



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale: 1:240
MEASURED DEPTH
Company: Anadarko
Well: RUSSIAN FIDDLER 35N-18HZ
Field: Weld County
Region: Continental US Country: United States

Status: Final Print
API Number: 05-123-36215
Permanent Datum (P.D.): Ground Level
Log Measured From: Kelly Bushing
Depth Reference: Driller's Depth
Surface Location: Latitude: 40° 07' 02.986" N Longitude: 104° 42' 41.054" W
Section: 19 TWN: 2N Range 65W
Other Services: Directional VSS
Elevations: 5013.00 ft. N/A
5000.00 ft.

Interval Logged Dates
Top: 5660.0 ft. Date From: 06 Apr 2013 Date To: 14 Apr 2013 Dip Angle: 66.90 ° Azi Reference North: True
Bottom: 12349.0 ft. Date To: 14 Apr 2013 Total Mag to Reference
Spud Date: 04 Apr 2013 Field Strength: 52936.0 nT North Correction: 8.45 °

Borehole Record			Casing Record		
Hole Size	From	To	Size	Weight	From To
13.500 in.	Surface	1033.0 ft.	9.625 in.	36.00 lb/ft	Surface 1023.0 ft.
8.750 in.	1033.0 ft.	7687.0 ft.	7.000 in.	26.00 lb/ft	Surface 7677.0 ft.
6.125 in.	7687.0 ft.	12397.0 ft.			

Mud Record			Deviation Record		
Type	From	To	Hole Size	Interval	Inc / Az (Start) Inc / Az (End)
Water Based	Surface	12397.0 ft.	8.750 in.	Intermediate	0.6 / 259.3 ° 87.5 ° / 1.2 °
			6.125 in.	Lateral	87.5 ° / 1.2 ° 93.6 ° / 359.5 °
					/
					/
					/
					/
					/

Acquisition System			Software Version			Other		
Advantage	2.20U4	Rig: / Contractor:	Ensign 145	/ Ensign Drilling				
PATS	6.4.1.34	Job No:	5325201	/ D&E				
		District: / Unit:	Rocky Mountain					

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
2	2	3	8.750	PDC	2.000	Steerable	6660.0	7638.0	6715.0	7687.0	06 Apr 2013 15:00	07 Apr 2013 13:39	25.6
3	3	4	6.125	PDC	2.000	Steerable	7639.0	11301.0	7687.0	11350.0	10 Apr 2013 20:06	12 Apr 2013 06:17	30.2
4	4	5	6.125	PDC	2.000	Steerable	11301.0	12349.0	11350.0	12397.0	14 Apr 2013 03:36	14 Apr 2013 20:23	15.2

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Ian McCarrell	04 Apr 2013	15 Apr 2013	Matt Dickey	04 Apr 2013	10 Apr 2013	Steven Cano	11 Apr 2013	15 Apr 2013

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides mg/l	K+ mg/l
04 Apr 2013	07:00	1	1050.0	Water Base	8.4	27	8.5	N/A	0/96	Pit	1300	40.0
07 Apr 2013	19:00	2	7687.0	Water Base	9.9	40	10.0	N/A	0/94	Pit	2200	40.0
10 Apr 2013	18:00	3	7710.0	Water Base	9.4	32	10.0	N/A	0/94	Pit	2200	40.0
12 Apr 2013	07:30	4	11350.0	Water Base	9.5	38	8.5	N/A	0/92	Pit	1800	80.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Density	points
GRSI	Gamma Ray Slide Indicator	Unitless
GRTX	Gamma Ray Time Since Drilled	min.
ROPA	Rate of Penetration, 3.0 ft. Avg	ft/hr
TCDX	Downhole Temperature	degF.
TVD	True Vertical Depth	ft.
WOBA	Surface Weight On Bit, 1.0 ft. Avg.	kLbs.

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
2	DIR	11941435	Directional	52.35	6.500	2.875
2	SRIG	12595025	Gamma	48.98	6.500	2.875
3	DIR	12479858	Directional	50.66	4.750	2.750
3	SRIG	12604926	Gamma	47.28	4.750	2.750
4	DIR	12566682	Directional	51.63	4.750	2.625
4	SRIG	10595779	Gamma	48.22	4.750	2.625

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

1) Baker Hughes INTEQ run 1 utilized 6 1/2 inch NaviTrak services (Directional, Gamma Ray, and VSS) behind an 8 3/4 inch bit and steerable assembly from 1033 to 6715 feet MD (1033 to 6686 feet TVD).
2) Baker Hughes INTEQ run 2 utilized 6 1/2 inch NaviGamma services (Directional, Gamma Ray, and VSS) behind an 8 3/4 inch bit and steerable assembly from 6715 to 7687 feet MD (6686 to 7280 feet TVD).
3) Baker Hughes INTEQ runs 3 and 4 utilized 4 3/4 inch NaviGamma services (Directional, Gamma Ray, and VSS) behind a 6 1/8 inch bit and steerable assembly from 7687 to 12397feet MD (7280 to 7255 feet TVD).

Remarks

Number	Measured Depth (m.)	Hole Section (in.)	LWD Run No.	Remark
1	6670	8.750	2	The interval from surface to 6660 feet MD (6631 feet TVD) was not logged since logging services began at curve kick off point during run 2.
2	7650	8.750	2	The interval from 7639 feet to 7687 feet MD (7279 to 7280 feet TVD) was logged up to ?? hours after being drilled due to casing and cement operations.
3	11310	6.125	3	The interval from 11301 feet to 11350 feet MD (7273 to 7270 feet TVD) was logged up to ?? hours after being drilled due to a trip out of hole to check the torque on each connection and replace BHA.
4	12397	6.125	4	The interval from 12349 to 12397 feet MD (7259 to 7255 feet TVD) was not logged due to sensor to bit offset at well TD.





















































