

15-38555

OCCIDENTAL PERMIAN LTD.

San Dunes Delaware, West
Eddy County, NM
Pure Gold B Federal #16
DH - Job #32D12111218

Survey: MWD

SDI Standard Survey Report

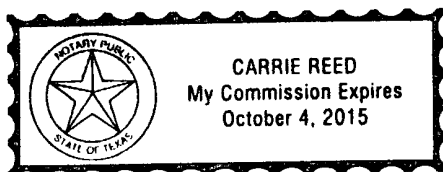
This survey is correct to the best of my knowledge and is supported by actual field data.

Michael North

Notarized this date 31st of December, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling
Directional Drilling Operations

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well Pure Gold B Federal #16
Project:	San Dunes Delaware, West	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Pure Gold B Federal #16	North Reference:	Grd
Wellbore:	VH - Job #32K12111211	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K12111211	Database:	EDM:Regulatory

Project	San Dunes Delaware, West		
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		Eddy County - NM			
Site Position:		Northing:	461,972 78 usft	Latitude:	32° 16' 8 261 N
From:	Lat/Long	Easting:	664,293 31 usft	Longitude:	103° 48' 6 450 W
Position Uncertainty:	0.0 usft	Slot Radius:	0"	Grid Convergence:	0.28 °

Well:	Pure Gold B Federal #16, Directional					
Well Position	+N/-S	0 0 usft	Northing:	470,505 73 usft	Latitude:	32° 17' 32.708 N
	+E/-W	0 0 usft	Easting:	664,183 97 usft	Longitude:	103° 48' 7.231 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore:	VH - Job #32K12111211				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/13/2011	7.64	60 20	48,608

Design: VH - Job #32K12111211				
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	252 37

Survey Program		Date	1/22/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.7	427 3	Gyro (VH - Job #32K12111211)	Keeper	Keeper Surface Readout	

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0.0
100 7	0 86	247 76	100 7	-0 3	-0 7	247 76	0.8
161 9	0 94	244 59	161 9	-0 7	-1.6	246 83	1.7
250 4	0 94	241 09	250 4	-1 3	-2 9	245 00	3.2
338 8	0 97	239 03	338 8	-2 1	-4.1	243 43	4.6
427 3	0 99	234 56	427 3	-2 9	-5 4	241 79	6.1

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Project:	San Dunes Delaware, West	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Pure Gold B Federal #16	North Reference:	Grid
Wellbore:	DH - Job #32D12111218	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D12111218	Database:	EDM-Regulatory

Project	San Dunes Delaware, West		
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	Eddy County, NM		
Site Position:		Northing:	461,972.78 usft
From:	Lat/Long	Easting:	664,293.31 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0"
		Latitude:	32° 16' 8.261 N
		Longitude:	103° 48' 6.450 W
		Grid Convergence:	0.28 °

Well	Pure Gold B Federal #16, Directional		
Well Position	+N/-S	0.0 usft	Northing: 470,505.73 usft
	+E/-W	0.0 usft	Easting: 664,183.97 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 17' 32.708 N
		Longitude:	103° 48' 7.231 W
		Ground Level:	0.0 usft

Wellbore	DH - Job #32D12111218				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/15/2011	7.64	60.20	48,608

Design	DH - Job #32D12111218			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 427.3
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	252.37

Survey Program	Date	1/22/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.7	427.3	Gyro (VH - Job #32K12111211)	Keeper	Keeper Surface Readout
525.0	8,241.0	MWD (DH - Job #32D12111218)	MWD	MWD

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
427.3	0.99	234.56	427.3	-2.9	-5.4	241.79	6.1
525.0	1.14	234.75	524.9	-4.0	-6.9	240.17	7.9
644.0	1.13	227.30	643.9	-5.4	-8.7	238.09	10.3
762.0	0.98	233.30	761.9	-6.8	-10.4	236.69	12.4
891.0	0.98	236.89	890.9	-8.1	-12.2	236.45	14.6
1,026.0	0.98	233.44	1,025.9	-9.4	-14.1	236.28	16.9
1,161.0	1.10	234.78	1,160.8	-10.8	-16.1	236.01	19.4
1,296.0	1.12	233.96	1,295.8	-12.4	-18.2	235.81	22.0
1,422.0	1.14	232.12	1,421.8	-13.9	-20.2	235.53	24.5
1,557.0	0.95	228.49	1,556.8	-15.4	-22.1	235.07	26.9
1,692.0	0.77	222.83	1,691.7	-16.8	-23.5	234.43	28.9

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Well:	Pure Gold B Federal #16	North Reference:	Grid
Wellbore:	DH - Job #32D12111218	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D12111218	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,827.0	0.69	219.50	1,826.7	-18.1	-24.7	233.70	30.6
1,963.0	0.55	207.24	1,962.7	-19.3	-25.5	232.82	32.0
2,097.0	0.50	200.62	2,096.7	-20.5	-26.0	231.80	33.1
2,233.0	0.34	193.24	2,232.7	-21.4	-26.3	230.86	33.9
2,368.0	0.21	178.88	2,367.7	-22.0	-26.4	230.12	34.4
2,503.0	0.11	147.21	2,502.7	-22.4	-26.3	229.59	34.5
2,638.0	0.17	141.43	2,637.7	-22.7	-26.1	229.04	34.6
2,773.0	0.17	143.01	2,772.7	-23.0	-25.9	228.38	34.6
2,908.0	0.30	145.30	2,907.7	-23.4	-25.5	227.47	34.7
3,043.0	0.24	180.01	3,042.7	-24.0	-25.3	226.56	34.9
3,178.0	0.29	239.11	3,177.7	-24.5	-25.6	226.34	35.4
3,313.0	0.50	173.13	3,312.7	-25.2	-25.9	225.72	36.1
3,449.0	1.21	152.21	3,448.7	-27.1	-25.1	222.85	36.9
3,584.0	1.78	147.22	3,583.6	-30.1	-23.3	217.76	38.1
3,719.0	2.57	150.38	3,718.5	-34.5	-20.7	210.95	40.2
3,854.0	2.11	155.29	3,853.4	-39.4	-18.2	204.74	43.4
3,971.0	1.15	206.43	3,970.4	-42.4	-17.8	202.75	46.0
4,097.0	1.23	220.44	4,096.4	-44.6	-19.2	203.33	48.5
4,232.0	1.06	220.43	4,231.3	-46.6	-21.0	204.22	51.1
4,322.0	1.78	228.81	4,321.3	-48.2	-22.6	205.09	53.2
4,412.0	2.59	246.63	4,411.2	-49.9	-25.5	207.05	56.0
4,502.0	3.17	264.59	4,501.1	-50.9	-29.8	210.35	59.0
4,592.0	4.09	259.50	4,590.9	-51.8	-35.5	214.41	62.7
4,682.0	5.34	259.33	4,680.6	-53.1	-42.7	218.81	68.2
4,772.0	6.44	257.31	4,770.2	-55.0	-51.8	223.27	75.5
4,862.0	7.60	253.45	4,859.5	-57.8	-62.4	227.19	85.1
4,952.0	8.58	259.62	4,948.6	-60.7	-74.7	230.90	96.3
5,042.0	9.60	255.70	5,037.5	-63.8	-88.6	234.25	109.1
5,132.0	10.69	256.63	5,126.1	-67.6	-104.0	236.99	124.0
5,222.0	12.97	255.68	5,214.1	-72.0	-121.9	239.43	141.5
5,312.0	14.01	255.78	5,301.7	-77.2	-142.2	241.52	161.8
5,402.0	15.83	253.38	5,388.6	-83.3	-164.6	243.14	184.5
5,492.0	16.72	253.60	5,475.0	-90.5	-188.7	244.38	209.3
5,627.0	17.82	252.90	5,603.9	-102.1	-227.1	245.80	249.0
5,762.0	16.48	253.55	5,732.9	-113.6	-265.2	246.82	288.5
5,852.0	17.45	254.76	5,819.0	-120.7	-290.5	247.43	314.6
5,987.0	17.27	254.48	5,947.8	-131.4	-329.3	248.25	354.6
6,123.0	17.97	254.73	6,077.5	-142.3	-369.0	248.91	395.5
6,257.0	18.98	255.09	6,204.6	-153.4	-410.0	249.49	437.8
6,392.0	17.80	254.91	6,332.7	-164.4	-451.1	249.98	480.2
6,527.0	15.00	255.16	6,462.2	-174.3	-488.0	250.35	518.1
6,662.0	15.84	255.27	6,592.3	-183.4	-522.7	250.66	553.9
6,797.0	14.58	255.67	6,722.6	-192.3	-557.0	250.95	589.2
6,932.0	15.72	256.86	6,852.9	-200.7	-591.2	251.25	624.4

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Project:	San Dunes Delaware, West	TVD Reference:	WELL @ 0' 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0' 0usft (Original Well Elev)
Well:	Pure Gold B Federal #16	North Reference:	Grid
Wellbore:	DH - Job #32D12111218	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D12111218	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
7,067.0	16 51	254.73	6,982.6	-209.9	-627.5	251.51	661.7
7,202.0	18 29	253.37	7,111.4	-221.0	-666.4	251.65	702.0
7,336.0	17 90	251.69	7,238.8	-233.5	-706.0	251.70	743.7
7,471.0	18 54	252.61	7,367.0	-246.4	-746.2	251.73	785.9
7,606.0	16 39	252.02	7,495.8	-258.7	-784.8	251.76	826.4
7,741.0	16.77	249.62	7,625.1	-271.4	-821.2	251.71	864.9
7,876.0	17 40	249.45	7,754.2	-285.2	-858.4	251.62	904.5
8,056.0	16 47	251.75	7,926.4	-302.7	-907.8	251.56	956.9
8,179.0	10 45	253.36	8,046.0	-311.3	-935.1	251.58	985.5
8,241.0	10.45	253.36	8,106.9	-314.6	-945.8	251.60	996.8
Projection to Bit							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,241.0	8,106.9	-314.6	-945.8	Projection to Bit



Scientific Drilling
Directional Drilling Operations

Project: San Dunes Delaware, West
Eddy County, NM
Well: Pure Gold B Federal #16
Wellbore: DH - Job #32D12111218
Design: DH - Job #32D12111218

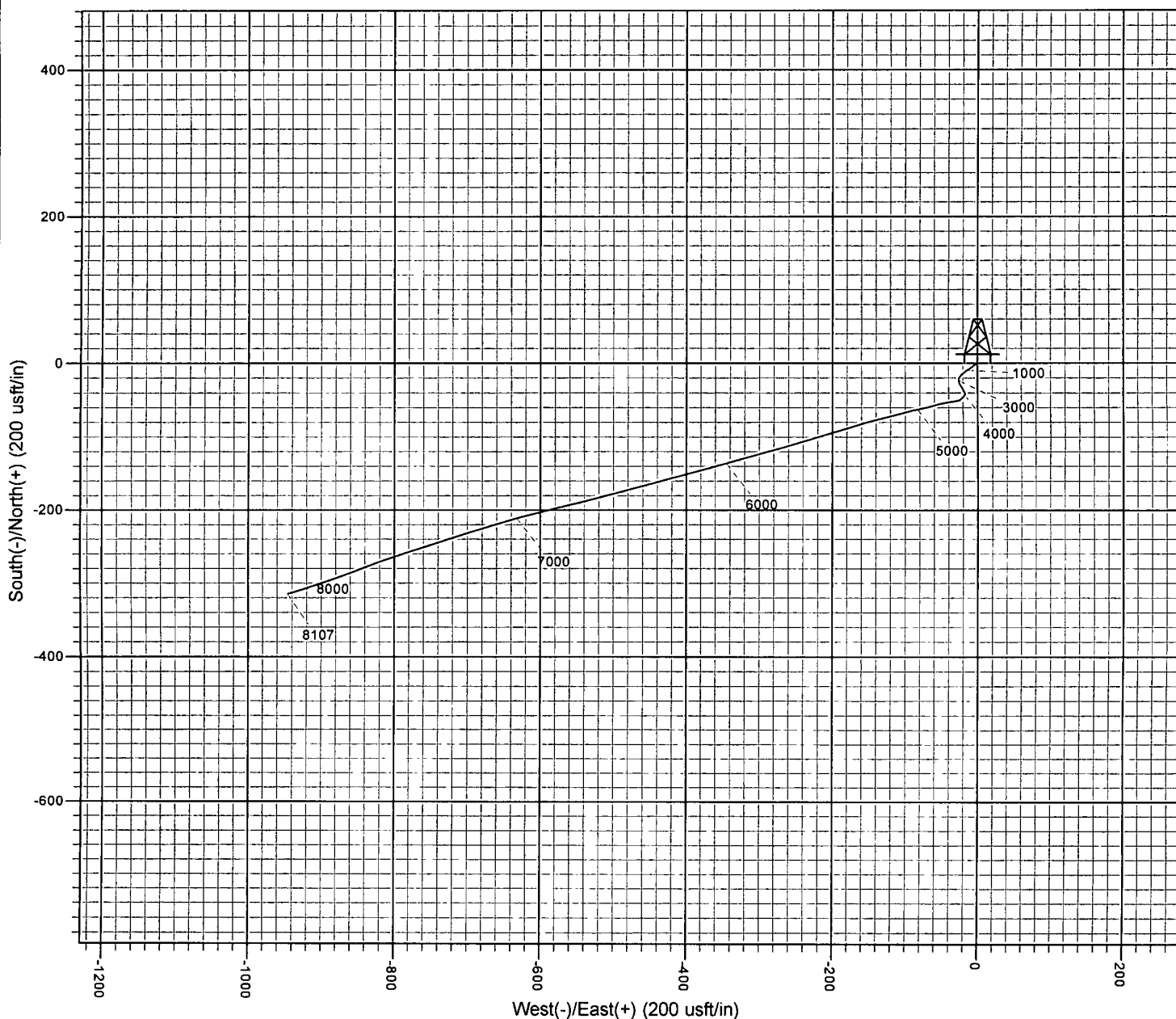


Azimuths to Grid North
True North -0 28°
Magnetic North 7 35°

Magnetic Field
Strength 48607.8nT
Dip Angle: 60 20°
Date: 12/15/2011
Model IGRF2010

WELL DETAILS: Pure Gold B Federal #16
WELL @ 0.0usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	470505.73	664183.97	32° 17' 32.708 N	103° 48' 7.231 W	



PROJECT DETAILS: San Dunes Delaware, West
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS: Eddy County, NM
Site Centre Latitude: 32° 16' 8.261 N
Longitude: 103° 48' 6.450 W
Positional Uncertainty: 0.0
Convergence: 0.28
Local North: Grid