



An Operating Unit of Smith International, Inc.

HOBBS OCD

JUN 21 2011

RECEIVED

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM
BLACKBERRY BKB STATE #1H
LEA COUNTY, NEW MEXICO

SUR: P-6-21s-34e, 3300/S & 330/E
BHL: M-6-21s-34e, 3266/S & 4898/E
API # 30-025-39941

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder

6213 W Interstate 20
Midland, Texas 79706
Tel 432 687 1647
Fax 432 687 1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JAY FULTON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 03-10-11 TO 03-17-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
BLACKBERRY BKB STATE #1H
LEA COUNTY, NM
RIG: PATRIOT 5
9. SURVEY CERTIFIED FROM: 5833 TO 13147 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4563.69 FEET ON A BEARING OF 269.57 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13237 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: 03/03/2011
Date Completed: 03/17/2011

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT 5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: JAY FULTON
ZACH VEST

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.30.34.8431 N LON: 103.30.6.0690 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 797705.8530 Y: 550151.8290
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.16° EAST TO GRID
Vertical Section Plane: 269.45
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude: 3727.00' Ground To MSL

Measured Depth	13237.00	(feet)
Inclination	88.29	(deg)
Azimuth	270.10	(deg)
True Vertical Depth	8856.49	(feet)
Vertical Section	4563.68	(feet)
Survey X cord	793142.27	(feet)
Survey Y cord	550117.47	(feet)
Survey Lat	32.50968119 N	(deg)
Survey Lon	103.51648943 W	(deg)
Rectangular Corr. N/S	34.34 S	(feet)
Rectangular Corr. E/W	4563.56 W	(feet)
Closure Distance	4563.69	(feet)
Direction of Closure	269.57	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

BLACKBERRY "BKB" STATE #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JAY FULTON

ZACH VEST

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.30.34.8431 N LON: 103.30.6.0690 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 797705.8530 Y: 550151.8290

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.16° EAST TO GRID

Vertical Section Plane: 269.45

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3727.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIE-IN PROVIDED BY MULTI-SHOT GYROSCOPIC SURVEYS @ 5750' MD.										
5750.00	0.50	307.97	5749.15	0.00	-38.75	17.68 N	38.58 E	42.44@	65.38	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
5833.00	0.44	277.90	5832.15	83.00	-38.15	17.95 N	37.98 E	42.01@	64.71	0.30
6022.00	0.62	261.28	6021.14	189.00	-36.42	17.89 N	36.25 E	40.42@	63.73	0.12
6210.00	0.62	246.48	6209.13	188.00	-34.48	17.33 N	34.31 E	38.44@	63.20	0.09
6399.00	0.70	265.81	6398.12	189.00	-32.38	16.84 N	32.22 E	36.36@	62.41	0.12
6588.00	0.88	257.96	6587.10	189.00	-29.81	16.45 N	29.65 E	33.91@	60.98	0.11
6776.00	0.70	257.44	6775.08	188.00	-27.27	15.90 N	27.12 E	31.44@	59.61	0.10
6965.00	0.79	225.89	6964.06	189.00	-25.20	14.74 N	25.06 E	29.07@	59.53	0.22
7152.00	0.97	201.87	7151.04	187.00	-23.66	12.38 N	23.54 E	26.60@	62.27	0.22
7342.00	1.32	216.15	7341.01	190.00	-21.74	9.12 N	21.65 E	23.49@	67.16	0.24
7530.00	1.23	216.45	7528.96	188.00	-19.23	5.75 N	19.17 E	20.02@	73.32	0.05
7718.00	1.32	218.88	7716.91	188.00	-16.64	2.44 N	16.62 E	16.79@	81.66	0.06
7907.00	1.14	204.96	7905.87	189.00	-14.45	0.96 S	14.46 E	14.49@	93.81	0.18
8095.00	0.79	201.64	8093.84	188.00	-13.15	3.86 S	13.19 E	13.74@	106.32	0.19
8283.00	0.70	217.90	8281.83	188.00	-11.95	5.97 S	12.01 E	13.41@	116.45	0.12
8314.00	0.88	230.28	8312.82	31.00	-11.65	6.28 S	11.71 E	13.28@	118.19	0.80
8377.00	0.97	237.76	8375.82	63.00	-10.82	6.87 S	10.88 E	12.87@	122.26	0.24
8408.00	2.81	253.75	8406.80	31.00	-9.86	7.22 S	9.93 E	12.28@	126.02	6.12
8439.00	7.03	261.89	8437.68	31.00	-7.25	7.70 S	7.32 E	10.63@	136.44	13.76
8471.00	12.13	266.99	8469.22	32.00	-1.95	8.16 S	2.02 E	8.40@	166.06	16.14
8502.00	17.59	268.35	8499.17	31.00	6.00	8.46 S	5.92 W	10.32@	214.97	17.65
8533.00	21.63	270.81	8528.37	31.00	16.40	8.52 S	16.32 W	18.41@	242.44	13.30
8565.00	24.36	271.73	8557.82	32.00	28.89	8.23 S	28.81 W	29.97@	254.05	8.60
8596.00	26.64	272.17	8585.80	31.00	42.22	7.78 S	42.15 W	42.86@	259.55	7.38

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 02/04

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)
8628.00	29.63	272.95	8614.02	32.00	57.29	7.10 S	57.22 W	57.66@	262.93	9.41
8659.00	32.80	272.77	8640.53	31.00	73.32	6.30 S	73.27 W	73.54@	265.09	10.23
8691.00	36.58	272.02	8666.83	32.00	91.51	5.54 S	91.46 W	91.63@	266.53	11.89
8722.00	39.57	270.87	8691.23	31.00	110.61	5.07 S	110.57 W	110.68@	267.38	9.91
8753.00	42.30	269.63	8714.65	31.00	130.92	4.98 S	130.88 W	130.97@	267.82	9.19
8785.00	45.20	269.05	8737.76	32.00	153.04	5.24 S	153.00 W	153.09@	268.04	9.15
8816.00	48.54	269.05	8758.95	31.00	175.66	5.62 S	175.62 W	175.71@	268.17	10.78
8848.00	52.32	268.95	8779.34	32.00	200.33	6.05 S	200.28 W	200.37@	268.27	11.81
8879.00	56.28	269.47	8797.42	31.00	225.49	6.39 S	225.44 W	225.53@	268.38	12.85
8910.00	60.06	270.18	8813.77	31.00	251.83	6.47 S	251.78 W	251.86@	268.53	12.35
8942.00	63.66	270.16	8828.86	32.00	280.04	6.39 S	279.99 W	280.06@	268.69	11.25
8973.00	66.30	270.43	8841.97	31.00	308.12	6.24 S	308.08 W	308.14@	268.84	8.55
9002.00	69.20	270.05	8852.95	29.00	334.96	6.13 S	334.92 W	334.97@	268.95	10.07
9033.00	73.16	269.73	8862.95	31.00	364.29	6.19 S	364.25 W	364.30@	269.03	12.81
9064.00	76.15	269.36	8871.15	31.00	394.19	6.42 S	394.14 W	394.20@	269.07	9.71
9096.00	78.61	268.32	8878.14	32.00	425.41	7.06 S	425.36 W	425.42@	269.05	8.32
9158.00	83.89	266.94	8887.57	62.00	486.63	9.60 S	486.56 W	486.66@	268.87	8.79
9190.00	86.53	266.40	8890.24	32.00	518.48	11.45 S	518.39 W	518.52@	268.73	8.42
9252.00	90.31	266.68	8891.95	62.00	580.37	15.19 S	580.25 W	580.44@	268.50	6.11
9284.00	90.66	268.10	8891.68	32.00	612.34	16.64 S	612.21 W	612.44@	268.44	4.57
9379.00	89.69	268.48	8891.39	95.00	707.32	19.48 S	707.17 W	707.44@	268.42	1.10
9473.00	90.66	268.94	8891.10	94.00	801.31	21.60 S	801.14 W	801.43@	268.46	1.14
9567.00	89.78	268.71	8890.74	94.00	895.30	23.52 S	895.12 W	895.43@	268.49	0.97
9661.00	90.22	270.46	8890.74	94.00	989.30	24.20 S	989.11 W	989.41@	268.60	1.92
9754.00	89.43	270.35	8891.02	93.00	1082.29	23.55 S	1082.11 W	1082.37@	268.75	0.86
9849.00	88.72	270.44	8892.56	95.00	1177.26	22.89 S	1177.09 W	1177.32@	268.89	0.75
9943.00	89.16	269.49	8894.30	94.00	1271.24	22.95 S	1271.08 W	1271.28@	268.97	1.11
10038.00	89.69	269.35	8895.25	95.00	1366.23	23.91 S	1366.07 W	1366.28@	269.00	0.58

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG:PATRIOT 5

Page 03/04

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)
10132.00	89.08	269.67	8896.26	94.00	1460.23	24.71 S	1460.06 W	1460.27@	269.03	0.73
10226.00	89.87	269.77	8897.12	94.00	1554.22	25.17 S	1554.05 W	1554.26@	269.07	0.85
10320.00	88.99	269.94	8898.06	94.00	1648.21	25.41 S	1648.05 W	1648.24@	269.12	0.95
10414.00	89.25	269.96	8899.50	94.00	1742.20	25.49 S	1742.04 W	1742.22@	269.16	0.28
10509.00	89.34	269.91	8900.67	95.00	1837.19	25.60 S	1837.03 W	1837.21@	269.20	0.11
10603.00	89.78	269.62	8901.39	94.00	1931.18	25.99 S	1931.02 W	1931.20@	269.23	0.56
10697.00	88.99	269.66	8902.40	94.00	2025.18	26.58 S	2025.02 W	2025.19@	269.25	0.84
10792.00	89.25	269.23	8903.86	95.00	2120.17	27.50 S	2120.00 W	2120.18@	269.26	0.53
10886.00	89.25	268.98	8905.09	94.00	2214.16	28.97 S	2213.98 W	2214.17@	269.25	0.27
10981.00	91.01	269.28	8904.87	95.00	2309.15	30.41 S	2308.97 W	2309.17@	269.25	1.88
11075.00	93.65	268.95	8901.05	94.00	2403.06	31.86 S	2402.87 W	2403.08@	269.24	2.83
11169.00	93.97	269.25	8894.81	94.00	2496.85	33.33 S	2496.65 W	2496.87@	269.24	0.47
11263.00	93.83	270.18	8888.41	94.00	2590.63	33.80 S	2590.43 W	2590.65@	269.25	1.00
11357.00	91.98	270.04	8883.65	94.00	2684.50	33.62 S	2684.30 W	2684.51@	269.28	1.97
11451.00	93.12	270.18	8879.47	94.00	2778.40	33.44 S	2778.21 W	2778.41@	269.31	1.22
11546.00	90.84	270.43	8876.18	95.00	2873.33	32.93 S	2873.14 W	2873.33@	269.34	2.42
11640.00	90.40	270.75	8875.17	94.00	2967.30	31.96 S	2967.13 W	2967.31@	269.38	0.58
11734.00	90.40	269.82	8874.51	94.00	3061.29	31.50 S	3061.13 W	3061.29@	269.41	0.99
11828.00	91.89	270.19	8872.63	94.00	3155.26	31.49 S	3155.11 W	3155.26@	269.43	1.63
11922.00	91.80	271.27	8869.61	94.00	3249.19	30.29 S	3249.05 W	3249.19@	269.47	1.15
12016.00	89.96	270.55	8868.16	94.00	3343.14	28.80 S	3343.02 W	3343.15@	269.51	2.10
12110.00	90.57	268.98	8867.73	94.00	3437.14	29.19 S	3437.02 W	3437.14@	269.51	1.79
12204.00	92.91	268.50	8864.87	94.00	3531.08	31.25 S	3530.94 W	3531.08@	269.49	2.54
12299.00	91.54	269.15	8861.19	95.00	3626.00	33.20 S	3625.85 W	3626.00@	269.48	1.60
12393.00	89.87	269.05	8860.03	94.00	3719.99	34.67 S	3719.83 W	3719.99@	269.47	1.78
12487.00	89.34	268.87	8860.68	94.00	3813.98	36.38 S	3813.81 W	3813.98@	269.45	0.60
12581.00	89.96	269.26	8861.25	94.00	3907.98	37.91 S	3907.79 W	3907.98@	269.44	0.78
12676.00	89.52	269.96	8861.68	95.00	4002.98	38.56 S	4002.79 W	4002.98@	269.45	0.87

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 04/04

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)
12770.00	91.89	270.65	8860.53	94.00	4096.95	38.06 S	4096.77 W	4096.95@	269.47	2.63
12864.00	91.98	270.76	8857.35	94.00	4190.88	36.90 S	4190.71 W	4190.88@	269.50	0.15
12958.00	92.24	270.90	8853.89	94.00	4284.78	35.54 S	4284.64 W	4284.79@	269.52	0.31
13053.00	89.78	270.13	8852.22	95.00	4379.75	34.69 S	4379.61 W	4379.75@	269.55	2.71
13147.00	88.29	270.10	8853.80	94.00	4473.72	34.50 S	4473.60 W	4473.73@	269.56	1.59
STRAIGHT LINE PROJECTION TO BIT @ 13237' MD.										
13237.00	88.29	270.10	8856.49	90.00	4563.68	34.34 S	4563.56 W	4563.69@	269.57	0.00



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	BLACKBERRY "BKB" STATE	1H	
WELL LOCATION:	LEA COUNTY		
COUNTY / STATE / COUNTRY:	LEA COUNTY	NEW MEXICO	USA
RIG:	PATRIOT 5		
API WELL No:	30-025-39941		
JOB No:	700001649 WT-WT		
P.O / AFE No.	10-280-0		
DIRECTIONAL COMPANY:	PATHFINDER ENERGY		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC).			
On Wall Plat:	7.16	LWD Calculated:	7.16
X = 797705.853000		Y = 550151.829000	
Feet		Feet	
SITE LATITUDE:	32 509679	SITE LONGITUDE:	103.501686
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	269.45		
KELLY BUSHING ELEVATION:	26.5		
ALTITUDE:	3727	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	5750		
DRIFT ANGLE:	0.5		
DRIFT DIRECTION:	307.97		
TRUE VERTICAL DEPTH	5749.15		
VERTICAL SECTION:	269.45		
RECTANGULAR COORDINATE (N / S) :	17.68		
RECTANGULAR COORDINATE (E / W) :	38.58		
CLOSURE DISTANCE / DIRECTION:	42.44	65.39	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	MS ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	8385.5	TOTAL DEPTH:	13224.19
KICKOFF ANGLE:	0	MAX ANGLE:	88.41

PES Engineers: JAY FULTON
ZACH VEST

**Signature of both field engineers required if applicable

Directional Driller IRBY LEJEUNE

DATE: 3-Mar-2011



A Schlumberger Company

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT #5

Fri Feb 18 09:03:10 2011

Coordinates

Latitude: 32.509679 N (32 deg. 30 min. 34.8431 sec.)
Longitude: 103.501686 W (-103 deg. 30 min. 6.0690 sec.)
Elevation: 3753.50 feet.
Calculation Date: Feb/18/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4726 degrees
Total Magnetic Field: 0.48827 gauss
Magnetic Declination: 7.613828 degrees
Horizontal Intensity: 0.240638 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.613828 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 797705.8530 feet
Y: 550151.8290 feet
True to Grid: (convergence) -0.446985 degrees
Magnetic to Grid: 7.166843 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.166843 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Field

Calculation

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY
Rig: PATRIOT 5

Thu Mar 03 13:22:37 2011

Coordinates

Latitude: 32.509679 N (32 deg. 30 min. 34.8431 sec.)
Longitude: 103.501686 W (-103 deg. 30 min. 6.0690 sec.)
Elevation: 3753.50 feet.
Calculation Date: Mar/03/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4716 degrees
Total Magnetic Field: 0.48823 gauss
Magnetic Declination: 7.609162 degrees
Horizontal Intensity: 0.240626 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.609162 Degr.

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 797705.8530 feet
Y: 550151.8290 feet
True to Grid: (convergence) -0.446985 degrees
Magnetic to Grid: 7.162177 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.162177 Degr.



An Operating Unit of Smith International, Inc.

HOBBS OCD

JUN 21 2011

RECEIVED

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM
BLACKBERRY BKB STATE #1H - SHC
LEA COUNTY, NEW MEXICO

SUR: P-6-21s-34e, 3300/S & 330/E
BHL: M-6-21s-34e, 3266/S & 4898/E
API # 30-025-39941

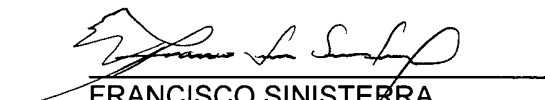
PREPARED BY: FRANCISCO SINISTERRA

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JAY FULTON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 03-10-11 TO 03-17-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
BLACKBERRY BKB STATE #1H - SHC
LEA COUNTY, NM
RIG: PATRIOT 5
9. SURVEY CERTIFIED FROM: 5833 TO 10073 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 23.93 FEET ON A BEARING OF 252.59 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 10073 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: 03/03/2011
Date Completed: 03/07/2011

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H SHC
LEA COUNTY, NEW MEXICO
Rig:PATRIOT 5
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: JAY FULTON
ZACH VEST

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.30.34.8431 N LON:103.30.6.0690 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 797705.8530 Y: 550151.8290
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.16° EAST TO GRID
Vertical Section Plane: 269.45
Survey Vert. Reference: 26.50' Rotary Table To Ground
Altitude:3727.00' Ground To MSL

Measured Depth	10073.00	(feet)
Inclination	0.79	(deg)
Azimuth	273.81	(deg)
True Vertical Depth	10071.41	(feet)
Vertical Section	22.90	(feet)
Survey X cord	797683.00	(feet)
Survey Y cord	550144.65	(feet)
Survey Lat	32.50965941 N	(deg)
Survey Lon	103.50176015 W	(deg)
Rectangular Corr. N/S	7.16 S	(feet)
Rectangular Corr. E/W	22.83 W	(feet)
Closure Distance	23.93	(feet)
Direction of Closure	252.59	(deg)
Dogleg Severity	0.29	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

BLACKBERRY "BKB" STATE #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JAY FULTON

ZACH VEST

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.30.34.8431 N LON: 103.30.6.0690 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 797705.8530 Y: 550151.8290

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.16° EAST TO GRID

Vertical Section Plane: 269.45

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3727.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)	
THE FOLLOWING ARE MULTI-SHOT GYROSCOPIC SURVEYS.									
0.00	0.00	0.00	0.01	0.00	0.05	0.00 N 0.05 W	0.05@ 274.94	0.00	
200.00	0.50	205.02	200.00	200.00	0.43	0.79 S 0.42 W	0.89@ 208.12	0.25	
400.00	0.75	176.97	399.99	200.00	0.75	2.88 S 0.72 W	2.97@ 194.02	0.19	
600.00	0.50	179.93	599.98	200.00	0.70	5.06 S 0.65 W	5.11@ 187.31	0.13	
800.00	0.25	211.91	799.97	200.00	0.94	6.31 S 0.88 W	6.37@ 187.94	0.16	
1000.00	0.25	205.88	999.97	200.00	1.37	7.07 S 1.30 W	7.19@ 190.42	0.01	
1200.00	0.25	218.86	1199.97	200.00	1.84	7.80 S 1.76 W	8.00@ 192.74	0.03	
1400.00	0.50	228.84	1399.97	200.00	2.78	8.72 S 2.70 W	9.12@ 197.18	0.13	
1600.00	0.50	205.81	1599.96	200.00	3.83	10.08 S 3.73 W	10.75@ 200.33	0.10	
1800.00	0.75	174.79	1799.95	200.00	4.11	12.17 S 3.99 W	12.80@ 198.17	0.21	
2000.00	1.00	72.77	1999.93	200.00	2.33	12.95 S 2.21 W	13.14@ 189.67	0.68	
2200.00	1.00	73.74	2199.90	200.00	-1.02	11.95 S 1.13 E	12.00@ 174.57	0.01	
2400.00	0.50	95.72	2399.89	200.00	-3.57	11.54 S 3.68 E	12.12@ 162.33	0.28	
2600.00	0.25	50.58	2599.88	200.00	-4.77	11.35 S 4.88 E	12.36@ 156.73	0.19	
2800.00	0.25	74.56	2799.88	200.00	-5.54	10.96 S 5.64 E	12.33@ 152.77	0.05	
3000.00	1.75	56.53	2999.84	200.00	-8.52	9.16 S 8.61 E	12.57@ 136.78	0.76	
3200.00	2.00	63.51	3199.74	200.00	-14.22	5.92 S 14.28 E	15.46@ 112.52	0.17	
3400.00	2.25	63.48	3399.60	200.00	-20.89	2.61 S 20.92 E	21.08@ 97.11	0.13	
3600.00	2.25	57.46	3599.45	200.00	-27.75	1.25 N 27.74 E	27.77@ 87.41	0.12	
3800.00	2.00	47.43	3799.31	200.00	-33.67	5.73 N 33.62 E	34.10@ 80.33	0.22	
4000.00	1.25	65.42	3999.23	200.00	-38.26	9.00 N 38.17 E	39.22@ 76.74	0.45	
4200.00	1.00	48.40	4199.19	200.00	-41.57	11.06 N 41.46 E	42.91@ 75.06	0.21	
4400.00	0.25	9.38	4399.18	200.00	-42.96	12.65 N 42.84 E	44.67@ 73.55	0.41	
4600.00	0.50	8.35	4599.17	200.00	-43.17	13.94 N 43.04 E	45.24@ 72.05	0.13	
4800.00	0.00	0.00	4799.17	200.00	-43.30	14.81 N 43.16 E	45.63@ 71.06	0.25	

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 02/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5000.00	0.25	279.51	4999.17	200.00	-42.87	14.88 N	42.73 E	45.25@	70.80	0.13
5200.00	0.25	317.58	5199.17	200.00	-42.15	15.27 N	42.01 E	44.70@	70.02	0.08
5400.00	0.50	287.74	5399.16	200.00	-41.03	15.86 N	40.88 E	43.85@	68.79	0.16
5600.00	0.50	318.81	5599.16	200.00	-39.64	16.78 N	39.48 E	42.90@	66.97	0.13
** TIE-IN PROVIDED BY MULTI-SHOT GYROSCOPIC SURVEYS @ 5750' MD.										
5750.00	0.50	307.97	5749.15	150.00	-38.70	17.68 N	38.53 E	42.39@	65.35	0.06
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
5833.00	0.44	277.90	5832.15	83.00	-38.10	17.95 N	37.93 E	41.96@	64.68	0.30
6022.00	0.62	261.28	6021.14	189.00	-36.37	17.89 N	36.20 E	40.38@	63.70	0.12
6210.00	0.62	246.48	6209.13	188.00	-34.43	17.33 N	34.26 E	38.40@	63.17	0.09
6399.00	0.70	265.81	6398.12	189.00	-32.33	16.84 N	32.17 E	36.31@	62.37	0.12
6588.00	0.88	257.96	6587.10	189.00	-29.76	16.45 N	29.60 E	33.87@	60.94	0.11
6776.00	0.70	257.44	6775.08	188.00	-27.22	15.90 N	27.07 E	31.39@	59.57	0.10
6965.00	0.79	225.89	6964.06	189.00	-25.15	14.74 N	25.01 E	29.03@	59.48	0.22
7152.00	0.97	201.87	7151.04	187.00	-23.61	12.38 N	23.49 E	26.55@	62.22	0.22
7342.00	1.32	216.15	7341.01	190.00	-21.69	9.12 N	21.60 E	23.45@	67.12	0.24
7530.00	1.23	216.45	7528.96	188.00	-19.18	5.75 N	19.12 E	19.97@	73.28	0.05
7718.00	1.32	218.88	7716.91	188.00	-16.59	2.44 N	16.57 E	16.74@	81.63	0.06
7907.00	1.14	204.96	7905.87	189.00	-14.40	0.96 S	14.41 E	14.44@	93.82	0.18
8095.00	0.79	201.64	8093.84	188.00	-13.10	3.86 S	13.14 E	13.70@	106.38	0.19
8283.00	0.70	217.90	8281.83	188.00	-11.90	5.97 S	11.96 E	13.37@	116.55	0.12
8472.00	0.70	222.04	8470.81	189.00	-10.40	7.74 S	10.47 E	13.02@	126.47	0.03
8660.00	1.06	238.39	8658.79	188.00	-8.13	9.51 S	8.22 E	12.57@	139.14	0.23
8849.00	1.06	261.06	8847.76	189.00	-4.91	10.69 S	5.01 E	11.81@	154.91	0.22
9037.00	1.49	266.93	9035.71	188.00	-0.74	11.10 S	0.85 E	11.13@	175.62	0.24
9225.00	2.02	272.15	9223.62	188.00	5.01	11.10 S	4.90 W	12.14@	203.82	0.29
9319.00	1.32	261.84	9317.58	94.00	7.74	11.19 S	7.63 W	13.55@	214.28	0.81
9414.00	1.32	266.82	9412.56	95.00	9.91	11.41 S	9.81 W	15.04@	220.68	0.12

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
 BLACKBERRY "BKB" STATE #1H
 LEA COUNTY, NEW MEXICO
 RIG: PATRIOT 5

Page 03/03

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)
9508.00	1.23	283.06	9506.53	94.00	11.98	11.24 S	11.87 W	16.35@	226.55	0.39
9695.00	1.49	296.51	9693.48	187.00	16.09	9.70 S	16.00 W	18.71@	238.77	0.22
9884.00	1.06	290.71	9882.43	189.00	19.91	7.99 S	19.83 W	21.38@	248.06	0.24
9979.00	0.97	287.25	9977.42	95.00	21.49	7.44 S	21.42 W	22.68@	250.85	0.12
10073.00	0.79	273.81	10071.41	94.00	22.90	7.16 S	22.83 W	23.93@	252.59	0.29

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM CORPORATION		
LEASE / WELL No.:	BLACKBERRY "BKB" STATE	1H	
WELL LOCATION:	LEA COUNTY		
COUNTY / STATE / COUNTRY:	LEA COUNTY	NEW MEXICO	USA
RIG:	PATRIOT 5		
API WELL No:	30-025-39941		
JOB No	700001649 WT-WT		
P.O. / AFE No.	10-280-0		
DIRECTIONAL COMPANY:	PATHFINDER ENERGY		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.16	LWD Calculated:	7.16
		Agreed Upon:	7.16
X =	797705.853000	Feet	Y = 550151.829000
			Feet
SITE LATITUDE:	32.509679	SITE LONGITUDE:	103.501686
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	269.45		
KELLY BUSHING ELEVATION:	26.5		
ALTITUDE:	3727	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	5750		
DRIFT ANGLE:	0.5		
DRIFT DIRECTION:	307.97		
TRUE VERTICAL DEPTH:	5749.15		
VERTICAL SECTION:	269.45		
RECTANGULAR COORDINATE (N / S) :	17.68		
RECTANGULAR COORDINATE (E / W) :	38.58		
CLOSURE DISTANCE / DIRECTION:	42.44	65.39	
SURVEY CALCULATION METHOD:	AA ☐ MC ☒ RC ☐ BT ☐		
SOURCE OF TIE-IN DATA (COMPANY):	MS ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	8385.5	TOTAL DEPTH:	13224.19
KICKOFF ANGLE:	0	MAX ANGLE:	88.41

PÉS Engineers. JAY FULTON

ZACH VEST

**Signature of both field engineers required if applicable

Directional Driller. IRBY LEJEUNE

DATE: 3-Mar-2011



A Schlumberger Company **PathFinder Energy Services, Inc.**

Magnetic & Grid Calculations

YATES PETROLEUM
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
Rig: PATRIOT #5

Fri Feb 18 09:03:10 2011

Coordinates

Latitude: 32.509679 N (32 deg. 30 min. 34.8431 sec.)
Longitude: 103.501686 W (-103 deg. 30 min. 6.0690 sec.)
Elevation: 3753.50 feet.
Calculation Date: Feb/18/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4726 degrees
Total Magnetic Field: 0.48827 gauss
Magnetic Declination: 7.613828 degrees
Horizontal Intensity: 0.240638 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.613828 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 797705.8530 feet
Y: 550151.8290 feet
True to Grid: (convergence) -0.446985 degrees
Magnetic to Grid: 7.166843 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.166843 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY
Rig: PATRIOT 5

Field
Calculation

Thu Mar 03 13:22:37 2011

Coordinates

Latitude: 32.509679 N (32 deg. 30 min. 34.8431 sec.)
Longitude: 103.501686 W (-103 deg. 30 min. 6.0690 sec.)
Elevation: 3753.50 feet.
Calculation Date: Mar/03/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4716 degrees
Total Magnetic Field: 0.48823 gauss
Magnetic Declination: 7.609162 degrees
Horizontal Intensity: 0.240626 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.609162 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 797705.8530 feet
Y: 550151.8290 feet
True to Grid: (convergence) -0.446985 degrees
Magnetic to Grid: 7.162177 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.162177 Degs.

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION

BLACKBERRY "BKB" STATE #1H

LEA COUNTY, NEW MEXICO

Rig: PATRIOT 5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JAY FULTON

ZACH VEST

HOBBS OCD

JUN 21 2011

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.30.34.8431 N LON: 103.30.6.0690 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 797705.8530 Y: 550151.8290

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.16° EAST TO GRID

Vertical Section Plane: 269.45

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 3727.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	RECEIVED Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIE-IN PROVIDED BY MULTI-SHOT GYROSCOPIC SURVEYS @ 5750' MD.										
5750.00	0.50	307.97	5749.15	0.00	-38.75	17.68 N	38.58 E	42.44@	65.38	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
5833.00	0.44	277.90	5832.15	83.00	-38.15	17.95 N	37.98 E	42.01@	64.71	0.30
6022.00	0.62	261.28	6021.14	189.00	-36.42	17.89 N	36.25 E	40.42@	63.73	0.12
6210.00	0.62	246.48	6209.13	188.00	-34.48	17.33 N	34.31 E	38.44@	63.20	0.09
6399.00	0.70	265.81	6398.12	189.00	-32.38	16.84 N	32.22 E	36.36@	62.41	0.12
6588.00	0.88	257.96	6587.10	189.00	-29.81	16.45 N	29.65 E	33.91@	60.98	0.11
6776.00	0.70	257.44	6775.08	188.00	-27.27	15.90 N	27.12 E	31.44@	59.61	0.10
6965.00	0.79	225.89	6964.06	189.00	-25.20	14.74 N	25.06 E	29.07@	59.53	0.22
7152.00	0.97	201.87	7151.04	187.00	-23.66	12.38 N	23.54 E	26.60@	62.27	0.22
7342.00	1.32	216.15	7341.01	190.00	-21.74	9.12 N	21.65 E	23.49@	67.16	0.24
7530.00	1.23	216.45	7528.96	188.00	-19.23	5.75 N	19.17 E	20.02@	73.32	0.05
7718.00	1.32	218.88	7716.91	188.00	-16.64	2.44 N	16.62 E	16.79@	81.66	0.06
7907.00	1.14	204.96	7905.87	189.00	-14.45	0.96 S	14.46 E	14.49@	93.81	0.18
8095.00	0.79	201.64	8093.84	188.00	-13.15	3.86 S	13.19 E	13.74@	106.32	0.19
8283.00	0.70	217.90	8281.83	188.00	-11.95	5.97 S	12.01 E	13.41@	116.45	0.12
8314.00	0.88	230.28	8312.82	31.00	-11.65	6.28 S	11.71 E	13.28@	118.19	0.80
8377.00	0.97	237.76	8375.82	63.00	-10.82	6.87 S	10.88 E	12.87@	122.26	0.24
8408.00	2.81	253.75	8406.80	31.00	-9.86	7.22 S	9.93 E	12.28@	126.02	6.12
8439.00	7.03	261.89	8437.68	31.00	-7.25	7.70 S	7.32 E	10.63@	136.44	13.76
8471.00	12.13	266.99	8469.22	32.00	-1.95	8.16 S	2.02 E	8.40@	166.06	16.14
8502.00	17.59	268.35	8499.17	31.00	6.00	8.46 S	5.92 W	10.32@	214.97	17.65
8533.00	21.63	270.81	8528.37	31.00	16.40	8.52 S	16.32 W	18.41@	242.44	13.30
8565.00	24.36	271.73	8557.82	32.00	28.89	8.23 S	28.81 W	29.97@	254.05	8.60
8596.00	26.64	272.17	8585.80	31.00	42.22	7.78 S	42.15 W	42.86@	259.55	7.38

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 02/04

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)
8628.00	29.63	272.95	8614.02	32.00	57.29	7.10 S	57.22 W	57.66@	262.93	9.41
8659.00	32.80	272.77	8640.53	31.00	73.32	6.30 S	73.27 W	73.54@	265.09	10.23
8691.00	36.58	272.02	8666.83	32.00	91.51	5.54 S	91.46 W	91.63@	266.53	11.89
8722.00	39.57	270.87	8691.23	31.00	110.61	5.07 S	110.57 W	110.68@	267.38	9.91
8753.00	42.30	269.63	8714.65	31.00	130.92	4.98 S	130.88 W	130.97@	267.82	9.19
8785.00	45.20	269.05	8737.76	32.00	153.04	5.24 S	153.00 W	153.09@	268.04	9.15
8816.00	48.54	269.05	8758.95	31.00	175.66	5.62 S	175.62 W	175.71@	268.17	10.78
8848.00	52.32	268.95	8779.34	32.00	200.33	6.05 S	200.28 W	200.37@	268.27	11.81
8879.00	56.28	269.47	8797.42	31.00	225.49	6.39 S	225.44 W	225.53@	268.38	12.85
8910.00	60.06	270.18	8813.77	31.00	251.83	6.47 S	251.78 W	251.86@	268.53	12.35
8942.00	63.66	270.16	8828.86	32.00	280.04	6.39 S	279.99 W	280.06@	268.69	11.25
8973.00	66.30	270.43	8841.97	31.00	308.12	6.24 S	308.08 W	308.14@	268.84	8.55
9002.00	69.20	270.05	8852.95	29.00	334.96	6.13 S	334.92 W	334.97@	268.95	10.07
9033.00	73.16	269.73	8862.95	31.00	364.29	6.19 S	364.25 W	364.30@	269.03	12.81
9064.00	76.15	269.36	8871.15	31.00	394.19	6.42 S	394.14 W	394.20@	269.07	9.71
9096.00	78.61	268.32	8878.14	32.00	425.41	7.06 S	425.36 W	425.42@	269.05	8.32
9158.00	83.89	266.94	8887.57	62.00	486.63	9.60 S	486.56 W	486.66@	268.87	8.79
9190.00	86.53	266.40	8890.24	32.00	518.48	11.45 S	518.39 W	518.52@	268.73	8.42
9252.00	90.31	266.68	8891.95	62.00	580.37	15.19 S	580.25 W	580.44@	268.50	6.11
9284.00	90.66	268.10	8891.68	32.00	612.34	16.64 S	612.21 W	612.44@	268.44	4.57
9379.00	89.69	268.48	8891.39	95.00	707.32	19.48 S	707.17 W	707.44@	268.42	1.10
9473.00	90.66	268.94	8891.10	94.00	801.31	21.60 S	801.14 W	801.43@	268.46	1.14
9567.00	89.78	268.71	8890.74	94.00	895.30	23.52 S	895.12 W	895.43@	268.49	0.97
9661.00	90.22	270.46	8890.74	94.00	989.30	24.20 S	989.11 W	989.41@	268.60	1.92
9754.00	89.43	270.35	8891.02	93.00	1082.29	23.55 S	1082.11 W	1082.37@	268.75	0.86
9849.00	88.72	270.44	8892.56	95.00	1177.26	22.89 S	1177.09 W	1177.32@	268.89	0.75
9943.00	89.16	269.49	8894.30	94.00	1271.24	22.95 S	1271.08 W	1271.28@	268.97	1.11
10038.00	89.69	269.35	8895.25	95.00	1366.23	23.91 S	1366.07 W	1366.28@	269.00	0.58

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
BLACKBERRY "BKB" STATE #1H
LEA COUNTY, NEW MEXICO
RIG: PATRIOT 5

Page 03/04

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)
10132.00	89.08	269.67	8896.26	94.00	1460.23	24.71 S	1460.06 W	1460.27@	269.03	0.73
10226.00	89.87	269.77	8897.12	94.00	1554.22	25.17 S	1554.05 W	1554.26@	269.07	0.85
10320.00	88.99	269.94	8898.06	94.00	1648.21	25.41 S	1648.05 W	1648.24@	269.12	0.95
10414.00	89.25	269.96	8899.50	94.00	1742.20	25.49 S	1742.04 W	1742.22@	269.16	0.28
10509.00	89.34	269.91	8900.67	95.00	1837.19	25.60 S	1837.03 W	1837.21@	269.20	0.11
10603.00	89.78	269.62	8901.39	94.00	1931.18	25.99 S	1931.02 W	1931.20@	269.23	0.56
10697.00	88.99	269.66	8902.40	94.00	2025.18	26.58 S	2025.02 W	2025.19@	269.25	0.84
10792.00	89.25	269.23	8903.86	95.00	2120.17	27.50 S	2120.00 W	2120.18@	269.26	0.53
10886.00	89.25	268.98	8905.09	94.00	2214.16	28.97 S	2213.98 W	2214.17@	269.25	0.27
10981.00	91.01	269.28	8904.87	95.00	2309.15	30.41 S	2308.97 W	2309.17@	269.25	1.88
11075.00	93.65	268.95	8901.05	94.00	2403.06	31.86 S	2402.87 W	2403.08@	269.24	2.83
11169.00	93.97	269.25	8894.81	94.00	2496.85	33.33 S	2496.65 W	2496.87@	269.24	0.47
11263.00	93.83	270.18	8888.41	94.00	2590.63	33.80 S	2590.43 W	2590.65@	269.25	1.00
11357.00	91.98	270.04	8883.65	94.00	2684.50	33.62 S	2684.30 W	2684.51@	269.28	1.97
11451.00	93.12	270.18	8879.47	94.00	2778.40	33.44 S	2778.21 W	2778.41@	269.31	1.22
11546.00	90.84	270.43	8876.18	95.00	2873.33	32.93 S	2873.14 W	2873.33@	269.34	2.42
11640.00	90.40	270.75	8875.17	94.00	2967.30	31.96 S	2967.13 W	2967.31@	269.38	0.58
11734.00	90.40	269.82	8874.51	94.00	3061.29	31.50 S	3061.13 W	3061.29@	269.41	0.99
11828.00	91.89	270.19	8872.63	94.00	3155.26	31.49 S	3155.11 W	3155.26@	269.43	1.63
11922.00	91.80	271.27	8869.61	94.00	3249.19	30.29 S	3249.05 W	3249.19@	269.47	1.15
12016.00	89.96	270.55	8868.16	94.00	3343.14	28.80 S	3343.02 W	3343.15@	269.51	2.10
12110.00	90.57	268.98	8867.73	94.00	3437.14	29.19 S	3437.02 W	3437.14@	269.51	1.79
12204.00	92.91	268.50	8864.87	94.00	3531.08	31.25 S	3530.94 W	3531.08@	269.49	2.54
12299.00	91.54	269.15	8861.19	95.00	3626.00	33.20 S	3625.85 W	3626.00@	269.48	1.60
12393.00	89.87	269.05	8860.03	94.00	3719.99	34.67 S	3719.83 W	3719.99@	269.47	1.78
12487.00	89.34	268.87	8860.68	94.00	3813.98	36.38 S	3813.81 W	3813.98@	269.45	0.60
12581.00	89.96	269.26	8861.25	94.00	3907.98	37.91 S	3907.79 W	3907.98@	269.44	0.78
12676.00	89.52	269.96	8861.68	95.00	4002.98	38.56 S	4002.79 W	4002.98@	269.45	0.87

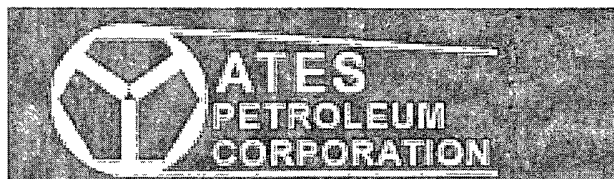
PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
 BLACKBERRY "BKB" STATE #1H
 LEA COUNTY, NEW MEXICO
 RIG: PATRIOT 5

Page 04/04

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)
12770.00	91.89	270.65	8860.53	94.00	4096.95	38.06 S	4096.77 W	4096.95@	269.47	2.63
12864.00	91.98	270.76	8857.35	94.00	4190.88	36.90 S	4190.71 W	4190.88@	269.50	0.15
12958.00	92.24	270.90	8853.89	94.00	4284.78	35.54 S	4284.64 W	4284.79@	269.52	0.31
13053.00	89.78	270.13	8852.22	95.00	4379.75	34.69 S	4379.61 W	4379.75@	269.55	2.71
13147.00	88.29	270.10	8853.80	94.00	4473.72	34.50 S	4473.60 W	4473.73@	269.56	1.59
STRAIGHT LINE PROJECTION TO BIT @ 13237' MD.										
13237.00	88.29	270.10	8856.49	90.00	4563.68	34.34 S	4563.56 W	4563.69@	269.57	0.00



Yates Petroleum Corp.

Lea County
Blackberry BKB State
#1H
OH

Plan: Plan #3

Pathfinder X & Y Survey Report

18 March, 2011

HOBBS OCD
JUN 21 2011
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SUR: P-6-21s-34e, 3300/S & 330/E
BHL: M-6-21s-34e, 3266/S & 4898/E
API # 30-025-39941

PATHFINDER
A Schlumberger Company



Pathfinder
Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Lea County
Site: Blackberry BKB State
Well: #1H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #1H
TVD Reference: Patriot #5 @ 3753 50usft
MD Reference: Patriot #5 @ 3753 50usft
North Reference: Grid
Survey/Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Project: Lea County

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Blackberry BKB State

Site Position: Northing: 550,151 829 usft Latitude: 32° 30' 34 843 N
From: Map Easting: 797,705.853 usft Longitude: 103° 30' 6 069 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.45 °

Well: #1H

Well Position: +N/-S 0.00 usft Northing: 550,151.829 usft Latitude: 32° 30' 34.843 N
+E/-W 0.00 usft Easting: 797,705.853 usft Longitude: 103° 30' 6.069 W
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,727 00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	02/03/11	7 61	60 50	48,865

Design: Plan #3

Audit Notes:

Version: Phase: PLAN Tie On Depth: 8,283.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0 00	269.45



Pathfinder Pathfinder X & Y Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	Patriot #5 @ 3753 50usft
Site:	Blackberry BKB State	MD Reference:	Patriot #5 @ 3753.50usft
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	EDM 5000.1 Single User Db

Survey Tool Program		Date	03/18/11		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
200 00	5,750.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot	
5,833.00	8,283.00	MWD (OH)	MWD	MWD - Standard	
8,283.00	13,257.10	Plan #3 (OH)	MWD	MWD - Standard	

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg. (°/100usft)	Northing (usft)	Easting (usft)	
0 00	0 00	0 00	0.00	3,753.50	0.00	0.00	0.00	0.00	550,151.83	797,705.85	
200.00	0.50	205.02	200.00	3,553.50	-0.79	-0.37	0.38	0.25	550,151.04	797,705.48	
400 00	0.75	176.97	399.99	3,353.51	-2.89	-0.67	0.70	0.19	550,148.94	797,705.18	
600.00	0.50	179.93	599.97	3,153.53	-5.07	-0.60	0.65	0.13	550,146.76	797,705.25	
800.00	0.25	211.91	799.97	2,953.53	-6.31	-0.83	0.89	0.16	550,145.52	797,705.02	
1,000.00	0.25	205.88	999.97	2,753.53	-7.07	-1.25	1.32	0.01	550,144.75	797,704.60	
1,200.00	0.25	218.86	1,199.97	2,553.53	-7.81	-1.71	1.79	0.03	550,144.02	797,704.14	
1,400.00	0.50	228.84	1,399.96	2,353.54	-8.72	-2.64	2.73	0.13	550,143.11	797,703.21	
1,600.00	0.50	205.81	1,599.95	2,153.55	-10.08	-3.68	3.78	0.10	550,141.75	797,702.17	
1,800 00	0.75	174.79	1,799.94	1,953.56	-12.17	-3.94	4.06	0.21	550,139.66	797,701.91	
2,000.00	1.00	72.77	1,999.93	1,753.57	-12.96	-2.16	2.28	0.68	550,138.87	797,703.70	
2,200.00	1.00	73.74	2,199.90	1,553.60	-11.95	1.19	-1.07	0.01	550,139.88	797,707.04	
2,400.00	0.50	95.72	2,399.88	1,353.62	-11.55	3.73	-3.62	0.28	550,140.28	797,709.58	
2,600 00	0.25	50.58	2,599.88	1,153.62	-11.36	4.93	-4.83	0.18	550,140.47	797,710.79	
2,800.00	0.25	74.56	2,799.87	953.63	-10.97	5.69	-5.59	0.05	550,140.86	797,711.55	
3,000.00	1.75	56.53	2,999.84	753.66	-9.17	8.66	-8.57	0.76	550,142.66	797,714.51	
3,200.00	2.00	63.51	3,199.73	553.77	-5.92	14.33	-14.27	0.17	550,145.90	797,720.18	
3,400 00	2.25	63.48	3,399.59	353.91	-2.62	20.97	-20.94	0.13	550,149.21	797,726.82	
3,600.00	2.25	57.46	3,599.44	154.06	1.25	27.79	-27.80	0.12	550,153.08	797,733.64	
3,800.00	2.00	47.43	3,799.30	-45.80	5.72	33.67	-33.72	0.22	550,157.55	797,739.52	



Pathfinder
Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Blackberry BKB State
Well: #1H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H
Patriot #5 @ 3753.50usft
Patriot #5 @ 3753.50usft
Grid:
Minimum Curvature
EDM 5000-1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,000.00	1.25	65.42	3,999.22	-245.72	8.99	38.22	-38.31	0.45	550,160.82	797,744.08
4,200.00	1.00	48.40	4,199.18	-445.68	11.06	41.51	-41.62	0.21	550,162.89	797,747.37
4,400.00	0.25	9.38	4,399.17	-645.67	12.65	42.89	-43.01	0.41	550,164.48	797,748.74
4,600.00	0.50	8.35	4,599.17	-845.67	13.94	43.09	-43.22	0.13	550,165.77	797,748.94
4,800.00	0.00	0.00	4,799.16	-1,045.66	14.80	43.21	-43.35	0.25	550,166.63	797,749.07
5,000.00	0.25	279.51	4,999.16	-1,245.66	14.88	42.78	-42.92	0.12	550,166.70	797,748.64
5,200.00	0.25	317.58	5,199.16	-1,445.66	15.27	42.06	-42.20	0.08	550,167.10	797,747.91
5,400.00	0.50	287.74	5,399.16	-1,645.66	15.86	40.93	-41.08	0.15	550,167.69	797,746.79
5,600.00	0.50	318.81	5,599.15	-1,845.65	16.78	39.53	-39.69	0.13	550,168.61	797,745.38
5,750.00	0.50	307.97	5,749.14	-1,995.64	17.68	38.58	-38.75	0.06	550,169.50	797,744.43
5,833.00	0.44	277.90	5,832.14	-2,078.64	17.94	37.98	-38.15	0.30	550,169.77	797,743.83
6,022.00	0.62	261.28	6,021.13	-2,267.63	17.89	36.25	-36.42	0.12	550,169.72	797,742.10
6,210.00	0.62	246.48	6,209.12	-2,455.62	17.33	34.31	-34.48	0.08	550,169.16	797,740.17
6,399.00	0.70	265.81	6,398.11	-2,644.61	16.83	32.22	-32.38	0.12	550,168.66	797,738.08
6,588.00	0.88	257.96	6,587.09	-2,833.59	16.45	29.65	-29.81	0.11	550,168.28	797,735.51
6,776.00	0.70	257.44	6,775.07	-3,021.57	15.90	27.12	-27.27	0.10	550,167.73	797,732.97
6,965.00	0.79	225.89	6,964.06	-3,210.56	14.74	25.06	-25.20	0.22	550,166.57	797,730.91
7,152.00	0.97	201.87	7,151.04	-3,397.54	12.37	23.54	-23.66	0.22	550,164.20	797,729.40
7,342.00	1.32	216.15	7,341.00	-3,587.50	9.11	21.65	-21.74	0.24	550,160.94	797,727.50
7,530.00	1.23	216.45	7,528.95	-3,775.45	5.74	19.18	-19.23	0.05	550,157.57	797,725.03
7,718.00	1.32	218.88	7,716.91	-3,963.41	2.43	16.62	-16.64	0.06	550,154.26	797,722.47
7,907.00	1.14	204.96	7,905.86	-4,152.36	-0.97	14.46	-14.45	0.18	550,150.86	797,720.31
8,095.00	0.79	201.64	8,093.84	-4,340.34	-3.87	13.19	-13.15	0.19	550,147.96	797,719.04
8,283.00	0.70	217.90	8,281.82	-4,528.32	-5.98	12.01	-11.95	0.12	550,145.85	797,717.86
Start 129.50 hold at 8283.00 MD										
8,300.00	0.70	217.90	8,298.82	-4,545.32	-6.14	11.88	-11.82	0.00	550,145.69	797,717.73
8,400.00	0.70	217.90	8,398.81	-4,645.31	-7.11	11.13	-11.06	0.00	550,144.72	797,716.98



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:	Patriot #5 @ 3753.50usft
Site:	Blackberry BKB State	MD Reference:	Patriot #5 @ 3753.50usft
Well:	#1H	North Reference:	Gnd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	EDM 5000 1, Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,412.50	0.70	217.90	8,411.31	-4,657.81	-7.23	11.04	-10.97	0.00	550,144.60	797,716.89	
KOP-8412.50°MD,0.70°INC,217.90°AZI,8411.31°TVD											
8,425.00	2.01	253.75	8,423.81	-4,670.31	-7.35	10.78	-10.71	12.00	550,144.48	797,716.63	
8,450.00	4.97	263.27	8,448.76	-4,695.26	-7.60	9.28	-9.21	12.00	550,144.23	797,715.14	
8,475.00	7.95	265.67	8,473.60	-4,720.10	-7.86	6.48	-6.41	12.00	550,143.97	797,712.34	
8,500.00	10.95	266.77	8,498.26	-4,744.76	-8.12	2.39	-2.31	12.00	550,143.71	797,708.24	
8,525.00	13.95	267.39	8,522.66	-4,769.16	-8.39	-3.00	3.08	12.00	550,143.44	797,702.86	
8,550.00	16.95	267.80	8,546.76	-4,793.26	-8.67	-9.65	9.73	12.00	550,143.16	797,696.21	
8,575.00	19.95	268.09	8,570.47	-4,816.97	-8.95	-17.55	17.64	12.00	550,142.88	797,688.30	
8,600.00	22.94	268.31	8,593.74	-4,840.24	-9.23	-26.69	26.77	12.00	550,142.59	797,679.17	
8,625.00	25.94	268.48	8,616.49	-4,862.99	-9.52	-37.03	37.12	12.00	550,142.30	797,668.83	
8,650.00	28.94	268.61	8,638.68	-4,885.18	-9.82	-48.54	48.64	12.00	550,142.01	797,657.31	
8,675.00	31.94	268.73	8,660.23	-4,906.73	-10.11	-61.21	61.30	12.00	550,141.72	797,644.65	
8,700.00	34.95	268.82	8,681.09	-4,927.59	-10.40	-74.98	75.08	12.00	550,141.43	797,630.87	
8,725.00	37.95	268.90	8,701.20	-4,947.70	-10.70	-89.83	89.93	12.00	550,141.13	797,616.03	
8,750.00	40.95	268.97	8,720.50	-4,967.00	-10.99	-105.71	105.81	12.00	550,140.84	797,600.15	
8,775.00	43.95	269.04	8,738.94	-4,985.44	-11.29	-122.57	122.68	12.00	550,140.54	797,583.28	
8,800.00	46.95	269.09	8,756.48	-5,002.98	-11.58	-140.38	140.49	12.00	550,140.25	797,565.47	
8,825.00	49.95	269.14	8,773.06	-5,019.56	-11.86	-159.09	159.19	12.00	550,139.97	797,546.76	
8,850.00	52.95	269.19	8,788.64	-5,035.14	-12.15	-178.64	178.74	12.00	550,139.68	797,527.22	
8,875.00	55.95	269.24	8,803.18	-5,049.68	-12.43	-198.97	199.08	12.00	550,139.40	797,506.88	
8,900.00	58.95	269.28	8,816.63	-5,063.13	-12.70	-220.04	220.15	12.00	550,139.13	797,485.81	
8,925.00	61.95	269.31	8,828.96	-5,075.46	-12.97	-241.78	241.90	12.00	550,138.86	797,464.07	
8,950.00	64.95	269.35	8,840.13	-5,086.63	-13.23	-264.14	264.26	12.00	550,138.60	797,441.71	
8,975.00	67.95	269.38	8,850.12	-5,096.62	-13.48	-287.06	287.17	12.00	550,138.35	797,418.80	
9,000.00	70.95	269.42	8,858.89	-5,105.39	-13.73	-310.46	310.58	12.00	550,138.10	797,395.39	
9,025.00	73.95	269.45	8,866.43	-5,112.93	-13.96	-334.29	334.41	12.00	550,137.87	797,371.56	



Pathfinder
Pathfinder X & Y Survey Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Lea County
Site: Blackberry, BKB State
Well: #1H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H
Patriot #5 @ 3753.50usft
Patriot #5 @ 3753.50usft
Grid
Minimum Curvature
EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)
9,050.00	76.95	269.48	8,872.71	-5,119.21	-14.19	-358.49	358.61	12.00	550,137.64	797,347.36
9,075.00	79.95	269.51	8,877.71	-5,124.21	-14.40	-382.98	383.10	12.00	550,137.43	797,322.87
9,100.00	82.95	269.54	8,881.43	-5,127.93	-14.61	-407.70	407.82	12.00	550,137.22	797,298.16
9,125.00	85.95	269.57	8,883.85	-5,130.35	-14.80	-432.58	432.70	12.00	550,137.03	797,273.28
9,150.00	88.95	269.60	8,884.96	-5,131.46	-14.98	-457.55	457.67	12.00	550,136.84	797,248.31
9,152.89	89.30	269.60	8,885.00	-5,131.50	-15.01	-460.44	460.56	12.00	550,136.82	797,245.42
EOC-9152.89°MD,89.30°INC,269.60°AZI,8885.00°TVD										
9,200.00	89.30	269.60	8,885.58	-5,132.08	-15.33	-507.54	507.67	0.00	550,136.49	797,198.31
9,300.00	89.30	269.60	8,886.80	-5,133.30	-16.03	-607.53	607.66	0.00	550,135.80	797,098.32
9,400.00	89.30	269.60	8,888.02	-5,134.52	-16.73	-707.52	707.65	0.00	550,135.10	796,998.33
9,500.00	89.30	269.60	8,889.24	-5,135.74	-17.43	-807.51	807.64	0.00	550,134.40	796,898.34
9,600.00	89.30	269.60	8,890.46	-5,136.96	-18.13	-907.50	907.64	0.00	550,133.70	796,798.35
9,700.00	89.30	269.60	8,891.68	-5,138.18	-18.82	-1,007.49	1,007.63	0.00	550,133.00	796,698.36
9,800.00	89.30	269.60	8,892.91	-5,139.41	-19.52	-1,107.48	1,107.62	0.00	550,132.31	796,598.37
9,900.00	89.30	269.60	8,894.13	-5,140.63	-20.22	-1,207.47	1,207.61	0.00	550,131.61	796,498.38
10,000.00	89.30	269.60	8,895.35	-5,141.85	-20.92	-1,307.46	1,307.60	0.00	550,130.91	796,398.39
10,100.00	89.30	269.60	8,896.57	-5,143.07	-21.62	-1,407.45	1,407.60	0.00	550,130.21	796,298.40
10,200.00	89.30	269.60	8,897.79	-5,144.29	-22.31	-1,507.44	1,507.59	0.00	550,129.51	796,198.41
10,300.00	89.30	269.60	8,899.01	-5,145.51	-23.01	-1,607.43	1,607.58	0.00	550,128.82	796,098.42
10,400.00	89.30	269.60	8,900.24	-5,146.74	-23.71	-1,707.42	1,707.57	0.00	550,128.12	795,998.43
10,500.00	89.30	269.60	8,901.46	-5,147.96	-24.41	-1,807.41	1,807.56	0.00	550,127.42	795,898.44
10,600.00	89.30	269.60	8,902.68	-5,149.18	-25.11	-1,907.40	1,907.56	0.00	550,126.72	795,798.45
10,700.00	89.30	269.60	8,903.90	-5,150.40	-25.81	-2,007.39	2,007.55	0.00	550,126.02	795,698.46
10,800.00	89.30	269.60	8,905.12	-5,151.62	-26.50	-2,107.38	2,107.54	0.00	550,125.33	795,598.47
10,900.00	89.30	269.60	8,906.34	-5,152.84	-27.20	-2,207.37	2,207.53	0.00	550,124.63	795,498.48
11,000.00	89.30	269.60	8,907.57	-5,154.07	-27.90	-2,307.36	2,307.53	0.00	550,123.93	795,398.49
11,100.00	89.30	269.60	8,908.79	-5,155.29	-28.60	-2,407.35	2,407.52	0.00	550,123.23	795,298.50



Pathfinder
Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Lea County
Site: Blackberry BKB State
Well: #1H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H
Patriot #5 @ 3753.50usft
Patriot #5 @ 3753.50usft
Grid
Minimum Curvature
EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
11,200.00	89.30	269.60	8,910.01	-5,156.51	-29.30	-2,507.34	2,507.51	0.00	550,122.53	795,198.51
11,300.00	89.30	269.60	8,911.23	-5,157.73	-29.99	-2,607.33	2,607.50	0.00	550,121.84	795,098.52
11,400.00	89.30	269.60	8,912.45	-5,158.95	-30.69	-2,707.32	2,707.49	0.00	550,121.14	794,998.53
11,500.00	89.30	269.60	8,913.67	-5,160.17	-31.39	-2,807.32	2,807.49	0.00	550,120.44	794,898.54
11,600.00	89.30	269.60	8,914.90	-5,161.40	-32.09	-2,907.31	2,907.48	0.00	550,119.74	794,798.55
11,700.00	89.30	269.60	8,916.12	-5,162.62	-32.79	-3,007.30	3,007.47	0.00	550,119.04	794,698.56
11,800.00	89.30	269.60	8,917.34	-5,163.84	-33.48	-3,107.29	3,107.46	0.00	550,118.34	794,598.57
11,900.00	89.30	269.60	8,918.56	-5,165.06	-34.18	-3,207.28	3,207.46	0.00	550,117.65	794,498.58
12,000.00	89.30	269.60	8,919.78	-5,166.28	-34.88	-3,307.27	3,307.45	0.00	550,116.95	794,398.59
12,100.00	89.30	269.60	8,921.00	-5,167.50	-35.58	-3,407.26	3,407.44	0.00	550,116.25	794,298.60
12,200.00	89.30	269.60	8,922.23	-5,168.73	-36.28	-3,507.25	3,507.43	0.00	550,115.55	794,198.61
12,300.00	89.30	269.60	8,923.45	-5,169.95	-36.97	-3,607.24	3,607.42	0.00	550,114.85	794,098.62
12,400.00	89.30	269.60	8,924.67	-5,171.17	-37.67	-3,707.23	3,707.42	0.00	550,114.16	793,998.63
12,500.00	89.30	269.60	8,925.89	-5,172.39	-38.37	-3,807.22	3,807.41	0.00	550,113.46	793,898.64
12,600.00	89.30	269.60	8,927.11	-5,173.61	-39.07	-3,907.21	3,907.40	0.00	550,112.76	793,798.65
12,700.00	89.30	269.60	8,928.34	-5,174.84	-39.77	-4,007.20	4,007.39	0.00	550,112.06	793,698.66
12,800.00	89.30	269.60	8,929.56	-5,176.06	-40.46	-4,107.19	4,107.39	0.00	550,111.36	793,598.67
12,900.00	89.30	269.60	8,930.78	-5,177.28	-41.16	-4,207.18	4,207.38	0.00	550,110.67	793,498.68
13,000.00	89.30	269.60	8,932.00	-5,178.50	-41.86	-4,307.17	4,307.37	0.00	550,109.97	793,398.69
13,100.00	89.30	269.60	8,933.22	-5,179.72	-42.56	-4,407.16	4,407.36	0.00	550,109.27	793,298.70
13,200.00	89.30	269.60	8,934.44	-5,180.94	-43.26	-4,507.15	4,507.35	0.00	550,108.57	793,198.71
13,257.10	89.30	269.60	8,935.14	-5,181.64	-43.66	-4,564.24	4,564.45	0.00	550,108.17	793,141.61

TD at 13257.10



Pathfinder
Pathfinder X & Y Survey Report



Company: Yates Petroleum Corp.
Project: Lea County
Site: Blackberry BKB State
Well: #1H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H
Patriot #5 @ 3753.50usft
Patriot #5 @ 3753.50usft
Grid
Minimum Curvature
EDM 5000 1 Single User Db

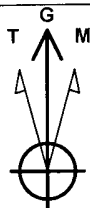
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,283.00	8,281.82	-5.98	12.01	Start 129.50 hold at 8283.00 MD
8,412.50	8,411.31	-7.23	11.04	KOP-8412.50°MD,0.70°INC,217.90°AZI,8411.31°TVD
9,152.89	8,885.00	-15.01	-460.44	EOC-9152.89°MD,89.30°INC,269.60°AZI,8885.00°TVD
13,257.10	8,935.14	-43.66	-4,564.24	TD at 13257.10

Checked By: _____ Approved By: _____ Date: _____



Project: Lea County
Site: Blackberry BKB State
Well: #1H
Wellbore: OH
Plan: Plan #3 (#1H/OH)

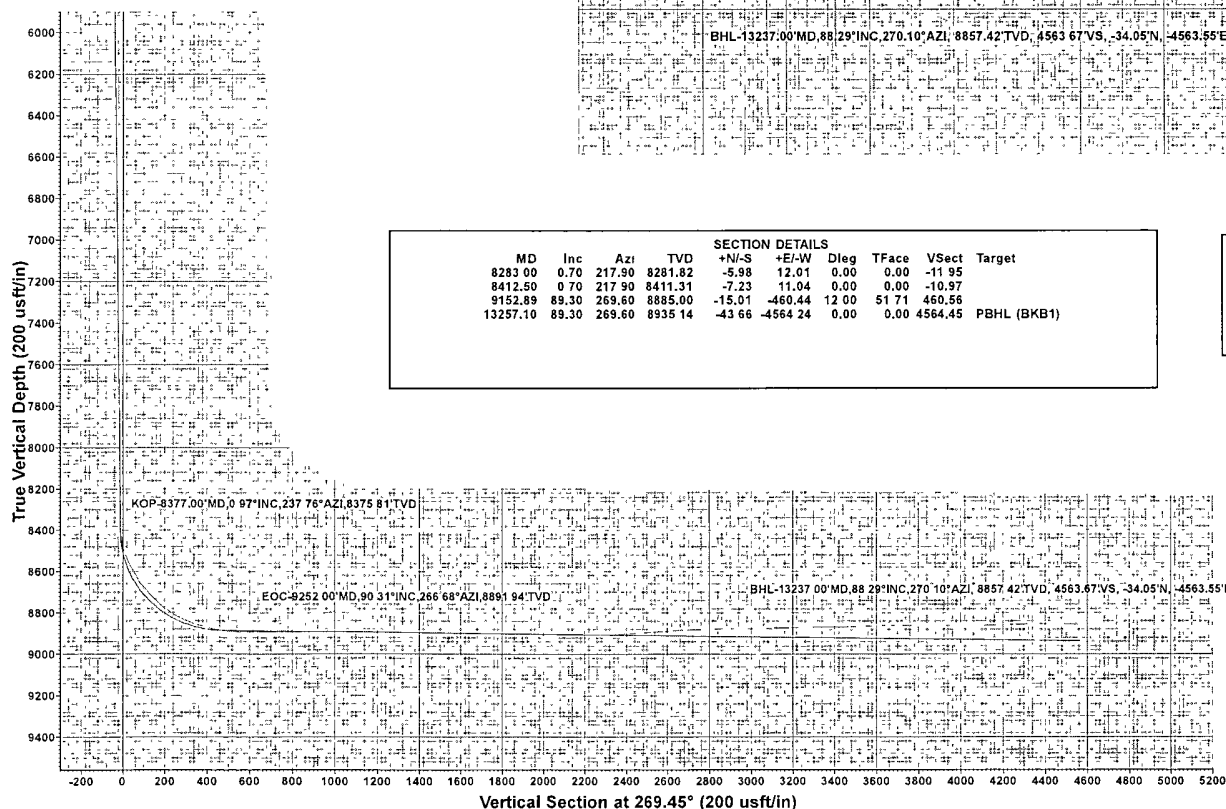
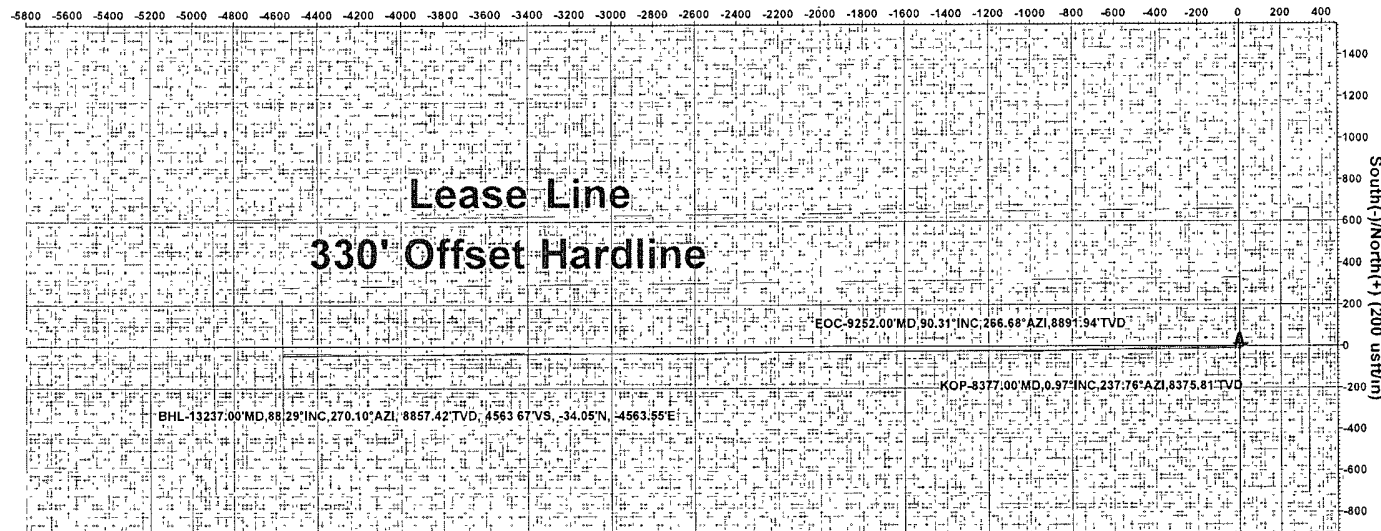


Azimuths to Grid North
True North: -0.45°
Magnetic North: 7.16°

Magnetic Field
Strength: 48865.0snT
Dip Angle: 60.50°
Date: 02/03/2011
Model: IGRF200510

PATHFINDER
A Schlumberger Company

West(-)/East(+) (200 usft/in)



SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace VSect Target
8283.00	0.70	217.90	8281.82	-5.98	12.01	0.00	0.00 -11.95
8412.50	0.70	217.90	8411.31	-7.23	11.04	0.00	0.00 -10.97
9152.89	89.30	269.60	8885.00	-15.01	-460.44	12.00	51.71 450.56
13257.10	89.30	269.60	8935.14	-43.66	-4564.24	0.00	0.00 4564.45 PBHL (BKB1)

WELL DETAILS #1H

Ground Elevation 3727.00
RKB Elevation Patriot #5 @ 3753.50usft
Rig Name

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	550151.829	797705.853	32° 30' 34.843 N	103° 30' 6.069 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL (BKB1) 8935.00		-43.66	-4564.24	550108.180	793141.610	Point

Plan Plan #3 (#1H/OH)

Created By Nate Bingham Date 8/21, March 18 2011
Checked _____ Date _____