



OCCIDENTAL PERMIAN LTD

**NORTH HOBBS UNIT
SEC. 24, T18S, R37E
NHU 24-679
NHU 24-679**

HOBBS OCD

AUG 04 2016

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Survey: Survey #1

Final Survey Report

22 March, 2016





GeoGuidance Drilling
Final Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well NHU 24-679
Project:	NORTH HOBBS UNIT	TVD Reference:	NHU 24-679 @ 3685.90usft (H&P 340)
Site:	SEC. 24, T18S, R37E	MD Reference:	NHU 24-679 @ 3685.90usft (H&P 340)
Well:	NHU 24-679	North Reference:	Grid
Wellbore:	NHU 24-679	Survey Calculation Method:	Minimum Curvature
Design:	NHU 24-679	Database:	TEXAS

Project	NORTH 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		

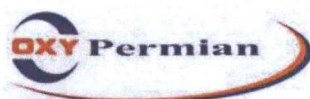
Site	SEC. 24, T18S, R37E		
Site Position:		Northing:	632,000.00 usft
From:	Map	Easting:	847,000.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 43' 56.5824 N
		Longitude:	103° 12' 17.7425 W
		Grid Convergence:	0.61 °

Well		NHU 24-679, SUR. N 632679.15 E 849179.98				
Well Position	+N/-S	0.00 usft	Northing:	632,679.15 usft	Latitude:	32° 44' 3.0712 N
	+E/-W	0.00 usft	Easting:	849,179.98 usft	Longitude:	103° 11' 52.1411 W
Position Uncertainty	-	0.00 usft	Wellhead Elevation:	3,685.90 usft	Ground Level:	3,669.40 usft

Wellbore	NHU 24-679				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/26/2016	6.95	60.61	48,414

Design		NHU 24-679		
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	236.37

Survey Program	Date 3/22/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
137.00	4,775.00	Survey #1 (NHU 24-679)	MWD+IGRF	OWSG MWD + IGRF or WMM



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MD Reference: NHU 24-679 @ 3685.90usft (H&P 340)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: TEXAS

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	V. Sec (usft)
0.00	0.00	0.00	0.00	3,685.90	0.00	0.00	632,679.15	849,179.98	0.00	0.00
137.00	0.88	353.46	136.99	3,548.91	1.05	-0.12	632,680.20	849,179.86	0.64	-0.48
318.00	0.70	311.14	317.98	3,367.92	3.15	-1.11	632,682.30	849,178.87	0.33	-0.82
500.00	1.50	256.50	499.95	3,185.95	3.33	-4.26	632,682.48	849,175.72	0.68	1.71
623.00	4.70	255.30	622.75	3,063.15	1.67	-10.71	632,680.82	849,169.27	2.60	7.99
820.00	8.70	228.70	818.41	2,867.49	-10.22	-29.72	632,668.93	849,150.26	2.52	30.40
999.00	10.30	231.60	994.95	2,690.95	-29.09	-52.43	632,650.06	849,127.55	0.93	59.77
1,179.00	12.20	240.30	1,171.50	2,514.40	-48.51	-81.57	632,630.64	849,098.41	1.41	94.78
1,359.00	16.10	235.40	1,346.01	2,339.89	-72.12	-118.65	632,607.03	849,061.33	2.26	138.73
1,539.00	15.25	239.60	1,519.32	2,166.58	-98.27	-159.61	632,580.88	849,020.37	0.79	187.32
1,729.00	16.10	243.40	1,702.25	1,983.65	-122.71	-204.72	632,556.44	848,975.26	0.70	238.42
1,909.00	19.90	240.80	1,873.42	1,812.48	-148.84	-253.80	632,530.31	848,926.18	2.16	293.76
2,089.00	21.20	236.80	2,041.97	1,643.93	-181.61	-307.78	632,497.54	848,872.20	1.06	356.85
2,269.00	21.20	238.02	2,209.79	1,476.11	-216.67	-362.62	632,462.48	848,817.36	0.25	421.93
2,449.00	18.30	234.70	2,379.18	1,306.72	-250.25	-413.30	632,428.90	848,766.68	1.73	482.72
2,629.00	15.60	235.20	2,551.35	1,134.55	-280.40	-456.25	632,398.75	848,723.73	1.50	535.18
2,808.00	14.20	233.60	2,724.33	961.57	-307.16	-493.69	632,371.99	848,686.29	0.82	581.17
2,989.00	12.60	231.80	2,900.39	785.51	-332.55	-527.07	632,346.60	848,652.91	0.91	623.03
3,168.00	14.70	240.90	3,074.35	611.55	-355.67	-562.27	632,323.48	848,617.71	1.67	665.14
3,348.00	14.40	243.00	3,248.58	437.32	-376.94	-602.17	632,302.21	848,577.81	0.34	710.14
3,518.00	13.32	242.60	3,413.63	272.27	-395.55	-638.39	632,283.60	848,541.59	0.64	750.61
3,708.00	12.60	241.30	3,598.78	87.12	-415.57	-676.00	632,263.58	848,503.98	0.41	793.01
3,888.00	11.20	241.40	3,774.91	-89.01	-433.37	-708.57	632,245.78	848,471.41	0.78	829.99
4,068.00	10.80	240.50	3,951.60	-265.70	-450.04	-738.59	632,229.11	848,441.39	0.24	864.22
4,247.00	10.81	239.78	4,127.43	-441.53	-466.75	-767.70	632,212.40	848,412.28	0.08	897.71
4,427.00	10.00	238.70	4,304.47	-618.57	-483.37	-795.64	632,195.78	848,384.34	0.46	930.17
4,607.00	9.70	239.20	4,481.82	-795.92	-499.25	-822.01	632,179.90	848,357.97	0.17	960.93



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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	V. Sec (usft)
4,717.00	9.50	239.60	4,590.28	-904.38	-508.59	-837.80	632,170.56	848,342.18	0.19	979.25
4,775.00	9.50	239.60	4,647.48	-961.58	-513.43	-846.06	632,165.72	848,333.92	0.00	988.81

Checked By: _____ Approved By: _____ Date: _____



OCCIDENTAL PERMIAN LTD

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Wellpath: NHU 24-679
Design: NHU 24-679

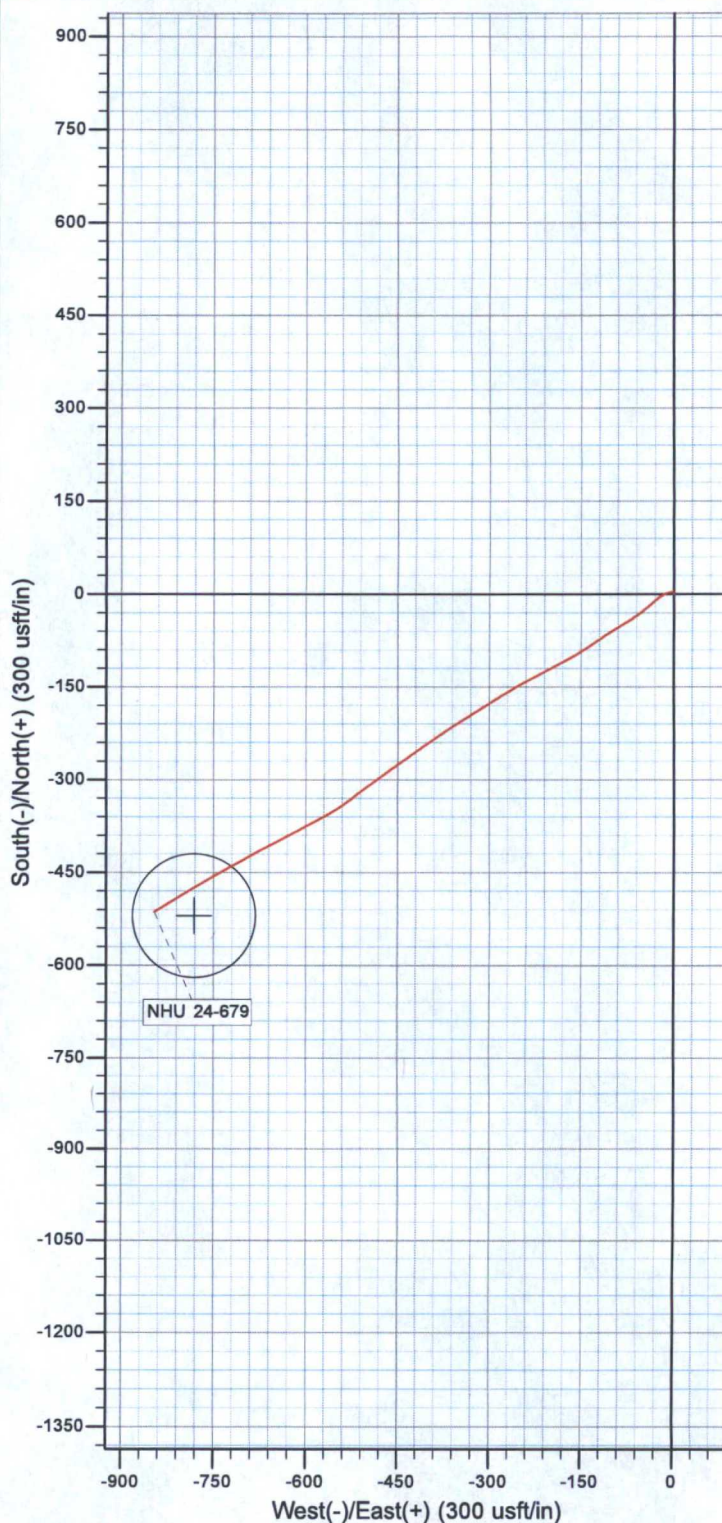
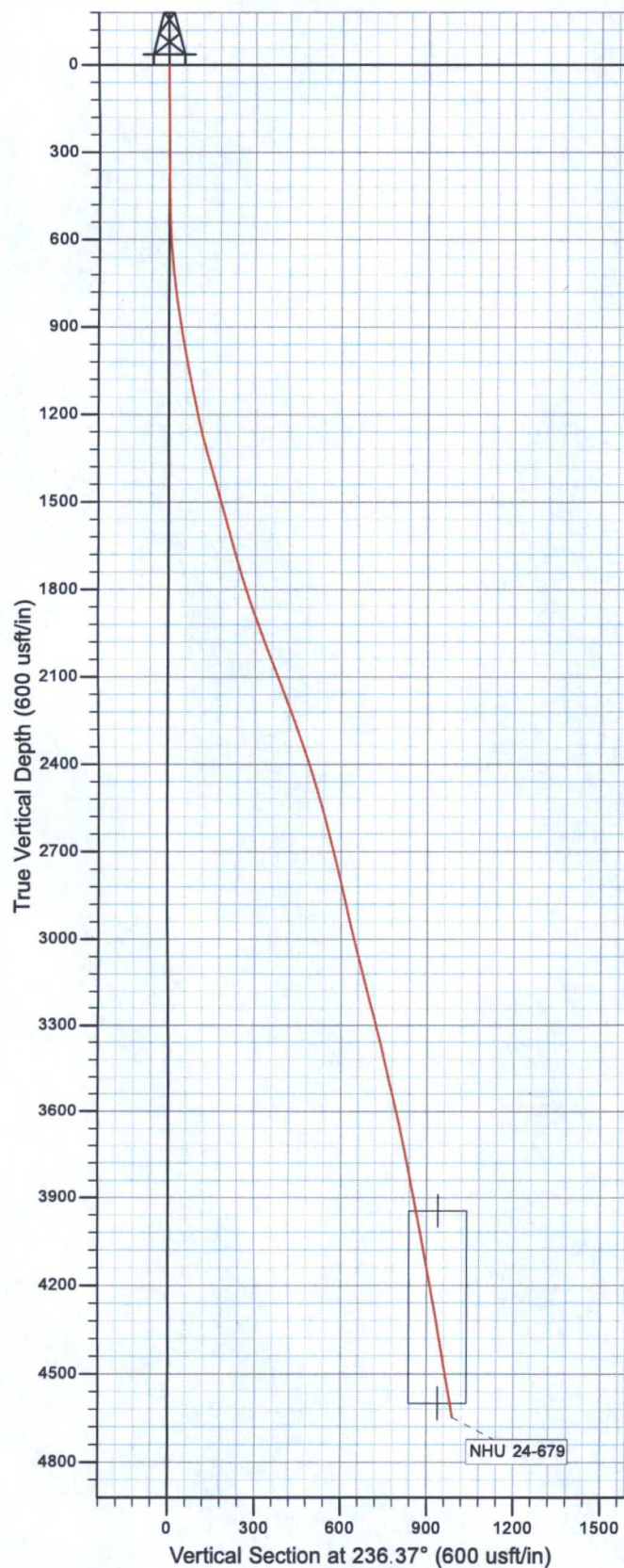


Azimuths to Grid North
True North: -0.61°
Magnetic North: 6.34°

Magnetic Field
Strength: 48414.0nT
Dip Angle: 60.61°
Date: 2/26/2016
Model: IGRF2015



GEOGUIDANCE
DRILLING SERVICES, INC.



FINAL PLOT