



Job Number: SVMO-141612
 Company: Yates Petroleum Corporation
 Lease/Well: Convoy Buc State 001H
 Location: Lea County, NM
 Rig Name: Nomac #22
 RKB: 21.5'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.76°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\YATES\MO\CONVOY~1\001H.SVY
 Date/Time: 02-Dec-14 / 10:59
 Curve Name: Surface - 1200' M.D. (Rate Gyro)

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 359.57
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
Surface MD to 1200' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.

Curtis Bingham 12/2/14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.33	296.85	100.00	.13	-.26	.13	.29	296.85	.33
200.00	.41	286.01	200.00	.36	-.86	.37	.93	292.70	.11
300.00	.41	275.96	299.99	.49	-1.56	.51	1.63	287.62	.07
400.00	.10	241.52	399.99	.49	-1.99	.51	2.05	283.84	.33
500.00	.10	310.47	499.99	.51	-2.13	.52	2.19	283.32	.11
600.00	.16	323.32	599.99	.67	-2.28	.69	2.38	286.44	.07
700.00	.10	108.27	699.99	.76	-2.28	.78	2.41	288.37	.25
800.00	.17	11.50	799.99	.88	-2.17	.89	2.34	291.98	.21
900.00	.29	81.69	899.99	1.06	-1.89	1.07	2.17	299.24	.28

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.46	98.73	999.99	1.03	-1.24	1.04	1.62	309.74	.20
1100.00	.48	97.27	1099.99	.92	-.43	.92	1.02	334.87	.02
Last Survey Depth Recorded									
1200.00	.56	85.79	1199.98	.90	.47	.90	1.02	27.56	.13

Yates Petroleum

Lea County, NM (NAD-83)

Convoy BUC State

#1H

OH

Design: OH

Standard Survey Report

12 December, 2014

HOBBS CCD
JUL 10 2017
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Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Site:	Convoy BUC State	MD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Convoy BUC State			
Site Position:		Northing:	430,562.70 usft	Latitude:	32° 10' 53.130 N
From:	Map	Easting:	775,754.00 usft	Longitude:	103° 34' 32.289 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#1H					
Well Position	+N/-S	0.0 usft	Northing:	430,573.00 usft	Latitude:	32° 10' 53.110 N
	+E/-W	0.0 usft	Easting:	777,503.60 usft	Longitude:	103° 34' 11.931 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,481.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/6/2014	7.16	60.06	48,251

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	359.57	

Survey Program	Date	12/12/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	1,200.0	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
1,280.0	15,824.0	Survey #2 - Crescent MWD Surveys (OH)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
Caravan #11H (75R) - State 28#1 R2 = 150.1'										
0.5	0.00	296.85	0.5	0.0	0.0	0.0	0.00	0.00	0.00	
State 28#1										
6.7	0.02	296.85	6.7	0.0	0.0	0.0	0.35	0.35	0.00	
State 28#1 R1 = 233'										
100.0	0.33	296.85	100.0	0.1	-0.3	0.1	0.33	0.33	0.00	
200.0	0.41	286.01	200.0	0.4	-0.9	0.4	0.11	0.08	-10.84	
300.0	0.41	275.96	300.0	0.5	-1.6	0.5	0.07	0.00	-10.05	

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Site:	Convoy BUC State	MD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
400.0	0.10	241.52	400.0	0.5	-2.0	0.5	0.33	-0.31	-34.44	
500.0	0.10	310.47	500.0	0.5	-2.1	0.5	0.11	0.00	68.95	
600.0	0.16	323.32	600.0	0.7	-2.3	0.7	0.07	0.06	12.85	
700.0	0.10	108.27	700.0	0.8	-2.3	0.8	0.25	-0.06	144.95	
800.0	0.17	11.50	800.0	0.9	-2.2	0.9	0.21	0.07	-96.77	
900.0	0.29	81.69	900.0	1.1	-1.9	1.1	0.28	0.12	70.19	
1,000.0	0.46	98.73	1,000.0	1.0	-1.2	1.0	0.20	0.17	17.04	
1,100.0	0.48	97.27	1,100.0	0.9	-0.4	0.9	0.02	0.02	-1.46	
1,200.0	0.56	85.79	1,200.0	0.9	0.5	0.9	0.13	0.08	-11.48	
1,280.0	1.00	66.80	1,280.0	1.2	1.5	1.2	0.63	0.55	-23.74	
1,343.0	1.00	78.00	1,343.0	1.5	2.5	1.5	0.31	0.00	17.78	
1,436.0	0.90	77.10	1,436.0	1.9	4.1	1.8	0.11	-0.11	-0.97	
1,529.0	0.70	319.10	1,528.9	2.5	4.4	2.4	1.48	-0.22	-126.88	
1,623.0	1.10	319.10	1,622.9	3.6	3.4	3.6	0.43	0.43	0.00	
1,717.0	1.40	318.90	1,716.9	5.1	2.1	5.1	0.32	0.32	-0.21	
1,810.0	1.60	326.30	1,809.9	7.1	0.6	7.1	0.30	0.22	7.96	
1,903.0	1.80	312.70	1,902.8	9.1	-1.2	9.1	0.48	0.22	-14.62	
2,091.0	2.50	321.80	2,090.7	14.4	-5.9	14.4	0.41	0.37	4.84	
2,278.0	3.10	313.80	2,277.5	21.1	-12.1	21.2	0.38	0.32	-4.28	
2,466.0	2.20	282.80	2,465.3	25.4	-19.2	25.5	0.88	-0.48	-16.49	
2,652.0	2.80	259.20	2,651.1	25.3	-27.2	25.5	0.63	0.32	-12.69	
2,839.0	2.60	263.10	2,837.9	24.0	-35.9	24.2	0.15	-0.11	2.09	
3,025.0	2.10	255.20	3,023.8	22.6	-43.4	22.9	0.32	-0.27	-4.25	
3,211.0	2.50	266.90	3,209.6	21.5	-50.7	21.9	0.33	0.22	6.29	
3,398.0	1.50	278.20	3,396.5	21.6	-57.2	22.0	0.57	-0.53	6.04	
3,585.0	2.50	299.90	3,583.4	24.0	-63.2	24.5	0.66	0.53	11.60	
3,772.0	1.70	308.10	3,770.2	27.7	-68.9	28.3	0.46	-0.43	4.39	
3,960.0	2.20	330.00	3,958.1	32.6	-72.9	33.1	0.47	0.27	11.65	
4,147.0	2.50	285.30	4,145.0	36.8	-78.6	37.4	0.97	0.16	-23.90	
4,334.0	1.00	226.20	4,331.9	36.7	-83.7	37.3	1.16	-0.80	-31.60	
4,521.0	0.80	130.90	4,518.9	34.7	-83.9	35.4	0.72	-0.11	-50.96	
4,706.0	1.60	135.00	4,703.9	32.1	-81.1	32.7	0.43	0.43	2.22	
4,893.0	2.20	140.50	4,890.8	27.4	-77.0	28.0	0.33	0.32	2.94	
5,081.0	1.20	159.60	5,078.7	22.8	-74.0	23.4	0.60	-0.53	10.16	
5,174.0	0.80	159.70	5,171.7	21.3	-73.4	21.8	0.43	-0.43	0.11	
5,281.0	0.90	178.80	5,278.6	19.8	-73.2	20.3	0.28	0.09	17.85	
5,467.0	1.10	185.20	5,464.6	16.5	-73.3	17.1	0.12	0.11	3.44	
5,653.0	1.10	186.80	5,650.6	13.0	-73.7	13.5	0.02	0.00	0.86	
5,840.0	0.90	187.50	5,837.6	9.7	-74.1	10.3	0.11	-0.11	0.37	
6,026.0	1.10	181.50	6,023.5	6.5	-74.3	7.0	0.12	0.11	-3.23	
6,213.0	1.10	169.90	6,210.5	2.9	-74.0	3.5	0.12	0.00	-6.20	
6,401.0	1.20	167.20	6,398.5	-0.8	-73.3	-0.2	0.06	0.05	-1.44	
6,588.0	1.40	168.70	6,585.4	-4.9	-72.4	-4.4	0.11	0.11	0.80	
6,774.0	0.90	244.10	6,771.4	-7.8	-73.3	-7.2	0.79	-0.27	40.54	

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
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Site:	Convoy BUC State	MD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,960.0	0.70	237.40	6,957.4	-9.0	-75.6	-8.5	0.12	-0.11	-3.60
7,148.0	0.70	227.50	7,145.3	-10.4	-77.4	-9.8	0.06	0.00	-5.27
7,335.0	0.90	217.20	7,332.3	-12.4	-79.1	-11.8	0.13	0.11	-5.51
7,521.0	1.10	229.30	7,518.3	-14.7	-81.3	-14.1	0.16	0.11	6.51
7,707.0	1.20	234.70	7,704.3	-17.0	-84.3	-16.4	0.08	0.05	2.90
7,895.0	0.90	237.00	7,892.2	-18.9	-87.1	-18.3	0.16	-0.16	1.22
8,081.0	0.90	213.10	8,078.2	-20.9	-89.1	-20.3	0.20	0.00	-12.85
8,268.0	1.10	227.20	8,265.2	-23.4	-91.3	-22.7	0.17	0.11	7.54
8,454.0	1.20	222.80	8,451.1	-26.0	-93.9	-25.3	0.07	0.05	-2.37
8,642.0	0.20	52.50	8,639.1	-27.3	-95.0	-26.6	0.74	-0.53	-90.59
8,828.0	0.50	16.80	8,825.1	-26.3	-94.5	-25.6	0.19	0.16	-19.19
8,995.0	0.50	27.50	8,992.1	-25.0	-93.9	-24.3	0.06	0.00	6.41
9,110.0	0.70	12.00	9,107.1	-23.8	-93.6	-23.1	0.22	0.17	-13.48
9,296.0	1.20	339.20	9,293.1	-20.9	-94.0	-20.2	0.39	0.27	-17.63
9,484.0	0.90	358.70	9,481.1	-17.6	-94.7	-16.9	0.25	-0.16	10.37
9,671.0	0.70	61.40	9,668.0	-15.6	-93.8	-14.9	0.45	-0.11	33.53
9,858.0	0.50	153.50	9,855.0	-15.7	-92.4	-15.1	0.47	-0.11	49.25
10,046.0	1.80	169.50	10,043.0	-19.4	-91.5	-18.7	0.71	0.69	8.51
10,234.0	0.40	182.20	10,231.0	-22.9	-91.0	-22.3	0.75	-0.74	6.76
10,420.0	0.50	203.50	10,417.0	-24.3	-91.3	-23.7	0.10	0.05	11.45
10,513.0	0.70	184.10	10,509.9	-25.3	-91.5	-24.6	0.30	0.22	-20.86
10,565.0	0.20	110.60	10,561.9	-25.6	-91.5	-24.9	1.29	-0.96	-141.35
KOP: 10565.0' MD, 10561.9' TVD									
10,596.0	3.50	10.10	10,592.9	-24.7	-91.3	-24.0	11.43	10.65	-324.19
10,627.0	7.60	10.50	10,623.8	-21.8	-90.7	-21.1	13.23	13.23	1.29
10,658.0	11.10	10.50	10,654.4	-16.8	-89.8	-16.1	11.29	11.29	0.00
10,689.0	13.90	14.30	10,684.6	-10.3	-88.3	-9.6	9.41	9.03	12.26
10,720.0	17.20	14.50	10,714.5	-2.2	-86.3	-1.6	10.65	10.65	0.65
10,751.0	20.10	15.00	10,743.8	7.4	-83.7	8.0	9.37	9.35	1.61
10,782.0	23.20	14.70	10,772.7	18.4	-80.8	19.0	10.01	10.00	-0.97
10,813.0	26.20	11.00	10,800.8	31.0	-78.0	31.6	10.88	9.68	-11.94
10,845.0	29.60	9.60	10,829.1	45.8	-75.3	46.3	10.82	10.63	-4.38
10,876.0	33.40	9.20	10,855.5	61.8	-72.7	62.3	12.28	12.26	-1.29
10,907.0	37.50	9.00	10,880.8	79.5	-69.8	80.0	13.23	13.23	-0.65
10,939.0	41.00	7.10	10,905.6	99.5	-67.0	100.0	11.56	10.94	-5.94
10,970.0	44.20	3.20	10,928.4	120.4	-65.1	120.9	13.38	10.32	-12.58
11,001.0	47.70	1.50	10,949.9	142.7	-64.2	143.2	11.96	11.29	-5.48
11,032.0	51.70	0.10	10,970.0	166.3	-63.9	166.8	13.35	12.90	-4.52
11,063.0	55.60	359.40	10,988.3	191.3	-64.0	191.8	12.71	12.58	-2.26
11,095.0	59.80	359.70	11,005.4	218.3	-64.2	218.8	13.15	13.13	0.94
11,126.0	62.80	0.30	11,020.3	245.5	-64.2	246.0	9.83	9.68	1.94
11,157.0	66.00	0.30	11,033.7	273.5	-64.1	273.9	10.32	10.32	0.00
11,188.0	69.50	359.90	11,045.5	302.2	-64.0	302.6	11.35	11.29	-1.29

Survey Report

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Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Site:	Convoy BUC State	MD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,202.0	71.60	359.59	11,050.1	315.4	-64.1	315.8	15.14	15.00	-2.22
Cross 330' Hardline:11202.0' MD, 11050.1' TVD, 71.60° INC									
11,220.0	74.30	359.20	11,055.4	332.6	-64.3	333.0	15.14	15.00	-2.16
11,251.0	78.70	359.00	11,062.6	362.7	-64.7	363.2	14.21	14.19	-0.65
11,279.0	81.30	358.70	11,067.5	390.3	-65.3	390.7	9.35	9.29	-1.07
11,310.0	83.20	358.70	11,071.7	421.0	-66.0	421.5	6.13	6.13	0.00
11,341.0	85.90	358.80	11,074.6	451.8	-66.7	452.3	8.72	8.71	0.32
11,372.0	87.10	358.50	11,076.5	482.8	-67.4	483.2	3.99	3.87	-0.97
11,403.0	88.50	358.50	11,077.7	513.7	-68.2	514.2	4.52	4.52	0.00
EOC: 11403.0' MD, 11077.7' TVD, 88.50° INC, 358.50° AZ, 514.2' VS									
11,434.0	88.50	358.70	11,078.5	544.7	-69.0	545.2	0.64	0.00	0.65
11,465.0	88.30	358.70	11,079.4	575.7	-69.7	576.2	0.65	-0.65	0.00
11,559.0	89.40	359.60	11,081.3	669.6	-71.1	670.2	1.51	1.17	0.96
11,653.0	90.30	359.40	11,081.5	763.6	-71.9	764.2	0.98	0.96	-0.21
11,747.0	90.40	359.60	11,080.9	857.6	-72.7	858.2	0.24	0.11	0.21
11,840.0	90.80	359.20	11,080.0	950.6	-73.7	951.2	0.61	0.43	-0.43
11,934.0	90.80	359.20	11,078.6	1,044.6	-75.0	1,045.1	0.00	0.00	0.00
12,027.0	89.70	0.80	11,078.2	1,137.6	-75.0	1,138.1	2.09	-1.18	1.72
12,121.0	89.70	0.60	11,078.7	1,231.6	-73.8	1,232.1	0.21	0.00	-0.21
12,215.0	90.10	2.20	11,078.9	1,325.6	-71.5	1,326.1	1.75	0.43	1.70
12,308.0	90.40	2.20	11,078.5	1,418.5	-68.0	1,419.0	0.32	0.32	0.00
12,401.0	90.80	2.00	11,077.5	1,511.4	-64.6	1,511.9	0.48	0.43	-0.22
12,495.0	91.00	2.20	11,076.0	1,605.4	-61.1	1,605.8	0.30	0.21	0.21
12,596.0	91.00	2.00	11,074.3	1,706.3	-57.4	1,706.6	0.20	0.00	-0.20
12,690.0	91.30	1.80	11,072.4	1,800.2	-54.3	1,800.6	0.38	0.32	-0.21
12,783.0	89.90	1.50	11,071.4	1,893.2	-51.6	1,893.5	1.54	-1.51	-0.32
12,877.0	90.10	1.30	11,071.4	1,987.1	-49.3	1,987.4	0.30	0.21	-0.21
12,971.0	90.40	1.70	11,071.0	2,081.1	-46.9	2,081.4	0.53	0.32	0.43
13,065.0	91.10	1.50	11,069.8	2,175.0	-44.2	2,175.3	0.77	0.74	-0.21
13,159.0	90.30	1.70	11,068.6	2,269.0	-41.6	2,269.2	0.88	-0.85	0.21
13,252.0	90.40	2.00	11,068.1	2,362.0	-38.6	2,362.2	0.34	0.11	0.32
13,345.0	90.60	2.20	11,067.2	2,454.9	-35.2	2,455.1	0.30	0.22	0.22
13,438.0	89.40	1.70	11,067.2	2,547.8	-32.0	2,548.0	1.40	-1.29	-0.54
13,532.0	89.60	2.00	11,068.1	2,641.8	-29.0	2,641.9	0.38	0.21	0.32
13,625.0	90.10	2.50	11,068.3	2,734.7	-25.4	2,734.8	0.76	0.54	0.54
13,720.0	90.40	1.70	11,067.9	2,829.6	-21.9	2,829.7	0.90	0.32	-0.84
13,814.0	90.10	1.10	11,067.5	2,923.6	-19.6	2,923.7	0.71	-0.32	-0.64
13,909.0	90.40	0.80	11,067.1	3,018.6	-18.0	3,018.6	0.45	0.32	-0.32
14,002.0	89.60	0.60	11,067.1	3,111.6	-16.9	3,111.6	0.89	-0.86	-0.22
14,096.0	90.10	0.60	11,067.3	3,205.6	-15.9	3,205.6	0.53	0.53	0.00
14,189.0	89.60	0.30	11,067.6	3,298.6	-15.2	3,298.6	0.63	-0.54	-0.32
14,282.0	89.70	0.30	11,068.1	3,391.6	-14.7	3,391.6	0.11	0.11	0.00
14,376.0	89.90	0.40	11,068.5	3,485.6	-14.1	3,485.6	0.24	0.21	0.11
14,469.0	90.10	0.10	11,068.5	3,578.6	-13.7	3,578.6	0.39	0.22	-0.32

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Site:	Convoy BUC State	MD Reference:	RKB @ 3502.5usft (Nomac 22 - KB=21.5)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,562.0	90.10	359.70	11,068.3	3,671.6	-13.9	3,671.6	0.43	0.00	-0.43
14,655.0	90.30	359.70	11,068.0	3,764.6	-14.3	3,764.6	0.22	0.22	0.00
14,748.0	90.40	359.40	11,067.4	3,857.6	-15.1	3,857.6	0.34	0.11	-0.32
14,843.0	91.00	359.20	11,066.2	3,952.5	-16.2	3,952.6	0.67	0.63	-0.21
14,936.0	90.10	359.70	11,065.3	4,045.5	-17.1	4,045.6	1.11	-0.97	0.54
15,029.0	90.40	359.90	11,064.9	4,138.5	-17.4	4,138.6	0.39	0.32	0.22
15,122.0	91.00	359.60	11,063.8	4,231.5	-17.9	4,231.5	0.72	0.65	-0.32
15,216.0	90.10	0.80	11,062.9	4,325.5	-17.5	4,325.5	1.60	-0.96	1.28
15,309.0	90.10	0.10	11,062.7	4,418.5	-16.8	4,418.5	0.75	0.00	-0.75
15,403.0	89.60	358.70	11,063.0	4,512.5	-17.8	4,512.5	1.58	-0.53	-1.49
15,497.0	89.70	359.40	11,063.6	4,606.5	-19.3	4,606.5	0.75	0.11	0.74
15,591.0	90.60	0.10	11,063.3	4,700.5	-19.7	4,700.5	1.21	0.96	0.74
15,684.0	90.80	0.40	11,062.2	4,793.5	-19.3	4,793.5	0.39	0.22	0.32
15,768.0	91.10	0.40	11,060.8	4,877.5	-18.8	4,877.5	0.36	0.36	0.00
Final MWD Survey: 15768.0' MD, 11060.8' TVD									
15,824.0	91.10	0.40	11,059.7	4,933.5	-18.4	4,933.5	0.00	0.00	0.00
BHL: 15824.0' MD, 11059.7' TVD, 91.10° INC, 0.40° AZ, 4933.5' +N/-S, -18.4' +E/-W, 4933.5' VS - PBHL(CBS#1H)									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,565.0	10,561.9	-25.6	-91.5	KOP: 10565.0' MD, 10561.9' TVD
11,202.0	11,050.1	315.4	-64.1	Cross 330' Hardline:11202.0' MD, 11050.1' TVD, 71.60° INC
11,403.0	11,077.7	513.7	-68.2	EOC: 11403.0' MD, 11077.7' TVD, 88.50° INC, 358.50° AZ, 514.2' VS
15,768.0	11,060.8	4,877.5	-18.8	Final MWD Survey: 15768.0' MD, 11060.8' TVD
15,824.0	11,059.7	4,933.5	-18.4	BHL: 15824.0' MD, 11059.7' TVD, 91.10° INC, 0.40° AZ, 4933.5' +N/-S, -18.4' +E/-W, 4933.5' VS - PBHL(CBS#1H)

Checked By: _____ Approved By: _____ Date: _____