

15-41413

OXY

Eddy County, NM (NAD 27 NME)

Misty 35 Fed 4H

M35 F 4H

Sidetrack #1

Design: Sidetrack #1

Standard Survey Report

08 January, 2015

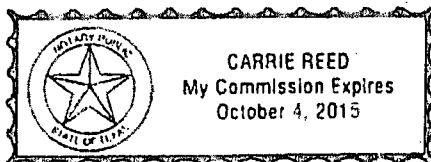
This survey is correct to the best of my knowledge and is supported by actual field data.

Cluhoar

Notarized this date 4th of March, 2015.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling

www.scientificdrilling.com

Survey Report

Company:	OXY	Local Co-ordinate Reference:	Well M35 F 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3536.7usft
Site:	Misty 35 Fed 4H	MD Reference:	KB @ 3536.7usft
Well:	M35 F 4H	North Reference:	Grid
Wellbore:	Sidetrack #1	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack #1	Database:	Midland District

Project:	Eddy County, NM (NAD 27 NME); 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:	Misty 35 Fed 4H		
Site Position:	Northing:	618,565.90 usft	Latitude: 32° 41' 59.649 N
From:	Map	Eastng:	622,589.80 usft
Position Uncertainty:	0.0 usft	Spot Radius:	13-3/16 "
		Grid Convergence:	0.22 °

Well:	M35 F 4H		
Well Position	+N-S	0.0 usft	Northng: 618,565.90 usft
	+E-W	0.0 usft	Eastng: 622,589.80 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Ground Level:	3,511.7 usft

Wellbore:	Sidetrack #1		
Magnetics	Model Name	Sample Date	Declination
	BGGM2014	12/18/2014	7.53
			Dip Angle
			60.47
			Field Strength
			48,462

Design:	Sidetrack #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	506.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			279.02

Survey Program	Date: 1/8/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
138.0	506.0	MS Gyro (OH)	Generic Gyro
588.0	13,232.0	SDI MWD (Sidetrack #1)	SDI MWD
			SDI MWD - Standard ver 1.0.1

Survey	Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Turn
	Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
	(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	138.0	0.95	308.55	138.0	0.7	-0.9	1.0	0.70	0.70	0.00
	230.0	0.98	312.63	230.0	1.7	-2.1	2.3	0.07	0.02	4.11
	322.0	0.92	313.34	322.0	2.8	-3.2	3.6	0.07	-0.07	0.77
	414.0	1.06	320.36	414.0	3.9	-4.3	4.8	0.20	0.15	7.83
	506.0	1.12	319.24	505.9	5.3	-5.4	6.2	0.07	0.07	-1.22
	598.0	1.44	310.70	597.9	8.7	-6.9	7.6	0.40	0.35	-9.28
	690.0	0.11	5.51	689.9	7.6	-7.7	8.8	1.50	-1.45	59.58
	782.0	0.09	230.54	781.9	7.5	-7.8	8.9	0.20	-0.02	-146.71
	875.0	0.53	213.02	874.9	7.2	-9.1	9.1	0.48	0.47	-18.84

Survey Report

Company: OXY
 Project: Eddy County, NM (NAD 27 NME)
 Site: Misty 35 Fed 4H
 Well: M35 F 4H
 Wellbore: Sidelrack #1
 Design: Sidelrack #1

Local Co-ordinate Reference: Well M35 F 4H
 TVD Reference: KB @ 3536.7usft
 MD Reference: KB @ 3536.7usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland District

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)
967.0	0.34	206.31	966.9	6.8	-8.4	9.4	0.21	-0.21	-7.29
1,061.0	0.23	190.08	1,060.9	6.2	-8.6	9.4	0.14	-0.12	-17.29
1,156.0	0.08	353.72	1,155.9	6.0	-8.6	9.5	0.32	-0.16	172.27
1,250.0	0.43	334.53	1,249.9	6.4	-8.8	9.7	0.38	0.37	-20.41
1,345.0	0.09	140.91	1,344.9	6.7	-8.9	9.8	0.54	-0.36	174.19
1,439.0	0.51	75.28	1,438.9	6.7	-8.4	9.4	0.51	0.45	-68.86
1,534.0	0.60	84.86	1,533.9	6.9	-7.5	8.5	0.14	0.09	10.08
1,628.0	0.41	40.56	1,627.9	7.2	-6.8	7.8	0.45	-0.20	-47.13
1,723.0	0.68	95.27	1,722.9	7.4	-6.0	7.1	0.58	0.28	57.59
1,817.0	0.88	59.32	1,816.9	7.8	-5.0	6.1	0.45	0.00	-38.24
1,912.0	0.88	71.48	1,911.9	8.2	-3.8	5.0	0.36	0.32	12.80
2,006.0	0.66	63.64	2,005.9	8.7	-2.5	3.8	0.36	-0.34	-8.34
2,101.0	0.68	51.96	2,100.9	9.2	-1.6	3.0	0.14	0.00	-12.29
2,195.0	0.64	19.31	2,194.8	10.1	-1.0	2.5	0.39	-0.02	-34.73
2,290.0	1.02	356.75	2,289.8	11.4	-0.9	2.6	0.52	0.40	-23.75
2,384.0	0.53	53.95	2,383.8	12.5	-0.6	2.5	0.91	-0.52	80.85
2,478.0	0.61	71.29	2,478.8	12.9	0.3	1.7	0.20	0.08	18.25
2,573.0	0.14	208.91	2,572.8	13.0	0.7	1.3	0.78	-0.50	144.28
2,668.0	0.43	182.16	2,667.8	12.5	0.6	1.3	0.32	0.31	-26.05
2,762.0	0.54	186.09	2,761.8	11.7	0.6	1.3	0.12	0.12	4.18
2,856.0	0.39	229.30	2,855.8	11.1	0.3	1.5	0.39	-0.16	45.97
2,951.0	0.41	201.62	2,950.8	10.6	-0.1	1.7	0.20	0.02	-29.14
3,045.0	0.33	201.80	3,044.8	10.0	-0.3	1.8	0.09	-0.09	0.19
3,140.0	0.48	215.61	3,139.8	9.4	-0.6	2.1	0.19	0.16	14.54
3,234.0	0.45	225.78	3,233.8	8.8	-1.1	2.5	0.09	-0.03	10.82
3,329.0	0.50	199.00	3,328.8	8.2	-1.5	2.8	0.24	0.05	-26.19
3,423.0	0.47	232.52	3,422.8	7.6	-2.0	3.1	0.30	-0.03	35.68
3,518.0	0.59	213.79	3,517.8	6.9	-2.6	3.6	0.22	0.13	-18.72
3,613.0	0.30	230.15	3,612.8	6.4	-3.0	4.0	0.33	-0.31	17.22
3,679.0	0.42	202.04	3,689.6	6.1	-3.2	4.1	0.37	0.21	-49.32
3,798.0	0.50	214.01	3,797.6	5.2	-3.7	4.5	0.10	0.08	9.35
3,892.0	0.53	214.47	3,891.8	4.5	-4.2	4.8	0.03	0.03	0.49
3,987.0	0.57	207.91	3,986.8	3.7	-4.6	5.2	0.08	0.04	-5.91
4,081.0	1.28	179.30	4,080.8	2.2	-4.9	5.1	0.88	0.76	-30.44
4,176.0	1.51	178.71	4,175.7	-0.1	-4.5	4.7	0.24	0.24	-0.62
4,270.0	1.23	134.94	4,269.7	-2.0	-4.1	3.7	1.12	-0.30	-45.58
4,365.0	1.10	116.22	4,364.7	-3.2	-2.5	2.0	0.42	-0.14	-19.71
4,459.0	0.40	216.04	4,458.7	-3.8	-1.9	1.3	1.31	-0.74	106.19
4,554.0	1.57	17.26	4,553.7	-2.8	-1.7	1.3	2.06	1.23	169.71
4,648.0	4.29	23.80	4,647.5	1.6	0.1	0.2	2.91	2.89	5.86
4,742.0	6.96	23.51	4,741.1	10.0	3.6	-2.2	2.84	2.84	-0.31
4,837.0	8.21	27.84	4,835.3	21.3	9.2	-5.8	1.45	1.32	-4.58
4,931.0	8.45	42.10	4,928.3	32.4	17.0	-11.7	2.21	0.26	15.17

Survey Report

Company: OXY
 Project: Eddy County, NM (NAD 27 NME)
 Site: Misty 35 Fed 4H
 Well: M35 F 4H
 Wellbore: Sidetrack #1
 Design: Sidetrack #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Database:

Well M35 F 4H
 KB @ 3538.7usft
 KB @ 3538.7usft
 Grid
 Minimum Curvature
 Midland District

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)
5,026.0	7.52	41.59	5,022.3	42.2	25.8	-18.9	0.88	-0.88	-0.54
5,120.0	8.12	30.05	5,115.5	52.6	33.2	-24.6	1.78	0.64	-12.28
5,215.0	9.28	30.68	5,209.4	64.9	40.5	-29.8	1.23	1.22	0.66
5,309.0	8.20	29.63	5,302.3	77.3	47.7	-35.0	1.16	-1.15	-1.12
5,404.0	7.75	29.70	5,398.4	88.7	54.2	-39.6	0.47	-0.47	0.07
5,498.0	9.47	33.38	5,489.3	100.7	61.6	-45.0	1.92	1.83	3.91
5,593.0	9.28	34.04	5,583.0	113.6	70.2	-51.5	0.23	-0.20	0.69
5,687.0	8.75	34.04	5,675.9	125.8	78.4	-57.7	0.56	-0.56	0.00
5,782.0	8.61	32.53	5,769.8	137.8	86.3	-63.6	0.28	-0.15	-1.59
5,877.0	8.10	32.77	5,863.8	149.4	93.7	-69.2	0.54	-0.54	0.25
5,971.0	7.57	29.24	5,956.9	160.4	100.3	-74.0	0.76	-0.58	-3.76
6,065.0	8.75	36.02	6,050.0	171.6	107.6	-79.4	1.62	1.26	7.21
6,162.0	10.83	21.17	6,145.6	186.0	115.2	-84.6	3.36	2.14	-15.31
6,258.0	14.17	16.98	6,237.3	205.3	121.8	-88.1	3.68	3.55	-4.46
6,351.0	13.62	8.42	6,328.5	227.5	126.8	-89.6	2.24	-0.58	-9.01
6,445.0	12.48	8.05	6,421.1	248.5	129.8	-89.3	1.22	-1.21	-0.39
6,540.0	11.56	8.12	6,514.0	268.0	132.6	-89.0	0.97	-0.97	0.07
6,634.0	12.08	356.52	6,606.1	287.2	133.3	-86.7	2.58	0.55	-12.34
6,729.0	10.94	356.33	6,699.1	306.1	132.2	-82.6	1.20	-1.20	-0.20
6,823.0	9.73	355.80	6,791.6	322.9	131.0	-78.8	1.29	-1.29	-0.56
6,918.0	6.35	3.93	6,885.7	336.2	130.8	-76.5	3.75	-3.56	8.56
7,012.0	5.95	3.36	6,979.1	346.2	131.4	-75.5	0.43	-0.43	-0.61
7,107.0	5.42	357.60	7,073.7	355.6	131.5	-74.2	0.82	-0.56	-8.06
7,201.0	6.86	358.36	7,167.1	365.7	131.2	-72.2	1.53	1.53	0.81
7,296.0	5.90	357.47	7,261.5	376.2	130.8	-70.2	1.02	-1.01	-0.94
7,390.0	5.63	358.45	7,355.1	385.7	130.5	-68.4	0.31	-0.29	1.04
7,484.0	6.15	359.04	7,448.6	395.3	130.3	-66.7	0.56	0.55	0.63
7,579.0	7.39	5.10	7,542.9	406.5	130.8	-65.5	1.57	1.31	7.43
7,673.0	6.15	0.68	7,636.2	417.5	131.5	-64.5	1.48	-1.32	-5.77
7,768.0	5.66	359.36	7,730.7	427.3	131.5	-62.9	0.54	-0.52	-1.39
7,863.0	7.18	3.98	7,825.1	437.9	131.9	-61.6	1.69	1.60	4.86
7,957.0	6.81	1.57	7,918.4	449.3	132.5	-60.4	0.50	-0.39	-2.56
8,052.0	6.28	1.02	7,998.9	458.6	132.7	-59.2	0.68	-0.65	-0.68
8,146.0	6.54	353.22	8,012.8	460.1	132.6	-58.8	6.51	1.89	-55.80
M35 F 4H KOP									
8,151.0	10.68	318.73	8,110.7	472.6	125.9	-50.2	6.51	4.18	-34.83
8,182.0	14.95	308.86	8,141.0	477.3	120.8	-44.5	15.43	13.77	-31.84
8,214.0	19.71	303.09	8,171.5	482.8	113.1	-36.0	15.80	14.88	-18.03
8,245.0	23.41	298.94	8,200.3	488.7	103.3	-25.5	12.90	11.94	-13.39
8,277.0	25.64	285.22	8,229.4	494.7	91.5	-12.8	8.47	6.97	-11.63
8,308.0	28.09	288.56	8,257.1	499.8	78.5	0.8	12.51	7.90	-21.48
8,340.0	29.91	282.42	8,285.1	504.0	63.6	16.2	10.90	5.69	-19.19
8,371.0	31.00	277.61	8,311.8	506.7	48.1	31.9	8.61	3.52	-15.52

Survey Report

Company:	OXY	Local Co-ordinate Reference:	Well M35 F 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3536.7usft
Site:	Misty 35 Fed 4H	MD Reference:	KB @ 3536.7usft
Well:	M35 F 4H	North Reference:	Grid:
Wellbore:	Sidetrack #1	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack #1	Database:	Midland District

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)
8,403.0	33.48	276.32	8,338.9	508.8	31.2	49.0	8.04	7.75	-4.03
8,434.0	36.15	276.39	8,364.3	510.7	13.6	66.6	8.81	8.01	0.23
8,466.0	39.07	275.79	8,389.7	512.8	-5.8	86.1	9.20	9.13	-1.68
8,497.0	41.19	275.26	8,413.4	514.7	-25.7	106.1	8.93	8.84	-1.71
8,528.8	43.27	273.93	8,436.9	516.4	-47.0	127.4	7.14	6.58	-4.19
M35 F 4H FTP									
8,529.0	43.29	273.92	8,437.1	516.5	-47.2	127.5	7.14	6.59	-4.02
8,560.0	45.02	273.90	8,459.3	517.9	-68.7	149.0	5.58	5.58	-0.06
8,592.0	47.34	274.70	8,481.5	519.7	-91.7	172.0	7.47	7.25	2.50
8,623.0	50.11	272.72	8,501.9	521.2	-115.0	195.2	10.14	8.94	-6.39
8,655.0	53.73	272.79	8,521.7	522.4	-140.1	220.3	11.31	11.31	0.22
8,686.0	58.28	273.44	8,539.0	523.8	-165.8	245.8	14.78	14.68	2.10
8,718.0	61.95	273.97	8,554.9	525.6	-193.5	273.5	11.56	11.47	1.66
8,749.0	64.63	274.84	8,568.9	527.7	-221.1	301.1	9.00	8.65	2.81
8,781.0	67.03	276.19	8,582.0	530.5	-250.1	330.2	8.43	7.50	4.22
8,812.0	69.80	277.02	8,593.4	533.8	-278.8	359.0	9.28	8.94	2.68
8,844.0	73.69	277.29	8,603.4	537.6	-308.9	389.4	12.18	12.16	0.84
8,875.0	77.26	276.84	8,611.2	541.3	-338.7	419.3	11.60	11.52	-1.45
8,907.0	80.19	275.57	8,617.4	544.7	-368.9	450.7	9.95	9.16	-3.97
8,938.0	83.17	275.30	8,621.9	547.6	-400.4	481.3	9.65	9.61	-0.87
8,969.0	85.58	275.95	8,624.9	550.6	-431.1	512.1	8.05	7.77	2.10
8,995.0	87.89	276.32	8,626.4	553.4	-456.9	538.0	9.38	9.27	1.42
9,020.0	91.48	274.87	8,626.8	562.6	-551.5	632.8	3.98	3.67	-1.53
9,164.0	91.95	273.14	8,624.0	569.2	-645.2	726.4	1.91	0.50	-1.84
9,279.0	90.91	271.91	8,621.7	573.4	-740.1	820.8	1.70	-1.09	-1.29
9,373.0	89.77	271.63	8,621.1	576.3	-834.0	914.0	1.25	-1.21	-0.30
9,468.0	89.43	271.85	8,621.8	579.2	-929.0	1,008.3	0.43	-0.36	0.23
9,562.0	89.30	272.32	8,622.8	582.6	-1,022.9	1,101.6	0.52	-0.14	0.50
9,657.0	89.06	270.55	8,624.2	585.0	-1,117.8	1,195.7	1.88	-0.25	-1.86
9,751.0	89.40	270.76	8,625.4	586.1	-1,211.8	1,288.7	0.43	0.36	0.22
9,845.0	89.40	270.72	8,626.4	587.3	-1,305.8	1,381.7	0.04	0.00	-0.04
9,940.0	89.06	270.45	8,627.7	588.2	-1,400.8	1,475.7	0.46	-0.36	-0.28
10,034.0	88.22	270.63	8,629.9	589.1	-1,494.8	1,568.6	0.91	-0.89	0.19
10,129.0	87.18	270.91	8,633.7	590.4	-1,589.7	1,662.6	1.13	-1.09	0.29
10,223.0	90.54	271.71	8,635.6	592.5	-1,683.6	1,755.7	3.67	3.57	0.85
10,317.0	91.11	271.79	8,634.2	595.4	-1,777.6	1,848.9	0.61	0.61	0.09
10,412.0	91.51	271.89	8,632.1	598.5	-1,872.5	1,943.2	0.43	0.42	0.11
10,506.0	91.01	270.99	8,630.0	600.8	-1,966.4	2,036.3	1.10	-0.53	-0.96
10,601.0	91.21	271.00	8,628.2	602.5	-2,061.4	2,130.4	0.21	0.21	0.01
10,695.0	91.58	271.39	8,625.9	604.4	-2,155.4	2,223.5	0.57	0.39	0.41
10,790.0	91.75	271.41	8,623.1	606.8	-2,250.3	2,317.6	0.18	0.18	0.02
10,884.0	90.94	271.76	8,620.9	609.4	-2,344.2	2,410.8	0.94	-0.86	0.37
10,979.0	91.48	272.03	8,618.9	612.5	-2,439.2	2,505.0	0.64	0.57	0.28
11,073.0	90.97	273.79	8,616.9	617.3	-2,533.0	2,598.5	1.95	-0.54	1.87

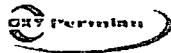
Survey Report

Company:	OXY	Local Coordinate Reference:	Well M35 F 4H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3536.7usft
Site:	Misty 35 Fed 4H	MD Reference:	KB @ 3536.7usft
Well:	M35 F 4H	North Reference:	Grid
Wellbore:	Sidetrack #1	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack #1	Database:	Midland District

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)	
11,167.0	81.44	273.77	8,614.8	623.5	-2,626.8	2,892.0	0.50	0.50	-0.02	
11,262.0	81.68	273.77	8,612.3	629.7	-2,721.6	2,786.6	0.25	0.25	0.00	
11,356.0	88.26	273.78	8,611.6	635.9	-2,815.3	2,880.2	2.57	-2.57	-0.01	
11,457.0	88.80	274.01	8,612.6	642.7	-2,918.1	2,980.8	0.42	0.34	0.25	
11,545.0	89.16	274.18	8,613.5	649.0	-3,003.9	3,068.5	0.53	-0.50	0.17	
11,640.0	89.33	274.46	8,614.8	656.1	-3,098.6	3,183.1	0.36	0.18	0.32	
11,734.0	89.30	274.55	8,615.9	663.5	-3,192.3	3,256.8	0.10	-0.03	0.10	
11,829.0	89.63	274.55	8,616.8	671.0	-3,287.0	3,351.5	0.35	0.35	0.00	
11,923.0	89.78	274.81	8,617.3	678.7	-3,380.7	3,445.9	0.31	0.14	0.28	
12,018.0	90.40	275.83	8,617.1	687.5	-3,475.3	3,540.1	1.27	0.67	1.07	
12,113.0	90.77	275.00	8,616.2	698.5	-3,569.8	3,634.9	0.98	0.39	-0.87	
12,208.0	90.64	275.29	8,615.0	705.0	-3,664.4	3,729.7	0.33	-0.14	0.31	
12,302.0	89.33	273.43	8,615.0	712.2	-3,758.2	3,823.3	2.42	-1.39	-1.98	
12,397.0	89.50	273.82	8,616.0	718.2	-3,853.0	3,917.9	0.45	0.18	0.41	
12,491.0	89.70	271.53	8,616.7	722.5	-3,948.9	4,011.3	2.45	0.21	-2.44	
12,586.0	89.80	271.13	8,617.1	724.6	-4,041.8	4,105.5	0.43	0.11	-0.42	
12,680.0	89.70	271.17	8,617.5	726.6	-4,135.8	4,198.6	0.11	-0.11	0.04	
12,775.0	89.50	270.90	8,618.1	728.4	-4,230.5	4,292.7	0.35	-0.21	-0.28	
12,869.0	90.70	271.52	8,618.0	730.3	-4,324.8	4,385.8	1.44	1.28	0.68	
12,964.0	90.97	271.26	8,618.6	732.6	-4,419.7	4,479.9	0.39	0.28	-0.27	
13,058.0	91.24	271.37	8,614.8	734.6	-4,513.7	4,573.1	0.31	0.29	0.12	
13,109.6	91.28	271.29	8,613.6	738.0	-4,565.2	4,624.2	0.18	0.11	-0.15	
M35 F 4H LTP										
13,152.0	91.34	271.23	8,612.7	738.9	-4,607.6	4,666.2	0.18	0.11	-0.15	
13,184.0	91.34	271.29	8,611.9	737.6	-4,639.6	4,697.9	0.10	0.00	0.19	
MWD Survey										
13,232.0	91.34	271.29	8,610.8	738.7	-4,687.6	4,745.5	0.00	0.00	0.00	
Projection to BHTD - M35 F 4H BHL										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,184.0	8,611.9	737.6	-4,639.6	MWD Survey
13,232.0	8,610.8	738.7	-4,687.6	Projection to BHTD

Checked By: _____ Approved By: _____ Date: _____



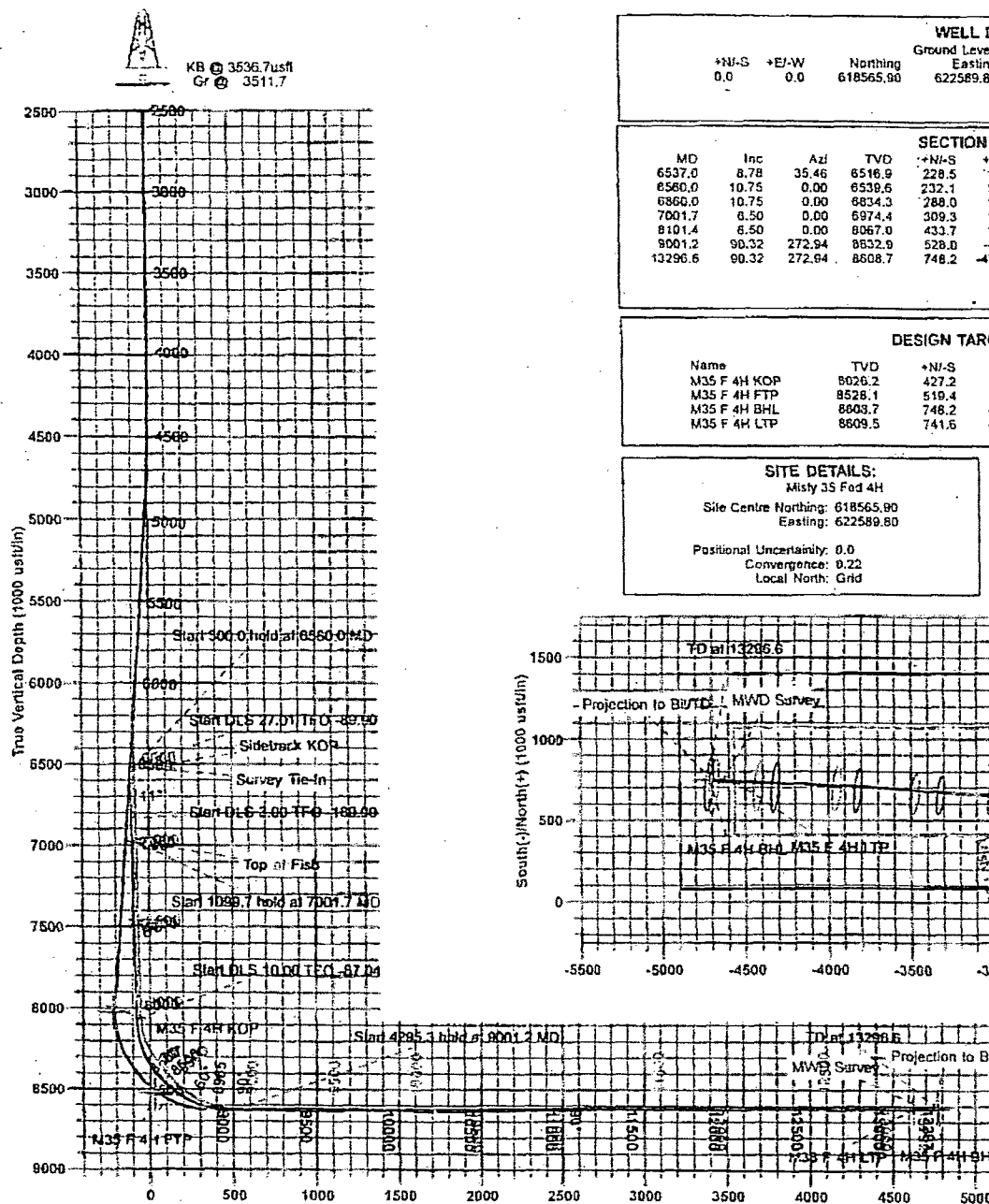
M35 F 4H
Eddy County, NM (NAD 27 NME)
Northing: 618565.90
Easting: 622589.80
ST1 Plan #5



To convert Magnetic North to Grid, Add 7.32"
To convert True North to Grid, Subtract 0.22"

Azimuths to Grid North
True North: -0.21"
Magnetic North: 7.32"

Magnetic Field
Strength: 48461.95nT
Dip Angle: 60.47"
Date: 12/18/2014
Model: BGGM2014



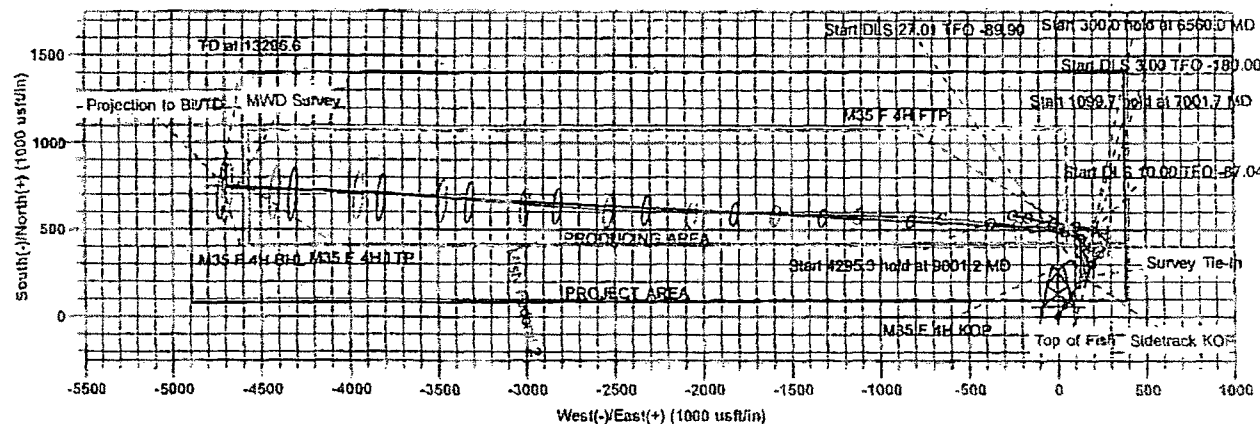
WELL DETAILS M35 F 4H						
Ground Level:			3511.7			
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	618565.90	622589.80	32° 41' 59.649 N	103° 56' 5.353 W	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target
6537.0	8.78	35.46	6516.9	228.5	145.8	0.00	0.00	-108.2	
6560.0	10.75	0.00	6539.6	232.1	146.8	27.01	-89.90	-106.6	
6860.0	10.75	0.00	6834.3	288.0	146.8	0.00	0.00	-99.8	
7001.7	8.50	0.00	6974.4	309.3	146.8	3.00	-180.00	-96.5	
8101.4	6.50	0.00	8067.0	433.7	146.6	0.00	0.00	-77.0	
9001.2	90.32	272.94	8832.9	528.0	-425.3	10.00	-87.04	502.8	
13296.6	90.32	272.94	8808.7	748.2	-4714.9	0.00	0.00	4773.8	M35 F 4H BHL

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Northing	Easting				
M35 F 4H KOP	8026.2	427.2	284.5	618893.10	622874.30				
M35 F 4H FTP	8528.1	519.4	54.0	619085.30	622642.80				
M35 F 4H BHL	8803.7	748.2	-4714.9	618314.10	617874.90				
M35 F 4H LTP	8609.5	741.6	-4565.0	619307.50	618024.80				

SITE DETAILS:									
Misty 35 Fed 4H									
Site Centre Northing:		618565.90							
Easting:		622589.80							
Positional Uncertainty: 0.0									
Convergence: 0.22									
Local North: Grid									

PROJECT DETAILS:									
Eddy County, NM (NAD 27 NME)									
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									





Job Number: SVMO-141618
 Company: OXY USA, Inc.
 Lease/Well: Misty 35 Federal Com 4H
 Location: Eddy County, NM
 Rig Name: H&P #621
 RKB: 21'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.72°
 Grid: East To Grid North
 File name: Y:\WINSER-112014SU-11OXYMOIMISTY3-114H.SVY
 Date/Time: 03-Dec-14 / 12:08
 Curve Name: Surface - 506' M.D. (Rate Gyro) (API 30-015-41413)

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
~~Surface~~ MD to 506' MD is, to the best of
 our knowledge a true and accurate account of the
 well bore.

Daniel West 12-3-14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
138.00	.96	308.85	137.99	.73	-.90	.73	1.16	308.85	.70
230.00	.98	312.63	229.98	1.74	-2.08	1.74	2.71	309.95	.07
322.00	.92	313.34	321.97	2.78	-3.20	2.78	4.24	311.04	.07
414.00	1.06	320.36	413.95	3.94	-4.28	3.94	5.82	312.69	.20

Last Survey Depth Recorded

506.00	1.12	319.24	505.94	5.28	-5.41	5.28	7.56	314.33	.07
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