



## REALTIME LOG

NATURAL FORMATION EVALUATION  
GAMMA RAY

Scale:

1:240

## MEASURED DEPTH

Company: Kerr-McGee Oil &amp; Gas Onshore LP

Well: Rathler 34N-3HZ

Field: Weld County (Kerr McGee)

Region: Continental US Country: United States

Status:

## Field Print

Surface Location:

Latitude:

40° 10' 30.403" N

Longitude: 104° 48' 12.036" W

Other Services:

API Number:

05-123-37076

Section 34

TWN: 3N

Range: 66E

Directional  
VSS

Permanent Datum (P.D.): Ground Level Elevation: 4983.00 ft.

Elevations: 4996.00 ft.  
N/A

Log Measured From: Kelly Bushing 13.00 ft. Above P.D.

KB: 4996.00 ft.  
DF: N/A

Depth Reference: Driller's Depth

GL: 4983.00 ft.

## Interval Logged

Dates

Magnetic Field Reference

Top: 6620.0 ft. Date From: 26 Jul 13 Dip Angle: 67.02° Azi Reference North: True

Bottom: 12699.0 ft. Date To: 31 Jul 13 Total Mag to Reference

Spud Date: 24 Jul 13 Field Strength: 52807.0 nT North Correction: 8.52°

## Borehole Record

## Casing Record

Hole Size From To Size Weight From To

13.500 in. Surface 825.0 ft. 9.625 in. 36.00 lb/ft Surface 821.0 ft.

8.750 in. 825.0 ft. 7.000 in. 26.00 lb/ft Surface 7733ft.

6.125 in. 7743.0 ft. 12749.0 ft.

## Mud Record

## Deviation Record

Type From To Hole Size Interval Inc / Az (Start) Inc / Az (End)

Water Based Surface 12749ft. 8.750 in. Intermediate 0.46° / 112.5° 85.0° / 180.4°

6.125 in. Lateral 85.0° / 180.4° 85.15° / 180.4°

## Acquisition System Software Version

## Other

Advantage 2.20U4 Rpt / Contractor: Ensign 145 / Ensign Drilling

PATs 6.4.1.34 Job No: 5609934

District / Unit: RMD /

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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	
1	2	2	8.750	PDC	2.000	Steerable	6620.0	7693.0	825.0	7743.0	24 Jul 2013 08:43	27 Jul 2013 17:43	36.9
2	2	0	6.125	PDC	2.000	Steerable	7693.0	12699.0	7743.0	12749.0	29 Jul 2013 15:30	31 Jul 2013 01:14	50.9

## Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Ian McCarrell	23 Jul 2013	25 Jul 2013	Steven Cano	23 Jul 2013	01 Aug 2013	Tyler Wall	25 Jul 2013	01 Aug 2013
Ian McCarrell	01 Aug 2013	01 Aug 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 ppm	K+ %
25 Jul 2013	18:50	1	4359.0	Water Based	9.6	40	8.5	N/A	0.0 / 94.1	Flow line	1900	N/A
27 Jul 2013	07:04	1	7420.0	Water Based	9.8	37	8.0	N/A	0.0 / 94.1	Flow line	1900	N/A
30 Jul 2013	00:32	2	10443.0	Water Based	10.1	40	8.5	N/A	0.0 / 94.1	Flow line	2200	N/A

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.)
1	DIR	12546334	Directional	55.14	6.750	2.250
1	SRIG	12673191	Gamma	51.76	6.750	2.250
2	DIR	11954360	Directional	49.97	4.750	1.750
2	SRIG	12600748	Gamma	46.59	4.750	1.750

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 NaviGamma services (Directional, Gamma Ray, and VSS) behind an 8 3/4 inch bit and steerable assembly from 825 to 7743 feet MD (825 to 7290 feet TVD).
2) Baker Hughes INTEQ run 2 utilized 4 3/4 inch NaviGamma services (Directional, Gamma Ray, and VSS) behind a 6 1/8 inch bit and steerable assembly from 7290 to 12749 feet MD (7290 to 7332 feet TVD).

Remarks

Number	Measured Depth ft)	Hole Section (in.)	LWD Run No.	Remark
1	6625	8.750	1	The interval from surface to 6620 feet MD (6566 feet TVD) was not logged since logging services began at the curve kick off point of 6670 feet MD.

2	7750	6.125	2	The interval from 7693 to 7743 feet MD (7287 to 7290 feet TVD) was logged up to 40.1 hours after being drilled due to a trip out of hole to run casing, cement, and pick up lateral tools.
3	12745	6.125	2	The interval from 12699 to 12749 feet MD (7327 to 7332 feet TVD) was not logged due to sensor to bit offset at well TD.































































