



LWD MEMORY LOG

Gamma Ray

Scale:	Company: Bayswater E&P LLC			
	Well: G & D HANKS P-27-28HN			
	Field: Weld County			
	County: Weld		Country: United States	
	Depth Reference:			
Measured Depth				
Driller's Depth				
Status:	Surface Location:		Other Services:	
Final Print	Latitude:		040° 32' 32.114" N	
API No: 05-123-46032	Longitude:		104° 45' 35.471" W	
Job ID: 9067267	SEC: 27	TMW: 7N	RGE: 66W	Directional
Permanent Datum (P.D.):	Ground Level	Elevation:	4875.00 ft	Elev. KB: N/A
Log Measured From:	Rig Floor	Above P.D.:	25.00 ft	Elev. DF: 4900.00 ft
				Elev. GL: 4875.00 ft
Dates		Interval	Magnetic Field Reference	
From: 2019-04-18	Drilled (ft)	Logged (ft)	Azi Reference North: True	
To: 2019-05-16	Top: 105.00	Top: 1567.00	Dip Angle: (deg) 66.88	
Spud: 2019-04-18	Bottom: 18224.00	Bottom: 18211.00	Total Magnetic Field Strength: (nT) 52304	
			Mag to Reference North Correction: (deg) 8.21	
Borehole Record				
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)
13.500	105.00	1567.00	9.625	36.00
8.500	1567.00	18224.00		
Casing Record				
Mud Record				
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)
Water Based Mud	105.00	1567.00	13.500	1567.00
Diesel-Oil Based Mud	1567.00	18224.00	8.500	16657.00
			15.91	69.01
				90.00
				268.18
Deviation Record				
			Inc Az (Start)	Inc Az (End)
			0.34 194.26	15.91 69.01
			15.91 69.01	90.00 268.18
Acquisition System				
Cadence	RT 5.2	Rig: True 38		
Plot Studio	5.2.8472.1	Contractor: True Drilling		
		District: RMA	Unit: D&E	

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Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	13.500	PDC	4.00	Steerable	0.00	0.00	105.00	1567.00	2019-04-18 02:36	2019-04-18 09:05	6.11
2	2	8.500	PDC	3.00	AutoTrak Curve	1567.00	18211.00	1567.00	18224.00	2019-05-12 18:45	2019-05-16 02:25	80.14

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Emi Iyalla	2019-05-12	2019-05-17						

Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2019-04-18 03:30	1	283.00	Water Based Mud	8.5	1	8.3	0.0	0/99	Active Pit	1291	0.00
2019-05-12 18:00	2	1567.00	Diesel-Oil Based Mud	8.7	6	N/A	22.0	72/17	Active Pit	40000	0.00
2019-05-13 03:30	2	4784.00	Diesel-Oil Based Mud	8.7	6	N/A	22.0	73/18	Active Pit	40000	0.00
2019-05-13 15:30	2	7855.00	Diesel-Oil Based Mud	9.7	11	N/A	18.0	67.6/20	Active Pit	37000	0.00
2019-05-14 03:30	2	10355.00	Diesel-Oil Based Mud	9.7	12	N/A	16.8	67.8/19.6	Active Pit	36500	0.00
2019-05-14 15:30	2	12300.00	Diesel-Oil Based Mud	9.7	11	N/A	18.8	67.6/19.7	Active Pit	36000	0.00
2019-05-15 03:30	2	14189.00	Diesel-Oil Based Mud	9.8	13	N/A	18.4	67.3/19.5	Active Pit	36000	0.00
2019-05-15 15:30	2	16400.00	Diesel-Oil Based Mud	9.8	12	N/A	18.3	68.4/18.2	Active Pit	35000	0.00
2019-05-16 03:30	2	18224.00	Diesel-Oil Based Mud	9.9	14	N/A	18.3	68.4/17.8	Active Pit	35500	0.00

Equipment and Service Data

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	NaviTrak	13191955	VSS	14.23	50.20	8.000	0.000
1	NaviTrak	13191955	Directional (mag)	14.23	50.20	8.000	0.000
2	AutoTrak Curve Steering Unit	14382369	Near Bit Inclination	5.93	6.73	7.000	4.330
2	AutoTrak Curve Steering Unit	14382369	Near Bit VSS	5.93	6.73	7.000	4.330
2	AutoTrak Curve MWD	14179564	Gamma (single)	2.77	12.90	7.000	3.250
2	AutoTrak Curve MWD	14179564	Directional (mag)	12.29	22.42	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional Module, NaviTrak Platform
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

Comments

1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD Run 1 utilized 6.75 inch NaviTrak Service (Directional) behind a 13.5 inch bit and a steerable assembly from 105 to 1567 feet MD (105 to 1537 feet TVD). No logging data was acquired through out that run.
3	Baker Hughes LWD Run 2 utilized 6.75 inch NaviGamma Service (Gamma Ray and Directional) behind an 8.5 inch bit and a rotary steerable assembly from 1567 to 18224 feet MD (1537 to 7281 feet TVD).
4	The GRAM data is presented on a scale of 0 to 300 API, per the client's request.

Remarks

Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	18211.00	8.500	2	The interval from 18211 to 18224 feet MD (7218 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 10 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 3 ft Average	API
TCDM	Directional Real-Time Survey Temperature	degF





























