

HOBBS OCD

DEC 21 2016
OXY Permian
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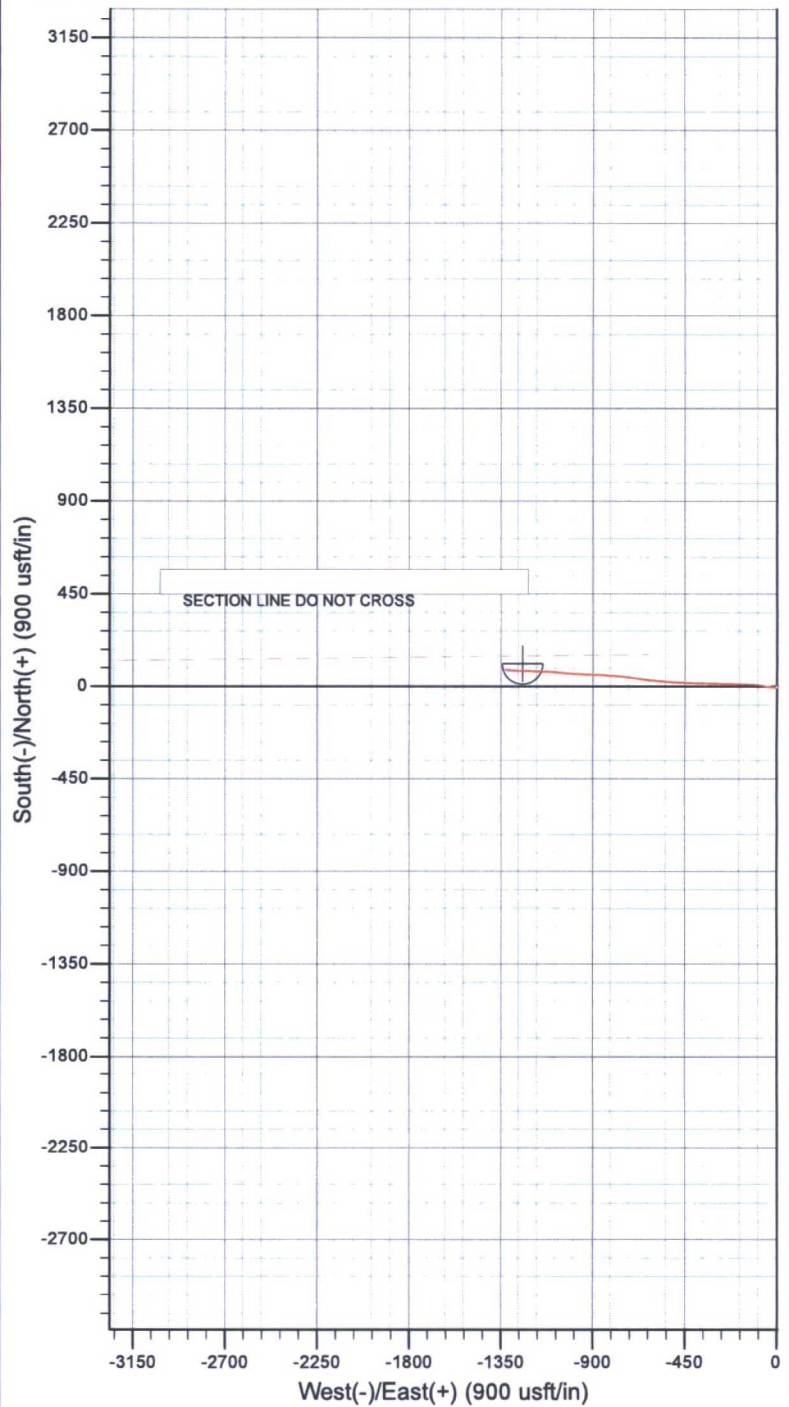
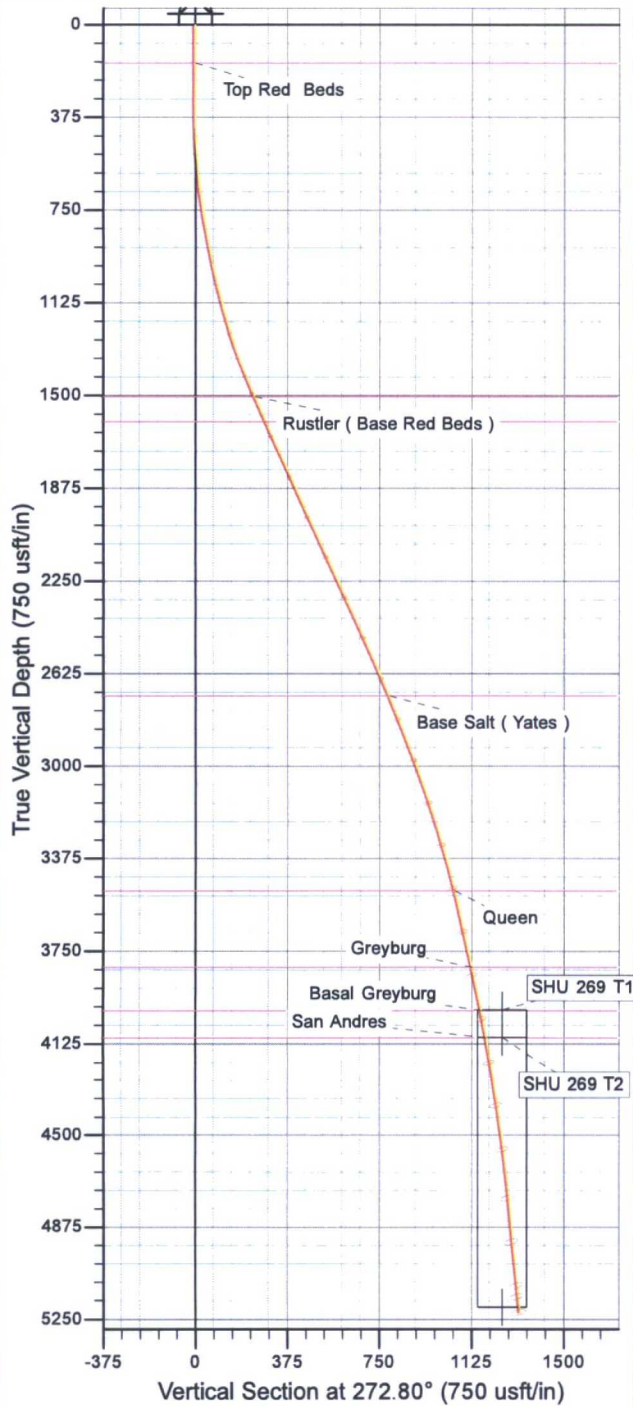
OCCIDENTAL PERMIAN LTD

Project: SOUTH HOBBS UNIT
Site: SEC. 9, T19S, R38E
Well: SHU 269
Wellpath: SHU 269
Design: SHU 269



Azimuths to Grid North
True North: -0.63°
Magnetic North: 6.28°

Magnetic Field
Strength: 48374.1nT
Dip Angle: 60.56°
Date: 4/12/2016
Model: IGRF2015



LEGEND

- SHU 269
- SHU 269 Surveys

SECTION DETAILS

No plan data is available



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OCCIDENTAL PERMIAN LTD

**SOUTH HOBBS UNIT
SEC. 9, T19S, R38E
SHU 269**

SHU 269

Survey: SHU 269 Surveys

Standard Survey Report

28 April, 2016





GEOGUIDANCE DRILLING

Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well SHU 269
Project:	SOUTH HOBBS UNIT	TVD Reference:	SHU 269 @ 3617.4usft (H&P 340)
Site:	SEC. 9, T19S, R38E	MD Reference:	SHU 269 @ 3617.4usft (H&P 340)
Well:	SHU 269	North Reference:	Grid
Wellbore:	SHU 269	Survey Calculation Method:	Minimum Curvature
Design:	SHU 269	Database:	EDM 5000.1 Single User Db

Project	SOUTH HOBBS UNIT		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SEC. 9, T19S, R38E		
Site Position:		Northing:	612,000.00 usft
From:	Map	Easting:	863,000.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 36.987 N
		Longitude:	103° 9' 13.072 W
		Grid Convergence:	0.64 °

Well	SHU 269, SUR. N 613648.18 E 861168.43		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,617.4 usft
		Latitude:	32° 40' 53.495 N
		Longitude:	103° 9' 34.283 W
		Ground Level:	3,600.9 usft

Wellbore	SHU 269				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/12/2016	6.92	60.56	48,374

Design	SHU 269			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	272.80

Survey Program	Date 4/28/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
167.0	5,439.0	SHU 269 Surveys (SHU 269)	MWD+IGRF	OWSG MWD + IGRF or WMM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
167.0	0.92	183.99	167.0	-1.3	-0.1	0.0	0.55	0.55	0.00
349.0	0.60	210.80	349.0	-3.6	-0.7	0.5	0.26	-0.18	14.73
530.0	3.10	286.50	529.9	-3.0	-5.9	5.7	1.66	1.38	41.82
713.0	8.80	267.00	711.8	-2.4	-24.6	24.5	3.26	3.11	-10.66
908.0	11.20	284.70	903.9	1.7	-57.8	57.8	1.99	1.23	9.08
1,088.0	13.90	275.30	1,079.6	8.1	-96.3	96.6	1.88	1.50	-5.22
1,268.0	17.20	271.20	1,253.0	10.7	-144.4	144.8	1.93	1.83	-2.28
1,448.0	22.90	273.40	1,422.0	13.3	-206.0	206.4	3.19	3.17	1.22
1,523.0	23.60	270.30	1,490.9	14.2	-235.6	236.0	1.88	0.93	-4.13



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Well:	SHU 269	North Reference:	Grid
Wellbore:	SHU 269	Survey Calculation Method:	Minimum Curvature
Design:	SHU 269	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,713.0	24.52	270.13	1,664.4	14.5	-313.1	313.4	0.49	0.48	-0.09
1,892.0	24.21	271.93	1,827.5	15.8	-386.9	387.2	0.45	-0.17	1.01
2,072.0	24.79	273.77	1,991.3	19.6	-461.5	461.9	0.53	0.32	1.02
2,252.0	24.91	273.67	2,154.6	24.5	-536.9	537.5	0.07	0.07	-0.06
2,432.0	24.70	275.75	2,318.0	30.7	-612.2	613.0	0.50	-0.12	1.16
2,612.0	24.61	279.09	2,481.6	40.4	-686.6	687.8	0.78	-0.05	1.86
2,792.0	23.33	275.97	2,646.1	50.0	-759.1	760.6	1.00	-0.71	-1.73
2,971.0	22.10	272.41	2,811.2	55.1	-828.0	829.7	1.03	-0.69	-1.99
3,151.0	20.17	271.49	2,979.1	57.3	-892.8	894.6	1.09	-1.07	-0.51
3,331.0	18.32	272.84	3,149.0	59.5	-952.1	953.9	1.06	-1.03	0.75
3,512.0	16.57	275.31	3,321.7	63.3	-1,006.2	1,008.1	1.05	-0.97	1.36
3,692.0	13.36	275.23	3,495.6	67.6	-1,052.5	1,054.6	1.78	-1.78	-0.04
3,872.0	12.17	274.30	3,671.1	70.9	-1,092.2	1,094.3	0.67	-0.66	-0.52
4,052.0	12.66	273.03	3,846.9	73.4	-1,130.8	1,133.0	0.31	0.27	-0.71
4,232.0	10.81	269.56	4,023.1	74.3	-1,167.3	1,169.6	1.10	-1.03	-1.93
4,412.0	9.58	271.53	4,200.3	74.6	-1,199.2	1,201.4	0.71	-0.68	1.09
4,592.0	8.40	272.76	4,378.1	75.6	-1,227.3	1,229.5	0.66	-0.66	0.68
4,772.0	7.12	270.40	4,556.4	76.3	-1,251.6	1,253.8	0.73	-0.71	-1.31
4,972.0	5.45	275.05	4,755.2	77.2	-1,273.5	1,275.7	0.87	-0.84	2.33
5,152.0	5.49	275.14	4,934.4	78.8	-1,290.5	1,292.9	0.02	0.02	0.05
5,332.0	5.58	276.63	5,113.6	80.5	-1,307.8	1,310.2	0.09	0.05	0.83
5,377.0	5.63	275.93	5,158.3	81.0	-1,312.2	1,314.6	0.19	0.11	-1.56
5,439.0	5.63	275.93	5,220.0	81.6	-1,318.2	1,320.6	0.00	0.00	0.00
Projected to TD									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
155.0	155.0	Top Red Beds		0.00	
1,538.4	1,505.0	Rustler (Base Red Beds)		0.00	
1,647.8	1,605.0	Top Salt		0.00	
2,866.9	2,715.0	Base Salt (Yates)		0.00	
3,701.7	3,505.0	Queen		0.00	
4,019.3	3,815.0	Greyburg		0.00	
4,198.2	3,990.0	Basal Greyburg		0.00	
4,310.2	4,100.0	San Andres		0.00	

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,439.0	5,220.1	81.7	-1,318.1	Projected to TD



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Checked By: _____	Approved By: _____	Date: _____
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