



An Operating Unit of Smith International, Inc.

30-015-37537

DIRECTIONAL SURVEY REPORT

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APR 06 2011

NMOCD ARTESIA

YATES PETROLEUM

MADURO BOZ STATE #1H

EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder Energy Services, Inc.
6213 W. Interstate 20 • Midland, TX • 79706
(432) 681-6000

Pathfinder

6213 W. Interstate 20
Midland, Texas, 79706
Tel. 432.687.1647
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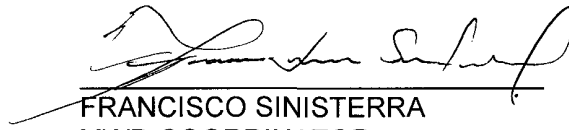
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JESUS BARRAZA
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 01-31-11 TO 02-20-11
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:

YATES PETROLEUM
MADURO BOZ STATE #1H
EDDY COUNTY, NM
RIG: SILVER OAK 10

9. SURVEY CERTIFIED FROM: 427 TO 12470 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4604.83 FEET ON A BEARING OF 270.38 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12550 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 01/29/2011
Date Completed: 02/20/2011

YATES PETROLEUM CORPORATION
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
Rig:SILVER OAK 10
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:JESUS BARRAZA
ZACH VEST

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.8.20.9739 N LON:104.10.14.5809 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 591670.3910 Y: 414399.8400
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.81°EAST TO GRID
Vertical Section Plane: 270.31
Survey Vert. Reference: 18.00' Kelly Bushing To Ground
Altitude:3178.00' Ground To MSL

Measured Depth	12550.00	(feet)
Inclination	92.07	(deg)
Azimuth	271.50	(deg)
True Vertical Depth	8037.64	(feet)
Vertical Section	4604.83	(feet)
Survey X cord	587065.64	(feet)
Survey Y cord	414430.48	(feet)
Survey Lat	32.13926190 N	(deg)
Survey Lon	104.18559386 W	(deg)
Rectangular Corr. N/S	30.66 N	(feet)
Rectangular Corr. E/W	4604.73 W	(feet)
Closure Distance	4604.83	(feet)
Direction of Closure	270.38	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

MADURO BOZ STATE #1H

EDDY COUNTY, NEW MEXICO

Rig:SILVER OAK 10

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JESUS BARRAZA

ZACH VEST

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.8.20.9739 N LON:104.10.14.5809 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 591670.3910 Y: 414399.8400

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.81° EAST TO GRID

Vertical Section Plane: 270.31

Survey Vert. Reference: 18.00' Kelly Bushing To Ground

Altitude:3178.00' Ground To MSL

Survey Calculations by RX5 V6.03C 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 MS ENERGY SERVICES GYRO SURVEYS.										
0.00	0.00	0.00	-0.00	0.00	0.00	0.00 N	0.00 W	0.01@	314.77	0.00
200.00	1.25	105.32	199.98	200.00	-2.10	0.57 S	2.10 E	2.18@	105.23	0.63
** TIE IN TO MS ENERGY GYRO SURVEY AT 400'MD.										
400.00	0.75	82.19	399.95	200.00	-5.51	0.97 S	5.50 E	5.58@	100.00	0.32
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
427.00	0.44	68.79	426.95	27.00	-5.78	0.91 S	5.77 E	5.84@	98.95	1.25
610.00	0.97	353.88	609.94	183.00	-6.26	0.89 N	6.26 E	6.32@	81.95	0.52
792.00	1.67	339.80	791.89	182.00	-5.16	4.91 N	5.18 E	7.14@	46.56	0.42
982.00	1.41	305.40	981.82	190.00	-2.27	8.86 N	2.32 E	9.16@	14.68	0.50
1172.00	1.49	300.42	1171.76	190.00	1.78	11.46 N	1.72 W	11.59@	351.49	0.08
1362.00	1.06	284.20	1361.72	190.00	5.62	13.15 N	5.55 W	14.27@	337.11	0.29
1552.00	1.32	264.65	1551.68	190.00	9.50	13.37 N	9.43 W	16.36@	324.80	0.25
1742.00	1.23	107.50	1741.66	190.00	9.73	12.56 N	9.67 W	15.85@	322.41	1.32
1932.00	3.34	109.66	1931.50	190.00	2.56	10.08 N	2.51 W	10.39@	346.03	1.11
2122.00	3.17	89.98	2121.20	190.00	-7.91	8.22 N	7.96 E	11.44@	44.07	0.59
2185.00	2.11	90.81	2184.13	63.00	-10.81	8.20 N	10.86 E	13.61@	52.93	1.68
2262.00	1.58	93.80	2261.09	77.00	-13.29	8.11 N	13.34 E	15.61@	58.68	0.70
2452.00	1.58	93.27	2451.02	190.00	-18.52	7.79 N	18.56 E	20.13@	67.23	0.01
2642.00	0.70	126.16	2640.98	190.00	-22.08	6.96 N	22.12 E	23.18@	72.54	0.56
2832.00	0.62	148.35	2830.97	190.00	-23.56	5.40 N	23.59 E	24.20@	77.12	0.14
3021.00	0.44	183.22	3019.96	189.00	-24.07	3.80 N	24.09 E	24.39@	81.03	0.19
3211.00	0.53	186.21	3209.95	190.00	-23.94	2.20 N	23.95 E	24.05@	84.75	0.05
3402.00	0.79	171.65	3400.94	191.00	-24.05	0.02 N	24.05 E	24.05@	89.96	0.16
3592.00	0.53	181.91	3590.93	190.00	-24.22	2.16 S	24.21 E	24.31@	95.09	0.15
3782.00	0.79	164.01	3780.91	190.00	-24.56	4.29 S	24.54 E	24.91@	99.92	0.17

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 10

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)
3972.00	0.88	181.84	3970.89	190.00	-24.89	7.01 S	24.86 E	25.82@	105.75	0.14
4162.00	0.88	176.33	4160.87	190.00	-24.95	9.93 S	24.90 E	26.81@	111.73	0.04
4352.00	1.14	169.98	4350.84	190.00	-25.40	13.24 S	25.32 E	28.58@	117.61	0.15
4542.00	0.53	157.50	4540.82	190.00	-26.07	15.92 S	25.99 E	30.48@	121.48	0.33
4733.00	0.35	146.70	4731.81	191.00	-26.74	17.22 S	26.65 E	31.73@	122.87	0.10
4923.00	0.44	115.48	4921.81	190.00	-27.72	18.02 S	27.62 E	32.98@	123.11	0.12
5113.00	0.44	136.04	5111.80	190.00	-28.89	18.86 S	28.79 E	34.42@	123.22	0.08
5303.00	0.44	125.90	5301.80	190.00	-29.99	19.81 S	29.89 E	35.86@	123.54	0.04
5493.20	0.62	220.47	5491.99	190.20	-29.92	21.02 S	29.81 E	36.48@	125.19	0.41
5684.00	0.88	243.88	5682.78	190.80	-27.95	22.45 S	27.83 E	35.75@	128.90	0.21
5874.00	0.88	262.78	5872.76	190.00	-25.19	23.28 S	25.07 E	34.21@	132.88	0.15
6064.00	1.23	218.75	6062.73	190.00	-22.48	25.05 S	22.34 E	33.57@	138.27	0.45
6255.00	1.67	230.35	6253.66	191.00	-19.07	28.43 S	18.92 E	34.15@	146.36	0.28
6440.00	1.76	245.20	6438.58	185.00	-14.43	31.34 S	14.26 E	34.43@	155.53	0.24
6626.00	1.58	261.02	6624.50	186.00	-9.32	32.94 S	9.14 E	34.18@	164.49	0.27
6814.00	1.49	270.21	6812.44	188.00	-4.31	33.33 S	4.13 E	33.59@	172.93	0.14
7001.00	1.58	289.57	6999.37	187.00	0.55	32.46 S	0.73 W	32.47@	181.28	0.28
7187.00	1.14	290.11	7185.32	186.00	4.71	30.96 S	4.88 W	31.35@	188.96	0.24
7374.00	0.88	337.29	7372.29	187.00	7.03	29.00 S	7.18 W	29.88@	193.91	0.45
7559.00	0.97	303.71	7557.27	185.00	8.89	26.82 S	9.03 W	28.30@	198.61	0.29
7611.00	0.88	303.80	7609.26	52.00	9.59	26.35 S	9.73 W	28.09@	200.27	0.17
7642.00	0.79	303.65	7640.26	31.00	9.97	26.10 S	10.11 W	27.99@	201.17	0.29
7673.00	1.76	288.06	7671.25	31.00	10.60	25.84 S	10.74 W	27.98@	202.57	3.30
7704.00	4.40	282.12	7702.20	31.00	12.22	25.44 S	12.35 W	28.28@	205.90	8.57
7735.00	7.74	281.81	7733.03	31.00	15.43	24.76 S	15.56 W	29.25@	212.14	10.78
7765.00	11.43	280.79	7762.60	30.00	20.33	23.79 S	20.46 W	31.38@	220.69	12.31
7797.00	15.12	281.02	7793.74	32.00	27.55	22.40 S	27.67 W	35.60@	231.01	11.53
7828.00	18.91	281.26	7823.38	31.00	36.46	20.65 S	36.57 W	42.00@	240.55	12.23
7859.00	22.34	280.58	7852.39	31.00	47.19	18.58 S	47.29 W	50.81@	248.55	11.09
7890.00	25.76	280.08	7880.69	31.00	59.63	16.32 S	59.72 W	61.91@	254.71	11.05

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 10

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)
7921.00	29.19	280.32	7908.19	31.00	73.72	13.79 S	73.79 W	75.07@	259.42	11.07
7951.00	32.71	280.92	7933.92	30.00	88.89	10.94 S	88.95 W	89.62@	262.99	11.78
7983.00	36.40	281.32	7960.27	32.00	106.72	7.44 S	106.76 W	107.02@	266.01	11.55
8014.00	39.83	280.66	7984.65	31.00	125.52	3.79 S	125.54 W	125.60@	268.27	11.14
8045.00	43.44	279.47	8007.82	31.00	145.81	0.20 S	145.82 W	145.82@	269.92	11.92
8076.00	47.13	277.93	8029.63	31.00	167.60	3.12 N	167.59 W	167.62@	271.07	12.41
8107.00	50.91	276.73	8049.95	31.00	190.83	6.10 N	190.80 W	190.90@	271.83	12.54
8138.00	54.69	275.64	8068.69	31.00	215.39	8.75 N	215.34 W	215.52@	272.33	12.51
8169.00	58.48	274.63	8085.76	31.00	241.17	11.06 N	241.11 W	241.36@	272.63	12.53
8200.00	62.34	274.05	8101.07	31.00	268.05	13.10 N	267.98 W	268.30@	272.80	12.56
8231.00	66.30	272.71	8114.50	31.00	295.94	14.74 N	295.87 W	296.23@	272.85	13.35
8263.00	70.35	271.25	8126.32	32.00	325.66	15.76 N	325.58 W	325.96@	272.77	13.35
8294.00	74.57	270.02	8135.66	31.00	355.21	16.09 N	355.13 W	355.49@	272.59	14.13
8325.00	77.12	268.92	8143.24	31.00	385.26	15.81 N	385.18 W	385.51@	272.35	8.92
8357.00	79.23	268.08	8149.79	32.00	416.57	14.99 N	416.49 W	416.76@	272.06	7.08
8388.00	81.07	268.03	8155.10	31.00	447.08	13.95 N	447.02 W	447.23@	271.79	5.94
8419.00	84.94	267.92	8158.87	31.00	477.82	12.86 N	477.76 W	477.93@	271.54	12.49
8450.00	88.90	268.19	8160.54	31.00	508.75	11.81 N	508.69 W	508.83@	271.33	12.80
8472.00	90.31	266.99	8160.69	22.00	530.72	10.89 N	530.67 W	530.78@	271.18	8.42
8503.00	91.19	267.20	8160.28	31.00	561.67	9.32 N	561.63 W	561.70@	270.95	2.92
8534.00	91.98	266.98	8159.42	31.00	592.61	7.74 N	592.58 W	592.63@	270.75	2.65
8565.00	92.95	267.41	8158.09	31.00	623.53	6.23 N	623.51 W	623.54@	270.57	3.42
8659.00	93.21	267.48	8153.04	94.00	717.28	2.04 N	717.28 W	717.28@	270.16	0.29
8752.00	92.15	267.80	8148.69	93.00	810.08	1.78 S	810.10 W	810.10@	269.87	1.19
8846.00	91.80	267.70	8145.45	94.00	903.93	5.47 S	903.97 W	903.99@	269.65	0.39
8939.00	91.36	269.10	8142.89	93.00	996.84	8.07 S	996.90 W	996.93@	269.54	1.58
9033.00	90.92	268.81	8141.02	94.00	1090.79	9.78 S	1090.86 W	1090.90@	269.49	0.56
9126.00	90.57	268.79	8139.81	93.00	1183.75	11.73 S	1183.83 W	1183.89@	269.43	0.38
9220.00	90.48	268.50	8138.95	94.00	1277.71	13.95 S	1277.80 W	1277.88@	269.37	0.32
9313.00	91.63	269.78	8137.24	93.00	1370.67	15.35 S	1370.77 W	1370.86@	269.36	1.85

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 10

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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)
9407.00	91.80	270.75	8134.42	94.00	1464.63	14.91 S	1464.73 W	1464.80@	269.42	1.05
9500.00	91.01	270.69	8132.14	93.00	1557.60	13.74 S	1557.69 W	1557.75@	269.49	0.85
9594.00	90.57	270.59	8130.85	94.00	1651.58	12.69 S	1651.68 W	1651.73@	269.56	0.48
9688.00	90.13	270.25	8130.27	94.00	1745.58	12.01 S	1745.67 W	1745.71@	269.61	0.59
9781.00	89.96	270.77	8130.20	93.00	1838.58	11.18 S	1838.67 W	1838.70@	269.65	0.59
9874.00	90.22	271.25	8130.05	93.00	1931.57	9.54 S	1931.65 W	1931.68@	269.72	0.59
9967.00	91.19	271.50	8128.91	93.00	2024.55	7.31 S	2024.62 W	2024.63@	269.79	1.08
10060.00	91.45	271.67	8126.77	93.00	2117.50	4.73 S	2117.56 W	2117.56@	269.87	0.33
10152.00	93.03	271.34	8123.17	92.00	2209.41	2.32 S	2209.45 W	2209.45@	269.94	1.76
10246.00	93.12	272.15	8118.13	94.00	2303.24	0.54 N	2303.27 W	2303.27@	270.01	0.87
10339.00	92.59	272.34	8113.50	93.00	2396.07	4.18 N	2396.09 W	2396.09@	270.10	0.61
10433.00	91.89	272.67	8109.82	94.00	2489.93	8.28 N	2489.92 W	2489.94@	270.19	0.82
10520.00	92.51	274.33	8106.48	87.00	2576.73	13.59 N	2576.69 W	2576.73@	270.30	2.04
10613.00	93.47	273.70	8101.63	93.00	2669.41	20.09 N	2669.34 W	2669.41@	270.43	1.23
10707.00	91.63	271.95	8097.45	94.00	2763.22	24.72 N	2763.12 W	2763.23@	270.51	2.70
10799.00	91.01	271.92	8095.33	92.00	2855.15	27.82 N	2855.05 W	2855.18@	270.56	0.67
10892.00	91.19	271.97	8093.54	93.00	2948.10	30.98 N	2947.98 W	2948.14@	270.60	0.20
10985.00	91.71	271.58	8091.19	93.00	3041.04	33.86 N	3040.90 W	3041.09@	270.64	0.70
11078.00	91.36	270.43	8088.70	93.00	3134.00	35.49 N	3133.85 W	3134.05@	270.65	1.29
11171.00	91.19	269.91	8086.63	93.00	3226.97	35.77 N	3226.83 W	3227.02@	270.64	0.59
11265.00	91.89	269.31	8084.10	94.00	3320.93	35.13 N	3320.79 W	3320.98@	270.61	0.98
11358.00	91.63	269.42	8081.25	93.00	3413.88	34.10 N	3413.74 W	3413.91@	270.57	0.30
11451.00	91.54	268.96	8078.67	93.00	3506.82	32.78 N	3506.70 W	3506.85@	270.54	0.50
11545.00	92.95	268.72	8074.99	94.00	3600.72	30.88 N	3600.60 W	3600.73@	270.49	1.52
11638.00	92.33	269.39	8070.71	93.00	3693.59	29.35 N	3693.49 W	3693.61@	270.46	0.98
11732.00	91.89	268.97	8067.25	94.00	3787.51	28.00 N	3787.42 W	3787.52@	270.42	0.65
11826.00	91.63	269.25	8064.36	94.00	3881.45	26.54 N	3881.36 W	3881.45@	270.39	0.41
11919.00	90.57	269.01	8062.58	93.00	3974.41	25.13 N	3974.33 W	3974.41@	270.36	1.17
12013.00	91.98	269.98	8060.48	94.00	4068.37	24.30 N	4068.30 W	4068.37@	270.34	1.82
12107.00	92.15	270.51	8057.10	94.00	4162.31	24.71 N	4162.24 W	4162.31@	270.34	0.59

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 10

Page 05/05

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
12200.00	93.47	269.72	8052.54	93.00	4255.20	24.89 N	4255.12 W	4255.20@	270.34	1.65
12293.00	92.68	270.57	8047.55	93.00	4348.06	25.13 N	4347.99 W	4348.06@	270.33	1.25
12387.00	92.15	271.22	8043.59	94.00	4441.97	26.60 N	4441.89 W	4441.97@	270.34	0.89
12470.00	92.07	271.50	8040.53	83.00	4524.90	28.56 N	4524.81 W	4524.90@	270.36	0.35
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 12550'MD.										
12550.00	92.07	271.50	8037.64	80.00	4604.83	30.66 N	4604.73 W	4604.83@	270.38	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.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	MADURO "BOZ"	#1H	
WELL LOCATION:	EDDY COUNTY, NEW MEXICO		
COUNTY / STATE / COUNTRY:	EDDY COUNTY	NEW MEXICO	USA
RIG:	SILVER OAK 10		
API WELL No:	30-015-37537		
JOB No:	#700001506 WT-WT		
P.O. / AFE No.	93940		
DIRECTIONAL COMPANY:	PES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.83	LWD Calculated:	7.81
Agreed Upon:		7.81	
X =	591670.391000	Feet	Y =
414399.840000		Feet	
SITE LATITUDE:	32°08'21.03" E	SITE LONGITUDE:	104°10'14.60"
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	270.31		
KELLY BUSHING ELEVATION:	18'		
ALTITUDE:	3178	Feet	WATER DEPTH:
NA		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	400		
DRIFT ANGLE:	0.75		
DRIFT DIRECTION:	82.19		
TRUE VERTICAL DEPTH:	399.95		
VERTICAL SECTION:	-5.51		
RECTANGULAR COORDINATE (N / S) :	-0.97		
RECTANGULAR COORDINATE (E / W) :	5.5		
CLOSURE DISTANCE / DIRECTION:	5.59	100.04	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MS ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	7682'	TOTAL DEPTH:	12597'
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers:

John Burnaza
Lady Vut

**Signature of both field engineers required if applicable

Directional Driller:

Richard Hill

DATE: 30-Jan-2011

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* **YATES PETROLEUM** *

JOB NUMBER: SVCO-110134

WELL NAME: MADURO BOZ ST. COM. #1H

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: FEBRUARY 07, 2011

SURVEY ENGINEER: S. SMITH

MAGNETIC DECLINATION: 07.81 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 270.31
SURF. ELEVATION: 18

***** DEPTH MEASURED IN FEET *****

***** THIS DIRECTIONAL SURVEY REPORT IS *****
** CORRECT TO THE BEST OF MY KNOWLEDGE **
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
COMMENTS: SILVER OAK 10
RKB 18'
TBUSSELL@YATESPETROLEUM.COM**
MIKEL@YATESPETROLEUM.COM
**

COMPANY REPRESENTATIVE

MS ENERGY SERVICES
ODESSA, TEXAS

JOB NUMBER: SVCO-110134

WELL NAME: MADURO BOZ ST. COM. #1H

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES		D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
0.0	0.00	0.00	0.000	00.00	000.00	0.00	N	0.00	E	0.00	0.00 AT 000.00
200.0	199.98	-2.11	-0.565	01.25	105.32	0.58	S	2.10	E	0.63	2.18 AT 105.32
400.0	399.95	-5.51	-0.945	00.75	082.19	0.97	S	5.50	E	0.32	5.59 AT 100.04

*
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
*
* 400.00 FEET EQUALS 5.59 FEET AT 100.04 *
*

PathFinder Energy Services, Inc.
Magnetic & Grid Calculations

*field
calculated*

YATES PETROLEUM
MADURO BOZ STATE #1H
EDDY COUNTY, NEW MEXICO
Rig: SILVER OAK 10

Sat Jan 29 22:54:08 2011

Coordinates

Latitude: 32.139159 N (32 deg. 8 min. 20.9739 sec.)
Longitude: 104.170717 W (-104 deg. 10 min. 14.5809 sec.)
Elevation: 3196.00 feet.
Calculation Date: Jan/29/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.0116 degrees
Total Magnetic Field: 0.48536 gauss
Magnetic Declination: 7.897143 degrees
Horizontal Intensity: 0.242597 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.897143 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 591670.3910 feet
Y: 414399.8400 feet
True to Grid: (convergence) -0.086508 degrees
Magnetic to Grid: 7.810634 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.810634 Degs.