

Results of Directional Survey

DD

API number:	30-025-40859		
OGRID:		Operator:	OCCIDENTAL PERMIAN LTD
		Property:	NORTH HOBBS G/SA UNIT # 945

surface	ULSTR:	H	19	T	18S	R	38E
				2361	FNL	1064	FEL

BH Loc	ULSTR:	P	19	T	18S	R	38E
5040	MD	4568.5	TVD	1143	FSL	1225	FEL
				4137	FNL		

Top Perf/OH	ULSTR:	I	19	T	18S	R	38E
4582	MD	4202.6	TVD	1414	FSL	1174	FEL
				3866	FNL		

Bot Perf/OH	ULSTR:	I	19	T	18S	R	38E
4710	MD	4305.8	TVD	1339	FSL	1186	FEL
				3941	FNL		

	MD	N/S	E/W	VD
	4568	-1496.72	-108.44	4191.26
TOP PERFS/OH	4582	-1504.86	-109.76	4202.57
	4654	-1546.72	-116.53	4260.76
	4654	-1546.72	-116.53	4260.76
BOT PERFS/OH	4710	-1579.51	-122.28	4305.79
	4741	-1597.66	-125.47	4330.72

NEXT TO LAST	5026.45	-1767.35	-158.84	4557.80
LAST READING	5040	-1775.51	-160.50	4568.49
TD	5040	-1775.51	-160.50	4568.49

Surface Location	2361	FN	1064	FE
Projected BHL	4137	FN	1225	FE
Location of				
Top Perfs/OH	3866	FN	1174	FE
Bottom Perfs/OH	3941	FN	1186	FE

SUMMARY of Subsurface Locations

Surface Location	H-19-18S-38E	2361	FN	1064	FE	Vert. Depth
Top Perfs/OH	I-19-18S-38E	3866	FN	1174	FE	4202.57
Bottom Perfs/OH	I-19-18S-38E	3941	FN	1186	FE	4305.79
Projected TD	P-19-18S-38E	4137	FN	1225	FE	4568.49

SEP 05 2013



Scientific Drilling

HOBBS OCD

MAY 29 2013

RECEIVED

OXY

Hobbs Grayburg San Andres
New Mexico Hobbs Unit
NHU # 19-945

Original Wellbore

Survey: Survey #1

Standard Survey Report

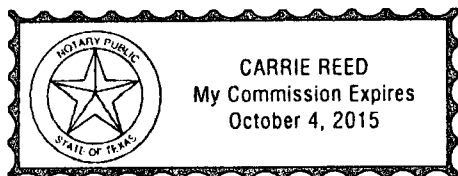
This survey is correct to the best of my knowledge and is supported by actual field data.

K. Wharton

Notarized this date 31st of December, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Company:	OXY	Local Co-ordinate Reference:	Well NHU # 19-945
Project:	Hobbs Grayburg San Andres	TVD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Site:	New Mexico Hobbs Unit	MD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Well:	NHU # 19-945	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM-JodyBarclay-Local

Project	Hobbs Grayburg San Andres, Lea County, New Mexico		
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	New Mexico Hobbs Unit		
Site Position:		Northing:	632,523.03 usft
From:	Map	Easting:	853,967.89 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 44' 1.015 N
		Longitude:	103° 10' 56.118 W
		Grid Convergence:	0.62 °

Well	NHU # 19-945		
Well Position	+N/-S	0.00 usft	Northing: 632,523.03 usft
	+E/-W	0.00 usft	Easting: 853,967.89 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 44' 1.015 N
		Longitude:	103° 10' 56.118 W
		Ground Level:	3,652.00 usft

Wellbore	Original Wellbore		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	12/21/12	7.25
			Dip Angle (°)
			60.69
			Field Strength (nT)
			48,811

Design	Original Wellbore		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction (°)
			182.72

Survey Program	Date 12/30/12		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
144.00	5,040.00	Survey #1 (Original Wellbore)	SDI MWD
			Description
			SDI MWD - Standard ver 1.0.1

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144.00	0.35	337.04	144.00	0.40	-0.17	-0.40	0.24	0.24	0.00
207.00	0.35	294.94	207.00	0.66	-0.42	-0.64	0.40	0.00	-66.83
232.00	0.24	290.72	232.00	0.71	-0.54	-0.69	0.46	-0.45	-16.89
Base Red Beds									
267.00	0.09	267.08	267.00	0.74	-0.63	-0.71	0.46	-0.42	-67.54
326.00	0.35	314.54	326.00	0.86	-0.81	-0.82	0.50	0.44	80.44
399.00	0.26	310.94	399.00	1.13	-1.09	-1.07	0.13	-0.12	-4.93
485.00	0.44	228.32	484.99	1.04	-1.49	-0.96	0.56	0.21	-96.07
572.00	0.70	180.60	571.99	0.28	-1.74	-0.20	0.60	0.30	-54.85
658.00	1.67	180.60	657.97	-1.50	-1.76	1.58	1.13	1.13	0.00

Company:	OXY	Local Co-ordinate Reference:	Well NHU # 19-945
Project:	Hobbs Grayburg San Andres	TVD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Site:	New Mexico Hobbs Unit	MD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Well:	NHU # 19-945	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM-JodyBarclay-Local

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)
745.00	2.64	178.05	744.91	-4.77	-1.71	4.84	1.12	1.11	-2.93
831.00	3.96	172.77	830.76	-9.69	-1.26	9.74	1.57	1.53	-6.14
917.00	5.36	173.74	916.48	-16.63	-0.45	16.63	1.63	1.63	1.13
1,004.00	5.54	172.51	1,003.08	-24.83	0.54	24.78	0.25	0.21	-1.41
1,090.00	7.03	170.58	1,088.57	-34.14	1.94	34.01	1.75	1.73	-2.24
1,176.00	8.35	169.96	1,173.79	-45.48	3.89	45.25	1.54	1.53	-0.72
1,263.00	9.85	170.49	1,259.69	-59.04	6.22	58.68	1.73	1.72	0.61
1,349.00	11.26	175.41	1,344.24	-74.67	8.11	74.20	1.94	1.64	5.72
1,435.00	12.66	176.03	1,428.37	-92.44	9.43	91.89	1.63	1.63	0.72
1,522.00	13.72	175.59	1,513.07	-112.24	10.89	111.60	1.22	1.22	-0.51
1,542.52	13.92	175.34	1,533.00	-117.13	11.27	116.46	1.02	0.98	-1.20
Rustler									
1,567.00	14.16	175.06	1,556.75	-123.04	11.77	122.35	1.02	0.98	-1.16
1,647.67	13.97	175.13	1,635.00	-142.58	13.45	141.78	0.23	-0.23	0.09
Top Salt									
1,717.00	13.81	175.20	1,702.30	-159.16	14.85	158.28	0.23	-0.23	0.09
1,803.00	13.52	180.12	1,785.87	-179.44	15.69	178.50	1.39	-0.34	5.72
1,890.00	14.10	184.56	1,870.36	-200.18	14.82	199.25	1.39	0.67	5.10
1,976.00	15.44	187.21	1,953.51	-221.98	12.55	221.13	1.74	1.56	3.08
2,062.00	16.55	189.18	2,036.18	-245.43	9.16	244.72	1.44	1.29	2.29
2,147.00	17.97	190.46	2,117.35	-270.28	4.85	269.74	1.73	1.67	1.51
2,235.00	19.91	188.61	2,200.59	-298.44	0.14	298.10	2.31	2.20	-2.10
2,322.00	21.86	187.13	2,281.87	-329.16	-4.09	328.99	2.32	2.24	-1.70
2,408.00	23.56	186.37	2,361.20	-362.14	-7.98	362.11	2.01	1.98	-0.88
2,494.00	24.43	185.86	2,439.76	-396.91	-11.70	397.02	1.04	1.01	-0.59
2,581.00	25.67	185.04	2,518.58	-433.58	-15.20	433.81	1.48	1.43	-0.94
2,667.00	27.00	185.21	2,595.65	-471.58	-18.61	471.93	1.55	1.55	0.20
2,754.00	28.30	184.68	2,672.71	-511.80	-22.08	512.27	1.52	1.49	-0.61
2,796.34	28.29	184.68	2,710.00	-531.80	-23.72	532.33	0.02	-0.02	0.00
Base Salt									
2,840.00	28.28	184.68	2,748.44	-552.42	-25.41	553.00	0.02	-0.02	0.00
2,927.00	29.44	184.65	2,824.64	-594.27	-28.82	594.97	1.33	1.33	-0.03
3,013.00	30.13	183.77	2,899.28	-636.88	-31.95	637.68	0.95	0.80	-1.02
3,099.00	30.64	183.98	2,973.46	-680.28	-34.90	681.17	0.61	0.59	0.24
3,186.00	30.84	183.07	3,048.24	-724.66	-37.63	725.63	0.58	0.23	-1.05
3,272.00	31.27	182.70	3,121.91	-768.97	-39.86	769.99	0.55	0.50	-0.43
3,359.00	31.97	183.29	3,196.00	-814.52	-42.25	815.61	0.88	0.80	0.68
3,445.00	31.72	182.78	3,269.05	-859.83	-44.65	860.98	0.43	-0.29	-0.59
3,532.00	32.76	184.00	3,342.64	-906.16	-47.40	907.39	1.41	1.20	1.40
3,618.00	32.54	184.44	3,415.05	-952.43	-50.81	953.77	0.38	-0.26	0.51
3,701.30	33.23	184.97	3,485.00	-997.50	-54.53	998.96	0.90	0.83	0.64
Queen									
3,704.00	33.25	184.99	3,487.26	-998.98	-54.66	1,000.44	0.90	0.83	0.63
3,791.00	34.28	184.55	3,559.58	-1,047.16	-58.67	1,048.77	1.22	1.18	-0.51

Company:	OXY	Local Co-ordinate Reference:	Well NHU # 19-945
Project:	Hobbs Grayburg San Andres	TVD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Site:	New Mexico Hobbs Unit	MD Reference:	KB @ 3665.00usft (Assumed 13' RKB)
Well:	NHU # 19-945	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM-JodyBarclay-Local

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)
3,877.00	34.72	184.93	3,630.46	-1,095.71	-62.70	1,097.45	0.57	0.51	0.44
3,963.00	35.84	185.07	3,700.66	-1,145.19	-67.03	1,147.08	1.31	1.30	0.16
4,050.00	35.98	185.62	3,771.13	-1,195.99	-71.78	1,198.05	0.40	0.16	0.63
4,104.21	35.97	185.61	3,815.00	-1,227.68	-74.90	1,229.85	0.02	-0.02	-0.01
Grayburg									
4,136.00	35.96	185.61	3,840.73	-1,246.26	-76.73	1,248.50	0.03	-0.02	-0.01
4,223.00	35.98	186.33	3,911.14	-1,297.08	-82.04	1,299.52	0.49	0.02	0.83
4,309.00	35.85	186.78	3,980.79	-1,347.20	-87.80	1,349.85	0.34	-0.15	0.52
4,338.84	35.72	187.07	4,005.00	-1,364.52	-89.90	1,367.25	0.72	-0.44	0.97
Basal Grayburg									
4,395.00	35.47	187.62	4,050.67	-1,396.94	-94.08	1,399.83	0.72	-0.44	0.98
4,461.76	35.58	188.07	4,105.00	-1,435.37	-99.37	1,438.47	0.42	0.17	0.67
San Andres									
4,482.00	35.62	188.20	4,121.46	-1,447.03	-101.04	1,450.20	0.42	0.17	0.66
4,568.00	35.86	188.73	4,191.26	-1,496.72	-108.44	1,500.18	0.46	0.28	0.62
4,654.00	36.30	189.65	4,260.76	-1,546.72	-116.53	1,550.50	0.81	0.51	1.07
4,741.00	36.66	190.26	4,330.72	-1,597.66	-125.47	1,601.81	0.59	0.41	0.70
4,827.00	36.96	190.92	4,399.57	-1,648.31	-134.94	1,652.85	0.58	0.35	0.77
4,913.00	37.37	191.45	4,468.11	-1,699.28	-145.02	1,704.24	0.60	0.48	0.62
4,977.00	37.91	191.49	4,518.78	-1,737.58	-152.79	1,742.87	0.84	0.84	0.06
5,026.45	37.91	191.49	4,557.80	-1,767.35	-158.84	1,772.90	0.00	0.00	0.00
NHU# 19-945 BHL									
5,040.00	37.91	191.49	4,568.49	-1,775.51	-160.50	1,781.13	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
232.00	232.00	Base Red Beds		0.00	
1,542.52	1,533.00	Rustler		0.00	
1,647.67	1,635.00	Top Salt		0.00	
2,796.34	2,710.00	Base Salt		0.00	
3,701.30	3,485.00	Queen		0.00	
4,104.21	3,815.00	Grayburg		0.00	
4,338.84	4,005.00	Basal Grayburg		0.00	
4,461.76	4,105.00	San Andres		0.00	

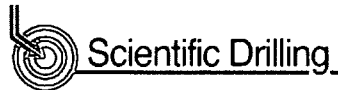
Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



NHU # 19-945
Hobbs Grayburg San Andres
Northing: 632523.03
Easting: 853967.89
Design #5

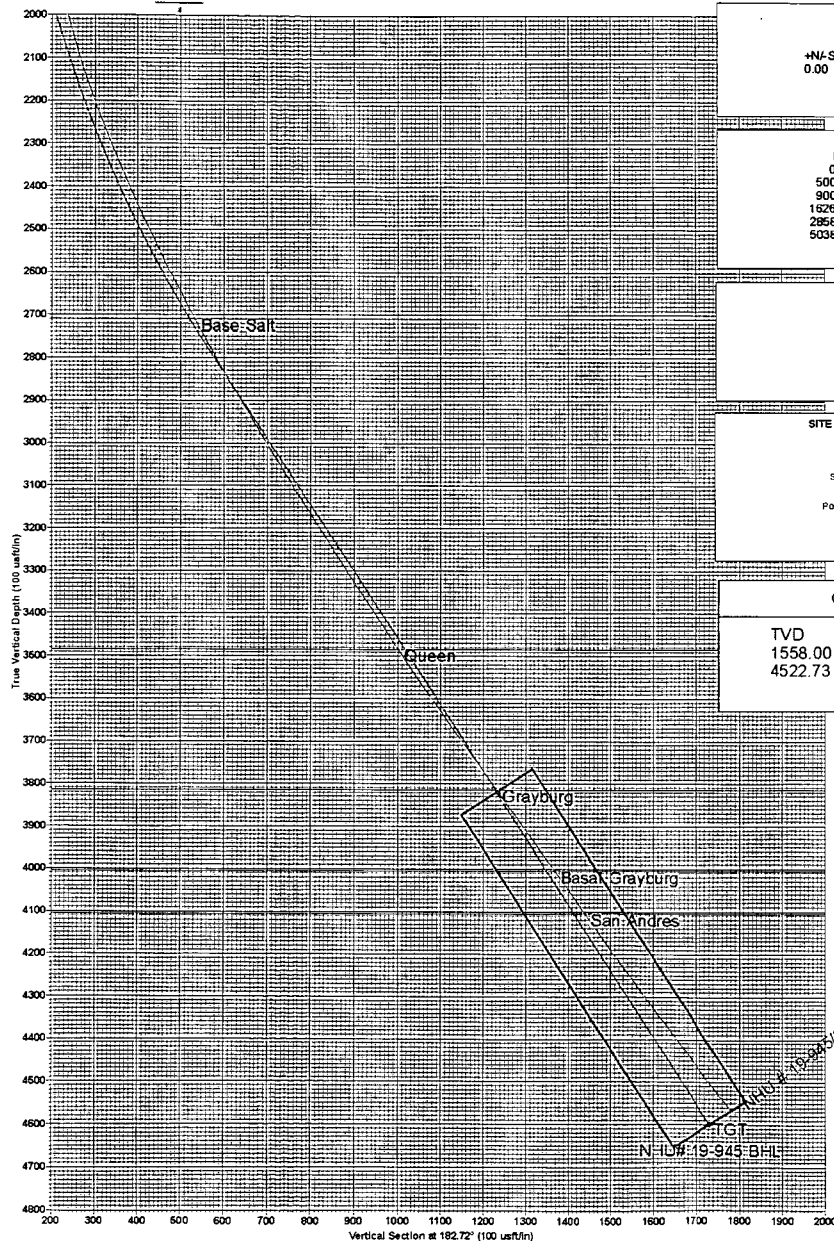


KB @ 3865.00usft (Assumed 13' RKB)
Gr. 3652.00



Azimuth to Grid North
True North -0.52°
Magnetic North -6.63°
Magnetic Field
Strength 48811.9nT
Dip Angle 60.69°
Date 12/21/2012
Model IGF12.010

To convert Magnetic North to Grid, Add 6.63°
To convert True North to Grid, Subtract 0.52°



WELL DETAILS NHU # 19-945

Ground Level: 3652.00
+N-S +E-W Northing Easting Latitude Longitude
0.00 0.00 632523.03 853967.89 32° 44' 1.015 N 103° 10' 56.118 W

SECTION DETAILS

MD	Inc	Asi	TVD	+N-S	+E-W	Diag	TFace	VSecl	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
900.00	8.00	182.72	898.70	-27.85	-1.32	2.00	182.72	27.88	
1626.37	8.00	182.72	1618.00	-128.83	-6.12	0.00	0.00	128.97	
2858.83	32.65	182.72	2764.83	-553.13	-26.26	2.00	0.00	553.76	
5038.39	32.65	182.72	4600.00	-1727.87	-82.01	0.00	0.00	NHU#19-945 BHL	

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting
NHU# 19-945 BHL	4600.00	-1727.87	-82.01	630795.36	853886.88

SITE DETAILS: New Mexico Hobbs Unit

Block:
District:
Site Centre Northing: 632523.03
Easting: 853967.89
Positional Uncertainty: 0.00
Convergence: 0.62
Local North: Grid

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

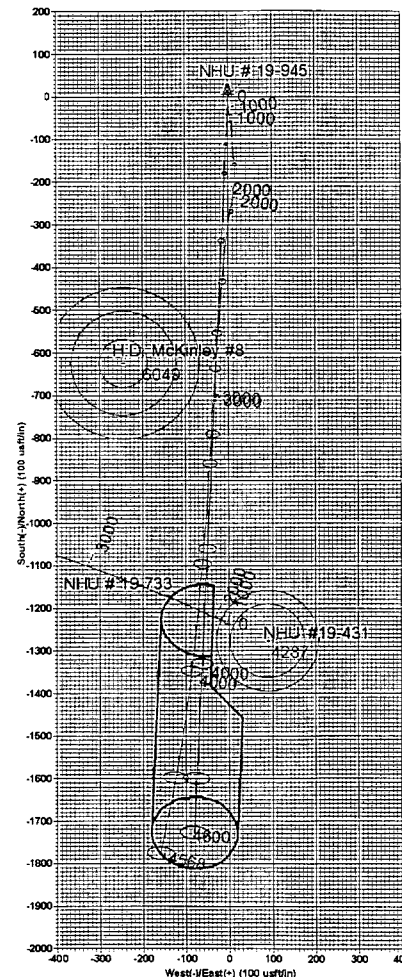
CASING DETAILS

TVD	MD	Size
1558.00	1565.78	9-5/8
4522.73	4946.62	7

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
232.00	232.00	Base Red Beds
1533.00	1542.52	Rustler
1695.00	1647.87	Top Salt
2710.00	2796.34	Base Salt
3485.00	3701.30	Queen
3815.00	4104.21	Grayburg
4005.00	4338.84	Basal Grayburg
4105.00	4461.75	San Andres

Well Name: NHU 19-945, Wellbore #1, Wellbore #1 V0
Design: Design #5
Date: 12/21/2012
User: Jody Barday
Location: 103° 10' 56.118 W
Latitude: 32° 44' 1.015 N
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Geodetic System: US State Plane 1927
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
To convert Magnetic North to Grid, Add 6.63°
To convert True North to Grid, Subtract 0.52°



LEGEND

- NHU # 19-733, Wellbore #1, Wellbore #1 V0
- NHU #19-431, Wellbore #1, Wellbore #1 V0
- NHU # 19-945, Original Wellbore, Design #5 V0
- H.D. McKinley #8, Wellbore #1, Wellbore #1 V0
- Original Wellbore
- Survey #1

Jody Barday
9/29, December 30 2012

Scientific Drilling
2740 N. Highway 287
Decatur, Texas 76234