

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other: _____

2 Name of Operator
Yates Petroleum Corporation

3 Address
105 S. 4th Str., Artesia, NM 88210

3a. Phone No. (include area code)
575-748-1471

4 Location of Well (Report location clearly and in accordance with Federal requirements)*

At Surface 1022'FNL & 2536'FEL (Unit B, NWNE)

At top prod. Interval reported below

BHL 1267'FNL & 923'FEL (Unit A, NENE)

FEB 22 2008
OCD-ARTESIA

5 Lease Serial No

NM-21012

6 If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No

8 Lease Name and Well No.

Federal HQ #3

9. API Well No

30-015-35704

10 Field and Pool or Exploratory

Undes. Little Box Canyon; Morrow

11 Sec., T., R., M., on Block and

Survey or Area

Sec. 32-T20.5S-R22E SHL

Sec. 5-T21S-R22E BHL

12 County or Parish 13 State

Eddy

New Mexico

14 Date Spudded
RH 8/28/07 RT 10/17/07

15 Date T.D. Reached
12/17/07

16 Date Completed 1/28/08
☐ D & A ☒ Ready to Prod

17. Elevations (DF, RKB, RT, GL)*
4283'GL 4305'KB

18 Total Depth MD 9633'
TVD NA

19 Plug Back T.D. MD 9587'
TVD NA

20 Depth Bridge Plug Set: MD NA
TVD NA

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

CNL, Dipole Sonic Imager, CBL

22 Was Well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey? ☐ No ☒ Yes (Submit copy)

23 Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt (#/ft.)	Top (MD)	Bottom (MD)	State Cementer Depth	No. of Sks & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
14-3/4"	20"	Conductor	Surface	80'		Redi-mix		Surface	
8-3/4"	9-5/8"	36#	Surface	1622'		1740 sx		Surface	
	5-1/2"	17#	Surface	9633'		1875 sx		1400'CBL	

24 Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-7/8"	9015'	9015'						

25 Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No Holes	Perf Status
A) Morrow	9328'	9376'	9328'-9340'		78	Producing
B)			9344'-9350'		42	Producing
C)			9370'-9376'		42	Producing
D)						

26 Perforation Record

27 Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
9328'-9376'	Acidize w/1500g 7-1/2% Morrow acid and 1000 SCF/bbl N2 w/150 balls
	Frac w/60,000g 60Q CO2 foam and 46,000# 18/40 Versaprop

28 Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
1/29/08	2/17/08	24	→	0	353	0	NA	NA	Flowing
Choke Size	Tbg Press Flwg	Csg Press	24 Hr Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
18/64"	430 psi	560 psi	→	0	353	0	NA	Producing	

28a Production-Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg Press Flwg	Csg Press	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

*(See instructions and spaces for additional data on page 2)

28b Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg	Csg Press	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg	Csg Press	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29 Disposition of Gas (Sold, used for fuel, vented, etc)

Sold

30. Summary of Porous Zones (Include Aquifers)

Show all important zones of porosity and contents thereof Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31 Formation (Log) Markers

Formation	Top	Bottom	Description, Contents, etc.	Name	Top
					Meas Depth
				San Andres	288'
				Glorieta	1430'
				Upper Yeso	1672'
				Tubb	3092'
				Abo	3850'
				Wolfcamp	5536'
				Cisco	6664'
				Strawn	8114'
				Atoka	8892'
				Morrow	9224'

32 Additional remarks (include plugging procedure).

33 Indicate which items have been attached by placing a check in the appropriate boxes.

- ☒ Electrical/Mechanical Logs (1 full set req'd)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
 ☐ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☒ Other Deviation Survey

34 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print)

Tina Huerta

Title

Regulatory Compliance Supervisor

Signature



Date

February 19, 2008

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

(Continued on page 3)

(Form 3160-4, page2)

OPERATOR
WELL/LEASE
COUNTY

YATES PETROLEUM CORP.
FEDERAL HQ #3
EDDY

078-0055

STATE OF NEW MEXICO
DEVIATION REPORT

193	2.00
284	1.75
374	1.25
584	1.50
704	1.50
854	1.00
1,005	0.00
1,256	0.75
1,417	1.25
1,570	1.00
1,622	1.00

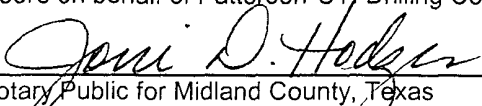
STATE OF TEXAS

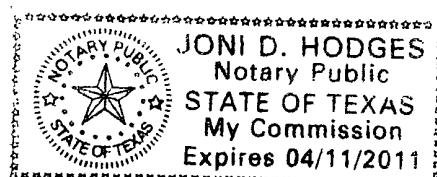
COUNTY OF MIDLAND

BY: 

The foregoing instrument was acknowledged before me on
Moore on behalf of Patterson-UTJ Drilling Company LLC.

January 8, 2008, by Steve


Notary Public for Midland County, Texas
My Commission Expires: 4/11/11





DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

FEDERAL HQ #3 - ST

EDDY COUNTY, NEW MEXICO

PREPARED BY: CODY MEBANE

Pathfinder Energy Services, Inc.
6213 W. County Road 112 • Midland, TX • 79706
(432)681-6000

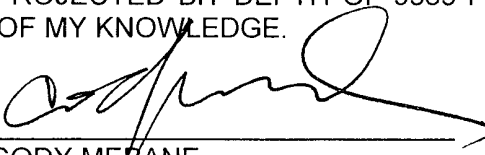
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) TREVOR SUTTON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10/29/07 TO 12/14/07
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
FEDERAL HQ #3 – ST
EDDY COUNTY, NM
RIG: PATTERSON #78

9. SURVEY CERTIFIED FROM: 1672 TO 9329 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 3010.83 FEET ON A BEARING OF 147.59 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 9383 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


CODY MEBANE
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 10/29/2007
Date Completed: 12/14/2007

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 78
PathFinder Office Supervisor: CODY MEBANE
PathFinder Field Engineers:SAM DEMORY
TREVOR SUTTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.31.4.6164 N LON:104.43.28.4160 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coor: X: 379408.0980 Y: 552363.6796
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.76° EAST TO GRID
Vertical Section Plane: 148.09
Survey Vert. Reference:4283.00' Rotary Table To MSL

Measured Depth	9383.00	(feet)
Inclination	1.58	(deg)
Azimuth	151.14	(deg)
True Vertical Depth	8641.17	(feet)
Vertical Section	3010.72	(feet)
Survey X cord	381021.61	(feet)
Survey Y cord	549821.68	(feet)
Survey Lat	32.51097772 N	(deg)
Survey Lon	104.71929565 W	(deg)
Rectangular Corr. N/S	2541.98 S	(feet)
Rectangular Corr. E/W	1613.53 E	(feet)
Closure Distance	3010.83	(feet)
Direction of Closure	147.59	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/07
Tie-in Date: 10/29/2007
Date Completed: 12/14/2007

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 78
PathFinder Office Supervisor: CODY MEBANE
PathFinder Field Engineers: SAM DEMORY
TREVOR SUTTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.31.4.6164 N LON:104.43.28.4160 W
Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 379408.0980 Y: 552363.6796
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.76° EAST TO GRID
Vertical Section Plane: 148.09
Survey Vert. Reference:4283.00' Rotary Table 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)
TIED INTO GYRODATA DIRECTIONAL SURVEY.										
1652.00	1.10	92.31	1651.70	0.00	18.05	2.56 S	30.04 E	30.15@	94.87	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1672.00	0.88	100.25	1671.70	20.00	18.26	2.60 S	30.38 E	30.49@	94.88	1.29
1704.00	1.85	101.48	1703.69	32.00	18.78	2.74 S	31.13 E	31.25@	95.03	3.03
1737.00	3.08	112.65	1736.66	33.00	19.87	3.19 S	32.47 E	32.63@	95.61	3.98
1768.00	4.40	118.45	1767.59	31.00	21.58	4.08 S	34.29 E	34.53@	96.78	4.42
1800.00	5.45	123.11	1799.47	32.00	24.03	5.49 S	36.64 E	37.05@	98.52	3.51
1832.00	6.60	126.01	1831.29	32.00	27.11	7.40 S	39.40 E	40.09@	100.64	3.72
1864.00	7.47	130.58	1863.05	32.00	30.80	9.84 S	42.47 E	43.59@	103.04	3.23
1895.00	8.71	133.57	1893.74	31.00	34.99	12.77 S	45.70 E	47.45@	105.61	4.22
1927.00	9.67	136.38	1925.33	32.00	39.97	16.38 S	49.31 E	51.96@	108.38	3.31
1958.00	10.55	138.49	1955.85	31.00	45.32	20.39 S	52.98 E	56.77@	111.05	3.08
1991.00	11.70	140.51	1988.23	33.00	51.61	25.24 S	57.11 E	62.44@	113.84	3.68
2022.00	12.75	142.53	2018.53	31.00	58.13	30.38 S	61.19 E	68.32@	116.40	3.66
2054.00	13.45	146.04	2049.70	32.00	65.37	36.27 S	65.42 E	74.80@	119.00	3.31
2086.00	14.51	146.57	2080.75	32.00	73.09	42.70 S	69.71 E	81.75@	121.49	3.34
2118.00	15.12	147.71	2111.68	32.00	81.27	49.57 S	74.15 E	89.19@	123.77	2.11
2149.00	15.56	147.45	2141.58	31.00	89.47	56.50 S	78.54 E	96.75@	125.73	1.44
2181.00	16.44	148.07	2172.34	32.00	98.29	63.96 S	83.25 E	104.98@	127.53	2.80
2213.00	17.85	148.42	2202.92	32.00	107.73	71.98 S	88.21 E	113.85@	129.21	4.42
2245.00	18.73	149.65	2233.30	32.00	117.77	80.59 S	93.38 E	123.34@	130.80	3.00
2277.00	19.61	150.62	2263.52	32.00	128.27	89.70 S	98.61 E	133.30@	132.29	2.93
2309.00	20.40	151.23	2293.59	32.00	139.20	99.27 S	103.93 E	143.72@	133.69	2.55

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
2340.00	21.46	151.05	2322.55	31.00	150.26	108.97 S	109.27 E	154.32@	134.92	3.43
2372.00	22.16	150.88	2352.26	32.00	162.13	119.36 S	115.04 E	165.78@	136.06	2.20
2404.00	23.30	152.29	2381.77	32.00	174.47	130.24 S	120.92 E	177.72@	137.12	3.95
2436.00	24.80	153.08	2410.99	32.00	187.47	141.83 S	126.90 E	190.31@	138.18	4.79
2469.00	25.94	153.60	2440.81	33.00	201.55	154.46 S	133.25 E	203.99@	139.22	3.52
2501.00	26.82	154.48	2469.48	32.00	215.69	167.25 S	139.47 E	217.77@	140.18	3.01
2533.00	28.05	154.48	2497.88	32.00	230.35	180.55 S	145.82 E	232.08@	141.07	3.84
2565.00	28.93	154.13	2526.00	32.00	245.52	194.31 S	152.44 E	246.97@	141.88	2.80
2597.00	29.37	153.69	2553.95	32.00	261.03	208.31 S	159.29 E	262.23@	142.59	1.53
2629.00	30.07	153.08	2581.74	32.00	276.82	222.49 S	166.40 E	277.83@	143.21	2.38
2661.00	30.60	152.37	2609.36	32.00	292.93	236.85 S	173.81 E	293.78@	143.73	2.00
2693.00	30.95	151.32	2636.85	32.00	309.27	251.29 S	181.53 E	310.00@	144.15	2.00
2724.00	31.57	151.76	2663.35	31.00	325.33	265.43 S	189.20 E	325.96@	144.52	2.13
2757.00	32.18	148.59	2691.38	33.00	342.74	280.54 S	197.87 E	343.30@	144.80	5.40
2789.00	32.54	148.42	2718.41	32.00	359.86	295.15 S	206.82 E	360.39@	144.98	1.16
2821.00	32.54	149.03	2745.38	32.00	377.07	309.86 S	215.75 E	377.57@	145.15	1.03
2853.00	32.36	150.09	2772.39	32.00	394.24	324.66 S	224.45 E	394.69@	145.34	1.86
2885.00	31.83	150.79	2799.50	32.00	411.23	339.45 S	232.84 E	411.63@	145.55	2.02
2917.00	32.01	150.16	2826.66	32.00	428.13	354.17 S	241.18 E	428.49@	145.75	1.18
2949.00	32.27	150.44	2853.76	32.00	445.14	368.96 S	249.61 E	445.46@	145.92	0.94
2980.00	32.01	151.58	2880.00	31.00	461.61	383.38 S	257.60 E	461.89@	146.10	2.13
3012.00	32.27	151.41	2907.10	32.00	478.60	398.34 S	265.73 E	478.84@	146.29	0.86
3043.00	32.62	151.93	2933.26	31.00	495.20	412.98 S	273.62 E	495.40@	146.47	1.44
3075.00	33.06	151.76	2960.15	32.00	512.52	428.28 S	281.81 E	512.68@	146.66	1.40
3139.00	32.54	151.67	3013.94	64.00	547.12	458.81 S	298.24 E	547.22@	146.98	0.82
3203.00	31.39	150.53	3068.24	64.00	580.95	488.47 S	314.61 E	581.02@	147.22	2.03
3266.00	30.51	150.09	3122.27	63.00	613.33	516.62 S	330.65 E	613.37@	147.38	1.44

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
3330.00	30.34	147.28	3177.46	64.00	645.73	544.30 S	347.49 E	645.77@	147.45	2.24
3426.00	31.22	147.98	3259.93	96.00	694.85	585.80 S	373.79 E	694.89@	147.46	0.99
3490.00	32.45	148.42	3314.31	64.00	728.61	614.49 S	391.58 E	728.65@	147.49	1.96
3586.00	33.41	148.33	3394.88	96.00	780.80	658.93 S	418.94 E	780.83@	147.55	1.00
3650.00	32.89	147.80	3448.47	64.00	815.79	688.63 S	437.45 E	815.83@	147.57	0.93
3714.00	32.62	148.86	3502.29	64.00	850.42	718.10 S	455.63 E	850.45@	147.60	0.99
3778.00	32.10	149.82	3556.35	64.00	884.66	747.56 S	473.10 E	884.69@	147.67	1.14
3842.00	30.51	148.51	3611.03	64.00	917.91	776.12 S	490.14 E	917.93@	147.73	2.70
3905.00	29.02	145.96	3665.72	63.00	949.17	802.42 S	507.05 E	949.19@	147.71	3.10
3968.00	28.67	144.64	3720.90	63.00	979.53	827.41 S	524.35 E	979.56@	147.64	1.15
4033.00	29.90	143.32	3777.60	65.00	1011.24	853.12 S	543.05 E	1011.29@	147.52	2.14
4097.00	30.78	143.67	3832.83	64.00	1043.46	879.10 S	562.28 E	1043.54@	147.40	1.40
4160.00	31.83	144.38	3886.66	63.00	1076.12	905.59 S	581.51 E	1076.22@	147.29	1.77
4226.00	31.48	143.67	3942.84	66.00	1110.67	933.62 S	601.85 E	1110.80@	147.19	0.78
4289.00	31.04	143.76	3996.69	63.00	1143.26	959.98 S	621.20 E	1143.44@	147.09	0.70
4353.00	30.69	145.96	4051.63	64.00	1176.04	986.82 S	640.10 E	1176.24@	147.03	1.85
4417.00	31.04	146.31	4106.57	64.00	1208.85	1014.08 S	658.39 E	1209.07@	147.01	0.61
4481.00	31.30	147.01	4161.33	64.00	1241.97	1041.76 S	676.60 E	1242.19@	147.00	0.70
4545.00	31.48	148.77	4215.96	64.00	1275.30	1069.99 S	694.31 E	1275.52@	147.02	1.46
4609.00	31.74	149.65	4270.47	64.00	1308.84	1098.81 S	711.48 E	1309.04@	147.08	0.83
4672.00	31.83	150.18	4324.02	63.00	1342.00	1127.52 S	728.12 E	1342.18@	147.15	0.47
4736.00	32.10	150.44	4378.32	64.00	1375.86	1156.95 S	744.90 E	1376.02@	147.22	0.47
4800.00	32.54	150.09	4432.40	64.00	1410.05	1186.67 S	761.87 E	1410.19@	147.30	0.75
4864.00	31.48	150.88	4486.67	64.00	1443.94	1216.19 S	778.59 E	1444.06@	147.37	1.78
4928.00	31.74	150.79	4541.17	64.00	1477.45	1245.48 S	794.93 E	1477.54@	147.45	0.41
4993.00	31.48	150.35	4596.53	65.00	1511.49	1275.15 S	811.67 E	1511.56@	147.52	0.53
5056.00	30.95	150.70	4650.41	63.00	1544.11	1303.57 S	827.74 E	1544.17@	147.59	0.89

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
5121.00	30.86	150.97	4706.18	65.00	1577.45	1332.72 S	844.01 E	1577.50@	147.65	0.25
5185.00	31.22	151.85	4761.02	64.00	1610.40	1361.70 S	859.80 E	1610.43@	147.73	0.90
5248.00	31.74	151.76	4814.74	63.00	1643.23	1390.70 S	875.34 E	1643.25@	147.81	0.83
5312.00	29.90	149.65	4869.70	64.00	1675.98	1419.30 S	891.37 E	1675.99@	147.87	3.33
5376.00	29.99	150.00	4925.16	64.00	1707.91	1446.91 S	907.43 E	1707.92@	147.91	0.31
5440.00	29.63	148.24	4980.69	64.00	1739.72	1474.22 S	923.75 E	1739.72@	147.93	1.48
5504.00	29.28	148.07	5036.42	64.00	1771.19	1500.95 S	940.36 E	1771.19@	147.93	0.56
5567.00	27.70	148.15	5091.79	63.00	1801.24	1526.47 S	956.23 E	1801.24@	147.94	2.51
5631.00	26.20	148.42	5148.84	64.00	1830.24	1551.14 S	971.48 E	1830.25@	147.94	2.35
5694.00	25.59	149.82	5205.51	63.00	1857.75	1574.75 S	985.61 E	1857.75@	147.96	1.37
5774.00	25.15	151.58	5277.80	80.00	1891.99	1604.64 S	1002.38 E	1891.99@	148.01	1.09
5806.00	25.59	152.02	5306.71	32.00	1905.67	1616.72 S	1008.86 E	1905.67@	148.04	1.50
5838.00	26.29	153.43	5335.49	32.00	1919.62	1629.16 S	1015.27 E	1919.62@	148.07	2.91
5870.00	26.20	153.08	5364.19	32.00	1933.71	1641.80 S	1021.64 E	1933.71@	148.11	0.56
5902.00	27.52	150.70	5392.74	32.00	1948.14	1654.54 S	1028.46 E	1948.14@	148.14	5.32
5934.00	28.93	150.35	5420.93	32.00	1963.26	1667.72 S	1035.90 E	1963.26@	148.15	4.44
5966.00	30.34	150.44	5448.75	32.00	1979.07	1681.48 S	1043.72 E	1979.07@	148.17	4.41
5997.00	31.83	150.97	5475.29	31.00	1995.06	1695.43 S	1051.55 E	1995.06@	148.19	4.89
6029.00	32.89	149.65	5502.32	32.00	2012.17	1710.31 S	1060.04 E	2012.17@	148.21	3.98
6061.00	33.59	148.59	5529.09	32.00	2029.71	1725.36 S	1069.04 E	2029.71@	148.22	2.84
6093.00	32.89	148.15	5555.85	32.00	2047.25	1740.30 S	1078.24 E	2047.25@	148.22	2.31
6125.00	32.27	148.15	5582.82	32.00	2064.48	1754.94 S	1087.33 E	2064.48@	148.22	1.94
6156.00	32.10	147.89	5609.05	31.00	2080.99	1768.94 S	1096.08 E	2080.99@	148.22	0.71
6220.00	30.34	147.19	5663.78	64.00	2114.16	1796.93 S	1113.88 E	2114.16@	148.21	2.81
6251.00	29.81	146.49	5690.61	31.00	2129.69	1809.94 S	1122.37 E	2129.69@	148.20	2.05
6315.00	30.78	146.22	5745.87	64.00	2161.96	1836.81 S	1140.26 E	2161.96@	148.17	1.53
6347.00	30.51	146.04	5773.40	32.00	2178.26	1850.36 S	1149.35 E	2178.26@	148.15	0.89

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
6378.00	30.78	147.19	5800.07	31.00	2194.06	1863.55 S	1158.04 E	2194.06@	148.14	2.08
6442.00	30.78	147.63	5855.05	64.00	2226.81	1891.15 S	1175.68 E	2226.81@	148.13	0.35
6505.00	30.07	148.95	5909.38	63.00	2258.71	1918.28 S	1192.46 E	2258.71@	148.13	1.55
6569.00	30.25	150.09	5964.72	64.00	2290.85	1945.99 S	1208.76 E	2290.85@	148.15	0.94
6601.00	30.16	150.53	5992.37	32.00	2306.94	1959.98 S	1216.74 E	2306.94@	148.17	0.75
6664.00	30.69	150.18	6046.70	63.00	2338.82	1987.71 S	1232.52 E	2338.82@	148.20	0.89
6728.00	30.69	150.79	6101.73	64.00	2371.45	2016.13 S	1248.61 E	2371.46@	148.23	0.49
6791.00	30.69	150.97	6155.91	63.00	2403.57	2044.22 S	1264.26 E	2403.58@	148.27	0.15
6823.00	30.95	150.88	6183.39	32.00	2419.94	2058.55 S	1272.23 E	2419.96@	148.28	0.83
6855.00	30.86	151.06	6210.85	32.00	2436.36	2072.92 S	1280.20 E	2436.38@	148.30	0.40
6887.00	29.81	150.00	6238.46	32.00	2452.51	2086.99 S	1288.15 E	2452.52@	148.32	3.68
6918.00	28.93	147.36	6265.48	31.00	2467.71	2099.98 S	1296.05 E	2467.72@	148.32	5.05
6950.00	28.14	146.49	6293.59	32.00	2482.99	2112.79 S	1304.39 E	2483.01@	148.31	2.79
6982.00	27.17	146.22	6321.94	32.00	2497.83	2125.16 S	1312.62 E	2497.85@	148.30	3.06
7014.00	25.59	147.28	6350.61	32.00	2512.05	2137.04 S	1320.42 E	2512.06@	148.29	5.15
7045.00	24.09	148.51	6378.74	31.00	2525.07	2148.07 S	1327.34 E	2525.08@	148.29	5.12
7109.00	22.86	148.77	6437.44	64.00	2550.56	2169.84 S	1340.61 E	2550.58@	148.29	1.93
7173.00	22.60	150.88	6496.47	64.00	2575.27	2191.21 S	1353.04 E	2575.29@	148.31	1.34
7268.00	23.92	152.29	6583.75	95.00	2612.72	2224.21 S	1370.88 E	2612.74@	148.35	1.51
7300.00	23.83	152.64	6613.01	32.00	2625.63	2235.70 S	1376.87 E	2625.66@	148.37	0.52
7364.00	23.65	152.90	6671.59	64.00	2651.31	2258.61 S	1388.66 E	2651.35@	148.42	0.32
7427.00	22.60	153.25	6729.53	63.00	2675.96	2280.67 S	1399.86 E	2676.01@	148.46	1.68
7491.00	21.81	150.26	6788.79	64.00	2700.09	2301.97 S	1411.29 E	2700.15@	148.49	2.15
7554.00	21.02	147.98	6847.44	63.00	2723.08	2321.71 S	1423.09 E	2723.15@	148.49	1.82
7618.00	20.75	144.82	6907.23	64.00	2745.88	2340.71 S	1435.71 E	2745.94@	148.48	1.81
7681.00	19.96	145.52	6966.30	63.00	2767.76	2358.70 S	1448.23 E	2767.82@	148.45	1.31
7745.00	18.55	146.57	7026.72	64.00	2788.86	2376.20 S	1460.02 E	2788.90@	148.43	2.27

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
7808.00	18.03	147.80	7086.53	63.00	2808.62	2392.81 S	1470.74 E	2808.67@	148.42	1.03
7904.00	15.56	147.98	7178.43	96.00	2836.36	2416.31 S	1485.48 E	2836.41@	148.42	2.57
7967.00	15.39	142.97	7239.15	63.00	2853.14	2430.15 S	1495.00 E	2853.18@	148.40	2.14
8031.00	14.77	143.23	7300.95	64.00	2869.72	2443.46 S	1505.00 E	2869.76@	148.37	0.97
8094.00	13.72	146.66	7362.01	63.00	2885.19	2456.14 S	1513.91 E	2885.23@	148.35	2.14
8158.00	13.10	147.89	7424.26	64.00	2900.04	2468.62 S	1521.94 E	2900.06@	148.35	1.07
8253.00	10.82	150.53	7517.20	95.00	2919.71	2485.50 S	1532.05 E	2919.74@	148.35	2.47
8307.00	9.85	152.64	7570.32	54.00	2929.38	2494.02 S	1536.66 E	2929.41@	148.36	1.93
8339.00	9.58	148.86	7601.86	32.00	2934.77	2498.73 S	1539.30 E	2934.81@	148.37	2.16
8371.00	9.15	146.75	7633.43	32.00	2939.98	2503.14 S	1542.07 E	2940.01@	148.36	1.72
8402.00	8.53	145.61	7664.07	31.00	2944.74	2507.09 S	1544.72 E	2944.77@	148.36	2.08
8434.00	7.56	143.15	7695.75	32.00	2949.21	2510.74 S	1547.32 E	2949.24@	148.36	3.22
8466.00	7.21	139.63	7727.49	32.00	2953.29	2513.95 S	1549.89 E	2953.32@	148.35	1.79
8498.00	6.95	139.01	7759.24	32.00	2957.19	2516.94 S	1552.46 E	2957.22@	148.33	0.85
8529.00	6.60	138.57	7790.03	31.00	2960.80	2519.70 S	1554.87 E	2960.82@	148.32	1.14
8561.00	6.24	135.59	7821.83	32.00	2964.31	2522.32 S	1557.30 E	2964.33@	148.31	1.53
8593.00	6.33	128.91	7853.63	32.00	2967.67	2524.67 S	1559.89 E	2967.69@	148.29	2.30
8625.00	6.60	120.82	7885.43	32.00	2970.97	2526.72 S	1562.84 E	2970.99@	148.26	2.97
8657.00	6.42	114.67	7917.22	32.00	2974.10	2528.41 S	1566.05 E	2974.11@	148.23	2.25
8689.00	6.24	112.91	7949.03	32.00	2977.02	2529.83 S	1569.27 E	2977.02@	148.19	0.83
8818.00	5.54	99.99	8077.35	129.00	2986.91	2533.64 S	1581.87 E	2986.91@	148.02	1.16
8849.00	5.98	91.20	8108.20	31.00	2988.79	2533.93 S	1584.95 E	2988.79@	147.97	3.17
8881.00	5.98	92.52	8140.02	32.00	2990.64	2534.04 S	1588.29 E	2990.65@	147.92	0.43
8913.00	5.45	96.91	8171.86	32.00	2992.54	2534.30 S	1591.46 E	2992.56@	147.87	2.15
8944.00	4.66	99.46	8202.74	31.00	2994.29	2534.68 S	1594.16 E	2994.32@	147.83	2.65
8976.00	4.13	100.52	8234.65	32.00	2995.93	2535.11 S	1596.58 E	2995.97@	147.80	1.67
9008.00	3.69	104.47	8266.58	32.00	2997.45	2535.57 S	1598.71 E	2997.50@	147.77	1.61

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
9040.00	3.52	105.53	8298.51	32.00	2998.92	2536.09 S	1600.65 E	2998.98@	147.74	0.57
9072.00	3.34	102.98	8330.45	32.00	3000.30	2536.57 S	1602.51 E	3000.37@	147.72	0.74
9103.00	3.25	104.74	8361.40	31.00	3001.58	2536.99 S	1604.24 E	3001.65@	147.69	0.44
9135.00	2.99	98.85	8393.36	32.00	3002.78	2537.35 S	1605.94 E	3002.86@	147.67	1.29
9202.00	2.64	106.41	8460.27	67.00	3005.08	2538.06 S	1609.15 E	3005.17@	147.63	0.76
9265.00	2.11	127.94	8523.22	63.00	3007.25	2539.18 S	1611.45 E	3007.36@	147.60	1.63
9329.00	1.58	151.14	8587.19	64.00	3009.24	2540.68 S	1612.81 E	3009.35@	147.59	1.41
STRAIGHT LINE PRONECTION TO BIT AT 9383' MD.										
9383.00	1.58	151.14	8641.17	54.00	3010.72	2541.98 S	1613.53 E	3010.83@	147.59	0.00

PATHFINDER

ENERGY SERVICES

DIRECTIONAL SURVEY INFORMATION

Prepared By: CODY MEBANE

Name of Client: YATES PETROLEUM

Attention: _____

☒ Directional Only Job OR ☐ Logging Job

Name(s) of Persons Performing Surveys:

A) SAM DEMORY D) _____
B) TREVOR SUTTON E) _____
C) JOHN PATTERSON F) _____

Positions of Said Persons: Surveyors / Field Engineers Other _____

Date(s) Survey was Performed: From 29-Oct To 18-Nov

Type of Survey Performed: (Specify if other than MWD) _____

IDENTIFICATION OF WELL:

Client:	<u>YATES PETROLEUM</u>	Rig Name:	<u>PATTERSON # 78</u>
Well No.:	<u>FEDERAL HQ # 3 - ORIGINAL</u>	API No.:	<u>30-015-35704</u>
Location:	<u>EDDY COUNTY</u>	Job No.:	<u>101006863 WT-WT</u>
State:	<u>NM</u>		

TEXAS RAILROAD COMMISSION INFORMATION:

Field: _____

Abstract No.: _____
Well Plat Survey Co.: _____

Surveys Performed From 1672 Feet TO 9048 Feet

MMS / ASCII / LAS Diskette Filename: _____

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOW THE WELL TO BE DISPLACED AT 3016.09 FEET ON A BEARING OF 148.54 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED DEPTH OF 9114 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 10/29/2007
Date Completed: 11/17/2007

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 78
PathFinder Office Supervisor: CODY MEBANE
PathFinder Field Engineers:SAM DEMORY
TREVOR SUTTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.31.4.6164 N LON:104.43.28.4160 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 379408.0980 Y: 552363.6796
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.76° EAST TO GRID
Vertical Section Plane: 148.09
Survey Vert. Reference:4283.00' Rotary Table To MSL

Measured Depth	9114.00	(feet)
Inclination	2.81	(deg)
Azimuth	183.57	(deg)
True Vertical Depth	8371.88	(feet)
Vertical Section	3016.00	(feet)
Survey X cord	380982.21	(feet)
Survey Y cord	549790.95	(feet)
Survey Lat	32.51089284 N	(deg)
Survey Lon	104.71942309 W	(deg)
Rectangular Corr. N/S	2572.73 S	(feet)
Rectangular Corr. E/W	1574.12 E	(feet)
Closure Distance	3016.09	(feet)
Direction of Closure	148.54	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/06
Tie-in Date: 10/29/2007
Date Completed: 11/17/2007

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 78
PathFinder Office Supervisor: CODY MEBANE
PathFinder Field Engineers: SAM DEMORY
TREVOR SUTTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.31.4.6164 N LON:104.43.28.4160 W
Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 379408.0980 Y: 552363.6796
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.76° EAST TO GRID
Vertical Section Plane: 148.09
Survey Vert. Reference:4283.00' Rotary Table To MSL

Survey Calculations by PathCalc v1.97 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)
TIED INTO GYRODATA DIRECTIONAL SURVEY.										
1652.00	1.10	92.31	1651.70	0.00	18.05	2.56 S	30.04 E	30.15@	94.87	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1672.00	0.88	100.25	1671.70	20.00	18.26	2.60 S	30.38 E	30.49@	94.88	1.29
1704.00	1.85	101.48	1703.69	32.00	18.78	2.74 S	31.13 E	31.25@	95.03	3.03
1737.00	3.08	112.65	1736.66	33.00	19.87	3.19 S	32.47 E	32.63@	95.61	3.98
1768.00	4.40	118.45	1767.59	31.00	21.58	4.08 S	34.29 E	34.53@	96.78	4.42
1800.00	5.45	123.11	1799.47	32.00	24.03	5.49 S	36.64 E	37.05@	98.52	3.51
1832.00	6.60	126.01	1831.29	32.00	27.11	7.40 S	39.40 E	40.09@	100.64	3.72
1864.00	7.47	130.58	1863.05	32.00	30.80	9.84 S	42.47 E	43.59@	103.04	3.23
1895.00	8.71	133.57	1893.74	31.00	34.99	12.77 S	45.70 E	47.45@	105.61	4.22
1927.00	9.67	136.38	1925.33	32.00	39.97	16.38 S	49.31 E	51.96@	108.38	3.31
1958.00	10.55	138.49	1955.85	31.00	45.32	20.39 S	52.98 E	56.77@	111.05	3.08
1991.00	11.70	140.51	1988.23	33.00	51.61	25.24 S	57.11 E	62.44@	113.84	3.68
2022.00	12.75	142.53	2018.53	31.00	58.13	30.38 S	61.19 E	68.32@	116.40	3.66
2054.00	13.45	146.04	2049.70	32.00	65.37	36.27 S	65.42 E	74.80@	119.00	3.31
2086.00	14.51	146.57	2080.75	32.00	73.09	42.70 S	69.71 E	81.75@	121.49	3.34
2118.00	15.12	147.71	2111.68	32.00	81.27	49.57 S	74.15 E	89.19@	123.77	2.11
2149.00	15.56	147.45	2141.58	31.00	89.47	56.50 S	78.54 E	96.75@	125.73	1.44
2181.00	16.44	148.07	2172.34	32.00	98.29	63.96 S	83.25 E	104.98@	127.53	2.80
2213.00	17.85	148.42	2202.92	32.00	107.73	71.98 S	88.21 E	113.85@	129.21	4.42
2245.00	18.73	149.65	2233.30	32.00	117.77	80.59 S	93.38 E	123.34@	130.80	3.00
2277.00	19.61	150.62	2263.52	32.00	128.27	89.70 S	98.61 E	133.30@	132.29	2.92
2309.00	20.40	151.23	2293.59	32.00	139.20	99.27 S	103.93 E	143.72@	133.69	2.55

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

Page 02/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2340.00	21.46	151.05	2322.55	31.00	150.26	108.97 S	109.27 E	154.32@	134.92	3.43
2372.00	22.16	150.88	2352.26	32.00	162.13	119.36 S	115.04 E	165.78@	136.06	2.20
2404.00	23.30	152.29	2381.77	32.00	174.47	130.24 S	120.92 E	177.72@	137.12	3.95
2436.00	24.80	153.08	2410.99	32.00	187.47	141.83 S	126.90 E	190.31@	138.18	4.79
2469.00	25.94	153.60	2440.81	33.00	201.55	154.46 S	133.25 E	203.99@	139.22	3.52
2501.00	26.82	154.48	2469.48	32.00	215.69	167.25 S	139.47 E	217.77@	140.18	3.01
2533.00	28.05	154.48	2497.88	32.00	230.35	180.55 S	145.82 E	232.08@	141.07	3.84
2565.00	28.93	154.13	2526.00	32.00	245.52	194.31 S	152.44 E	246.97@	141.88	2.80
2597.00	29.37	153.69	2553.95	32.00	261.03	208.31 S	159.29 E	262.23@	142.59	1.53
2629.00	30.07	153.08	2581.74	32.00	276.82	222.49 S	166.40 E	277.83@	143.21	2.38
2661.00	30.60	152.37	2609.36	32.00	292.93	236.85 S	173.81 E	293.78@	143.73	2.00
2693.00	30.95	151.32	2636.85	32.00	309.27	251.29 S	181.53 E	310.00@	144.15	2.00
2724.00	31.57	151.76	2663.35	31.00	325.33	265.43 S	189.20 E	325.96@	144.52	2.13
2757.00	32.18	148.59	2691.38	33.00	342.74	280.54 S	197.87 E	343.30@	144.80	5.40
2789.00	32.54	148.42	2718.41	32.00	359.86	295.15 S	206.82 E	360.39@	144.98	1.16
2821.00	32.54	149.03	2745.39	32.00	377.07	309.86 S	215.75 E	377.57@	145.15	1.03
2853.00	32.36	150.09	2772.39	32.00	394.24	324.66 S	224.45 E	394.69@	145.34	1.86
2885.00	31.83	150.79	2799.50	32.00	411.23	339.45 S	232.84 E	411.63@	145.55	2.02
2917.00	32.01	150.16	2826.66	32.00	428.13	354.17 S	241.18 E	428.49@	145.75	1.18
2949.00	32.27	150.44	2853.76	32.00	445.14	368.96 S	249.61 E	445.46@	145.92	0.94
2980.00	32.01	151.58	2880.00	31.00	461.61	383.38 S	257.60 E	461.89@	146.10	2.13
3012.00	32.27	151.41	2907.10	32.00	478.60	398.34 S	265.73 E	478.84@	146.29	0.86
3043.00	32.62	151.93	2933.26	31.00	495.20	412.98 S	273.62 E	495.40@	146.47	1.44
3075.00	33.06	151.76	2960.15	32.00	512.52	428.28 S	281.81 E	512.68@	146.66	1.40
3139.00	32.54	151.67	3013.94	64.00	547.12	458.81 S	298.24 E	547.22@	146.98	0.82
3203.00	31.39	150.53	3068.24	64.00	580.95	488.47 S	314.61 E	581.02@	147.22	2.03
3266.00	30.51	150.09	3122.27	63.00	613.33	516.62 S	330.65 E	613.37@	147.38	1.44

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG: PATTERSON 78

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
3330.00	30.34	147.28	3177.46	64.00	645.73	544.30 S	347.49 E	645.77@	147.45	2.24
3426.00	31.22	147.98	3259.93	96.00	694.85	585.80 S	373.79 E	694.89@	147.46	0.99
3490.00	32.45	148.42	3314.31	64.00	728.61	614.49 S	391.58 E	728.65@	147.49	1.96
3586.00	33.41	148.33	3394.88	96.00	780.80	658.93 S	418.94 E	780.83@	147.55	1.00
3650.00	32.89	147.80	3448.47	64.00	815.79	688.63 S	437.45 E	815.83@	147.57	0.93
3714.00	32.62	148.86	3502.29	64.00	850.42	718.10 S	455.63 E	850.45@	147.60	0.99
3778.00	32.10	149.82	3556.35	64.00	884.66	747.56 S	473.10 E	884.69@	147.67	1.14
3842.00	30.51	148.51	3611.03	64.00	917.91	776.12 S	490.14 E	917.93@	147.73	2.70
3905.00	29.02	145.96	3665.72	63.00	949.17	802.42 S	507.05 E	949.20@	147.71	3.10
3968.00	28.67	144.64	3720.90	63.00	979.53	827.41 S	524.35 E	979.56@	147.64	1.15
4033.00	29.90	143.32	3777.60	65.00	1011.24	853.12 S	543.05 E	1011.29@	147.52	2.14
4097.00	30.78	143.67	3832.83	64.00	1043.46	879.10 S	562.28 E	1043.54@	147.40	1.40
4160.00	31.83	144.38	3886.66	63.00	1076.12	905.59 S	581.51 E	1076.22@	147.29	1.77
4226.00	31.48	143.67	3942.84	66.00	1110.67	933.62 S	601.85 E	1110.80@	147.19	0.77
4289.00	31.04	143.76	3996.69	63.00	1143.26	959.98 S	621.20 E	1143.44@	147.09	0.70
4353.00	30.69	145.96	4051.63	64.00	1176.04	986.82 S	640.10 E	1176.24@	147.03	1.85
4417.00	31.04	146.31	4106.57	64.00	1208.85	1014.08 S	658.39 E	1209.07@	147.01	0.61
4481.00	31.30	147.01	4161.33	64.00	1241.97	1041.76 S	676.60 E	1242.19@	147.00	0.70
4545.00	31.48	148.77	4215.96	64.00	1275.30	1069.99 S	694.31 E	1275.52@	147.02	1.46
4609.00	31.74	149.65	4270.47	64.00	1308.84	1098.81 S	711.48 E	1309.04@	147.08	0.83
4672.00	31.83	150.18	4324.02	63.00	1342.00	1127.52 S	728.12 E	1342.18@	147.15	0.47
4736.00	32.10	150.44	4378.32	64.00	1375.86	1156.95 S	744.90 E	1376.02@	147.22	0.47
4800.00	32.54	150.09	4432.40	64.00	1410.05	1186.67 S	761.87 E	1410.19@	147.30	0.75
4864.00	31.48	150.88	4486.67	64.00	1443.94	1216.19 S	778.59 E	1444.06@	147.37	1.78
4928.00	31.74	150.79	4541.17	64.00	1477.45	1245.48 S	794.93 E	1477.54@	147.45	0.41
4993.00	31.48	150.35	4596.53	65.00	1511.49	1275.15 S	811.67 E	1511.56@	147.52	0.53
5056.00	30.95	150.70	4650.41	63.00	1544.11	1303.57 S	827.74 E	1544.17@	147.59	0.89

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5121.00	30.86	150.97	4706.18	65.00	1577.45	1332.72 S	844.01 E	1577.50@	147.65	0.25
5185.00	31.22	151.85	4761.02	64.00	1610.40	1361.70 S	859.80 E	1610.43@	147.73	0.91
5248.00	31.74	151.76	4814.74	63.00	1643.23	1390.70 S	875.34 E	1643.25@	147.81	0.83
5312.00	29.90	149.65	4869.70	64.00	1675.98	1419.30 S	891.37 E	1675.99@	147.87	3.33
5376.00	29.99	150.00	4925.16	64.00	1707.91	1446.91 S	907.43 E	1707.92@	147.91	0.31
5440.00	29.63	148.24	4980.69	64.00	1739.72	1474.22 S	923.75 E	1739.72@	147.93	1.48
5504.00	29.28	148.07	5036.42	64.00	1771.19	1500.95 S	940.36 E	1771.19@	147.93	0.56
5567.00	27.70	148.15	5091.79	63.00	1801.24	1526.47 S	956.23 E	1801.24@	147.94	2.51
5631.00	26.20	148.42	5148.84	64.00	1830.24	1551.14 S	971.48 E	1830.25@	147.94	2.35
5694.00	25.59	149.82	5205.51	63.00	1857.75	1574.75 S	985.61 E	1857.75@	147.96	1.37
5774.00	25.15	151.58	5277.80	80.00	1891.99	1604.64 S	1002.38 E	1891.99@	148.01	1.09
5806.00	25.59	152.02	5306.71	32.00	1905.67	1616.72 S	1008.86 E	1905.67@	148.04	1.50
5838.00	26.29	153.43	5335.49	32.00	1919.62	1629.16 S	1015.27 E	1919.62@	148.07	2.92
5870.00	26.20	153.08	5364.19	32.00	1933.71	1641.80 S	1021.64 E	1933.71@	148.11	0.56
5902.00	27.52	150.70	5392.74	32.00	1948.14	1654.54 S	1028.46 E	1948.14@	148.14	5.32
5934.00	28.93	150.35	5420.93	32.00	1963.26	1667.72 S	1035.90 E	1963.26@	148.15	4.44
5966.00	30.34	150.44	5448.75	32.00	1979.07	1681.48 S	1043.72 E	1979.07@	148.17	4.41
5997.00	31.83	150.97	5475.29	31.00	1995.06	1695.43 S	1051.55 E	1995.06@	148.19	4.89
6029.00	32.89	149.65	5502.32	32.00	2012.17	1710.31 S	1060.04 E	2012.17@	148.21	3.98
6061.00	33.59	148.59	5529.09	32.00	2029.71	1725.36 S	1069.04 E	2029.71@	148.22	2.84
6093.00	32.89	148.15	5555.85	32.00	2047.25	1740.30 S	1078.24 E	2047.25@	148.22	2.31
6125.00	32.27	148.15	5582.82	32.00	2064.48	1754.94 S	1087.33 E	2064.48@	148.22	1.94
6156.00	32.10	147.89	5609.05	31.00	2080.99	1768.94 S	1096.08 E	2081.00@	148.22	0.71
6220.00	30.34	147.19	5663.78	64.00	2114.16	1796.93 S	1113.88 E	2114.16@	148.21	2.81
6251.00	29.81	146.49	5690.61	31.00	2129.69	1809.94 S	1122.37 E	2129.69@	148.20	2.05
6315.00	30.78	146.22	5745.87	64.00	2161.96	1836.81 S	1140.26 E	2161.96@	148.17	1.53
6347.00	30.51	146.04	5773.40	32.00	2178.26	1850.36 S	1149.35 E	2178.26@	148.15	0.89

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
6378.00	30.78	147.19	5800.07	31.00	2194.06	1863.55 S	1158.04 E	2194.06@	148.14	2.08
6442.00	30.78	147.63	5855.06	64.00	2226.81	1891.15 S	1175.68 E	2226.81@	148.13	0.35
6505.00	30.07	148.95	5909.38	63.00	2258.71	1918.28 S	1192.46 E	2258.71@	148.13	1.55
6569.00	30.25	150.09	5964.72	64.00	2290.85	1945.99 S	1208.76 E	2290.85@	148.15	0.94
6601.00	30.16	150.53	5992.37	32.00	2306.94	1959.98 S	1216.74 E	2306.94@	148.17	0.75
6664.00	30.69	150.18	6046.70	63.00	2338.82	1987.71 S	1232.52 E	2338.82@	148.20	0.89
6728.00	30.69	150.79	6101.73	64.00	2371.45	2016.13 S	1248.61 E	2371.46@	148.23	0.49
6791.00	30.69	150.97	6155.91	63.00	2403.57	2044.22 S	1264.26 E	2403.58@	148.27	0.15
6823.00	30.95	150.88	6183.39	32.00	2419.94	2058.55 S	1272.23 E	2419.96@	148.28	0.83
6855.00	30.86	151.06	6210.85	32.00	2436.36	2072.92 S	1280.20 E	2436.38@	148.30	0.40
6887.00	29.81	150.00	6238.46	32.00	2452.51	2086.99 S	1288.15 E	2452.52@	148.32	3.68
6918.00	28.93	147.36	6265.48	31.00	2467.71	2099.98 S	1296.05 E	2467.72@	148.32	5.05
6950.00	28.14	146.49	6293.59	32.00	2482.99	2112.79 S	1304.39 E	2483.01@	148.31	2.79
6982.00	27.17	146.22	6321.94	32.00	2497.83	2125.16 S	1312.62 E	2497.85@	148.30	3.06
7014.00	25.59	147.28	6350.60	32.00	2512.05	2137.04 S	1320.42 E	2512.06@	148.29	5.15
7045.00	24.09	148.51	6378.74	31.00	2525.07	2148.07 S	1327.34 E	2525.08@	148.29	5.12
7109.00	22.86	148.77	6437.44	64.00	2550.56	2169.84 S	1340.61 E	2550.58@	148.29	1.93
7173.00	22.60	150.88	6496.47	64.00	2575.27	2191.21 S	1353.04 E	2575.29@	148.31	1.34
7268.00	23.92	152.29	6583.75	95.00	2612.72	2224.21 S	1370.88 E	2612.74@	148.35	1.51
7300.00	23.83	152.64	6613.01	32.00	2625.63	2235.70 S	1376.87 E	2625.66@	148.37	0.52
7364.00	23.65	152.90	6671.59	64.00	2651.31	2258.61 S	1388.66 E	2651.35@	148.42	0.33
7427.00	22.60	153.25	6729.53	63.00	2675.96	2280.67 S	1399.86 E	2676.01@	148.46	1.68
7491.00	21.81	150.26	6788.78	64.00	2700.09	2301.97 S	1411.29 E	2700.15@	148.49	2.15
7554.00	21.02	147.98	6847.44	63.00	2723.08	2321.71 S	1423.09 E	2723.15@	148.49	1.82
7618.00	20.75	144.82	6907.23	64.00	2745.88	2340.71 S	1435.71 E	2745.94@	148.48	1.81
7681.00	19.96	145.52	6966.30	63.00	2767.76	2358.70 S	1448.23 E	2767.82@	148.45	1.31
7745.00	18.55	146.57	7026.72	64.00	2788.86	2376.20 S	1460.02 E	2788.90@	148.43	2.27

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 78

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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)
7808.00	18.03	147.80	7086.53	63.00	2808.62	2392.81 S	1470.74 E	2808.67@	148.42	1.03
7904.00	15.56	147.98	7178.43	96.00	2836.36	2416.31 S	1485.48 E	2836.41@	148.42	2.57
7967.00	15.39	142.97	7239.15	63.00	2853.14	2430.15 S	1495.00 E	2853.18@	148.40	2.14
8031.00	14.77	143.23	7300.95	64.00	2869.72	2443.46 S	1505.00 E	2869.76@	148.37	0.97
8094.00	13.72	146.66	7362.01	63.00	2885.19	2456.14 S	1513.91 E	2885.22@	148.35	2.14
8158.00	13.10	147.89	7424.26	64.00	2900.04	2468.62 S	1521.94 E	2900.06@	148.35	1.07
8253.00	10.82	150.53	7517.20	95.00	2919.71	2485.50 S	1532.05 E	2919.74@	148.35	2.47
8348.00	9.23	146.75	7610.74	95.00	2936.24	2499.64 S	1540.61 E	2936.27@	148.35	1.81
8412.00	8.53	147.19	7673.98	64.00	2946.12	2507.92 S	1546.00 E	2946.15@	148.35	1.10
8475.00	8.71	146.04	7736.27	63.00	2955.56	2515.81 S	1551.19 E	2955.58@	148.34	0.40
8539.00	7.65	148.33	7799.61	64.00	2964.66	2523.45 S	1556.14 E	2964.69@	148.34	1.73
8603.00	7.47	148.86	7863.06	64.00	2973.08	2530.64 S	1560.53 E	2973.11@	148.34	0.30
8698.00	6.95	154.66	7957.31	95.00	2984.96	2541.12 S	1566.18 E	2984.99@	148.35	0.94
8761.00	6.24	159.23	8019.89	63.00	2992.11	2547.76 S	1569.02 E	2992.15@	148.37	1.40
8825.00	5.45	161.34	8083.56	64.00	2998.48	2553.89 S	1571.23 E	2998.52@	148.40	1.28
8889.00	4.48	156.15	8147.32	64.00	3003.91	2559.06 S	1573.21 E	3003.96@	148.42	1.67
8952.00	4.22	177.51	8210.14	63.00	3008.37	2563.63 S	1574.31 E	3008.43@	148.45	2.59
9048.00	2.81	183.57	8305.96	96.00	3013.36	2569.50 S	1574.32 E	3013.44@	148.50	1.52
STRAIGHT LINE PROJECTION TO BIT @ 9114' MD.										
9114.00	2.81	183.57	8371.88	66.00	3016.00	2572.73 S	1574.12 E	3016.09@	148.54	0.00

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
FEDERAL HQ #3
EDDY COUNTY, NEW MEXICO
Rig:PATTERSON 78

Tue Oct 16 17:21:22 2007

Coordinates

Latitude: 32.517949 N (32 deg. 31 min. 4.6176 sec.)
Longitude: 104.724560 W (-104 deg. 43 min. 28.4148 sec.)
Elevation: 4301.00 feet.
Calculation Date: Oct/16/2007

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.3498 degrees
Total Magnetic Field: 0.49040 gauss
Magnetic Declination: 8.549413 degrees
Horizontal Intensity: 0.242601 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.549413 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 379408.2000 feet
Y: 552363.8000 feet
True to Grid: (convergence) 0.210311 degrees
Magnetic to Grid: 8.759725 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 8.759725 Degr.

A Gyrodata Directional Survey

for

YATES PETROLEUM

Location: PATTERSON #78, EDDY CO., NEW MEX
Lease: FEDERAL HQ Well: #3
4-1/2" DRILLPIPE

Job Number: MD1007G_358

Run Date: 10/29/2007 3:06:22 AM

Surveyor: DREW/PENA

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 32.517944 deg. N Longitude: 104.724556 deg. W

Azimuth Correction:

Gyro: 0.21000 deg East to Grid North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

YATES PETROLEUM

Location: PATTERSON #78, EDDY CO.,NEW MEX

Lease: FEDERAL HQ Well: #3, 4-1/2" DRILLPIPE

Job Number: MD1007G_358

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N 0.00 E

0-1652 FT. RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 4-1/2" DRILLPIPE
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO PATTERSON DRILLING RIG #78 RKB.

100.00	0.89	85.32	0.89	100.00	0.8	85.3	0.06 N 0.77 E
200.00	1.13	99.47	0.35	199.98	2.5	90.8	0.04 S 2.51 E
300.00	1.14	101.93	0.05	299.96	4.5	95.2	0.40 S 4.46 E
400.00	1.30	113.70	0.29	399.94	6.6	99.3	1.06 S 6.47 E
500.00	1.85	99.14	0.68	499.90	9.3	101.0	1.77 S 9.09 E
600.00	1.41	88.28	0.53	599.86	12.1	99.5	1.99 S 11.91 E
700.00	1.21	90.35	0.20	699.83	14.3	97.9	1.96 S 14.20 E
800.00	0.98	86.84	0.24	799.82	16.2	96.8	1.92 S 16.11 E
900.00	0.92	88.09	0.06	899.80	17.9	95.9	1.85 S 17.76 E
1000.00	1.06	88.26	0.14	999.79	19.6	95.3	1.79 S 19.49 E
1100.00	0.86	91.02	0.21	1099.77	21.2	94.8	1.78 S 21.17 E
1200.00	0.76	91.38	0.09	1199.76	22.7	94.6	1.81 S 22.58 E
1300.00	0.83	95.40	0.09	1299.75	24.0	94.5	1.89 S 23.97 E
1400.00	0.93	97.87	0.10	1399.74	25.6	94.6	2.07 S 25.50 E

A Gyrodata Directional Survey

YATES PETROLEUM

Location: PATTERSON #78, EDDY CO.,NEW MEX

Lease: FEDERAL HQ Well: #3, 4-1/2" DRILLPIPE

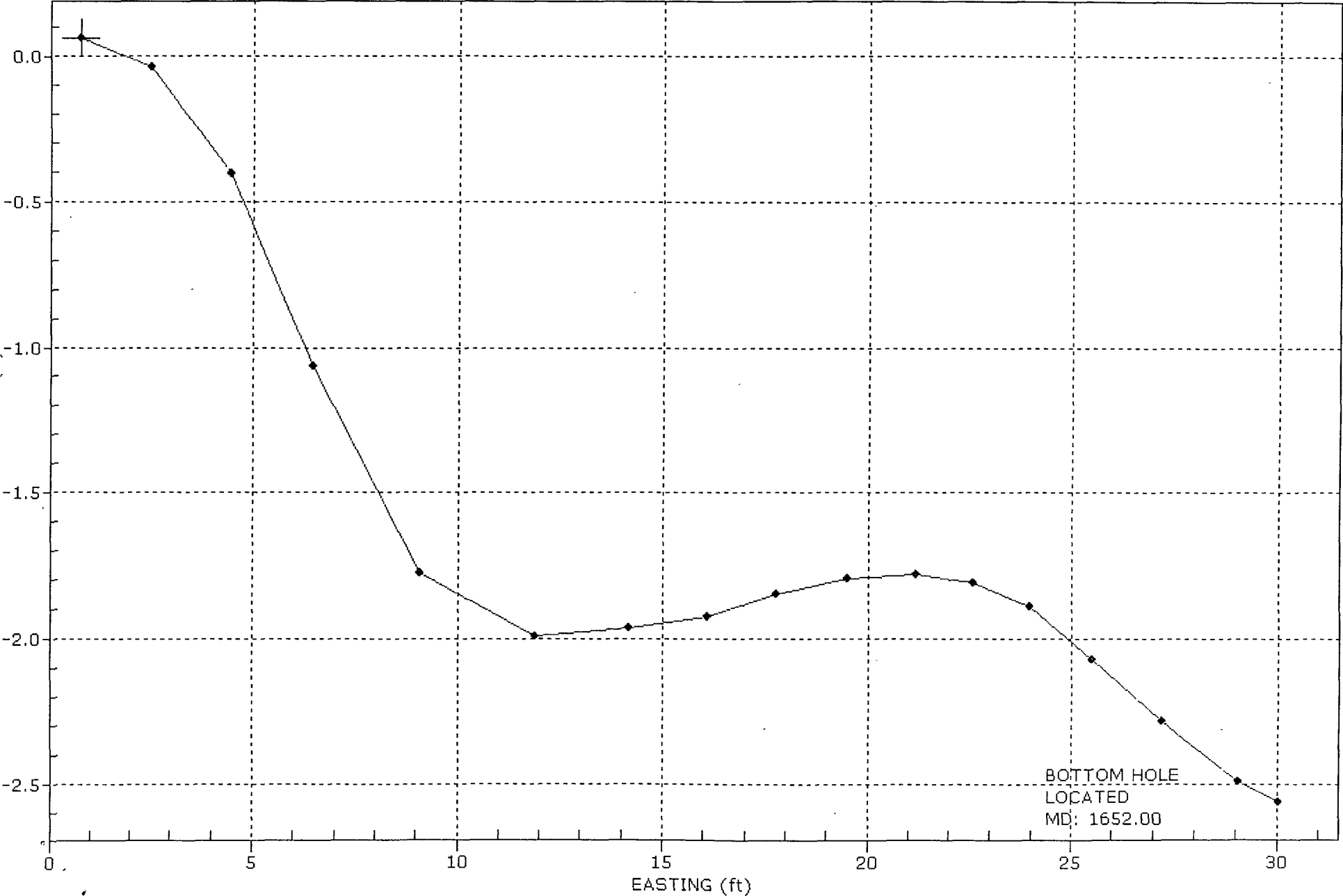
Job Number: MD1007G_358

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
1500.00	1.07	96.53	0.14	1499.73	27.3	94.8	2.29 S 27.23 E
1600.00	1.05	96.15	0.02	1599.71	29.2	94.9	2.49 S 29.07 E
1652.00	1.10	92.31	0.17	1651.70	30.1	94.9	2.56 S 30.04 E

Final Station Closure: Distance: 30.15 ft Az: 94.88 deg.

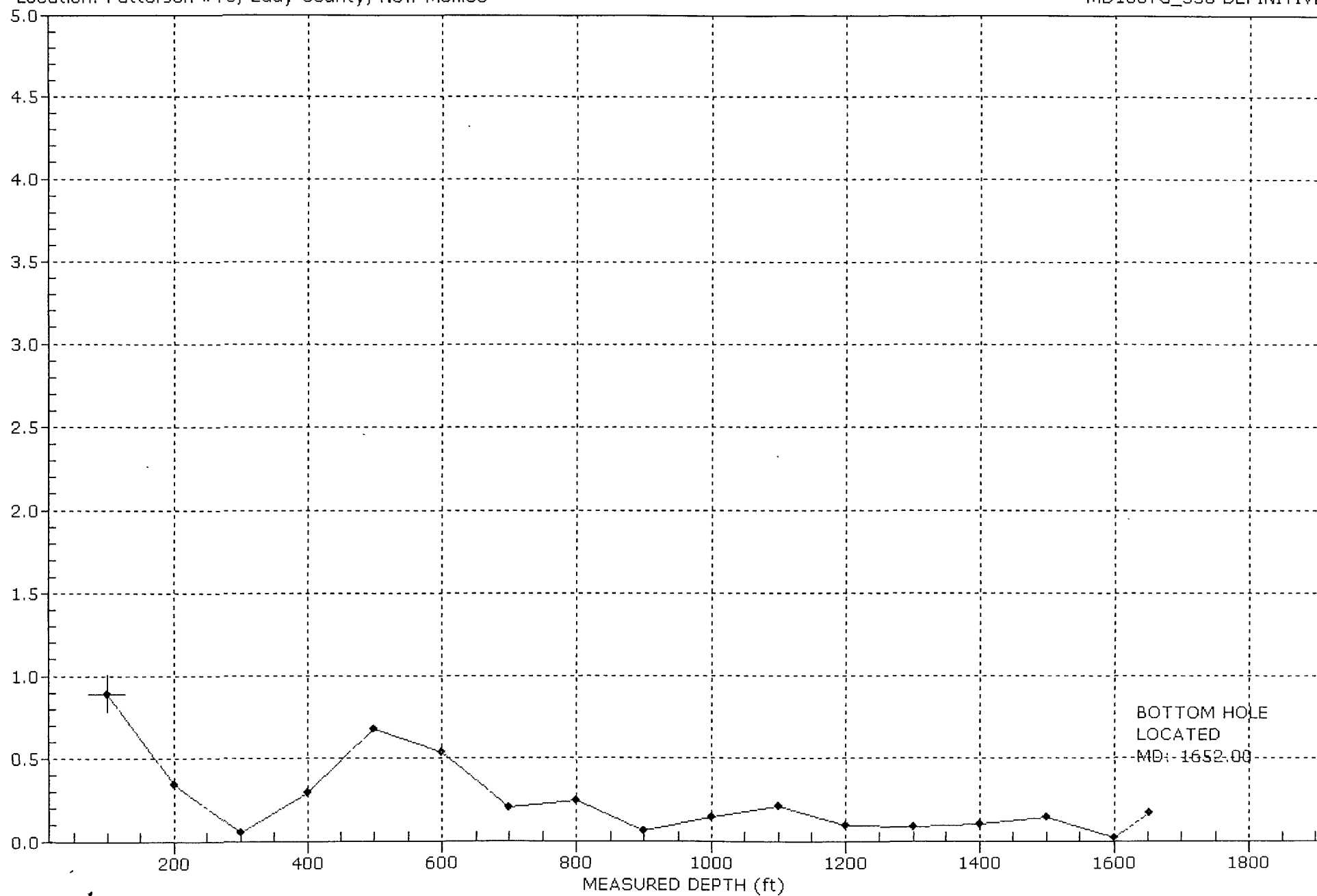
Yates Petroleum
Well: Federal Hq No. 3 4-1/2" Drillpipe
Location: Patterson #78, Eddy County, New Mexico

Inrun
Gyrodata
MD1007G_358 DEFINITIVE



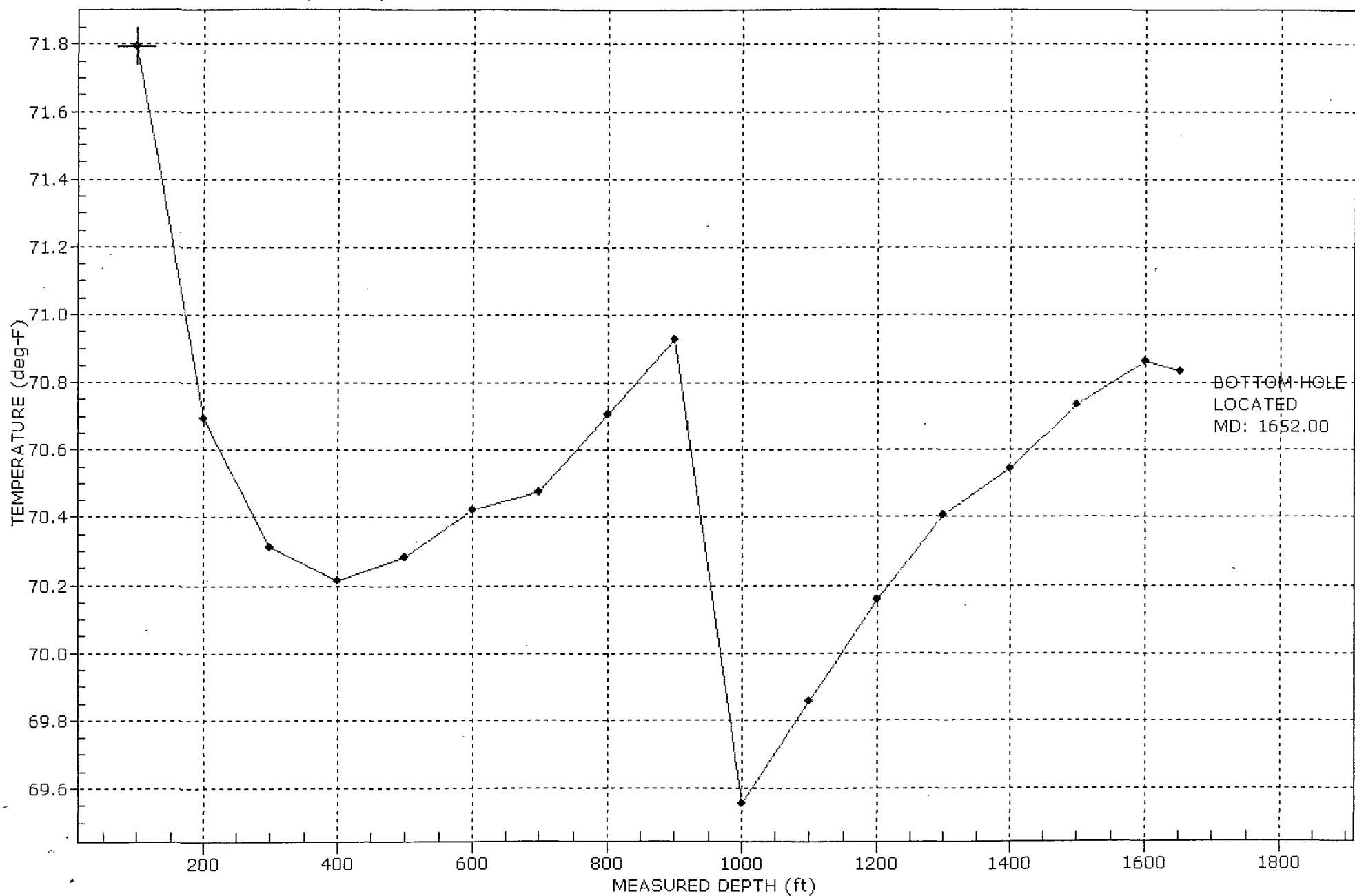
Yates Petroleum
Well: Federal Hq No. 3 4-1/2" Drillpipe
Location: Patterson #78, Eddy County, New Mexico

Inrun
Gyrodata
MD1007G_358 DEFINITIVE



Yates Petroleum
Well: Federal Hq No. 3 4-1/2" Drillpipe
Location: Patterson #78, Eddy County, New Mexico

Inrun
Gyrodata
MD1007G_358 DEFINITIVE



Top Map Details:

- Section: 32, T.20 1/2 S., R. 22 E.
- Geodetic Coordinates (NAD-27): Y=552363.8 N, X=379408.2 E, LAT.=32.517949, LONG.=104.724560
- Surface Location: 4320, 4277, 4284, 4286
- Penetration Point: Y=550414.7 N, X=380622.1 E
- Section Line: AZ:149°05'07" 3,003'

Bottom Map Details:

- Section: NORTH-HALF SECTION 5, T. 21 S., R. 22 E.
- Bottom Hole Location: Y=549814.6 N, X=380995.8 E, LAT.=32.510958 N, LONG.=104.719379 W
- Penetration Point
- Section Line: 1280'
- Other dimensions: 950', 660', 660'

Pathfinder Energy Survey Report

Company: Yates Petroleum Corporation		Date: 01/24/2008	Time: 10:59:56	Page: 1
Field: Federal HQ #3		Co-ordinate(NE) Reference: Site: Federal HQ #3, Grid North		
Map: Federal HQ #3		Vertical (TVD) Reference: RKB @ 4301 4301.0		
Wellpath: Plan #1		Section (VS) Reference: Well (0.00N,0.00E,148.09Azi)		
		Survey Calculation Method: Minimum Curvature Db: Sybase		

Field: Federal HQ #3	
Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Site Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005

Site: Federal HQ #3	
Site Position:	Northing: 552363.80 ft Latitude: 32 31 4.618 N
From: Map	Easting: 379408.20 ft Longitude: 104 43 28.415 W
Position Uncertainty: 0.00 ft	North Reference: Grid
Ground Level: 4283.00 ft	Grid Convergence: -0.21 deg

Well: Federal HQ #3		Slot Name:	
Well Position: +N/-S 0.00 ft	Northing: 552363.80 ft	Latitude: 32 31 4.618 N	
+E/-W 0.00 ft	Easting: 379408.20 ft	Longitude: 104 43 28.415 W	
Position Uncertainty: 0.00 ft			

Wellpath: Plan #1		Drilled From: Surface	
Current Datum: RKB @ 4301	Height: 4301.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 08/15/2007		Above System Datum: Mean Sea Level	
Field Strength: 49088 nT		Declination: 8.57 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 60.35 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	148.09

Survey: ST Surveys	Start Date: 11/29/2007
Company: Pathfinder Energy	Engineer:
Tool:	Tied-to: From. Definitive Path

Survey: ST Surveys										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1652.00	1.10	92.31	1651.70	-2.56	30.04	18.05	0.00	0.00	0.00	KOP @ 1652' MD/TVD, Begin
2423.14	24.20	152.77	2399.29	-137.08	124.48	182.16	3.07	3.00	7.84	EOB @ 2423' MD 23.73° INC
6575.97	30.23	150.19	5970.74	-1949.04	1210.51	2294.36	0.15	0.15	-0.06	1210.67 Easting, -1949.33
8158.00	13.10	147.89	7424.26	-2468.62	1521.94	2900.03	1.08	-1.08	-0.15	
8253.00	10.82	150.53	7517.20	-2485.50	1532.05	2919.71	2.47	-2.40	2.78	
8307.00	9.85	152.64	7570.32	-2494.02	1536.67	2929.38	1.93	-1.80	3.91	
8339.00	9.58	148.86	7601.86	-2498.73	1539.30	2934.77	2.16	-0.84	-11.81	
8371.00	9.15	146.75	7633.44	-2503.14	1542.07	2939.98	1.72	-1.34	-6.59	
8402.00	8.53	145.61	7664.07	-2507.09	1544.72	2944.74	2.08	-2.00	-3.68	
8434.00	7.56	143.15	7695.75	-2510.74	1547.33	2949.21	3.22	-3.03	-7.69	
8466.00	7.21	139.63	7727.49	-2513.95	1549.89	2953.29	1.79	-1.09	-11.00	
8498.00	6.95	139.01	7759.24	-2516.94	1552.46	2957.19	0.85	-0.81	-1.94	
8529.00	6.60	138.57	7790.03	-2519.69	1554.87	2960.80	1.14	-1.13	-1.42	
8561.00	6.24	135.59	7821.83	-2522.31	1557.30	2964.31	1.53	-1.12	-9.31	
8593.00	6.33	128.91	7853.63	-2524.67	1559.89	2967.67	2.30	0.28	-20.87	
8625.00	6.60	120.82	7885.43	-2526.72	1562.84	2970.97	2.97	0.84	-25.28	
8657.00	6.42	114.67	7917.22	-2528.40	1566.05	2974.10	2.25	-0.56	-19.22	
8689.00	6.24	112.91	7949.03	-2529.83	1569.28	2977.02	0.83	-0.56	-5.50	
8818.00	5.54	99.99	8077.35	-2533.64	1581.87	2986.91	1.16	-0.54	-10.02	
8849.00	5.98	91.20	8108.20	-2533.93	1584.96	2988.79	3.18	1.42	-28.35	
8881.00	5.98	92.52	8140.02	-2534.04	1588.29	2990.64	0.43	0.00	4.12	
8913.00	5.45	96.91	8171.86	-2534.30	1591.46	2992.54	2.15	-1.66	13.72	
8944.00	4.66	99.46	8202.74	-2534.68	1594.17	2994.29	2.65	-2.55	8.23	
8976.00	4.13	100.52	8234.65	-2535.10	1596.58	2995.93	1.68	-1.66	3.31	

Pathfinder Energy

Survey Report

Company: Yates Petroleum Corporation
Field: Federal HQ #3
Site: Federal HQ #3
Well: Federal HQ #3
Wellpath: Plan #1

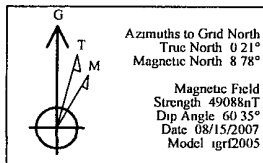
Date: 01/24/2008 **Time:** 10:59:56 **Page:** 2
Co-ordinate(NE) Reference: Site: Federal HQ #3, Grid North
Vertical (TVD) Reference: RKB @ 4301 4301.0
Section (VS) Reference: Well (0.00N,0.00E,148.09Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: ST Surveys

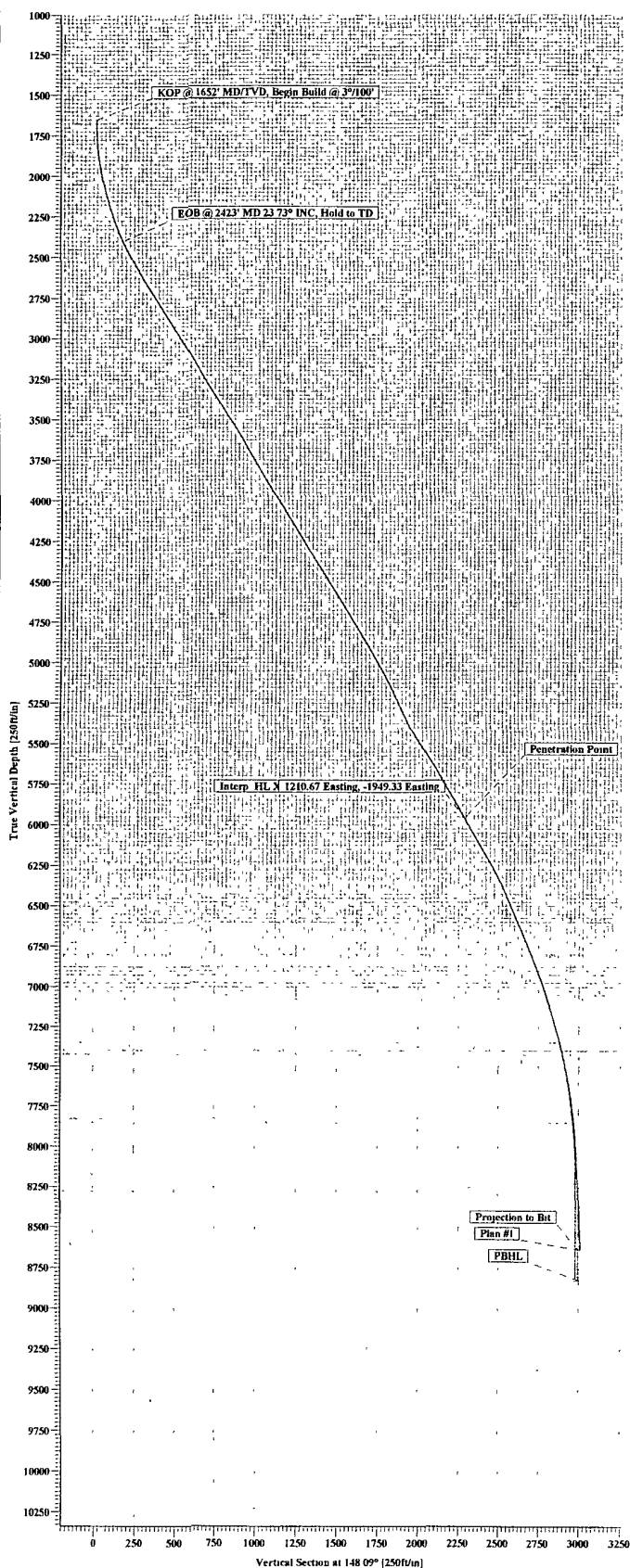
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
9008.00	3.69	104.47	8266.57	-2535.57	1598.71	2997.45	1.61	-1.37	12.34	
9040.00	3.52	105.53	8298.51	-2536.09	1600.65	2998.92	0.57	-0.53	3.31	
9072.00	3.34	102.98	8330.45	-2536.56	1602.51	3000.30	0.74	-0.56	-7.97	
9103.00	3.25	104.74	8361.40	-2536.99	1604.24	3001.58	0.44	-0.29	5.68	
9135.00	2.99	98.85	8393.36	-2537.35	1605.94	3002.78	1.29	-0.81	-18.41	
9202.00	2.64	106.41	8460.27	-2538.05	1609.15	3005.08	0.76	-0.52	11.28	
9265.00	2.11	127.94	8523.22	-2539.18	1611.45	3007.25	1.63	-0.84	34.17	
9329.00	1.58	151.14	8587.19	-2540.67	1612.81	3009.24	1.41	-0.83	36.25	
9383.00	1.58	151.14	8641.17	-2541.98	1613.53	3010.72	0.00	0.00	0.00	BHL 1267.33' FNL, 923.33'

Annotation

MD ft	TVD ft	
1652.00	1651.70	KOP @ 1652' MD/TVD, Begin Build @ 3"/100'
2423.14	2399.29	EOB @ 2423' MD 23.73° INC, Hold to TD
9383.00	8641.17	Projection to Bit
6575.97	5970.74	Interp. HL Xing @ 6575.97' MD, 5970.74' TVD
6575.97	5970.74	1210.67 Easting, -1949.33 Easting
9383.00	8641.17	BHL 1267.33' FNL, 923.33' FEL



Field: Federal HQ #3
Site: Federal HQ #3
Well: Federal HQ #3
Wellpath: Plan #1
Plan: Plan #6 ST Plan



SITE DETAILS	
Federal HQ #3	
Site Centre Northing	552363 80
Easting	379408 20
Ground Level	4283 00
Positional Uncertainty	0 00
Convergence	-0 21

WELLPATH DETAILS			
Plan #1			
Rig Ref Datum	RKB @ 4301	4301 00ft	
V Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
148 09°	0 00	0 00	0 00

TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
Penetration Point	5950 00	-1949 10	1213 90	Point
PBHL	8825 00	-2549 20	1587 60	Point

ANNOTATIONS			
No	TVD	MD	Annotation
1	1651 70	1652 00	KOP @ 1652' MD/TVD, Begin Build @ 3°/100'
2	2399 29	2423 14	EOB @ 2423' MD 23 73° INC, Hold to TD
3	8640 59	9383 00	Projection to Bit
4	5970 74	6575 97	Interp. HL Xing @ 6575 97' MD, 5970 74' TVD
5	5970 74	6575 97	1210 67 Easting, -1949 33 Easting

