



An Operating Unit of Smith International, Inc.

DIRECTIONAL SURVEY REPORT

OXY PETROLEUM

FEDERAL 23 # 6

EDDY COUNTY, NEW MEXICO

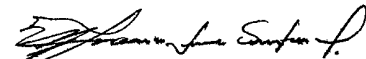
PREPARED BY: FRANCISCO SINISTERRA

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) STEWART ROBERTSON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12/27/09 TO 01/04/10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
RIG: H & P 340
9. SURVEY CERTIFIED FROM: 865 TO 8577 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 1375.56 FEET ON A BEARING OF 280.79 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 8632 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/27/2009
Date Completed: 01/04/2010

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
Rig:H & P 340

PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:S. ROBERTSON
J. ALCOCER

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.22.27.5609 N LON:103.44.30.2098 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 682647.9000 Y: 500398.5000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.52° EAST TO GRID
Vertical Section Plane: 281.08
Survey Vert. Reference: 16.50' Rotary Table To Ground
Altitude:3543.70' Ground To MSL

Measured Depth	8632.00	(feet)
Inclination	17.06	(deg)
Azimuth	279.45	(deg)
True Vertical Depth	8382.96	(feet)
Vertical Section	1375.54	(feet)
Survey X cord	681296.63	(feet)
Survey Y cord	500655.80	(feet)
Survey Lat	32.37505019 N	(deg)
Survey Lon	103.74609701 W	(deg)
Rectangular Corr. N/S	257.47 N	(feet)
Rectangular Corr. E/W	1351.25 W	(feet)
Closure Distance	1375.56	(feet)
Direction of Closure	280.79	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
Rig:H & P 340
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: S. ROBERTSON
J. ALCOCER

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.22.27.5609 N LON:103.44.30.2098 W
Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 682647.9000 Y: 500398.5000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.52° EAST TO GRID
Vertical Section Plane: 281.08
Survey Vert. Reference: 16.50' Rotary Table To Ground
Altitude:3543.70' Ground To MSL

Survey Calculations by RX5 V6.02A using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE SCIENTIFIC DRILLING GYRO SURVEYS.										
0.00	0.00	0.00	-0.00	0.00	0.00	0.00 S	0.00 W	0.00@	260.39	0.00
100.00	0.08	23.41	100.00	100.00	-0.01	0.06 N	0.03 E	0.07@	21.83	0.08
200.00	0.15	188.33	200.00	100.00	-0.03	0.00 S	0.03 E	0.03@	92.99	0.23
300.00	0.25	162.46	300.00	100.00	-0.14	0.34 S	0.08 E	0.35@	166.57	0.13
400.00	0.41	189.71	399.99	100.00	-0.26	0.90 S	0.09 E	0.90@	174.51	0.22
500.00	0.36	184.60	499.99	100.00	-0.30	1.57 S	0.00 E	1.57@	179.97	0.06
600.00	0.69	179.96	599.99	100.00	-0.45	2.48 S	0.02 W	2.48@	180.55	0.33
700.00	0.62	175.81	699.98	100.00	-0.71	3.62 S	0.02 E	3.62@	179.75	0.08
**	TIE INTO SCIENTIFIC DRILLING SURVEY @ 800' MD.									
800.00	1.05	187.88	799.97	100.00	-0.91	5.07 S	0.07 W	5.07@	180.79	0.46
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
865.00	0.70	165.63	864.96	65.00	-1.11	6.04 S	0.05 W	6.04@	180.50	0.74
955.00	0.97	171.44	954.95	90.00	-1.60	7.33 S	0.20 E	7.33@	178.46	0.31
1045.00	1.14	182.60	1044.94	90.00	-1.99	8.98 S	0.27 E	8.98@	178.28	0.30
1135.00	0.26	135.14	1134.93	90.00	-2.29	10.02 S	0.37 E	10.02@	177.87	1.09
1226.00	0.18	74.49	1225.93	91.00	-2.59	10.13 S	0.66 E	10.15@	176.29	0.25
1316.00	0.26	68.52	1315.93	90.00	-2.89	10.01 S	0.98 E	10.06@	174.40	0.09
1406.00	0.26	51.29	1405.93	90.00	-3.19	9.81 S	1.33 E	9.90@	172.27	0.09
1496.00	0.44	52.61	1495.93	90.00	-3.55	9.47 S	1.77 E	9.64@	169.44	0.20
1586.00	0.44	55.16	1585.92	90.00	-4.02	9.07 S	2.32 E	9.36@	165.62	0.02
1677.00	0.53	56.12	1676.92	91.00	-4.56	8.63 S	2.96 E	9.12@	161.07	0.10
1767.00	0.62	46.37	1766.92	90.00	-5.14	8.06 S	3.66 E	8.85@	155.60	0.15
1857.00	0.70	36.88	1856.91	90.00	-5.66	7.29 S	4.34 E	8.48@	149.22	0.15
1947.00	0.88	44.79	1946.90	90.00	-6.28	6.36 S	5.16 E	8.19@	140.95	0.23
2037.00	0.97	47.95	2036.89	90.00	-7.12	5.36 S	6.21 E	8.20@	130.78	0.12
2127.00	0.97	58.14	2126.88	90.00	-8.14	4.44 S	7.42 E	8.65@	120.91	0.19

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
RIG-H & P 340

Page 02/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2218.00	1.06	53.05	2217.86	91.00	-9.27	3.53 S	8.75 E	9.44@	111.98	0.14
2308.00	1.14	58.76	2307.85	90.00	-10.48	2.57 S	10.18 E	10.50@	104.15	0.15
2398.00	1.14	62.36	2397.83	90.00	-11.84	1.69 S	11.74 E	11.86@	98.18	0.08
2488.00	1.41	55.86	2487.81	90.00	-13.32	0.65 S	13.45 E	13.46@	92.77	0.34
2579.00	1.06	30.46	2578.79	91.00	-14.39	0.70 N	14.80 E	14.82@	87.28	0.71
2669.00	1.14	18.86	2668.77	90.00	-14.79	2.27 N	15.51 E	15.68@	81.68	0.26
2759.00	0.88	334.03	2758.76	90.00	-14.49	3.74 N	15.50 E	15.94@	76.45	0.90
2849.00	1.14	317.42	2848.74	90.00	-13.36	5.02 N	14.59 E	15.43@	71.02	0.43
2939.00	1.32	319.97	2938.72	90.00	-11.83	6.47 N	13.32 E	14.81@	64.09	0.21
3030.00	1.49	317.86	3029.69	91.00	-10.06	8.15 N	11.85 E	14.38@	55.48	0.20
3120.00	1.67	322.34	3119.66	90.00	-8.14	10.06 N	10.26 E	14.37@	45.59	0.24
3210.00	1.58	317.69	3209.62	90.00	-6.16	12.01 N	8.63 E	14.79@	35.69	0.18
3300.00	1.58	316.46	3299.59	90.00	-4.15	13.83 N	6.94 E	15.47@	26.64	0.04
3390.00	1.76	314.52	3389.55	90.00	-1.99	15.70 N	5.10 E	16.50@	17.99	0.21
3481.00	1.67	311.09	3480.51	91.00	0.33	17.55 N	3.10 E	17.82@	10.03	0.15
3571.00	1.49	317.77	3570.48	90.00	2.40	19.28 N	1.33 E	19.32@	3.94	0.29
3661.00	1.06	320.24	3660.45	90.00	3.99	20.78 N	0.01 E	20.78@	0.02	0.48
3752.00	0.79	321.73	3751.44	91.00	5.11	21.92 N	0.92 W	21.94@	357.60	0.30
3842.00	1.06	318.57	3841.43	90.00	6.25	23.03 N	1.85 W	23.11@	355.40	0.31
3932.00	0.88	302.66	3931.42	90.00	7.55	24.03 N	2.99 W	24.22@	352.92	0.36
4022.00	0.70	298.79	4021.41	90.00	8.71	24.67 N	4.05 W	25.00@	350.68	0.21
4113.00	0.53	298.96	4112.40	91.00	9.64	25.14 N	4.90 W	25.61@	348.96	0.19
4181.00	0.53	304.68	4180.40	68.00	10.23	25.47 N	5.44 W	26.05@	347.95	0.08
4290.00	0.62	331.66	4289.40	109.00	11.07	26.28 N	6.13 W	26.98@	346.86	0.26
4335.00	0.70	312.94	4334.39	45.00	11.46	26.68 N	6.45 W	27.45@	346.41	0.51
4380.00	0.53	325.07	4379.39	45.00	11.84	27.04 N	6.77 W	27.87@	345.94	0.47
4425.00	0.79	307.93	4424.39	45.00	12.27	27.40 N	7.13 W	28.31@	345.40	0.72
4470.00	2.11	292.46	4469.37	45.00	13.36	27.91 N	8.14 W	29.07@	343.73	3.03

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
RIG:H & P 340

Page 03/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
4515.00	3.52	298.35	4514.32	45.00	15.49	28.88 N	10.13 W	30.60@	340.68	3.19
4560.00	4.48	293.96	4559.21	45.00	18.52	30.25 N	12.95 W	32.90@	336.83	2.24
4605.00	5.80	291.49	4604.02	45.00	22.47	31.79 N	16.67 W	35.90@	332.33	2.97
4650.00	6.86	292.20	4648.75	45.00	27.34	33.64 N	21.27 W	39.81@	327.69	2.36
4695.00	8.27	293.34	4693.36	45.00	33.14	35.94 N	26.73 W	44.79@	323.36	3.15
4741.00	8.53	290.26	4738.86	46.00	39.74	38.43 N	32.97 W	50.64@	319.37	1.13
4785.00	9.76	287.89	4782.30	44.00	46.67	40.71 N	39.58 W	56.78@	315.80	2.92
4830.00	10.46	285.08	4826.60	45.00	54.53	42.94 N	47.16 W	63.78@	312.32	1.90
4875.00	10.20	283.50	4870.88	45.00	62.59	44.94 N	54.98 W	71.00@	309.26	0.85
4921.00	10.20	284.64	4916.15	46.00	70.72	46.92 N	62.88 W	78.45@	306.73	0.44
4966.00	10.29	281.30	4960.43	45.00	78.72	48.71 N	70.67 W	85.83@	304.58	1.33
5011.00	11.34	276.29	5004.63	45.00	87.15	49.98 N	79.01 W	93.49@	302.32	3.13
5056.00	11.52	274.53	5048.74	45.00	96.02	50.82 N	87.89 W	101.53@	300.04	0.87
5101.00	12.40	272.77	5092.76	45.00	105.26	51.41 N	97.19 W	109.95@	297.88	2.12
5146.00	13.10	273.21	5136.65	45.00	115.10	51.93 N	107.11 W	119.04@	295.87	1.57
5191.00	13.89	272.25	5180.41	45.00	125.48	52.43 N	117.60 W	128.76@	294.03	1.82
5236.00	15.04	270.75	5223.98	45.00	136.57	52.72 N	128.84 W	139.20@	292.25	2.69
5281.00	15.65	271.37	5267.38	45.00	148.29	52.94 N	140.74 W	150.37@	290.61	1.40
5326.00	16.27	271.81	5310.64	45.00	160.50	53.28 N	153.11 W	162.12@	289.19	1.40
5371.00	17.32	272.33	5353.72	45.00	173.34	53.75 N	166.11 W	174.59@	287.93	2.36
5416.00	18.29	273.74	5396.57	45.00	186.96	54.49 N	179.84 W	187.92@	286.85	2.36
5461.00	19.17	274.53	5439.18	45.00	201.31	55.53 N	194.26 W	202.04@	285.95	2.03
5507.00	20.49	274.62	5482.46	46.00	216.81	56.78 N	209.81 W	217.36@	285.14	2.87
5552.00	21.10	273.92	5524.52	45.00	232.67	57.96 N	225.74 W	233.07@	284.40	1.46
5597.00	20.93	273.74	5566.53	45.00	248.68	59.04 N	241.84 W	248.95@	283.72	0.40
5642.00	21.19	272.69	5608.53	45.00	264.70	59.95 N	257.99 W	264.86@	283.08	1.02
5687.00	21.98	273.30	5650.37	45.00	281.09	60.81 N	274.52 W	281.18@	282.49	1.82
5732.00	22.60	272.42	5692.01	45.00	297.98	61.66 N	291.57 W	298.02@	281.94	1.56

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
RIG:H & P 340

Page 04/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5777.00	22.51	272.69	5733.57	45.00	315.05	62.43 N	308.81 W	315.06@	281.43	0.31
5822.00	21.81	274.53	5775.24	45.00	331.88	63.50 N	325.75 W	331.88@	281.03	2.19
5867.00	21.72	277.08	5817.03	45.00	348.49	65.18 N	342.35 W	348.50@	280.78	2.11
5912.00	21.63	278.84	5858.85	45.00	365.08	67.49 N	358.80 W	365.10@	280.65	1.46
5957.00	21.28	278.93	5900.73	45.00	381.53	70.03 N	375.07 W	381.55@	280.58	0.78
6003.00	20.66	280.68	5943.69	46.00	397.99	72.83 N	391.29 W	398.01@	280.54	1.92
6048.00	20.40	280.68	5985.83	45.00	413.77	75.75 N	406.79 W	413.79@	280.55	0.58
6093.00	20.58	281.48	6027.98	45.00	429.52	78.78 N	422.25 W	429.54@	280.57	0.74
6138.00	20.22	282.35	6070.16	45.00	445.21	82.02 N	437.60 W	445.22@	280.62	1.05
6228.00	22.07	283.58	6154.10	90.00	477.65	89.31 N	469.23 W	477.66@	280.78	2.11
6318.00	23.65	282.35	6237.03	90.00	512.59	97.15 N	503.30 W	512.59@	280.92	1.83
6409.00	24.80	280.95	6320.01	91.00	549.93	104.68 N	539.87 W	549.93@	280.97	1.41
6499.00	24.36	280.95	6401.86	90.00	587.36	111.79 N	576.63 W	587.36@	280.97	0.49
6589.00	23.21	280.60	6484.21	90.00	623.66	118.57 N	612.28 W	623.66@	280.96	1.29
6679.00	23.74	280.68	6566.76	90.00	659.51	125.19 N	647.52 W	659.51@	280.94	0.59
6769.00	23.92	280.16	6649.09	90.00	695.87	131.77 N	683.28 W	695.87@	280.92	0.31
6859.00	22.07	279.37	6731.94	90.00	731.02	137.74 N	717.93 W	731.02@	280.86	2.08
6950.00	23.21	280.51	6815.92	91.00	766.04	143.80 N	752.43 W	766.04@	280.82	1.34
7040.00	23.21	280.07	6898.64	90.00	801.50	150.13 N	787.33 W	801.51@	280.80	0.19
7130.00	22.16	279.19	6981.67	90.00	836.20	155.94 N	821.54 W	836.21@	280.75	1.23
7220.00	21.37	278.66	7065.26	90.00	869.55	161.12 N	854.51 W	869.57@	280.68	0.90
7310.00	20.31	281.21	7149.37	90.00	901.55	166.63 N	886.04 W	901.58@	280.65	1.55
7401.00	21.37	282.71	7234.42	91.00	933.92	173.35 N	917.71 W	933.94@	280.70	1.30
7491.00	21.28	283.14	7318.25	90.00	966.63	180.67 N	949.61 W	966.64@	280.77	0.20
7581.00	22.77	282.27	7401.68	90.00	1000.37	188.08 N	982.53 W	1000.38@	280.84	1.69
7671.00	23.48	280.60	7484.45	90.00	1035.71	195.08 N	1017.18 W	1035.72@	280.86	1.07
7761.00	22.25	280.86	7567.38	90.00	1070.68	201.59 N	1051.54 W	1070.69@	280.85	1.37
7851.00	20.75	279.37	7651.12	90.00	1103.65	207.40 N	1084.00 W	1103.67@	280.83	1.77

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY, NM
RIG:H & P 340

Page 05/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7941.00	22.16	279.72	7734.88	90.00	1136.56	212.86 N	1116.47 W	1136.58@	280.79	1.57
8032.00	20.14	279.81	7819.74	91.00	1169.38	218.43 N	1148.82 W	1169.40@	280.77	2.22
8122.00	21.37	280.25	7903.90	90.00	1201.27	223.99 N	1180.23 W	1201.29@	280.75	1.38
8212.00	21.98	282.97	7987.54	90.00	1234.50	230.68 N	1212.78 W	1234.52@	280.77	1.31
8302.00	21.28	281.12	8071.20	90.00	1267.67	237.61 N	1245.22 W	1267.68@	280.80	1.09
8392.00	20.31	281.12	8155.34	90.00	1299.62	243.78 N	1276.57 W	1299.63@	280.81	1.08
8482.00	19.08	280.95	8240.07	90.00	1329.95	249.58 N	1306.34 W	1329.97@	280.82	1.37
8577.00	17.06	279.45	8330.38	95.00	1359.41	254.82 N	1335.33 W	1359.43@	280.80	2.18
STRAIGHT-LINE PROJECTION TO BIT DEPTH @ 8632' MD.										
8632.00	17.06	279.45	8382.96	55.00	1375.54	257.47 N	1351.25 W	1375.56@	280.79	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	OXY PETROLEUM		
LEASE / WELL No.:	FEDERAL 23	# 6	
WELL LOCATION:	EDDY COUNTY, NM		
COUNTY / STATE / COUNTRY:	EDDY COUNTY	NM	USA
RIG:	H&P 340		
API WELL No:	30-015-37340		
JOB No:	101009502 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.52	LWD Calculated:	7.52
		Agreed Upon:	7.52
X =	682647.900000	Feet	Y = 500398.500000
			Feet
SITE LATITUDE:	32.374322 N	SITE LONGITUDE:	103.741725 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐ ZONE:		
PROPOSED DRIFT DIRECTION:	281.08		
KELLY BUSHING ELEVATION:	17		
ALTITUDE:	3560.2	Feet	WATER DEPTH: N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	800		
DRIFT ANGLE:	1.05		
DRIFT DIRECTION:	187.88		
TRUE VERTICAL DEPTH:	799.97		
VERTICAL SECTION:	3.53		
RECTANGULAR COORDINATE (N / S) :	-5.07		
RECTANGULAR COORDINATE (E / W) :	-0.07		
CLOSURE DISTANCE / DIRECTION:	5.07	180.76	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC DRILLING		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

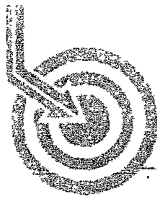
KICKOFF DEPTH:	4450	TOTAL DEPTH:	8615.2
KICKOFF ANGLE:	0	MAX ANGLE:	22.45

PES Engineers: _____

**Signature of both field engineers required if applicable

Directional Driller: _____

DATE: _____



Scientific Drilling

Gyroscopic Survey Report for OXY

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	FEDERAL 23 #6
Rig Name	H & P #340
Survey Date	12/26/2009
Latitude	32.37 deg
North Reference	Grid North
Grid Correction	-0.32 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 134.94Azim (deg)
Definitive Survey	FINAL INRUN
Operator	LEO GARZA

Comments



Survey Report

Well Name: FEDERAL 23 #6

Survey: FINAL INRUN

Survey Date: 12/26/2009

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.08	23.41	100.00	-0.03	0.06	0.03	0.08	0.07	23.41
200.00	0.15	188.33	200.00	0.03	0.00	0.04	0.23	0.04	91.51
300.00	0.25	162.46	300.00	0.30	-0.34	0.08	0.13	0.35	166.17
400.00	0.41	189.71	400.00	0.70	-0.91	0.09	0.22	0.91	174.40
500.00	0.36	184.60	500.00	1.11	-1.57	0.00	0.07	1.57	179.89
600.00	0.69	179.96	599.99	1.74	-2.48	-0.02	0.34	2.48	180.50
700.00	0.62	175.81	699.98	2.57	-3.63	0.02	0.09	3.63	179.71
800.00	1.05	187.88	799.97	3.53	-5.07	-0.07	0.46	5.07	180.76

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

OXY PETROLEUM
FEDERAL 23 #6
EDDY COUNTY

Sun Dec 27 14:57:00 2009

Coordinates

Latitude: 32.374322 N (32 deg. 22 min. 27.5592 sec.)
Longitude: 103.741725 W (-103 deg. 44 min. 30.2100 sec.)
Elevation: 3560.20 feet.
Calculation Date: Dec/27/2009

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.3516 degrees
Total Magnetic Field: 0.48865 gauss
Magnetic Declination: 7.839620 degrees
Horizontal Intensity: 0.241723 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.839620 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 682647.8830 feet
Y: 500398.3275 feet

True to Grid: (convergence) -0.316784 degrees

Magnetic to Grid: 7.522836 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.522836 Degr.