



HOBBS OCD

SEP 13 2016

RECEIVED

OCCIDENTAL PERMIAN LTD

**SOUTH HOBBS UNIT
SEC. 4, T19S, R38E
SHU 263**

SHU 263

Design: SHU 263

Standard Survey Report

23 May, 2016



GEOGUIDANCE
DRILLING SERVICES, INC.



GEOGUIDANCE DRILLING

Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well SHU 263
Project:	SOUTH HOBBS UNIT	TVD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Site:	SEC. 4, T19S, R38E	MD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Well:	SHU 263	North Reference:	Grid
Wellbore:	SHU 263	Survey Calculation Method:	Minimum Curvature
Design:	SHU 263	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. 4, T19S, R38E		
Site Position:		Northing:	616,000.00 usft
From:	Map	Easting:	863,000.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 41' 16.562 N
		Longitude:	103° 9' 12.552 W
		Grid Convergence:	0.64 °

Well	SHU 263, SUR. N 615775.21 E 861359.49		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,623.2 usft
		Latitude:	32° 41' 14.518 N
		Longitude:	103° 9' 31.773 W
		Ground Level:	3,606.7 usft

Wellbore	SHU 263		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/17/2016	6.93
			Dip Angle (°)
			60.57
			Field Strength (nT)
			48,385

Design	SHU 263		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			296.40

Survey Program	Date 5/23/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
104.0	1,455.0	SHU 263 EMS Surveys (SHU 263)	EMS+HDGM
1,575.0	5,315.0	SHU 263 MWD Surveys (SHU 263)	MWD+IGRF
			Description
			OWSG EMS + HDGM
			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
104.0	1.00	213.30	104.0	-0.8	-0.5	0.1	0.96	0.96	0.00
Start of EMS Surveys									
134.0	1.00	214.20	134.0	-1.2	-0.8	0.2	0.05	0.00	3.00
194.0	1.00	209.80	194.0	-2.1	-1.3	0.3	0.13	0.00	-7.33
255.0	1.00	212.30	255.0	-3.0	-1.9	0.4	0.07	0.00	4.10
315.0	1.10	206.80	315.0	-3.9	-2.4	0.4	0.24	0.17	-9.17
376.0	1.10	200.60	376.0	-5.0	-2.9	0.4	0.20	0.00	-10.16
466.0	0.90	197.10	465.9	-6.5	-3.4	0.2	0.23	-0.22	-3.89
556.0	0.90	204.10	555.9	-7.8	-3.9	0.0	0.12	0.00	7.78



GEOGUIDANCE DRILLING

Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well SHU 263
Project:	SOUTH HOBBS UNIT	TVD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Site:	SEC. 4, T19S, R38E	MD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Well:	SHU 263	North Reference:	Grid
Wellbore:	SHU 263	Survey Calculation Method:	Minimum Curvature
Design:	SHU 263	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)
646.0	0.80	208.50	645.9	-9.0	-4.5	0.0	0.13	-0.11	4.89
736.0	0.70	207.00	735.9	-10.1	-5.0	0.0	0.11	-0.11	-1.67
825.0	0.80	190.70	824.9	-11.2	-5.4	-0.1	0.26	0.11	-18.31
915.0	0.60	176.70	914.9	-12.2	-5.5	-0.5	0.29	-0.22	-15.56
1,050.0	0.70	175.30	1,049.9	-13.8	-5.4	-1.3	0.07	0.07	-1.04
1,095.0	0.60	177.60	1,094.9	-14.3	-5.4	-1.6	0.23	-0.22	5.11
1,185.0	0.50	202.40	1,184.9	-15.1	-5.5	-1.8	0.28	-0.11	27.56
1,275.0	0.20	240.80	1,274.9	-15.6	-5.8	-1.7	0.41	-0.33	42.67
1,365.0	0.10	253.20	1,364.9	-15.7	-6.0	-1.6	0.12	-0.11	13.78
1,455.0	0.00	244.40	1,454.9	-15.7	-6.1	-1.5	0.11	-0.11	0.00
End of EMS Surveys									
1,575.0	0.10	206.60	1,574.9	-15.8	-6.1	-1.5	0.08	0.08	0.00
1,755.0	2.50	322.40	1,754.8	-12.8	-8.6	2.0	1.41	1.33	64.33
1,935.0	7.30	322.10	1,934.1	-0.7	-18.0	15.8	2.67	2.67	-0.17
2,115.0	10.90	306.50	2,111.8	18.5	-38.7	42.9	2.41	2.00	-8.67
2,294.0	14.90	294.30	2,286.3	38.0	-73.3	82.6	2.69	2.23	-6.82
2,474.0	20.17	294.75	2,457.9	60.6	-122.6	136.8	2.93	2.93	0.25
2,654.0	20.00	296.24	2,626.9	87.2	-178.4	198.6	0.30	-0.09	0.83
2,834.0	18.90	297.56	2,796.7	114.3	-231.9	258.5	0.66	-0.61	0.73
3,014.0	16.92	296.50	2,967.9	139.5	-281.2	313.8	1.11	-1.10	-0.59
3,194.0	14.15	296.42	3,141.4	160.9	-324.3	362.1	1.54	-1.54	-0.04
3,374.0	12.84	295.64	3,316.4	179.4	-362.1	404.1	0.73	-0.73	-0.43
3,554.0	12.08	298.39	3,492.1	197.0	-396.7	442.9	0.54	-0.42	1.53
3,734.0	13.58	297.34	3,667.6	215.7	-432.0	482.8	0.84	0.83	-0.58
3,914.0	12.22	298.92	3,843.1	234.6	-467.4	523.0	0.78	-0.76	0.88
4,094.0	11.43	298.22	4,019.3	252.2	-499.8	559.9	0.45	-0.44	-0.39
4,274.0	11.56	297.71	4,195.7	269.0	-531.5	595.7	0.09	0.07	-0.28
4,454.0	8.75	295.71	4,372.8	283.4	-559.8	627.4	1.57	-1.56	-1.11
4,634.0	8.35	296.90	4,550.8	295.2	-583.8	654.2	0.24	-0.22	0.66
4,813.0	8.13	298.97	4,728.0	307.2	-606.5	679.8	0.21	-0.12	1.16
4,993.0	7.91	300.24	4,906.2	319.6	-628.3	704.9	0.16	-0.12	0.71
5,173.0	7.82	302.96	5,084.5	332.5	-649.3	729.4	0.21	-0.05	1.51
5,218.0	7.69	301.29	5,129.1	335.8	-654.4	735.5	0.58	-0.29	-3.71
5,315.0	7.69	301.29	5,225.2	342.5	-665.5	748.4	0.00	0.00	0.00
Projected to TD									



GEOGUIDANCE DRILLING

Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well SHU 263
Project:	SOUTH HOBBS UNIT	TVD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Site:	SEC. 4, T19S, R38E	MD Reference:	SHU 263 @ 3623.2usft (H&P 340)
Well:	SHU 263	North Reference:	Grid
Wellbore:	SHU 263	Survey Calculation Method:	Minimum Curvature
Design:	SHU 263	Database:	EDM 5000.1 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,505.1	1,505.0	Rustler (Base Red Beds)		0.00		
1,655.1	1,655.0	Top salt		0.00		
2,747.5	2,715.0	Base Salt (Yates)		0.00		
3,567.2	3,505.0	Queen		0.00		
3,885.2	3,815.0	Grayburg		0.00		
4,064.1	3,990.0	Basal Grayburg		0.00		
4,176.4	4,100.0	San Andres		0.00		

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
104.0	104.0	-0.8	-0.5	Start of EMS Surveys	
1,455.0	1,454.9	-15.7	-6.1	End of EMS Surveys	
5,315.0	5,225.2	342.5	-665.5	Projected to TD	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



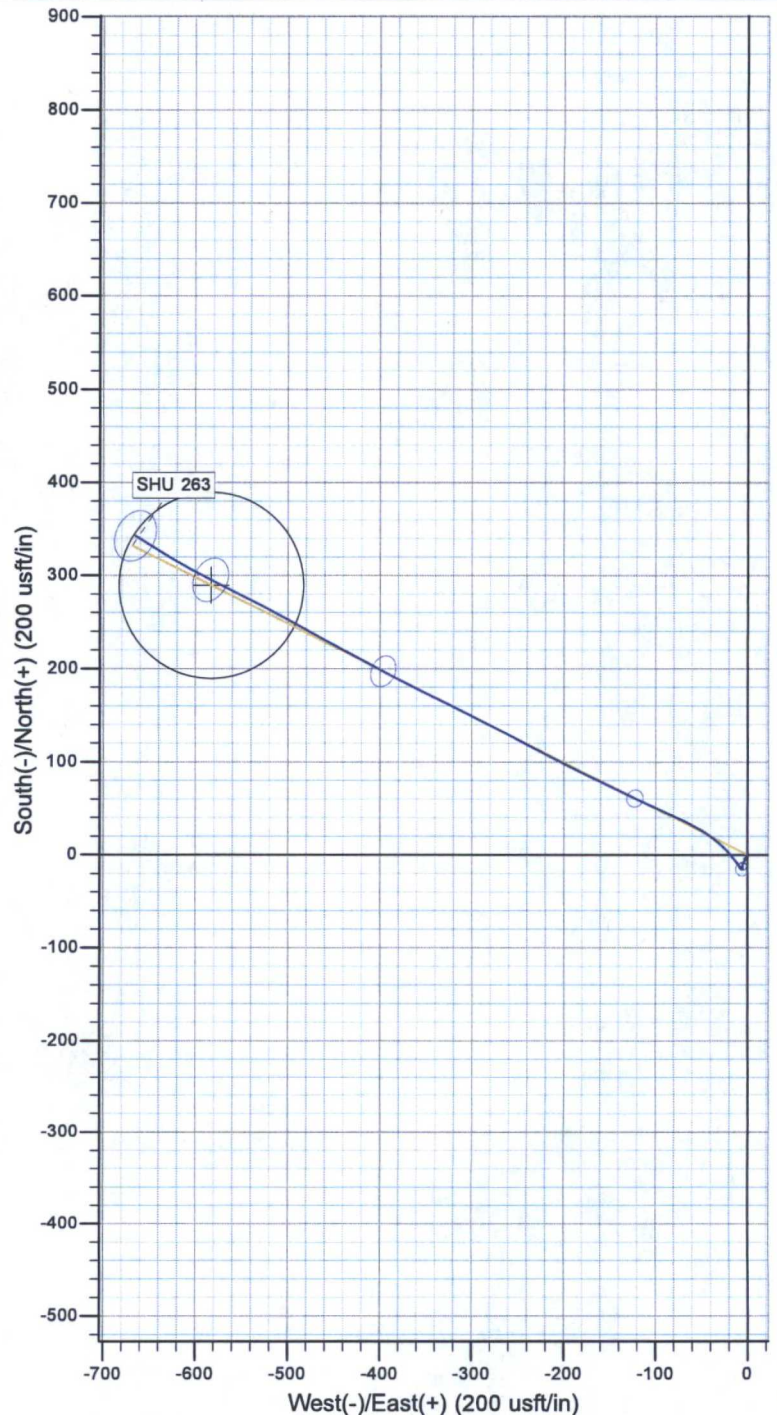
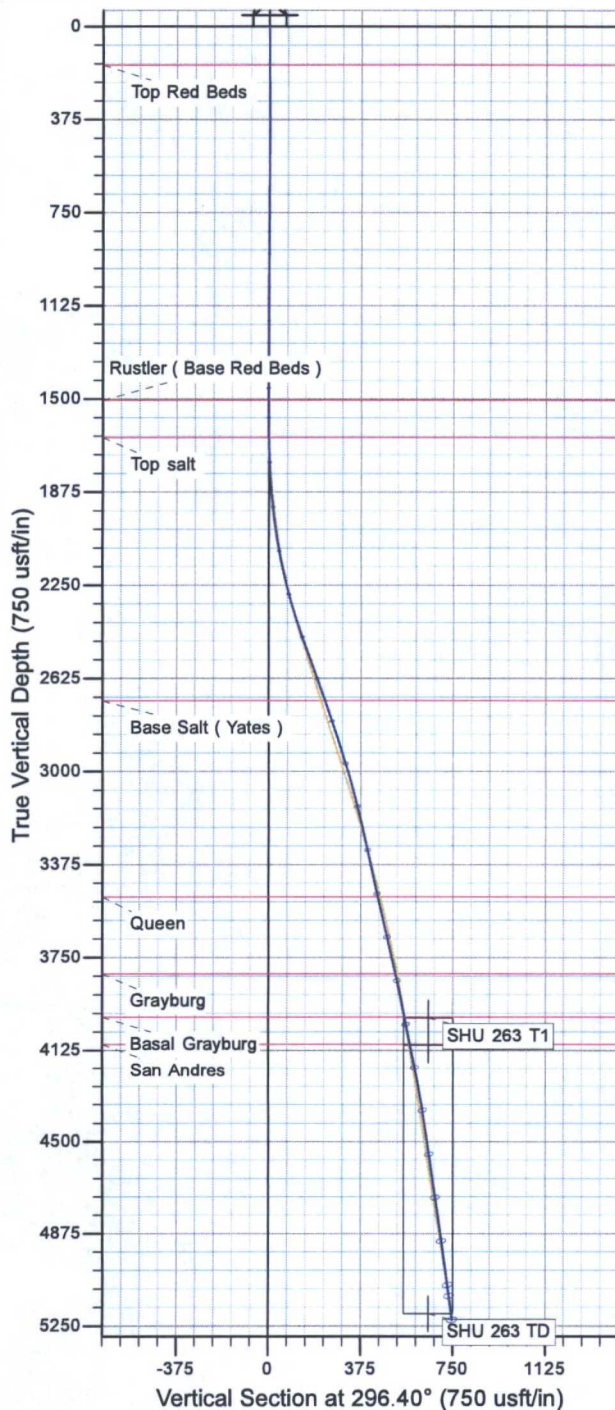
OCCIDENTAL PERMIAN LTD

Project: SOUTH HOBBS UNIT
Site: SEC. 4, T19S, R38E
Well: SHU 263
Wellpath: SHU 263
Design: SHU 263



Azimuths to Grid North
True North: -0.63°
Magnetic North: 6.29°

Magnetic Field
Strength: 48385.0nT
Dip Angle: 60.57°
Date: 3/17/2016
Model: IGRF2015



LEGEND

- △ SHU 263, SHU 263, 031716 V1 V0
- SHU 263

SECTION DETAILS

No plan data is available