



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

30-015-37211

YATES PETROLEUM

FEDERAL AB #13H

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) JOHN PATTERSON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 08-07-11 TO 08-14-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
FEDERAL AB #13H
EDDY COUNTY, NM
RIG: PATTERSON 101
9. SURVEY CERTIFIED FROM: 2027 TO 4234 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 1943.78 FEET ON A BEARING OF 0.93 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 4286 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: 08/07/2011
Date Completed: 08/14/2011

YATES PETROLEUM CORPORATION
FEDERAL AB #13H
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 101
PathFinder Office Supervisor: FRANCISCO SINNISTERRA
PathFinder Field Engineers:J. PATTERSON
K.THURMAN

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.41.54.9145 N LON:104.30.38.2419 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 486800.6290 Y: 617922.9510
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.13° EAST TO GRID
Vertical Section Plane: 0.00
Survey Vert. Reference: 18.50' Rotary Table To Ground
Altitude:3603.00' Ground To MSL

Measured Depth	4286.00	(feet) -
Inclination	88.02	(deg)
Azimuth	0.36	(deg)
True Vertical Depth	2584.77	(feet) -
Vertical Section	1943.53	(feet)
Survey X cord	486832.00	(feet)
Survey Y cord	619866.46	(feet)
Survey Lat	32.70392959 N	(deg)
Survey Lon	104.51053133 W	(deg)
Rectangular Corr. N/S	1943.53 N	(feet)
Rectangular Corr. E/W	31.39 E	(feet)
Closure Distance	1943.78	(feet)
Direction of Closure	0.93	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/03

Tie-in Date: 08/07/2011

Date Completed: 08/14/2011

YATES PETROLEUM CORPORATION

FEDERAL AB #13H

EDDY COUNTY, NEW MEXICO

Rig:PATTERSON 101

PathFinder Office Supervisor: FRANCISCO SINNISTERRA

PathFinder Field Engineers: J. PATTERSON

K.THURMAN

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.41.54.9145 N LON:104.30.38.2419 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 486800.6290 Y: 617922.9510

North Aligned To:GRID NORTH

Total Magnetic Correction: 8.13° EAST TO GRID

Vertical Section Plane: 0.00

Survey Vert. Reference: 18.50' Rotary Table To Ground

Altitude:3603.00' Ground To MSL

Survey Calculations by RX4 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 GYRO SURVEYS										
0.00	0.00	0.00	-0.00	0.00	-0.00	0.00 S	0.00 W	0.01@	205.96	0.00
200.00	0.50	267.33	200.00	200.00	-0.05	0.05 S	0.87 W	0.88@	267.03	0.25
400.00	0.25	244.11	399.99	200.00	-0.28	0.28 S	2.14 W	2.16@	262.63	0.14
600.00	0.50	149.90	599.99	200.00	-1.22	1.22 S	2.09 W	2.42@	239.72	0.29
800.00	0.25	96.68	799.98	200.00	-2.03	2.03 S	1.22 W	2.37@	211.08	0.20
1000.00	0.50	92.46	999.98	200.00	-2.12	2.12 S	0.08 E	2.12@	177.75	0.13
1200.00	0.50	98.69	1199.97	200.00	-2.29	2.29 S	1.82 E	2.92@	141.50	0.03
1400.00	0.50	92.47	1399.97	200.00	-2.45	2.45 S	3.55 E	4.32@	124.65	0.03
1600.00	0.75	133.26	1599.95	200.00	-3.39	3.39 S	5.38 E	6.36@	122.22	0.25
1800.00	0.75	132.04	1799.94	200.00	-5.16	5.16 S	7.30 E	8.94@	125.26	0.01
** TIE IN SURVEY PROVIDED BY MS ENERGY SERVICES										
2000.00	0.75	110.60	1999.92	200.00	-6.50	6.50 S	9.50 E	11.51@	124.38	0.14
THE FOLLOWING ARE PATHFINDER MWD SURVEYS										
2027.00	0.79	154.46	2026.92	27.00	-6.73	6.73 S	9.75 E	11.84@	124.63	2.13
2058.00	0.62	106.79	2057.92	31.00	-6.97	6.97 S	10.00 E	12.19@	124.89	1.91
2090.00	2.20	35.11	2089.91	32.00	-6.52	6.52 S	10.52 E	12.37@	121.79	6.53
2122.00	5.63	21.34	2121.83	32.00	-4.55	4.55 S	11.44 E	12.32@	111.70	11.04
2154.00	10.11	18.05	2153.52	32.00	-0.42	0.42 S	12.88 E	12.89@	91.86	14.07
2186.00	15.30	15.08	2184.72	32.00	6.33	6.33 N	14.85 E	16.15@	66.91	16.34
2217.00	20.31	13.97	2214.23	31.00	15.51	15.51 N	17.22 E	23.17@	47.99	16.20
2249.00	24.27	12.65	2243.83	32.00	27.32	27.32 N	20.00 E	33.86@	36.21	12.47
2281.00	27.61	10.64	2272.61	32.00	41.03	41.03 N	22.81 E	46.94@	29.07	10.79
2313.00	30.95	9.15	2300.51	32.00	56.44	56.44 N	25.49 E	61.93@	24.30	10.68
2344.00	34.73	8.03	2326.56	31.00	73.06	73.06 N	27.99 E	78.24@	20.96	12.35
2376.00	38.69	6.79	2352.20	32.00	92.03	92.03 N	30.45 E	96.94@	18.31	12.59
2407.00	42.30	5.10	2375.78	31.00	112.05	112.05 N	32.52 E	116.67@	16.19	12.17

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
FEDERAL AB #13H
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 101

Page 02/03

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)
2438.00	45.81	3.44	2398.05	31.00	133.54	133.54 N	34.12 E	137.83@	14.33	11.92
2470.00	50.30	1.48	2419.44	32.00	157.31	157.31 N	35.12 E	161.19@	12.59	14.75
2501.00	53.99	1.34	2438.46	31.00	181.78	181.78 N	35.73 E	185.25@	11.12	11.91
2532.00	57.33	1.58	2455.94	31.00	207.36	207.36 N	36.38 E	210.53@	9.95	10.79
2564.00	61.11	1.05	2472.31	32.00	234.84	234.84 N	37.01 E	237.74@	8.96	11.90
2596.00	64.37	0.77	2486.97	32.00	263.28	263.28 N	37.46 E	265.93@	8.10	10.22
2628.00	67.27	1.31	2500.08	32.00	292.47	292.47 N	37.99 E	294.92@	7.40	9.19
2659.00	70.70	1.32	2511.19	31.00	321.39	321.39 N	38.65 E	323.71@	6.86	11.07
2691.00	73.69	1.19	2520.97	32.00	351.85	351.85 N	39.32 E	354.04@	6.38	9.35
2723.00	76.06	1.15	2529.32	32.00	382.73	382.73 N	39.95 E	384.81@	5.96	7.41
2755.00	80.37	0.92	2535.86	32.00	414.04	414.04 N	40.52 E	416.02@	5.59	13.49
2787.00	83.10	0.84	2540.46	32.00	445.70	445.70 N	41.00 E	447.59@	5.26	8.53
2864.00	89.08	0.02	2545.71	77.00	522.49	522.49 N	41.58 E	524.14@	4.55	7.84
2896.00	90.92	359.98	2545.71	32.00	554.49	554.49 N	41.58 E	556.04@	4.29	5.75
2928.00	91.10	359.77	2545.14	32.00	586.48	586.48 N	41.51 E	587.95@	4.05	0.86
2960.00	89.69	0.15	2544.92	32.00	618.48	618.48 N	41.48 E	619.87@	3.84	4.56
2991.00	88.11	0.51	2545.52	31.00	649.47	649.47 N	41.66 E	650.81@	3.67	5.23
3022.00	87.85	0.98	2546.61	31.00	680.45	680.45 N	42.07 E	681.75@	3.54	1.73
3054.00	88.20	1.57	2547.71	32.00	712.42	712.42 N	42.78 E	713.71@	3.44	2.14
3086.00	89.08	1.58	2548.47	32.00	744.40	744.40 N	43.66 E	745.68@	3.36	2.75
3118.00	89.25	1.59	2548.94	32.00	776.39	776.39 N	44.54 E	777.66@	3.28	0.53
3149.00	88.72	0.70	2549.49	31.00	807.37	807.37 N	45.16 E	808.64@	3.20	3.34
3181.00	88.20	359.38	2550.35	32.00	839.36	839.36 N	45.18 E	840.58@	3.08	4.43
3213.00	88.29	359.31	2551.33	32.00	871.34	871.34 N	44.82 E	872.50@	2.94	0.36
3245.00	88.11	359.31	2552.33	32.00	903.33	903.33 N	44.43 E	904.42@	2.82	0.56
3277.00	87.85	359.67	2553.46	32.00	935.31	935.31 N	44.15 E	936.35@	2.70	1.39
3308.00	87.93	359.99	2554.60	31.00	966.28	966.28 N	44.06 E	967.29@	2.61	1.06
3340.00	88.11	358.94	2555.71	32.00	998.26	998.26 N	43.76 E	999.22@	2.51	3.33

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
FEDERAL AB #13H
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 101

Page 03/03

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)
3371.00	88.11	358.84	2556.73	31.00	1029.24	1029.24 N	43.16 E	1030.15@	2.40	0.32
3403.00	88.29	358.91	2557.73	32.00	1061.22	1061.22 N	42.53 E	1062.07@	2.29	0.60
3466.00	88.46	359.02	2559.52	63.00	1124.18	1124.18 N	41.39 E	1124.94@	2.11	0.32
3530.00	89.43	358.94	2560.70	64.00	1188.16	1188.16 N	40.25 E	1188.84@	1.94	1.52
3594.00	89.43	359.03	2561.34	64.00	1252.15	1252.15 N	39.12 E	1252.76@	1.79	0.14
3657.00	89.69	358.80	2561.82	63.00	1315.13	1315.13 N	37.93 E	1315.68@	1.65	0.55
3720.00	89.78	359.19	2562.11	63.00	1378.12	1378.12 N	36.82 E	1378.62@	1.53	0.64
3783.00	89.25	359.17	2562.64	63.00	1441.12	1441.12 N	35.92 E	1441.56@	1.43	0.84
3847.00	87.67	359.54	2564.36	64.00	1505.09	1505.09 N	35.20 E	1505.50@	1.34	2.54
3911.00	86.70	358.44	2567.51	64.00	1569.00	1569.00 N	34.07 E	1569.37@	1.24	2.29
3974.00	86.61	358.63	2571.18	63.00	1631.87	1631.87 N	32.46 E	1632.19@	1.14	0.33
4036.00	86.44	359.23	2574.94	62.00	1693.74	1693.74 N	31.31 E	1694.03@	1.06	1.00
4099.00	87.23	359.33	2578.42	63.00	1756.64	1756.64 N	30.52 E	1756.91@	1.00	1.26
4163.00	88.46	0.69	2580.83	64.00	1820.59	1820.59 N	30.53 E	1820.85@	0.96	2.86
4227.00	88.11	0.20	2582.74	64.00	1884.56	1884.56 N	31.03 E	1884.82@	0.94	0.94
4234.00	88.02	0.36	2582.98	7.00	1891.56	1891.56 N	31.06 E	1891.81@	0.94	2.62
STRAIGHT LINE PROJECTION TO BIT AT 4286' MD(2584.77' TVD)										
4286.00	88.02	0.36	2584.77	52.00	1943.53	1943.53 N	31.39 E	1943.78@	0.93	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 CORP.		
LEASE / WELL No.:	FEDERAL AB	13H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY	NM	USA
RIG:	PATTERSON 101		
API WELL No:	30-015-37211		
JOB No:	70003264 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	ADS		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	8.13	LWD Calculated:	Agreed Upon:
X =	486800.629000	Feet	Y = 617922.951000 Feet
SITE LATITUDE:	32.698587 N	SITE LONGITUDE:	104.510623 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	0		
KELLY BUSHING ELEVATION:	18.5		
ALTITUDE:	3603	Feet	WATER DEPTH: Feet

TIE-IN SURVEY

MEASURED DEPTH:	2000		
DRIFT ANGLE:	0.75		
DRIFT DIRECTION:	110.6		
TRUE VERTICAL DEPTH:	1999.92		
VERTICAL SECTION:	-6.5		
RECTANGULAR COORDINATE (N / S) :	-6.5		
RECTANGULAR COORDINATE (E / W) :	9.5		
CLOSURE DISTANCE / DIRECTION:	11.51	124.36	
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:	2072.6	TOTAL DEPTH:	4324.69
KICKOFF ANGLE:	0	MAX ANGLE:	89.05

PES Engineers:

**Signature of both field engineers required if applicable

Directional Driller:

DATE:

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* **YATES PETROLEUM CORPORATION** *

JOB NUMBER: SVCO 110961

WELL NAME: FEDERAL AB #13H

LOCATION: EDDY COUNTY, NEW MEXICO

SURVEY DATE: AUGUST 08,2011

SURVEY ENGINEER: S. SMITH

MAGNETIC DECLINATION: 08.13 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: N00-00E
SURF. ELEVATION: 19

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*****
***** DEPTH MEASURED IN FEET *****
*****
***** THIS DIRECTIONAL SURVEY REPORT IS *****
***** ** CORRECT TO THE BEST OF MY KNOWLEDGE **
***** * AND IS SUPPORTED BY ACTUAL FIELD DATA! *
***** **
COMMENTS: PATTERSON 101
          RKB 19'
          EMAIL TBUSSELL@YATESPETROLEUM.COM**
          MIKEL@YATESPETROLEUM.COM
          ** COMPANY REPRESENTATIVE **
*****
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**

WELL NAME: FEDERAL AB #13H

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES		D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
						LATITUDE	DEPARTURE				
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	200.00	-0.04	-0.872	00.50	267.33	0.04 S	0.87 W	0.25	0.50	0.87	AT 267.33
400.0	399.99	-0.27	-2.136	00.25	244.11	0.27 S	2.14 W	0.14	0.29	2.15	AT 262.75
600.0	599.99	-1.22	-2.091	00.50	149.90	1.22 S	2.09 W	0.29	0.58	2.42	AT 239.79
800.0	799.99	-2.02	-1.220	00.25	096.68	2.02 S	1.22 W	0.20	0.40	2.36	AT 211.09
1000.0	999.98	-2.11	0.085	00.50	092.46	2.11 S	0.09 E	0.13	0.25	2.11	AT 177.68
1200.0	1199.97	-2.28	1.820	00.50	098.69	2.28 S	1.82 E	0.03	0.05	2.92	AT 141.41
1400.0	1399.97	-2.45	3.554	00.50	092.47	2.45 S	3.55 E	0.03	0.05	4.32	AT 124.58
1600.0	1599.96	-3.38	5.379	00.75	133.26	3.38 S	5.38 E	0.25	0.49	6.36	AT 122.18
1800.0	1799.94	-5.16	7.305	00.75	132.04	5.16 S	7.30 E	0.01	0.02	8.94	AT 125.23
2000.0	1999.92	-6.50	9.502	00.75	110.60	6.50 S	9.50 E	0.14	0.28	11.51	AT 124.36

```

*****
*                                     *****
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF
*                                     *****
* 2000.00 FEET EQUALS      11.51      FEET AT      124.36
*                                     *****
*****

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PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
FEDERAL AB 13H
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 101

Wed Aug 03 13:55:05 2011

Coordinates

Latitude: 32.698587 N (32 deg. 41 min. 54.9145 sec.)
Longitude: 104.510623 W (-104 deg. 30 min. 38.2419 sec.)
Elevation: 3621.50 feet.
Calculation Date: Aug/03/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4583 degrees
Total Magnetic Field: 0.48780 gauss
Magnetic Declination: 8.033798 degrees
Horizontal Intensity: 0.240516 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.033798 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 486800.6290 feet
Y: 617922.9510 feet
True to Grid: (convergence) 0.095775 degrees
Magnetic to Grid: 8.129573 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 8.129573 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM CORPORATION
FEDERAL AB #13H
PENASCO DRAW, SAN ANDRES, YESO
Rig:PATTERSON 101

Wed Aug 10 14:21:02 2011

Coordinates

Latitude: 32.698587 N (32 deg. 41 min. 54.9145 sec.)
Longitude: 104.510623 W (-104 deg. 30 min. 38.2419 sec.)
Elevation: 3621.50 feet.
Calculation Date: Aug/07/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4580 degrees
Total Magnetic Field: 0.48779 gauss
Magnetic Declination: 8.032472 degrees
Horizontal Intensity: 0.240512 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.032472 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 486800.6290 feet
Y: 617922.9510 feet
True to Grid: (convergence) 0.095775 degrees
Magnetic to Grid: 8.128247 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 8.128247 Degs.