

OCCIDENTAL PERMIAN LTD

SOUTH HOBBS UNIT

SEC. 9, T19S, R38E

SHU 282

SHU 282

Design: SHU 282

Standard Survey Report

14 March, 2018

**HOBBS OCD
MAY 09 2018
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GeoGuidance Drilling

Survey Report

Company: OCCIDENTAL PERMIAN LTD
Project: SOUTH HOBBS UNIT
Site: SEC. 9, T19S, R38E
Well: SHU 282
Wellbore: SHU 282
Design: SHU 282

Local Co-ordinate Reference: Well SHU 282
TVD Reference: SHU 282 @ 3619.80usft (TRINIDAD 435)
MD Reference: SHU 282 @ 3619.80usft (TRINIDAD 435)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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	Latitude:	32.676941
From:	Map	Easting:	863,000.00 usft	Longitude:	-103.153631
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.64 °

Well	SHU 282, SUR. N 608888.56 E 863569.25					
Well Position	+N/-S	0.00 usft	Northing:	608,888.56 usft	Latitude:	32.668373
	+E/-W	0.00 usft	Easting:	863,569.25 usft	Longitude:	-103.151894
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,619.80 usft	Ground Level:	3,602.30 usft

Wellbore	SHU 282				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/31/2018	6.72	60.53	48,179

Design	SHU 282				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	0.00	

Survey Program	Date	3/14/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
190.00	1,583.00	MultiShot Surveys (SHU 282)	EMS+IGRF	OWSG EMS + IGRF or WMM	
1,693.00	5,588.00	SHU 282 Surveys (SHU 282)	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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
190.00	0.50	233.60	190.00	-0.49	-0.67	-0.49	0.26	0.26	0.00	
343.00	0.70	146.50	342.99	-1.67	-0.69	-1.67	0.55	0.13	-56.93	
527.00	0.10	174.40	526.99	-2.76	-0.05	-2.76	0.33	-0.33	15.16	
709.00	1.50	336.00	708.97	-0.75	-1.01	-0.75	0.88	0.77	88.79	
894.00	0.70	325.20	893.93	2.39	-2.64	2.39	0.44	-0.43	-5.84	
1,079.00	1.20	33.90	1,078.91	4.93	-2.20	4.93	0.62	0.27	37.14	
1,268.00	1.10	335.40	1,267.88	8.22	-1.85	8.22	0.60	-0.05	-30.95	
1,425.00	0.60	31.10	1,424.86	10.30	-2.05	10.30	0.58	-0.32	35.48	
1,583.00	0.80	253.80	1,582.86	10.70	-2.69	10.70	0.83	0.13	-86.90	

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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)
MultiShot Surveys									
1,693.00	0.44	336.64	1,692.85	10.87	-3.59	10.87	0.79	-0.33	75.31
1,881.00	0.22	278.80	1,880.85	11.59	-4.23	11.59	0.20	-0.12	-30.77
2,070.00	0.42	291.40	2,069.85	11.90	-5.24	11.90	0.11	0.11	6.67
2,258.00	0.00	257.27	2,257.85	12.15	-5.88	12.15	0.22	-0.22	0.00
2,447.00	0.09	342.39	2,446.85	12.29	-5.92	12.29	0.05	0.05	0.00
2,635.00	0.50	52.66	2,634.84	12.93	-5.32	12.93	0.25	0.22	37.38
2,825.00	0.83	49.85	2,824.83	14.32	-3.61	14.32	0.17	0.17	-1.48
3,014.00	0.83	54.38	3,013.81	16.00	-1.45	16.00	0.03	0.00	2.40
3,202.00	1.45	46.40	3,201.77	18.43	1.38	18.43	0.34	0.33	-4.24
3,391.00	0.35	47.87	3,390.75	20.47	3.54	20.47	0.58	-0.58	0.78
3,580.00	1.32	45.76	3,579.72	22.37	5.53	22.37	0.51	0.51	-1.12
3,770.00	0.83	181.51	3,769.71	22.52	7.06	22.52	1.05	-0.26	71.45
3,958.00	0.57	169.56	3,957.69	20.24	7.20	20.24	0.16	-0.14	-6.36
4,146.00	0.82	154.06	4,145.68	18.11	7.95	18.11	0.17	0.13	-8.24
4,334.00	0.75	136.11	4,333.66	16.02	9.40	16.02	0.14	-0.04	-9.55
4,522.00	0.88	161.34	4,521.64	13.76	10.71	13.76	0.20	0.07	13.42
4,710.00	0.90	165.60	4,709.62	10.97	11.54	10.97	0.04	0.01	2.27
4,900.00	0.66	169.25	4,899.60	8.45	12.11	8.45	0.13	-0.13	1.92
5,088.00	0.31	138.27	5,087.60	7.00	12.65	7.00	0.23	-0.19	-16.48
5,278.00	0.18	210.03	5,277.60	6.36	12.85	6.36	0.16	-0.07	37.77
5,467.00	0.53	198.65	5,466.59	5.27	12.42	5.27	0.19	0.19	-6.02
5,514.00	0.48	179.53	5,513.59	4.87	12.35	4.87	0.37	-0.11	-40.68
5,588.00	0.48	179.53	5,587.59	4.25	12.36	4.25	0.00	0.00	0.00

Projection To Bit

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,583.00	1,582.86	10.70	-2.69	MultiShot Surveys
5,588.00	5,587.59	4.25	12.36	Projection To Bit

Checked By: _____ Approved By: _____ Date: _____