sperry-sun DRILLING SERVICES
A Halliburton Company

1 : 500

INSITE

MWD

EWR Electromagnetic Wave Resistivity
DGR Dual Gamma Ray
ACAL Acoustic Caliper
BAT Bi-Modal Acoustic Sonic

Country : **Australia**
Field : **VIC-P-45**
Location : **Lat: 38° 35' 44.230" South** / **Long: 148° 16' 31.859" East**
Well : **Megamouth-1ST**
Company : **BHP Billiton**
Rig : **Ocean Epoch**

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LOCATION
Latitude : **Lat: 38° 35' 44.230" South**
Longitude : **Long: 148° 16' 31.859" East**
UTM Easting = 611,077.19 m
UTM Northing = 5,727,325.06 m

Other Services

Permanent Datum : **LAT**
Log Measured From : **Drill Floor** **22.40 m** Above Permanent Datum
Drilling Measured From : **Drill Floor**

Elevation : **0.00 m**

TVD LOG

Elev. KB
DF **22.40 m**
GL
WD **80.20 m**

Depth Logged : **2,391.81 m** To **2,677.28 m**
Date Logged : **27-Nov-03** To **02-Dec-03**
Total Depth MD : **2,688.00 m** TVD : **2,677.28 m**
Spud Date : **27-Nov-03**

Unit No. : **LT 1087**
Job No. : **AU-FE-0002796094**
Plot Type : **Final**
Plot Date : **08-Jan-04**

Run No.	Borehole Record (TVD) Size	From	To
4	311.000 mm	2,448.66 m	2,480.82 m
5	311.000 mm	2,391.81 m	2,677.28 m

Run No.	Borehole Record (TVD) Size	From	To

Casing Record (TVD) Size	Weight	From	To
762.000 mm	573.00 kgpm	80.96 m	147.93 m
340.000 mm	101.00 kgpm	80.96 m	820.59 m

WELL INFORMATION

MWD Run Number	300	400																											
Date run completed	29-Nov-03	03-Dec-03																											
Rig Bit Number	4	5																											
Bit Size (mm)	311	311																											
Tool Nominal OD (mm)	203	203																											
Log Start Depth (TVD, m)	2448.66	2391.81																											
Log End Depth (TVD, m)	2480.82	2674.43																											
Drill or Wipe	Drilling	Drilling																											
Drill/Wipe Start Date and Time	28-Nov-03 23:50	30-Nov-03 23:30																											
Drill/Wipe End Date and Time	29-Nov-03 08:00	02-Dec-03 18:45																											
Min Inc (deg) @ Depth (TVD, m)	0.75 @ 2441.08	0.28 @ 2,332.10																											
Max Inc (deg) @ Depth (TVD, m)	0.75 @ 2441.08	17.94 @ 2,564.05																											
Bit TFA(in2) / Bit Type	1.33 / Hughes MX20DX	1.33 / Hughes MX20DX																											
Flow Rate (gpm)	710	690																											
Max AV (mpm) / CV (mpm) @ MWD	82.7 / 153.6	60.6 / 136.8																											
Fluid Type	Aqua Drill	Aqua-Drill																											
Density (sg) / Viscosity (spl)	1.2 / 72.00	1.2 / 80.00																											
Filtrate CL (ppm)	39950	38500																											
pH / Fluid Loss (cptm)	9.50 / 1.0	10.20 / 5.5																											
PV (cp) / YP (pa)	25 / 35.00	25 / 16.80																											
% Solids / % Sand	5.5 / 0.75	6.0 / 0.25																											
% Oil / Oil:Water Ratio	N/A / N/A:100	N/A / N/A:100																											
Rm @ Measured Temp (degC)	0.12 @ 18.00	0.12 @ 20.00																											
Rmf @ Measured Temp (degC)	0.11 @ 18.00	0.11 @ 20.00																											
Rmc @ Measured Temp (degC)	0.25 @ 18.00	0.24 @ 20.00																											
Max Tool Temp (degC) / Source	66.00 / EWR-P4	65.00 / EWR-P4																											
Rm @ Max Tool Temp (degC)	0.05 @ 66.00	0.06 @ 65.00																											
Lead MWD Engineer	F.Besanger	F. Besanger																											
Customer Representative	P.Devine	P. Devine																											

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	66.37	66.37			
Sub Serial Number	198838	198838			
Insert Serial Number	132882	132882			
Logging String Serial Number	DM90031516XHRLG	DM90031516XHRLG			
Date and Time Initialized	28-Nov-03 16:22	30-Nov-03 14:52			
Date and Time Read	29-Nov-03 14:09	03-Dec-03 08:15			

Directional Sensor Information

Tool Type	DM	DM			
Distance From Bit (m)	26.71	26.71			
Software Version	3.15	3.15			
Sub Serial Number	29034	29034			
Sonde Serial Number	103286	103286			
Sensor ID Number	N/A	N/A			
Survey String Serial Number	DM90026201F8	DM90026201F8			
Toolface Offset (deg)	18.00	18.00			

Gamma Ray Sensor Information

Tool Type	DGR	DGR			
Distance From Bit (m)	12.94	12.94			
Recorded Sample Period (sec)	10	10			
Software Version	N/A	N/A			
Sub Serial Number	082377	082377			
Insert/Sonde Serial Number	89753	89753			

Resistivity Sensor Information

Tool Type	EWR-P4	EWR-P4			
Distance From Bit (m)	19.36	19.36			
Recorded Sample Period (sec)	12	12			
Software Version	1.38	1.38			
Sub Serial Number	121090	121090			
Receiver Insert Serial Number	74703	74703			
Transmitter Insert Serial Number	62499	62499			
Receiver Orientation	Down	Down			

Sonic Sensor Information

Tool Type	BAT	BAT			
Distance From Bit (m)	34.70	34.70			
Recorded Sample Period (sec)	14	14			
Software Version	4.41	4.41			
Sub Serial Number	187219	187219			
Receiver Insert Serial Number	180818	180818			
Transmitter Insert Serial Number	179659	179659			

REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.

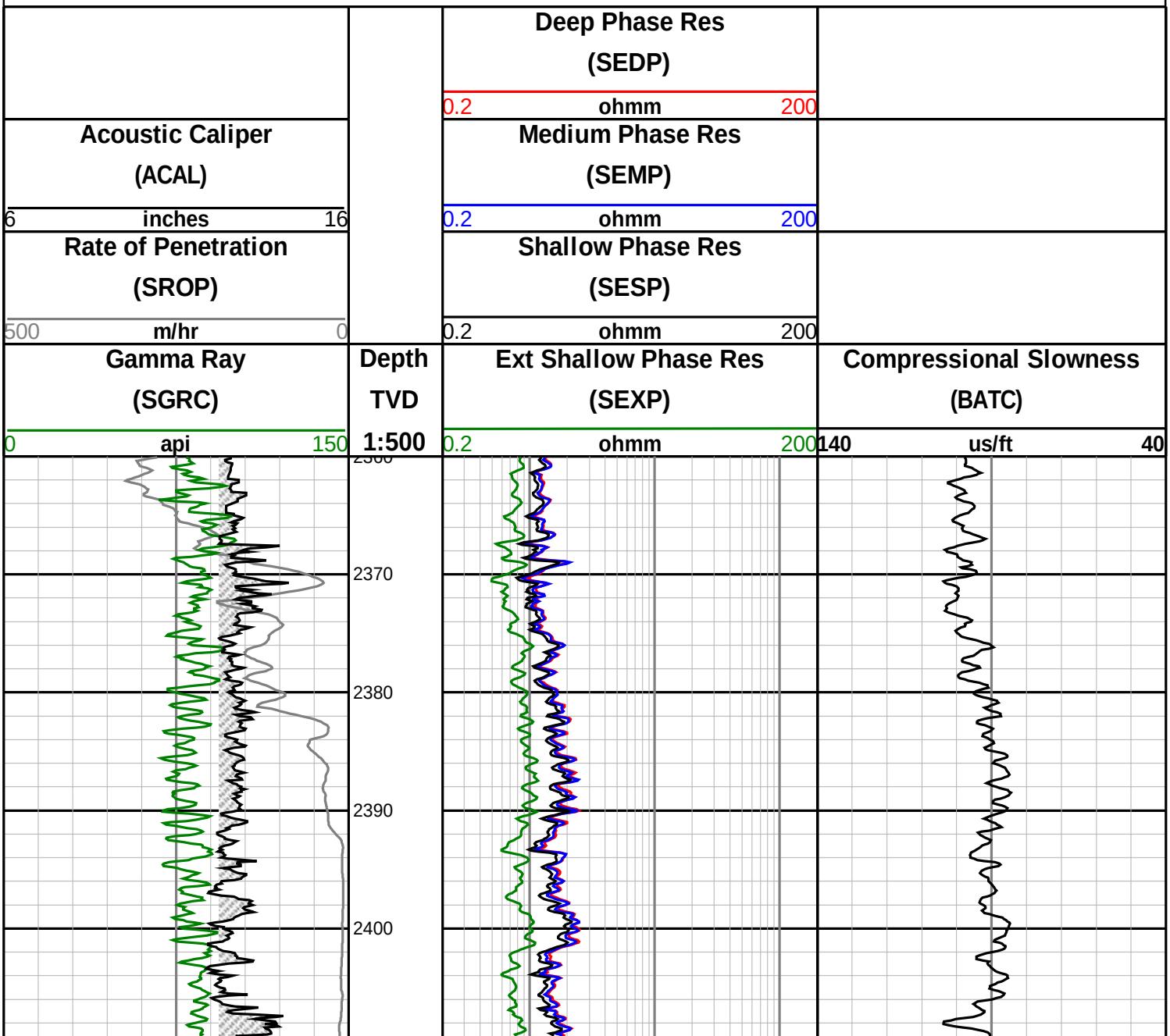
2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Binghams Plastic Law for oil based muds.

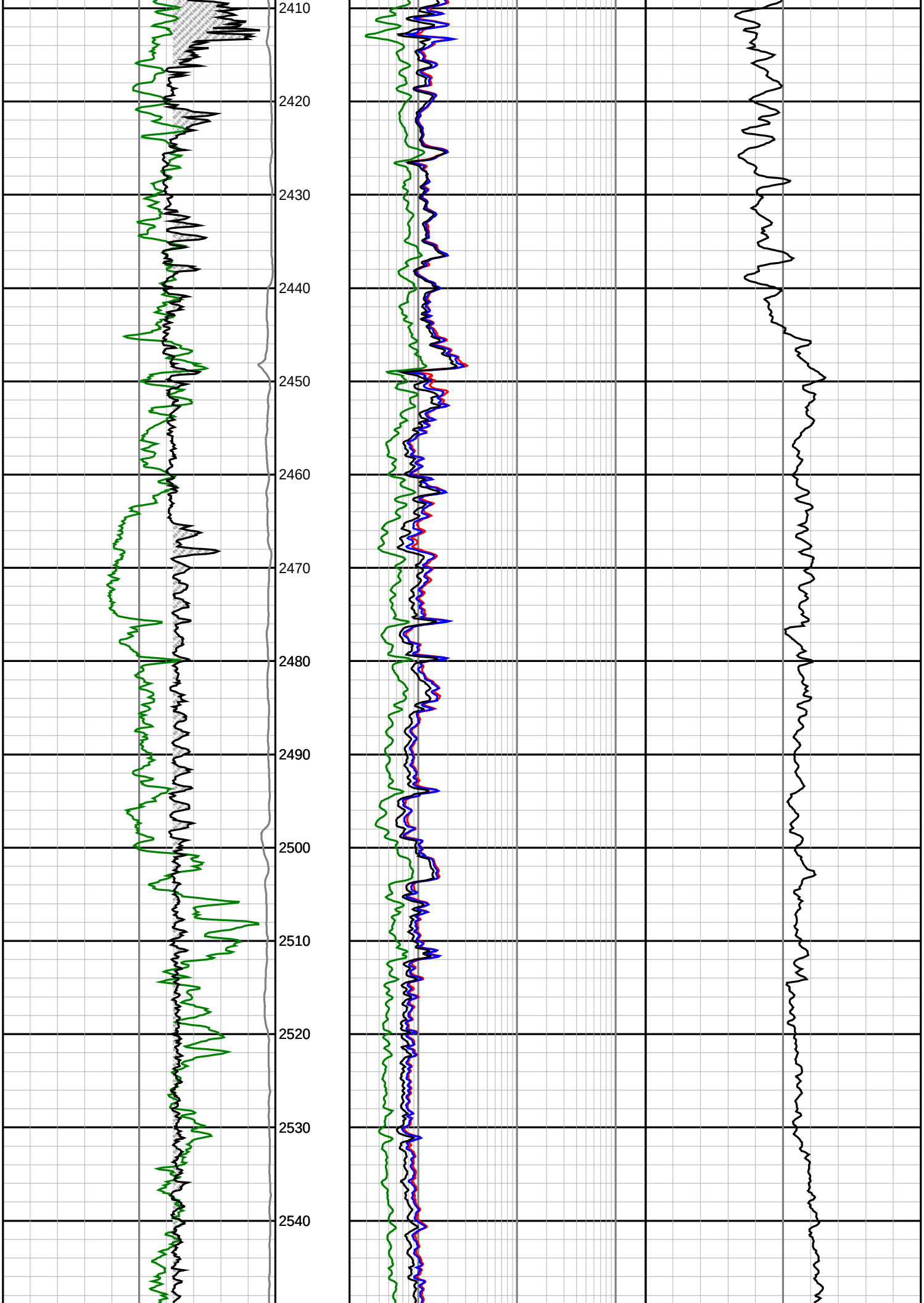
3. Curve mnemonics are :

SGRC - Smoothed Gamma Ray Combined, api
SEXP - Smoothed Extra Shallow Phase-Shift Derived Resistivity, ohm-m
SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m

SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m
SEMP - Smoothed Medium Phase-Shift Derived Resistivity, ohm-m
SEDP - Smoothed Deep Phase-Shift Derived Resistivity, ohm-m
SROP - Smoothed Rate of Penetration, m/hr
ACAL - Acoustic Caliper, inches.
BATC - Bi-Modal Acoustic Compressional Sonic, usec/ft

WARRANTY

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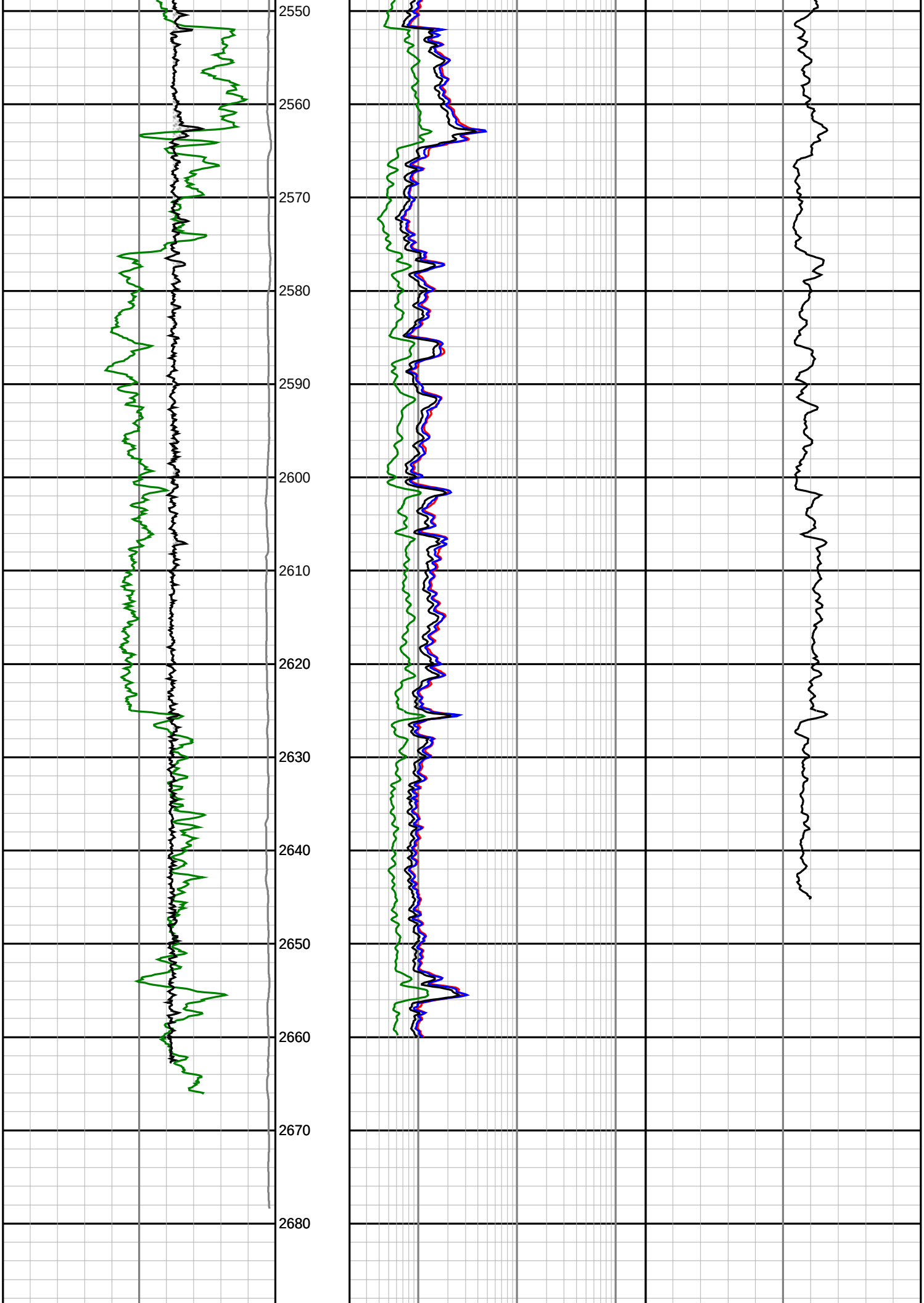
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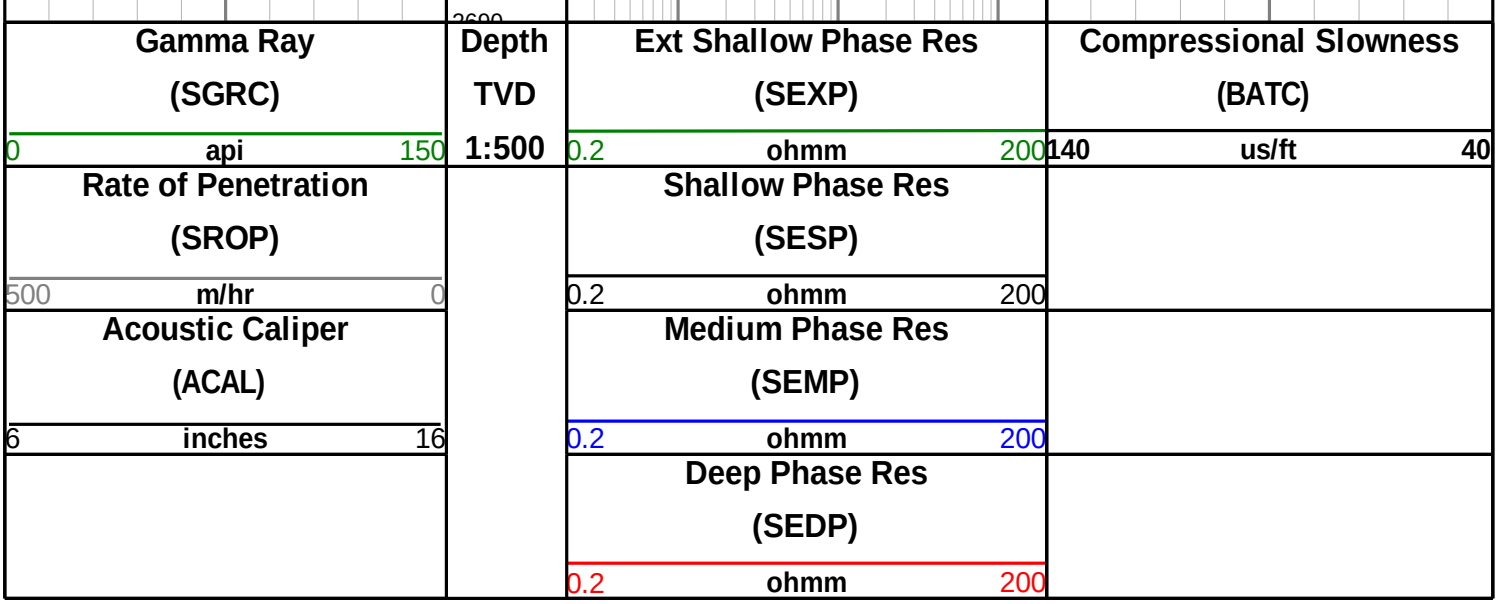


INSITE

HALLIBURTON

DIRECTIONAL SURVEY REPORT

BHP Billiton
Megamouth-1ST
VIC-P-45
Victoria
Australia
AU-FE-0002796094
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)*
2383.080	0.83	351.30	2381.890	46.190 N	1.780 W	46.190	TIE-IN
2384.750	0.76	350.33	2383.560	46.213 N	1.784 W	-41.053	1.22
2412.800	0.28	303.92	2411.609	46.435 N	1.871 W	-41.217	0.65
2443.800	7.35	186.91	2442.525	44.507 N	2.172 W	-39.344	7.23
2469.500	14.35	185.33	2467.750	39.699 N	2.666 W	-34.784	8.18
2499.760	15.12	185.79	2497.015	32.039 N	3.413 W	-27.535	0.78
2528.500	15.52	186.75	2524.733	24.491 N	4.244 W	-20.352	0.49
2553.500	16.08	187.06	2548.789	17.733 N	5.062 W	-13.889	0.68
2585.900	16.57	187.44	2579.882	8.698 N	6.212 W	-5.224	0.47
2614.750	17.07	187.73	2607.497	0.421 N	7.315 W	2.734	0.53
2656.600	17.94	187.31	2647.409	12.059 S	8.961 W	14.727	0.63
2688.000	17.94	187.31	2677.282	21.653 S	10.192 W	23.932	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 205.21 DEGREES (GRID)
A TOTAL CORRECTION OF 14.07 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

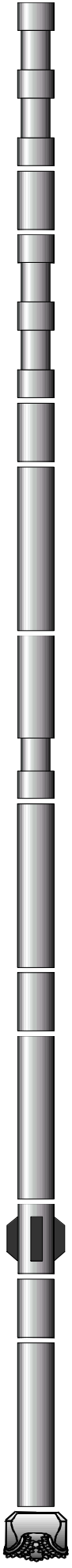
HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2688.000 METRES
IS 23.932 METRES ALONG 205.21 DEGREES (GRID)

MWD RUN 300 - BHA

Cumulative Length (m)

MWD RUN 300 - MWD

Sensor Measure Point



HWDP — 211.42

Sub — 135.77

HWDP — 135.13

Sub — 125.66

Drill Collar — 124.55

Jar — 105.63

Drill Collar — 95.88

Sub — 40.10

MWD — 38.18

Reamer — 11.73

Sub — 9.41

Motor — 8.64

Bit — 0.35

MWD RUN 400 - BHA

Distance To Bit (m)

BAT

8 DGWD 650 System

PM

HCIM

CNP — 22.310

EWR-P4 — 19.360

SLD — 16.400

DGR — 12.940

MWD RUN 400 - MWD

	Cumulative Length (m)
HWDP	211.42
Sub	135.77
HWDP	135.13
Sub	125.66
Drill Collar	124.55
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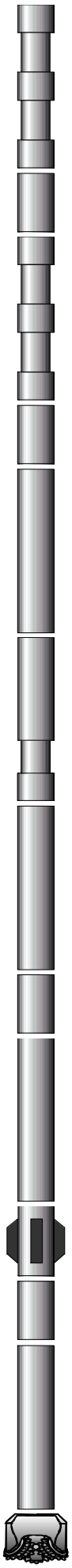
Bit	0.35



	Sensor Measure Point Distance To Bit (m)
BAT	
8 DGWD 650 System	
PM	
HCIM	
CNP	22.310
EWR-P4	19.360
SLD	16.400
DGR	12.940