To

Casing Record (MD)

Size	Weight	From	To
762.000 mm	458.00 kgpm	538.00 m	585.00 m
340.000 mm	102.00 kgpm	585.00 m	1,534.14 m

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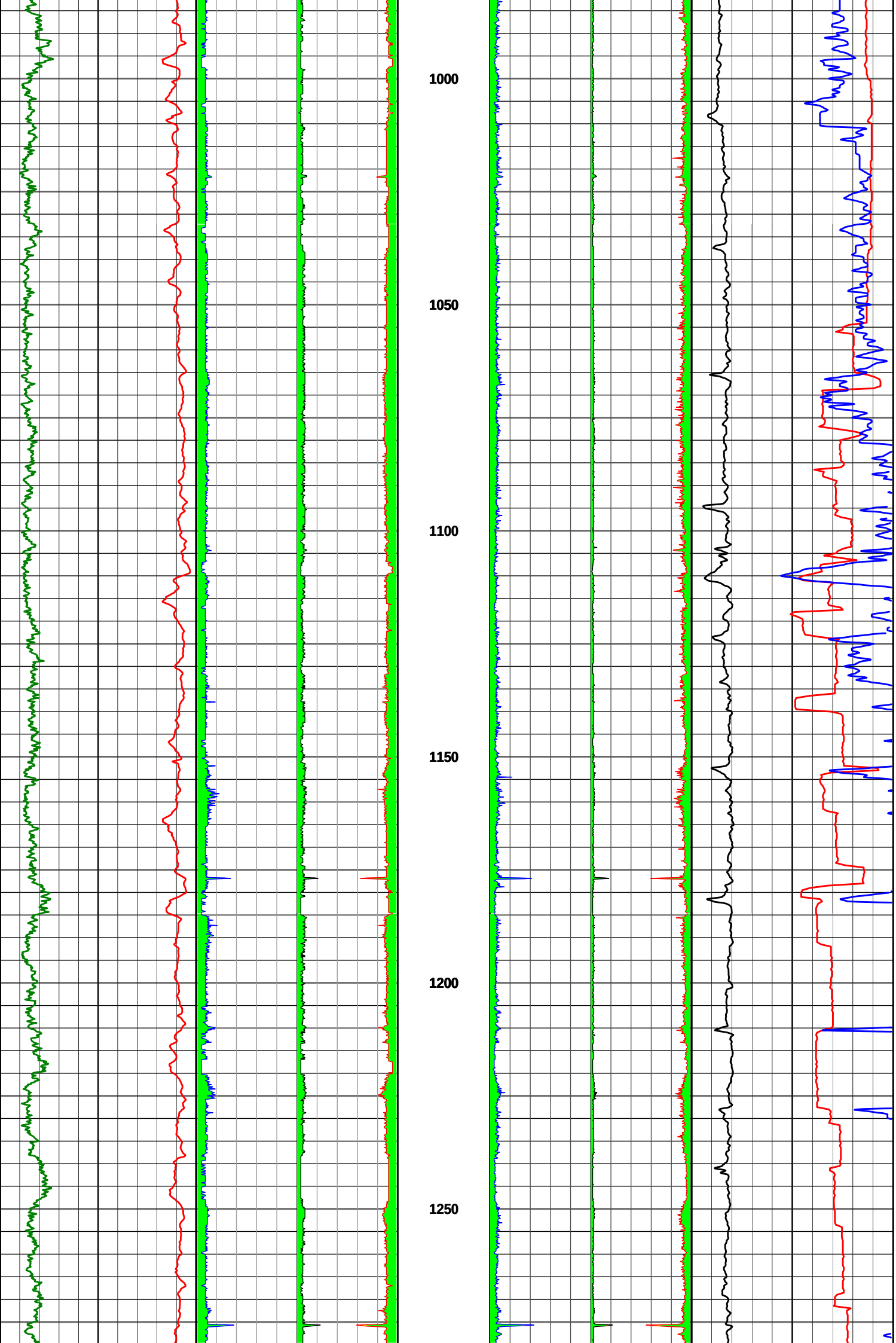
750
800
850
900
950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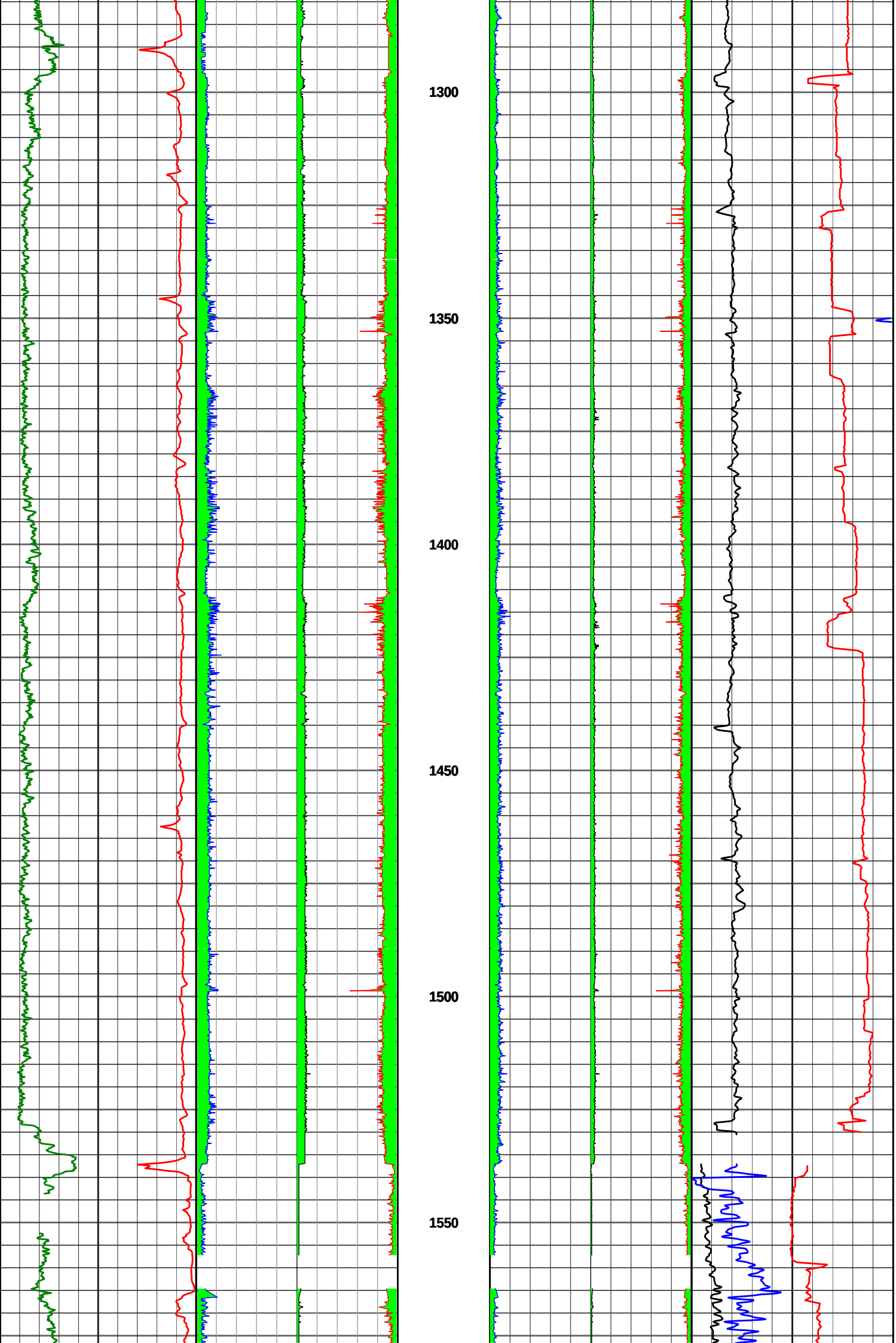
1050
1100
1150
1200
1250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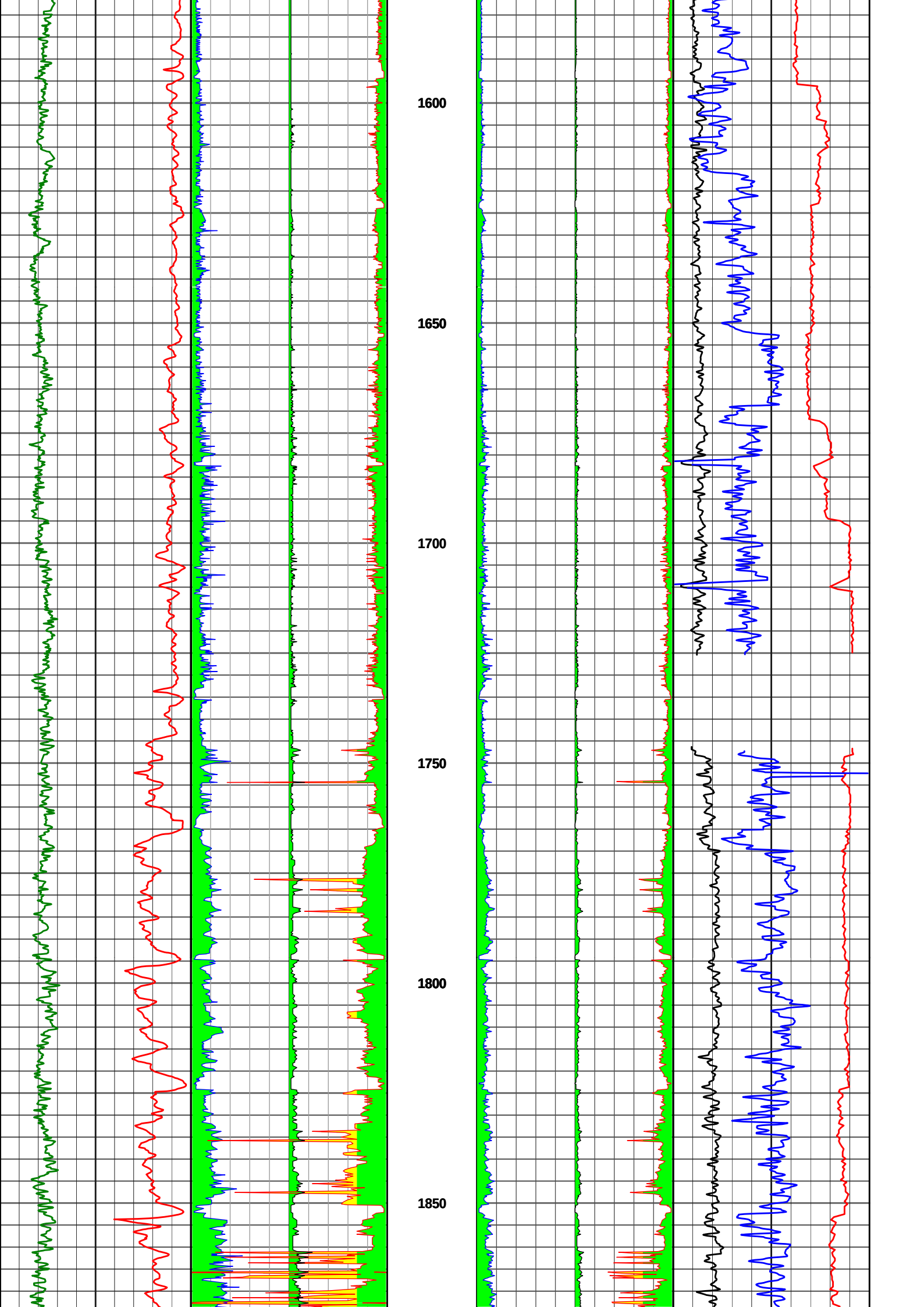
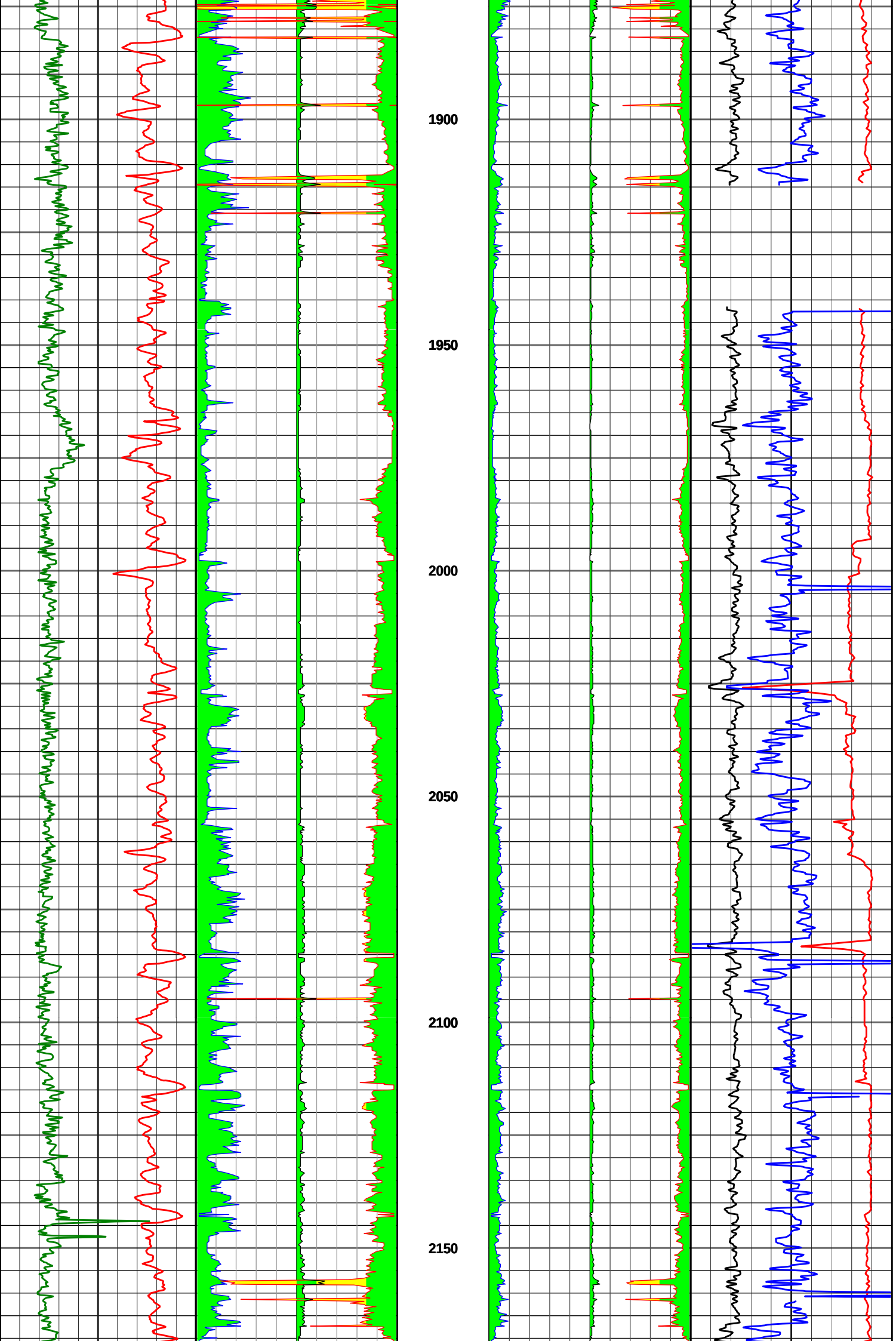
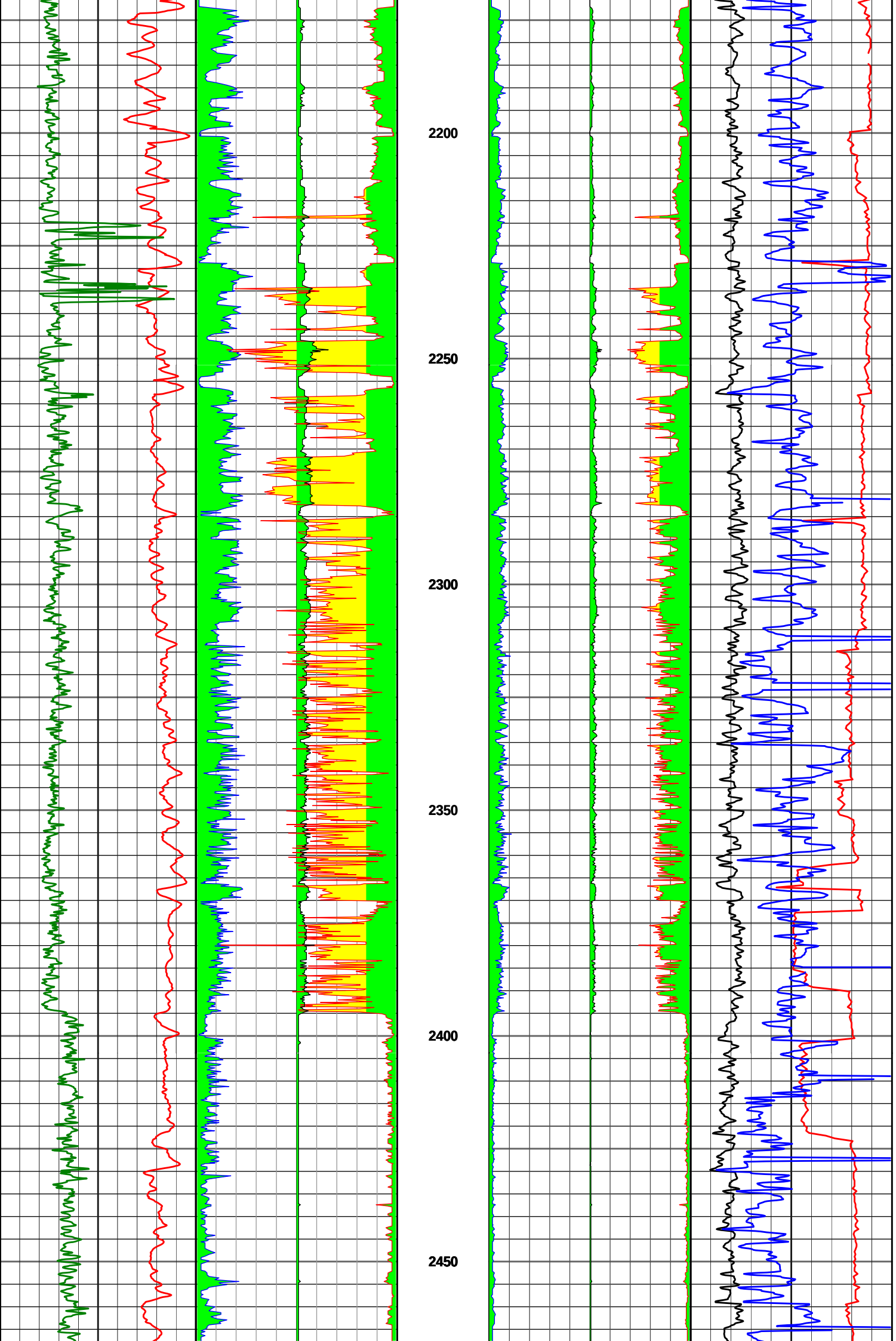
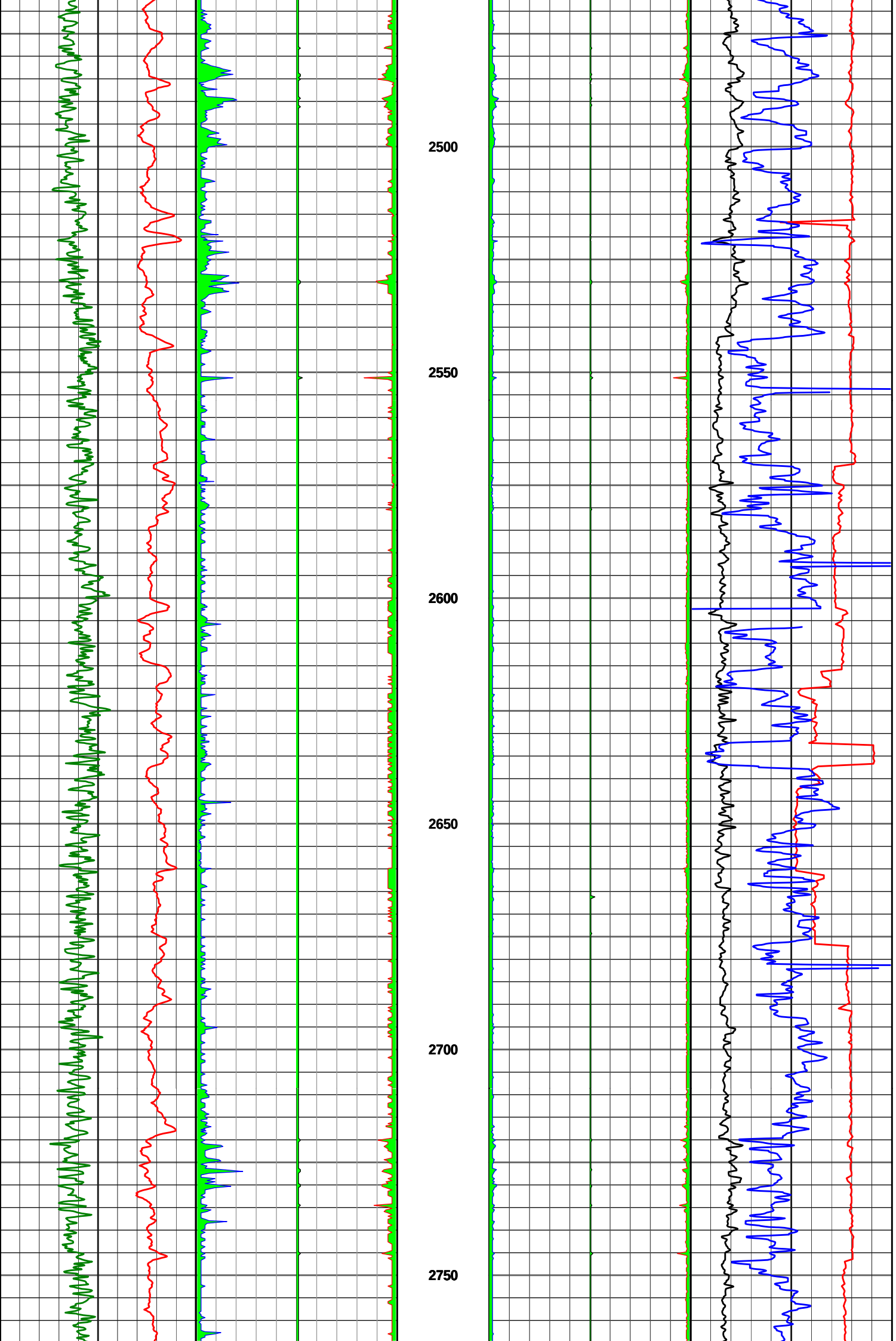
1350
1400
1450
1500
1550


1600
1650
1700
1750
1800
1850


1900
1950
2000
2050
2100
2150


2200
2250
2300
2350
2400
2450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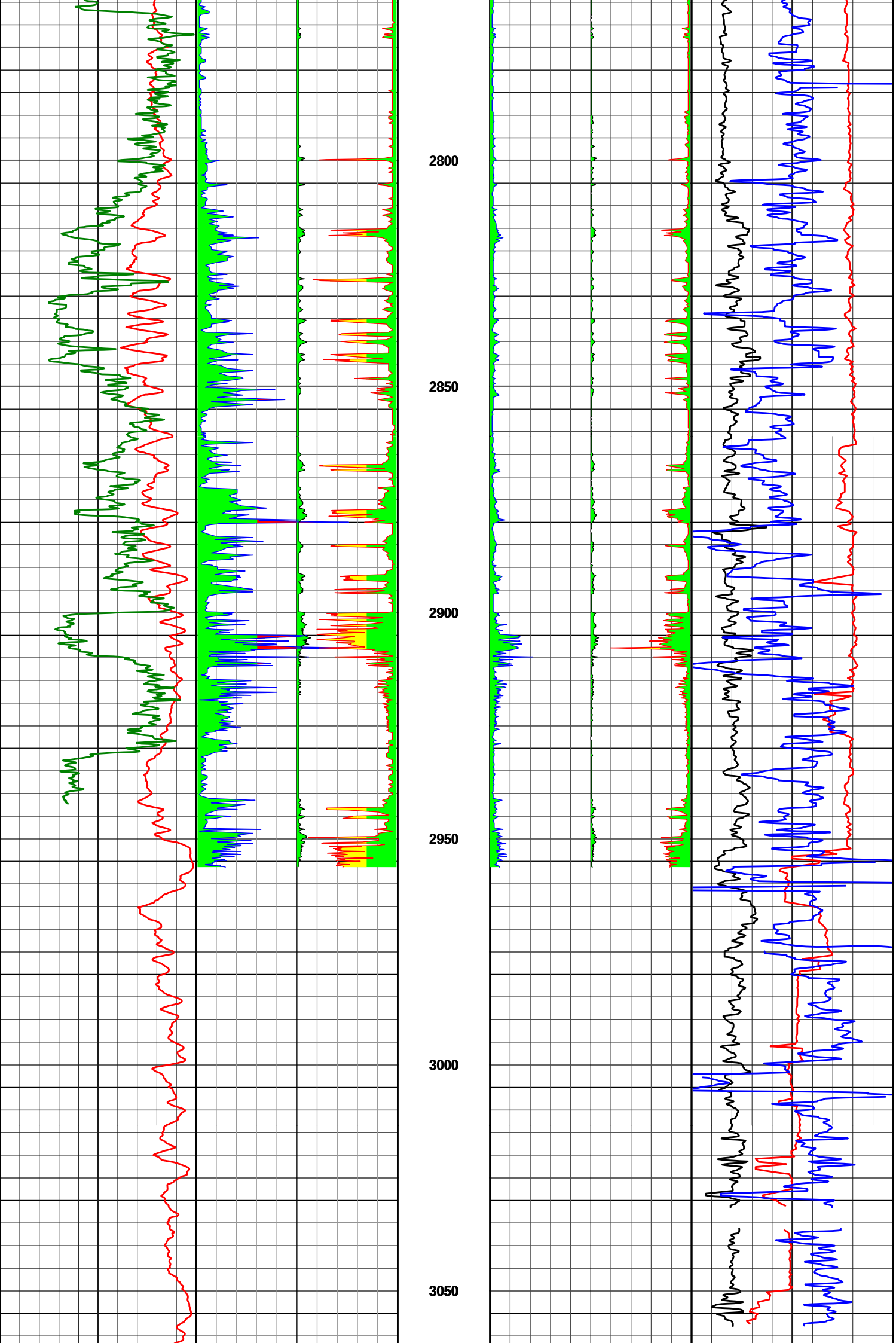
2550
2600
2650
2700
2750


2800
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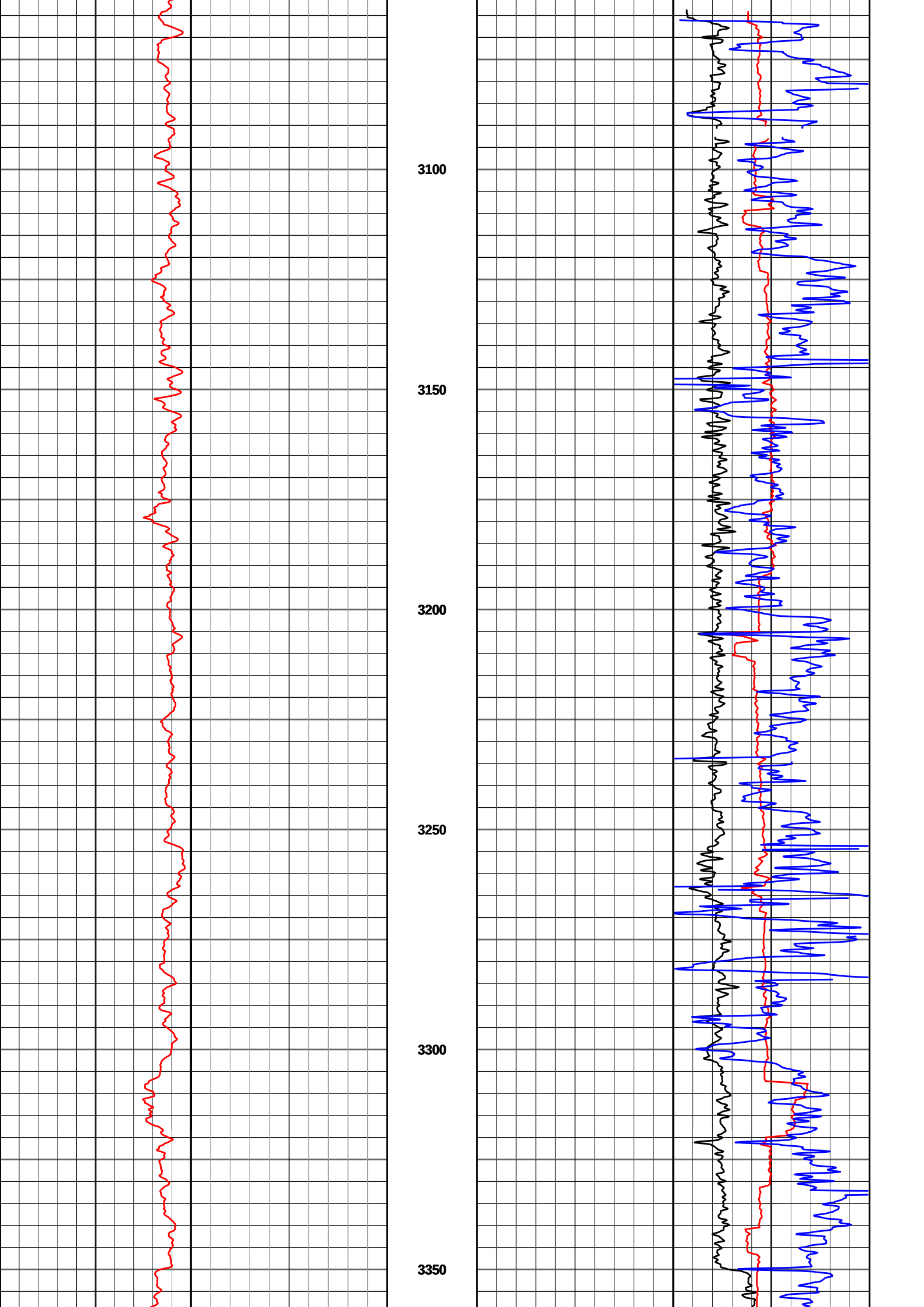
2900
2950
3000
3050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3200
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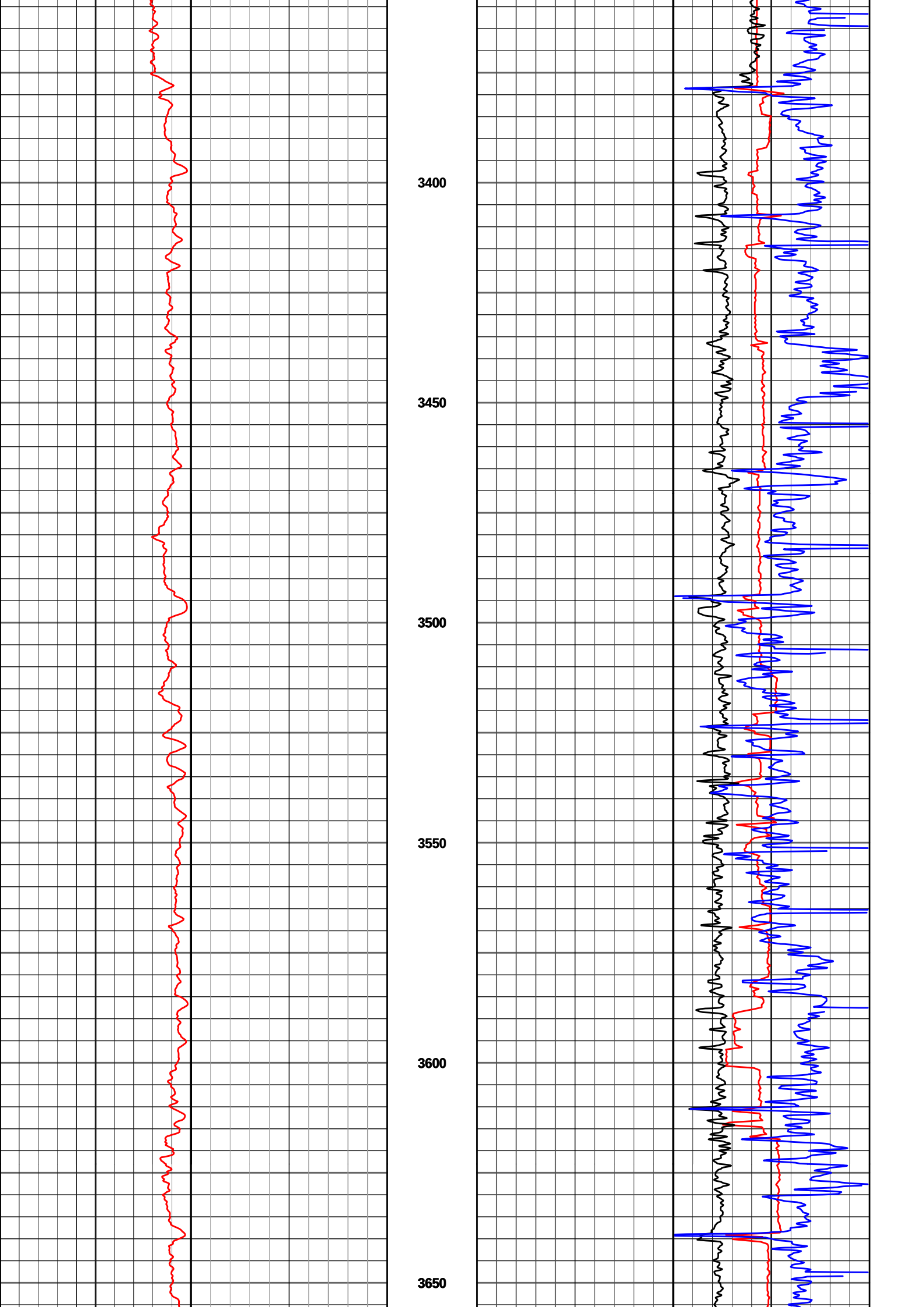
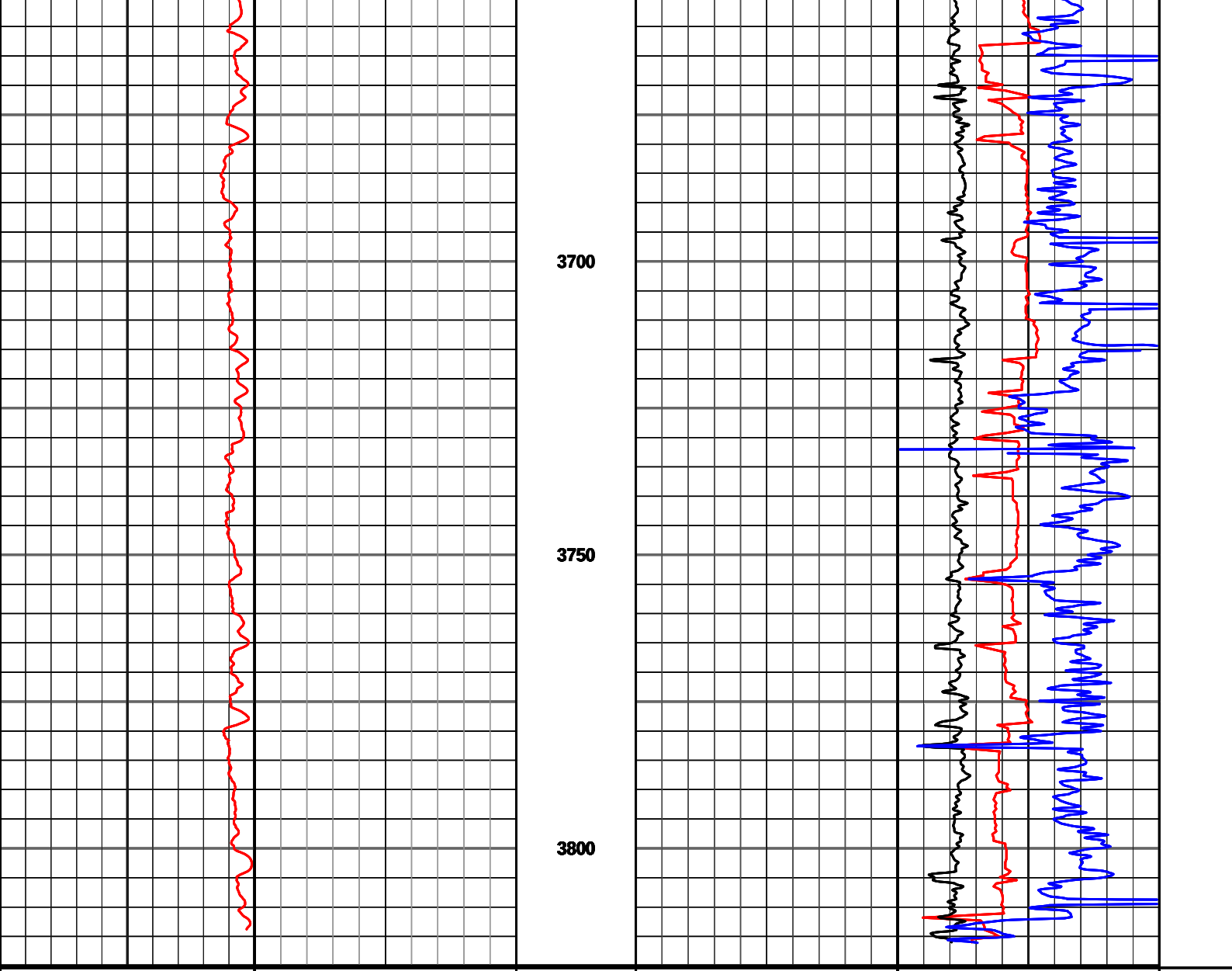
3300
3350


3400
3450
3500
3550
3600
3650



SGRC	SAAZ	Depth	SPAZ	RPM
0 200	-10 10		-100 100	0 200
api	g	1:1000	g	rev per min
SROP	**SAAY**		**SPAY**	**TORQ**
500 0	20 0		200 0	0 50
metre per hr	g		g	foot-klb
	SAAX		**SPAX**	**WOB**
	0 20		0 200	0 50
	g		g	kilo pounds

HALLIBURTON

DDS Drillstring Dynamics

Powered by INSITE™

Sperry Drilling Services

Company	Apache Northwest Pty Ltd
Rig	Ocean Patriot
Well	Dory-1
Field	Exploration
Country	Australia
DOE Number	

Country : Australia
Field : Exploration
Location : Lat: 38° 35' 19.759" South GDA94 Long: 148° 32' 51.925" East GDA94
Well : Dory-1
Company : Apache Northwest Pty Ltd
Rig : Ocean Patriot

LOCATION
Latitude : Lat: 38° 35' 19.759" South GDA94
Longitude : Long: 148° 32' 51.925" East GDA94
UTM Easting = 634,798.900 m
UTM Northing = 5,727,714.900 m

Other Services
Pressure While Drilling
DDS Drillstring Dynamics

Permanent Datum : AHD
Elevation : 0.00 m
Log Measured From : Drill Floor
23.50 m Above Permanent Datum
Drilling Measured From : Drill Floor

TIME LOG

Elev. KB 23.50 m
DF 23.50 m
GL 0.00 m
WD 517.30 m

Depth Logged : 586.50 m To 3,814.00 m
Date Logged : 30-Oct-08 To 16-Nov-08
Total Depth MD : 3,814.00 m TVD : 3,812.69 m
Spud Date : 04-Nov-08

Unit No. : 300703
Job No. : AU-FE-0006105438

Plot Type : Field
Plot Date : 27-Jan-09

Run No.	Borehole Record (MD) Size	From	To
100	406.000 mm	586.50 m	1,537.00 m
200	216.000 mm	1,537.00 m	1,537.00 m
300	216.000 mm	1,537.00 m	2,955.00 m
400	216.000 mm	2,955.00 m	3,814.00 m

Run No.	Borehole Record (MD) Size	From	To

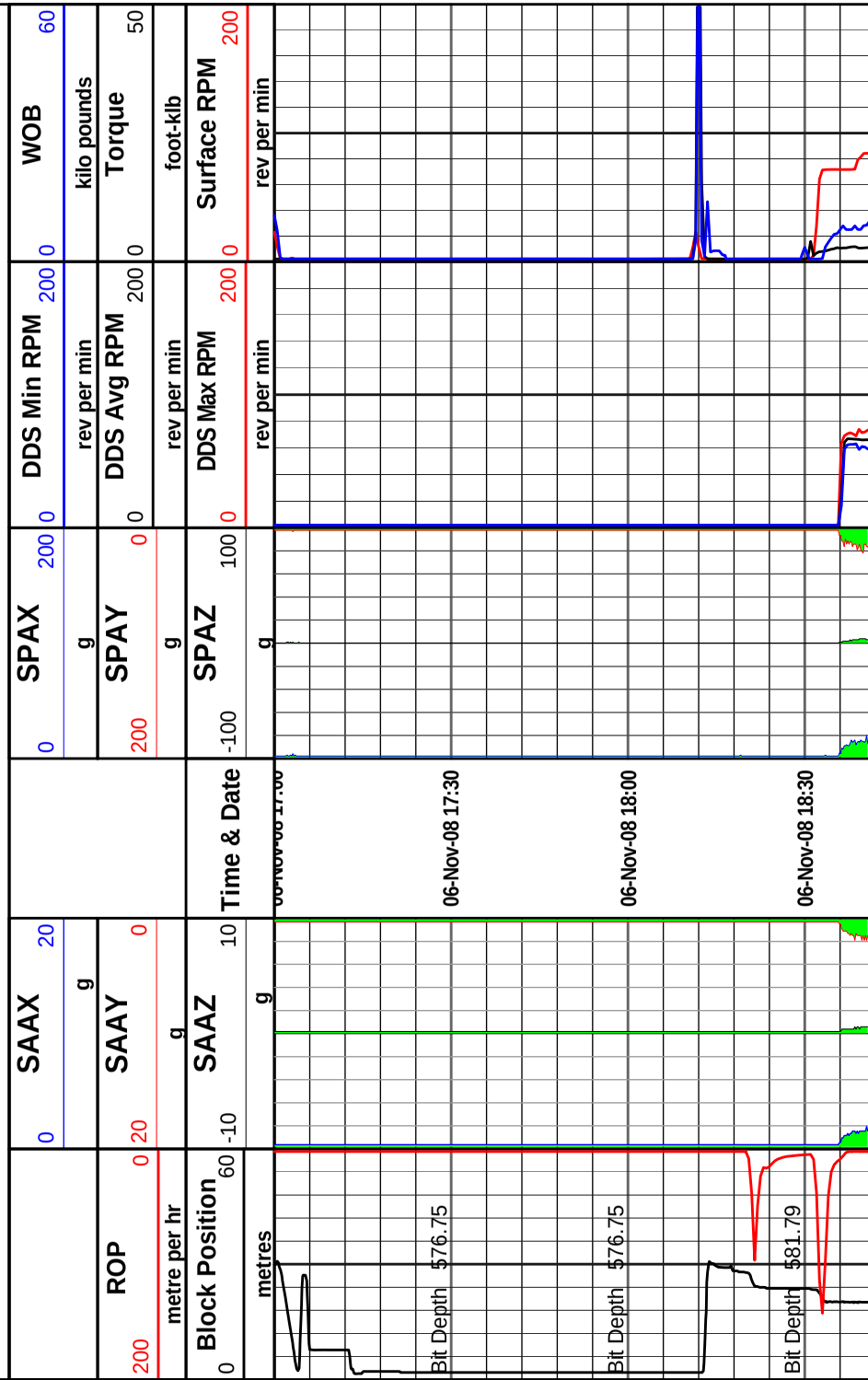
Casing Record (MD)

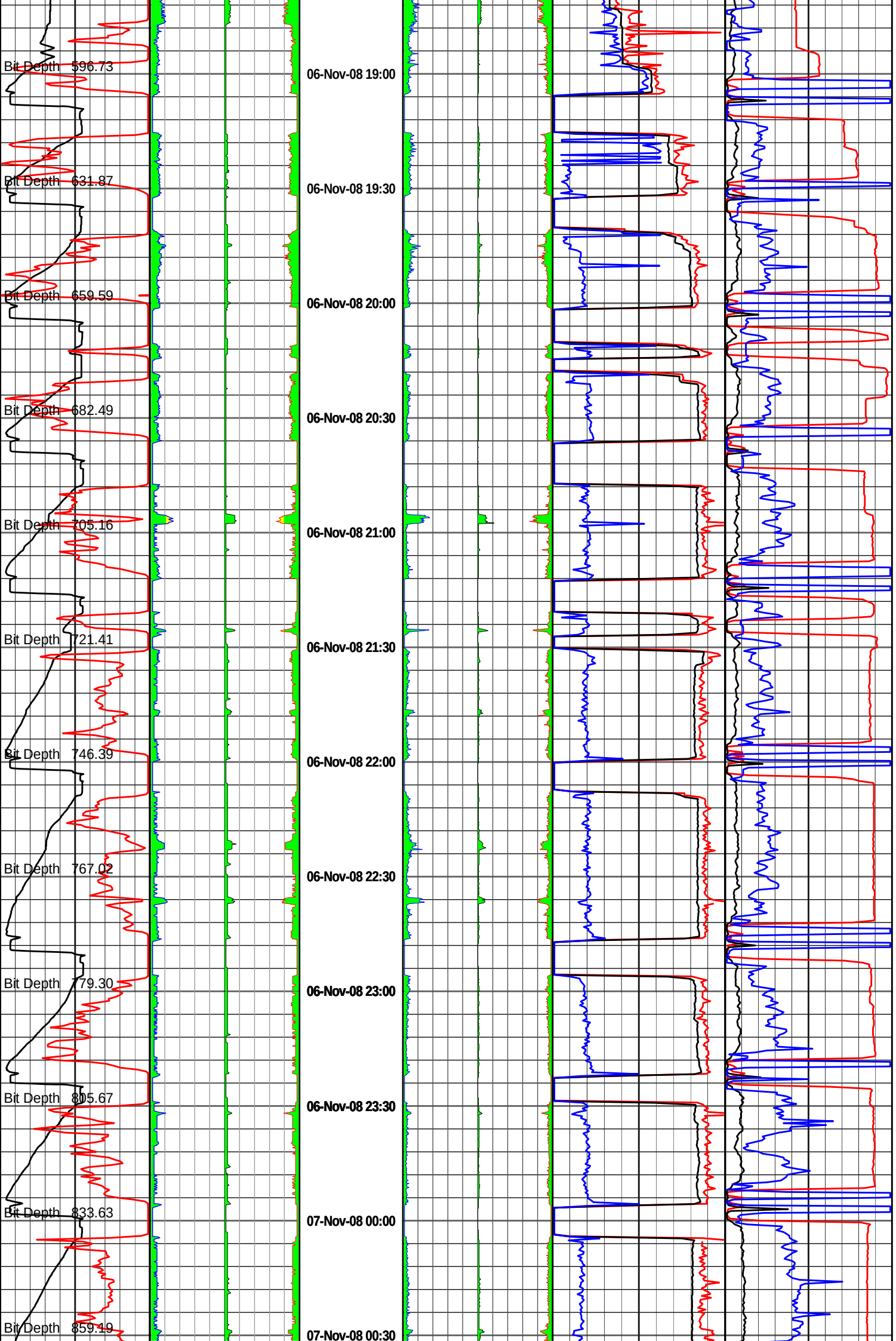
Size	Weight	From	To
762.000 mm	458.00 kgpm	538.00 m	585.00 m
340.000 mm	102.00 kgpm	585.00 m	1,534.14 m

Run 100 : 406mm Hole

586.5 to 1537.0 mMDRT, from 17:00 06-Nov-08 - 04:00 08-Nov-08

SDL Data presented as acquired from BHI

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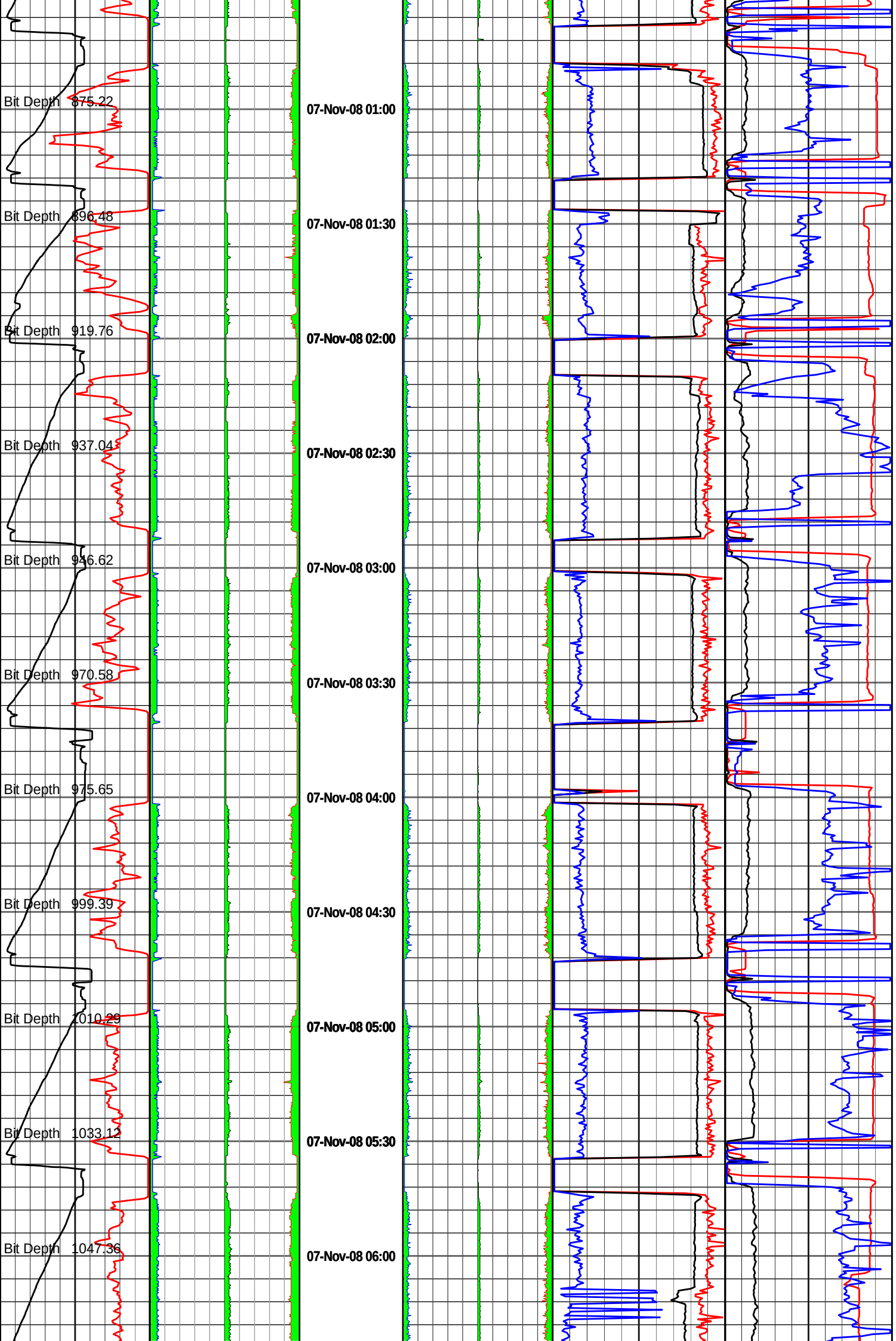
Bit Depth 767.02
Bit Depth 779.30
Bit Depth 805.67
Bit Depth 833.63
Bit Depth 859.19
06-Nov-08 19:00
06-Nov-08 19:30
06-Nov-08 20:00
06-Nov-08 20:30
06-Nov-08 21:00
06-Nov-08 21:30
06-Nov-08 22:00
06-Nov-08 22:30
06-Nov-08 23:00
06-Nov-08 23:30
07-Nov-08 00:00
07-Nov-08 00:30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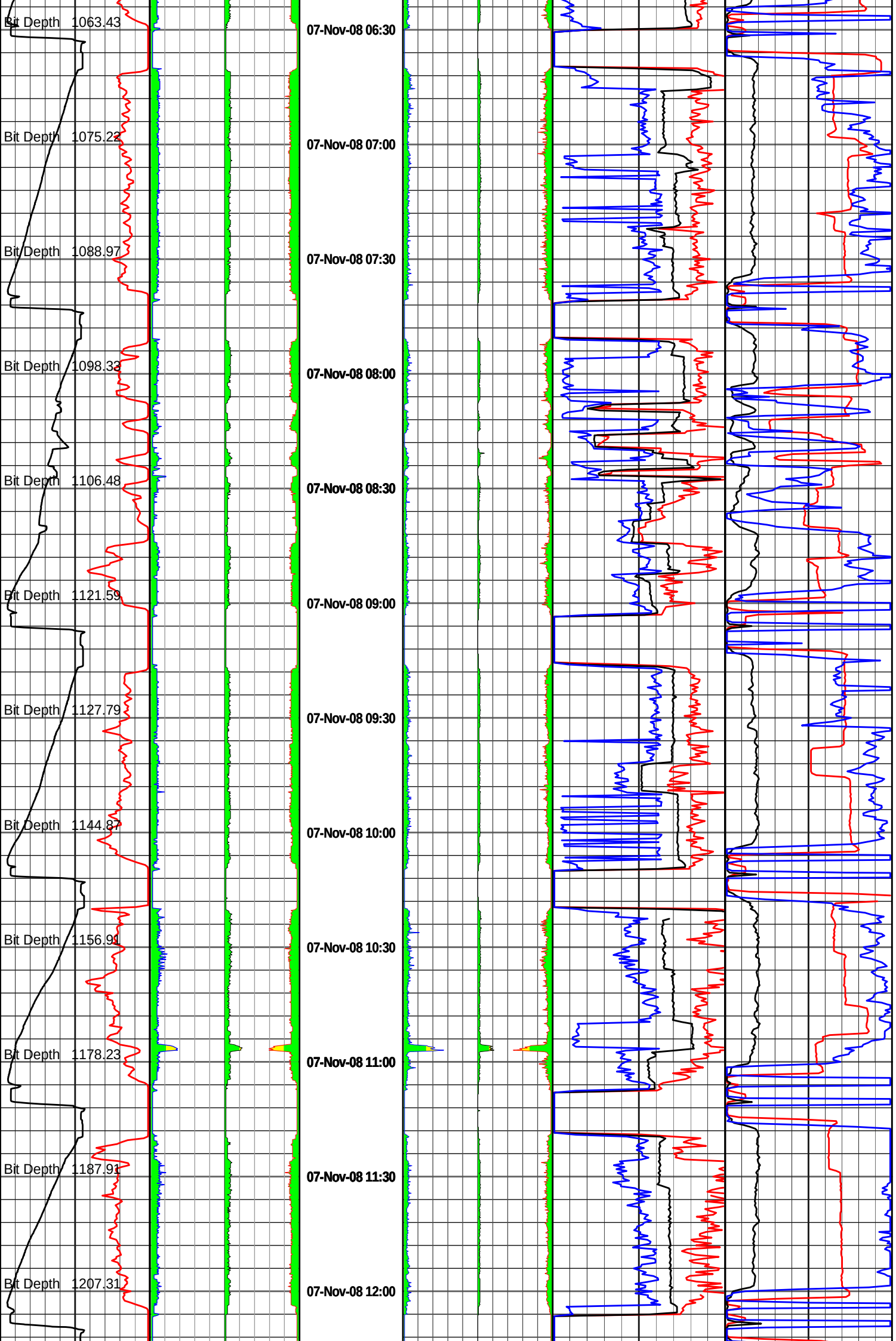
Bit Depth 999.39
Bit Depth 1010.29
Bit Depth 1033.12
Bit Depth 1047.36
07-Nov-08 01:00
07-Nov-08 01:30
07-Nov-08 02:00
07-Nov-08 02:30
07-Nov-08 03:00
07-Nov-08 03:30
07-Nov-08 04:00
07-Nov-08 04:30
07-Nov-08 05:00
07-Nov-08 05:30
07-Nov-08 06:00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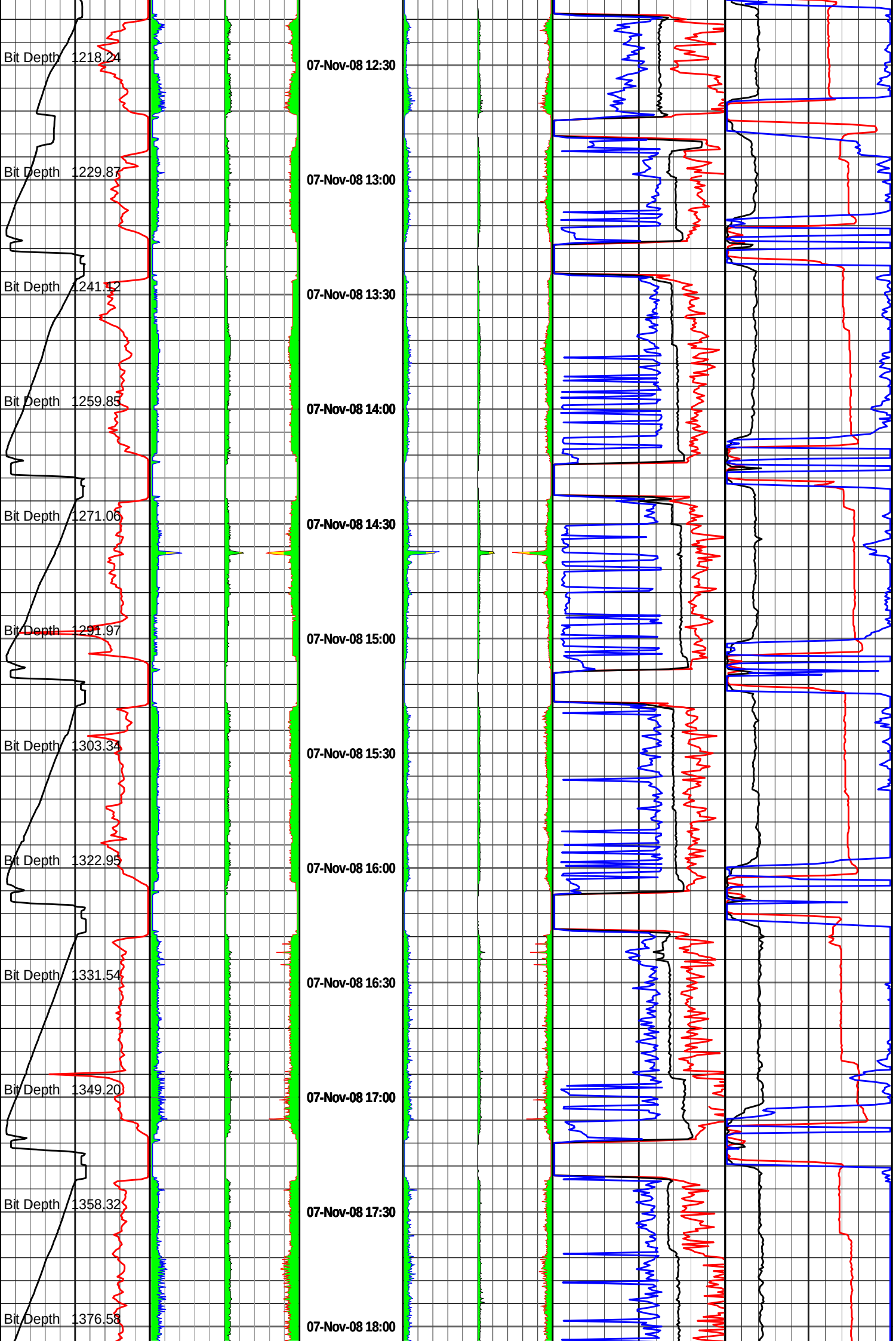
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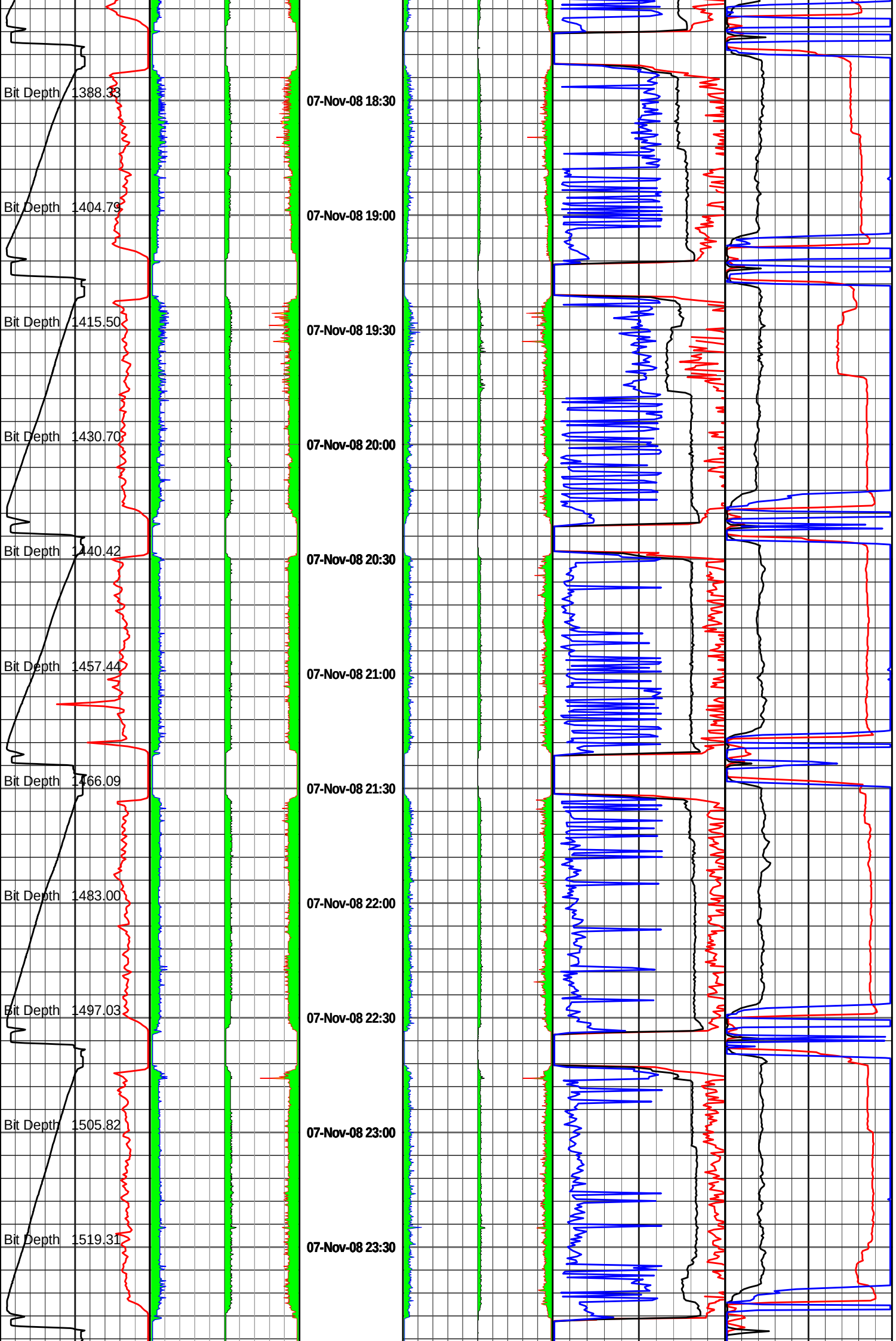
07-Nov-08 17:00
07-Nov-08 17:30
07-Nov-08 18:00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07-Nov-08 20:30
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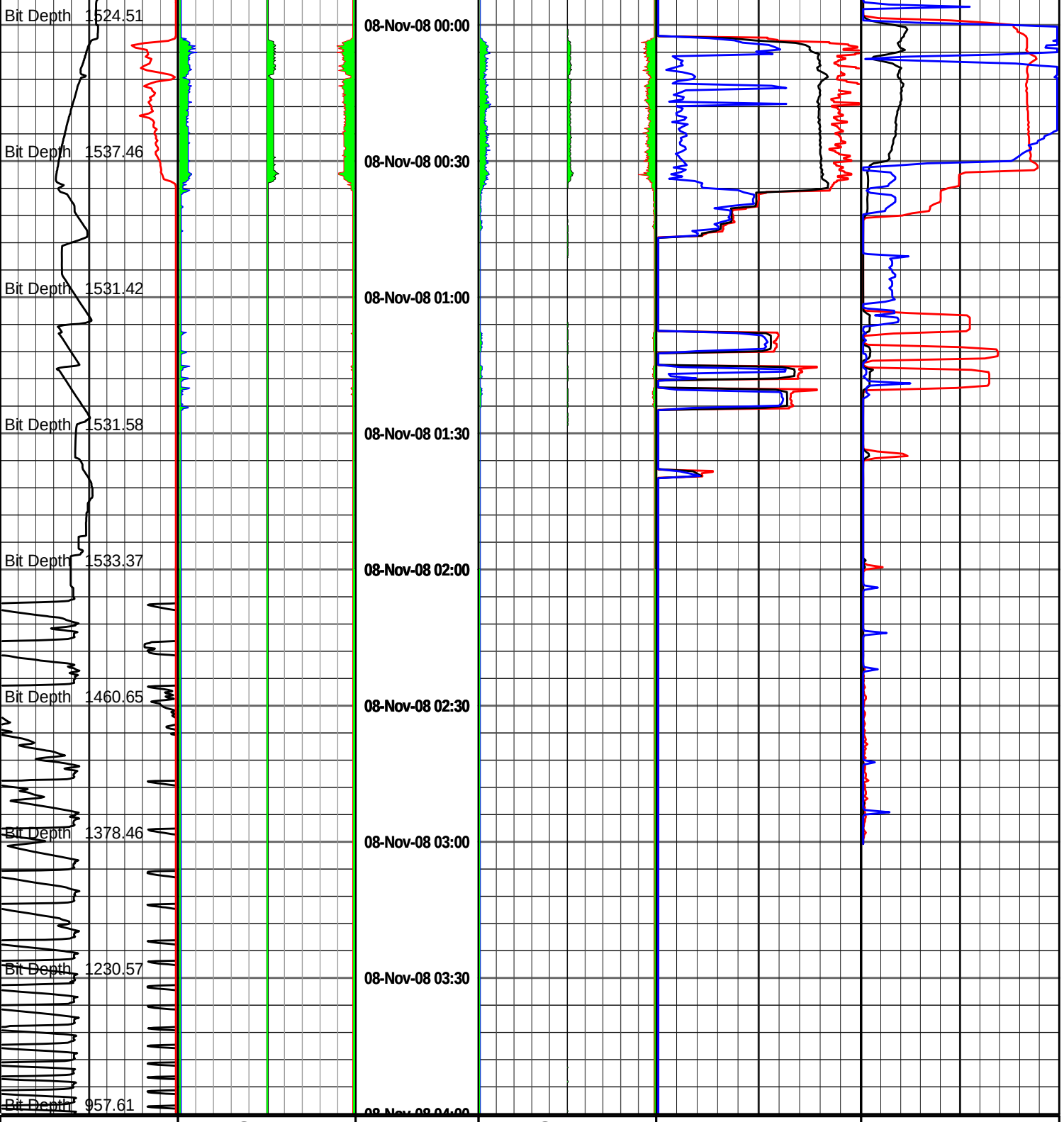
07-Nov-08 22:00
07-Nov-08 22:30
07-Nov-08 23:00
07-Nov-08 23:30



Block Position	SAAZ	Time & Date	SPAZ	DDS Max RPM	Surface RPM
0 60	-10 10		-100 100	0 200	0 200
metres	g		g	rev per min	rev per min
ROP	**SAAY**		**SPAY**	**DDS Avg RPM**	**Torque**
200 0	20 0		200 0	0 200	0 50
metre per hr	g		g	rev per min	foot-klb
	SAAX		**SPAX**	**DDS Min RPM**	**WOB**
	0 20		0 200	0 200	0 60
	g		g	rev per min	kilo pounds

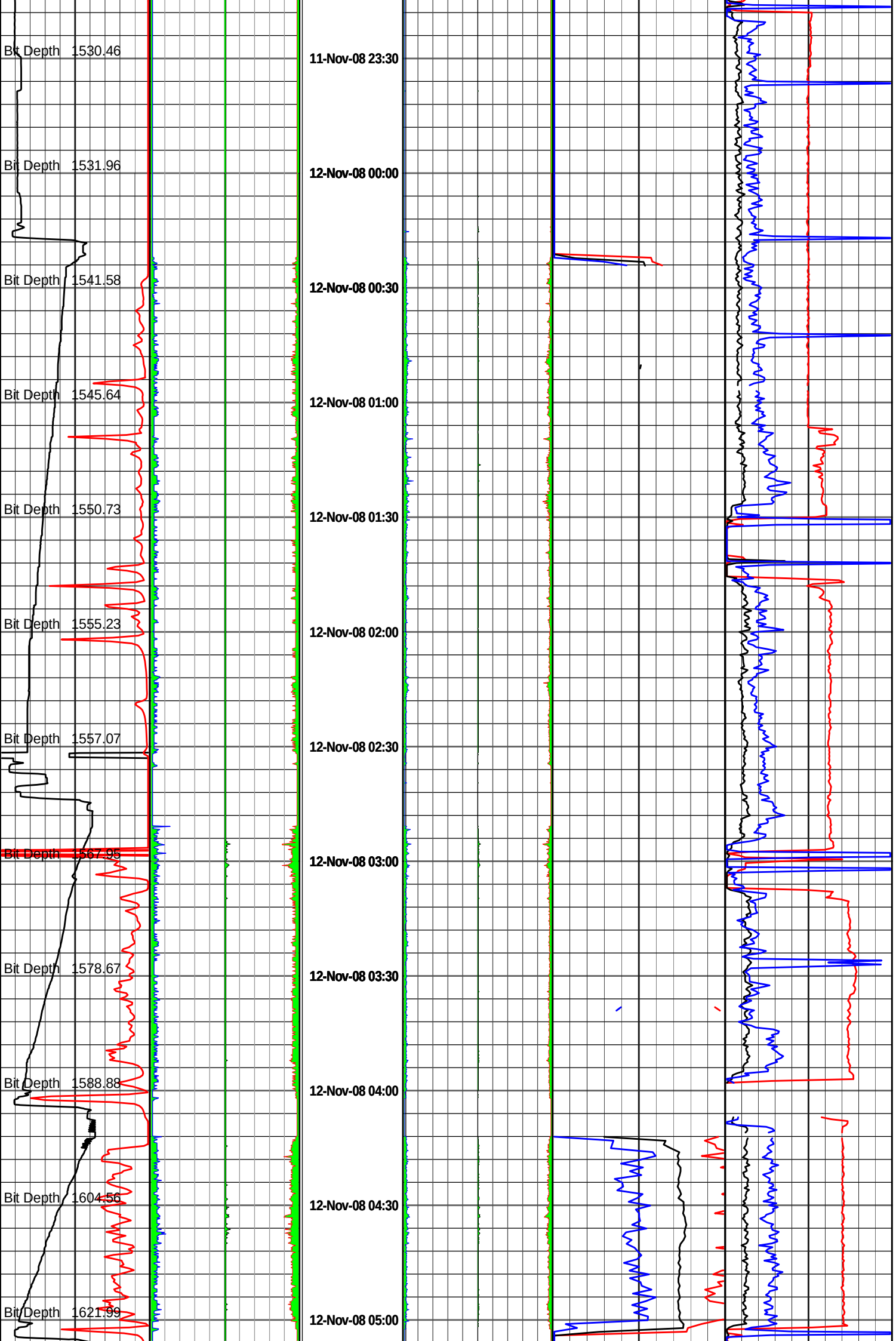
Run 300 : 216 mm Hole

1884.0 to 2870.0 mMDRT, from 18:00 11-Nov-08 - 20:00 13-Nov-08

SDL Data presented as acquired from BHI.

		Time & Date			
	SAAX		**SPAX**	**DDS Min RPM**	**WOB**
	0 20		0 200	0 200	0 60

ROP
200
0
metre per hr
Block Position
0
60
metres
g
SAAY
20
0
g
SAAZ
-10
10
g
g
SPAY
200
0
g
SPAZ
-100
100
g
rev per min
DDS Avg RPM
0
200
rev per min
DDS Max RPM
0
200
rev per min
kilo pounds
Torque
0
50
foot-klb
Surface RPM
0
200
rev per min
Bit Depth 1362.71
Bit Depth 1455.77
Bit Depth 1475.73
Bit Depth 1529.64
Bit Depth 1522.93
Bit Depth 1528.74
Bit Depth 1521.54
Bit Depth 1539.63
Bit Depth 1536.23
Bit Depth 1533.02
11-Nov-08 18:30
11-Nov-08 19:00
11-Nov-08 19:30
11-Nov-08 20:00
11-Nov-08 20:30
11-Nov-08 21:00
11-Nov-08 21:30
11-Nov-08 22:00
11-Nov-08 22:30
11-Nov-08 23:00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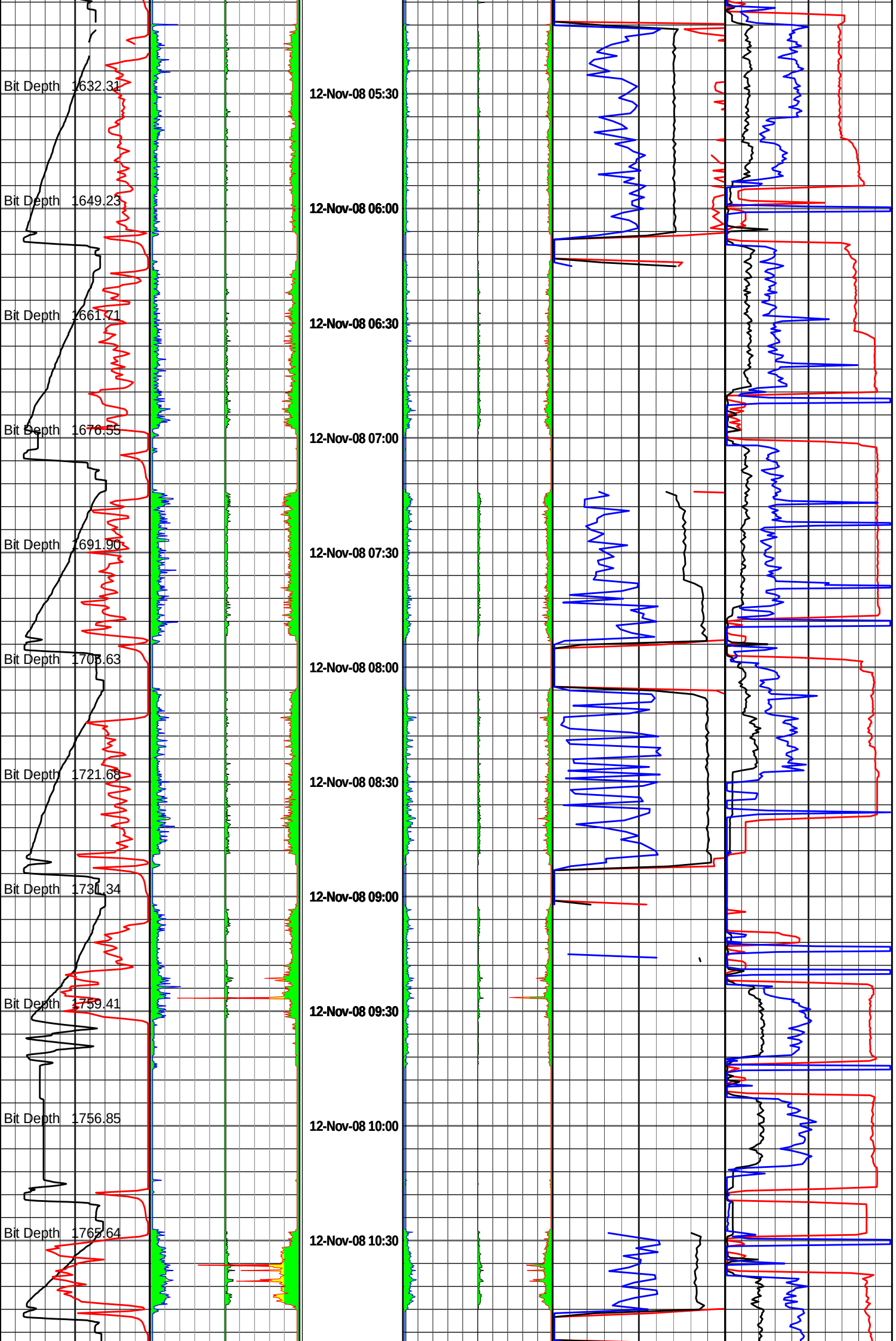
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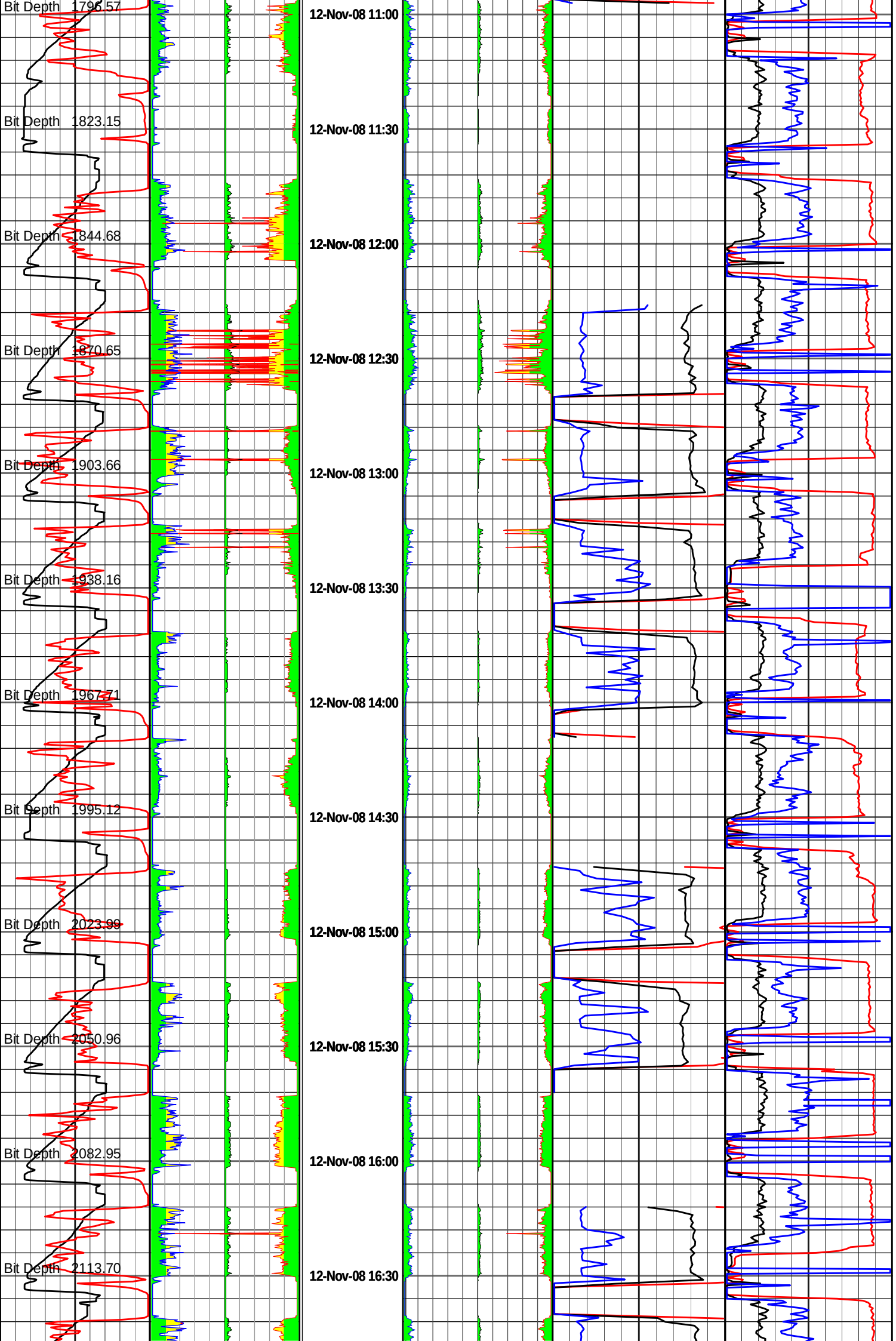
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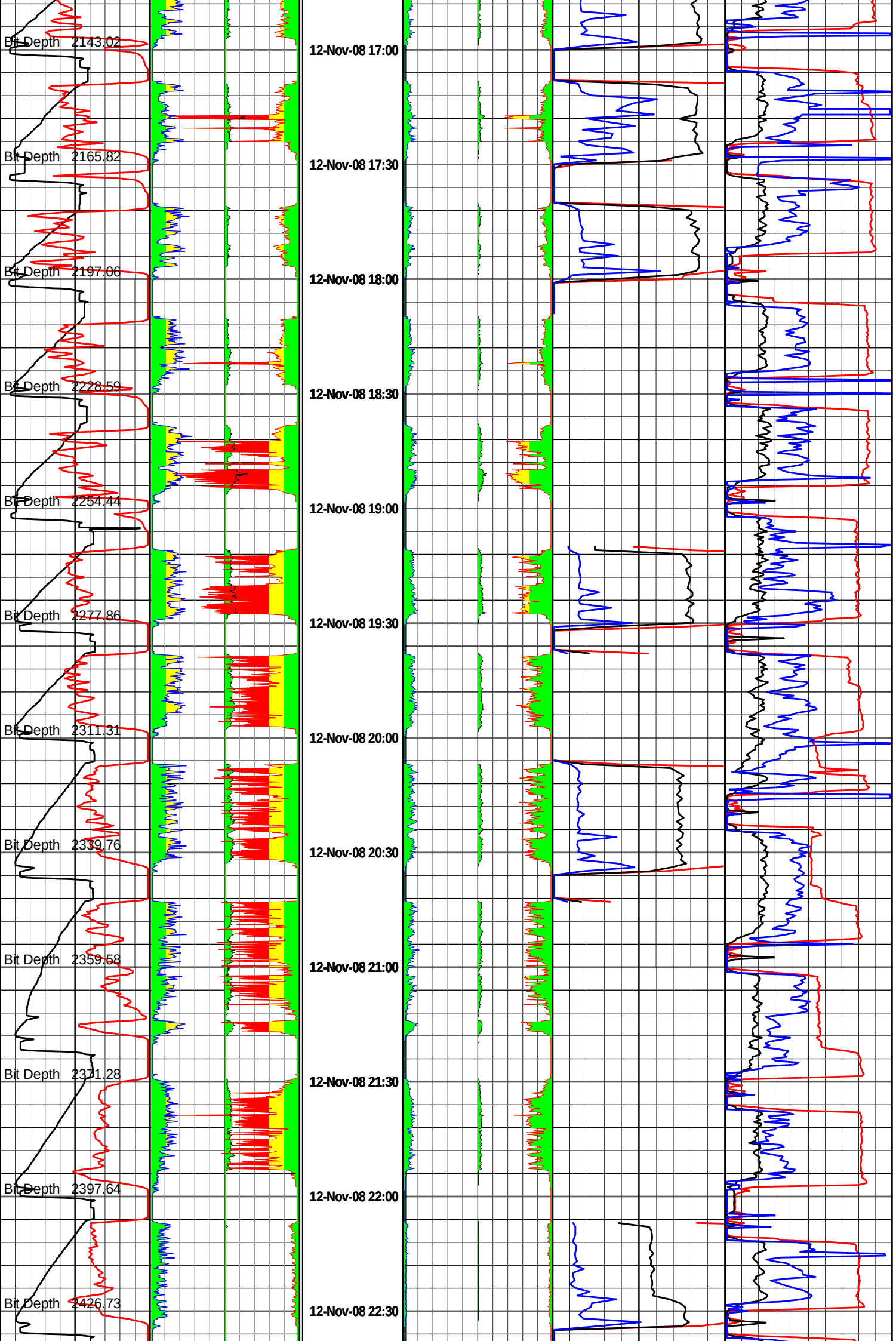
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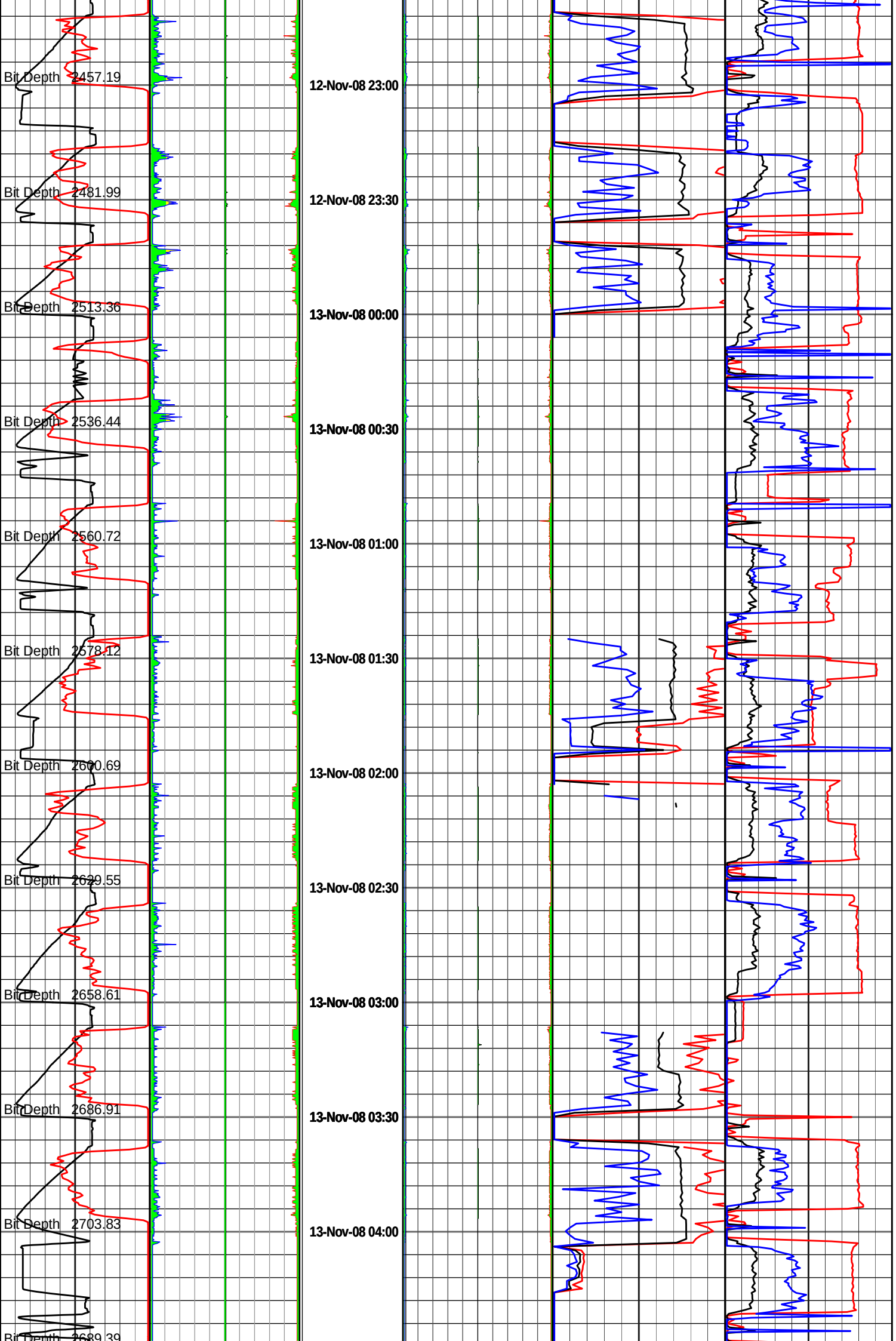
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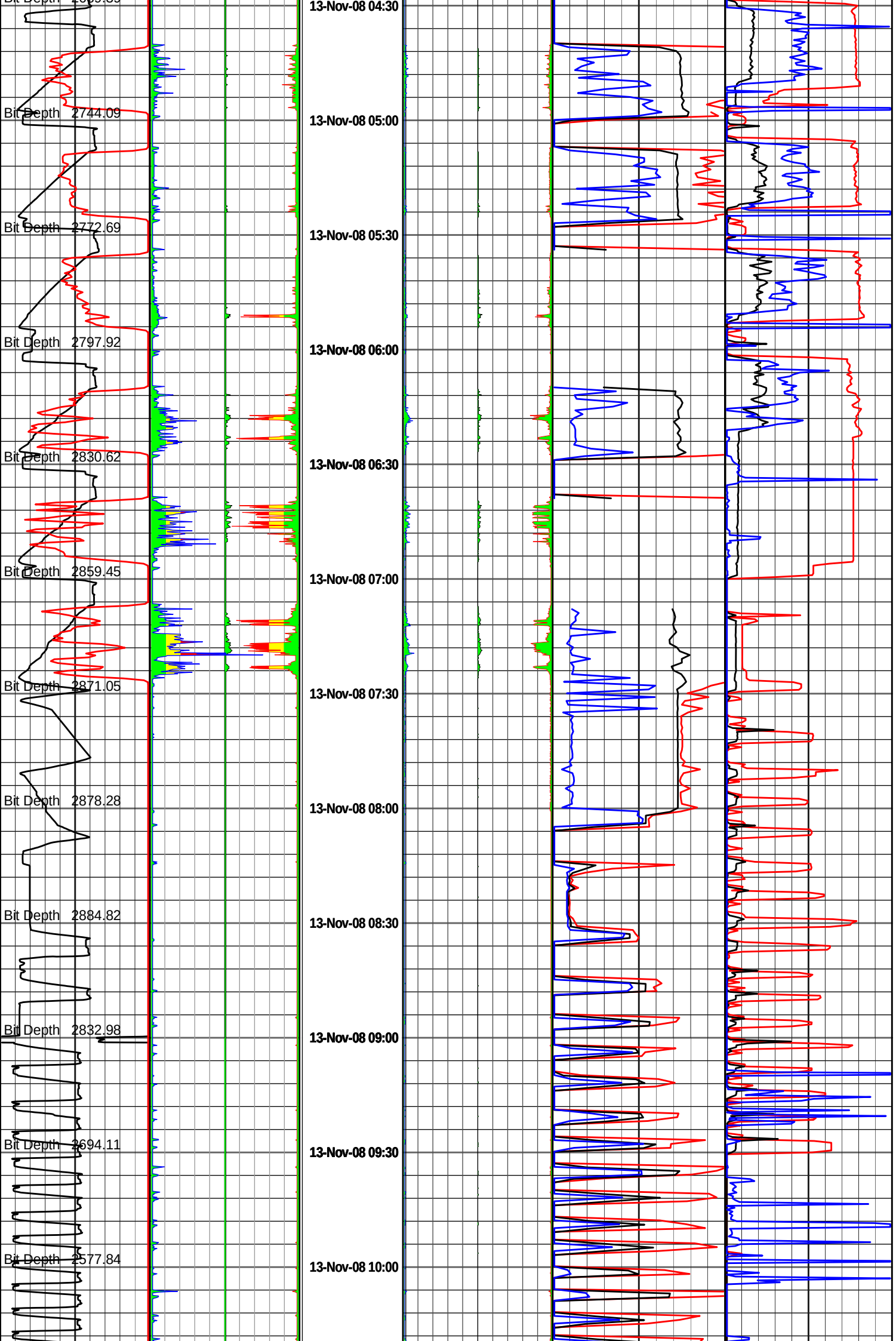
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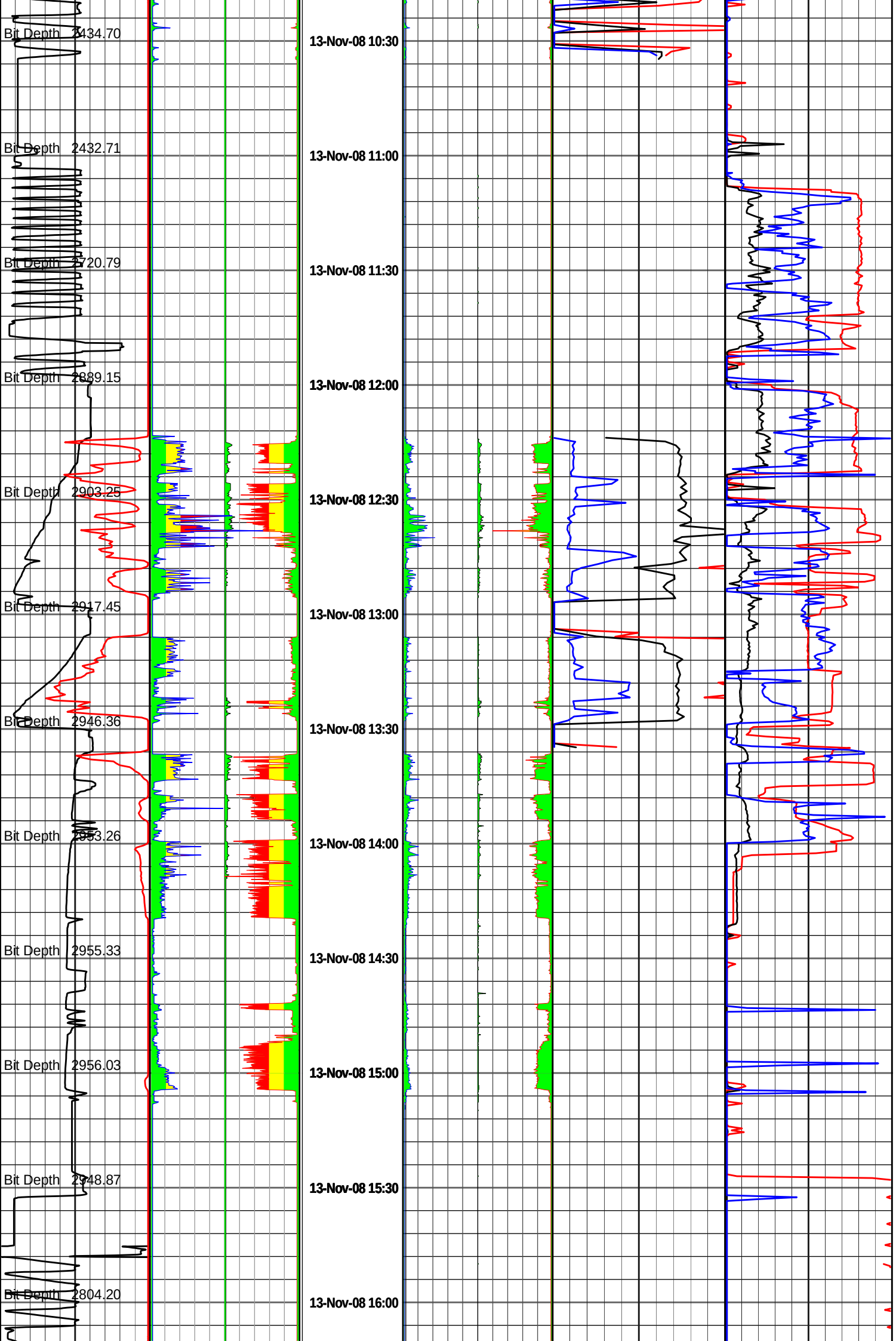
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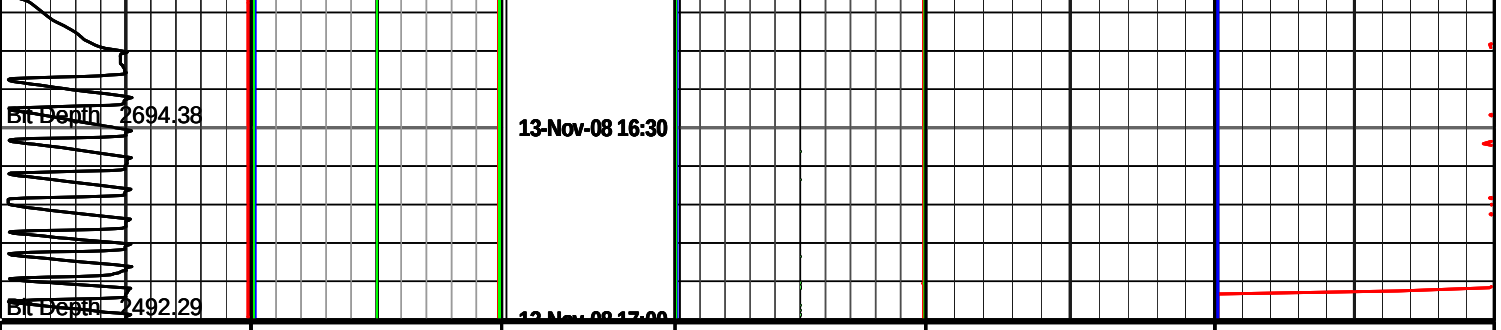

Block Position	SAAZ		SPAZ	DDS Max RPM	Surface RPM
0 60	-10 10		-100 100	0 200	0 200
metres	g		g	rev per min	rev per min
ROP	**SAAY**		**SPAY**	**DDS Avg RPM**	**Torque**
200 0	20 0		200 0	0 200	0 50
metre per hr	g		g	rev per min	foot-klb
	SAAX		**SPAX**	**DDS Min RPM**	**WOB**
	0 20		0 200	0 200	0 60
	g		g	rev per min	kilo pounds

Time & Date

FINAL WELL REPORT

Apache Northwest Pty Ltd

Dory-1

05 – 15 November 2008

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 cons ultant's obligation of performance as provided for in a written agreement between the parties, or, if none, in consultant's most recent price list.

Dory-1
Final Well Report

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1.2 Data Acquisition Summary

Section 2 Drilling Data
2.1 Bit Hydraulics Summary

Section 3 Formation Sampling and Gas
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3.1.1 Sampling Intervals
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3.1.3 Sample Destination
3.2 ROP and Gas
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4.1.1 Daily Equipment Status
4.2 Gas Equipment
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Drilling Data Plot 1 : 1000
Pressure Evaluation Plot 1 : 1000
Gas Ratio Plot 1 : 500

1.1 Well Data Summary

Well Name	Dory-1
Rig Name:	Ocean Patriot
Rig Type:	Semi-submersible
Drilling Contractor:	Diamond Offshore
Drilling Datum:	Rotary Table
RT to AHD:	23.5 mMDRT
Water Depth:	517.3 mMDRT
Surface Coordinates:	Lat 38º 35’ 19.759” S Long 148º 32’ 51.925” E
Grid Coordinates:	E 634 798.9 m N 5 727 714.9 m
Block: Vic-P59	
Well Type:	Exploration
Spud Date:	5 November 2008
Spud Depth:	538.8 mMDRT
Total Depth:	3814.0 mMDRT
TD Date:	15 November 2008
Well Status:	Plugged and Abandoned
Baker Hughes INTEQ Crew:	
Data Engineers:	B. Iyulores, T. Zelski, S. Sadawarte, S. Shahadan,
Logging Geologists:	N. Satani, O. Mustafa

1.1 Data Acquisition Summary

Baker Hughes INTEQ SLS provided formation evaluation, drill monitoring services for Dory-1. This was done by Baker Hughes Inteq Unit number 573 on board the Ocean Patriot. Data was processed and stored using **Advantage version 2.10U2** software. All depths were measured depths below Rotary Table (mMDRT) referenced to Australian Height Datum (AHD) unless otherwise stated.

The appendices attached to this report display graphically the recorded parameters; Formation Evaluation Log, Drilling Data Log, Pressure Data Log and Gas Ratio Log. Time based data was recorded every thirty seconds, and depth based each metre. These are presented as *.csv files in the Final Well Report CD.

SECTION 2

2.1 Bit Hydraulics Summary

BAKER HUGHES INTEQ

Apache ENERGY

Bit Hydraulics Summary — Dory-1

Bit No.	Depth AHD (m)	Hole Size in	Jets x 1/32"	Drill String Type	Mud Type	Mud Density sg	PV mPas	YP Pa	Flow Rate lpm	Jet Vel m/sec	Impact Force lbf / in2	Hydraulic Power Surface HP	Power/ Area hp/sq in	Bit Loss KPa	SPP Kpa	Pipe* Loss Kpa	ECD sg	Annular Velocities DP OH m/min	Annular Velocities DC OH m/min	Annular Velocities DP Max Dia m/min
660mm (26") with 914mm (36") Hole Opener 538.75 - 586.5 m																				
NB1	586.50	26.00	4 x 18	M	SW	1.03	-	-	4182	45.3	0.6	1369.0	0.08	1014	17609.0	16595	1.03	-	11.230	-
406mm (16") Hole Section 586.5 - 1537.0 m																				
NB2	1537.00	16.00	4x22, 1x22 (CJ)	M	SW	1.04	27	26	4694	70.0	6.4	3390.0	1.3	2448	32336.0	29889	1.05	40.100	48.250	10.590
216mm (8.5") Hole Section 1537.0 - 3814.0 m																				
NB3	1537.00	8.50	5x13	M	WBM	1.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3RR	2955.00	8.50	5x13	M	WBM	1.15	12	28	2877	113.2	24.4	1851.7	8.0	1027	25593.0	24566	1.29	118.580	168.830	15.350
RR4	3814.00	8.50	6x14	M	WBM	1.16	13	51	2783	75.9	15.3	1645.3	3.4	462	25510.0	25048	1.30	110.680	179.190	14.320

SECTION 3 Formation Sampling and Gas

3.1 Formation Sampling

Geological formation evaluation for Dory-1 commenced from spud depth at 5 38.80 mMDRT to 3814.00 mMDRT Total Depth. All depths given are measured depths from the Rotary Table (mMDRT).

All gas monitoring equipment was calibrated before drilling each hole section and checked regularly (see sections 4.2.1 and 4.2.2). Calcimetry analysis on cuttings samples were performed at the request of the Well-site Geologists.

The lithological descriptions are compiled on Appendix 1: Formation Evaluation Log. Please note that the descriptions on the Formation Evaluation Log were provided by the Apache Wellsite Geologists.

3.1.1 Sampling Intervals:

Depth mMDRT	914mm (36") section
545.0 – 586.5	Samples return to seabed. Riserless

Depth mMDRT	311mm (12-1/4") section
586.5 – 1537.0	Samples return to seabed.

Depth mMDRT	216mm (8-1/2")section, Sample Interval
1532.0 – 1540.0	8m
1540.0 – 1780.0	10m
1780.0 – 2780.0	20m
2780.0 – 2800.0	10m
2800.0 – 2850.0	5m
2850.0 – 3320.0	10m
3320.0 – 3440.0	20m
3440.0 – 3510.0	10m
3510.0 – 3560.0	5m
3560.0 – 3810.0	10m
3810.0 – 3814.0	4m

3.1.2 Sample Manifest

SAMPLE TYPE	No. of Sets	COMPOSITION				PACKING DETAILS
		Big Box No:	Small Box No:	Sample Depth Interval From (mMDRT)	Sample Depth Interval To (mMDRT)	
Washed &dried samples (200gms). Set :1 (Apache), 2 (DOIR), 3 (Geo Science Australia)	3	1	1 2 3 4 5 6 7 8	1532.0 1640.0 1760.0 2000.0 2260.0 2520.0 2780.0 2860.0	1640.0 1760.0 2000.0 2260.0 2520.0 2780.0 2860.0 2960.0	Total of 9 big packed boxes (approx. total weight = 15kg) Total weight Set 1,2&3: =90kg
		2	9 10 11 12 13 14 15 16	2960.0 3060.0 3160.0 3260.0 3420.0 3525.0 3590.0 3690.0	3060.0 3160.0 3260.0 3420.0 3525.0 3590.0 3690.0 3790.0	
		3	17	3790.0	3814.0 (TD)	
ISOTUBE Gas Samples Set: 4	1		2818.0 2825.0 2829.0	Total of 1 box. (Approx. total weight = 0.5 kg)		
Mud Samples Set: 5	1 1		2740.0 2820.0 3515.0 100 ml mud filtrate	Total of 1 small boxes (Approx. total weight = 5 kg)		
Samplex Trays Set : 6	1		1	1532.0 – 3814.0 (TD)		Total of 3 small cupboard boxes Samplex tray. (Approx. total weight = 5 kg) Packed together in big cupboard box with muds & isotubes samples.

Total of 10 big pacart boxes , (Approximate Total Weight = ±100kg)

3.1.3 Sample Destination

SET NUMBER	SET TYPE	DESTINATION	FORWARD ON TO (CoreLab to fwd to)
1 **2** **3**	200g W&D Drill Cuttings Sample	**Core Laboratories** **447-449 Belmont Ave** **Kewdale WA 6109** Attn: Paul Stephenson	Geoscience Australia **Corner Jerrabomberra Avenue** **& Hindmarsh Drive** **Symonston ACT 2609.** **GPO Box 378,** Canberra ACT, 2601
		Core Laboratories, Perth **Address as above**	**WA DOIR** Geological Survey Stores & Transportation Depot 37 Harris Street Carlisle WA 6101 ***contact Chris Brooks 9470 0305 for delivery arrangements.***
4	Isotubes gas sample	**Core Laboratories, Perth** Address as above	
5	Mud & mud filtrate sample	**Core Laboratories, Perth** Address as above	
6	Samplex Trays	**Core Laboratories, Perth** Address as above	

3.2 ROP and Gas

3.2.1 ROP / Gas Summary

Interval (mMDRT)	ROP Range (m/hr)	ROP Average (m/hr)	Total Gas Range (%)	Total Gas Average (%)
1537.0 – 1620.0	6.37 – 71.08	27.33	0.01 – 0.05	0.05
1620.0 – 2396.0	15.74 – 200.94	86.66	0.01 – 0.21	0.05
2396.0 – 2613.0	28.95 – 159.57	99.03	0.01 – 0.06	0.03
2613.0 – 2720.0	44.50 – 149.16	91.59	0.01 – 0.08	0.04
2720.0 – 2765.0	72.92 – 167-81	109.25	0.02 – 0.14	0.05
2765.0 – 2815.0	65.66 – 138.02	98.48	0.03 – 1.79	0.16
2815.0 – 2845.0	57.56 – 246.68	138.53	2.48 – 10.03	6.26
2845.0 – 2900.0	17.05 – 207.71	111.01	0.03 – 5.10	0.77
2900.0 – 2952.0	23.15 – 149.12	79.40	0.01 – 0.19	0.04
2952.0 – 3130.0	4.76 – 141.56	56.11	0.0 – 0.29	0.04
3130.0 – 3240.0	14.27 – 94.94	52.61	0.04 – 0.52	0.12
3240.0 – 3340.0	10.81 – 129.51	60.72	0.01 – 0.32	0.09
3340.0 – 3515.0	5.27 – 113.82	55.20	0.02 – 0.13	0.07
3515.0 – 3580.0	8.15 – 82.01	35.82	0.00 – 0.09	0.04
3580.0 – 3750.0	4.25 – 78.51	37.74	0.00 – 0.11	0.03
3750.0 – 3814.0	2.20 – 113.82	43.05	0.00 – 0.13	0.05

3.2.2 Minimum / Maximum Chromatograph Readings

Interval (mMDRT)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	iC5 (ppm)	nC5 (ppm)
1537.0 – 1620.0	49 - 418	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0
1620.0 – 2396.0	50 - 1946	1 - 6	0 - 11	0 - 1	0 - 0	0 - 1	0 - 0
2396.0 – 2613.0	65 - 654	1 - 3	1 - 5	0 - 1	0 - 1	0 - 1	0 - 1
2613.0 – 2720.0	80 - 965	1 - 7	1 - 2	0 - 1	1 - 11	0 - 0	0 - 1
2720.0 – 2765.0	179 - 1342	2 - 37	2 - 16	0 - 5	0 - 45	0 - 10	0 - 0
2765.0 – 2815.0	134 - 2163	6 - 1054	4 - 278	0 - 58	0 - 45	0 - 10	0 - 1
2815.0 – 2845.0	2080 - 95553	1013 - 6211	275 - 1792	48 - 325	44 – 312	10 - 72	0 - 0
2845.0 – 2900.0	198 - 41925	1 - 3355	6 - 1016	1 - 190	1 - 182	0 - 43	0 - 25
2900.0 – 2952.0	20 - 866	3 - 242	1 - 143	2 - 24	0 - 39	0 - 12	0 - 10
2952.0 – 3130.0	8 - 2032	0 - 313	0 - 151	0 - 38	0 - 36	0 - 8	0 - 8
3130.0 – 3240.0	237 - 3332	43 - 576	22 - 290	1 - 41	5 - 80	0 - 22	1 - 23
3240.0 – 3340.0	14 - 965	6 - 331	0 - 162	1 - 11	1 – 30	1 - 6	0 - 6
3340.0 – 3515.0	154 - 1125	15 - 120	6 - 61	1 - 11	3 - 27	0 - 7	0 - 8
3515.0 – 3580.0	18 - 540	2 - 83	1 - 30	0 - 9	0 – 13	0 - 5	0 - 2
3580.0 – 3750.0	15 - 807	1 - 96	0 - 29	0 - 4	0 - 7	0 - 2	0 - 3
3750.0 – 3814.0	53 - 612	3 - 62	3 - 23	0 - 2	0 - 5	0 - 2	0 - 2

3.2.3 Gas Peaks

DEPTH (mMDRT)	TG (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	iC5 (ppm)	nC5 (ppm)
2818.0	5.30	6738	3283	927	163	154	35	25
2825.0	8.00	11293	5503	1571	284	266	62	43
2829.0	10.03	12729	6203	1790	325	312	72	53

SECTION 4 Equipment Performance

4.1 Summary of Equipment Performance

Baker Hughes Inteq provided equipment for the collection and management of data whilst drilling the Dory-1 well. Equipment status, calibrations, services and checks are shown in 4.1.1 (Daily Equipment Status).

All other equipment was in good operational order as per contract for the drilling and completing of Dory-1.

BAKER HUGHES
INTEQ

Baker Hughes INTEQ - DAILY EQUIPMENT STATUS | CH=check CA=calibrate T=test F=failure N/A=not used

MONTH Nov '08 | **RIG** Ocean Patriot | **UNIT** 573 | **Baker Hughes Inteq REP** TZ, BI, SSh, SS | **CLIENT REP**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Chromatograph					CH	CH	CH	CH	CH	CA	CH	CH	CH	CH	CH																
Total Hydrocarbon Detector					CH	CH	CH	CH	CH	CA	CH	CH	CH	CH	CH																
Top up Air Agitator / Check Motor					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Operation of Auto Blowout					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Top up Air Agitator / Check Motor					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Clean Gas Trap and Blowout Lines					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Peristaltic Pump and Pneumatics Panel					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Recharge Kelly Height System					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A																
Hydr Gen Dessicant / Water Level					CH	CH	CH	CH	CH	T	CH	CH	T	CH	CH																
Airconditioner Filters					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																
Visual Inspection of Sensors					T	CH	T	CH	CH	T	T	T	CH	CH	CH																
H2S activation (Internal)					T	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH																
H2S activation (External)					T	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH																
Drain Air compressor (back room)					CH	CH	CH	CH	CH	T	CH	CH	CH	CH	CH																

COMMENTS :

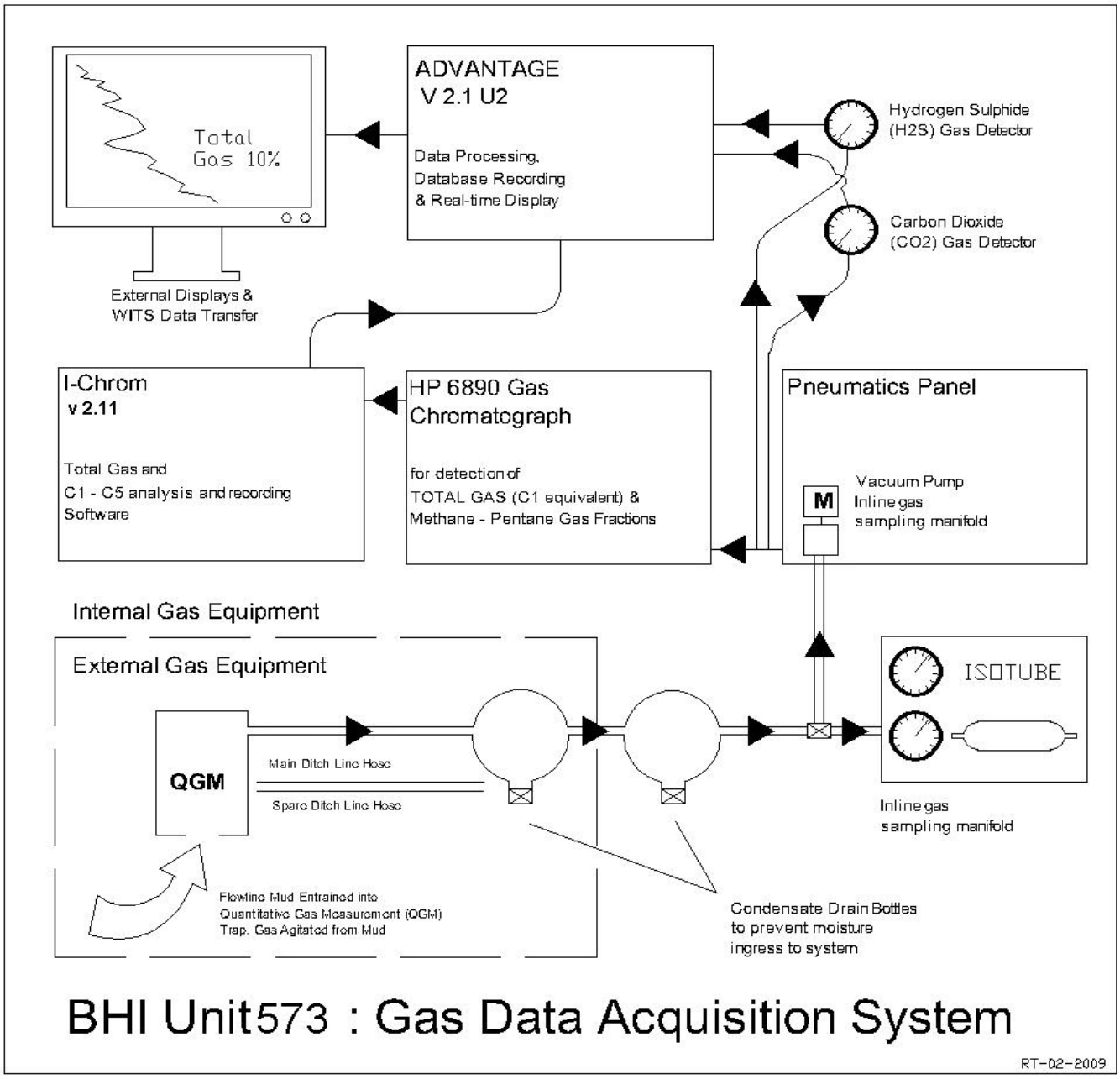
Sensors cleaned and tested regularly to prevent spurious readings from pits

4.2 Gas Equipment

Gas data was acquired using a Baker Hughes Inteq QGM Gas Trap (see Page 16) with lines back to BHI Unit 573 (4.2.1). Gas was pumped through the HP6890 Chromatograph and read by the I-Chrom software. This was used for total gas and chromatographic analysis and the data processed and stored using Advantage version 2.1U2 software.

All of the gas equipment used was in serviceable order during drilling well Dory-1. The calibration of this equipment is illustrated in charts in section 4.2.2 which show screen shots of the I-Chrom analysis.

4.2.1 Gas Data Acquisition System



Gas Trap (QGM)

Gastrap:
Manufacturer: Baker Hughes INTEQ
Partno: N80880-101

Type:
Fixed Volume

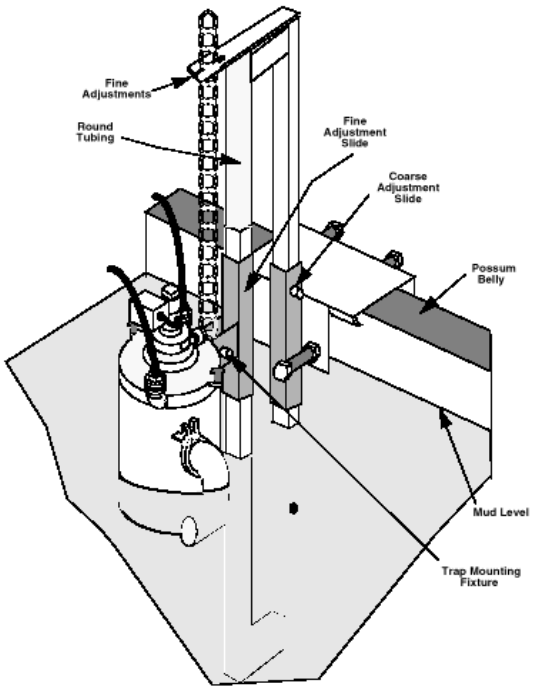
Material:
Canister assembly: 304 Stainless Steel.
Weight: 36 lbs (16.3 Kg)

Measurements:
Canister Diameter: 6" (152 mm)
Overall Diameter: 15" (381 mm)
Overall Height: 21" (533 mm)

Mounting:
Suitable for mounting in either
Header Box or Open Flow Line.

Specifications:
Mud Depth: 1.5" to 5.5" (38 to 140 mm)
Gas Extraction Rate: 8 SCFH (3.77L/M)
Agitator Motor Type: Air Driven
Agitator Speed: 500 ~ 1500 RPM
Air supply: 80PSI (5.51 Bar) minimum

Mounting bracket:
Mounting Stand: 24 lbs (10.9 Kg)
Overall Height: 41" (1041 mm)
Material: 304 Stainless Steel



Operation:

The QGM Gas-trap is a robust and continuous volume gastrap, which extracts well bore gases from the drilling fluid (either water or oil based) and is made from non-corrosive materials.
The QGM Gas Trap can be mounted in either the open Return Flow line or the Shaker Header box.

The drilling fluid is circulated through the QGM gas trap, and out an exhaust port.

Through agitation by means of an air motor and propeller shaft the gasses are separated from the fluid and passed on to the gas-trap's exhaust port.

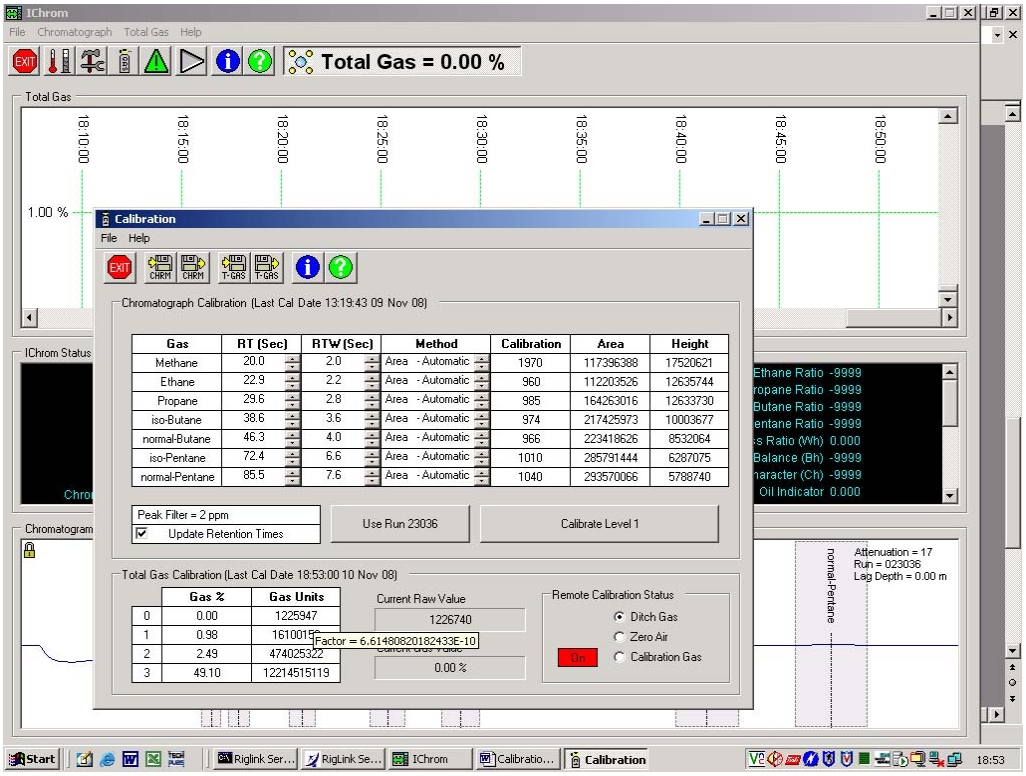
Both inlet and mud exhaust port are below the surface of the drill-mud.

This prevents outside air or other contamination with hydrocarbons from entering the gas-trap.

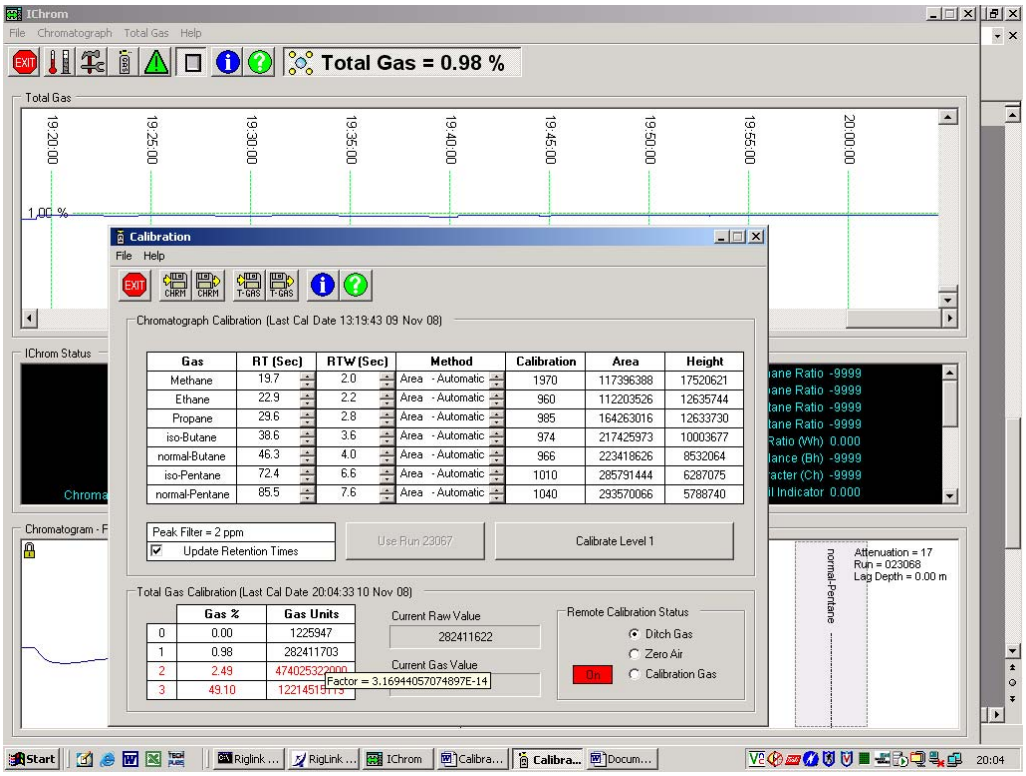
The liberated gases are extracted out of the box section by means of a vacuum produced by the pumps in the pneumatics assembly inside the SLS cabin.

The Baker Hughes QGM gas-trap provides a constant flow, which results in improved consistency in gas readings.

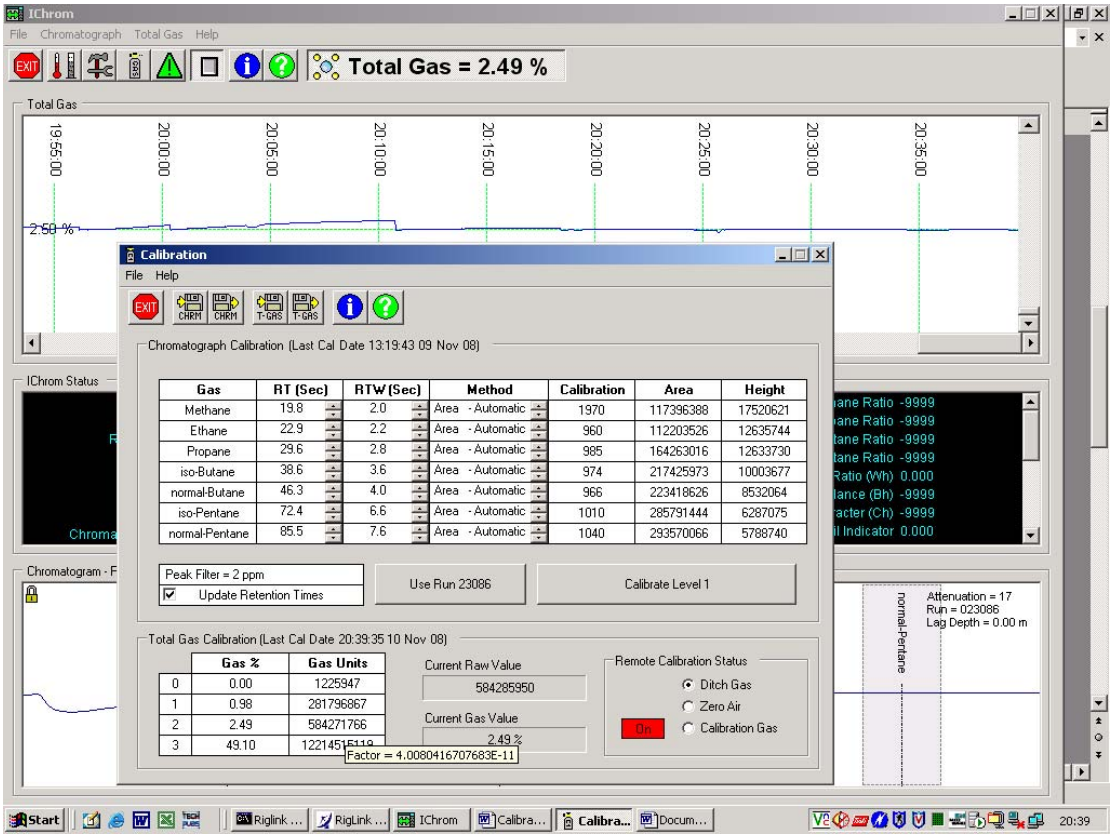
4.2.2 Calibration Charts



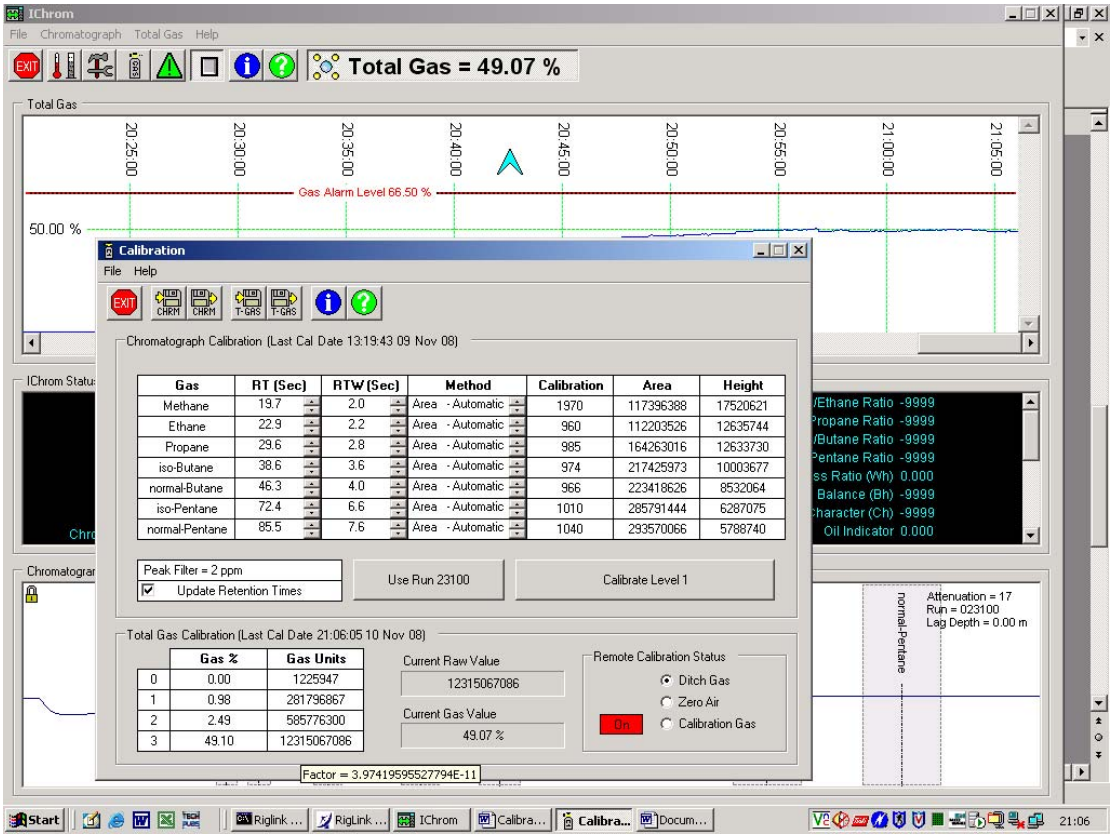
ZERO GAS



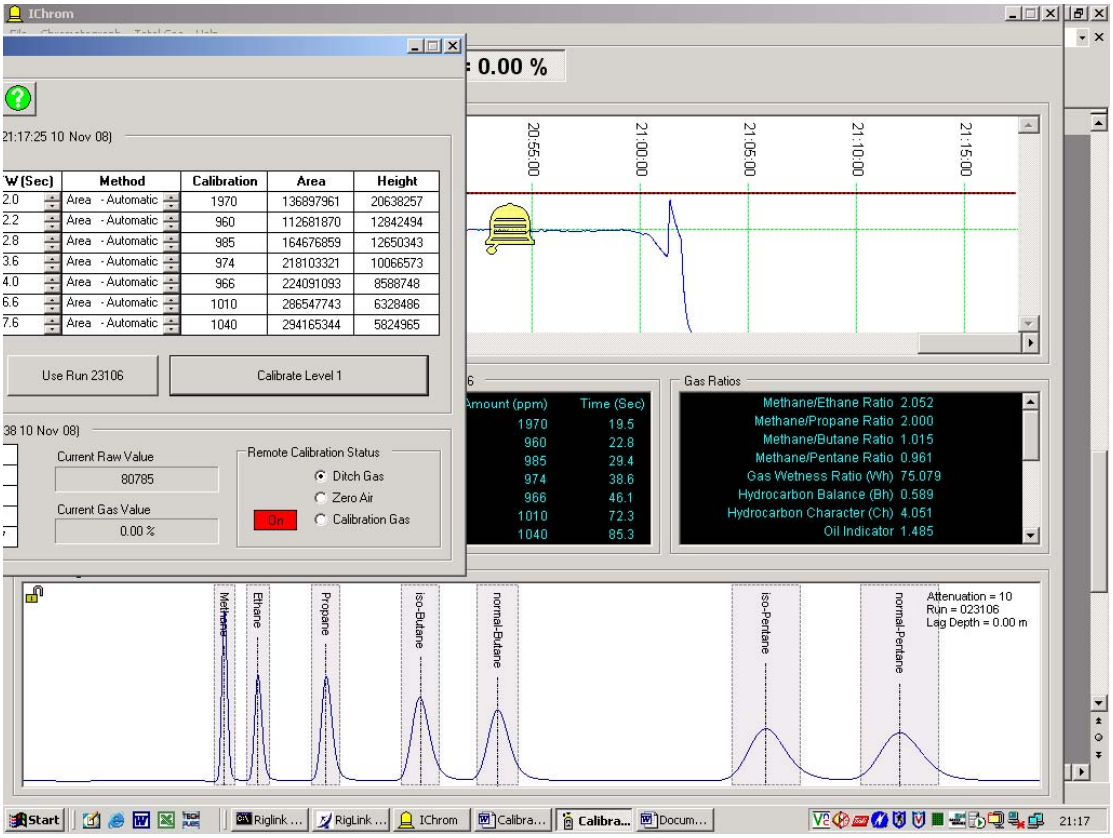
0.98% TG



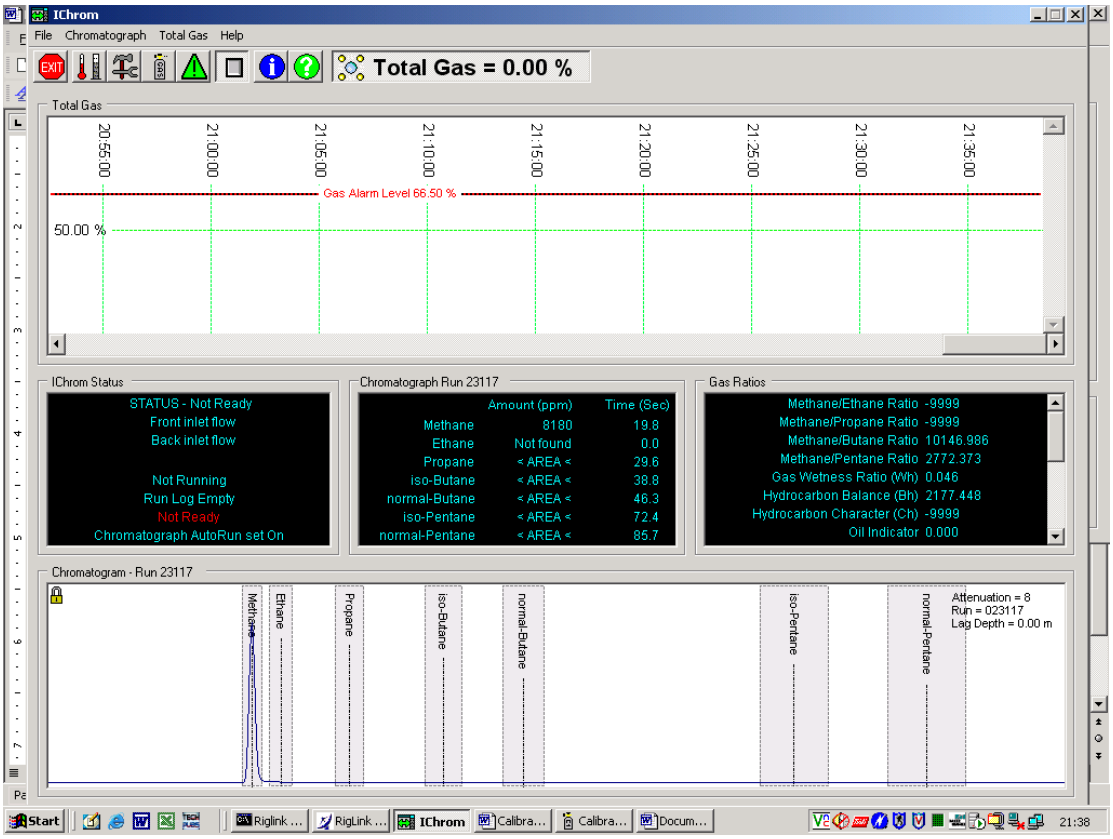
2.49% COCKTAIL TG



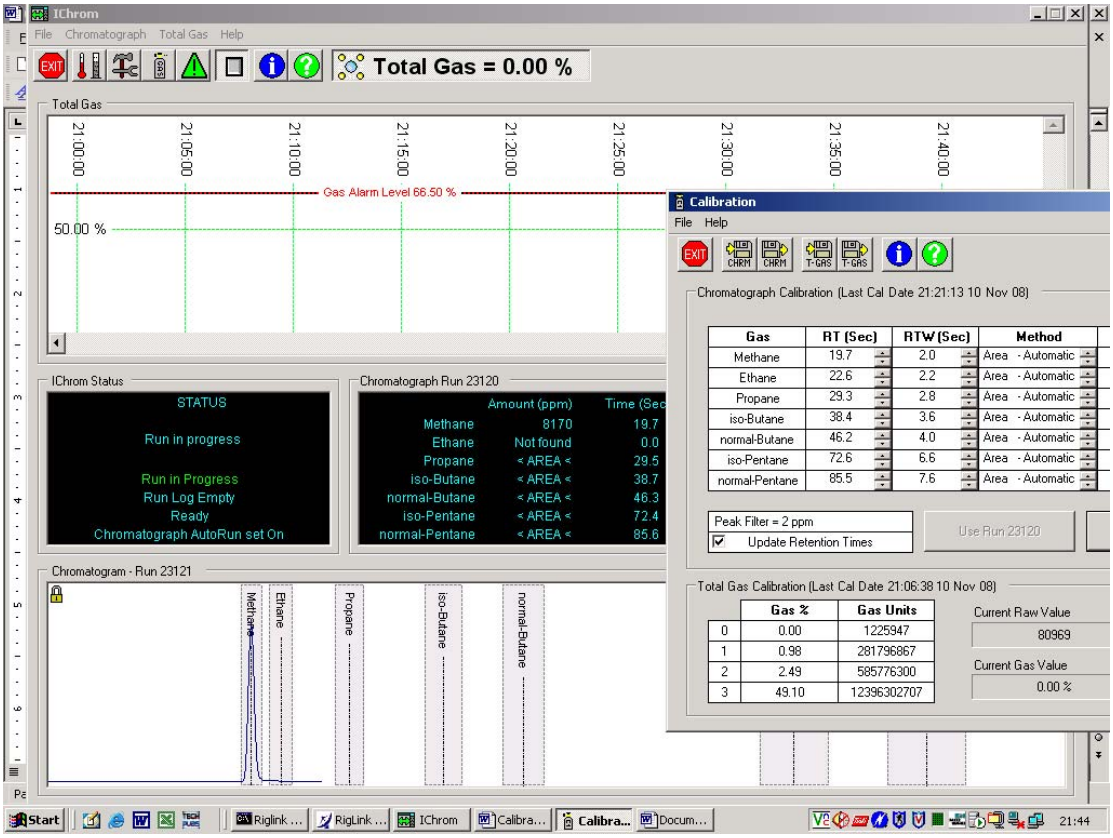
49.1% TG



CHROM GAS COCKTAIL



METHANE 0.98% THROUGH CHROM



METHANE 0.98% = 8170PPM

APPENDICES

FORMATION EVALUATION LOG

1:500

BAKER HUGHES INTEQ

Apache ENERGY

Company	**Apache Northwest Pty Ltd**
Well	**Dory-1**
Permit	**Vic-P59**
Region	**Gippsland Basin**
Designation	**Exploration**
Coordinates	**Lat 38º 35' 19.759" S** **Long 148º 32' 51.925" E**
Ref Elevation	**RT 23.5 mMDRT (AHD)**
Total Depth	**3814.0 mMDRT**
Contractor	**Diamond Offshore**
Rig	**Ocean Patriot**
Type	**Semi-Submersible**

LOG INTERVAL Depth	**538.8 – 3814.0 mMDRT**
Date	**5 – 15 November 2008**
Scale	**1 : 500**
Data Engineers	**B. Iyulores, T. Zelski, S. Sadawarte, S.Shahadan**
Logging Geologists	**O.Mustafa, N. Satani**

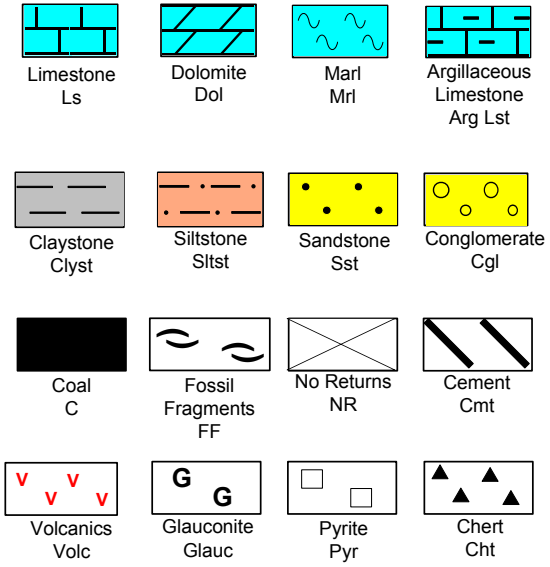
INTEQ LOG SUITE

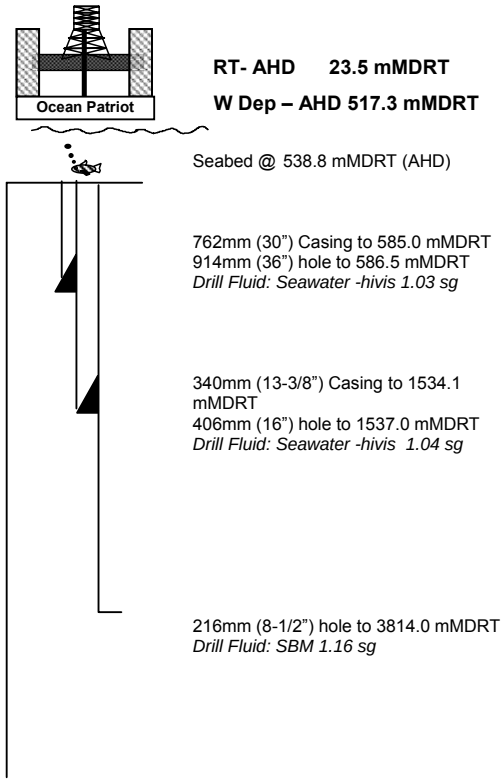
Formation Evaluation
Drilling Data Plot
Drilling Data Pressure Plot
Gas Ratio Plot

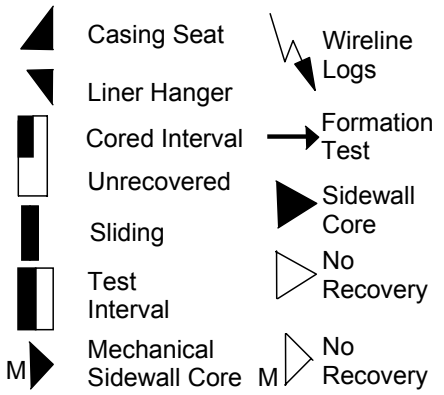
ABBREVIATIONS

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







BAKER HUGHES INTEQ

Company : Apache Northwest Pty Ltd
Well : Dory-1
Interval : 524.00 - 3839.99 meters
Created : 20/11/2008 4:17:19 PM

Apache ENERGY

FORMATION EVALUATION LOG

Drilling Rate
ROP (m/hr)
200 180 160 140 120 100 80 60 40 20
ROP (m/hr)
400 380 360 340 320 300 280 260 240 220
Gamma Ray
0 — 200
api

MD meters 1:500

Cuttings Lithology

Visual Inferred Porosity
P F G

Oil Show
P F G

Gas Data
Gas Hydrocarbon Avg %
0.1 | 1 | 10 | 100
Resistivity Shall 0.1 — 1000 ohmm
Resistivity Deep 0.1 — 1000 ohmm

Chromatograph Data
Methane ppm 1 — 100000
Ethane ppm 1 — 100000
Propane ppm 1 — 100000
iso-Butane ppm 1 — 100000
n-Butane ppm 1 — 100000
iso-Pentane ppm 1 — 100000
n-Pentane ppm

Calcimetry
CaCO3 %
20 40 60 80 100
MgCO3 %
100 80 60 40 20

Interpreted Lithology

Lithology Description

530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690

NB1 Smith- XR+C
914 mm (36") 4x18, 4x18
Depth In: 538.8m
Depth Out: 586.5m
Drilled: 47.7m in 1.34hrs
Grade:
1-1-WT-A-E-I-NO-TD

WOB: 1.63 - 13.12 klbf
RPM: 16 - 113
GPM: 472 - 1207
SPP: 845 - 3550 psi

06/11/08
NB2 Smith TCT+CR
406 mm (16") 4x22, 1x22
(CJ)
Depth In: 586.5m
Depth Out: 1537.0m
Drilled: 952.0m in 21.90hrs
Grade:
1-1-WT-A-E-I-NO-TD

WOB: 1.6 - 19.8 klbf
RPM: 84 - 171
GPM: 918 - 1311
SPP: 1956 - 3999 psi

Survey @ 539.98 mMDRT
Incl: 0.0 deg
Azi: 0.0 deg
TVD: 539.98m

Survey @ 613.93 mMDRT
Incl: 1.24 deg
Azi: 346.95 deg
TVD: 613.92m

Survey @ 641.31 mMDRT
Incl: 1.32 deg
Azi: 347.27 deg
TVD: 641.30m

Dory-1 spudded on
5th November 2008

All depth measurements in meters
referenced from Rotary table (RT)
RT- AHD= 23.5 m
Water depth = 517.3 mMDRT
RT - Seabed = 537.80 mMDRT

Drill 914mm hole w/ seawater and
hi-vis sweeps. Returns to Seabed.

Set 30" conductor casing @
585.0mMDRT

Drill 914mm hole to 586.50 mMDRT

Drill 406mm hole w/seawater and
hi-vis gel sweeps. Returns to
Seabed.

WOB: 5.4 - 20.4 klbf
RPM: 154 - 197
GPM: 890 - 1283
SPP: 1870 - 4011 psi

700
710
720
730
740
750

Survey @ 729.08 mMDRT
Incl: 1.27 deg
Azi: 349.67 deg
TVD: 729.04m

Drill 406mm hole w/seawater and hi-vis gel sweeps. Returns to Seabed.

WOB: 7.5 - 25.4 klbf
RPM: 168 - 184
GPM: 895 - 1281
SPP: 1923 - 4050 psi

760
770
780
790
800

Survey @ 758.04 mMDRT
Incl: 1.30 deg
Azi: 347.73 deg
TVD: 758.00m

Drill 406mm hole w/seawater and hi-vis gel sweeps. Returns to Seabed.

WOB: 2.7 - 23.7 klbf
RPM: 174 - 181
GPM: 1267 - 1290
SPP: 3743 - 4135 psi

810
820
830
840

Survey @ 815.76 mMDRT
Incl: 1.05 deg
Azi: 343.05 deg
TVD: 815.71m

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

07/11/08

Survey @ 844.38 mMDRT
Incl: 0.97 deg
Azi: 344.98 deg
TVD: 844.32m

WOB: 3.9 - 29.5 klbf
RPM: 170 - 181
GPM: 1275 - 1325
SPP: 3840 - 4136 psi

850
860
870
880
890

Survey @ 850.0 mMDRT
Incl: 1.0 deg
Azi: 1.0 deg
TVD: 849.94m

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

WOB: 21.3 - 35.2 klbf
RPM: 151 - 193
GPM: 1211 - 1282
SPP: 3620 - 4635 psi

900
910

Survey @ 901.69 mMDRT
Incl: 0.83 deg
Azi: 347.84 deg
TVD: 901.62m

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

920
930
940
950
960
970
980
990
1000
1010
1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120

WOB: 22.7 - 32.7 klbf
RPM: 167 - 181
GPM: 873 - 1292
SPP: 1110 - 4207 psi

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

WOB: 27.1 - 41.0 klbf
RPM: 171 - 178
GPM: 860 - 1275
SPP: 2285 - 4045 psi

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Survey @ 1016.72 mMDRT
Incl: 0.47 deg
Azi: 350.84 deg
TVD: 1016.65m

WOB: 21.1 - 44.9 klbf
RPM: 174 - 180
GPM: 1200 - 1290
SPP: 2227 - 4220 psi

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Survey @ 1074.58 mMDRT
Incl: 0.45 deg
Azi: 1.50 deg
TVD: 1074.50m

WOB: 31.7 - 56.2 klbf
RPM: 122 - 189
GPM: 1060 - 1275
SPP: 3008 - 4155 psi

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

1130
1140
1150
1160
1170
1180
1190
1200
1210
1220
1230
1240
1250
1260
1270
1280
1290
1300
1310
1320
1330
1340

WOB: 22.0 - 57.2 klbf
RPM: 98 - 165
GPM: 916 - 1278
SPP: 2200 - 4220 psi

WOB: 34.0 - 69.4 klbf
RPM: 109 - 188
GPM: 1195 - 1264
SPP: 2576 - 4274 psi

WOB: 31.6 - 76.9 klbf
RPM: 124 - 150
GPM: 1188 - 1257
SPP: 2434 - 4218 psi

WOB: 47.8 - 77.9 klbf
RPM: 116 - 165
GPM: 1199 - 1244
SPP: 2608 - 4175 psi

Survey @ 1132.15 mMDRT
Incl: 0.26 deg
Azi: 336.38 deg
TVD: 1132.07m

Survey @ 1160.99 mMDRT
Incl: 0.25 deg
Azi: 342.45 deg
TVD: 1160.91m

Survey @ 1189.79 mMDRT
Incl: 0.28 deg
Azi: 339.34 deg
TVD: 1189.71m

Survey @ 1218.51 mMDRT
Incl: 0.36 deg
Azi: 337.60 deg
TVD: 1218.43m

Survey @ 1247.27 mMDRT
Incl: 0.31 deg
Azi: 352.14deg
TVD: 1247.19m

Survey @ 1275.84 mMDRT
Incl: 0.35 deg
Azi: 336.74 deg
TVD: 1275.76m

Survey @ 1333.43 mMDRT
Incl: 0.45 deg
Azi: 3337.84 deg
TVD: 1333.35m

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

1350
1360
1370
1380
1390
1400
1410
1420
1430
1440
1450
1460
1470
1480
1490
1500
1510
1520
1530
1540
1550

WOB: 51.2 - 75.5 klbf
RPM: 126 - 161
GPM: 1211 - 1241
SPP: 2581 - 4241 psi

Survey @ 1362.39 mMDRT
Incl: 0.36 deg
Azi: 331.14 deg
TVD: 1362.31m

Survey @ 1391.37 mMDRT
Incl: 0.38 deg
Azi: 337.89 deg
TVD: 1391.29m

WOB: 45.6 - 73.5 klbf
RPM: 137 - 168
GPM: 887 - 1230
SPP: 2254 - 4161 psi

WOB: 55.2 - 78.5 klbf
RPM: 135 - 173
GPM: 1197 - 1220
SPP: 2618 - 4190 psi

Survey @ 1478.77 mMDRT
Incl: 0.44 deg
Azi: 339.78 deg
TVD: 1478.69m

WOB: 53.6 - 76.1 klbf
RPM: 161 - 177
GPM: 1195 - 1227
SPP: 2393 - 4234 psi

Survey @ 1507.71 mMDRT
Incl: 0.41 deg
Azi: 345.24 deg
TVD: 1507.63m

Survey @ 1519.07 mMDRT
Incl: 0.33 deg
Azi: 354.14 deg
TVD: 1518.99m

WOB: 50.0 - 79.2 klbf
RPM: 146 - 181
GPM: 1181 - 1205
SPP: 3970 - 4485 psi

08/11/2008
11/11/2008

11/11/2008
12/11/2008

NB3 Smith- MI519BPX
216 mm (8-1/2") 5x13
Depth In: 1537.0 m
Depth Out:1537.0 m
POOH due to failed LWD

Survey @ 1565.75 mMDRT
Incl: 0.62 deg
Azi: 13.67 deg

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

Drill 406mm hole w/ seawater and hi-vis gel sweeps. Returns to Seabed.

LWD GR and Res Data from 1525.0m to 2940.0m

340mm (13-3/8") Casing Shoe @ 1534.1 mMDRT

Reached 406mm (16") Section TD @ 1537.0m at 00:30 hrs on 08/11/2008

Drill with 9.6 ppg (1.15 sg) WBM

MW 1.15 V 54 PV 13 YP 20
GELS 5/7/7 Cl 60 K Sol 4.8

DOLOMITIC CLAYSTONE: lt yel, or, abdt calc mat, mnr lith, mod hd-hd, sb-blky

tools

BIT3RR Smith- MI519BPX
216 mm (8-1/2") 5x13
Depth In: 1537.0 m
Depth Out:2955.0 m
Drilled: 1418.0 m in 21.19 hrs
Grade:4-8-RO-S-X-1-BT-PR

WOB: 6.3 - 13.3 klbf
RPM: 99 - 122
GPM: 607 - 815
SPP: 2060 - 3057 psi

WOB: 5.1 - 20.2 klbf
RPM: 142 - 160
GPM: 756 - 772
SPP: 3040 - 3166 psi

WOB: 13.7 - 41.1 klbf
RPM: 137 - 182
GPM: 711 - 771
SPP: 2830 - 3224 psi

WOB: 2.1 - 18.6 klbf
RPM: 157 - 186
GPM: 696 - 790
SPP: 2780 - 3343 psi

1560 1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760 1770

TVD: 1555.66m

Survey @ 1584.25 mMDRT
Incl: 0.70 deg
Azi: 1.92 deg
TVD: 1584.16m

Survey @ 1612.64 mMDRT
Incl: 0.68 deg
Azi: 350.69 deg
TVD: 1612.55m

Survey @ 1641.01 mMDRT
Incl: 0.96 deg
Azi: 329.53 deg
TVD: 1640.92m

Survey @ 1669.49 mMDRT
Incl: 1.05 deg
Azi: 321.20 deg
TVD: 1669.39m

Survey @ 1698.35 mMDRT
Incl: 1.42 deg
Azi: 301.03 deg
TVD: 1698.25m

Survey @ 1727.22 mMDRT
Incl: 1.69 deg
Azi: 294.67 deg
TVD: 1727.11m

Survey @ 1756.10 mMDRT
Incl: 1.86 deg
Azi: 285.87 deg
TVD: 1755.97m

LOT@ 1540.00 mMDRT: 1.34 sg (EMW)

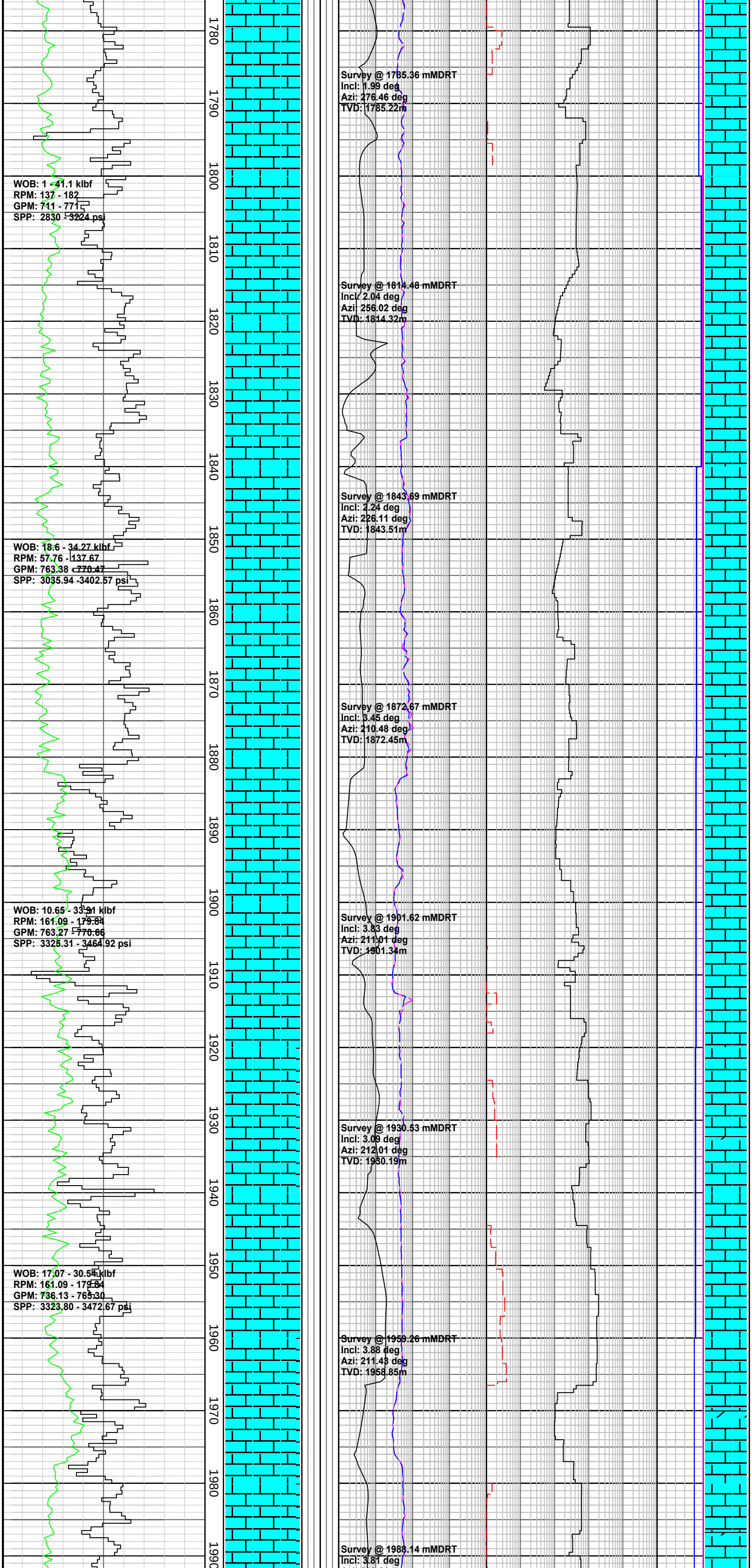
CALCILUTITE: lt gry, lt gn gry, lt gry-off wh, m gn gry, com arg mtx, occ f qtz gr, com dk lit & glauc mat, occ mic foss, occ or calc frag, frm-mod hd, sbblky-blky

CALCILUTITE: lt gry, lt gn gry, lt gry-off wh, m gn gry, com arg mtx, occ f qtz gr, com dk lith & glauc mat, occ mic foss, occ or calc frag, slty i/p & loc grd-ARG CLCLT, frm-mod hd, sbblky-blky

OOLITIC CALCARENITE: m lt gry-m gry, v f-v crs, pr srt, rnd-sbang, abdt arg mtx, rr micrxln, mnr qtz gr v f-v crs, wl rnd, tr lith, abdt foss, (oo, Foram, Amm), mnr glauc, lse, brit- mod hd i/p, dom n vis por, gd inf por, n shw

CALCISILTITE: m lt gry-lt olv gry, mnr m gry, abdt mtx & grad-CLCLT i/p, grad-CLCAR i/p, abdt v f dk lith, com foss (Foram & oo), abdt v f qtz gr, tr glauc, tr carb mat, sft-brit, dom frm, com sft & brit, sbblky, n vis por

CALCISILTITE: dom gnsh gry-lt olv gry, com m lt gry-lt olv gry, abdt mtx & grad-CLCLT i/p, abdt v f dk lith, mnr foss, oo, abdt v f qtz gr, tr-com v f glauc, tr carb, mat, sft-brit, dom frm, mnr sft & brit, sbblky, n vis por



CALCARENITE: m lt gry-med gry, v f-f, wl srt, rnd-sbang, abdt arg mtx, rr micrxln, tr lith, com foss (oo, Foram, Amm), rr glauc, mnr lse, dom brit-mod hd i/p, v p vis por, tr moldic por, n shw

CALCISILTITE: m lt gry, com lt olv gry-lt gry, mnr olv gry, abdt arg mtx, mnr f dk lith, mnr oo, mnr v f qtz gr, tr glauc, tr carb mat, sft-brit, dom frm, mnr sft & brit, sbblky, n vis por, n shw

CALCILUTITE: olv gry, arg grad-CALC CLYST i/p, mnr v f dk lith, tr glauc mat, mnr oo, tr carb mat, frm, sbblky, n vis por, n shw

DOLOMITE: m dk gry- dk gry, micrxln, tr glauc mat, v hd, ang

WOB: 13.20 - 47.10 klbf
RPM: 162.59 - 183.56
GPM: 742.06 - 769.78
SPP: 3323.38 - 3631.31 psi

WOB: -11.40 - 88.23 klbf
RPM: 18.76 - 170.36
GPM: 754.35 - 770.22
SPP: 3477.24 - 3625.68 psi

WOB: 17.13 - 37.42 klbf
RPM: 110.56 - 181.88
GPM: 739.76 - 773.81
SPP: 3400.9 - 3700.43 psi

WOB: 17.44 - 52.60 klbf
RPM: 169.27 - 182.46
GPM: 751.84 - 776.36
SPP: 3868.75 - 3804.08 psi

WOB: 14 - 166 klbf
RPM: 169 - 181
GPM: 758 - 1112
SPP: 3643 - 3853 psi

2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160 2170 2180 2190 2200

Azi: 209.64 deg
TVD: 1987.67m

Survey @ 2017.06 mMDRT
Incl: 3.95 deg
Azi: 200.39 deg
TVD: 2016.52m

Survey @ 2045.65 mMDRT
Incl: 3.97 deg
Azi: 192.82 deg
TVD: 2045.04m

Survey @ 2074.48 mMDRT
Incl: 4.05 deg
Azi: 182.58 deg
TVD: 2073.80m

Survey @ 2103.17 mMDRT
Incl: 3.74 deg
Azi: 182.81 deg
TVD: 2103.43m

Survey @ 2131.89 mMDRT
Incl: 3.28 deg
Azi: 185.32 deg
TVD: 2131.09m

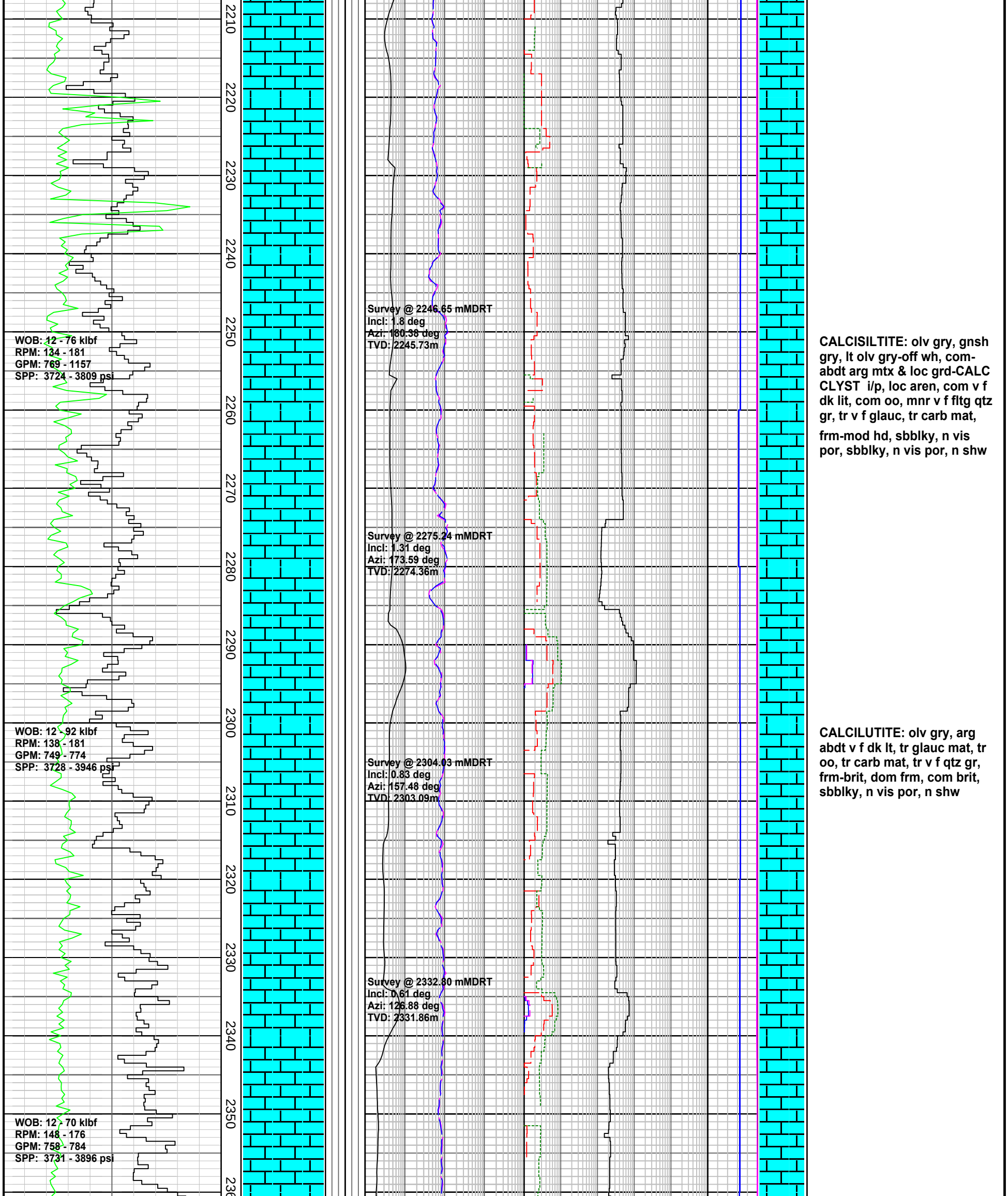
Survey @ 2160.61 mMDRT
Incl: 3.01 deg
Azi: 186.95 deg
TVD: 2159.77m

Survey @ 2189.20 mMDRT
Incl: 2.79 deg
Azi: 187.90 deg
TVD: 2188.32m

CALCILUTITE: olv gry, arg abdt v f dk lt, tr glauc mat, tr oo, tr carb mat, tr v f qtz gr, frm-brit, dom frm, com brit, sbblky, n vis por, n shw

CALCISILTITE: olv gry, gnsh gry, lt olv gry-off wh, com-abdt arg mtx & loc grd-CLCLT i/p, com v f dk lith, com oo, mnr v f fltg qtz gr, tr v f glauc,tr carb mat, frm-mod hd, sbblky, n shw

CALCILUTITE: olv gry, arg abdt v f dk lith, tr glauc mat, tr oo, tr carb mat, tr v f qtz gr, frm-brit, dom frm, com brit, sbblky, n vis por, n shw



CALCISILTITE: olv gry, gnsh gry, lt olv gry-off wh, com-abdt arg mtx & loc grd-CALC CLYST i/p, loc aren, com v f dk lit, com oo, mnr v f fltg qtz gr, tr v f glauc, tr carb mat,

frm-mod hd, sbblky, n vis por, sbblky, n vis por, n shw

CALCILUTITE: olv gry, arg abdt v f dk lt, tr glauc mat, tr oo, tr carb mat, tr v f qtz gr, frm-brit, dom frm, com brit, sbblky, n vis por, n shw

CALCISILTITE: olv gry, gnsh gry, lt olv gry-off wh, com-abdt arg mtx & loc grd-CALC CLYST i/p, loc aren, com v f dk lith, com oo, mnr v f fltg qtz gr, tr v f glauc, tr carb mat, frm-hd, sbblky, n vis por, sbblky, n vis por, n shw

CALCILUTITE: olv gry, arg abdt v f dk lith tr glauc mat, tr oo, tr carb mat, tr v f qtz gr, frm-brit, dom frm, com brit, sbblky, n vis por, n shw

2430
2440
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2500
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2520
2530
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2590
2600
2610
2620
2630

WOB: 9.6 - 20.7 klbf
RPM: 110 - 167
GPM: 756 - 772
SPP: 3782 - 4066 psi

WOB: 10.8 - 52 klbf
RPM: 150 - 168
GPM: 757 - 791
SPP: 3973 - 4278 psi

12/11/2008
13/11/2008

WOB: 1 - 33 klbf
RPM: 112 - 164
GPM: 718 - 790
SPP: 3214 - 4146 psi

WOB: 7.3 - 22.5 klbf
RPM: 141 - 165
GPM: 705 - 861
SPP: 3629 - 4218 psi

TVD: 2418.40m

Survey @ 2448.20 mMDRT
Incl: 1.36 deg
Azi: 46.46 deg
TVD: 2447.24m

Survey @ 2477.02 mMDRT
Incl: 1.39 deg
Azi: 40.13 deg
TVD: 2476.05m

Survey @ 2505.87 mMDRT
Incl: 1.62 deg
Azi: 34.79 deg
TVD: 2504.90m

Survey @ 2534.92 mMDRT
Incl: 1.73 deg
Azi: 35.80 deg
TVD: 2533.93m

Survey @ 2563.90 mMDRT
Incl: 1.80 deg
Azi: 33.67 deg
TVD: 2562.90m

Survey @ 2592.89 mMDRT
Incl: 1.74 deg
Azi: 25.08 deg
TVD: 2591.88m

Survey @ 2621.85 mMDRT
Incl: 1.54 deg
Azi: 25.98 deg
TVD: 2620.82m

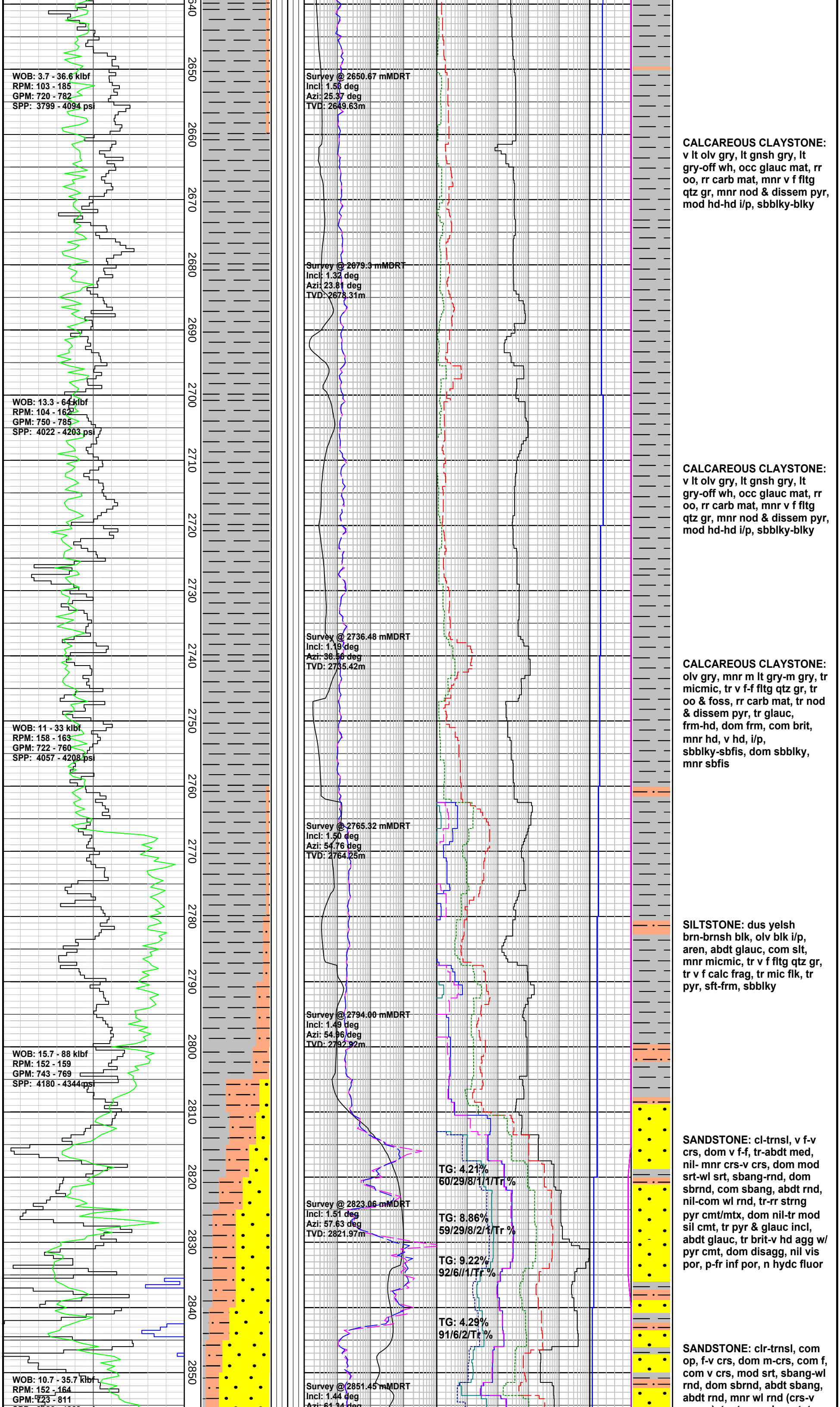
CALCILUTITE: dom lt olv gry, lt gnsh gry, olv gry, occ v f dk lith, occ glauc mat, rr oo, rr carb mat, tr fltg qtz gr, mnr micrxln frag,rr dissem pyr, mod hd-hd, v hd i/p, sbblky-blky, n vis por, n shw

CALCISILTITE: olv gry, gnsh gry, lt olv gry-off wh, com-abdt arg mtx & loc grd-CLCLT i/p, loc aren, com v f dk lith, com oo, mnr v f fltg qtz gr, tr v f glauc, tr carb mat, frm-mod hd, sbblky, n vis por, sbblky, n vis por, n shw

MW 1.15 V 53 PV 13 YP 21
GELS 6/7/7 Cl 60 K Sol 4.8

CALCAREOUS CLAYSTONE: v lt olv gry, lt gnsh gry, lt gry-off wh, occ v f dk lith, occ glauc mat, rr oo, rr carb mat, mnr v f fltg qtz gr, rr or calc frag, mnr nod & dissem pyr, mod hd-hd, v hd i/p, sbblky-blky

CALCAREOUS SILTSTONE: olv gry, gnsh gry, lt olv gry-off wh, com-abdt arg mtx & loc grd-CALC CLYST i/p, loc aren, com v f dk lith, com oo, mnr v f fltg qtz gr, tr v f glauc, tr carb mat, frm-hd, sbblky



CALCAREOUS CLAYSTONE: v lt olv gry, lt gnsh gry, lt gry-off wh, occ glauc mat, rr oo, rr carb mat, mnr v f fltg qtz gr, mnr nod & dissem pyr, mod hd-hd i/p, sbblky-blky

CALCAREOUS CLAYSTONE: v lt olv gry, lt gnsh gry, lt gry-off wh, occ glauc mat, rr oo, rr carb mat, mnr v f fltg qtz gr, mnr nod & dissem pyr, mod hd-hd i/p, sbblky-blky

CALCAREOUS CLAYSTONE: olv gry, mnr m lt gry-m gry, tr micmic, tr v f-f fltg qtz gr, tr oo & foss, rr carb mat, tr nod & dissem pyr, tr glauc, frm-hd, dom frm, com brit, mnr hd, v hd, i/p, sbblky-sbfis, dom sbblky, mnr sbfis

SILTSTONE: dus yelsh brn-brnsh blk, olv blk i/p, aren, abdt glauc, com slt, mnr micmic, tr v f fltg qtz gr, tr v f calc frag, tr mic flk, tr pyr, sft-frm, sbblky

SANDSTONE: cl-trnsl, v f-v crs, dom v f-f, tr-abdt med, nil- mnr crs-v crs, dom mod srt-wl srt, sbang-rnd, dom sbrnd, com sbang, abdt rnd, nil-com wl rnd, tr-rr strng pyr cmt/mtx, dom nil-tr mod sil cmt, tr pyr & glauc incl, abdt glauc, tr brit-v hd agg w/ pyr cmt, dom disagg, nil vis por, p-fr inf por, n hydc fluor

SANDSTONE: clr-trnsl, com op, f-v crs, dom m-crs, com f, com v crs, mod srt, sbang-wl rnd, dom sbrnd, abdt sbang, abdt rnd, mnr wl rnd (crs-v

SPP: 3926 - 4268 psi

WOB: 8.86 - 32.53 klbf
RPM: 123 - 165
GPM: 329 - 807
SPP: 3546 - 4286 psi

WOB: -4.36 - 58.07 klbf
RPM: 126 - 166
GPM: 738 - 757
SPP: 4126 - 4290 psi

13/11/2008
14/11/2008

WOB: 21.09 - 41.0 klbf
RPM: 58 - 108
GPM: 727 - 754
SPP: 3640 - 3963 psi

RR4 PDC- HC506-ZX
216 mm (8-1/2") 6x14
Depth In: 2995.0 m
Depth Out:3814.0 m
Drilled: 819.0 m in 25.23 hrs
Grade:5-2-CR-N-X-I-BT-TD

WOB: 17.92 - 71.54 klbf
RPM: 0 - 98
GPM: 153 - 748
SPP: 533 - 3859 psi

2860 2870 2880 2890 2900 2910 2920 2930 2940 2950 2960 2970 2980 2990 3000 3010 3020 3030 3040 3050 3060 3070

Azi: 61.54 deg
TVD: 2850.35m

Survey @ 2909.60 mMDRT
Incl: 1.41 deg
Azi: 63.70 deg
TVD: 2908.49m

Survey @ 2938.52 mMDRT
Incl: 1.23 deg
Azi: 64.70 deg
TVD: 2937.40m

Survey @ 3000.00 mMDRT
Incl: 0.99 deg
Azi: 61.54 deg
TVD: 2998.87m

Survey @ 3060.00 mMDRT
Incl: 0.77 deg
Azi: 65.72 deg
TVD: 3058.86 m

crs gr), tr strng calc cmt, tr strng pyr cmt/mtx, abdt glauc, tr pyr & glauc incl, rr fis qtz shard, tr brit-v hd agg, dom disagg, n vis por, gd inf por, n hydc fluor

SANDSTONE: clr-trnsl, abdt op, f-v crs, dom crs-v crs, mnr f, abdt med, wl srt, sbang-wl rnd, dom sbrnd-rnd, abdt sbang, com wl rnd, tr strng calc cmt, tr strng sil cmt w fusd gr bondrs, i/p abdt arg cmt/mtx w f gr & abdt glauc & grad-arg glauc Sst, com glauc, tr mic flk, tr foss, rr fis qtz shards, brit-v hd agg(10%), dom disagg(90%), n vis por, v gd inf por, n hydc fluor

GLAUCONITIC SANDSTONE: m dk gry-olv blk, com m gry, clr-trnsl, v f-m, dom v f-f agg, dom m disagg gr, wl srt, sbang-rnd, dom sbrnd-sbang, mnr mod strng calc cmt, mnr mod strng sil cmt, tr arg cmt/mtx & grd-ARG SST, com-abdt lt gry arg mtx, com brn gry slt mtx i/p, v f-m glauc grd-GNSD i/p, tr mic flk, tr f pyr nod, tr lit, tr carb mat, abdt fri-mod hd agg, dom brit-mod hd, n hydc fluor

SANDSTONE: cl-trnsl, abdt op, m-v crs, dom crs-v crs, abdt med, wl srt, sbang-wl rnd, dom sbrnd-rnd, com sbang, abdt wl rnd, tr strng calc cmt, tr pyr cmt/mtx, tr glauc & glauc stn, tr pyr len & incl, tr mic flk, rr fiss qtz shard, brit-v hd agg, dom disagg, nil vis por, v gd inf por

POOH for bit trip @ 2955.00 mMDRT

Wireline GR and Res Data from 2940.0m to TD

SILTSTONE: med dk gry bn, olv blk, slily aren, com f-med glauc grn, com tan lith, mnr micmic, tr-mnr nod & dissem pyr, mod hd-hd, sbblky

CLAYSTONE: lt blsh gry, lt gry, lt gnsh gry, sil, mnr calc mat, com off wh lith, com micmic, hd-v hd, sbfis-sbblky

SANDSTONE: cl-trnsl, fros, dom crs-v crs, com f-med grn, p-loc wl srt, ang-sbang, sbrnd w/-f-med grn, mnr wk pyr cmt, tr wk calc cmt, n vis mtx, com nod pyr cmt glauc nod, com lse med glauc grn, gen cln disagg grn, v gd inf por

FLUORESCENCE: (Tr%) (2952.0-3130.0 mMDRT) mod bri pl blu-off wh sptd res fluor ass/w crs SST gr, slw diff ct & mnr slw bldg ct, thn off wh-pl gn flm res

SILTSTONE: m dk gry brn, m

WOB: 14.52 - 44.06 klbf
RPM: 71 - 102
GPM: 729 - 742
SPP: 3664 - 3889 psi

WOB: 15.20 - 32.0 klbf
RPM: 105 - 111
GPM: 730 - 750
SPP: 3460 - 3991 psi

WOB: 11.30 - 24.2 klbf
RPM: 86 - 104
GPM: 728 - 751
SPP: 3745 - 3982 psi

14/11/2008
15/11/2008

WOB: 5 - 65 klbf
RPM: 57 - 93
GPM: 722 - 754
SPP: 3788 - 3946 psi

3080 3090 3100 3110 3120 3130 3140 3150 3160 3170 3180 3190 3200 3210 3220 3230 3240 3250 3260 3270 3280

Survey @ 3120.00 mMDRT
Incl: 0.79 deg
Azi: 74.12 deg
TVD: 3118.86 m

Survey @ 3180.00 mMDRT
Incl: 0.96 deg
Azi: 42.99 deg
TVD: 3178.85

Survey @ 3240.00 mMDRT
Incl: 1.32 deg
Azi: 41.52 deg
TVD: 3238.84

brn, occ oli wh-tan, arg i/p,
occ f-m glauc gr, com tan lith, mnr micmic, com carb mic lam, tr-mnr nod, mod hd-hd, sbblky

SANDSTONE: off wh, clr-trnsl, dom v f-m w/ com crs-v crs frac gr, ang-sbrnd, dom sbang, com strng sil cmt & occ fsd gr bondrs, mnr mod strng pyr cmt, tr wk calc cmt, com off wh arg mtx whr v f-f ti agg, occ carb spk com nod pyr, rr glauc nod, com cht frag, com fri-mod hd f gr gre, gen cln disag crs gr & frac qtz shard,
pr-fr vis por, gen fr-gd inf por

FLUORESCENCE: (Tr%) (3240.0-3320.0 mMDRT) brt pl blu-off wh sptd res fluor ass/w crs SST gr, slw diff ct & wk slw bldng ct, thk off wh-pl gn flm res

COAL: blk, olv blk, vit-sbvit & grd, com slt lam & com grd-CARB SLTST, hkl i/p, hd-v hd, sbconch-sbblky

MW 1.15 V 53 PV 12 YP 28
GELS 9/10/11 Cl 55K Sol 4.3

SILTSTONE: m brn, m gry brn, lt olv gry, com arg & loc grd-SLT CLST, com carb lam & spk & loc grd-VIT C strgr, loc aren & grd to SLT SST i/p, mnr micmic, tr lith, mod hd-hd, sbfis-sbblky

SANDSTONE: off wh, pl brn, clr-trnsl, v f-m, decr com crs-v crs frac gr, sbang-sbrnd, com strng sil cmt & occ fsd gr bondrs whr crs gr, tr pyr cmt, tr wk calc cmt, com off wh arg mtx whr v f-f ti agg, occ pl brn slt mtx & loc grd-AREN SLTST, com carb spk, com nod pyr w/ occ glauc gr, com fri-mod hd f gr agg, gen cln
disagg gr, pr-fr, vis, por in f agg, pr-gen fr inf por, n hydc fluor

SILTSTONE: lt-m gry brn, lt

WOB: 3 - 62 klbf
RPM: 60 - 105
GPM: 591 - 745
SPP: 3019 - 4017 psi

3290
3300
3310
3320
3330
3340
3350

Survey @ 3300.00 mMDRT
Incl: 1.08 deg
Azi: 44.10 deg
TVD: 3298.83

olv gry, com aren & loc grd-SLT SST, com carb lam & spk, loc arg, mnr micmic, tr lith, mod hd-hd, sbblky, sbfis i/p

SANDSTONE: clr-trnsl, fros, v f-v crs, dom m-crs, pr std, sbang-sbrnd, ang i/p, com wk sil & calc cmt, rr pyr cmt, loc com pl brn-off wh arg & slt mtx whr v f-f gr agg, com nod pyr w/ occ glauc gr, com lith mnr carb spk, gen cln disagg gr, mnr v hd, v f-f gr agg, gd inf por, n hydc fluor

WOB: 10.5 - 18.1 klbf
RPM: 75 - 138
GPM: 731 - 735
SPP: 3899 - 3999 psi

3360
3370
3380
3390
3400
3410
3420

Survey @ 3360.00 mMDRT
Incl: 1.39 deg
Azi: 22.11 deg
TVD: 3358.82

SANDSTONE: clr-trnsl, abdt op, rr m lt gry-m gry agg, f-v crs, dom m-crs, abdt f, abdt v crs, agg f, mod srt, ang-rnd, dom sbang-sbrnd, com ang & rnd, rr mod sil cmt, rr pyr cmt, wh arg mtx, mnr nod pyr, com lith & carb spk, tr chrt, tr mic flks, dom disagg, mnr brit-v hd agg, n-pr vis por & gd inf por, n hydc fluor

WOB: 1.8 - 96 klbf
RPM: 63 - 106
GPM: 695 - 743
SPP: 3740 - 4075 psi

Survey @ 3420.00 mMDRT
Incl: 1.40 deg
Azi: 35.37 deg
TVD: 3418.80

SILTSTONE: dk gry-olv bl, lt olv gry, com aren & loc grd-SLT SST, com carb lam & spk, loc arg, mnr micmic, tr lith, mod hd-hd, sbblky, sbfis i/p

WOB: 24.4 - 42.3 klbf
RPM: 74 - 104
GPM: 713 - 744
SPP: 3826 - 4126 psi

3440
3450
3460
3470
3480
3490
3500

Survey @ 3480.00 mMDRT
Incl: 1.40 deg
Azi: 32.98 deg
TVD: 3478.78

SANDSTONE: clr-trnsl, abdt op, f-crs, dom m, abdt f, com crs, wl srt, sbang-rnd, dom sbrnd-rnd, abdt sbang, tr pyr cmt com nod pyr, com lith & carb mat, tr glauc or chlor, tr calc frag, disagg, gd inf por, n hydc fluor

SILTSTONE: dk gry-olv bk, com m dk gry & olv gry, dom v aren & grd-SLT SST i/p, mnr arg, com carb lam & spk, mnr micmic, tr lith, tr f qtz gr, tr nod & dissem pyr, sft-mod hd, dom frm, com sft, mnr mod hd, abdt frm, sbblky

FLUORESCENCE: (Tr%) (3515.0-3520.0) dll yelsh gn ptchy fluor ass/w calc cmt gr, n ct & n c/c, n r/r

CLAYSTONE: m gry, sil i/p, slt i/p & grd-SLT CLST, micmic, brit, fis-splin, frm & sbblky whr slt

WOB: 3.5 - 72 klbf
RPM: 59 - 94

GPM: 728 - 746
SPP: 4017 - 4215 psi

3510
3520
3530
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3560
3570
3580
3590
3600
3610
3620
3630
3640
3650
3660
3670
3680
3690
3700
3710

Survey @ 3540.00 mMDRT
Incl: 1.65 deg
Azi: 34.48 deg
TVD: 3538.76

SANDSTONE: clr- trnsl, com op, med lt gry-med gry agg, v f-v crs, dom f-med, abdt v f, mnr crs, rr v crs, mod srt, agg are v f-f & wl srt, sbang-rnd, dom sbang-sbrnd, com rnd, tr wk sil cmt, mnr pyr cmt, tr strng calc cmt w/fis agg, com arg cmt/mtx, mnr nod pyr, com lith & carb spk, tr glauc (poss chlor), tr mic flk, dom disagg, abdt fri-brit agg, pr vis & inf por, tr min fluor

FLUORESCENCE: (5%) (3520.0-3525.0) dom dll-mnr mod brt yelsh gn ptchy fluor ass/w calc cmt gr, v slw mky wh dif ct, mod thk blush wh r/r

FLUORESCENCE: (5-10%) (3525.0-3555.0) dll-mnr mod brt yelsh gn-pl or ptchy fluor ass/ w calc cmt gr, n ct & n c/c, n r/r

WOB: 9 - 53 klbf
RPM: 58 - 106
GPM: 732 - 736
SPP: 4044 - 4121 psi

SANDSTONE: clr-trnsl, com op, med lt gry-med gry agg, v f-v crs, dom f-med, com v f, mnr crs, rr v crs, mod srt, agg f & wl srt, sbang-rnd, dom sbang-sbrnd, com rnd, tr wk-i/p strng sil cmt, rr pyr cmt, tr strng calc cmt w/ fis agg, com arg cmt/mtx, com nod pyr, com lith & carb spk, tr glauc, tr mic flk, tr qtz shard, dom disagg, abdt fri-hd agg, pr vis & fr inf por, hydc fluor, min fluor

FLUORESCENCE: (Tr-5%) (3555.0-3580.0) dll yelsh gn ptchy fluor ass/ w calc cmt gr, n ct & slw c/c, mod thk yelsh gn rng-ptchy flm res

WOB: 19.29 - 40.46 klbf
RPM: 53 - 99
GPM: 697 - 743
SPP: 3827 - 4171 psi

Survey @ 3600.00 mMDRT
Incl: 1.45 deg
Azi: 25.76 deg
TVD: 3598.74

SILTSTONE: dom olv gry, olv blk, dom aren & grdg-SLT SST i/p, arg i/p & grdg-SLT CLST, com carb lam & mat, micmic, com lith, tr nod & dissem pyr, tr v f glauc, com arg mtx, sft-brit, dom sft-frm, com brit, sbblky

WOB: 24.33 - 40.18 klbf
RPM: 54 - 109
GPM: 724 - 741
SPP: 4094 - 4271 psi

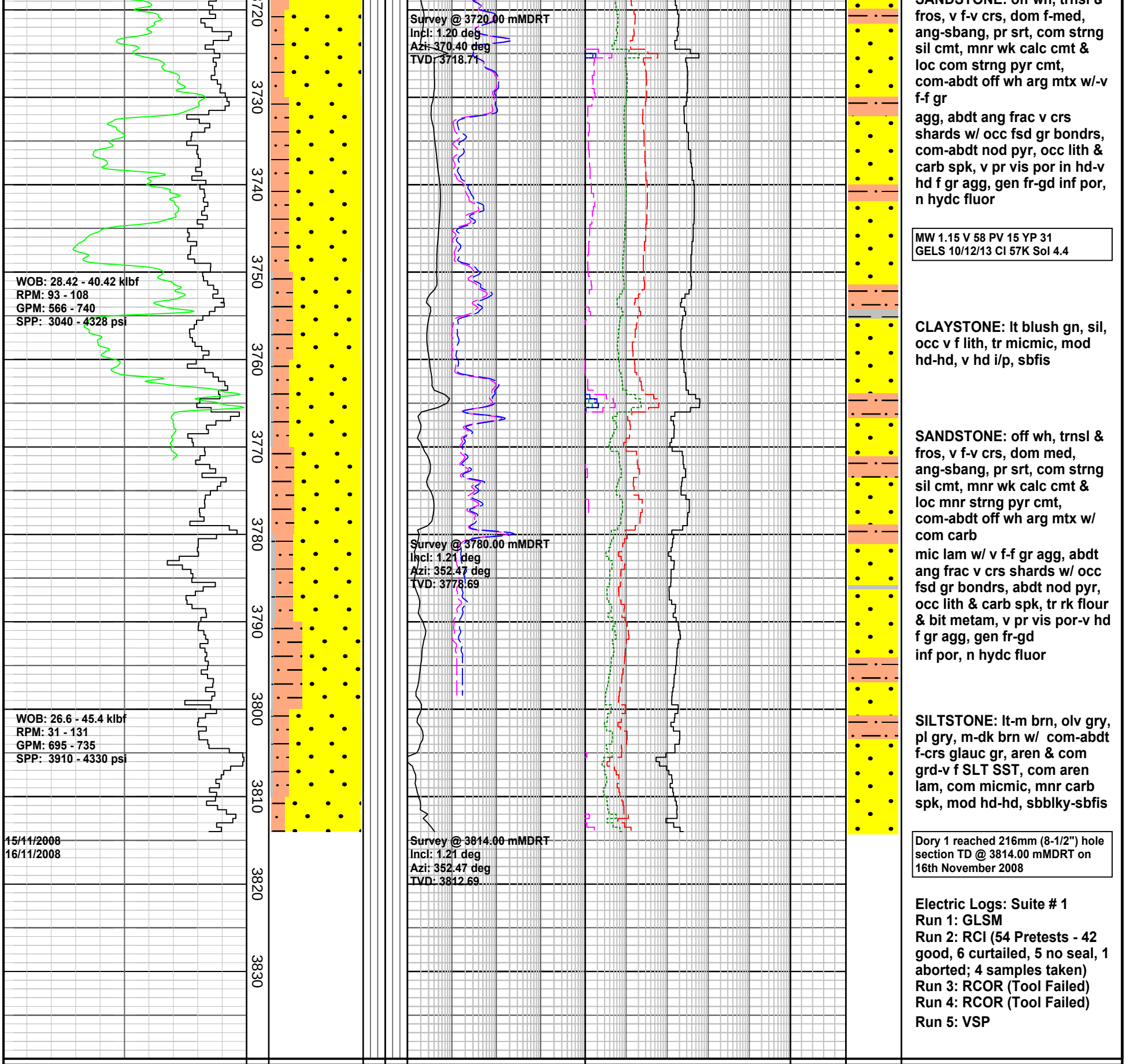
Survey @ 3660.00 mMDRT
Incl: 1.25 deg
Azi: 16.45 deg
TVD: 3658.72

SANDSTONE: clr- trnsl, com op, med dk gry-med gry agg, v f-v crs, dom med-crs, com v f, abdt f, com v crs, pr srt, agg f & wl srt, sbang-rnd, dom sbang-sbrnd, com rnd, tr wk-i/p strng sil cmt, mnr pyr cmt, tr strng calc cmt w/ fis agg, tr dol cmt, com arg cmt/mtx, com slt mtx & grdg-SLT SST, tr disp calc mtx, mnr nod pyr, com lith & carb spk, tr glauc, tr qtz shards, dom disagg, abdt fri-hd agg, pr vis & fr inf por, n hydc fluor

SILTSTONE: olv blk, brnsh gry, olv gry, dom aren & grdg-SLTY SST i/p, arg i/p & grdg-SLTY CLYST, com carb lam & spk, com micmic, abdt lith, com dissem pyr, tr v f, glauc, mod hd-hd, sbblky

WOB: 24.84 - 40.46 klbf
RPM: 63 - 109
GPM: 725 - 747
SPP: 4147 - 4382 psi

SANDSTONE: off wh, trnsl &



FORMATION EVALUATION LOG

Drilling Rate
ROP (m/hr) 200 180 160 140 120 100 80 60 40 20
ROP (m/hr) 400 380 360 340 320 300 280 260 240 220
Gamma Ray 0 – 200 api

MD meters 1:500

Cuttings Lithology

Visual Inferred Porosity P F G

Oil Show P F G

Gas Data
Gas Hydrocarbon Avg % 0.1 | 1 | 10 | 100
Resistivity Shall 0.1 – 1000 ohmm
Resistivity Deep 0.1 – 1000 ohmm

Chromatograph Data
Methane ppm 1 – 100000
Ethane ppm 1 – 100000
Propane ppm 1 – 100000
iso-Butane ppm 1 – 100000
n-Butane ppm 1 – 100000
iso-Pentane ppm 1 – 100000
n-Pentane ppm

Calcimetry
CaCO3 % 20 40 60 80 100
MgCO3 % 100 80 60 40 20

Interpreted Lithology

Lithology Description

DRILLING DATA PLOT

1:1000

BAKER HUGHES INTEQ

Apache ENERGY

Company	**Apache Northwest Pty Ltd**
Well	**Dory-1**
Permit	**Vic-P59**
Region	**Gippsland Basin**
Designation	**Exploration**
Coordinates	**Lat 38º 35' 19.759" S** **Long 148º 32' 51.925" E**
Ref Elevation	**RT 23.5 mMDRT (AHD)**
Total Depth	**3814.0 mMDRT**
Contractor	**Diamond Offshore**
Rig	**Ocean Patriot**
Type	**Semi-Submersible**

LOG INTERVAL Depth	**538.8 – 3814.0 mMDRT**
Date	**5 – 15 November 2008**
Scale	**1 : 500**
Data Engineers	**B. Iyulores, T. Zelski, S. Sadawarte, S.Shahadan**
Logging Geologists	**O.Mustafa, N. Satani**

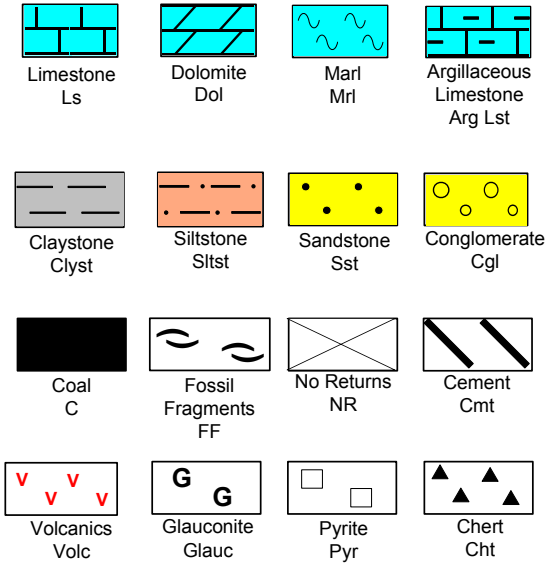
INTEQ LOG SUITE

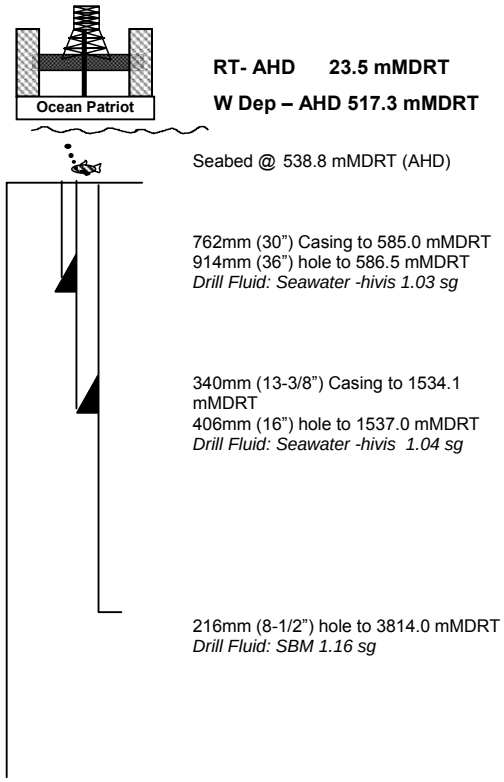
Formation Evaluation
Drilling Data Plot
Drilling Data Pressure Plot
Gas Ratio Plot

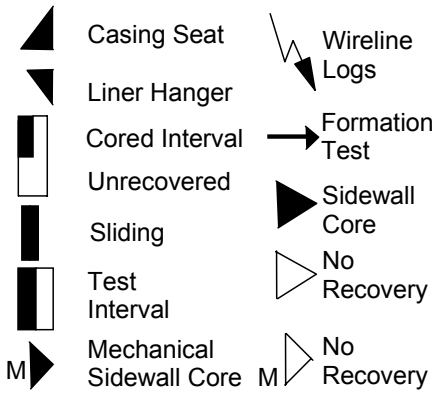
ABBREVIATIONS

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







BAKER HUGHES INTEQ

Company : Apache Northwest Pty Ltd
Well : Dory-1
Interval : 524.00 - 3839.99 meters
Created : 20/11/2008 4:17:19 PM

Apache ENERGY

DRILLING DATA PLOT

ROP (m/hr) 200 175 150 125 100 75 50 25

MD meters 1:1000

FLOW IN (gpm) 240 480 720 960 1200
STANDPIPE (psi) 1000 2000 3000 4000 5000

RPM Avg 50 100 150 200 250
WOB Avg (klbs) 8 16 24 32 40

TORQUE Max (kft-lb) 5 10 15 20 25
TORQUE Avg (kft-lb) 5 10 15 20 25

DXC 0.2 2

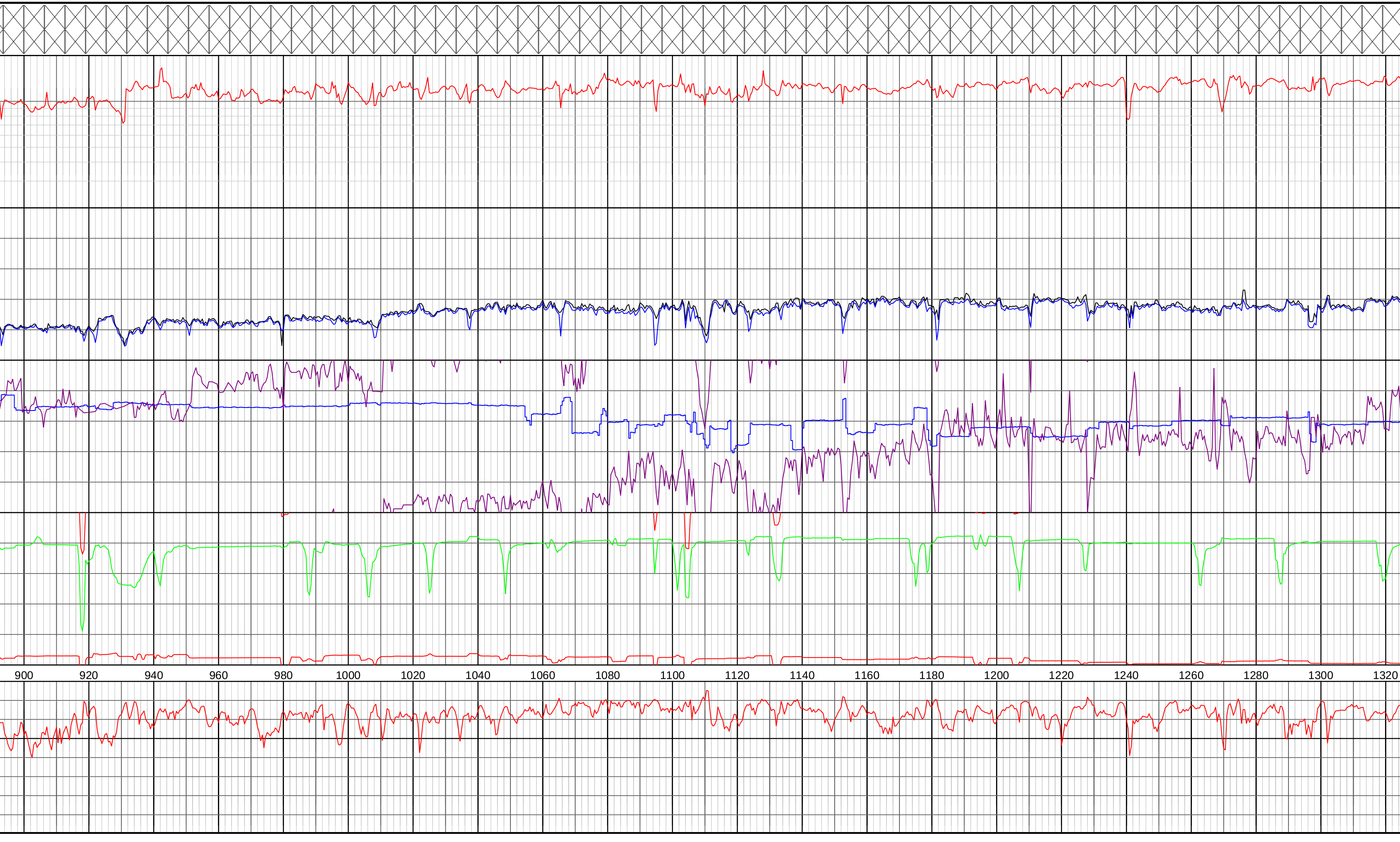
INTERPRETED LITHOLOGY

NB1 Smith- XR+C
914 mm (36") 4x18, 4x18
Depth In: 538.8m
Depth Out: 586.5m
Drilled: 47.7m in 1.34hrs
Grade:
1-1-WT-A-E-I-NO-TD

06/11/08

NB2 Smith TCT+CR
406 mm (16") 4x22, 1x22 (CJ)
Depth In: 586.5m
Depth Out: 1537.0m
Drilled: 952.0m in 21.90hrs
Grade:
1-1-WT-A-E-I-NO-TD

07/11/08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08/11/2008
11/11/2008
11/11/2008
12/11/2008

NB3 Smith- MI519BPX
216 mm (8-1/2") 5x13
Depth In: 1537.0 m
Depth Out:1537.0 m
POOH due to failed
LWD tools

BIT3RR Smith-
MI519BPX
216 mm (8-1/2") 5x13
Depth In: 1537.0 m
Depth Out:2955.0 m
Drilled: 1418.0 m in
21.19 hrs
Grade:4-8-RO-S-X-1-BT-PR

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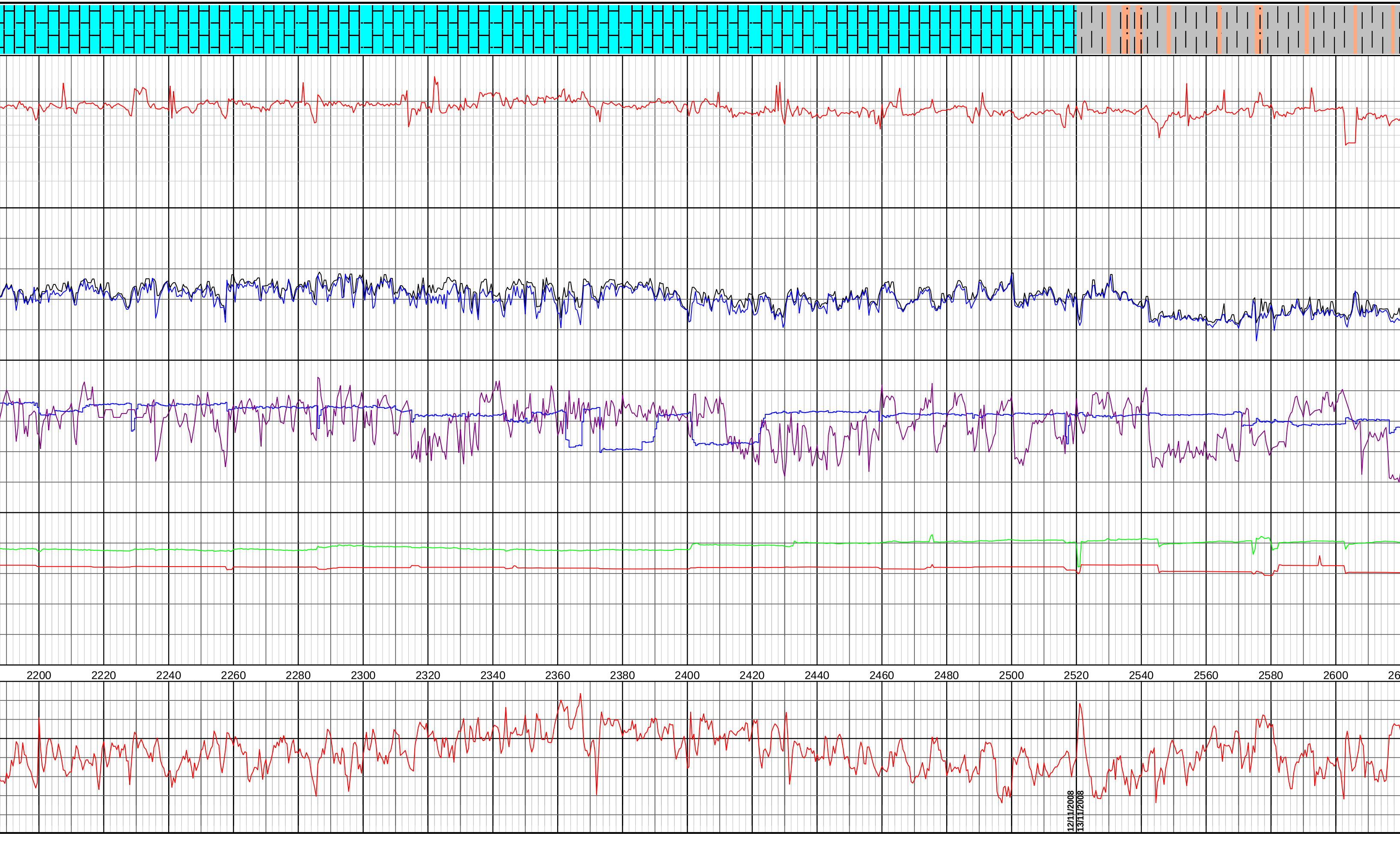
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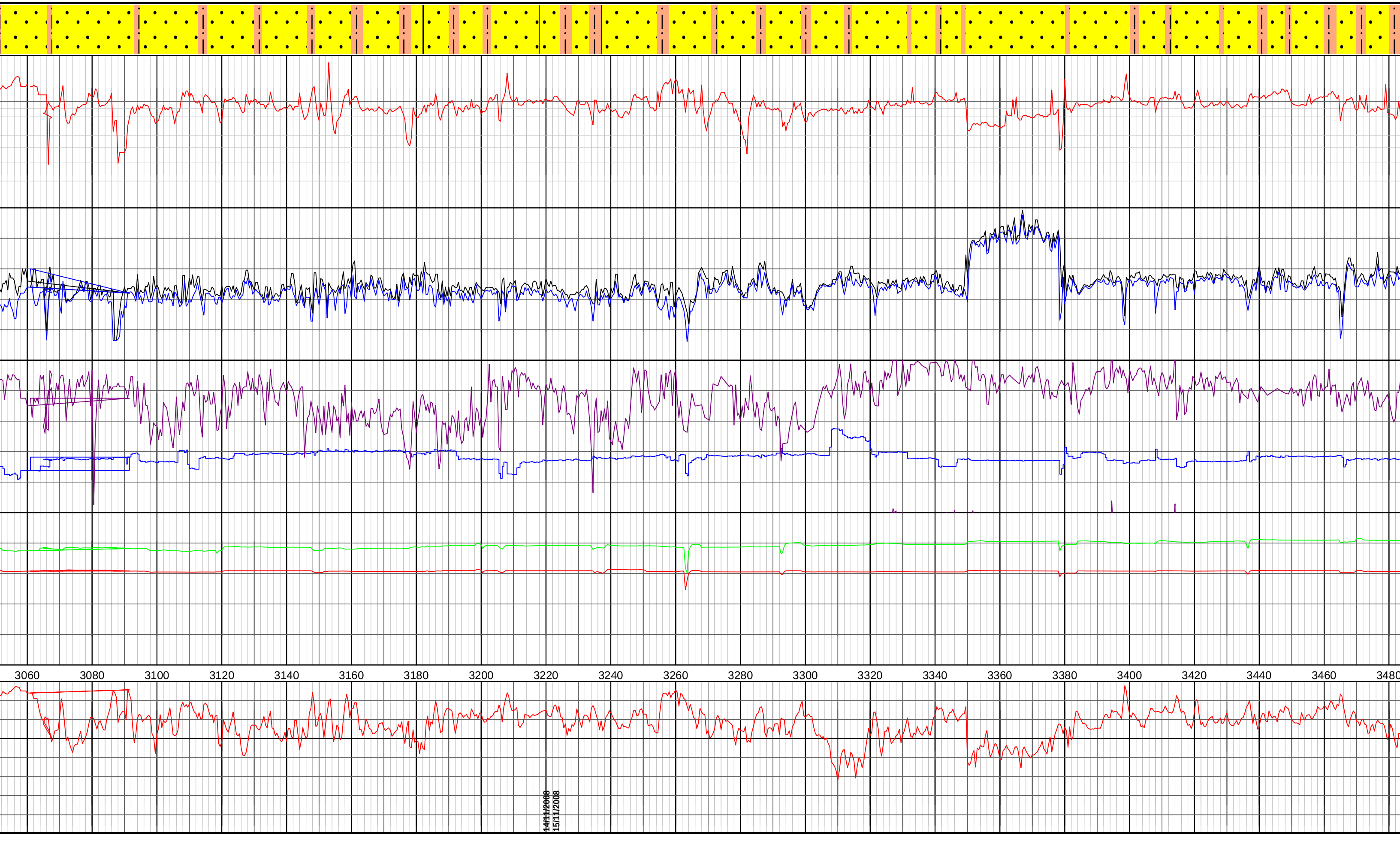
13/11/2008
14/11/2008

RR4 PDC- HC506-ZX
216 mm (8-1/2") 6x14
Depth In: 2995.0 m
Depth Out:3814.0 m
Drilled: 819.0 m in
25.23 hrs
Grade:5-2-CR-N-X-I-BT-TD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DRILLING DATA PLOT

ROP (m/hr)	MD meters 1:1000	FLOW IN (gpm) / STANDPIPE (psi)	RPM Avg / WOB Avg (klbs)	TORQUE Max (kft-lb) / TORQUE Avg (kft-lb)	DXC	INTERPRETED LITHOLOGY
200 | 175 | 150 | 125 | 100 | 75 | 50 | 25	3500 3520 3540 3560 3580 3600 3620 3640 3660 3680 3700 3720 3740 3760 3780 3800 3820	240 | 480 | 720 | 960 | 1200 / 1000 | 2000 | 3000 | 4000 | 5000	50 | 100 | 150 | 200 | 250 / 8 | 16 | 24 | 32 | 40	5 | 10 | 15 | 20 | 25 / 5 | 10 | 15 | 20 | 25	0.2 — 2	

15/11/2008
16/11/2008

PRESSURE EVALUATION PLOT

1:1000

BAKER HUGHES INTEQ

Apache ENERGY

Company	**Apache Northwest Pty Ltd**
Well	**Dory-1**
Permit	**Vic-P59**
Region	**Gippsland Basin**
Designation	**Exploration**
Coordinates	**Lat 38º 35' 19.759" S** **Long 148º 32' 51.925" E**
Ref Elevation	**RT 23.5 mMDRT (AHD)**
Total Depth	**3814.0 mMDRT**
Contractor	**Diamond Offshore**
Rig	**Ocean Patriot**
Type	**Semi-Submersible**

LOG INTERVAL Depth	**538.8 – 3814.0 mMDRT**
Date	**5 – 15 November 2008**
Scale	**1 : 500**
Data Engineers	**B. Iyulores, T. Zelski, S. Sadawarte, S.Shahadan**
Logging Geologists	**O.Mustafa, N. Satani**

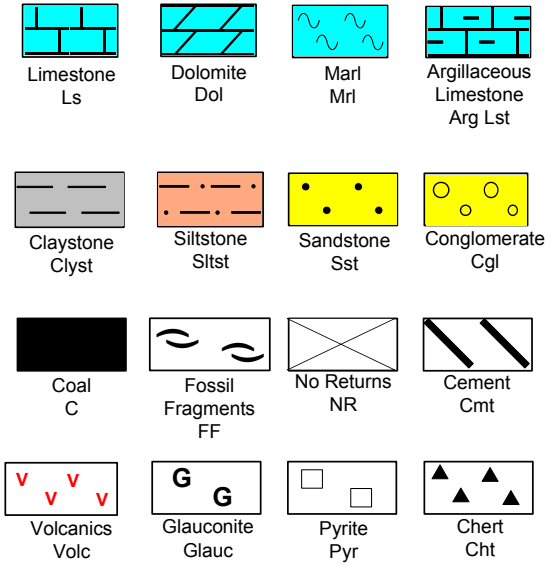
INTEQ LOG SUITE

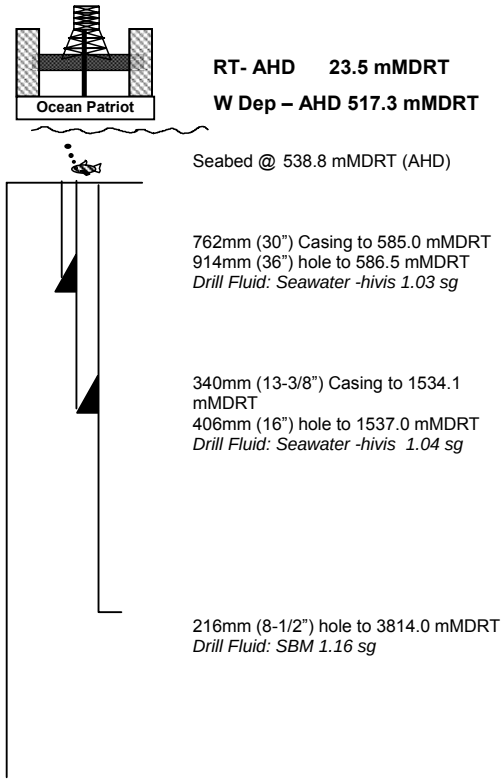
Formation Evaluation
Drilling Data Plot
Drilling Data Pressure Plot
Gas Ratio Plot

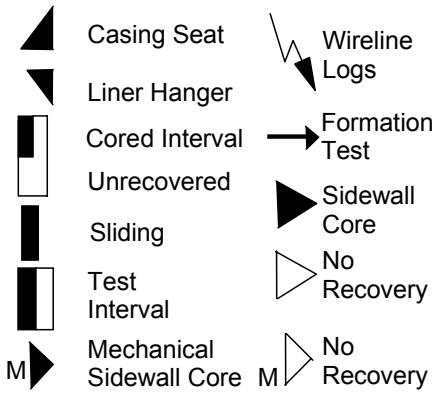
ABBREVIATIONS

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







BAKER HUGHES INTEQ

Company : Apache Northwest Pty Ltd
Well : Dory-1
Interval : 524.00 - 3839.99 meters
Created : 20/11/2008 4:17:19 PM

Apache ENERGY

PRESSURE DATA PLOT

Rate Of Penetration
ROP
0 — 200
m/hr

MD meters 1:1000

Drilling Exponent
DXC
0.2 — 2

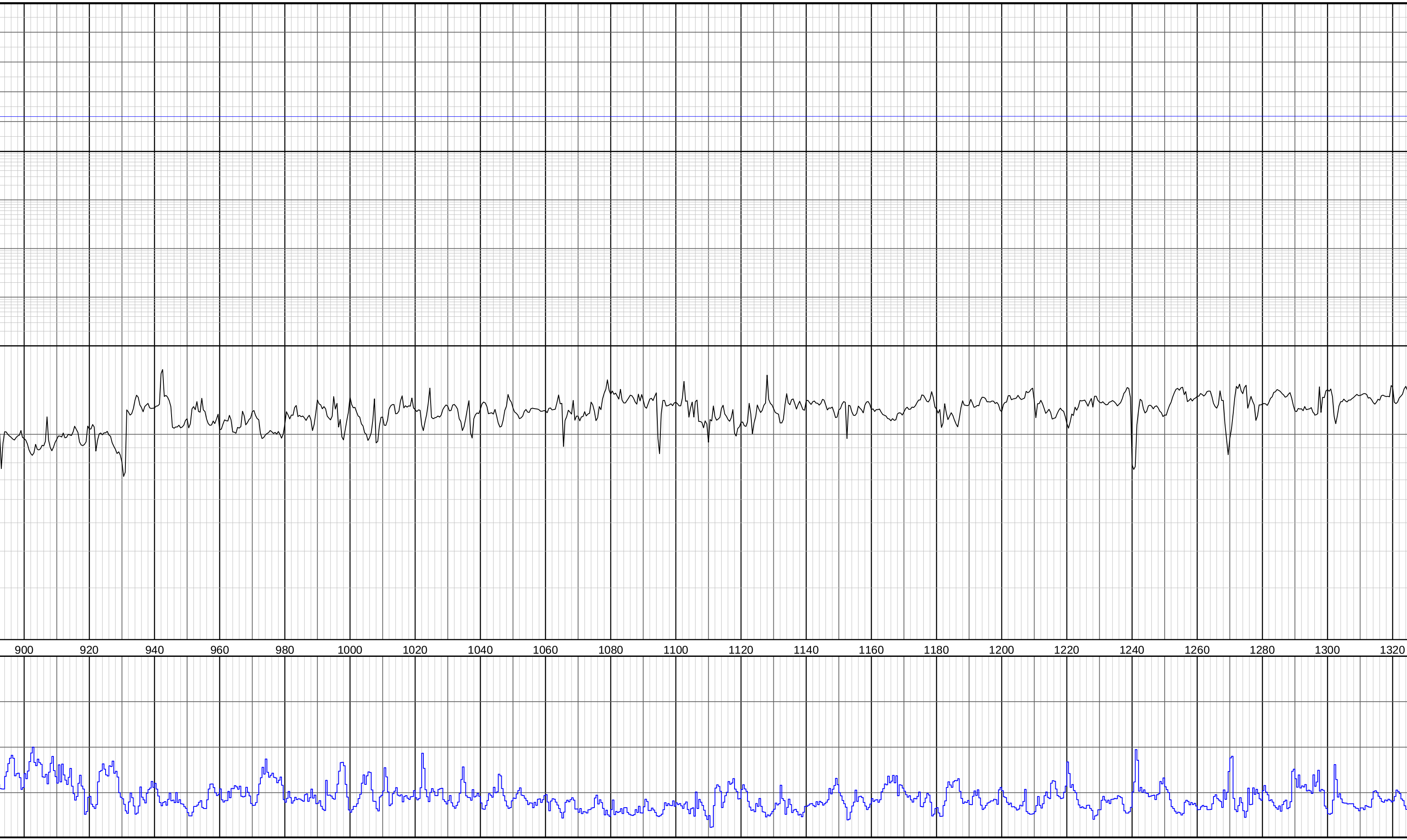
Gas Data
TOTAL GAS (%)
0.1 | 1 | 10 | 100

Temperature Data
Temperature Out (DegC)
20 | 40 | 60 | 80 | 100
0 Temperature In (degC) 100
degC

06/11/08

07/11/08

540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880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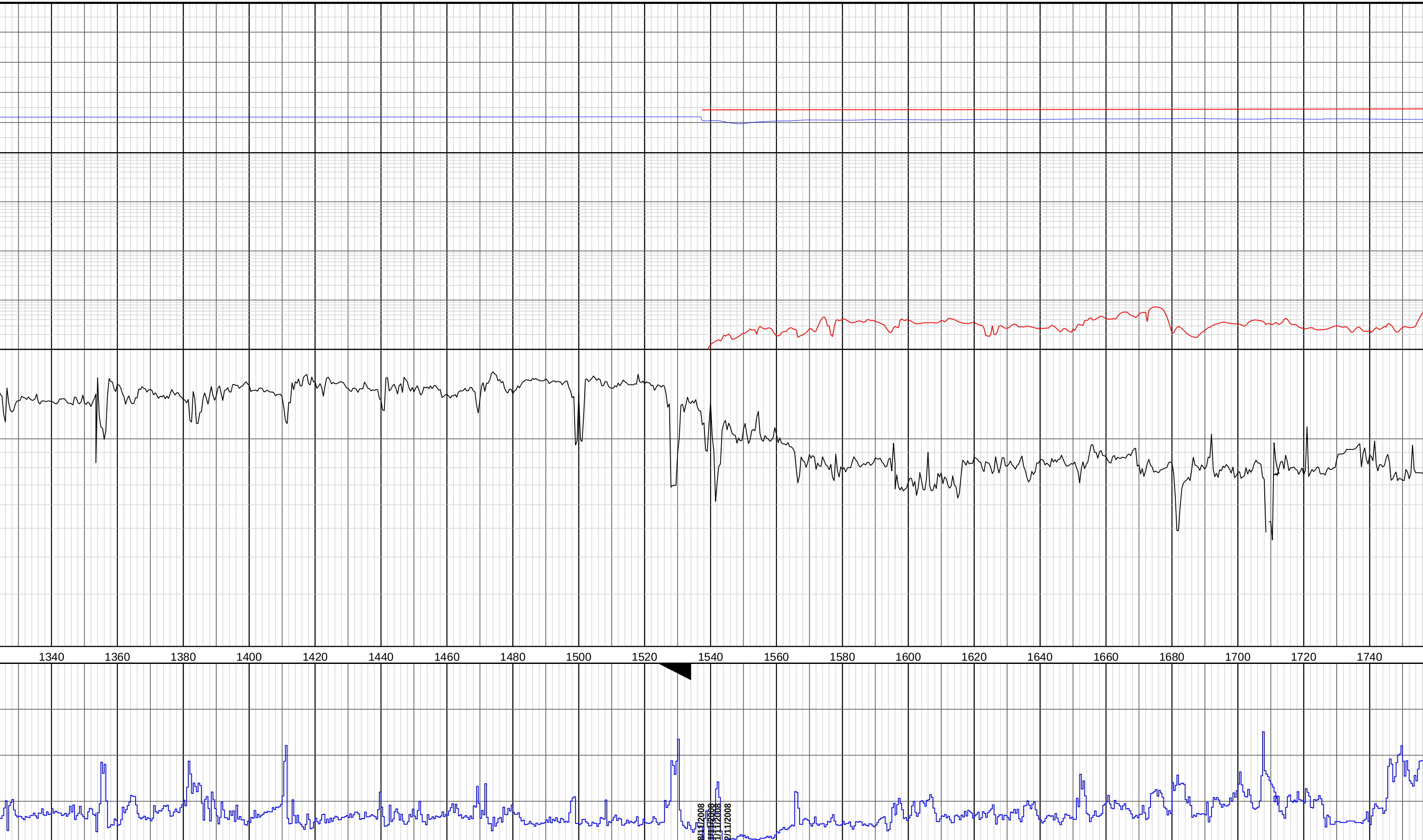
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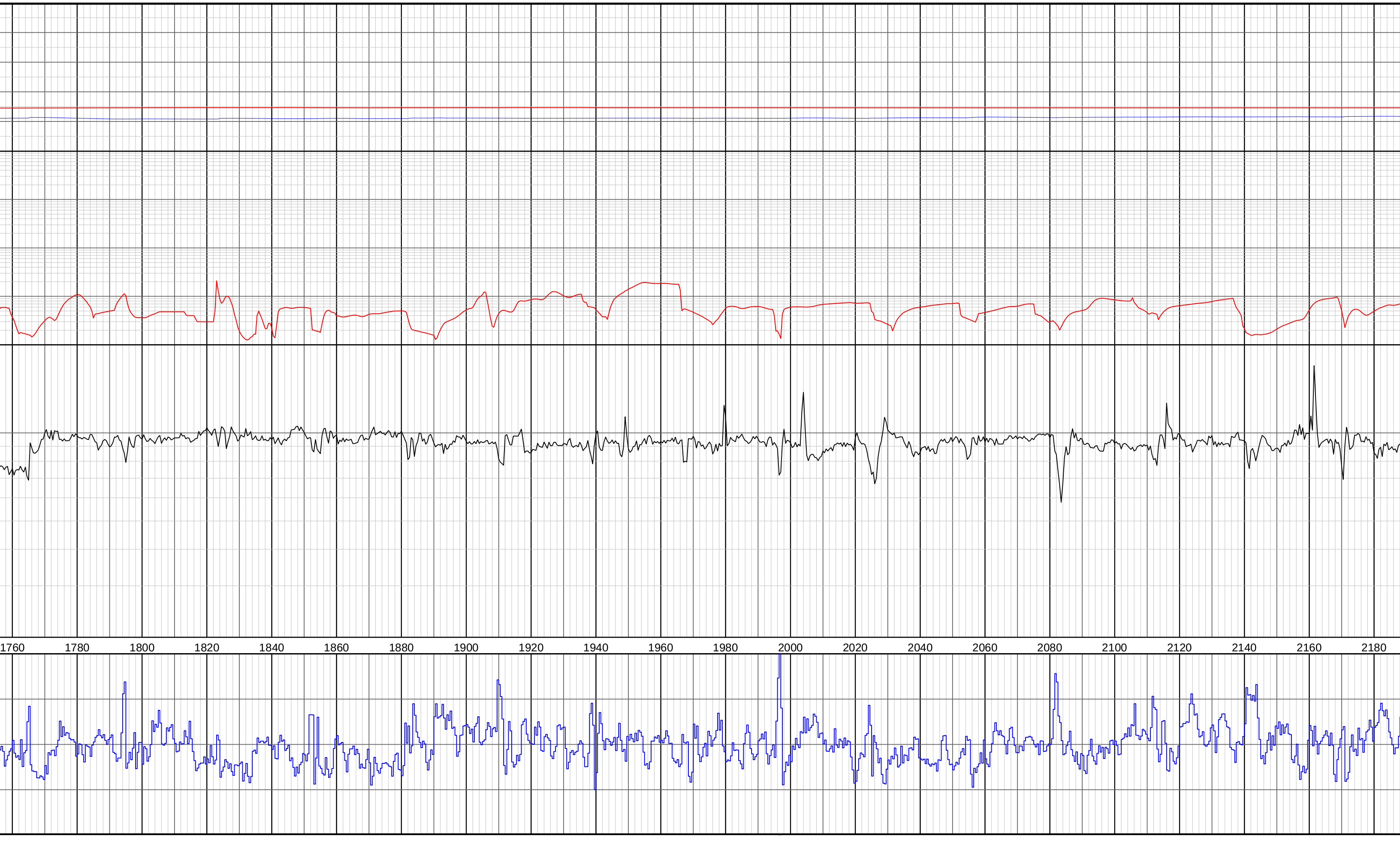
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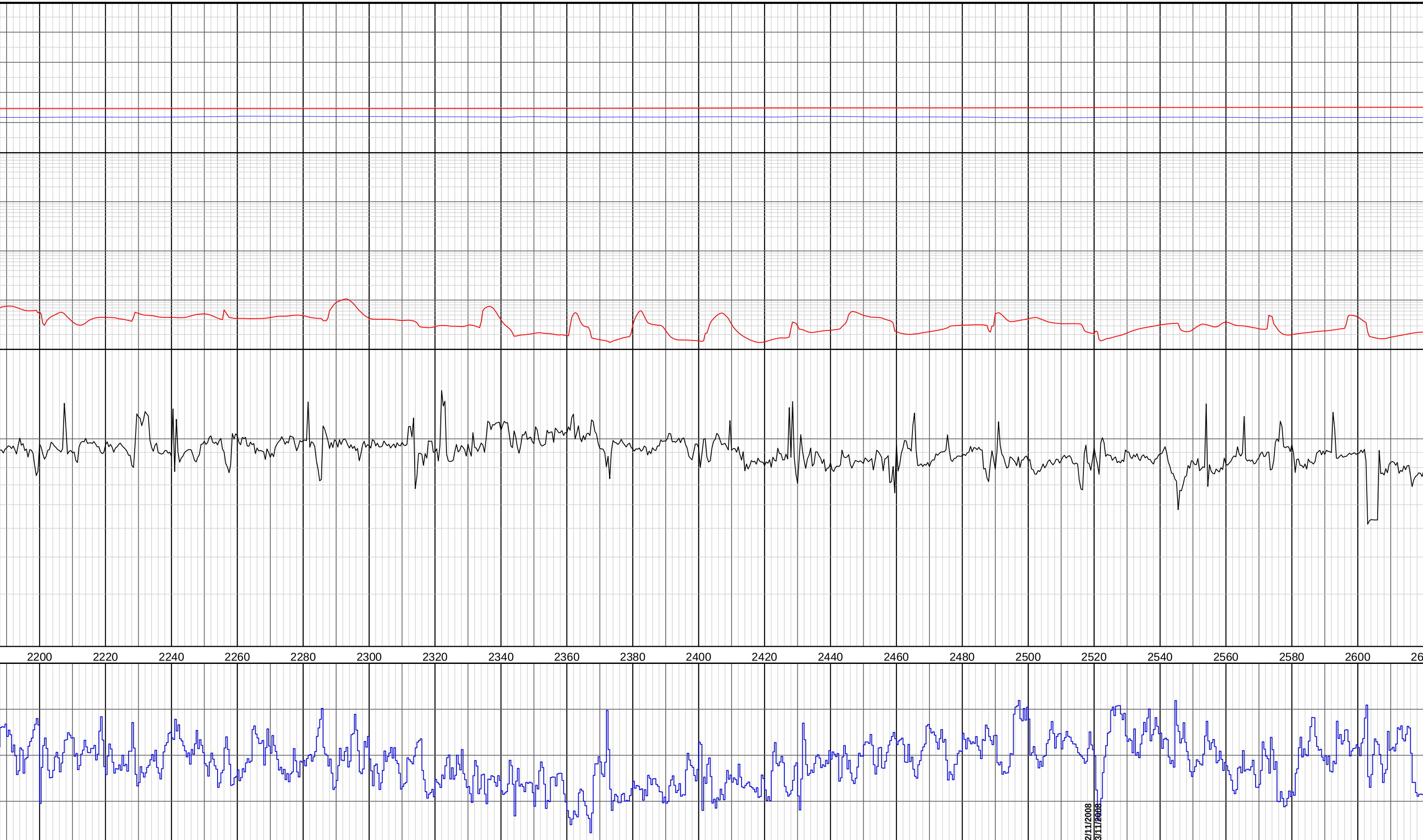
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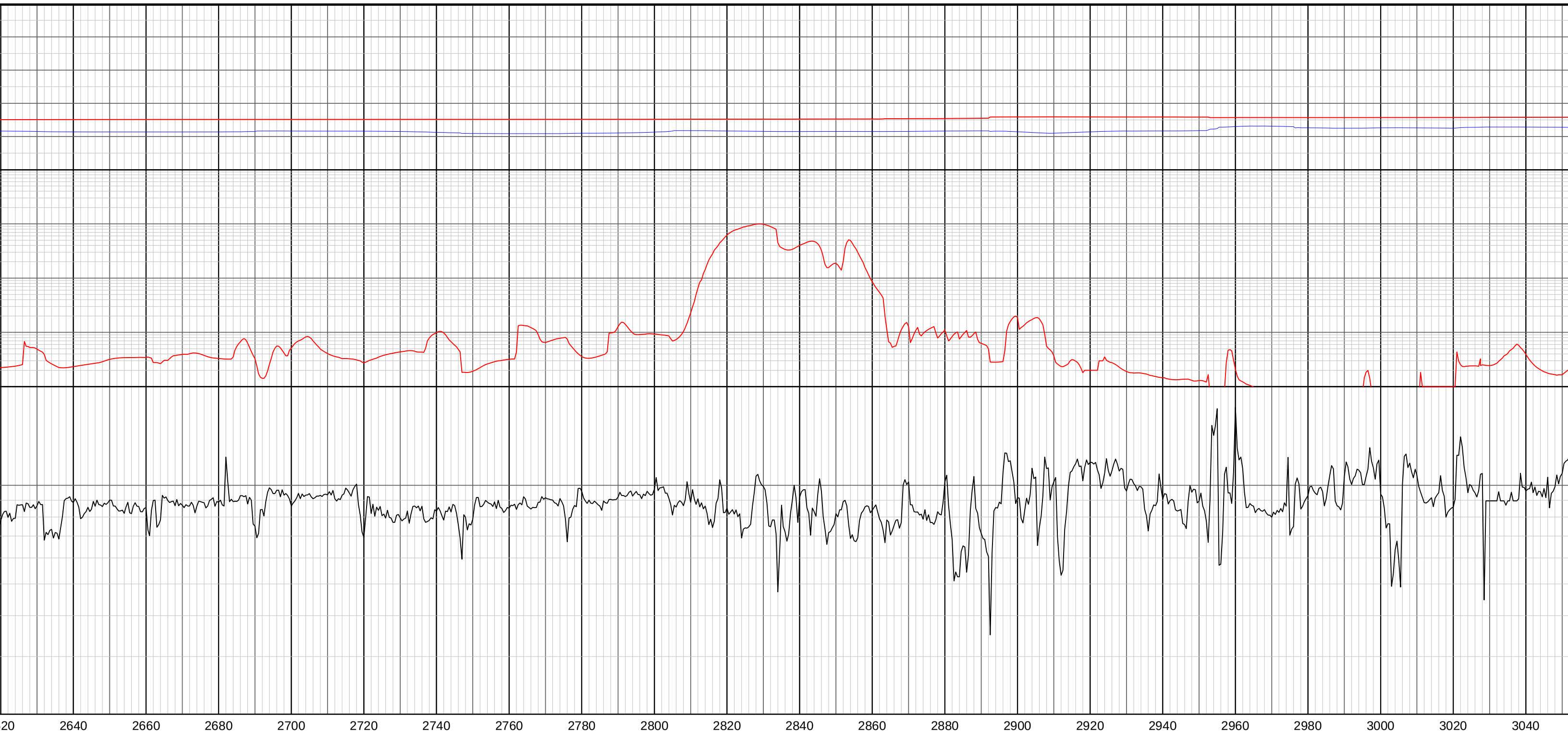
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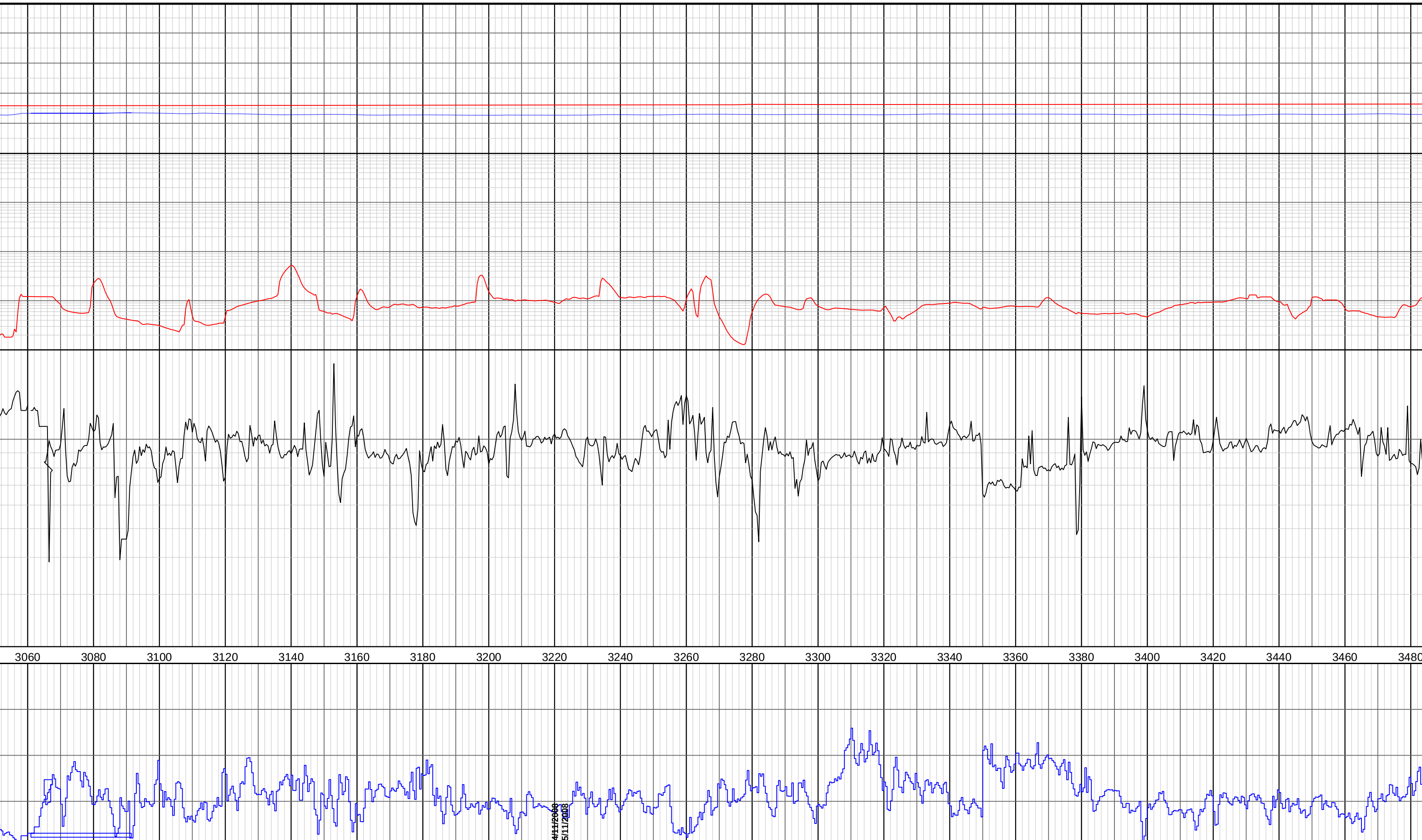
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15/11/2008

PRESSURE DATA PLOT

Rate Of Penetration	MD meters 1:1000	Drilling Exponent	Gas Data	Temperature Data
0 ROP 200	3500	0.2 DXC 2	TOTAL GAS (%)	Temperature Out (DegC)
m/hr	3520		0.1 | 1 | 10 | 100	20 | 40 | 60 | 80 | 100
	3540			0 Temperature In (degC) 100
	3560			degC
	3580			
	3600			
	3620			
	3640			
	3660			
	3680			
	3700			
	3720			
	3740			
	3760			
	3780			
	3800			
15/11/2008 16/11/2008	3820			

GAS RATIO PLOT

1:500

BAKER HUGHES INTEQ

Company : Apache Northwest Pty Ltd
Well : Dory-1
Interval : 1522.00 - 3839.99 meters
Created : 20/11/2008 4:17:19 PM

Apache ENERGY

GAS RATIO PLOT

Total Gas — DITCH GAS — 0.1 | 1 | 10 | 100 — %

MD meters 1:500

Chromatograph Data — 10 | 100000 — C1 ppm; C2 ppm; C3 ppm; iC4 ppm; nC4 ppm; iC5 ppm; nC5 ppm — 100 | 1000 | 10000 | 100000

OCQ — Unitless — 0.5 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4

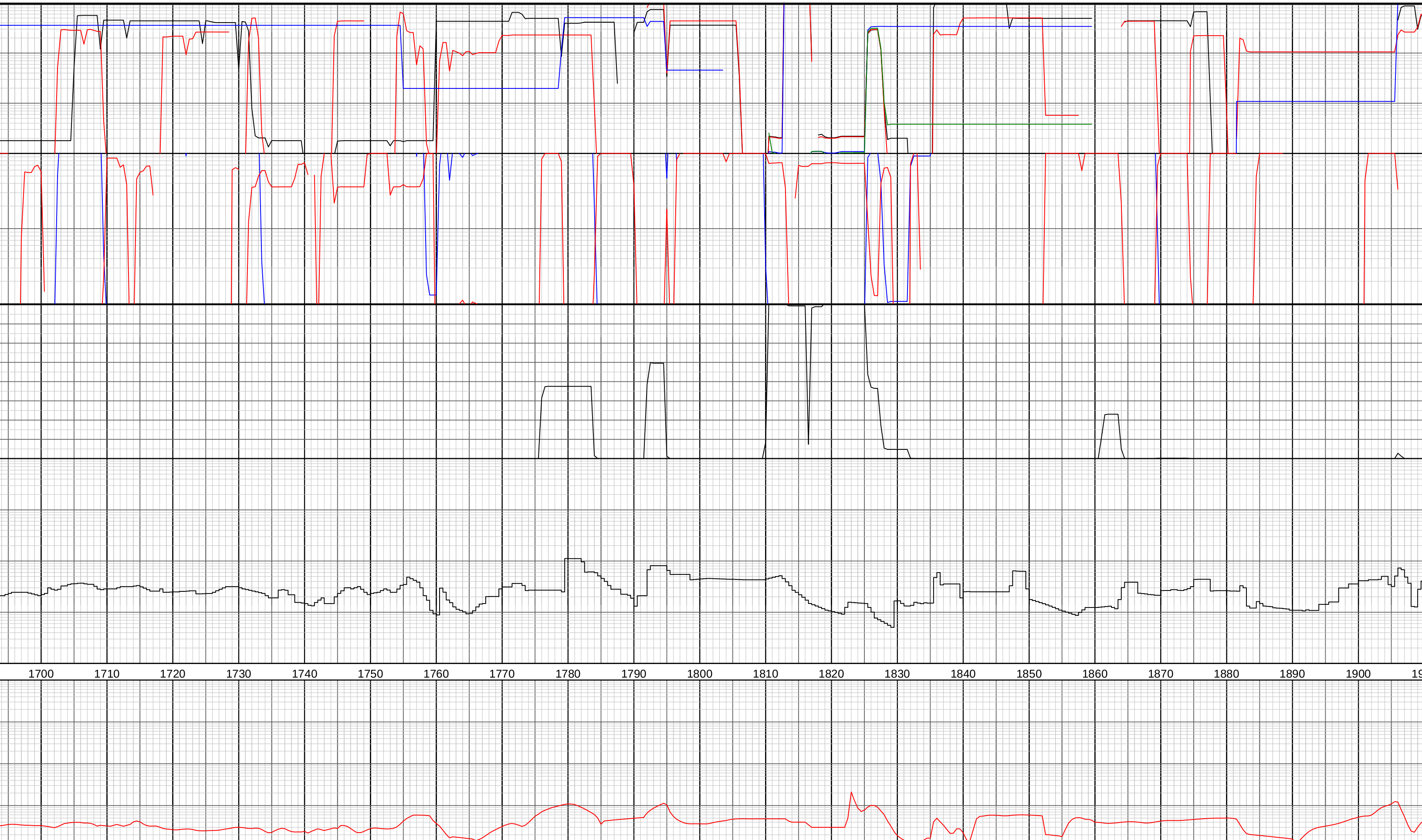
Ratios — LHR 1 | 100; GWR 1 | 100

C1 Ratios — C1C2; C1C3; C1C4; C1C5 — 1 | 1000

1530 1540 1550 1560 1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680 1690

NB3 Smith-
MI519BPX
216 mm (8-1/2")
5x13
Depth In: 1537.0 m
Depth Out:1537.0 m
POOH due to failed
LWD tools

BIT3RR Smith-
MI519BPX
216 mm (8-1/2")
5x13
Depth In: 1537.0 m
Depth Out:2955.0 m
Drilled: 1418.0 m in
21.19 hrs
Grade:4-8-RO-S-X-1-BT-PR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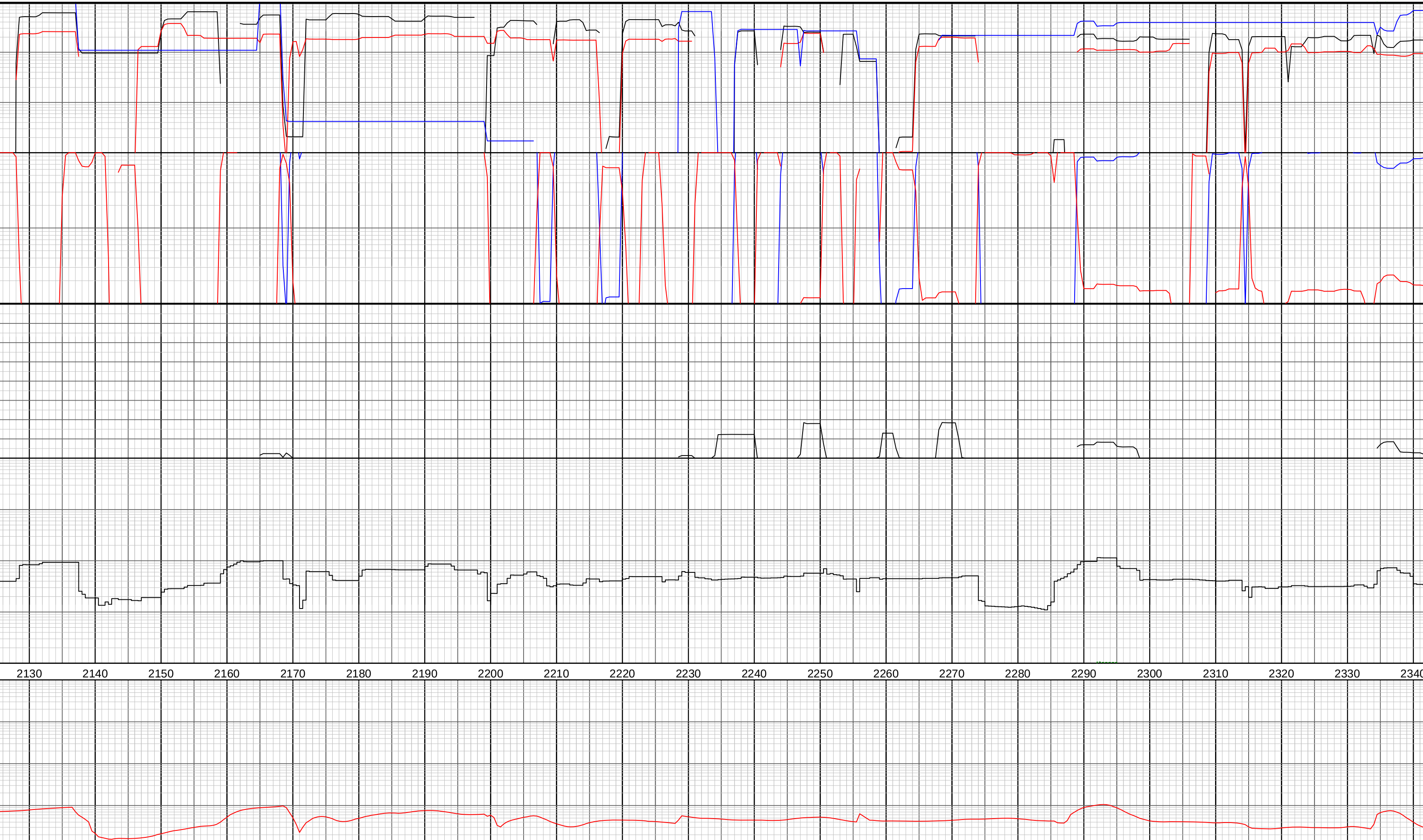
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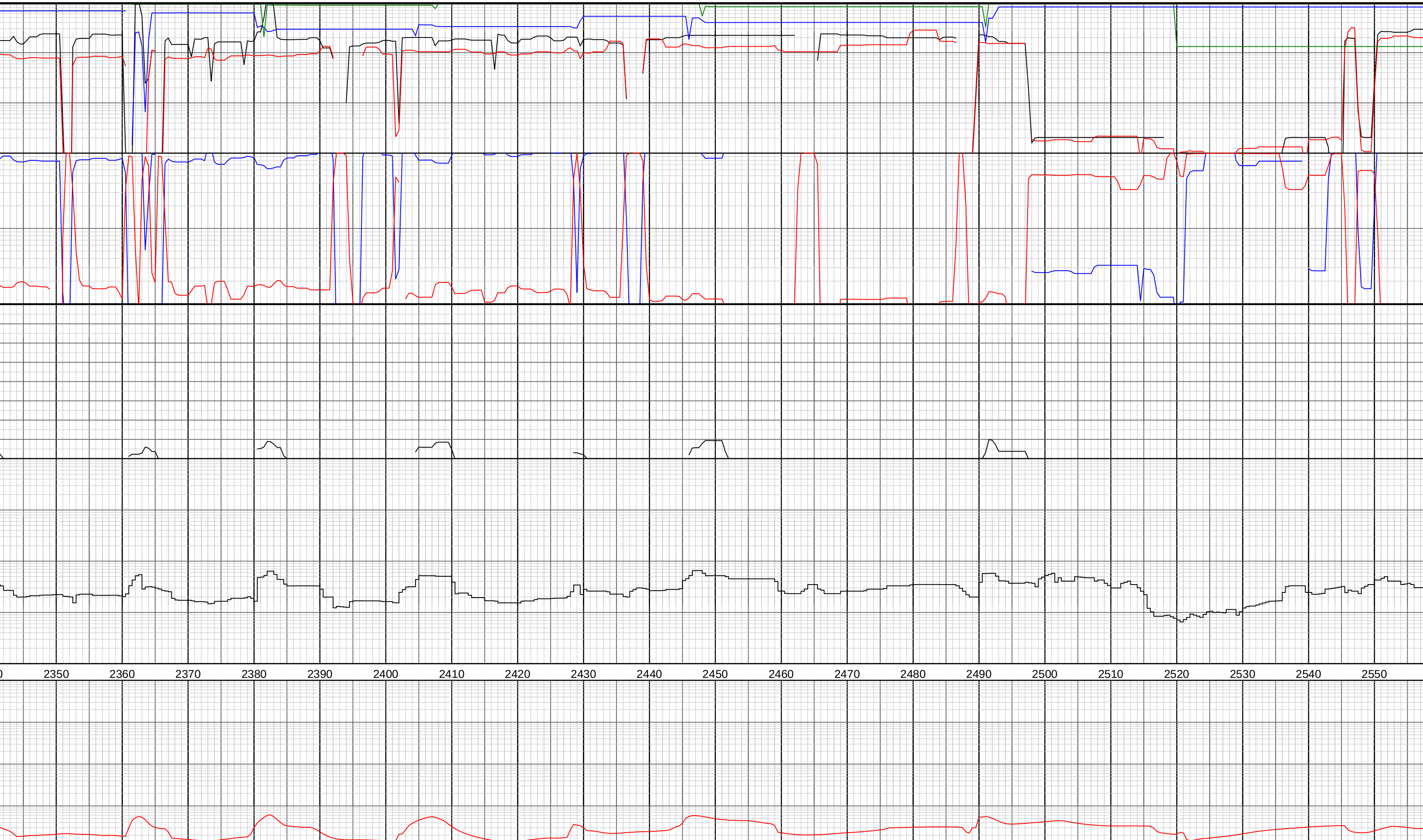
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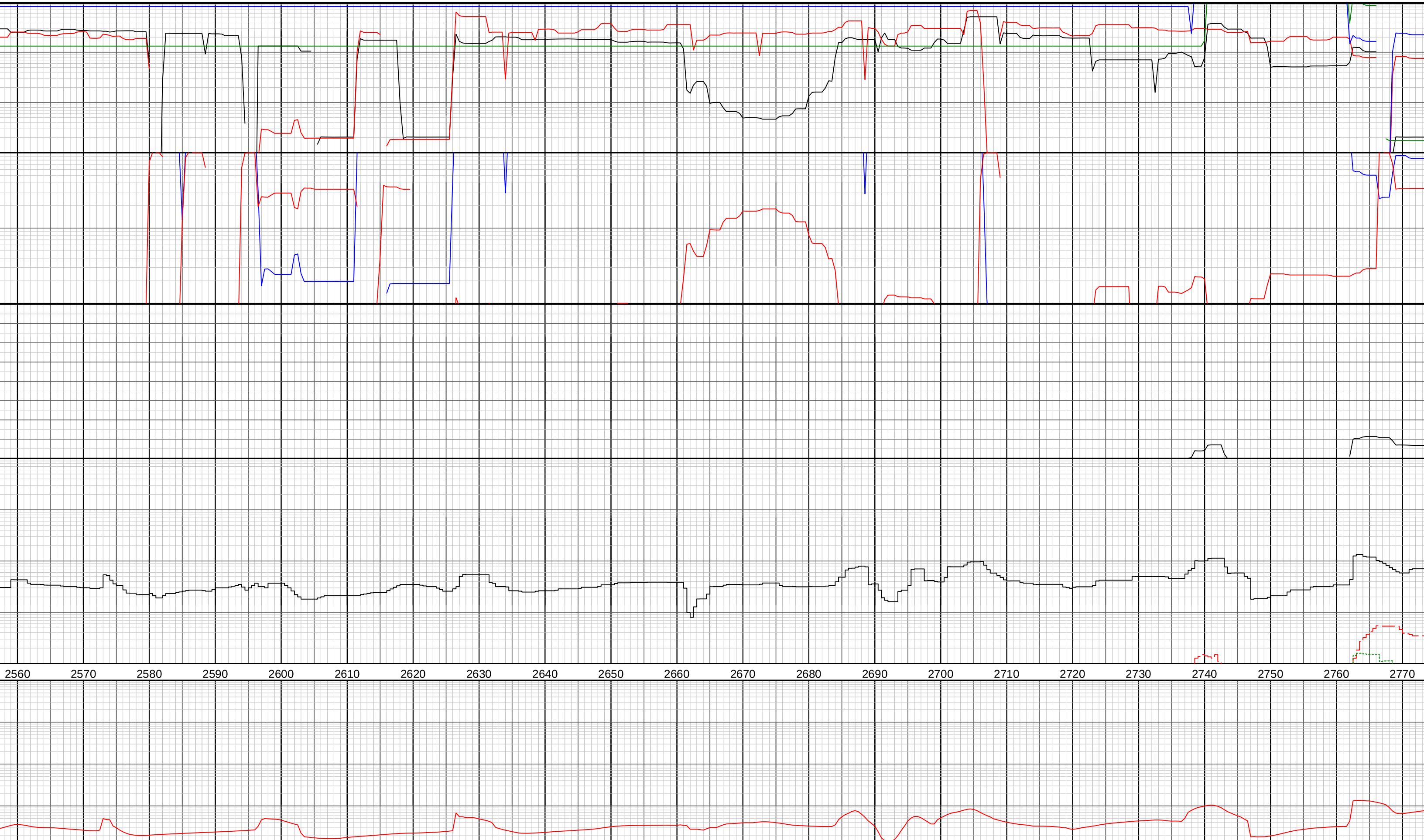
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RR4 PDC-
HC506-ZX
216 mm (8-1/2")
6x14
Depth In: 2995.0 m
Depth Out:3814.0 m
Drilled: 819.0 m in
25.23 hrs
Grade:5-2-CR-N-X-I-BT-TD

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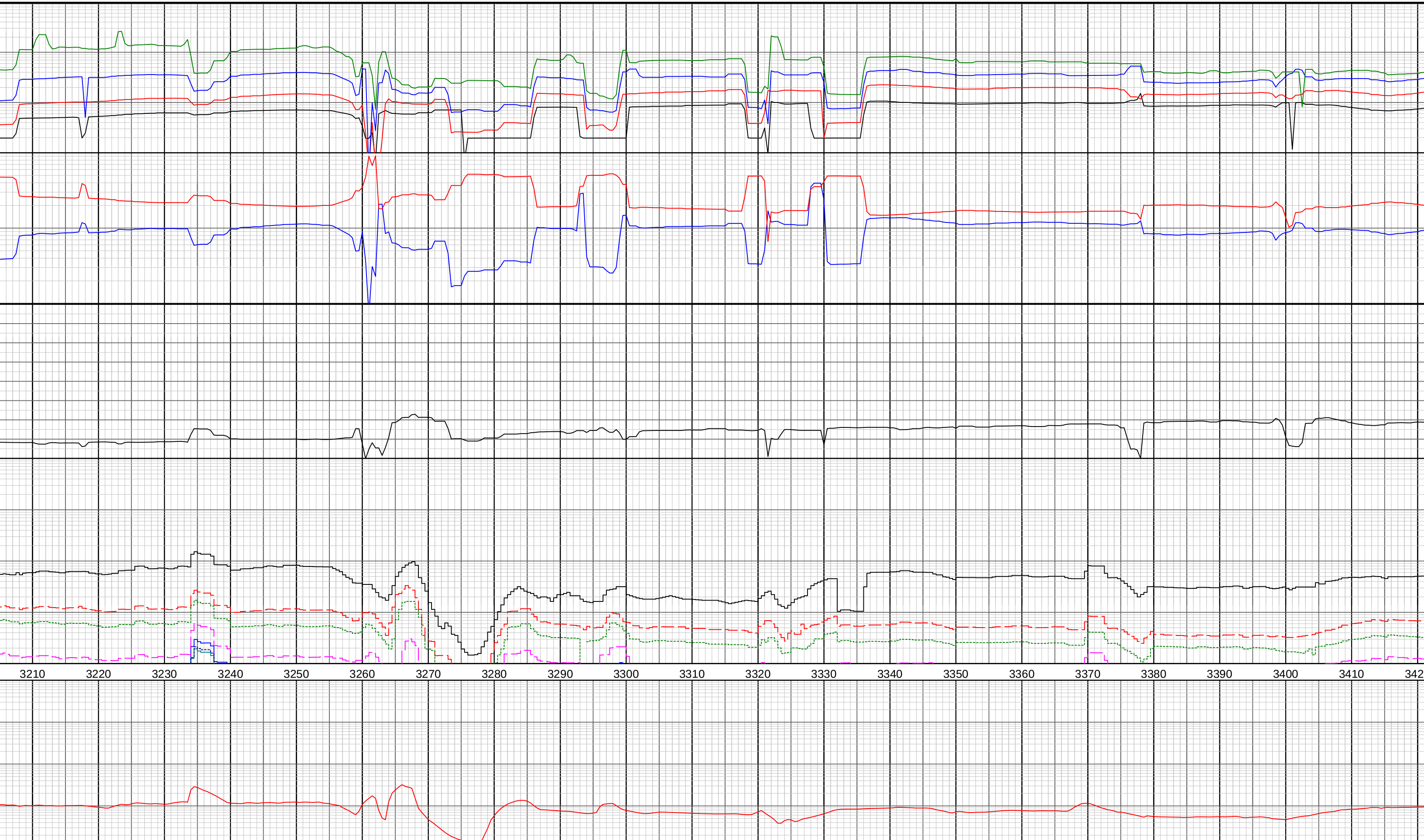
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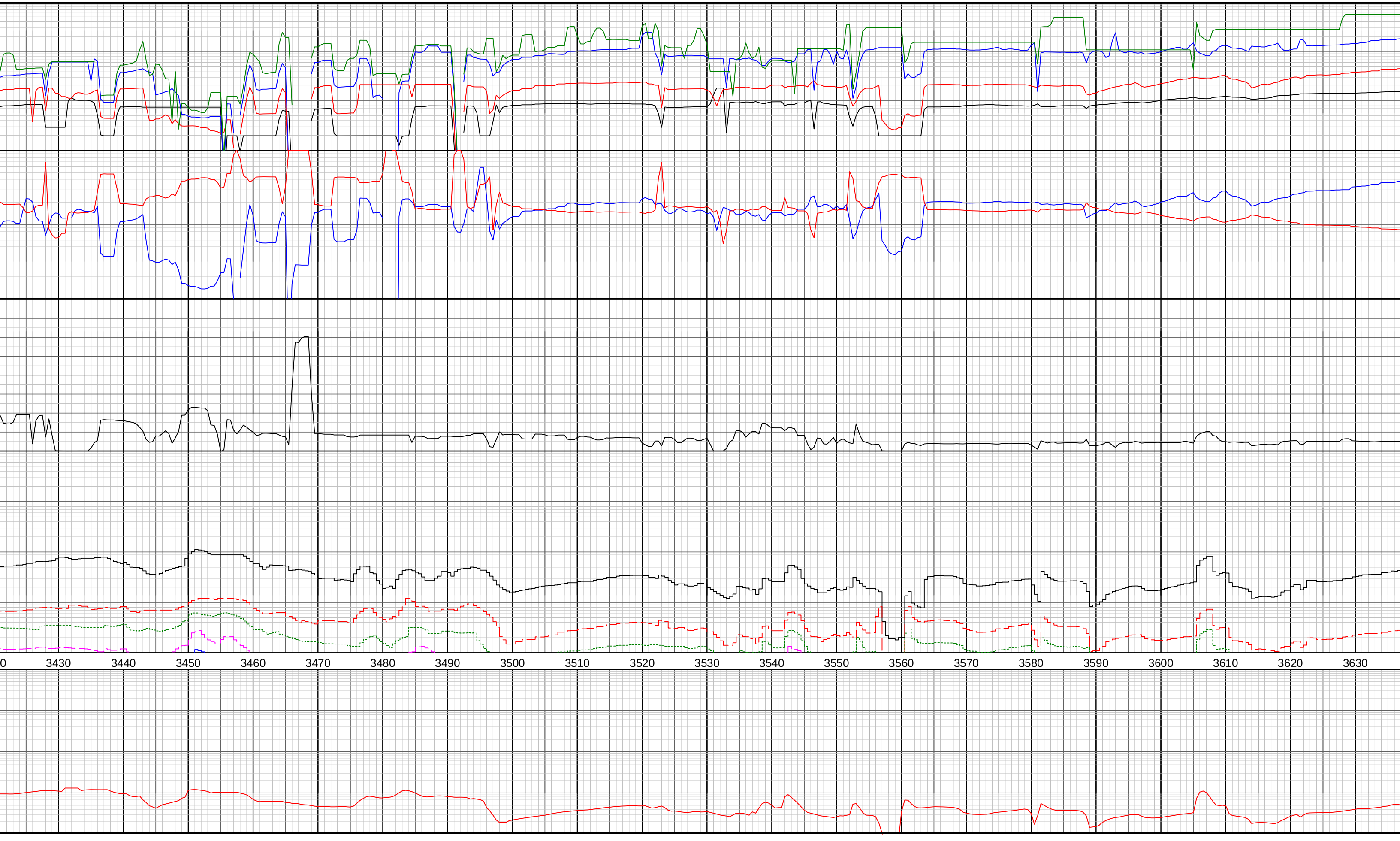
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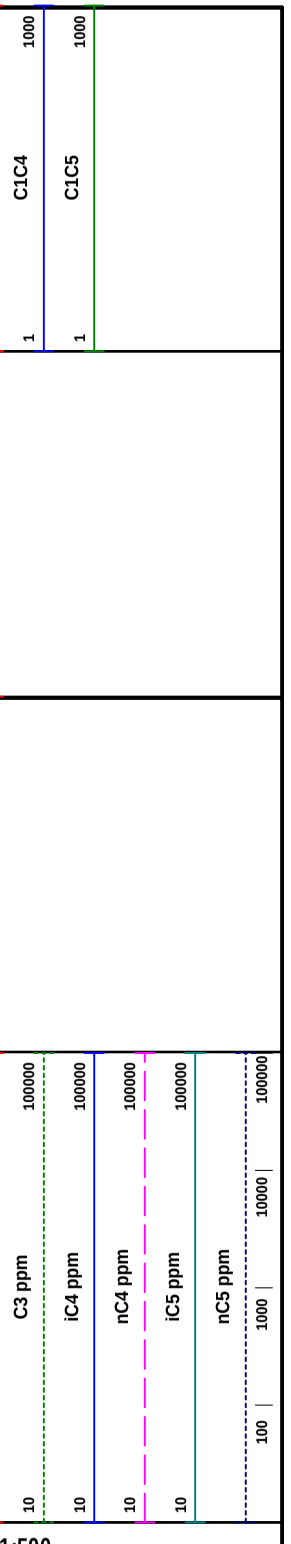
GAS RATIO PLOT

Total Gas	MD meters	Chromatograph Data	OCQ	Ratios	C1 Ratios
DITCH GAS 0.1 | 1 | 10 | 100 %	3640 3650 3660 3670 3680 3690 3700 3710 3720 3730 3740 3750 3760 3770 3780 3790 3800 3810 3820 3830	C1 ppm 10 — 100000 C2 ppm 10 — 100000	Unitless 0.5 1 1.5 2 2.5 3 3.5 4	LHR 1 — 100 GWR 1 — 100	C1C2 1 — 1000 C1C3 1 — 1000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Apache

WIRELINE LOGGING REPORT

GENERAL WELL DATA

Well Name :	Dory-1	**Suite :**	1	**Rig :**	Ocean Patriot
Permit :	VIC-P59	**Date 1st Log :**	16-Nov-2008	**GL Elevation :**	
Latitude :	038° 35' 19.759" North	**Date Last Log :**	18-Nov-2008	**Water Depth :**	518.5 (m)
Longitude :	148° 32' 51.925" East	**Depth Ref. :**	MWD / LWD	**Witnesses :**	W. Cruickshank, G. Fawns
Easting (m) :	5,727,714.900 E	**Depth Ref. Elev. :**	21.5 (m)		
Northing (m) :	-634,798.900 N	**Service Comp. :**	Baker Atlas		
UTM Zone :	55			**Engineers :**	P. Budya, P. Redfern, A. Saragih, I. Siregar
Geo. Datum :	NAD83, GDA94				
Ellipsoid :	Geodetic Reference System 1980				

HOLE DATA

Hole Size :	216 (mm)	**Seabed Temp :**	18.0 (°C)	**Max Hole Dev :**	1.5 (°)
Driller's Depth :	3,814.0 (m)	**Surface Temp :**	16.0 (°C)	**Max Dev Depth :**	2,823.1 (m)
Logger's Depth :	3,800.0 (m)	**Max BHT :**	84.4 (°C)		
Survey Type :	ORIT				

Hole Problems : Low kick tolerance - 1.34sg EMW

Comments :
Grandslam successful.

RCI successful.

RCOR failed (x2) without recovering cores.
1 x pressure module fail
1 x failed enhancer above hydraulic jar.

VSP cancelled due to cetacean activity. Poor response / noisy signal from top shuttle.

CASING DATA

Casing String	Shoe Depth (mMDRT)	Shoe Depth (mTVDRT)	Casing OD (mm)	Casing ID (mm)	Weight (lbm/ft)	Hole Size (mm)
762 mm Conductor	585.0	585.0	762	711	309.78	914
340 mm Casing	1534.1	1,534.0	340	315	68.00	406

WATER BASE MUD DATA

Date Mud Check	Date Time Circ Stopped	Circ Time (h)	Mud Type	MW (sg)	KCl (%)	Cl (mg/L)	Barite (%)	Rmf (ohm.m)	Rm (ohm.m)	Rmc (ohm.m)
15-Nov-2008	6-Nov-2008 2:3	35.31	KCL / Polymer	1.15	11.1	540000.0	1.00	0.065 @ 20.0 °	0.068 @ 19.3 °	0.086 @ 19.3 °

WIRELINE RUN TEMPERATURE DATA

Date of Mud Check: 15-Nov-2008 **Date / Time Circ. Stopped:** 16-Nov-2008 2:30 **Circ. Time :** 35.31 (h)

Run #	Run Date	Tool String	Max BHT (°C)	Max BHT TVD Depth (m)	Date Time Logger on Bottom	Time Since Circ. Stopped (h)
1	16-Nov-2008	Grand Slam	84.4	3744.2	16-Nov-2008 19:20	16.83
2	16-Nov-2008	RCI	71.7	3099.8	17-Nov-2008 20:09	41.65
3	17-Nov-2008	RCOR			18-Nov-2008 5:00	50.50
4	18-Nov-2008	RCOR	72.2	2865.0	18-Nov-2008 8:25	53.92
5	18-Nov-2008	VSP			18-Nov-2008 16:10	61.67

WIRELINE RUN SUMMARY DATA

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Run #	Tool String	Log From Depth (m)	Log To Depth (m)	Repeat From Depth (m)	Repeat To Depth (m)	Comments
1	Grand Slam	3814.0	2760.0	2900.0	2760.0	Full Quad Combo - TD to 2760m (50 m above pay zone) including spectral gamma. Downlog from shoe. Main pass logged section from 3800.0 to 2711.0 mMDRT. Main pass was interrupted at ~ 3575.0 mMDRT due to a wireline misspool. Main log repeated over this section for splicing of data. Final logs consists of 2 individual "main log" files spliced together. Repeat pass log over reservoir section from 2875.0 to 2810.0 mMDRT
2	RCI	2807.9	3099.8			RCI - Conducted 54 Pretests - 42 good tests, 6 curtailed tests, 5 no seal, 1 aborted test. 4 formation samples taken.
3	RCOR					RCOR - 26 cores programmed. RCOR hydraulic module failed at core point #2. No cores recovered. POOH to troubleshoot.
4	RCOR					RCOR - 26 cores programmed. Tool communication failed at 3060m during first core. Broke off core bit and POOH. Surface analysis showed a failed enhancer above the hydraulic jar.
5	VSP	1365.0	3780.0			VSP/checkshot survey - TD to loss of signal (30 m levels). Environmental Mitigation procedures enacted. Excessive noise from top shuttle. Used data from 1 shuttle over 30m intervals from 3585 to 3525m. VSP cancelled due to whales sighted in the area. Ran total of 9 checkshots.

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BAKER HUGHES

Baker Atlas

DUAL LATEROLOG
MICRO LATEROLOG
COMPENSATED Z-DENSILOG SM
COMPENSATED NEUTRON LOG
X-MULTIPOLE ARRAY ACOUSTILOG SM
GAMMA RAY LOG
DIGITAL SPECTRALOG ®
TTRM SUB SM

FILE NO:

API NO:

COMPANY	APACHE ENERGY LIMITED
WELL	DORY-1
FIELD	DORY
COUNTRY	AUSTRALIA

Ver. 3.87
FIELD PRINT
SCALE 1:200

SUITE 1

LOCATION:
LAT : 038DEG 35' 19.759" S
LONG: 148DEG 32' 51.925" E

OTHER SERVICES
RCI/GR
VSP

PERMANENT DATUM	AHD	ELEVATION	0 M
LOG MEASURED FROM	DF	23.5 M	ABOVE P.D.
DRILL. MEAS. FROM	DF		

ELEVATIONS:
KB -
DF 23.5 M
GL 517.3 M

DATE		16-NOV-2008			
RUN	TRIP	1	1		
SERVICE ORDER		700041			
DEPTH DRILLER		3814.0 M			
DEPTH LOGGER		3800.0 M			
BOTTOM LOGGED INTERVAL		3799.0 M			
TOP LOGGED INTERVAL		2760.0 M			
CASING DRILLER		13.375 IN @1534.1 M		@	
CASING LOGGER		NOT LOGGED			
BIT SIZE		8.5 IN			
TYPE OF FLUID IN HOLE		KCL POLYMER			
DENSITY	VISCOSITY	1.15 G/C3	56 S		
PH	FLUID LOSS	11	4.0 C3		
SOURCE OF SAMPLE		ACTIVE TANK			
RM AT MEAS. TEMP.		0.068 OHMM @19.3 DEGC		@	
RMF AT MEAS. TEMP.		0.065 OHMM @20.0 DEGC		@	
RMC AT MEAS. TEMP.		0.086 OHMM @19.3 DEGC		@	
SOURCE OF RMF	RMC	MEASURED	MEASURED		
RM AT BHT		0.027 OHMM @84.4 DEGC		@	
TIME SINCE CIRCULATION		17 HOURS			
MAX. RECORDED TEMP.		84.4 DEGC			
EQUIP. NO.	LOCATION	HL 8881	PERTH		
RECORDED BY		I.SIREGAR/P.REDFERN			
WITNESSED BY		G.FAWNS/A.CRUICKSHANK			

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
13.375 IN	68 LB/F	L80	0 M	1534.1 M

BOREHOLE RECORD

BIT SIZE	FROM	TO
8.5 IN	1537 M	3814.0 M

REMARKS

RUN 1 TRIP 1 :

* FIRST RUN IN HOLE. DEPTH MATCHED TO HALLIBURTON MWD LOG AT CLIENT REQUEST.
* LOGGED REPEAT SECTION FROM 2850 TO 2800 AT CLIENT REQUEST.
* TOOL ZEROED AT 16:28 ON 16-NOV-2008 WITH A TIDE CORRECTION OF 0.86 M.
* CIRCULATION STOPPED AT 02:30 ON 16-NOV-2008 AFTER 2.5 HOURS DURATION.
* CASING SHOE NOT LOGGED.
* ADDITIONAL MUD PROPERTIES:
  PV/YP: 14/28
  CHLORIDES: 54,000 MG/L, NACL EQUIVALENT 89,000
  NACL: 0.6 PPB
  KCL: 11% WT SOL
  BARITE: 1%
* MAXIMUM DEVIATION: 1.91 DEG AT 2884 M.
* MAXIMUM RECORDED TEMPERATURE FROM THERMOMETERS: 84.4, 84.4, 84.4 C.
* TOTAL BOREHOLE VOLUME FOR RECORDED INTERVAL, 3800 TO 2760, IS 37.8 M3.
* COMPUTED CEMENT VOLUME FOR RECORDED INTERVAL FOR 7 IN CASING IS 11.9 M3.
* MLL/DLL/XMAC/ZDL/CN/ORIT/GR/DSL/TTRM RUN IN COMBINATION.

* XMAC TOOL RUN CENTRALISED.
* MLL/DLL RUN STOOD OFF.
* ZDL/CN/GR/DSL RUN DECENTRALISED, BOWSPRING DECENTRALISER USED.
* DLL CORRECTED FOR BOREHOLE EFFECTS USING CALIPER CURVE.
* XMAC DATA RECORDED IN FULLWAVE, CROSS DIPOLE MODE.
* DT24 ONLY PRESENTED, POST PROCESSING REQUIRED FOR OTHER XMAC DATA.
* TOTAL INTEGRATED ACOUSTIC TRAVEL TIME: 28.5 MSEC OVER RECORDED INTERVAL.
* ZDL/CN DATA PRESENTED ON LIMESTONE SCALES.
* NEUTRON POROSITY IS CORRECTED FOR BOREHOLE SIZE AND SALINITY.
* SPECTRALOG DATA CORRECTED FOR KCL IN DRILLING MUD.
* LOG SPLICED AT 3600 M DUE TO WIRELINE MIS-SPOOL.

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	SWIVEL	3944XD	10127260	FREE
1	1	PWR ADPTR	4430XB	10173278	FREE
1	1	PCL ISO	3997XB	10411486	FREE
1	1	PCL ISO	3997XB	10449448	STDOFF
1	1	ENHANCER	9993DB	10498268	FREE
1	1	TTRM	3981XA	10045149	FREE
1	1	JAR	9993DA	10498267	FREE
1	1	COM REMOTE	3514XA	10177072	DECENTRALISED
1	1	GR-DSL	1329XB	10399813	DECENTRALISED
1	1	CN	2446XA	178125	DECENTRALISED
1	1	ZDL	2234XA	188262	PAD DEVICE
1	1	KNUCKLE	3939XA	10168910	FREE
1	1	ORIT	4401XA	10171789	FREE
1	1	XMAC E	1677EA	10200962	FREE
1	1	XMAC RX	1678MC	10343086	CENTRALISED
1	1	XMAC PB	1678PB	10195602	CENTRALISED
1	1	XMAC TX	1678BA	10217523	CENTRALISED
1	1	XMAC TXE	1678FA	10132925	CENTRALISED
1	1	SLAM ADPTR	3516XA	183701	FREE
1	1	DLL E	1239EA	10119425	STD OFF
1	1	DLL M	1239MA	10120337	STDOFF
1	1	MLL	1233XA	154386	PAD DEVICE

INSTRUMENT CONFIGURATION

Source File: /dat1a/dory1/DLL_SLAM-tdg

CABLEHEAD
Series : CABL338
Mnemonic : CBLH
Diameter : 8.6 cm
Weight : 10.9 kg
Length : 167.6 cm
Measure Point: 83.8 cm: CABLEHEAD TOP

DOWNHOLE POWER ADAPTER
Series : 4430XB
Mnemonic : DHPA
Diameter : 9.2 cm
Weight : 36.4 kg
Length : 160.5 cm

SWIVEL
Series : 3944XB
Mnemonic : SWVL
Diameter : 8.6 cm
Weight : 29.5 kg

56.63 m

CABLEHEAD TOP — 55.80 m

MASS ISOLATION SUB - 12' JOINT
Series : 3997ZB
Mnemonic : ISSB
Diameter : 9.2 cm
Weight : 80.9 kg
Length : 361.9 cm

SP 48.23 m

MASS ISOLATION SUB - 12' JOINT WITH SP
Series : 3997XB
Mnemonic : ISSB
Diameter : 9.2 cm
Weight : 80.9 kg
Length : 361.9 cm
Measure Point: 313.7 cm: SP

ENHANCER
Series :
Mnemonic :
Diameter : 9.2 cm
Weight : 54.5 kg
Length : 288.3 cm

TTRM SUB
Series : 3981XA
Mnemonic : TTRM
Diameter : 9.2 cm
Weight : 26.4 kg
Length : 116.8 cm

TEMP MP 41.47 m
RM MP 41.39 m

JAR
Series : JAR
Mnemonic : JAR
Diameter : 9.2 cm
Weight : 54.5 kg
Length : 329.2 cm

WTS COMMON REMOTE
Series : 3514XB
Mnemonic : WTS
Diameter : 9.2 cm
Weight : 58.2 kg
Length : 189.5 cm

DIGITAL SPECTRALOG
Series : 1329XA
Mnemonic : DSL
Diameter : 9.2 cm
Weight : 60.9 kg
Length : 222.8 cm
Measure Point: 48.8 cm: GR MP

GR MP 34.12 m

COMPENSATED NEUTRON
Series : 2446XA
Mnemonic : CN
Diameter : 9.2 cm
Weight : 68.2 kg
Length : 231.4 cm
Measure Point: 80.3 cm: LSN MP
Measure Point: 68.2 cm: SSN MP

LSN MP 32.12 m
SSN MP 32.00 m

Z-DENSILOG
Series : 2234XA
Mnemonic : ZDL
Diameter : 12.4 cm
Weight : 163.6 kg
Length : 341.9 cm
Measure Point: 97.3 cm: CAL MP
Measure Point: 75.4 cm: LSD MP
Measure Point: 63.2 cm: SSD MP

KNUCKLE JOINT (DOUBLE)
Series : 3939XA
Mnemonic : KNJT
Diameter : 8.6 cm
Weight : 22.7 kg
Length : 141.8 cm

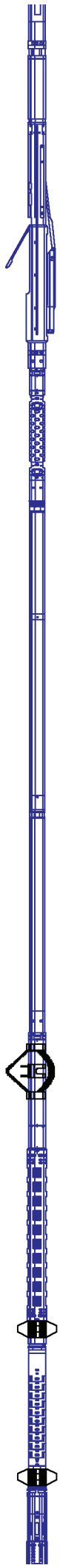
DIGITAL ORIENTATION
Series : 4401XB
Mnemonic : ORIT
Diameter : 8.6 cm
Weight : 51.4 kg
Length : 329.4 cm
Measure Point: 0.0 cm: ORIENT MP

ARRAY ACOUSTILOG ELECTRONICS, 8 CHANNEL
Series : 1677EA
Mnemonic : XMAC
Diameter : 8.6 cm
Weight : 61.8 kg
Length : 238.3 cm

CROSS MULTIPOLE ARRAY ACOUSTILOG
Series : 1678MB
Mnemonic : XMAC
Diameter : 9.8 cm
Weight : 68.2 kg
Length : 332.4 cm
Measure Point: 167.6 cm: R8
Measure Point: 152.4 cm: R7
Measure Point: 137.2 cm: R6
Measure Point: 121.9 cm: R5
Measure Point: 106.7 cm: R4
Measure Point: 91.4 cm: R3
Measure Point: 76.2 cm: R2
Measure Point: 61.0 cm: R1

SHEAR WAVE ACOUSTILOG
Series : 1678PB
Mnemonic : XMAC
Diameter : 9.2 cm
Weight : 61.4 kg
Length : 152.4 cm

MULTI-POLE ARRAY ACOUSTIC



CAL MP 28.87 m
LSD MP 28.65 m
SSD MP 28.53 m
ORIENT MP 23.19 m
R8 19.16 m
R7 19.00 m
R6 18.85 m
R5 18.70 m
R4 18.55 m
R3 18.39 m
R2 18.24 m
R1 18.09 m
MONOPOLE T2 15.50 m
QUADRUPOLE T5 15.50 m

Series : 1678BA
Mnemonic : XMAC
Diameter : 9.8 cm
Weight : 79.5 kg
Length : 241.3 cm
Measure Point: 195.6 cm: QUADRUPOLE T5
Measure Point: 195.6 cm: MONOPOLE T2
Measure Point: 142.2 cm: Y-DIPOLE T4
Measure Point: 142.2 cm: X-DIPOLE T3
Measure Point: 88.9 cm: MONOPOLE T1

MULTI-POLE ARRAY ACOUSTIC
Series : 1678FA
Mnemonic : MAC
Diameter : 8.6 cm
Weight : 34.1 kg
Length : 131.6 cm

SLAM ADAPTER
Series : 3516XA
Mnemonic : SLAM
Diameter : 8.6 cm
Weight : 50.0 kg
Length : 160.7 cm

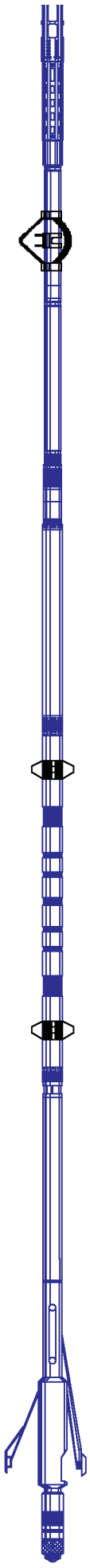
ISOLATION RETURN SUB
Series : 3967XB
Mnemonic : ISSB

DUAL LATERLOG MANDREL
Series : 1239XA
Mnemonic : DLLS
Diameter : 9.2 cm
Weight : 115.5 kg
Length : 545.1 cm
Measure Point: 179.1 cm: RS/RD MP

MICROLATEROLOG
Series : 1233XA
Mnemonic : MLL
Diameter : 12.1 cm
Weight : 150.0 kg
Length : 458.3 cm
Measure Point: 90.0 cm: MLL / CAL MP

BULL PLUG 3 1/8

TOTAL LENGTH: 56.70 m
TOTAL WEIGHT: 1456.8 kg
MAX DIAMETER: 12.4 cm



X-DIPOLE T3 14.97 m
Y-DIPOLE T4 14.97 m
MONOPOLE T1 14.43 m
RS/RD MP 6.37 m
MLL / CAL MP 0.90 m
0.00 m

MAIN LOG 1:200 SCALE

ECLIPS 6.0i Feb 22, 2008
Patches: 1,2,4

Wed Nov 19 05:21:22 2008

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k772i04.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 3530.422 m BOTTOM DEPTH: 3804.506 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
SPBR	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
CN	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
ZDL MED RES	FILTER (hrd1*)	medium		''	''
	FILTER (hrd1s*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2s*)	medium		''	''
	FILTER (soft*)	medium		''	''
DT24	FILTER ()	light (2)		''	''
DLL	FILTER ()	medium (1)		''	''
MLL	FILTER ()	light (2a)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	340.000	mm	TOP	BOTTOM
	CASING THICKNESS	0.000	mm	''	''
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		''	''
BIT SIZE	BIT SIZE	216.000	mm	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	25.0	degC	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	25.0	degC	''	''
	at BH REF DEPTH	0.0	m	''	''
	with TEMP GRADIENT	2.187	0.01 degC/m	''	''
MUD DENSITY	MUD DENSITY	1.15	g/cm3	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (dlbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (slbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	216.000	mm	''	''
	FIXED DIAMETER (dlbh*)	216.000	mm	''	''
	FIXED DIAMETER (slbh*)	216.000	mm	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	MUD SAMP DERIVED		''	''

SLII PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
SLII BOREHOLE	KCL MUD CONTENT	11	pct	TOP	BOTTOM
E MATRIX	OPEN/CASED HOLE	OPEN HOLE		''	''
SLII AUTOGAIN	AUTO GAIN	AUTO GAIN ON		''	''
SLII ENERGY RANGE	ENERGY RANGE	1.30-3.00 MeV		''	''
SPECTRUM CALIBRATION	MODE	AUTOMATIC		''	''

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	89000	ppm	''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	200.025	mm	''	''

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MUD DENSITY	MUD DENSITY	1.15	g/cm3	TOP	BOTTOM
ZDL	DENX TRACKING (2234XA 1)	ON		''	''

ACOUSTIC POROSITY

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		TOP	BOTTOM

ACOUSTIC PICK CONTROL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	''	''
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	''	''
	SEARCH START OFFSET (sfan2*)	0	us	''	''
	SEARCH START OFFSET (sfan3*)	0	us	''	''
	SEARCH START OFFSET (sfan4*)	0	us	''	''
	SEARCH WINDOW LENGTH	819	us	''	''
	THRESHOLD FACTOR	0.30		''	''
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	''	''
	E3 THRESHOLD	OFF		''	''

ACOUSTIC QUALITY CONTROL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM

ACOUSTIC WAVEFORM FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	''	''
	HIGH FREQ CUTOFF	20000	Hz	''	''

DLL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DLL BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM
	DEEP TYPE	STANDARD		''	''
	SHALLOW TYPE	STANDARD		''	''
	TOOL POSITION	CENTRALIZED		''	''
	DEEP CURRENT RTN.	STANDARD		''	''
	ARMOR ISOLATOR	DUAL 12' ISOLATORS		''	''
	GRONINGEN RTN. DIST	40 FT RETURN		''	''

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k772105.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2743.116 m BOTTOM DEPTH: 3595.116 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CHT	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
SPBR	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''

CN	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
ZDL MED RES	FILTER (hrd1*)	medium		''	''
	FILTER (hrd1s*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2s*)	medium		''	''
	FILTER (soft*)	medium		''	''
DT24	FILTER ()	light (2)		''	''
DLL	FILTER ()	medium (1)		''	''
MLL	FILTER ()	light (2a)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	340.000	mm	TOP	BOTTOM
	CASING THICKNESS	0.000	mm	''	''
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		''	''
BIT SIZE	BIT SIZE	216.000	mm	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	25.0	degC	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	25.0	degC	''	''
	at BH REF DEPTH	0.0	m	''	''
	with TEMP GRADIENT	2.187	0.01 degC/m	''	''
MUD DENSITY	MUD DENSITY	1.15	g/cm3	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (dlbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (slbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	216.000	mm	''	''
	FIXED DIAMETER (dlbh*)	216.000	mm	''	''
	FIXED DIAMETER (slbh*)	216.000	mm	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	MUD SAMP DERIVED		''	''

SLII PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
SLII BOREHOLE	KCL MUD CONTENT	11	pct	TOP	BOTTOM
E MATRIX	OPEN/CASED HOLE	OPEN HOLE		''	''
SLII AUTOGAIN	AUTO GAIN	AUTO GAIN ON		''	''
SLII ENERGY RANGE	ENERGY RANGE	1.30-3.00 MeV		''	''
SPECTRUM CALIBRATION	MODE	AUTOMATIC		''	''

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	89000	ppm	''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	200.025	mm	''	''

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MUD DENSITY	MUD DENSITY	1.15	g/cm3	TOP	BOTTOM
ZDL	DENX TRACKING (2234XA 1)	ON		''	''

ACOUSTIC POROSITY

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		TOP	BOTTOM

ACOUSTIC PICK CONTROL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	''	''
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	''	''
	SEARCH START OFFSET (sfan2*)	0	us	''	''
	SEARCH START OFFSET (sfan3*)	0	us	''	''
	SEARCH START OFFSET (sfan4*)	0	us	''	''
	SEARCH WINDOW LENGTH	819	us	''	''
	THRESHOLD FACTOR	0.30		''	''
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	''	''

THRESHOLD MINIMUM (sfan2*)		1.8	pct	''	''
THRESHOLD MINIMUM (sfan3*)		1.8	pct	''	''
THRESHOLD MINIMUM (sfan4*)		1.8	pct	''	''
E3 THRESHOLD	OFF			''	''

ACOUSTIC QUALITY CONTROL

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM

ACOUSTIC WAVEFORM FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	''	''
	HIGH FREQ CUTOFF	20000	Hz	''	''

DLL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DLL BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM
	DEEP TYPE	STANDARD		''	''
	SHALLOW TYPE	STANDARD		''	''
	TOOL POSITION	CENTRALIZED		''	''
	DEEP CURRENT RTN.	STANDARD		''	''
	ARMOR ISOLATOR	DUAL 12' ISOLATORS		''	''
	GRONINGEN RTN. DIST	40 FT RETURN		''	''

CURVE DESCRIPTION REPORT

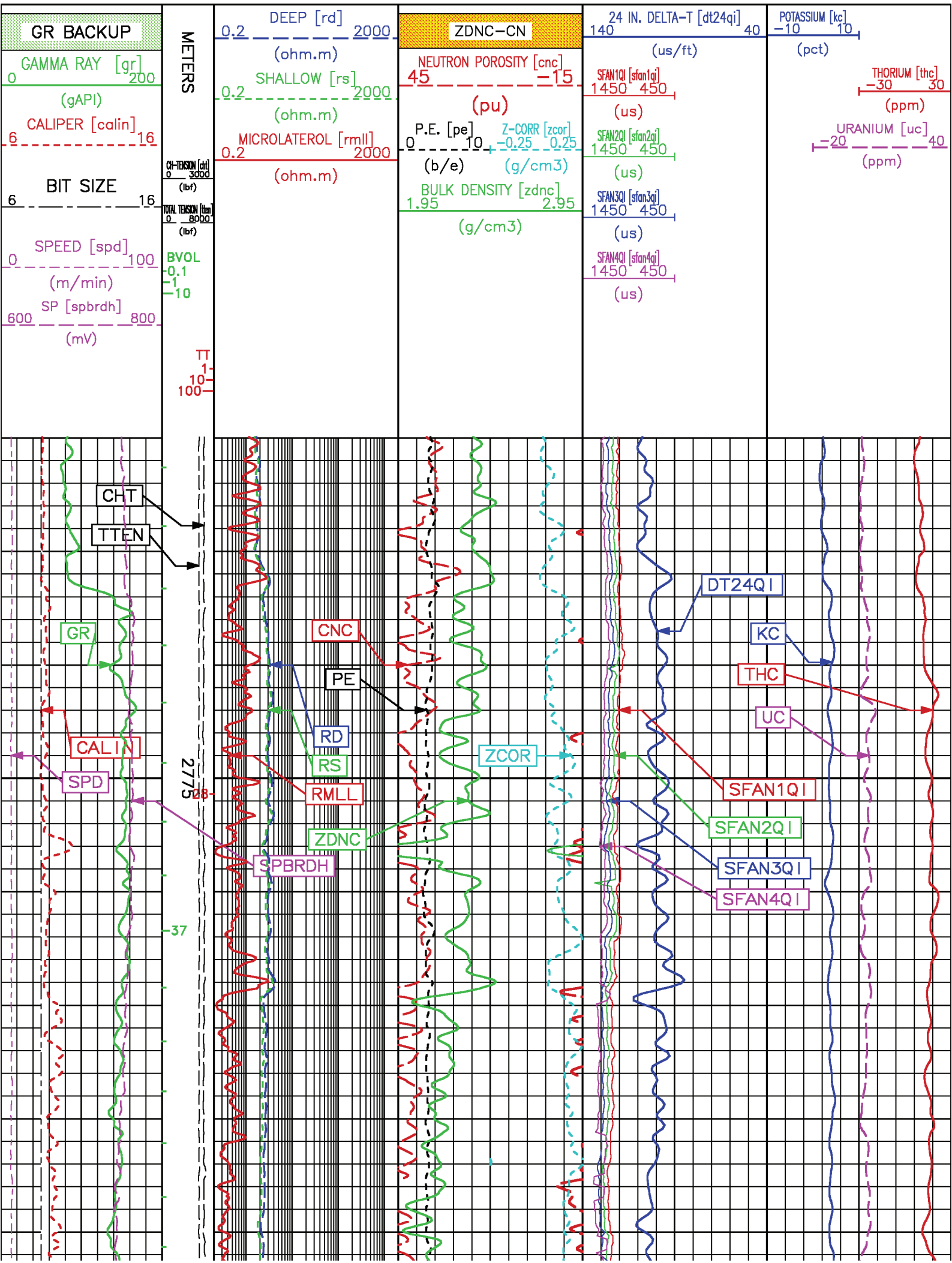
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BVOL	BVOL	Nov 16 20:07:35 2008	BOREHOLE VOLUME
F1:CHT	CHT	Nov 16 20:07:35 2008	CABLE HEAD TENSION
F1:CNC	CNC	Nov 16 20:07:35 2008	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:DT24QI	DT24.I	Nov 16 20:07:35 2008	INTERVAL TRANSIT TIME OVER 24 INCH INTERVAL
F1:GR	GR	Nov 16 20:07:35 2008	GAMMA RAY
F1:KC	KC	Nov 16 20:07:35 2008	POTASSIUM INPUT FROM SPECTRALOG
F1:PE	PE	Nov 16 20:07:35 2008	PHOTO ELECTRIC CROSS-SECTION
F1:RD	RD	Nov 16 20:07:35 2008	DEEP RESISTIVITY
F1:RMLL	RMLL	Nov 16 20:07:35 2008	RESISTIVITY
F1:RS	RS	Nov 16 20:07:35 2008	SHALLOW RESISTIVITY
F1:SFAN1QI	SFAN1.I	Nov 16 19:20:13 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R1
F1:SFAN2QI	SFAN2.I	Nov 16 19:20:13 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R2
F1:SFAN3QI	SFAN3.I	Nov 16 19:20:13 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R3
F1:SFAN4QI	SFAN4.I	Nov 16 19:20:13 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R4
F1:SPBRDH	SPBRDH	Nov 16 19:20:13 2008	BRIDLE ELECTRODE PROCESSED IN COMMON REMOTE
F1:SPD	SPD	Nov 16 19:20:13 2008	SPEED
F1:THC	THC	Nov 16 20:07:35 2008	THORIUM INPUT FROM SPECTRALOG
F1:TTEN	TTEN	Nov 16 20:07:35 2008	TOTAL TENSION
F1:TTQI	TT.I	Nov 16 20:07:35 2008	INTEGRATED TRAVEL TIME FROM ACOUSTIC DELTA-T
F1:ZCOR	ZCOR	Nov 16 20:07:35 2008	DENSITY CORRECTION
F1:ZDNC	ZDNC	Nov 16 20:07:35 2008	BOREHOLE SIZE/MUD WEIGHT CORRECTED DENSITY

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CALIN	0.00	PE	28.65	SFAN3QI	16.92	UC	34.14
CHT	0.00	RD	6.40	SFAN4QI	17.07	ZCOR	28.65
CNC	32.00	RMLL	0.91	SPBRDH	48.31	ZDNC	28.65
DT24QI	16.15	RS	6.40	SPD	0.00		
GR	34.14	SFAN1QI	16.76	THC	34.14		
KC	34.14	SFAN2QI	16.92	TTEN	0.00		

Presentation : sys1:/dat1a/dory1/COMPOSITE_MAIN200.pdf [1:200 Scale]
Plot Interval : 2760 - 3806.04 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i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CALIPER [calin]
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BIT SIZE
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SPEED [spd]
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(m/min)
SP [spbrdh]
600 800
(mV)
METERS
CH-TENSION [cht]
0 3000
(lbf)
TOTAL TENSION [tten]
0 8000
(lbf)
BVOL
0.1
1
10
TT
1
10
100
DEEP [rd]
0.2 2000
(ohm.m)
SHALLOW [rs]
0.2 2000
(ohm.m)
MICROLATEROL [rmll]
0.2 2000
(ohm.m)
ZDNC-CN
NEUTRON POROSITY [cnc]
45 -15
(pu)
P.E. [pe]
0 10
(b/e)
Z-CORR [zcor]
-0.25 0.25
(g/cm3)
BULK DENSITY [zdnc]
1.95 2.95
(g/cm3)
24 IN. DELTA-T [dt24qi]
140 40
(us/ft)
SFAN1QI [sfan1qi]
1450 450
(us)
SFAN2QI [sfan2qi]
1450 450
(us)
SFAN3QI [sfan3qi]
1450 450
(us)
SFAN4QI [sfan4qi]
1450 450
(us)
POTASSIUM [kc]
-10 10
(pct)
THORIUM [thc]
-30 30
(ppm)
URANIUM [uc]
-20 40
(ppm)
2775
28
37
CHT
TTEN
GR
CALIN
SPD
CNC
PE
RD
RS
RMLL
ZDNC
SPBRDH
ZCOR
DT24QI
KC
THC
UC
SFAN1QI
SFAN2QI
SFAN3QI
SFAN4QI

2800
36
27
2825
35
26
2850

34
25
2875
33
2900

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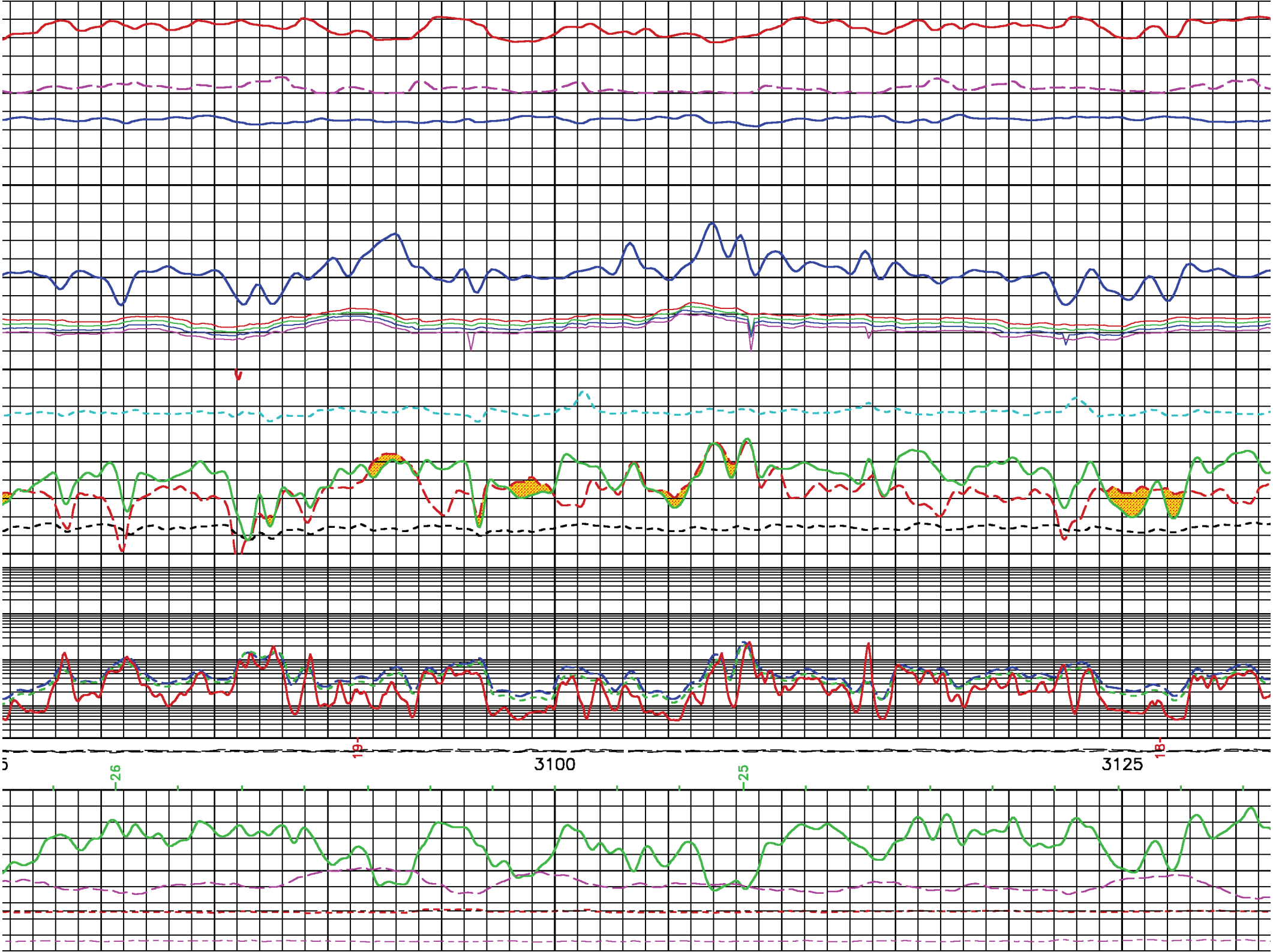
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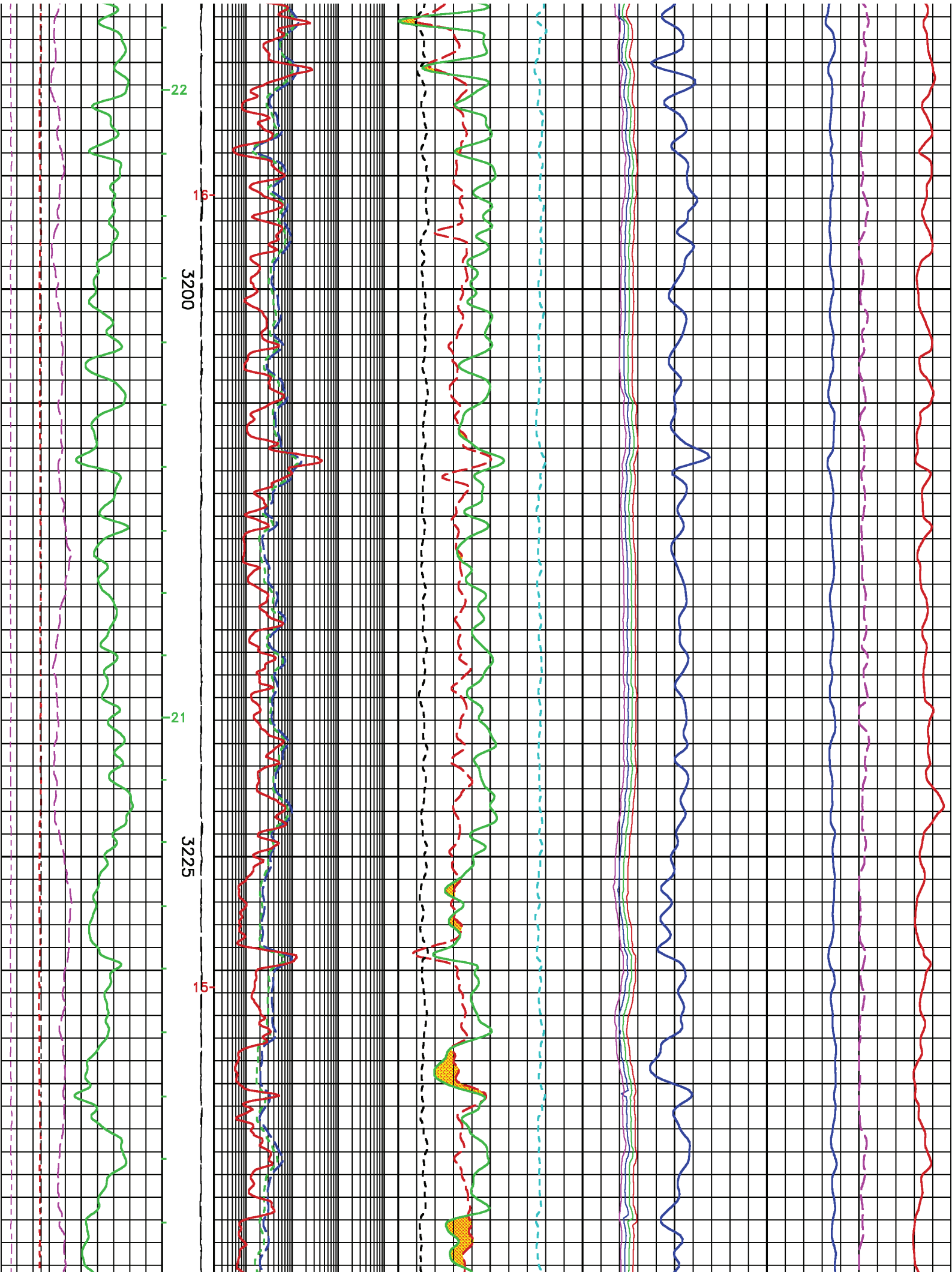
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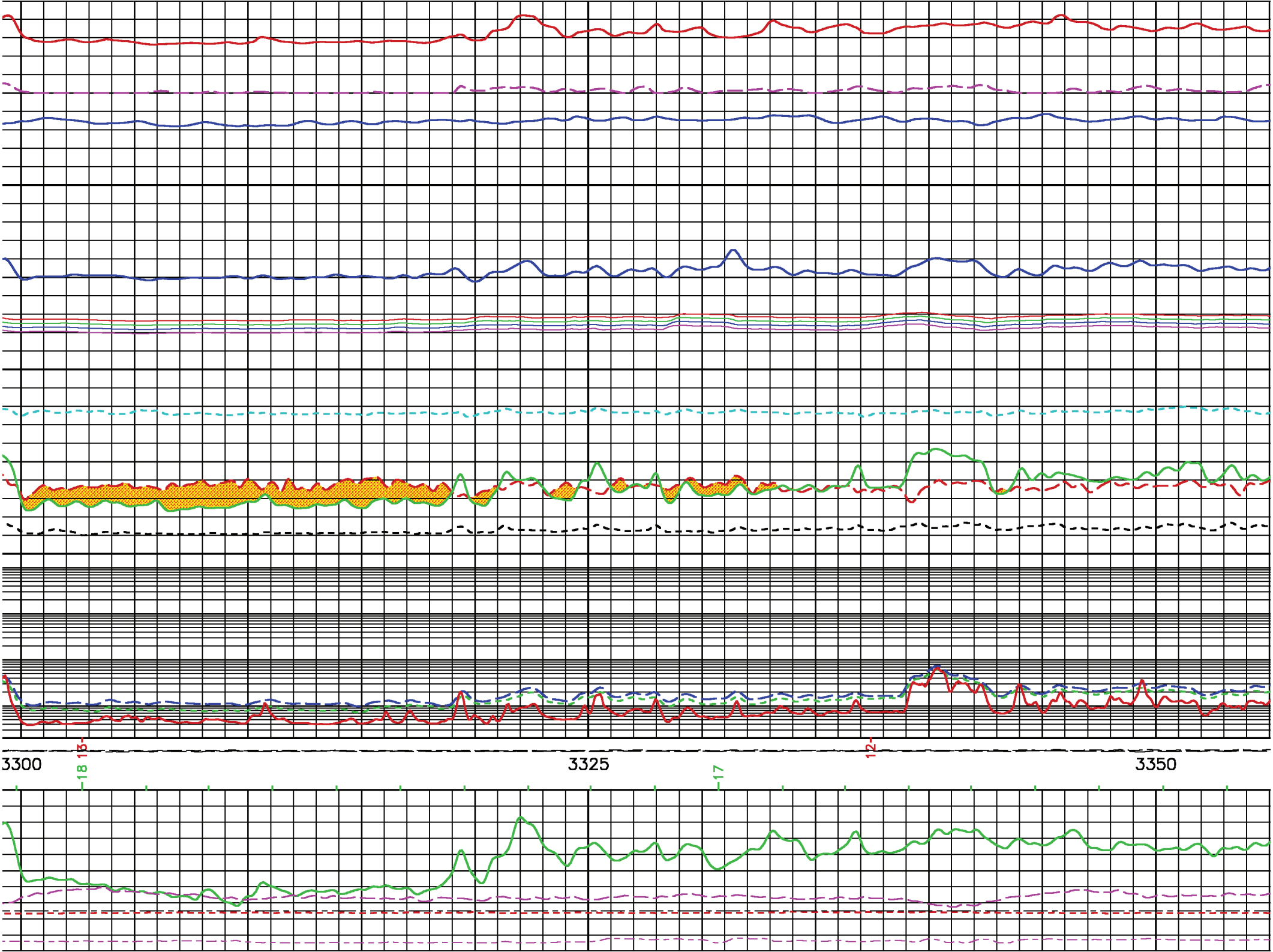
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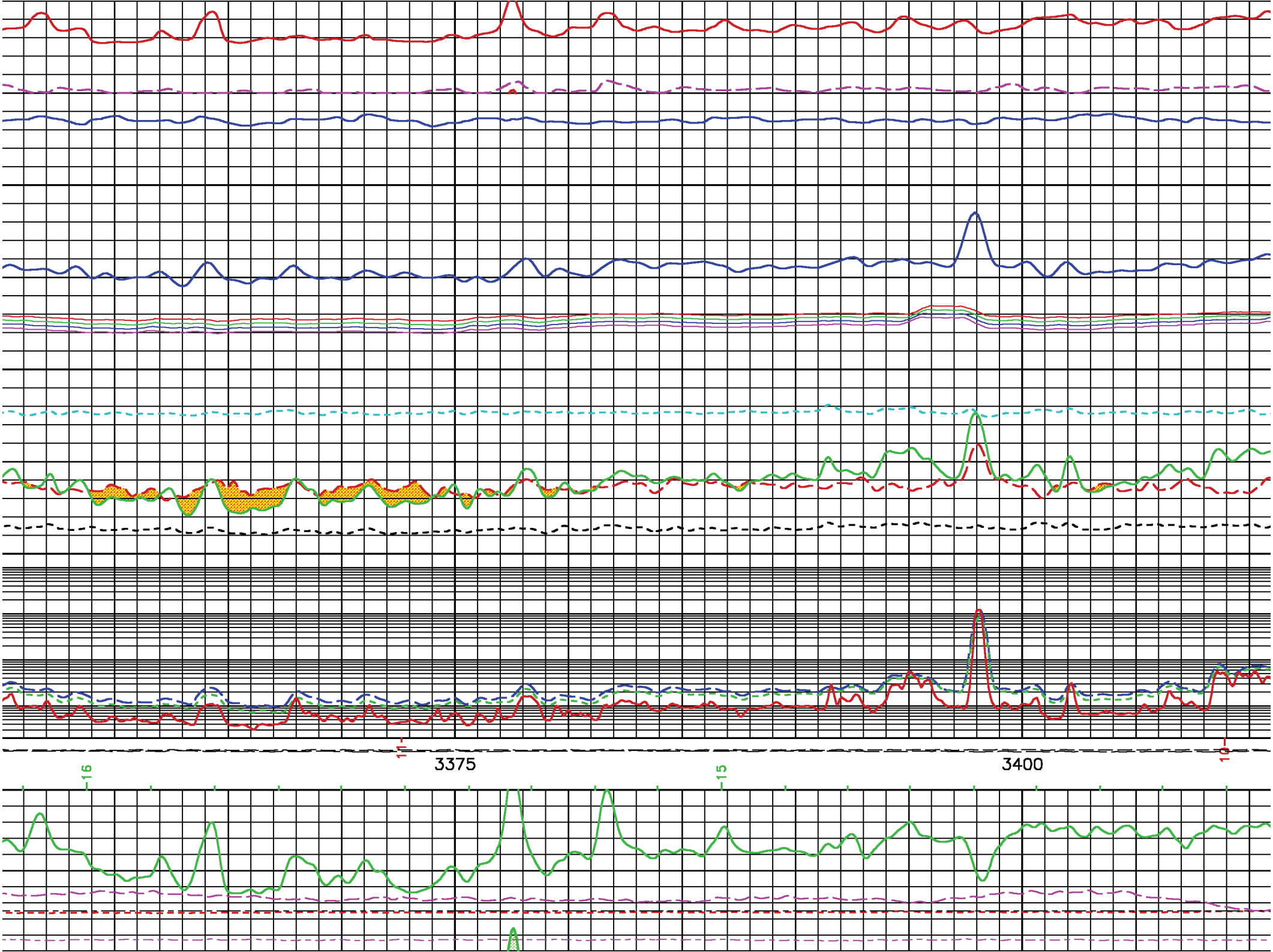
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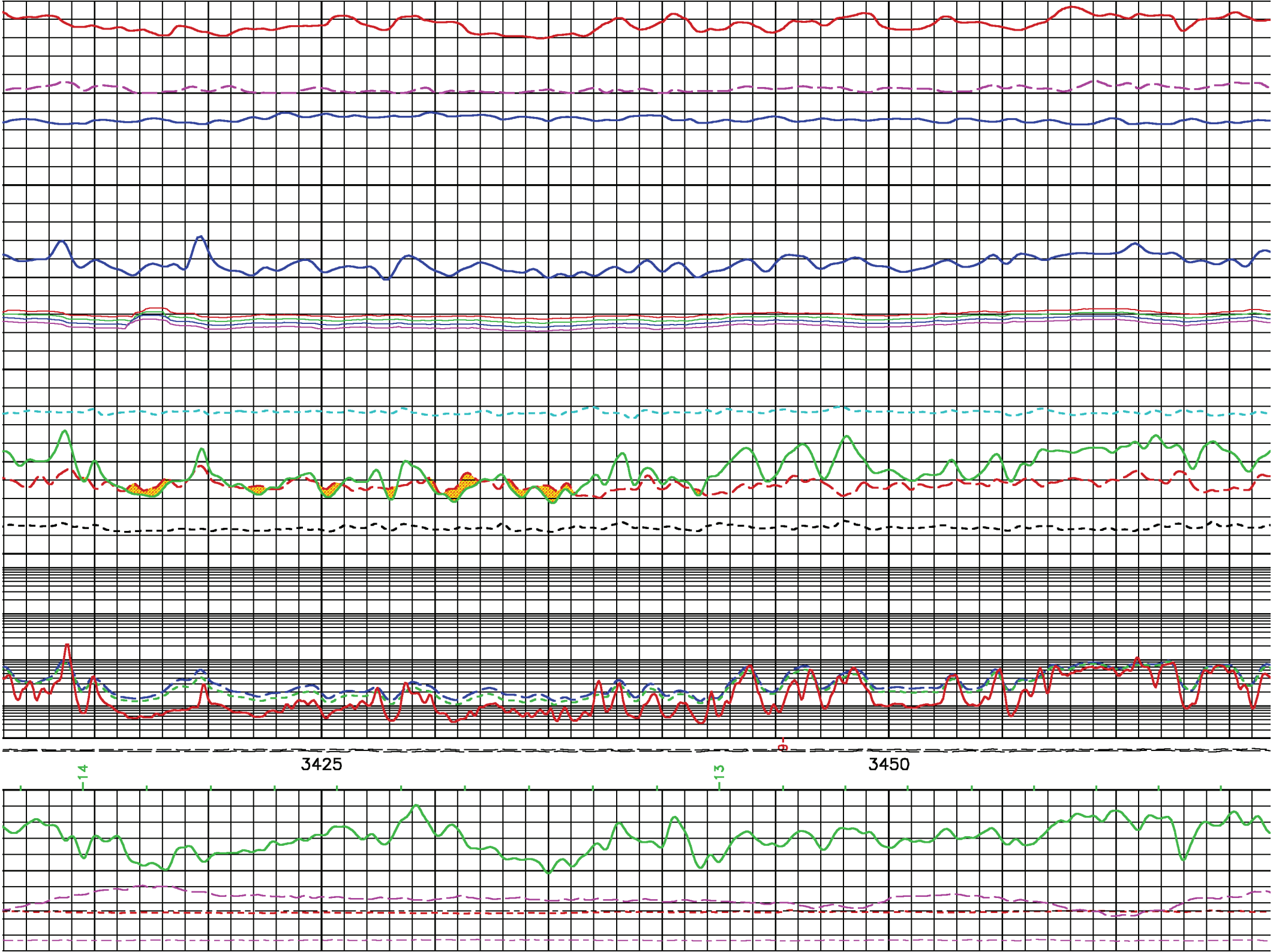
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12
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B
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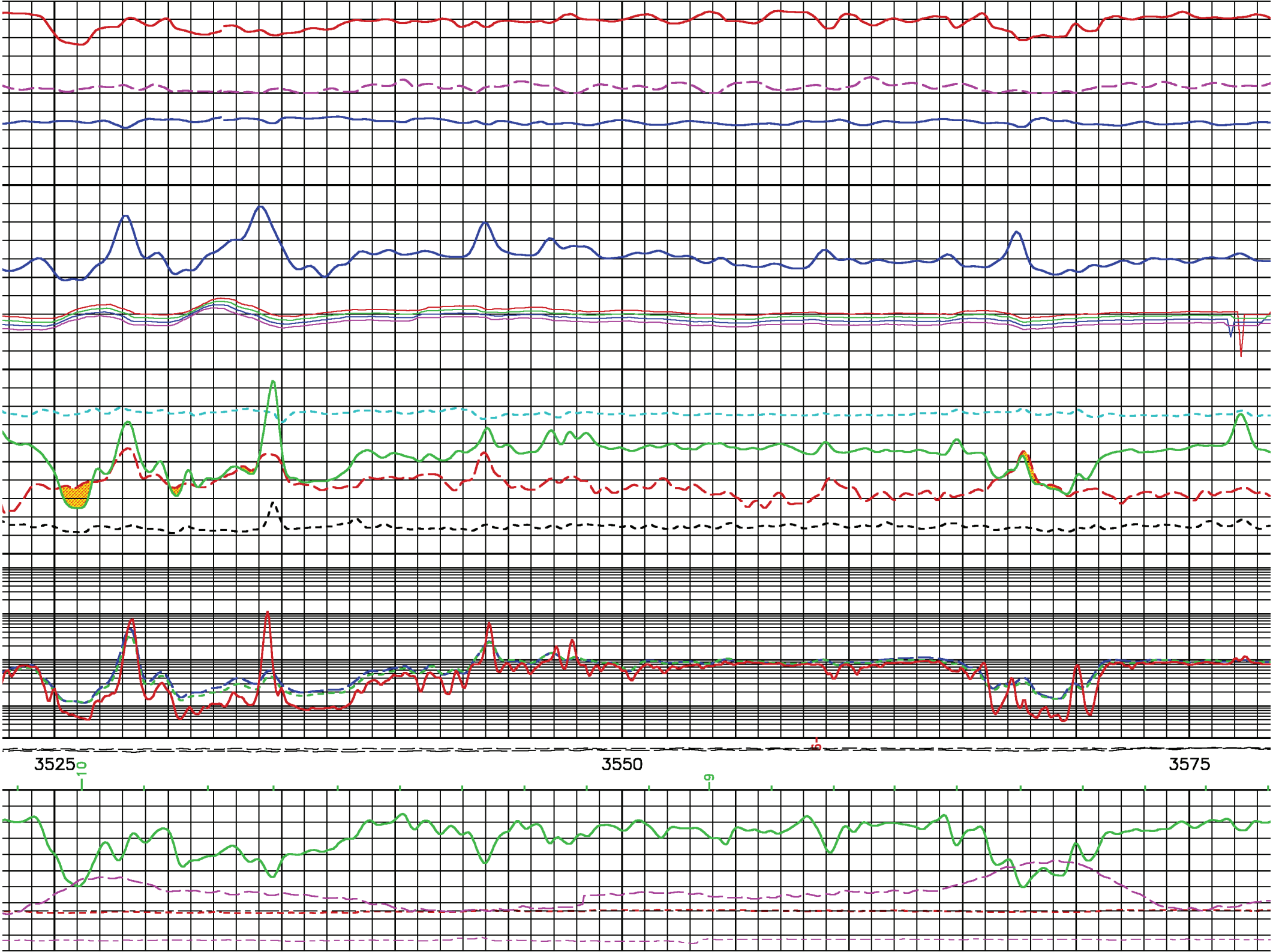
A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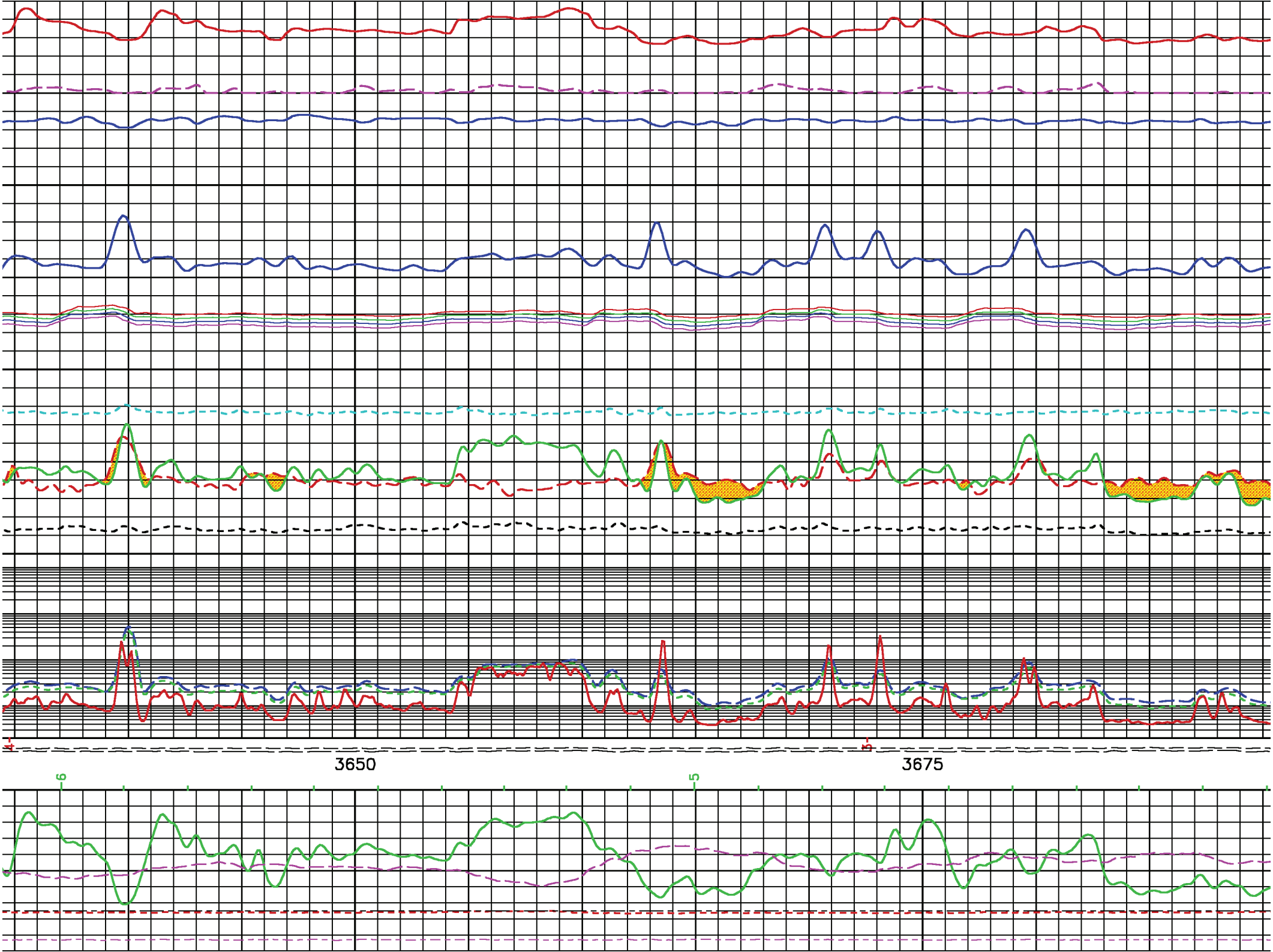
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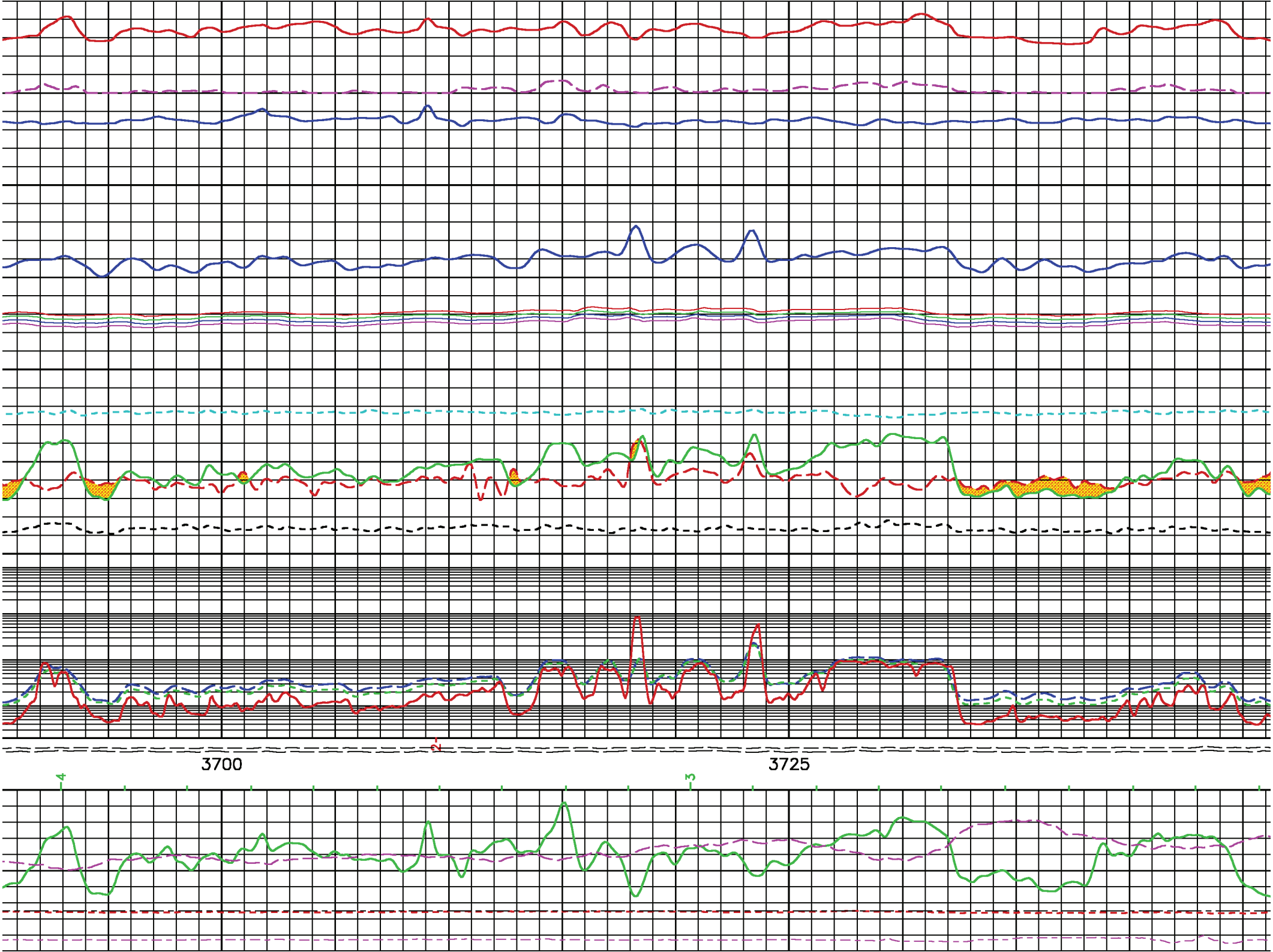
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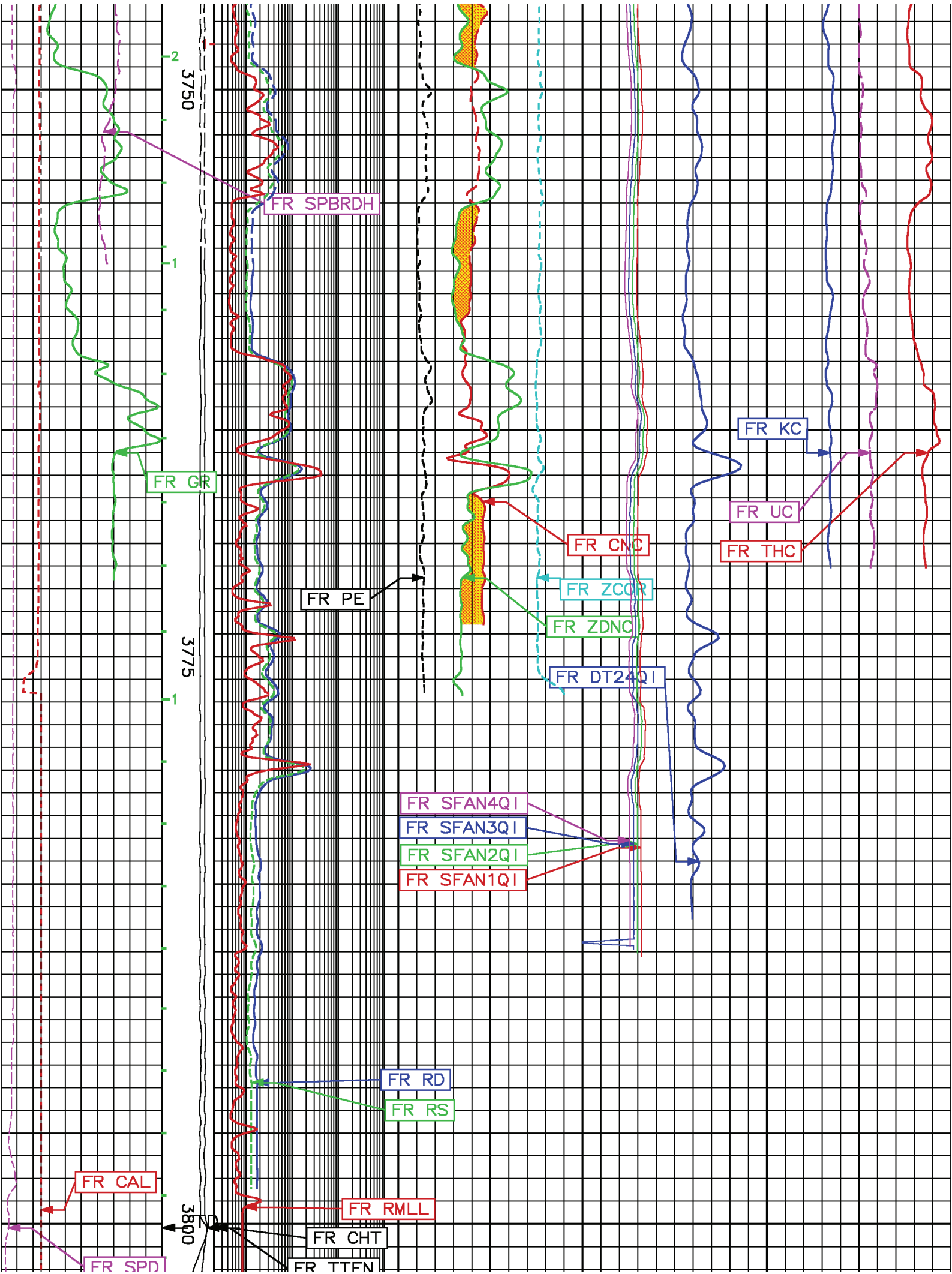
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3775
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FR GR
FR PE
FR CNC
FR ZCOR
FR ZDNC
FR DT24Q1
FR KC
FR UC
FR THC
FR SFAN4Q1
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FR RD
FR RS
FR CAL
FR RMLL
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FR SPD
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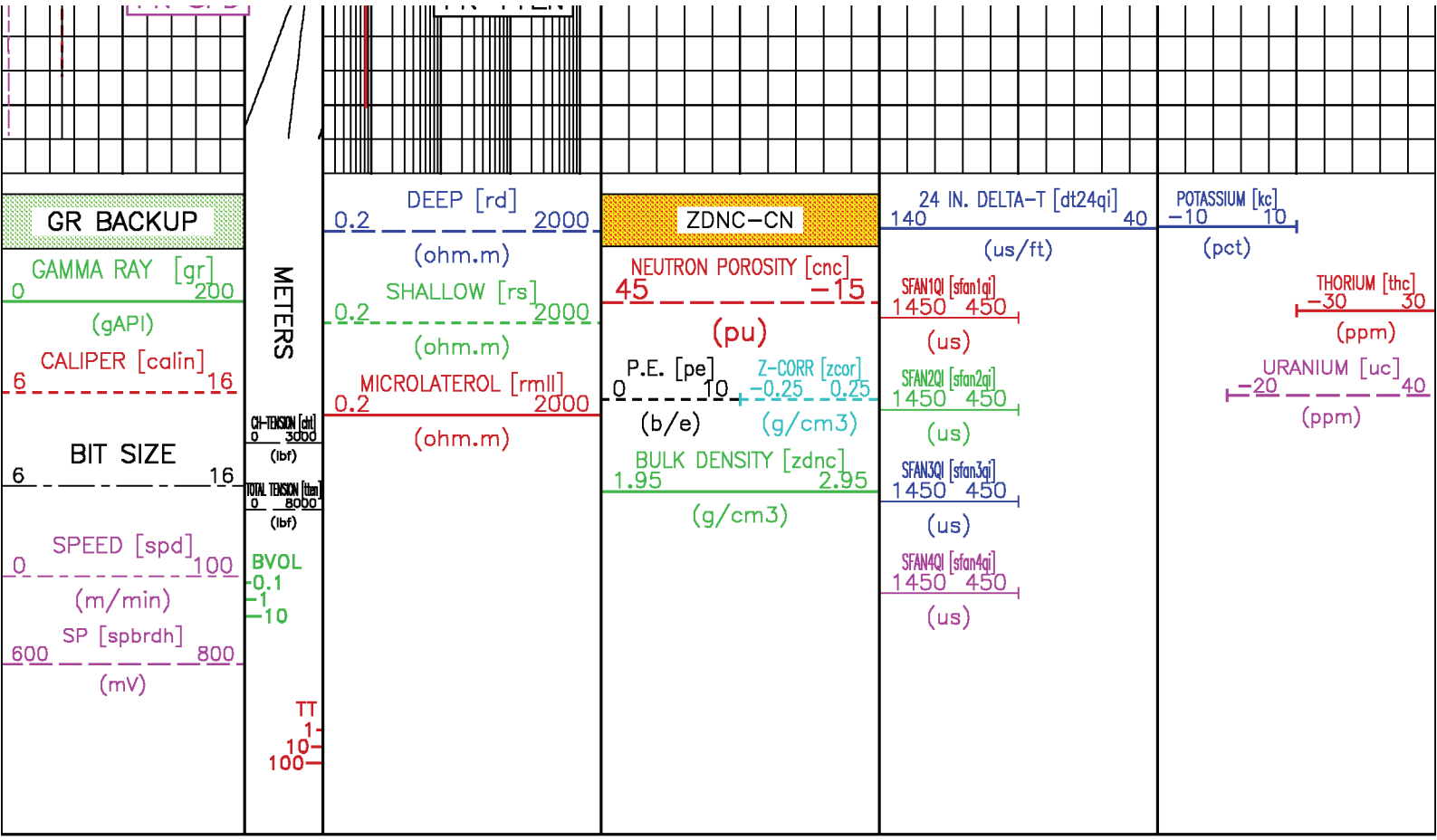


REPEAT LOG 1:200 SCALE

ECLIPS 6.0i Feb 22, 2008
Patches: 1,2,4

Wed Nov 19 05:24:58 2008

Perplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k772i06.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2788.303 m BOTTOM DEPTH: 2896.812 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		TOP	BOTTOM
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
SPBR	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
CN	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
ZDL MED RES	FILTER (hrd1*)	medium		''	''
	FILTER (hrd1s*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2s*)	medium		''	''
	FILTER (soft*)	medium		''	''
DT24	FILTER ()	light (2)		''	''
DLL	FILTER ()	medium (1)		''	''
MLL	FILTER ()	light (2)		''	''

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
BOREHOLE & CEMENT					
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	340.000	mm	TOP	BOTTOM
	CASING THICKNESS	0.000	mm	''	''
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		''	''
BIT SIZE	BIT SIZE	216.000	mm	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	25.0	degC	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	25.0	degC	''	''
	at BH REF DEPTH	0.0	m	''	''
	with TEMP GRADIENT	2.187	0.01 degC/m	''	''
MUD DENSITY	MUD DENSITY	1.15	g/cm3	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (dlbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (slbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	216.000	mm	''	''
	FIXED DIAMETER (dlbh*)	216.000	mm	''	''
	FIXED DIAMETER (slbh*)	216.000	mm	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE	MUD SAMP DERIVED		''	''
SLII PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
SLII BOREHOLE	KCL MUD CONTENT	11	pct	TOP	BOTTOM
E MATRIX	OPEN/CASED HOLE	OPEN HOLE		''	''
SLII AUTOGAIN	AUTO GAIN	AUTO GAIN ON		''	''
SLII ENERGY RANGE	ENERGY RANGE	1.30-3.00 MeV		''	''
SPECTRUM CALIBRATION	MODE	AUTOMATIC		''	''
CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	89000	ppm	''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	200.025	mm	''	''
ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
MUD DENSITY	MUD DENSITY	1.15	g/cm3	TOP	BOTTOM
ZDL	DENX TRACKING (2234XA 1)	ON		''	''
ACOUSTIC POROSITY					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		TOP	BOTTOM
ACOUSTIC PICK CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	''	''
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	''	''
	SEARCH START OFFSET (sfan2*)	0	us	''	''
	SEARCH START OFFSET (sfan3*)	0	us	''	''
	SEARCH START OFFSET (sfan4*)	0	us	''	''
	SEARCH WINDOW LENGTH	819	us	''	''
	THRESHOLD FACTOR	0.30		''	''
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	''	''
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	''	''
	E3 THRESHOLD	OFF		''	''
ACOUSTIC QUALITY CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM

ACOUSTIC WAVEFORM FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	''	''
	HIGH FREQ CUTOFF	20000	Hz	''	''

DLL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
DLL BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM
	DEEP TYPE	STANDARD		''	''
	SHALLOW TYPE	STANDARD		''	''
	TOOL POSITION	CENTRALIZED		''	''
	DEEP CURRENT RTN.	STANDARD		''	''
	ARMOR ISOLATOR	DUAL 12' ISOLATORS		''	''
	GRONINGEN RTN. DIST	40 FT RETURN		''	''

CURVE DESCRIPTION REPORT

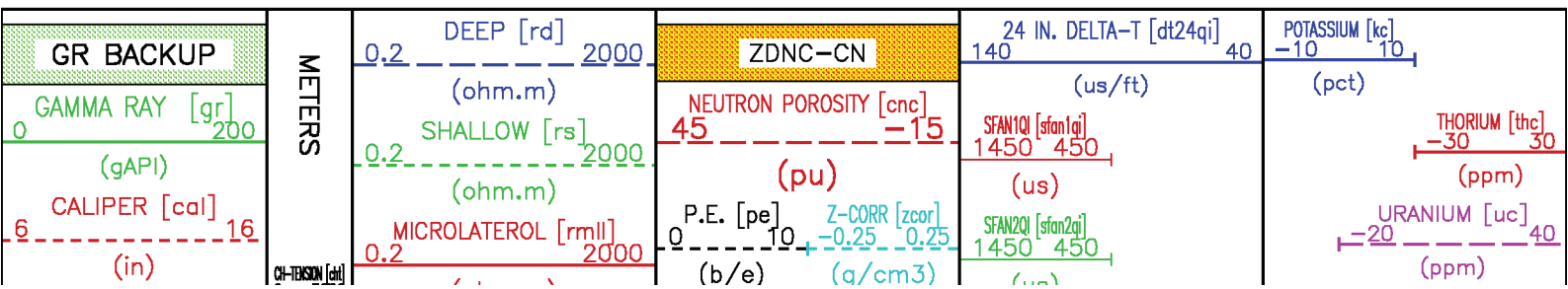
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CAL	CAL	Nov 16 22:38:48 2008	CALIPER
F1:CHT	CHT	Nov 16 22:38:48 2008	CABLE HEAD TENSION
F1:CNC	CNC	Nov 16 22:38:48 2008	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:DT24QI	DT24.I	Nov 16 22:38:48 2008	INTERVAL TRANSIT TIME OVER 24 INCH INTERVAL
F1:GR	GR	Nov 16 22:38:48 2008	GAMMA RAY
F1:KC	KC	Nov 16 22:38:48 2008	POTASSIUM INPUT FROM SPECTRALOG
F1:PE	PE	Nov 16 22:38:48 2008	PHOTO ELECTRIC CROSS-SECTION
F1:RD	RD	Nov 16 22:38:48 2008	DEEP RESISTIVITY
F1:RMLL	RMLL	Nov 16 22:38:48 2008	RESISTIVITY
F1:RS	RS	Nov 16 22:38:48 2008	SHALLOW RESISTIVITY
F1:SFAN1QI	SFAN1.I	Nov 16 22:38:48 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R1
F1:SFAN2QI	SFAN2.I	Nov 16 22:38:48 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R2
F1:SFAN3QI	SFAN3.I	Nov 16 22:38:48 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R3
F1:SFAN4QI	SFAN4.I	Nov 16 22:38:48 2008	SURFACE PICK FIRST ARRIVAL TIME, T2R4
F1:SPBRDH	SPBRDH	Nov 16 22:38:48 2008	BRIDLE ELECTRODE PROCESSED IN COMMON REMOTE
F1:SPD	SPD	Nov 16 22:38:48 2008	SPEED
F1:THC	THC	Nov 16 22:38:48 2008	THORIUM INPUT FROM SPECTRALOG
F1:TTEN	TTEN	Nov 16 22:38:48 2008	TOTAL TENSION
F1:ZCOR	ZCOR	Nov 16 22:38:48 2008	DENSITY CORRECTION
F1:ZDNC	ZDNC	Nov 16 22:38:48 2008	BOREHOLE SIZE/MUD WEIGHT CORRECTED DENSITY

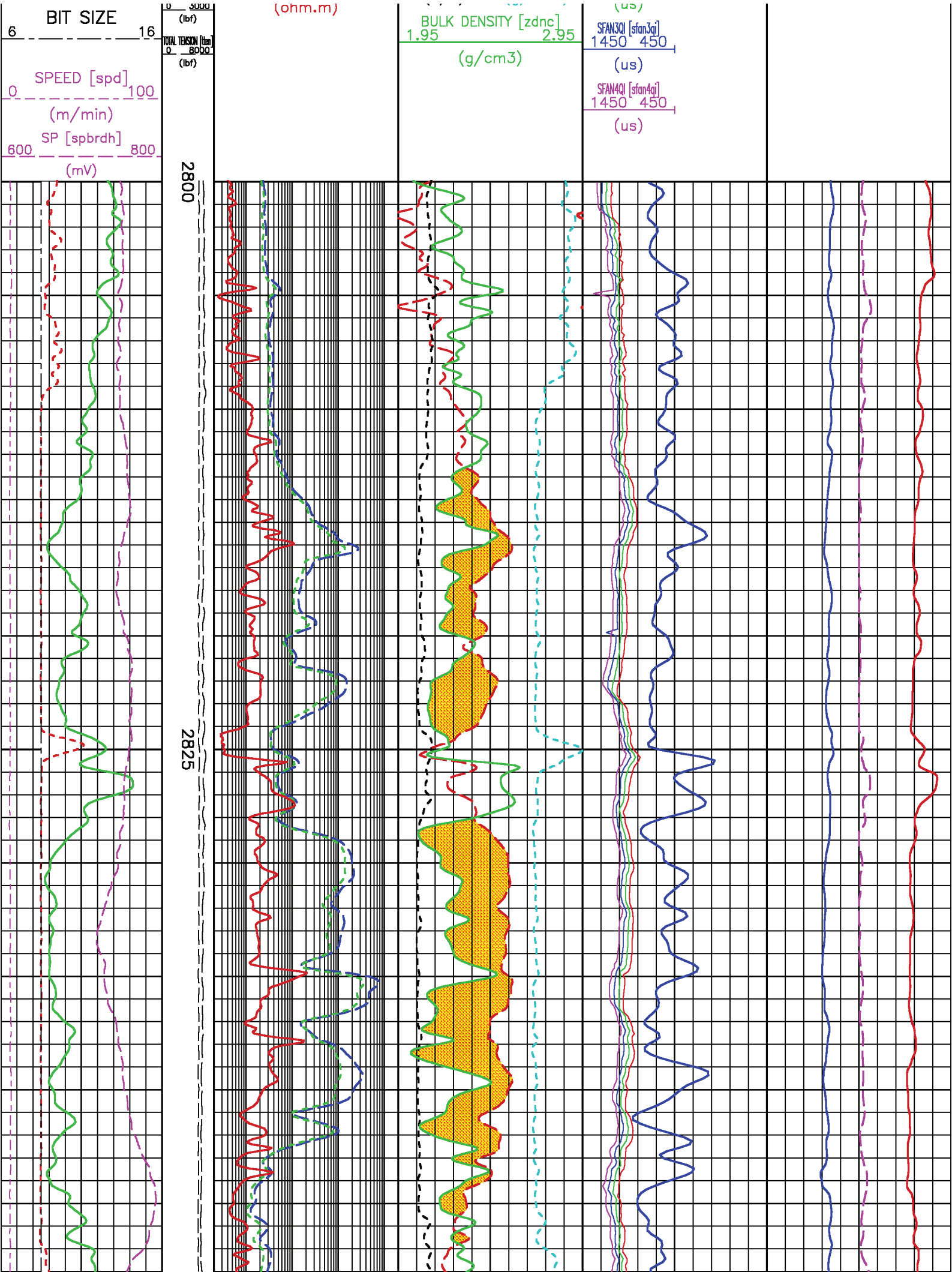
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CAL	0.91	PE	28.65	SFAN3QI	16.92	UC	34.14
CHT	0.00	RD	6.40	SFAN4QI	17.07	ZCOR	28.65
CNC	32.00	RMLL	0.91	SPBRDH	48.31	ZDNC	28.65
DT24QI	16.15	RS	6.40	SPD	0.00		
GR	34.14	SFAN1QI	16.76	THC	34.14		
KC	34.14	SFAN2QI	16.92	TTEN	0.00		

Presentation : sys1:/dat1a/dory1/COMPOSITE_RPT200.pdf [1:200 Scale]
Plot Interval : 2800 - 2850 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k772i06.xtf
Created On : Nov 16 22:38:48 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2741.98 - 2898.65 Meters
Oct : k772i

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(m/min)
SP [spbrdh]
600
800
(mV)
0
3000
(lbf)
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(lbf)
(ohm.m)
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(g/cm3)
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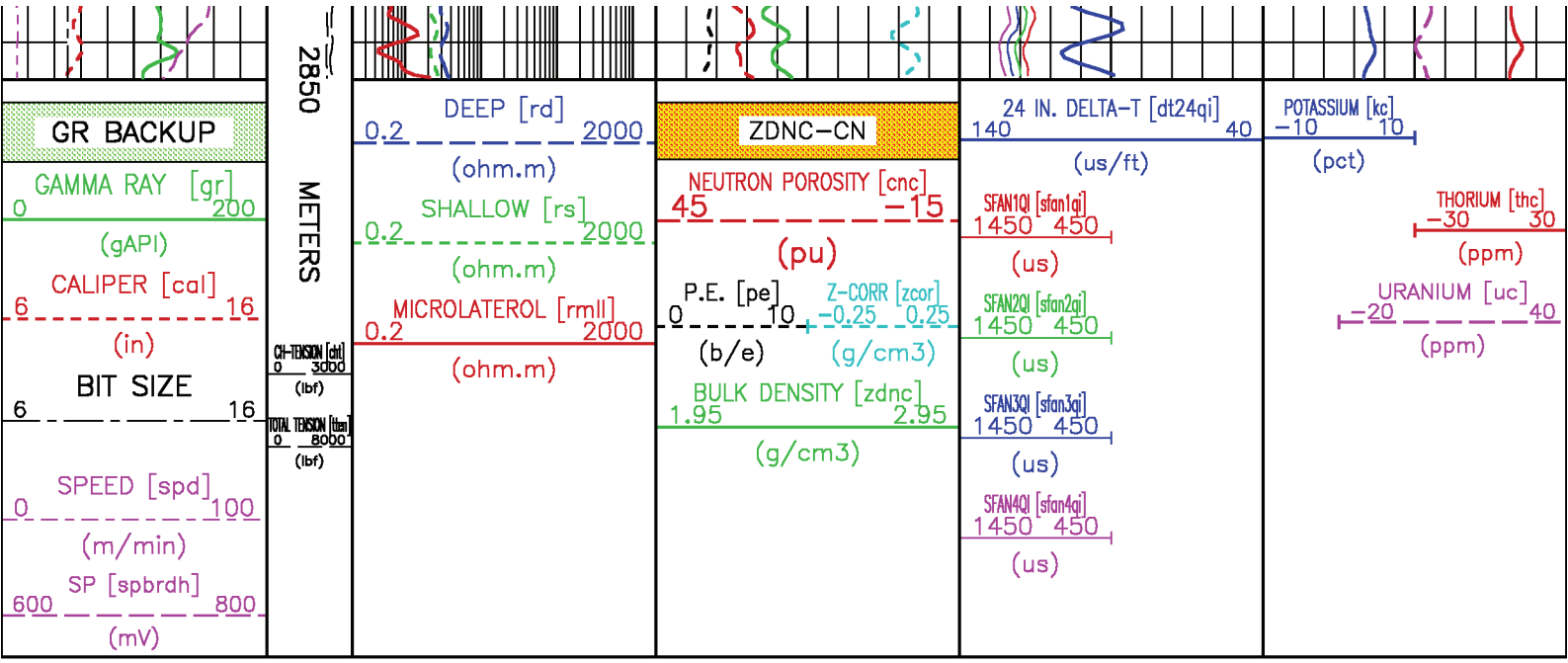


CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/dory1/k772i.tp1

CHT PRIMARY CALIBRATION SUMMARY

TOOL #: 3981XA 10045149 DATE/TIME PERFORMED: Sun Nov 16 16:10:55 2008

UNIT #: 3988XA 008881

	Signal Low (raw)	Signal High (raw)	Scale Mult	Scale Add	Engr Low (lbf)	Engr High (lbf)
CHT	-122.07	696.54	3.46	-428.00	-850.00	1980.00

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 01:52:15 2008

UNIT #: 3988XA 008881 CALB JIG #: 4702NK BA-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	28.18	921.84	893.7 (830.0 960.0)	0.168	4.73	154.73	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 01:58:29 2008

UNIT #: 3988XA 008881 VERI JIG #: 4702NK BA-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	26.93	935.87	0.168	4.52	157.08	152.56
						140.00 160.00

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 02:01:36 2008 DAYS SINCE CAL: 0

UNIT #: 3988XA 008881 VERI JIG #: 4702NK BA-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	28.71	933.58	0.168	4.82	156.70	151.88
						142.56 162.56

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Mon Nov 17 01:14:27 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881 VERI JIG #: 4702NK BA-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	56.96	936.22	0.168	9.56	157.14	147.58
						141.88 161.88

SL_II PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 01:54:37 2008

UNIT #: 3988XA 008881 CALIBRATOR ID: 4702NA BA-862

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	23.09	920.23	0.167	3.86	153.86	150

	Std Rate (cts/s)	Meas Rate (cts/s)	Tool Norm	Std Mult	Log Mult	App Con (pct ppm)
E (.15-3.0)	748	755.6	0.990			
			0.900 1.100			
K				0.01169	0.01157	8.700

U	0.02668	0.02641	20.000
TH	0.07158	0.07086	53.500

	Mult chnl/MeV	Add chnls	Chi Sqr qsa	QCAL	GAIN	QPKS
SPECTRUM	71.187	1.257	0.491	0.997 (0.980 1.020)	2991	5

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.76 (22.80 28.80)	44.75 (40.20 48.20)	81.53 (76.00 86.00)	127.37 (121.40 133.40)	157.55 (152.00 166.00)
Fit Pk	26.31	44.61	80.99	126.90	158.15

SL_II PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 01:58:33 2008

UNIT #: 3988XA 008881 CALIBRATOR ID: 4702NA BA-862

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	23.29	928.58	0.167	3.89	155.26	151 (135 165)

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.15-3.0)	748	755.2	0.990			

K	0.01169	0.01157	8.740 (7.830 9.570)
U	0.02668	0.02641	19.948 (18.000 22.000)
TH	0.07158	0.07086	53.519 (48.150 58.850)

	Mult chnl/MeV	Add chnls	Chi Sqr qsa	QCAL	GAIN	QPKS
SPECTRUM	70.779	1.654	0.990	0.994 (0.980 1.020)	2991	5

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.90 (22.80 28.80)	44.76 (40.20 48.20)	81.80 (76.00 86.00)	127.25 (121.40 133.40)	156.78 (152.00 166.00)
Fit Pk	26.57	44.76	80.93	126.58	157.65

SL_II BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Sat Nov 15 02:01:39 2008 DAYS SINCE CAL: 0

UNIT #: 3988XA 008881 CALIBRATOR ID: 4702NA BA-862

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	23.23	925.81	0.167	3.88	154.79	151 (135 – 165)

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.15-3.0)	748	755.6	0.990			
K				0.01169	0.01157	8.745 (7.830 – 9.570)
U				0.02668	0.02641	19.958 (18.000 – 22.000)
TH				0.07158	0.07086	53.545 (48.150 – 58.850)

	Mult chnl/MeV	Add chnls	Chi Sqr qsa	QCAL	GAIN	QPKS
SPECTRUM	71.136	1.398	0.567	0.997 (0.980 – 1.020)	2991	5

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.86 (22.80 – 28.80)	44.82 (40.20 – 48.20)	81.72 (76.00 – 86.00)	127.42 (121.40 – 133.40)	157.54 (152.00 – 166.00)
Fit Pk	26.44	44.72	81.07	126.95	158.18

SL_II AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10399813 DATE/TIME PERFORMED: Mon Nov 17 01:14:46 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881 CALIBRATOR ID: 4702NA BA-862

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	47.31	928.64	0.167	7.91	155.27	147 (135 – 165)

	Std rate (cts/s)	Meas rate (cts/s)	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.15-3.0)	748	742.1	0.990			
K				0.01169	0.01157	8.588

				7.830 9.570
U		0.02668	0.02641	19.600 18.000 22.000
TH		0.07158	0.07086	52.586 48.150 58.850

	Mult chnl/MeV	Add chnls	Chi Sqr qsa	QCAL	GAIN	QPKS
SPECTRUM	71.076	1.401	0.700	0.996 0.980 1.020	3003	5

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	25.79 22.80 28.80	44.83 40.20 48.20	81.62 76.00 86.00	127.46 121.40 133.40	157.31 152.00 166.00
Fit Pk	26.42	44.69	81.01	126.85	158.05

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2446XA 178125 DATE/TIME PERFORMED: Mon Oct 27 16:05:07 2008

UNIT #: PERTH LAB CALIBRATOR #: 2437XB 185995 SOURCE #: 4717XS 074080

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	NOMINAL SSN/LSN	CORRECTION FACTOR	POROSITY (pu)
LSN	727.22	740.13				
SSN	1898.77	1973.73				
RATIO			2.66672	2.75100	1.03160 0.97000 1.07000	
CN						21.358

CN PRIMARY VERIFICATION SUMMARY

TOOL #: 2446XA 178125 DATE/TIME PERFORMED: Mon Oct 27 16:23:25 2008

UNIT #: PERTH LAB ICE BLOCK #: 4717ND D--380

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1972.30	2070.35				
SSN	4710.46	5200.48				
RATIO			2.51188	1.03160	2.59275	
CN						19.128

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2446XA 178125 DATE/TIME PERFORMED: Sat Nov 15 01:43:21 2008 DAYS SINCE CAL: 18

UNIT #: 3988XA 008881 ICE BLOCK #: 4717ND D--380

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1948.28	2043.89				
SSN	4681.31	5164.99				
RATIO			2.52703	1.03160	2.60829	
CN						19.343
						17.128 21.128

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2446XA 178125 DATE/TIME PERFORMED: Mon Nov 17 01:09:25 2008 DAYS SINCE CAL: 20

UNIT #: 3988XA 008881 ICE BLOCK #: 4717ND D--380

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1916.86	2009.34				
SSN	4689.12	5174.46				
RATIO			2.57520	1.03160	2.65811	
CN						20.041
						17.343 21.343

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA 188262 DATE/TIME PERFORMED: Sat Nov 15 02:17:25 2008

UNIT #: 3988XA 008881

	SMALL RING	LARGE RING	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	1811.2	2589.2	0.00771	-7.96812	6.000	12.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 188262 DATE/TIME PERFORMED: Sun Nov 16 17:07:38 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881

	I.D.	MULT	ADD	I.D. (mm)
CALIPER	2676.0	0.19589	-208.89336	315.300

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 188262 DATE/TIME PERFORMED: Sun Nov 16 23:39:20 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881

	I.D.	MULT	ADD	I.D. (mm)
CALIPER	2654.8	0.19589	-208.89336	311.147 302.600 328.000

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2234XA 188262 DATE/TIME PERFORMED: Tue Oct 28 10:49:11 2008

UNIT: PERTH LAB CALB BLKS: 2225XA 112395 CS SRC: 4705XA 24453B

SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)
224.0 220.0 230.0	224.1 220.0 230.0	1354.9	1930.0

	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	25744.2	12950.0	0.622 0.565 0.665	1.699	0.003	2.080
AL	15119.3	1305.5		2.700	-0.009	
AL + SHIM	20807.7	2297.0		2.618	0.158	
MG + SHIM (HI PE)	12611.1	6253.8	0.251 0.210 0.270			8.240
RATIO AL + SHIM/AL	1.38 1.32 1.42	1.76 1.64 1.84				
RATIO MG/AL	1.70 1.65 1.78	9.92 9.40 10.20				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 188262 DATE/TIME PERFORMED: Sat Nov 15 00:52:42 2008 DAYS SINCE CAL: 17

UNIT #: 3988XA 008881

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1909.6	224.3	1170.0
	1830.0 2030.0	220.0 230.0	1100.0 1550.0
SS	1359.0	225.2	1185.8
	1254.9 1454.9	220.0 230.0	1100.0 1550.0

LV (V)	PAD CURRENT (mA)
5.0	80.1
4.8 5.2	60.0 120.0

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 188262 DATE/TIME PERFORMED: Mon Nov 17 01:06:32 2008 DAYS SINCE CAL: 19

UNIT #: 3988XA 008881

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1906.9	225.8	1176.0
	1830.0 2030.0	220.0 230.0	1100.0 1550.0
SS	1356.6	225.1	1190.0
	1254.9 1454.9	220.0 230.0	1100.0 1550.0

LV (V)	PAD CURRENT (mA)
5.0	79.6
4.8 5.2	60.0 120.0

DLL PRIMARY CALIBRATION SUMMARY

TOOL #: 1239MA 10120337 DATE/TIME PERFORMED: Sun Nov 16 17:21:37 2008

UNIT #: 3988XA 008881

	Sig Low (raw)	Sig High (raw)	Scale Add	Scale Mult	Engr Low (ohm.m)	Engr High (ohm.m)
ED Deep Volt	328.9	4044.8				
ID Deep Curr	1733.4	23.1				
ES Shallow Volt	310.4	3792.5				
IS Shallow Curr	1041.3	13.6				
RD Deep Resist			-0.00001	0.01997	9.5	9500.0
RS Shallow Resist			-0.00000	0.01875	15.9	15900.0

DLL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1239MA 10120337 DATE/TIME PERFORMED: Sun Nov 16 23:04:42 2008 DAYS SINCE CAL: 0

UNIT #: 3988XA 008881

	Sig Low (raw)	Sig High (raw)	Scale Add	Scale Mult	Engr Low (ohm.m)	Engr High (ohm.m)
ED Deep Volt	330.0	4049.1				
ID Deep Curr	1737.1	23.3				
ES Shallow Volt	311.4	3802.5				
IS Shallow Curr	1042.6	14.2				
RD Deep Resist			-0.00001	0.01997	9.5 9.0 10.0	9410.1 8000.0 11000.0
RS Shallow Resist			-0.00000	0.01875	15.9 15.4 16.4	15285.1 14400.0 17400.0

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1233XA 154386 DATE/TIME PERFORMED: Sat Nov 15 02:11:13 2008

UNIT #: 3988XA 008881

	SMALL RING (mV)	LARGE RING (mV)	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	1415.7	2395.0	0.00613	-2.67397	6.000	12.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1233XA 154386 DATE/TIME PERFORMED: Sun Nov 16 17:08:09 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881

	I.D. (mV)	MULT	ADD	I.D. (mm)
CALIPER	2659.4	0.15562	-98.86620	315.000

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1233XA 154386 DATE/TIME PERFORMED: Sun Nov 16 23:38:32 2008 DAYS SINCE CAL: 1

UNIT #: 3988XA 008881

	I.D. (mV)	MULT	ADD	I.D. (mm)
CALIPER	2720.9	0.15562	-98.86620	324.574
				302.300 327.700

MLL PRIMARY CALIBRATION SUMMARY

TOOL #: 1233XA 154386 DATE/TIME PERFORMED: Sun Nov 16 17:20:22 2008

UNIT #: 3988XA 008881

	INT ZERO (raw)	INT CAL (raw)	MULT	ADD	ZERO (mS/m)	CAL (mS/m)
MLL Conductivity	1.068	1025.39	0.97528	-0.04171	1.000	1000.00
	-2.000 4.000	900.00 1100.00				

MLL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1233XA 154386 DATE/TIME PERFORMED: Sun Nov 16 23:05:18 2008 DAYS SINCE CAL: 0

UNIT #: 3988XA 008881

	INT ZERO (raw)	INT CAL (raw)	MULT	ADD	ZERO (mS/m)	CAL (mS/m)
MLL Conductivity	0.916	987.67	0.97528	-0.04171	0.851	963.21
					0.000 2.000	950.00 1050.00

BAKER HUGHES

Baker Atlas

EOLIPS

COMPANY APACHE ENERGY LIMITED
WELL DORY-1
FIELD DORY
COUNTRY AUSTRALIA

FILE NO:

API NO:

LOCATION:

LAT : 038DEG 35' 19.759" S
LONG: 148DEG 32' 51.925" E

ELEVATIONS:
KB -
DF 21.5 M
GL 518.5 M

FIELD PRINT
SCALE 1:200

SUITE 1

DATE 16-NOV-2008

BAKER HUGHES

Baker Atlas

RESERVOIR CHARACTERIZATION INSTRUMENT SM
SampleView SM

FORMPS

FILE NO:	
API NO:	
COMPANY	APACHE ENERGY LIMITED
WELL	DORY-1
FIELD	DORY
COUNTRY	AUSTRALIA

Ver. 3.87
FIELD PRINT
SCALE 1:200

SUITE 1

LOCATION:
LAT : 038DEG 35' 19.759" S
LONG: 148DEG 32' 51.925" E

OTHER SERVICES
GSLAM
DSL
VSP

PERMANENT DATUM	AHD	ELEVATION	0 M
LOG MEASURED FROM	DF	23.5 M	ABOVE P.D.
DRILL. MEAS. FROM	DF		

ELEVATIONS:
KB -
DF 23.5 M
GL 517.3 M

DATE		17-NOV-2008			
RUN	TRIP	2	1		
SERVICE ORDER		700041			
DEPTH DRILLER		3814.0 M			
DEPTH LOGGER		NOT TAGGED			
BOTTOM LOGGED INTERVAL		3099.8 M			
TOP LOGGED INTERVAL		2813.2 M			
CASING DRILLER		13.375 IN @1534.1 M		@	
CASING LOGGER		NOT LOGGED			
BIT SIZE		8.5 IN			
TYPE OF FLUID IN HOLE		KCL POLYMER			
DENSITY	VISCOSITY	1.15 G/C3	56 S		
PH	FLUID LOSS	11	4.0 C3		
SOURCE OF SAMPLE		ACTIVE TANK			
RM AT MEAS. TEMP.		0.068 OHMM @19.3 DEGC		@	
RMF AT MEAS. TEMP.		0.065 OHMM @20.0 DEGC		@	
RMC AT MEAS. TEMP.		0.086 OHMM @19.3 DEGC		@	
SOURCE OF RMF	RMC	MEASURED	MEASURED		
RM AT BHT		0.029 OHMM @72.2 DEGC		@	
TIME SINCE CIRCULATION		42 HOURS			
MAX. RECORDED TEMP.		72.2 DEGC			
EQUIP. NO.	LOCATION	HLS8881	PERTH		
RECORDED BY		I.SIREGAR/P.REDFERN			
WITNESSED BY		G.FAWNS/A.CRUICKSHANK			

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
13.375 IN	68 LB/F	L80	0 M	1534.1 M

BOREHOLE RECORD

BIT SIZE	FROM	TO
8.5 IN	1537.0 M	3814.0 M

REMARKS

RUN 2 TRIP 1 :

* LOG CORRELATED TO MLL/DLL/XMAC/ZDL/CN/DSL OF THE FIRST RUN.
* TOOL ZEROED AT 03:57 ON 17-NOV-2008 WITH A TIDE CORRECTION OF 1.15 M.
* CIRCULATION STOPPED AT 02:30 ON 16-NOV-2008 AFTER 2.5 HOURS DURATION.
* ADDITIONAL MUD PROPERTIES:
  PV/YP: 14/28
  CHLORIDES: 54,000 MG/L, NACL EQUIVALENT 89,000 PPM
  NACL: 0.6 PPB
  KCL: 11% WT SOL
  BARITE: 1%
* MAXIMUM DEVIATION: 1.91 DEG AT 2884 M.
* MAXIMUM RECORDED TEMPERATURE FROM THERMOMETERS: 72.2, 72.2, 72.2 C.
* ALL PRESSURES RECORDED IN PSIA.
* DISTANCE BETWEEN PACKER TO PRESSURE GAUGE IS 72.5".
  PRESSURE READINGS ARE NOT CORRECTED FOR THE FLUID COLUMN BETWEEN THE PACKER AND THE GAUGE.
* DRAWDOWN VOLUMES, REPEAT DRAWDOWNS, SET TIME AND PUMP OUT TIME SPECIFIED BY

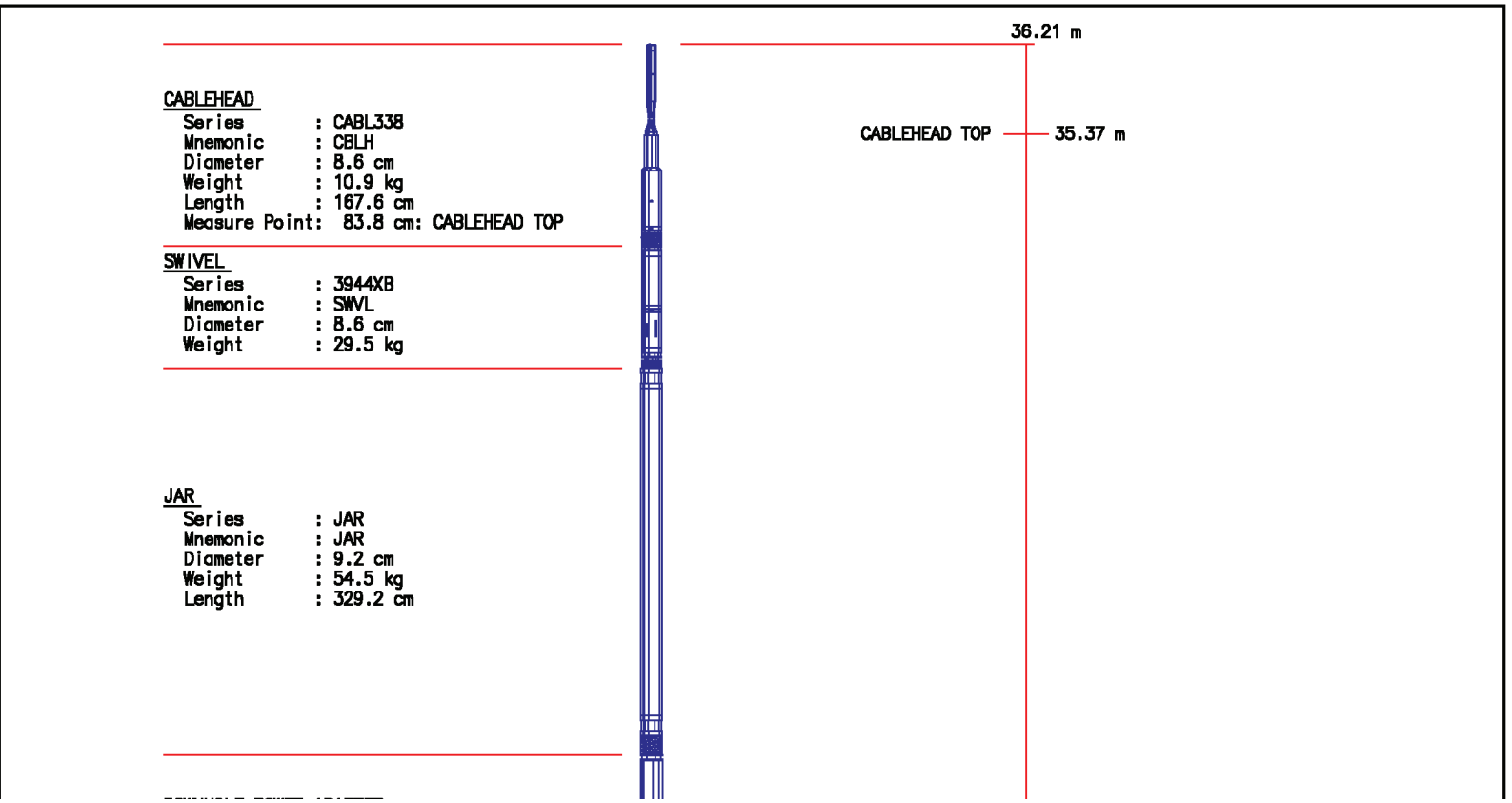
CUSTOMER.
* RCI WAS RUN WITH 6 X SPT1 TANKS.
* PRESSURE TEST ATTEMPTED = 101, IN 58 TOOL LEVEL
GOOD TEST = 42
REPEAT TEST = 43
PRE-SAMPLE TEST = 4
TIGHT TEST = 6
NO SEAL = 5
ABORTED TEST = 1 (WELL STABILITY TEST)
* SAMPLE ATTEMPTED = 4
SAMPLE RECOVERED = 4
* PRESSURE TEST AND SAMPLE DETAILS PRESENTED IN PRESSURE TEST AND SAMPLE REPORT SECTIONS.

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	SWVL	3944XB	10222678	FREE
2	1	ENH	9993DB	10498268	FREE
2	1	DHPA	4430XB	10222678	FREE
2	1	TTRM	3981XB	10360828	FREE
2	1	JAR	9993DB	10498268	FREE
2	1	COMR	3514XB	10170650	FREE
2	1	DSL	1329XA	10422933	FREE
2	1	RCI HYD	1970CB	10156908	FREE
2	1	RCI ELEC	1970EB	10425286	FREE
2	1	RCI 6 TANKS	1970WA	10229112	STAND OFF
2	1	SAMPLEVIEW	1970IB	10440459	FREE
2	1	RCI POWER	1970OB	10296171	FREE
2	1	RCI PUMP	1970RB	10189075	FREE
2	1	RCI DRWDOWN	1070BB	173959	STANDOFF
2	1	RCI PACKER	1970MB	10302543	STANDARD KIT

INSTRUMENT CONFIGURATION

Source File: /dat1a/dory1/rci-tdg



DOWNHOLE POWER ADAPTER
Series : 4430XA
Mnemonic : DHPA
Diameter : 9.2 cm
Weight : 36.4 kg
Length : 160.7 cm

TTRM SUB
Series : 3981XA
Mnemonic : TTRM
Diameter : 9.2 cm
Weight : 26.4 kg
Length : 116.8 cm

ENHANCER
Series :
Mnemonic :
Diameter : 9.2 cm
Weight : 54.5 kg
Length : 288.3 cm

WTS COMMON REMOTE
Series : 3514XB
Mnemonic : WTS
Diameter : 9.2 cm
Weight : 58.2 kg
Length : 189.5 cm

DIGITAL SPECTRALOG
Series : 1329XA
Mnemonic : DSL
Diameter : 9.2 cm
Weight : 60.9 kg
Length : 222.8 cm
Measure Point: 48.8 cm: GR MP

RCI HYDRAULIC POWER SECTION (F. D.)
Series : 1970CB
Mnemonic : RCI
Diameter : 12.1 cm
Weight : 113.6 kg
Length : 330.9 cm

RCI ELECTRONICS SECTION
Series : 1970EB
Mnemonic : RCI
Diameter : 11.1 cm
Weight : 45.5 kg
Length : 112.0 cm

RCI SIX TANK SECTION (A)
Series : 1970WA
Mnemonic : RCI
Diameter : 12.1 cm
Weight : 141.8 kg
Length : 393.7 cm

TEMP MP — 27.87 m
RM MP — 27.79 m
GR MP — 20.93 m

RCI FLUID CHARACTERIZATION WITH FLUOR
- Series : 1970IB
- Mnemonic : NIR
- Diameter : 12.4 cm
- Weight : 90.9 kg
- Length : 309.4 cm

RCI AUX POWER SECTION
- Series : 1970OB
- Mnemonic : RCI
- Diameter : 12.4 cm
- Weight : 61.8 kg
- Length : 133.6 cm

RCI SAMPLE PUMPTHRU SECTION (500 CC)
- Series : 1970RB
- Mnemonic : RCI
- Diameter : 12.1 cm
- Weight : 113.6 kg
- Length : 240.4 cm

RCI DRAW DOWN SECTION (56.7 CC)
- Series : 1970BB
- Mnemonic : RCI
- Diameter : 12.1 cm
- Weight : 113.6 kg
- Length : 233.7 cm

RCI SINGLE PACKER SECTION (STD)
- Series : 1970MB
- Mnemonic : RCI
- Diameter : 12.1 cm
- Weight : 155.5 kg
- Length : 290.7 cm
- Measure Point: 38.1 cm: PACKER MP

PACKER MP — 0.38 m

0.00 m

BULL PLUG 3 1/8

TOTAL LENGTH: 36.28 m
TOTAL WEIGHT: 1171.4 kg
MAX DIAMETER: 12.4 cm

Source File: /dat1a/dory1/fta.11172008.025029.TMP.bin.pcf

Pressure Summary Section

REALTIME FTA PRESSURE TEST SUMMARY

Depth Range MD 2807.9 m – 3099.8 m TVD 2807.9 m – 3099.8 m

Company: APACHE **Field:** 1
Date/Time: 11/19/2008 4:51 AM **Well:** DORY–1
Tool Instance: 1
FTA Data File: /dat1a/dory1/fta.11172008.025029.TMP.bin

Tool Level	Test	File	Depth MD (m)	Depth TVD (m)	Gauge Temp. (degC)	DD Vol. (cm3)	Flow Time (sec)	Minimum Pressure (psia)	Final BU Pressure (psia)	DD Mobility (mD/cP)	Hydro. Before (psia)	Hydro. After (psia)	Test Comment
1	4	g05	2813.2	2813.2	63.4	10.0	4.0	1307.11	0.00	N/A	4644.55	4644.30	Test Aborted
2	9	g06	2813.2	2813.2	63.6	4.9	1.9	3146.81	4030.00	7.790	4644.98	4644.42	Good Test
2	12	g06	2813.2	2813.2	63.6	5.0	2.9	2973.50	4029.65	6.718	4644.98	4644.42	Repeat Test
3	18	g07	2814.0	2814.0	63.7	4.8	1.5	3635.23	4030.12	19.71	4646.38	4645.92	Good Test
3	21	g07	2814.0	2814.0	63.8	4.9	2.5	3672.29	4029.94	22.74	4646.38	4645.92	Repeat Test
4	27	g08	2815.0	2815.0	63.8	9.8	3.2	4006.68	4030.23	349.9	4648.10	4648.25	Good Test
4	30	g08	2815.0	2815.0	63.8	9.8	4.8	4011.72	4030.67	421.6	4648.10	4648.25	Repeat Test
5	36	g09	2817.3	2817.3	63.9	9.8	3.4	4002.42	4031.63	267.6	4652.43	4652.32	Good Test
5	39	g09	2817.3	2817.3	63.9	9.9	4.5	4007.11	4031.36	337.0	4652.43	4652.32	Repeat Test
6	50	g10	2819.2	2819.2	63.9	9.6	0.5	703.28	0.00	N/A	4655.66	4655.50	Tight Test
7	56	g11	2820.1	2820.1	64.1	9.9	3.1	4011.24	4031.81	404.3	4656.96	4656.83	Good Test
7	59	g11	2820.1	2820.1	64.1	9.8	5.0	4017.38	4032.36	533.3	4656.96	4656.83	Repeat Test
8	65	g12	2822.0	2822.0	64.1	9.9	3.1	4022.23	4032.59	889.4	4660.44	4660.01	Good Test
8	68	g12	2822.0	2822.0	64.1	9.7	4.5	4024.31	4032.50	998.4	4660.44	4660.01	Repeat Test
9	74	g13	2823.0	2823.0	64.2	9.8	3.4	4023.37	4033.03	849.5	4662.30	4662.41	Good Test
9	77	g13	2823.0	2823.0	64.2	9.8	4.6	4025.42	4033.32	1047	4662.30	4662.41	Repeat Test
10	83	g14	2824.3	2824.3	64.2	9.9	2.8	4025.66	4033.38	1048	4664.32	4653.62	Good Test
10	86	g14	2824.3	2824.3	64.2	9.8	4.8	4026.49	4033.82	1117	4664.32	4653.62	Repeat Test
11	96	g15	2824.3	2824.3	64.6	11.3	0.1	4013.42	4033.52	1952	4663.23	4444.14	Sample
11	101	g15	2824.3	2824.3	65.0	13.3	1.5	4026.57	4035.29	4773	4663.23	4444.14	Post sample DD
12	109	g16	2828.7	2828.7	65.2	9.9	2.8	2790.02	4036.76	5.484	4671.33	4670.96	Good Test
12	112	g16	2828.7	2828.7	65.3	10.1	5.8	2237.15	4036.73	3.857	4671.33	4670.96	Repeat Test
13	118	g17	2829.8	2829.8	65.3	9.9	3.4	4020.23	4035.45	524.1	4673.35	N/A	Good Test
13	121	g17	2829.8	2829.8	65.4	9.8	4.9	4024.43	4035.94	678.5	4673.35	N/A	Repeat Test
14	126	g18	2832.0	2832.0	65.4	9.8	3.1	4023.89	4036.06	651.1	4677.23	4677.16	Good Test
14	129	g18	2832.0	2832.0	65.4	9.9	5.0	4022.59	4036.28	571.2	4677.23	4677.16	Repeat Test
15	135	g19	2833.5	2833.5	65.5	9.9	3.1	4024.89	4036.76	662.2	4679.94	4680.30	Good Test
15	138	g19	2833.5	2833.5	65.5	9.7	4.9	4027.57	4037.08	830.9	4679.94	4680.30	Repeat Test
16	144	g20	2836.0	2836.0	65.5	9.9	3.1	4031.56	4037.61	1278	4684.11	4684.13	Good Test
16	147	g20	2836.0	2836.0	65.5	9.8	4.8	4033.38	4038.16	1643	4684.11	4684.13	Repeat Test
17	153	g21	2837.5	2837.5	65.5	11.5	1.4	4008.78	4037.78	1368	4686.65	4686.36	Good Test
17	156	g21	2837.5	2837.5	65.5	9.8	5.1	4031.77	4037.84	1251	4686.65	4686.36	Repeat Test
18	162	g22	2839.0	2839.0	65.5	9.9	3.4	4033.31	4038.41	1467	4689.26	4689.36	Good Test
18	165	g22	2839.0	2839.0	65.5	9.8	5.1	4033.96	4038.92	1496	4689.26	4689.36	Repeat Test
19	171	g23	2842.0	2842.0	65.5	9.7	3.5	4008.85	4039.43	247.9	4694.34	4694.32	Good Test
19	174	g23	2842.0	2842.0	65.5	9.8	5.2	4015.75	4039.74	318.2	4694.34	4694.32	Repeat Test
20	179	g24	2843.2	2843.2	65.5	10.0	4.2	2987.69	4040.15	6.732	4696.50	4696.07	Good Test
20	181	g24	2843.2	2843.2	65.6	4.9	2.8	3337.83	4040.08	9.213	4696.50	4696.07	Repeat Test
21	187	g25	2845.4	2845.4	65.6	4.8	1.1	4032.35	4043.07	685.6	4700.37	4699.74	Good Test
21	190	g25	2845.4	2845.4	65.6	9.7	4.9	4033.07	4042.96	806.8	4700.37	4699.74	Repeat Test
22	196	g26	2846.7	2846.7	65.7	9.7	3.5	4024.47	4045.00	367.7	4702.42	4702.37	Good Test
22	199	g26	2846.7	2846.7	65.7	9.9	5.0	4027.30	4045.04	452.8	4702.42	4702.37	Repeat Test
23	205	g27	2851.7	2851.7	65.7	9.9	4.4	2907.48	4053.97	5.926	4710.73	4710.46	Good Test
23	208	g27	2851.7	2851.7	65.7	4.8	3.0	3099.70	4053.91	6.621	4710.73	4710.46	Repeat Test
24	214	g28	2863.7	2863.7	65.7	9.9	4.4	2429.09	4066.00	4.237	4730.47	4730.32	Good Test

24	217	g28	2865.7	2865.7	65.7	4.9	2.5	2805.43	4065.76	4.739	4750.47	4750.32	Repeat Test
25	223	g30	2876.0	2876.0	66.2	9.8	4.1	3036.97	4066.48	6.715	4750.46	4750.52	Good Test
25	226	g30	2876.0	2876.0	66.2	4.9	3.3	3280.13	4066.41	8.320	4750.46	4750.52	Repeat Test
26	234	g31	2879.5	2879.5	66.3	9.8	4.8	3980.52	4072.09	84.86	4756.23	4756.19	Good Test
26	237	g31	2879.5	2879.5	66.3	9.8	5.0	3988.42	4072.08	91.21	4756.23	4756.19	Repeat Test
27	243	g32	2883.6	2883.6	66.3	9.9	4.1	3416.28	4078.69	11.23	4762.98	4762.86	Good Test
27	246	g32	2883.6	2883.6	66.3	4.9	2.8	3536.78	4078.58	12.59	4762.98	4762.86	Repeat Test
28	252	g33	2887.0	2887.0	66.4	9.8	3.9	3540.50	4083.33	14.08	4768.48	4768.47	Good Test
28	255	g33	2887.0	2887.0	66.4	5.0	1.9	3506.92	4083.28	19.80	4768.48	4768.47	Repeat Test
29	261	g34	2890.5	2890.5	66.5	9.9	4.4	2375.61	4097.11	3.725	4774.12	4773.93	Good Test
29	264	g34	2890.5	2890.5	66.5	4.8	2.9	2796.24	4096.45	4.474	4774.12	4773.93	Repeat Test
30	270	g35	2901.6	2901.6	66.6	9.9	4.4	2379.42	4083.41	3.750	4792.18	4792.06	Good Test
30	273	g35	2901.6	2901.6	66.6	4.9	3.1	2775.51	4083.10	4.428	4792.18	4792.06	Repeat Test
31	279	g36	2907.8	2907.8	66.7	9.8	3.9	3591.83	4086.89	14.33	4802.20	4802.00	Good Test
31	282	g36	2907.8	2907.8	66.8	4.9	2.9	3640.07	4086.83	14.94	4802.20	4802.00	Repeat Test
32	288	g37	2909.0	2909.0	66.9	9.8	3.8	3916.15	4088.61	43.91	4804.19	4804.10	Good Test
32	291	g37	2909.0	2909.0	67.0	10.1	2.0	3467.43	4088.61	30.21	4804.19	4804.10	Repeat Test
33	299	g39	2933.8	2933.8	67.5	9.9	5.4	4171.40	4177.69	1208	4844.64	4844.54	Good Test
33	302	g39	2933.8	2933.8	67.5	9.8	5.4	4172.59	4177.71	1466	4844.64	4844.54	Repeat Test
34	310	g40	2940.5	2940.5	67.6	9.7	5.2	4185.87	4187.39	4991	4855.56	4855.50	Good Test
34	313	g40	2940.5	2940.5	67.6	9.9	5.2	4186.23	4187.42	6274	4855.56	4855.50	Repeat Test
35	318	g41	2952.9	2952.9	67.7	9.8	5.0	4874.68	0.00	N/A	4875.58	4875.50	No Seal
36	323	g42	2952.9	2952.9	67.8	9.8	4.9	4874.93	0.00	N/A	4875.65	4875.51	No Seal
37	330	g43	2957.3	2957.3	67.9	4.8	0.0	2056.04	0.00	N/A	4882.92	4882.94	Tight Test
38	336	g44	2957.0	2957.0	68.1	10.0	4.5	2413.00	4212.06	3.521	4882.48	4882.57	Good Test
38	339	g44	2957.0	2957.0	68.2	5.0	3.0	2817.08	4207.09	4.566	4882.48	4882.57	Repeat Test
39	345	g45	2963.0	2963.0	68.3	9.9	3.6	4200.07	4220.12	368.4	4892.21	4892.21	Good Test
39	348	g45	2963.0	2963.0	68.3	9.8	5.1	4205.31	4220.13	501.9	4892.21	4892.21	Repeat Test
40	354	g47	2971.5	2971.5	68.7	9.8	3.5	4196.54	4232.28	208.9	4905.96	4905.62	Good Test
40	357	g47	2971.5	2971.5	68.7	9.9	5.1	4194.02	4232.25	193.7	4905.96	4905.62	Repeat Test
41	365	g48	2989.0	2989.0	68.8	9.7	5.1	4253.27	4257.53	1773	4934.51	4934.41	Good Test
41	368	g48	2989.0	2989.0	68.9	9.7	4.8	4254.87	4257.46	2868	4934.51	4934.41	Repeat Test
42	374	g50	3058.6	3058.6	70.6	9.9	3.9	4009.48	4365.48	20.68	5048.40	5048.45	Good Test
42	377	g50	3058.6	3058.6	70.6	4.9	2.6	4046.02	4365.41	22.43	5048.40	5048.45	Repeat Test
43	383	g51	3059.4	3059.4	70.9	9.7	3.8	4235.83	4365.80	57.63	5049.85	5049.92	Good Test
43	386	g51	3059.4	3059.4	70.9	4.9	2.8	4240.48	4365.76	58.43	5049.85	5049.92	Repeat Test
44	392	g52	3060.3	3060.3	70.9	9.8	3.6	4313.17	4366.25	142.3	5051.54	5051.33	Good Test
44	395	g52	3060.3	3060.3	70.9	9.8	5.0	4316.64	4366.04	150.8	5051.54	5051.33	Repeat Test
45	401	g53	3062.3	3062.3	70.9	9.9	4.1	3625.86	4368.14	9.560	5054.76	5054.69	Good Test
45	404	g53	3062.3	3062.3	70.9	4.9	2.9	3719.19	4367.29	10.65	5054.76	5054.69	Repeat Test
46	409	g55	2845.4	2845.4	68.8	9.8	3.5	4035.09	4043.29	914.1	4698.55	4696.28	Sample
47	421	g57	3066.7	3066.7	70.3	11.6	1.2	4359.59	4371.14	3351	5059.36	5059.62	Good Test
47	424	g57	3066.7	3066.7	70.4	11.6	1.2	4342.74	4371.18	1420	5059.36	5059.62	Repeat Test
48	429	g58	3086.5	3086.5	71.2	11.2	7.4	2079.24	0.00	N/A	5093.29	5093.58	Tight Test
49	434	g59	3086.6	3086.6	71.3	9.7	0.1	2283.33	0.00	N/A	5093.66	5093.59	Tight Test
50	439	g60	3087.3	3087.3	71.4	9.7	0.1	2285.28	0.00	N/A	5094.99	5095.11	Tight Test
51	444	g61	3087.4	3087.4	71.4	4.8	0.1	3279.38	0.00	N/A	5095.29	5095.05	Tight Test
52	450	g62	3098.3	3098.3	71.5	9.9	3.8	4356.93	4420.37	120.9	5113.12	5113.06	Good Test
52	453	g62	3098.3	3098.3	71.6	9.7	5.0	4362.20	4420.39	129.0	5113.12	5113.06	Repeat Test
53	459	g63	3099.8	3099.8	71.7	9.8	4.1	3790.21	4422.76	11.53	5115.40	5115.85	Good Test
53	462	g63	3099.8	3099.8	71.7	4.9	3.0	3844.94	4422.70	11.57	5115.40	5115.85	Repeat Test
54	468	g64	3060.3	3060.3	71.8	9.8	3.8	4155.65	4366.37	35.30	5050.98	5046.43	Sample
55	479	g65	3066.7	3066.7	71.5	4.8	2.0	4363.85	4372.02	970.8	5062.68	5059.99	Sample
56	485	g67	2808.0	2808.0	68.3	11.5	1.8	4633.51	0.00	N/A	4636.66	4636.74	No Seal
57	490	g68	2807.9	2807.9	67.1	10.9	7.1	4632.80	0.00	N/A	4636.84	4636.92	No Seal
58	495	g69	2808.5	2808.5	66.6	11.0	6.5	4366.25	0.00	N/A	4638.13	4636.09	No Seal

Remarks:

Level 1	FALL OFF TEST
Level 11	SAMPLE 1 TANK 1
Level 46	SAMPLE 2 TANK 2
Level 54	SAMPLE 3 TANK 3
Level 55	SAMPLE 4 TANK 4

Summary Notes:

MD – Measured Depth
TVD – True Vertical Depth
A) Permeability can be calculated by multiplying mobility with fluid viscosity.
B) Drawdown Rate is calculated using maximum piston rate during drawdown.
C) Gauge temperature is the internal temperature of the quartz gauge which is not intended to represent fluid or sample line fluid temperatures.

Sample Summary Section

RCI SAMPLE SUMMARY REPORT

Company Name	APACHE ENERGY LIMITED
Well Name	DORY–1
Field	DORY
Report Date/Time	18–NOV–2008 15:00

Run	SUITE 1 RUN 2
Operation	–
Trip	–

Packer Type	7–7/8"
Packer Kit Type	G5
Filter Size	0.008
Temp Reference (APQK/APQL/PVTT/Other)	RTDMB

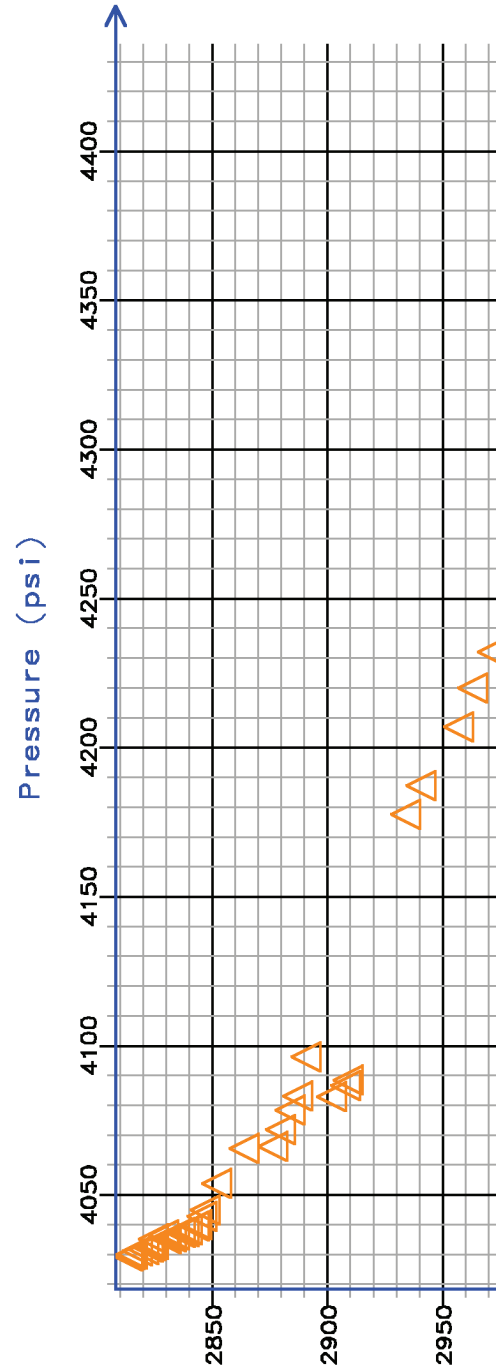
Rubber Durometer	KEVLAR
Packer Kit Size	STANDARD
Pump Size	56CC / 500CC

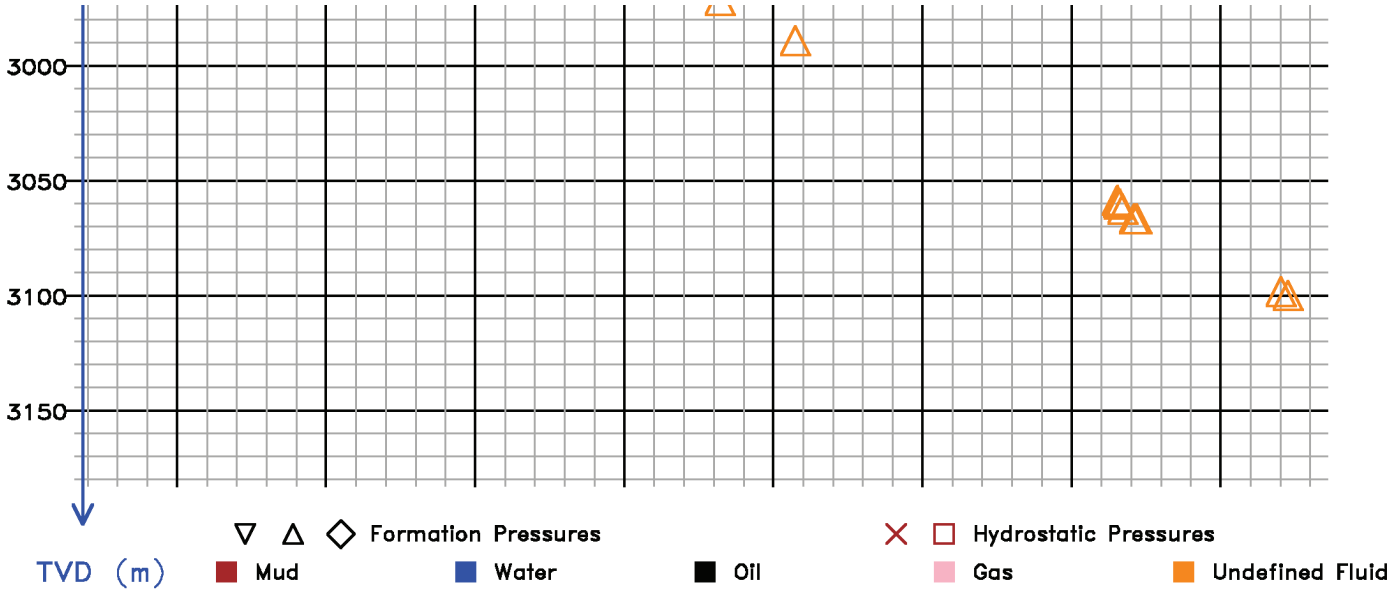
	Sample Recovery			Tank Filling						Clean Out						General						
Comments	Final N2 Charge (PSI) @ Temp (DEGC)	Sample Transferred (Yes/No)	Opening Pressure (PSI) @ Temp (DEGC)	Initial N2 Charge (PSI) @ Temp (DEGC)	Tank Size (CC)	Volume Pumped (L)	Time to Fill (sec)	Final Temp at Closing (PSI)	Tank Closing Pressure (PSI)	Min. Obs. Pressure (PSI)	Fluid ID Method (SampleView or RC)	Time Elapsed (sec)	Volume (L)	Initial Temp (DEGC)	Min. Obs. Pressure (PSI)	FBU Pretest (PSI)	Date/Time	Hydrostatic Pressure (PSI)	TVD (M)	MD (M)	File Number	Tank Serial Number	Sample Number
	5500 / 1	YES	5320 / 1	1500 / 1	SPT1 (450 CC)	1	102	64.7	NA (RB)	4029.3	SAMPLEVIEW	2180	25.5	64.2	4022.5	4033.5	17–NOV–2008 0	4663.2	2819.2	2819.2	15	10133533	1

	2	3	4
	10364568	10354566	10177302
	55	64	65
	2845.4	3060.3	3066.7
	2845.4	3060.3	3066.7
	4698.6	5051.0	5062.7
9:37	17-NOV-2008 18:41	17-NOV-2008 21:06	17-NOV-2008 21:36
	4043.3	4366.37	4372.0
	4017.9	3671.2	4353
	67.3	71.5	71.1
	24.8	14.4	8.5
	2285	2160	753
	SAMPLEVIEW	SAMPLEVIEW	SAMPLEVIEW
	4031.0	3749.9	4368.2
	NA (RB)	NA (RB)	NA (RB)
	66.5	71.3	71.4
	131	160	105
	0.5	1	0.5
	SPT1 (450 CC)	SPT1 (450 CC)	SPT1 (450 CC)
8	1500 / 18	1500 / 18	1500 / 18
8	5800 / 18	5295 / 18	5820 / 18
	YES	YES	YES
8	5500 / 18	5800 / 18	5800 / 18

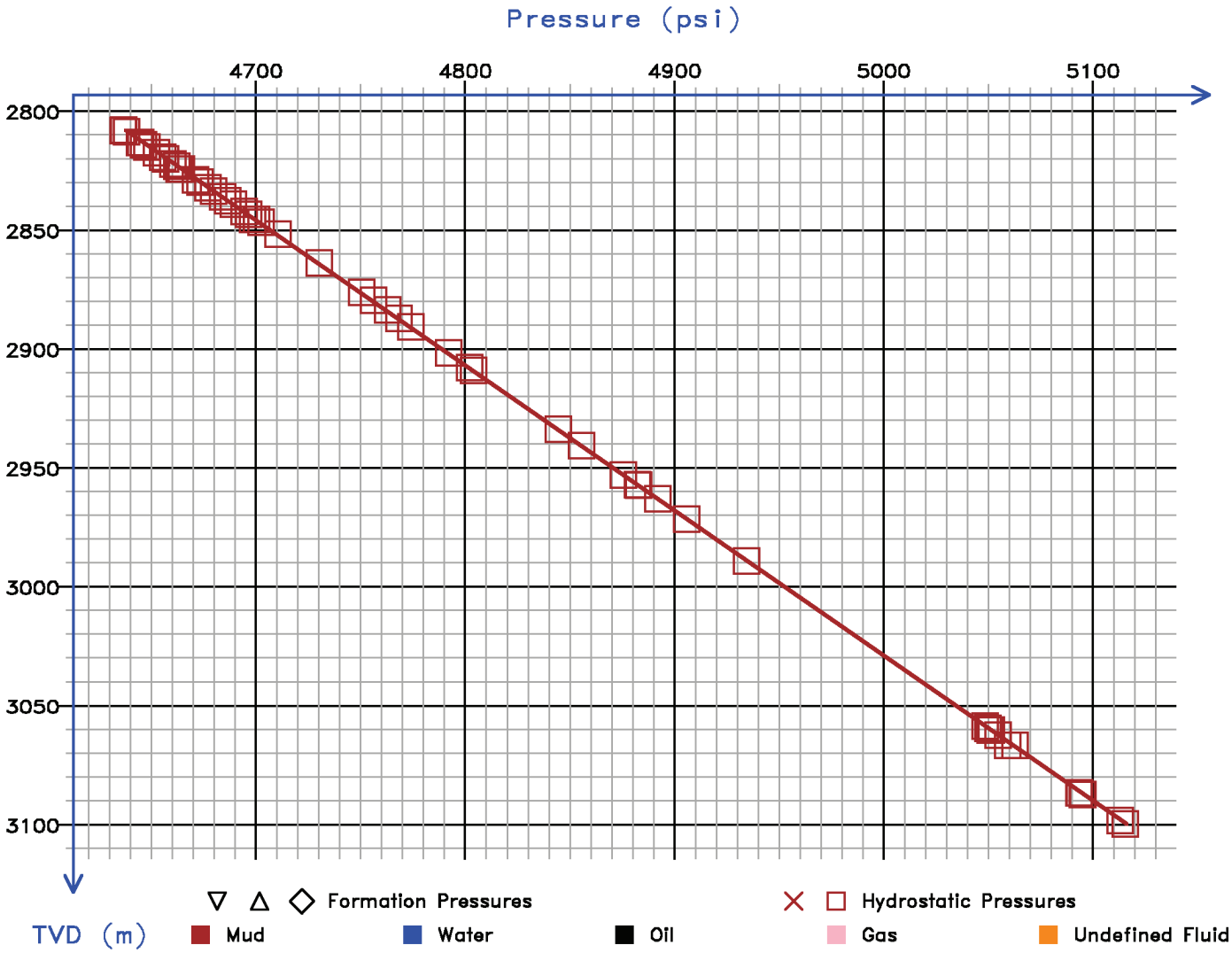
Gradients Section

FORMATION PRESSURE GRADIENT





HYDROSTATIC PRESSURE GRADIENT



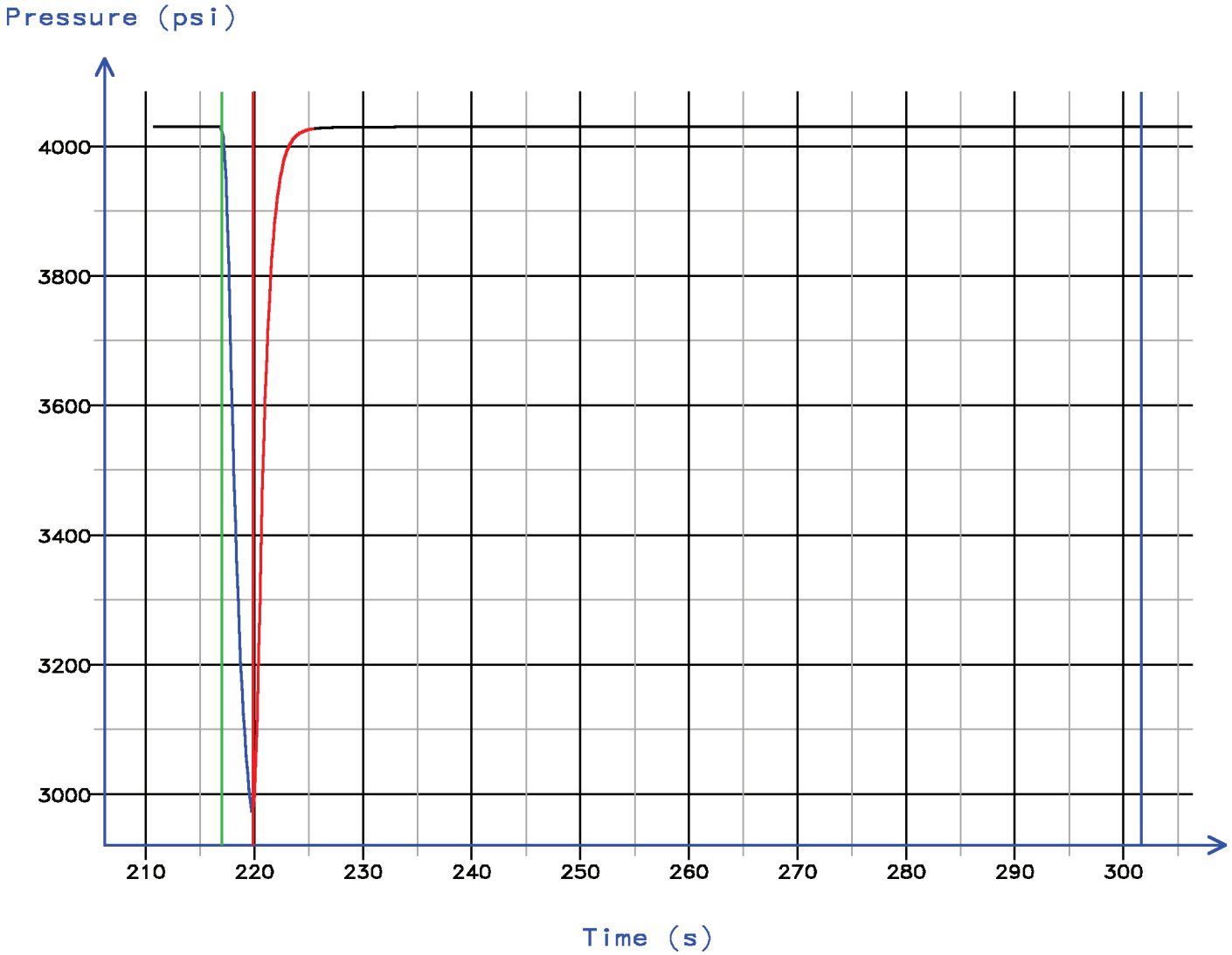
Specific Gravity: 1.15 = (1.638 psi/m)/(1.421 psi/m) Depth Range: 2807.91 m – 3099.81 m

Tests Section

Pressure Tests – Level 2 Tool Instance 1
MD 2813.2 m TVD 2813.2 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2813.2 m TVD 2813.2 m

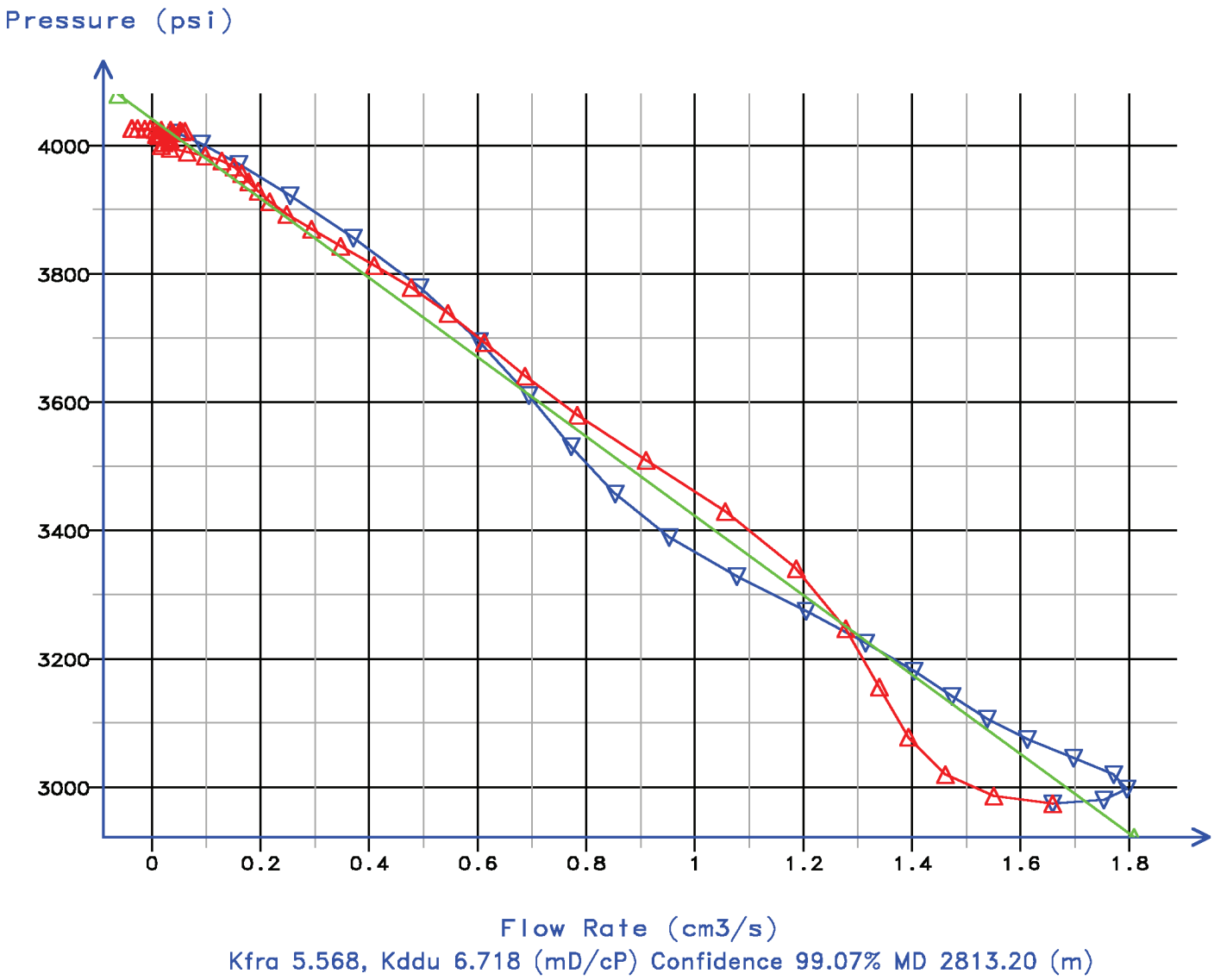


MD: 2813.20 TVD: 2813.20 (m) [002.1.012]

Final BU	4029.65	psi	DD Volume	4.97	cm3	Temp	63.61 degC
BU Stability	−0.00232	psi/min	Min Flow P	2973.50	psi	Temp Stability	0.01189 degC/min
BU Repeat	n/a	psi	DD Rate	2.06	cm3/s	FRA	0.991 R2
P_hydro	4644.98	psi	Mobility DD	6.718	mD/cP	Mobility Kfra	5.568 mD/cP

FLOW RATE ANALYSIS

Depth MD 2813.2 m TVD 2813.2 m

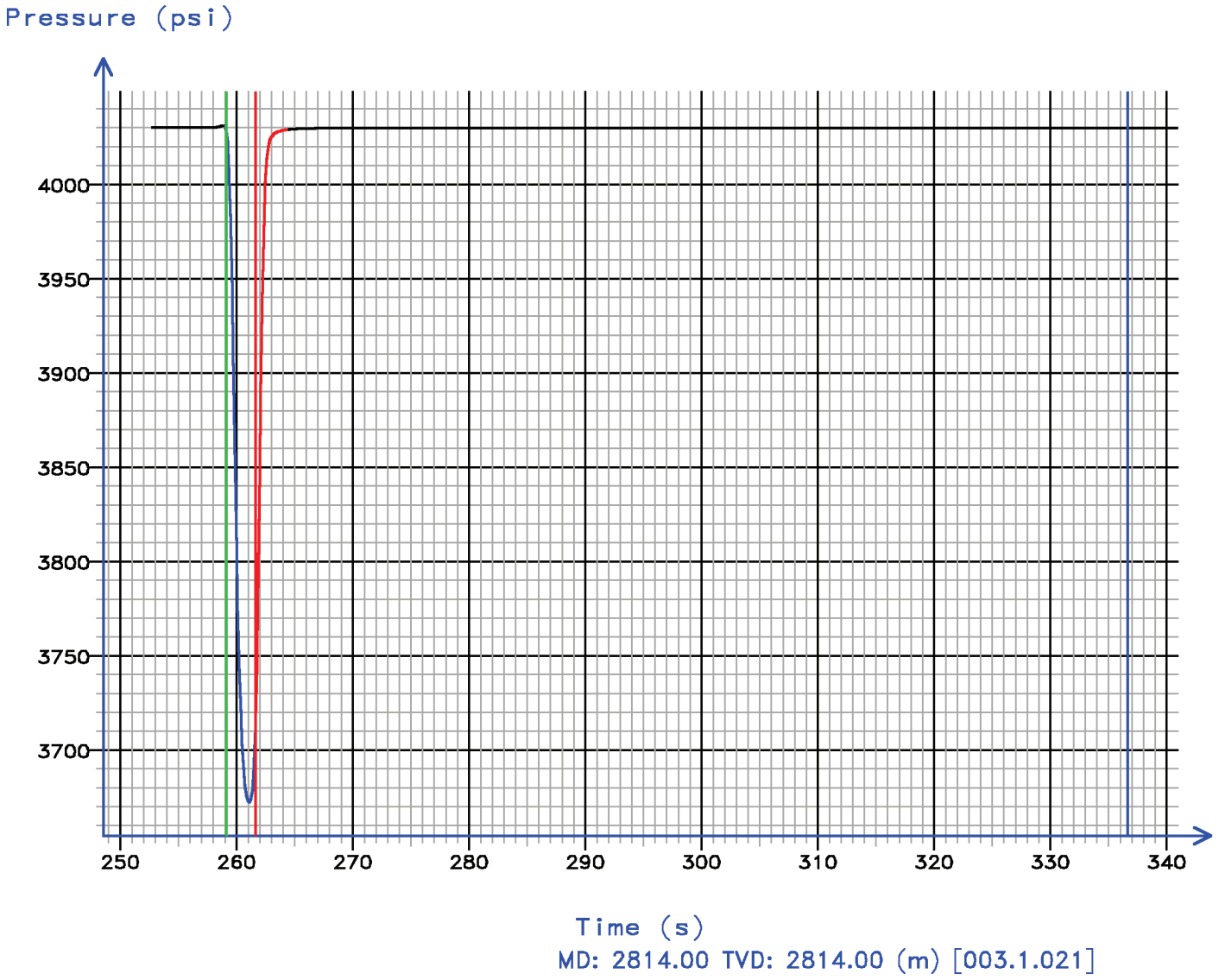


Kfra 5.568, Kddu 6.718 (mD/cP) Confidence 99.07% MD 2813.20 (m)

Pressure Tests – Level 3 Tool Instance 1
MD 2814.0 m TVD 2814.0 m

PRESSURE HISTORY (apql vs. time)

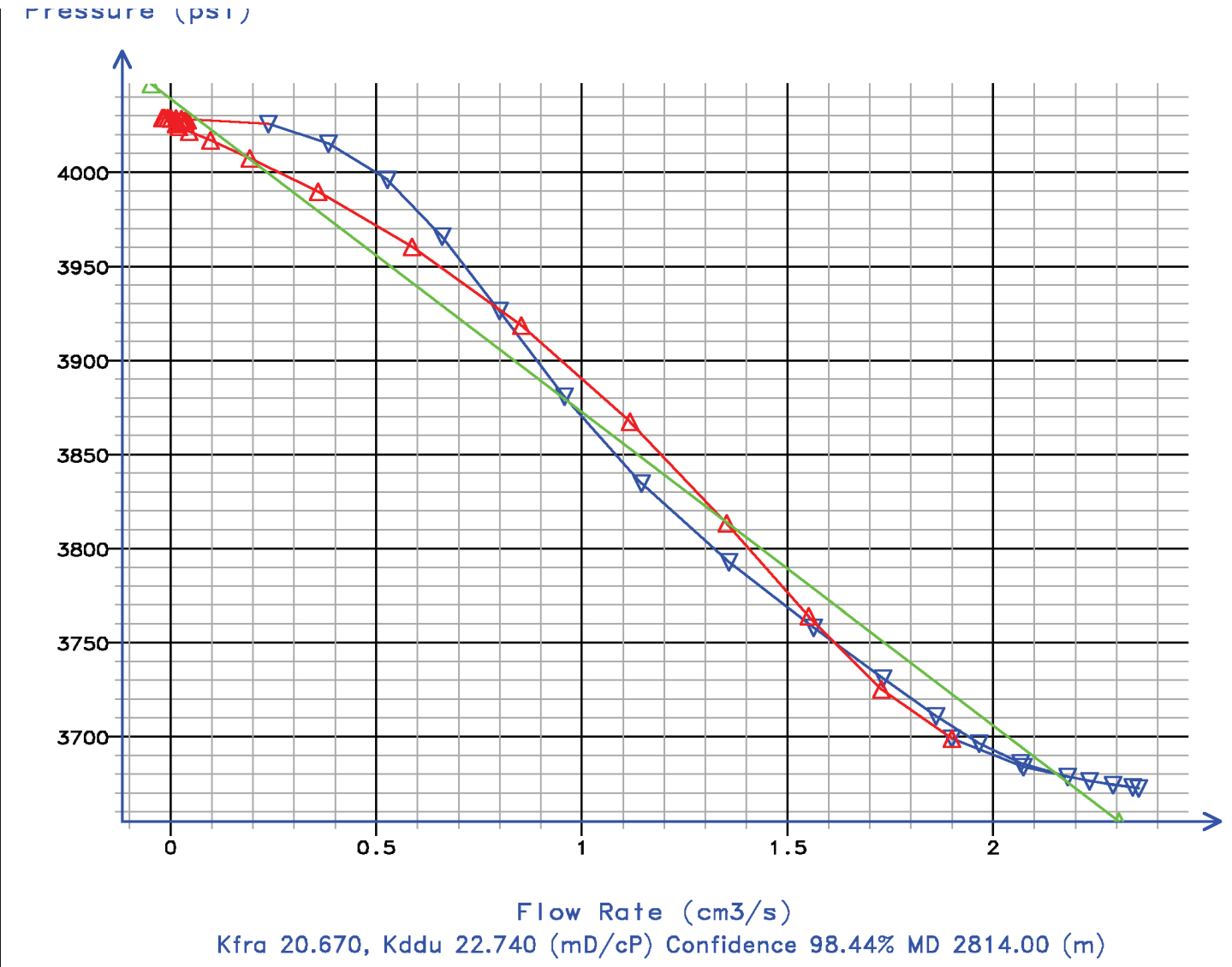
Depth MD 2814.0 m TVD 2814.0 m



Final BU	4029.94	psi	DD Volume	4.88	cm3	Temp	63.75 degC
BU Stability	0.01372	psi/min	Min Flow P	3672.29	psi	Temp Stability	0.00909 degC/min
BU Repeat	−0.173	psi	DD Rate	2.36	cm3/s	FRA	0.984 R2
P_hydro	4646.38	psi	Mobility DD	22.740	mD/cP	Mobility Kfra	20.670 mD/cP

FLOW RATE ANALYSIS

Depth MD 2814.0 m TVD 2814.0 m

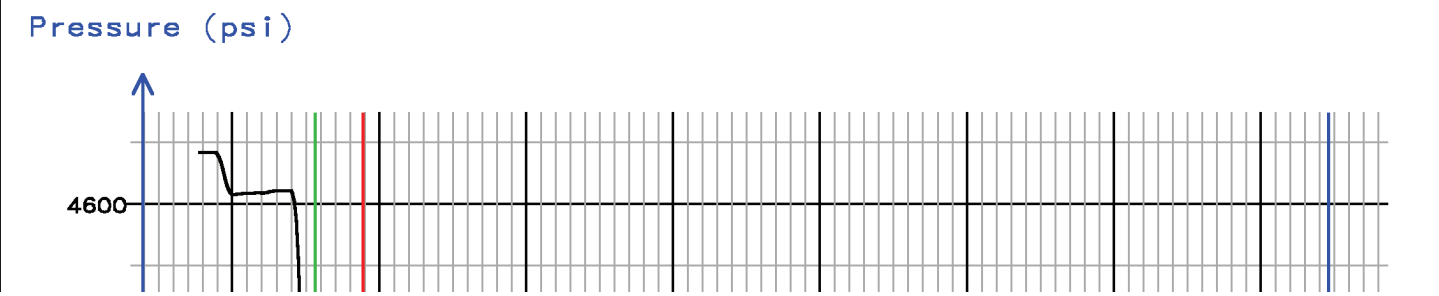


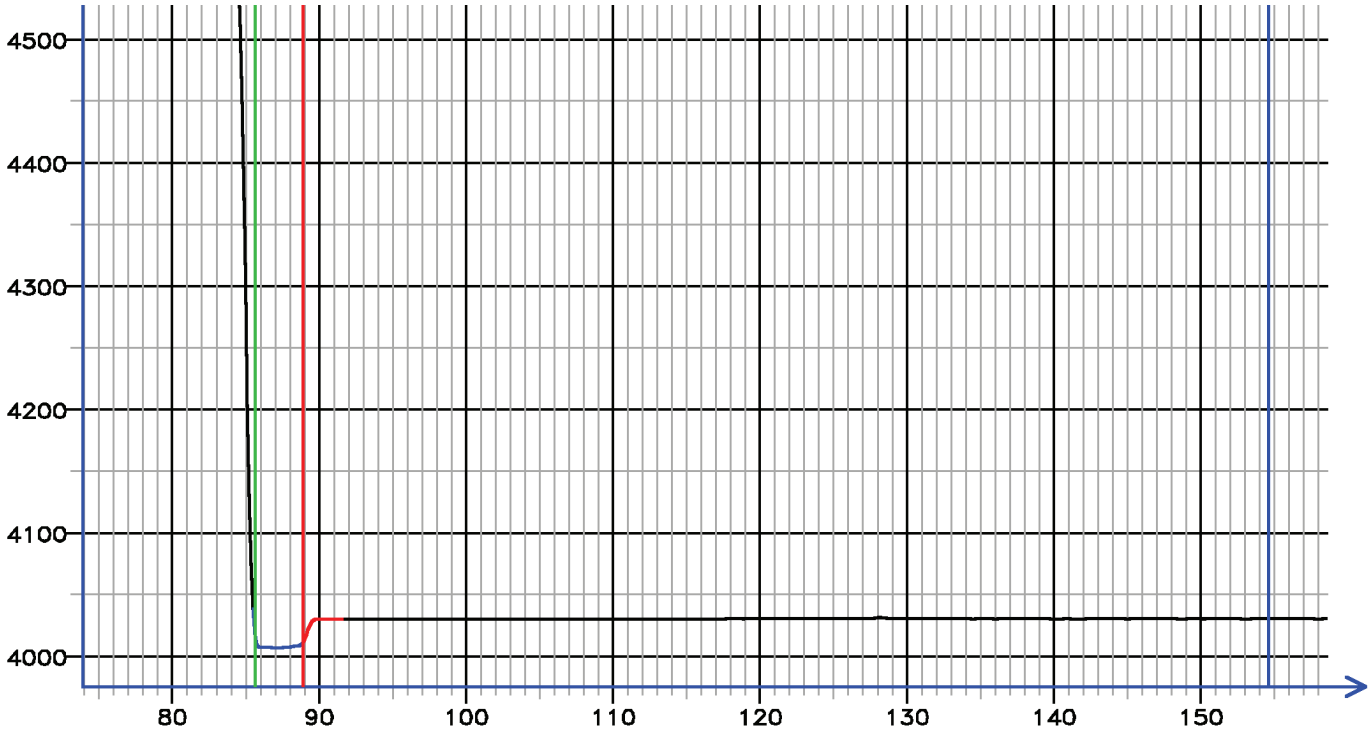
Kfra 20.670, Kddu 22.740 (mD/cP) Confidence 98.44% MD 2814.00 (m)

Pressure Tests – Level 4 Tool Instance 1
MD 2815.0 m TVD 2815.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2815.0 m TVD 2815.0 m

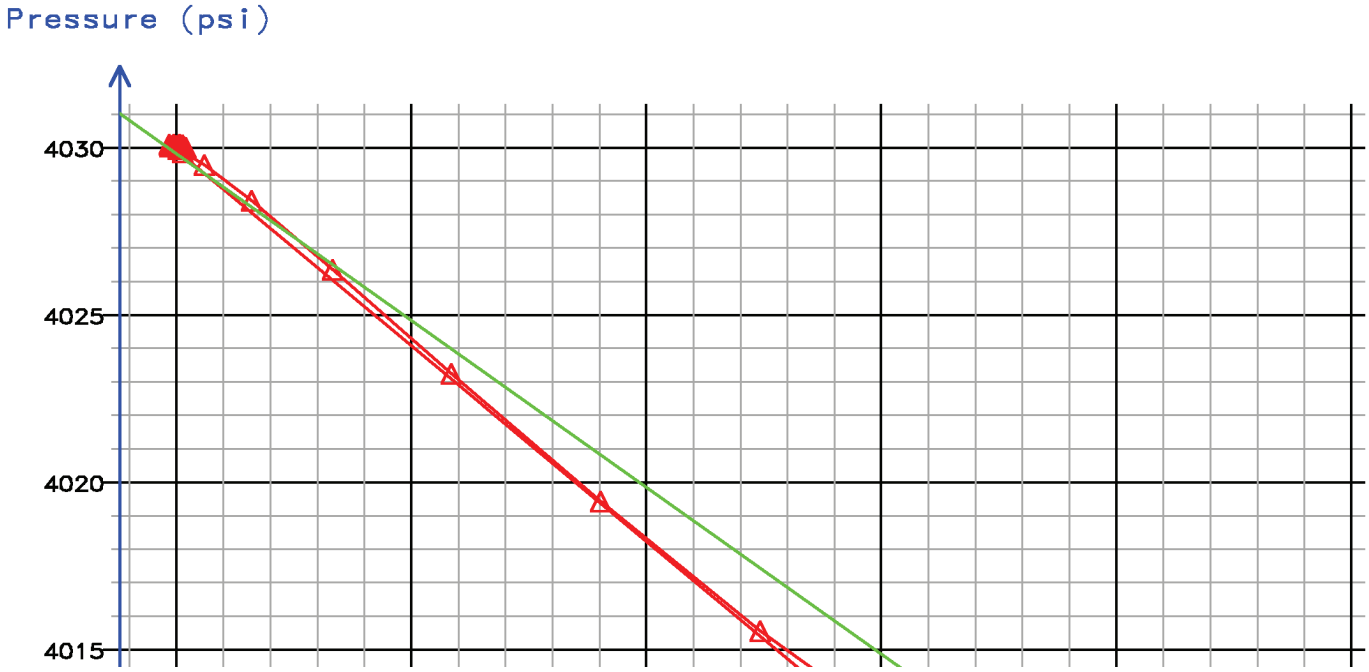


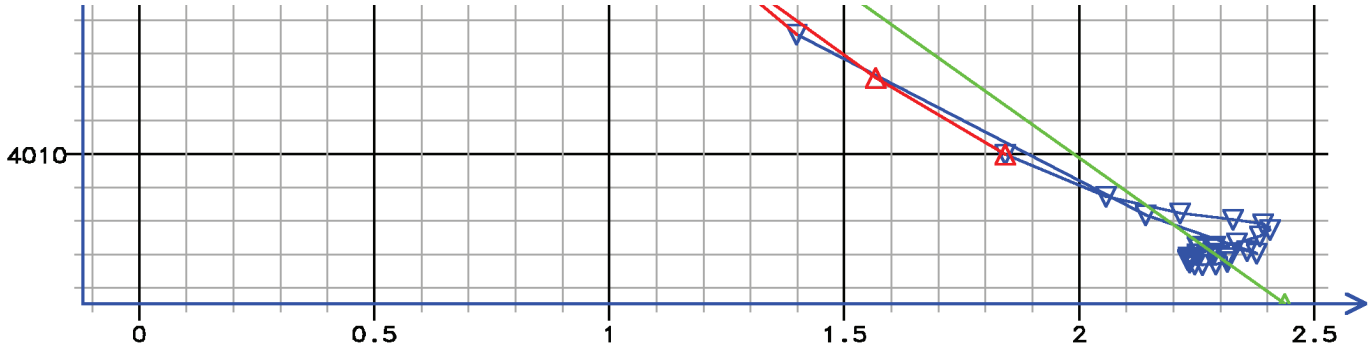


Final BU	4030.23	psi	DD Volume	9.83	cm3	Temp	63.82	degC
BU Stability	0.02028	psi/min	Min Flow P	4006.68	psi	Temp Stability	0.01141	degC/min
BU Repeat	n/a	psi	DD Rate	2.39	cm3/s	FRA	0.994	R2
P_hydro	4648.10	psi	Mobility DD	349.927	mD/cP	Mobility Kfra	345.175	mD/cP

FLOW RATE ANALYSIS

Depth MD 2815.0 m TVD 2815.0 m





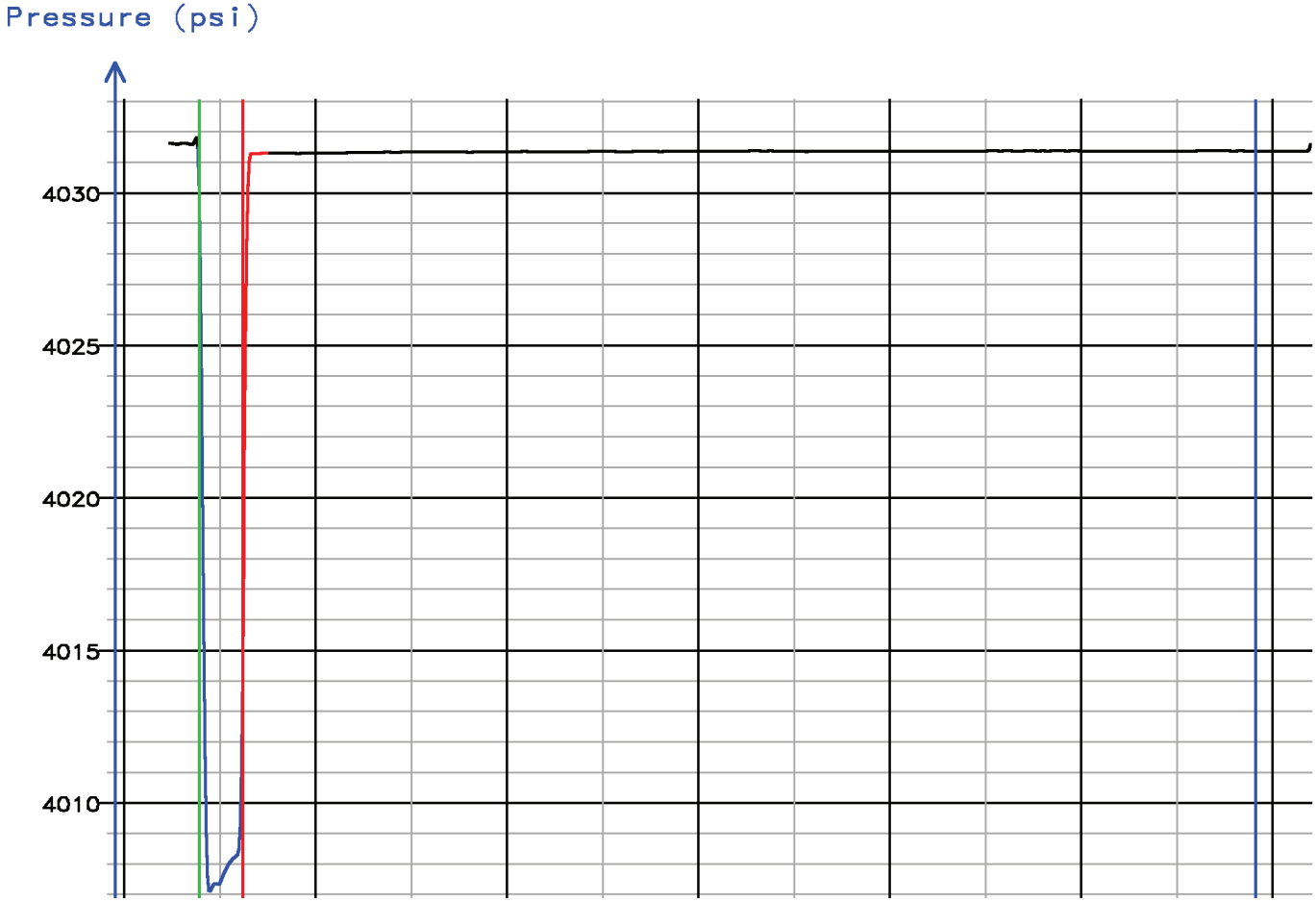
Flow Rate (cm3/s)

Kfra 345.175, Kddu 350.153 (mD/cP) Confidence 99.35% MD 2815.00 (m)

Pressure Tests – Level 5 Tool Instance 1
MD 2817.3 m TVD 2817.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2817.3 m TVD 2817.3 m



Time (s)

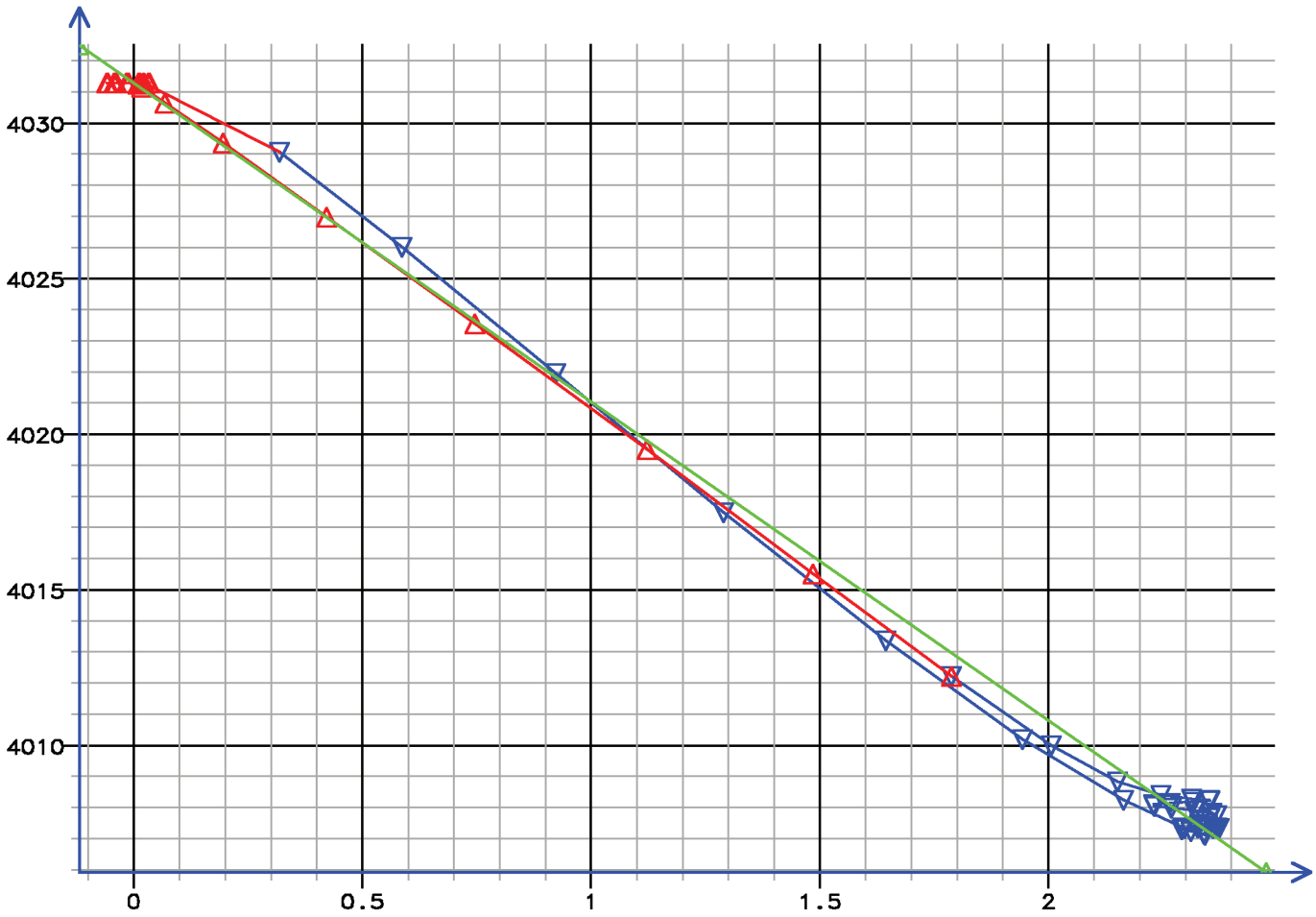
MD: 2817.33 TVD: 2817.33 (m) [005.1.039]

Final BU	4031.36	psi	DD Volume	9.93	cm3	Temp	63.93 degC
BU Stability	0.15351	psi/min	Min Flow P	4007.11	psi	Temp Stability	0.00772 degC/min
BU Repeat	−0.297	psi	DD Rate	2.37	cm3/s	FRA	0.998 R2
P_hydro	4652.43	psi	Mobility DD	336.962	mD/cP	Mobility Kfra	336.061 mD/cP

FLOW RATE ANALYSIS

Depth MD 2817.3 m TVD 2817.3 m

Pressure (psi)



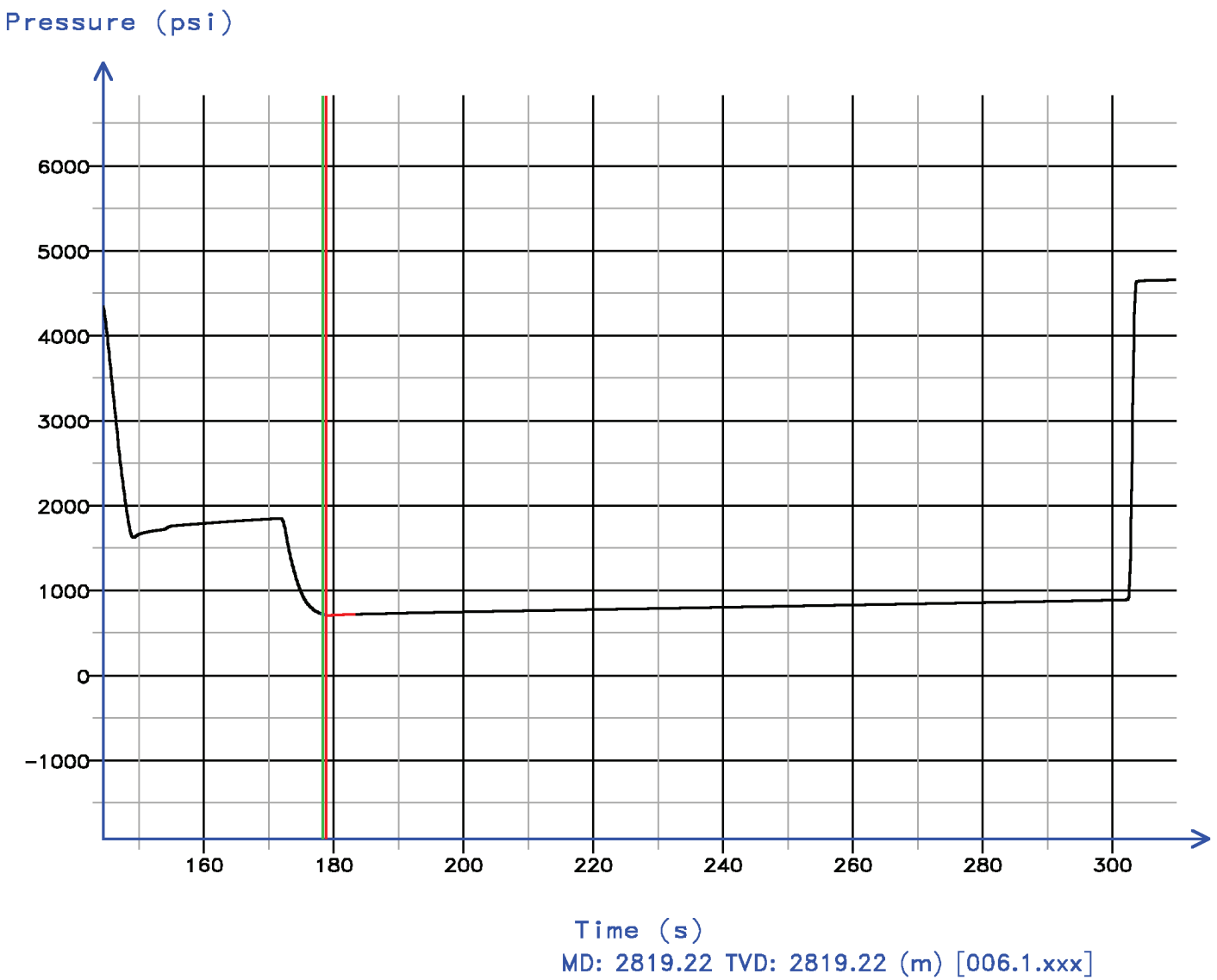
Flow Rate (cm3/s)

Kfra 336.061, Kddu 336.962 (mD/cP) Confidence 99.78% MD 2817.33 (m)

Pressure Tests – Level 6 Tool Instance 1
MD 2819.2 m TVD 2819.2 m

PRESSURE HISTORY (apql vs. time)

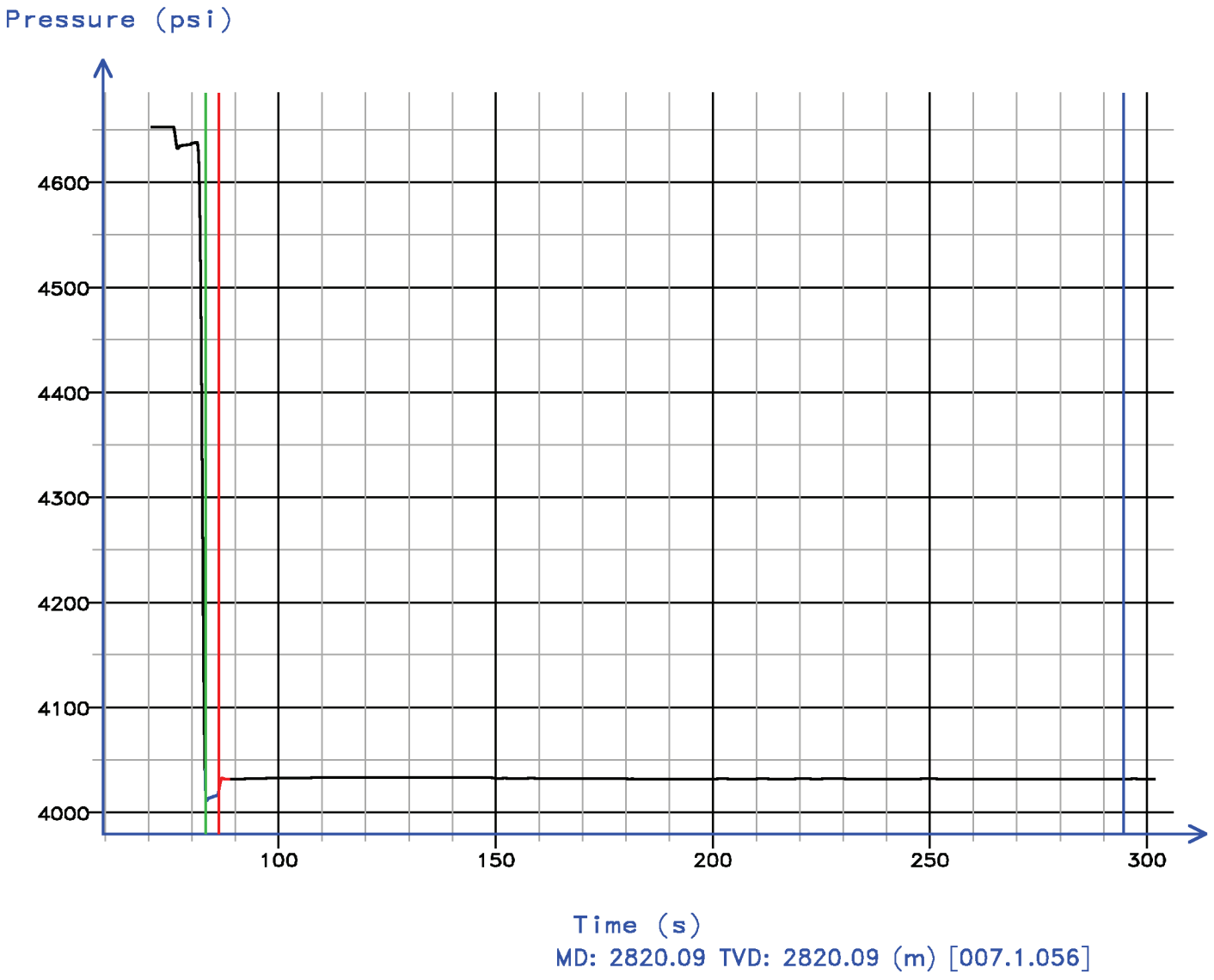
Depth MD 2819.2 m TVD 2819.2 m



Pressure Tests – Level 7 Tool Instance 1
MD 2820.1 m TVD 2820.1 m

PRESSURE HISTORY (apql vs. time)

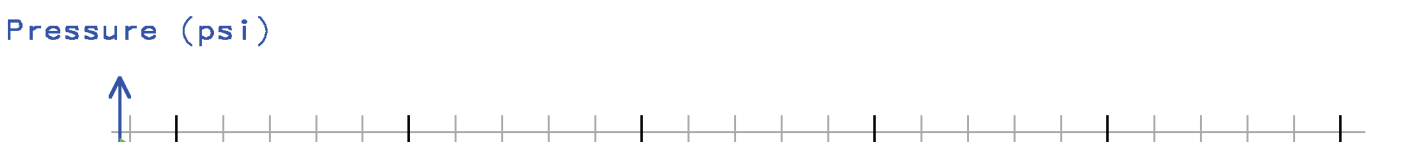
Depth MD 2820.1 m TVD 2820.1 m

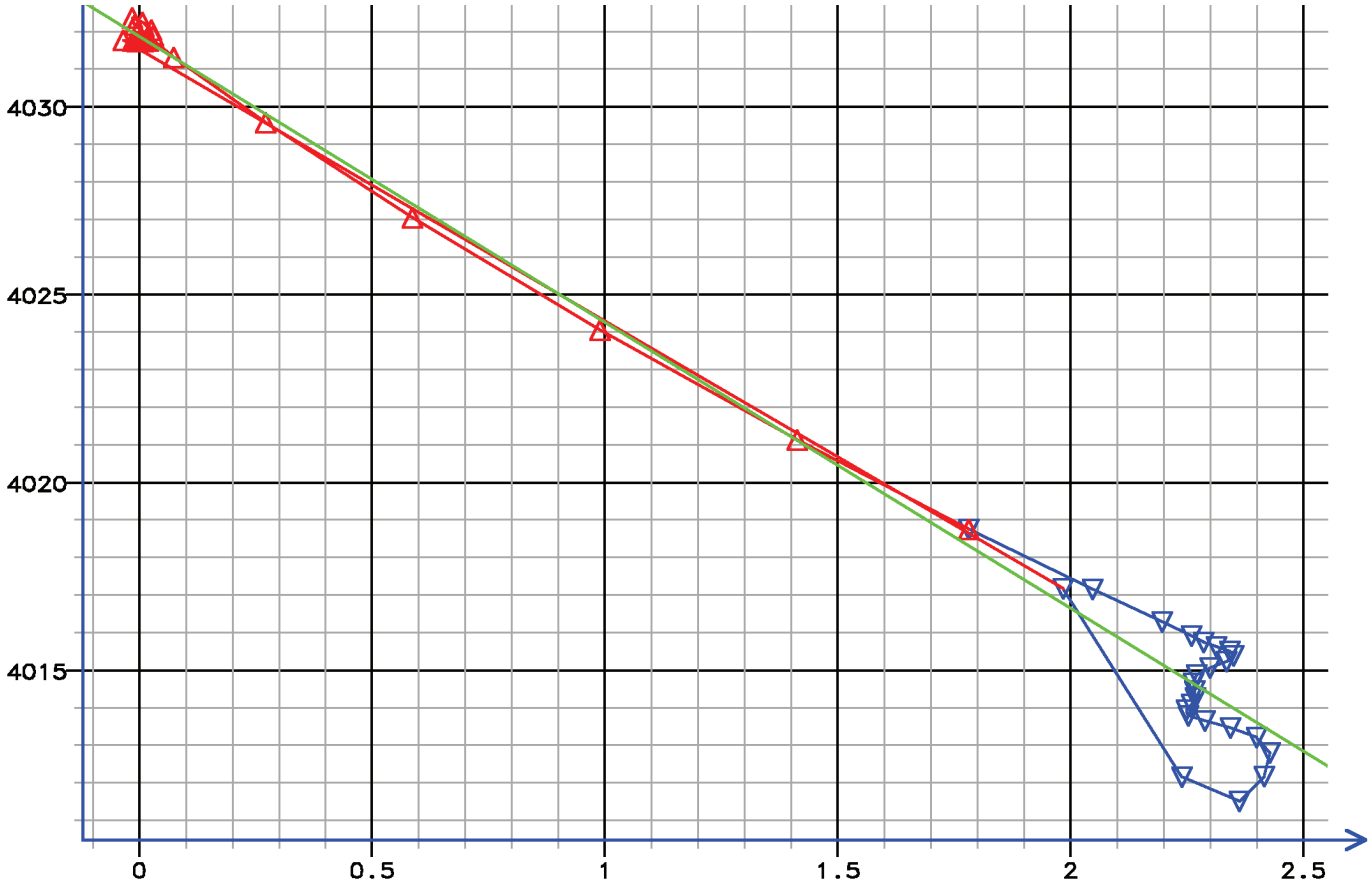


Final BU	4031.81	psi	DD Volume	9.89	cm3	Temp	64.06	degC
BU Stability	0.10338	psi/min	Min Flow P	4011.24	psi	Temp Stability	0.00429	degC/min
BU Repeat	n/a	psi	DD Rate	2.42	cm3/s	FRA	0.990	R2
P_hydro	4656.96	psi	Mobility DD	404.266	mD/cP	Mobility Kfra	452.214	mD/cP

FLOW RATE ANALYSIS

Depth MD 2820.1 m TVD 2820.1 m



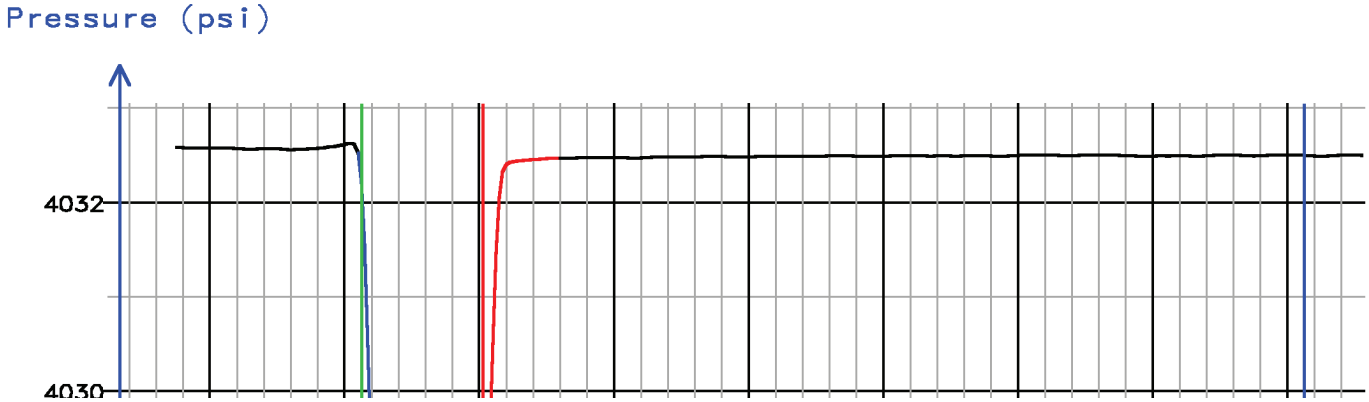


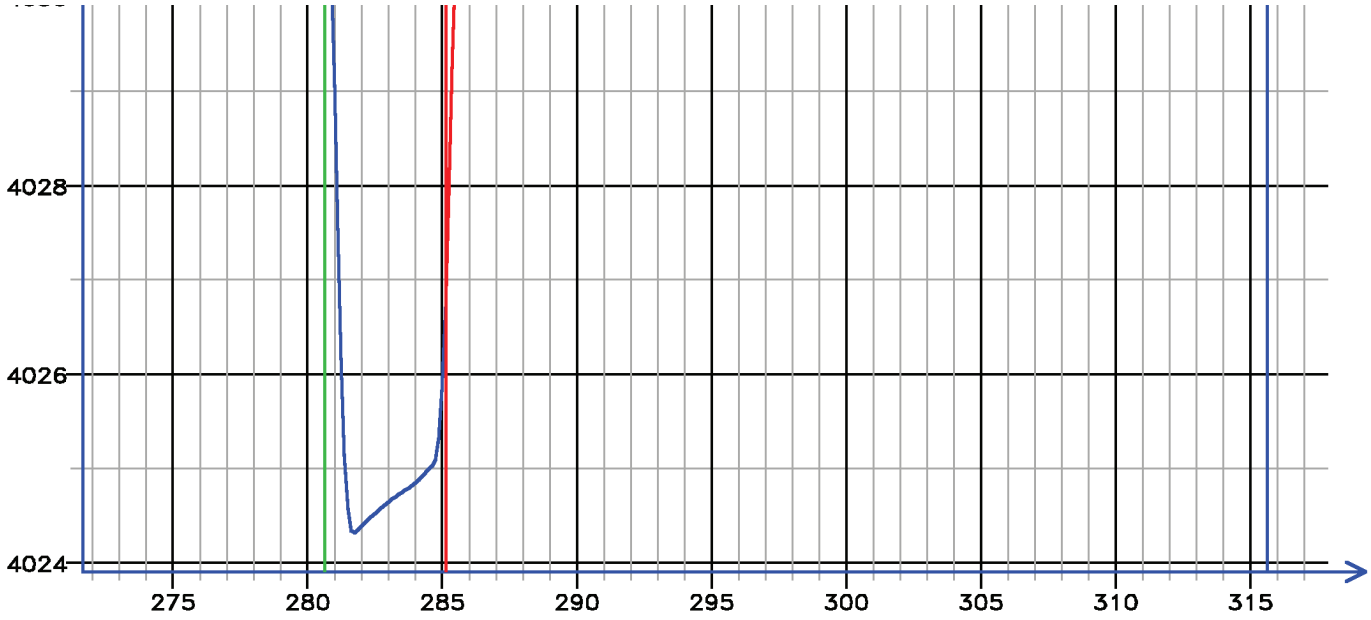
Kfra 452.214, Kddu 404.198 (mD/cP) Confidence 99.02% MD 2820.09 (m)

Pressure Tests – Level 8 Tool Instance 1
MD 2822.0 m TVD 2822.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2822.0 m TVD 2822.0 m



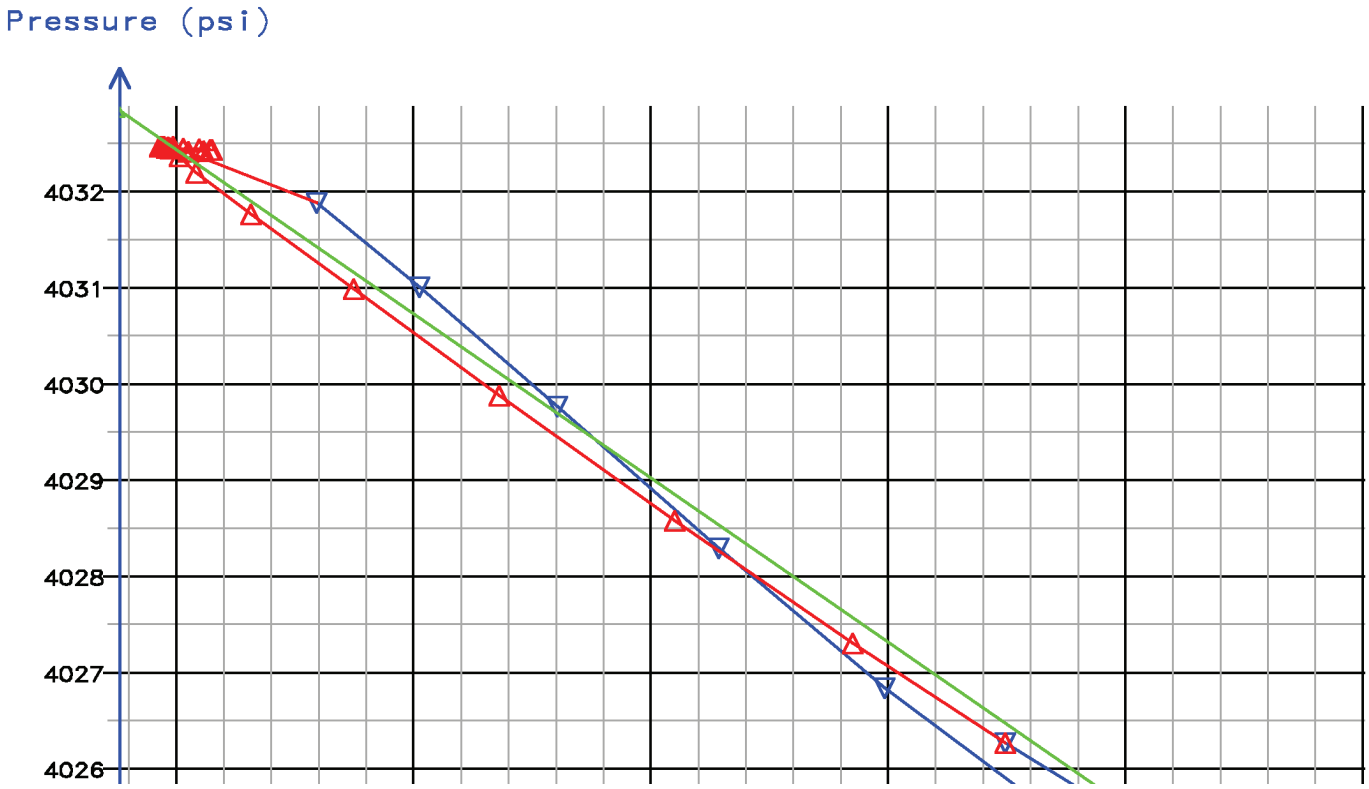


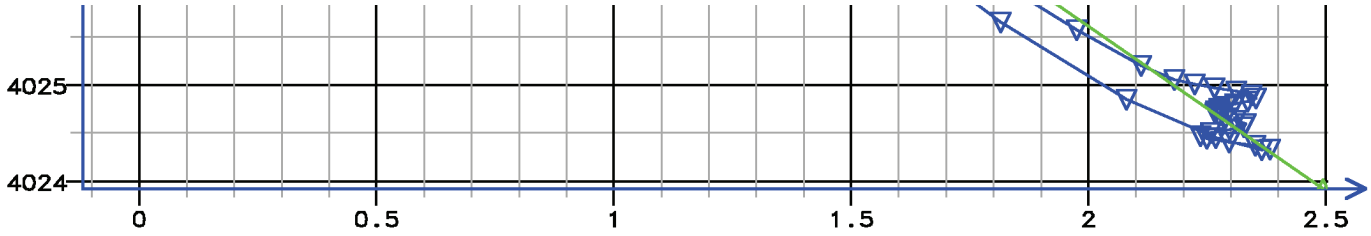
MD: 2822.02 TVD: 2822.02 (m) [008.1.068]

Final BU	4032.50	psi	DD Volume	9.73	cm3	Temp	64.12	degC
BU Stability	0.00014	psi/min	Min Flow P	4024.31	psi	Temp Stability	0.00584	degC/min
BU Repeat	−0.094	psi	DD Rate	2.37	cm3/s	FRA	0.996	R2
P_hydro	4660.44	psi	Mobility DD	998.369	mD/cP	Mobility Kfra	1008.184	mD/cP

FLOW RATE ANALYSIS

Depth MD 2822.0 m TVD 2822.0 m





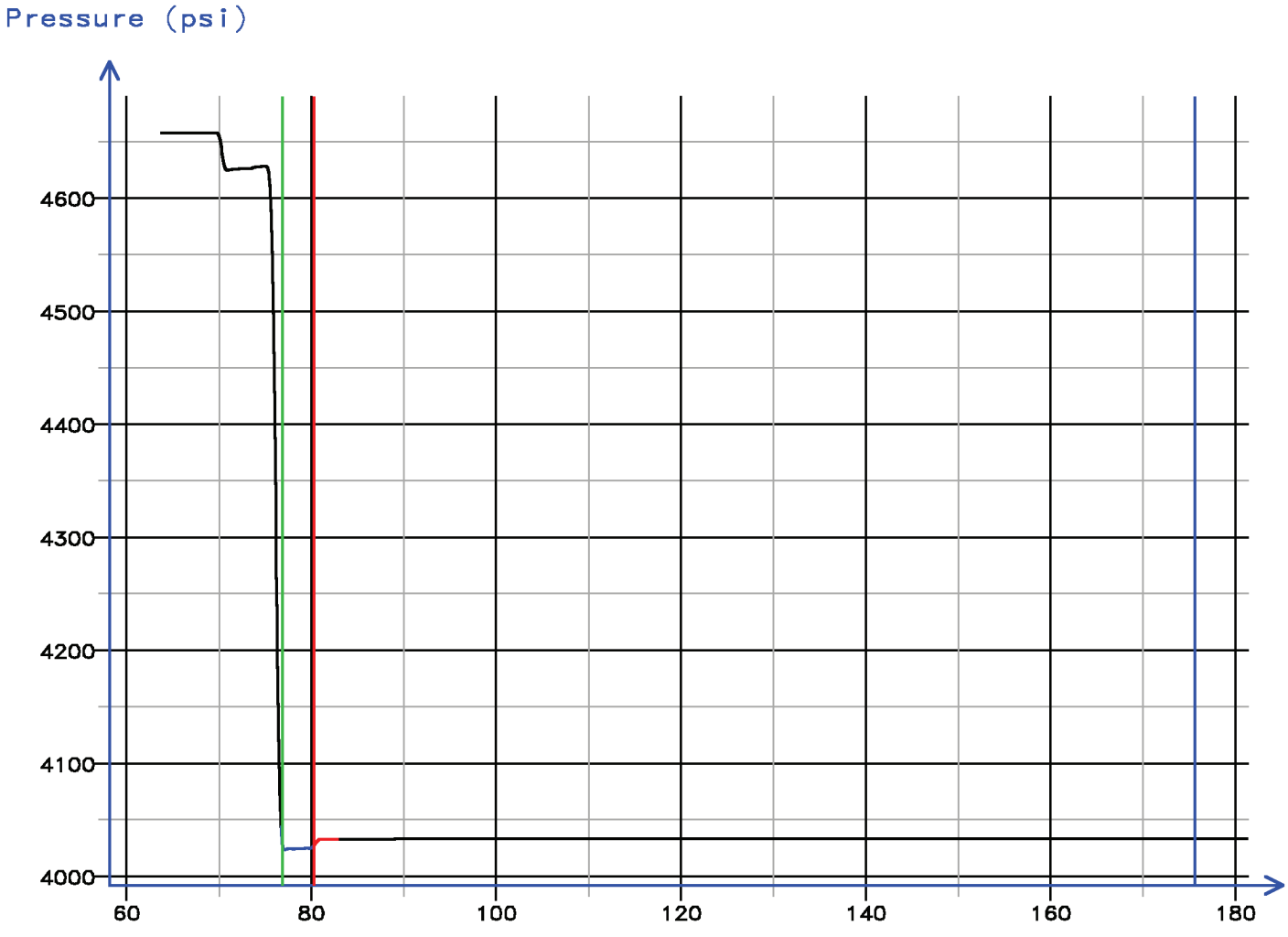
Flow Rate (cm3/s)

Kfra 1008.184, Kddu 998.369 (mD/cP) Confidence 99.58% MD 2822.02 (m)

Pressure Tests – Level 9 Tool Instance 1
MD 2823.0 m TVD 2823.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2823.0 m TVD 2823.0 m

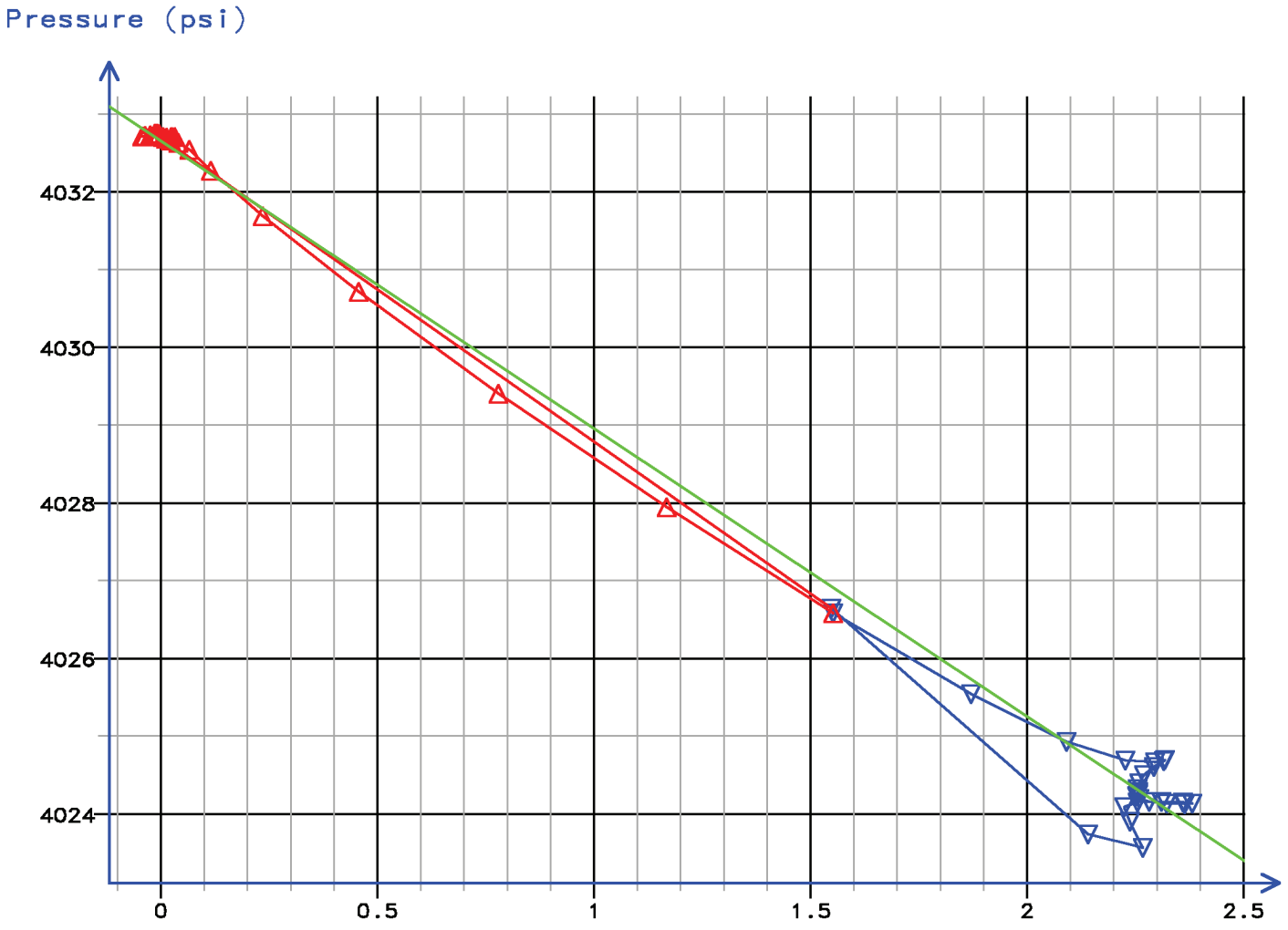


Time (s)
MD: 2823.00 TVD: 2823.00 (m) [009.1.074]

Final BU	4033.03	psi	DD Volume	9.84	cm3	Temp	64.16 degC
BU Stability	0.18409	psi/min	Min Flow P	4023.37	psi	Temp Stability	0.00912 degC/min
BU Repeat	n/a	psi	DD Rate	2.38	cm3/s	FRA	0.995 R2
P_hydro	4662.30	psi	Mobility DD	849.534	mD/cP	Mobility Kfra	929.925 mD/cP

FLOW RATE ANALYSIS

Depth MD 2823.0 m TVD 2823.0 m

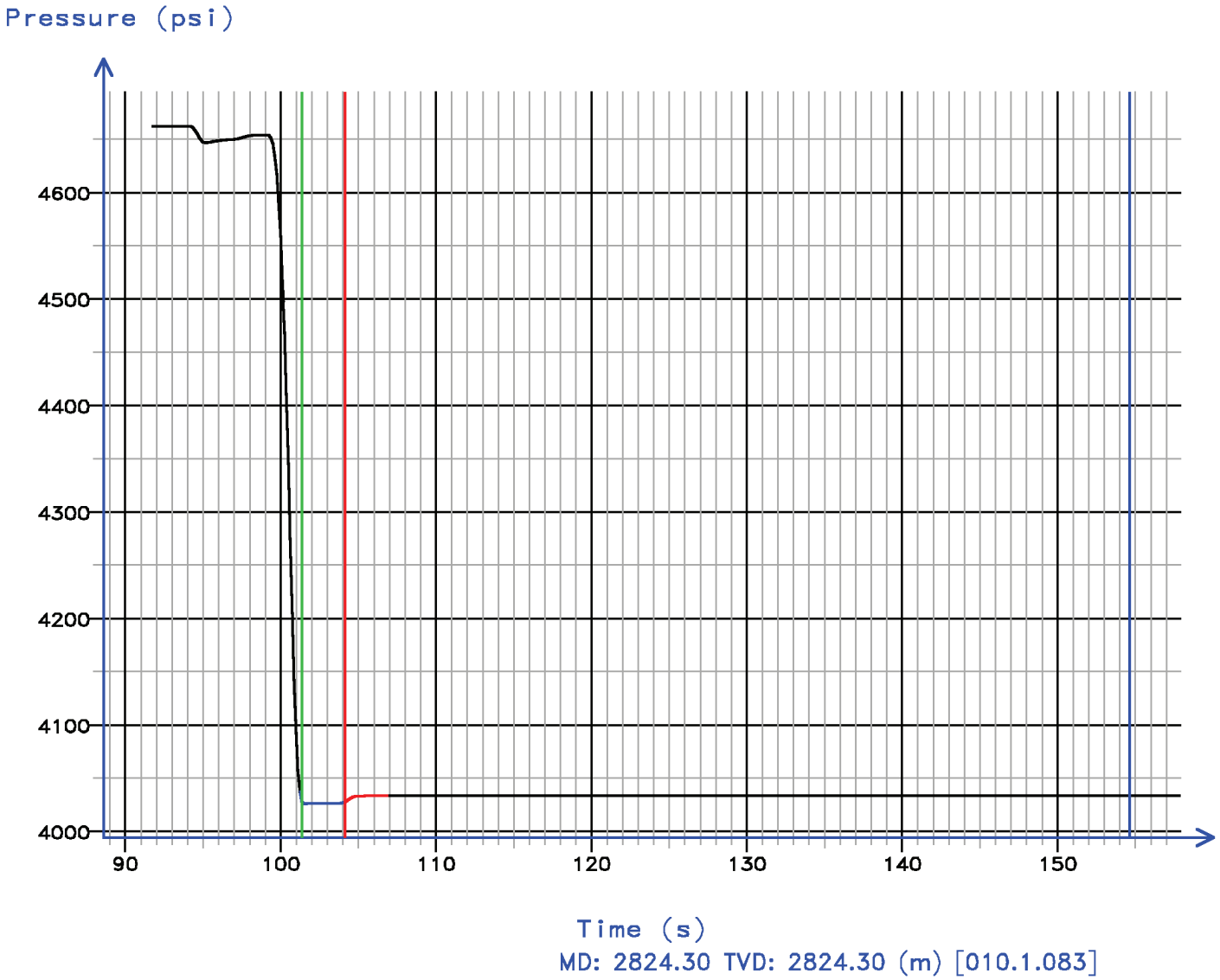


Kfra 929.925, Kddu 855.043 (mD/cP) Confidence 99.47% MD 2823.00 (m)

Sample Tests – Level 10 Tool Instance 1
MD 2824.3 m TVD 2824.3 m

PRESSURE HISTORY (apql vs. time)

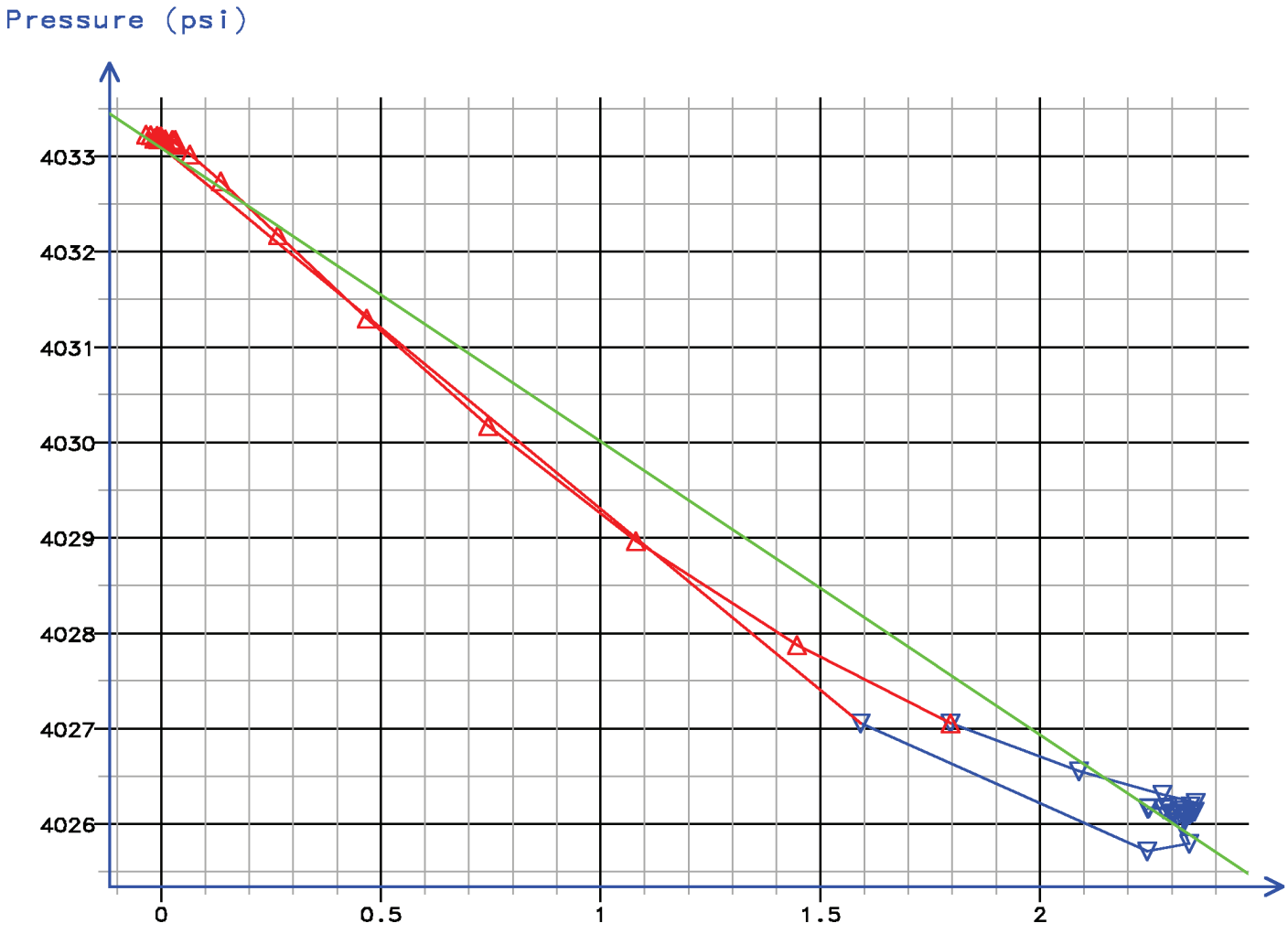
Depth MD 2824.3 m TVD 2824.3 m



Final BU	4033.38	psi	DD Volume	9.86	cm3	Temp	64.21	degC
BU Stability	0.00485	psi/min	Min Flow P	4025.66	psi	Temp Stability	0.01206	degC/min
BU Repeat	n/a	psi	DD Rate	2.35	cm3/s	FRA	0.991	R2
P_hydro	4664.32	psi	Mobility DD	1047.877	mD/cP	Mobility Kfra	1118.905	mD/cP

FLOW RATE ANALYSIS

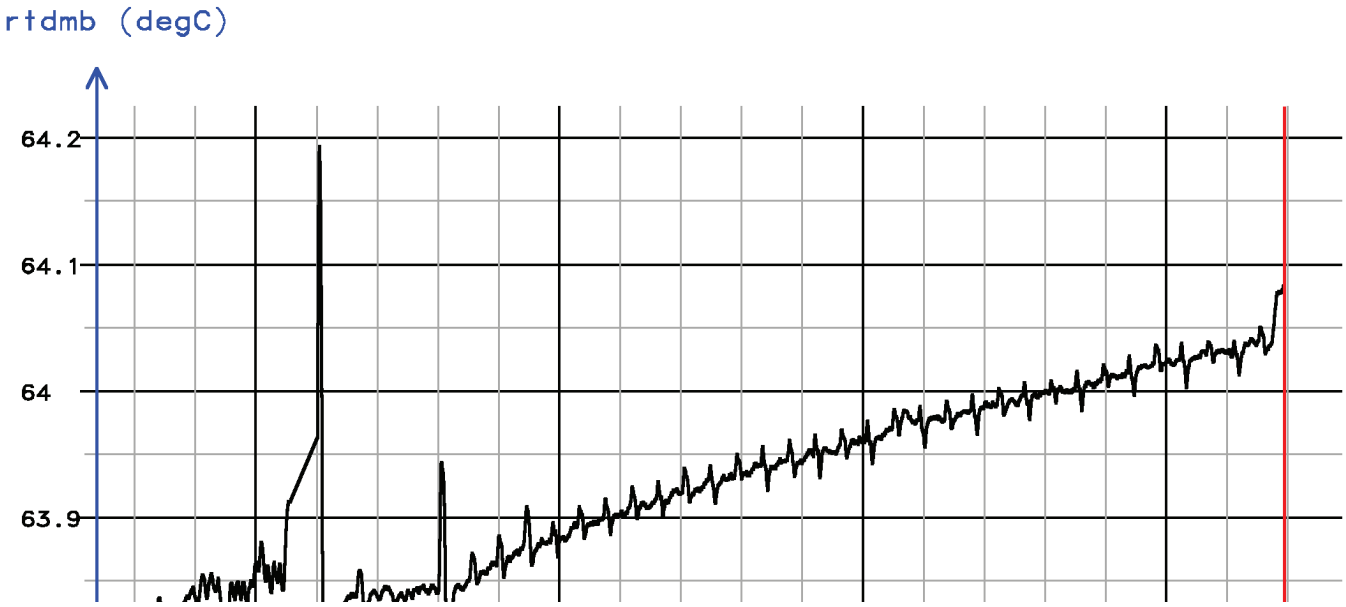
Depth MD 2824.3 m TVD 2824.3 m

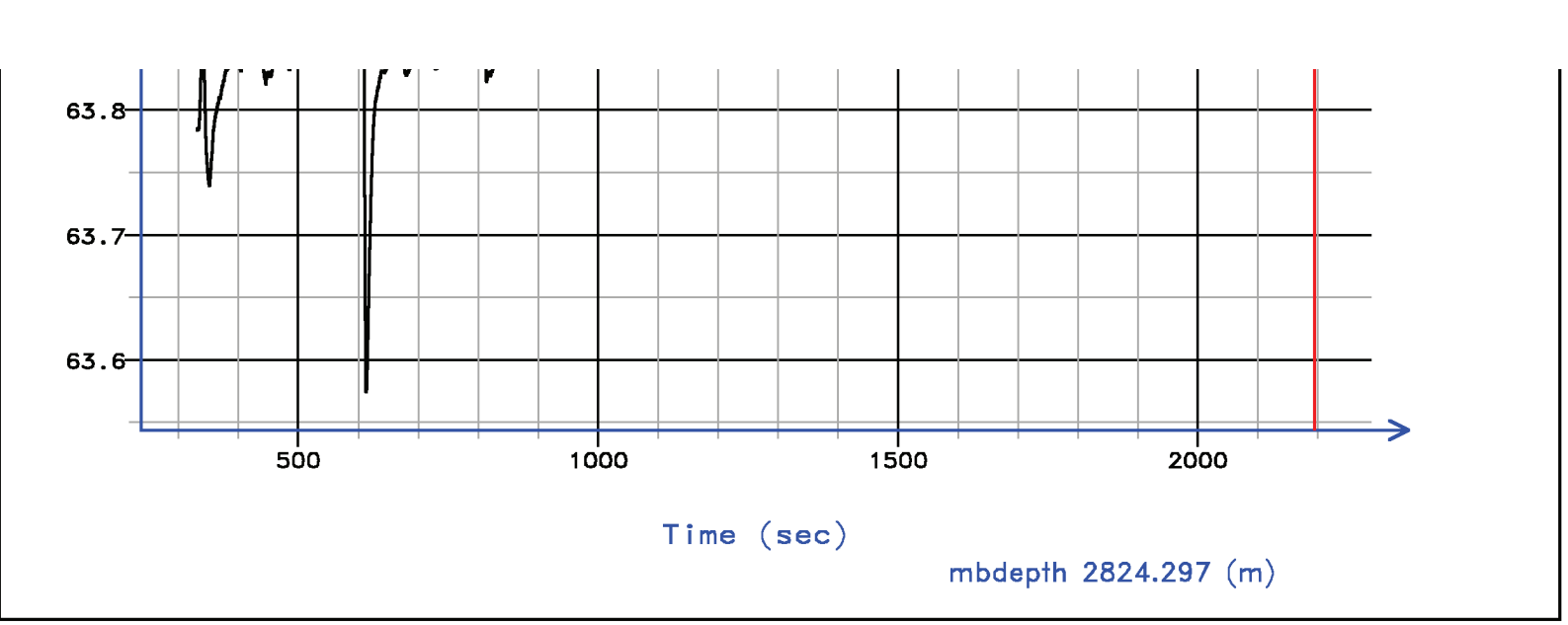


Kfra 1118.905, Kddu 1047.910 (mD/cP) Confidence 99.11% MD 2824.30 (m)

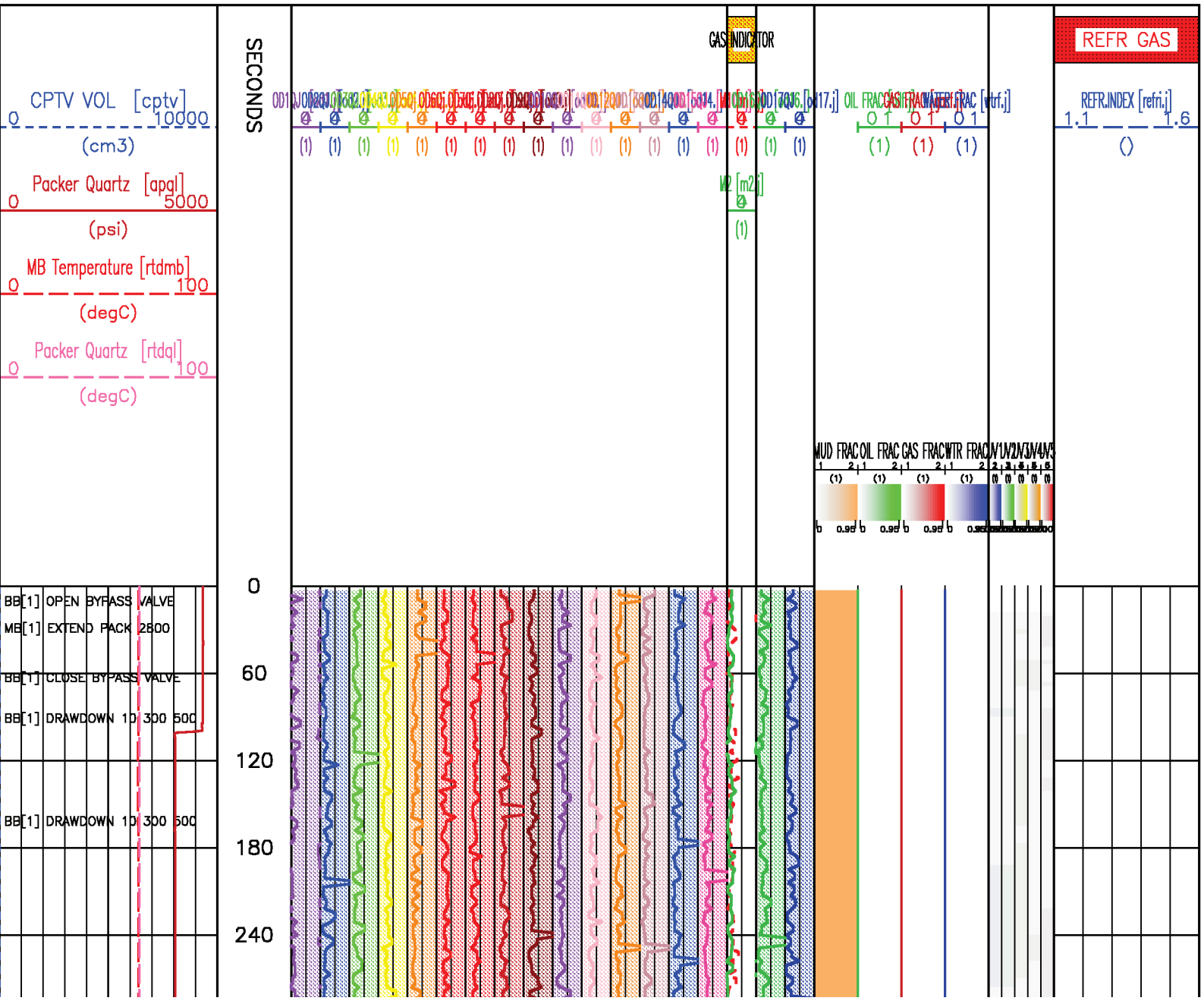
FLUID LINE (rtdmb vs. time)

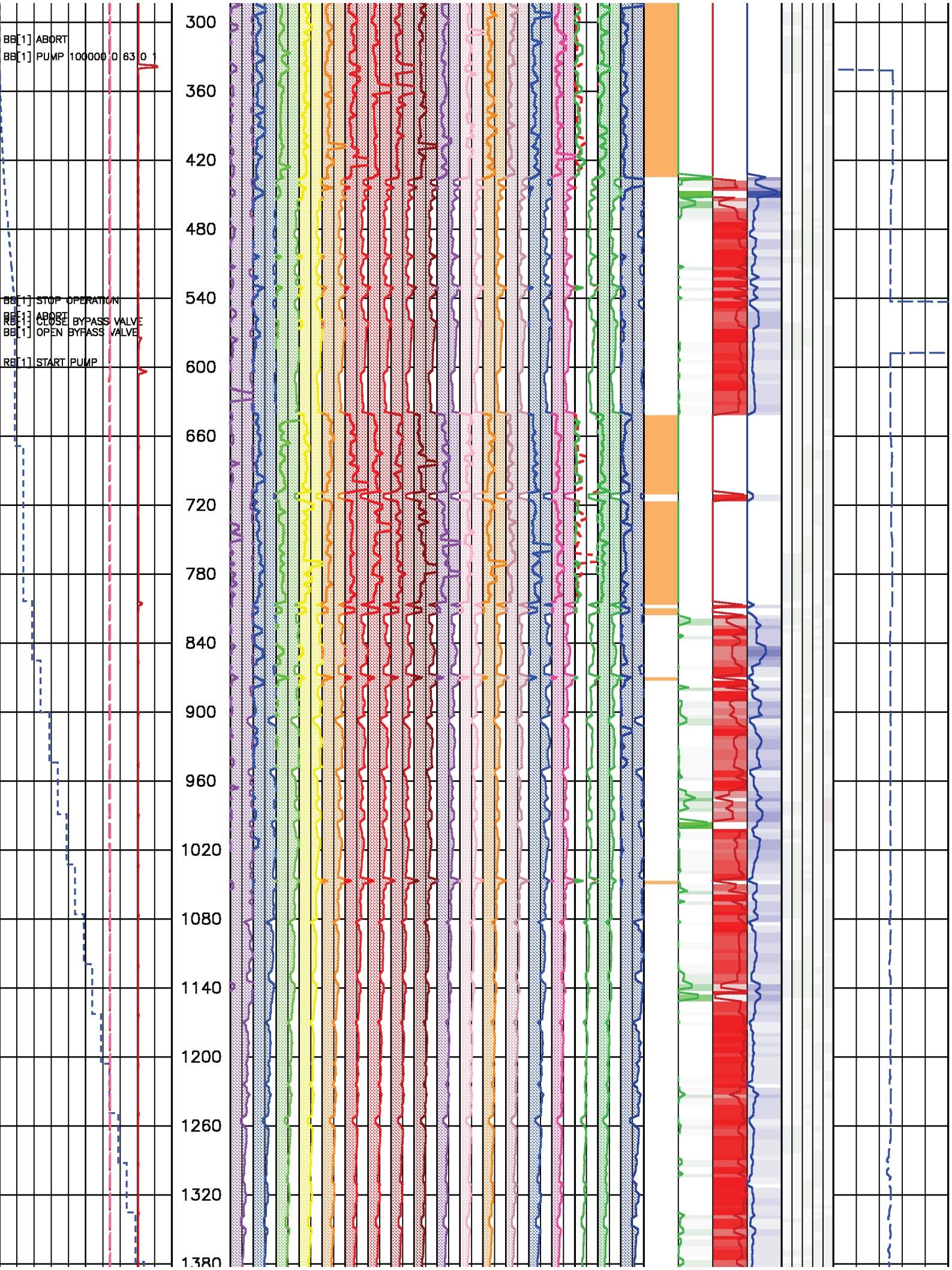
Depth MD 2824.3 m TVD 2824.3 m

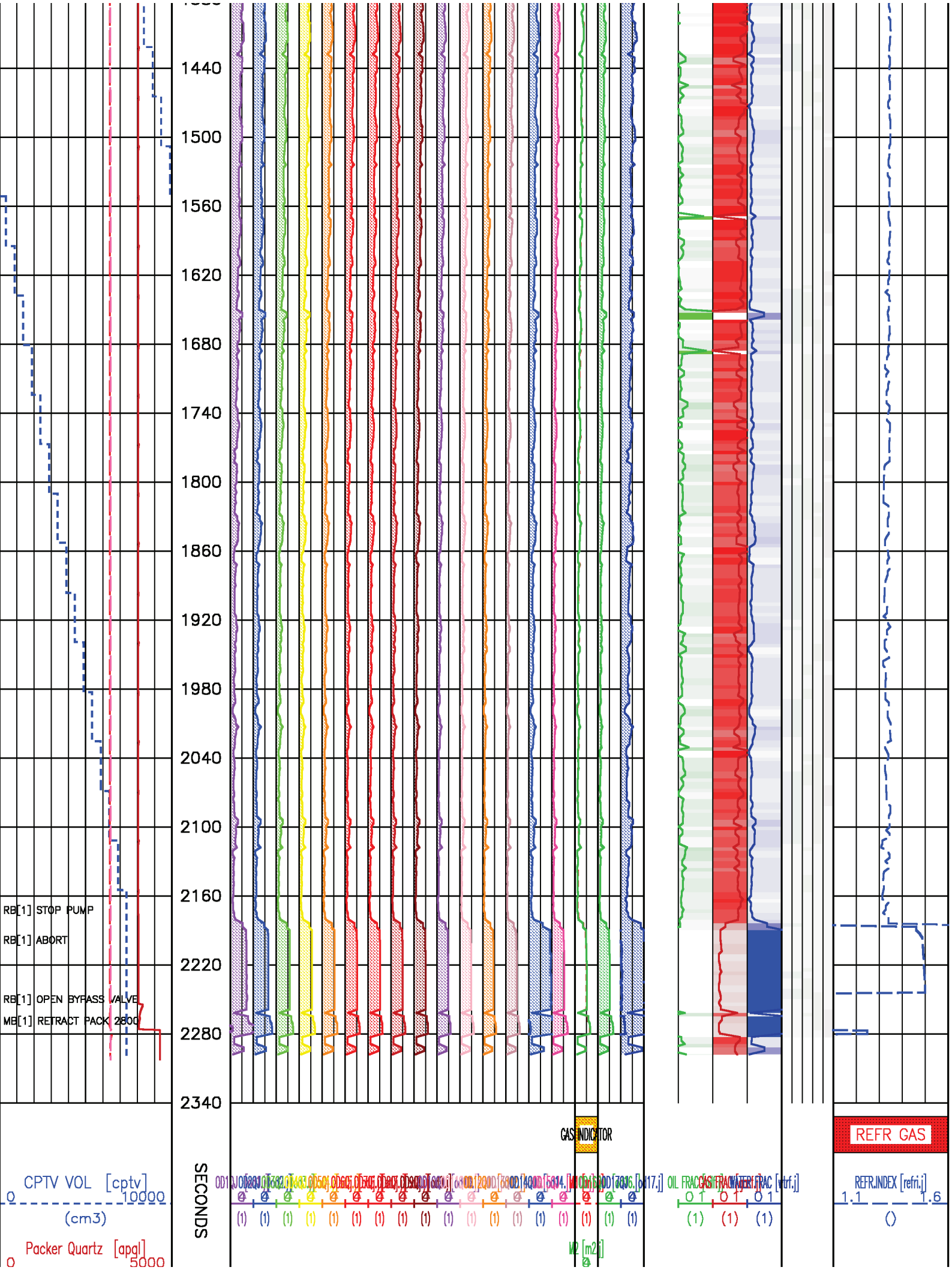


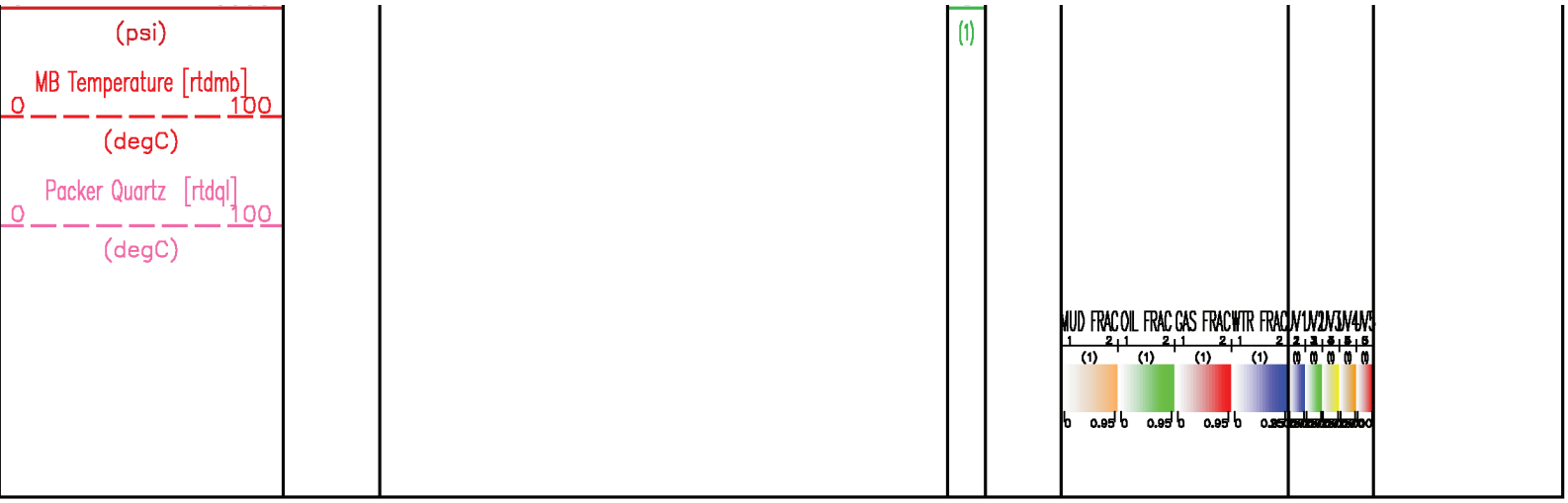


Data File : k800g14.aff
Presentation: samplev_ibch.log




BB[1] ABORT
BB[1] PUMP 100000 0 63 0 1
BB[1] STOP OPERATION
BB[1] ABORT
RB[1] CLOSE BYPASS VALVE
BB[1] OPEN BYPASS VALVE
RB[1] START PUMP
300
360
420
480
540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380

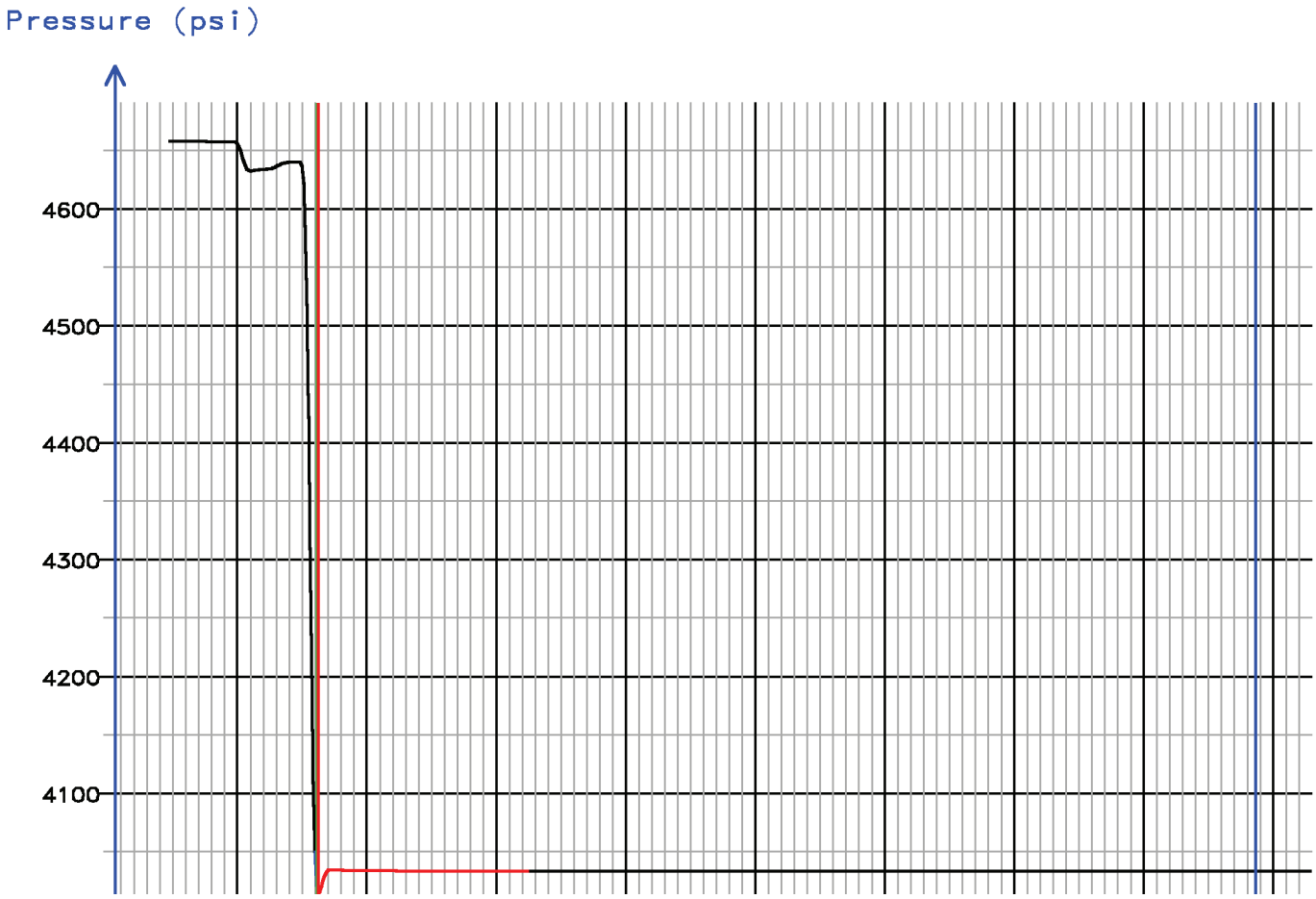

1440
1500
1560
1620
1680
1740
1800
1860
1920
1980
2040
2100
2160
2220
2280
2340
SECONDS
RB[1] STOP PUMP
RB[1] ABORT
RB[1] OPEN BYPASS VALVE
MB[1] RETRACT PACK 2800
CPTV VOL [cptv]
0
10000
(cm3)
Packer Quartz [apql]
0
5000
GAS INDICATOR
OIL FRAC
GAS FRAC
WATER FRAC [wfrf.j]
REFR GAS
REFR.INDEX [refri.j]
1.1
1.6
()
M2 [m2]

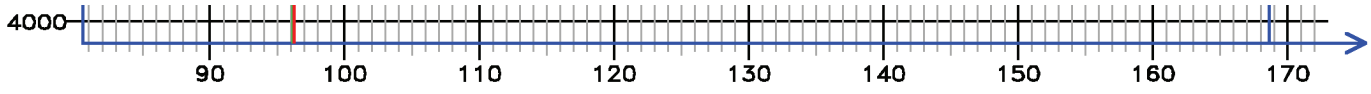


Sample Tests – Level 11 Tool Instance 1
MD 2824.3 m TVD 2824.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2824.3 m TVD 2824.3 m





Time (s)

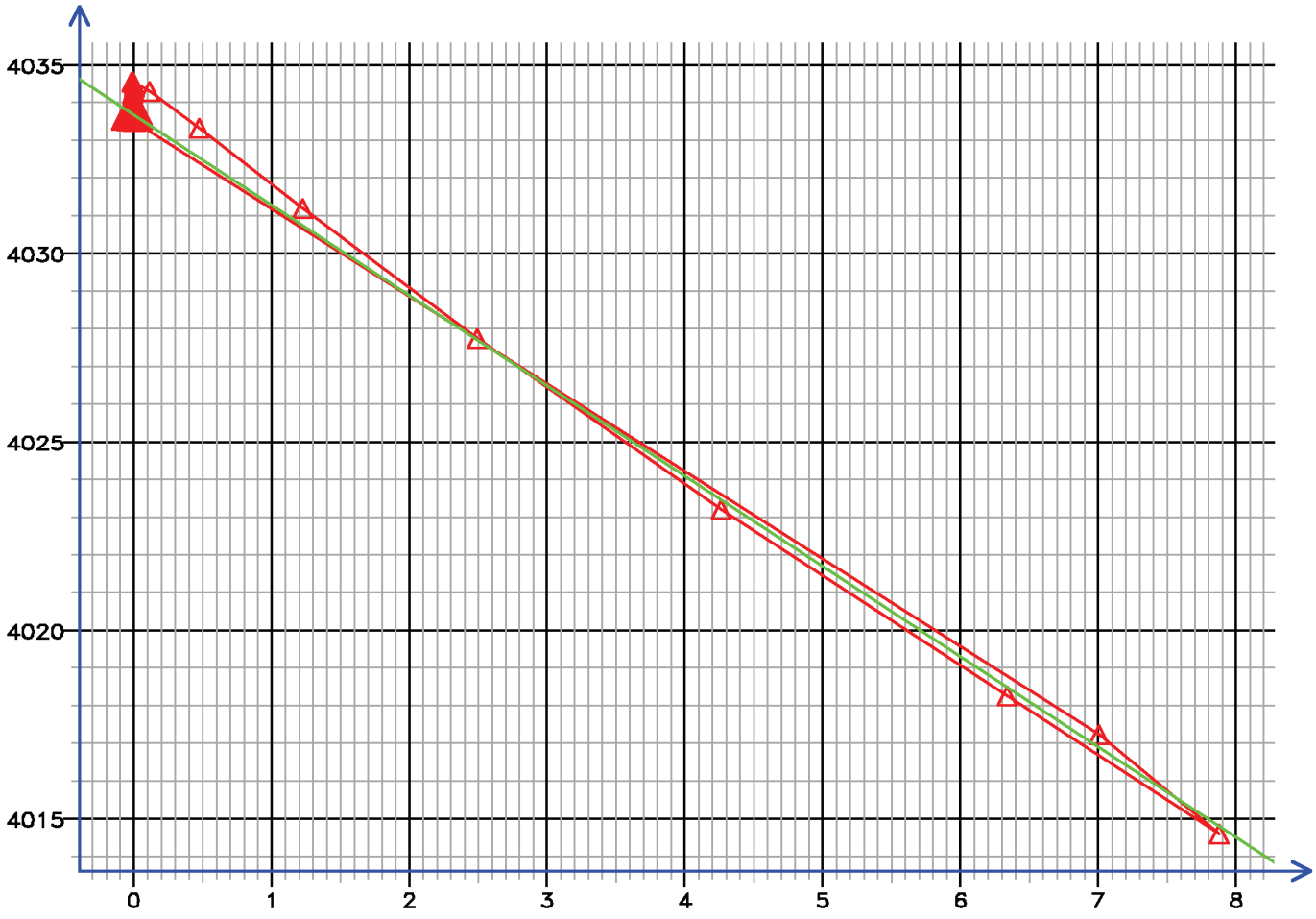
MD: 2824.29 TVD: 2824.29 (m) [011.1.096]

Final BU	4033.52	psi	DD Volume	11.25	cm3	Temp	64.55	degC
BU Stability	−0.02101	psi/min	Min Flow P	4013.42	psi	Temp Stability	0.02315	degC/min
BU Repeat	n/a	psi	DD Rate	11.40	cm3/s	FRA	0.991	R2
P_hydro	4663.23	psi	Mobility DD	1951.966	mD/cP	Mobility Kfra	1439.735	mD/cP

FLOW RATE ANALYSIS

Depth MD 2824.3 m TVD 2824.3 m

Pressure (psi)

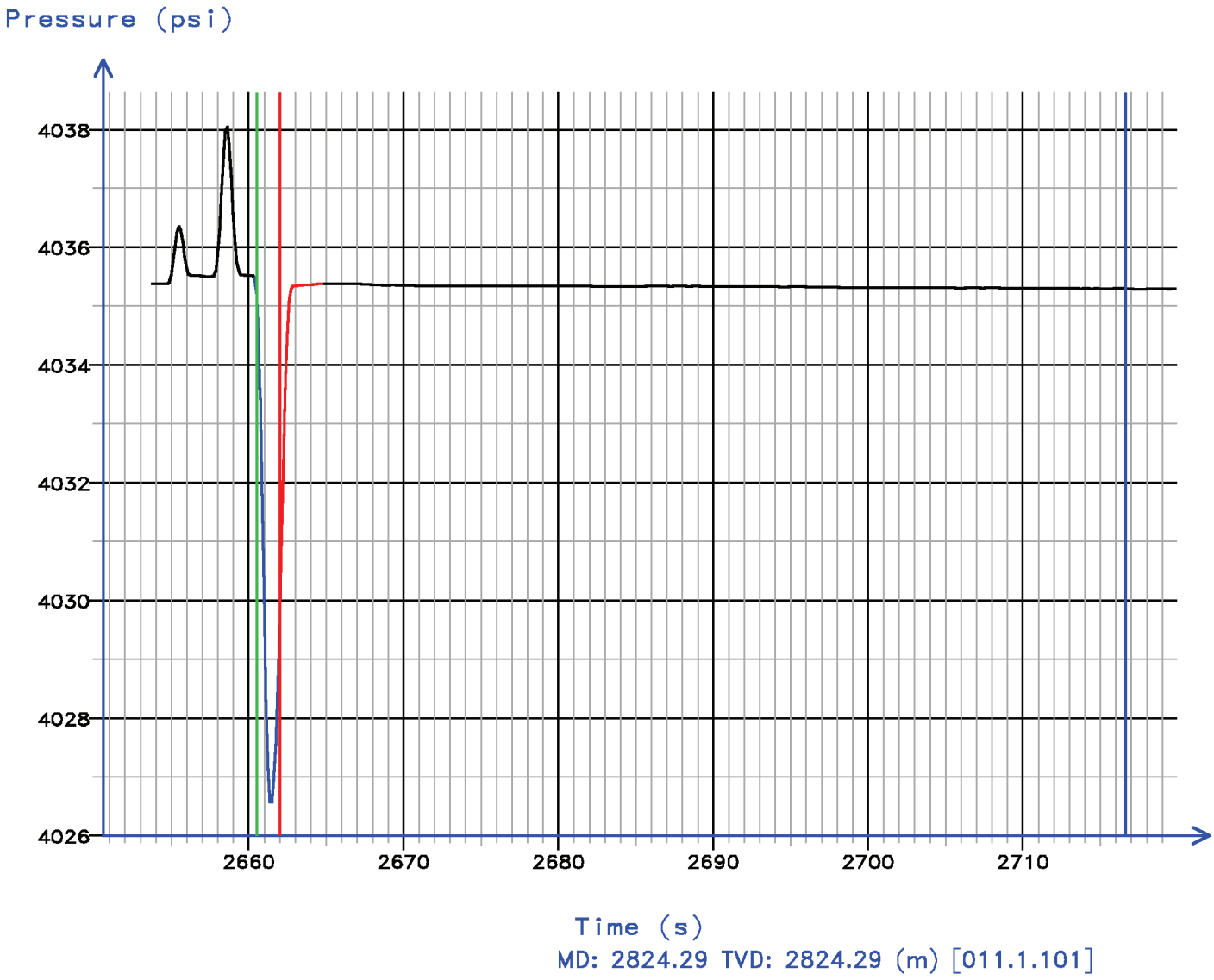


Flow Rate (cm3/s)

Kfra 1439.735, Kddu 1951.587 (mD/cP) Confidence 99.10% MD 2824.29 (m)

PRESSURE HISTORY (apql vs. time)

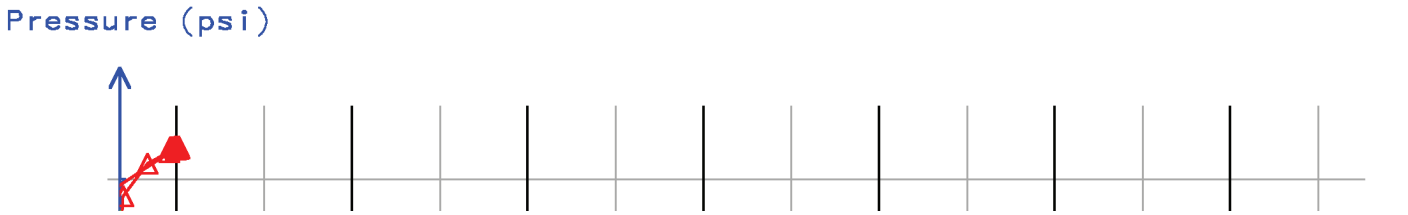
Depth MD 2824.3 m TVD 2824.3 m

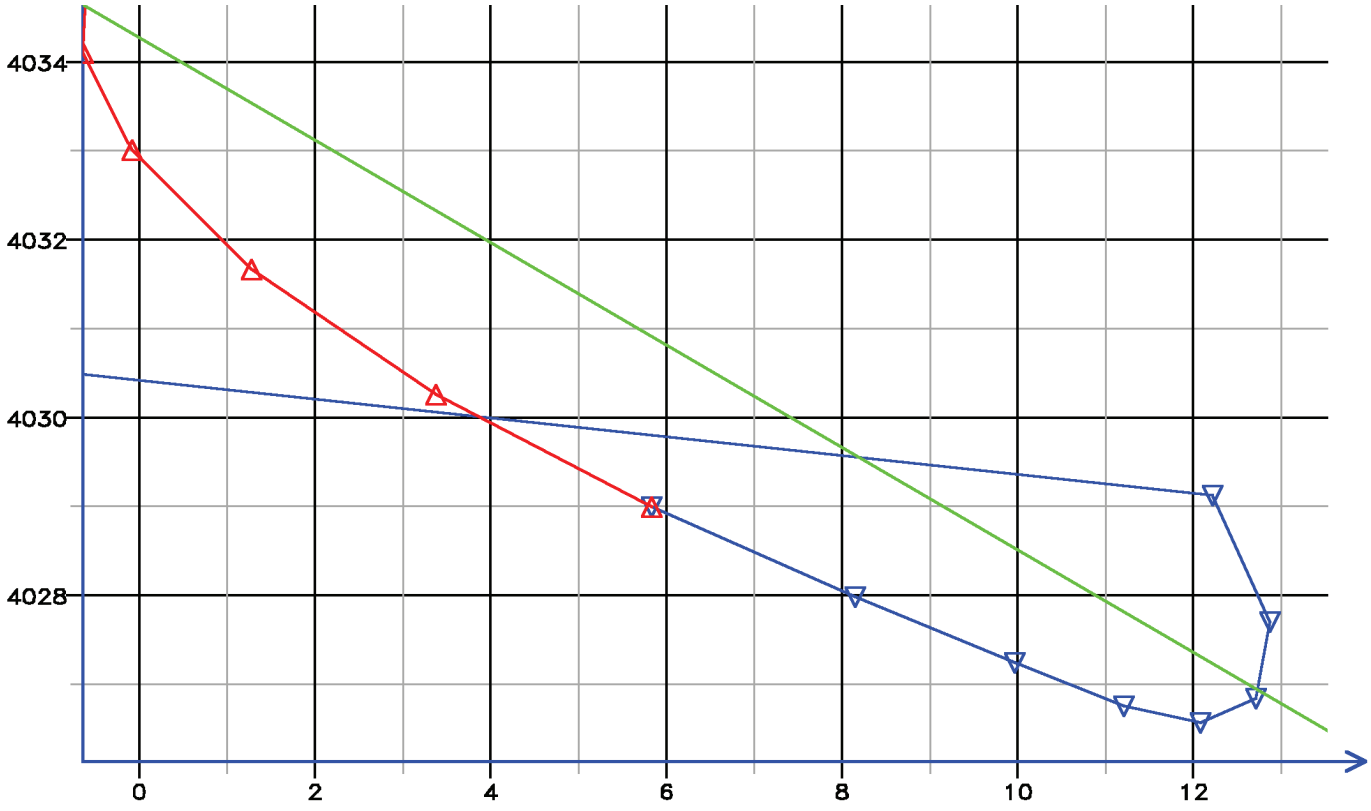


Final BU	4035.29	psi	DD Volume	13.31	cm3	Temp	65.04	degC
BU Stability	−0.08871	psi/min	Min Flow P	4026.57	psi	Temp Stability	0.01086	degC/min
BU Repeat	1.765	psi	DD Rate	12.09	cm3/s	FRA	0.750	R2
P_hydro	4663.23	psi	Mobility DD	4772.771	mD/cP	Mobility Kfra	5986.046	mD/cP

FLOW RATE ANALYSIS

Depth MD 2824.3 m TVD 2824.3 m

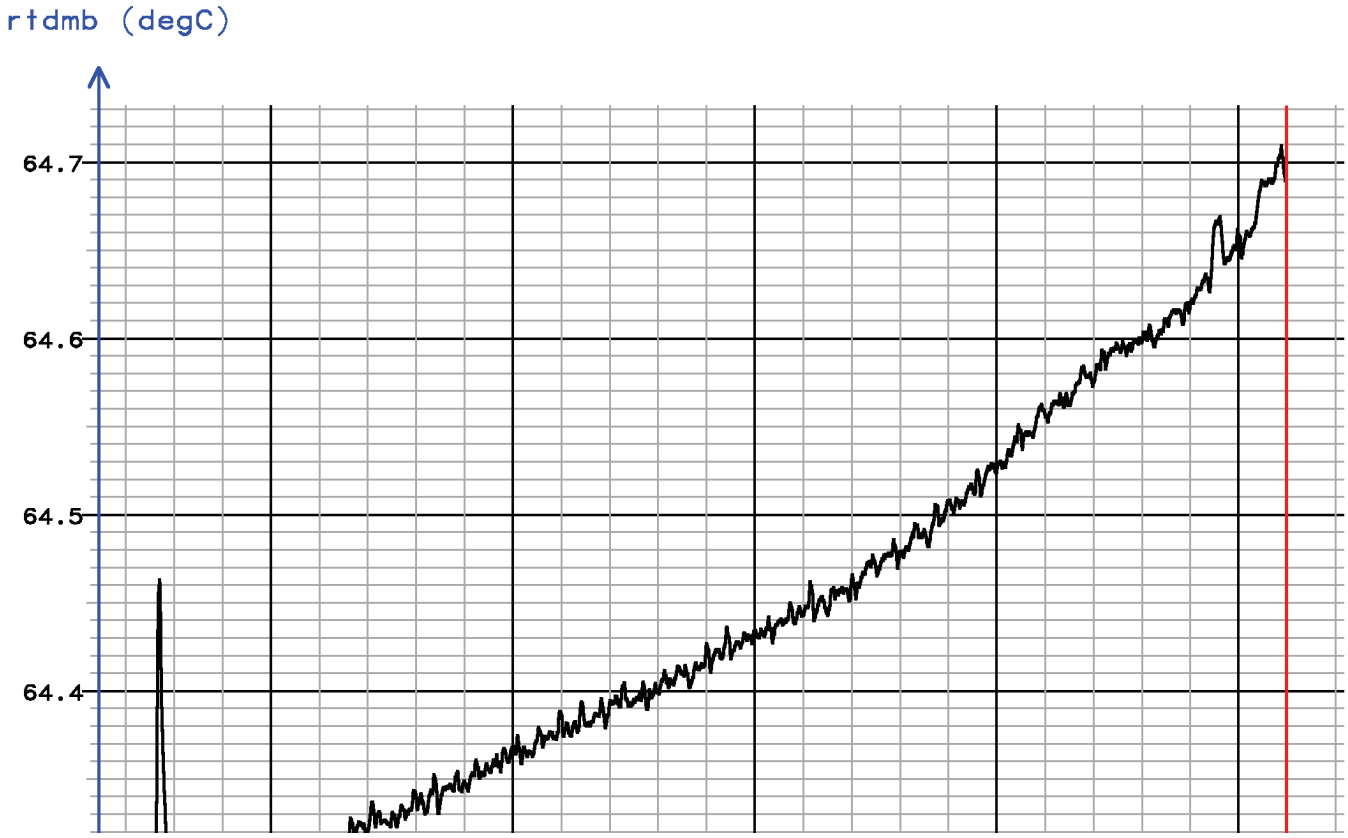


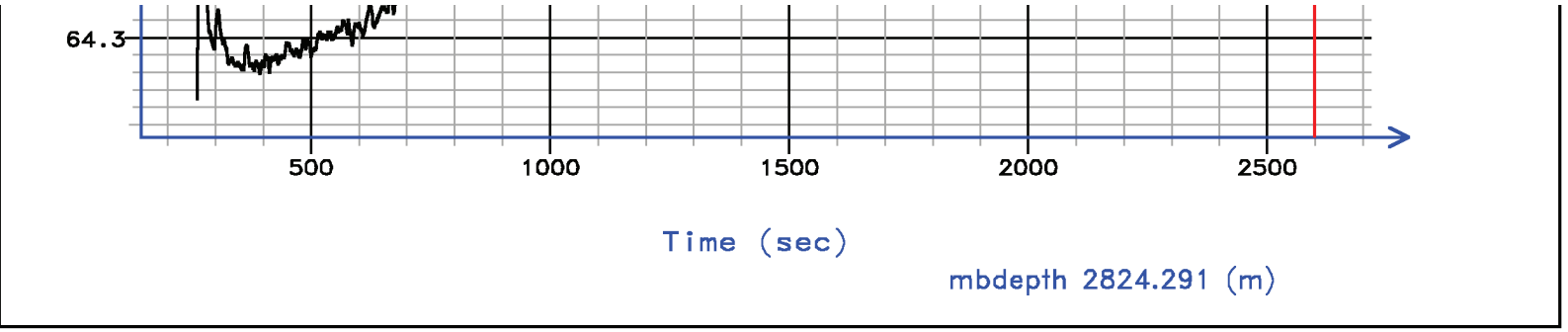


Kfra 5986.046, Kddu 4766.766 (mD/cP) Confidence 75.05% MD 2824.29 (m)

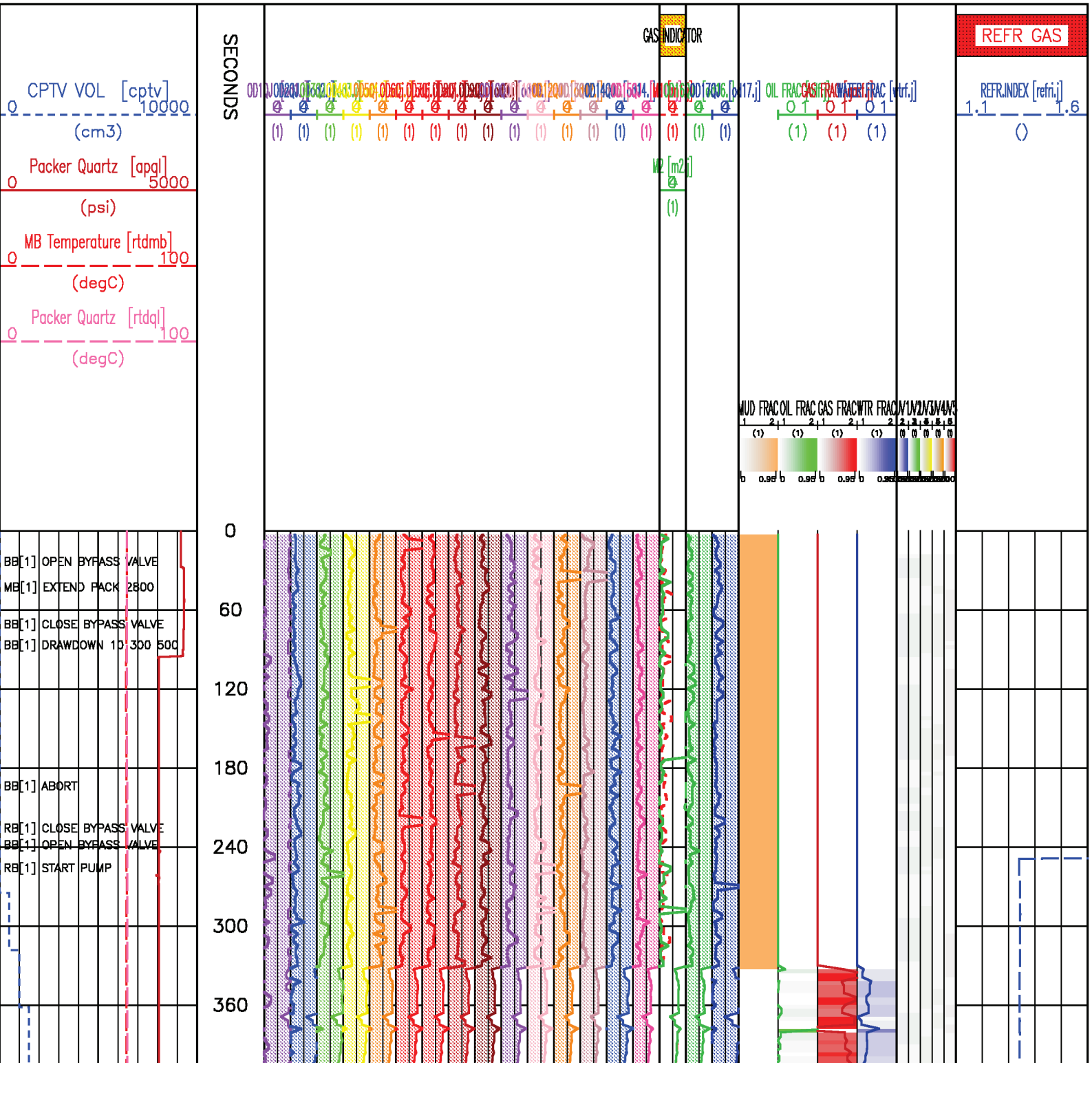
FLUID LINE (rtdmb vs. time)

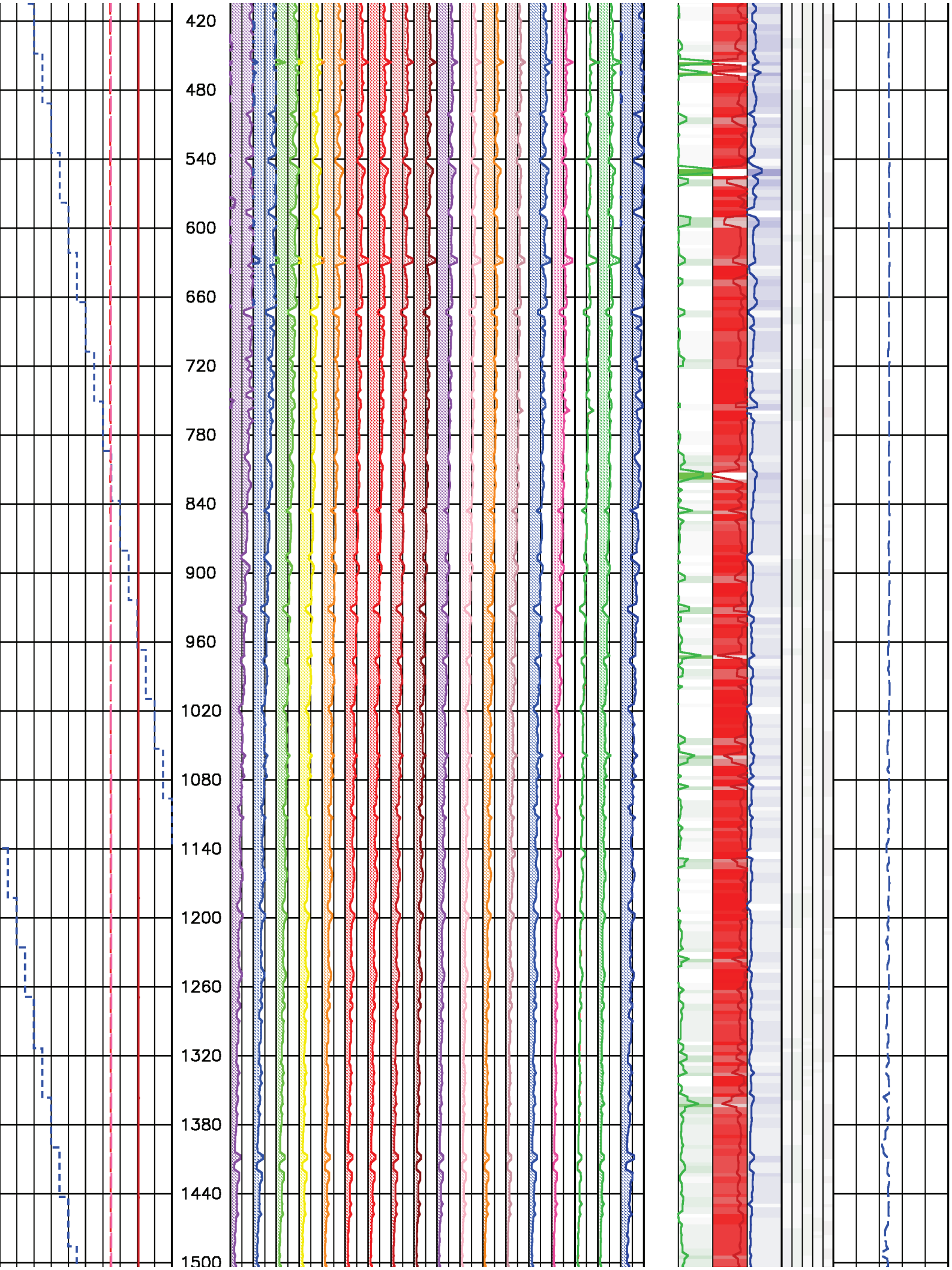
Depth MD 2824.3 m TVD 2824.3 m

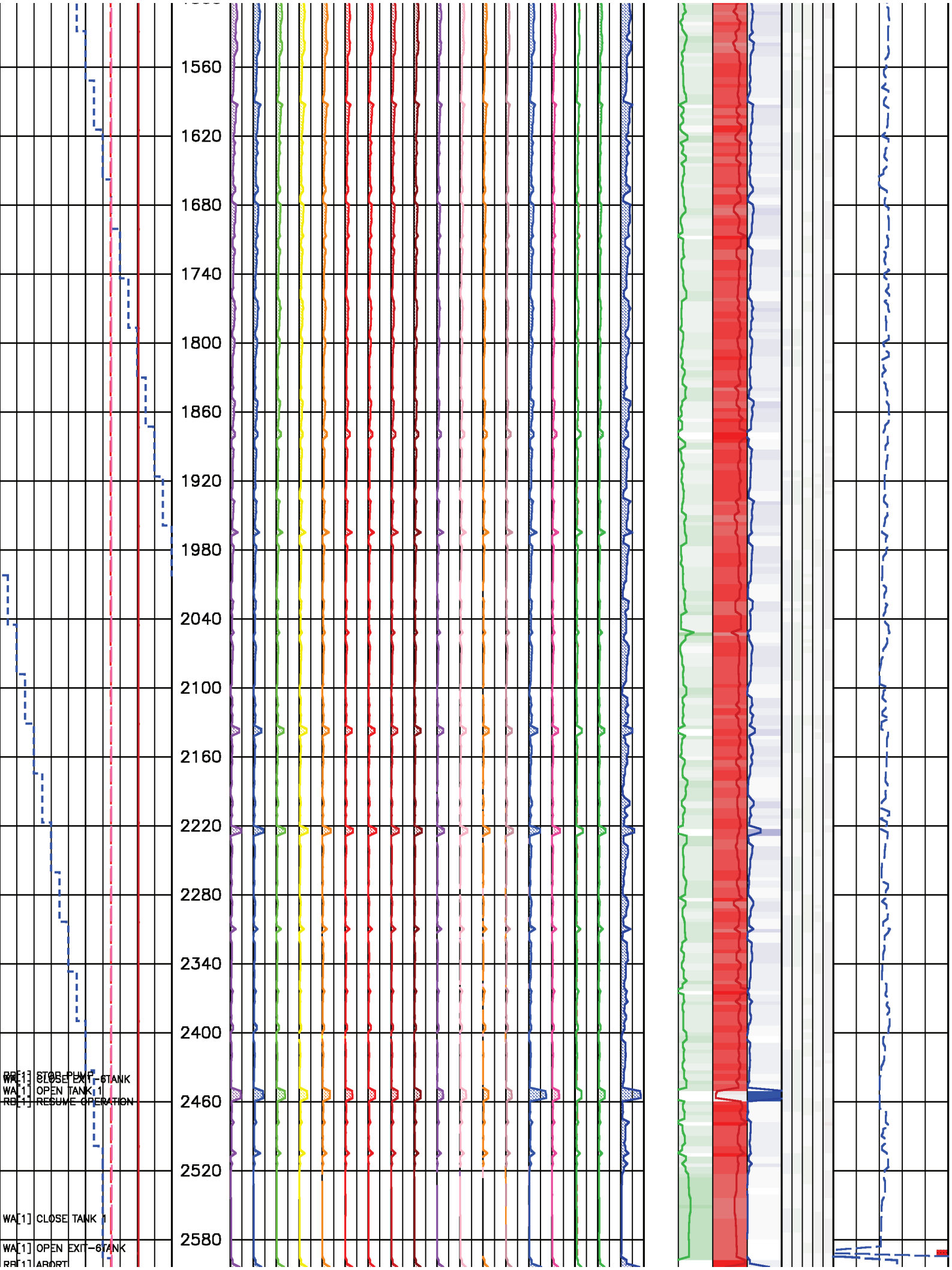


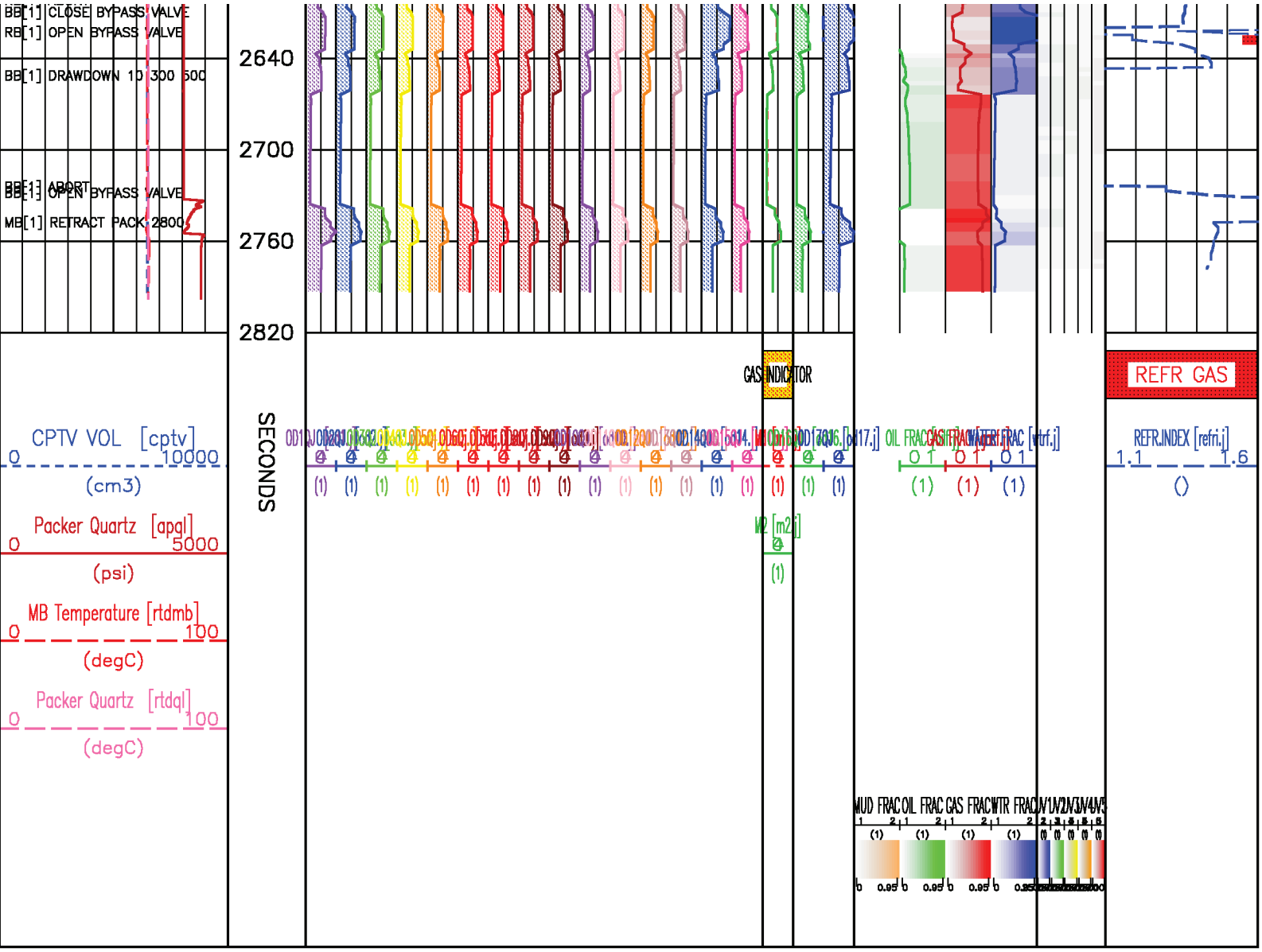


Data File : k800g15.aff
Presentation: samplev_ibch.log




420
480
540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500

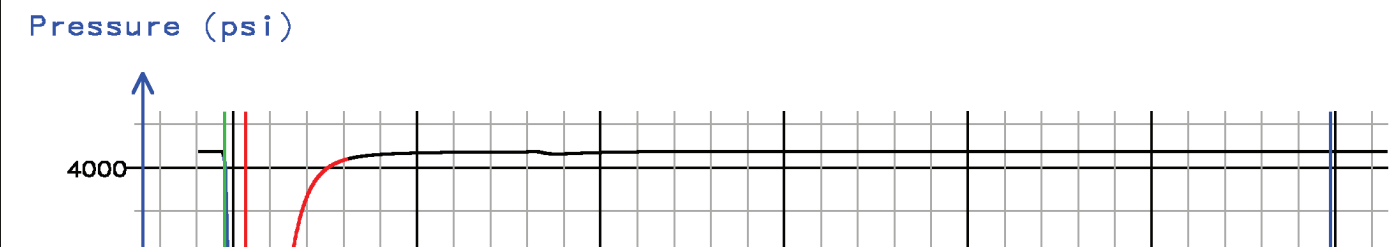

1560
1620
1680
1740
1800
1860
1920
1980
2040
2100
2160
2220
2280
2340
2400
2460
2520
2580
RB[1] STOP PUMP
WA[1] CLOSE EXIT-6TANK
WA[1] OPEN TANK 1
RB[1] RESUME OPERATION
WA[1] CLOSE TANK 1
WA[1] OPEN EXIT-6TANK
RB[1] ABORT

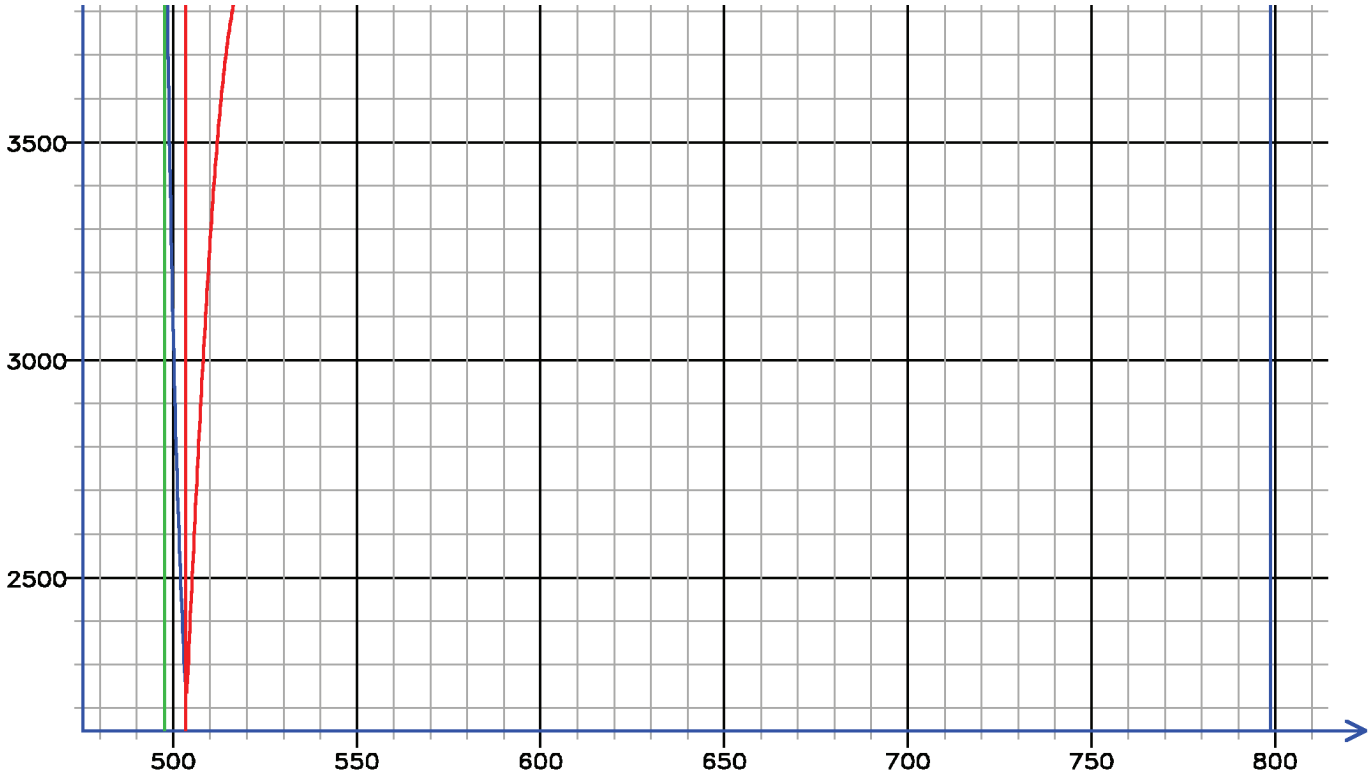


Pressure Tests – Level 12 Tool Instance 1
MD 2828.7 m TVD 2828.7 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2828.7 m TVD 2828.7 m

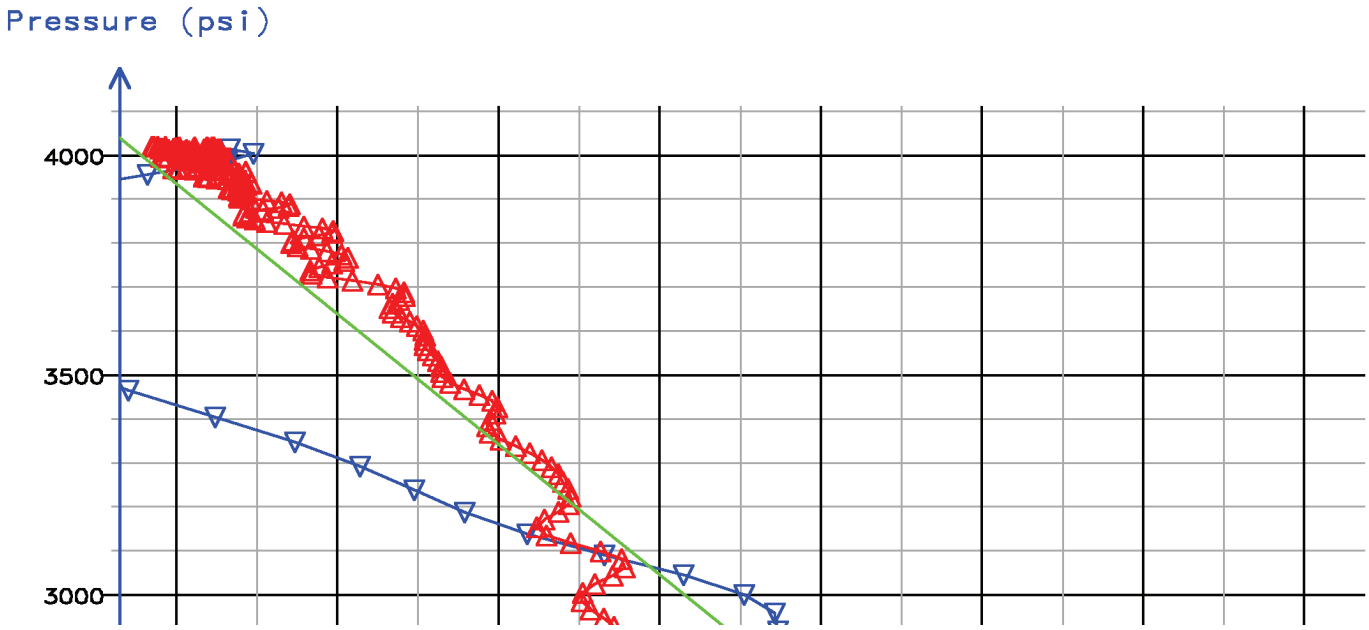


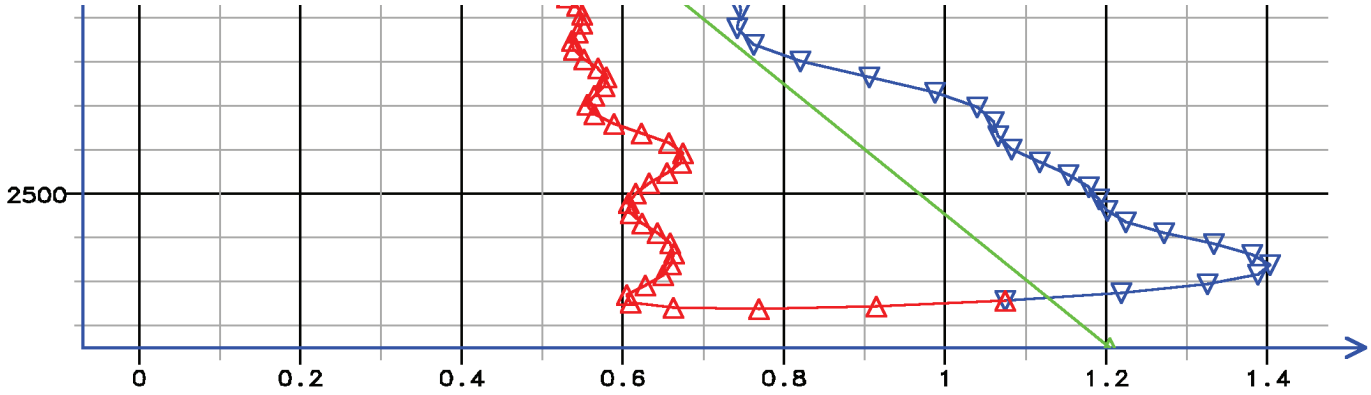


Final BU	4036.73	psi	DD Volume	10.09	cm3	Temp	65.30 degC
BU Stability	−0.08089	psi/min	Min Flow P	2237.15	psi	Temp Stability	0.00854 degC/min
BU Repeat	−0.029	psi	DD Rate	2.02	cm3/s	FRA	0.818 R2
P_hydro	4671.33	psi	Mobility DD	3.857	mD/cP	Mobility Kfra	2.307 mD/cP

FLOW RATE ANALYSIS

Depth MD 2828.7 m TVD 2828.7 m



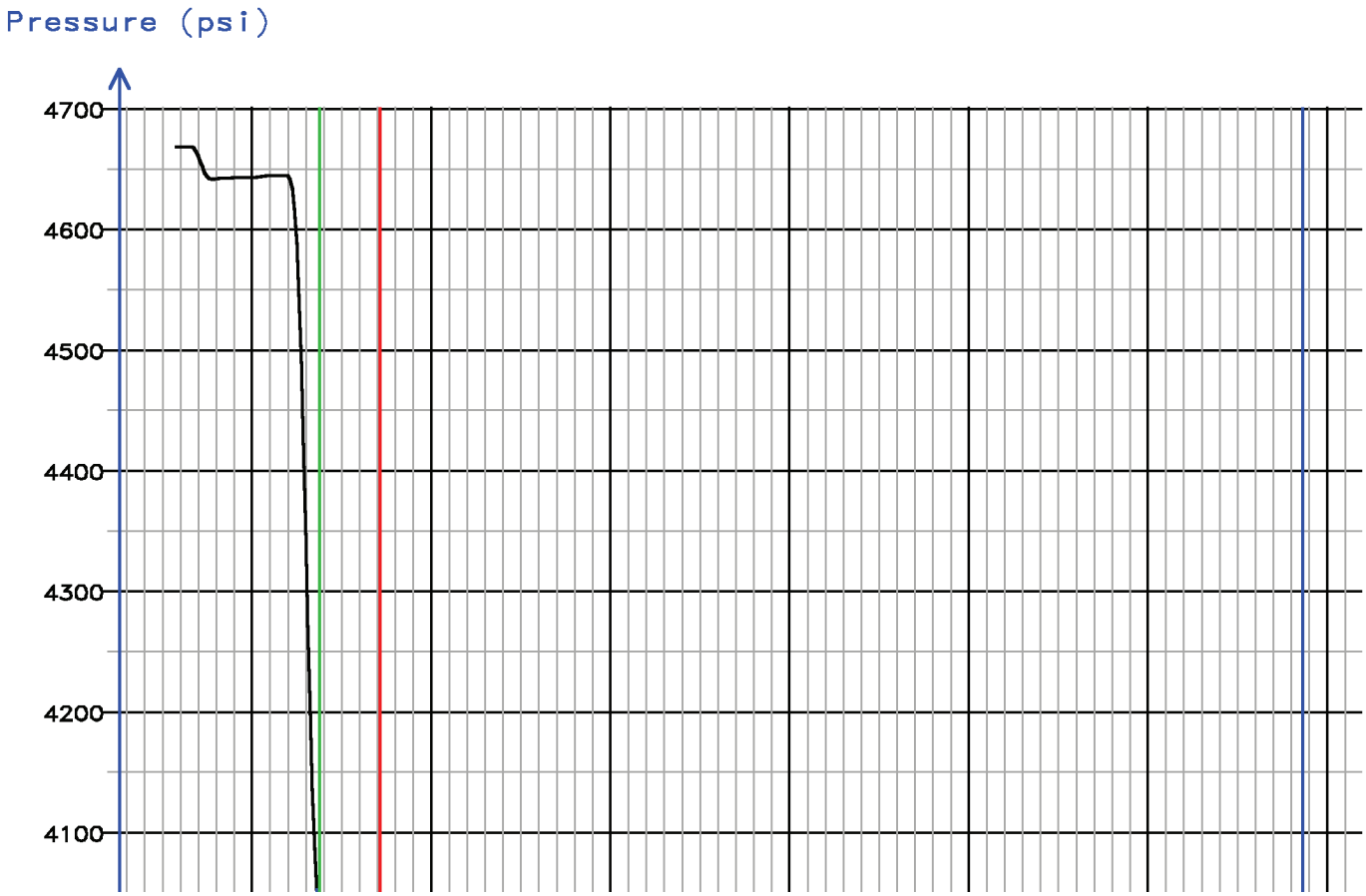


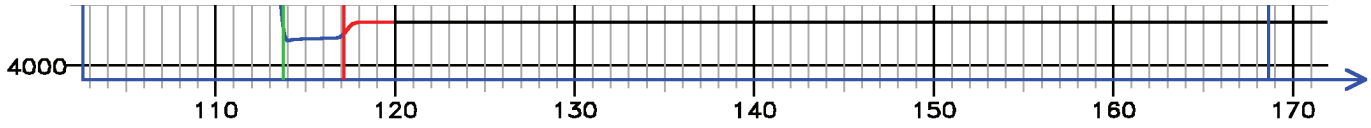
Kfra 2.307, Kddu 3.857 (mD/cP) Confidence 81.82% MD 2828.71 (m)

Pressure Tests – Level 13 Tool Instance 1
MD 2829.8 m TVD 2829.8 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2829.8 m TVD 2829.8 m





Time (s)

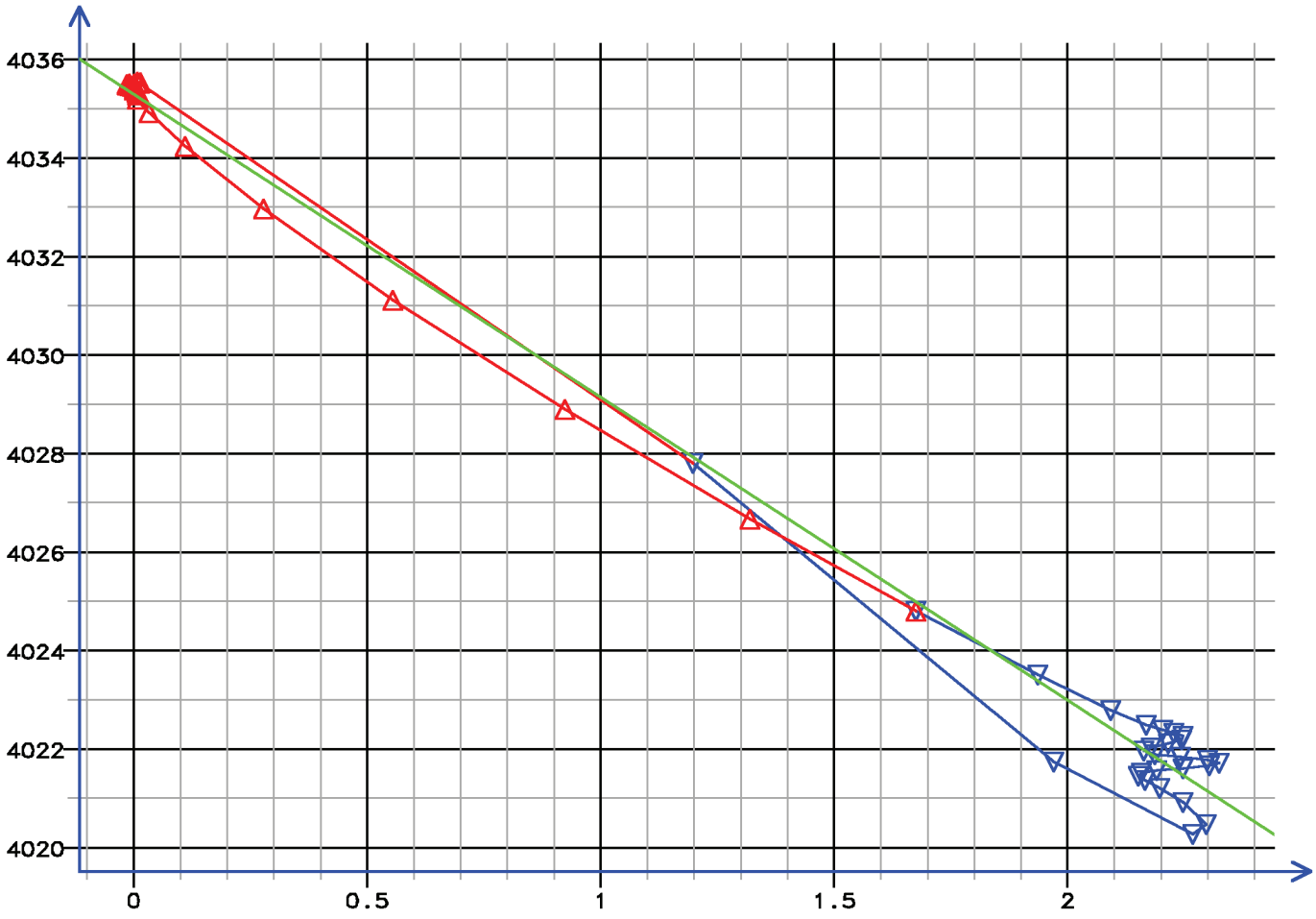
MD: 2829.80 TVD: 2829.80 (m) [013.1.118]

Final BU	4035.45	psi	DD Volume	9.86	cm3	Temp	65.34 degC
BU Stability	−0.03554	psi/min	Min Flow P	4020.23	psi	Temp Stability	0.01336 degC/min
BU Repeat	n/a	psi	DD Rate	2.32	cm3/s	FRA	0.994 R2
P_hydro	4673.35	psi	Mobility DD	524.119	mD/cP	Mobility Kfra	559.272 mD/cP

FLOW RATE ANALYSIS

Depth MD 2829.8 m TVD 2829.8 m

Pressure (psi)



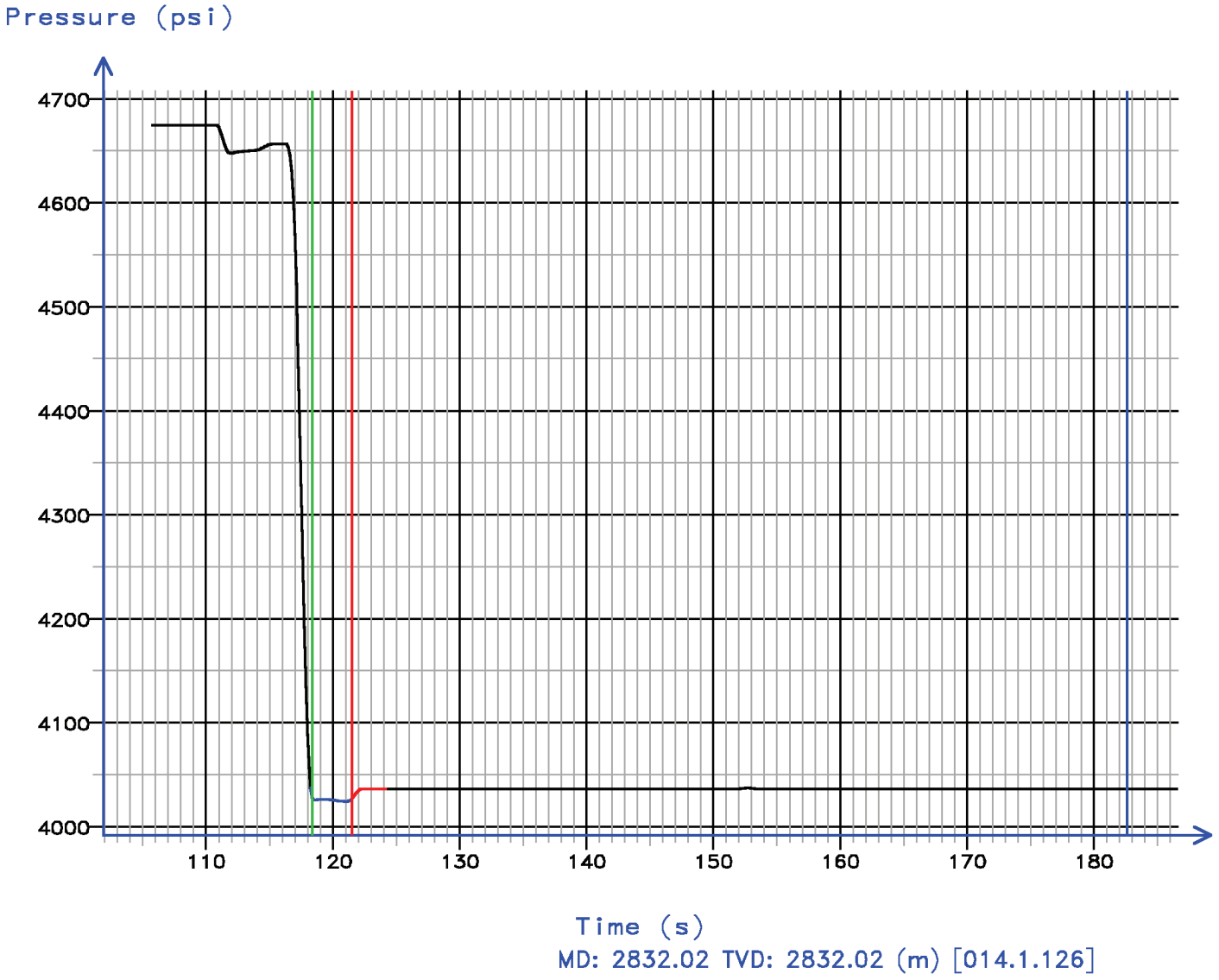
Flow Rate (cm3/s)

Kfra 559.272, Kddu 523.968 (mD/cP) Confidence 99.42% MD 2829.80 (m)

Pressure Tests — Level 14 Tool Instance 1
MD 2832.0 m TVD 2832.0 m

PRESSURE HISTORY (apql vs. time)

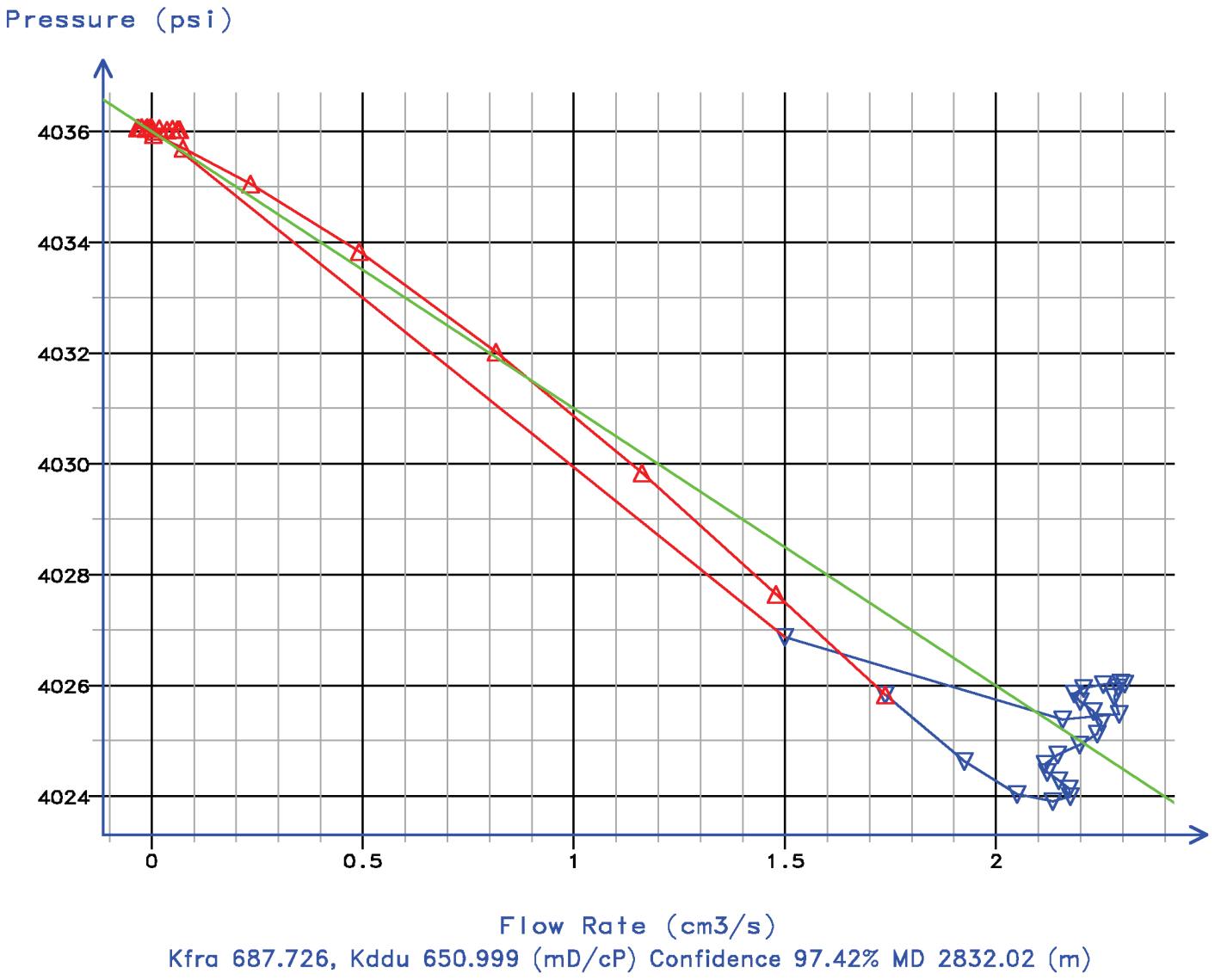
Depth MD 2832.0 m TVD 2832.0 m



Final BU	4036.06	psi	DD Volume	9.84	cm3	Temp	65.43	degC
BU Stability	−0.06309	psi/min	Min Flow P	4023.89	psi	Temp Stability	0.01328	degC/min
BU Repeat	n/a	psi	DD Rate	2.30	cm3/s	FRA	0.974	R2
P_hydro	4677.23	psi	Mobility DD	651.051	mD/cP	Mobility Kfra	687.726	mD/cP

FLOW RATE ANALYSIS

Depth MD 2832.0 m TVD 2832.0 m

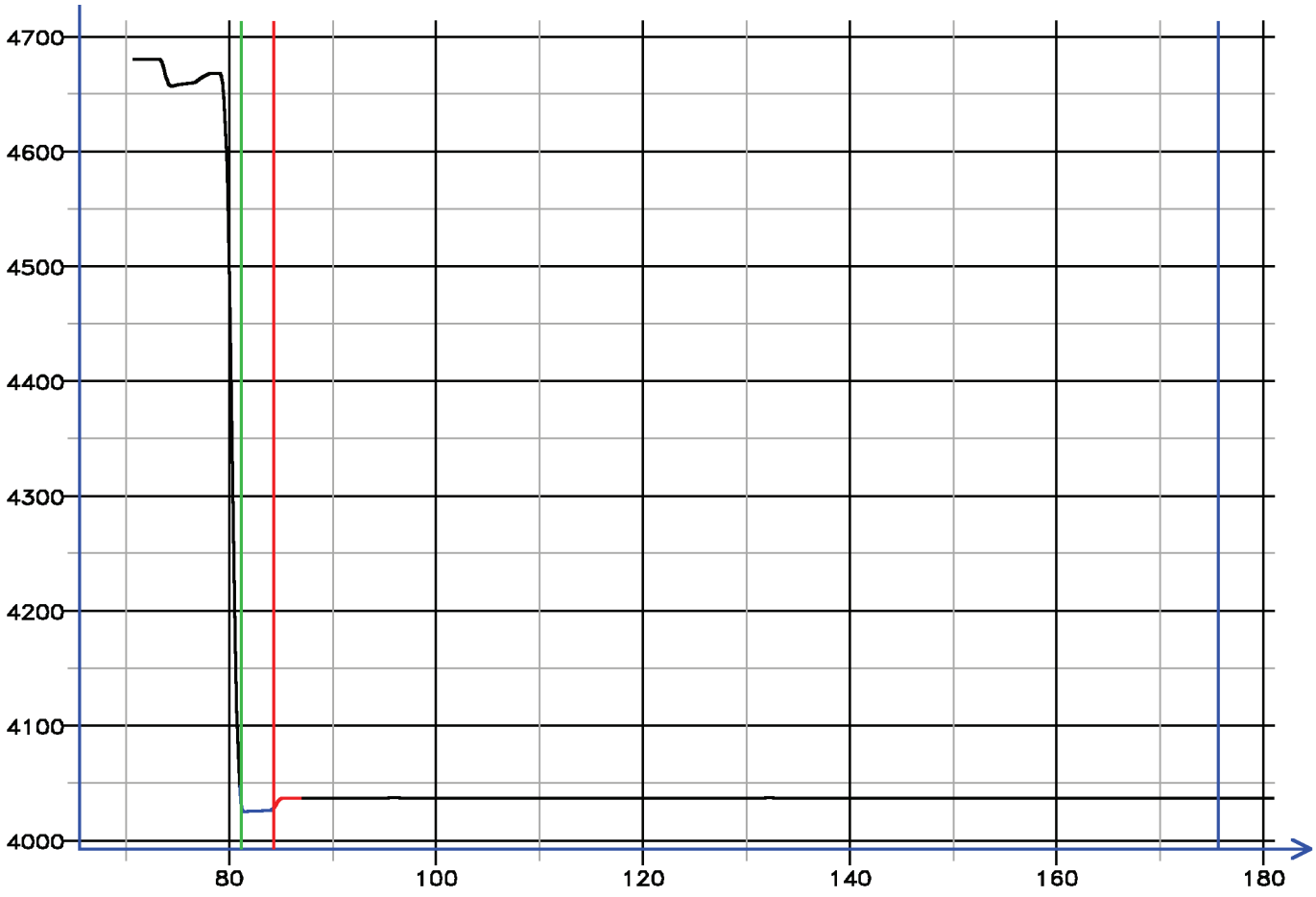


Kfra 687.726, Kddu 650.999 (mD/cP) Confidence 97.42% MD 2832.02 (m)

Pressure Tests – Level 15 Tool Instance 1
MD 2833.5 m TVD 2833.5 m

PRESSURE HISTORY (apql vs. time)

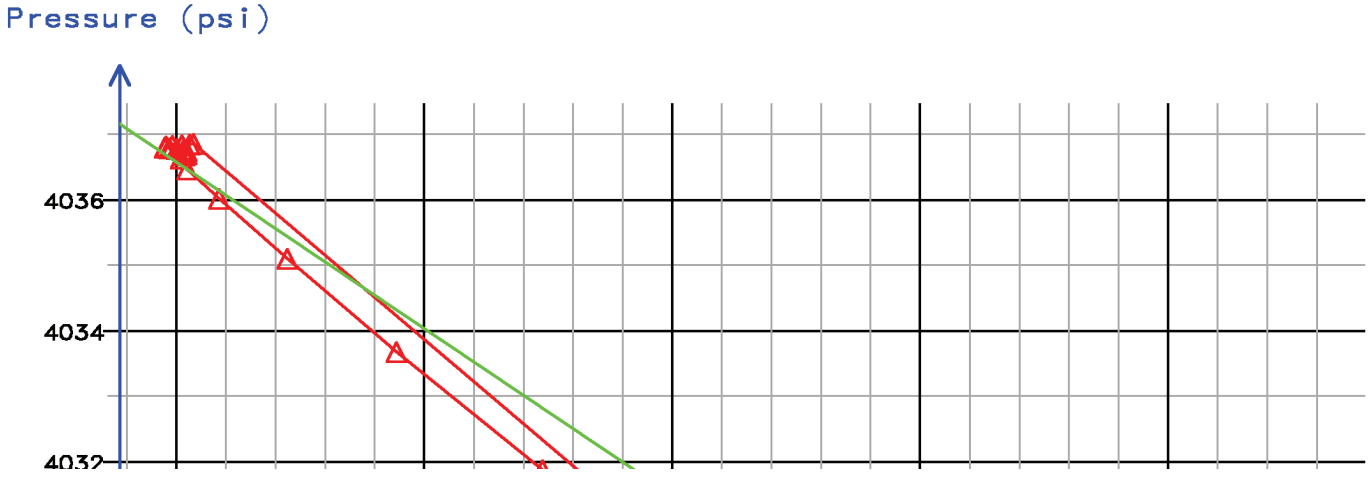
Depth MD 2833.5 m TVD 2833.5 m

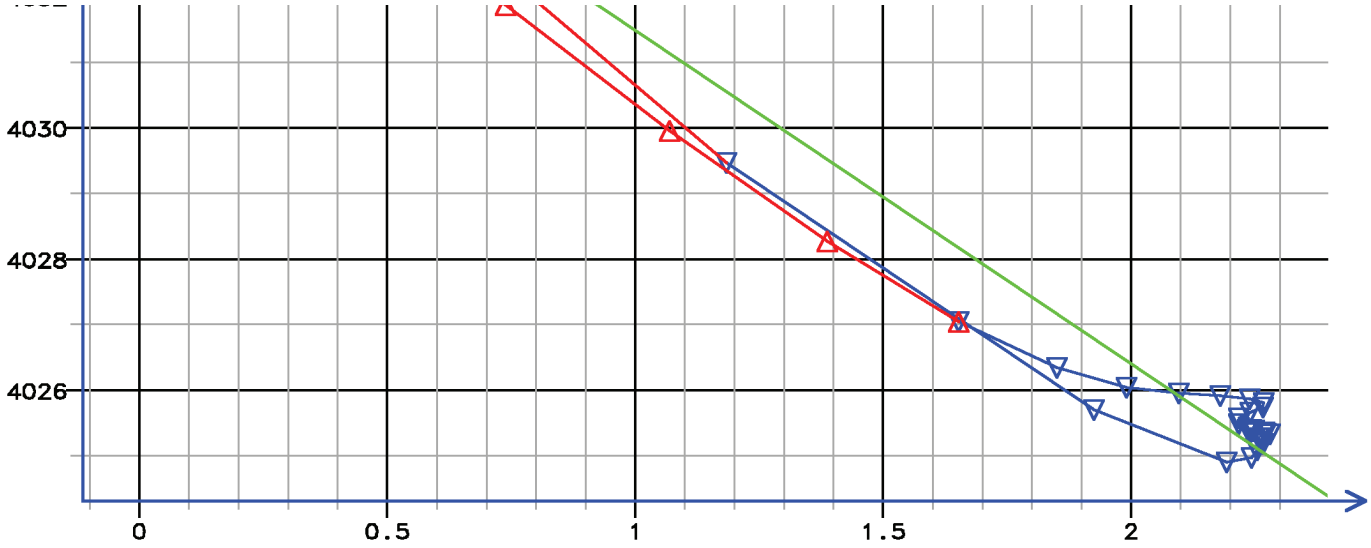


Final BU	4036.76	psi	DD Volume	9.91	cm3	Temp	65.48	degC
BU Stability	−0.04100	psi/min	Min Flow P	4024.89	psi	Temp Stability	0.00327	degC/min
BU Repeat	n/a	psi	DD Rate	2.28	cm3/s	FRA	0.990	R2
P_hydro	4679.94	psi	Mobility DD	662.206	mD/cP	Mobility Kfra	676.176	mD/cP

FLOW RATE ANALYSIS

Depth MD 2833.5 m TVD 2833.5 m





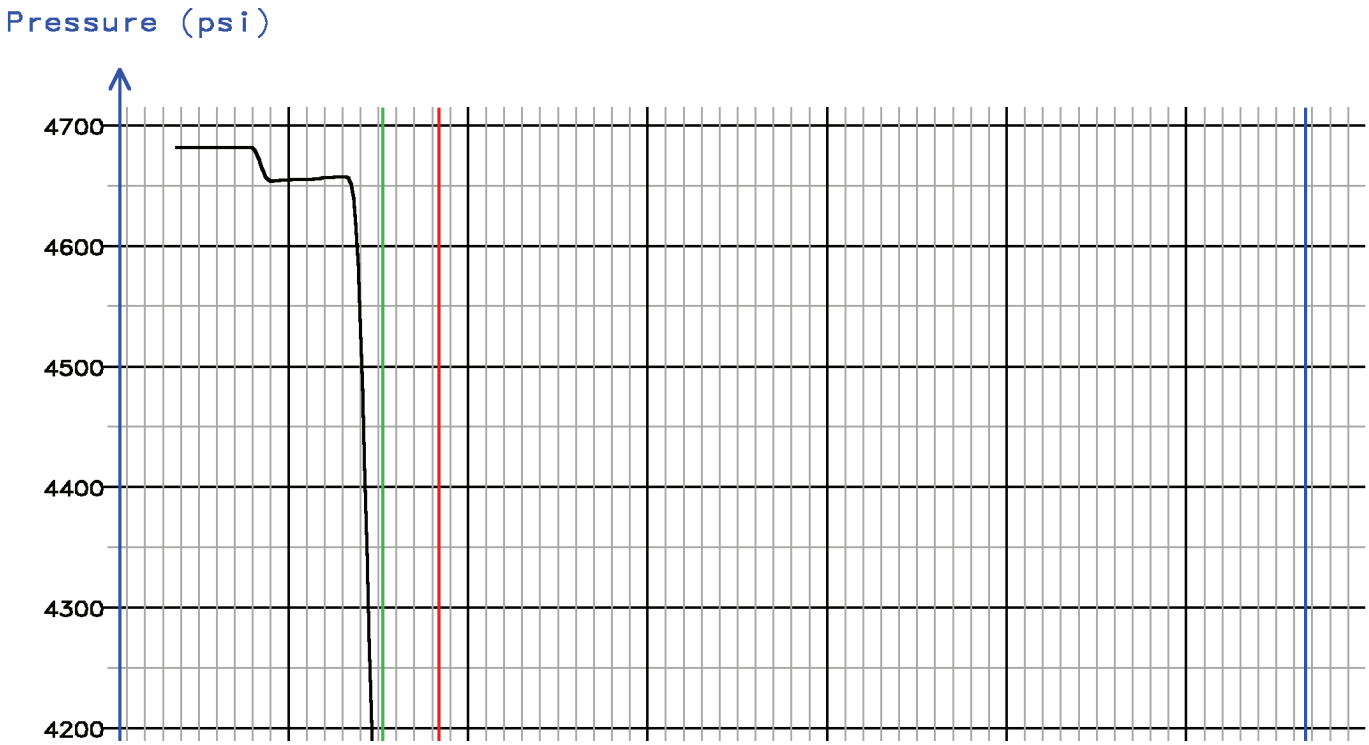
Flow Rate (cm3/s)

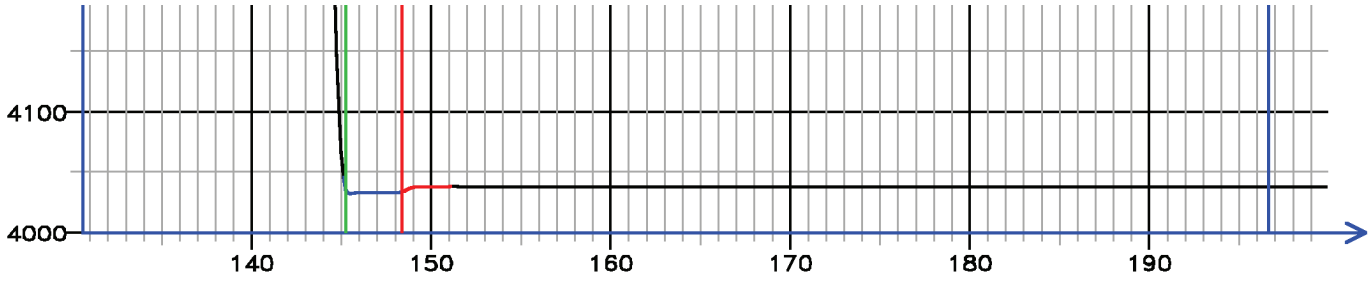
Kfra 676.176, Kddu 662.492 (mD/cP) Confidence 99.03% MD 2833.50 (m)

Pressure Tests – Level 16 Tool Instance 1
MD 2836.0 m TVD 2836.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2836.0 m TVD 2836.0 m





Time (s)

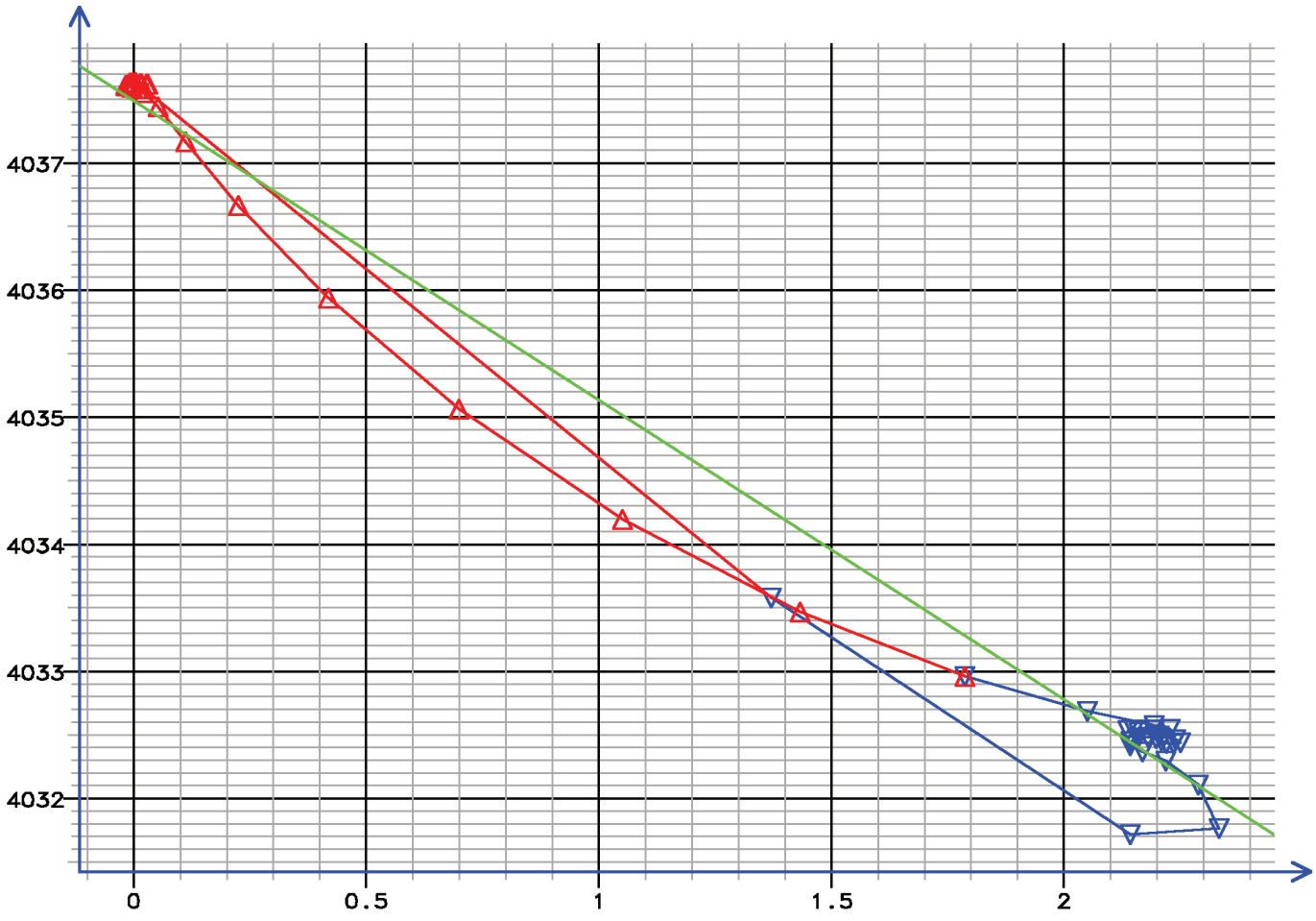
MD: 2836.00 TVD: 2836.00 (m) [016.1.144]

Final BU	4037.61	psi	DD Volume	9.89	cm3	Temp	65.49	degC
BU Stability	−0.00589	psi/min	Min Flow P	4031.56	psi	Temp Stability	0.00451	degC/min
BU Repeat	n/a	psi	DD Rate	2.25	cm3/s	FRA	0.985	R2
P_hydro	4684.11	psi	Mobility DD	1277.661	mD/cP	Mobility Kfra	1460.914	mD/cP

FLOW RATE ANALYSIS

Depth MD 2836.0 m TVD 2836.0 m

Pressure (psi)



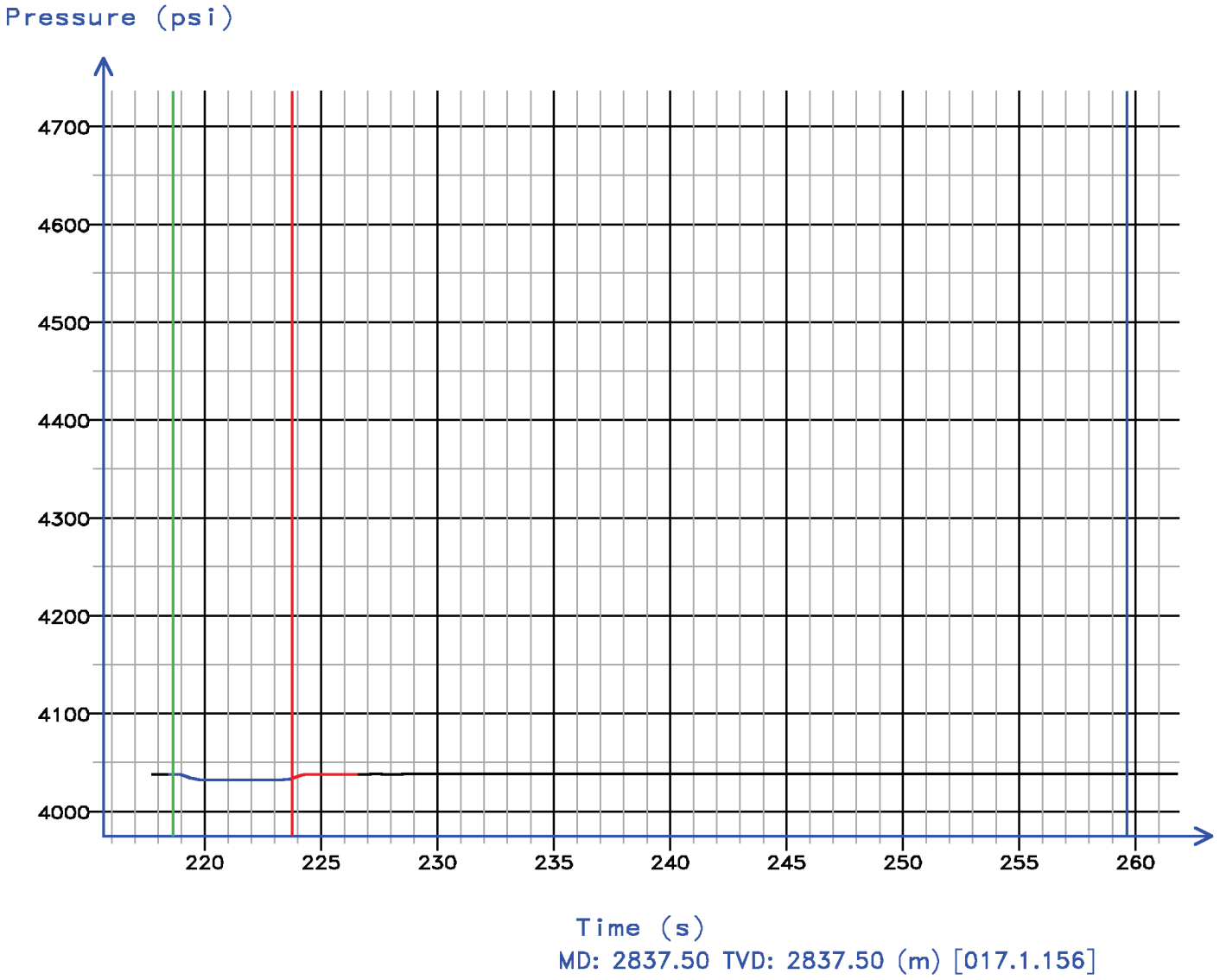
Flow Rate (cm3/s)

Kfra 1460.914. Kddu 1277.970 (mD/cP) Confidence 98.55% MD 2836.00 (m)

Pressure Tests – Level 17 Tool Instance 1
MD 2837.5 m TVD 2837.5 m

PRESSURE HISTORY (apql vs. time)

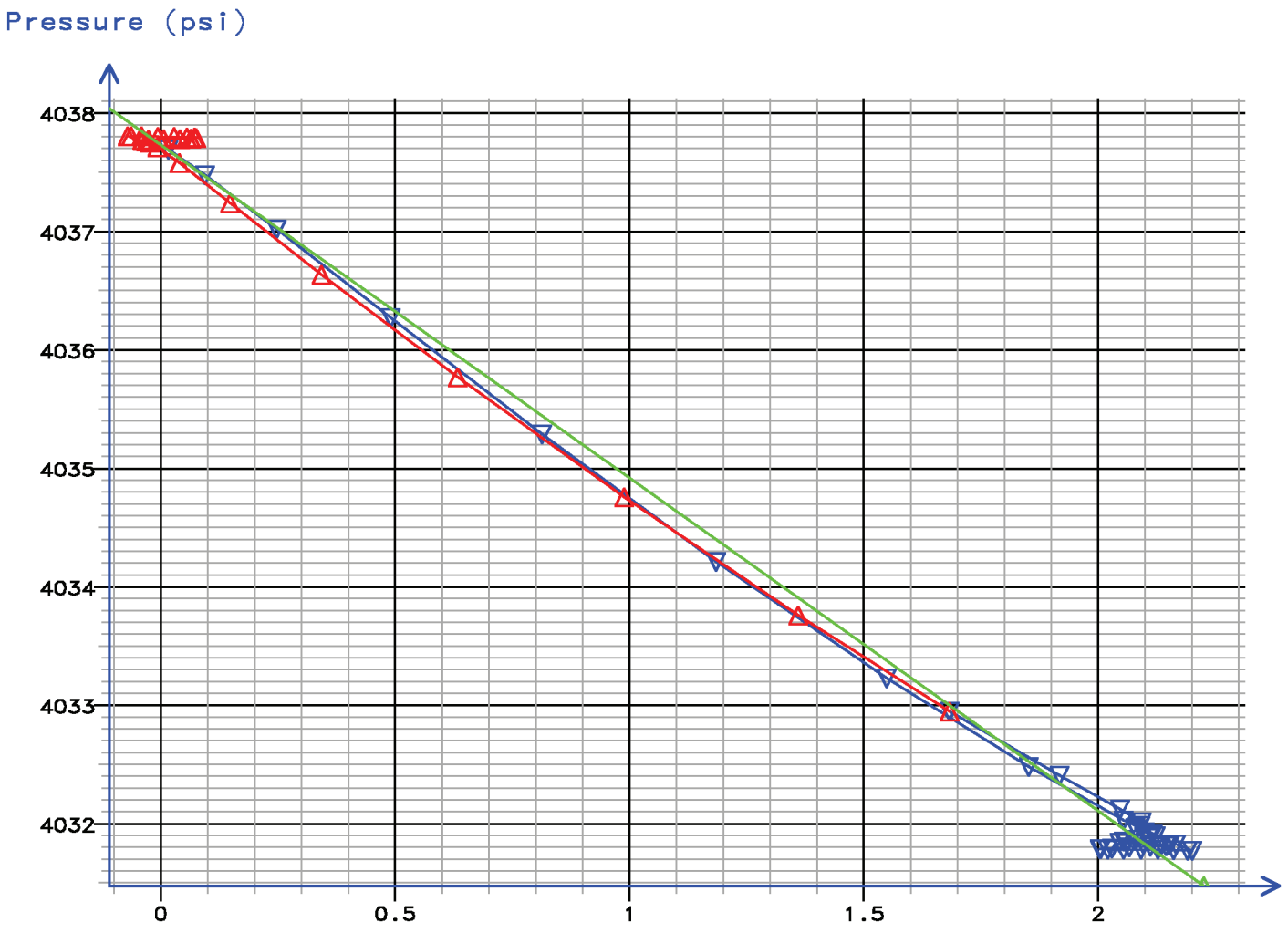
Depth MD 2837.5 m TVD 2837.5 m



Final BU	4037.84	psi	DD Volume	9.79	cm3	Temp	65.51	degC
BU Stability	0.00278	psi/min	Min Flow P	4031.77	psi	Temp Stability	0.00555	degC/min
BU Repeat	0.047	psi	DD Rate	2.20	cm3/s	FRA	0.997	R2
P_hydro	4686.65	psi	Mobility DD	1250.752	mD/cP	Mobility Kfra	1225.030	mD/cP

FLOW RATE ANALYSIS

Depth MD 2837.5 m TVD 2837.5 m

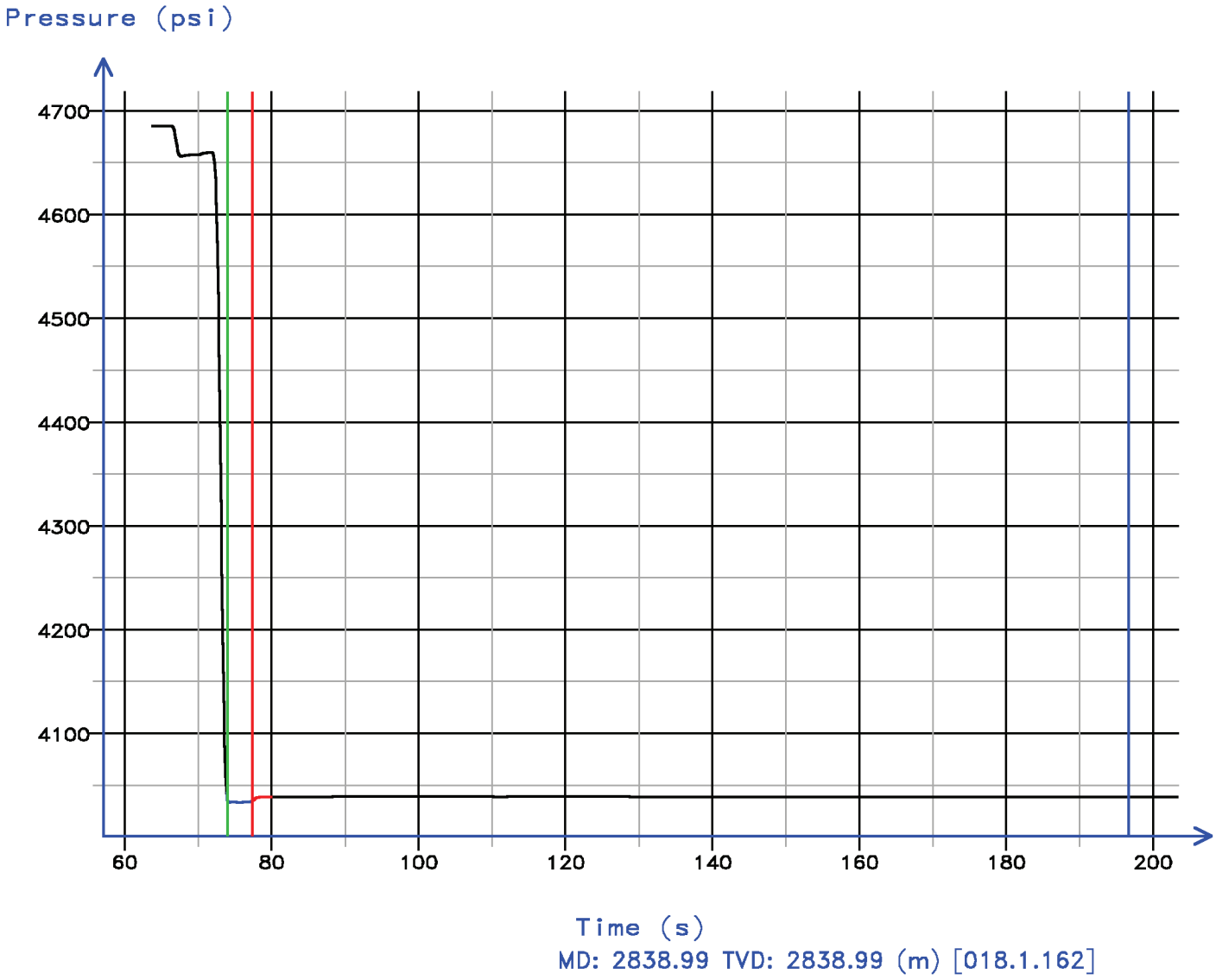


Kfra 1225.030, Kddu 1250.752 (mD/cP) Confidence 99.72% MD 2837.50 (m)

Pressure Tests – Level 18 Tool Instance 1
MD 2839.0 m TVD 2839.0 m

PRESSURE HISTORY (apql vs. time)

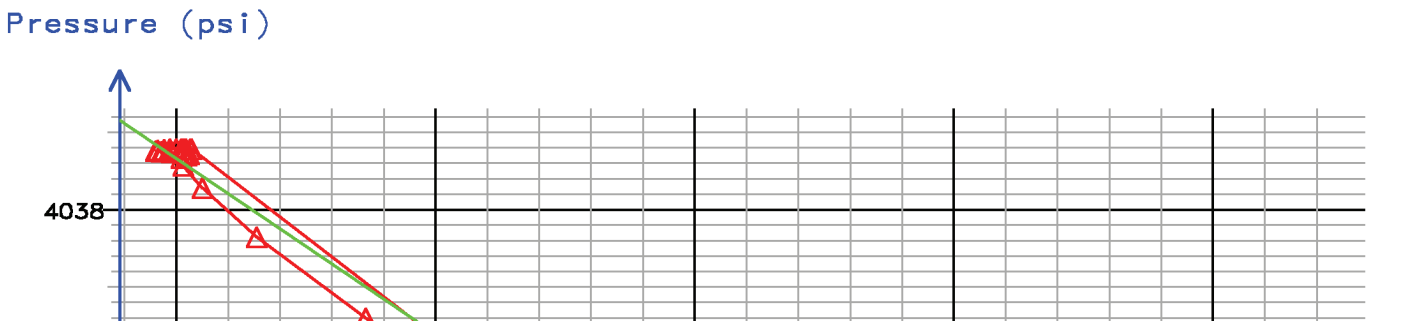
Depth MD 2839.0 m TVD 2839.0 m

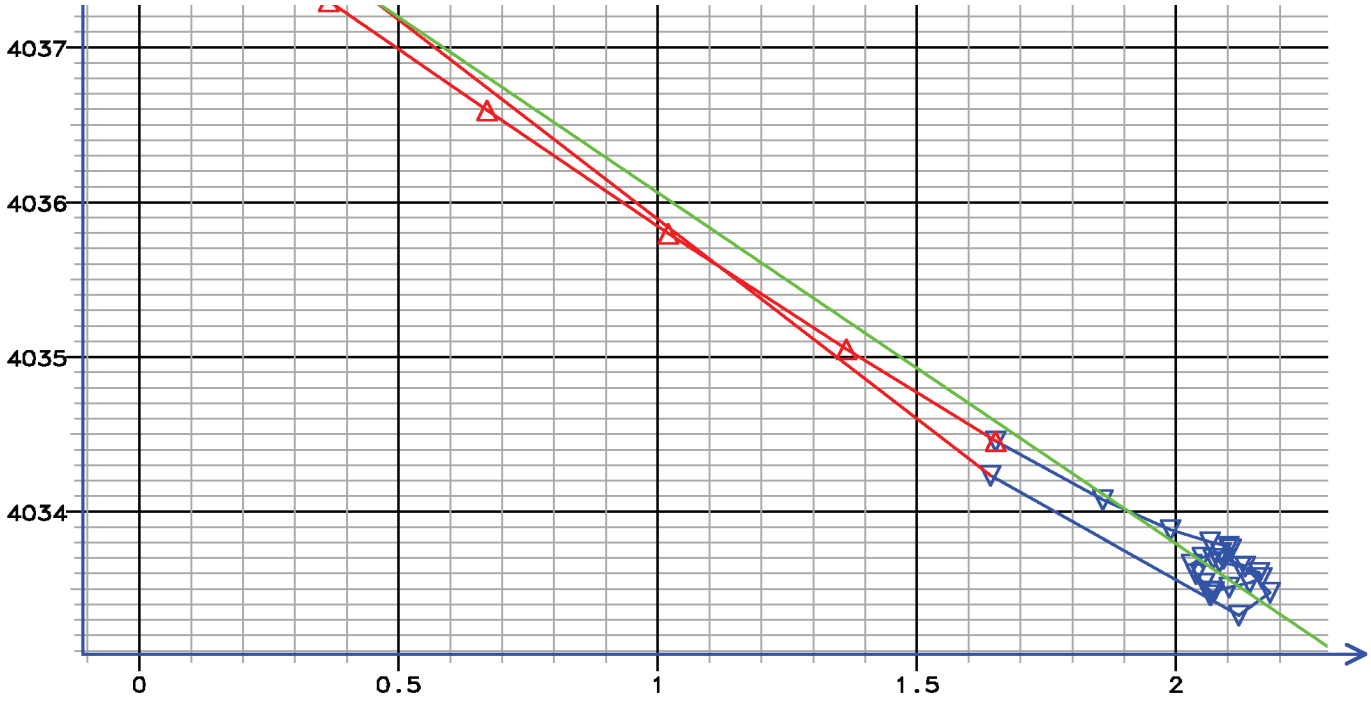


Final BU	4038.41	psi	DD Volume	9.89	cm3	Temp	65.52	degC
BU Stability	−0.02925	psi/min	Min Flow P	4033.31	psi	Temp Stability	n/a	degC/min
BU Repeat	n/a	psi	DD Rate	2.17	cm3/s	FRA	0.996	R2
P_hydro	4689.26	psi	Mobility DD	1466.866	mD/cP	Mobility Kfra	1516.996	mD/cP

FLOW RATE ANALYSIS

Depth MD 2839.0 m TVD 2839.0 m



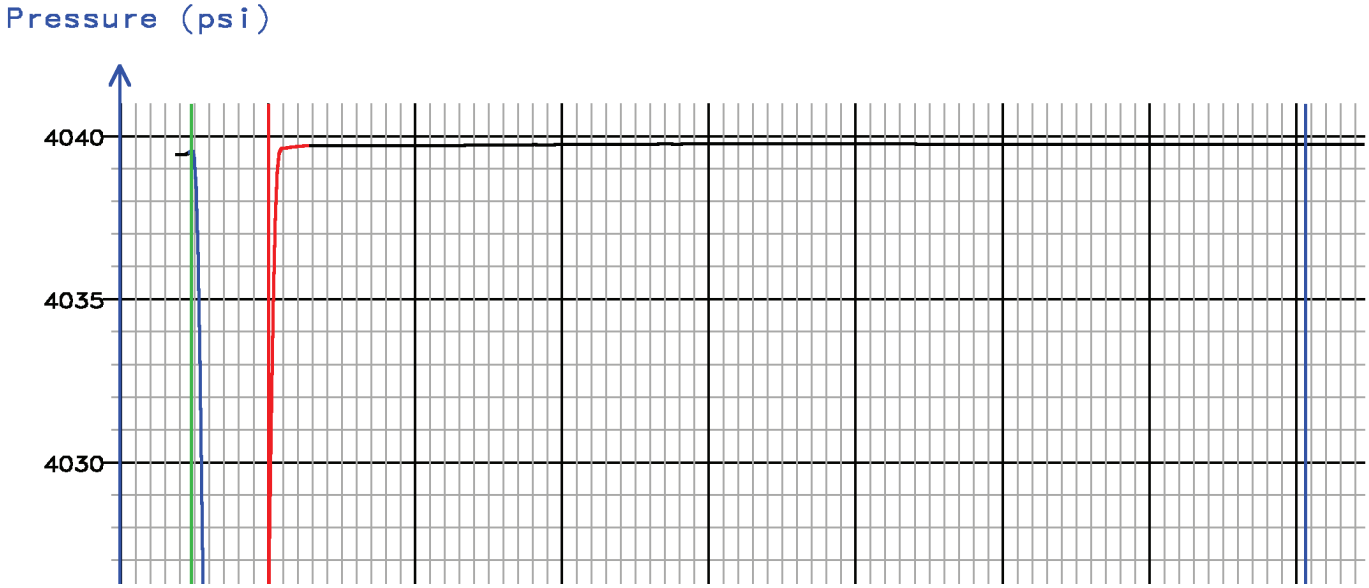


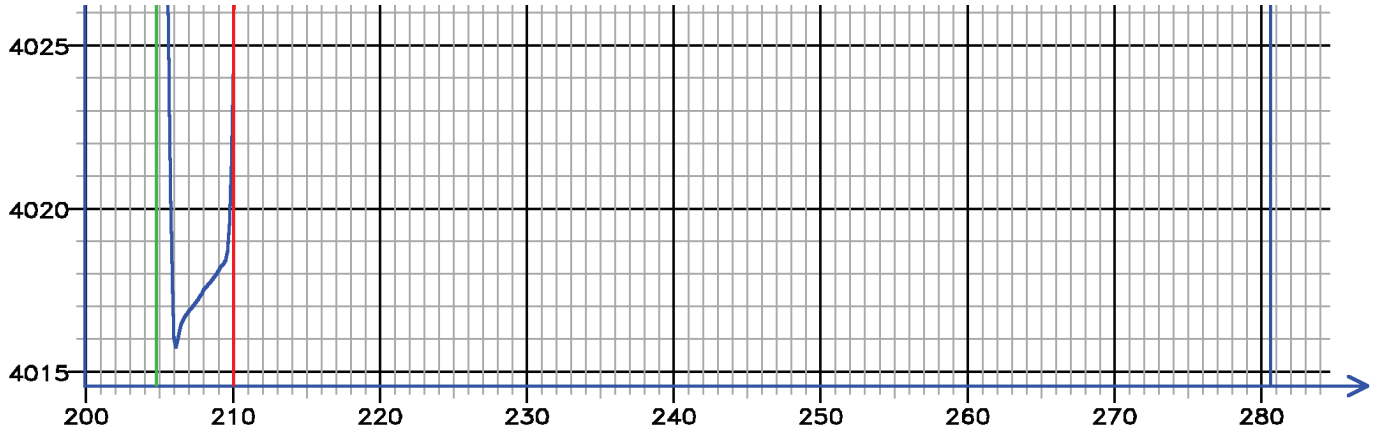
Kfra 1516.996, Kddu 1466.094 (mD/cP) Confidence 99.64% MD 2838.99 (m)

Pressure Tests – Level 19 Tool Instance 1
MD 2842.0 m TVD 2842.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2842.0 m TVD 2842.0 m

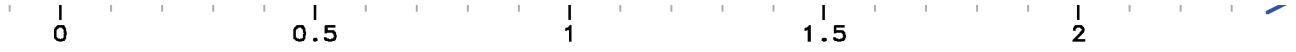




Final BU	4039.74	psi	DD Volume	9.75	cm3	Temp	65.51	degC
BU Stability	−0.01250	psi/min	Min Flow P	4015.75	psi	Temp Stability	0.00589	degC/min
BU Repeat	0.310	psi	DD Rate	2.22	cm3/s	FRA	0.993	R2
P_hydro	4694.34	psi	Mobility DD	318.247	mD/cP	Mobility Kfra	326.225	mD/cP

FLOW RATE ANALYSIS

Depth MD 2842.0 m TVD 2842.0 m



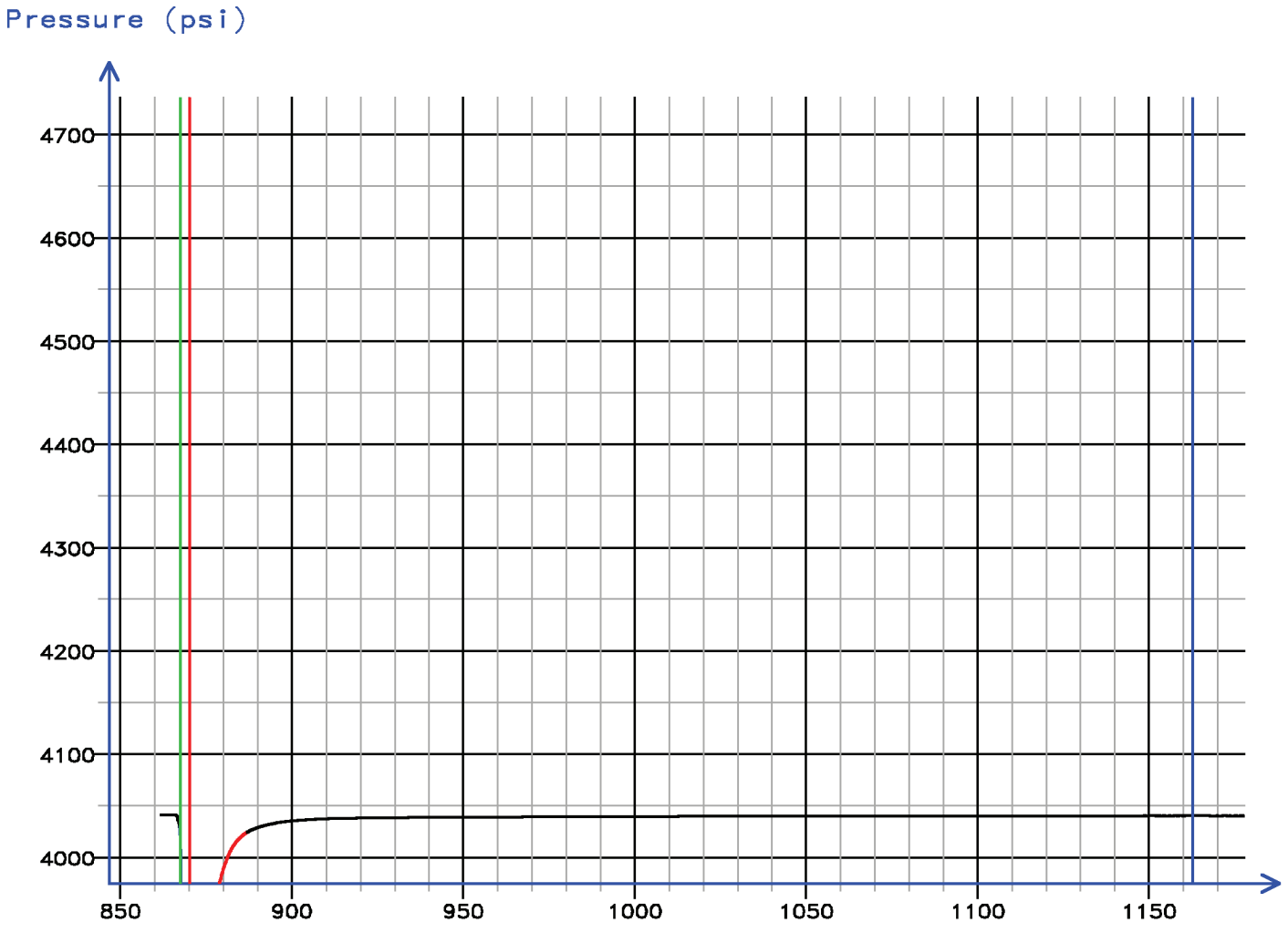
Flow Rate (cm3/s)

Kfra 326.225, Kddu 318.221 (mD/cP) Confidence 99.28% MD 2842.00 (m)

Pressure Tests – Level 20 Tool Instance 1
MD 2843.2 m TVD 2843.2 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2843.2 m TVD 2843.2 m



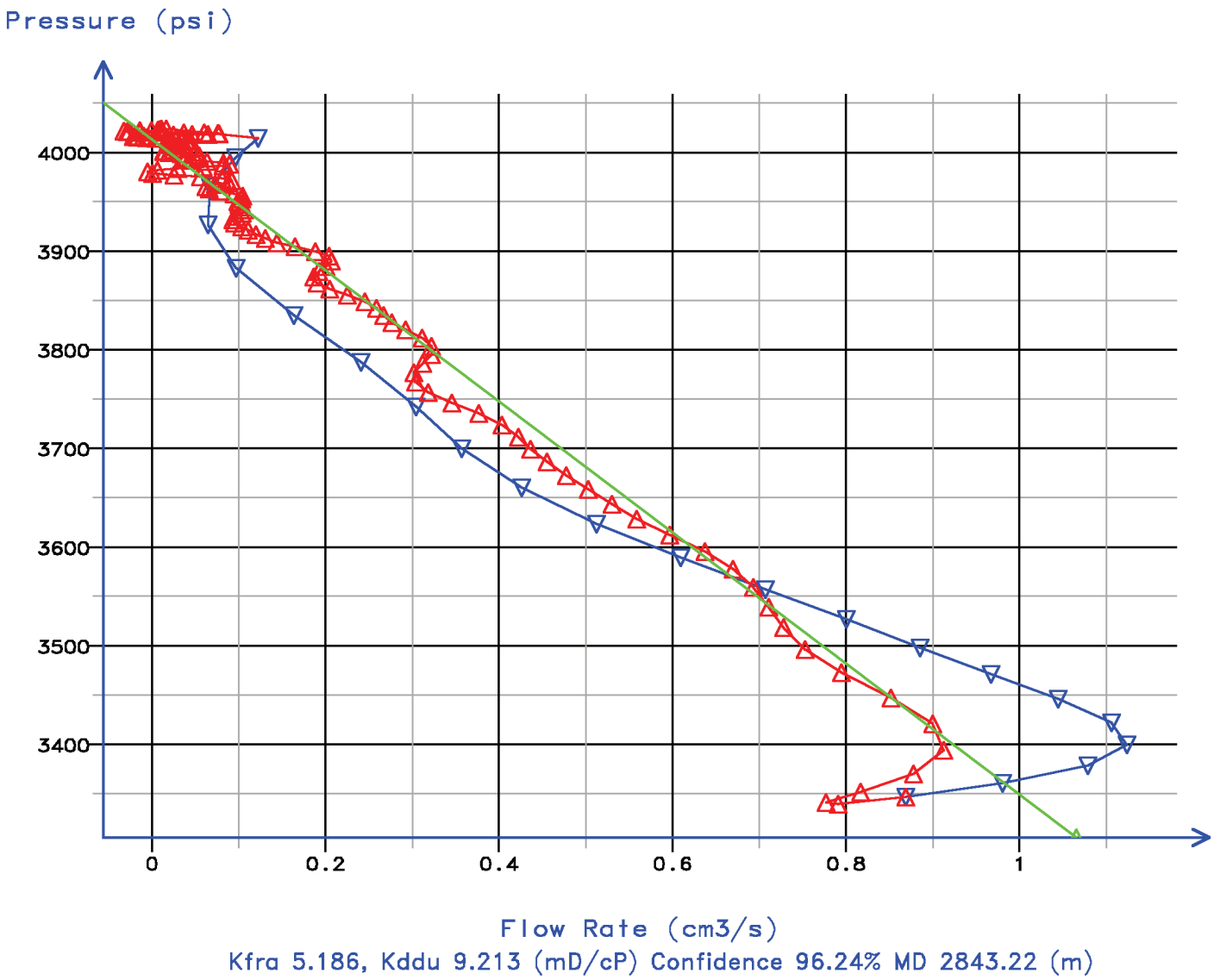
MD: 2843.22 TVD: 2843.22 (m) [020.1.181]

Final BU	4040.08 psi	DD Volume	4.86 cm3	Temp	65.56 degC

BU Stability	n/a	psi/min	Min Flow P	3337.83	psi	Temp Stability	n/a degC/min
BU Repeat	n/a	psi	DD Rate	1.88	cm3/s	FRA	0.962 R2
P_hydro	4696.50	psi	Mobility DD	9.213	mD/cP	Mobility Kfra	5.186 mD/cP

FLOW RATE ANALYSIS

Depth MD 2843.2 m TVD 2843.2 m



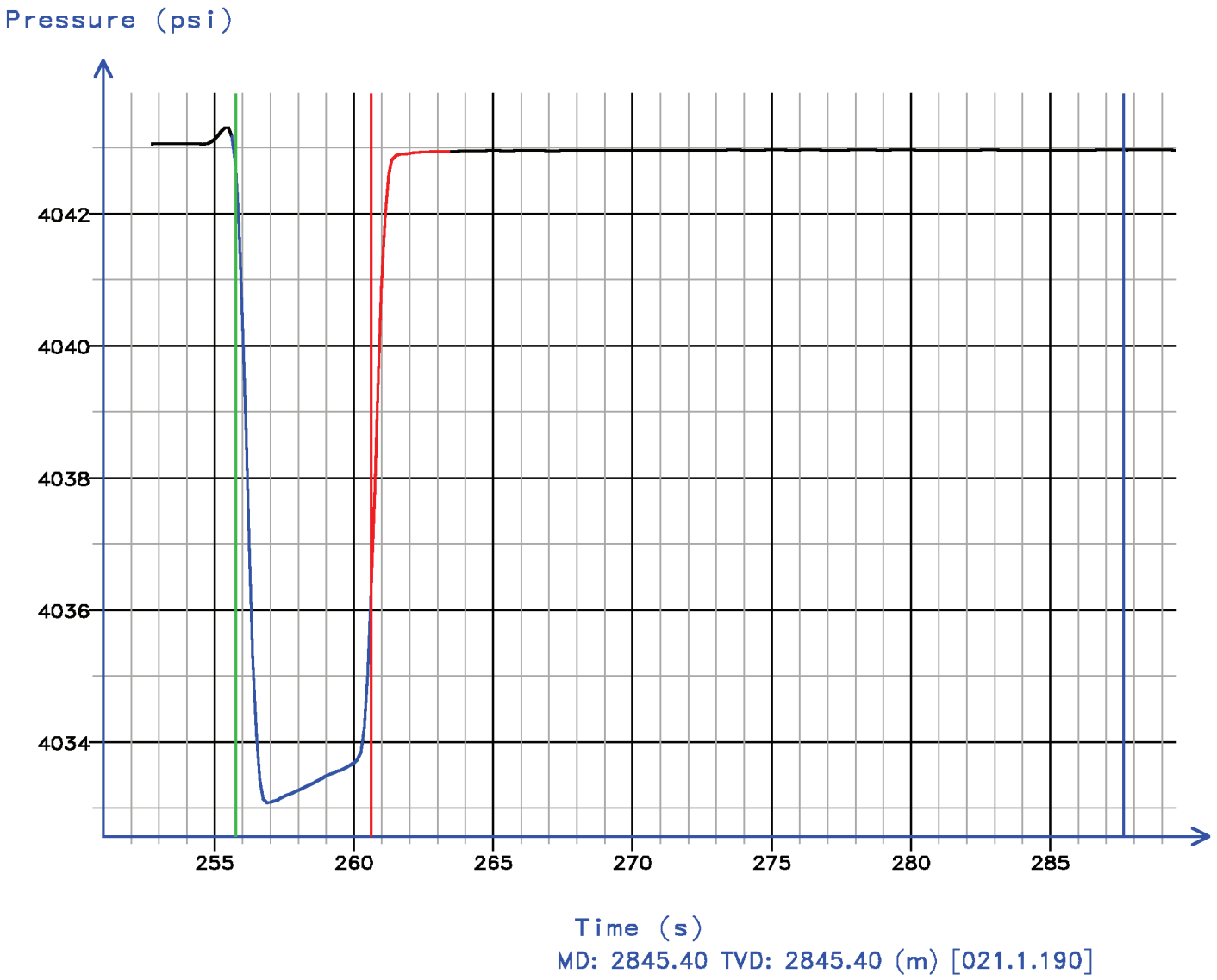
Kfra 5.186, Kddu 9.213 (mD/cP) Confidence 96.24% MD 2843.22 (m)

Pressure Tests – Level 21 Tool Instance 1

MD 2845.4 m TVD 2845.4 m

PRESSURE HISTORY (apql vs. time)

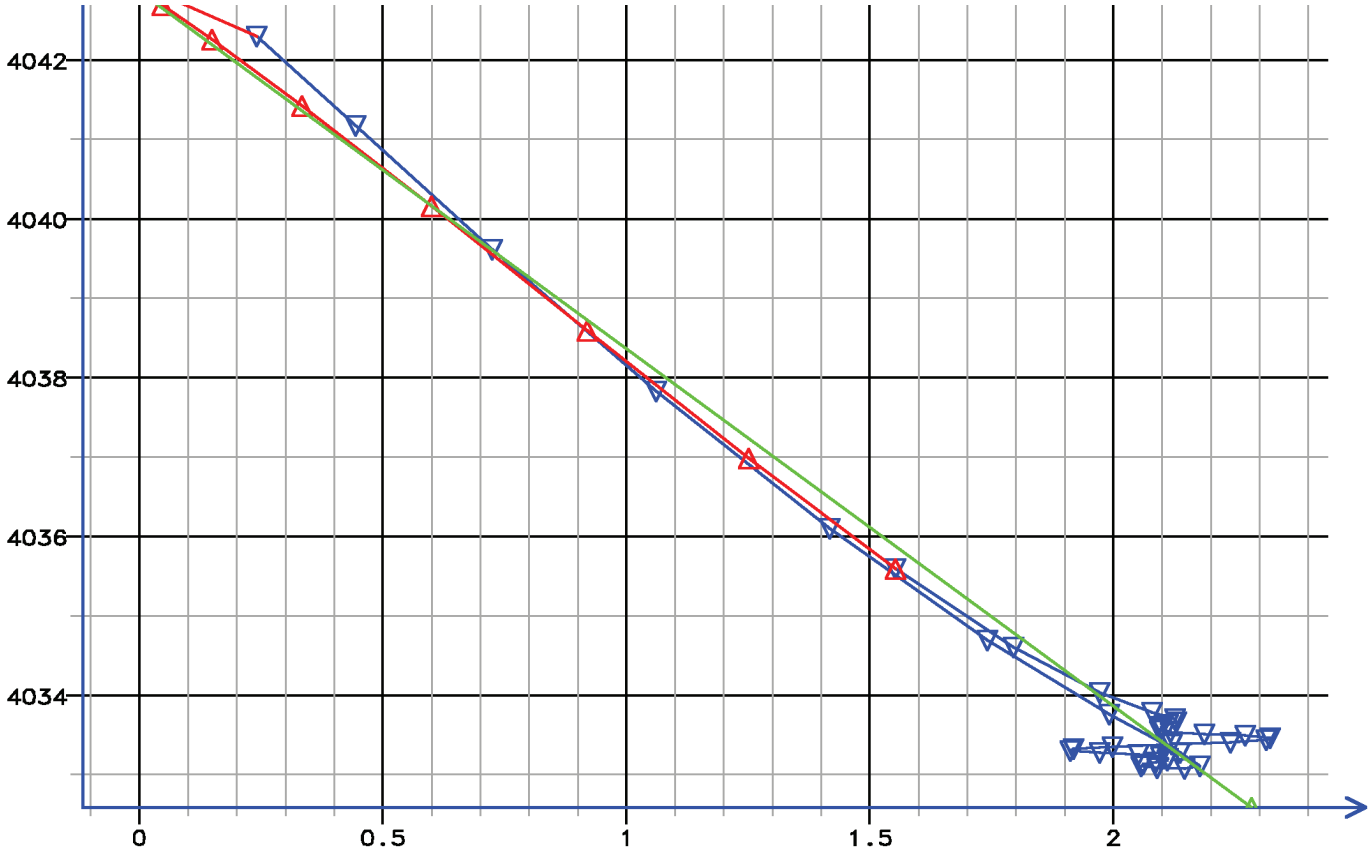
Depth MD 2845.4 m TVD 2845.4 m



Final BU	4042.96	psi	DD Volume	9.70	cm3	Temp	65.64 degC
BU Stability	0.00314	psi/min	Min Flow P	4033.07	psi	Temp Stability	0.00625 degC/min
BU Repeat	−0.108	psi	DD Rate	2.32	cm3/s	FRA	0.993 R2
P_hydro	4700.37	psi	Mobility DD	806.847	mD/cP	Mobility Kfra	764.758 mD/cP

FLOW RATE ANALYSIS

Depth MD 2845.4 m TVD 2845.4 m

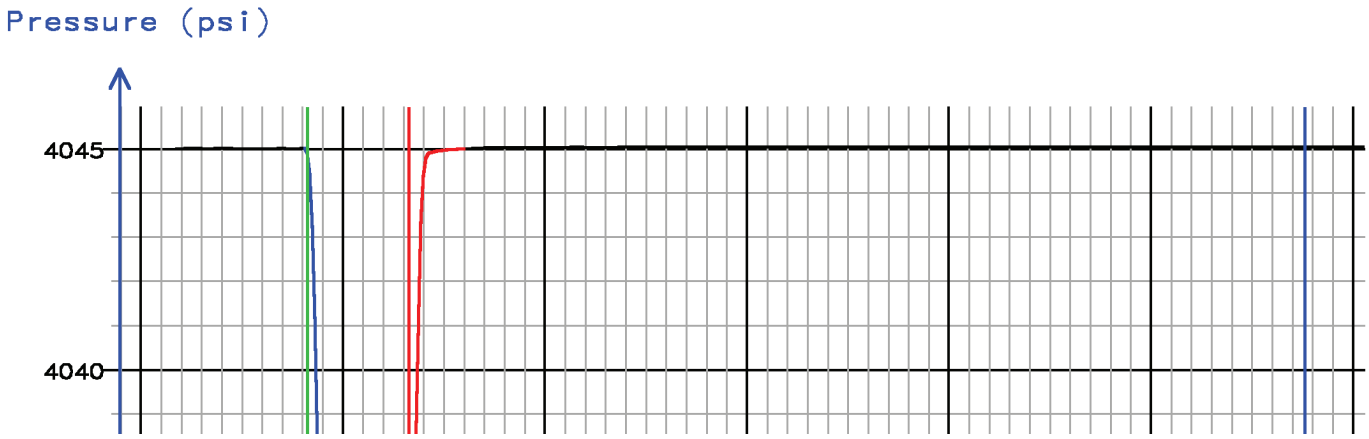


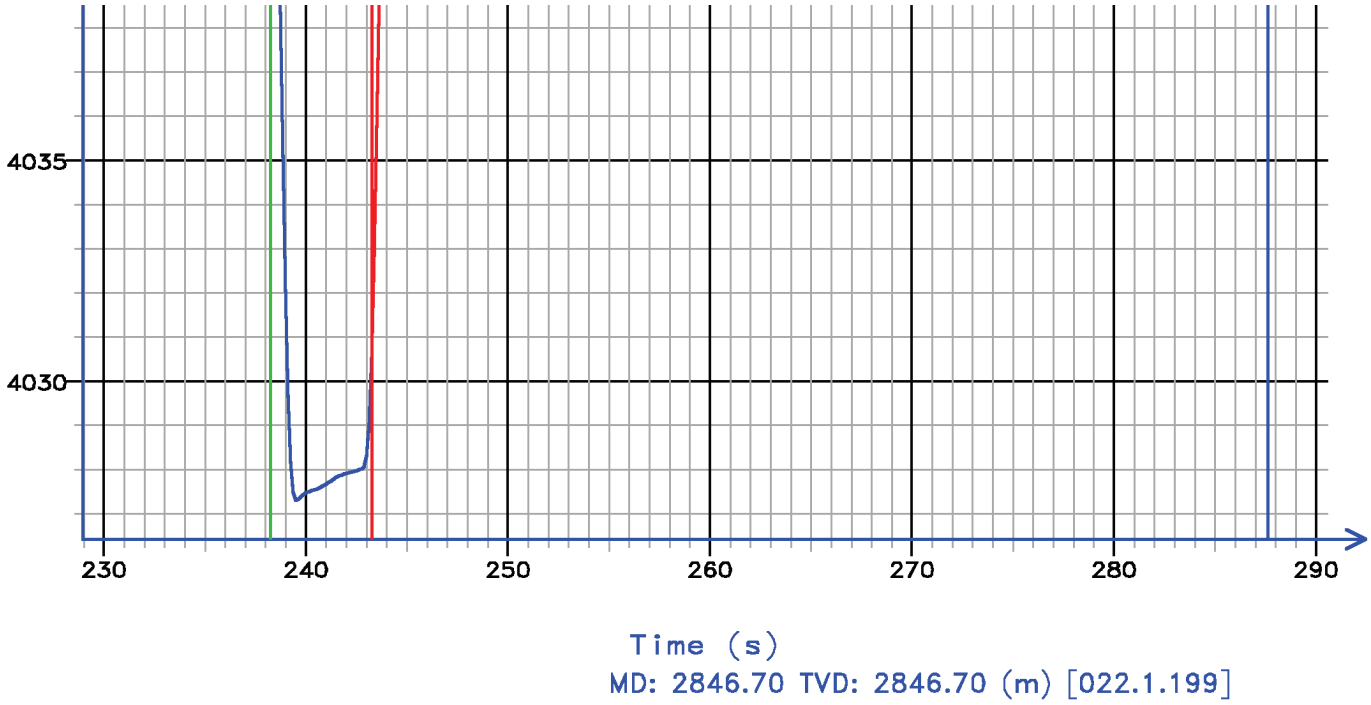
Kfra 764.758, Kddu 806.967 (mD/cP) Confidence 99.27% MD 2845.40 (m)

Pressure Tests – Level 22 Tool Instance 1
MD 2846.7 m TVD 2846.7 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2846.7 m TVD 2846.7 m

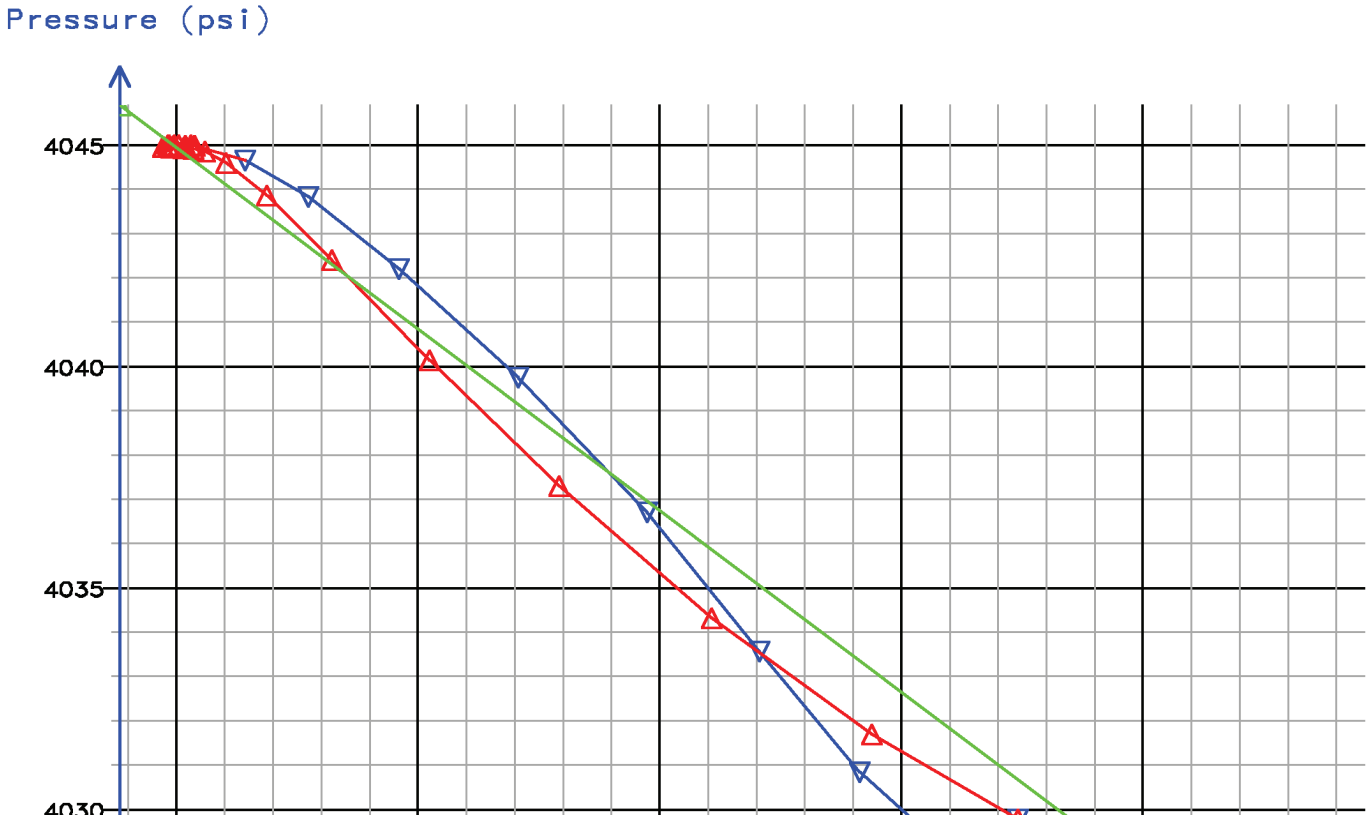


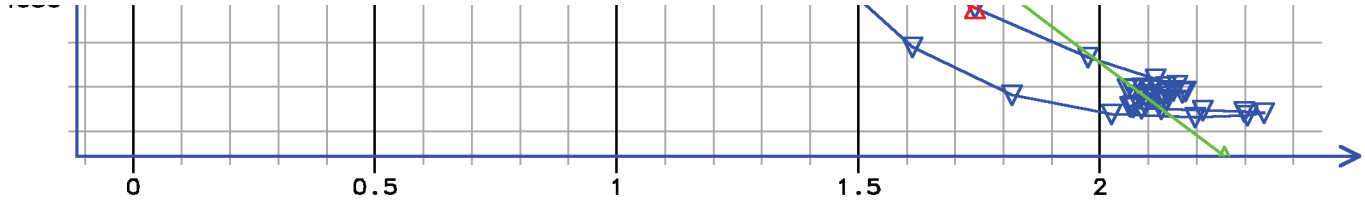


Final BU	4045.04	psi	DD Volume	9.88	cm3	Temp	65.69	degC
BU Stability	−0.00103	psi/min	Min Flow P	4027.30	psi	Temp Stability	0.00383	degC/min
BU Repeat	0.036	psi	DD Rate	2.33	cm3/s	FRA	0.988	R2
P_hydro	4702.42	psi	Mobility DD	452.788	mD/cP	Mobility Kfra	419.676	mD/cP

FLOW RATE ANALYSIS

Depth MD 2846.7 m TVD 2846.7 m





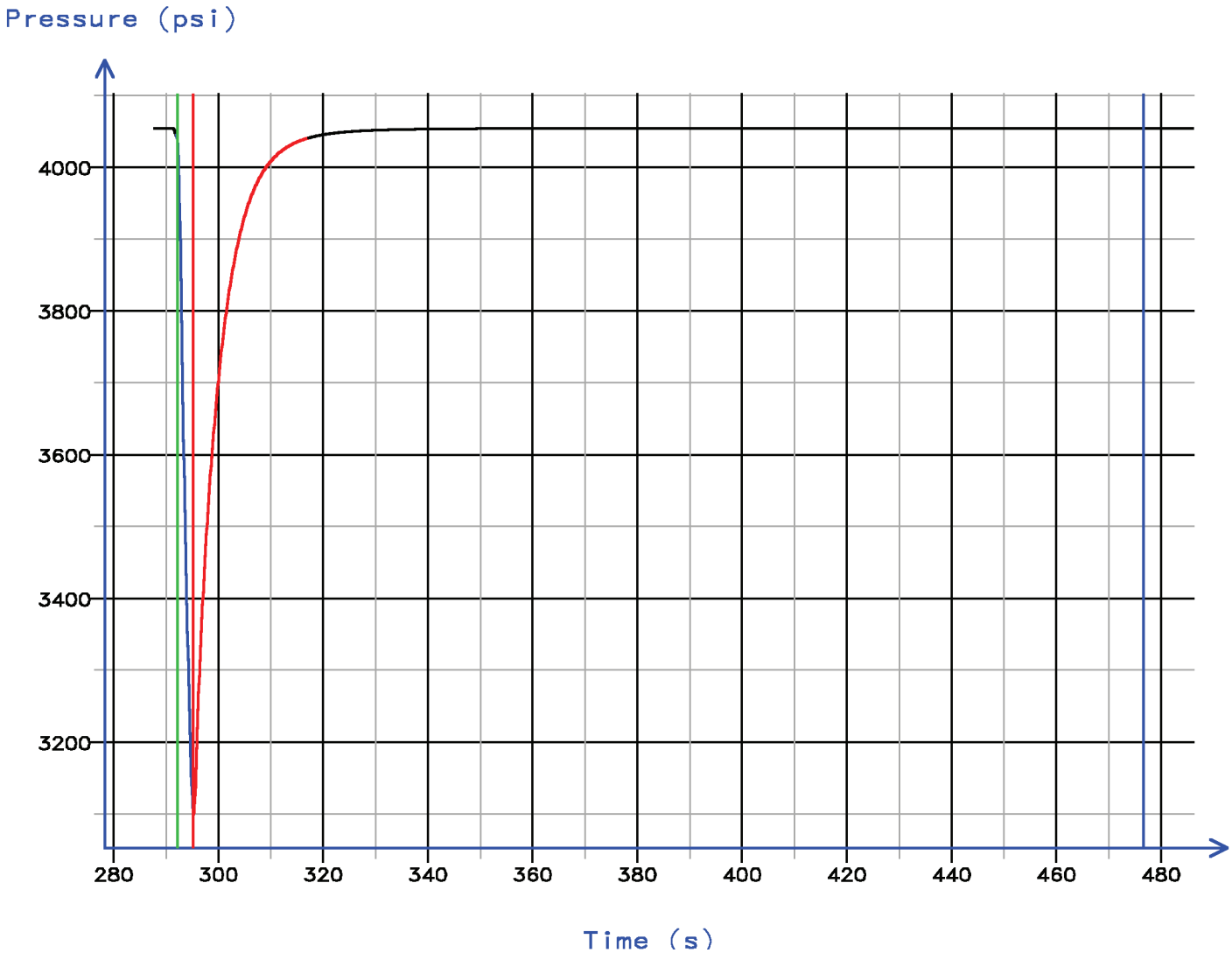
Flow Rate (cm3/s)

Kfra 419.676, Kddu 452.714 (mD/cP) Confidence 98.82% MD 2846.70 (m)

Pressure Tests – Level 23 Tool Instance 1
MD 2851.7 m TVD 2851.7 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2851.7 m TVD 2851.7 m

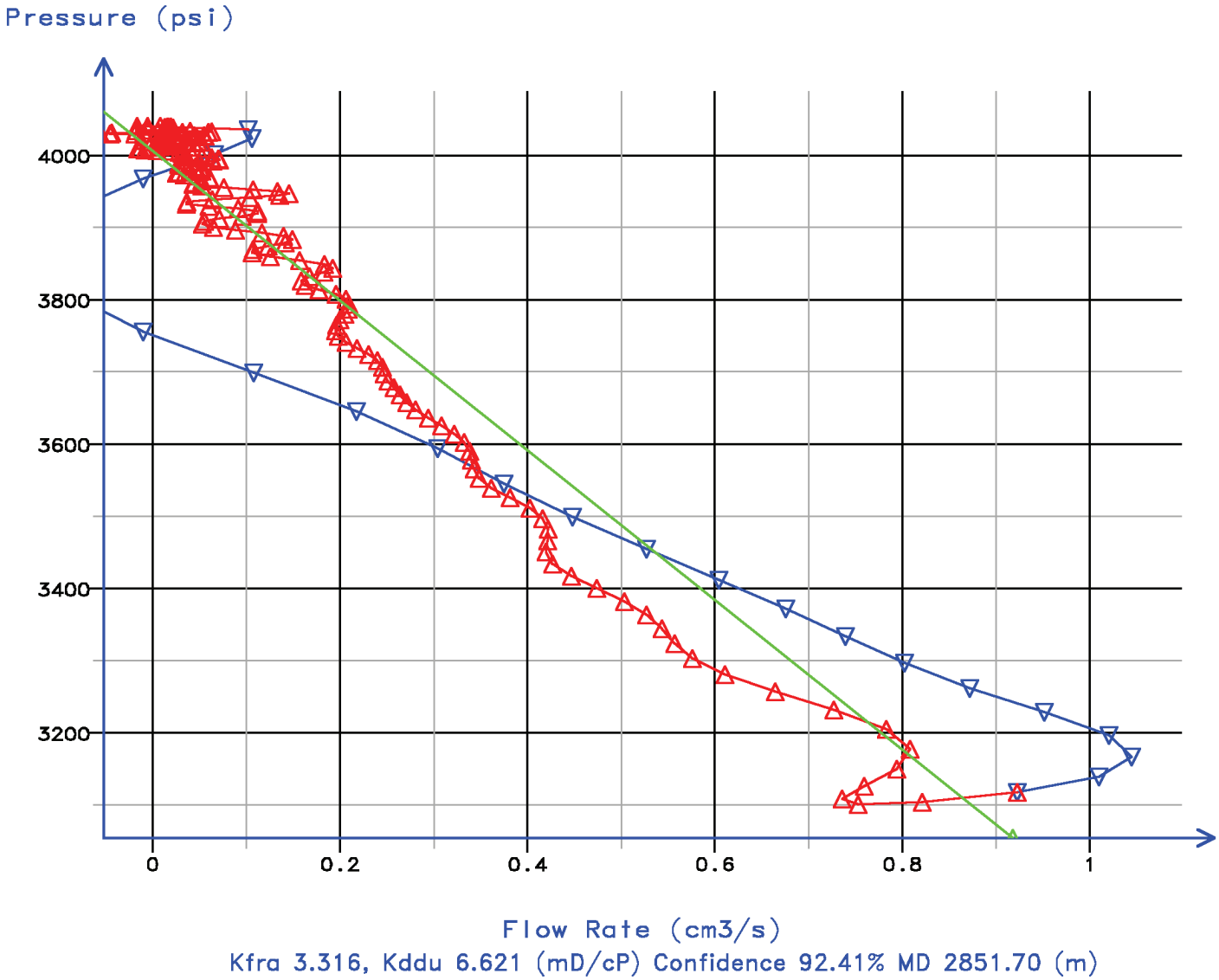


MD: 2851.70 TVD: 2851.70 (m) [023.1.208]

Final BU	4053.91	psi	DD Volume	4.84	cm3	Temp	65.71 degC
BU Stability	0.01476	psi/min	Min Flow P	3099.70	psi	Temp Stability	n/a degC/min
BU Repeat	−0.057	psi	DD Rate	1.84	cm3/s	FRA	0.924 R2
P_hydro	4710.73	psi	Mobility DD	6.621	mD/cP	Mobility Kfra	3.316 mD/cP

FLOW RATE ANALYSIS

Depth MD 2851.7 m TVD 2851.7 m



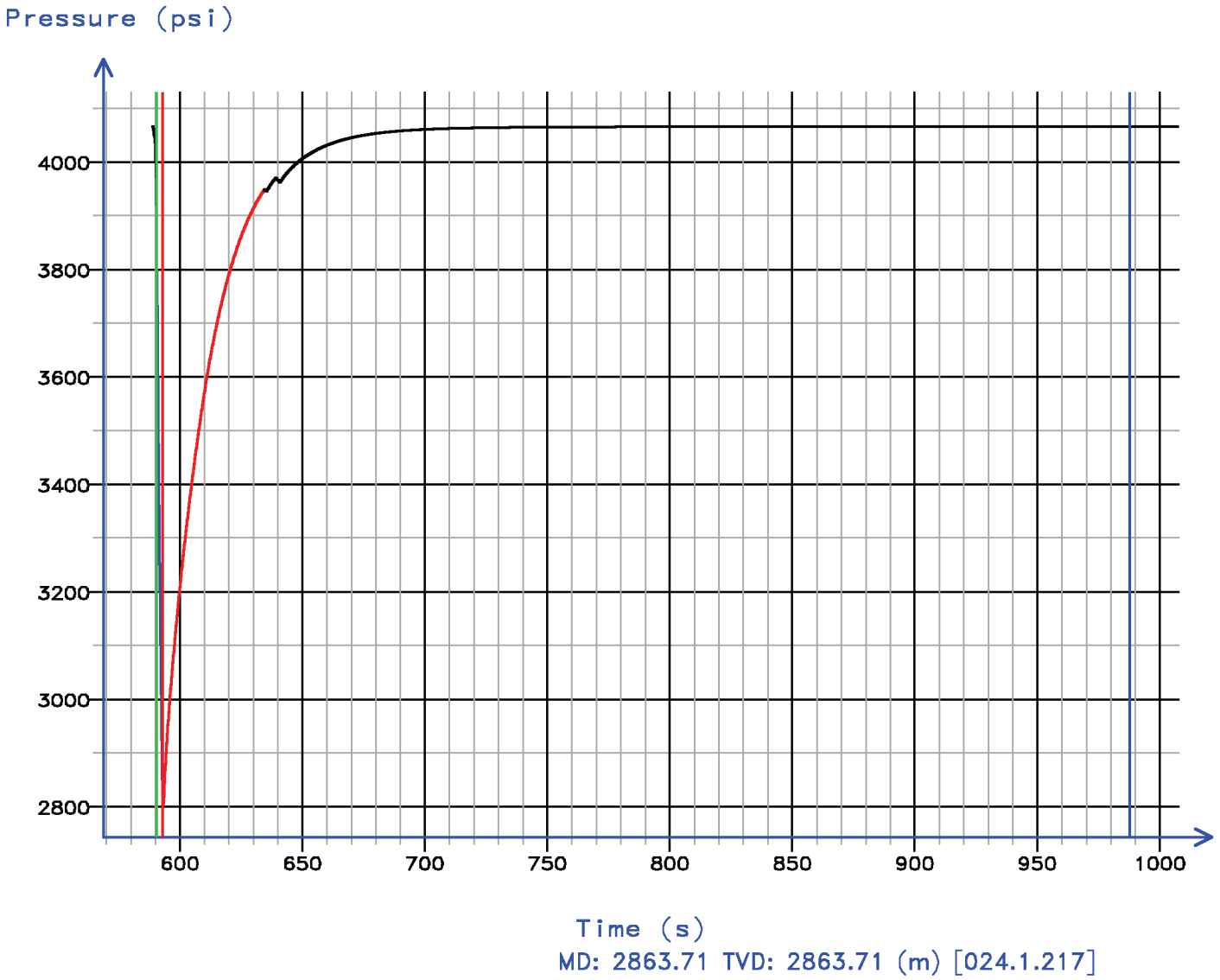
Kfra 3.316, Kddu 6.621 (mD/cP) Confidence 92.41% MD 2851.70 (m)

Pressure Tests – Level 24 Tool Instance 1

MD 2863.7 m TVD 2863.7 m

PRESSURE HISTORY (apql vs. time)

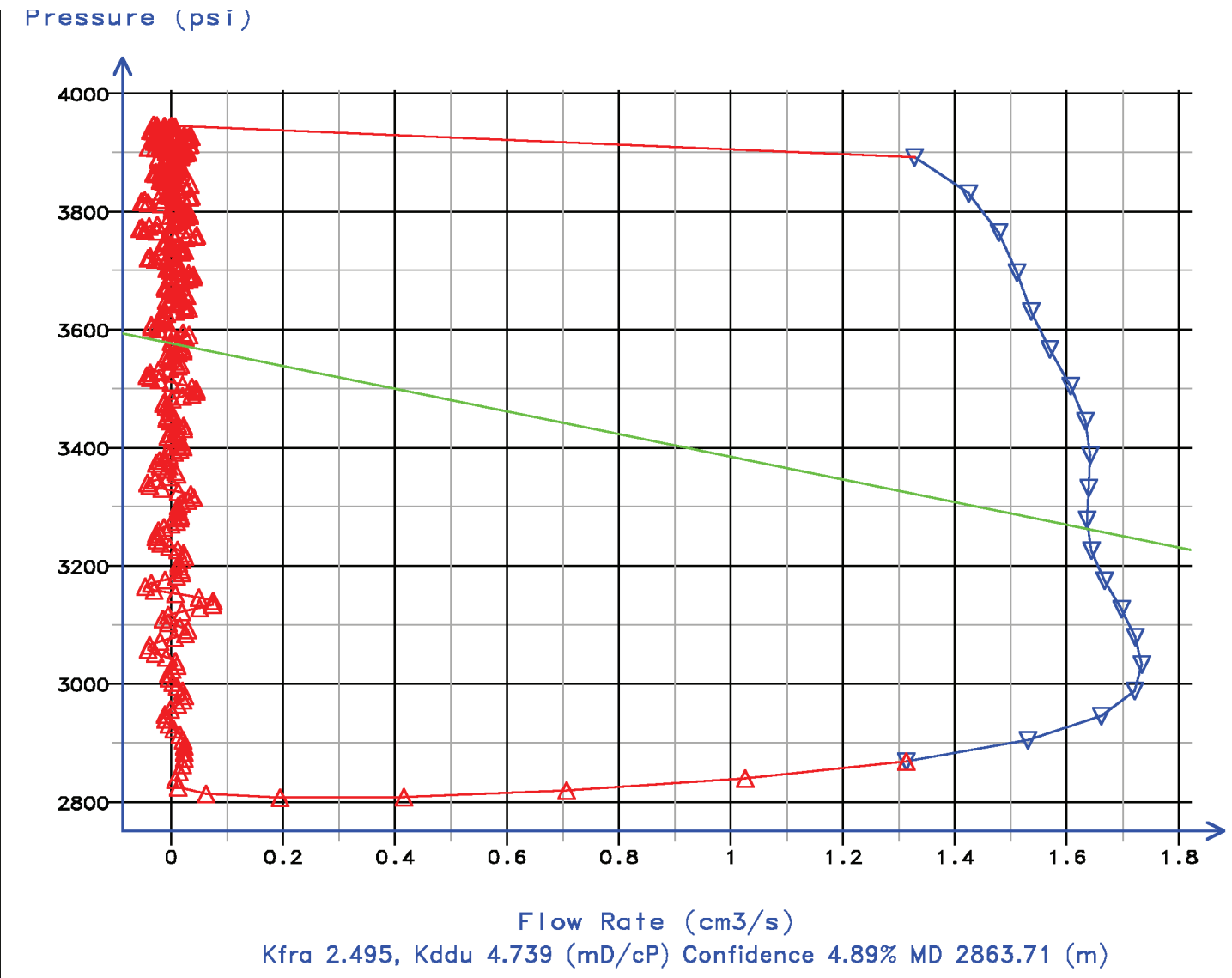
Depth MD 2863.7 m TVD 2863.7 m



Final BU	4065.76	psi	DD Volume	4.88	cm3	Temp	65.71 degC
BU Stability	0.00349	psi/min	Min Flow P	2805.43	psi	Temp Stability	0.00341 degC/min
BU Repeat	−0.248	psi	DD Rate	1.74	cm3/s	FRA	0.049 R2
P_hydro	4730.47	psi	Mobility DD	4.739	mD/cP	Mobility Kfra	2.495 mD/cP

FLOW RATE ANALYSIS

Depth MD 2863.7 m TVD 2863.7 m

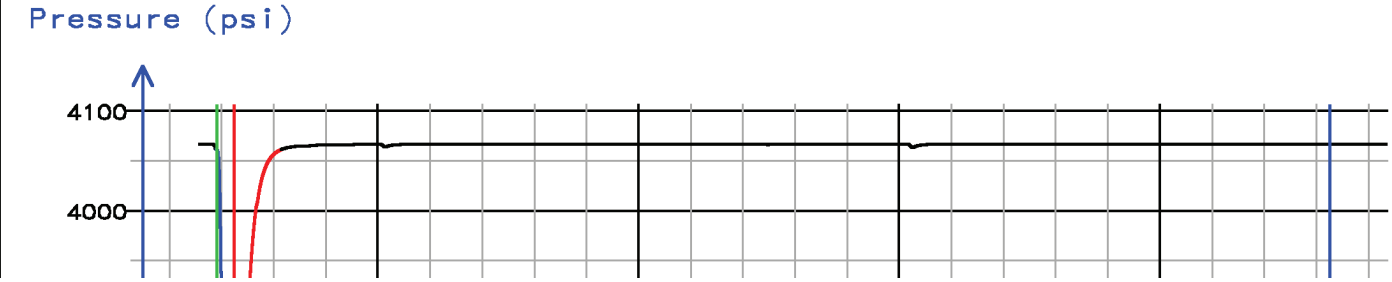


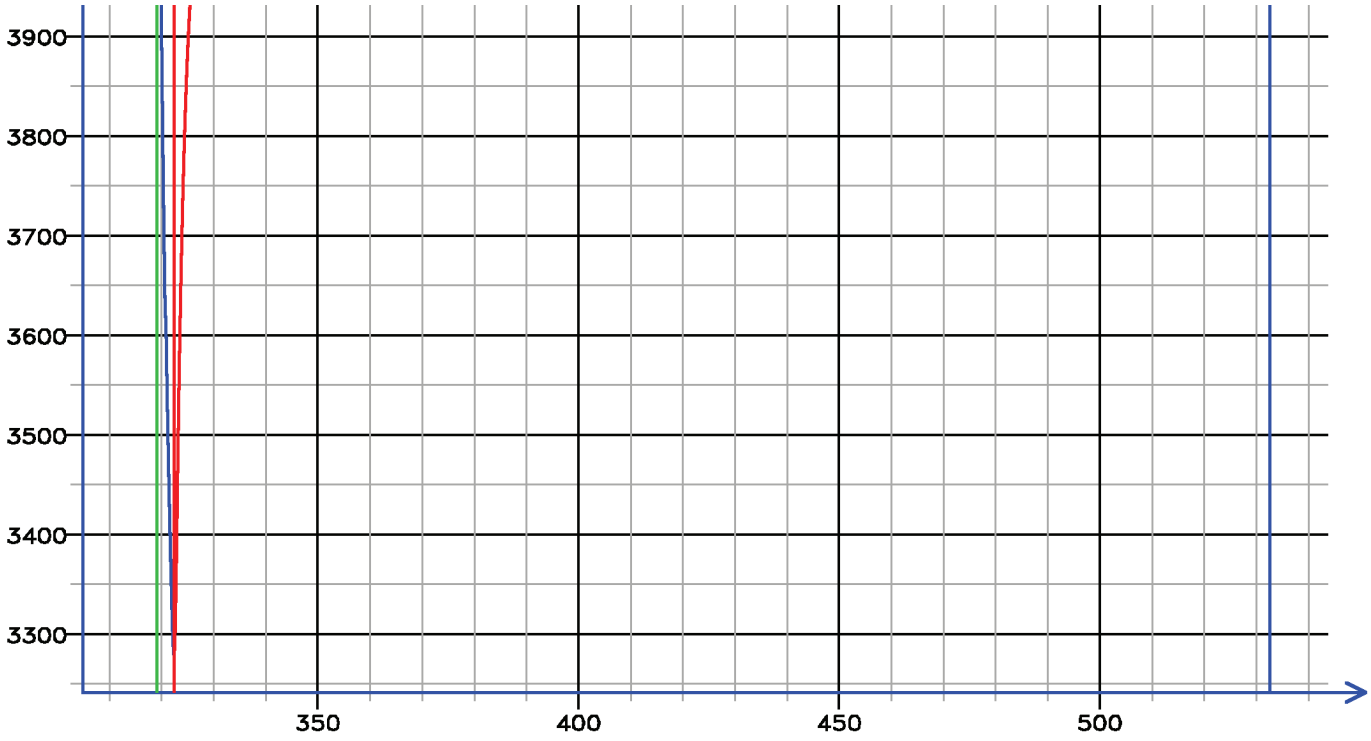
Kfra 2.495, Kddu 4.739 (mD/cP) Confidence 4.89% MD 2863.71 (m)

Pressure Tests – Level 25 Tool Instance 1
MD 2876.0 m TVD 2876.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2876.0 m TVD 2876.0 m



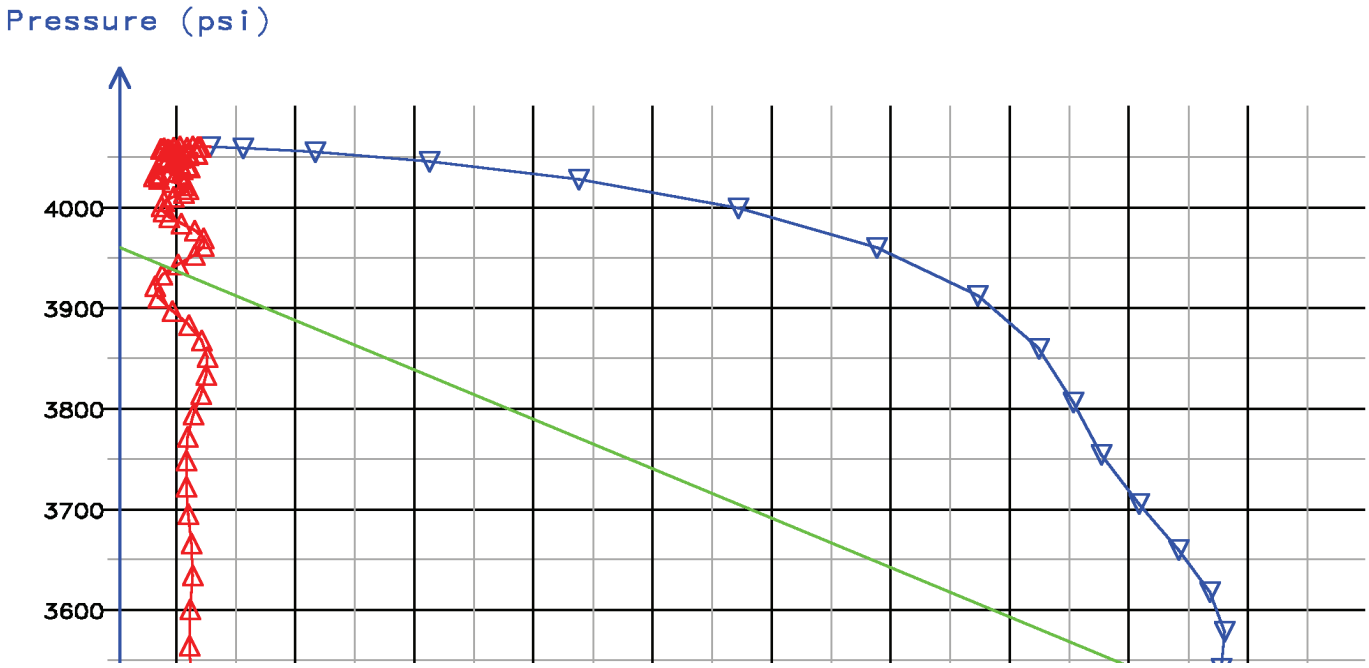


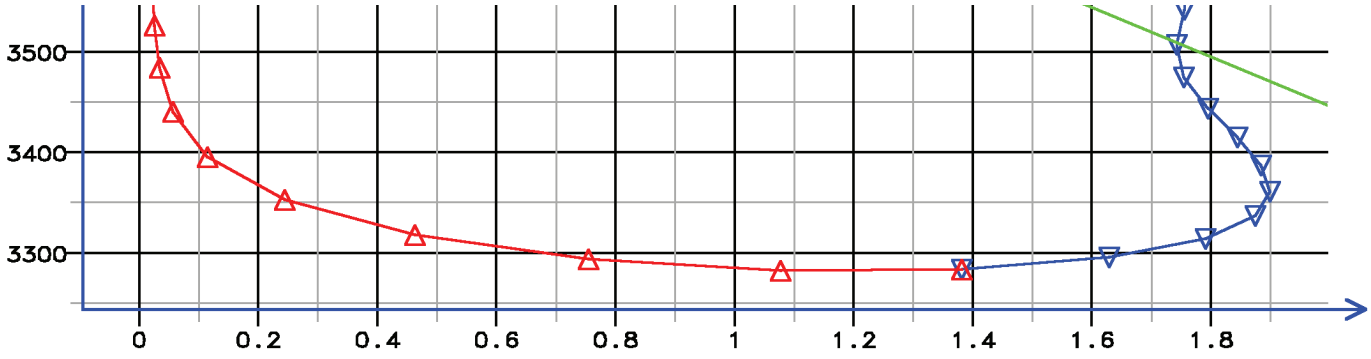
MD: 2876.02 TVD: 2876.02 (m) [025.1.226]

Final BU	4066.41	psi	DD Volume	4.88	cm3	Temp	66.24	degC
BU Stability	0.00452	psi/min	Min Flow P	3280.13	psi	Temp Stability	0.00557	degC/min
BU Repeat	−0.072	psi	DD Rate	1.90	cm3/s	FRA	0.414	R2
P_hydro	4750.46	psi	Mobility DD	8.320	mD/cP	Mobility Kfra	7.751	mD/cP

FLOW RATE ANALYSIS

Depth MD 2876.0 m TVD 2876.0 m



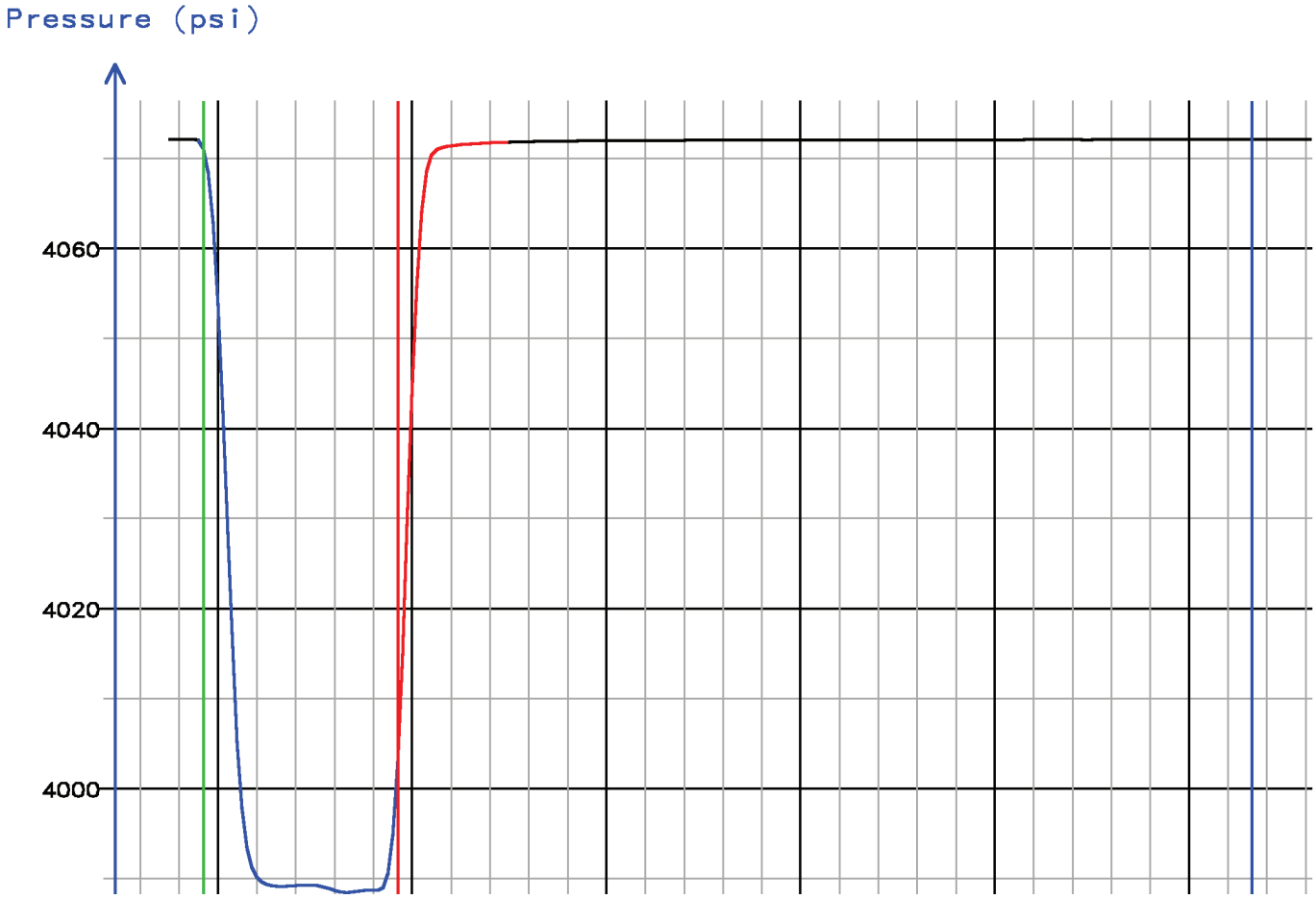


Kfra 7.751, Kddu 8.320 (mD/cP) Confidence 41.39% MD 2876.02 (m)

Pressure Tests – Level 26 Tool Instance 1
MD 2879.5 m TVD 2879.5 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2879.5 m TVD 2879.5 m



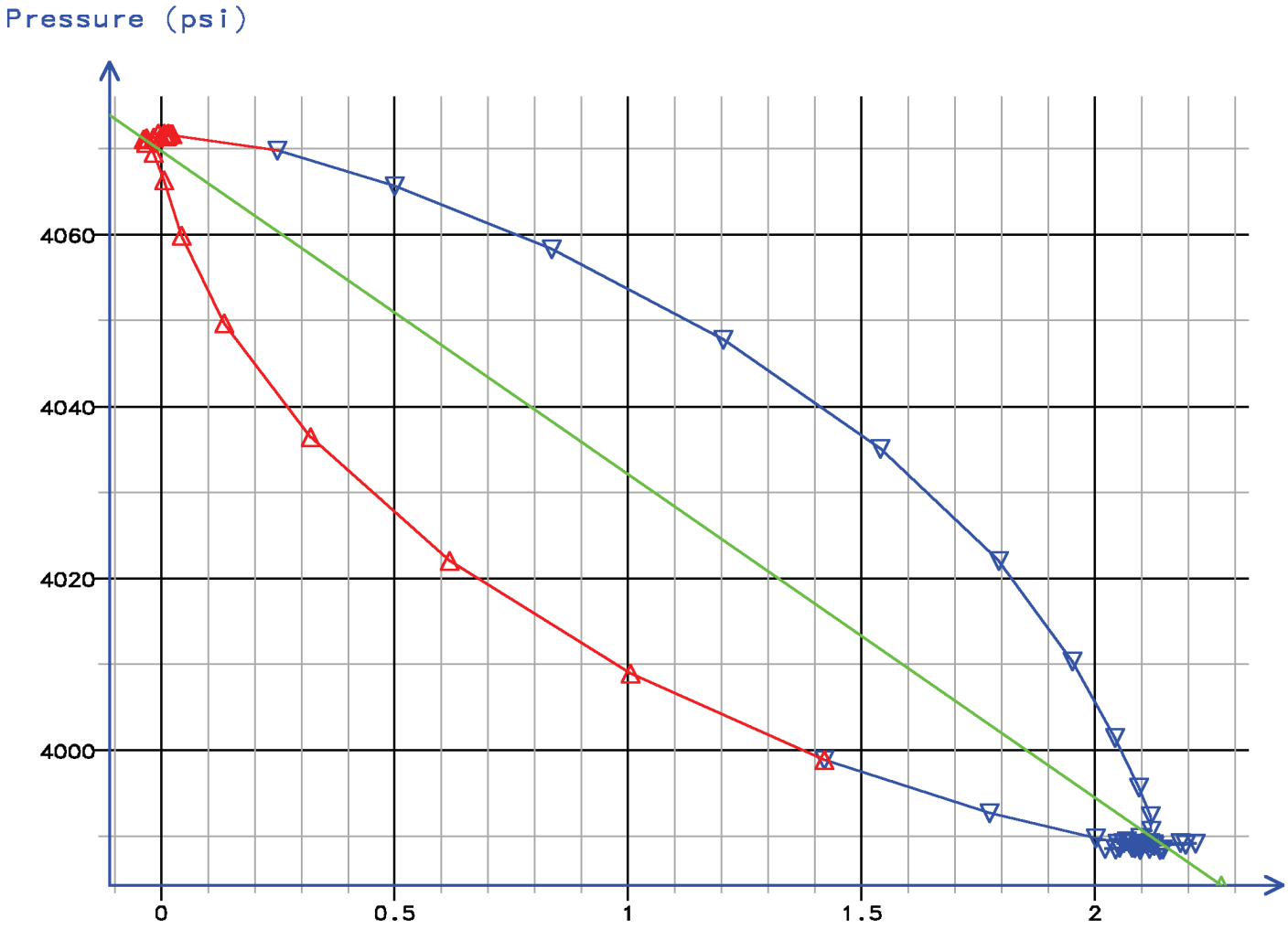
Time (s)

MD: 2879.51 TVD: 2879.51 (m) [026.1.237]

Final BU	4072.08	psi	DD Volume	9.83	cm3	Temp	66.31 degC
BU Stability	0.17423	psi/min	Min Flow P	3988.42	psi	Temp Stability	0.00795 degC/min
BU Repeat	−0.017	psi	DD Rate	2.22	cm3/s	FRA	0.942 R2
P_hydro	4756.23	psi	Mobility DD	91.211	mD/cP	Mobility Kfra	86.927 mD/cP

FLOW RATE ANALYSIS

Depth MD 2879.5 m TVD 2879.5 m

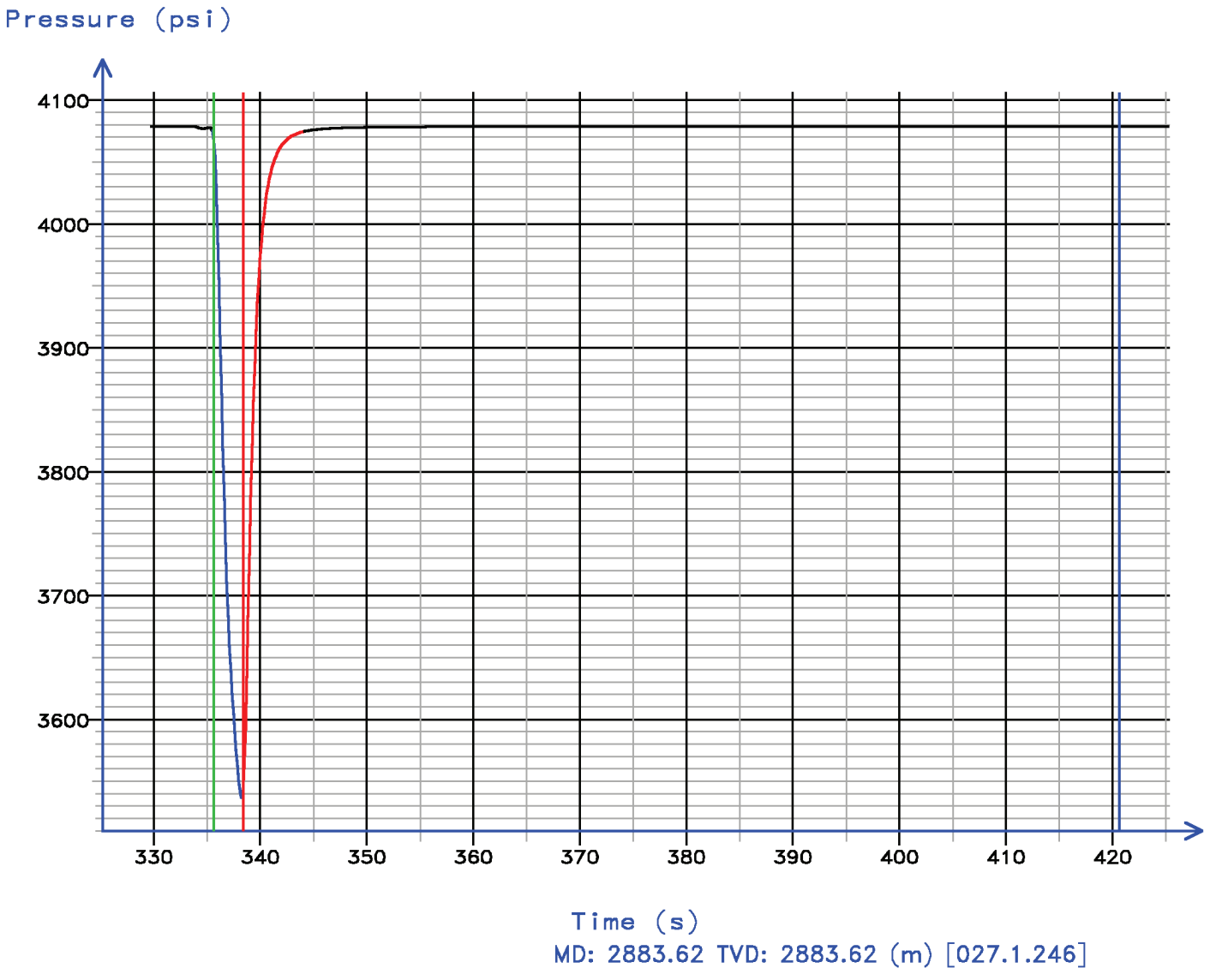


Kfra 86.927, Kddu 91.212 (mD/cP) Confidence 94.17% MD 2879.51 (m)

Pressure Tests – Level 27 Tool Instance 1
MD 2883.6 m TVD 2883.6 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2883.6 m TVD 2883.6 m

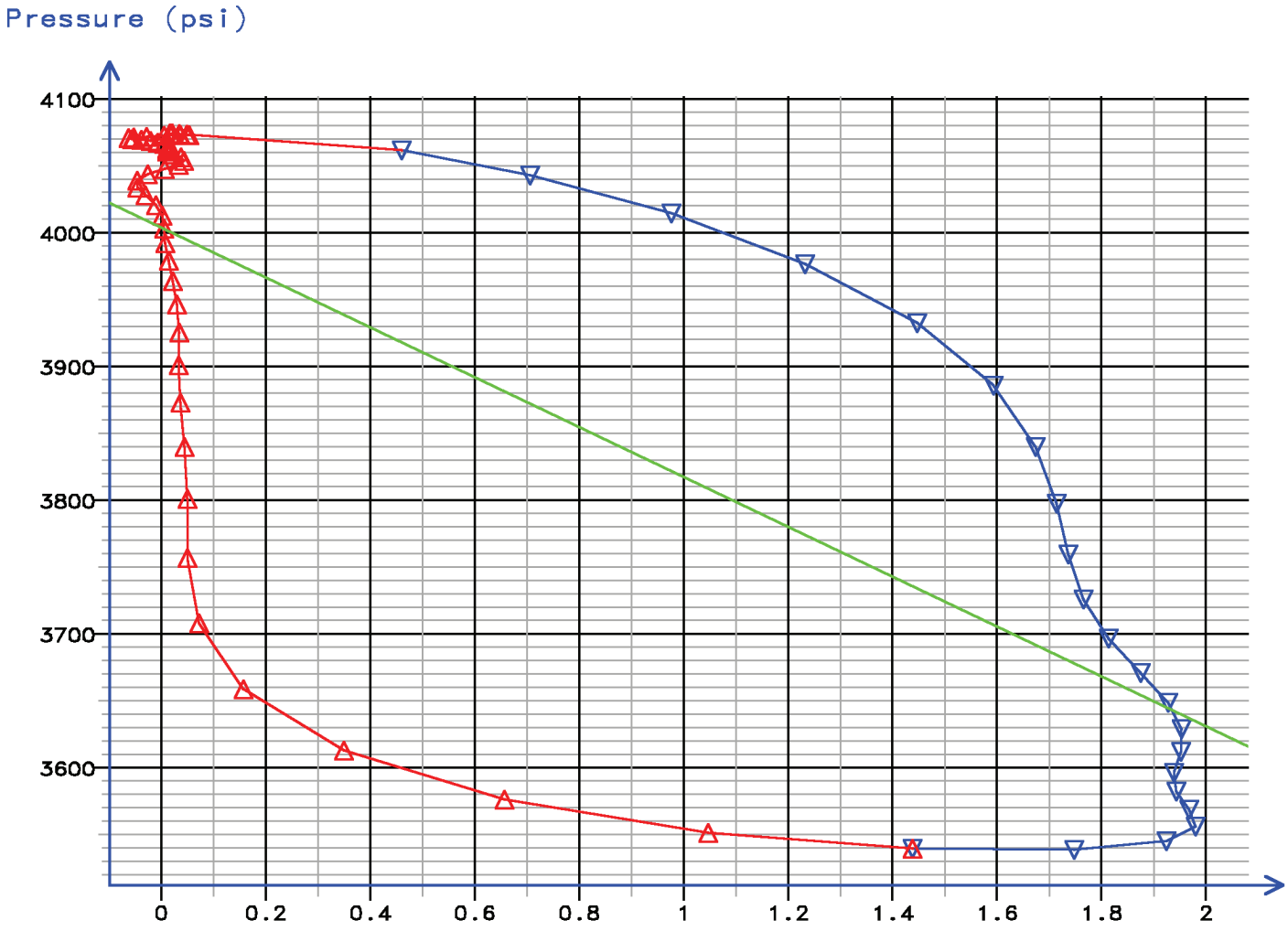


Final BU	4078.58	psi	DD Volume	4.87	cm3	Temp	66.34 degC
BU Stability	−0.00320	psi/min	Min Flow P	3536.78	psi	Temp Stability	n/a degC/min
BU Repeat	−0.102	psi	DD Rate	1.98	cm3/s	FRA	0.587 R2
P_hydro	4762.98	psi	Mobility DD	12.586	mD/cP	Mobility Kfra	12.851 mD/cP

FLOW RATE ANALYSIS

FLOW RATE ANALYSIS

Depth MD 2883.6 m TVD 2883.6 m

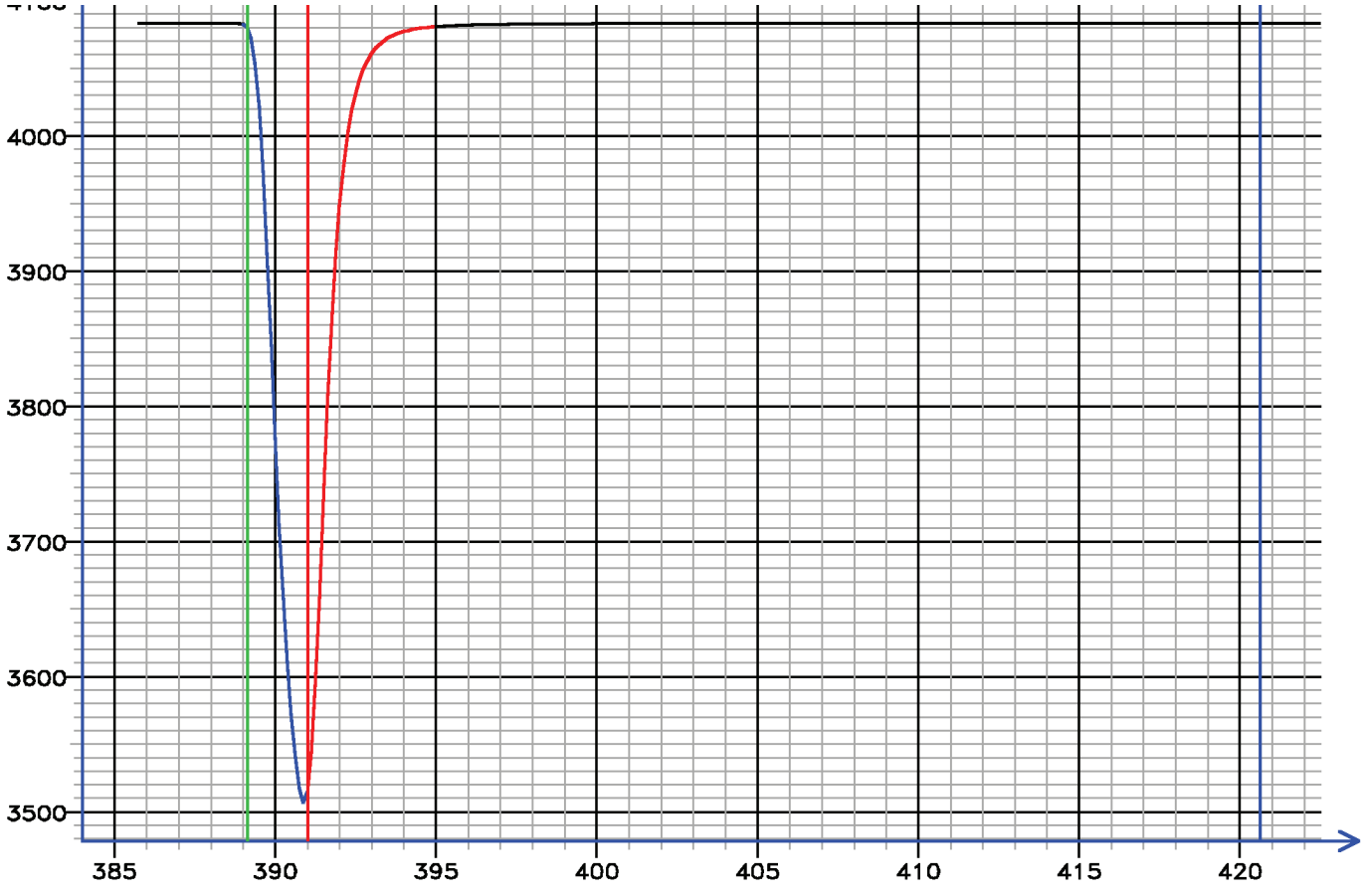


Kfra 12.851, Kddu 12.586 (mD/cP) Confidence 58.67% MD 2883.62 (m)

Pressure Tests — Level 28 Tool Instance 1
MD 2887.0 m TVD 2887.0 m

PRESSURE HISTORY (apql vs. time)

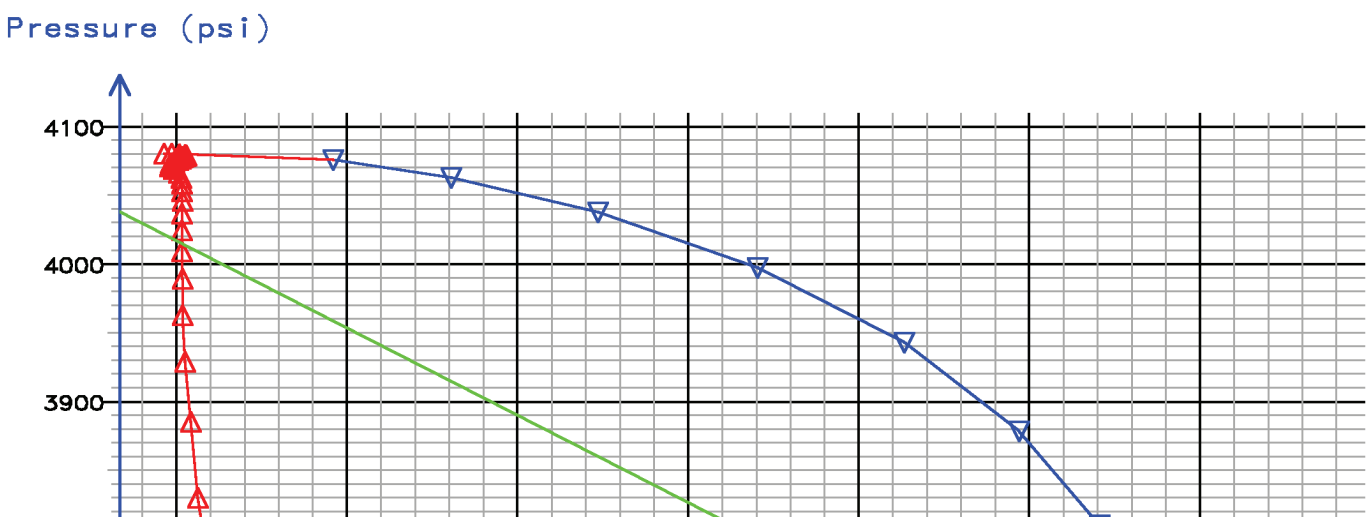
Depth MD 2887.0 m TVD 2887.0 m

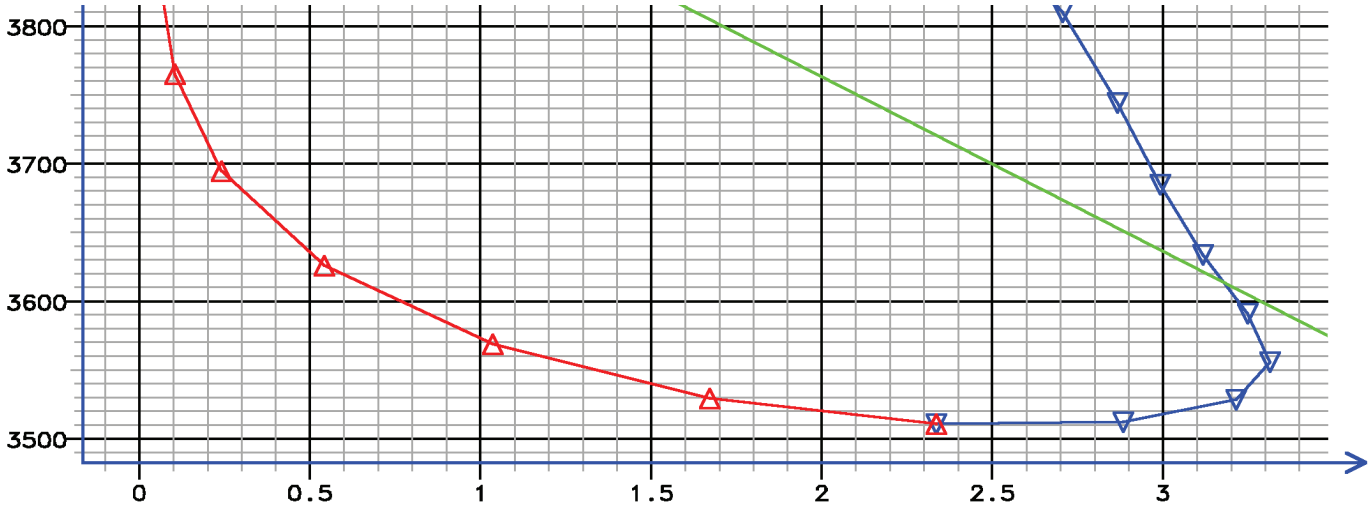


Final BU	4083.28	psi	DD Volume	4.99	cm3	Temp	66.37	degC
BU Stability	0.19519	psi/min	Min Flow P	3506.92	psi	Temp Stability	0.00703	degC/min
BU Repeat	−0.044	psi	DD Rate	3.32	cm3/s	FRA	0.569	R2
P_hydro	4768.48	psi	Mobility DD	19.803	mD/cP	Mobility Kfra	18.683	mD/cP

FLOW RATE ANALYSIS

Depth MD 2887.0 m TVD 2887.0 m



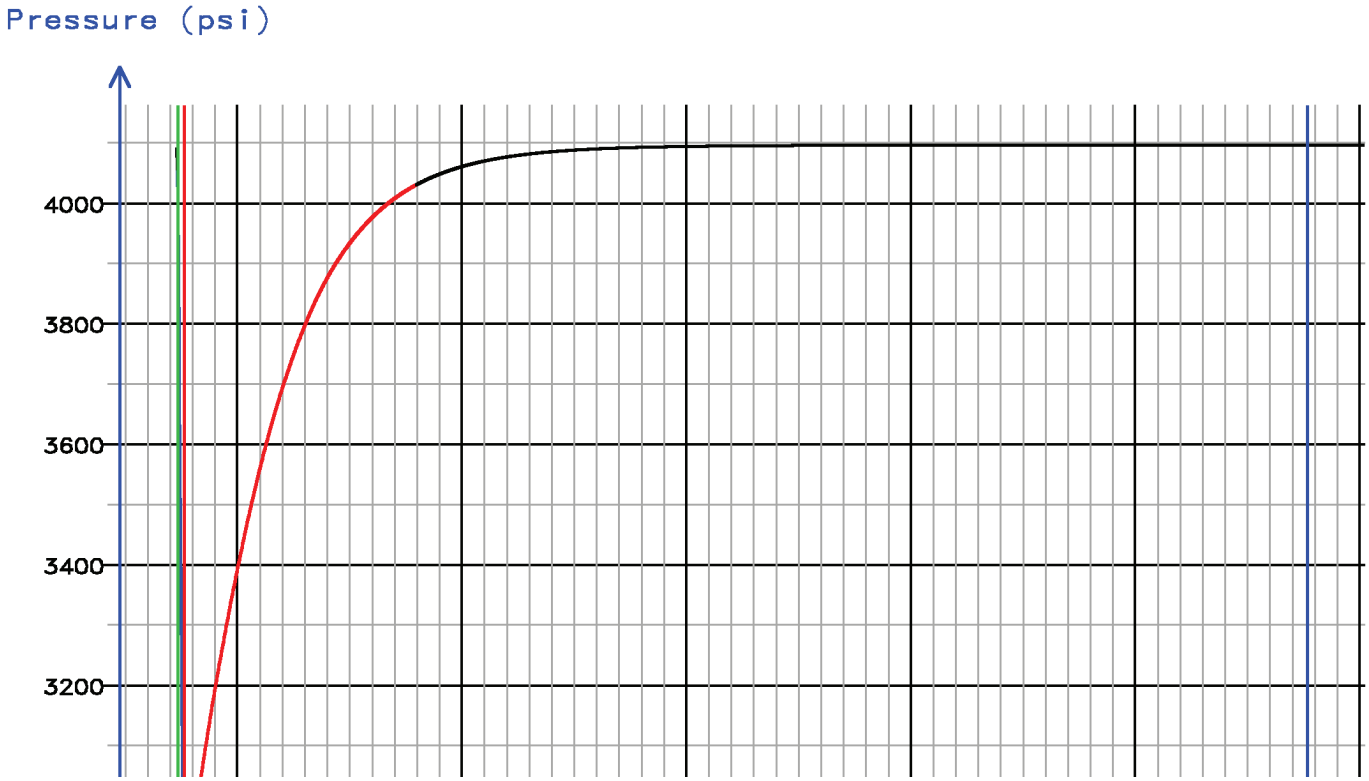


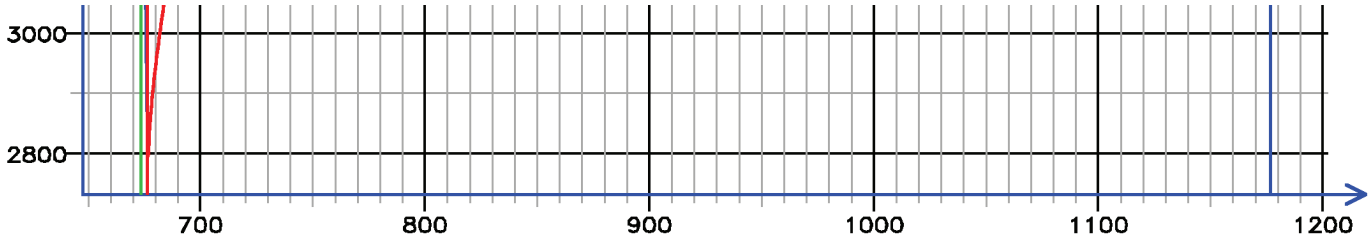
Kfra 18.683, Kddu 19.804 (mD/cP) Confidence 56.86% MD 2887.01 (m)

Pressure Tests – Level 29 Tool Instance 1
MD 2890.5 m TVD 2890.5 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2890.5 m TVD 2890.5 m





Time (s)

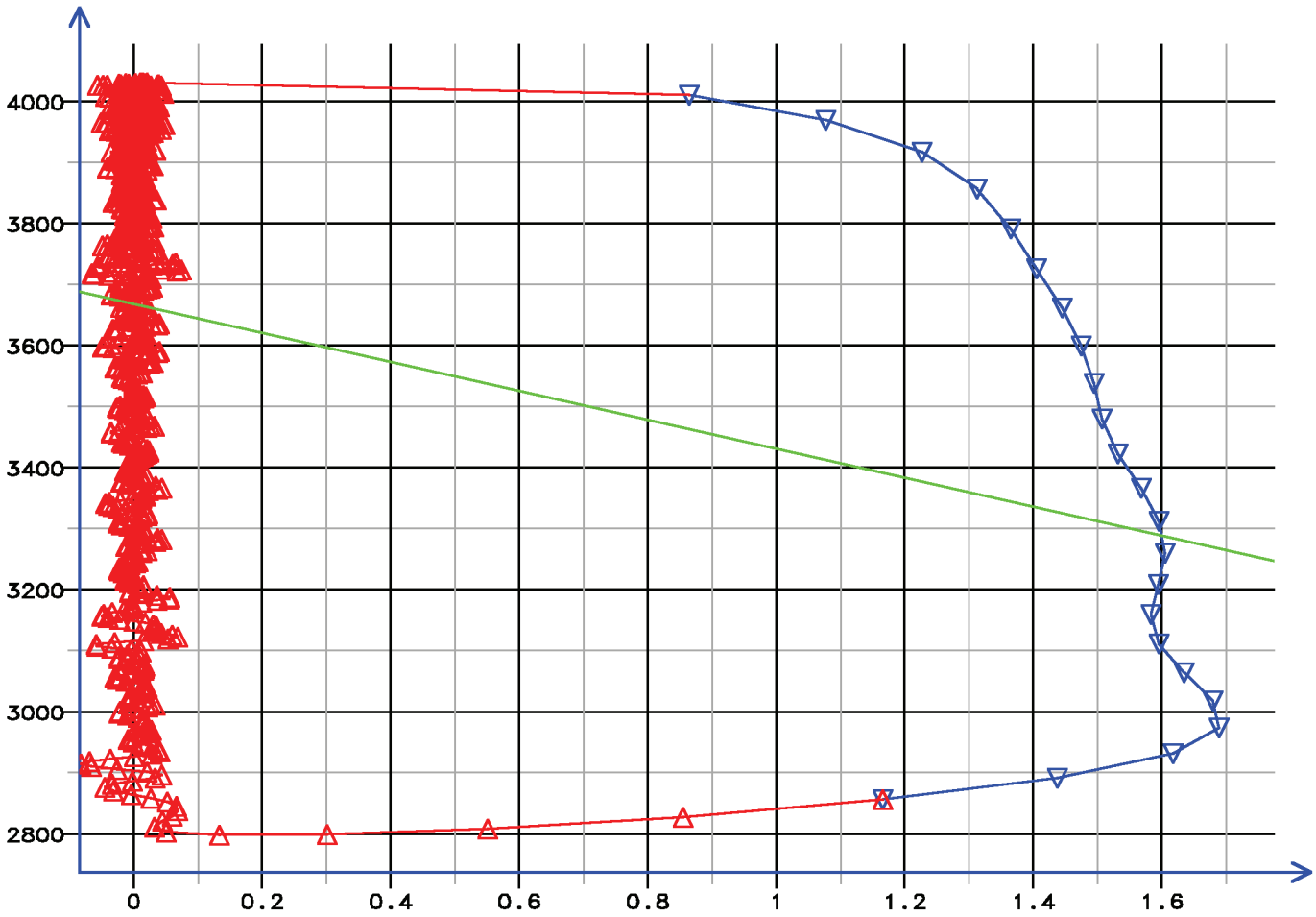
MD: 2890.52 TVD: 2890.52 (m) [029.1.264]

Final BU	4096.45	psi	DD Volume	4.80	cm3	Temp	66.49	degC
BU Stability	0.01351	psi/min	Min Flow P	2796.24	psi	Temp Stability	0.00388	degC/min
BU Repeat	−0.662	psi	DD Rate	1.69	cm3/s	FRA	0.028	R2
P_hydro	4774.12	psi	Mobility DD	4.474	mD/cP	Mobility Kfra	1.956	mD/cP

FLOW RATE ANALYSIS

Depth MD 2890.5 m TVD 2890.5 m

Pressure (psi)



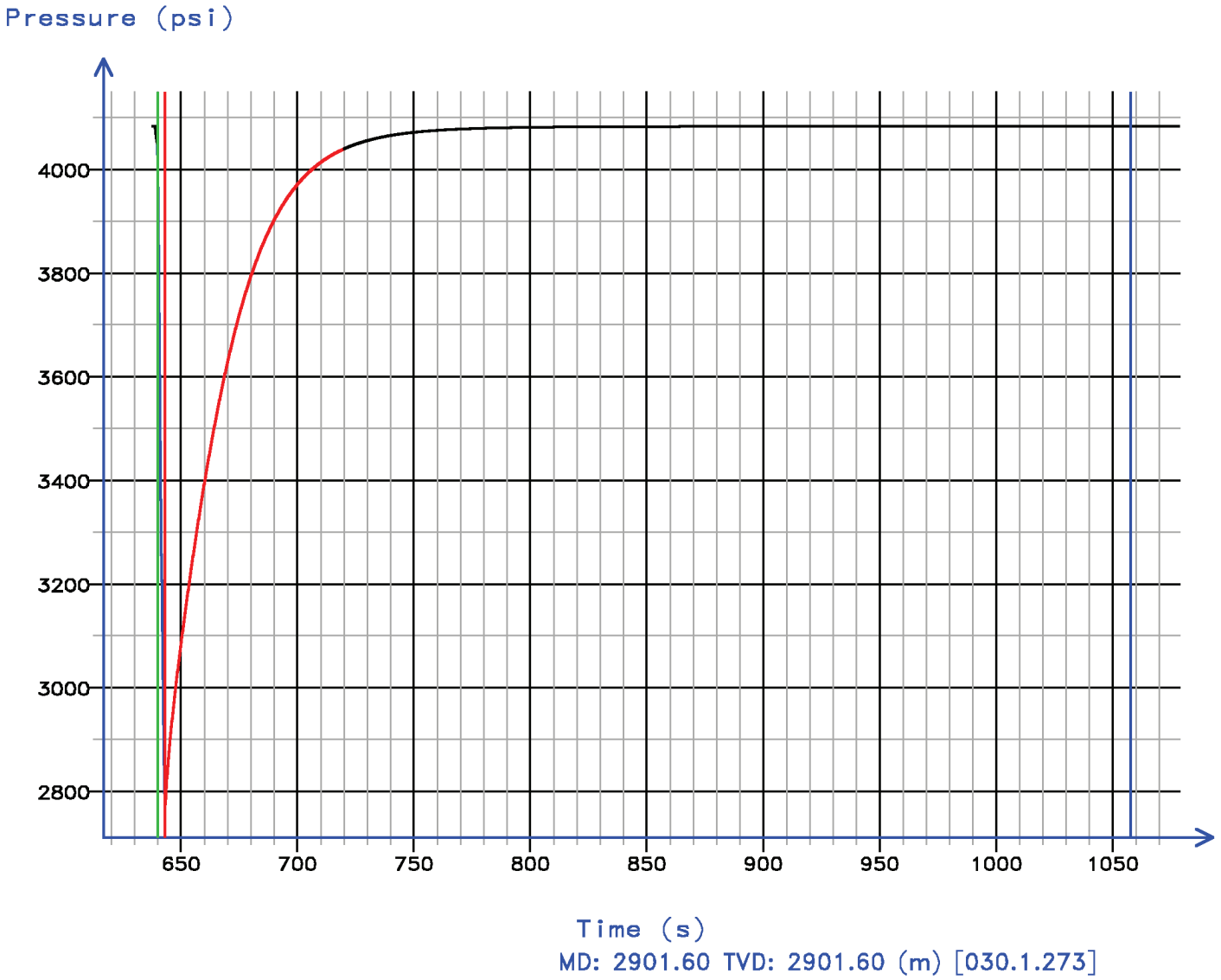
Flow Rate (cm3/s)

Kfra 1.956, Kddu 4.474 (mD/cP) Confidence 2.82% MD 2890.52 (m)

Pressure Tests – Level 30 Tool Instance 1
MD 2901.6 m TVD 2901.6 m

PRESSURE HISTORY (apql vs. time)

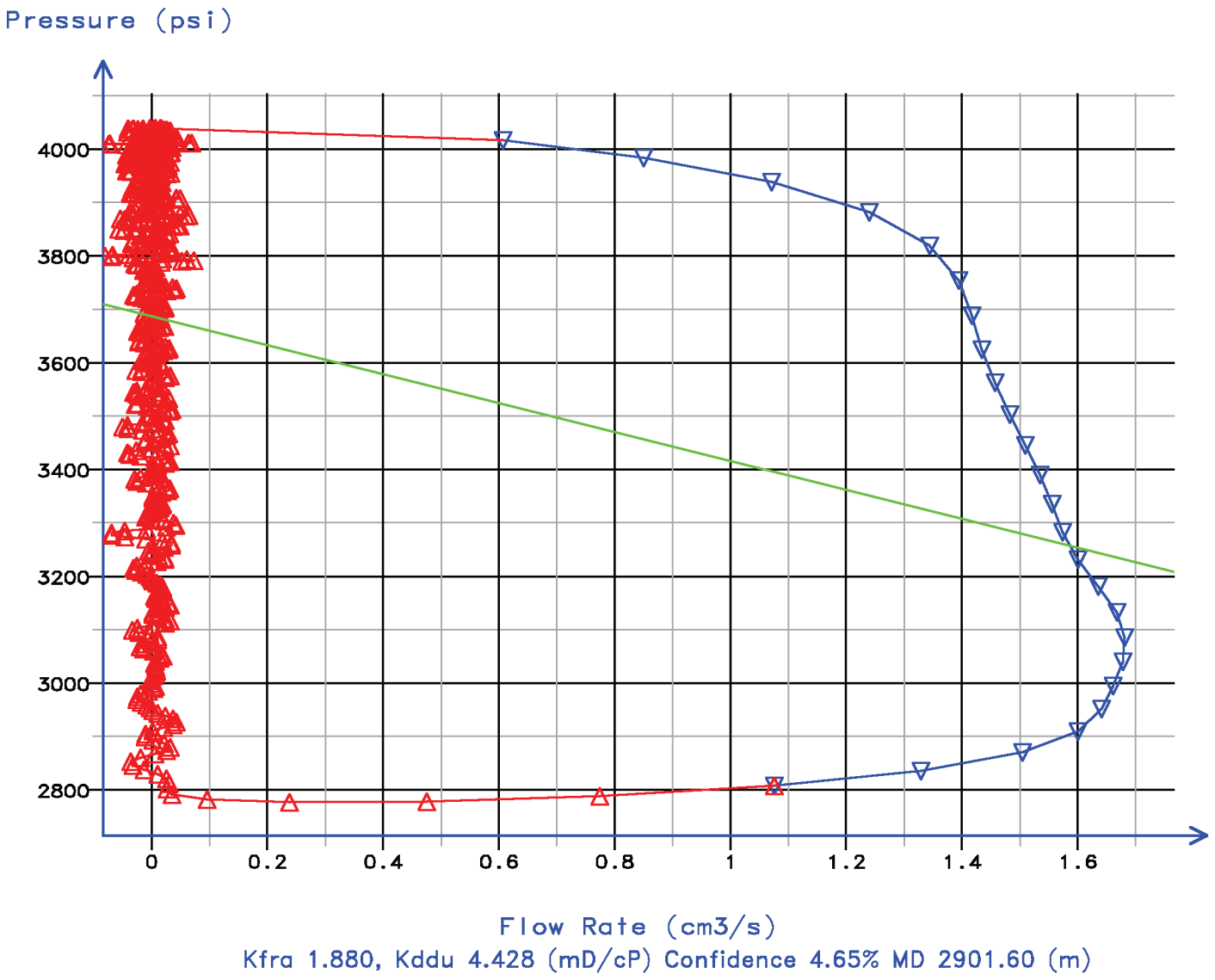
Depth MD 2901.6 m TVD 2901.6 m



Final BU	4083.10	psi	DD Volume	4.89	cm3	Temp	66.63 degC
BU Stability	0.06418	psi/min	Min Flow P	2775.51	psi	Temp Stability	0.00364 degC/min
BU Repeat	−0.310	psi	DD Rate	1.68	cm3/s	FRA	0.046 R2
P_hydro	4792.18	psi	Mobility DD	4.428	mD/cP	Mobility Kfra	1.880 mD/cP

FLOW RATE ANALYSIS

Depth MD 2901.6 m TVD 2901.6 m

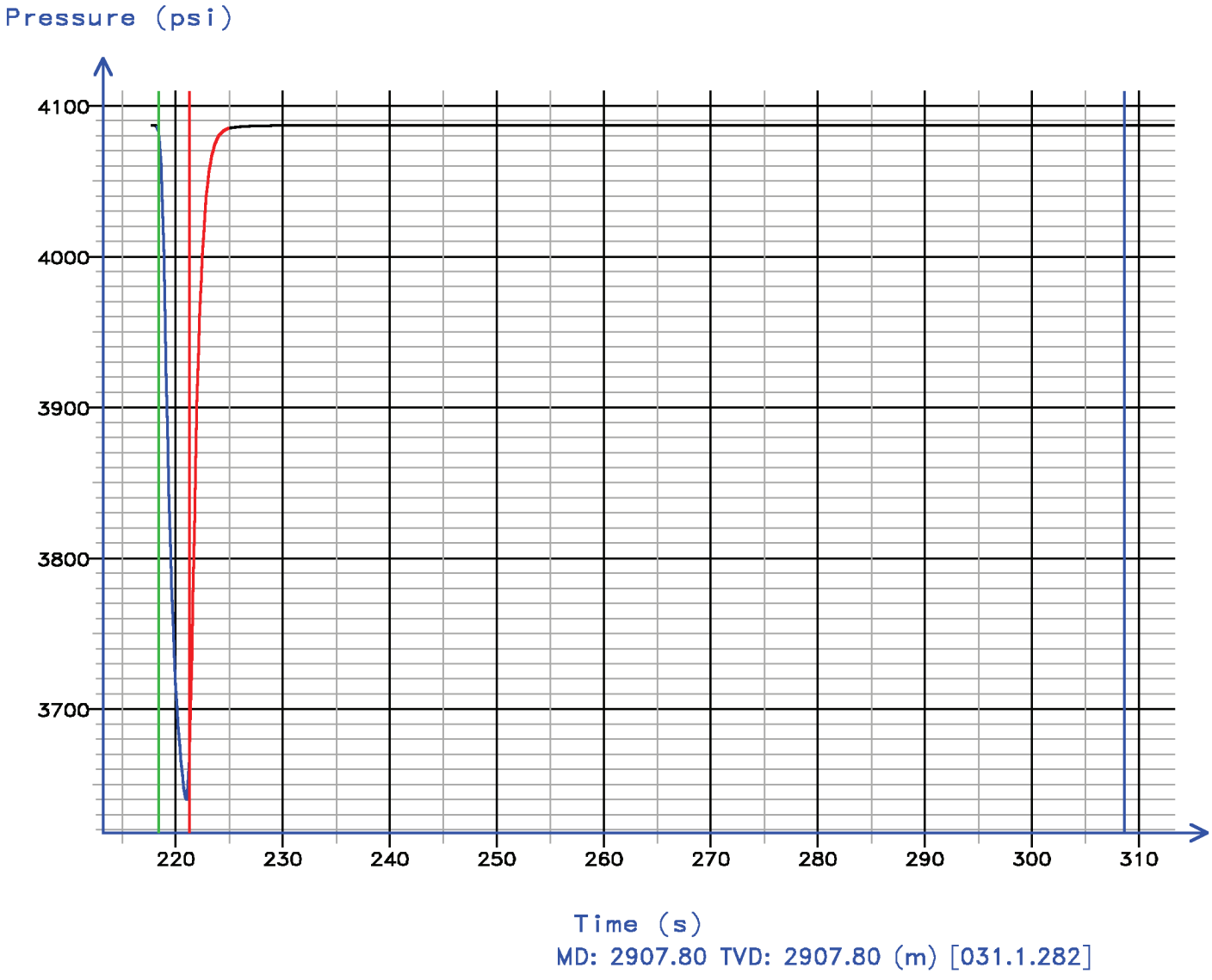


Kfra 1.880, Kddu 4.428 (mD/cP) Confidence 4.65% MD 2901.60 (m)

Pressure Tests – Level 31 Tool Instance 1
MD 2907.8 m TVD 2907.8 m

PRESSURE HISTORY (apql vs. time)

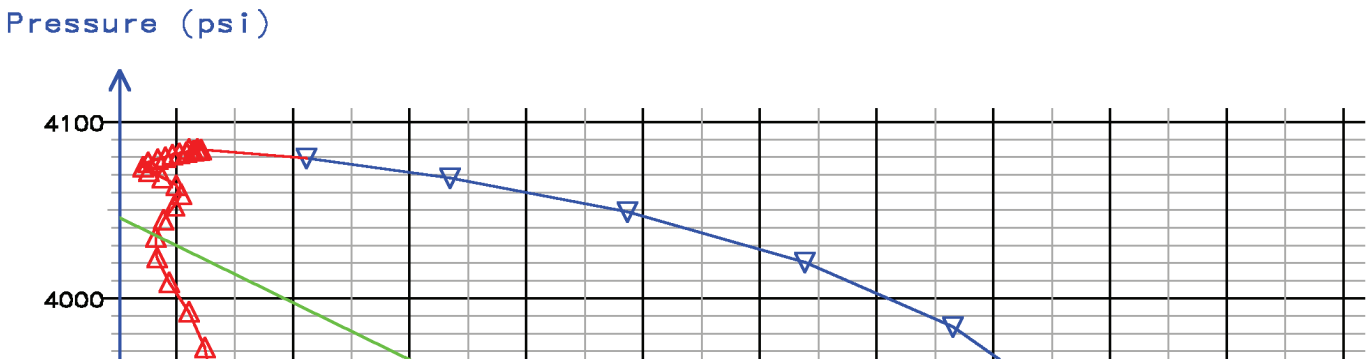
Depth MD 2907.8 m TVD 2907.8 m

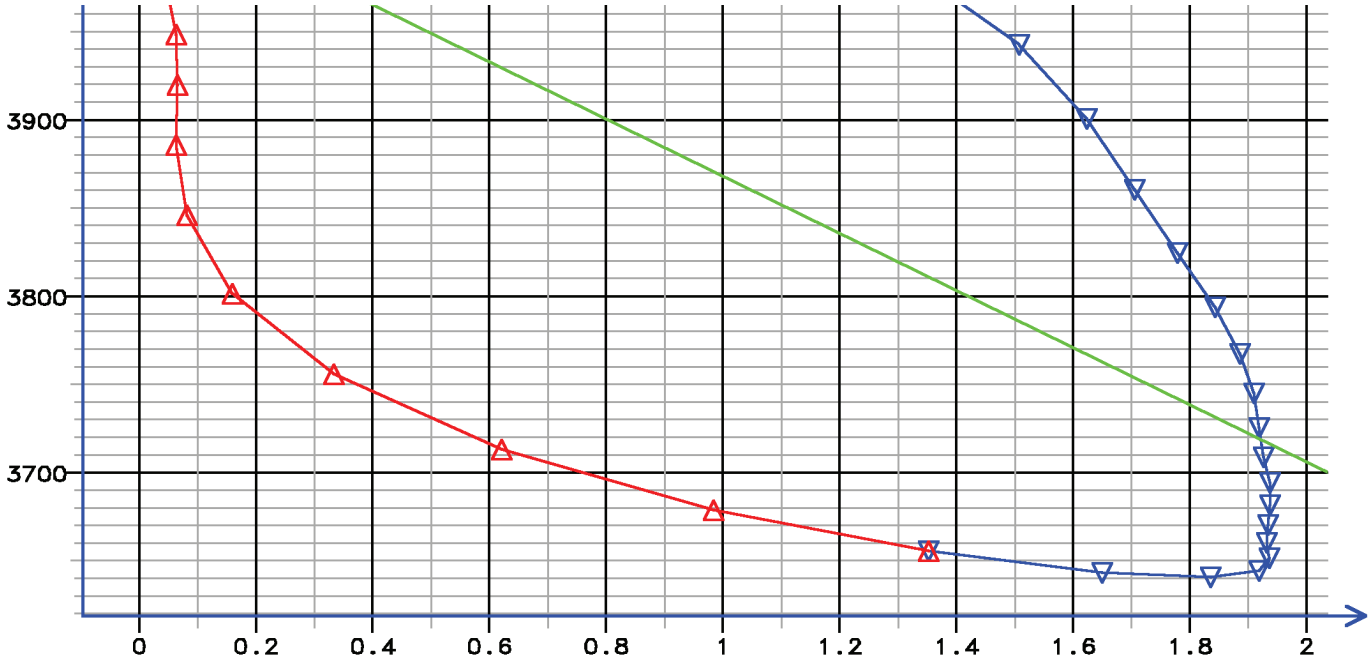


Final BU	4086.83	psi	DD Volume	4.85	cm3	Temp	66.78	degC
BU Stability	−0.01173	psi/min	Min Flow P	3640.07	psi	Temp Stability	0.02345	degC/min
BU Repeat	−0.064	psi	DD Rate	1.94	cm3/s	FRA	0.657	R2
P_hydro	4802.20	psi	Mobility DD	14.935	mD/cP	Mobility Kfra	15.674	mD/cP

FLOW RATE ANALYSIS

Depth MD 2907.8 m TVD 2907.8 m



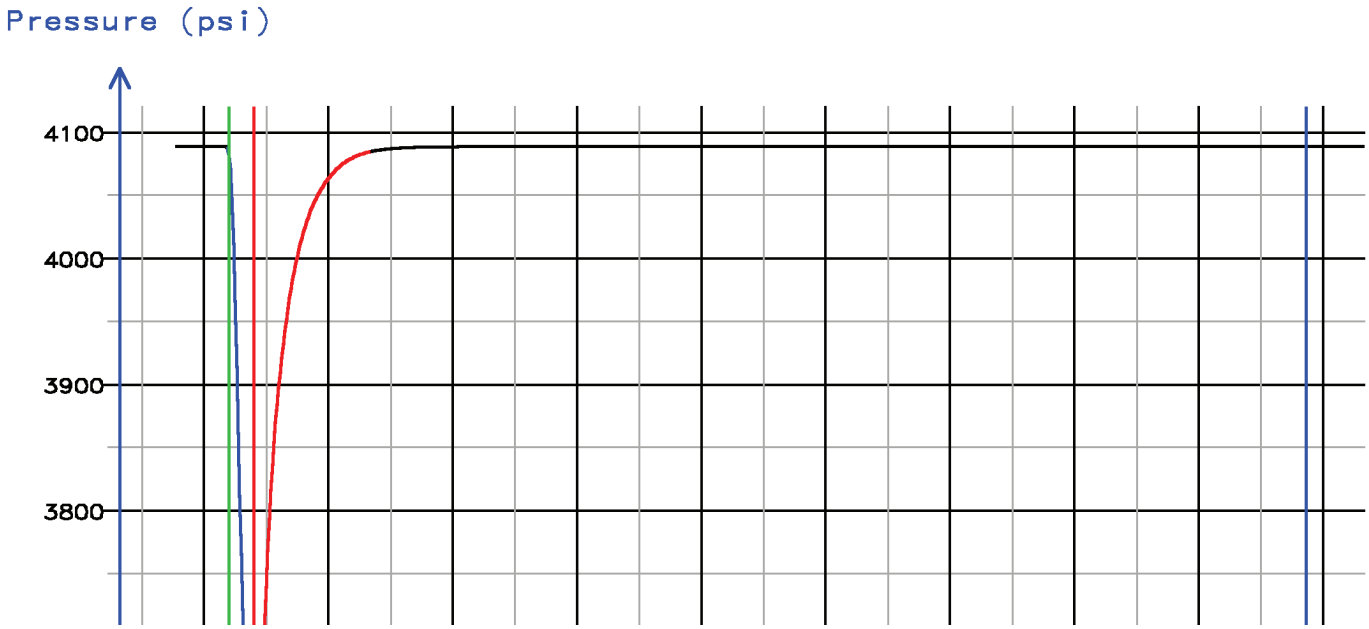


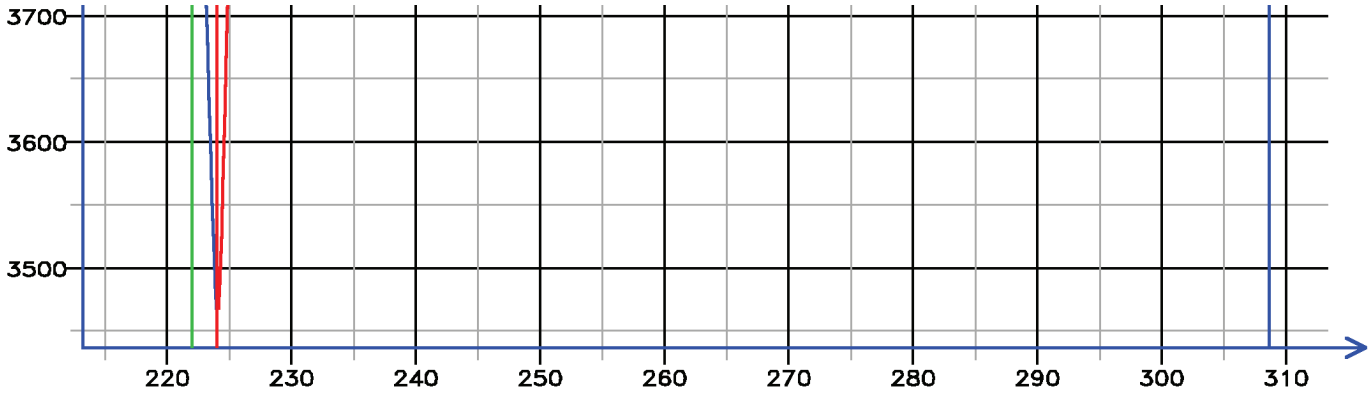
Kfra 15.674, Kddu 14.935 (mD/cP) Confidence 65.66% MD 2907.80 (m)

Pressure Tests – Level 32 Tool Instance 1
MD 2909.0 m TVD 2909.0 m

PRESSURE HISTORY (apqI vs. time)

Depth MD 2909.0 m TVD 2909.0 m

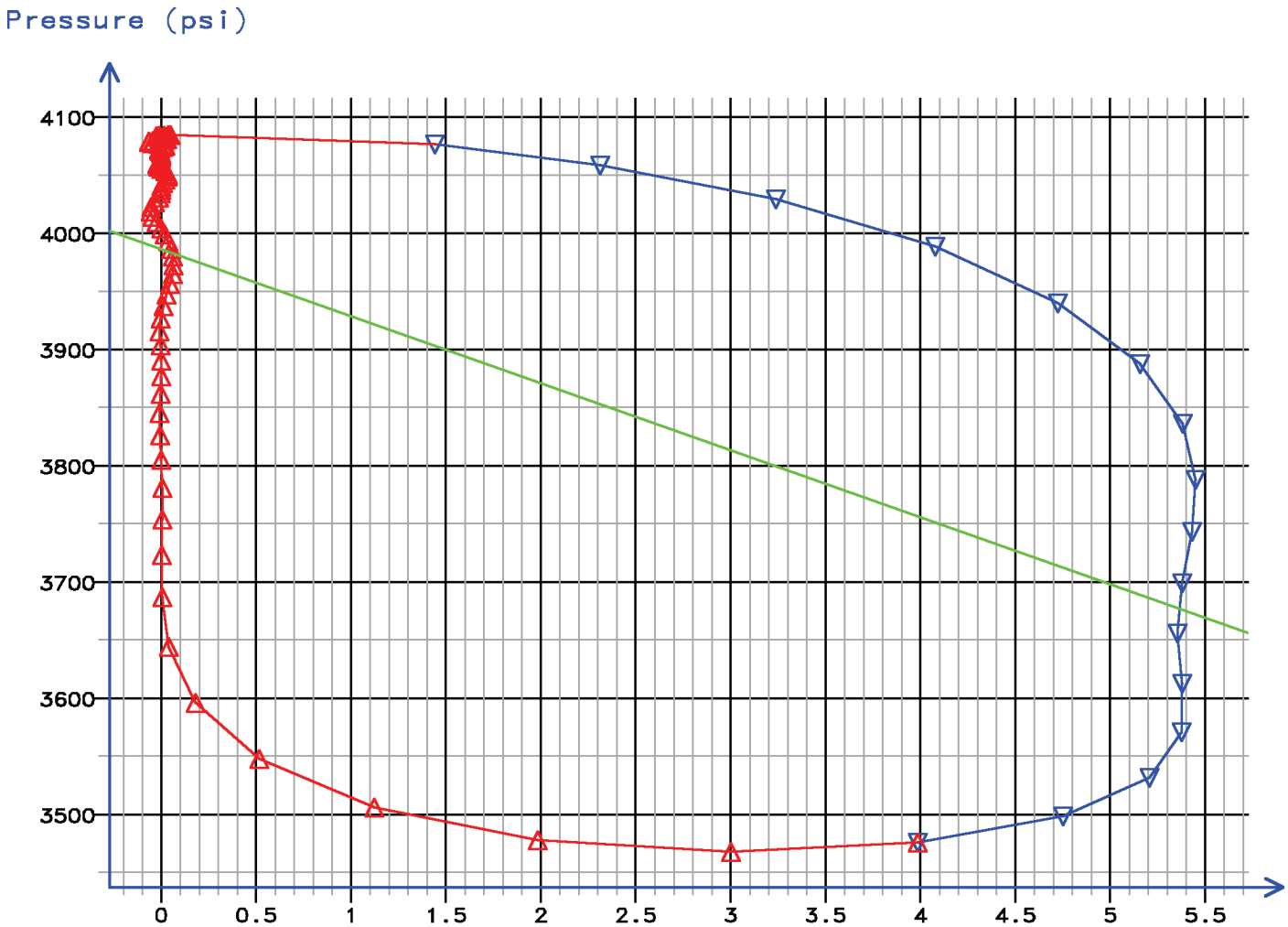




Final BU	4088.61	psi	DD Volume	10.10	cm3	Temp	66.96	degC
BU Stability	−0.06109	psi/min	Min Flow P	3467.43	psi	Temp Stability	0.01864	degC/min
BU Repeat	0.003	psi	DD Rate	5.45	cm3/s	FRA	0.327	R2
P_hydro	4804.19	psi	Mobility DD	30.214	mD/cP	Mobility Kfra	31.765	mD/cP

FLOW RATE ANALYSIS

Depth MD 2909.0 m TVD 2909.0 m

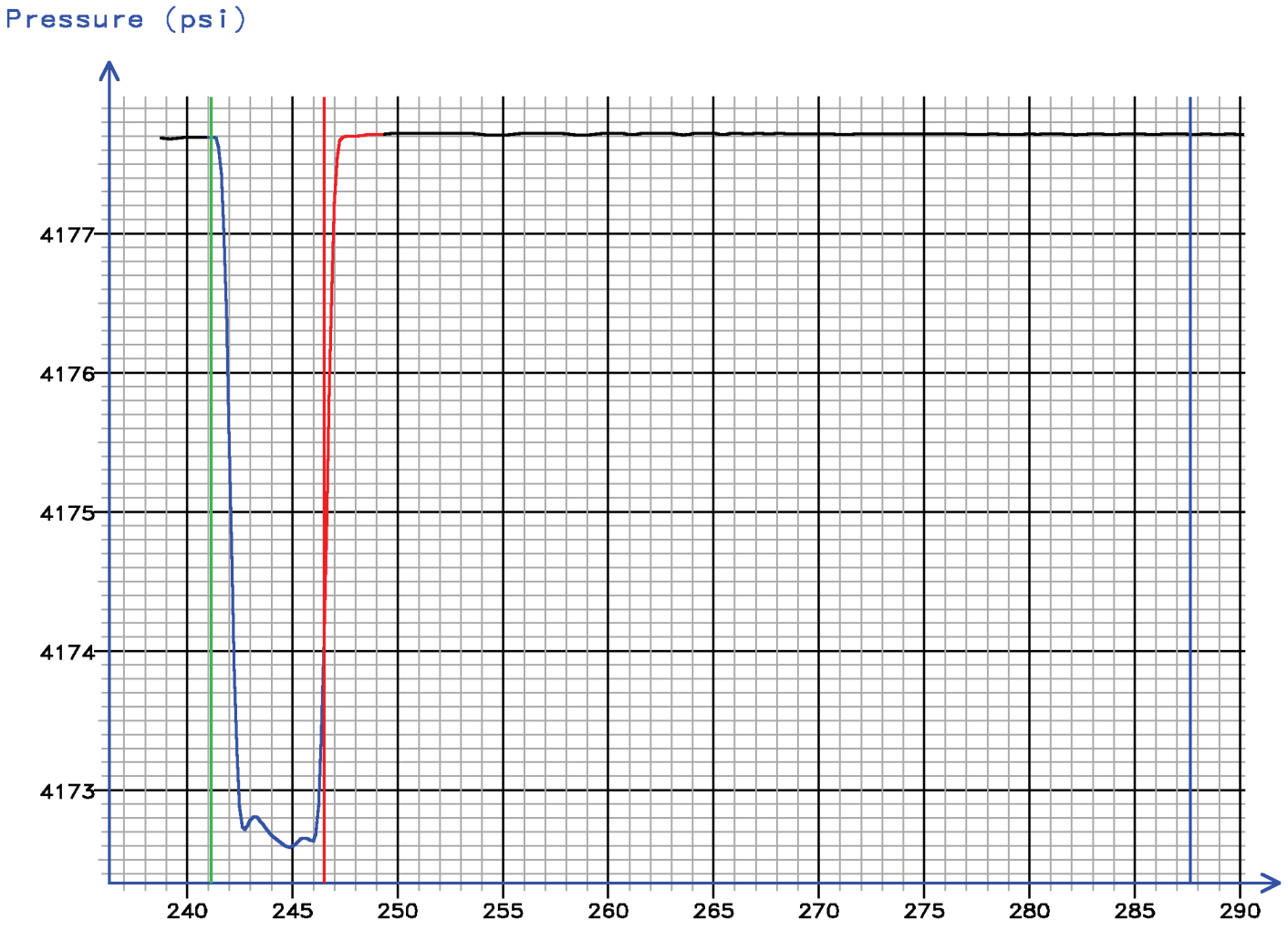


Flow Rate (cm3/s)
Kfra 31.765, Kddu 30.214 (mD/cP) Confidence 32.75% MD 2909.00 (m)

Pressure Tests – Level 33 Tool Instance 1
MD 2933.8 m TVD 2933.8 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2933.8 m TVD 2933.8 m



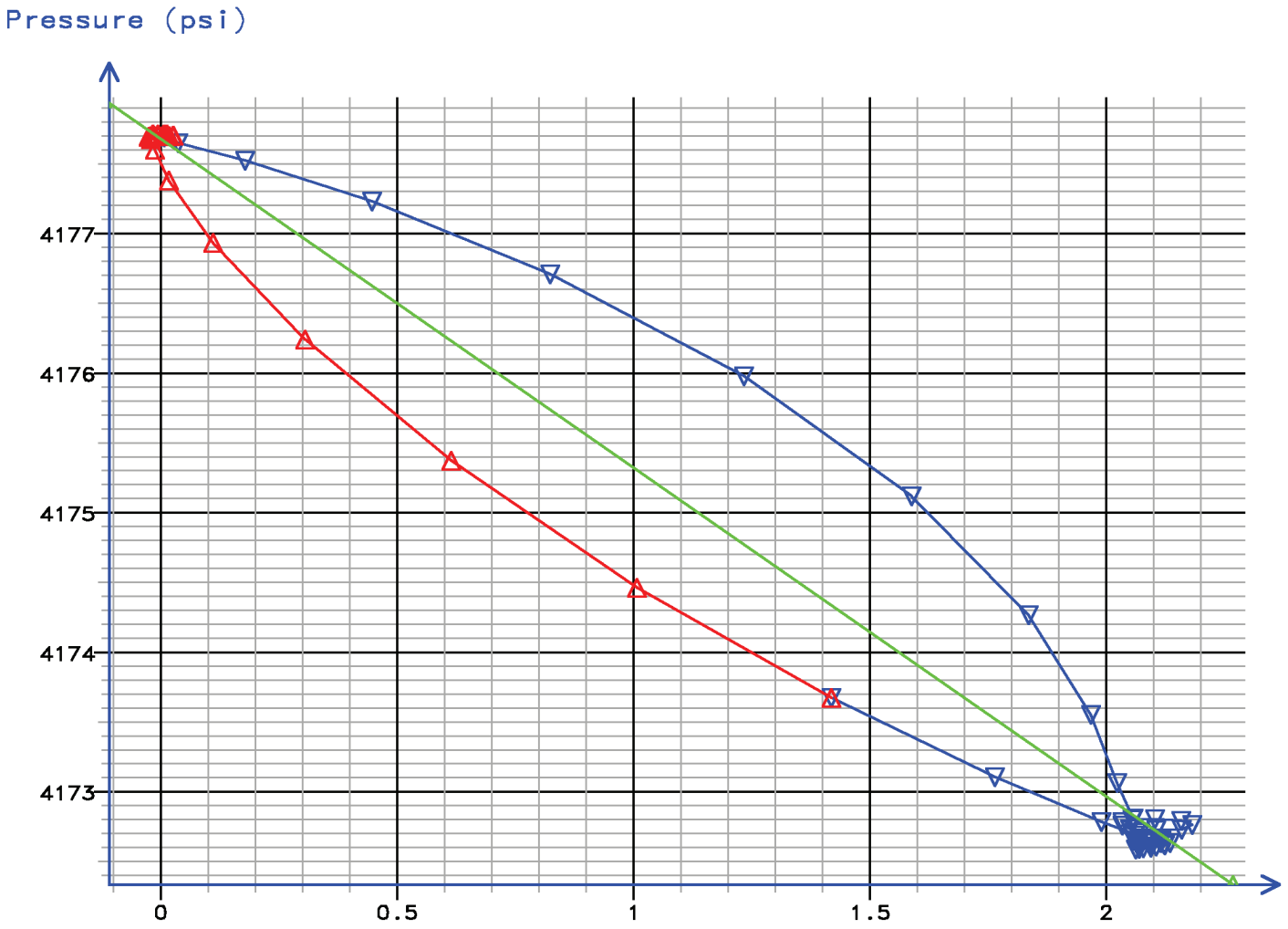
MD: 2933.79 TVD: 2933.79 (m) [033.1.302]

Final BU	4177.71 psi	DD Volume	9.76 cm3	Temp	67.53 degC
BU Stability	−0.00425 psi/min	Min Flow P	4172.59 psi	Temp Stability	0.02018 degC/min

BU Repeat	0.026 psi	DD Rate	2.18 cm3/s	FRA	0.975 R2
P_hydro	4844.64 psi	Mobility DD	1466.396 mD/cP	Mobility Kfra	1436.894 mD/cP

FLOW RATE ANALYSIS

Depth MD 2933.8 m TVD 2933.8 m



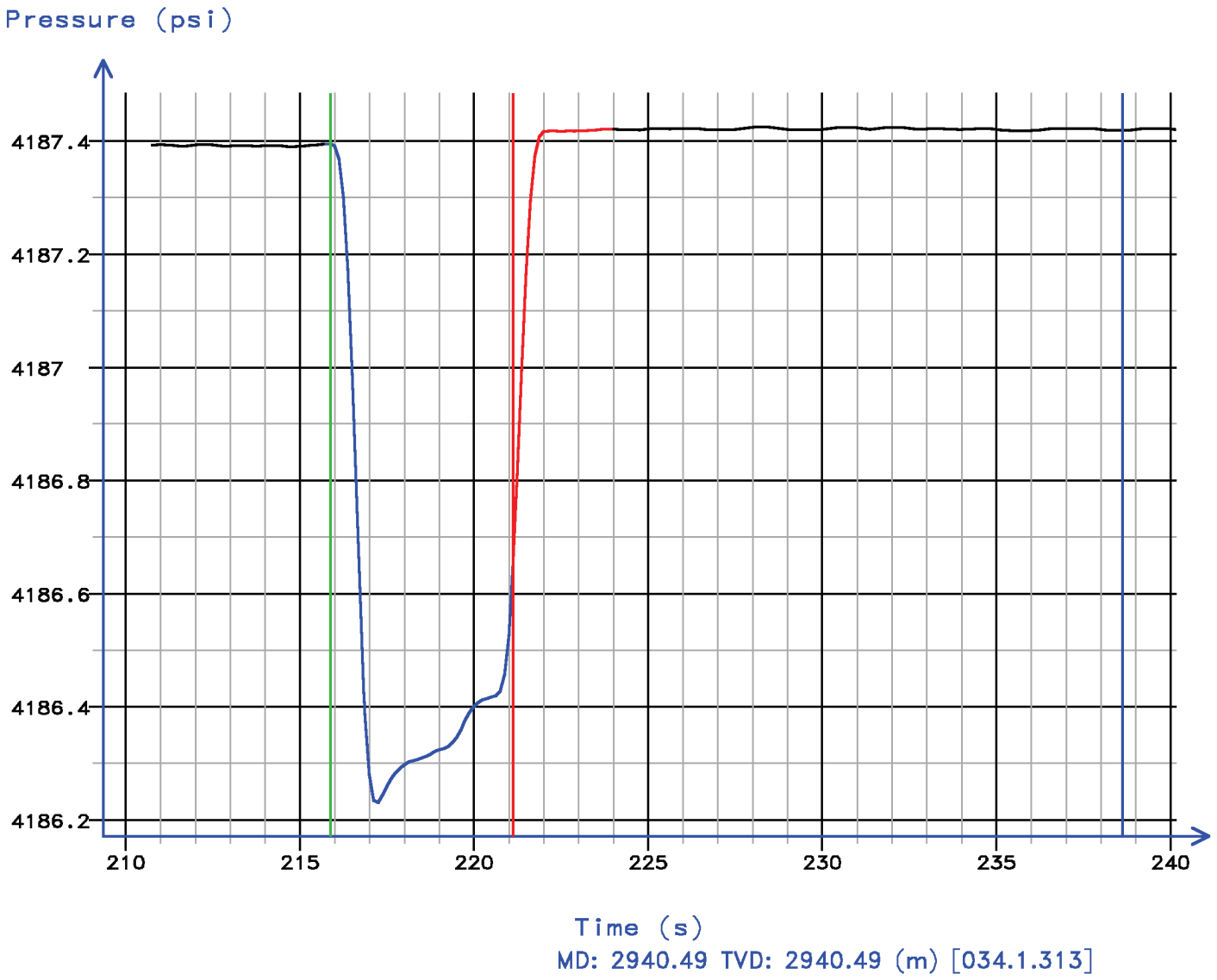
Kfra 1436.894, Kddu 1466.675 (mD/cP) Confidence 97.49% MD 2933.79 (m)

Pressure Tests – Level 34 Tool Instance 1

MD 2940.5 m TVD 2940.5 m

PRESSURE HISTORY (apql vs. time)

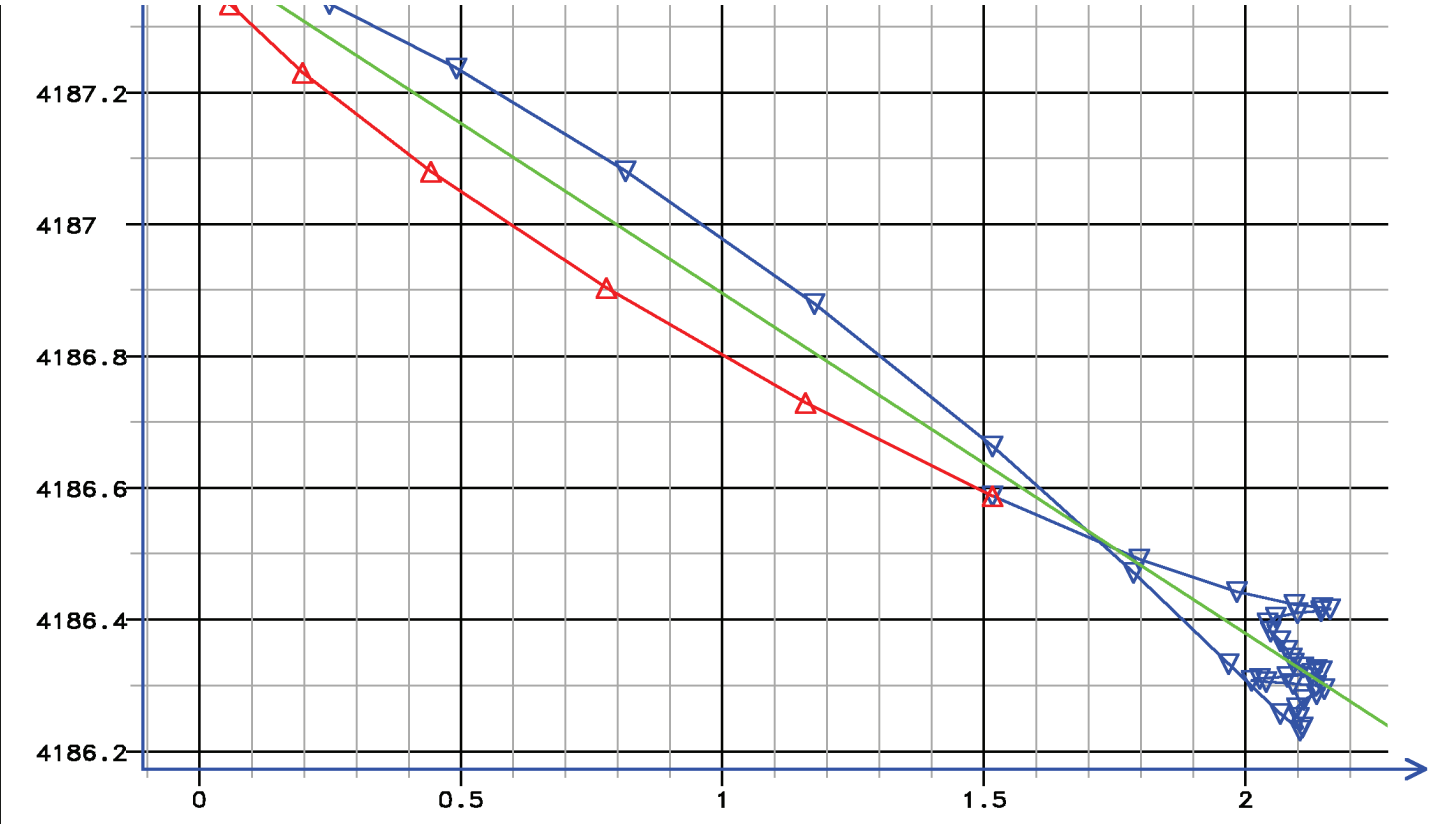
Depth MD 2940.5 m TVD 2940.5 m



Final BU	4187.42	psi	DD Volume	9.88	cm3	Temp	67.64	degC
BU Stability	−0.00525	psi/min	Min Flow P	4186.23	psi	Temp Stability	0.00805	degC/min
BU Repeat	0.027	psi	DD Rate	2.16	cm3/s	FRA	0.989	R2
P_hydro	4855.56	psi	Mobility DD	6274.010	mD/cP	Mobility Kfra	6629.579	mD/cP

FLOW RATE ANALYSIS

Depth MD 2940.5 m TVD 2940.5 m

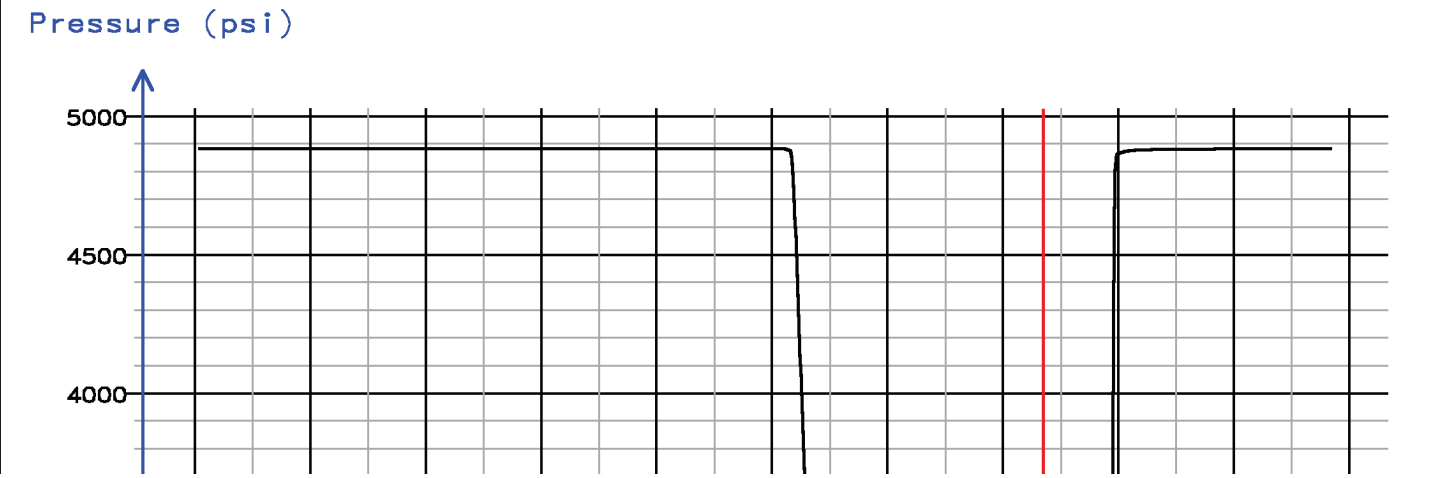


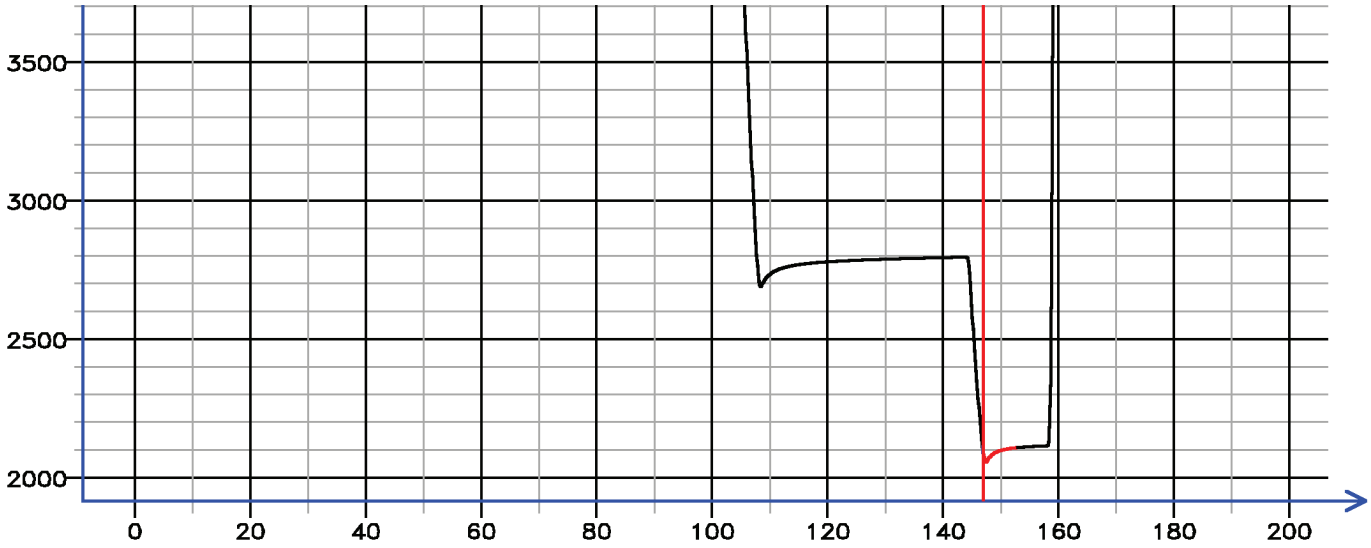
Kfra 6629.579, Kddu 6261.127 (mD/cP) Confidence 98.87% MD 2940.49 (m)

Pressure Tests — Level 37 Tool Instance 1
MD 2957.3 m TVD 2957.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2957.3 m TVD 2957.3 m

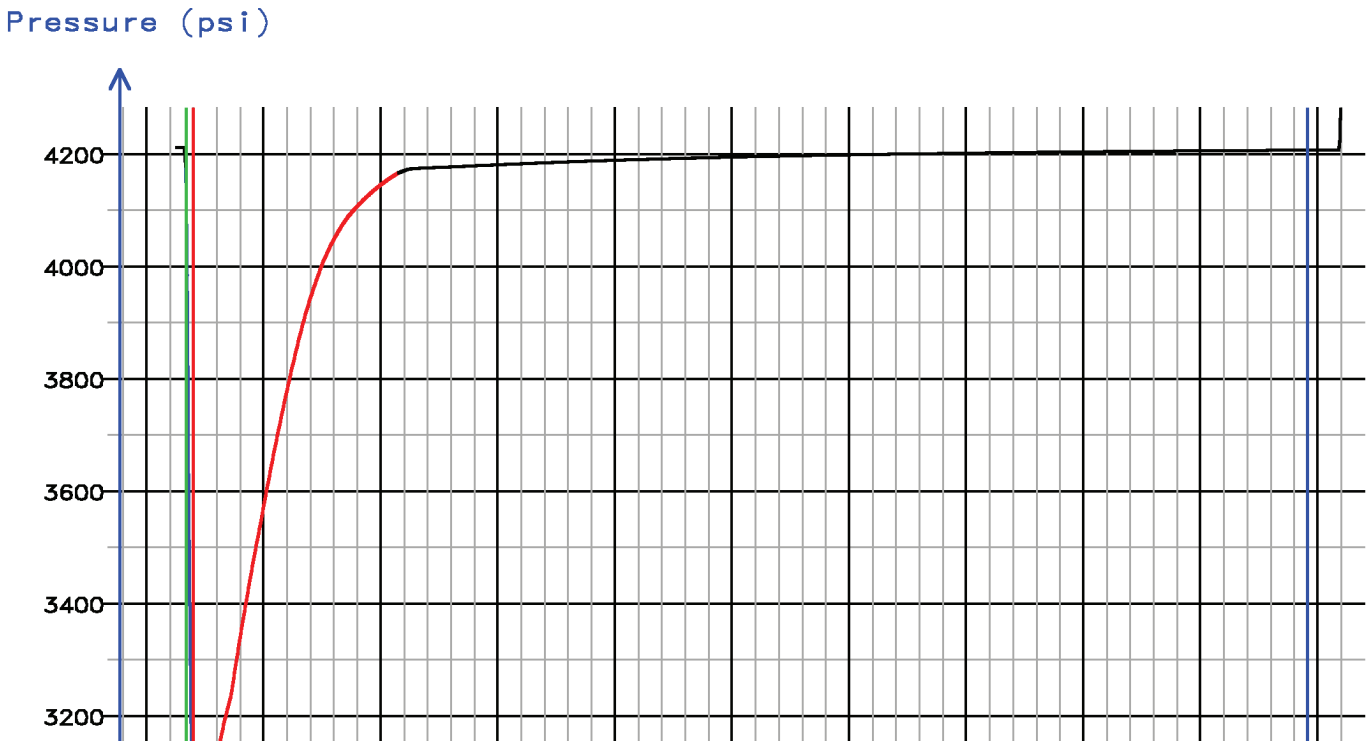


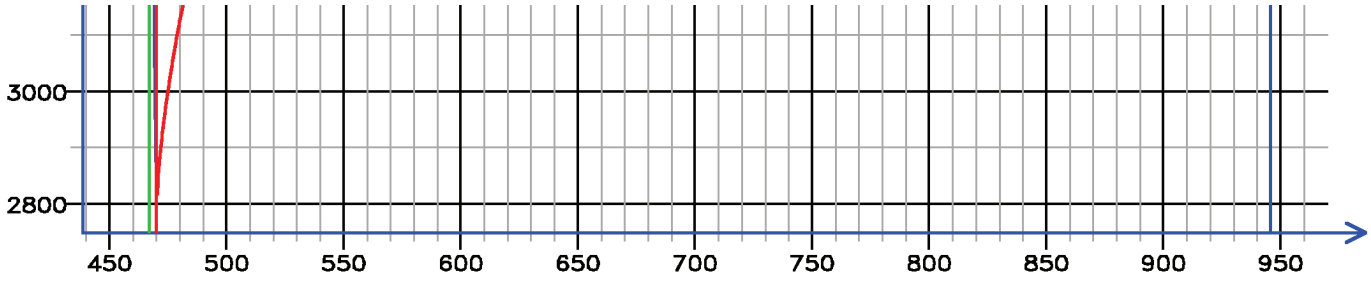


Pressure Tests – Level 38 Tool Instance 1
MD 2957.0 m TVD 2957.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2957.0 m TVD 2957.0 m



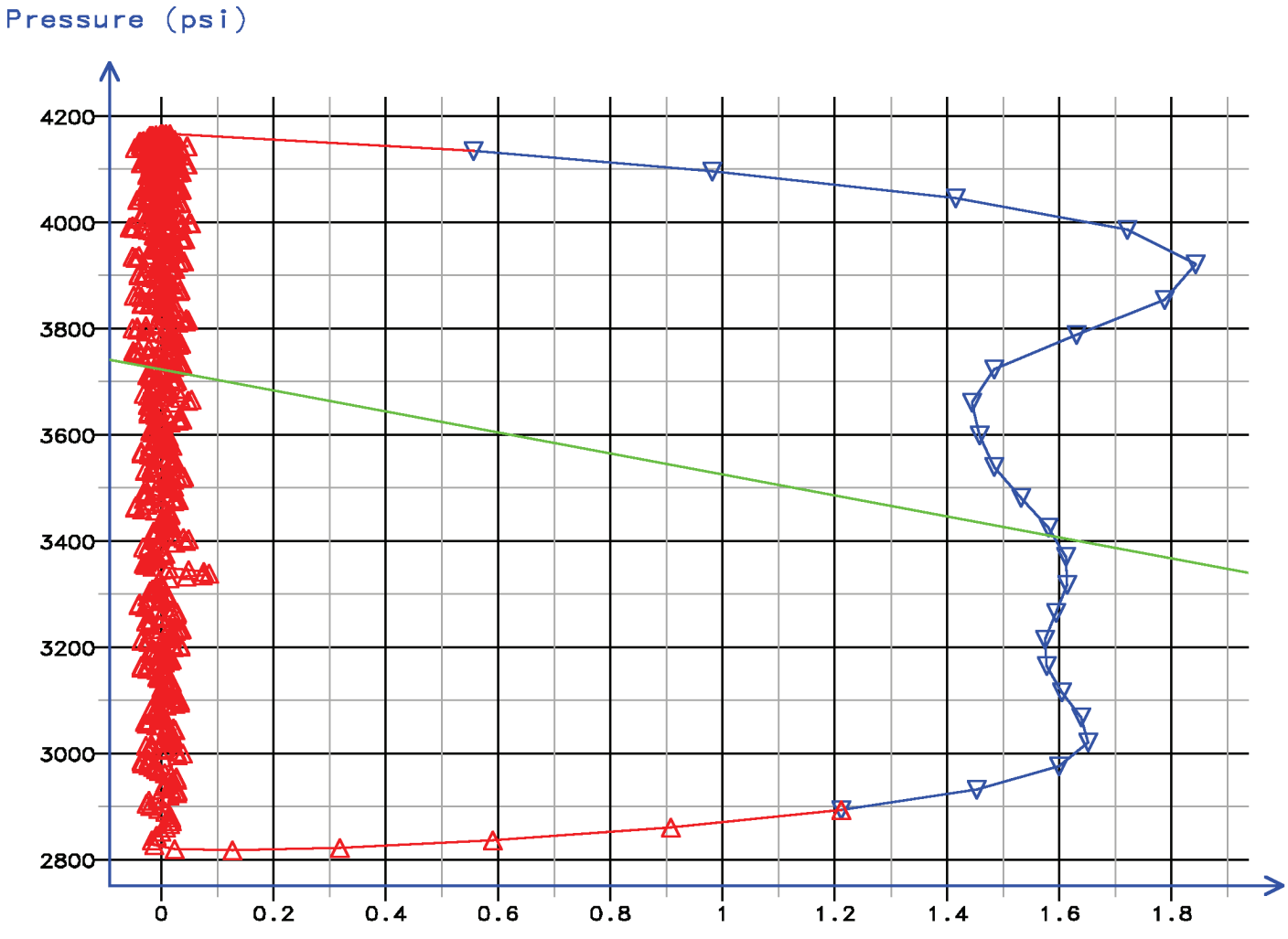


MD: 2957.01 TVD: 2957.01 (m) [038.1.339]

Final BU	4207.09	psi	DD Volume	4.97	cm3	Temp	68.21	degC
BU Stability	1.61387	psi/min	Min Flow P	2817.08	psi	Temp Stability	0.00915	degC/min
BU Repeat	−4.975	psi	DD Rate	1.84	cm3/s	FRA	0.018	R2
P_hydro	4882.48	psi	Mobility DD	4.566	mD/cP	Mobility Kfra	3.282	mD/cP

FLOW RATE ANALYSIS

Depth MD 2957.0 m TVD 2957.0 m

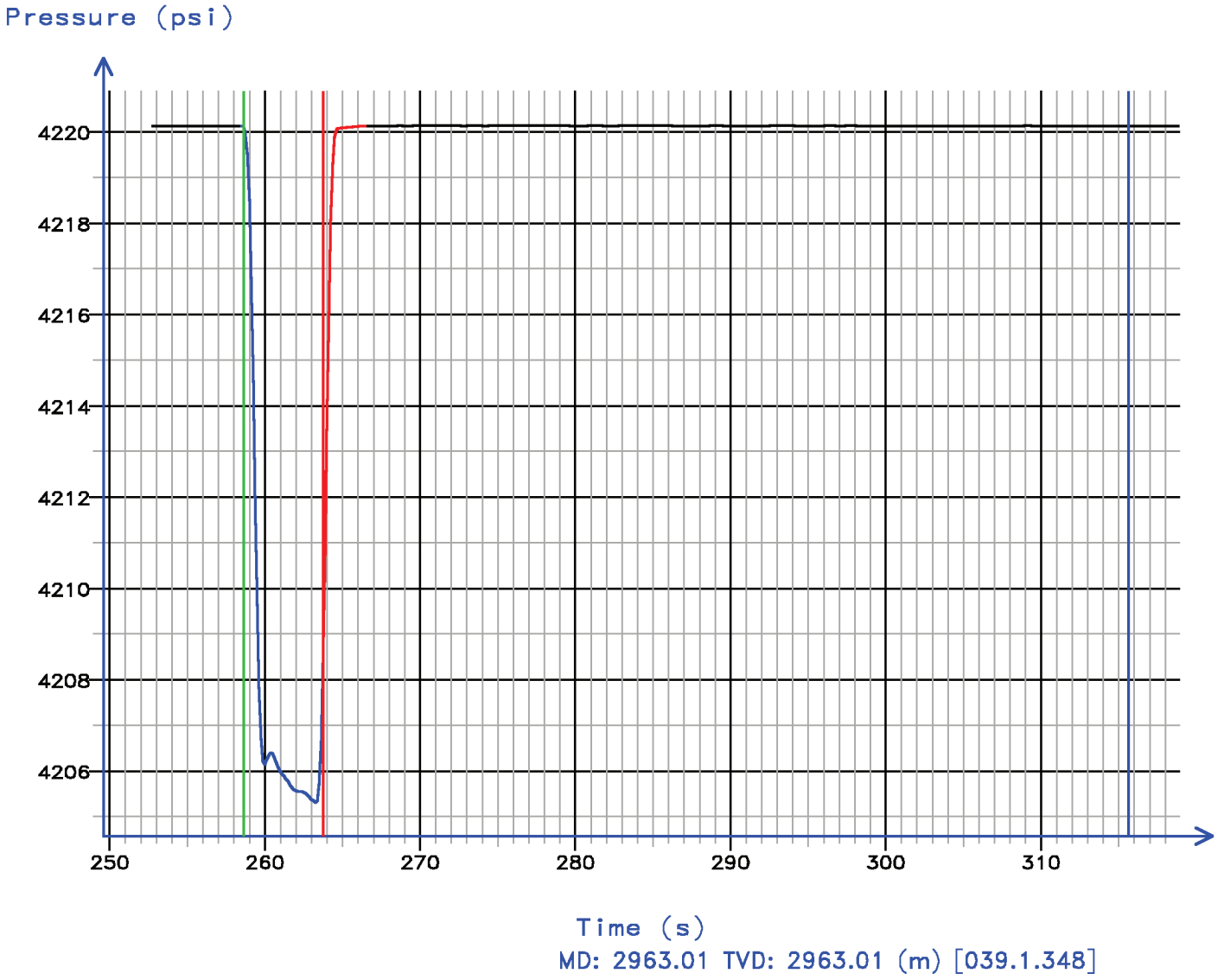


Kfra 3.282. Kddu 4.567 (mD/cP) Confidence 1.82% MD 2957.01 (m)

Pressure Tests — Level 39 Tool Instance 1
MD 2963.0 m TVD 2963.0 m

PRESSURE HISTORY (apql vs. time)

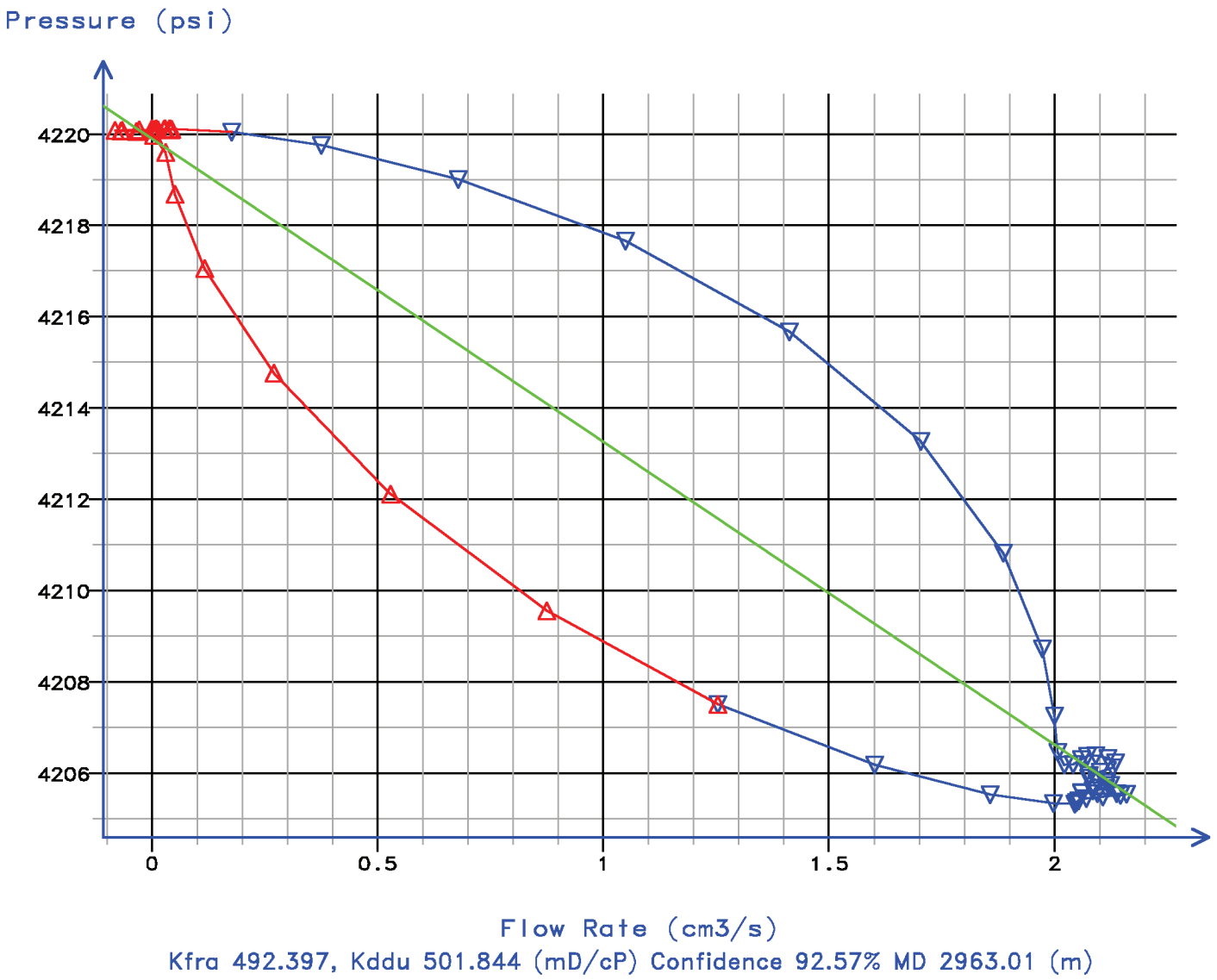
Depth MD 2963.0 m TVD 2963.0 m



Final BU	4220.13	psi	DD Volume	9.80	cm3	Temp	68.34	degC
BU Stability	−0.00119	psi/min	Min Flow P	4205.31	psi	Temp Stability	0.01457	degC/min
BU Repeat	0.004	psi	DD Rate	2.16	cm3/s	FRA	0.926	R2
P_hydro	4892.21	psi	Mobility DD	501.861	mD/cP	Mobility Kfra	492.397	mD/cP

FLOW RATE ANALYSIS

Depth MD 2963.0 m TVD 2963.0 m

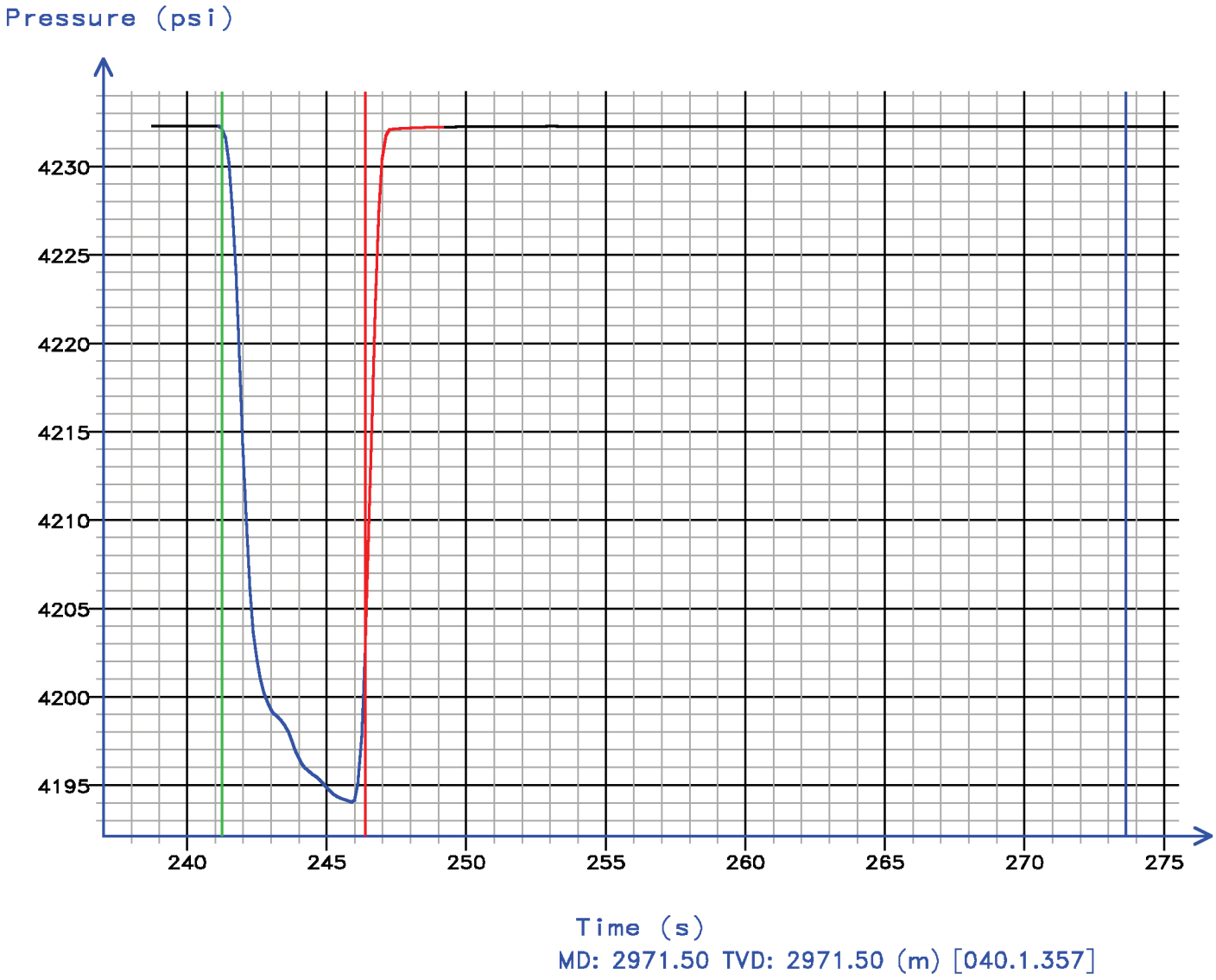


Kfra 492.397, Kddu 501.844 (mD/cP) Confidence 92.57% MD 2963.01 (m)

Pressure Tests – Level 40 Tool Instance 1
MD 2971.5 m TVD 2971.5 m

PRESSURE HISTORY (apql vs. time)

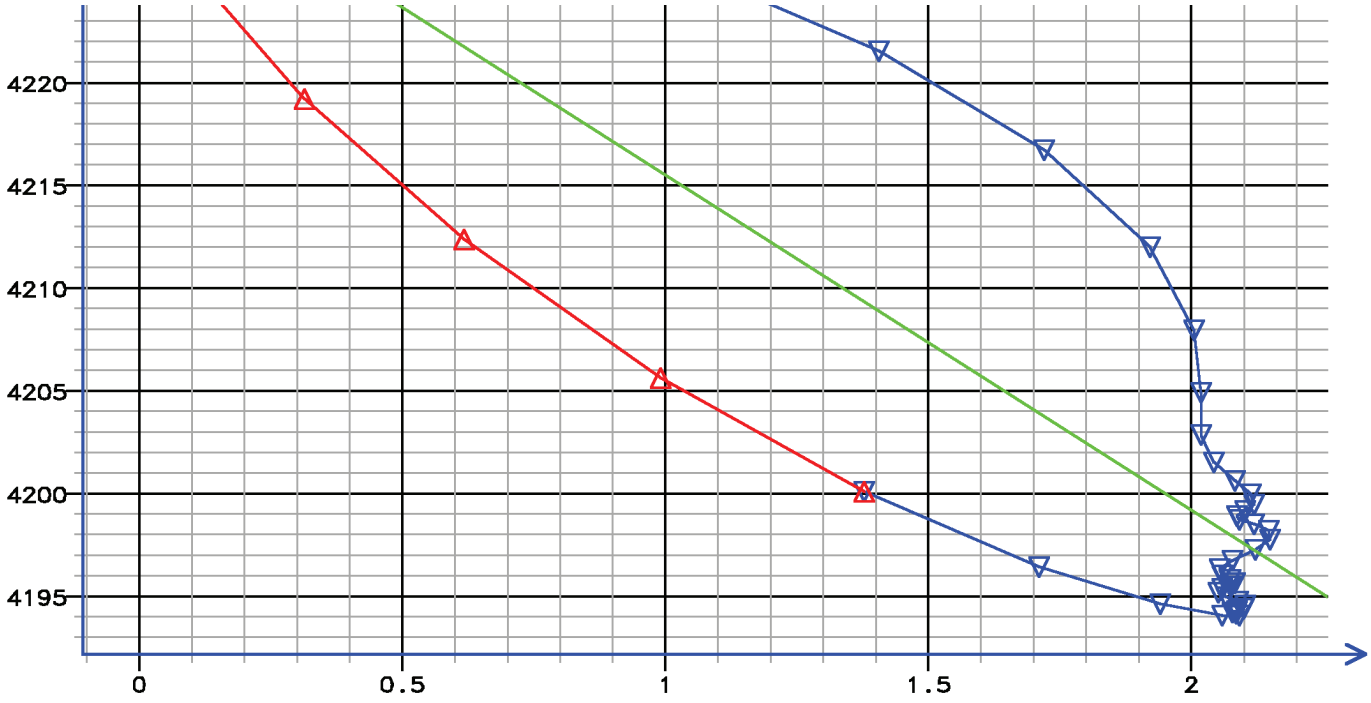
Depth MD 2971.5 m TVD 2971.5 m



Final BU	4232.25	psi	DD Volume	9.87	cm3	Temp	68.69 degC
BU Stability	−0.00205	psi/min	Min Flow P	4194.02	psi	Temp Stability	0.01460 degC/min
BU Repeat	−0.027	psi	DD Rate	2.15	cm3/s	FRA	0.915 R2
P_hydro	4905.96	psi	Mobility DD	193.652	mD/cP	Mobility Kfra	201.766 mD/cP

FLOW RATE ANALYSIS

Depth MD 2971.5 m TVD 2971.5 m



Flow Rate (cm3/s)

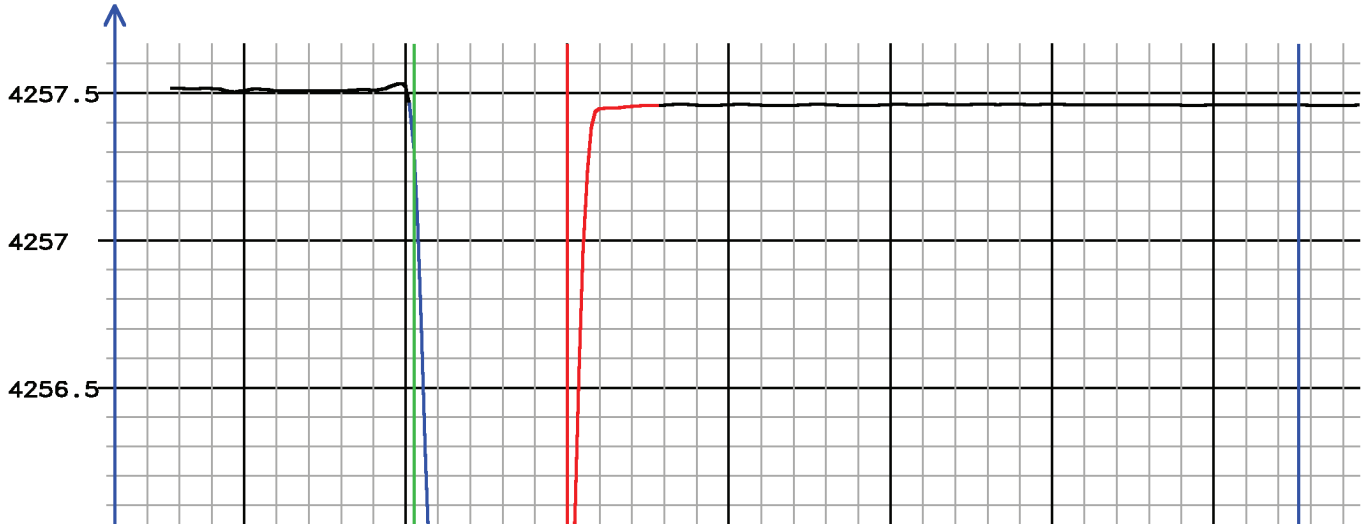
Kfra 201.766, Kddu 193.652 (mD/cP) Confidence 91.47% MD 2971.50 (m)

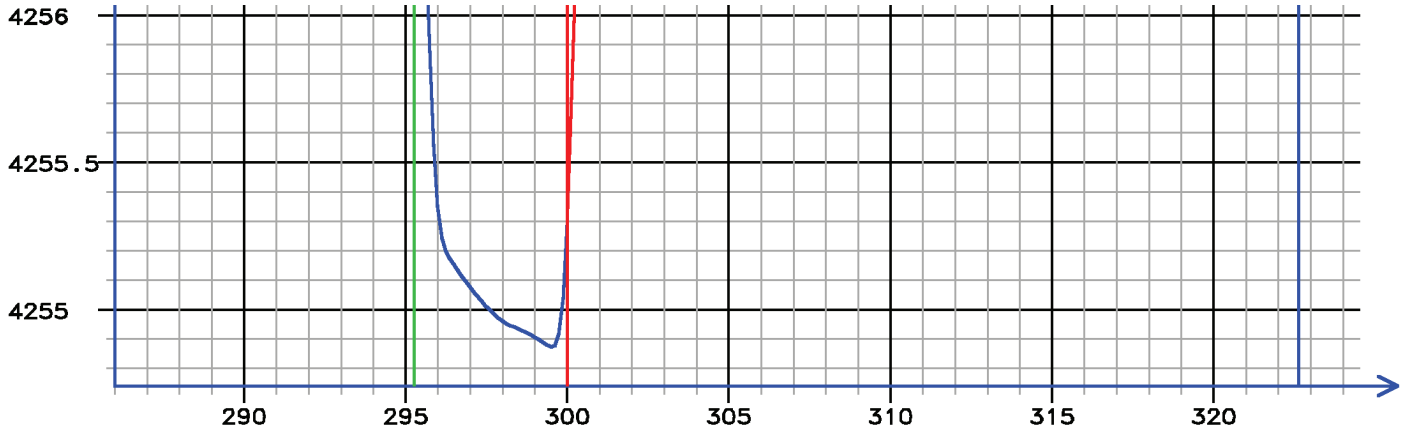
Pressure Tests — Level 41 Tool Instance 1
MD 2989.0 m TVD 2989.0 m

PRESSURE HISTORY (apql vs. time)

Depth MD 2989.0 m TVD 2989.0 m

Pressure (psi)

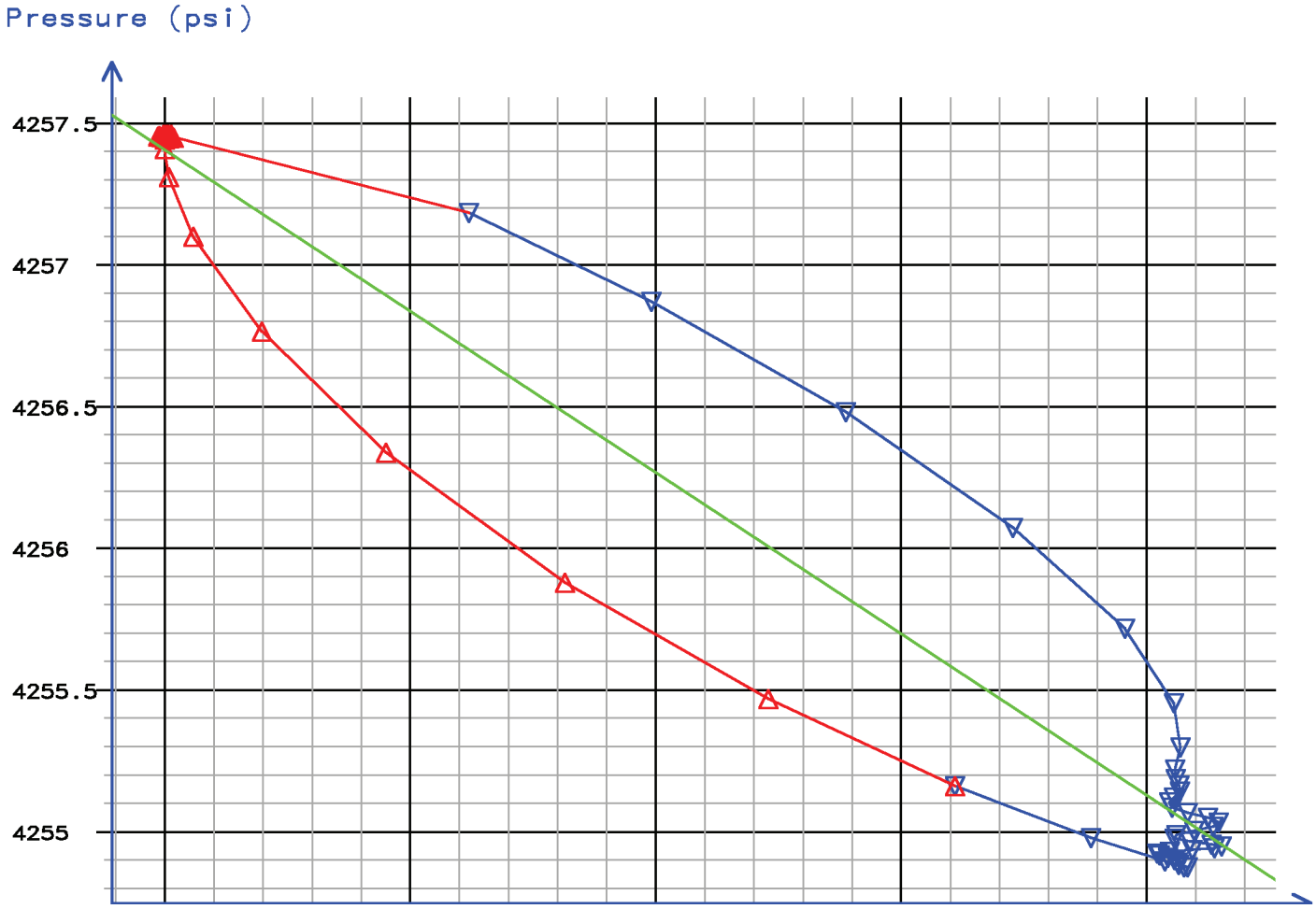




Final BU	4257.46	psi	DD Volume	9.74	cm3	Temp	68.85	degC
BU Stability	−0.00334	psi/min	Min Flow P	4254.87	psi	Temp Stability	0.02049	degC/min
BU Repeat	−0.073	psi	DD Rate	2.15	cm3/s	FRA	0.949	R2
P_hydro	4934.51	psi	Mobility DD	2867.655	mD/cP	Mobility Kfra	2904.691	mD/cP

FLOW RATE ANALYSIS

Depth MD 2989.0 m TVD 2989.0 m



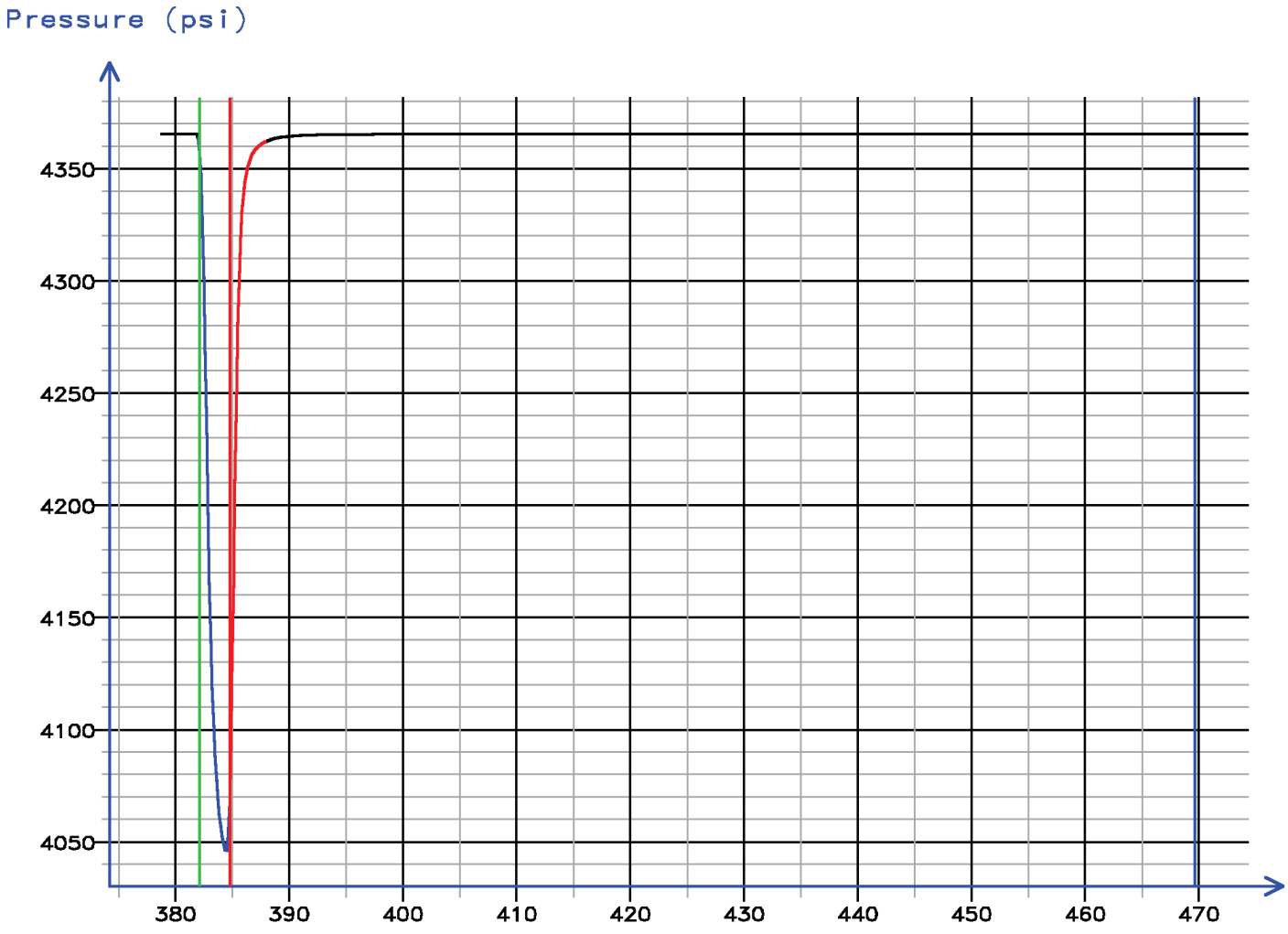
Flow Rate (cm3/s)

Kfra 2904.691, Kddu 2866.031 (mD/cP) Confidence 94.88% MD 2989.00 (m)

Pressure Tests – Level 42 Tool Instance 1
MD 3058.6 m TVD 3058.6 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3058.6 m TVD 3058.6 m



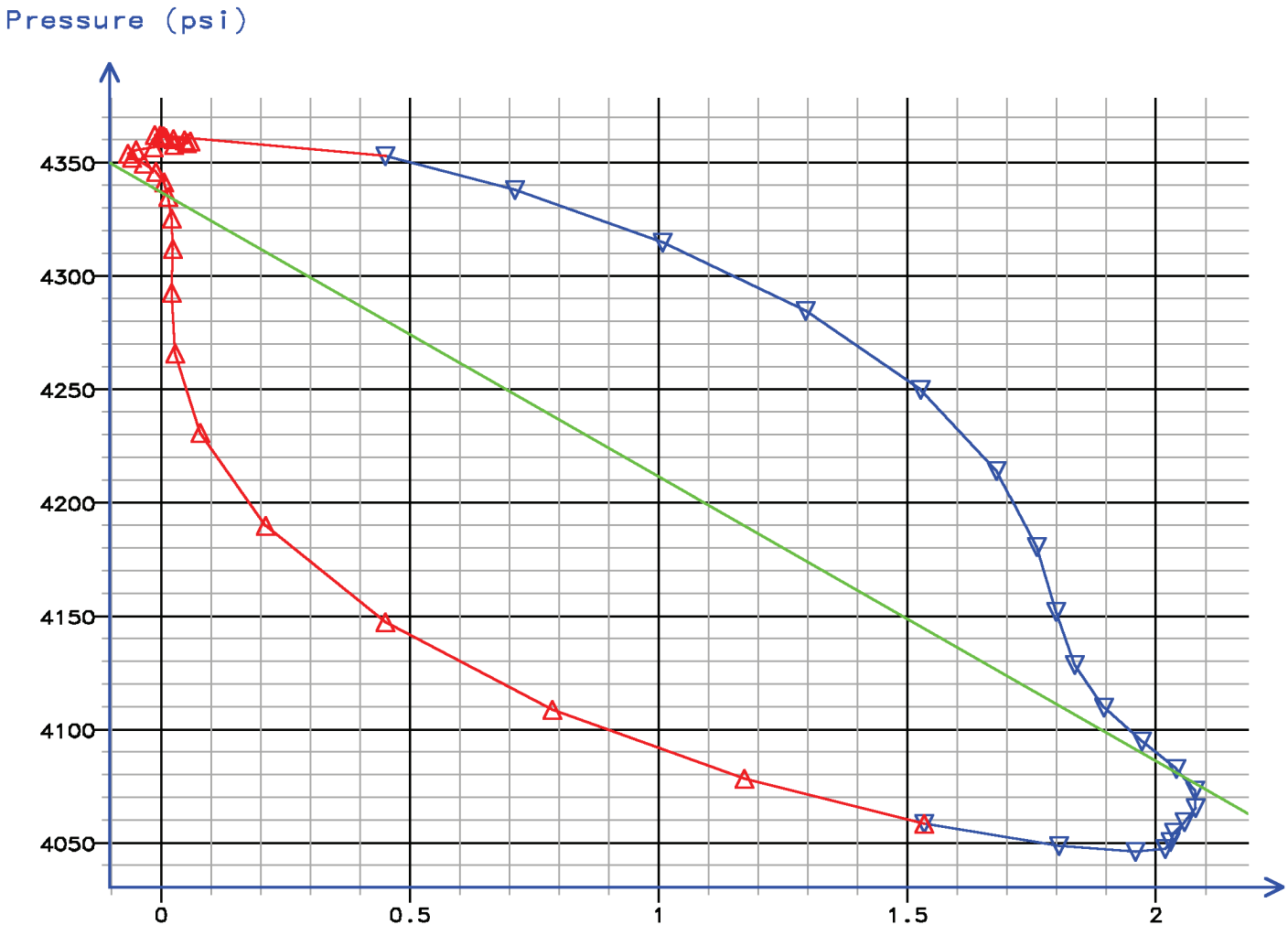
MD: 3058.60 TVD: 3058.60 (m) [042.1.377]

Final BU	4365.41 psi	DD Volume	4.86 cm3	Temp	70.63 degC

BU Stability	0.05229 psi/min	Min Flow P	4046.02 psi	Temp Stability	0.04180 degC/min
BU Repeat	−0.068 psi	DD Rate	2.08 cm3/s	FRA	0.777 R2
P_hydro	5048.40 psi	Mobility DD	22.427 mD/cP	Mobility Kfra	23.125 mD/cP

FLOW RATE ANALYSIS

Depth MD 3058.6 m TVD 3058.6 m



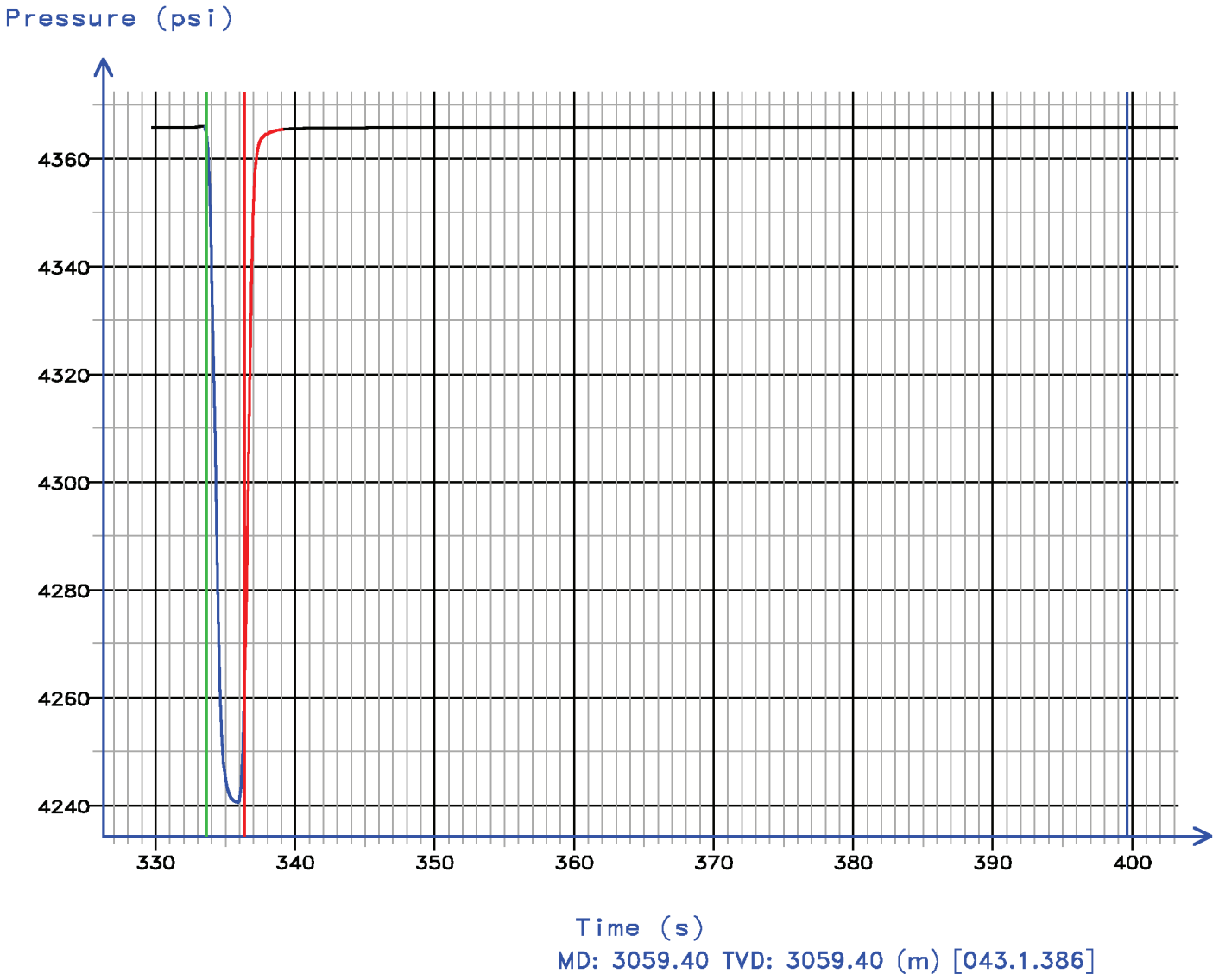
Kfra 23.125, Kddu 22.428 (mD/cP) Confidence 77.67% MD 3058.60 (m)

Pressure Tests – Level 43 Tool Instance 1

MD 3059.4 m TVD 3059.4 m

PRESSURE HISTORY (apql vs. time)

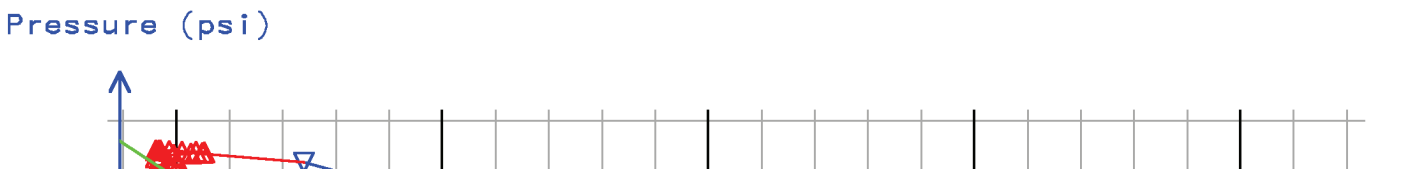
Depth MD 3059.4 m TVD 3059.4 m

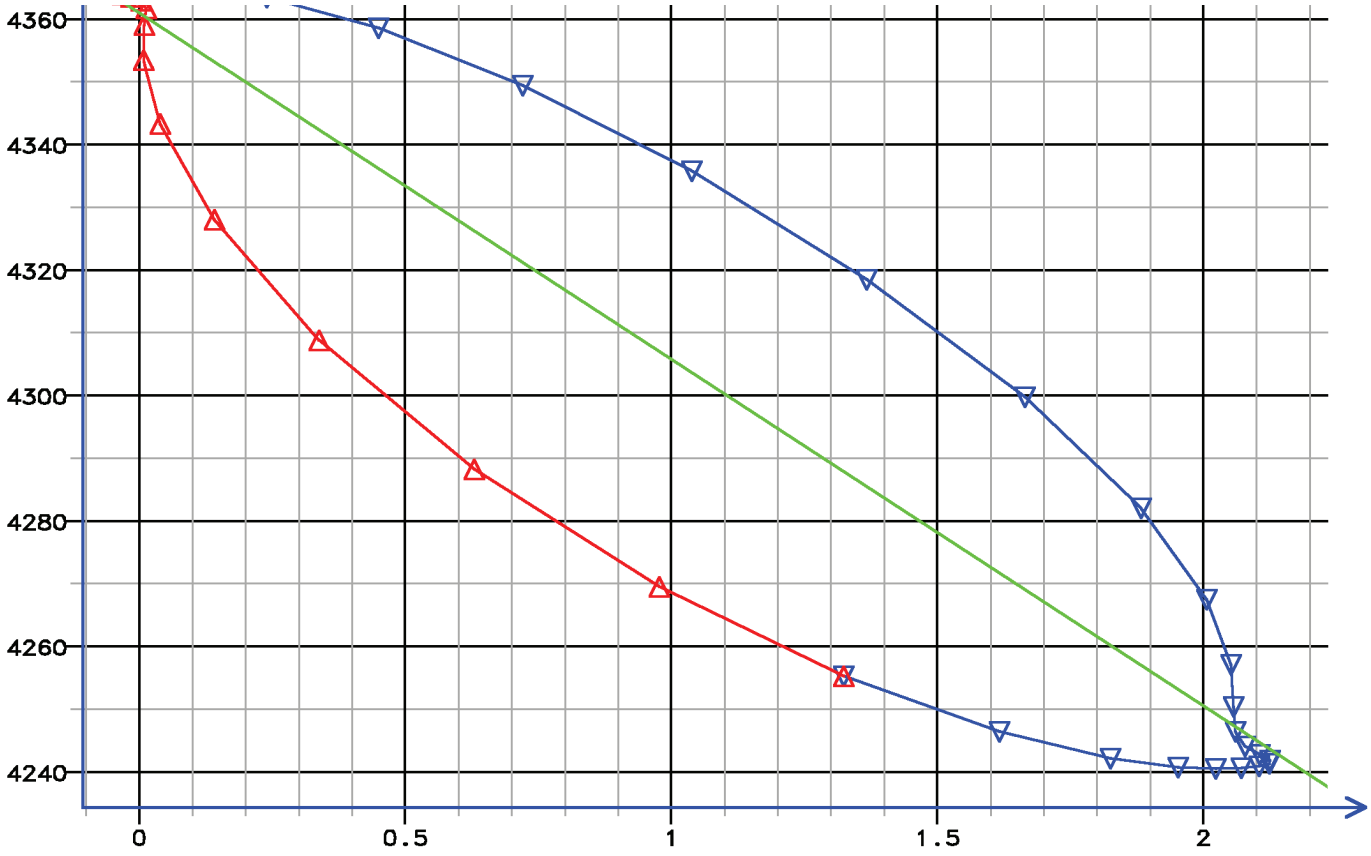


Final BU	4365.76	psi	DD Volume	4.89	cm3	Temp	70.86 degC
BU Stability	0.00494	psi/min	Min Flow P	4240.48	psi	Temp Stability	0.00434 degC/min
BU Repeat	−0.044	psi	DD Rate	2.13	cm3/s	FRA	0.895 R2
P_hydro	5049.85	psi	Mobility DD	58.426	mD/cP	Mobility Kfra	58.309 mD/cP

FLOW RATE ANALYSIS

Depth MD 3059.4 m TVD 3059.4 m



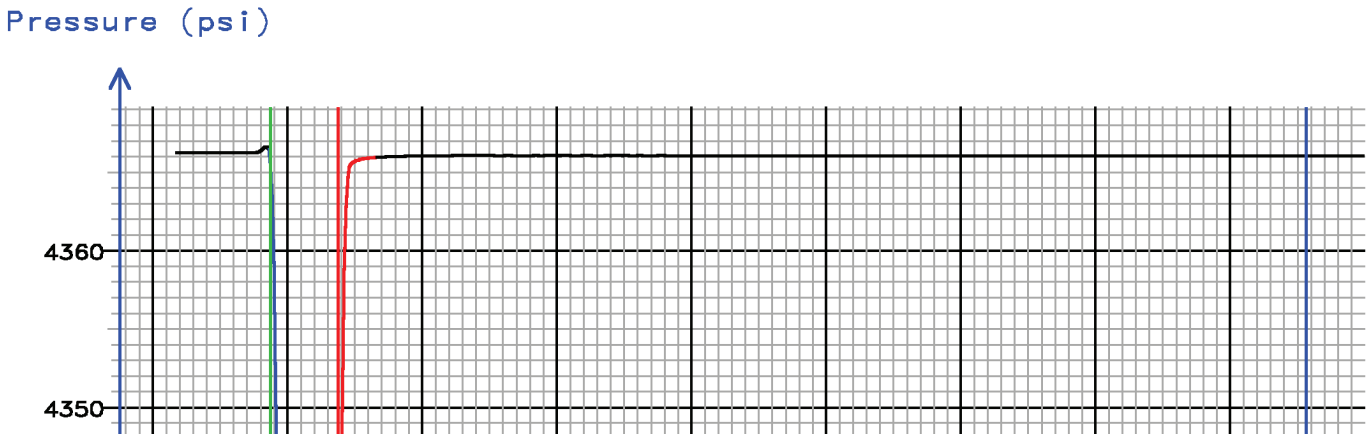


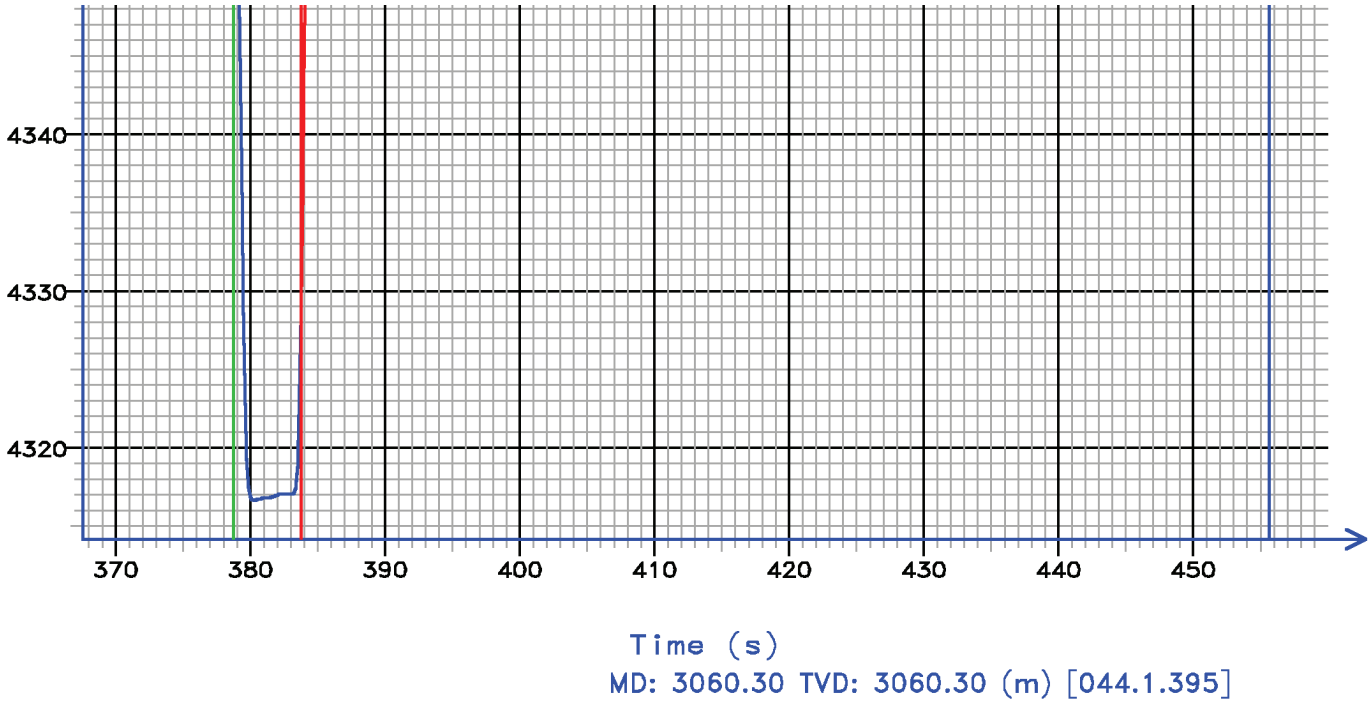
Kfra 58.309, Kddu 58.427 (mD/cP) Confidence 89.50% MD 3059.40 (m)

Pressure Tests — Level 44 Tool Instance 1
MD 3060.3 m TVD 3060.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3060.3 m TVD 3060.3 m

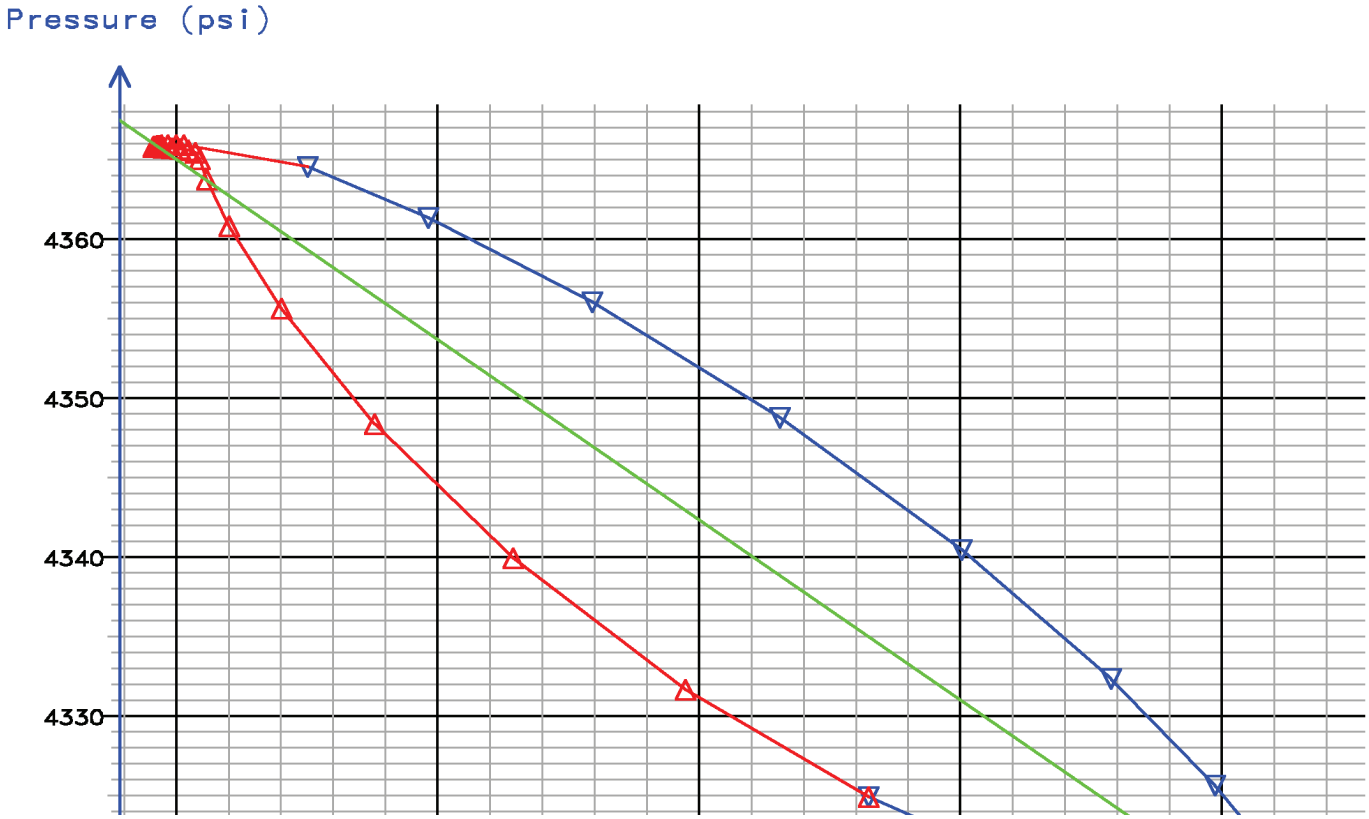


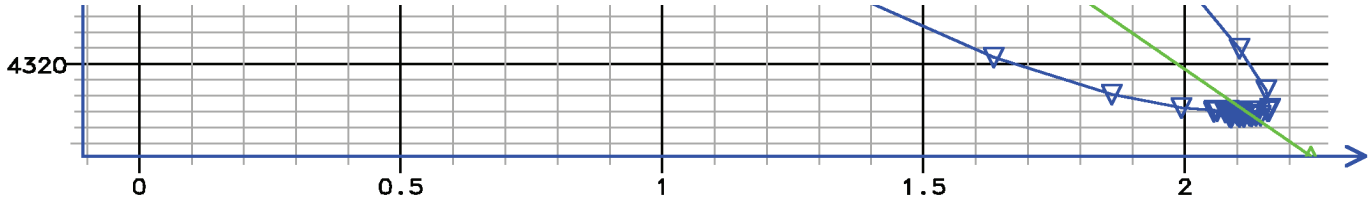


Final BU	4366.04	psi	DD Volume	9.79	cm3	Temp	70.88	degC
BU Stability	−0.02131	psi/min	Min Flow P	4316.64	psi	Temp Stability	0.00330	degC/min
BU Repeat	−0.204	psi	DD Rate	2.16	cm3/s	FRA	0.967	R2
P_hydro	5051.54	psi	Mobility DD	150.811	mD/cP	Mobility Kfra	147.141	mD/cP

FLOW RATE ANALYSIS

Depth MD 3060.3 m TVD 3060.3 m





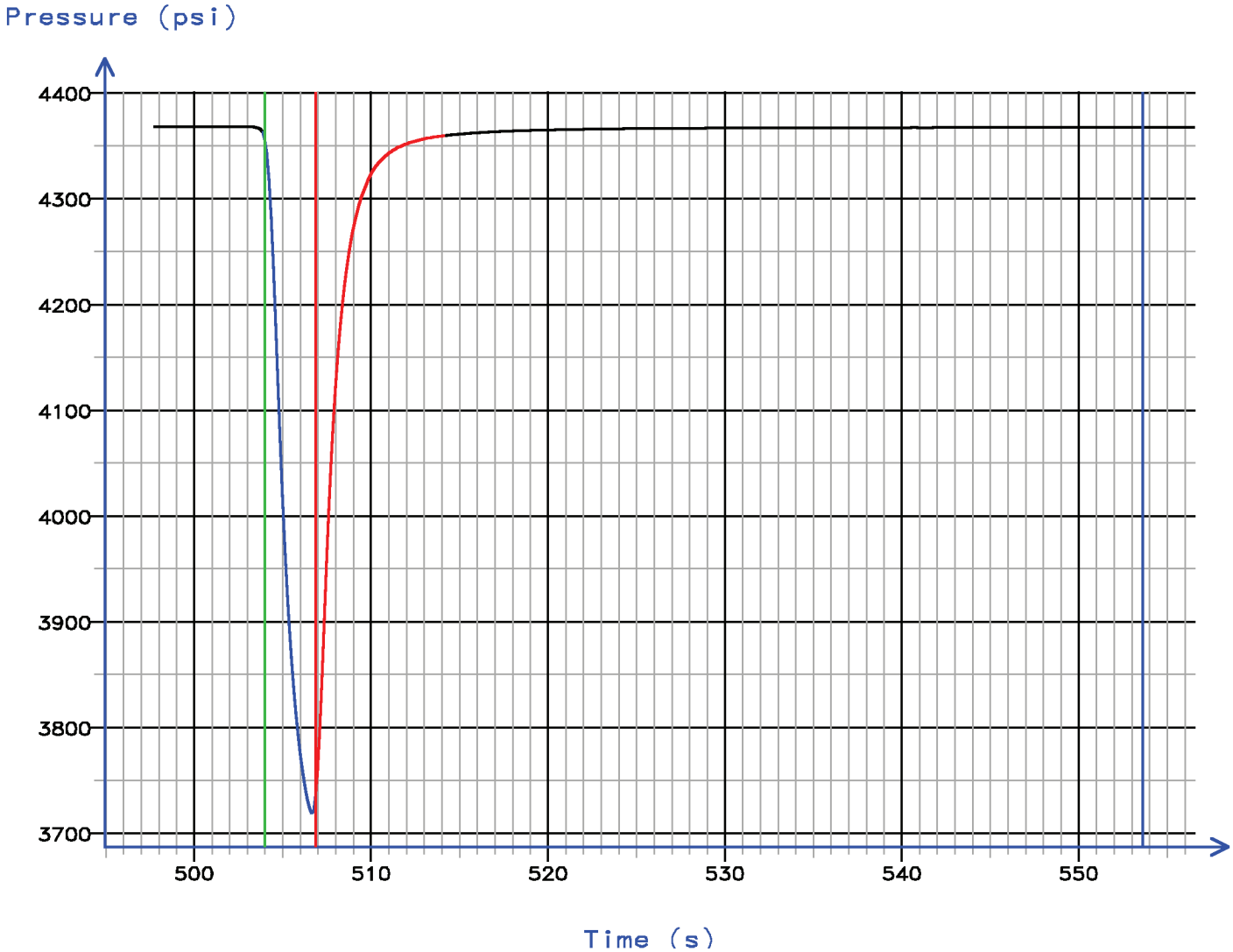
Flow Rate (cm3/s)

Kfra 147.141, Kddu 150.805 (mD/cP) Confidence 96.72% MD 3060.30 (m)

Pressure Tests – Level 45 Tool Instance 1
MD 3062.3 m TVD 3062.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3062.3 m TVD 3062.3 m

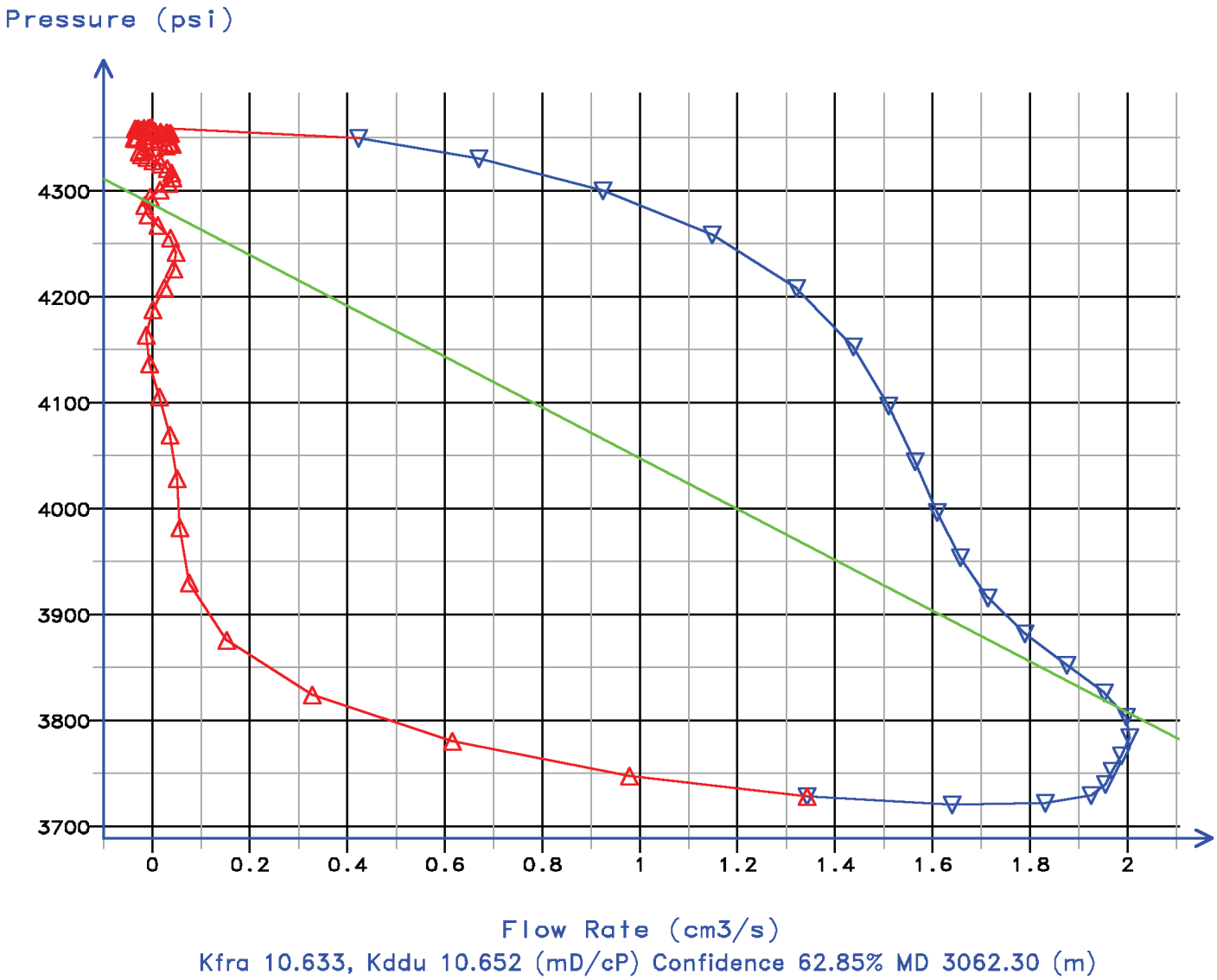


MD: 3062.30 TVD: 3062.30 (m) [045.1.404]

Final BU	4367.29	psi	DD Volume	4.90	cm3	Temp	70.91 degC
BU Stability	0.54926	psi/min	Min Flow P	3719.19	psi	Temp Stability	0.00207 degC/min
BU Repeat	−0.851	psi	DD Rate	2.01	cm3/s	FRA	0.629 R2
P_hydro	5054.76	psi	Mobility DD	10.652	mD/cP	Mobility Kfra	10.633 mD/cP

FLOW RATE ANALYSIS

Depth MD 3062.3 m TVD 3062.3 m



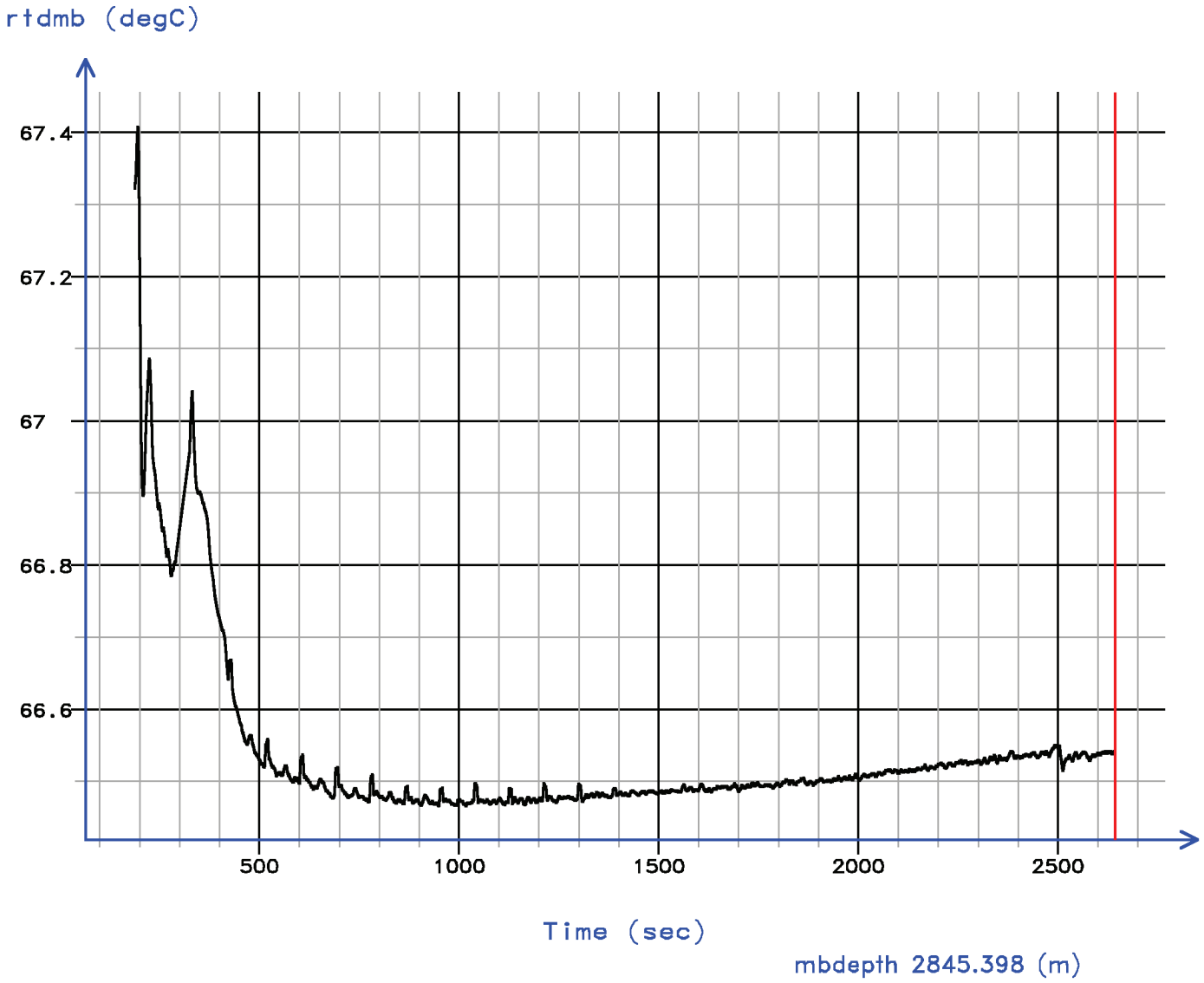
Kfra 10.633, Kddu 10.652 (mD/cP) Confidence 62.85% MD 3062.30 (m)

Sample Tests – Level 46 Tool Instance 1

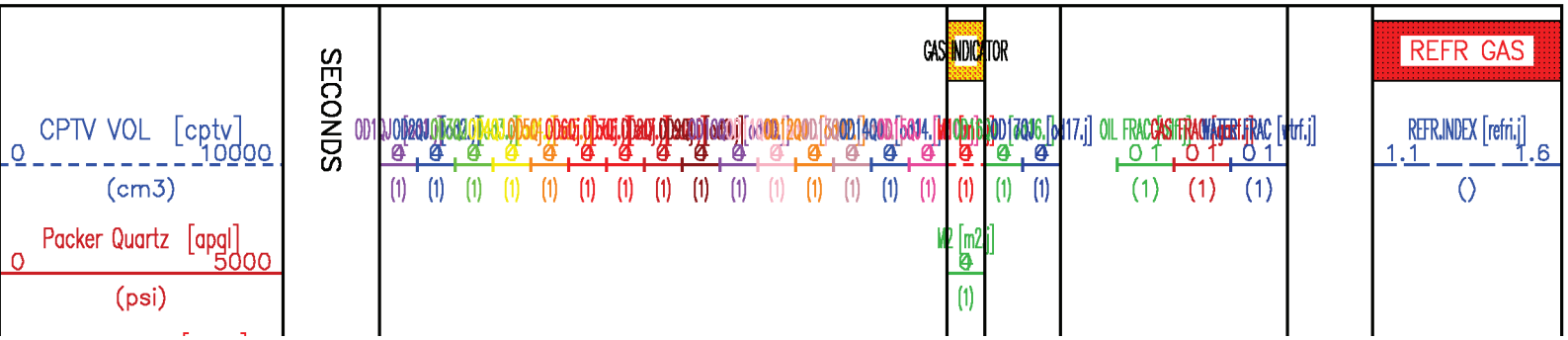
MD 2845.4 m TVD 2845.4 m

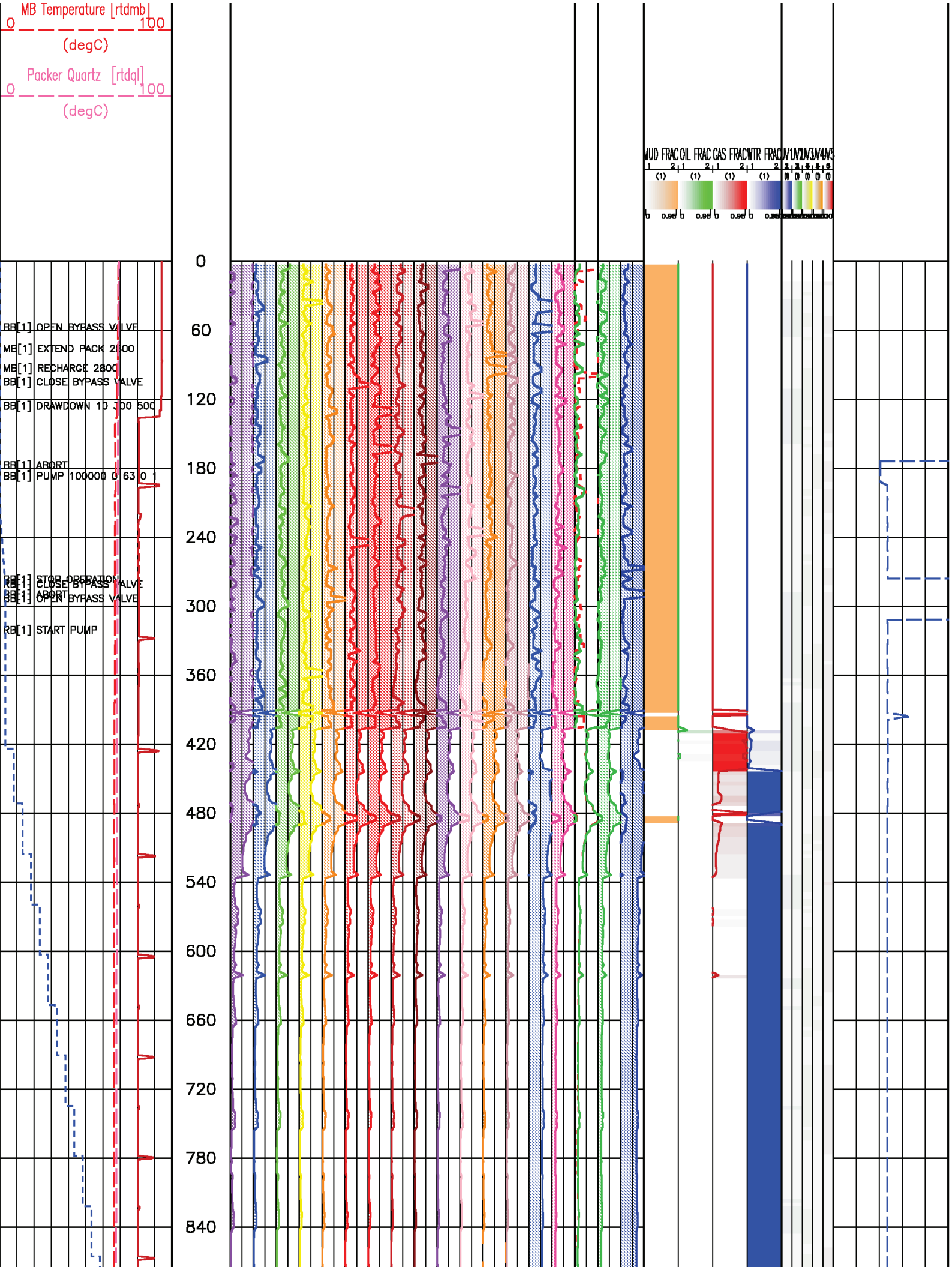
FLUID LINE (rtdmb vs. time)

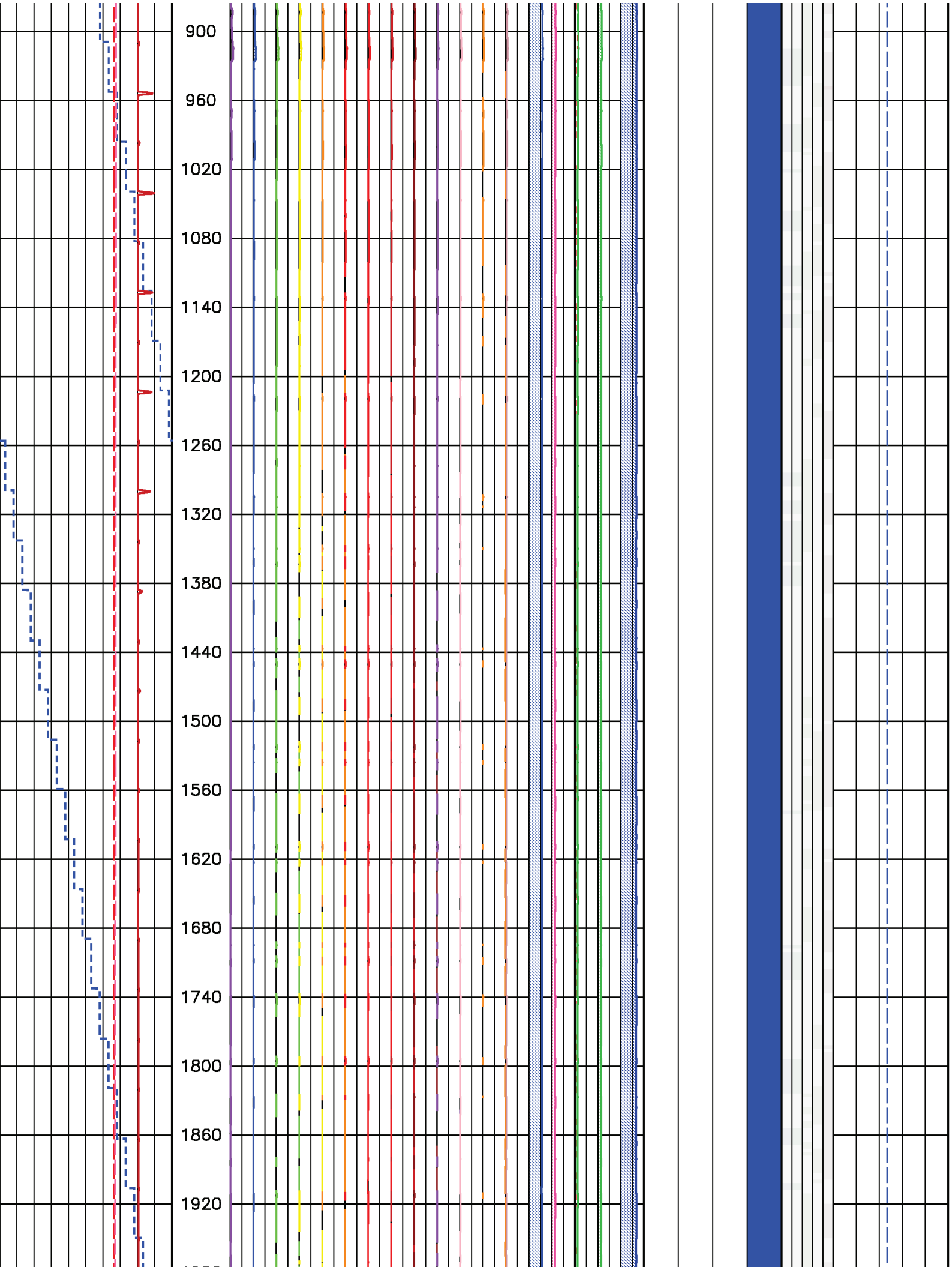
Depth MD 2845.4 m TVD 2845.4 m

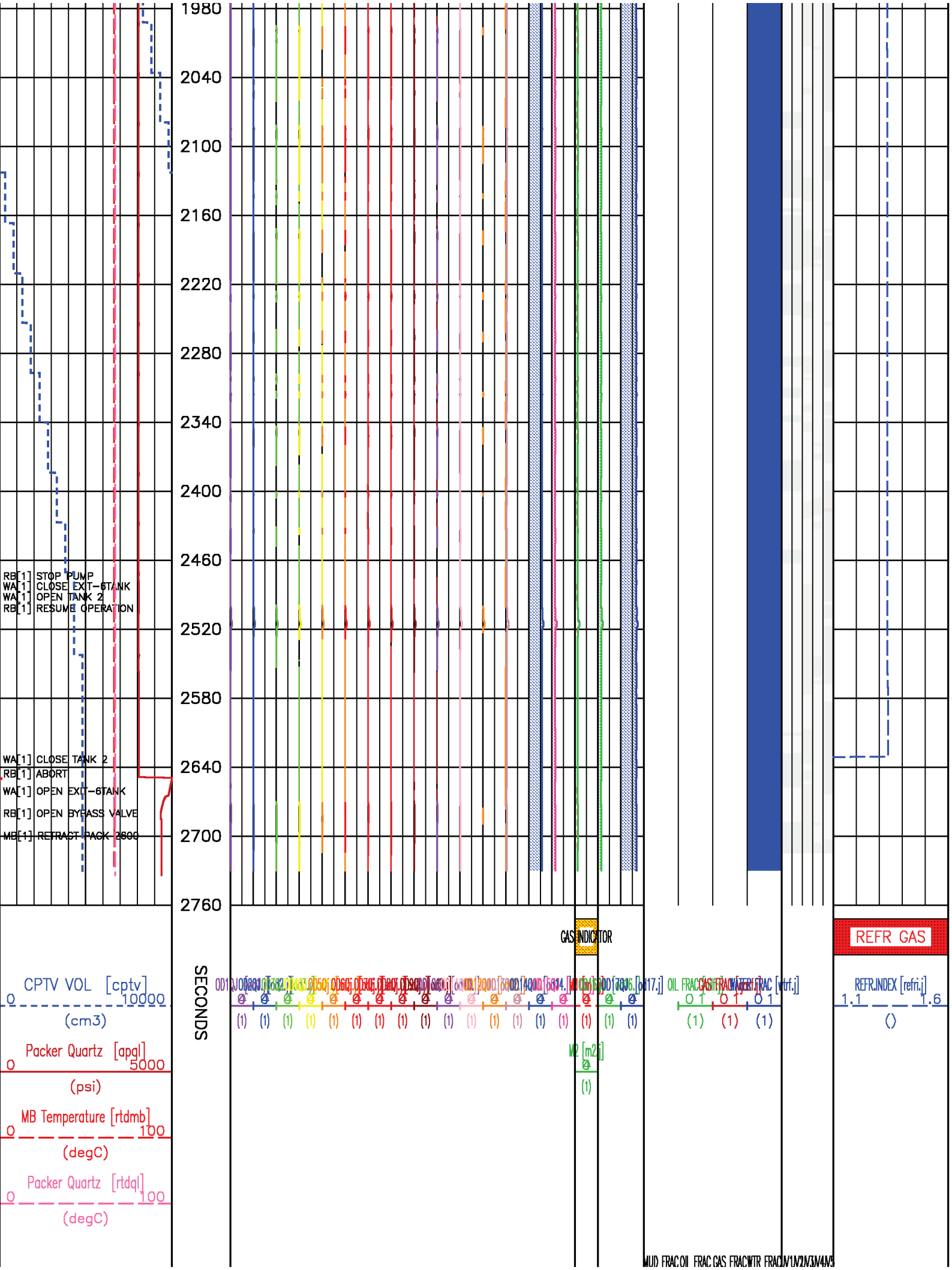


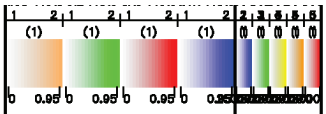
Data File : k800g55.aff
Presentation: samplev_ibch.log




MB Temperature [rtdmb]
0
100
(degC)
Packer Quartz [rtdql]
0
100
(degC)
MUD
FRAC OIL
FRAC GAS
FRAC WTR
FRAC
RB[1] OPEN BYPASS VALVE
MB[1] EXTEND PACK 2800
MB[1] RECHARGE 2800
BB[1] CLOSE BYPASS VALVE
BB[1] DRAWDOWN 10 300 500
BB[1] ABORT
BB[1] PUMP 100000 0 63 0 1
RB[1] STOP OPERATION
RB[1] CLOSE BYPASS VALVE
BB[1] ABORT
BB[1] OPEN BYPASS VALVE
RB[1] START PUMP
0
60
120
180
240
300
360
420
480
540
600
660
720
780
840


900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500
1560
1620
1680
1740
1800
1860
1920

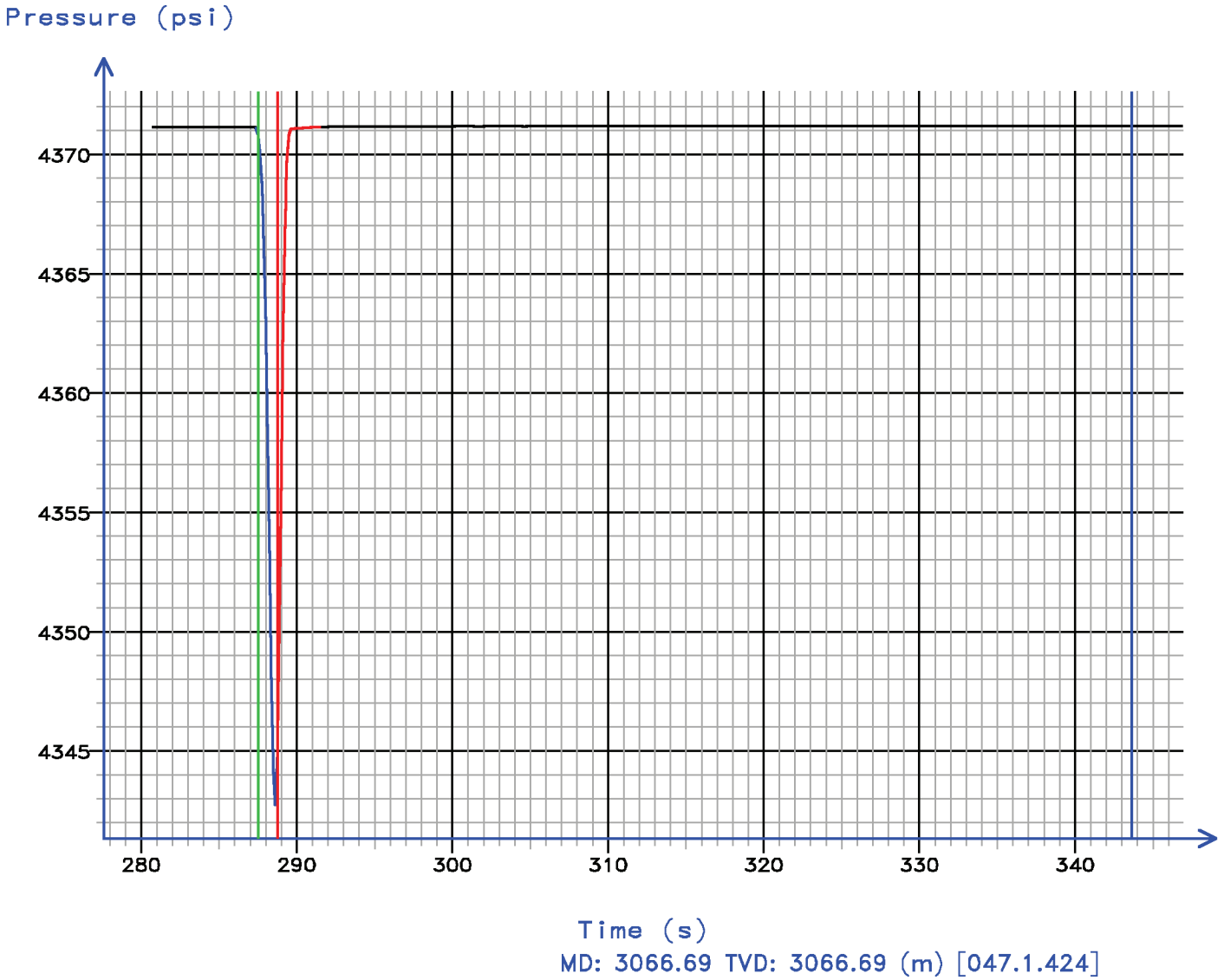

1980
2040
2100
2160
2220
2280
2340
2400
2460
2520
2580
2640
2700
2760
SECONDS
RB[1] STOP PUMP
WA[1] CLOSE EXT-6TANK
WA[1] OPEN TANK 2
RB[1] RESUME OPERATION
WA[1] CLOSE TANK 2
RB[1] ABORT
WA[1] OPEN EXT-6TANK
RB[1] OPEN BYPASS VALVE
MB[1] RETRACT PACK 2600
GAS INDICATOR
REFR GAS
CPTV VOL [cptv]
0
10000
(cm3)
Packer Quartz [apql]
0
5000
(psi)
MB Temperature [rtdmb]
0
100
(degC)
Packer Quartz [rtdql]
0
100
(degC)
REFR.INDEX [refri.]
1.1
1.6
()
MUD FRAC.OIL FRAC.GAS FRAC.WTR FRAC



Pressure Tests – Level 47 Tool Instance 1
MD 3066.7 m TVD 3066.7 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3066.7 m TVD 3066.7 m

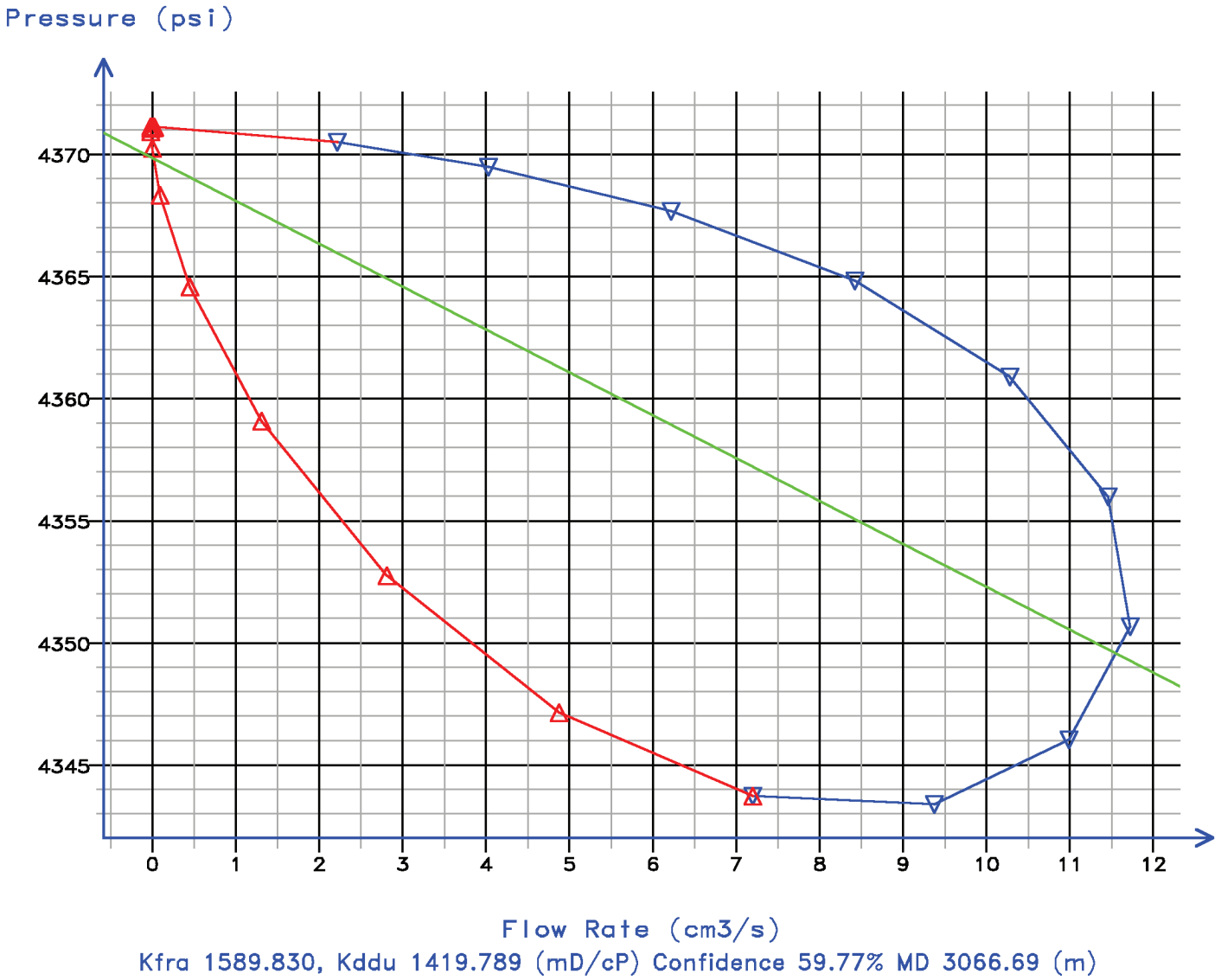


Final BU	4371.18 psi	DD Volume	11.57 cm3	Temp	70.42 degC
BU Stability	0.00031 psi/min	Min Flow P	4342.74 psi	Temp Stability	0.06702 degC/min

BU Stability	[illegible] psi/min	Min Flow P	4342.74 psi	Temp Stability	[illegible] degC/min
BU Repeat	0.040 psi	DD Rate	11.73 cm3/s	FRA	0.598 R2
P_hydro	5059.36 psi	Mobility DD	1419.764 mD/cP	Mobility Kfra	1589.830 mD/cP

FLOW RATE ANALYSIS

Depth MD 3066.7 m TVD 3066.7 m



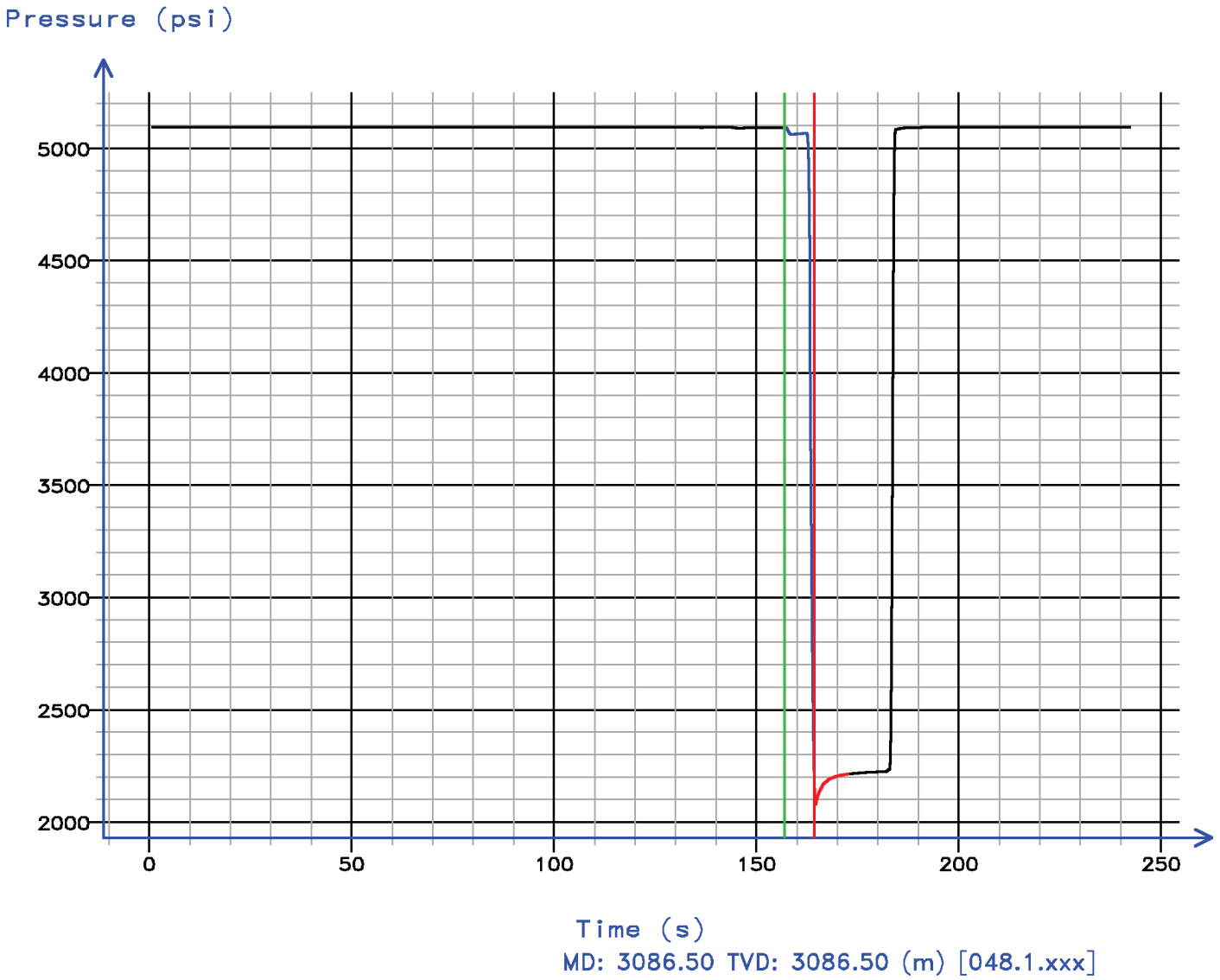
Kfra 1589.830, Kddu 1419.789 (mD/cP) Confidence 59.77% MD 3066.69 (m)

Pressure Tests – Level 48 Tool Instance 1

MD 3086.5 m TVD 3086.5 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3086.5 m TVD 3086.5 m

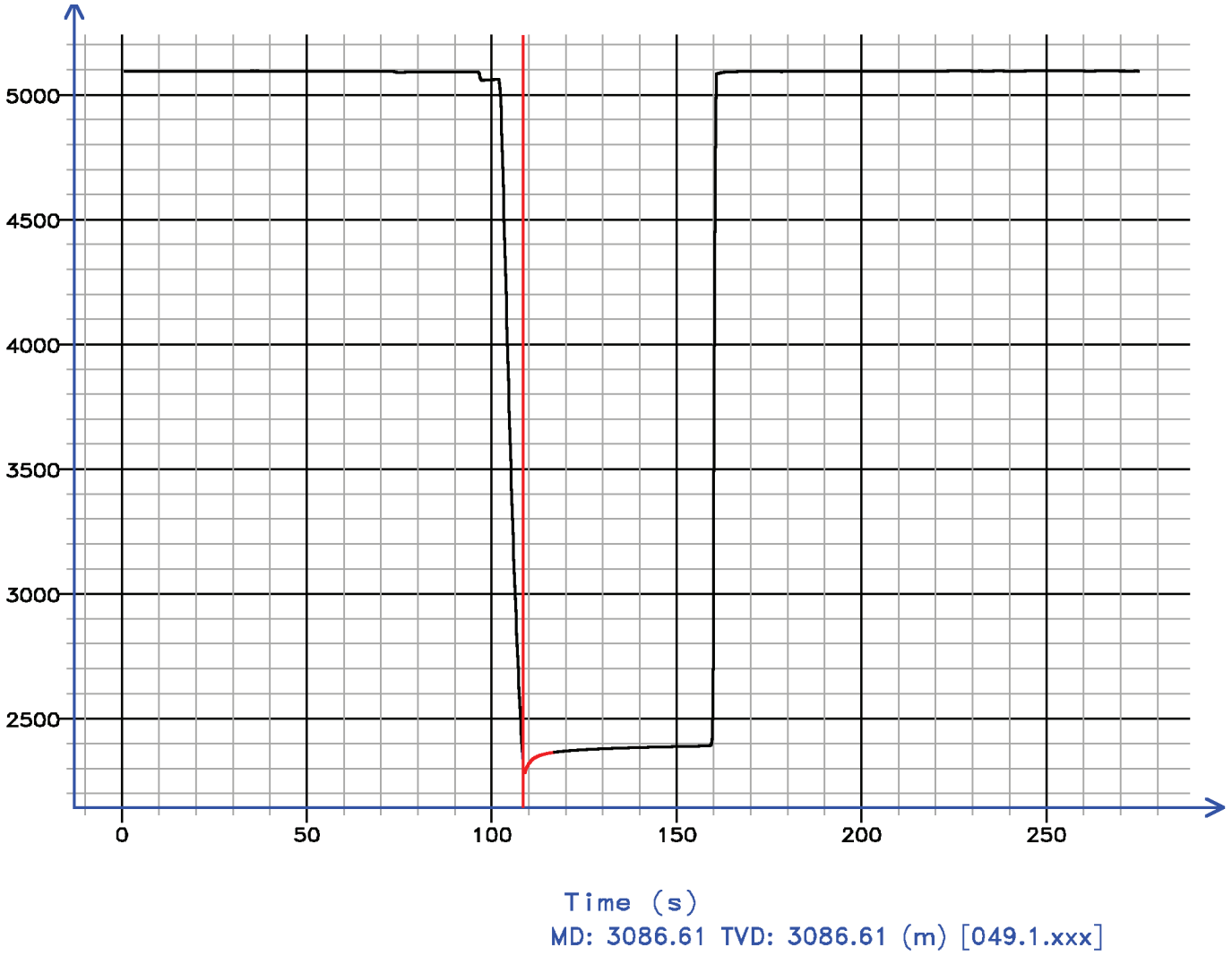


Pressure Tests – Level 49 Tool Instance 1

MD 3086.6 m TVD 3086.6 m

PRESSURE HISTORY (apql vs. time)

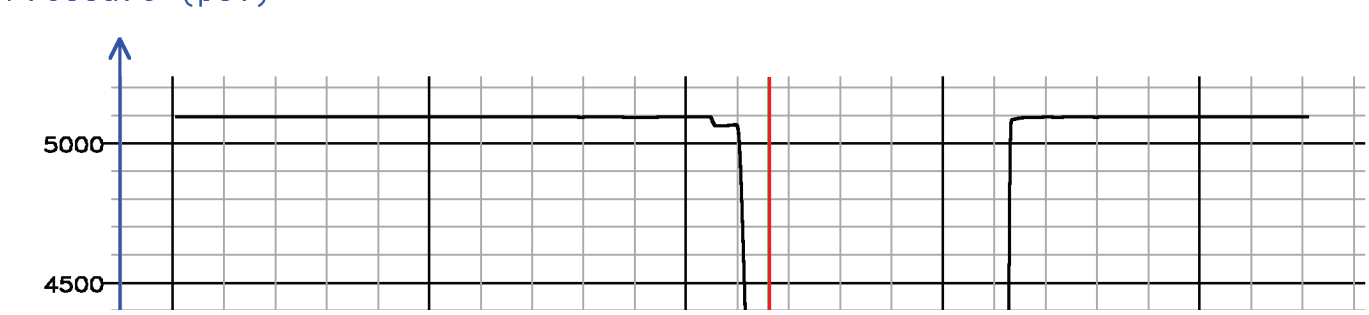
Depth MD 3086.6 m TVD 3086.6 m

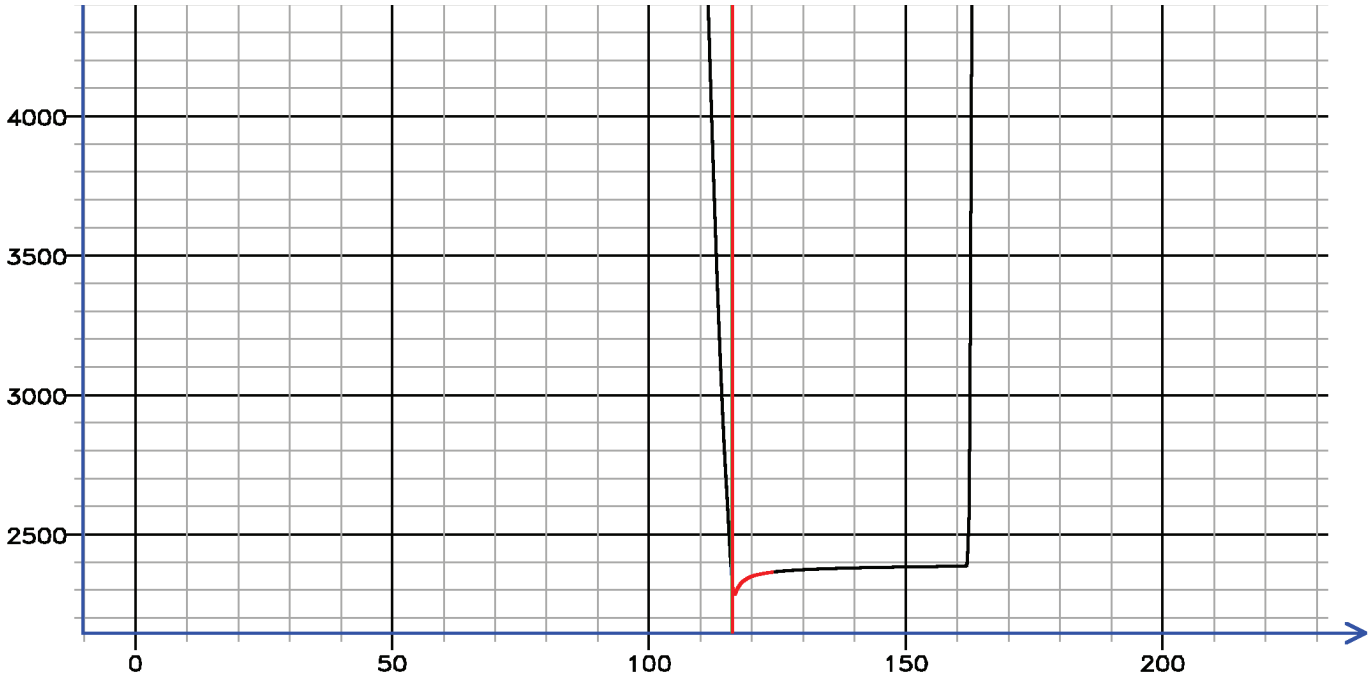


Pressure Tests – Level 50 Tool Instance 1
MD 3087.3 m TVD 3087.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3087.3 m TVD 3087.3 m

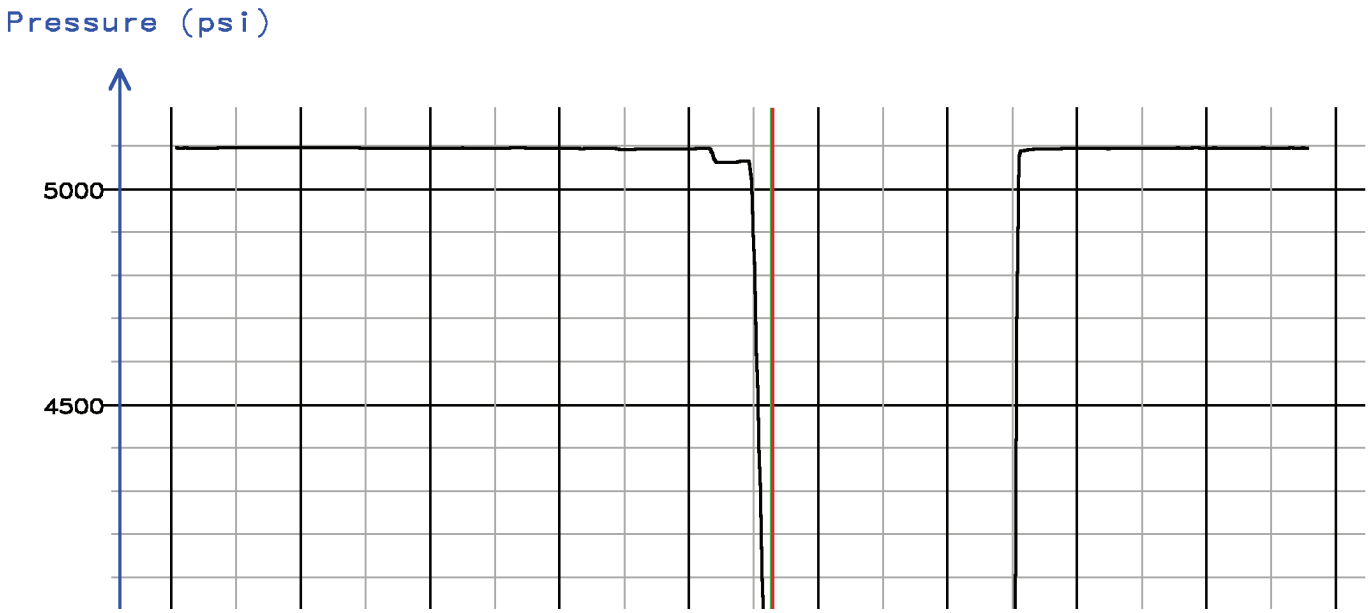


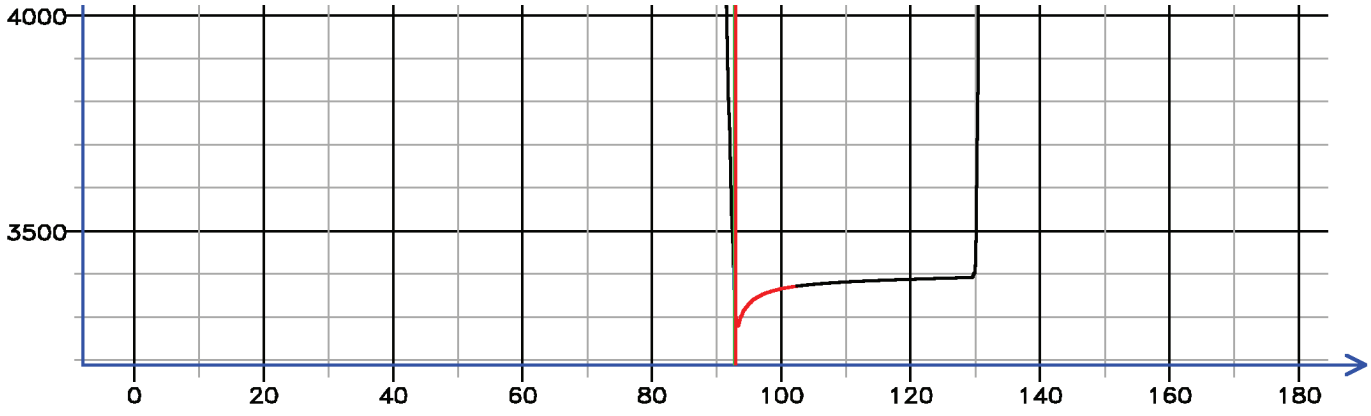


Pressure Tests — Level 51 Tool Instance 1
MD 3087.4 m TVD 3087.4 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3087.4 m TVD 3087.4 m

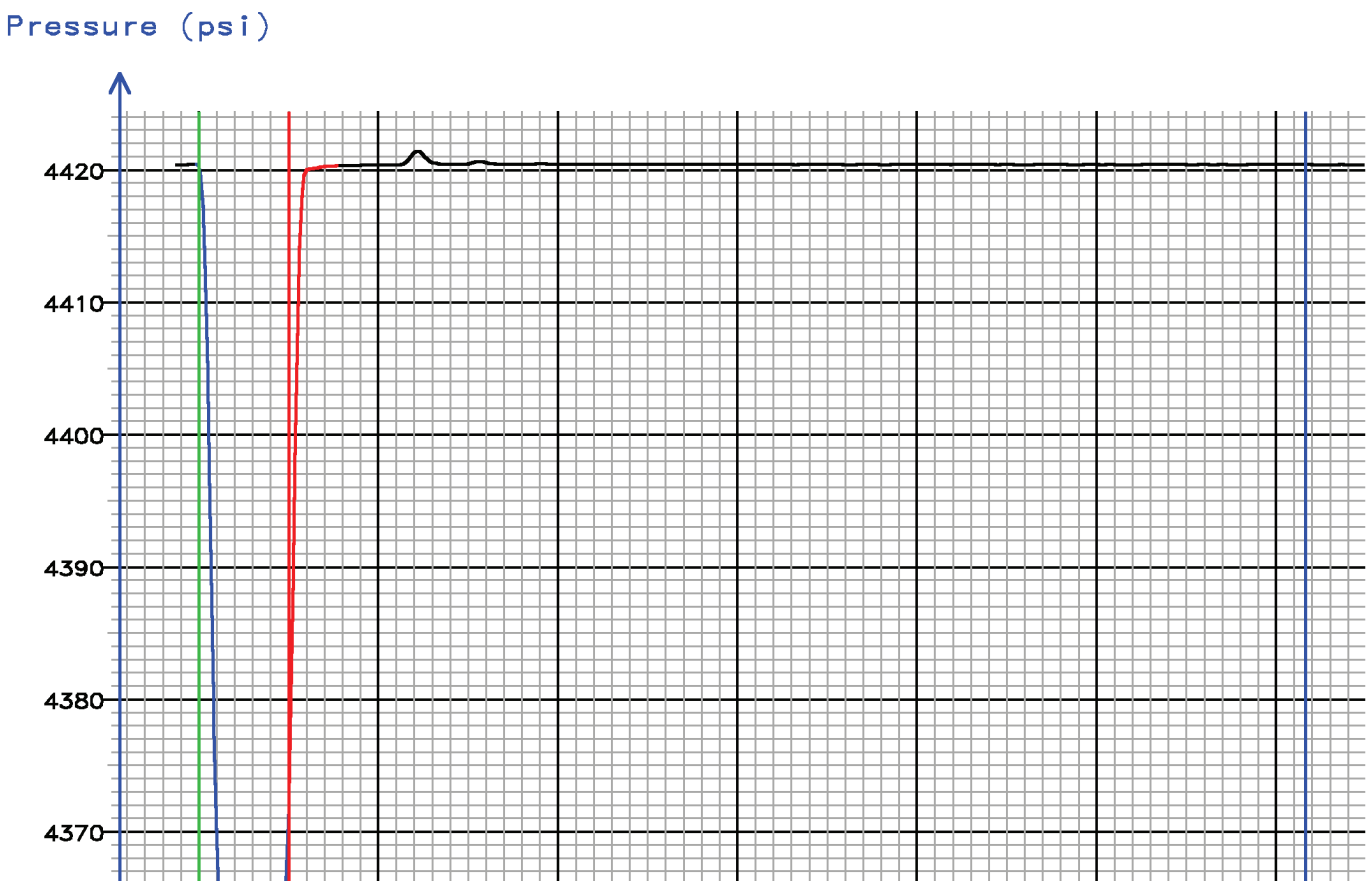


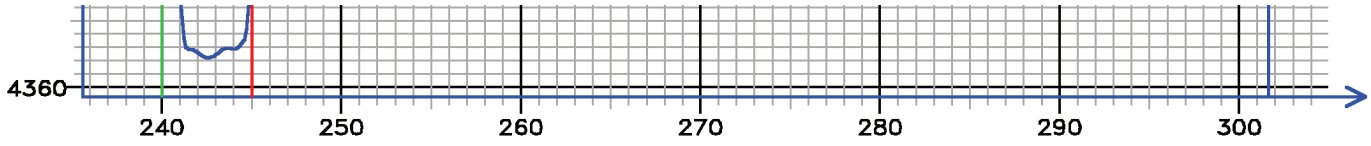


Pressure Tests – Level 52 Tool Instance 1
MD 3098.3 m TVD 3098.3 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3098.3 m TVD 3098.3 m





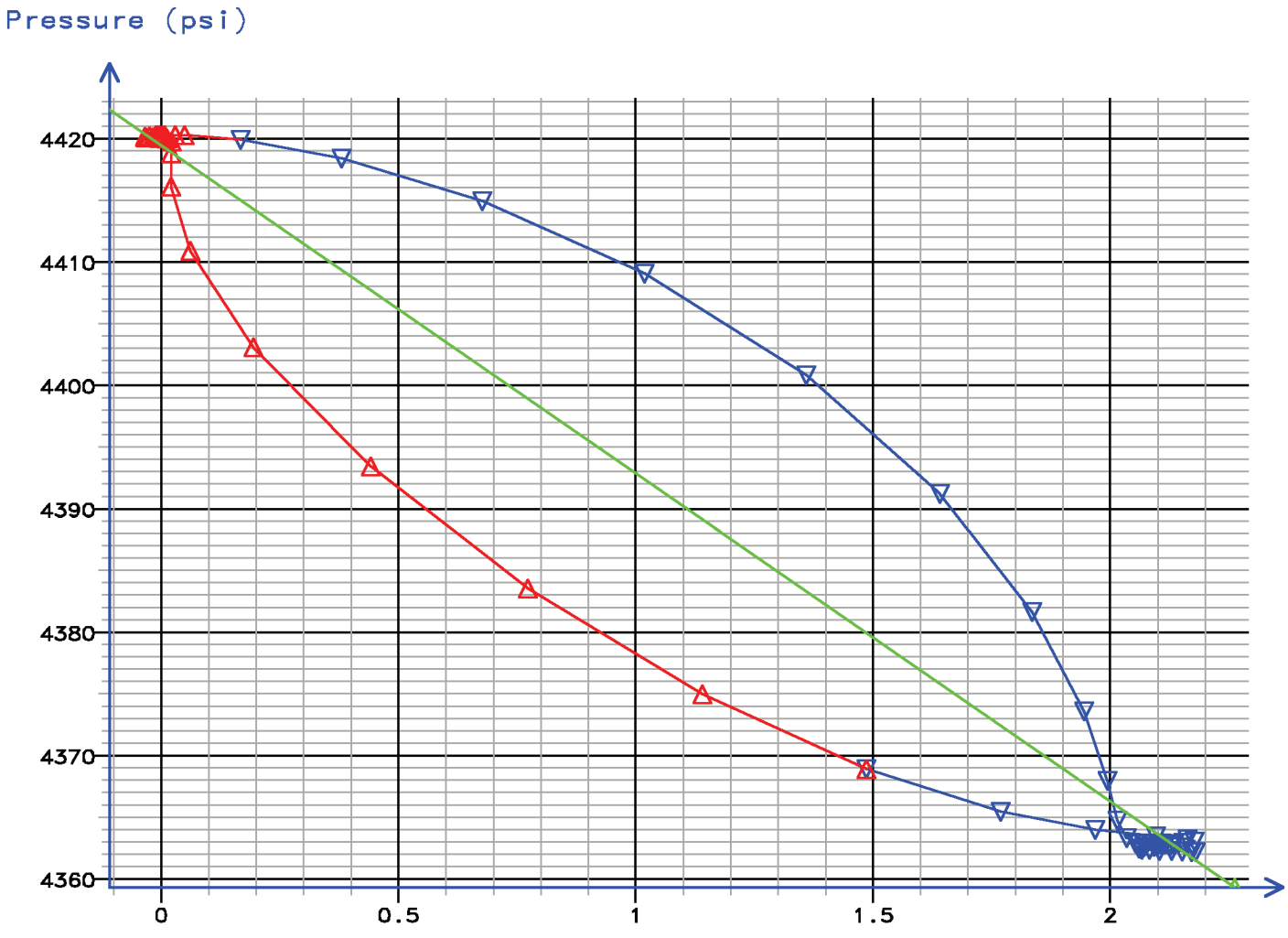
Time (s)

MD: 3098.33 TVD: 3098.33 (m) [052.1.453]

Final BU	4420.39	psi	DD Volume	9.73	cm3	Temp	71.55 degC
BU Stability	0.00453	psi/min	Min Flow P	4362.20	psi	Temp Stability	0.01678 degC/min
BU Repeat	0.015	psi	DD Rate	2.18	cm3/s	FRA	0.945 R2
P_hydro	5113.12	psi	Mobility DD	129.022	mD/cP	Mobility Kfra	123.920 mD/cP

FLOW RATE ANALYSIS

Depth MD 3098.3 m TVD 3098.3 m

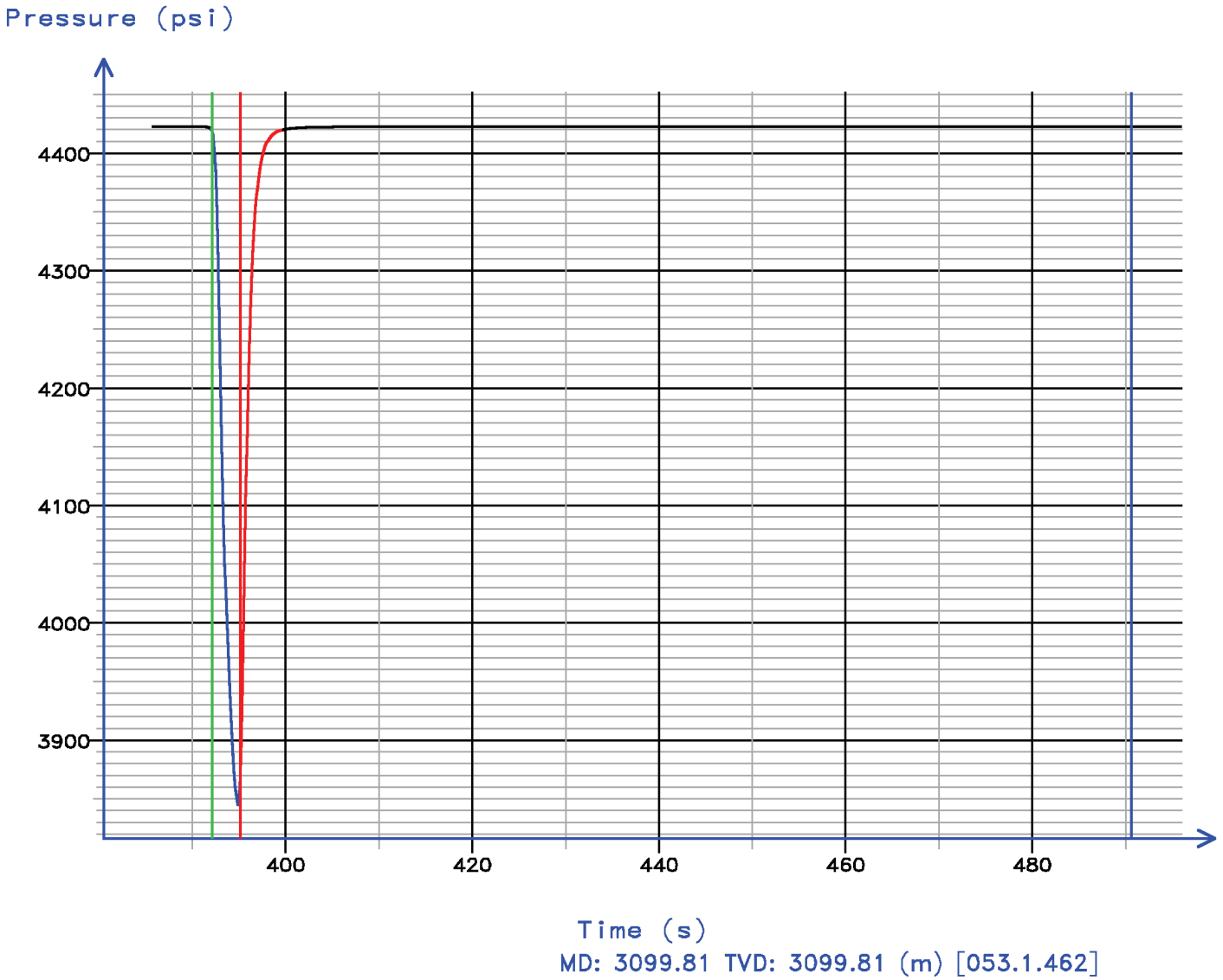


Kfra 123.920, Kddu 129.002 (mD/cP) Confidence 94.50% MD 3098.33 (m)

Pressure Tests – Level 53 Tool Instance 1
MD 3099.8 m TVD 3099.8 m

PRESSURE HISTORY (apql vs. time)

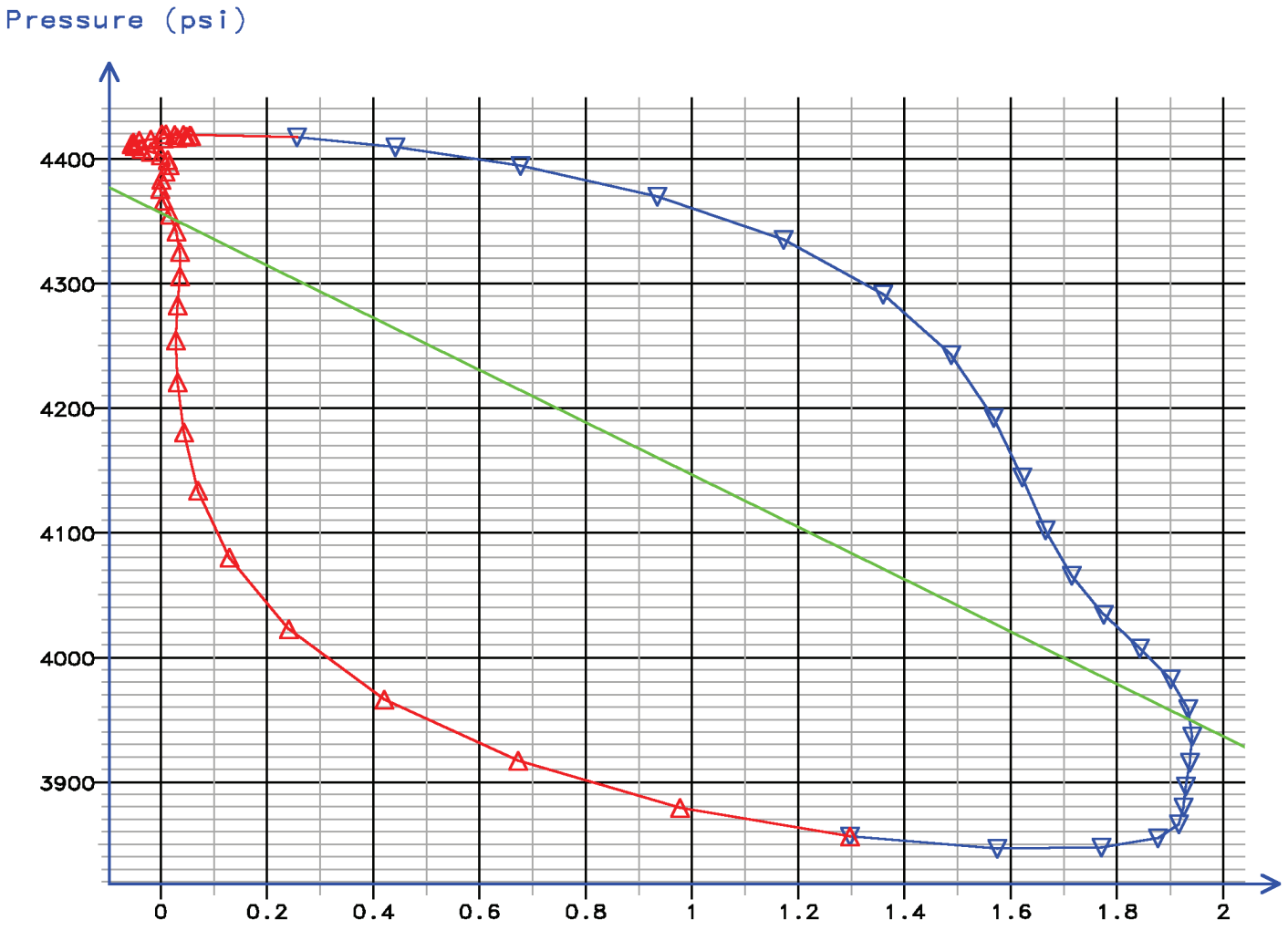
Depth MD 3099.8 m TVD 3099.8 m



Final BU	4422.70	psi	DD Volume	4.95	cm3	Temp	71.74 degC
BU Stability	0.00633	psi/min	Min Flow P	3844.94	psi	Temp Stability	0.01104 degC/min
BU Repeat	−0.060	psi	DD Rate	1.94	cm3/s	FRA	0.621 R2
P_hydro	5115.40	psi	Mobility DD	11.574	mD/cP	Mobility Kfra	11.983 mD/cP

FLOW RATE ANALYSIS

Depth MD 3099.8 m TVD 3099.8 m



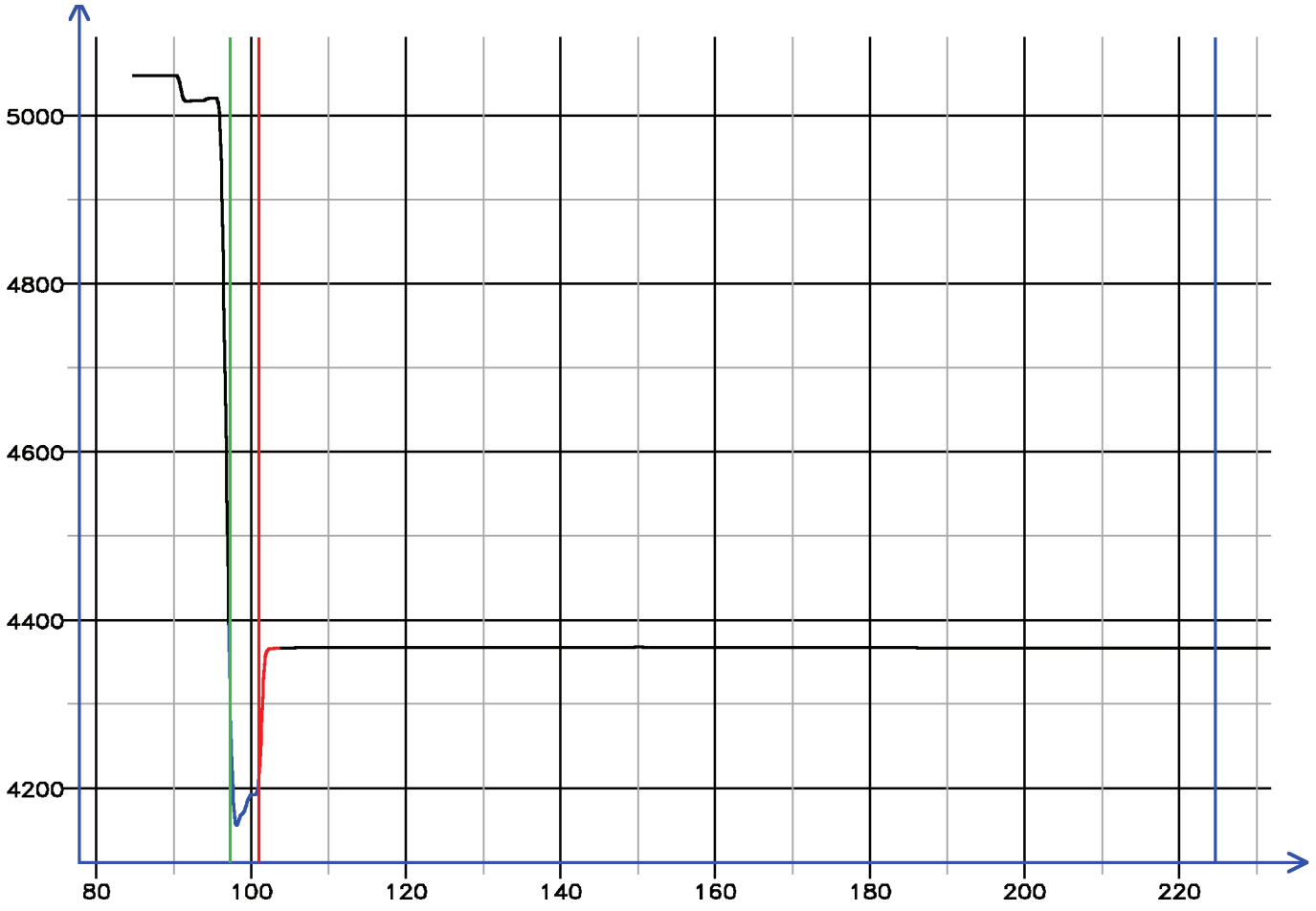
Kfra 11.983, Kddu 11.574 (mD/cP) Confidence 62.08% MD 3099.81 (m)

Sample Tests – Level 54 Tool Instance 1

MD 3060.3 m TVD 3060.3 m

PRESSURE HISTORY (apql vs. time)

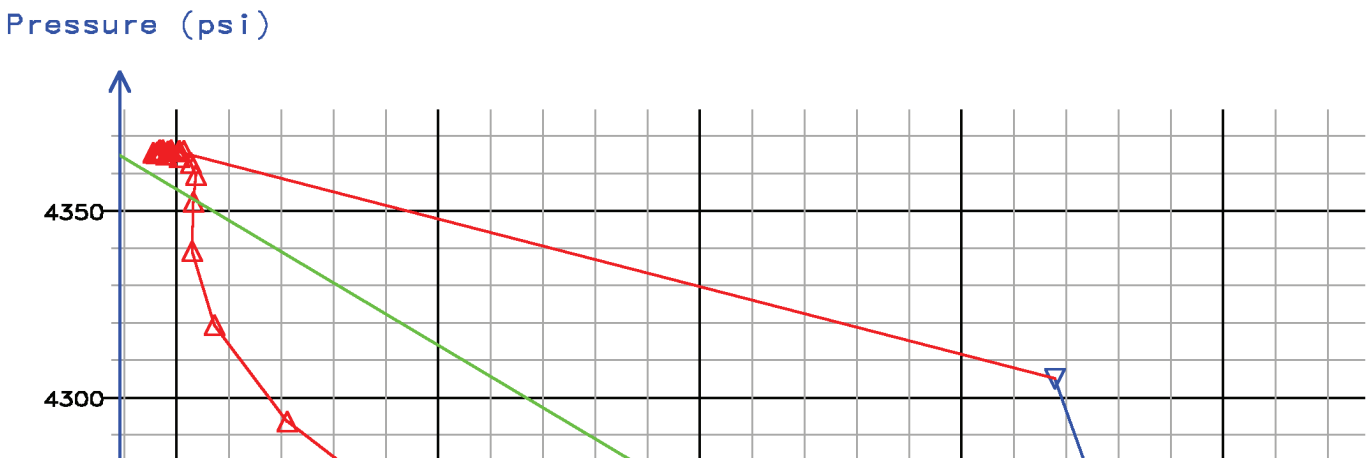
Depth MD 3060.3 m TVD 3060.3 m



Final BU	4366.37	psi	DD Volume	9.76	cm3	Temp	71.81	degC
BU Stability	−0.20491	psi/min	Min Flow P	4155.65	psi	Temp Stability	0.00009	degC/min
BU Repeat	n/a	psi	DD Rate	2.16	cm3/s	FRA	0.933	R2
P_hydro	5050.98	psi	Mobility DD	35.303	mD/cP	Mobility Kfra	38.725	mD/cP

FLOW RATE ANALYSIS

Depth MD 3060.3 m TVD 3060.3 m

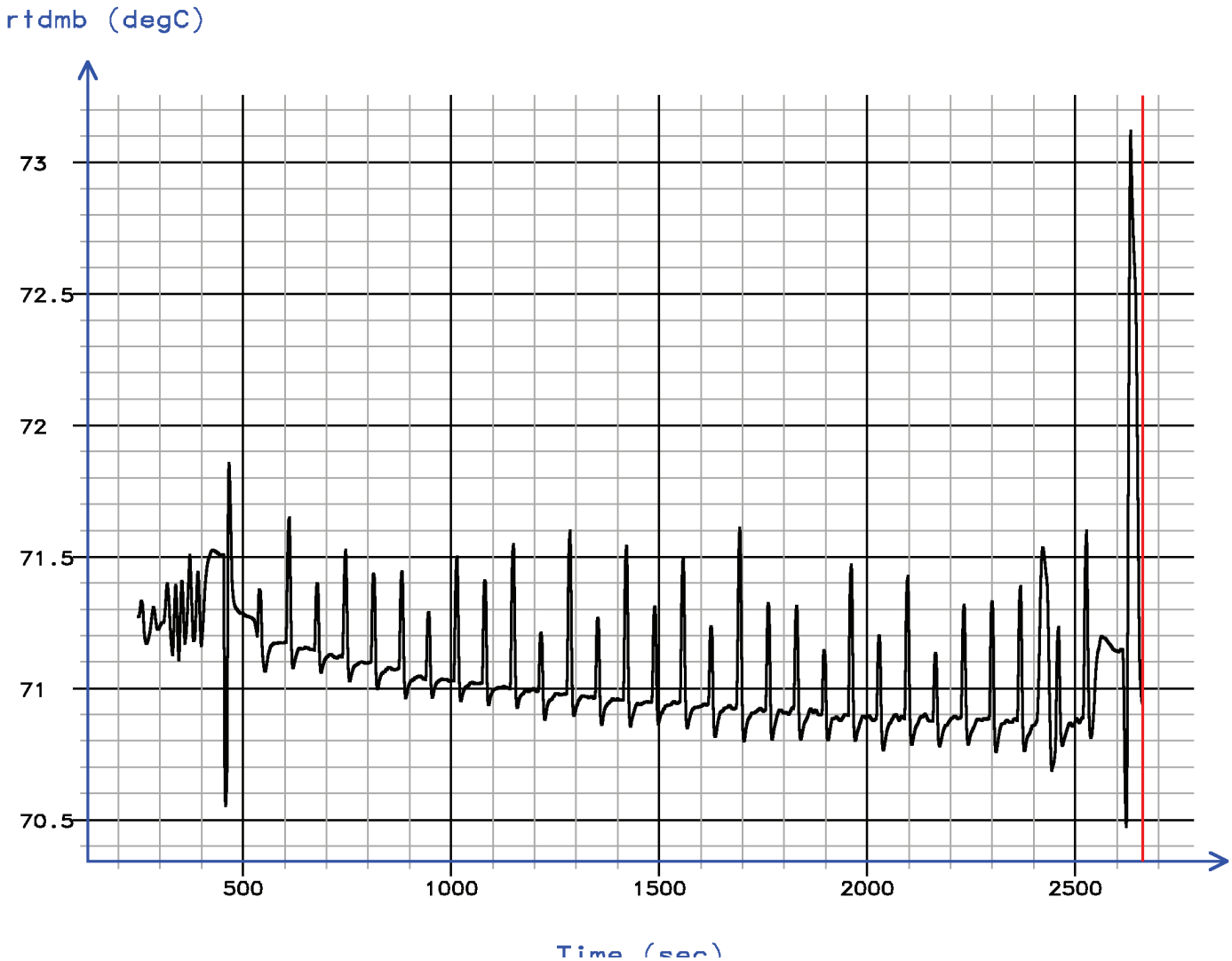


Flow Rate (cm3/s)

Kfra 38.725, Kddu 35.300 (mD/cP) Confidence 93.35% MD 3060.31 (m)

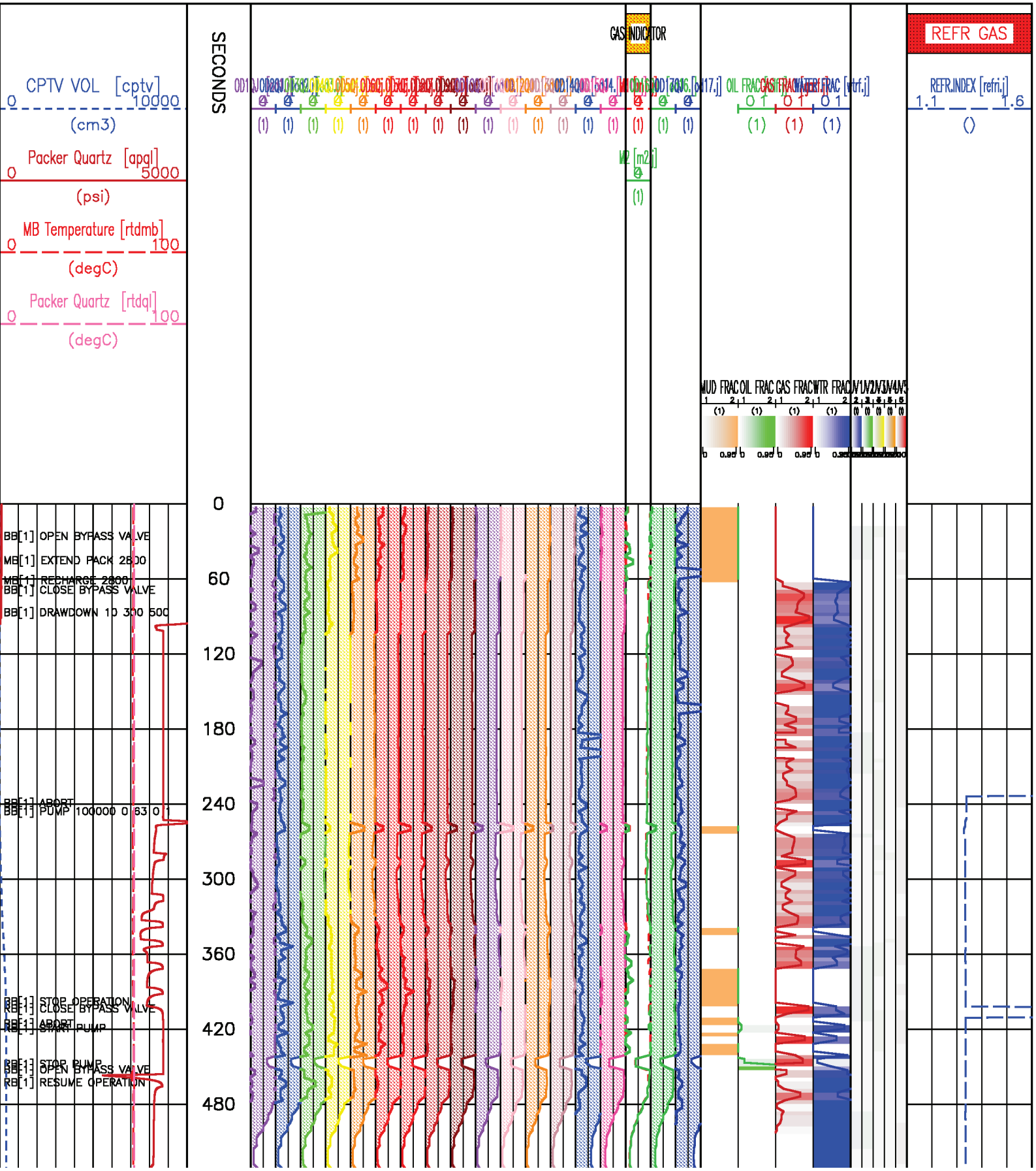
FLUID LINE (rtdmb vs. time)

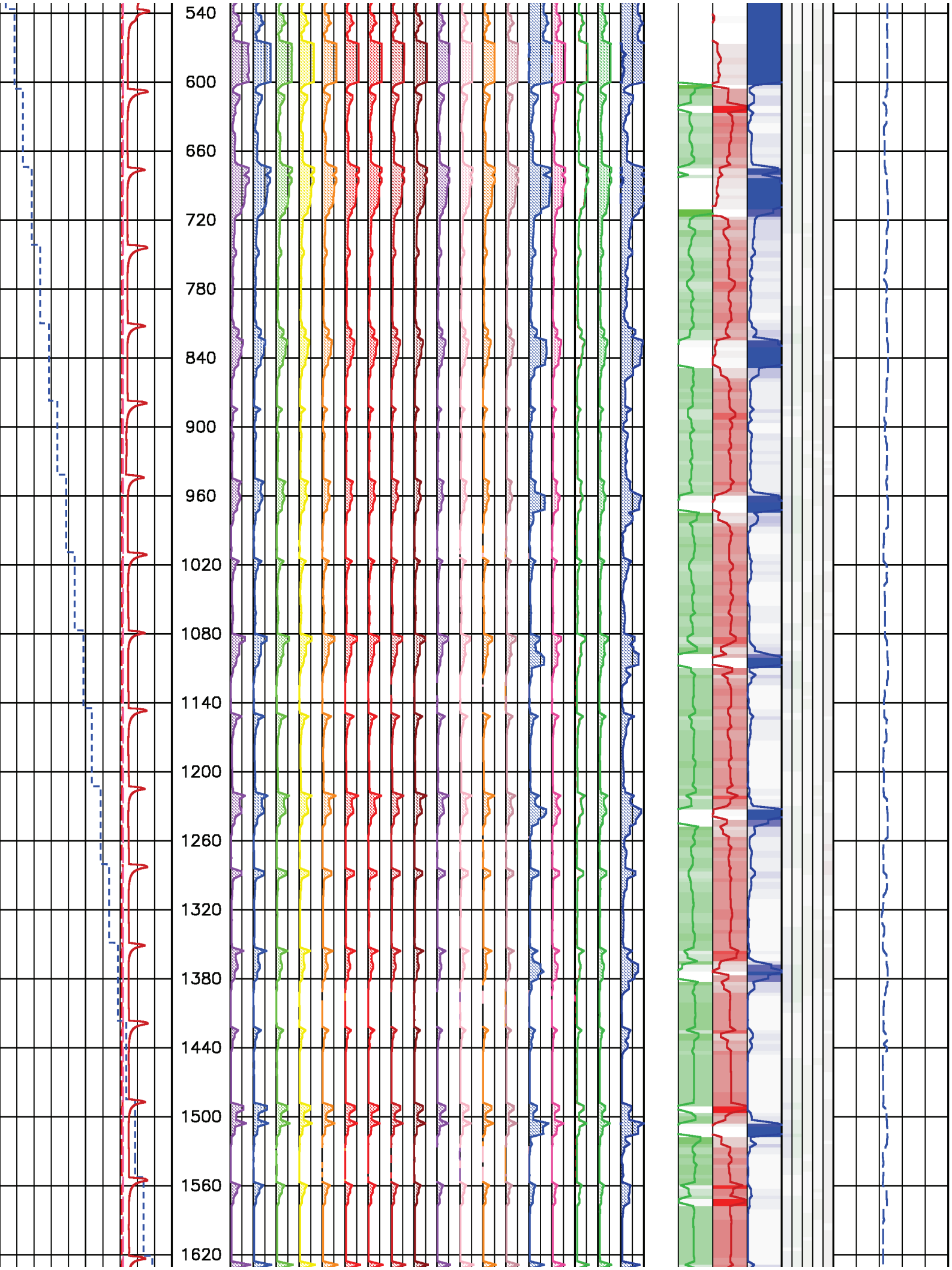
Depth MD 3060.3 m TVD 3060.3 m

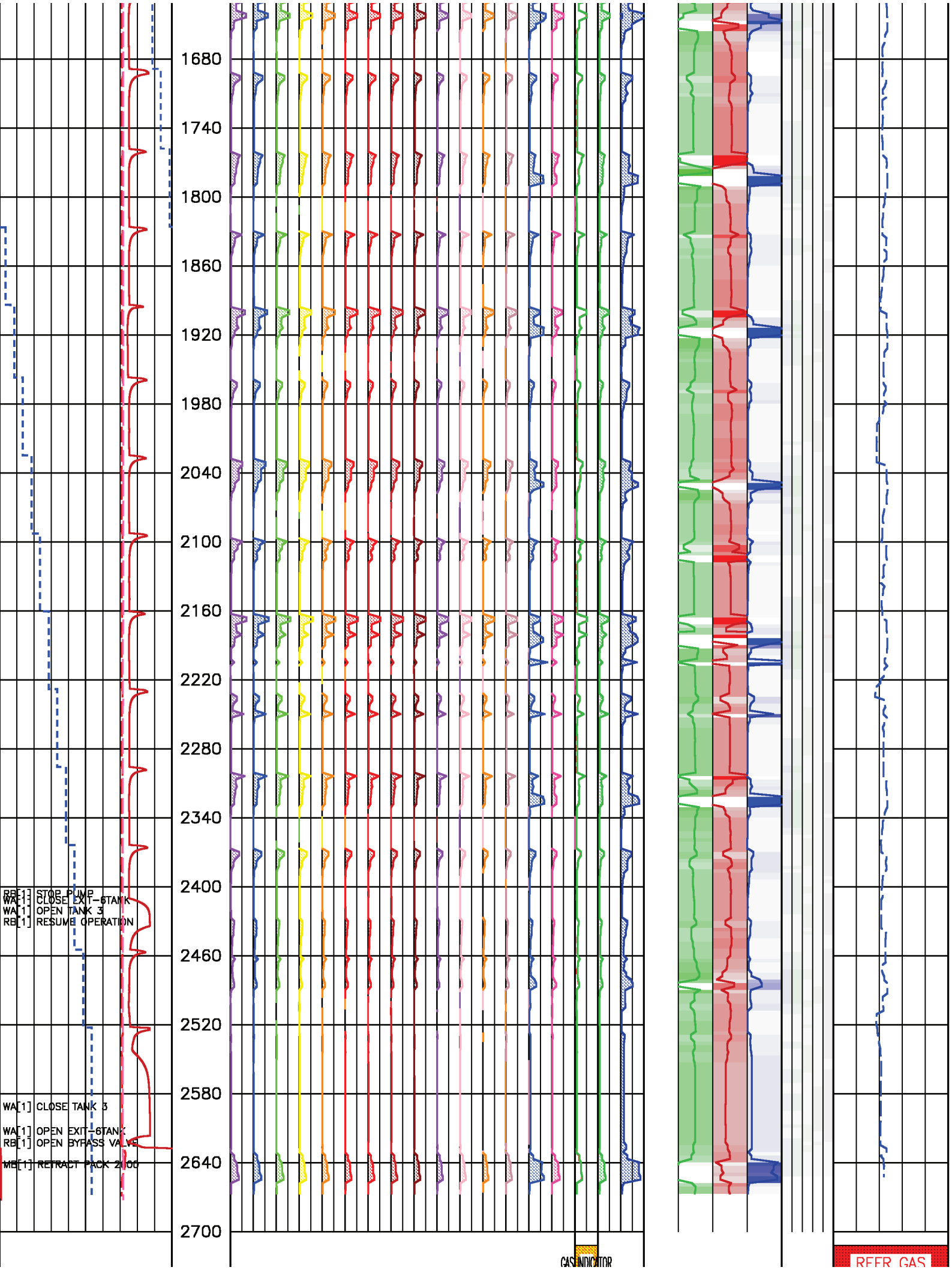


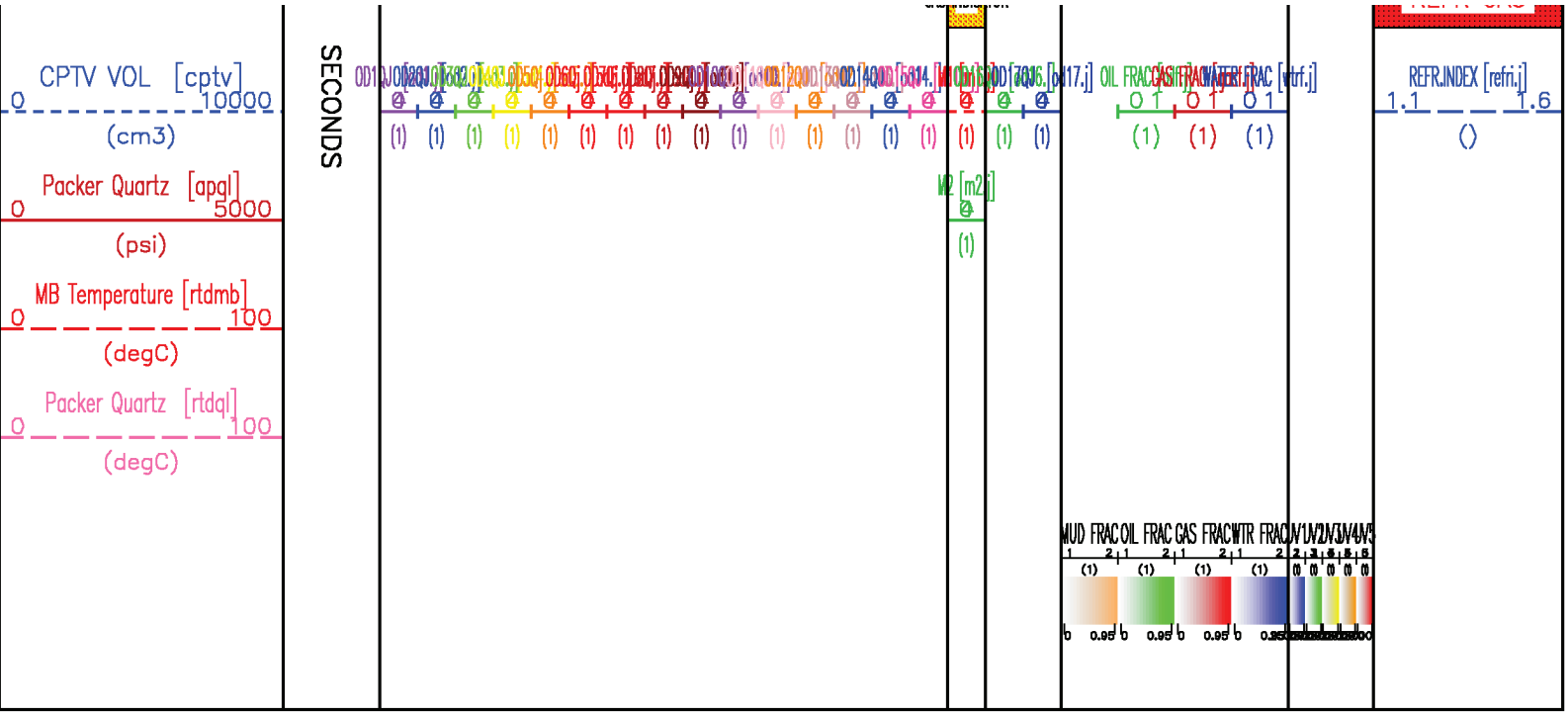
mbdepth 3060.312 (m)

Data File : k800g64.aff
Presentation: samplev_ibch.log




540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
1440
1500
1560
1620

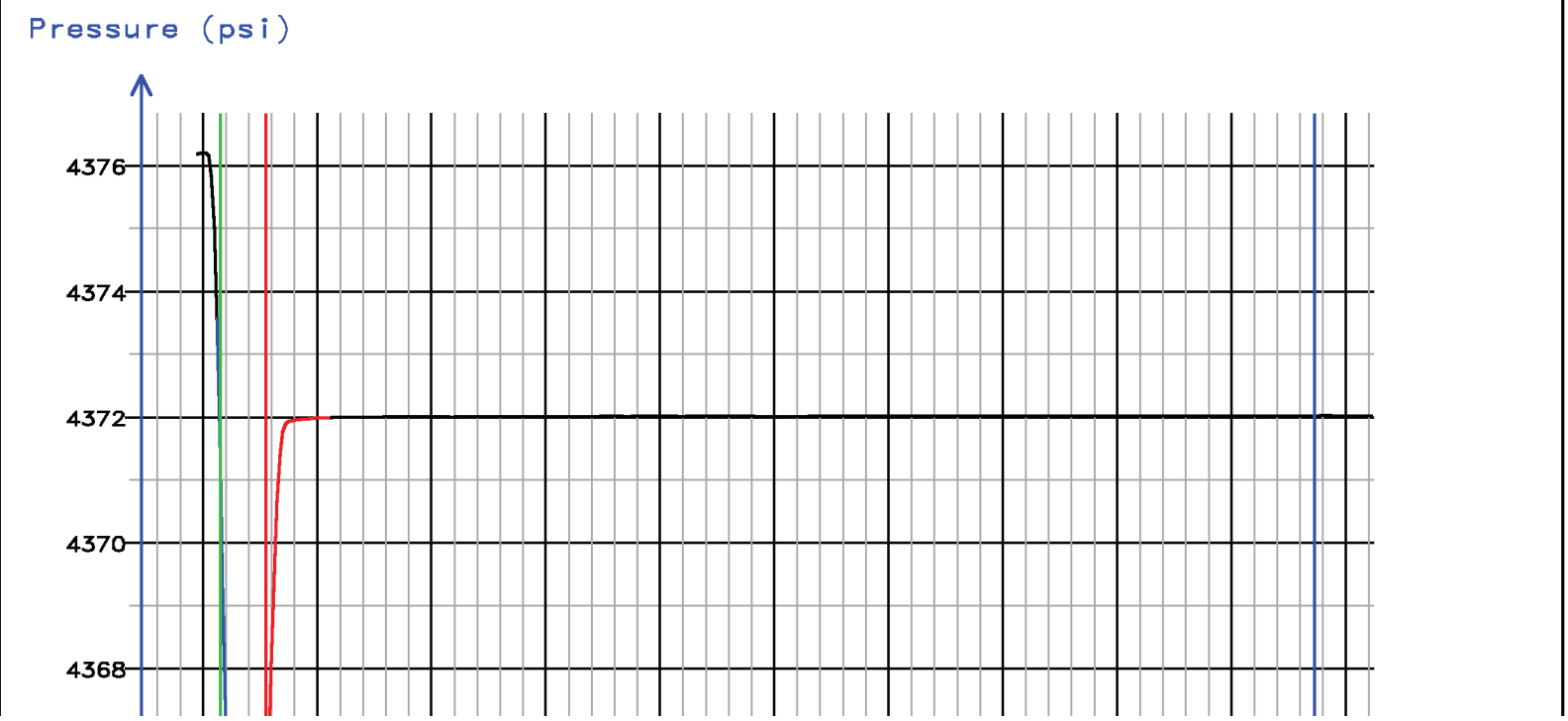

1680
1740
1800
1860
1920
1980
2040
2100
2160
2220
2280
2340
2400
2460
2520
2580
2640
2700
RB[1] STOP PUMP
WA[1] CLOSE EXIT-6TANK
WA[1] OPEN TANK 3
RB[1] RESUME OPERATION
WA[1] CLOSE TANK 3
WA[1] OPEN EXIT-6TANK
RB[1] OPEN BYPASS VALVE
MB[1] RETRACT PACK 2100
GAS INDICATOR
REER GAS

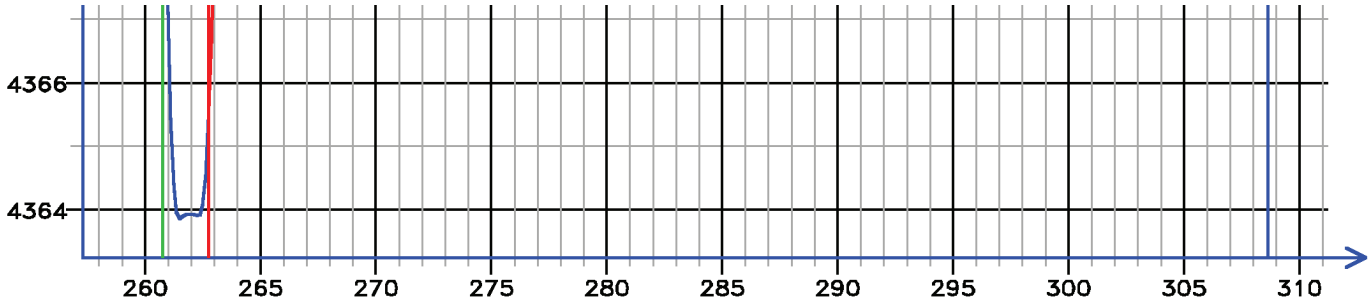


Sample Tests – Level 55 Tool Instance 1
MD 3066.7 m TVD 3066.7 m

PRESSURE HISTORY (apql vs. time)

Depth MD 3066.7 m TVD 3066.7 m



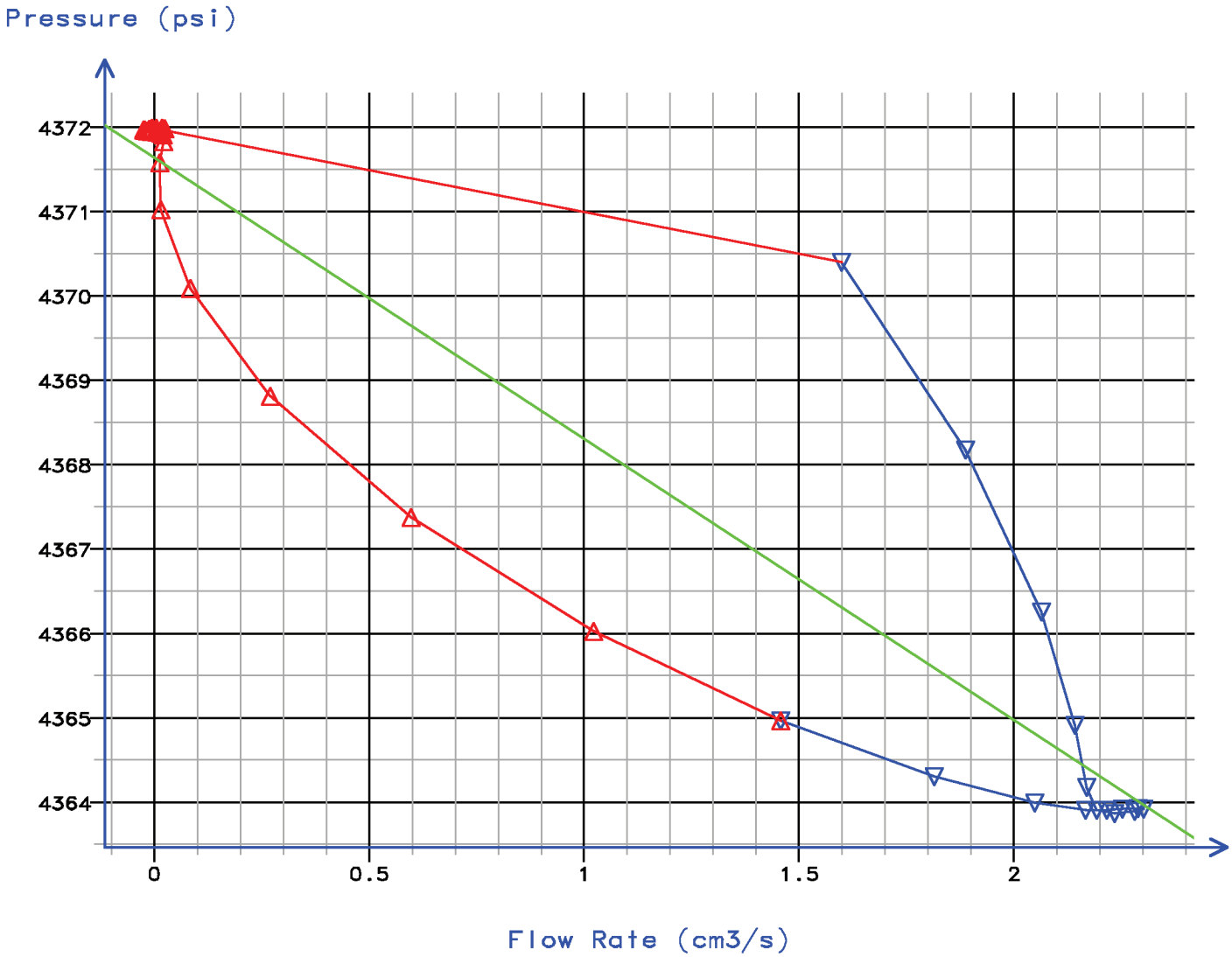


MD: 3066.72 TVD: 3066.72 (m) [055.1.479]

Final BU	4372.02	psi	DD Volume	4.77	cm3	Temp	71.55	degC
BU Stability	0.00007	psi/min	Min Flow P	4363.85	psi	Temp Stability	n/a	degC/min
BU Repeat	n/a	psi	DD Rate	2.30	cm3/s	FRA	0.895	R2
P_hydro	5062.68	psi	Mobility DD	970.759	mD/cP	Mobility Kfra	973.519	mD/cP

FLOW RATE ANALYSIS

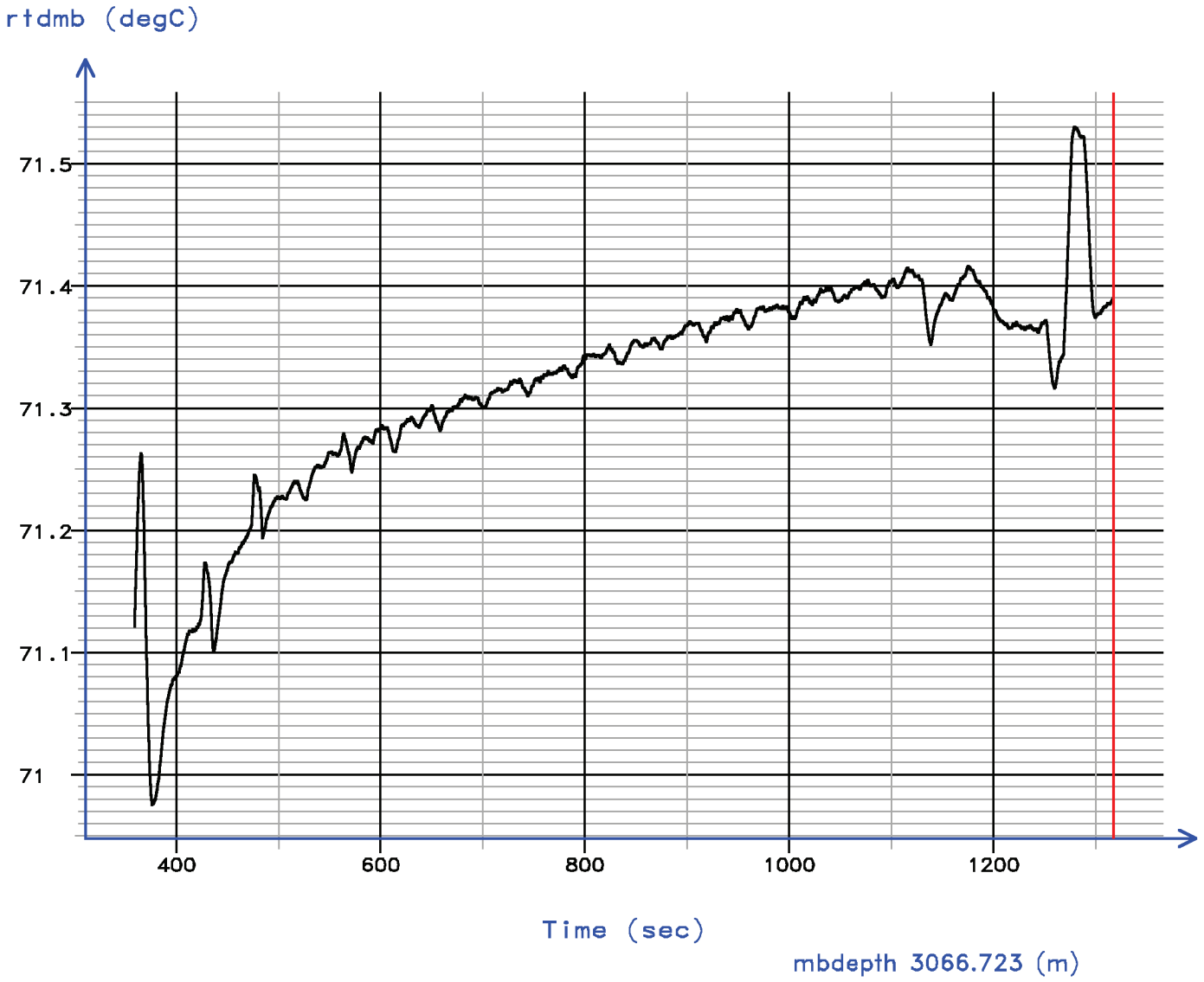
Depth MD 3066.7 m TVD 3066.7 m



Kfra 973.519, Kddu 970.934 (mD/cP) Confidence 89.53% MD 3066.72 (m)

FLUID LINE (rtdmb vs. time)

Depth MD 3066.7 m TVD 3066.7 m



PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g65.prm
LOGGING MODE: TIME
START TIME: 0.125 s END TIME: 1326.500 s

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (s)	
				START	END
LMP	FILTER ()	medium(1)		''	''
QD PRES	FILTER ()	medium(1)		''	''
RTD	FILTER ()	medium(1)		''	''

RCI PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (s)

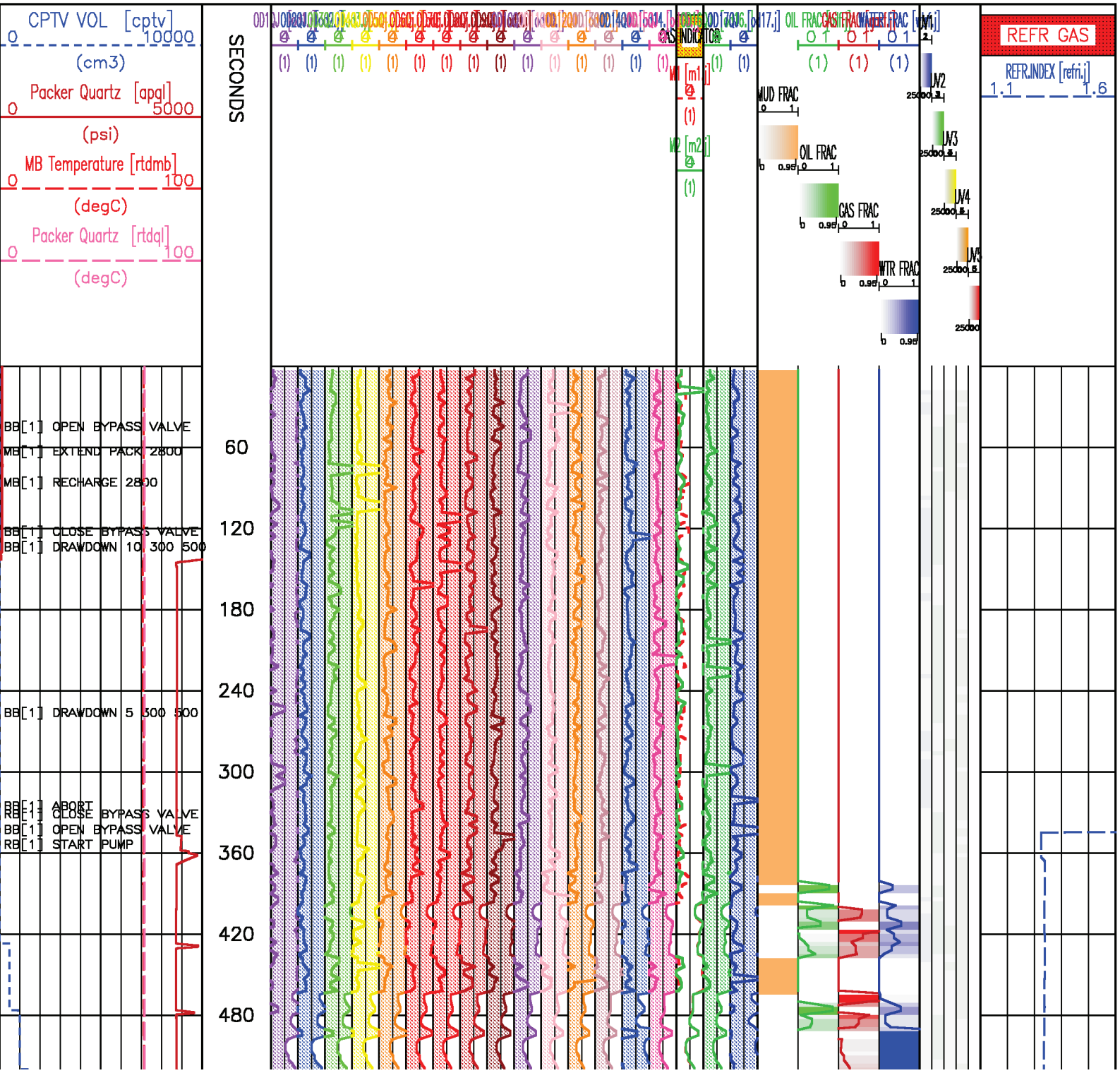
			START	END
RCI HARDWARE SELECT	Flowline Sensor	RTD		
RCI VOLUME	Isolated VOL	51.0 (56cc pump)	''	''
	Piston Area	445.8 (56cc pump)	''	''
FTA INPUT	Select FTA Input	1970MB	''	''
RCI RB PUMP THROUGH	Volume per Stroke	Medium (500 cc)	''	''

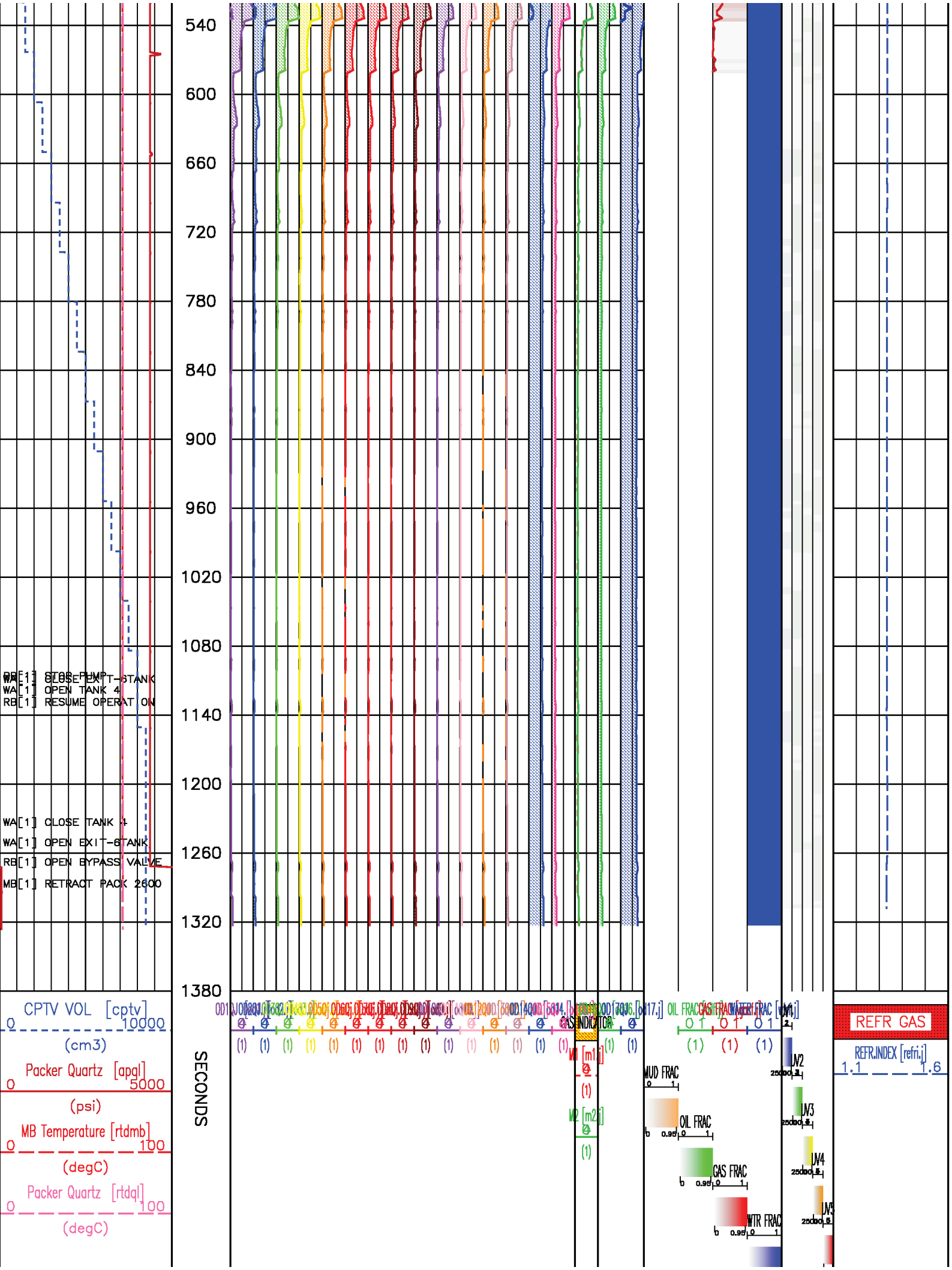
SAMPLEVIEW

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (s)	
SAMPLEVIEW DISPLAY CONTROL	UV Display Filter	On		START	END
SAMPLEVIEW REFERENCE CONTROL	Reference Select	Reference-A12		''	''

SAMPLEVIEW FLUID FRACTION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (s)	
(OD16 - OD15) VALUES FOR OIL	0% OIL EMPTY CELL	0.05		START	END
	100% OIL	0.50		''	''
(OD14 - OD13) VALUES FOR WATER	0% WATER EMPTY CELL	0.05		''	''
	100% WATER	1.80		''	''




540
600
660
720
780
840
900
960
1020
1080
1140
1200
1260
1320
1380
SECONDS
RB[1] STOP PUMP
WA[1] CLOSE EXIT-6TANK
WA[1] OPEN TANK 4
RB[1] RESUME OPERATION
WA[1] CLOSE TANK 4
WA[1] OPEN EXIT-6TANK
RB[1] OPEN BYPASS VALVE
MB[1] RETRACT PACK 2600
CPTV VOL [cptv]
0
10000
(cm3)
Packer Quartz [apql]
0
5000
(psi)
MB Temperature [rtdmb]
0
100
(degC)
Packer Quartz [rtdql]
0
100
(degC)
GAS INDICATOR
M1 [m1i]
M2 [m2i]
OIL FRAC
GAS FRAC
WTR FRAC
MUD FRAC
UV1
UV2
UV3
UV4
UV5
REFR GAS
REFR.INDEX [refri]
1.1
1.6

CORRELATION PASS 1

ECLIPS 6.0i Feb 22, 2008
Patches: 1,2,4

Wed Nov 19 05:07:30 2008

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g04.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2821.686 m BOTTOM DEPTH: 2905.049 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CHT	CHT	Nov 17 05:53:31 2008	CABLE HEAD TENSION
F1:GR	GR	Nov 17 05:53:31 2008	GAMMA RAY
F1:SPD	SPD	Nov 17 05:53:31 2008	SPEED
F1:TEN	TEN	Nov 17 05:53:31 2008	DIFFERENTIAL TENSION
F1:TTEN	TTEN	Nov 17 05:53:31 2008	TOTAL TENSION

CURVE MEASURE POINT OFFSET

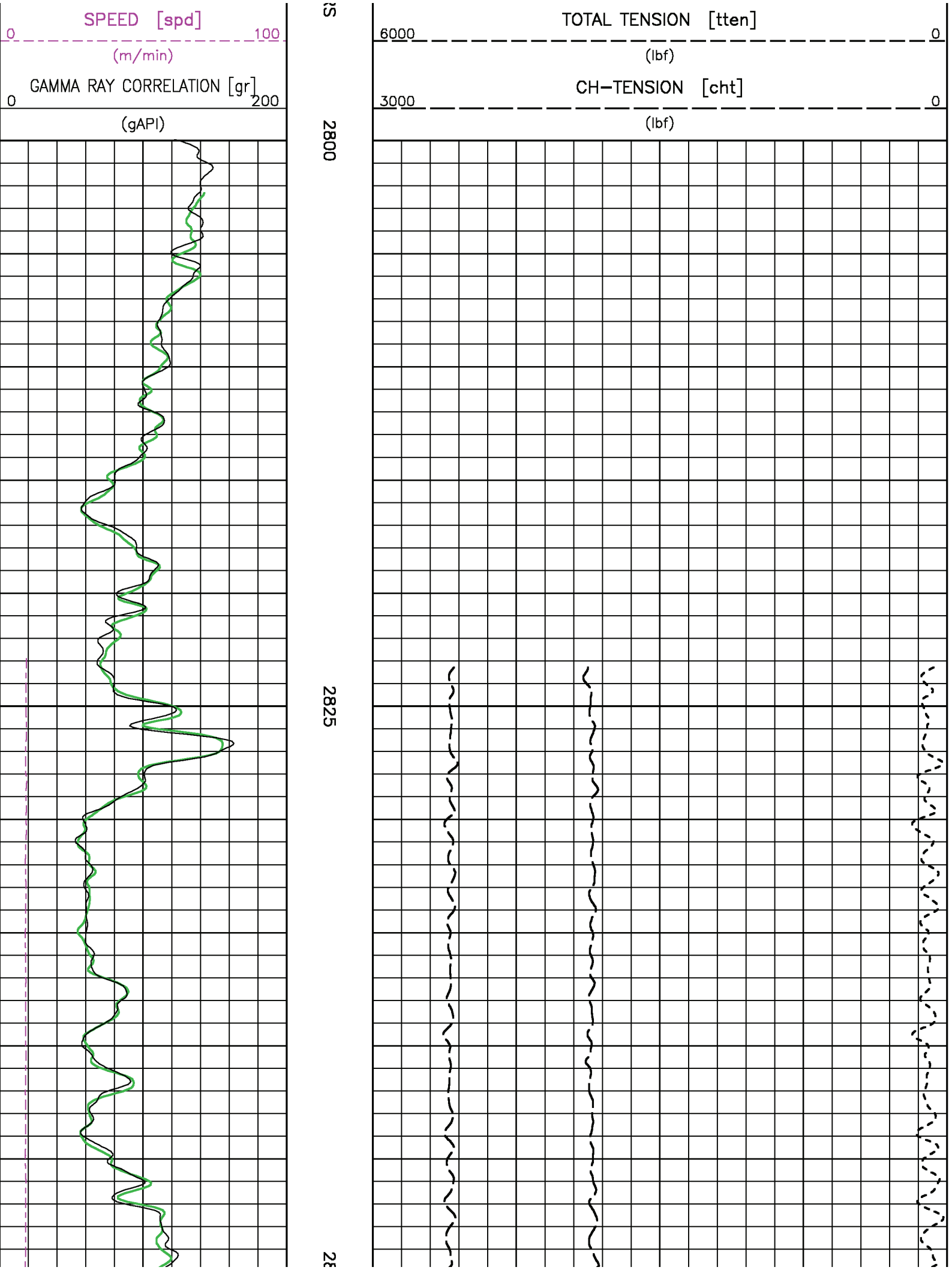
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CHT	-0.38	SPD	0.00	TTEN	-0.38		
GR	20.57	TEN	-0.38				

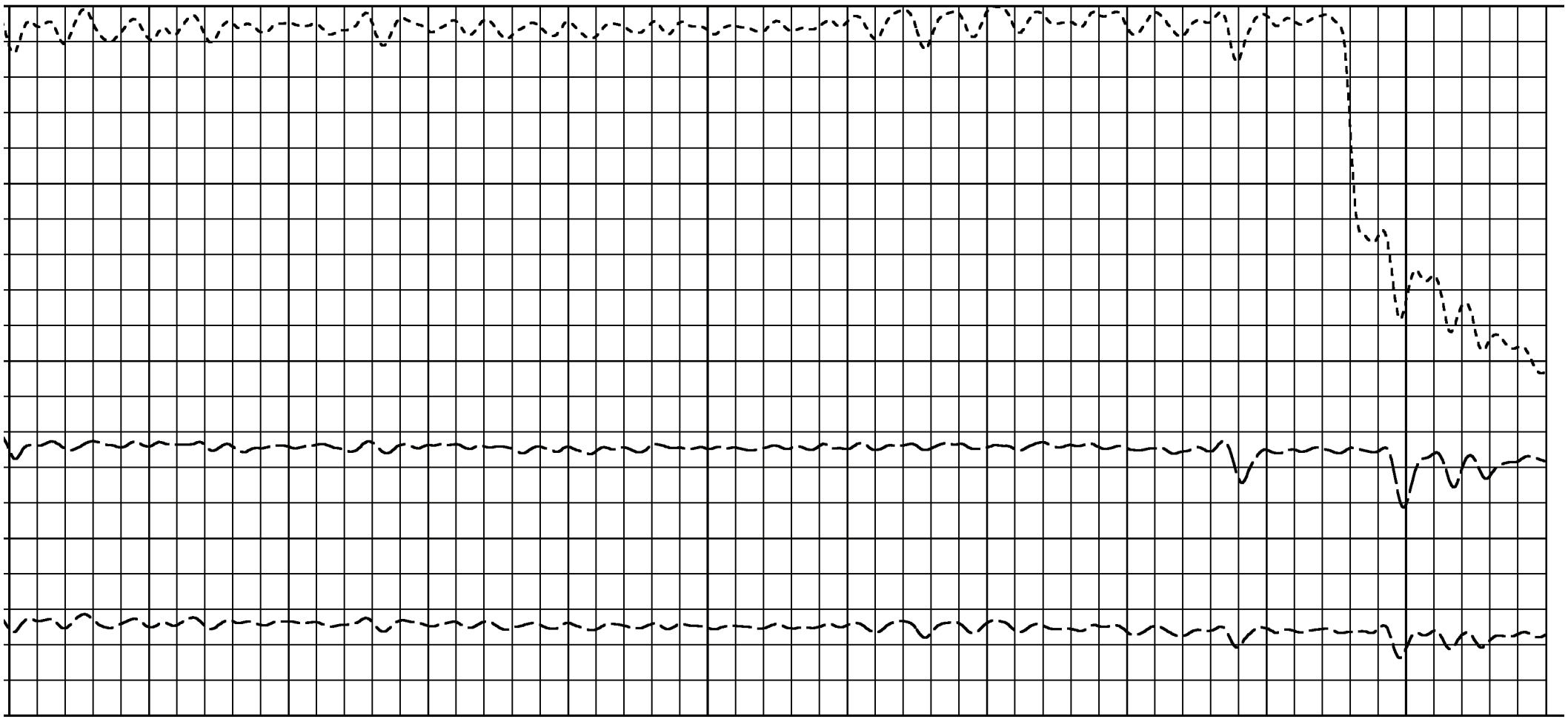
Presentation : sys1:/dat1a/dory1/gr-sp-rci1.pdf [1:200 Scale]
Plot Interval : 2800 - 2905 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k800g04.aff
Created On : Nov 17 06:03:05 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2798.29 - 2906.34 Meters
Oct : k800g

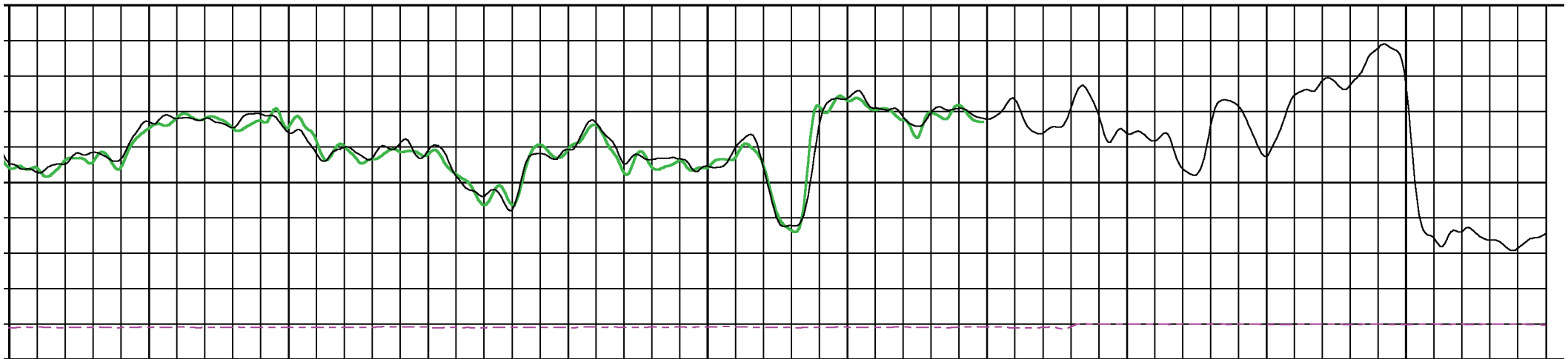
Data File 2 : F2 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i

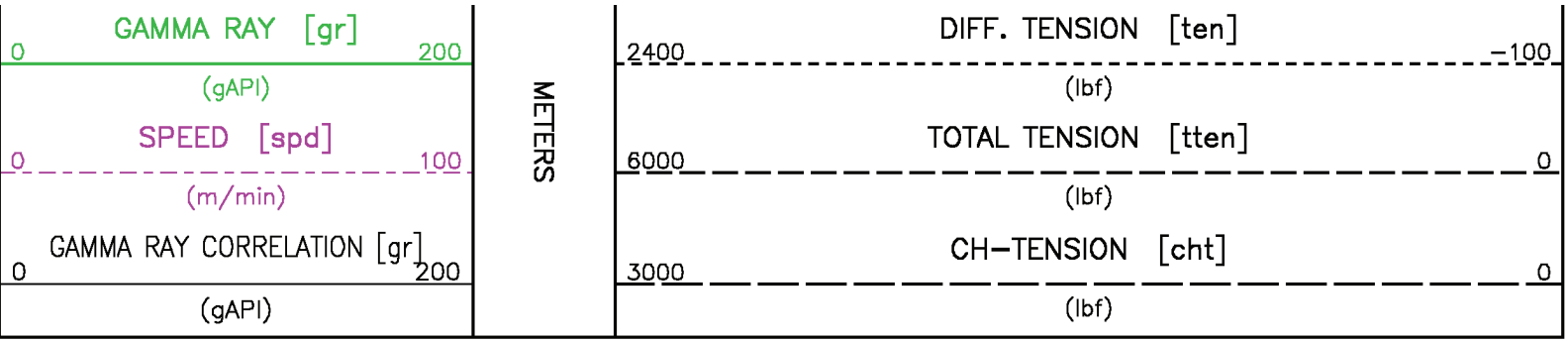
GAMMA RAY [gr]		DIFF. TENSION [ten]
0 — 200	METER	2400 — -100
(gAPI)		(lbf)


SPEED [spd]
0
100
(m/min)
GAMMA RAY CORRELATION [gr]
0
200
(gAPI)
2800
2825
TOTAL TENSION [tten]
6000
0
(lbf)
CH-TENSION [cht]
3000
0
(lbf)



850 2875 2900





CORRELATION PASS 2

ECLIPS 6.0i Feb 22, 2008
Patches: 1,2,4

Wed Nov 19 04:57:54 2008

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g29.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2875.864 m BOTTOM DEPTH: 2933.222 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m)	
				TOP	BOTTOM
CHT	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CHT	CHT	Nov 17 12:43:16 2008	CABLE HEAD TENSION
F1:GR	GR	Nov 17 12:43:16 2008	GAMMA RAY
F1:SPD	SPD	Nov 17 12:43:16 2008	SPEED
F1:TEN	TEN	Nov 17 12:43:16 2008	DIFFERENTIAL TENSION
F1:TTEN	TTEN	Nov 17 12:43:16 2008	TOTAL TENSION

CURVE MEASURE POINT OFFSET

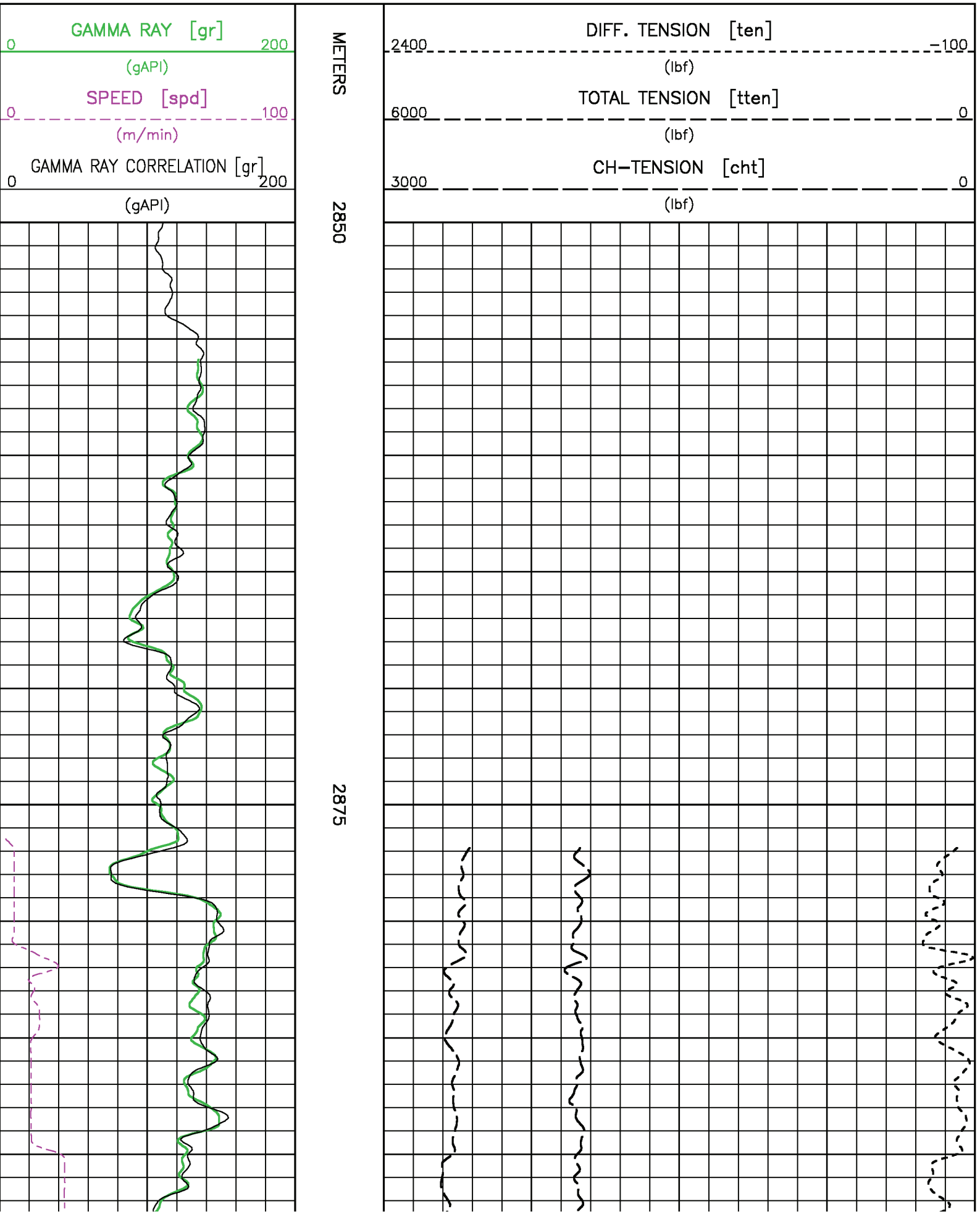
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CHT	-0.38	SPD	0.00	TTEN	-0.38		
GR	20.57	TEN	-0.38				

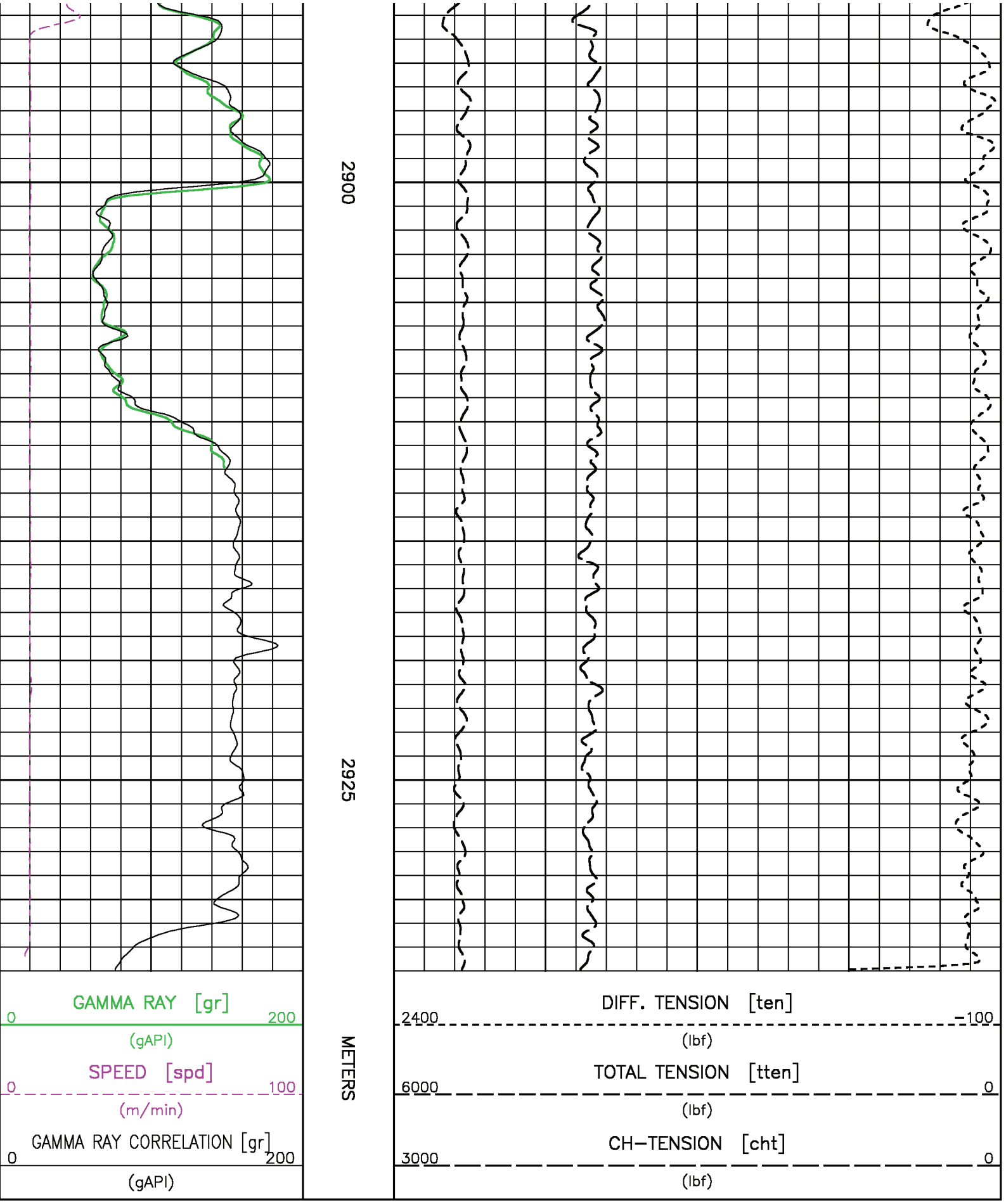
Presentation : sys1:/dat1a/dory1/gr-sp-rci2.pdf [1:200 Scale]
Plot Interval : 2850 - 2933 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k800g29.aff
Created On : Nov 17 12:43:16 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2851.86 - 2933.4 Meters
Oct : k800g

Data File 2 : F2 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE

Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i





CORRELATION PASS 3

CORRELATION PASS 3

ECLIPS 6.0i Feb 22, 2008 Wed Nov 19 05:07:21 2008
Patches: 1,2,4

Perplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g38.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2918.993 m BOTTOM DEPTH: 2975.395 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		TOP	BOTTOM
GR	FILTER ()	medium (1)		''	''
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CHT	CHT	Nov 17 14:55:59 2008	CABLE HEAD TENSION
F1:GR	GR	Nov 17 14:55:59 2008	GAMMA RAY
F1:SPD	SPD	Nov 17 14:55:59 2008	SPEED
F1:TEN	TEN	Nov 17 14:55:59 2008	DIFFERENTIAL TENSION
F1:TTEN	TTEN	Nov 17 14:55:59 2008	TOTAL TENSION

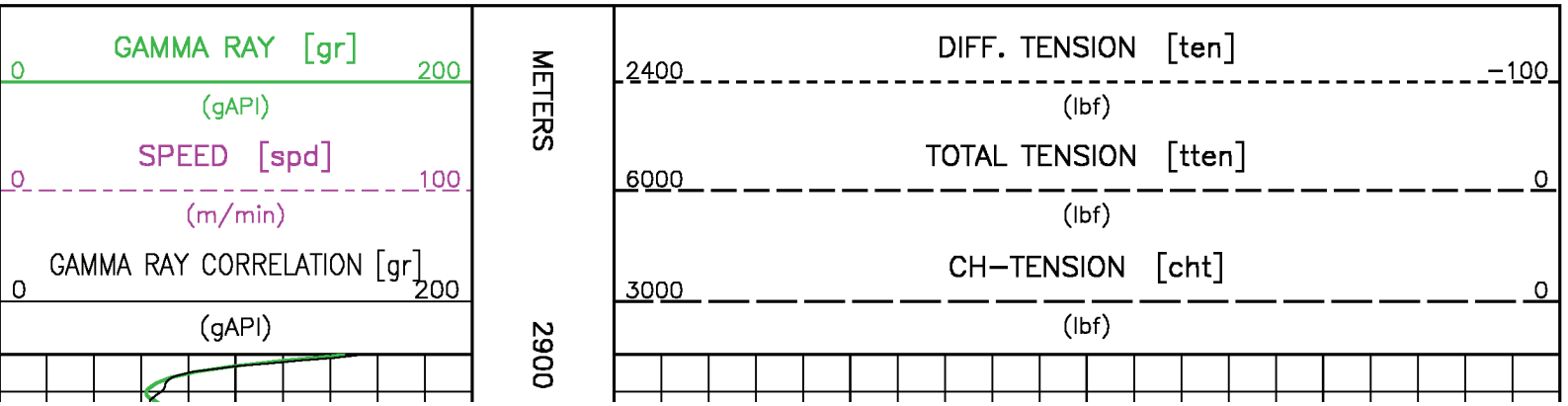
CURVE MEASURE POINT OFFSET

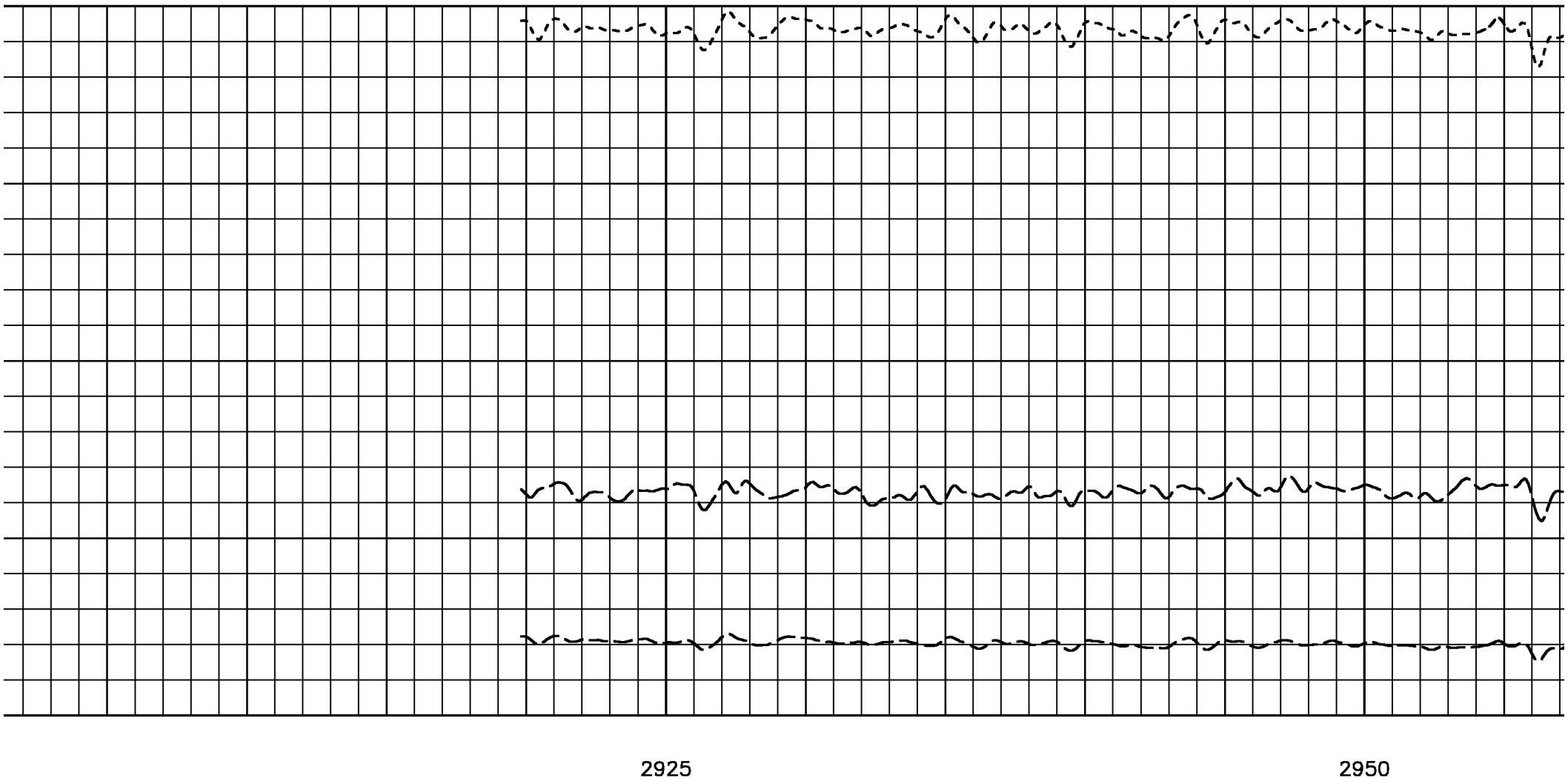
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CHT	-0.38	SPD	0.00	TTEN	-0.38		
GR	20.57	TEN	-0.38				

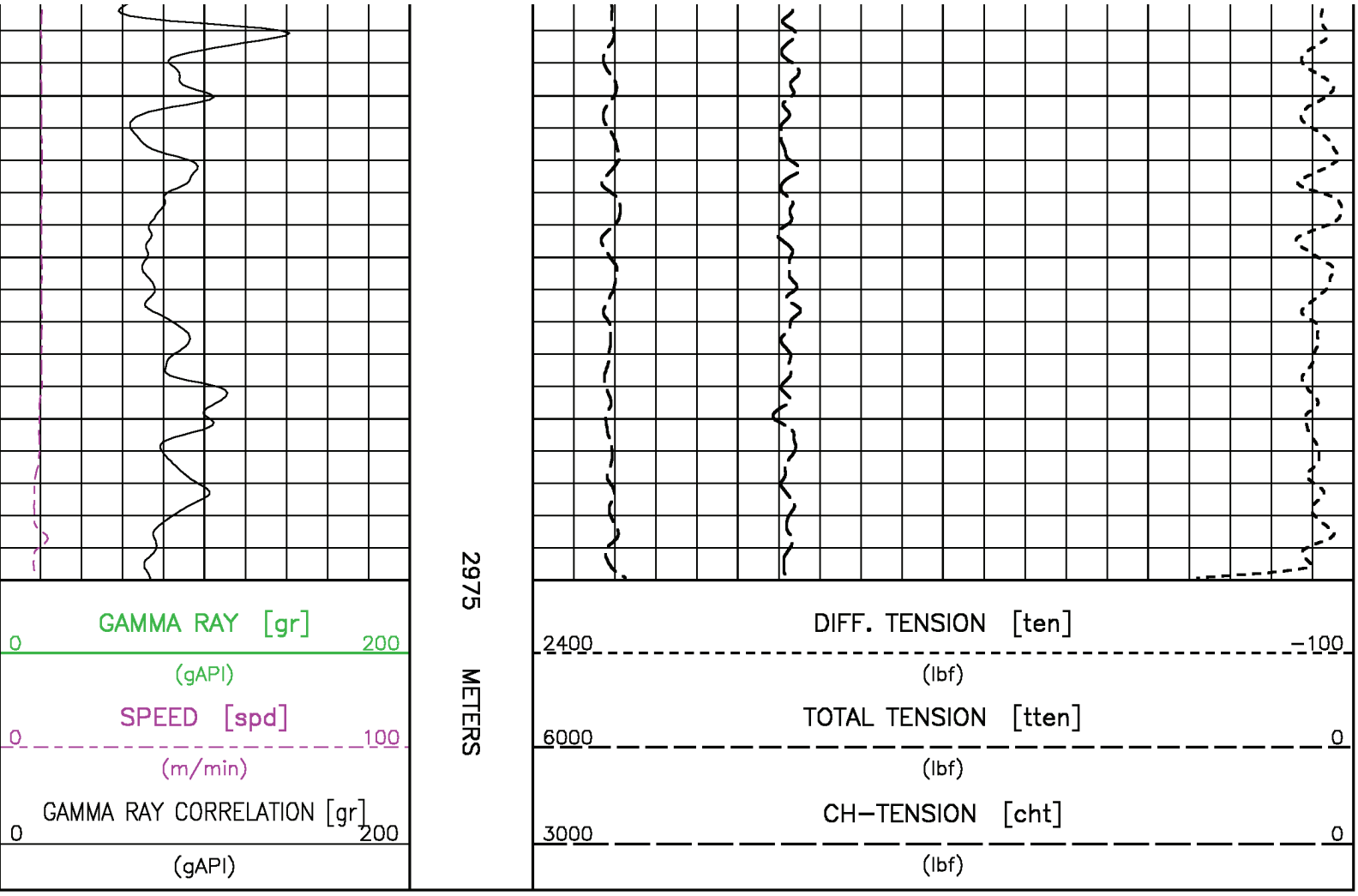
Presentation : sys1:/dat1a/dory1/gr-sp-rci3.pdf [1:200 Scale]
Plot Interval : 2900 - 2975 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k800g38.aff
Created On : Nov 17 14:55:59 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2894.84 - 2975.61 Meters
Oct : k800g

Data File 2 : F2 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i




2925
2950



CORRELATION PASS 4

ECLIPS 6.0i Feb 22, 2008
Patches: 1,2,4

Wed Nov 19 05:01:49 2008

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g46.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2962.199 m BOTTOM DEPTH: 3000.029 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		TOP	BOTTOM
GR	FILTER ()	medium (1)		''	''
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CHT	CHT	Nov 17 16:16:09 2008	CABLE HEAD TENSION

F1:GR	GR	Nov 17 16:16:09 2008	GAMMA RAY
F1:SPD	SPD	Nov 17 16:16:09 2008	SPEED
F1:TEN	TEN	Nov 17 16:16:09 2008	DIFFERENTIAL TENSION
F1:TTEN	TTEN	Nov 17 16:16:09 2008	TOTAL TENSION

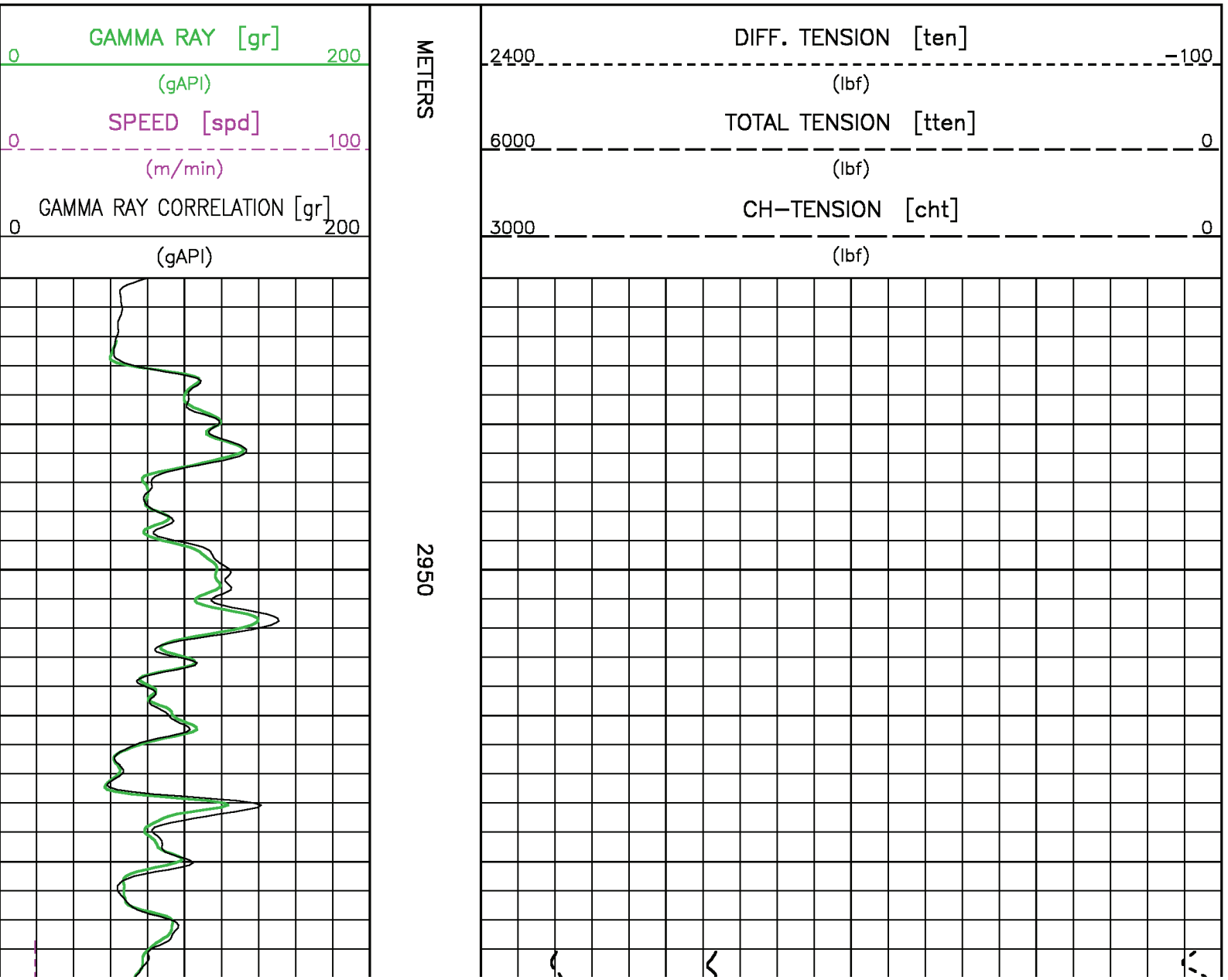
CURVE MEASURE POINT OFFSET

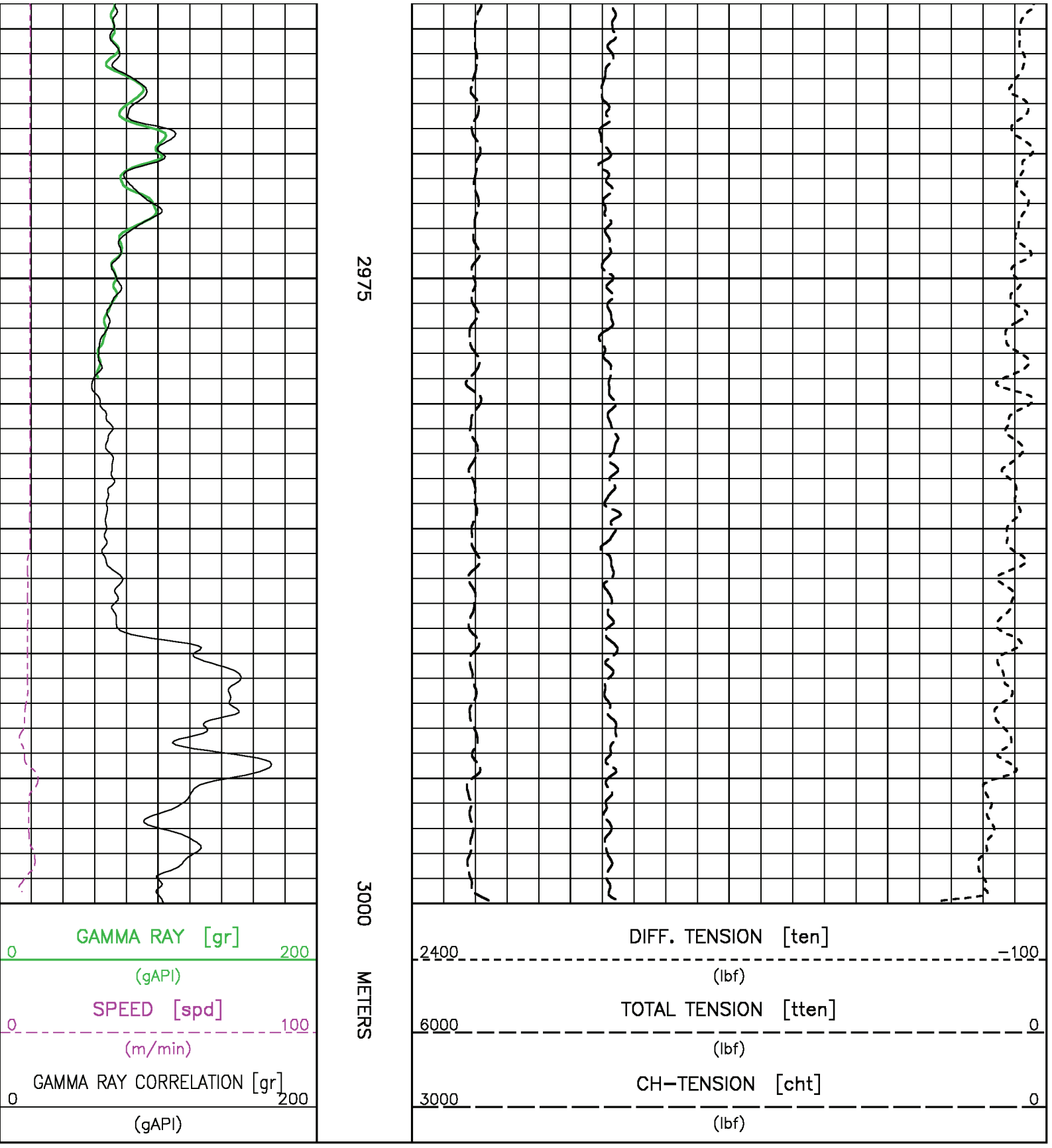
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CHT	-0.38	SPD	0.00	TTEN	-0.38		
GR	20.57	TEN	-0.38				

Presentation : sys1:/dat1a/dory1/gr-sp-rci4.pdf [1:200 Scale]
Plot Interval : 2940 - 3000 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k800g46.aff
Created On : Nov 17 16:16:09 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2938.12 - 3000.38 Meters
Oct : k800g

Data File 2 : F2 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i





CORRELATION PASS 5

Patches: 1,2,4

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.24

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/dory1/k800g49.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 3068.269 m BOTTOM DEPTH: 3124.810 m

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (m) TOP	BOTTOM
CHT	FILTER ()	medium (1)		TOP	BOTTOM
GR	FILTER ()	medium (1)		''	''
SPEED	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:CHT	CHT	Nov 17 16:48:35 2008	CABLE HEAD TENSION
F1:GR	GR	Nov 17 16:48:35 2008	GAMMA RAY
F1:SPD	SPD	Nov 17 16:48:35 2008	SPEED
F1:TEN	TEN	Nov 17 16:48:35 2008	DIFFERENTIAL TENSION
F1:TTEN	TTEN	Nov 17 16:48:35 2008	TOTAL TENSION

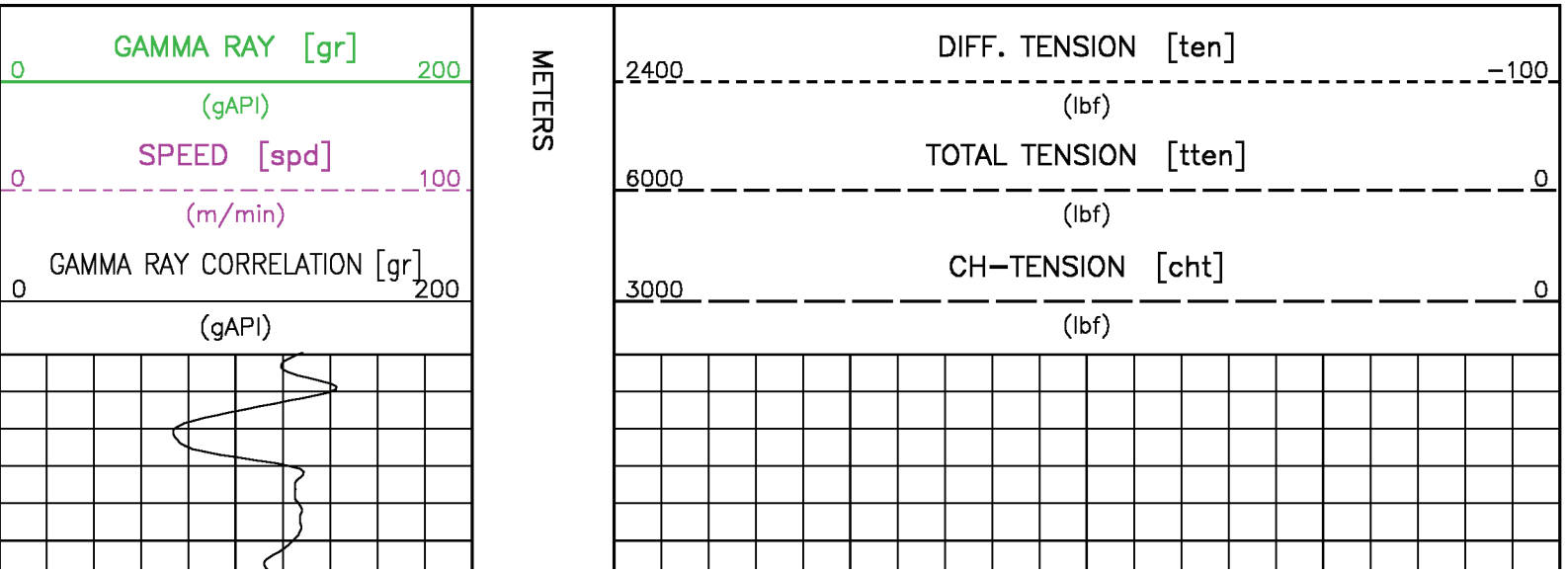
CURVE MEASURE POINT OFFSET

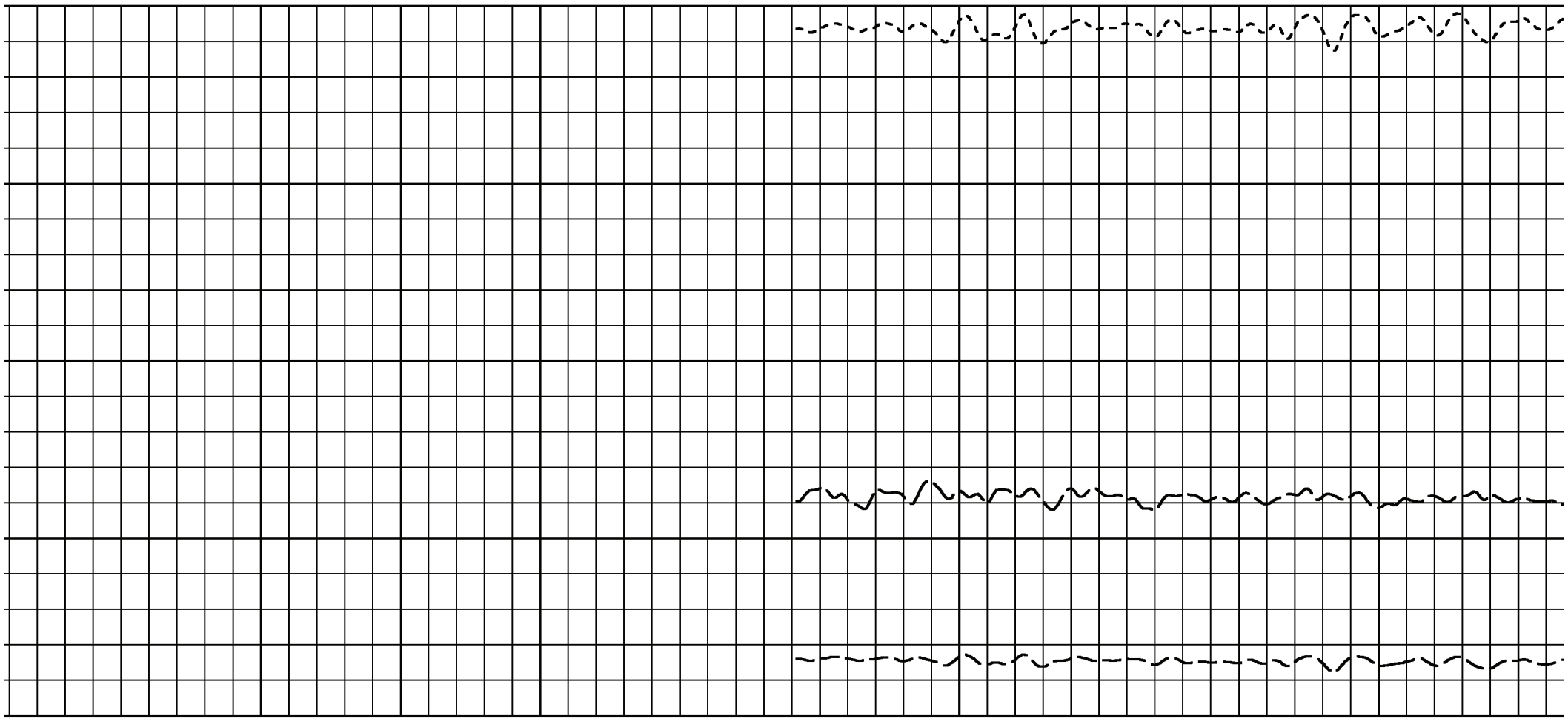
CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)	CURVE	OFFSET (m)
CHT	-0.38	SPD	0.00	TTEN	-0.38		
GR	20.57	TEN	-0.38				

Presentation : sys1:/dat1a/dory1/gr-sp-rci5.pdf [1:200 Scale]
Plot Interval : 3035 - 3125 Meters

Data File 1 : F1 : sys1:/dat1a/dory1/k800g49.aff
Created On : Nov 17 16:48:35 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 3044.19 - 3125.34 Meters
Oct : k800g

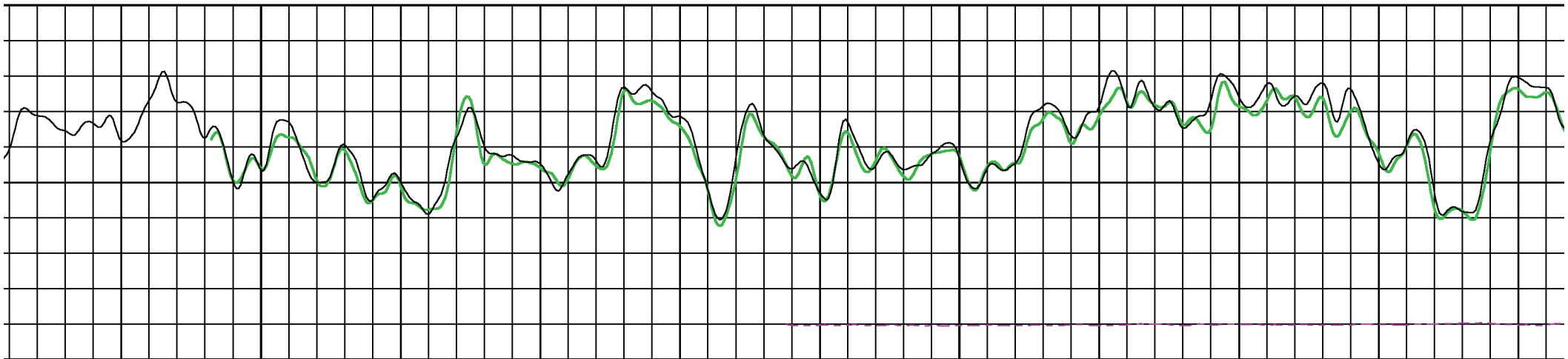
Data File 2 : F2 : sys1:/dat1a/dory1/slamrush.xtf
Created On : Nov 16 19:20:13 2008
Company : APACHE
Well : DORY-1
Field : 1
File Interval : 2696.95 - 3806.04 Meters
Oct : k772i

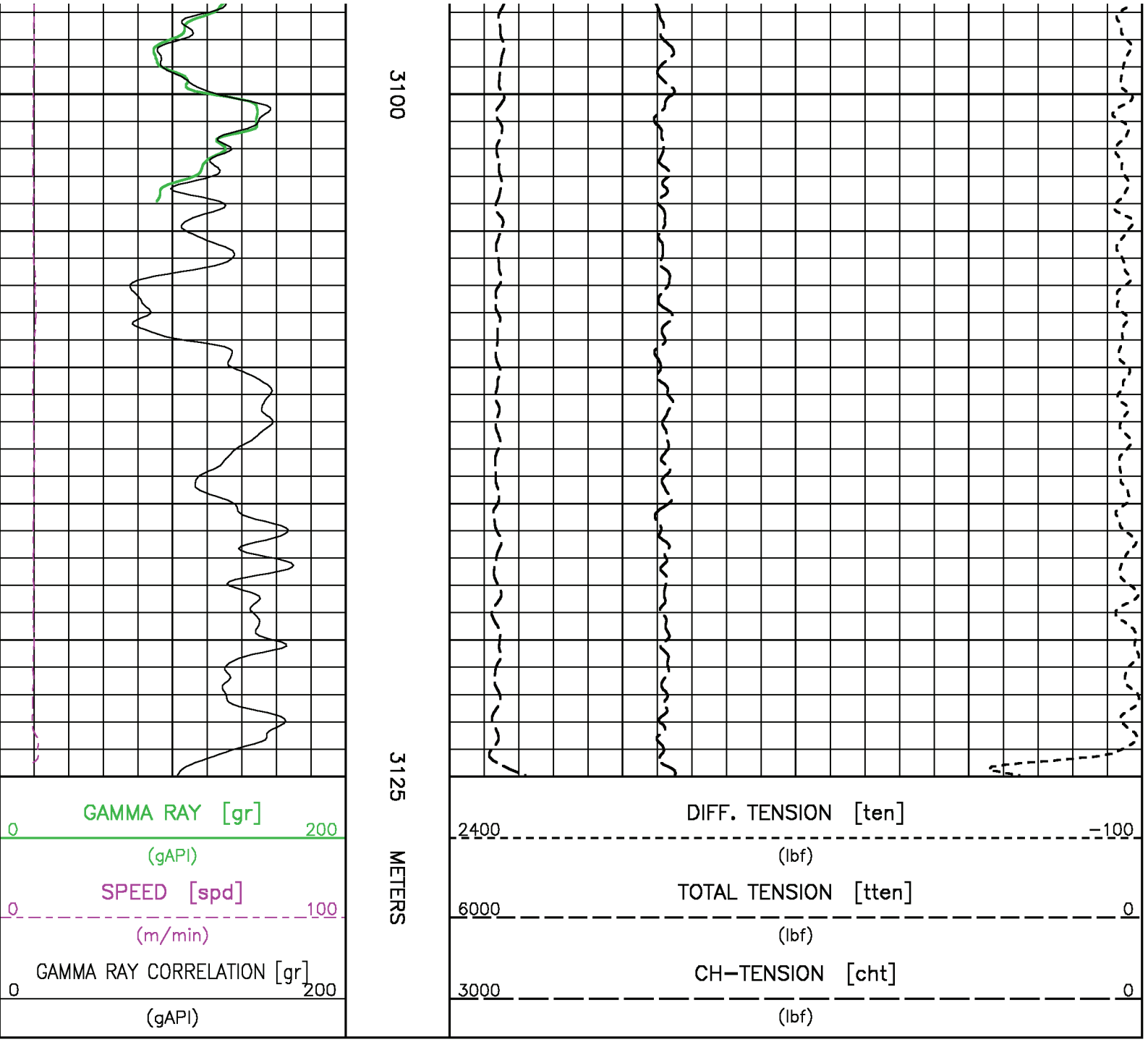




3050

3075





CALIBRATION / VERIFICATION SUMMARY

Source File: /data/dory1/k800g.tp1

CHT PRIMARY CALIBRATION SUMMARY

TOOL #: 3981XA 10360828

DATE/TIME PERFORMED: Mon Nov 17 03:48:27 2008

UNIT #: 3988XA 008881

	Signal Low (raw)	Signal High (raw)	Scale Mult	Scale Add	Engr Low (lbf)	Engr High (lbf)
CHT	-5.37	668.62	3.12	-283.28	-300.00	1800.00

WTSREF PRIMARY CALIBRATION SUMMARY

TOOL #: 3514XB 10170650 DATE/TIME PERFORMED: Sat Nov 15 10:03:00 2008

UNIT #: 3988XA 008881

	WCLP	WCHP	WZLP	WZHP	WZLN	WZHN
WTS TELE REF	498	4011	26	239	24	224

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 10422933 DATE/TIME PERFORMED: Fri Oct 17 15:18:57 2008

UNIT #: PERTH LAB CALB JIG #: 4702NK ba-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	327.36	1247.67	920.3 (830.0 960.0)	0.163	53.36	203.36	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 10422933 DATE/TIME PERFORMED: Sat Nov 15 03:55:00 2008

UNIT #: 3988XA 008881 VERI JIG #: 4702NK ba-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	28.78	960.40	0.163	4.69	156.53	151.84 (140.00 160.00)

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 10422933 DATE/TIME PERFORMED: Sat Nov 15 03:58:05 2008 DAYS SINCE CAL: 28

UNIT #: 3988XA 008881 VERI JIG #: 4702NK ba-862

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	29.29	954.69	0.163	4.77	155.60	150.83

SAMPLEVIEW PRIMARY CALIBRATION SUMMARY

TOOL #: 19701B 10440459 DATE/TIME PERFORMED: Thu Feb 28 10:11:31 2008

UNIT #: 3988XA 008881 TEMPERATURE: TREND WARMING

	At Start (degC)	At Finish (degC)
Temp Data	25.0	166.0

Bulb 1 nm-chan	Dark uV	Light uV	Diff@25C uV	Diff@50C uV	Diff@75C uV	Diff@100C uV	Diff@125C uV	Diff@150C uV	Diff@175C uV
425-A5	787	-322913	470886	434630	400145	370107	345817	328088	321890
475-A6	1273	-1857887	2241382	2130331	2033033	1953716	1885823	1839689	1875187
525-A7	96	-875346	1031779	978822	935666	901201	873605	859809	886606
575-A8	-1067	-1045235	1204892	1152674	1110434	1077570	1049349	1033529	1052556
632-B1	5664	-1062113	1250721	1201822	1159980	1123364	1089387	1064640	1071642
694-B2	473	-718880	1471113	1370942	1263657	1130913	982094	822484	663599
757-B3	-171	-712986	1184471	1108488	1019203	924629	832539	761305	682684
819-B4	280	-881301	1220398	1159583	1100215	1037168	965261	910979	863673
882-B5	-2682	-484651	1227079	1120644	1006626	872310	701433	561898	437331
944-B6	-1066	-1101725	1094410	1081674	1074076	1069399	1067653	1074025	1118143
1007-B7	-398	-1953259	1822777	1833420	1851028	1864634	1884854	1912272	1978182
1069-B8	-4582	-1211289	715160	802255	894967	987102	1066997	1143467	1243781
1300-A9	-421	-348270	455129	444629	434932	422504	404459	378053	329946
1420-A1	-2617	-422929	610046	587836	563857	536951	503210	460009	396938
1600-A10	-4571	-848897	1005013	995000	993975	984752	962501	914012	800854
1600R-A11	0	0	167918	160621	154674	148784	143650	134643	-7208
1670-B9	0	0	280856	276303	271191	264583	253817	234567	-13443
1682-B10	0	0	171044	162924	162376	159234	155524	145776	-8651
1740-A2	107319	-241573	448942	442286	435491	425186	409056	381196	329357

1935-A3	119490	-144651	311182	311585	312266	310249	303956	287786	249872
Ref-A12	4384	-809125	779442	753241	739734	738653	748553	773371	837412

Bulb 2	Dark	Light	Diff@25C	Diff@50C	Diff@75C	Diff@100C	Diff@125C	Diff@150C	Diff@175C
nm-chan	uV	uV	uV	uV	uV	uV	uV	uV	uV
425-A5	787	-322913	402853	365929	330413	299152	274953	261300	261298
475-A6	1273	-1857887	1192479	1112770	1041924	981666	931512	908579	935085
525-A7	96	-875346	977375	918584	867589	824572	790288	779722	820963
575-A8	-1067	-1045235	1153055	1090187	1036596	992404	953787	937702	968125
632-B1	5664	-1062113	1103736	1051333	1004618	963428	925013	904618	923998
694-B2	473	-718880	1399132	1299258	1193877	1062182	909259	771428	626867
757-B3	-171	-712986	901805	836337	761875	686816	613388	560689	509698
819-B4	280	-881301	1039932	982972	924281	864953	799264	752670	714957
882-B5	-2682	-484651	1120928	1018588	907754	783409	628242	502653	395904
944-B6	-1066	-1101725	1036071	1016962	1002506	991896	984844	992986	1041991
1007-B7	-398	-1953259	1366336	1367107	1373598	1370730	1380855	1404231	1469668
1069-B8	-4582	-1211289	540529	602828	670316	735049	792497	850421	932523
1300-A9	-421	-348270	384023	373543	363669	351818	335861	313591	274335
1420-A1	-2617	-422929	606828	581509	555533	527125	492699	450731	391828
1600-A10	-4571	-848897	832167	819645	815045	804120	783855	742047	649262
1600R-A11	0	0	5494	5405	5272	5094	4991	4869	596
1670-B9	0	0	251409	246596	241360	235283	225732	209737	-11344
1682-B10	0	0	139939	132926	131974	129061	125557	117732	-6724
1740-A2	107319	-241573	513528	505496	497470	485076	465006	433891	377840
1935-A3	119490	-144651	326303	324988	324314	320907	313333	296148	258006
Ref-A12	4384	-809125	911894	880633	863844	860715	872160	905843	996137

Bulb 1	Relative	MULT@25C	MULT@50C	MULT@75C	MULT@100C	MULT@125C	MULT@150C	MULT@175C
nm-chan	Intensity	uV	uV	uV	uV	uV	uV	uV
475-A6	0.31319	0.20556	0.24055	0.28055	0.32191	0.36576	0.41356	0.44907
525-A7	0.47001	0.67014	0.78714	0.91500	1.04517	1.17745	1.30796	1.38776

575-A8	0.62683	0.76533	0.88400	1.01177	1.13853	1.27097	1.40980	1.53353
632-B1	0.80560	0.94756	1.08485	1.23694	1.39758	1.57324	1.77248	1.97363
694-B2	1.00000	1.00000	1.21724	1.52179	2.01337	2.82629	4.33605	7.51482

Bulb 2 nm-chan	Relative Intensity	MULT@25C uV	MULT@50C uV	MULT@75C uV	MULT@100C uV	MULT@125C uV	MULT@150C uV	MULT@175C uV
475-A6	0.31319	0.36746	0.44452	0.53689	0.63714	0.73840	0.84607	0.90763
525-A7	0.47001	0.67283	0.80237	0.95244	1.11075	1.26185	1.41306	1.44835
575-A8	0.62683	0.76060	0.89627	1.04973	1.20650	1.36304	1.53724	1.63867
632-B1	0.80560	1.02121	1.18563	1.37494	1.57491	1.78280	2.03202	2.21309
694-B2	1.00000	1.00000	1.22155	1.53193	2.03876	2.90332	4.39683	7.56591

RCICAL-K PRIMARY CALIBRATION SUMMARY

GAUGE #: 1970KB 152601 DATE/TIME PERFORMED: Sat Nov 15 10:03:43 2008

UNIT #: 3988XA 008881

Pres	Coeff	A0	A1	A2	A3
A	-6.574122E+03	1.515091E+01	-9.027510E-01	-1.824994E-02	1.453620E-05
B	7.944955E+01	4.298882E+01	-3.266436E-02	4.558076E-05	-4.857807E-08
C	-5.978849E-02	-1.186292E-02	1.465653E-05	-1.911062E-07	-8.363595E-11
D	5.351629E-05	7.084892E-06	2.042652E-08	5.385454E-10	6.304175E-13
E	-2.167475E-08	-2.653528E-09	-3.655071E-11	-6.005857E-13	-8.820623E-16

	FPO	FTO	MP	MT
Prescale A&M	19217.0	57176.0	0.01	0.01

	F(pres) (Hz)	F(temp) (Hz)	F(ref) (Hz)	DIFF(pres) (psi)	Pressure (psi)	Temp (degC)
Coeff Test	12000.0	1500.0	2200000.0	1.00000	7350.83	247.18

Temp	Coeff	A0	A1	A2	A3
G	2.658172E+02	2.443555E+01	-7.003439E-01	-7.005939E-04	-4.673051E-07

H	-9.011310E-02	-2.448919E-01	-5.564957E-04	-5.543471E-07	-1.075315E-10
I	-7.612012E-06	-9.740921E-05	-1.668676E-07	-4.992820E-11	-1.135993E-13
J	-3.196087E-08	-5.567044E-08	-2.822481E-10	-7.099308E-13	-4.911481E-16

RCICAL-L PRIMARY CALIBRATION SUMMARY

GAUGE #: 1970LB 172883 DATE/TIME PERFORMED: Sat Nov 15 10:04:40 2008

UNIT #: 3988XA 008881

Pres Coeff	A0	A1	A2	A3
A	-5.126519E+03	1.483311E+01	-3.878216E-01	-1.826539E-02	1.011337E-05
B	6.313430E+01	4.134606E+01	-2.100201E-02	2.195811E-05	-6.009201E-08
C	-2.099522E-02	-2.073436E-03	1.024494E-05	-3.252679E-08	5.884378E-11
D	9.814062E-06	9.097029E-07	2.435764E-10	8.958180E-11	1.050596E-13
E	1.558814E-09	-3.052116E-10	-5.246681E-12	-1.073928E-13	-2.178041E-16

	FP0	FT0	MP	MT
Prescale A&M	21603.0	52912.0	0.01	0.01

	F(pres) (Hz)	F(temp) (Hz)	F(ref) (Hz)	DIFF(pres) (psi)	Pressure (psi)	Temp (degC)
Coeff Test	12000.0	1500.0	2200000.0	1.00000	5428.29	250.27

Temp Coeff	A0	A1	A2	A3
G	2.509630E+02	2.400657E+01	-7.195598E-01	-8.244769E-04	-6.466680E-07
H	-9.615185E-03	8.213397E-05	7.976992E-06	9.022729E-08	2.410135E-10
I	4.011424E-05	-3.372352E-07	-2.745081E-08	-3.357719E-10	-9.460584E-13
J	-4.390942E-08	2.662458E-10	1.658349E-11	2.747998E-13	8.998712E-16

BAKER HUGHES

Baker Atlas

EOLIPS

FIELD DORY COUNTRY AUSTRALIA		API NO:
LOCATION: LAT : 038DEG 35' 19.759" S LONG: 148DEG 32' 51.925" E	ELEVATIONS: KB - DF 21.5 M GL 518.5 M	FIELD PRINT SCALE 1:200 SUITE 1
	DATE 17-NOV-2008	

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Dory -1

SUITE-1 RUN-2 Baker Atlas RCI

PRESSURE POINT & SAMPLING PROGRAMME

17/11/2008

			RT-AHD =	21.5												
	Actual	Actual	Actual			Time	Initial	Final		Initial	Final	Buildup	Time			
Pressure	Depth	Depth	Depth	Depth	Mobility	Pad	Ini Hydro	Fin Hydro	Drawdown	Drawdown	Buildup	Time	Pad	Temp.	Remarks	Overpull / Fall Off Point
Point #	mMDRT	mTVDRT	mTVDAHD	ftTVDAHD	md/cp	Set	Pressure	Pressure	Volume	Pressure	Pressure	mins	Retracted	deg C		(lbs)
							psia	psia	cc	psia	psia					
1	2813.2	2812.1	2790.6	9155.0		6:32	4644.1	4644.4	10			1	6:33	63.3	Tentative test - draw down - on point for 1 min. Pull off point ok - 200 lbs overpull	200
1a					6.7	6:39	4645.0	4645.0	2 x 5	2973.5	4029.65	45 sec	6:45	63.6	DD-1 & 2 good test	
2	2814.0	2812.9	2791.4	9157.6	19.7	6:52	4646.4		5	3672.3	4030.12	40 sec		63.7	DD-1	-200
					22.7			4646.2	5	3672.3	4029.94	30 sec	6:58		DD-2 good test	
3	2815.0	2813.9	2792.4	9160.9	349.9	7:03	4648.1		10	4006.7	4030.23	70 sec		63.8	DD-1	-300
					421.6			4648.5	10	4011.7	4030.67	150 sec	7:10		DD-2 good test	
4	2817.3	2816.2	2794.7	9168.4	267.6	7:15	4652.5		10	4002.4	4031.63	240 sec		63.9	DD-1	-400
					337.0			4652.6	10	4007.1	4031.36	110 sec	7:23		DD-2 good test	
5	2819.2	2818.1	2796.6	9174.6		7:27	4655.7	4655.7	10	703.3	0	150 sec	7:33	63.9	Tight - curtailed	-400
6	2820.1	2819.0	2797.5	9177.6	404.3	7:39	4657.0		10	4011.2	4031.81	210 sec		64.1	DD-1	-800
					533.3			4657.2	10	4017.4	4032.36	150 sec	7:47		DD-2 good test	
7	2822.0	2820.9	2799.4	9183.8	889.4	7:50	4660.4		10	4022.2	4032.59	190 sec		64.1	DD-1	-400
					998.4			4660.2	10	4024.3	4032.50	50 sec	7:57		DD-2 good test	
8	2823.0	2821.9	2800.4	9187.1	849.5	8:01	4662.3		10	4023.4	4033.03	110 sec		64.2	DD-1	-200
					1047.0			4662.7	10	4025.4	4033.32	90 sec	8:06		DD-2 good test	
9	2824.3	2823.2	2801.7	9191.4	1048.0	8:10	4664.3	4664.3	10	4025.7	4033.38			64.2	DD-1 good test	-400
10	2828.7	2827.6	2806.1	9205.8	5.5	9:53	4671.3		10	2790.0	4036.76	280 sec		65.2	DD-1	-900
					3.9			4671.1	10	2237.2	4036.73	320 sec	10:06		DD-2 good test	
11	2829.8	2828.7	2807.2	9209.4	524.1	10:11	4673.4		10	4020.2	4035.45	70 sec		65.3	DD-1	-800
					678.5			4671.3	10	4024.4	4035.94	110 sec	10:16		DD-2 good test	
12	2832.0	2830.9	2809.4	9216.6	651.1	10:23	4677.2		10	4023.9	4036.06	100 sec		65.4	DD-1	-500
					571.2			4677.4	10	4022.6	4036.28	60 sec	10:29		DD-2 good test	
13	2833.5	2832.4	2810.9	9221.5	662.2	10:32	4679.9		10	4024.9	4036.76	100 sec		65.5	DD-1	-500
					830.9			4680.4	10	4027.6	4037.08	100 sec	10:38		DD-2 good test	
14	2836.0	2834.9	2813.4	9229.7	1278.0	10:42	4684.1		10	4031.6	4037.61	60 sec		65.5	DD-1	-300
					1643.0			4684.4	10	4033.4	4038.16	60 sec	10:47		DD-2 good test	
															Pump and clean up before next pre-test	
15	2837.5	2836.4	2814.9	9234.7	1368.0	10:52	4686.2		10	4008.8	4037.78	120 sec		65.5	DD-1	-400
					1251.0			4686.5	10	4031.8	4037.84	40 sec	10:59		DD-2 good test	
16	2839.0	2837.9	2816.4	9239.6	1467.0	11:01	4688.8		10	4033.3	4038.41	120 sec		65.5	DD-1	-400
					1496.0			4689.7	10	4034.0	4038.92	100 sec	11:08		DD-2 good test	
17	2842.0	2840.9	2819.4	9249.4	247.9	11:12	4694.3		10	4008.9	4039.43	105sec		65.5	DD-1	-500
					318.2			4694.6	10	4015.8	4039.74	70 sec	11:18		DD-2 good test	
18	2843.2	2842.1	2820.6	9253.4	6.7	11:22	4696.5		10	2987.7	4040.15	540 sec		65.6	DD-1 failed to stabilse properly, took first initial close stabilisation point. Total time 13 minutes.	-800
					9.2			4696.4	5	3337.8	4040.08	280 sec	11:43		DD-2 good test	

	Actual	Actual	Actual			Time	Initial	Final		Initial	Final	Buildup	Time				
Pressure	Depth	Depth	Depth	Depth	Mobility	Pad	Ini Hydro	Fin Hydro	Drawdown	Drawdown	Buildup	Time	Pad	Temp.	Remarks	Overpull / Fall Off Point	
Point #	mMDRT	mTVDRT	mTVDAHD	ftTVDAHD	md/cp	Set	Pressure	Pressure	Volume	Pressure	Pressure	mins	Retracted	deg C		(lbs)	
							psia	psia	cc	psia	psia						
19	2845.4	2844.3	2822.8	9260.6	685.6	11:48	4700.4		5	4032.4	4034.07	120 sec		65.6	DD-1	-700	
					806.8			4700.1	10	4033.1	4042.96	30 sec	11:55		DD-2 good test		
20	2846.7	2845.6	2824.1	9264.8	367.7	11:58	4702.4		10	4024.5	4045.0	105 sec		65.7	DD-1	-900	
					452.8			4702.4	10	4027.3	4045.04	50 sec	12:05		DD-2 good test		
21	2851.7	2850.6	2829.1	9281.2	5.9	12:07	4710.7		10	2907.5	4053.97	140 sec		65.7	DD-1	-1100	
					6.6			4710.6	5	3099.7	4053.91	180 sec	12:16		DD-2 good test		
22	2863.7	2862.6	2841.1	9320.6	4.2	12:21	4730.5		10	2429.1	4066.00	440 sec		65.7	DD-1	-1100	
					4.7			4730.4	5	2805.4	4065.76	380 sec	12:39		DD-2 good test		
															Correlation pass before next point		
23	2876.0	2874.9	2853.4	9360.9	6.7	12:54	4750.5		10	3037.0	4066.48	200 sec		66.2	DD-1	-300	
					8.3			4750.5	5	3280.1	4066.41	210 sec	13:03		DD-2 good test		
24	2879.5	2878.4	2856.9	9372.4		13:07	4756.2		10					66.3	DD-1 failed to stabilise after 230 seconds	-600	
					84.9				10	3980.5	4072.09	60 sec			DD-2 good test		
					91.2			4756.1	10	3988.4	4072.08	50 sec	13:20		DD-3 good test		
25	2883.6	2882.5	2861.0	9385.8	11.2	13:26	4763.0		10	3416.3	4078.69	200 sec		66.3	DD-1	-700	
					12.6			4762.8	5	3536.8	4078.58	80 sec	13:33		DD-2 good test		
26	2887.0	2885.9	2864.4	9397.0	14.1	13:37	4768.5		10	3540.5	4083.33	220 sec		66.4	DD-1	-700	
					19.8			4768.4	5	3506.9	4083.28	60 sec	13:45		DD-2 good test		
27	2890.5	2889.4	2867.9	9408.5	3.7	13:49	4774.1		10	2375.6	4097.11	530 sec		66.5	DD-1	-1300	
					4.5			4773.9	5	2796.2	4096.45	500 sec	14:10		DD-2 good test		
28	2901.6	2900.5	2879.0	9444.9	3.8	14:15	4792.2		10	2379.4	4083.41	520 sec		66.6	DD-1	-1000	
					4.4			4792.1	5	2775.5	4083.1	420 sec	14:34		DD-2 good test		
29	2907.8	2906.7	2885.2	9465.2	14.3	14:37	4802.2		10	3591.8	4086.89	90 sec		66.7	DD-1	-500	
					14.9			4802.2	5	3640.1	4086.83	90 sec	14:43		DD-2 good test		
30	2909.0	2907.9	2886.4	9469.2	43.9	14:46	4804.2		10	3916.2	4088.61	60 sec		67.0	DD-1	-500	
					30.2			4804.1	10	3467.4	4088.62	90 sec	14:52		DD-2 good test		
															Correlation pass before next point		
31	2933.8	2932.7	2911.2	9550.5	1206.0	15:04	4844.6		10	4171.4	4177.69	40 sec		67.5	DD-1	-300	
					1466.0			4844.6	10	4172.6	4177.71	50 sec	15:10		DD-2 good test		
32	2940.5	2939.4	2917.9	9572.5	4991.0	15:14	4855.6		10	4185.9	4187.39	50 sec		67.6	DD-1	-400	
					6274.0			4855.6	10	4186.2	4187.42	20 sec	15:19		DD-2 good test		
33	2952.9	2951.8	2930.3	9613.1		15:24			10				15:26		No seal. Move off and on to station and retry	-400	
33a	2952.9					15:30	4875.6	4875.7	10				15:33	67.8	No seal. Move onto next station		
34	2957.3	2956.2	2934.7	9627.6		15:38	4882.7	4882.9	10				15:42	68.0	Tight - move to 2957.0 and retry	-400	
34a	2957.0	2955.9	2934.4	9626.7	3.5	15:45	4882.5		10	2413.0	4212.06	330 sec		68.2	DD-1 good test	-500	
					4.6			4882.6	5	2817.1	4207.09	500 sec	16:01		DD-2 curtailed after 500 sec, didn't stabilise		
35	2963.0	2961.9	2940.4	9646.3	368.4	16:06	4892.2		10	4200.1	4220.12	130 sec		68.3	DD-1	-600	
					501.9			4892.2	10	4205.3	4220.13	50 sec	16:11		DD-2 good test		
															Correlation pass before next point		
36	2971.5	2970.4	2948.9	9674.1	208.9	16:24	4906.0		10	4196.5	4232.26	120 sec		68.7	DD-1	-600	
					193.7			4905.8	10	4194.0	4232.25	20 sec	16:29		DD-2 good test		
37	2989.0	2987.9	2966.4	9731.5	1773.0	16:34	4934.5		10	4253.3	4257.53	160 sec		68.8	DD-1	-400	
					2868.0			4934.6	10	4254.9	4257.46	30 sec	16:41		DD-2 good test		
															Correlation pass before next point		
38	3058.6	3057.5	3036.0	9959.8	20.7	16:58	5048.4		10	4009.5	4365.48	240 sec		70.5	DD-1	-400	

	Actual	Actual	Actual			Time	Initial	Final		Initial	Final	Buildup	Time				
Pressure	Depth	Depth	Depth	Depth	Mobility	Pad	Ini Hydro	Fin Hydro	Drawdown	Drawdown	Buildup	Time	Pad	Temp.	Remarks	Overpull / Fall Off Point	
Point #	mMDRT	mTVDRT	mTVDAHD	ftTVDAHD	md/cp	Set	Pressure	Pressure	Volume	Pressure	Pressure	mins	Retracted	deg C		(lbs)	
							psia	psia	cc	psia	psia						
					22.4			5048.5	5	4046.0	4365.41	80 sec	17:06		DD-2 good test		
39	3059.4	3058.3	3036.8	9962.4	57.6	17:11	5049.9		10	4235.8	4365.80	190 sec		70.8	DD-1	-50	
					58.4			5049.9	5	4240.5	4365.76	60 sec	17:18		DD-2 good test		
40	3060.3	3059.2	3037.7	9965.4	142.3	17:21	5051.5		10	4313.2	4366.25	240 sec		70.9	DD-1	-600	
					150.8			5051.5	10	4316.6	4366.04	60 sec	17:29		DD-2 good test		
41	3062.3	3061.2	3039.7	9972.0	9.6	17:33	5054.8		10	3825.9	4368.14	400 sec		70.9	DD-1	-500	
					10.7			5054.4	5	3719.2	4367.29	180 sec	17:46		DD-2 good test		
															Move to 2845.4 and acquire sample		
42	3066.7	3065.6	3044.1	9986.4	3351.0	19:13	5061.1		10	4342.7	4371.1	50 sec		70.4	DD-1		
					1420.0			5059.5	10	4342.7	4371.1	50 sec	19:20		DD-2 good test	-300	
43	3086.5	3085.2	3063.7	10051.0		19:33	5093.7	5093.5	10			20 sec	19:35	71.2	Tight - curtailed. Built to 2300 psi from 2080 psi.		
43a	3086.6	3085.3	3063.8	10051.2		19:39	5094.2	5094.1	10			50 sec	19:42	71.3	Returned to point 3086.6m - Tight / curtailed. Engineer concerned for packer damage.		
44	3087.3	3086.1	3064.6	10053.9		19:47	5095.6	5095.2	10			50 sec	19:49	71.4	Tight - curtailed. Built to 2300 psi from 2080 psi.	-50	
44a	3087.4	3086.2	3064.7	10054.1		19:53	5095.5	5095.3	5			50 sec	19:55	71.5	Returned to point 3087.4m - Tight / curtailed. Engineer concerned for packer damage.		
45	3098.3	3097.1	3075.6	10090.0	120.0	20:00	5113.1		10	4362.2	4420.4	120 sec		71.5	DD-1		
					129.0			5113.3	10	4362.2	4420.4	60 sec	20:05	71.6	DD-2 good test	-300	
46	3099.8	3098.6	3077.1	10094.9	11.5	20:09	5116.4		10	3790.2	4422.7	270		71.7	DD-1	-600	
					11.6			5115.4	5	3844.9	4422.7	100	20:17	71.7	DD-2 good test		
47	2808	2806.9	2785.4	9137.9		22:02	4638.3	4636.8	10				22:04	68.1	No seal - drop off and return to point - 0.1m -Tem guage slow to stabilise.		
47a	2807.9	2806.8	2785.3	9137.5		22:10	4637.9	4636.8	10				22:13	67.0	No seal - drop off and return to point + 0.5m		
47b	2808.5					22:17	4639.0	4637.3	10				22:20	66.5	No seal - abandon point - POOH		
															Dory - 1 RCI run complete.		
							Ini Hydro	**Fin Hydro**	**Drawdown**	**Drawdown**	**Buildup**	**Time**	**Pad**	**Temp.**			
Sample					**Time**	**Mobility**	**Pressure**	**Pressure**	**Volume**	**Pressure**	**Pressure**	**mins**	**Retracted**	**deg C**	res and ohms		
1	2824.3	2823.2	2801.7	9191.4	**8:15**	1952	4664.2	4664.3	10	4013.4	4033.52			64.2	Extended pad to wall		
C # 1																	
															Test point for 35mins - curtailed to test for difficulty pulling off wall (-400 lb fall weight).		
															1786 cc pumped		
					8:45										Stop pumping		
															shut-off pressure = 4035 psi		
					8:47							39	8:47		Retract /Pull off point and return to station		
1a	2824.3	2823.2	2801.7	9191.4	8:56	4773	4663.2	4663.2	10	4026.6	4035.29			65.0	Pad extended		
					8:57										Draw down 10cc		
					9:00										Small pump 303 cc		
					9:03										Large pump 500 cc / 40 sec - max pump rate		
					9:35										Pumped through 25000 cc.		

	Actual	Actual	Actual			Time	Initial	Final		Initial	Final	Buildup	Time				
Pressure	Depth	Depth	Depth	Depth	Mobility	Pad	Ini Hydro	Fin Hydro	Drawdown	Drawdown	Buildup	Time	Pad	Temp.	Remarks	Overpull / Fall Off Point	
Point #	mMDRT	mTVDRT	mTVDAHD	ftTVDAHD	md/cp	Set	Pressure	Pressure	Volume	Pressure	Pressure	mins	Retracted	deg C		(lbs)	
							psia	psia	cc	psia	psia						
					9:37										Take sample -		
					9:42										Retracting packer. No trouble off wall		
2	2845.4	2844.3	2822.8	9260.6	**18:00**	914.1	4698.3	4695.5	10.0	4035.1	4043.3	46	18:45	68.8	Extended pad to wall, check mobility.		
C # 2															Draw down 10cc		
					18:02										Small pump - drawdown 25 psi		
					18:04										Changed to large pump 500 cc / 40 sec - max pump rate - drawdown 25 psi		
					18:10										Sample stable & clean - Sample View indicates Water		
															Continue to pump - 24500 cc		
					18:41										Take Sample - 4200 psi closing pressure		
					18:44										Retracting packer.	2000	
					18:45										Pad retracted. Overpull off wall		
3																	
C # 3	3060.3	3059.2	3037.7	9965.4	20:25	8 (pervious	5051.6	5051.9	10	3750.0	4366.4	45		71.8	Extended pad to wall, Quick check mobility only. Pretest did not stabilise		
															Draw down 10cc - pressure built to 4366 psi - good		
					20:29										Start small pump - drawdown 240 psi		
					20:31										Changed to large pump 500 cc / 68 sec - pump rate - drawdown 120 psi		
					20:38										Draw down 600 psi - pumped 2500 cc		
					20:45										Pumped 5500 cc - gas and water on sample view.		
					20:54										Pumped 9500 cc - 630psi - refractive index - gas		
					21:05										Take Sample		
					21:08										Close tank - 4200 psi closing pressure		
					21:11										Off point - no overpull. 14300 cc total pumped.		
4																	
C # 4	3066.7	3065.6	3044.1	9986.4	21:18	970.9	5062.5	5060.1	10	4363.9	4372.0	21		71.6	Extended pad to wall, check mobility.		
					21:19										Draw down 10cc - pressure built to 4372 psi - good mobility.		
					21:25										Max pum 500 cc / 50 - drawdown 18psi		
					21:33										Pumped 6000 cc		
															Take Sample		
					21:37										Close tank - 4140 psi closing pressure		
					21:39								21:38		Off point - no overpull. 14300 cc total pumped.	1000	

Borehole Seismic Survey

Field Report

ZVSP

Prepared by

Baker Atlas

for

APACHE ENERGY LIMITED

DORY-1

DORY

AUSTRALIA

The preliminary processing of the data contained within this Field Report has been performed by a Baker Atlas Field Engineer, who has relied on experience and has exercised his/her best judgment based on measurements, empirical relationships and assumptions, and industry practice, which are not infallible. Professional opinions of this nature may differ. Consequently, Baker Atlas will not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation or calculations contained within this report.

Survey report

Survey date	18-NOV
Job reference	SO#700041
Type of service	ZVSP
Country	AUSTRALIA
Oilfield	DORY
Well location east	148 32' 51.925 E
Well location north	038 35' 19.759 N
Rig name	OCEAN PATRIOT
Rig heading	264 degrees
Datum description	MSL
Seismic datum elevation	at MSL
Well reference level	DF
Reference level elevation	21.5 m above MSL
Water velocity	1500.0 m/s
Total Depth	3780 M (BOTTOM INTERVAL)
Well deviation	STRAIGHT WELL
Casing details	340mm @1534M
Liner details	N/A
Wireline contractor	BAKER ATLAS
Observer	BILLY CHIN/GATOT PAMUNGKAS
Client representative	G. FAWNS
Tool system	ANALOG
Controller type	DAQ
Sample interval	1000 us
Tool system zeroed at	Top Receiver
Gamma tool	GRT3
Gamma tool depth offset	15.8 m
Sinker weight	N/A
Cable adapters	N/A
Additional equipment	N/A

Receiver report

Tool 1

Type	ESR
Sensor pack	GIMBAL
Serial number	
Depth offset from zero	0.00 m
Arm	Extended

Tool 2

Type	ESR
Sensor pack	GIMBAL
Serial number	
Depth offset from zero	15.00 m
Arm	Extended

Sensor polarity is Baker Hughes version 1.1 Jan 07

Channel report

Channel allocation			Sensor description	Scaling applied
1	Tool 1	VZ	SMC1850-VRT-10HZ	-1.000
2	Tool 1	HX	SMC1850-HOR-10HZ	1.000
3	Tool 1	HY	SMC1850-HOR-10HZ	1.000
4	Tool 2	VZ	SMC1850-VRT-10HZ	-1.000
5	Tool 2	HX	SMC1850-HOR-10HZ	1.000
6	Tool 2	HY	SMC1850-HOR-10HZ	1.000
7	Reference			1.000

Source 1 report

MARINE

Observer	Billy Chin/Gatot Pamungkas
Source	2 x G Gun 250cuin
SCX (Easting)	-19.2 m
SCY (Northing)	-65.4 m
Source control system	Hotshot
External delay	0.0 ms
Air supply	Rucker
Airgun pressure	1800 psi
Fire control	RELAY A
Source reference channel	7
Record data length	6000 samples
QC data length	5000 samples
Source reference elevation (SRE)	at MSL
Source depth below SRE	5.0 m
Monitor	MP8D below source
Monitor distance from source	3.0 m
Water depth	518.5 m

Journal

Date	Time	Record	Src/Set	Stk	MD(m)	Fix	SCX(m)	SCY(m)
18Nov2008	12:30:53	>tool on sea bed, stand by for gun deployment						
18Nov2008	12:41:56	>St by for rig refueling						
18Nov2008	13:16:07	1	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:16:52	2	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:18:50	3	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:19:25	4	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:19:56	5	1/1	1	1365.0	0	-19.2	-65.4
18Nov2008	13:23:43	>un-correlated depth, CS #1						
18Nov2008	14:30:16	6	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:30:57	7	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:32:27	8	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:33:03	9	1/1	2	2175.0	0	-19.2	-65.4
18Nov2008	14:36:04	10	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:36:38	11	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:37:05	12	1/1	3	2175.0	0	-19.2	-65.4
18Nov2008	14:40:02	>depth correlated ~1500M, CS #2 @ 2175M completed						
18Nov2008	15:18:03	>GR correlation completed, depth shift 1.8M						
18Nov2008	15:19:45	13	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:20:15	14	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:21:57	15	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:22:35	16	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:23:25	17	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:24:46	18	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:26:22	19	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:27:15	20	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:28:04	21	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:29:09	22	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:29:43	23	1/1	4	2985.0	0	-19.2	-65.4
18Nov2008	15:59:52	>CS #3 @2985m						
18Nov2008	16:03:45	>GR correlation completed ~3665M, depth shift -0.8						
18Nov2008	16:09:01	>bottom tool held up @ 3773M; first tool station will be 3765M						
18Nov2008	16:11:15	24	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:11:52	25	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:12:23	26	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:15:27	27	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:17:57	28	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:18:55	29	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:19:35	30	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:20:07	31	1/1	5	3765.0	0	-19.2	-65.4
18Nov2008	16:20:51	>noisy & guns out of sync						
18Nov2008	16:28:52	32	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:29:21	33	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:29:45	34	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:30:14	35	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:30:46	36	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:31:20	37	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:32:07	38	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:35:48	39	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:36:13	40	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:36:46	41	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:37:51	42	1/1	6	3765.0	0	-19.2	-65.4
18Nov2008	16:44:31	43	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:45:47	44	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:47:52	45	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:48:52	46	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:49:25	47	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:50:00	48	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:50:40	49	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:51:34	50	1/1	7	3735.0	0	-19.2	-65.4

Journal

Date	Time	Record	Src/Set	Stk	MD(m)	Fix	SCX(m)	SCY(m)
18Nov2008	16:52:05	51	1/1	7	3735.0	0	-19.2	-65.4
18Nov2008	16:58:55	52	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	16:59:23	53	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:00:06	54	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:00:48	55	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:01:16	56	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:02:01	57	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:03:40	58	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:04:07	59	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:04:34	60	1/1	8	3705.0	0	-19.2	-65.4
18Nov2008	17:10:44	61	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:11:35	62	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:12:25	63	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:13:43	64	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:14:31	65	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:14:58	66	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:15:25	67	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:15:52	68	1/1	9	3675.0	0	-19.2	-65.4
18Nov2008	17:24:33	69	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:26:05	70	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:26:32	71	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:29:16	72	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:30:00	73	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:34:34	74	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:35:31	75	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:36:44	76	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:37:10	77	1/1	10	3645.0	0	-19.2	-65.4
18Nov2008	17:43:00	78	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:43:28	79	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:43:55	80	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:44:22	81	1/1	11	3615.0	0	-19.2	-65.4
18Nov2008	17:49:24	82	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:50:22	83	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:51:09	84	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:51:48	85	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:53:35	86	1/1	12	3585.0	0	-19.2	-65.4
18Nov2008	17:58:31	>Instructed to limit number of shots to 3 good shots only.						
18Nov2008	18:00:39	87	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:03:48	88	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:05:43	89	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:09:10	90	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:10:01	91	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:10:32	92	1/1	13	3555.0	0	-19.2	-65.4
18Nov2008	18:13:32	93	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:13:59	94	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:14:31	95	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:14:56	96	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:16:24	97	1/1	14	3525.0	0	-19.2	-65.4
18Nov2008	18:18:24	>stand by for the whale						
18Nov2008	19:27:11	>Survey abandoned.						

Preliminary

Seismic datum elevation : at MSL
Well reference elevation (DF) : 21.5 m above MSL
Source reference elevation (SRE) : at MSL
Source depth below SRE : 5.0 m
Source to monitor : 3.0 m
Source offset : 68.2 m
Correction velocity for Ts : 1500 m/s

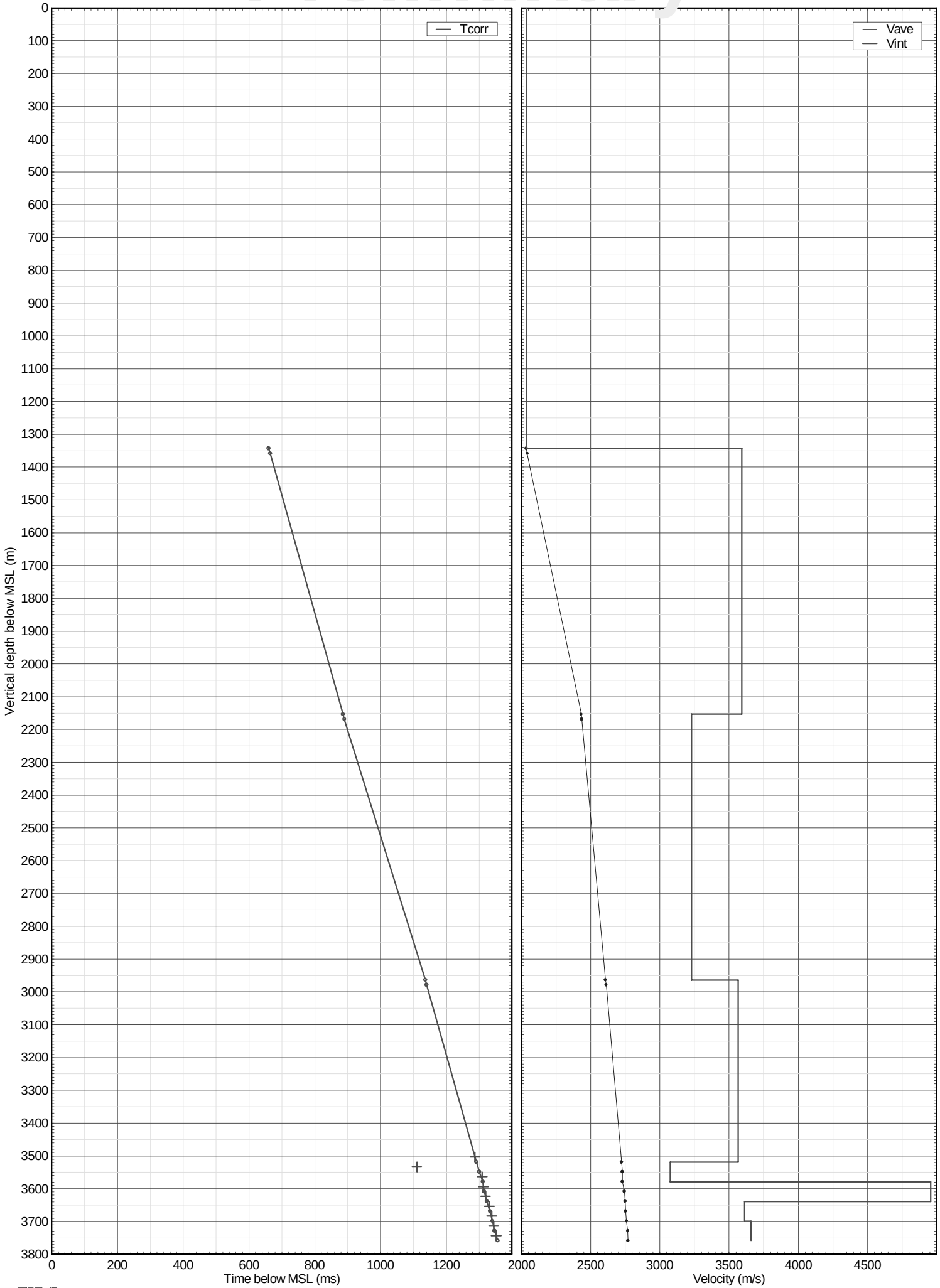
MD = Measured Depth of receiver below DF (m)
TVDSD = True Vertical Depth of receiver below MSL (m)
Tpick = Time from reference pick to receiver pick (ms)
Tt = Travel time from source to receiver (ms)
(Tpick + external reference delay(0.0) + source to monitor delay)
SGO = Source to receiver lateral offset (m)
Tv = Vertical time from source to receiver (ms)
Ts = Static time correction from source to MSL (ms)
Tcorr = Corrected vertical time from MSL to receiver (Tv+Ts) (ms)
Vave = Average velocity from MSL to receiver (m/s)
Vint = Interval velocity (m/s) above TVDSD

MD	TVDSD	Tpick	Tt	SGO	Tv	Ts	Tcorr	Vave	Vint
1365.0	1343.5	655.6	657.6	68.2	656.7	3.3	660.1	2035	2035
1380.0	1358.5	660.7	662.7	68.2	661.9	3.3	665.2	2042	
2175.0	2153.5	880.7	882.7	68.2	882.3	3.3	885.6	2432	3592
2190.0	2168.5	885.4	887.4	68.2	887.0	3.3	890.3	2436	
2985.0	2963.5	1131.4	1133.4	68.2	1133.1	3.3	1136.4	2608	3229
3000.0	2978.5	1135.4	1137.4	68.2	1137.1	3.3	1140.4	2612	
3540.0	3518.5	1287.0	1289.0	68.2	1288.8	3.3	1292.1	2723	3566
3570.0	3548.5	1295.0	1297.0	68.2	1296.8	3.3	1300.1	2729	
3600.0	3578.5	1306.5	1308.5	68.2	1308.3	3.3	1311.6	2728	3076
3630.0	3608.5	1310.6	1312.6	68.2	1312.4	3.3	1315.7	2743	
3660.0	3638.5	1318.6	1320.6	68.2	1320.4	3.3	1323.7	2749	4956
3690.0	3668.5	1327.7	1329.7	68.2	1329.5	3.3	1332.8	2752	
3720.0	3698.5	1335.2	1337.2	68.2	1337.0	3.3	1340.3	2759	3613
3750.0	3728.5	1341.9	1343.9	68.2	1343.7	3.3	1347.0	2768	
3780.0	3758.5	1351.6	1353.6	68.2	1353.4	3.3	1356.7	2770	3658

Preliminary

Field computations

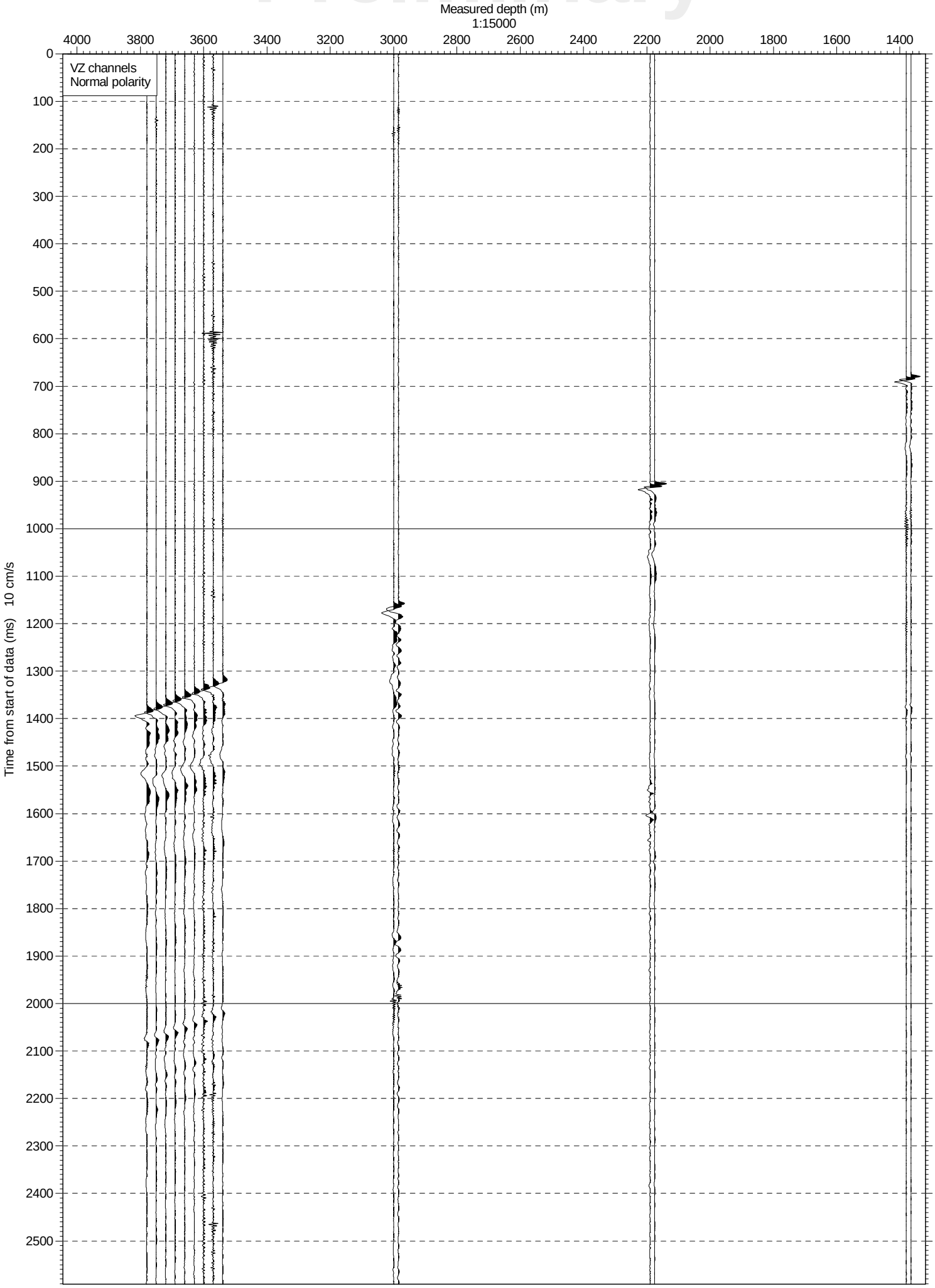
Dataset 1



Preliminary

Stacked data

Dataset 1



Seismic datum elevation : at MSL
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MD = Measured Depth of receiver below DF (m)
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Tt = Travel time from source to receiver (s)
(Tpick + external reference delay(0.000000) + source to monitor delay)
SGO = Source to receiver lateral offset (m)
Tv = Vertical time from source to receiver (s)
Ts = Static time correction from source to MSL (s)
Tcorr = Corrected vertical time from MSL to receiver (Tv+Ts) (s)
Vave = Average velocity from MSL to receiver (m/s)
Vint = Interval velocity (m/s) above TVDSD
VRMS = RMS velocity
TWT = Two-way vertical time below MSL
SCX/SCY = Source coordinates relative to wellhead (m)
RCX/RCY = Receiver coordinates relative to wellhead (m)

MD m	TVD m	TVDSD m	Tpick s	Tt s	SGO m	Tv s		Ts s
1365	1365	1343.5	0.6556	0.6576	68.16	0.656749	0.003333	0.660082
1380	1380	1358.5	0.6607	0.6627	68.16	0.661861	0.003333	0.665195
2175	2175	2153.5	0.8807	0.8827	68.16	0.882256	0.003333	0.885589
2190	2190	2168.5	0.8854	0.8874	68.16	0.88696		0.003333
2985	2985	2963.5	1.1314	1.1334	68.16	1.133099	0.003333	1.136433
3000	3000	2978.5	1.1354	1.1374	68.16	1.137101	0.003333	1.140435
3540	3540	3518.5	1.287	1.289	68.16	1.288758	0.003333	1.292091
3570	3570	3548.5	1.295	1.297	68.16	1.29676		0.003333
3600	3600	3578.5	1.3065	1.3085	68.16	1.308262	0.003333	1.311595
3630	3630	3608.5	1.3106	1.3126	68.16	1.312365	0.003333	1.315699
3660	3660	3638.5	1.3186	1.3206	68.16	1.320368	0.003333	1.323701
3690	3690	3668.5	1.3277	1.3297	68.16	1.32947		0.003333
3720	3720	3698.5	1.3352	1.3372	68.16	1.336972	0.003333	1.340306
3750	3750	3728.5	1.3419	1.3439	68.16	1.343675	0.003333	1.347008
3780	3780	3758.5	1.3516	1.3536	68.16	1.353377	0.003333	1.35671

	Tcorrs			Vave m/s	Vrms m/s	Vint m/s	TWTs		SCXm	
2035	2035	2035	1.320165	-19.23	-65.39	0	0			
2042	2044		1.330389	-19.23	-65.39	0	0			
2432	2525	3592	1.771179	-19.23	-65.39	0	0			
0.890293	2436	2529		1.780587	-19.23	-65.39	0	0		
2608	2696	3229	2.272865	-19.23	-65.39	0	0			
2612	2701		2.280869	-19.23	-65.39	0	0			
2723	2815	3566	2.584182	-19.23	-65.39	0	0			
1.300093	2729	2822		2.600187	-19.23	-65.39	0	0		
2728	2820	3076	2.623191	-19.23	-65.39	0	0			
2743	2845		2.631397	-19.23	-65.39	0	0			
2749	2852	4956	2.647402	-19.23	-65.39	0	0			
1.332803	2752	2855		2.665607	-19.23	-65.39	0	0		
2759	2862	3613	2.680611	-19.23	-65.39	0	0			
2768	2873		2.694016	-19.23	-65.39	0	0			
	2770	2874	3658	2.71342		-19.23	-65.39	0		

SCYm	RCXm	RCYm

0

Well Name : DORY-1

Operator : APACHE ENERGY

Interval : 2785m - 3780m

Scale : 1:5000

Chart date: 19 February 2009

Palynological Data Chart : BASIC DATA

% Abundance histogram : Highest occurrence

Mike Macphail

DORY-1

Morgan Palaeo Associates
Maitland, South Australia

Enclosure 1

Sampling
- Cutting
- Core
- Sidewall core

Text Keys
*1 % within discipline (40mm=100%)
*2 In-Situ occurrences

Depth | **Samples** | **Dinoflagellate Cysts** (% within discipline (40mm=100%); In-Situ occurrences) | AC *1 *2 | FT *1 *2 | AL *1 *2 | **Spores And Pollen** (% within discipline (40mm=100%); In-Situ occurrences) | **Samples** | **Total Count** | **% Category**

Samples in Discipline(s) : Paly

Achomosphaera .
Deflandrea .
dinocysts% unassigned%
Nematosphaeropsis spp.
Operculodinium spp.
Pyxidinopsis .
Spiniferites spp.
Adnatosphaeridium/Glaphyracyst .
Gippslandia extensa
Hystrichosphaeridium tubiferum
Paralecaniella indentata
Protoellipsodinium .
Selenopemphix .
Turbiosphaera filosa
Pterospermella .
Microforams .
Circulisporites parvus
Araucariacites australis
Cyathidites (> 45 microns)
Cyathidites% spp.%
Gleicheniidites spp.
Haloragacidites harrisii
Nothofagidites deminutus-vansteenisii
Nothofagidites emarcidus-heterus
Nothofagidites endurus/senectus
Podocarpidites (sensu lato)
Trilites/Ischyosporites .
Dilwynites spp.
Spores + hyphae
angiosperms unassigned
Cyatheacidites annulatus
Nothofagidites brachyspinulosus
Podosporites/Trichotomosaccite .
Microcachryidites antarcticus
Phyllocladidites mawsonii
Proteacidites spp.
Rugulatisporites spp.
spore% trilete%
Tricolporites/Rhoipites spp.
Baculatisporites spp.
gymnosperms% unassigned%
Herkosporites/Neoraistrickia .
Laevigatosporites spp.
Latrobosporites spp.
Nothofagidites (unassigned spp.).
Proteacidites angulatus
Retitriletes spp.
Stereisporites spp.
Tensucolpites illiei
Dacrycarpites australiensis
spores% monolete%
Tricolpites waiparaensis
Australopollis obscurus
Cycadopites .
Gambierina spp.
Peninsulapollis spp.
Peromonolites spp.
Tetradopollis .
Tricolpites spp.
Aequitriradites .
Camarozonosporites .
Lygistepollenites florinii
Lygistepollenites balmei
Phyllocladidites reticulosaccatus/verrucosus
Verrucosisporites .
Leptolepidites spp.

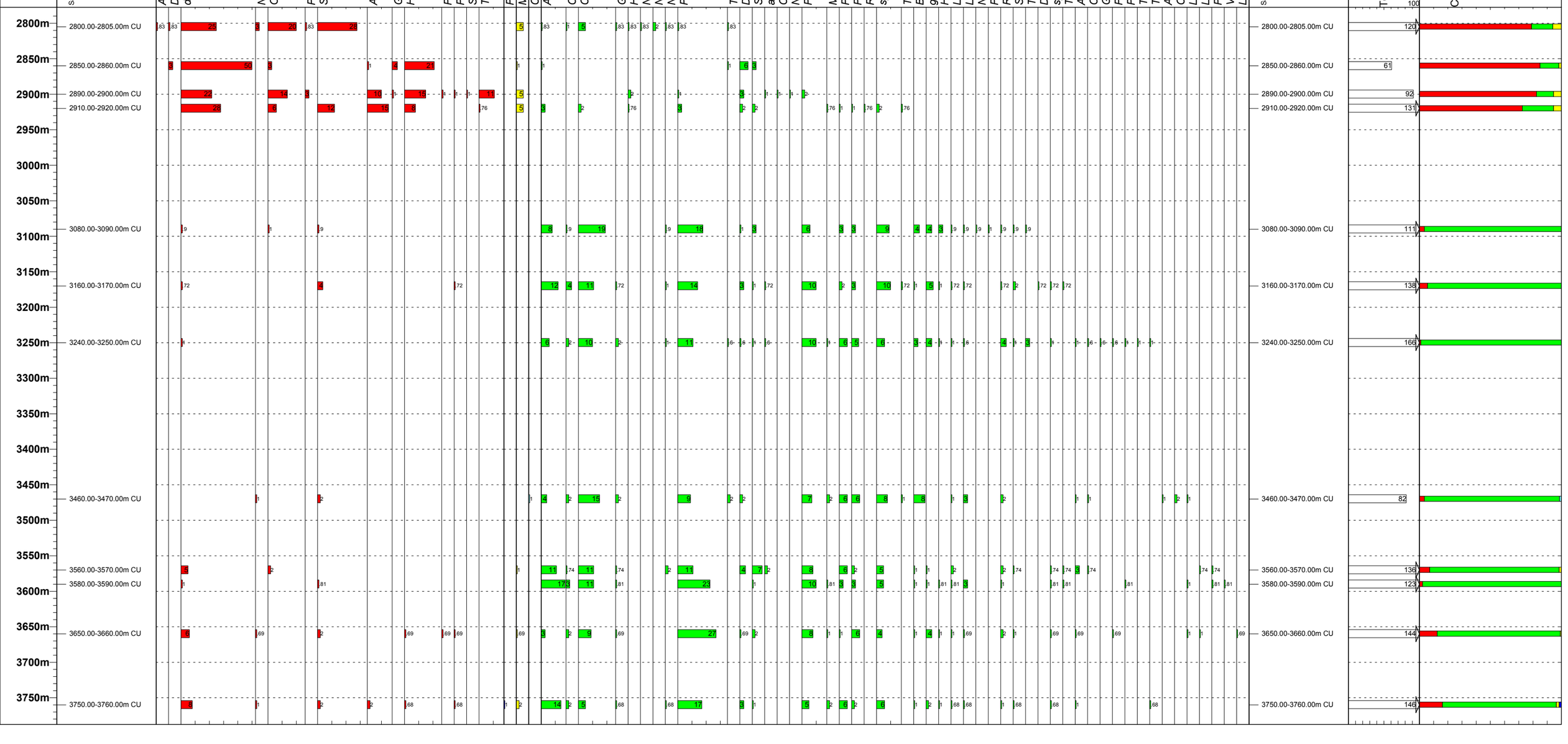
Samples

Samples in Discipline(s) : Paly

In-Situ occurrences — Total count: Total Count

In-Situ occurrences — Category %: % Category

AC AL FT SP DC



ONSITE PRELIMINARY ANALYSIS REPORT
Dory-1

This brief report outlines the sample volume, recovery, transfer data and handling of th
wireline fluid sampling program for the 8 1/2" hole section, from depths 2824.3mMDF
Baker Atlas wireline formation sampling tool.

RCI RUN 1 - 800cc RCI Chamber #10133533
The sample from chamber #10133533 recovered at 2824.3mMDRT had an opening pre
measured by Petrotech. The chamber was then pressurised 1450 psig above reservoir p
5500 psig. 475cc of the sample was transferred to a Petrotech shipping bottle. From v
after transfer, the sample bottle will contain predominantly gas. The remaining conten
atmosphere, with only a small amount of gas (1.5cc) and a small volume of water (2mI
conduct both H2S and CO2 measurements.

RCI RUN 1 - 800cc RCI Chamber #10354568
The sample from chamber #10354568 recovered at 2845.4mMDRT had an opening pre
measured by Petrotech. The chamber was then pressurised 1450 psig above reservoir p
5500 psig. 500cc of the sample was transferred to a Petrotech shipping bottle. From vi
transfer, the sample bottle will contain predominantly water. The remaining contents v
yielding mainly water (12mL) with a small volume of gas (0.2cc). There was insufficie
measurements.

RCI RUN 1 - 800cc RCI Chamber #10354566
The sample from chamber #10354566 recovered at 3060.3mMDRT had an opening pre
measured by Petrotech. The chamber was then pressurised 1450 psig above reservoir p
5800 psig. 400cc of the sample was transferred to a Petrotech shipping bottle. From v
after transfer, the sample bottle will contain gas with a trace of hydrocarbon. The rema
to atmosphere yielding gas with a small volume of water (55mL). H2S and CO2 measu

RCI RUN 1 - 800cc RCI Chamber #10177302
The sample from chamber #10177302 recovered at 3066.7mMDRT had an opening pre
measured by Petrotech. The chamber was then pressurised 1450 psig above reservoir p
5800 psig. 500cc of the sample was transferred to a Petrotech shipping bottle. From vi
transfer, the sample bottle will contain predominantly water. The remaining contents v
yielding mainly water (35mL) with a small volume of gas (0.2cc), with only sufficient
measurement.

WFS SAMPLE DATA

Client	Apache Energy Pty Ltd.
Well	Dory-1
Project No.	57207

Sampling Depth (mMDRT)	RCI Chamber No.	RCI Chamber Vol. (cc)	Downhole Sampling Date	Downhole Sampling Time	Opening Pressure (psig)	Opening Temperature (°C)
2824.3	10133533	800	17.11.08	-	5320	17.7
2845.4	10354568	800	17.11.08	-	5800	18.0
3060.3	10354566	800	17.11.08	-	5295	17.9
3066.7	10177302	800	17.11.08	-	5820	17.5

SINGLE PHASE TRANSFER DATA

Client	Apache Energy Pty Ltd.
Well	Dory-1
Project No.	57207

Petrotech Sample No.	Sample Depth (mRT)	RCI Chamber No.	Transfer Date	Transfer Time	Petrotech Cylinder No.	Transfer Volume (mL)	Transfer Pressure (psig)	Transfer Temp. (°C)	Comments
T.01	2824.3	10133533	18.11.08	4:05	PT-2561	475	5500	17.9	Gas/Water
T.02	2845.4	10354568	18.11.08	5:30	PT-2522	500	5500	17.7	Water
T.03	3060.3	10354566	18.11.08	7:10	PT-2525	400	5800	18.6	Gas/Water
T.04	3066.7	10177302	18.11.08	8:30	PT-2562	500	5800	19.8	Water

WFS FLASH DATA

Client	Apache Energy Pty Ltd.
Well	Dory-1
Project No.	57207

Petrotech Sample No.	Sample Depth (mMDRT)	RCI Chamber No.	Stabilised Oil Volume (mL)	Measured Gas Volume (cc)	Measured Water Vol. (cc)	Barometric Pressure (mBar)	Ambient Temperature (^{0}C)	Gas-Oil Ratio (scf/bbl)
T.01	2824.3	10133533	-	1.50	2	1012	17.9	-
T.02	2845.4	10354568	-	0.20	12	1012	17.7	-
T.03	3060.3	10354566	-	13.70	55	1012	18.6	-
T.04	3066.7	10177302	-	0.20	35	1012	19.8	-

SAMPLE ANALYSIS DATA

Client	Apache Energy Pty Ltd.
Well	Dory-1
Project No.	57207

Petrotech Sample No.	Sample Depth (mMDRT)	RCI Chamber No.	Oil Density (g/cm^3 @ 15^oC)	Oil Gravity (^oAPI @ 60^oF)	Draeger Tube		Viscosity		
					CO_2 (%vol)	H_2S (ppmv)	Kinematic (mm2/sec)	Dynamic (cp)	Temeprature (^oC)
T.01	2824.3	10133533	-	-	-	-	-	-	-
T.02	2845.4	10354568	-	-	-	-	-		-
T.03	3060.3	10354566	-	-	0	4.8	-	-	-
T.04	3066.7	10177302	-	-	-	>6	-	-	-

SAMPLE LIST

Client	Apache Energy Pty Ltd.
Well	Dory-1
Project No.	57207

Transferrred Samples

Petrotech Sample No.	Sample Depth (mMDRT)	RCI Chamber No.	Sample Nature	Petrotech Cylinder No.	Shipping Volume (cc)	Shipping Pressure (psig)
T.01	2824.3	10133533	Gas/Water	PT-2561	475	4180
T.02	2845.4	10354568	Water	PT-2522	500	80
T.03	3060.3	10354566	Gas/Water	PT-2525	400	3580
T.04	3066.7	10177302	Water	PT-2562	500	80

Validation and Compositional Analysis

for

Apache Energy Ltd.

Dory-1

AFL 20080050

The analyses, opinions or interpretations in this report are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgement of CORE LABORATORIES AUSTRALIA PTY LTD, (all errors and omissions excepted); but CORE LABORATORIES AUSTRALIA PTY LTD and its officers and employees assume no responsibility and make no warranty or representations as to the productivity, proper operation or profitability of any oil, gas or any other mineral well formation in connection with which such report is used or relied upon.

CORE LABORATORIES AUSTRALIA PTY LTD

Reservoir Fluids Group

447-449 Belmont Avenue, Kewdale WA 6105

Tel: +61 8 9353 3944 Fax: +61 8 9353 1369 Web: http://www.corelab.com

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Compositional Analysis of Cylinder PT-2525 (T.03) to C36+	C.4-C.6
Section D - Analysis Data - Bottom Hole Water Samples	
12 Ion Analysis of Flashed Water from Cylinder PT-2522 (T.02)	D.1
12 Ion Analysis of Flashed Water from Cylinder PT-2562 (T.04)	D.2
Section E - Appendix	
Data Used in Gas Compositional Calculations	E.1
Data Used in Liquid Compositional Calculations	E.2

Section A - Summary of Analysis Methods

Summary of Analysis Methods

Sample Validation
The opening pressure of the two BHS gas samples and the two BHS water samples was recorded at ambient temperature. The waters were then stabilised at 6500 psig and heated to 94°C for 24 hours. The samples were agitated thoroughly to ensure they were completely single phase and homogenous. A check for free water was made for the two gas samples and the sample volume determined. Hydrogen Sulphide gas was found to be present in samples T.03 (gas) and T.04 (water).

Compositional Analysis (BHS gas)
The fluid composition of the gas samples was determined using a combination of flash separation and gas chromatography techniques. Each fluid was flashed at ambient laboratory temperature (19°C) and separated into liquid and gas phases.
The gas was analysed using extended gas chromatography with compositions determined by a GPA 2286 method using a multi-column gas chromatograph system. A temperature programme was utilised to obtain optimum detection and separation of dodecanes plus components.
The flashed condensate was analysed by temperature programmed high resolution capillary gas chromatography. The two analyses were then mathematically recombined to the flash gas-oil ratio.

H2S Analysis (BHS gas)
A portion of the flashed gas generated during the gas flash separations was used to test for H2S. Using our standard 2-200 PPM Draegar tubes we were only able to obtain a qualitative measurement for H2S for sample T.03 (ie >200 PPM H2S). Upon receiving our order for higher range H2S Draegar tubes, sample T.03 was re-heated and a fresh gas sub-sample tested.
The volume of gas obtained from blowing down the waters was insufficient for quantitative Draegar tube testing.

Analysis (BHS water)
The two pressurised water samples were blown down to atmospheric conditions. A 12-ion analysis were performed on the flashed water including pH, density and resistivity.

Compositional Analysis Databases
For all compositions reported in this study, the properties used, eg Molecular Weight and Density of the individual components are tabulated in Section E of the Appendix.

Section B - Summary of Samples Received and Validation Data

Reported Well and Sampling Information - MDTs

Reservoir and Well Information

Field	
Well	Dory-1
Reservoir Fluid	Gas
Formation	
Reservoir Pressure	
Reservoir Temperature	
Installation	Ocean Patriot
Test	
Perforations	

Sampling Information

Date sampled	18-Nov-08
Time sampled	
Type of samples	MDT
Sampling company	Schlumberger
Sampling point	
Sampling Depth	2824.3 - 3066.7mMDRT
Choke	
Status of well	
Bottomhole pressure	4033.0 - 4372.0 psig
Bottomhole temperature	64.4 - 71.6°C
Wellhead flowing pressure	
Wellhead flowing temperature	
Separator pressure	
Separator temperature	
Pressure base	14.696 psia
Temperature base	15.6°C
Water flowrate	
Gas gravity (Air = 1)	
H2S	present in lower zone
CO2	
BS&W	
Oil gravity at 60°F	

Comments: Sampling information for samples T.01 through to T.04

Summary of MDT Samples Received and Validation Data

MDT Samples

Sample Number	Cylinder Number	Sample Depth (m MDRT)	Sample Type	Sampling :- Pressure (psig)	Sampling :- Temp. (°C)	Laboratory opening :- Pressure (psia)	Laboratory opening :- Temp. (°C)	Water Volume (cm^3)	Sample Volume (cm^3)	H2S content (PPM)*
T.01	PT-2561	2824.3	Gas	4033	64.4	4550	20.6	0	480	N.D.
T.02	PT-2522	2845.4	Water	4045	67.0	410	20.2	-	505	N.D.
T.03	PT-2525	3060.3	Gas	4366	71.7	4041	19.9	0	450	1250
T.04	PT-2562	3066.7	Water	4372	71.6	483	20.8	-	525	present

Notes:

Sampling pressure and temperature information obtained from Expro sampling sheets.

Sample T.01, Expro cylinder PT-2561 is transferred from Baker Atlas chamber No. 10133533
Sample T.02, Expro cylinder PT-2522 is transferred from Baker Atlas chamber No. 10354568
Sample T.03, Expro cylinder PT-2525 is transferred from Baker Atlas chamber No. 10354566
Sample T.04, Expro cylinder PT-2562 is transferred from Baker Atlas chamber No. 10177302

Sample Volumes at 6500 psig and 94°C

* H2S analysis performed by Draeger tube analysis on flashed gas where sufficient for analysis (T.01 & T.03). Though sample cylinders are made of titanium which does not readily absorb H2S, they do contain internal parts made from steel which will react with the H2S over time and lower the concentration remaining in the sample.

N.D.- Not Detected.

Section C - Compositional Analysis Data - Bottom Hole Gases

Compositional Analysis of Gas Sample T.01, cylinder PT-2561 to C36 plus

	Component	Mole %	Weight %
H_2	Hydrogen	0.00	0.00
H_2S	Hydrogen Sulphide	0.00	0.00
CO_2	Carbon Dioxide	2.45	5.17
N_2	Nitrogen	0.22	0.30
C_1	Methane	85.60	65.98
C_2	Ethane	6.28	9.08
C_3	Propane	2.06	4.37
iC_4	i-Butane	0.59	1.66
nC_4	n-Butane	0.57	1.60
C_5	Neo-Pentane	0.01	0.03
iC_5	i-Pentane	0.25	0.87
nC_5	n-Pentane	0.21	0.73
C_6	Hexanes	0.31	1.28
	M-C-Pentane	0.10	0.42
	Benzene	0.02	0.06
	Cyclohexane	0.16	0.66
C_7	Heptanes	0.16	0.79
	M-C-Hexane	0.25	1.19
	Toluene	0.02	0.09
C_8	Octanes	0.16	0.88
	E-Benzene	0.01	0.05
	M/P-Xylene	0.02	0.12
	O-Xylene	0.01	0.05
C_9	Nonanes	0.10	0.62
	1,2,4-TMB	0.01	0.06
C_{10}	Decanes	0.09	0.65
C_{11}	Undecanes	0.07	0.48
C_{12}	Dodecanes	0.05	0.42
C_{13}	Tridecanes	0.06	0.48
C_{14}	Tetradecanes	0.04	0.40
C_{15}	Pentadecanes	0.04	0.42
C_{16}	Hexadecanes	0.02	0.26
C_{17}	Heptdecanes	0.02	0.19
C_{18}	Octadecanes	0.02	0.20
C_{19}	Nonadecanes	0.01	0.11
C_{20}	Eicosanes	0.01	0.08
C_{21}	Heneicosanes	0.00	0.06
C_{22}	Docosanes	0.00	0.04
C_{23}	Tricosanes	0.00	0.03
C_{24}	Tetracosanes	0.00	0.02
C_{25}	Pentacosanes	0.00	0.02
C_{26}	Hexacosanes	0.00	0.01
C_{27}	Heptacosanes	0.00	0.01
C_{28}	Octacosanes	0.00	0.02
C_{29}	Nonacosanes	0.00	0.01
C_{30}	Triacontanes	0.00	0.01
C_{31}	Hentriacontanes	0.00	0.01
C_{32}	Dotriacontanes	0.00	0.00
C_{33}	Tritriacontanes	0.00	0.00
C_{34}	Tetratriacontanes	0.00	0.00
C_{35}	Pentatriacontanes	0.00	0.00
$C_{36}+$	Hexatriacontanes Plus	0.00	0.01
	Totals :	100.00	100.00

Note: 0.00 means less than 0.005.

Compositional Analysis of Gas Sample T.01, cylinder PT-2561 to C36 plus

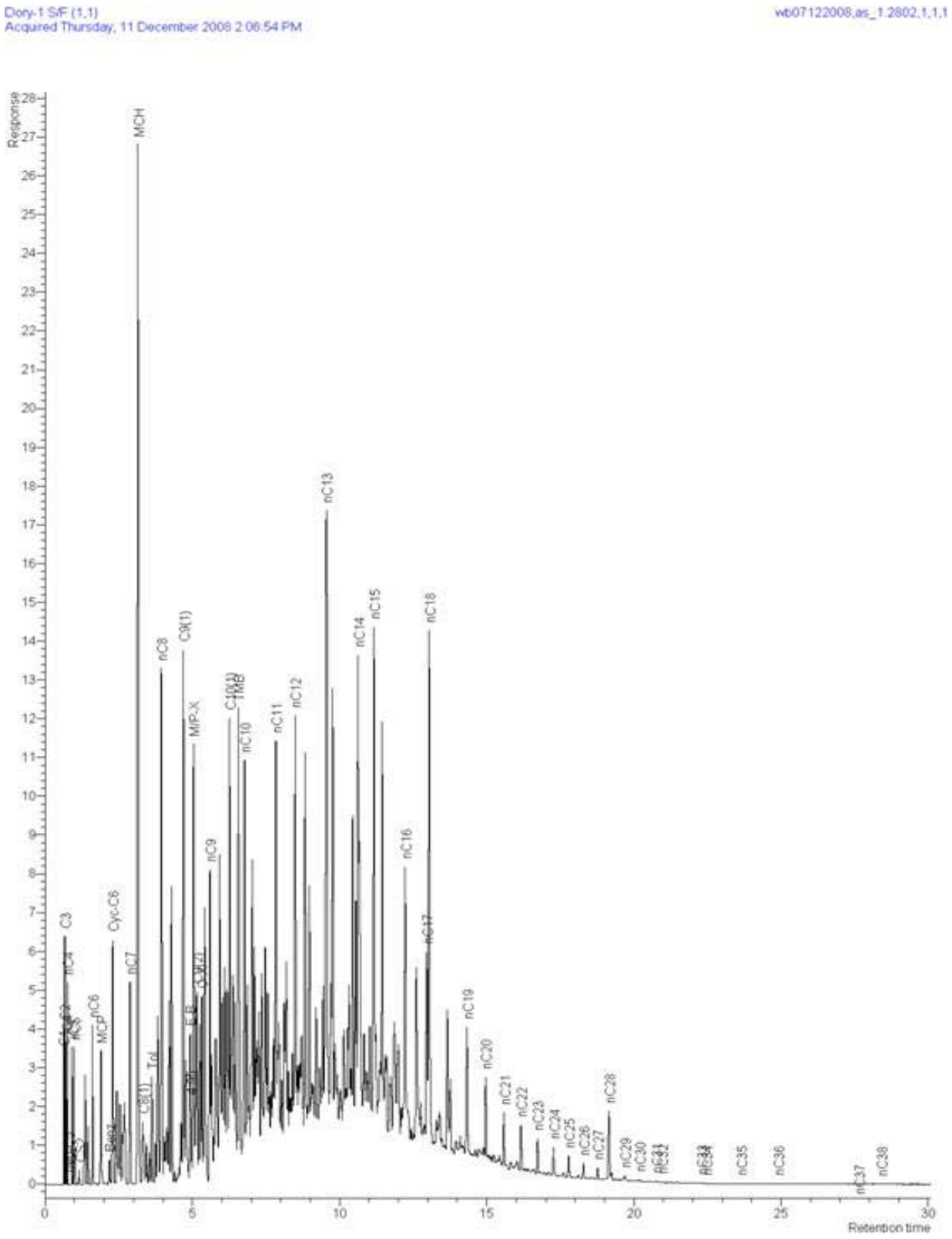
Calculated Residue Properties		
C_7 plus	Mole%	1.45
	Molecular Weight (g mol-1)	125
	Density at 15.6°C (g cm-3)	0.7727
C_{11} plus	Mole%	0.34
	Molecular Weight (g mol-1)	194
	Density at 15.6°C (g cm-3)	0.8244
C_{20} plus	Mole%	0.01
	Molecular Weight (g mol-1)	319
	Density at 15.6°C (g cm-3)	0.8775
C_{36} plus	Mole %	
	Molecular Weight (g mol-1)	523
	Density at 15.6°C (g cm-3)	0.9231

Calculated Whole Sample Properties		
	Average mole weight (g mol-1)	20.8

Notes:

There appears to be some possible minor contamination in the C12 to C18 region and again at C28. This is visible in the chromatogram on C.3

Fingerprint Analysis of flashed condensate, Sample T.01, cylinder PT-2561



Compositional Analysis of Gas Sample T.03, cylinder PT-2525 to C36 plus

	Component	Mole %	Weight %
H_2	Hydrogen	0.00	0.00
H_2S	Hydrogen Sulphide	0.12	0.15
CO_2	Carbon Dioxide	0.31	0.49
N_2	Nitrogen	0.45	0.45
C_1	Methane	72.20	41.22
C_2	Ethane	11.14	11.93
C_3	Propane	5.93	9.32
iC_4	i-Butane	1.04	2.16
nC_4	n-Butane	1.88	3.90
C_5	Neo-Pentane	0.01	0.03
iC_5	i-Pentane	0.61	1.57
nC_5	n-Pentane	0.67	1.72
C_6	Hexanes	0.69	2.11
	M-C-Pentane	0.20	0.60
	Benzene	0.11	0.32
	Cyclohexane	0.30	0.89
C_7	Heptanes	0.40	1.42
	M-C-Hexane	0.45	1.56
	Toluene	0.36	1.19
C_8	Octanes	0.42	1.70
	E-Benzene	0.03	0.11
	M/P-Xylene	0.31	1.17
	O-Xylene	0.07	0.25
C_9	Nonanes	0.31	1.41
	1,2,4-TMB	0.07	0.28
C_{10}	Decanes	0.34	1.71
C_{11}	Undecanes	0.25	1.33
C_{12}	Dodecanes	0.19	1.11
C_{13}	Tridecanes	0.20	1.23
C_{14}	Tetradecanes	0.15	1.04
C_{15}	Pentadecanes	0.15	1.10
C_{16}	Hexadecanes	0.11	0.86
C_{17}	Heptdecanes	0.08	0.69
C_{18}	Octadecanes	0.09	0.77
C_{19}	Nonadecanes	0.06	0.59
C_{20}	Eicosanes	0.05	0.51
C_{21}	Heneicosanes	0.05	0.48
C_{22}	Docosanes	0.04	0.44
C_{23}	Tricosanes	0.03	0.39
C_{24}	Tetracosanes	0.03	0.36
C_{25}	Pentacosanes	0.03	0.32
C_{26}	Hexacosanes	0.02	0.27
C_{27}	Heptacosanes	0.02	0.23
C_{28}	Octacosanes	0.01	0.17
C_{29}	Nonacosanes	0.01	0.12
C_{30}	Triacontanes	0.01	0.08
C_{31}	Hentriacontanes	0.00	0.06
C_{32}	Dotriacontanes	0.00	0.04
C_{33}	Tritriacontanes	0.00	0.04
C_{34}	Tetratriacontanes	0.00	0.03
C_{35}	Pentatriacontanes	0.00	0.02
$C_{36}+$	Hexatriacontanes Plus	0.00	0.06
	Totals :	100.00	100.00

Note: 0.00 means less than 0.005.

Compositional Analysis of Gas Sample T.03, cylinder PT-2525 to C36 plus

Calculated Residue Properties		
C_7 plus	Mole%	4.95
	Molecular Weight (g mol-1)	142
	Density at 15.6°C (g cm-3)	0.7989
C_{11} plus	Mole%	1.58
	Molecular Weight (g mol-1)	217
	Density at 15.6°C (g cm-3)	0.8384
C_{20} plus	Mole%	0.30
	Molecular Weight (g mol-1)	329
	Density at 15.6°C (g cm-3)	0.8805
C_{36} plus	Mole %	
	Molecular Weight (g mol-1)	538
	Density at 15.6°C (g cm-3)	0.9252

Calculated Whole Sample Properties		
	Average mole weight (g mol-1)	28.1

Fingerprint Analysis of flashed condensate, Sample T.03, cylinder PT-2525

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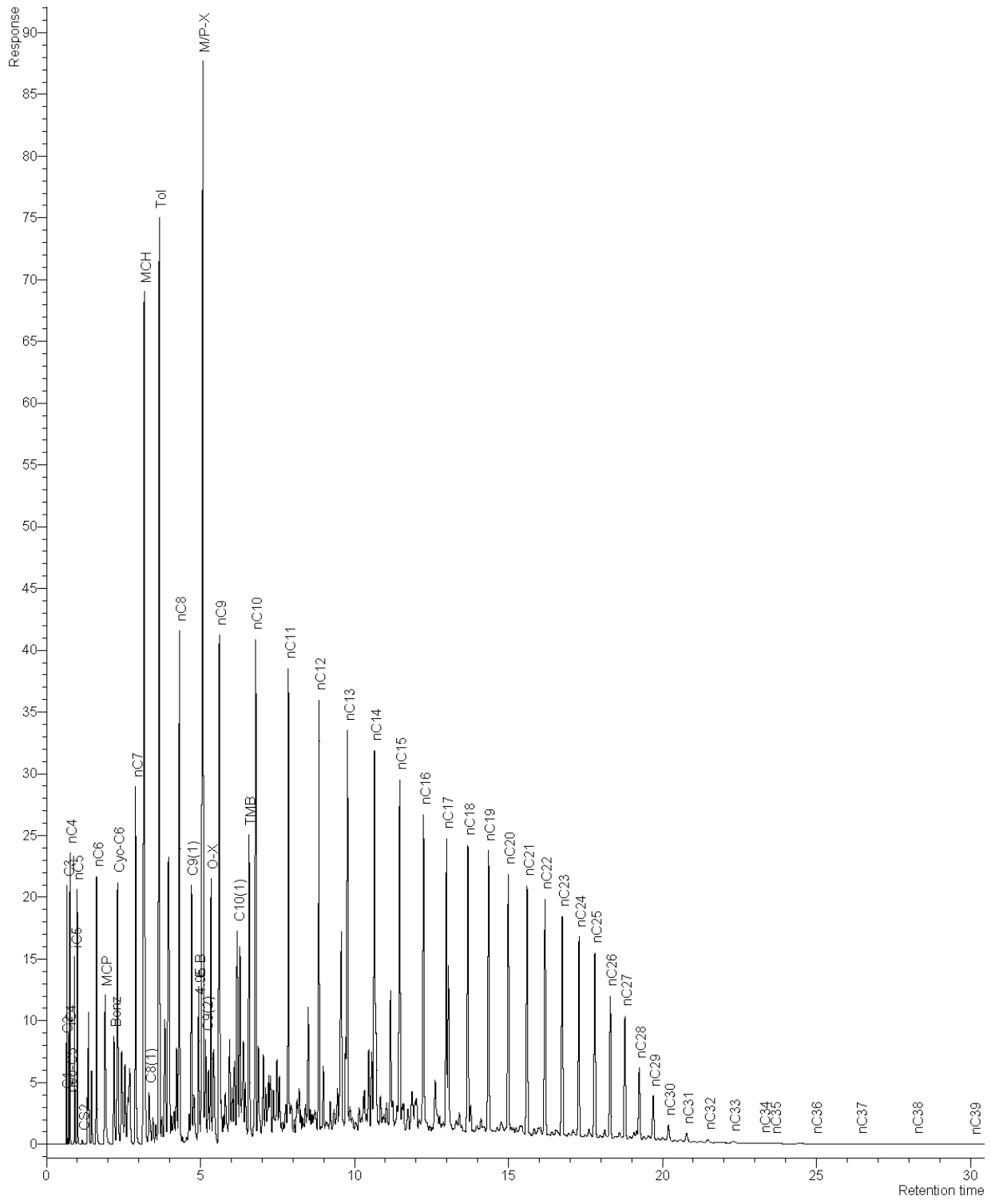

Section D - Analysis Data - Bottom Hole Waters

Detailed Flashed Water Analysis from Sample T.02, Cylinder PT-2522

Dissolved Constituent	Units	Results
Ions		
Calcium, Ca	mg/L	222
Magnesium, Mg	mg/L	604
Iron, Fe (soluble)	mg/L	0.31
Sodium, Na	mg/L	10310
Potassium, K	mg/L	5120
Strontium, Sr	mg/L	13.0
Barium, Ba	mg/L	4.2
Manganese, Mn	mg/L	0.14
Chloride, Cl	mg/L	22917
Sulphate, SO4	mg/L	193
Bicarbonate, HCO3	mg/L	1616
Carbonate, CO3	mg/L	28
Hydroxide, OH	mg/L	0
Basic Properties		
pH	pH units	7.5
Resistivity, @ 25°C	ohm-m	0.1622
Total Dissolved Solids (calculated)	mg/L	41028
Total Dissolved Solids (by evaporation at 110°C)	mg/L	43004
Total Dissolved Solids (by evaporation at 180°C)	mg/L	42452
Density, @ 20°C	gm/cc	1.0272

Detailed Flashed Water Analysis from Sample T.04, Cylinder PT-2562

Dissolved Constituent	Units	Results
Ions		
Calcium, Ca	mg/L	147
Magnesium, Mg	mg/L	889
Iron, Fe (soluble)	mg/L	0.03
Sodium, Na	mg/L	9830
Potassium, K	mg/L	3380
Strontium, Sr	mg/L	6.4
Barium, Ba	mg/L	3.0
Manganese, Mn	mg/L	0.20
Chloride, Cl	mg/L	21953
Sulphate, SO4	mg/L	66
Bicarbonate, HCO3	mg/L	593
Carbonate, CO3	mg/L	34
Hydroxide, OH	mg/L	0
Basic Properties		
pH	pH units	7.9
Resistivity, @ 25°C	ohm-m	0.1725
Total Dissolved Solids (calculated)	mg/L	36902
Total Dissolved Solids (by evaporation at 110°C)	mg/L	39681
Total Dissolved Solids (by evaporation at 180°C)	mg/L	39126
Density, @ 20°C	gm/cc	1.0250

Section E - Appendix

Data Used in Gas Compositional Calculations

Component		Mole Weight (g mol-1)	Density (g cm-3 at 60°F)	Component		Mole Weight (g mol-1)	Density (g cm-3 at 60°F)
Hydrogen	*	2.016	N/A	33DMC5	*	100.20	0.6954
Oxygen/(Argon)	**	31.999	1.1410	Cyclohexane	*	84.16	0.7827
Nitrogen (Corrected)	**	28.013	0.8086	2MC6/23DMC5	*	100.20	0.6917
Methane	**	16.043	0.2997	11DMCYC5/3MC6	*	99.20	0.7253
Carbon Dioxide	**	44.010	0.8172	t13DMCYC5	*	98.19	0.7528
Ethane	**	30.070	0.3558	c13DMCYC5/3EC5	*	99.20	0.7262
Hydrogen Sulphide	**	34.080	0.8006	t12DMCYC5	*	98.19	0.7554
Propane	**	44.097	0.5065	Heptanes (nC7)	*	100.20	0.6875
i-Butane	**	58.123	0.5623	22DMC6	*	114.23	0.6994
n-Butane	**	58.123	0.5834	MCYC6	*	98.19	0.7740
Neo-Pentane	*	72.15	0.5968	ECYC5	*	98.19	0.7704
i-Pentane	**	72.150	0.6238	223TMC5/24&25DMC6	*	114.23	0.7060
n-Pentane	**	72.150	0.6305	ctc124TMCYC5	*	112.21	0.7511
22DMC4	*	86.18	0.6529	ctc123TMCYC5	*	112.21	0.7574
23DMC4/CYC5	*	78.16	0.7129	Toluene	*	92.14	0.8734
2MC5	*	86.18	0.6572	Octanes (nC8)	*	114.23	0.7063
3MC5	*	86.18	0.6682	E-Benzene	*	106.17	0.8735
Hexanes (nC6)	*	86.18	0.6631	M/P-Xylene	*	106.17	0.8671
22DMC5	*	100.20	0.6814	O-Xylene	*	106.17	0.8840
M-C-Pentane	*	84.16	0.7533	Nonanes (nC9)	*	128.26	0.7212
24DMC5	*	100.20	0.6757	Decanes	***	134	0.778
223TMC4	*	100.20	0.6947	Undecanes	***	147	0.789
Benzene	*	78.11	0.8820	Dodecanes	***	161	0.800

Data Source Refs :

* ASTM Data Series Publication DS 4B (1991) - Physical Constants of Hydrocarbon and Non-Hydrocarbon Compounds.

** GPA Table of Physical Constants of Paraffin Hydrocarbons and Other Components of Natural Gas, GPA 2145-96.

*** Journal of Petroleum Technology, Nov 1978, Pages 1649-1655.
Predicting Phase Behaviour of Condensate/Crude Oil Systems Using Methane Interaction Coefficients - D.L. Katz & A. Firoozabadi.

Note :
The gas mole % compositions were calculated from the measured weight % compositions using the most detailed analysis results, involving as many of the above components as were identified. The reported component mole % compositions were then sub-grouped into the generic carbon number components.

Data Used in Liquid Compositional Calculations

Component		Mole Weight (g mol-1)	Density (g cm-3 at 60°F)	Component		Mole Weight (g mol-1)	Density (g cm-3 at 60°F)
Hydrogen	*	2.016	N/A	Undecanes	***	147	0.789
Hyd. sulphide	**	34.080	0.8006	Dodecanes	***	161	0.800
Carbon Dioxide	**	44.010	0.8172	Tridecanes	***	175	0.811
Nitrogen	**	28.013	0.8086	Tetradecanes	***	190	0.822
Methane	**	16.043	0.2997	Pentadecanes	***	206	0.832
Ethane	**	30.070	0.3558	Hexadecanes	***	222	0.839
Propane	**	44.097	0.5065	Heptadecanes	***	237	0.847
i-Butane	**	58.123	0.5623	Octadecanes	***	251	0.852
n-Butane	**	58.123	0.5834	Nonadecanes	***	263	0.857
i-Pentane	**	72.150	0.6238	Eicosanes	***	275	0.862
n-Pentane	**	72.150	0.6305	Heneicosanes	***	291	0.867
Hexanes	**	86.177	0.6634	Docosanes	***	305	0.872
Me-cyclo-pentane	*	84.16	0.7533	Tricosanes	***	318	0.877
Benzene	*	78.11	0.8820	Tetracosanes	***	331	0.881
Cyclo-hexane	*	84.16	0.7827	Pentacosanes	***	345	0.885
Heptanes	**	100.204	0.6874	Hexacosanes	***	359	0.889
Me-cyclo-hexane	*	98.19	0.7740	Heptacosanes	***	374	0.893
Toluene	*	92.14	0.8734	Octacosanes	***	388	0.896
Octanes	**	114.231	0.7061	Nonacosanes	***	402	0.899
Ethyl-benzene	*	106.17	0.8735	Triacontanes	***	416	0.902
Meta/Para-xylene	*	106.17	0.8671	Hentriacontanes	***	430	0.906
Ortho-xylene	*	106.17	0.8840	Dotriacontanes	***	444	0.909
Nonanes	**	128.258	0.7212	Tritriacontanes	***	458	0.912
1-2-4-T-M-benzene	*	120.19	0.8797	Tetratriacontanes	***	472	0.914
Decanes	**	142.285	0.7334	Pentatriacontanes	***	486	0.917

Data Source Refs :

* ASTM Data Series Publication DS 4B (1991) - Physical Constants of Hydrocarbon and Non-Hydrocarbon Compounds.

** GPA Table of Physical Constants of Paraffin Hydrocarbons and Other Components of Natural Gas GPA 2145-96.

*** Journal of Petroleum Technology, Nov 1978, Pages 1649-1655.
Predicting Phase Behaviour of Condensate/Crude Oil Systems Using Methane Interaction Coefficients - D.L. Katz & A. Firoozabadi.

Note :
The residue mole weight and density values (eg heptanes plus, undecanes plus, eicosanes plus) are calculated so that the calculated average mole weights and densities correspond with the measured values. This can lead to anomalous residue mole weights and densities where the Katz and Firoozabadi values may not be suitable for the isomer groups detected.

Report prepared by	Report approved by
Damien Gerard Senior Reservoir Fluids Technician	Murray Macleod Laboratory Supervisor