



30-015-37509

YATES PETROLEUM

Livinston Ridge
Eddy County, NM
Martha "AIK" Federal #10H
VH - Job #32K11121410

Survey: Gyro - Tie-In @ 7078' by Pathfinder

SDI Standard Survey Report

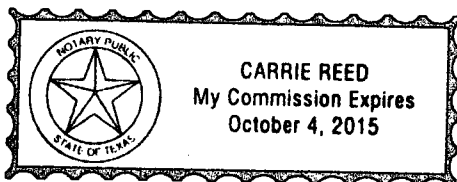
This survey is correct to the best of my knowledge and is supported by actual field data.

Hubert

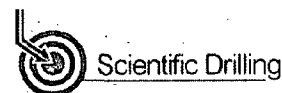
Notarized this date 5th of December, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	YATES PETROLEUM	Local Co-ordinate Reference:	Well Martha "AIK" Federal #10H
Project:	Livingston Ridge	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Martha "AIK" Federal #10H	North Reference:	Grid
Wellbore:	VH - Job #32K11121410	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K11121410	Database:	EDM-Regulatory

Project	Livingston Ridge		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Eddy County, NM				
Site Position:		Northing:	511,578.62 usft	Latitude:	32° 24' 18.252 N
From:	Lat/Long	Easting:	681,599.93 usft	Longitude:	103° 44' 41.712 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.32 °

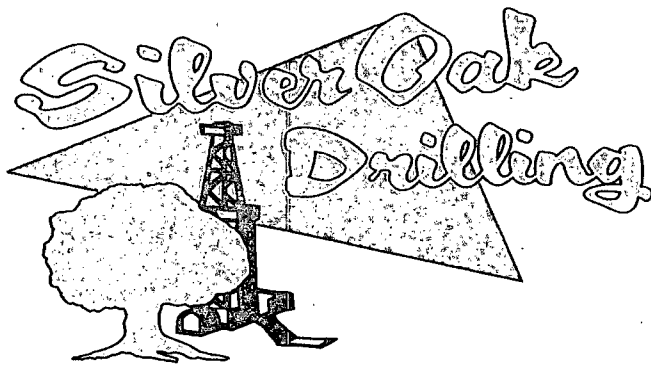
Well	Martha "AIK" Federal #10H, Direcctional (Pathfinder)					
Well Position	+N/-S	0.00 usft	Northing:	511,578.62 usft	Latitude:	32° 24' 18.252 N
	+E/-W	0.00 usft	Easting:	681,599.93 usft	Longitude:	103° 44' 41.712 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	0.00 usft	

Wellbore	VH - Job #32K11121410				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/17/12	7.51	60.29	48,590

Design	VH - Job #32K11121410				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	270.81	

Survey Program		Date 12/04/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
7,100.00	7,322.00	Gyro - Tie-In @ 7078' by Pathfinder (VH -	Keeper	Keeper Gyro

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
7,078.00	0.35	264.09	7,076.98	44.33	1.07	1.38	44.34
7,100.00	0.38	263.50	7,098.98	44.31	0.93	1.20	44.32
7,200.00	0.23	258.33	7,198.98	44.24	0.40	0.52	44.24
7,300.00	0.35	277.46	7,298.98	44.24	-0.09	359.88	44.24
7,322.00	0.52	257.19	7,320.98	44.22	-0.26	359.66	44.22



PO Box 1370
Artesia, NM 88211-1370
(505) 748-1288

December 10, 2012

Yates Petroleum Corporation
105 S. 4th
Artesia, NM 88211-1395

RE: Martha AIK Federal #10H
1780' FSL & 178' FEL
Sec. 11, T22S, R31E
Eddy County, New Mexico

Dear Sir,

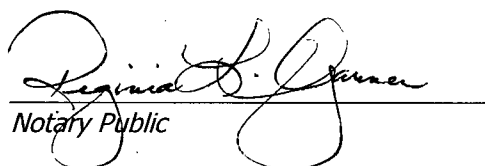
The attached is the Deviation Survey for the above captioned well.

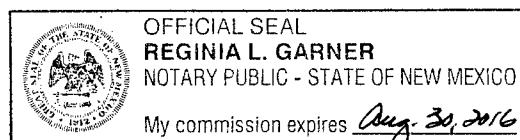
Very truly yours,


Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 10th day of December, 2012.


Notary Public



Martha AIK Federal #10H

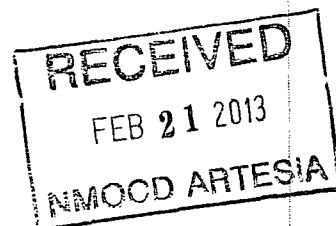
Date	Depth	Deviation	Direction	TVD	Horiz. Disp.
11/4/2012	133	0.60			
11/5/2012	291	0.70			
11/5/2012	445	0.90			
11/5/2012	601	1.10			
11/5/2012	812	2.50			
11/8/2012	912	2.37	9.39		
11/8/2012	1006	2.81	4.47		
11/8/2012	1102	1.58	20.37		
11/8/2012	1197	0.26	256.54		
11/8/2012	1356	0.79	206.44	1355.61	
11/8/2012	1546	0.44	242.21	1545.60	
11/9/2012	1737	0.79	225.25	1736.59	
11/9/2012	1927	0.70	185.70	1926.57	
11/9/2012	2118	0.62	210.57	2117.56	
11/9/2012	2308	0.44	237.11	2307.55	
11/9/2012	2498	1.32	2.62	2497.54	
11/9/2012	2689	1.49	19.93	2688.48	
11/10/2012	2879	1.49	355.68	2878.42	
11/10/2012	3069	1.67	0.42	3068.35	
11/11/2012	3265	1.32	5.26	3264.28	
11/11/2012	3455	1.32	15.72	3254.23	
11/11/2012	3646	1.76	19.85	3645.00	
11/11/2012	3836	1.41	53.42	3835.09	
11/12/2012	4217	0.26	315.77	4216.29	
11/12/2012	4407	0.44	300.92	4406.28	
11/12/2012	4500	0.26	350.23	4499.28	
11/15/2012	4614	0.09	248.98	4613.28	
11/15/2012	4809	0.09	286.33	4808.28	
11/15/2012	4994	0.26	212.68	4993.28	
11/15/2012	5185	0.26	189.47	5184.28	
11/15/2012	5375	0.26	224.63	5374.28	
11/15/2012	5565	0.26	252.23	5564.27	
11/16/2012	5756	0.26	229.73	5755.27	
11/16/2012	5945	0.44	241.51	5944.27	
11/16/2012	6136	0.53	256.62	6135.26	
11/16/2012	6325	0.35	258.21	6324.26	
11/16/2012	6518	0.44	257.33	6517.25	
11/16/2012	6891	0.44	232.98	6890.24	
11/17/2012	7078	0.35	264.09	7077.23	
11/17/2012	7322	0.52	257.19	7321.23	
11/23/2012	7450	0.53	253.46	7449.22	
11/23/2012	7482	0.62	234.48	7481.22	
11/23/2012	7514	1.14	255.13	7513.22	

Date	Depth	Deviation	Direction	TVD	Horiz. Disp.
11/23/2012	7545	5.45	264.80	7544.16	
11/23/2012	7577	10.11	267.52	7575.85	
11/23/2012	7608	14.51	267.79	7606.13	
11/23/2012	7640	17.85	268.93	7636.86	
11/23/2012	7672	20.66	269.81	7667.07	
11/23/2012	7703	24.18	271.39	7695.72	
11/23/2012	7735	28.31	269.81	7724.42	
11/24/2012	7767	31.66	271.04	7752.13	
11/24/2012	7798	34.38	270.34	7778.12	
11/24/2012	7830	36.49	270.16	7804.19	
11/24/2012	7861	39.92	270.07	7828.55	
11/24/2012	7893	44.05	269.98	7852.33	
11/24/2012	7925	48.89	270.77	7874.36	
11/24/2012	7956	52.94	272.00	7893.90	
11/24/2012	7988	56.28	272.71	7912.43	
11/25/2012	8020	58.92	272.62	7929.58	
11/25/2012	8052	62.34	271.92	7945.27	
11/25/2012	8084	65.95	271.39	7959.22	
11/26/2012	8115	69.47	270.07	7970.98	338.00
11/26/2012	8147	71.75	269.72	7981.60	368.00
11/26/2012	8179	72.72	269.37	7991.37	399.00
11/26/2012	8210	74.04	269.46	8000.23	
11/26/2012	8242	77.47	269.63	8008.11	459.00
11/26/2012	8274	80.64	269.37	8014.18	471.00
11/26/2012	8306	84.65	269.90	8118.00	522.00
11/26/2012	8337	85.21	270.25	8021.94	
11/26/2012	8369	86.70	270.86	8024.20	585.74
11/26/2012	8401	88.11	271.04	8025.65	617.17
11/26/2012	8432	89.52	271.04	8026.29	648.00
11/26/2012	8464	91.28	271.30	8026.06	680.00
11/26/2012	8527	90.84	270.25	8024.90	743.00
11/27/2012	8622	90.04	268.14	8024.17	838.00
11/27/2012	8811	92.24	267.43	8020.41	933.00
11/27/2012	8906	88.81	267.17	8019.54	1027.00
11/27/2012	9001	89.69	267.35	8020.78	1122.00
11/27/2012	9096	90.92	269.72	8020.28	1216.00
11/27/2012	9191	92.59	272.18	8017.37	1311.88
11/27/2012	9286	91.10	271.83	8014.31	1406.00
11/28/2012	9380	91.19	273.32	8012.43	1501.00
11/28/2012	9475	89.52	272.36	8011.84	1595.00
11/28/2012	9570	89.96	272.97	8012.27	1690.00
11/28/2012	9665	90.31	273.23	8012.05	1880.49
11/28/2012	9760	89.69	271.74	8012.05	1975.45
11/28/2012	9856	91.71	272.00	8010.87	2071.00
11/28/2012	9950	91.71	269.02	8008.07	2165.00

Date	Depth	Deviation	Direction	TVD	Horiz. Disp.
11/29/2012	10045	91.36	266.91	8005.52	2260.00
11/29/2012	10141	89.52	269.10	8003.00	2356.00
11/29/2012	10236	91.71	270.77	8002.00	2451.00
11/29/2012	10331	90.48	290.77	8000.00	2546.00
11/29/2012	10426	91.01	270.86	7999.02	2641.00
11/29/2012	10521	89.87	271.04	7998.29	2736.00
11/29/2012	10616	90.22	270.07	7998.22	2831.00
11/29/2012	10711	89.87	269.19	7998.00	2926.00
11/30/2012	10806	89.43	269.89	7998.00	3021.00
11/30/2012	10901	90.04	271.83	7999.00	3116.00
11/30/2012	10996	89.25	272.27	7999.75	3210.00
11/30/2012	11091	91.01	272.09	7999.54	3305.00
12/3/2012	11207	91.10	271.57	7996.00	3421.00
12/3/2012	11302	90.84	230.69	7994.00	3516.00
12/3/2012	11397	91.71	270.95	7992.65	3611.00
12/3/2012	11492	90.66	271.13	7990.69	3706.00
12/3/2012	11587	89.60	271.57	7990.47	3801.00
12/3/2012	11682	89.78	269.89	7991.00	3896.00
12/3/2012	11776	89.87	269.28	7991.00	3990.00
12/3/2012	11871	90.13	269.89	7991.00	4085.00
12/4/2012	11966	90.40	270.33	7990.00	4180.00
12/4/2012	12061	91.63	269.63	7989.15	4275.00
12/4/2012	12156	90.31	269.72	7987.55	4370.00
12/4/2012	12250	91.01	270.86	7986.46	4464.00
12/4/2012	12345	90.31	271.57	7985.37	4559.00
12/4/2012	12440	90.66	272.09	7984.00	4654.00



YATES
PETROLEUM
CORPORATION



Yates Petroleum Corp.

Eddy County (NAD 83)

Martha AIK Federal

#10H

OH

Design: OH

PathfinderX & Y Report

05 December, 2012

PATHFINDER[®]

A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County (NAD 83)
Site: Martha AIK Federal
Well: #10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #10H
TVD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
MD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project: Eddy County (NAD 83)

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

System Datum: Mean Sea Level

Site: Martha AIK Federal

Site Position:	From:	Map	Northing:	512,888.500 usft	Latitude:	32.409163
			Easting:	682,912.800 usft	Longitude:	-103.874574
Position Uncertainty:		0.0 usft	Slot Radius:	13/16 "	Grid Convergence:	0.25 "

Well: #10H

Well Position	+N-S	0.0 usft	Northing:	511,100.714 usft	Latitude:	32.403690
	+E-W	0.0 usft	Easting:	724,249.800 usft	Longitude:	-103.740664
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,584.0 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/14/2012	7.53	60.32	48,629

Design: OH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/S (usft)	+E/W (usft)	Direction (°)
	0.0	0.0	0.0	270.81



Pathfinder PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County (NAD 83)
Site: Martha AJK Federal
Well: #10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #10H
TVD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
MD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey Program		Date 12/5/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	730.0	Gyro #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
912.0	7,078.0	MWD #1 (OH)	MWD	MWD - Standard
7,100.0	7,322.0	Gyro #2 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
7,450.0	12,526.0	MWD #2 (OH)	MWD	MWD - Standard

Survey											
MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V-Sec (usft)	DLeg ("/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,602.0	0.0	0.0	0.0	0.00	511,100.71	724,249.80	
100.0	0.45	74.99	100.0	-3,502.0	0.1	0.4	-0.4	0.45	511,100.82	724,250.18	
200.0	0.54	83.73	200.0	-3,402.0	0.3	1.2	-1.2	0.12	511,100.97	724,251.03	
300.0	0.48	83.78	300.0	-3,302.0	0.4	2.1	-2.1	0.06	511,101.07	724,251.91	
400.0	0.75	76.63	400.0	-3,202.0	0.5	3.2	-3.2	0.28	511,101.26	724,252.96	
500.0	0.66	47.62	500.0	-3,102.0	1.1	4.2	-4.2	0.36	511,101.80	724,254.03	
600.0	1.17	20.78	600.0	-3,002.0	2.4	5.0	-5.0	0.65	511,103.14	724,254.81	
700.0	1.71	20.92	699.9	-2,902.1	4.8	5.9	-5.8	0.54	511,105.49	724,255.71	
730.0	1.84	15.55	729.9	-2,872.1	5.7	6.2	-6.1	0.70	511,106.38	724,256.00	
912.0	2.37	9.39	911.8	-2,690.2	12.2	7.6	-7.4	0.32	511,112.90	724,257.40	
1,006.0	2.81	4.47	1,005.7	-2,596.3	16.4	8.1	-7.9	0.52	511,117.12	724,257.89	
1,102.0	1.58	20.37	1,101.6	-2,500.4	20.0	8.7	-8.5	1.42	511,120.70	724,258.54	
1,197.0	0.26	256.54	1,196.6	-2,405.4	21.2	9.0	-8.7	1.83	511,121.88	724,258.78	
1,356.0	0.79	206.44	1,355.6	-2,246.4	20.1	8.1	-7.9	0.41	511,120.82	724,257.94	
1,546.0	0.44	242.21	1,545.6	-2,056.4	18.6	6.9	-6.7	0.27	511,119.30	724,256.72	
1,737.0	0.79	225.25	1,736.6	-1,865.4	17.3	5.3	-5.1	0.20	511,118.03	724,255.13	
1,927.0	0.70	185.70	1,926.6	-1,675.4	15.2	4.3	-4.1	0.27	511,115.96	724,254.09	
2,118.0	0.62	210.57	2,117.6	-1,484.4	13.2	3.6	-3.5	0.15	511,113.91	724,253.44	
2,308.0	0.44	237.11	2,307.6	-1,294.4	11.9	2.5	-2.3	0.16	511,112.63	724,252.31	
2,498.0	1.32	2.62	2,497.5	-1,104.5	13.7	2.0	-1.8	0.85	511,114.42	724,251.80	



Pathfinder PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County (NAD 83)
Site: Martha AIK Federal
Well: #10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
MD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,689.0	1.49	19.93	2,688.5	-913.5	18.2	2.9	-2.7	0.24	511,118.95	724,252.74	
2,879.0	1.49	355.68	2,878.4	-723.6	23.0	3.6	-3.3	0.33	511,123.73	724,253.40	
3,069.0	1.67	0.42	3,068.3	-533.7	28.3	3.4	-3.0	0.12	511,128.97	724,253.23	
3,265.0	1.32	5.26	3,264.3	-337.7	33.4	3.7	-3.2	0.19	511,134.07	724,253.46	
3,455.0	1.32	15.72	3,454.2	-147.8	37.6	4.5	-3.9	0.13	511,138.36	724,254.26	
3,646.0	1.76	19.85	3,645.2	43.2	42.5	6.0	-5.4	0.24	511,143.23	724,255.85	
3,836.0	1.41	53.42	3,835.1	233.1	46.7	8.9	-8.3	0.51	511,147.37	724,258.72	
4,026.0	1.14	79.88	4,025.0	423.0	48.4	12.7	-12.0	0.34	511,149.09	724,262.45	
4,217.0	0.26	315.77	4,216.0	614.0	49.0	14.2	-13.5	0.68	511,149.74	724,264.02	
4,407.0	0.44	300.92	4,406.0	804.0	49.7	13.3	-12.6	0.11	511,150.42	724,263.09	
4,500.0	0.26	350.23	4,499.0	897.0	50.1	13.0	-12.2	0.36	511,150.81	724,262.75	
4,614.0	0.09	248.98	4,613.0	1,011.0	50.3	12.8	-12.1	0.26	511,151.04	724,262.63	
4,804.0	0.09	286.33	4,803.0	1,201.0	50.3	12.5	-11.8	0.03	511,151.03	724,262.34	
4,994.0	0.26	212.68	4,993.0	1,391.0	50.0	12.2	-11.5	0.13	511,150.70	724,261.97	
5,185.0	0.26	189.47	5,184.0	1,582.0	49.2	11.9	-11.2	0.05	511,149.91	724,261.66	
5,375.0	0.26	224.63	5,374.0	1,772.0	48.5	11.5	-10.8	0.08	511,149.18	724,261.29	
5,565.0	0.26	252.23	5,564.0	1,962.0	48.0	10.8	-10.1	0.07	511,148.74	724,260.57	
5,756.0	0.26	229.73	5,755.0	2,153.0	47.6	10.0	-9.4	0.05	511,148.33	724,259.83	
5,946.0	0.44	241.51	5,945.0	2,343.0	47.0	9.1	-8.4	0.10	511,147.70	724,258.86	
6,136.0	0.53	256.62	6,135.0	2,533.0	46.4	7.6	-6.9	0.08	511,147.15	724,257.36	
6,325.0	0.35	258.21	6,324.0	2,722.0	46.1	6.1	-5.5	0.10	511,146.83	724,255.95	
6,518.0	0.44	257.33	6,517.0	2,915.0	45.8	4.8	-4.2	0.05	511,146.55	724,254.65	
6,704.0	0.44	252.67	6,703.0	3,101.0	45.5	3.5	-2.8	0.02	511,146.18	724,253.27	
6,891.0	0.44	232.98	6,890.0	3,288.0	44.8	2.2	-1.6	0.08	511,145.53	724,252.01	
7,078.0	0.35	264.09	7,077.0	3,475.0	44.3	1.1	-0.4	0.12	511,145.04	724,250.87	
7,100.0	0.38	263.50	7,099.0	3,497.0	44.3	0.9	-0.3	0.14	511,145.03	724,250.73	
7,200.0	0.23	258.33	7,199.0	3,597.0	44.2	0.4	0.2	0.15	511,144.95	724,250.21	



Pathfinder PathfinderX & Y Report



A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County (NAD 83)
Site: Martha AIK Federal
Well: #10H
Wellbore: OH
Design: OH

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

Well #10H
KB = 18 @ 3602.0usft (Silver Oak 10)
KB = 18 @ 3602.0usft (Silver Oak 10)
Grid:
Minimum Curvature
EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
7,300.0	0.35	277.46	7,299.0	3,697.0	44.2	-0.1	0.7	0.15	511,144.95	724,249.71	
7,322.0	0.52	257.19	7,321.0	3,719.0	44.2	-0.3	0.9	1.03	511,144.93	724,249.54	
7,450.0	0.53	253.46	7,449.0	3,847.0	43.9	-1.4	2.0	0.03	511,144.64	724,248.41	
7,482.0	0.62	234.48	7,481.0	3,879.0	43.8	-1.7	2.3	0.65	511,144.49	724,248.13	
7,514.0	1.14	255.13	7,513.0	3,911.0	43.6	-2.1	2.7	1.88	511,144.31	724,247.68	
KOP - 7514.0 MD; 7513.0 TVD, 43.6 N, -2.1 E											
7,545.0	5.45	264.80	7,543.9	3,941.9	43.4	-3.9	4.5	13.97	511,144.10	724,245.91	
7,577.0	10.11	267.52	7,575.6	3,973.6	43.1	-8.2	8.8	14.60	511,143.84	724,241.59	
7,608.0	14.51	267.79	7,605.9	4,003.9	42.9	-14.8	15.4	14.19	511,143.57	724,234.99	
7,640.0	17.85	268.93	7,636.6	4,034.6	42.6	-23.7	24.3	10.48	511,143.33	724,226.08	
7,672.0	20.66	269.81	7,666.8	4,064.8	42.5	-34.3	34.9	8.83	511,143.22	724,215.52	
7,703.0	24.18	271.39	7,695.5	4,093.5	42.6	-46.1	46.7	11.52	511,143.35	724,203.71	
7,735.0	28.31	269.81	7,724.2	4,122.2	42.8	-60.2	60.8	13.09	511,143.49	724,189.56	
7,767.0	31.66	271.04	7,751.9	4,149.9	42.9	-76.2	76.8	10.64	511,143.61	724,173.57	
7,798.0	34.38	270.34	7,777.9	4,175.9	43.1	-93.1	93.7	8.86	511,143.81	724,156.68	
7,830.0	36.49	270.16	7,803.9	4,201.9	43.2	-111.7	112.3	6.60	511,143.89	724,138.13	
7,861.0	39.92	270.07	7,828.3	4,226.3	43.2	-130.8	131.4	11.07	511,143.93	724,118.96	
7,893.0	44.05	269.98	7,852.1	4,250.1	43.2	-152.2	152.8	12.91	511,143.94	724,097.56	
7,925.0	48.89	270.77	7,874.1	4,272.1	43.4	-175.4	176.0	15.23	511,144.10	724,074.36	
7,956.0	52.94	272.00	7,893.7	4,291.7	44.0	-189.5	200.1	13.42	511,144.69	724,050.32	
7,988.0	56.28	272.71	7,912.2	4,310.2	45.0	-225.5	226.2	10.59	511,145.76	724,024.25	
8,020.0	58.92	272.62	7,929.3	4,327.3	46.3	-252.5	253.2	8.25	511,147.02	723,997.27	
8,052.0	62.34	271.92	7,945.0	4,343.0	47.4	-280.4	281.0	10.86	511,148.12	723,969.41	
8,084.0	65.95	271.39	7,959.0	4,357.0	48.2	-309.2	309.8	11.38	511,148.95	723,940.63	
8,115.0	69.47	270.07	7,970.7	4,368.7	48.6	-337.8	338.5	12.02	511,149.31	723,911.95	
8,147.0	71.75	269.72	7,981.4	4,379.4	48.5	-368.0	368.7	7.20	511,149.25	723,881.77	
8,179.0	72.72	269.37	7,991.1	4,389.1	48.3	-398.5	399.2	3.21	511,149.01	723,851.29	



Pathfinder PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: Yates Petroleum Corp.
Project: Eddy County (NAD 83)
Site: Martha Aik Federal
Well: #10H
Wellbore: OH
Design: OH

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

Well #10H
KB = 18 @ 3602.0usft (Silver Oak 10)
KB = 18 @ 3602.0usft (Silver Oak 10)
Grid:
Minimum Curvature
EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,210.0	74.04	269.45	8,000.0	4,398.0	48.0	-428.2	428.8	4.27	511,148.71	723,821.59	
8,242.0	77.47	269.63	8,007.9	4,405.9	47.7	-459.2	459.8	10.73	511,148.46	723,790.58	
8,274.0	80.64	269.37	8,013.9	4,411.9	47.5	-490.6	491.3	9.94	511,148.19	723,759.17	
8,306.0	84.15	269.90	8,018.2	4,416.2	47.3	-522.3	523.0	11.09	511,147.99	723,727.46	
8,337.0	85.21	270.25	8,021.0	4,419.0	47.3	-553.2	553.8	3.60	511,148.03	723,696.59	
8,369.0	86.70	270.86	8,023.3	4,421.3	47.6	-585.1	585.7	5.03	511,148.34	723,664.67	
8,401.0	88.11	271.04	8,024.8	4,422.8	48.2	-617.1	617.7	4.44	511,148.87	723,632.71	
8,432.0	89.52	271.04	8,025.4	4,423.4	48.7	-648.1	648.7	4.55	511,149.43	723,601.72	
LP - 8432.0 MD, 8025.4 TVD, 48.7° N, -648.1° E											
8,464.0	91.28	271.30	8,025.2	4,423.2	49.4	-680.1	680.7	5.56	511,150.08	723,569.73	
8,527.0	90.84	270.25	8,024.0	4,422.0	50.2	-743.1	743.7	1.81	511,150.93	723,506.75	
8,622.0	90.04	268.14	8,023.3	4,421.3	48.9	-838.0	838.6	2.38	511,149.80	723,411.77	
8,717.0	91.63	268.31	8,021.9	4,419.9	45.9	-933.0	933.5	1.68	511,146.66	723,316.83	
8,811.0	92.24	267.43	8,018.7	4,416.7	42.5	-1,026.9	1,027.4	1.14	511,143.17	723,222.95	
8,906.0	88.81	267.17	8,017.8	4,415.8	38.0	-1,121.7	1,122.2	3.62	511,138.69	723,128.07	
9,001.0	89.69	267.35	8,019.1	4,417.1	33.4	-1,216.6	1,217.0	0.95	511,134.15	723,033.19	
9,096.0	90.92	269.72	8,018.6	4,416.6	31.0	-1,311.6	1,311.9	2.81	511,131.72	722,938.23	
9,191.0	92.59	272.18	8,015.7	4,413.7	32.6	-1,406.5	1,406.8	3.13	511,133.29	722,843.30	
9,286.0	91.10	271.83	8,012.6	4,410.6	35.9	-1,501.4	1,501.8	1.61	511,136.62	722,748.41	
9,380.0	91.19	273.32	8,010.7	4,408.7	40.1	-1,595.3	1,595.7	1.58	511,140.84	722,654.52	
9,475.0	89.52	272.36	8,010.1	4,408.1	44.8	-1,690.2	1,690.6	2.03	511,145.54	722,559.65	
9,570.0	89.96	272.97	8,010.6	4,408.6	49.2	-1,785.0	1,785.6	0.79	511,149.96	722,464.75	
9,665.0	90.31	273.23	8,010.4	4,408.4	54.4	-1,879.9	1,880.5	0.46	511,155.10	722,369.89	
9,760.0	89.69	271.74	8,010.4	4,408.4	58.5	-1,974.8	1,975.4	1.70	511,159.22	722,274.98	
9,856.0	91.71	272.00	8,009.2	4,407.2	61.6	-2,070.8	2,071.4	2.12	511,162.35	722,179.05	
9,950.0	91.71	269.02	8,006.4	4,404.4	62.5	-2,164.7	2,165.4	3.17	511,163.19	722,085.10	
10,045.0	91.36	266.91	8,003.8	4,401.8	59.1	-2,259.6	2,260.2	2.25	511,159.81	721,990.20	



Pathfinder PathfinderX & Y Report

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Site: Martha Aik Federal
Well: #10H
Wellbore: OH
Design: OH

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

Well #10H
KB = 18 @ 3602.0usft (Silver Oak 10)
KB = 18 @ 3602.0usft (Silver Oak 10)
Grid:
Minimum Curvature
EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,141.0	89.52	269.10	8,003.1	4,401.1	55.8	-2,355.5	2,356.1	2.98	511,156.47	721,894.27	
10,236.0	91.71	270.77	8,002.1	4,400.1	55.7	-2,450.5	2,451.1	2.90	511,156.37	721,799.29	
10,331.0	90.48	270.77	8,000.3	4,398.3	56.9	-2,545.5	2,546.0	1.29	511,157.64	721,704.32	
10,426.0	91.01	270.86	7,999.0	4,397.0	58.3	-2,640.5	2,641.0	0.57	511,158.99	721,609.33	
10,521.0	89.87	271.04	7,998.3	4,396.3	59.9	-2,735.4	2,736.0	1.21	511,160.57	721,514.35	
10,616.0	90.22	270.07	7,998.2	4,396.2	60.8	-2,830.4	2,831.0	1.09	511,161.49	721,419.36	
10,711.0	89.87	269.19	7,998.1	4,396.1	60.2	-2,925.4	2,926.0	1.00	511,160.87	721,324.36	
10,806.0	89.43	269.90	7,998.7	4,396.7	59.4	-3,020.4	3,021.0	0.88	511,160.12	721,229.37	
10,901.0	90.04	271.83	7,999.2	4,397.2	60.8	-3,115.4	3,116.0	2.13	511,161.55	721,134.38	
10,996.0	89.25	272.27	7,999.8	4,397.8	64.2	-3,210.4	3,210.9	0.95	511,164.95	721,039.45	
11,091.0	91.01	272.09	7,999.5	4,397.5	67.9	-3,305.3	3,305.9	1.86	511,168.57	720,944.52	
11,154.0	92.07	272.71	7,997.8	4,395.8	70.5	-3,368.2	3,368.9	1.95	511,171.20	720,881.60	
11,207.0	91.10	271.57	7,996.4	4,394.4	72.5	-3,421.1	3,421.8	2.82	511,173.18	720,828.66	
11,302.0	90.84	270.69	7,994.8	4,392.8	74.3	-3,516.1	3,516.8	0.97	511,175.05	720,733.89	
11,397.0	91.71	270.95	7,992.7	4,390.7	75.7	-3,611.1	3,611.8	0.96	511,176.41	720,638.72	
11,492.0	90.66	271.13	7,990.7	4,388.7	77.4	-3,706.0	3,706.8	1.12	511,178.14	720,543.76	
11,587.0	89.60	271.57	7,990.5	4,388.5	79.7	-3,801.0	3,801.8	1.21	511,180.38	720,448.79	
11,682.0	89.78	269.90	7,991.0	4,389.0	80.9	-3,896.0	3,896.8	1.77	511,181.59	720,353.80	
11,776.0	89.87	269.28	7,991.3	4,389.3	80.2	-3,990.0	3,990.7	0.67	511,180.92	720,259.81	
11,871.0	90.13	269.90	7,991.3	4,389.3	79.5	-4,085.0	4,085.7	0.71	511,180.24	720,164.81	
11,966.0	90.40	270.34	7,990.8	4,388.8	79.7	-4,180.0	4,180.7	0.54	511,180.44	720,069.81	
12,061.0	91.63	269.63	7,989.2	4,387.2	79.7	-4,275.0	4,275.7	1.49	511,180.42	719,974.83	
12,156.0	90.31	269.72	7,987.5	4,385.5	79.2	-4,370.0	4,370.6	1.39	511,179.88	719,879.84	
12,250.0	91.01	270.86	7,986.5	4,384.5	79.6	-4,463.9	4,464.6	1.42	511,180.35	719,785.85	
12,345.0	90.31	271.57	7,985.4	4,383.4	81.7	-4,558.9	4,559.6	1.05	511,182.37	719,690.88	
12,440.0	90.66	272.09	7,984.6	4,382.6	84.7	-4,653.9	4,654.6	0.66	511,185.40	719,595.93	



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Project: Eddy County (NAD 83)
Site: Martha AIK Federal
Well: #10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
MD Reference: KB = 18 @ 3602.0usft (Silver Oak 10)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (*/100usft)	Northing (usft)	Easting (usft)
12,526.0	90.65	272.09	7,983.6	4,381.6	87.8	-4,739.8	4,740.6	0.00	511,188.54	719,510.00

PROJECTED BHL - 12526.0 'MD, 7983.6 'TVD, 87.8 'N, -4739.8 'E - FNL:741.45', FWL:361', FSL:579'

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,514.0	7,513.0	43.6	-2.1	KOP - 7514.0 'MD, 7513.0 'TVD, 43.6 'N, -2.1 'E
8,432.0	8,025.4	48.7	-648.1	LP - 8432.0 'MD, 8025.4 'TVD, 48.7 'N, -648.1 'E
12,526.0	7,983.6	87.8	-4,739.8	PROJECTED BHL - 12526.0 'MD, 7983.6 'TVD, 87.8 'N, -4739.8 'E
12,526.0	7,983.6	87.8	-4,739.8	FNL:741.45', FWL:361', FSL:579'

Checked By: _____

Approved By: _____

Date: _____