

Results of Directional Survey

API number:	30-025-41643	DD
OGRID:		Operator: OCCIDENTAL PERMIAN LTD
	Property:	NORTH HOBBS G/SA UNIT # 949

surface	ULSTR:	F	33	T 18S	R 38E
				2243 FNL	2046 FWL

BH Loc	ULSTR:	I	33	T 18S	R 38E
5228 MD		4548.6	TVD	2541 FSL	1071 FEL
				2739 FNL	4209 FWL

Top Perf/OH	ULSTR:	J	33	T 18S	R 38E
4630 MD		4045.4	TVD	2603 FSL	1388 FEL
				2677 FNL	3892 FWL
Bot Perf/OH	ULSTR:	I	33	T 18S	R 38E
4885 MD		4260.1	TVD	2578 FSL	1253 FEL
				2702 FNL	4027 FWL

	MD	N/S	E/W	VD
	4533.8	-424.20	1794.70	3964.5
TOP PERFS/OH	4630	-433.54	1845.86	4045.41
	4710	-441.30	1888.40	4112.70
	4753.4	-445.70	1911.30	4149.30
BOT PERFS/OH	4885	-458.71	1981.05	4260.09
	4890	-459.20	1983.70	4264.30

NEXT TO LAST	5184	-490.40	2139.60	4511.70
LAST READING	5228	-495.50	2162.90	4548.60
TD	5228	-495.50	2162.90	4548.60

Surface Location	2243 FN	2046 FW
Projected BHL	2739 FN	4209 FW
Location of		
Top Perfs/OH	2677 FN	3892 FW
Bottom Perfs/OH	2702 FN	4027 FW

SUMMARY of Subsurface Locations

Surface Location	F-33-18S-38E	2243 FN	2046 FW	Vert. Depth
Top Perfs/OH	F-33-18S-38E	2677 FN	3892 FW	4045.41
Bottom Perfs/OH	I-33-18S-38E	2702 FN	4027 FW	4260.09
Projected TD	I-33-18S-38E	2739 FN	4209 FW	4548.60

JUL 17 2014

OCCIDENTAL PERMIAN LTD.

Hobbs, North

Lea County, NM

North Hobbs Unit 33 #949

DH - Job #320314-MPD-342

HOBBS OCD

JUN 09 2014

RECEIVED

Survey: MWD

SDI Survey Report

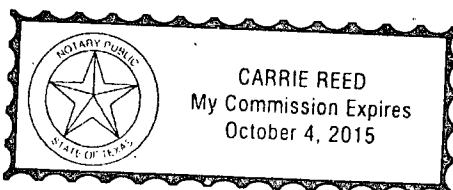
This survey is correct to the best of my knowledge and is supported by actual field data.

Leah

Notarized this date 30th of May, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well North Hobbs Unit 33 #949
Project:	Hobbs, North	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM	MD Reference:	Mean Sea Level (System)
Well:	North Hobbs Unit 33 #949	North Reference:	True
Wellbore:	DH - Job #320314-MPD-342	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320314-MPD-342	Database:	EDM-Regulatory

Project	Hobbs, North		
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		Lea County, NM			
Site Position:		Northing:	0.00 usft	Latitude:	30° 59' 24.512 N
From:	Map	Easting:	0.00 usft	Longitude:	105° 55' 44.137 W
Position Uncertainty:	0.0 usft	Slot Radius:	0"	Grid Convergence:	-0.82 °

Well	North Hobbs Unit 33 #949, Directional					
Well Position	+N/-S	0.0 usft	Northing:	622,204.02 usft	Latitude:	32° 42' 18.000 N
	+E/-W	0.0 usft	Easting:	862,465.35 usft	Longitude:	103° 9' 18.000 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft

Wellbore	DH - Job #320314-MPD-342				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/15/2014	7.08	60.63	48,700

Design		DH - Job #320314-MPD-342		
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	103.61

Survey Program		Date	6/1/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
173.0	5,228.0	MWD (DH - Job #320314-MPD-342)	MWD	MWD	

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0	
173.0	0.26	135.03	173.0	-0.3	0.3	135.03	0.4	
354.0	2.20	130.19	353.9	-2.8	3.2	131.10	4.3	
505.0	3.69	120.52	504.7	-7.1	9.6	126.61	12.0	
685.0	6.42	122.90	684.0	-15.6	23.1	124.00	27.8	
866.0	8.27	117.89	863.5	-27.1	43.1	122.22	50.9	
1,046.0	10.82	117.80	1,041.0	-41.1	69.5	120.60	80.7	
1,226.0	13.01	117.27	1,217.1	-58.2	102.4	119.63	117.8	
1,406.0	13.98	115.95	1,392.2	-77.0	140.0	118.83	159.8	
1,575.0	14.60	114.99	1,555.9	-95.0	177.6	118.13	201.4	
1,614.9	14.80	115.59	1,594.5	-99.3	186.8	118.00	211.5	
1,645.0	14.95	116.04	1,623.6	-102.7	193.7	117.92	219.3	

SDI

SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well North Hobbs Unit 33 #949
Project:	Hobbs, North	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM	MD Reference:	Mean Sea Level (System)
Well:	North Hobbs Unit 33 #949	North Reference:	True
Wellbore:	DH - Job #320314-MPD-342	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320314-MPD-342	Database:	EDM-Regulatory

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,687.4	15.79	114.81	1,664.5	-107.5	203.9	117.80	230.5
1,825.0	18.55	111.56	1,796.0	-123.4	241.3	117.09	271.0
2,006.0	22.42	113.14	1,965.5	-147.5	299.8	116.20	334.1
2,186.0	26.91	109.71	2,129.0	-174.8	369.7	115.30	409.0
2,366.0	30.43	106.90	2,286.9	-201.8	451.7	114.07	494.8
2,546.0	34.65	105.41	2,438.7	-228.6	544.7	112.77	590.8
2,726.0	38.34	104.44	2,583.3	-256.2	648.2	111.57	696.9
2,844.1	40.58	103.62	2,674.5	-274.4	721.0	110.83	771.4
2,907.0	41.77	103.21	2,721.9	-284.0	761.3	110.46	812.5
3,087.0	43.26	98.82	2,854.6	-307.1	880.6	109.23	932.6
3,267.0	44.67	97.59	2,984.1	-324.9	1,004.3	107.93	1,055.5
3,448.0	44.85	97.23	3,112.6	-341.4	1,130.7	106.80	1,181.1
3,628.0	43.62	96.97	3,241.6	-356.9	1,255.3	105.87	1,305.0
3,808.0	40.19	96.53	3,375.6	-371.0	1,374.6	105.11	1,423.8
3,858.7	39.32	96.46	3,414.5	-374.7	1,406.8	104.91	1,455.9
3,988.0	37.11	96.27	3,516.1	-383.6	1,486.3	104.47	1,535.0
4,169.0	35.09	97.32	3,662.4	-396.2	1,592.2	103.97	1,640.8
4,220.4	34.84	97.29	3,704.5	-399.9	1,621.5	103.86	1,670.1
4,349.0	34.21	97.23	3,810.4	-409.1	1,693.7	103.58	1,742.5
4,426.2	33.64	98.30	3,874.5	-415.0	1,736.4	103.44	1,785.3
4,529.0	32.89	99.78	3,960.4	-423.8	1,792.1	103.30	1,841.5
4,533.8	32.88	99.81	3,964.5	-424.2	1,794.7	103.30	1,844.2
4,710.0	32.54	100.84	4,112.7	-441.3	1,888.4	103.15	1,939.2
4,753.4	32.58	100.73	4,149.3	-445.7	1,911.3	103.13	1,962.5
4,890.0	32.71	100.40	4,264.3	-459.2	1,983.7	103.03	2,036.2
5,070.0	32.71	101.54	4,415.8	-477.7	2,079.2	102.94	2,133.4
5,174.0	32.80	102.24	4,503.3	-489.3	2,134.3	102.91	2,189.7
5,184.0	32.80	102.24	4,511.7	-490.4	2,139.6	102.91	2,195.1
Last MWD Survey							
5,228.0	32.80	102.24	4,548.6	-495.5	2,162.9	102.90	2,218.9
Projection to Bit							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,184.0	4,511.7	-490.4	2,139.6	Last MWD Survey
5,228.0	4,548.6	-495.5	2,162.9	Projection to Bit



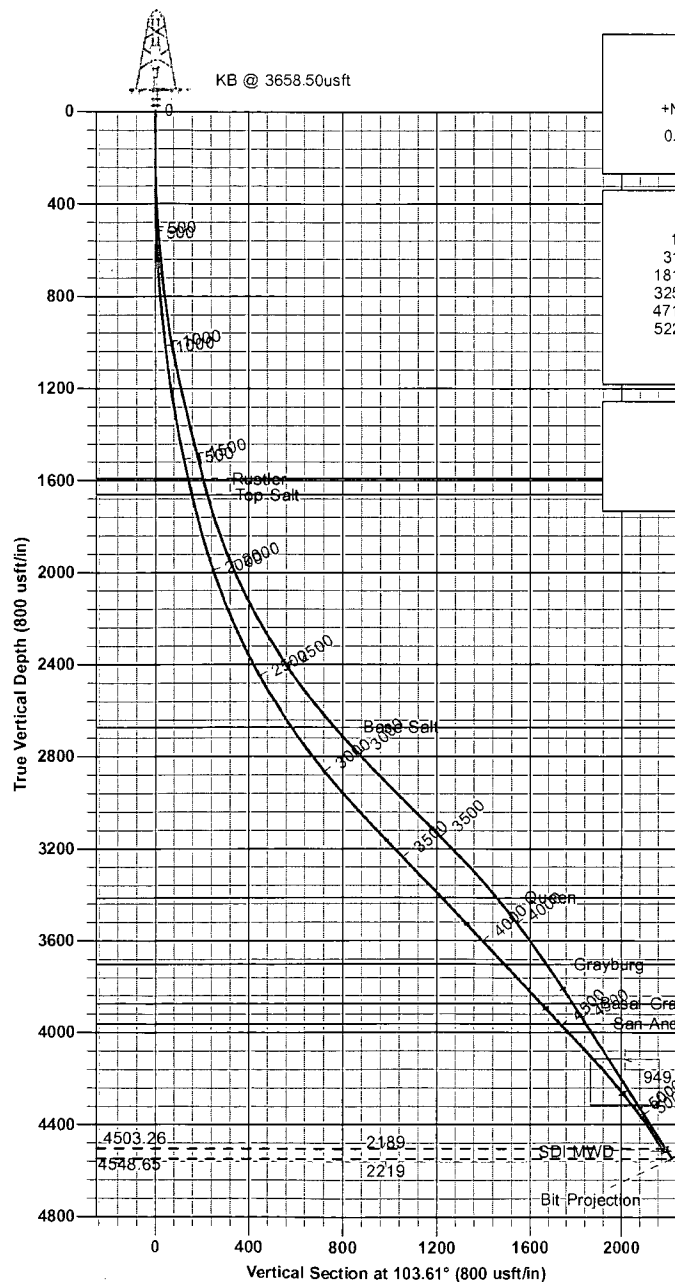
NHU 33-949
Hobbs Grayburg San Andres
Northing: 622155.24
Easting: 862495.92
Plan #7



Azimuths to Grid North
True North: -0.64°
Magnetic North: 6.49°

Magnetic Field
Strength: 48712.4snT
Dip Angle: 60.64°
Date: 10/22/2013
Model: IGRF2010

To convert a Magnetic Direction to a Grid Direction, Add 6.50°
To convert a True Direction to a Grid Direction, Subtract 0.64°



WELL DETAILS 33-949						
Ground Level: 3642.00						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	622155.24	862495.92	32.705	-103.155	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
16.50	0.00	0.00	16.50	0.00	0.00	0.00	0.00	0.00	
316.50	0.00	0.00	316.50	0.00	0.00	0.00	0.00	0.00	
1816.50	15.00	116.00	1799.42	-85.58	175.47	1.00	116.00	190.69	
3256.07	43.05	100.78	3047.08	-262.85	839.59	2.00	-21.85	877.87	
4719.01	43.05	100.78	4116.22	-449.55	1820.54	0.00	0.001875.21		949 TGT
5227.78	33.00	100.78	4516.50	-508.08	2128.01	1.97	179.992187.81		

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
949 TGT	4116.50	-474.16	1958.01	621681.08	864453.94
949 BHL	4516.50	-516.64	2111.98	621638.60	864607.90

PROJECT DETAILS: Hobbs Grayburg San Andres	
Geodetic System:	US State Plane 1927
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	New Mexico East 3001
System Datum:	Mean Sea Level

SITE DETAILS: North Hobbs Unit 33	
Site Centre Northing:	622355.75
Easting:	862403.21
Positional Uncertainty:	0.00
Convergence:	0.64
Local North:	Grid

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1594.50	1605.34	Rustler
1664.50	1677.26	Top Salt
2674.50	2780.49	Base Salt
3414.50	3758.82	Queen
3704.50	4155.64	Grayburg
3874.50	4388.25	Basal Grayburg
3964.50	4511.40	San Andres

