

OXY USA PERMIAN EOR

HOBBS NORTH (LEA)

NORTH HOBBS GRAYBURG-SA UNIT

NHU (G/SA) 667-24

3002543606

ORIG HOLE

HOBBS OCD
OCT 27 2017
RECEIVED

Design: NHU (G/SA) 667-24

Standard Survey Report

01 May, 2017

Oxy Survey Report

Company: OXY USA PERMIAN EOR
Project: HOBBS NORTH (LEA)
Site: NORTH HOBBS GRAYBURG-SA UNIT
Well: NHU (G/SA) 667-24
Wellbore: ORIG HOLE
Design: NHU (G/SA) 667-24

Local Co-ordinate Reference: Well NHU (G/SA) 667-24
TVD Reference: TR435 17.5'KB @ 3692.70ft (TRINIDAD 435)
MD Reference: TR435 17.5'KB @ 3692.70ft (TRINIDAD 435)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: HOPSPP

Project	HOBBS NORTH (LEA), North America, North West Hobbs, NM		
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		Using geodetic scale factor

Site	NORTH HOBBS GRAYBURG-SA UNIT, NORTH HOBBS G/SA UNIT		
Site Position:		Northing: 635,270.89 usft	Latitude: 32° 44' 28.209035 N
From: Map		Easting: 853,897.68 usft	Longitude: 103° 10' 56.590797 W
Position Uncertainty:	1.00 ft	Slot Radius: 13.200 in	Grid Convergence: 0.62 °

Well	NHU (G/SA) 667-24, 1402020100		
Well Position	+N/-S 0.00 ft	Northing: 633,973.36 usft	Latitude: 32° 44' 16.171932 N
	+E/-W 0.00 ft	Easting: 846,374.68 usft	Longitude: 103° 12' 24.816218 W
Position Uncertainty	5.59 ft	Wellhead Elevation: ft	Ground Level: 3,675.20 ft

Wellbore	ORIG HOLE		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	12/31/2016	6.97
			Dip Angle (°)
			60.82
			Field Strength (nT)
			48,309

Design	NHU (G/SA) 667-24		
Audit Notes:			
Version:	Phase: ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°)
			130.30

Survey Program	Date 5/1/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
112.00	5,393.00	MWD Survey (Surf+Prod) (ORIG HOLE)	B001Mb_MWD+HRGM
			Description
			OWSG MWD + HRGM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.00	0.57	204.89	112.00	-0.51	-0.23	0.15	0.51	0.51	0.00
295.00	0.35	241.37	294.99	-1.60	-1.11	0.19	0.19	-0.12	19.93
478.00	1.80	119.55	477.96	-3.28	0.90	2.81	1.10	0.79	-66.57
662.00	8.18	116.13	661.17	-10.48	15.18	18.36	3.47	3.47	-1.86
845.00	13.93	124.30	840.71	-28.64	45.09	52.92	3.25	3.14	4.46
1,031.00	17.14	129.31	1,019.90	-58.63	84.81	102.60	1.87	1.73	2.69
1,220.00	17.32	129.22	1,200.42	-94.07	128.15	158.58	0.10	0.10	-0.05
1,409.00	17.93	130.01	1,380.55	-130.56	172.23	215.80	0.35	0.32	0.42
1,515.00	17.76	129.92	1,481.45	-151.42	197.13	248.28	0.16	-0.16	-0.08

Oxy Survey Report

Company:	OXY USA PERMIAN EOR
Project:	HOBB8 NORTH (LEA)
Site:	NORTH HOBB8 GRAYBURG-SA UNIT
Well:	NHU (G/SA) 667-24
Wellbore:	ORIG HOLE
Design:	NHU (G/SA) 667-24
Database:	
Survey Calculation Method:	Minimum Curvature
North Reference:	Grid
MD Reference:	TR435 17.5KB @ 3692.70M (TRINIDAD 435)
TVD Reference:	TR435 17.5KB @ 3692.70M (TRINIDAD 435)
Local Co-ordinate Reference:	Well NHU (G/SA) 667-24
HOPSP	

Survey	Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	+N-S (m)	+E-W (m)	Vertical Section (m)	Dogleg Rate (/100m)	Build Rate (/100m)	Turn Rate (/100m)
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1,694.00	16.04	130.01	1,652.71	-184.84	237.01	300.31	0.96	-0.96	0.05	0.05
1,882.00	17.19	132.12	1,832.86	-220.18	277.51	354.06	0.89	0.61	1.12	0.42
2,070.00	16.97	132.91	2,012.57	-257.49	318.21	409.23	0.17	-0.12	0.23	-0.23
2,259.00	16.53	132.47	2,193.55	-294.42	358.25	463.65	0.24	-0.23	-0.14	-1.35
2,448.00	16.26	129.92	2,374.87	-329.56	398.37	516.98	0.41	-0.14	-0.37	-1.53
2,637.00	15.56	127.02	2,556.63	-361.80	438.91	568.75	0.56	-0.68	-0.37	-1.26
2,825.00	14.29	124.65	2,738.28	-390.17	478.13	617.01	0.75	-0.68	-0.37	-1.82
3,013.00	14.86	128.08	2,920.24	-418.24	516.19	664.19	0.55	-0.30	0.47	3.34
3,200.00	15.74	134.32	3,100.62	-450.75	553.22	713.46	1.00	0.47	0.83	-1.44
3,390.00	17.32	131.59	3,282.76	-487.53	592.81	767.45	0.93	0.83	-1.25	-1.67
3,579.00	14.95	128.43	3,464.31	-521.36	632.95	819.95	1.34	-1.25	0.30	0.14
3,767.00	15.52	128.69	3,645.70	-552.16	671.58	869.33	0.31	-0.93	0.00	0.00
3,956.00	13.76	128.69	3,828.56	-582.02	708.87	917.07	0.93	-1.77	-1.76	0.88
4,146.00	10.42	130.36	4,014.32	-607.28	739.81	956.86	1.77	-1.15	1.54	1.49
4,334.00	8.26	133.26	4,199.82	-627.54	762.40	987.35	1.18	-0.77	-0.34	-0.81
4,522.00	6.81	125.53	4,388.19	-643.28	781.31	1,011.94	0.94	-0.77	0.00	0.00
4,710.00	6.90	136.43	4,572.86	-657.94	798.16	1,034.28	0.69	0.05	0.74	5.80
4,898.00	6.73	137.83	4,759.53	-674.28	813.34	1,056.43	0.13	-0.09	0.00	0.00
5,087.00	6.29	141.26	4,947.31	-690.57	827.25	1,077.57	0.31	-0.23	1.81	1.49
5,275.00	5.98	144.07	5,134.23	-706.53	839.44	1,097.20	0.23	-0.16	0.00	0.00
5,455.00	5.58	143.11	5,313.34	-720.92	850.11	1,114.64	0.35	-0.34	0.00	0.00
5,633.00	5.58	143.11	5,491.63	-735.10	864.50	1,130.76	0.35	-0.34	0.00	0.00

Casing Points	Measured Depth (m)	Vertical Depth (m)	Name	Casing Diameter (in)	Hole Diameter (in)
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Checked By:

Approved By:

Date: