



An Operating Unit of Smith International, Inc.

30-015-37511

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

MARTHA "AIK" FEDERAL #13H

EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

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



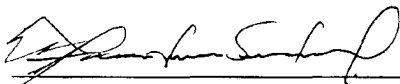
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) STEVE BIBB
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 09-12-10 TO 09-26-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
MARTHA "AIK" FEDERAL #13H
EDDY COUNTY, NM
RIG: LATSHAW #10

9. SURVEY CERTIFIED FROM: 7675 TO 12518 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4586.03 FEET ON A BEARING OF 269.29 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12600 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: 09/12/2010
Date Completed: 09/26/2010

YATES PETROLEUM CORPORATION
MARTHA AIK FEDERAL #13H
EDDY COUNTY, NM
Rig: LATSHAW 3
PathFinder Office Supervisor: Francisco Sinisterra
PathFinder Field Engineers: Steve Bibb
Rusty Haines

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.24.31.1423 N LON: 103.44.26.3140 W
GRID Reference: NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 682912.8000 Y: 512888.5000
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.45° EAST TO GRID
Vertical Section Plane: 269.21
Survey Vert. Reference: 19.00' Rotary Table To Ground
Altitude: 3549.00' Ground To MSL

Measured Depth	12600.00	(feet)
Inclination	90.31	(deg)
Azimuth	271.81	(deg)
True Vertical Depth	8244.51	(feet)
Vertical Section	4586.03	(feet)
Survey X cord	678327.12	(feet)
Survey Y cord	512831.35	(feet)
Survey Lat	32.40856256 N	(deg)
Survey Lon	103.75550203 W	(deg)
Rectangular Corr. N/S	57.15 S	(feet)
Rectangular Corr. E/W	4585.68 W	(feet)
Closure Distance	4586.03	(feet)
Direction of Closure	269.29	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
MARTHA AIK FEDERAL #13H
EDDY COUNTY, NM
Rig: LATSHAW 3
PathFinder Office Supervisor: Francisco Sinistera
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Survey Vert. Reference: 19.00' Rotary Table To Ground
Altitude: 3549.00' Ground To MSL

Survey Calculations by RX5 V6.03A using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
TIED IN TO MULTI SHOT GYRO SURVEY @ 7650' MD.									
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.									
7650.00	0.50	219.31	7648.80	0.00	-44.01	4.07 S	44.07 E	44.26@ 95.28	0.00
7675.00	0.97	218.96	7673.80	25.00	-43.80	4.32 S	43.87 E	44.08@ 95.62	1.88
7707.00	1.14	226.87	7705.79	32.00	-43.40	4.75 S	43.47 E	43.72@ 96.23	0.70
7738.00	3.52	249.58	7736.77	31.00	-42.27	5.29 S	42.35 E	42.68@ 97.12	8.09
7770.00	8.18	254.94	7768.59	32.00	-39.14	6.22 S	39.23 E	39.72@ 99.02	14.65
7800.00	13.89	257.15	7798.02	30.00	-33.54	7.58 S	33.65 E	34.49@ 102.70	19.08
7832.00	19.08	259.14	7828.70	32.00	-24.63	9.42 S	24.76 E	26.50@ 110.83	16.31
7863.00	24.09	261.25	7857.51	31.00	-13.37	11.34 S	13.53 E	17.65@ 129.97	16.35
7894.00	29.99	262.11	7885.11	31.00	0.60	13.37 S	0.41 W	13.37@ 181.77	19.07
7925.00	35.17	262.72	7911.23	31.00	17.17	15.56 S	16.95 W	23.02@ 227.45	16.74
7957.00	40.80	262.56	7936.44	32.00	36.72	18.09 S	36.48 W	40.72@ 243.62	17.60
7987.00	46.60	262.24	7958.12	30.00	57.30	20.83 S	57.01 W	60.70@ 249.93	19.35
8018.00	51.44	262.69	7978.44	31.00	80.53	23.90 S	80.21 W	83.69@ 253.41	15.65
8049.00	54.78	263.52	7997.05	31.00	105.18	26.87 S	104.82 W	108.21@ 255.62	10.98
8080.00	58.39	264.21	8014.12	31.00	130.94	29.63 S	130.54 W	133.86@ 257.21	11.79
8112.00	60.76	265.56	8030.32	32.00	158.45	32.09 S	158.02 W	161.25@ 258.52	8.25
8143.00	63.05	266.27	8044.92	31.00	185.75	34.03 S	185.30 W	188.40@ 259.59	7.66
8174.00	62.70	266.44	8059.05	31.00	213.31	35.79 S	212.83 W	215.82@ 260.46	1.23
8205.00	62.87	266.04	8073.23	31.00	240.84	37.59 S	240.34 W	243.26@ 261.11	1.27
8236.00	62.96	265.63	8087.35	31.00	268.39	39.60 S	267.87 W	270.78@ 261.59	1.21
8267.00	63.05	265.77	8101.42	31.00	295.96	41.67 S	295.41 W	298.34@ 261.97	0.50
8298.00	63.14	265.64	8115.45	31.00	323.55	43.74 S	322.98 W	325.93@ 262.29	0.47
8330.00	63.22	265.66	8129.88	32.00	352.06	45.91 S	351.46 W	354.44@ 262.56	0.26
8361.00	63.14	265.12	8143.87	31.00	379.66	48.13 S	379.03 W	382.08@ 262.76	1.58

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
 MARTHA AIK FEDERAL #13H
 EDDY COUNTY, NM
 RIG: LATSHAW 3

Page 02/04

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
8393.00	63.49	265.20	8158.24	32.00	408.18	50.54 S 407.52 W	410.64@ 262.93	1.12
8424.00	63.66	264.98	8172.04	31.00	435.87	52.92 S 435.18 W	438.39@ 263.07	0.84
8456.00	63.49	264.25	8186.28	32.00	464.43	55.61 S 463.71 W	467.03@ 263.16	2.11
8487.00	63.49	264.51	8200.12	31.00	492.08	58.32 S 491.32 W	494.77@ 263.23	0.75
8517.00	63.75	264.58	8213.44	30.00	518.86	60.88 S 518.07 W	521.64@ 263.30	0.89
8548.00	65.77	265.07	8226.66	31.00	546.82	63.41 S 546.00 W	549.67@ 263.38	6.67
8579.00	68.06	265.46	8238.82	31.00	575.27	65.76 S 574.42 W	578.17@ 263.47	7.48
8610.00	70.79	266.52	8249.71	31.00	604.24	67.79 S 603.36 W	607.16@ 263.59	9.37
8641.00	71.93	267.17	8259.62	31.00	633.59	69.40 S 632.69 W	636.49@ 263.74	4.18
8672.00	73.42	267.17	8268.85	31.00	663.16	70.86 S 662.25 W	666.03@ 263.89	4.81
8703.00	75.80	267.39	8277.08	31.00	693.03	72.28 S 692.10 W	695.87@ 264.04	7.71
8734.00	78.70	267.84	8283.92	31.00	723.25	73.54 S 722.31 W	726.04@ 264.19	9.46
8765.00	81.43	268.08	8289.26	31.00	753.78	74.63 S 752.82 W	756.51@ 264.34	8.84
8797.00	83.62	268.52	8293.43	32.00	785.50	75.57 S 784.53 W	788.16@ 264.50	6.98
8828.00	86.70	268.99	8296.04	31.00	816.38	76.24 S 815.41 W	818.97@ 264.66	10.05
8891.00	92.68	268.55	8296.38	63.00	879.35	77.59 S 878.37 W	881.79@ 264.95	9.52
8984.00	92.33	269.04	8292.32	93.00	972.26	79.54 S 971.26 W	974.51@ 265.32	0.65
9078.00	92.51	269.26	8288.35	94.00	1066.18	80.94 S 1065.16 W	1068.23@ 265.65	0.30
9172.00	93.30	268.82	8283.59	94.00	1180.06	82.51 S 1159.03 W	1161.96@ 265.93	0.96
9265.00	94.09	269.31	8277.59	93.00	1252.86	84.02 S 1251.82 W	1254.64@ 266.16	1.00
9296.00	93.91	269.37	8275.43	31.00	1283.79	84.38 S 1282.74 W	1285.52@ 266.24	0.61
9326.00	94.18	268.78	8273.31	30.00	1313.71	84.86 S 1312.66 W	1315.40@ 266.30	2.16
9356.00	93.56	268.82	8271.29	30.00	1343.64	85.49 S 1342.59 W	1345.31@ 266.36	2.07
9388.00	91.89	269.20	8269.77	32.00	1375.60	86.04 S 1374.55 W	1377.24@ 266.42	5.35
9418.00	90.40	269.11	8269.17	30.00	1405.60	86.48 S 1404.54 W	1407.20@ 266.48	4.98
9449.00	89.43	269.35	8269.21	31.00	1436.60	86.90 S 1435.53 W	1438.16@ 266.54	3.22

PathFinder Energy Services, Inc. Survey Report

YATES PETROLEUM CORPORATION
MARTHA AIK FEDERAL #13H
EDDY COUNTY, NM
RIG: LATSHAW 3

Page 03/04

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
9480.00	89.87	270.16	8269.40	31.00	1467.59	87.03 S 1466.53 W	1469.11@ 266.60	2.97
9511.00	89.96	269.98	8269.45	31.00	1498.59	87.00 S 1497.53 W	1500.06@ 266.68	0.65
9541.00	89.96	270.02	8269.47	30.00	1528.59	87.00 S 1527.53 W	1530.01@ 266.74	0.13
9572.00	90.13	270.33	8269.45	31.00	1559.58	86.90 S 1558.53 W	1560.95@ 266.81	1.14
9634.00	90.40	270.35	8269.16	62.00	1621.57	86.53 S 1620.53 W	1622.84@ 266.94	0.44
9695.00	90.22	270.73	8268.83	61.00	1682.55	85.96 S 1681.53 W	1683.72@ 267.07	0.69
9727.00	89.96	270.61	8268.78	32.00	1714.54	85.58 S 1713.52 W	1715.66@ 267.14	0.89
9820.00	89.96	270.20	8268.84	93.00	1807.52	84.93 S 1806.52 W	1808.52@ 267.31	0.44
9913.00	90.13	270.24	8268.77	93.00	1900.51	84.57 S 1899.52 W	1901.40@ 267.45	0.19
10006.00	90.66	269.62	8268.13	93.00	1993.50	84.68 S 1992.52 W	1994.32@ 267.57	0.88
10099.00	89.69	270.02	8267.85	93.00	2086.49	84.98 S 2085.52 W	2087.25@ 267.67	1.13
10192.00	89.87	269.94	8268.20	93.00	2179.48	85.01 S 2178.52 W	2180.17@ 267.77	0.21
10285.00	89.25	269.55	8268.92	93.00	2272.47	85.42 S 2271.51 W	2273.12@ 267.85	0.79
10379.00	89.52	269.68	8269.93	94.00	2366.47	86.05 S 2365.50 W	2367.07@ 267.92	0.32
10472.00	89.87	269.54	8270.42	93.00	2459.46	86.69 S 2458.50 W	2460.03@ 267.98	0.41
10565.00	89.87	269.95	8270.63	93.00	2552.46	87.10 S 2551.50 W	2552.98@ 268.04	0.44
10659.00	90.57	269.93	8270.27	94.00	2646.45	87.20 S 2645.50 W	2646.93@ 268.11	0.75
10752.00	90.22	270.38	8269.63	93.00	2739.43	86.95 S 2738.49 W	2739.87@ 268.18	0.61
10845.00	90.48	270.30	8269.06	93.00	2832.41	86.40 S 2831.49 W	2832.81@ 268.25	0.29
10938.00	90.31	270.50	8268.42	93.00	2925.39	85.75 S 2924.49 W	2925.74@ 268.32	0.28
11032.00	90.22	269.88	8267.99	94.00	3019.38	85.43 S 3018.48 W	3019.69@ 268.38	0.67
11125.00	90.31	269.93	8267.56	93.00	3112.37	85.59 S 3111.48 W	3112.66@ 268.42	0.11
11219.00	90.31	269.86	8267.05	94.00	3206.36	85.76 S 3205.48 W	3206.63@ 268.47	0.08
11313.00	92.51	270.49	8264.73	94.00	3300.31	85.47 S 3298.45 W	3300.55@ 268.52	2.43
11406.00	91.89	270.60	8261.16	93.00	3393.22	84.59 S 3392.37 W	3393.43@ 268.57	0.68
11498.00	92.42	270.42	8257.71	92.00	3485.13	83.77 S 3484.30 W	3485.31@ 268.62	0.61

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MARTHA AIK FEDERAL #13H
EDDY COUNTY, NM
RIG: LATSHAW 3

Page 04/04

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
11591.00	92.24	270.68	8253.92	93.00	3578.03	82.88 S 3577.22 W	3578.18@ 268.67	0.34
11684.00	91.01	270.50	8251.29	93.00	3670.96	81.92 S 3670.18 W	3671.09@ 268.72	1.34
11715.00	90.57	270.00	8250.86	31.00	3701.95	81.79 S 3701.18 W	3702.08@ 268.73	2.15
11777.00	91.80	270.79	8249.58	62.00	3763.92	81.36 S 3763.16 W	3764.04@ 268.76	2.36
11809.00	91.89	270.92	8248.55	32.00	3795.89	80.88 S 3795.14 W	3796.00@ 268.78	0.49
11840.00	91.54	270.81	8247.62	31.00	3826.87	80.42 S 3826.12 W	3826.97@ 268.80	1.18
11871.00	91.98	270.86	8246.67	31.00	3857.84	80.02 S 3857.10 W	3857.93@ 268.81	1.50
11891.00	91.80	271.56	8246.01	20.00	3877.82	79.63 S 3877.09 W	3877.91@ 268.82	4.59
11922.00	91.71	271.13	8245.06	31.00	3908.78	78.90 S 3908.07 W	3908.86@ 268.84	1.42
11954.00	91.63	271.25	8244.13	32.00	3940.75	78.24 S 3940.05 W	3940.82@ 268.86	0.45
11985.00	90.84	271.72	8243.46	31.00	3971.72	77.44 S 3971.03 W	3971.78@ 268.88	2.97
12079.00	90.04	271.49	8242.74	94.00	4065.63	74.80 S 4064.99 W	4065.68@ 268.95	0.89
12171.00	89.60	272.11	8243.02	92.00	4157.54	71.91 S 4156.94 W	4157.56@ 269.01	0.83
12265.00	89.34	271.85	8243.89	94.00	4251.42	68.67 S 4250.88 W	4251.44@ 269.07	0.39
12358.00	89.60	271.99	8244.75	93.00	4344.31	65.55 S 4343.82 W	4344.32@ 269.14	0.32
12451.00	89.96	272.25	8245.11	93.00	4437.19	62.11 S 4436.76 W	4437.19@ 269.20	0.48
12518.00	90.31	271.81	8244.95	67.00	4504.11	59.74 S 4503.72 W	4504.11@ 269.24	0.84
12600.00	90.31	271.81	8244.51	82.00	4586.03	57.15 S 4585.68 W	4586.03@ 269.29	0.00

STRAIGHT LINE PROJECTION TO BIT DEPTH @ 12600' MD.

FINDER

ENERGY SERVICES

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	Yates Petroleum Corporation		
LEASE / WELL No.:	Martha "AIK" Federal	13 H	
WELL LOCATION:	Eddy County New Mexico		
COUNTY / STATE / COUNTRY:	Eddy	NM	USA
RIG:	Latshaw # 3		
API WELL No:	30-015-37511		
JOB No:	700000051-WT-WT		
P.O. / AFE No.	10-182-0		
DIRECTIONAL COMPANY:	P.E.S.		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	7.6	LWD Calculated:	7.45
		Agreed Upon:	7.45
X =	682912.800000	Feet	Y = 512888.500000
			Feet
SITE LATITUDE:	32°24'31.1423" N	SITE LONGITUDE:	103°44'26.3140" W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	new mexico east
PROPOSED DRIFT DIRECTION:	269.57°		
KELLY BUSHING ELEVATION:	19		
ALTITUDE:	3549	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	7650'		
DRIFT ANGLE:	0.5°		
DRIFT DIRECTION:	269.21° (p.d.d. has changed at least 2 times since gyro)		
TRUE VERTICAL DEPTH:	7648.8'		
VERTICAL SECTION:	-43.9		
RECTANGULAR COORDINATE (N / S) :	-4.07		
RECTANGULAR COORDINATE (E / W) :	44.07		
CLOSURE DISTANCE / DIRECTION:	44.26	95.28	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	Multi-Shot Survey		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	7715	TOTAL DEPTH:	12628.69
KICKOFF ANGLE:	0.5	MAX ANGLE:	90.31

PES Engineers:

Steve Bibb

Signature of both field engineers required if applicable

Directional Driller:

DATE: 9-12-10



CUSTOMER: YATES PETROLEUM

JOB NUMBER: SVCO-100773

WELL NAME: MARTHA AIK FEDERAL #13H

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: 9/11/2010

SURVEYOR: S. SMITH

VERTICAL SEC: 268

DECLINATION: 7.53 E TO GRID

COMMENTS: LATSHAW 3

RKB 22'

IBUSSELL@YATESPETROLEUM.COM

MIKEL@YATESPETROLEUM.COM

MEASURED DEPTH	VERTICAL DEPTH	VERTICAL SECTION	INCLINATION ANGLE	BEARING AZIMUTH	COORDINATES		DOG-LEG PER 100	STATION DISPLACEMENT	DISPLACEMENT DIRECTION
					LATITUDE	DEPARTURE			
0	0	0	0	0	0	0	0	0	0
200	200	-0.24	0.25	144.4	-0.35	0.25	0.13	0.44	144.4
400	400	-0.91	0.25	74.44	-0.59	0.93	0.14	1.1	122.55
600	599.99	-2.35	0.75	49.45	0.38	2.34	0.27	2.37	80.9
800	799.98	-4.11	0.5	55.47	1.72	4.06	0.13	4.41	67.01
1000	999.95	-6.43	1.25	44.48	3.77	6.3	0.38	7.35	59.1
1200	1199.92	-7.94	1	355.51	7.07	7.7	0.48	10.45	47.43
1400	1399.9	-8.12	0.75	9.52	10.1	7.78	0.16	12.75	37.59
1600	1599.87	-7.64	1	332.55	12.94	7.19	0.3	14.8	29.05
1800	1799.86	-6.83	0.5	354.56	15.36	6.3	0.28	16.6	22.31
2000	1999.83	-8.08	1.25	34.57	18.02	7.46	0.46	19.5	22.48
2200	2199.79	-11.28	1.25	58.59	20.96	10.56	0.26	23.46	26.74
2400	2399.68	-16.65	2.5	50.59	24.86	15.79	0.64	29.45	32.42
2600	2599.59	-21.83	1	98.63	27.37	20.88	0.99	34.43	37.35
2800	2799.55	-25.69	1.25	97.76	26.81	24.77	0.13	36.5	42.73
3000	2999.5	-30.01	1.25	81.77	26.83	29.09	0.17	39.57	47.32
3200	3199.39	-36.54	2.5	88.79	27.23	35.61	0.63	44.83	52.59
3400	3399.32	-41.17	0.25	140.81	26.99	40.25	1.18	48.46	56.16
3600	3599.32	-41.01	0.25	282.82	26.75	40.1	0.24	48.2	56.3
3800	3799.27	-44.4	2.25	101.85	26.04	43.52	1.25	50.71	59.11
4000	3999.14	-51.14	2	120.88	23.44	50.35	0.37	55.54	65.04
4200	4199.06	-55.45	1.25	138.88	20.01	54.78	0.45	58.32	69.94
4400	4399.01	-56.98	1.25	173.89	16.19	56.45	0.38	58.73	73.99
4600	4598.97	-56.65	1.25	190.91	11.88	56.27	0.18	57.51	78.08
4800	4798.93	-55.48	1	200.93	8.11	55.23	0.16	55.83	81.65
5000	4998.91	-54.22	0.5	219.95	5.81	54.05	0.28	54.36	83.86
5200	5198.91	-53.24	0.25	241.96	4.94	53.1	0.14	53.33	84.69
5400	5398.9	-52.81	0.25	183.98	4.3	52.69	0.12	52.86	85.34
5600	5598.9	-52.36	0.25	292	4.02	52.25	0.2	52.41	85.6
5800	5798.9	-51.67	0.5	338.02	5	51.52	0.19	51.77	84.46
6000	5998.89	-51.29	0.5	353.03	6.67	51.09	0.07	51.52	82.56
6200	6198.89	-51.11	0.25	344.05	7.96	50.86	0.13	51.48	81.11
6400	6398.88	-49.38	1	247.07	7.7	49.14	0.53	49.74	81.1
6600	6598.86	-47.43	0.5	199.19	6.19	47.24	0.38	47.65	82.53
6800	6798.85	-46.9	0.5	192.21	4.52	46.77	0.03	46.99	84.48
7000	6998.84	-46.47	1	185.23	1.93	46.43	0.25	46.47	87.62
7200	7198.82	-46.06	0.25	203.25	-0.21	46.1	0.38	46.1	90.27
7400	7398.82	-45.24	0.75	207.26	-1.78	45.33	0.25	45.36	92.25
7600	7598.8	-44.16	0.5	208.3	-3.71	44.31	0.13	44.47	94.79
7650	7648.8	-43.9	0.5	219.31	-4.07	44.07	0.19	44.26	95.28

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
MARTHA "AIK" FEDERAL #13H
EDDY COUNTY, NEW MEXICO
Rig: LATSHAW #3

Fri Aug 20 10:50:31 2010

Coordinates

Latitude: 32.408651 N (32 deg. 24 min. 31.1423 sec.)
Longitude: 103.740643 W (-103 deg. 44 min. 26.3140 sec.)
Elevation: 3571.00 feet.
Calculation Date: Aug/20/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.3495 degrees
Total Magnetic Field: 0.48790 gauss
Magnetic Declination: 7.777719 degrees
Horizontal Intensity: 0.241369 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.777719 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 682912.8000 feet
Y: 512888.5000 feet
True to Grid: (convergence) -0.317663 degrees
Magnetic to Grid: 7.460056 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.460056 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
MARTHA AIK FEDERAL #13H
LIVINGTON RIDGE DELAWARE

Sun Sep 12 15:45:19 2010

Coordinates

Latitude: 32.408651 N (32 deg. 24 min. 31.1423 sec.)
Longitude: 103.740643 W (-103 deg. 44 min. 26.3140 sec.)
Elevation: 3568.00 feet.
Calculation Date: Sep/12/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.3479 degrees
Total Magnetic Field: 0.48811 gauss
Magnetic Declination: 7.771849 degrees
Horizontal Intensity: 0.241483 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.771849 Degs

Field Calc
SB: bh

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 682912.8000 feet
Y: 512888.5000 feet
True to Grid: (convergence) -0.317663 degrees
Magnetic to Grid: 7.454186 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.454186 Degs.