

15-38542

OCCIDENTAL PERMIAN LTD.

San Dunes Delaware, West
Eddy County, NM
Pure Gold B Federal #13
DH - Job #32D11111148

Survey: MWD

SDI Standard Survey Report

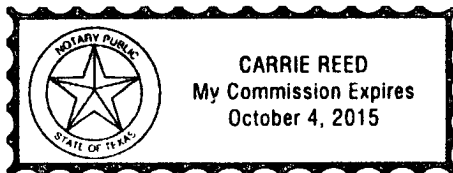
This survey is correct to the best of my knowledge and is supported by actual field data.

Therese

Notarized this date 31st of December, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well Pure Gold B Federal #13
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 #13	North Reference:	Grid
Wellbore:	VH - Job #32K11111146	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11111146	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"
		Grid Convergence:	0.28 °

Well	Pure Gold B Federal #13- Directional		
Well Position	+N/-S	0.0 usft	Northing: 468,477.30 usft
	+E/-W	0.0 usft	Easting: 664,738.42 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Ground Level:	0.0 usft

Wellbore	VH - Job #32K11111146		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	11/23/2011	7.64
			Dip Angle
			60.20
			Field Strength
			48,611 (nT)

Design	VH - Job #32K11111146		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			236.76

Survey Program	Date 1/22/2012		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
99.3	459.0	Gyro (VH - Job #32K11111146)	Keeper
			Description
			Keeper Surface Readout

Survey			
Measured Depth	Inclination	Azimuth	True Vertical
(usft)	(°)	(°)	Depth
0.0	0.00	0.00	0.0
99.3	0.87	214.47	99.3
190.6	0.86	216.37	190.6
279.5	0.80	213.56	279.5
367.6	0.61	214.70	367.5
459.0	0.58	212.65	459.0
			North/South
			(usft)
			0.0
			-0.6
			-1.7
			-2.8
			-3.7
			-4.5
			East/West
			(usft)
			0.0
			-0.4
			-1.2
			-2.0
			-2.6
			-3.1
			Closure Azimuth
			(°)
			0.00
			214.47
			215.08
			215.06
			214.81
			214.62
			Closure Distance
			(usft)
			0.0
			0.8
			2.1
			3.4
			4.5
			5.5

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Pure Gold B Federal #13	North Reference:	Grid
Wellbore:	DH - Job #32D11111148	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D11111148	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 #13, Directional		
Well Position	+N/-S	0.0 usft	Northing: 468,477.30 usft
	+E/-W	0 0 usft	Easting: 664,738.42 usft
Position Uncertainty	0 0 usft	Wellhead Elevation:	usft
		Latitude:	32° 17' 12.607 N
		Longitude:	103° 48' 0.890 W
		Ground Level:	0 0 usft

Wellbore	DH - Job #32D11111148		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	11/25/2011	(°) 7.64
			Dip Angle (°) 60.19
			Field Strength (nT) 48,610

Design	DH - Job #32D11111148		
Audit Notes:			
Version:	1 0	Phase:	ACTUAL
		Tie On Depth:	459.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 0	0.0	0 0
			Direction (°) 236.76

Survey Program	Date	1/22/2012		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
99.3	459.0	Gyro (VH - Job #32K11111146)	Keeper	Keeper Surface Readout
527.0	8,597.0	MWD (DH - Job #32D11111148)	MWD	MWD

Survey								
Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure/Azimuth	Closure Distance	
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)	
459.0	0.58	212.65	459.0	-4.5	-3.1	214.62	5.5	
527.0	0.34	228.03	527.0	-4.9	-3.4	214.96	6.0	
615.0	0.28	240.90	615.0	-5.2	-3.8	216.32	6.4	
707.0	1.09	242.76	707.0	-5.7	-4.8	220.04	7.4	
797.0	1.82	245.39	796.9	-6.7	-6.9	225.69	9.6	
887.0	1.82	240.76	886.9	-8.0	-9.4	229.66	12.3	
977.0	1.88	240.17	976.8	-9.4	-11.9	231.71	15.2	
1,067.0	1.97	237.98	1,066.8	-11.0	-14.5	232.93	18.2	
1,157.0	1.98	237.35	1,156.7	-12.6	-17.1	233.62	21.3	
1,247.0	2.00	236.45	1,246.7	-14.3	-19.8	234.04	24.4	
1,337.0	2.05	236.77	1,336.6	-16.1	-22.4	234.33	27.6	

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Pure Gold B Federal #13	North Reference:	Grid
Wellbore:	DH - Job #32D11111148	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D11111148	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,427.0	2.15	232.31	1,426.6	-18.0	-25.1	234.35	30.9	
1,517.0	2.02	228.94	1,516.5	-20.1	-27.6	234.00	34.1	
1,607.0	0.93	233.27	1,606.5	-21.6	-29.4	233.76	36.5	
1,697.0	0.21	241.88	1,696.5	-22.1	-30.1	233.79	37.4	
1,787.0	0.22	238.71	1,786.5	-22.2	-30.4	233.85	37.7	
1,877.0	0.50	227.55	1,876.5	-22.6	-30.9	233.81	38.2	
1,967.0	0.39	248.38	1,966.5	-23.0	-31.4	233.86	38.9	
2,057.0	0.24	245.26	2,056.5	-23.2	-31.9	234.02	39.4	
2,147.0	0.24	178.60	2,146.5	-23.4	-32.1	233.85	39.7	
2,237.0	0.21	151.50	2,236.5	-23.8	-32.0	233.39	39.8	
2,327.0	0.07	37.80	2,326.5	-23.9	-31.9	233.18	39.8	
2,417.0	0.15	135.15	2,416.5	-23.9	-31.8	233.03	39.7	
2,507.0	0.21	89.33	2,506.5	-24.0	-31.5	232.72	39.6	
2,598.0	0.17	62.22	2,597.5	-23.9	-31.2	232.54	39.3	
2,688.0	0.07	301.44	2,687.5	-23.8	-31.1	232.59	39.2	
2,778.0	0.24	140.73	2,777.5	-23.9	-31.1	232.39	39.2	
2,868.0	0.05	258.83	2,867.5	-24.1	-31.0	232.14	39.3	
2,958.0	0.17	30.84	2,957.5	-24.0	-31.0	232.23	39.2	
3,048.0	0.34	9.84	3,047.5	-23.6	-30.8	232.57	38.8	
3,138.0	0.48	358.17	3,137.4	-23.0	-30.8	233.30	38.4	
3,229.0	0.54	347.04	3,228.4	-22.2	-30.9	234.36	38.1	
3,319.0	0.57	18.53	3,318.4	-21.3	-30.9	235.36	37.5	
3,409.0	0.41	55.43	3,408.4	-20.7	-30.5	235.77	36.9	
3,499.0	0.36	79.05	3,498.4	-20.5	-29.9	235.60	36.3	
3,589.0	0.57	95.69	3,588.4	-20.5	-29.2	234.96	35.7	
3,679.0	0.88	120.85	3,678.4	-20.9	-28.2	233.45	35.1	
3,769.0	1.30	127.27	3,768.4	-21.9	-26.8	230.76	34.5	
3,859.0	1.65	131.08	3,858.4	-23.3	-25.0	226.95	34.2	
3,949.0	1.37	146.11	3,948.3	-25.1	-23.4	223.02	34.3	
4,039.0	1.05	148.20	4,038.3	-26.7	-22.4	219.98	34.8	
4,129.0	1.01	145.90	4,128.3	-28.0	-21.5	217.47	35.3	
4,235.0	0.84	162.49	4,234.3	-29.5	-20.7	215.06	36.1	
4,325.0	0.89	164.40	4,324.3	-30.8	-20.3	213.40	36.9	
4,415.0	0.98	217.61	4,414.3	-32.1	-20.6	212.70	38.2	
4,505.0	1.82	239.09	4,504.3	-33.5	-22.3	213.70	40.2	
4,595.0	2.54	250.49	4,594.2	-34.9	-25.4	216.10	43.1	
4,685.0	4.26	258.87	4,684.0	-36.2	-30.6	220.21	47.4	
4,775.0	5.29	258.06	4,773.7	-37.7	-37.9	225.18	53.5	
4,865.0	6.59	250.98	4,863.2	-40.2	-46.9	229.36	61.8	
4,955.0	7.84	242.46	4,952.5	-44.7	-57.2	231.96	72.6	
5,045.0	8.77	235.34	5,041.6	-51.5	-68.3	232.98	85.5	
5,135.0	9.76	233.40	5,130.4	-59.9	-80.0	233.18	100.0	
5,225.0	11.42	235.00	5,218.9	-69.6	-93.5	233.33	116.5	
5,314.0	13.72	236.60	5,305.7	-80.5	-109.5	233.69	135.9	

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Pure Gold B Federal #13	North Reference:	Grid
Wellbore:	DH - Job #32D11111148	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D11111148	Database:	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,404.0	15.64	236.40	5,392.8	-93.0	-128.5	234.09	158.7
5,494.0	17.43	237.50	5,479.1	-107.0	-150.0	234.50	184.2
5,584.0	19.40	237.90	5,564.4	-122.2	-174.0	234.92	212.6
5,674.0	22.08	236.60	5,648.6	-139.4	-200.8	235.22	244.5
5,763.0	23.46	237.19	5,730.7	-158.3	-229.7	235.43	278.9
5,854.0	25.16	237.56	5,813.6	-178.5	-261.2	235.66	316.4
5,944.0	27.78	237.30	5,894.2	-200.0	-295.0	235.86	356.4
6,034.0	29.92	238.60	5,973.0	-223.1	-331.8	236.09	399.8
6,124.0	32.06	238.10	6,050.1	-247.4	-371.3	236.32	446.1
6,214.0	33.54	236.80	6,125.8	-273.6	-412.4	236.43	494.9
6,304.0	35.24	236.90	6,200.0	-301.4	-454.9	236.47	545.7
6,394.0	36.59	235.90	6,272.9	-330.6	-498.9	236.46	598.5
6,484.0	37.87	236.20	6,344.6	-361.1	-544.1	236.43	653.0
6,574.0	35.31	236.90	6,416.8	-390.6	-588.8	236.44	706.6
6,664.0	36.70	236.80	6,489.7	-419.6	-633.1	236.47	759.5
6,754.0	39.05	237.20	6,560.7	-449.7	-679.4	236.50	814.8
6,844.0	36.98	237.90	6,631.6	-479.4	-726.2	236.57	870.2
6,934.0	35.79	238.20	6,704.0	-507.6	-771.5	236.66	923.5
7,024.0	34.76	237.50	6,777.5	-535.3	-815.5	236.72	975.5
7,114.0	37.12	237.00	6,850.4	-563.9	-859.9	236.75	1,028.3
7,204.0	38.30	235.40	6,921.6	-594.5	-905.7	236.72	1,083.4
7,294.0	38.32	236.90	6,992.2	-625.6	-952.0	236.69	1,139.2
7,384.0	38.75	238.11	7,062.6	-655.7	-999.3	236.73	1,195.2
7,474.0	40.24	237.68	7,132.1	-686.1	-1,047.8	236.78	1,252.4
7,564.0	41.82	236.42	7,199.9	-718.3	-1,097.3	236.79	1,311.5
7,654.0	41.25	237.25	7,267.3	-750.9	-1,147.3	236.79	1,371.2
7,744.0	42.35	238.11	7,334.4	-783.0	-1,198.0	236.83	1,431.2
7,835.0	37.20	238.65	7,404.3	-813.5	-1,247.5	236.89	1,489.4
7,925.0	35.28	239.25	7,476.9	-841.0	-1,293.1	236.96	1,542.5
8,015.0	36.19	237.99	7,550.0	-868.3	-1,338.0	237.02	1,595.1
8,105.0	36.23	238.90	7,622.6	-896.2	-1,383.3	237.06	1,648.2
8,195.0	33.81	238.40	7,696.3	-923.0	-1,427.4	237.11	1,699.8
8,285.0	33.16	238.70	7,771.3	-948.9	-1,469.8	237.15	1,749.5
8,375.0	31.22	239.00	7,847.5	-973.7	-1,510.8	237.20	1,797.4
8,420.0	30.75	238.13	7,886.1	-985.8	-1,530.6	237.21	1,820.6
8,465.0	29.47	238.20	7,925.0	-997.7	-1,549.7	237.23	1,843.1
8,510.0	28.63	238.20	7,964.4	-1,009.2	-1,568.3	237.24	1,865.0
8,597.0	28.63	238.20	8,040.7	-1,031.2	-1,603.7	237.26	1,906.7

Projection to Bit

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	OCCIDENTAL PERMIAN LTD	Local Co-ordinate Reference:	Well Pure Gold B Federal #13
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 #13	North Reference:	Grid
Wellbore:	DH - Job #32D11111148	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #32D11111148	Database:	EDM-Regulatory

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
+N/-S (usft)	+E/-W (usft)			
8,597.0	8,040.7	-1,031.2	-1,603.7	Projection to Bit



Scientific Drilling
Directional Drilling Operations

Project: San Dunes Delaware, West
Eddy County, NM
Well: Pure Gold B Federal #13
Wellbore: DH - Job #32D11111148
Design: DH - Job #32D11111148

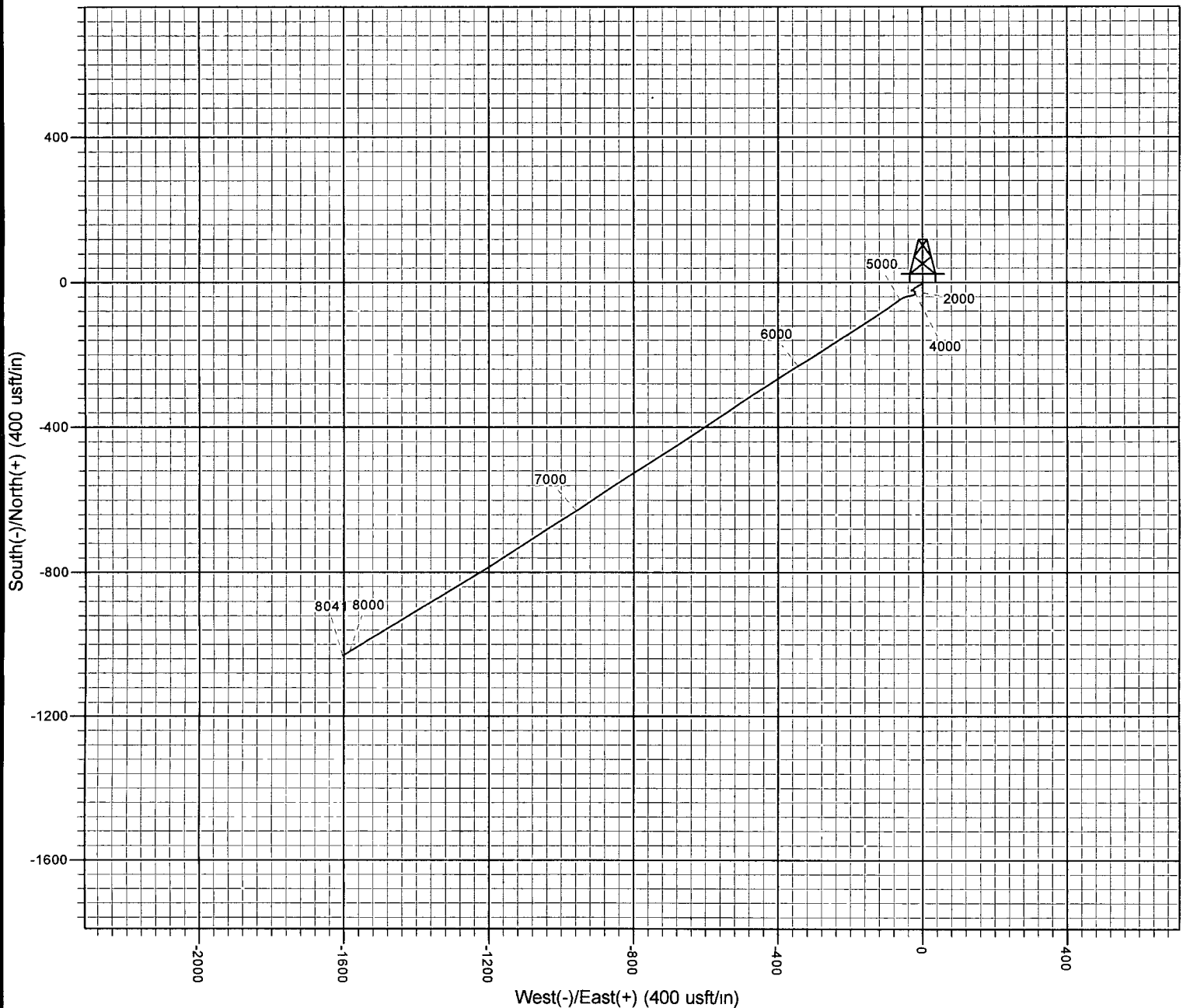


Azimuths to Grid North
True North: -0 28°
Magnetic North: 7 36°

Magnetic Field
Strength: 48610.1snT
Dip Angle: 60 19°
Date: 11/25/2011
Model: IGRF2010

WELL DETAILS: Pure Gold B Federal #13
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	468477.30	664738.42	32° 17' 12.607 N	103° 48' 0.890 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