

Results of Directional Survey

API number:	30-025-39768		
OGRID:		Operator:	YATES PETROLEUM CORP
		Property:	RENEGADE BPG FEDERAL # 1H

surface	ULSTR:	D	18	T 26S	R 35E
				660 FNL	330 FWL

BH Loc	ULSTR:	A	18	T 26S	R 35E
13891	MD	9367.3	TVD	633 FNL	4975 FWL

Top Perf/OH	ULSTR:	D	18	T 26S	R 35E
9774	MD	9440.1	TVD	656 FNL	860 FWL

Bot Perf/OH	ULSTR:	A	18	T 26S	R 35E
13835	MD	9369.7	TVD	633 FNL	4919 FWL

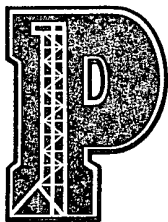
	MD	N/S	E/W	VD
	9760	4.59	515.82	9440.27
TOP PERFS/OH	9774	4.03	529.81	9440.08
	9854	0.81	609.73	9438.97
	13709	29.64	4463.14	9375.09
BOT PERFS/OH	13835	27.48	4589.06	9369.73
	13803	28.03	4557.08	9371.09

NEXT TO LAST	13709	29.64	4463.14	9375.09
LAST READING	13803	28.03	4557.08	9371.09
TD	13891	26.52	4645.02	9367.35

Surface Location	660	FN	330	FW
Projected BHL	633	FN	4975	FW
Location of				
Top Perfs/OH	656	FN	860	FW
Bottom Perfs/OH	633	FN	4919	FW

SUMMARY of Subsurface Locations

Surface Location	D-18-26S-35E	660	FN	330	FW	Vert. Depth
Top Perfs/OH	D-18-26S-35E	656	FN	860	FW	9440.08
Bottom Perfs/OH	A-18-26S-35E	633	FN	4919	FW	9369.73
Projected TD	A-18-26S-35E	633	FN	4975	FW	9367.35



PATRIOT DRILLING, LLC

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OPERATOR:
HOBBS CO
WELL/LEASE:
COUNTY:

Yates Petroleum Corp.
Renegade "BPG" Fed. # 1H
Lea County, New Mexico
Sec. 18, T26S, R35E

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
249	3/4	4,033	3/4
519	1	4,411	1
831	1	4,600	1
1,210	3/4	4,787	1
1,398	1	4,975	3
1,585	1	5,308	1/2
1,774	3/4	5,805	1
1,963	1/2	6,305	1
2,150	1/4	6,780	1
2,338	3/4	7,281	1
2,526	1	7,686	3/4
2,714	1	8,159	1 1/2
3,091	1	8,663	2 1/4
3,279	2	8,819	1 1/2
3,468	2	9,101	2 3/4
3,657	1/2	9,290	2
3,845	1/2		

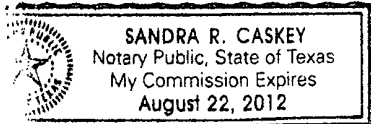
SUR @ D-18-26s-35e, 660/N & 330/W
BHL @ A-18-26s-35e, 633/N & 4975/W
API # 30-025-39768

Patriot Drilling, LLC

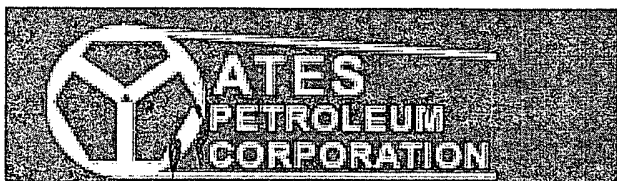

M. Leroy Peterson, Executive Vice-
President

The foregoing instrument was acknowledged before me on this 22nd day of
October, 2010 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling,
LLC.

My Commission Expires: 8/22/2012




Sandra R. Caskey
Notary Public for Midland Co., Texas



Yates Petroleum Corp.

Lea County
Renegade "BPG" Federal
#1H
OH

Survey: MWD#1

Pathfinder X & Y Survey Report

18 October, 2010

RECEIVED

JAN 13 2011
HOBBSOCD

PATHFINDER®

A Schlumberger Company

SUR @ D-18-26s-35e, 660/N & 330/W
BHL @ A-18-26s-35e, 633/N & 4975/W
API # 30-025-39768



Pathfinder

Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Site:	Renegade "BPG" Federal	MD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Project:	Lea County	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Renegade "BPG" Federal		
Site Position:		Northing:	382,702.976 ft
From:	Map	Easting:	826,156.049 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 2' 55.670 N
		Longitude:	103° 24' 50.611 W
		Grid Convergence:	0.49 °

Well:	#1H					
Well Position	+N/-S	0.00 ft	Northing:	382,702.976 ft	Latitude:	32° 2' 55.670 N
	+E/-W	0.00 ft	Easting:	826,156.049 ft	Longitude:	103° 24' 50.611 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,261.00 ft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	09/17/10	(°)	(°)	(nT)
			7.58	60.09	48.637

Design:	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	89.65	



Pathfinder

Pathfinder X & Y Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Site:	Renegade "BPG" Federal	MD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey Program	Date	10/18/10			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
200.00	9,300.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot	
9,418.00	13,891.00	MWD#1 (OH)	MWD	MWD - Standard	

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
8,800.00	1.00	236.15	8,799.24	5,511.74	19.31	-20.69	-20.57	0.00	382,722.29	826,135.36
8,938.00	1.32	239.76	8,937.21	5,649.71	17.84	-23.07	-22.96	0.24	382,720.81	826,132.98
8,969.00	0.53	172.61	8,968.21	5,680.71	17.52	-23.36	-23.25	3.92	382,720.49	826,132.69
KOP-8969.00°MD,0.53°INC,172.61°AZI,8968.21°TVD										
9,000.00	3.78	93.51	8,999.18	5,711.68	17.31	-22.32	-22.21	11.99	382,720.29	826,133.73
9,031.00	8.35	90.74	9,030.00	5,742.50	17.22	-19.04	-18.94	14.77	382,720.20	826,137.01
9,063.00	13.28	90.37	9,061.43	5,773.93	17.17	-13.04	-12.94	15.41	382,720.14	826,143.01
9,094.00	18.64	89.75	9,091.22	5,803.72	17.16	-4.52	-4.42	17.30	382,720.14	826,151.53
9,126.00	24.89	89.68	9,120.92	5,833.42	17.22	7.34	7.44	19.53	382,720.20	826,163.39
9,157.00	29.28	90.21	9,148.52	5,861.02	17.23	21.45	21.55	14.18	382,720.21	826,177.50
9,189.00	33.06	90.67	9,175.89	5,888.39	17.10	38.01	38.11	11.84	382,720.08	826,194.06
9,220.00	35.70	91.87	9,201.48	5,913.98	16.71	55.51	55.61	8.79	382,719.68	826,211.56
9,251.00	39.04	93.89	9,226.11	5,938.61	15.75	74.29	74.39	11.48	382,718.73	826,230.34
9,283.00	42.21	94.52	9,250.39	5,962.89	14.22	95.07	95.15	9.99	382,717.19	826,251.12
9,315.00	44.67	94.21	9,273.63	5,986.13	12.55	117.01	117.08	7.72	382,715.52	826,273.06
9,346.00	46.34	93.37	9,295.35	6,007.85	11.09	139.07	139.14	5.72	382,714.06	826,295.12
9,377.00	49.59	90.15	9,316.11	6,028.61	10.40	162.08	162.14	13.01	382,713.37	826,318.13
9,409.00	53.38	87.99	9,336.04	6,048.54	10.81	187.10	187.17	12.97	382,713.79	826,343.15
9,440.00	58.04	86.75	9,353.50	6,066.00	12.00	212.68	212.75	15.39	382,714.97	826,368.73
9,471.00	61.64	86.76	9,369.07	6,081.57	13.51	239.44	239.51	11.61	382,716.49	826,395.49
9,502.00	64.10	88.37	9,383.20	6,095.70	14.68	267.00	267.08	9.18	382,717.66	826,423.05



Pathfinder

Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Site:	Renegade "BPG" Federal	MD Reference:	WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
9,534.00	66.48	90.24	9,396.58	6,109.08	15.03	296.06	296.15	9.14	382,718.01	826,452.11	
9,565.00	69.73	92.27	9,408.14	6,120.64	14.39	324.81	324.89	12.12	382,717.37	826,480.86	
9,596.00	73.34	93.38	9,417.96	6,130.46	12.94	354.18	354.25	12.13	382,715.92	826,510.22	
9,628.00	76.41	93.10	9,426.31	6,138.81	11.20	385.01	385.08	9.63	382,714.17	826,541.06	
9,659.00	80.37	92.73	9,432.54	6,145.04	9.65	415.33	415.39	12.83	382,712.63	826,571.38	
9,760.00	90.84	93.06	9,440.27	6,152.77	4.57	515.77	515.79	10.37	382,707.55	826,671.82	
EOC-9760.00'MD,90.84°INC,93.06°AZI,9440.27'TVD,10.37°DLS, 515.79'VS, 4.57°N, 515.77'E											
9,854.00	90.75	91.55	9,438.97	6,151.47	0.79	609.68	609.67	1.61	382,703.77	826,765.73	
9,949.00	91.28	90.88	9,437.29	6,149.79	-1.22	704.64	704.62	0.90	382,701.75	826,860.69	
10,043.00	90.92	90.76	9,435.48	6,147.98	-2.57	798.62	798.59	0.40	382,700.41	826,954.67	
10,137.00	90.66	90.19	9,434.18	6,146.68	-3.35	892.60	892.57	0.67	382,699.63	827,048.65	
10,231.00	90.75	89.56	9,433.03	6,145.53	-3.14	986.60	986.56	0.68	382,699.84	827,142.65	
10,325.00	91.19	89.24	9,431.44	6,143.94	-2.16	1,080.58	1,080.54	0.58	382,700.82	827,236.63	
10,419.00	90.92	89.13	9,429.71	6,142.21	-0.82	1,174.55	1,174.52	0.31	382,702.16	827,330.60	
10,513.00	90.84	88.84	9,428.26	6,140.76	0.85	1,268.53	1,268.51	0.32	382,703.82	827,424.57	
10,606.00	90.48	88.12	9,427.19	6,139.69	3.31	1,361.49	1,361.48	0.87	382,706.29	827,517.54	
10,699.00	91.36	88.44	9,425.70	6,138.20	6.10	1,454.43	1,454.44	1.01	382,709.08	827,610.48	
10,769.00	91.98	87.95	9,423.66	6,136.16	8.31	1,524.37	1,524.39	1.13	382,711.28	827,680.42	
10,884.00	91.10	88.36	9,420.57	6,133.07	12.01	1,639.26	1,639.31	0.84	382,714.98	827,795.31	
10,978.00	91.10	88.11	9,418.76	6,131.26	14.90	1,733.20	1,733.26	0.27	382,717.88	827,889.25	
11,072.00	91.01	89.39	9,417.03	6,129.53	16.95	1,827.16	1,827.23	1.36	382,719.93	827,983.21	
11,166.00	90.40	89.42	9,415.88	6,128.38	17.93	1,921.15	1,921.22	0.65	382,720.91	828,077.20	
11,260.00	90.31	89.39	9,415.29	6,127.79	18.91	2,015.14	2,015.22	0.10	382,721.88	828,171.19	
11,355.00	89.78	88.93	9,415.22	6,127.72	20.30	2,110.13	2,110.22	0.74	382,723.27	828,266.18	
11,448.00	90.22	89.32	9,415.22	6,127.72	21.72	2,203.12	2,203.21	0.63	382,724.69	828,359.17	
11,542.00	89.78	88.94	9,415.22	6,127.72	23.15	2,297.11	2,297.21	0.62	382,726.12	828,453.16	
11,636.00	90.66	89.50	9,414.86	6,127.36	24.43	2,391.10	2,391.20	1.11	382,727.40	828,547.15	



Pathfinder

Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Renegade "BPG" Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
MD Reference: WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,730.00	90.84	89.29	9,413.63	6,126.13	25.42	2,485.08	2,485.19	0.29	382,728.39	828,641.13
11,825.00	90.92	89.36	9,412.17	6,124.67	26.54	2,580.07	2,580.18	0.11	382,729.51	828,736.12
11,919.00	91.10	89.42	9,410.51	6,123.01	27.54	2,674.05	2,674.16	0.20	382,730.51	828,830.10
12,013.00	90.84	89.21	9,408.92	6,121.42	28.66	2,768.03	2,768.15	0.36	382,731.64	828,924.08
12,108.00	91.19	88.97	9,407.24	6,119.74	30.17	2,863.00	2,863.13	0.45	382,733.15	829,019.05
12,202.00	91.36	88.92	9,405.15	6,117.65	31.90	2,956.96	2,957.10	0.19	382,734.88	829,113.01
12,296.00	91.45	89.28	9,402.84	6,115.34	33.38	3,050.92	3,051.07	0.39	382,736.35	829,206.97
12,391.00	91.36	89.26	9,400.51	6,113.01	34.59	3,145.88	3,146.04	0.10	382,737.56	829,301.93
12,485.00	90.40	88.92	9,399.07	6,111.57	36.08	3,239.86	3,240.02	1.08	382,739.05	829,395.91
12,579.00	90.57	89.86	9,398.27	6,110.77	37.08	3,333.85	3,334.01	1.02	382,740.06	829,489.90
12,673.00	90.84	90.12	9,397.12	6,109.62	37.10	3,427.84	3,428.01	0.40	382,740.07	829,583.89
12,767.00	90.04	89.76	9,396.39	6,108.89	37.19	3,521.84	3,522.00	0.93	382,740.17	829,677.89
12,861.00	88.72	89.43	9,397.41	6,109.91	37.86	3,615.83	3,615.99	1.45	382,740.83	829,771.88
12,955.00	88.90	90.06	9,399.36	6,111.86	38.28	3,709.81	3,709.97	0.70	382,741.25	829,865.86
13,050.00	90.22	90.29	9,400.09	6,112.59	37.99	3,804.80	3,804.96	1.41	382,740.96	829,960.85
13,144.00	89.69	90.08	9,400.17	6,112.67	37.68	3,898.80	3,898.96	0.61	382,740.66	830,054.85
13,238.00	91.98	90.77	9,398.80	6,111.30	36.99	3,992.78	3,992.93	2.54	382,739.96	830,148.83
13,332.00	93.47	91.19	9,394.33	6,106.83	35.38	4,086.66	4,086.80	1.65	382,738.36	830,242.71
13,426.00	93.03	91.26	9,389.00	6,101.50	33.37	4,180.49	4,180.61	0.47	382,736.35	830,336.53
13,521.00	92.77	91.03	9,384.19	6,096.69	31.48	4,275.34	4,275.46	0.37	382,734.45	830,431.39
13,615.00	92.86	91.24	9,379.58	6,092.08	29.62	4,369.21	4,369.31	0.24	382,732.59	830,525.26
13,709.00	92.59	90.73	9,375.11	6,087.61	28.00	4,463.09	4,463.18	0.61	382,730.98	830,619.14
13,803.00	91.54	90.37	9,371.72	6,084.22	27.10	4,557.03	4,557.11	1.18	382,730.08	830,713.07
13,891.00	91.54	90.37	9,369.35	6,081.85	26.53	4,644.99	4,645.07	0.00	382,729.51	830,801.04

BHL-13891.00°MD,91.54°INC,90.37°AZI, 9369.35°TVD, 4645.07°VS, 26.53°N, 4644.99°E



Pathfinder

Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Renegade "BPG" Federal
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
MD Reference: WELL @ 3287.50ft (Patriot #5 - 26.5' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(Ren#1H)rev		0.00	0.00	9,400.00	25.88	4,650.39	382,728.856	830,806.439	32° 2' 55.531 N	103° 23' 56.580 W
- survey misses target center by 31.12ft at 13891.00ft MD (9369.35 TVD, 26.53 N, 4644.99 E)										
- Point										

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,969.00	8,968.21	17.52	-23.36	KOP-8969.00'MD,0.53°INC,172.61°AZI,8968.21'TVD
9,760.00	9,440.27	4.57	515.77	EOC-9760.00'MD,90.84°INC,93.06°AZI,9440.27'TVD,10.37°DLS, 515.7
13,891.00	9,369.35	26.53	4,644.99	BHL-13891.00'MD,91.54°INC,90.37°AZI, 9369.35'TVD, 4645.07'VS, 26

Checked By: _____ Approved By: _____ Date: _____



Project: Lea County
Site: Renegade "BPG" Federal
Well: #1H
Wellbore: OH
Plan: Plan #4 (#1H/OH)

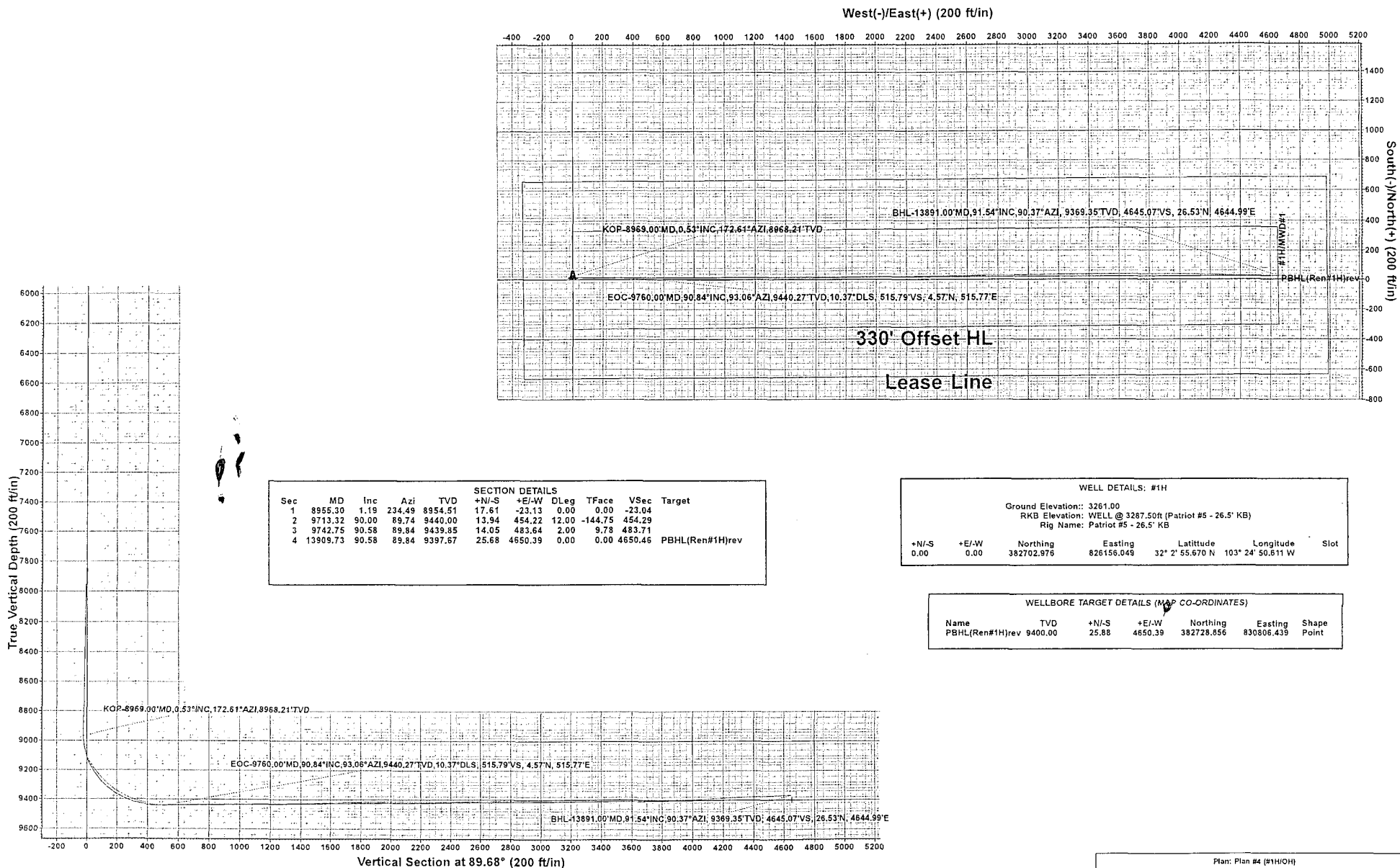


Azimuths to Grid North
True North: -0.49°
Magnetic North: 7.09°

Magnetic Field
Strength: 48636.8snT
Dip Angle: 60.09°
Date: 09/17/2010
Model: IGRF200510

PROJECT DETAILS: Lea County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

PATHFINDER
A Schlumberger Company



Plan: Plan #4 (#1H/OH)

Created By: Nate Bingham Date: 10/18, October 18 2010



SUR @ D-18-26s-35e, 660/N & 330/W
BHL @ A-18-26s-35e, 633/N & 4975/W
API # 30-025-39768

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

***RENEGADE BPG FEDERAL #1H -
HORIZONTAL***

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) BRYANT BLAKEMORE
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10-08-10 TO 10-17-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
RENEGADE BPG FEDERAL #1H- HORIZONTAL
EDDY COUNTY, NM
RIG: PATRIOT #5

9. SURVEY CERTIFIED FROM: 8938 TO 13803 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4645.12 FEET ON A BEARING OF 89.67 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13891 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: 10/08/2010
Date Completed: 10/17/2010

YATES PETROLEUM CORPORATION
RENEGADE BPG FEDERAL #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT 5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: B. BLAKEMORE
J. GARCIA

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.255.6700 N LON: 103.24.50.6110 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 826156.0490 Y: 382702.9760
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.10° EAST TO GRID
Vertical Section Plane: 89.64
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3261.00' Ground To MSL

Measured Depth	13891.00	(feet)
Inclination	91.54	(deg)
Azimuth	90.37	(deg)
True Vertical Depth	9369.34	(feet)
Vertical Section	4645.12	(feet)
Survey X cord	830801.09	(feet)
Survey Y cord	382729.54	(feet)
Survey Lat	32.04876062 N	(deg)
Survey Lon	103.39906731 W	(deg)
Rectangular Corr. N/S	26.56 N	(feet)
Rectangular Corr. E/W	4645.04 E	(feet)
Closure Distance	4645.12	(feet)
Direction of Closure	89.67	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

RENEGADE BPG FEDERAL #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: B. BLAKEMORE

J. GARCIA

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.255.6700 N LON: 103.24.50.6110 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 826156.0490 Y: 382702.9760

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.10° EAST TO GRID

Vertical Section Plane: 89.64

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3261.00' Ground To MSL

Survey Calculations by RX5 V6.03B 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)
TIE IN TO MULTI-SHOT GYRO @ 8800' MD.										
8800.00	1.00	236.15	8799.24	0.00	-20.57	19.31 N	20.69 W	28.30@	313.02	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
8938.00	1.32	239.76	8937.21	138.00	-22.95	17.84 N	23.06 W	29.16@	307.72	0.24
8969.00	0.53	161.94	8968.21	31.00	-23.22	17.52 N	23.33 W	29.18@	306.91	4.24
9000.00	3.78	93.51	8999.18	31.00	-22.15	17.32 N	22.26 W	28.21@	307.89	11.67
9031.00	8.35	90.74	9030.00	31.00	-18.88	17.23 N	18.99 W	25.64@	312.22	14.77
9063.00	13.28	90.37	9061.42	32.00	-12.88	17.18 N	12.99 W	21.54@	322.91	15.41
9094.00	18.64	89.75	9091.22	31.00	-4.36	17.18 N	4.47 W	17.75@	345.42	17.30
9126.00	24.89	89.68	9120.92	32.00	7.50	17.24 N	7.39 E	18.76@	23.21	19.53
9157.00	29.28	90.21	9148.52	31.00	21.61	17.25 N	21.50 E	27.56@	51.27	14.18
9189.00	33.06	90.67	9175.89	32.00	38.17	17.11 N	38.06 E	41.73@	65.79	11.84
9220.00	35.70	91.87	9201.47	31.00	55.66	16.72 N	55.56 E	58.02@	73.25	8.79
9251.00	39.04	93.89	9226.11	31.00	74.44	15.76 N	74.35 E	76.00@	78.03	11.48
9283.00	42.21	94.52	9250.39	32.00	95.21	14.23 N	95.12 E	96.18@	81.49	9.99
9315.00	44.67	94.21	9273.63	32.00	117.14	12.56 N	117.06 E	117.73@	83.88	7.72
9346.00	46.34	93.37	9295.35	31.00	139.19	11.10 N	139.12 E	139.57@	85.44	5.72
9377.00	49.59	90.15	9316.11	31.00	162.19	10.41 N	162.13 E	162.46@	86.33	13.01
9409.00	53.38	87.99	9336.03	32.00	187.22	10.83 N	187.16 E	187.47@	86.69	12.97
9440.00	58.04	86.75	9353.49	31.00	212.81	12.01 N	212.73 E	213.07@	86.77	15.39
9471.00	61.64	86.76	9369.07	31.00	239.57	13.53 N	239.49 E	239.87@	86.77	11.61
9502.00	64.10	88.37	9383.20	31.00	267.14	14.69 N	267.05 E	267.46@	86.85	9.18
9534.00	66.48	90.24	9396.58	32.00	296.20	15.04 N	296.12 E	296.50@	87.09	9.14
9565.00	69.73	92.27	9408.14	31.00	324.95	14.41 N	324.87 E	325.19@	87.46	12.12
9596.00	73.34	93.38	9417.96	31.00	354.30	12.96 N	354.23 E	354.47@	87.91	12.13
9628.00	76.41	93.10	9426.31	32.00	385.13	11.21 N	385.07 E	385.23@	88.33	9.63



PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
RENEGADE BPG FEDERAL #1H
LEA COUNTY, NEW MEXICO
RIG:PATRIOT 5

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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)
9659.00	80.37	92.73	9432.54	31.00	415.44	9.67 N	415.39 E	415.50@	88.67	12.83
9760.00	90.84	93.06	9440.27	101.00	515.84	4.59 N	515.82 E	515.84@	89.49	10.37
9854.00	90.75	91.55	9438.97	94.00	609.73	0.81 N	609.73 E	609.74@	89.92	1.61
9949.00	91.28	90.88	9437.28	95.00	704.68	1.21 S	704.70 E	704.70@	90.10	0.90
10043.00	90.92	90.76	9435.48	94.00	798.64	2.55 S	798.67 E	798.67@	90.18	0.40
10137.00	90.66	90.19	9434.18	94.00	892.62	3.33 S	892.66 E	892.66@	90.21	0.67
10231.00	90.75	89.56	9433.03	94.00	986.61	3.13 S	986.65 E	986.65@	90.18	0.68
10325.00	91.19	89.24	9431.44	94.00	1080.60	2.14 S	1080.63 E	1080.63@	90.11	0.58
10419.00	90.92	89.13	9429.71	94.00	1174.58	0.81 S	1174.61 E	1174.61@	90.04	0.31
10513.00	90.84	88.84	9428.26	94.00	1268.56	0.86 N	1268.58 E	1268.58@	89.96	0.32
10606.00	90.48	88.12	9427.19	93.00	1361.53	3.33 N	1361.54 E	1361.54@	89.86	0.87
10699.00	91.36	88.44	9425.70	93.00	1454.49	6.12 N	1454.48 E	1454.50@	89.76	1.01
10769.00	91.98	87.95	9423.66	70.00	1524.44	8.32 N	1524.42 E	1524.44@	89.69	1.13
10884.00	91.10	88.33	9420.57	115.00	1639.36	12.05 N	1639.32 E	1639.36@	89.58	0.83
10978.00	91.10	88.11	9418.76	94.00	1733.31	14.97 N	1733.25 E	1733.32@	89.51	0.23
11072.00	91.01	89.39	9417.03	94.00	1827.28	17.02 N	1827.21 E	1827.29@	89.47	1.37
11166.00	90.40	89.42	9415.87	94.00	1921.28	18.00 N	1921.20 E	1921.29@	89.46	0.65
11260.00	90.31	89.39	9415.29	94.00	2015.27	18.97 N	2015.19 E	2015.28@	89.46	0.10
11355.00	89.78	88.93	9415.22	95.00	2110.27	20.37 N	2110.18 E	2110.28@	89.45	0.74
11448.00	90.22	89.32	9415.22	93.00	2203.27	21.79 N	2203.17 E	2203.28@	89.43	0.63
11542.00	89.78	88.94	9415.22	94.00	2297.26	23.21 N	2297.16 E	2297.28@	89.42	0.62
11636.00	90.66	89.50	9414.86	94.00	2391.26	24.49 N	2391.15 E	2391.28@	89.41	1.11
11730.00	90.84	89.29	9413.63	94.00	2485.25	25.49 N	2485.14 E	2485.27@	89.41	0.29
11825.00	90.92	89.36	9412.17	95.00	2580.24	26.60 N	2580.12 E	2580.26@	89.41	0.11
11919.00	91.10	89.42	9410.51	94.00	2674.22	27.60 N	2674.10 E	2674.24@	89.41	0.20
12013.00	90.84	89.21	9408.92	94.00	2768.20	28.73 N	2768.08 E	2768.23@	89.41	0.36
12108.00	91.19	88.97	9407.24	95.00	2863.18	30.24 N	2863.05 E	2863.21@	89.39	0.45
12202.00	91.36	88.92	9405.14	94.00	2957.16	31.97 N	2957.01 E	2957.19@	89.38	0.19

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
RENEGADE BPG FEDERAL #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

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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)
12296.00	91.45	89.28	9402.84	94.00	3051.12	33.44 N	3050.97 E	3051.16@	89.37	0.39
12391.00	91.36	89.26	9400.51	95.00	3146.09	34.65 N	3145.94 E	3146.13@	89.37	0.10
12485.00	90.40	88.92	9399.07	94.00	3240.07	36.15 N	3239.91 E	3240.11@	89.36	1.08
12575.00	90.57	89.86	9398.30	90.00	3330.07	37.10 N	3329.90 E	3330.11@	89.36	1.06
12673.00	90.84	90.12	9397.10	98.00	3428.06	37.12 N	3427.90 E	3428.10@	89.38	0.38
12767.00	90.04	89.76	9396.38	94.00	3522.06	37.22 N	3521.89 E	3522.09@	89.39	0.93
12861.00	88.72	89.43	9397.39	94.00	3616.05	37.88 N	3615.88 E	3616.08@	89.40	1.45
12955.00	88.90	90.06	9399.35	94.00	3710.03	38.30 N	3709.86 E	3710.06@	89.41	0.70
13050.00	90.22	90.29	9400.08	95.00	3805.02	38.01 N	3804.85 E	3805.04@	89.43	1.41
13144.00	89.69	90.08	9400.15	94.00	3899.01	37.71 N	3898.85 E	3899.04@	89.45	0.61
13238.00	91.98	90.77	9398.78	94.00	3992.99	37.01 N	3992.83 E	3993.01@	89.47	2.54
13332.00	93.47	91.19	9394.31	94.00	4086.85	35.41 N	4086.71 E	4086.86@	89.50	1.65
13426.00	93.03	91.26	9388.98	94.00	4180.67	33.40 N	4180.54 E	4180.67@	89.54	0.47
13521.00	92.77	91.03	9384.18	95.00	4275.51	31.50 N	4275.40 E	4275.51@	89.58	0.36
13615.00	92.86	91.24	9379.56	94.00	4369.37	29.64 N	4369.27 E	4369.37@	89.61	0.24
13709.00	92.59	90.73	9375.09	94.00	4463.23	28.03 N	4463.14 E	4463.23@	89.64	0.61
13803.00	91.54	90.37	9371.70	94.00	4557.16	27.13 N	4557.08 E	4557.16@	89.66	1.18
STRAIGHT LINE PROJECTION TO BIT @ 13891' MD.										
13891.00	91.54	90.37	9369.34	88.00	4645.12	26.56 N	4645.04 E	4645.12@	89.67	0.00



TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	RENEGADE "BPG" FEDERAL	#1H	
WELL LOCATION:	LEA COUNTY, NEW MEXICO		
COUNTY / STATE / COUNTRY:	LEA	NM	USA
RIG:	PATRIOT 5		
API WELL No:	30-025-39768		
JOB No:	700000321 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.09	LWD Calculated:	7.1
Agreed Upon:		7.1	
X =	826156.049000	Feet	Y = 382702.976000
		Feet	
SITE LATITUDE:	32.048797	SITE LONGITUDE:	103.414059
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	new mexico east
PROPOSED DRIFT DIRECTION:	89.64		
KELLY BUSHING ELEVATION:	26.5'		
ALTITUDE:	3261	Feet	WATER DEPTH: N/A
		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	8800		
DRIFT ANGLE:	1		
DRIFT DIRECTION:	236.15		
TRUE VERTICAL DEPTH:	8799.24		
VERTICAL SECTION:	-20.57		
RECTANGULAR COORDINATE (N / S) :	19.31 N		
RECTANGULAR COORDINATE (E / W) :	20.69 W		
CLOSURE DISTANCE / DIRECTION:	28.3	313.02	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MULTI SHOT GYRO		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	8950	TOTAL DEPTH:	16485
KICKOFF ANGLE:	0	MAX ANGLE:	90

PES Engineers: BRYANT BLAKEMORE

JESUS GARCIA

**Signature of both field engineers required if applicable

Directional Driller: IRBY LEJUNE

DATE: 9-Oct-2010

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* YATES PETROLEUM *

JOB NUMBER: SVCO-100829

WELL NAME: RENEGADE BPG FEDERAL #1H

LOCATION: LEA COUNTY, NEW MEXICO

SURVEY DATE: OCTOBER 03, 2010

SURVEY ENGINEER: S. SMITH

MAGNETIC DECLINATION: 07.10 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 089.64
SURF. ELEVATION: 27

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

***** THIS DIRECTIONAL SURVEY REPORT IS *****
** CORRECT TO THE BEST OF MY KNOWLEDGE **
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
**

** COMPANY REPRESENTATIVE **

COMMENTS: PATRIOT 5
RKB 27'
MIKEL@YATESPETROLEUM.COM
TBUSSELL@YATESPETROLEUM.COM

MS ENERGY SERVICES
ODESSA, TEXAS

JOB NUMBER: SVCO-100829

WELL NAME: RENEGADE BPG FEDERAL #1H

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE DEPARTURE	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	200.00	-0.20	-0.389	00.25	332.65	0.39 N 0.20 W	0.13	0.25	0.44 AT	332.65
400.0	400.00	-0.32	-1.207	00.25	009.60	1.21 N 0.33 W	0.08	0.16	1.25 AT	344.77
600.0	600.00	0.18	-1.562	00.25	099.49	1.56 N 0.17 E	0.18	0.35	1.57 AT	006.38
800.0	800.00	0.29	-1.778	00.25	311.40	1.78 N 0.28 E	0.24	0.48	1.80 AT	008.88
1000.0	999.99	-0.35	-2.376	00.25	314.38	2.37 N 0.36 W	0.01	0.01	2.40 AT	351.35
1200.0	1199.99	-1.53	-2.709	00.50	271.36	2.70 N 1.55 W	0.18	0.36	3.11 AT	330.21
1400.0	1399.98	-3.24	-2.957	00.50	284.34	2.94 N 3.26 W	0.06	0.11	4.39 AT	311.98
1600.0	1599.97	-5.37	-3.466	00.75	282.32	3.43 N 5.39 W	0.13	0.25	6.39 AT	302.50
1800.0	1799.95	-7.91	-4.084	00.75	284.29	4.03 N 7.93 W	0.01	0.03	8.90 AT	296.95
2000.0	1999.95	-9.43	-4.771	00.25	324.27	4.71 N 9.46 W	0.29	0.58	10.57 AT	296.48
2200.0	2199.95	-9.28	-4.966	00.25	111.25	4.91 N 9.31 W	0.24	0.48	10.52 AT	297.81
2400.0	2399.94	-8.06	-5.124	00.50	068.23	5.07 N 8.09 W	0.18	0.36	9.55 AT	302.10
2600.0	2599.93	-6.02	-5.900	00.75	069.20	5.86 N 6.06 W	0.13	0.25	8.43 AT	314.07
2800.0	2799.89	-2.24	-6.922	01.50	077.18	6.91 N 2.28 W	0.38	0.76	7.27 AT	341.74
3000.0	2999.84	1.41	-8.852	01.00	038.15	8.86 N 1.35 E	0.48	0.96	8.96 AT	008.67
3200.0	3199.81	3.60	-12.098	01.25	030.13	12.12 N 3.52 E	0.15	0.29	12.62 AT	016.22
3400.0	3399.77	4.63	-15.721	01.00	357.11	15.75 N 4.53 E	0.34	0.68	16.39 AT	016.05
3600.0	3599.74	3.80	-19.039	01.00	334.09	19.06 N 3.68 E	0.20	0.40	19.41 AT	010.93
3800.0	3799.73	2.66	-20.808	00.25	296.07	20.82 N 2.53 E	0.41	0.82	20.98 AT	006.92
4000.0	3999.72	1.41	-21.175	00.50	281.05	21.18 N 1.28 E	0.13	0.27	21.22 AT	003.45
4200.0	4199.71	0.45	-22.652	00.75	355.02	22.65 N 0.31 E	0.39	0.78	22.66 AT	000.78
4400.0	4399.68	-0.42	-25.999	01.25	339.01	26.00 N 0.59 W	0.28	0.57	26.00 AT	358.71
4600.0	4599.67	-0.33	-28.189	00.50	079.85	28.19 N 0.51 W	0.72	1.43	28.19 AT	358.96
4800.0	4799.66	1.06	-27.648	00.50	141.83	27.65 N 0.89 E	0.26	0.51	27.67 AT	001.84
5000.0	4999.59	4.60	-24.425	02.25	129.82	24.45 N 4.44 E	0.88	1.76	24.85 AT	010.30
5200.0	5199.53	7.73	-21.029	00.50	170.78	21.08 N 7.60 E	0.95	1.90	22.41 AT	019.83
5400.0	5399.53	7.43	-20.221	00.25	276.76	20.27 N 7.31 E	0.31	0.62	21.54 AT	019.82
5600.0	5599.53	6.63	-20.501	00.25	300.74	20.54 N 6.50 E	0.05	0.10	21.55 AT	017.55
5800.0	5799.52	5.98	-21.070	00.25	321.71	21.11 N 5.85 E	0.05	0.09	21.90 AT	015.50
6000.0	5999.52	5.25	-22.155	00.50	327.69	22.19 N 5.12 E	0.13	0.25	22.77 AT	012.98
6200.0	6199.52	4.65	-23.308	00.25	340.67	23.34 N 4.50 E	0.13	0.26	23.77 AT	010.93
6400.0	6399.51	3.80	-24.818	00.75	326.65	24.84 N 3.64 E	0.26	0.51	25.11 AT	008.34
6600.0	6599.50	2.31	-26.326	00.50	297.63	26.34 N 2.15 E	0.20	0.40	26.43 AT	004.66
6800.0	6799.49	1.39	-27.143	00.25	338.60	27.15 N 1.22 E	0.18	0.35	27.18 AT	002.56
7000.0	6999.49	0.92	-28.364	00.50	338.58	28.37 N 0.74 E	0.13	0.25	28.38 AT	001.49
7200.0	7199.48	0.49	-29.600	00.25	344.54	29.60 N 0.30 E	0.13	0.25	29.60 AT	000.59
7400.0	7399.48	0.03	-30.283	00.25	306.51	30.28 N 0.16 W	0.08	0.16	30.28 AT	359.69
7600.0	7599.48	-1.19	-30.679	00.50	278.49	30.67 N 1.38 W	0.15	0.30	30.70 AT	357.43
7800.0	7799.47	-2.88	-30.541	00.50	251.47	30.52 N 3.07 W	0.12	0.23	30.68 AT	354.26
8000.0	7999.44	-5.99	-28.991	01.50	240.42	28.95 N 6.17 W	0.51	1.01	29.60 AT	347.96
8200.0	8199.37	-10.49	-26.311	01.50	237.26	26.25 N 10.65 W	0.04	0.08	28.32 AT	337.91
8400.0	8399.31	-14.54	-23.741	01.25	237.24	23.65 N 14.69 W	0.13	0.25	27.84 AT	328.16
8600.0	8599.27	-17.75	-21.487	01.00	231.20	21.37 N 17.88 W	0.14	0.28	27.87 AT	320.08
8800.0	8799.24	-20.57	-19.439	01.00	236.15	19.31 N 20.69 W	0.04	0.09	28.30 AT	313.02
9000.0	8999.20	-23.80	-17.208	01.25	234.11	17.06 N 23.91 W	0.13	0.25	29.37 AT	305.51
9200.0	9199.13	-27.93	-13.994	01.75	230.06	13.82 N 28.02 W	0.26	0.51	31.24 AT	296.25
9300.0	9299.08	-30.37	-11.818	02.00	226.01	11.63 N 30.44 W	0.28	0.28	32.59 AT	290.90

 * THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
 * 9300.00 FEET EQUALS 32.59 FEET AT 290.90 *



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DIRECTIONAL SURVEY REPORT

SUR @ D-18-26s-35e, 660/N & 330/W
BHL @ A-18-26s-35e, 633/N & 4975/W
API # 30-025-39768

YATES PETROLEUM
RENEGADE BPG FEDERAL #1H - SHC
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) BRYANT BLAKEMORE
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 09-24-10 TO 09-27-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
RENEGADE BPG FEDERAL #1H - SHC
EDDY COUNTY, NM
RIG: PATRIOT #5
9. SURVEY CERTIFIED FROM: 1210 TO 5308 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 26.72 FEET ON A BEARING OF 35.82 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 5389 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: 09/24/2010
Date Completed: 09/27/2010

YATES PETROLEUM CORPORATION
RENEGADE "BPG" FEDERAL #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT 5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: B. BLAKEMORE
B. ARMER

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.255.6700 N LON: 103.24.50.6110 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 826156.0490 Y: 382702.9760
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.10° EAST TO GRID
Vertical Section Plane: 89.64
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3261.00' Ground To MSL

Measured Depth	5389.00	(feet)
Inclination	0.35	(deg)
Azimuth	203.05	(deg)
True Vertical Depth	5388.41	(feet)
Vertical Section	15.77	(feet)
Survey X cord	826171.68	(feet)
Survey Y cord	382724.64	(feet)
Survey Lat	32.04885639 N	(deg)
Survey Lon	103.41400756 W	(deg)
Rectangular Corr. N/S	21.66 N	(feet)
Rectangular Corr. E/W	15.64 E	(feet)
Closure Distance	26.72	(feet)
Direction of Closure	35.82	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/02

Tie-in Date: 09/24/2010

Date Completed: 09/27/2010

YATES PETROLEUM CORPORATION

RENEGADE "BPG" FEDERAL #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: B. BLAKEMORE

B. ARMER

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.2556700 N LON: 103.24506110 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 826156.0490 Y: 382702.9760

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.10° EAST TO GRID

Vertical Section Plane: 89.64

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3261.00' Ground To MSL

Survey Calculations by RX5 V6.03B 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)
ASSUMED VERTICAL WELLBORE @ 1100' MD										
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00@	0.00	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1210.00	0.62	299.74	1210.00	110.00	-0.51	0.30 N	0.52 W	0.60@	299.74	0.56
1398.00	0.88	297.02	1397.98	188.00	-2.68	1.46 N	2.69 W	3.06@	298.46	0.14
1585.00	0.88	289.70	1584.96	187.00	-5.30	2.59 N	5.32 W	5.92@	295.99	0.06
1774.00	0.70	296.96	1773.94	189.00	-7.69	3.60 N	7.71 W	8.51@	295.05	0.11
1963.00	0.35	331.85	1962.93	189.00	-8.98	4.64 N	9.01 W	10.14@	297.22	0.24
2150.00	0.18	62.73	2149.93	187.00	-8.99	5.28 N	9.02 W	10.45@	300.31	0.21
2338.00	0.53	78.86	2337.93	188.00	-7.87	5.58 N	7.91 W	9.68@	305.20	0.19
2526.00	0.79	87.52	2525.92	188.00	-5.72	5.80 N	5.76 W	8.18@	315.22	0.15
2714.00	1.49	82.88	2713.88	188.00	-2.00	6.16 N	2.04 W	6.49@	341.69	0.38
2903.00	1.49	46.17	2902.82	189.00	2.22	8.17 N	2.17 E	8.45@	14.89	0.50
3091.00	0.97	37.31	3090.77	188.00	4.97	11.13 N	4.90 E	12.16@	23.77	0.29
3279.00	1.85	35.28	3278.72	188.00	7.71	14.87 N	7.62 E	16.71@	27.13	0.47
3468.00	1.76	9.82	3467.62	189.00	10.00	20.22 N	9.87 E	22.50@	26.03	0.42
3657.00	0.26	310.31	3656.59	189.00	10.19	23.36 N	10.04 E	25.42@	23.27	0.87
3845.00	0.35	272.32	3844.59	188.00	9.29	23.66 N	9.14 E	25.36@	21.13	0.12
4033.00	0.53	338.15	4032.58	188.00	8.40	24.49 N	8.25 E	25.84@	18.61	0.27
4221.00	0.79	352.34	4220.57	188.00	7.92	26.58 N	7.75 E	27.69@	16.26	0.16
4411.00	0.88	347.43	4410.55	190.00	7.44	29.30 N	7.26 E	30.19@	13.91	0.06
4600.00	0.79	73.00	4599.54	189.00	8.38	31.10 N	8.19 E	32.16@	14.75	0.60
4787.00	0.88	166.96	4786.53	187.00	9.93	30.08 N	9.74 E	31.62@	17.95	0.65
4975.00	1.93	131.09	4974.47	188.00	12.62	26.59 N	12.46 E	29.36@	25.10	0.70
5163.00	0.79	149.66	5162.41	188.00	15.64	23.39 N	15.50 E	28.06@	33.53	0.64
5308.00	0.35	203.05	5307.41	145.00	15.97	22.12 N	15.83 E	27.20@	35.59	0.45

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
RENEGADE "BPG" FEDERAL #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 02/02

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)
STRAIGHT LINE PROJECTION TO THE BIT @ 5389' MD.										
5389.00	0.35	203.05	5388.41	81.00	15.77	21.66	N 15.64 E	26.72@	35.82	0.00



TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	RENEGADE "BPG" FEDERAL	#1H	
WELL LOCATION:	LEA COUNTY, NEW MEXICO		
COUNTY / STATE / COUNTRY:	LEA	NM	USA
RIG:	PATRIOT 5		
API WELL No:	30-025-39768		
JOB No:	700000321 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.09	LWD Calculated:	7.1
		Agreed Upon:	7.1
X =	826156.049000	Feet	Y = 382702.976000
			Feet
SITE LATITUDE:	32.048797	SITE LONGITUDE:	103.414059
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	new mexico east
PROPOSED DRIFT DIRECTION:	89.64		
KELLY BUSHING ELEVATION:	26.5'		
ALTITUDE:	3160	Feet	WATER DEPTH: N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	1100		
DRIFT ANGLE:	0		
DRIFT DIRECTION:	0		
TRUE VERTICAL DEPTH:	1100		
VERTICAL SECTION:	0		
RECTANGULAR COORDINATE (N / S) :	0		
RECTANGULAR COORDINATE (E / W) :	0		
CLOSURE DISTANCE / DIRECTION:	0	0	
SURVEY CALCULATION METHOD:	AA ☐	MC ☐	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):			
COPY OF TIE-IN SURVEY REPORT	☐ YES ☒ NO		

WELL PLAN

KICKOFF DEPTH:	1100	TOTAL DEPTH:	10700
KICKOFF ANGLE:	0	MAX ANGLE:	0

PES Engineers: BRYANT BLAKEMORE
BRENT ARMOR

**Signature of both field engineers required if applicable

Directional Driller: IRBY LEJUNE

DATE: 23-Sep-2010



SUR @ D-18-26s-35e, 660/N & 330/W
BHL @ A-18-26s-35e, 633/N & 4975/W
API # 30-025-39768

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM
RENEGADE BPG FEDERAL #1H
EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA



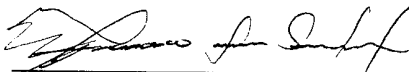
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) BRYANT BLAKEMORE
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10-02-10 TO 10-06-10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
RENEGADE BPG FEDERAL #1H
EDDY COUNTY, NM
RIG: PATRIOT #5

9. SURVEY CERTIFIED FROM: 9418 TO 10721 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 58.14 FEET ON A BEARING OF 260.08 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 10780 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: 10/02/2010
Date Completed: 10/06/2010

YATES PETROLEUM CORPORATION
RENEGADE BPG FEDERAL #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT 5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: B. BLAKEMORE

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.255.6700 N LON: 103.24.50.6110 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 826156.0490 Y: 382702.9760
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.10° EAST TO GRID
Vertical Section Plane: 89.64
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3261.00' Ground To MSL

Measured Depth	10780.00	(feet)
Inclination	1.32	(deg)
Azimuth	286.74	(deg)
True Vertical Depth	10778.54	(feet)
Vertical Section	-57.33	(feet)
Survey X cord	826098.78	(feet)
Survey Y cord	382692.96	(feet)
Survey Lat	32.04877101 N	(deg)
Survey Lon	103.41424370 W	(deg)
Rectangular Corr. N/S	10.02 S	(feet)
Rectangular Corr. E/W	57.27 W	(feet)
Closure Distance	58.14	(feet)
Direction of Closure	260.08	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/01

Tie-in Date: 10/02/2010

Date Completed: 10/06/2010

YATES PETROLEUM CORPORATION

RENEGADE BPG FEDERAL #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: B. BLAKEMORE

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.255.6700 N LON: 103.24.50.6110 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 826156.0490 Y: 382702.9760

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.10° EAST TO GRID

Vertical Section Plane: 89.64

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3261.00' Ground To MSL

Survey Calculations by RX5 V6.03B 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)
TIE IN TO MULTI SHOT GYRO @ 9300' MD.										
9300.00	2.00	226.01	9299.08	0.00	-30.37	11.63 N	30.44 W	32.59@	290.91	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
9418.00	2.29	236.61	9417.00	118.00	-33.83	8.90 N	33.89 W	35.04@	284.72	0.42
9512.00	1.49	225.70	9510.95	94.00	-36.29	7.02 N	36.33 W	37.00@	280.93	0.93
9607.00	1.67	221.18	9605.91	95.00	-38.10	5.11 N	38.13 W	38.47@	277.63	0.23
9701.00	2.37	218.93	9699.85	94.00	-40.23	2.57 N	40.25 W	40.33@	273.65	0.75
9795.00	1.58	221.83	9793.79	94.00	-42.34	0.09 N	42.34 W	42.34@	270.12	0.85
9889.00	1.58	223.62	9887.76	94.00	-44.11	1.81 S	44.10 W	44.13@	267.65	0.05
9984.00	1.76	220.34	9982.72	95.00	-45.97	3.87 S	45.94 W	46.11@	265.18	0.21
10078.00	2.11	218.67	10076.67	94.00	-48.00	6.32 S	47.96 W	48.37@	262.49	0.38
10172.00	1.14	203.44	10170.63	94.00	-49.46	8.53 S	49.41 W	50.14@	260.20	1.12
10268.00	0.97	215.07	10266.61	96.00	-50.32	10.08 S	50.26 W	51.26@	258.66	0.28
10359.00	0.53	218.51	10357.60	91.00	-51.03	11.03 S	50.96 W	52.14@	257.78	0.49
10453.00	0.44	309.14	10451.60	94.00	-51.58	11.15 S	51.51 W	52.71@	257.79	0.74
10547.00	0.88	279.97	10545.59	94.00	-52.57	10.79 S	52.50 W	53.60@	258.38	0.57
10641.00	1.23	269.78	10639.58	94.00	-54.29	10.67 S	54.22 W	55.27@	258.86	0.42
10721.00	1.32	286.74	10719.56	80.00	-56.03	10.41 S	55.97 W	56.93@	259.46	0.48
STRAIGHT LINE PROJECTION TO THE BIT @ 10780' MD.										
10780.00	1.32	286.74	10778.54	59.00	-57.33	10.02 S	57.27 W	58.14@	260.08	0.00



TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	RENEGADE "BPG" FEDERAL	#1H	
WELL LOCATION:	LEA COUNTY, NEW MEXICO		
COUNTY / STATE / COUNTRY:	LEA	NM	USA
RIG:	PATRIOT 5		
API WELL No:	30-025-39768		
JOB No:	700000321 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):					
On Wall Plat:	7.09	LWD Calculated:	7.1	Agreed Upon:	7.1
X =	826156.049000	Feet	Y =	382702.976000	Feet
SITE LATITUDE:	32.048797	SITE LONGITUDE:	103.414059		
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	new mexico east		
PROPOSED DRIFT DIRECTION:	89.64				
KELLY BUSHING ELEVATION:	26.5'				
ALTITUDE:	3160	Feet	WATER DEPTH:	N/A	Feet

TIE-IN SURVEY

MEASURED DEPTH:	9300			
DRIFT ANGLE:	2			
DRIFT DIRECTION:	226.01			
TRUE VERTICAL DEPTH:	9299.08			
VERTICAL SECTION:	-30.37			
RECTANGULAR COORDINATE (N / S) :	11.63			
RECTANGULAR COORDINATE (E / W) :	-30.44			
CLOSURE DISTANCE / DIRECTION:	32.59	290.9		
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐	BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MULTI SHOT GYRO			
COPY OF TIE-IN SURVEY REPORT	☒ YES		☒ NO	

WELL PLAN

KICKOFF DEPTH:	9500	TOTAL DEPTH:	10700
KICKOFF ANGLE:	0	MAX ANGLE:	0

PES Engineers: BRYANT BLAKEMORE

**Signature of both field engineers required if applicable

Directional Driller: IRBY LEJUNE

DATE: 2-Oct-2010

SH2

MS ENERGY SERVICES
ODESSA, TEXAS

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

* **YATES PETROLEUM** *

JOB NUMBER: SVCO-100829

WELL NAME: RENEGADE BPG FEDERAL #1H

LOCATION: LEA COUNTY, NEW MEXICO

SURVEY DATE: OCTOBER 03, 2010

SURVEY ENGINEER: S. SMITH

MAGNETIC DECLINATION: 07.10 GRID NORTH

GYRO REFERENCE BEARING: GRID NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 089.64
SURF. ELEVATION: 27

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

***** THIS DIRECTIONAL SURVEY REPORT IS *****
***** CORRECT TO THE BEST OF MY KNOWLEDGE *****
***** AND IS SUPPORTED BY ACTUAL FIELD DATA! *****

COMMENTS: PATRIOT 5 *****
RKB 27' *****
MIKEL@YATESPETROLEUM.COM *****
TBUSSELL@YATESPETROLEUM.COM *****
***** COMPANY REPRESENTATIVE *****

MS ENERGY SERVICES
ODESSA, TEXAS

JOB NUMBER: SVCO-100829

WELL NAME: RENEGADE BPG FEDERAL #1H

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE DEPARTURE	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	200.00	-0.20	-0.389	00.25	332.65	0.39 N 0.20 W	0.13	0.25	0.44	AT 332.65
400.0	400.00	-0.32	-1.207	00.25	009.60	1.21 N 0.33 W	0.08	0.16	1.25	AT 344.77
600.0	600.00	0.18	-1.562	00.25	099.49	1.56 N 0.17 E	0.18	0.35	1.57	AT 006.38
800.0	800.00	0.29	-1.778	00.25	311.40	1.78 N 0.28 E	0.24	0.48	1.80	AT 008.88
1000.0	999.99	-0.35	-2.376	00.25	314.38	2.37 N 0.36 W	0.01	0.01	2.40	AT 351.35
1200.0	1199.99	-1.53	-2.709	00.50	271.36	2.70 N 1.55 W	0.18	0.36	3.11	AT 330.21
1400.0	1399.98	-3.24	-2.957	00.50	284.34	2.94 N 3.26 W	0.06	0.11	4.39	AT 311.98
1600.0	1599.97	-5.37	-3.466	00.75	282.32	3.43 N 5.39 W	0.13	0.25	6.39	AT 302.50
1800.0	1799.95	-7.91	-4.084	00.75	284.29	4.03 N 7.93 W	0.01	0.03	8.90	AT 296.95
2000.0	1999.95	-9.43	-4.771	00.25	324.27	4.71 N 9.46 W	0.29	0.58	10.57	AT 296.48
2200.0	2199.95	-9.28	-4.966	00.25	111.25	4.91 N 9.31 W	0.24	0.48	10.52	AT 297.81
2400.0	2399.94	-8.06	-5.124	00.50	068.23	5.07 N 8.09 W	0.18	0.36	9.55	AT 302.10
2600.0	2599.93	-6.02	-5.900	00.75	069.20	5.86 N 6.06 W	0.13	0.25	8.43	AT 314.07
2800.0	2799.89	-2.24	-6.922	01.50	077.18	6.91 N 2.28 W	0.38	0.76	7.27	AT 341.74
3000.0	2999.84	1.41	-8.852	01.00	038.15	8.86 N 1.35 E	0.48	0.96	8.96	AT 008.67
3200.0	3199.81	3.60	-12.098	01.25	030.13	12.12 N 3.52 E	0.15	0.29	12.62	AT 016.22
3400.0	3399.77	4.63	-15.721	01.00	357.11	15.75 N 4.53 E	0.34	0.68	16.39	AT 016.05
3600.0	3599.74	3.80	-19.039	01.00	334.09	19.06 N 3.68 E	0.20	0.40	19.41	AT 010.93
3800.0	3799.73	2.66	-20.808	00.25	296.07	20.82 N 2.53 E	0.41	0.82	20.98	AT 006.92
4000.0	3999.72	1.41	-21.175	00.50	281.05	21.18 N 1.28 E	0.13	0.27	21.22	AT 003.45
4200.0	4199.71	0.45	-22.652	00.75	355.02	22.65 N 0.31 E	0.39	0.78	22.66	AT 000.78
4400.0	4399.68	-0.42	-25.999	01.25	339.01	26.00 N 0.59 W	0.28	0.57	26.00	AT 358.71
4600.0	4599.67	-0.33	-28.189	00.50	079.85	28.19 N 0.51 W	0.72	1.43	28.19	AT 358.96
4800.0	4799.66	1.06	-27.648	00.50	141.83	27.65 N 0.89 E	0.26	0.51	27.67	AT 001.84
5000.0	4999.59	4.60	-24.425	02.25	129.82	24.45 N 4.44 E	0.88	1.76	24.85	AT 010.30
5200.0	5199.53	7.73	-21.029	00.50	170.78	21.08 N 7.60 E	0.95	1.90	22.41	AT 019.83
5400.0	5399.53	7.43	-20.221	00.25	276.76	20.27 N 7.31 E	0.31	0.62	21.54	AT 019.82
5600.0	5599.53	6.63	-20.501	00.25	300.74	20.54 N 6.50 E	0.05	0.10	21.55	AT 017.55
5800.0	5799.52	5.98	-21.070	00.25	321.71	21.11 N 5.85 E	0.05	0.09	21.90	AT 015.50
6000.0	5999.52	5.25	-22.155	00.50	327.69	22.19 N 5.12 E	0.13	0.25	22.77	AT 012.98
6200.0	6199.52	4.65	-23.308	00.25	340.67	23.34 N 4.50 E	0.13	0.26	23.77	AT 010.93
6400.0	6399.51	3.80	-24.818	00.75	326.65	24.84 N 3.64 E	0.26	0.51	25.11	AT 008.34
6600.0	6599.50	2.31	-26.326	00.50	297.63	26.34 N 2.15 E	0.20	0.40	26.43	AT 004.66
6800.0	6799.49	1.39	-27.143	00.25	338.60	27.15 N 1.22 E	0.18	0.35	27.18	AT 002.56
7000.0	6999.49	0.92	-28.364	00.50	338.58	28.37 N 0.74 E	0.13	0.25	28.38	AT 001.49
7200.0	7199.48	0.49	-29.600	00.25	344.54	29.60 N 0.30 E	0.13	0.25	29.60	AT 000.59
7400.0	7399.48	0.03	-30.283	00.25	306.51	30.28 N 0.16 W	0.08	0.16	30.28	AT 359.69
7600.0	7599.48	-1.19	-30.679	00.50	278.49	30.67 N 1.38 W	0.15	0.30	30.70	AT 357.43
7800.0	7799.47	-2.88	-30.541	00.50	251.47	30.52 N 3.07 W	0.12	0.23	30.68	AT 354.26
8000.0	7999.44	-5.99	-28.991	01.50	240.42	28.95 N 6.17 W	0.51	1.01	29.60	AT 347.96
8200.0	8199.37	-10.49	-26.311	01.50	237.26	26.25 N 10.65 W	0.04	0.08	28.32	AT 337.91
8400.0	8399.31	-14.54	-23.741	01.25	237.24	23.65 N 14.69 W	0.13	0.25	27.84	AT 328.16
8600.0	8599.27	-17.75	-21.487	01.00	231.20	21.37 N 17.88 W	0.14	0.28	27.87	AT 320.08
8800.0	8799.24	-20.57	-19.439	01.00	236.15	19.31 N 20.69 W	0.04	0.09	28.30	AT 313.02
9000.0	8999.20	-23.80	-17.208	01.25	234.11	17.06 N 23.91 W	0.13	0.25	29.37	AT 305.51
9200.0	9199.13	-27.93	-13.994	01.75	230.06	13.82 N 28.02 W	0.26	0.51	31.24	AT 296.25
9300.0	9299.08	-30.37	-11.818	02.00	226.01	11.63 N 30.44 W	0.28	0.28	32.59	AT 290.90

*
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ***** *
* 9300.00 FEET EQUALS 32.59 FEET AT 290.90 *
* ***** *
