UNION DRILLING, INC.

Well Name & Number: Martha "AIK" Federal #14H

API Number: 30-015-37556

Location: 530 FSL & 200 FEL, Lot P Sec. 11, Township 22-S, Range 31-E, Eddy County, New Mexico

Operator: Yates Petroleum Corporation

Drilling Contractor: Union Drilling, Inc.

The undersigned hereby certifies that he is an authorized representative of the drilling Contractor who drilled the above described well and that deviation survey tests were conducted and he obtained the following results:

RECORD OF INCLINATION

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
460	460	.5	0.87	4.01	4.01
1149	689	.4	0.70	4.81	8.82
2004	855	.2	0.35	2.98	11.81
2859	855	.8	1.40	11.94	23.75
3810	951	2.9	5.06	48.13	71.88
4774	964	1.6	2.79	26.92	98.80
5430	656	6.4	11.16	73.24	172.03
6386	956	1.3	2.27	21.69	193.72
6549	163	6.2	10.82	17.63	211.35
DIRECTIONAL					
TOOK OVER					

4725 Loop 322 / Abilene, Texas 79602

325.698.9864 / Fax 325.698.6470

Drilling Contractor: Union Drilling, Inc.

By: Jim Mayfield

Jim Mayfield
Title: Division Manager

Subscribed and sworn to before me this 17th Day of December, 2012.

Laura Jo Young

Notary Public
My Commission Expires: July 29, 2014

COUNTY OF TAYLOR)
)
STATE OF TEXAS)

LAURA JO YOUNG
Notary Public, State of Texas
My Commission Expires
July 29, 2014

MS Energy Services

Job Number: SVMO-120070
Company: Yates Petroleum Corporation
Lease/Well: Martha ALK Federal 14H
Location: Eddy County, NM
Rig Name: UDI #223
RKB: 25'
G.L. or M.S.L.: GL

State/Country: New Mexico/USA
Declination: 7.19°
Grid: East To Grid North
File name: F:\SURVEY\2012SU~1\YATES\MO\MARTHA~2\14H.SVY
Date/Time: 21-Nov-12 / 11:32
Curve Name: Surface - 900' M.D. (Rate Gyro)

We hereby certify that our survey data from Surface MD to 900' MD is, to the best of our knowledge a true and accurate account of the well bore.

Jared Mayers — MS Energy Services — 11/21/12 — Date

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 271.27
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
50.00	.07	334.95	50.00	.03	-.01	.01	.03	334.97	.14
100.00	.05	343.89	100.00	.08	-.03	.03	.08	337.31	.04
150.00	.06	297.48	150.00	.11	-.06	.06	.13	330.77	.09
200.00	.07	266.73	200.00	.12	-.11	.12	.17	316.17	.07
250.00	.06	281.94	250.00	.12	-.17	.17	.21	305.81	.04
300.00	.05	263.75	300.00	.13	-.22	.22	.25	300.07	.04
350.00	.04	341.05	350.00	.14	-.25	.25	.28	299.77	.11
400.00	.17	8.15	400.00	.23	-.24	.25	.33	313.74	.27
450.00	.16	21.32	450.00	.37	-.20	.21	.42	330.95	.08

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	CLOSURE Direction Deg	Dogleg Severity Deg/100
500.00	.16	69.20	500.00	.46	-.11	.12	.47	346.01	.26
550.00	.27	61.91	550.00	.54	.05	-.04	.54	5.82	.23
600.00	.13	95.28	600.00	.59	.22	-.20	.63	20.07	.35
650.00	.09	120.25	650.00	.56	.31	-.29	.64	28.45	.12
700.00	.24	344.74	700.00	.65	.31	-.30	.72	25.80	.62
750.00	.38	1.12	750.00	.91	.29	-.27	.96	17.51	.33
800.00	.53	1.10	800.00	1.31	.30	-.27	1.34	12.72	.30
850.00	.51	7.79	849.99	1.76	.33	-.29	1.79	10.62	.13
Last Survey Depth Recorded									
900.00	.41	10.11	899.99	2.16	.39	-.34	2.19	10.29	.20

CRESCENT
DIRECTIONAL DRILLING

Yates Petroleum

Eddy, NM (NAD-83)
Martha AIK Federal
#14H

OH

Design: OH

Standard Survey Report

11 December, 2012

YATES PETROLEUM CORPORATION

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #14H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3593.0usft (Union #223 - 25' KB)
Site:	Martha AIK Federal	MD Reference:	WELL @ 3593.0usft (Union #223 - 25' KB)
Well:	#14H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project Eddy, 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 Martha AIK Federal

Site Position:		Northing:	509,750.87 usft	Latitude:	32° 23' 59.928 N
From:	Map	Easting:	724,235.17 usft	Longitude:	103° 44' 26.648 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well #14H

Well Position	+N/-S	0.0 usft	Northing:	509,751.01 usft	Latitude:	32° 23' 59.928 N
	+E/-W	0.0 usft	Easting:	724,257.17 usft	Longitude:	103° 44' 26.392 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	usft	Ground Level:	3,568.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/26/2012	7.51	60.29	48,566

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	271.27

Survey Program Date 12/11/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
50.0	900.0	Survey #1 - MS Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
959.0	10,268.0	Survey #2 - Crescent1 (OH)	MWD	MWD - Standard
10,330.0	10,330.0	Survey #3 - PTB (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
50.0	0.07	334.95	50.0	0.0	0.0	0.0	0.14	0.14	0.00
100.0	0.05	343.89	100.0	0.1	0.0	0.0	0.04	-0.04	17.88
150.0	0.06	297.48	150.0	0.1	-0.1	0.1	0.09	0.02	-92.82
200.0	0.07	266.73	200.0	0.1	-0.1	0.1	0.07	0.02	-61.50
250.0	0.06	281.94	250.0	0.1	-0.2	0.2	0.04	-0.02	30.42
300.0	0.05	263.75	300.0	0.1	-0.2	0.2	0.04	-0.02	-36.38
350.0	0.04	341.05	350.0	0.1	-0.2	0.2	0.11	-0.02	154.60
400.0	0.17	8.15	400.0	0.2	-0.2	0.2	0.27	0.26	54.20

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #14H
Project:	Eddy, NM (NAD-83)	**TVD Reference:**	WELL @ 3593.0usft (Union #223 - 25' KB)
Site:	Martha AIK Federal	**MD Reference:**	WELL @ 3593.0usft (Union #223 - 25' KB)
Well:	#14H	**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)
450.0	0.16	21.32	450.0	0.4	-0.2	0.2	0.08	-0.02	26.34
500.0	0.16	69.20	500.0	0.5	-0.1	0.1	0.26	0.00	95.76
550.0	0.27	61.91	550.0	0.5	0.1	0.0	0.23	0.22	-14.58
600.0	0.13	95.28	600.0	0.6	0.2	-0.2	0.35	-0.28	66.74
650.0	0.09	120.25	650.0	0.6	0.3	-0.3	0.12	-0.08	49.94
700.0	0.24	344.74	700.0	0.6	0.3	-0.3	0.62	0.30	-271.02
750.0	0.38	1.12	750.0	0.9	0.3	-0.3	0.33	0.28	32.76
800.0	0.53	1.10	800.0	1.3	0.3	-0.3	0.30	0.30	-0.04
850.0	0.51	7.79	850.0	1.8	0.3	-0.3	0.13	-0.04	13.38
900.0	0.41	10.11	900.0	2.2	0.4	-0.3	0.20	-0.20	4.64
959.0	0.50	14.00	959.0	2.6	0.5	-0.4	0.16	0.15	6.59
1,149.0	0.40	18.10	1,149.0	4.0	0.9	-0.8	0.06	-0.05	2.16
1,434.0	0.40	36.10	1,434.0	5.8	1.8	-1.7	0.04	0.00	6.32
1,719.0	0.40	22.30	1,719.0	7.5	2.8	-2.6	0.03	0.00	-4.84
2,004.0	0.20	23.10	2,004.0	8.9	3.3	-3.1	0.07	-0.07	0.28
2,289.0	0.30	127.30	2,289.0	8.9	4.1	-3.9	0.14	0.04	36.56
2,574.0	0.60	99.60	2,574.0	8.2	6.2	-6.0	0.13	0.11	-9.72
2,859.0	0.80	105.00	2,858.9	7.4	9.6	-9.4	0.07	0.07	1.89
3,144.0	0.60	123.20	3,143.9	6.1	12.7	-12.6	0.10	-0.07	6.39
3,430.0	2.50	129.60	3,429.8	1.3	18.8	-18.8	0.67	0.66	2.24
3,525.0	3.30	126.30	3,524.7	-1.6	22.6	-22.6	0.86	0.84	-3.47
3,715.0	3.10	139.30	3,714.4	-8.8	30.4	-30.6	0.40	-0.11	6.84
3,810.0	2.90	140.30	3,809.2	-12.6	33.6	-33.8	0.22	-0.21	1.05
3,905.0	2.90	135.50	3,904.1	-16.1	36.8	-37.1	0.26	0.00	-5.05
4,000.0	2.40	128.50	3,999.0	-19.1	40.0	-40.4	0.63	-0.53	-7.37
4,095.0	2.10	116.90	4,094.0	-21.1	43.1	-43.6	0.57	-0.32	-12.21
4,190.0	1.80	94.60	4,188.9	-22.0	46.2	-46.7	0.85	-0.32	-23.47
4,284.0	1.10	94.30	4,282.9	-22.2	48.6	-49.0	0.74	-0.74	-0.32
4,379.0	0.90	99.10	4,377.9	-22.4	50.2	-50.7	0.23	-0.21	5.05
4,474.0	0.60	116.90	4,472.8	-22.7	51.4	-51.9	0.40	-0.32	18.74
4,505.0	0.70	138.20	4,503.8	-22.9	51.7	-52.1	0.84	0.32	68.71
4,679.0	0.80	49.70	4,677.8	-22.9	53.3	-53.8	0.60	0.06	-50.86
4,774.0	1.60	11.80	4,772.8	-21.2	54.1	-54.5	1.14	0.84	-39.89
4,869.0	3.30	22.50	4,867.7	-17.4	55.4	-55.8	1.85	1.79	11.26
4,964.0	3.20	21.40	4,962.6	-12.4	57.4	-57.7	0.12	-0.11	-1.16
5,059.0	3.10	22.00	5,057.4	-7.5	59.3	-59.5	0.11	-0.11	0.63
5,154.0	2.80	25.30	5,152.3	-3.1	61.3	-61.3	0.36	-0.32	3.47
5,249.0	3.20	21.40	5,247.2	1.5	63.2	-63.2	0.47	0.42	-4.11
5,344.0	4.00	14.40	5,342.0	7.2	65.0	-64.9	0.96	0.84	-7.37
5,439.0	6.40	13.50	5,436.6	15.5	67.1	-66.7	2.53	2.53	-0.95
5,534.0	8.70	6.50	5,530.8	27.8	69.1	-68.5	2.60	2.42	-7.37
5,629.0	8.40	6.50	5,624.7	41.9	70.7	-69.8	0.32	-0.32	0.00
5,724.0	7.80	2.80	5,718.8	55.2	71.8	-70.6	0.84	-0.63	-3.89

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #14H
Project:	Eddy, NM (NAD-83)	**TVD Reference:**	WELL @ 3593.0usft (Union #223 - 25' KB)
Site:	Martha AIK Federal	**MD Reference:**	WELL @ 3593.0usft (Union #223 - 25' KB)
Well:	#14H	**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)
5,819.0	7.00	15.10	5,813.0	67.2	73.7	-72.2	1.86	-0.84	12.95
5,914.0	5.50	13.70	5,907.4	77.2	76.2	-74.5	1.59	-1.58	-1.47
6,009.0	5.30	4.40	6,002.0	86.0	77.7	-75.7	0.94	-0.21	-9.79
6,104.0	4.60	349.30	6,096.6	94.2	77.3	-75.2	1.55	-0.74	-15.89
6,199.0	2.80	351.90	6,191.4	100.2	76.3	-74.0	1.90	-1.89	2.74
6,294.0	1.10	328.30	6,286.4	103.3	75.5	-73.1	1.94	-1.79	-24.84
6,389.0	1.30	292.10	6,381.4	104.4	74.0	-71.6	0.81	0.21	-38.11
6,486.0	1.70	271.20	6,478.3	104.9	71.5	-69.2	0.69	0.41	-21.55
KOP - 6486.0' MD, 6478.3' TVD, 1.70° INC, 271.20° AZI, -69.2' VS									
6,517.0	2.80	267.30	6,509.3	104.9	70.3	-68.0	3.58	3.55	-12.58
6,549.0	6.20	264.20	6,541.2	104.7	67.8	-65.5	10.65	10.63	-9.69
6,581.0	10.10	265.60	6,572.9	104.3	63.3	-61.0	12.20	12.19	4.38
6,612.0	13.90	270.70	6,603.2	104.1	56.8	-54.5	12.71	12.26	16.45
6,644.0	16.50	276.00	6,634.1	104.6	48.5	-46.1	9.20	8.13	16.56
6,676.0	19.60	274.00	6,664.5	105.5	38.6	-36.3	9.88	9.69	-6.25
6,708.0	23.00	268.20	6,694.3	105.7	27.0	-24.6	12.49	10.63	-18.13
6,739.0	26.50	264.70	6,722.4	104.8	14.1	-11.7	12.24	11.29	-11.29
6,771.0	30.20	264.70	6,750.6	103.4	-1.1	3.4	11.56	11.56	0.00
6,803.0	30.00	269.60	6,778.3	102.6	-17.1	19.4	7.70	-0.63	15.31
6,834.0	27.80	277.20	6,805.4	103.5	-32.0	34.3	13.80	-7.10	24.52
6,866.0	27.00	282.10	6,833.9	105.9	-46.5	48.9	7.47	-2.50	15.31
6,898.0	31.00	281.20	6,861.8	109.1	-61.7	64.1	12.57	12.50	-2.81
6,929.0	34.80	277.00	6,887.9	111.7	-78.3	80.8	14.29	12.26	-13.55
6,961.0	38.30	272.10	6,913.6	113.2	-97.3	99.8	14.23	10.94	-15.31
6,993.0	42.50	267.90	6,937.9	113.1	-118.0	120.5	15.63	13.13	-13.13
7,028.0	47.40	266.30	6,962.7	111.9	-142.7	145.2	14.37	14.00	-4.57
7,042.1	49.78	266.12	6,972.0	111.2	-153.3	155.7	16.90	16.87	-1.31
PP - 7042.1' MD, 6972.0' TVD, 49.78° INC, 155.7' VS									
7,060.0	52.80	265.90	6,983.2	110.2	-167.2	169.6	16.90	16.88	-1.21
7,092.0	59.00	264.50	7,001.2	108.0	-193.6	196.0	19.71	19.38	-4.38
7,124.0	65.00	265.10	7,016.2	105.4	-221.7	224.0	18.82	18.75	1.88
7,153.0	68.90	266.90	7,027.5	103.6	-248.3	250.6	14.61	13.45	6.21
7,185.0	74.50	267.90	7,037.6	102.2	-278.7	280.9	17.75	17.50	3.13
7,216.0	79.80	268.80	7,044.5	101.3	-308.9	311.1	17.33	17.10	2.90
7,276.0	90.47	269.28	7,049.5	100.3	-368.6	370.7	17.80	17.78	0.79
EOC - 7276.0' MD, 7049.5' TVD, 90.47° INC, 269.28° AZI, 370.7' VS									
7,279.0	91.00	269.30	7,049.5	100.3	-371.6	373.7	17.80	17.78	0.79
7,374.0	91.70	269.10	7,047.3	98.9	-466.5	468.6	0.77	0.74	-0.21
7,518.0	91.00	271.20	7,043.9	99.3	-610.5	612.5	1.54	-0.49	1.46
7,613.0	91.00	270.70	7,042.2	100.9	-705.5	707.5	0.53	0.00	-0.53
7,709.0	90.80	269.50	7,040.7	101.1	-801.4	803.5	1.27	-0.21	-1.25
7,804.0	92.60	273.30	7,037.9	103.4	-896.4	898.4	4.42	1.89	4.00
7,899.0	91.80	272.10	7,034.2	107.9	-991.2	993.3	1.52	-0.84	-1.26
7,994.0	90.30	269.80	7,032.5	109.4	-1,086.1	1,088.3	2.89	-1.58	-2.42

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #14H
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Well:	#14H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
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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)
8,022.0	90.40	270.50	7,032.3	109.5	-1,114.1	1,116.3	2.53	0.36	2.50
8,116.0	91.00	270.20	7,031.2	110.1	-1,208.1	1,210.3	0.71	0.64	-0.32
8,211.0	90.10	270.50	7,030.3	110.7	-1,303.1	1,305.3	1.00	-0.95	0.32
8,306.0	88.30	267.20	7,031.6	108.8	-1,398.1	1,400.1	3.96	-1.89	-3.47
8,401.0	89.70	267.30	7,033.3	104.2	-1,492.9	1,494.9	1.48	1.47	0.11
8,496.0	87.80	265.10	7,035.3	97.9	-1,587.7	1,589.5	3.06	-2.00	-2.32
8,591.0	87.40	264.50	7,039.3	89.3	-1,682.2	1,683.8	0.76	-0.42	-0.63
8,686.0	90.40	265.90	7,041.1	81.4	-1,776.9	1,778.2	3.48	3.16	1.47
8,781.0	90.40	265.40	7,040.5	74.2	-1,871.6	1,872.8	0.53	0.00	-0.53
8,876.0	89.90	265.90	7,040.2	66.9	-1,966.3	1,967.3	0.74	-0.53	0.53
8,970.0	92.90	268.60	7,037.9	62.4	-2,060.2	2,061.0	4.29	3.19	2.87
9,066.0	93.10	269.80	7,032.9	61.1	-2,156.0	2,156.8	1.27	0.21	1.25
9,161.0	92.00	270.50	7,028.7	61.3	-2,250.9	2,251.7	1.37	-1.16	0.74
9,255.0	91.10	270.70	7,026.1	62.3	-2,344.9	2,345.7	0.98	-0.96	0.21
9,350.0	90.10	271.20	7,025.1	63.9	-2,439.9	2,440.7	1.18	-1.05	0.53
9,445.0	90.40	270.50	7,024.7	65.3	-2,534.9	2,535.7	0.80	0.32	-0.74
9,540.0	90.80	269.50	7,023.7	65.3	-2,629.8	2,630.6	1.13	0.42	-1.05
9,635.0	89.40	270.00	7,023.6	64.9	-2,724.8	2,725.6	1.56	-1.47	0.53
9,730.0	89.60	270.20	7,024.4	65.1	-2,819.8	2,820.6	0.30	0.21	0.21
9,825.0	90.80	270.50	7,024.1	65.6	-2,914.8	2,915.6	1.30	1.26	0.32
9,920.0	91.50	270.20	7,022.1	66.2	-3,009.8	3,010.5	0.80	0.74	-0.32
10,015.0	91.10	271.20	7,020.0	67.4	-3,104.8	3,105.5	1.13	-0.42	1.05
10,110.0	89.90	271.00	7,019.2	69.2	-3,199.8	3,200.5	1.28	-1.26	-0.21
10,205.0	90.10	271.20	7,019.2	71.0	-3,294.7	3,295.5	0.30	0.21	0.21
10,268.0	89.90	271.00	7,019.2	72.2	-3,357.7	3,358.5	0.45	-0.32	-0.32
10,330.0	89.90	271.00	7,019.3	73.3	-3,419.7	3,420.5	0.00	0.00	0.00
BHL - 10330.0' MD, 7019.3' TVD, 89.90° INC, 271.00° AZI, 73.3' N, -3419.7' E, 3420.5' VS									

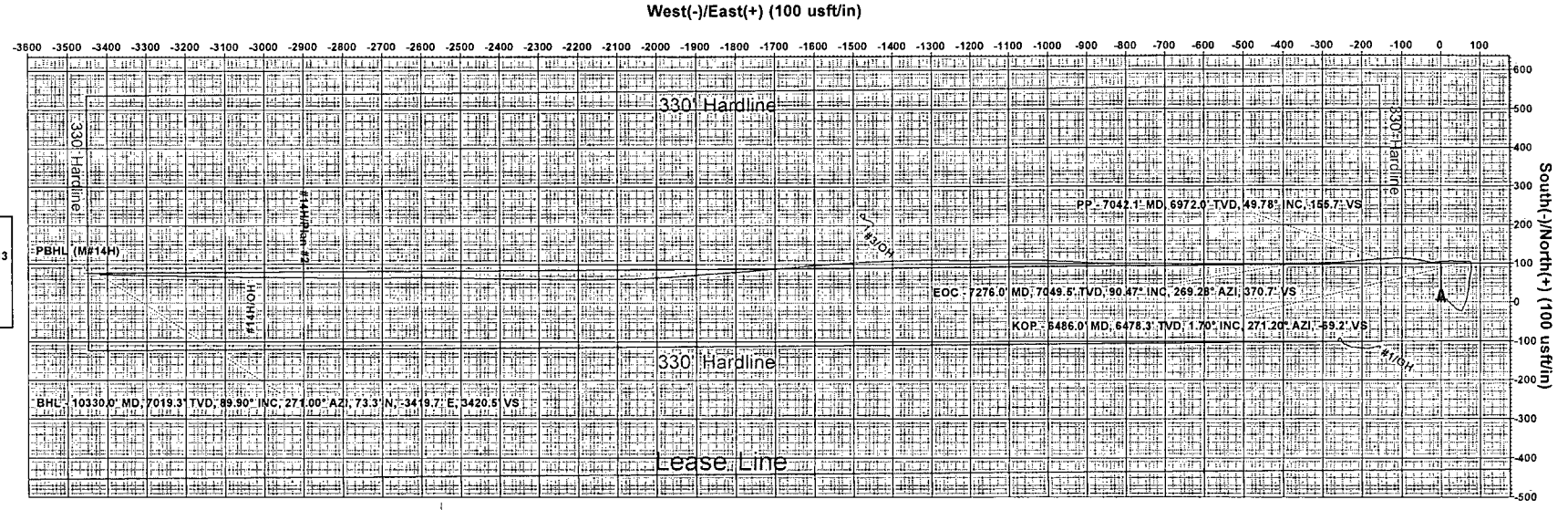
Design Annotations

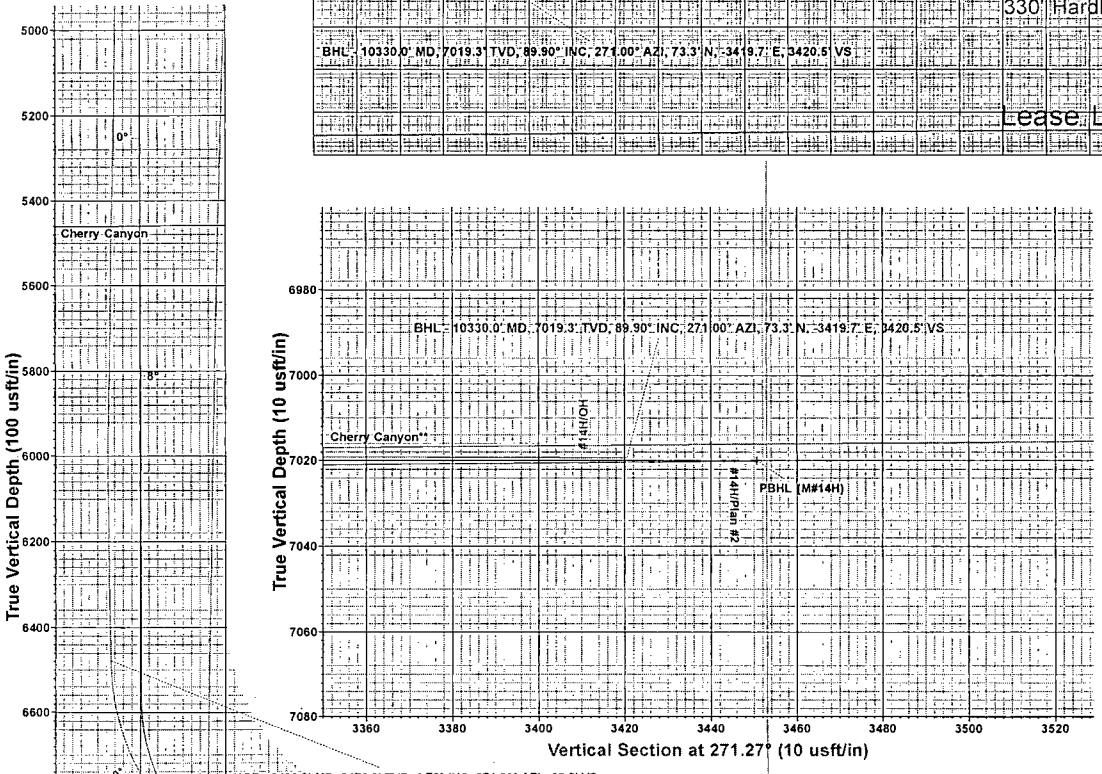
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,486.0	6,478.3	104.9	71.5	KOP - 6486.0' MD, 6478.3' TVD, 1.70° INC, 271.20° AZI, -69.2' VS
7,042.1	6,972.0	111.2	-153.3	PP - 7042.1' MD, 6972.0' TVD, 49.78° INC, 155.7' VS
7,276.0	7,049.5	100.3	-368.6	EOC - 7276.0' MD, 7049.5' TVD, 90.47° INC, 269.28° AZI, 370.7' VS
10,330.0	7,019.3	73.3	-3,419.7	BHL - 10330.0' MD, 7019.3' TVD, 89.90° INC, 271.00° AZI, 73.3' N, -3419.7' E,

Checked By: _____ Approved By: _____ Date: _____

Yates Petroleum
Project: Eddy, NM (NAD-83)
Site: Martha AIK Federal
Well: #14H
Wellbore: OH
Plan: Plan #2 (#14H/OH)

PROJECT DETAILS: Eddy, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid





Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5255.3	0.00	0.00	5255.3	0.0	0.0	0.00	0.00	0.0	
3	5655.3	8.00	0.00	5654.0	27.9	0.0	2.00	0.00	0.6	
4	5973.2	8.00	0.00	5968.8	72.1	0.0	0.00	0.00	1.6	
5	6373.2	0.00	0.00	6367.5	100.0	0.0	2.00	180.00	2.2	
6	6573.2	0.00	0.00	6567.5	100.0	0.0	0.00	0.00	2.2	
7	7327.3	90.48	269.61	7045.0	96.7	-481.5	12.00	269.61	483.5	
8	10295.7	90.48	269.61	7020.1	76.5	-3449.7	0.00	0.00	3450.6	PBHL (M#14H)

WELL DETAILS: #14H

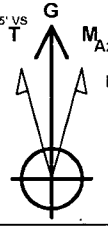
Ground Elevation:: 3568.0
RKB Elevation: WELL @ 3593.0usft (Union #223 - 25' KB)
Rig Name: Union #223 - 25' KB

Surface Hole Location

Northing	Easting	Latittude	Longitude
509751.01	724257.17	32° 23' 59.928 N	103° 44' 26.392 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (M#14H)	7020.0	76.7	-3449.7	509827.75	720807.45



Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.19°

Magnetic Field
Strength: 48566.3snT
Dip Angle: 60.29°
Date: 10/26/2012
Model: IGRF2010

Vertical Section at 271.27° (100 usft/in)

Crescent Directional Drilling
7715 West Industrial Ave. Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #2 (#14H/OH)
Created By: Matt Higgins Date: 8:52, December 11 2012