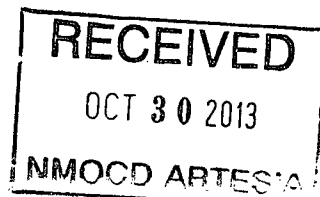


Yates Petroleum

Eddy, NM (NAD-83)
Grande Mike AKZ State
#2H

OH

Design: OH



30-015-41408

Survey Report - Geographic

29 August, 2013

CRESCENT
DIRECTIONAL DRILLING



Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Site:	Grande Mike AKZ State	MD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Well:	#2H	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	Grande Mike AKZ State		
Site Position:		Northing:	710,941.19 usft
From:	Map	Easting:	627,191.17 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 57' 14.663 N
		Longitude:	104° 3' 12.380 W
		Grid Convergence:	0.15 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing: 710,941.19 usft
	+E/-W	0.0 usft	Easting: 627,191.17 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Ground Level:	3,747.0 usft
		Latitude:	32° 57' 14.663 N
		Longitude:	104° 3' 12.380 W

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	5/28/2013	7.62
			Dip Angle
			60.73
			Field Strength
			48,804

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			95.51

Survey Program	Date 8/29/2013		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
590.0	11,846.0	Survey #2 - Crescent1 (OH)	MWD
11,902.8	11,902.8	Survey #2 - PTB (OH)	BLIND
			Description
			MWD - Standard
			Blind drilling, where no tool is applied

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting		
(usft)			(usft)			(usft)	(usft)		
469.0	0.55	11.93	469.0	0.8	-0.6	710,941.96	627,190.54	32° 57' 14.671 N	104° 3' 12.387 W
590.0	0.70	22.00	590.0	2.0	-0.2	710,943.22	627,190.94	32° 57' 14.683 N	104° 3' 12.382 W
681.0	0.70	27.20	681.0	3.0	0.2	710,944.23	627,191.40	32° 57' 14.693 N	104° 3' 12.377 W
775.0	0.80	33.70	775.0	4.1	0.9	710,945.28	627,192.03	32° 57' 14.704 N	104° 3' 12.370 W
868.0	0.90	36.20	868.0	5.2	1.6	710,946.41	627,192.82	32° 57' 14.715 N	104° 3' 12.360 W
961.0	1.10	44.70	961.0	6.4	2.7	710,947.64	627,193.88	32° 57' 14.727 N	104° 3' 12.348 W
1,054.0	1.00	38.80	1,053.9	7.7	3.8	710,948.90	627,195.01	32° 57' 14.739 N	104° 3' 12.334 W
1,147.0	1.00	42.30	1,146.9	8.9	4.9	710,950.14	627,196.07	32° 57' 14.751 N	104° 3' 12.322 W
1,241.0	1.10	40.40	1,240.9	10.2	6.0	710,951.43	627,197.20	32° 57' 14.764 N	104° 3' 12.309 W
1,334.0	1.20	43.60	1,333.9	11.6	7.3	710,952.81	627,198.45	32° 57' 14.778 N	104° 3' 12.294 W
1,427.0	1.30	47.00	1,426.9	13.0	8.7	710,954.24	627,199.90	32° 57' 14.792 N	104° 3' 12.277 W



Survey Report - Geographic



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Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Site:	Grande Mike AKZ State	MD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Well:	#2H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,520.0	1.30	40.10	1,519.8	14.6	10.2	710,955.77	627,201.35	32° 57' 14.807 N	104° 3' 12.260 W	
1,614.0	1.40	41.40	1,613.8	16.3	11.6	710,957.44	627,202.80	32° 57' 14.824 N	104° 3' 12.243 W	
1,707.0	1.50	48.60	1,706.8	17.9	13.3	710,959.10	627,204.46	32° 57' 14.840 N	104° 3' 12.223 W	
1,800.0	1.40	53.50	1,799.8	19.4	15.1	710,960.58	627,206.29	32° 57' 14.855 N	104° 3' 12.202 W	
1,893.0	1.50	53.60	1,892.7	20.8	17.0	710,961.98	627,208.18	32° 57' 14.868 N	104° 3' 12.179 W	
1,986.0	1.50	59.10	1,985.7	22.1	19.0	710,963.33	627,210.20	32° 57' 14.882 N	104° 3' 12.156 W	
2,079.0	1.70	61.80	2,078.7	23.4	21.3	710,964.60	627,212.46	32° 57' 14.894 N	104° 3' 12.129 W	
2,172.0	0.90	44.70	2,171.6	24.6	23.0	710,965.77	627,214.19	32° 57' 14.906 N	104° 3' 12.109 W	
2,266.0	0.70	35.10	2,265.6	25.6	23.9	710,966.77	627,215.04	32° 57' 14.916 N	104° 3' 12.099 W	
2,359.0	0.80	34.80	2,358.6	26.6	24.6	710,967.77	627,215.74	32° 57' 14.925 N	104° 3' 12.091 W	
2,452.0	0.80	21.60	2,451.6	27.7	25.2	710,968.90	627,216.35	32° 57' 14.937 N	104° 3' 12.083 W	
2,541.0	0.70	29.40	2,540.6	28.8	25.7	710,969.95	627,216.84	32° 57' 14.947 N	104° 3' 12.078 W	
2,659.0	1.10	11.00	2,658.6	30.5	26.2	710,971.69	627,217.41	32° 57' 14.964 N	104° 3' 12.071 W	
2,846.0	0.70	4.30	2,845.6	33.4	26.7	710,974.60	627,217.84	32° 57' 14.993 N	104° 3' 12.066 W	
3,031.0	1.10	358.20	3,030.5	36.3	26.7	710,977.50	627,217.87	32° 57' 15.022 N	104° 3' 12.065 W	
3,217.0	0.90	2.40	3,216.5	39.5	26.7	710,980.74	627,217.88	32° 57' 15.054 N	104° 3' 12.065 W	
3,403.0	1.10	359.40	3,402.5	42.8	26.7	710,983.99	627,217.92	32° 57' 15.086 N	104° 3' 12.064 W	
3,591.0	1.10	349.50	3,590.4	46.4	26.4	710,987.57	627,217.57	32° 57' 15.121 N	104° 3' 12.068 W	
3,777.0	1.20	343.00	3,776.4	50.0	25.5	710,991.18	627,216.68	32° 57' 15.157 N	104° 3' 12.079 W	
3,963.0	1.20	338.60	3,962.4	53.7	24.2	710,994.86	627,215.40	32° 57' 15.194 N	104° 3' 12.094 W	
4,148.0	0.90	269.60	4,147.3	55.5	22.1	710,996.65	627,213.24	32° 57' 15.211 N	104° 3' 12.119 W	
4,334.0	0.70	274.70	4,333.3	55.5	19.5	710,996.74	627,210.64	32° 57' 15.212 N	104° 3' 12.149 W	
4,520.0	0.50	212.30	4,519.3	54.9	17.9	710,996.14	627,209.08	32° 57' 15.206 N	104° 3' 12.168 W	
4,706.0	0.70	199.20	4,705.3	53.2	17.1	710,994.38	627,208.27	32° 57' 15.189 N	104° 3' 12.177 W	
4,892.0	0.90	206.50	4,891.3	50.8	16.1	710,992.00	627,207.24	32° 57' 15.165 N	104° 3' 12.189 W	
5,079.0	0.90	198.70	5,078.3	48.1	14.9	710,989.30	627,206.12	32° 57' 15.139 N	104° 3' 12.203 W	
5,265.0	0.90	226.00	5,264.2	45.7	13.4	710,986.90	627,204.60	32° 57' 15.115 N	104° 3' 12.221 W	
5,452.0	0.70	224.70	5,451.2	43.9	11.6	710,985.07	627,202.74	32° 57' 15.097 N	104° 3' 12.243 W	
5,639.0	1.10	232.50	5,638.2	42.0	9.3	710,983.16	627,200.51	32° 57' 15.078 N	104° 3' 12.269 W	
5,825.0	1.10	242.70	5,824.2	40.1	6.3	710,981.26	627,197.51	32° 57' 15.059 N	104° 3' 12.304 W	
6,012.0	0.90	259.20	6,011.1	39.0	3.3	710,980.16	627,194.47	32° 57' 15.049 N	104° 3' 12.340 W	
6,198.0	0.90	265.00	6,197.1	38.6	0.4	710,979.76	627,191.58	32° 57' 15.045 N	104° 3' 12.374 W	
6,385.0	0.70	253.70	6,384.1	38.1	-2.1	710,979.31	627,189.02	32° 57' 15.040 N	104° 3' 12.404 W	
6,570.0	0.40	115.80	6,569.1	37.5	-2.7	710,978.71	627,188.52	32° 57' 15.034 N	104° 3' 12.410 W	
KOP: 6570.0' MD: 6569.1' TVD: 0.40° INC: -6.2° VS										
6,696.0	0.90	108.00	6,695.1	37.0	-1.3	710,978.21	627,189.86	32° 57' 15.029 N	104° 3' 12.394 W	
6,714.0	1.20	106.30	6,713.1	36.9	-1.0	710,978.12	627,190.17	32° 57' 15.029 N	104° 3' 12.390 W	
6,745.0	2.50	111.90	6,744.1	36.6	-0.1	710,977.77	627,191.11	32° 57' 15.025 N	104° 3' 12.379 W	
6,777.0	5.30	115.20	6,776.0	35.7	1.9	710,976.88	627,193.10	32° 57' 15.016 N	104° 3' 12.356 W	
6,808.0	9.70	114.20	6,806.7	34.0	5.6	710,975.20	627,196.77	32° 57' 15.000 N	104° 3' 12.313 W	
6,839.0	13.50	111.50	6,837.1	31.6	11.4	710,972.81	627,202.53	32° 57' 14.976 N	104° 3' 12.245 W	
6,870.0	18.80	111.50	6,866.8	28.5	19.4	710,969.65	627,210.55	32° 57' 14.944 N	104° 3' 12.151 W	
6,902.0	24.10	112.40	6,896.6	24.1	30.2	710,965.26	627,221.39	32° 57' 14.901 N	104° 3' 12.024 W	
6,933.0	27.60	112.90	6,924.5	18.9	42.7	710,960.06	627,233.86	32° 57' 14.849 N	104° 3' 11.878 W	
6,964.0	30.40	114.50	6,951.6	12.8	56.4	710,954.01	627,247.62	32° 57' 14.788 N	104° 3' 11.717 W	
6,995.0	33.10	115.40	6,978.0	5.9	71.2	710,947.12	627,262.40	32° 57' 14.720 N	104° 3' 11.544 W	
7,026.0	35.50	116.60	7,003.6	-1.7	86.9	710,939.46	627,278.10	32° 57' 14.644 N	104° 3' 11.360 W	
7,057.0	38.00	118.40	7,028.4	-10.3	103.4	710,930.89	627,294.55	32° 57' 14.558 N	104° 3' 11.167 W	
7,088.0	40.10	119.60	7,052.5	-19.8	120.5	710,921.42	627,311.62	32° 57' 14.464 N	104° 3' 10.967 W	
7,119.0	42.60	120.80	7,075.8	-30.1	138.1	710,911.11	627,329.32	32° 57' 14.362 N	104° 3' 10.759 W	
7,150.0	45.40	122.80	7,098.1	-41.4	156.4	710,899.76	627,347.61	32° 57' 14.249 N	104° 3' 10.545 W	
7,181.0	48.20	124.70	7,119.3	-54.0	175.2	710,887.20	627,366.39	32° 57' 14.124 N	104° 3' 10.325 W	
7,212.0	51.20	126.60	7,139.3	-67.8	194.4	710,873.42	627,385.60	32° 57' 13.987 N	104° 3' 10.100 W	
7,243.0	55.60	127.50	7,157.8	-82.8	214.3	710,858.42	627,405.45	32° 57' 13.838 N	104° 3' 9.867 W	
7,274.0	60.00	127.90	7,174.3	-98.8	235.0	710,842.38	627,426.20	32° 57' 13.679 N	104° 3' 9.624 W	



Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Site:	Grande Mike AKZ State	MD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,305.0	64.40	127.70	7,188.8	-115.6	256.7	710,825.58	627,447.86	32° 57' 13.512 N	104° 3' 9.371 W
7,336.0	68.30	126.80	7,201.2	-132.8	279.3	710,808.40	627,470.46	32° 57' 13.342 N	104° 3' 9.106 W
7,365.0	70.70	126.60	7,211.4	-149.0	301.1	710,792.16	627,492.24	32° 57' 13.181 N	104° 3' 8.851 W
7,396.0	72.50	125.60	7,221.2	-166.4	324.8	710,774.84	627,516.01	32° 57' 13.009 N	104° 3' 8.573 W
7,427.0	74.10	123.70	7,230.1	-183.2	349.3	710,757.96	627,540.43	32° 57' 12.841 N	104° 3' 8.286 W
7,458.0	76.00	120.70	7,238.1	-199.2	374.6	710,742.00	627,565.77	32° 57' 12.682 N	104° 3' 7.989 W
7,489.0	79.00	118.90	7,244.8	-214.2	400.9	710,726.97	627,592.03	32° 57' 12.533 N	104° 3' 7.682 W
7,520.0	81.80	117.20	7,249.9	-228.6	427.8	710,712.60	627,619.01	32° 57' 12.390 N	104° 3' 7.366 W
7,522.4	82.02	117.09	7,250.3	-229.7	430.0	710,711.51	627,621.12	32° 57' 12.379 N	104° 3' 7.341 W
Cross into 330' Lease - 7522.4' MD, 7250.3' TVD, 82.02° INC, 450.0' VS									
7,551.0	84.60	115.80	7,253.6	-242.3	455.4	710,698.86	627,646.55	32° 57' 12.253 N	104° 3' 7.043 W
7,582.0	88.30	114.90	7,255.5	-255.6	483.3	710,685.62	627,674.51	32° 57' 12.122 N	104° 3' 6.715 W
7,613.0	90.40	114.50	7,255.9	-268.5	511.5	710,672.67	627,702.67	32° 57' 11.993 N	104° 3' 6.385 W
7,644.0	90.10	114.00	7,255.8	-281.3	539.8	710,659.94	627,730.93	32° 57' 11.866 N	104° 3' 6.054 W
EOC - 7644.0' MD, 7255.8' TVD, 90.10° INC, 564.3' VS									
7,674.0	90.10	114.50	7,255.7	-293.6	567.1	710,647.61	627,758.29	32° 57' 11.743 N	104° 3' 5.733 W
7,706.0	89.90	114.30	7,255.7	-306.8	596.3	710,634.40	627,787.43	32° 57' 11.612 N	104° 3' 5.391 W
7,737.0	89.90	114.70	7,255.8	-319.7	624.5	710,621.54	627,815.64	32° 57' 11.484 N	104° 3' 5.061 W
7,768.0	89.90	114.70	7,255.8	-332.6	652.6	710,608.59	627,843.80	32° 57' 11.355 N	104° 3' 4.731 W
7,800.0	89.90	114.70	7,255.9	-346.0	681.7	710,595.21	627,872.87	32° 57' 11.222 N	104° 3' 4.390 W
7,831.0	89.70	113.50	7,256.0	-358.6	710.0	710,582.56	627,901.17	32° 57' 11.096 N	104° 3' 4.058 W
7,862.0	90.40	111.70	7,255.9	-370.5	738.6	710,570.64	627,929.79	32° 57' 10.977 N	104° 3' 3.723 W
7,893.0	91.70	110.70	7,255.4	-381.8	767.5	710,559.44	627,958.68	32° 57' 10.865 N	104° 3' 3.384 W
7,924.0	92.60	109.60	7,254.2	-392.4	796.6	710,548.76	627,987.77	32° 57' 10.759 N	104° 3' 3.043 W
7,955.0	92.60	107.50	7,252.8	-402.3	826.0	710,538.91	628,017.12	32° 57' 10.661 N	104° 3' 2.699 W
7,986.0	92.20	106.10	7,251.5	-411.2	855.6	710,529.96	628,046.77	32° 57' 10.571 N	104° 3' 2.351 W
8,017.0	92.00	104.10	7,250.4	-419.3	885.5	710,521.89	628,076.68	32° 57' 10.491 N	104° 3' 2.000 W
8,048.0	91.80	102.40	7,249.3	-426.4	915.7	710,514.79	628,106.84	32° 57' 10.420 N	104° 3' 1.647 W
8,079.0	91.70	101.20	7,248.4	-432.7	946.0	710,508.45	628,137.17	32° 57' 10.356 N	104° 3' 1.291 W
8,110.0	91.50	99.60	7,247.5	-438.3	976.5	710,502.86	628,167.65	32° 57' 10.300 N	104° 3' 0.933 W
8,141.0	91.30	98.00	7,246.8	-443.1	1,007.1	710,498.12	628,198.27	32° 57' 10.252 N	104° 3' 0.574 W
8,173.0	91.00	96.60	7,246.1	-447.1	1,038.8	710,494.05	628,230.00	32° 57' 10.211 N	104° 3' 0.202 W
8,204.0	89.70	95.50	7,245.9	-450.4	1,069.7	710,490.79	628,260.83	32° 57' 10.178 N	104° 2' 59.840 W
8,235.0	88.00	94.50	7,246.6	-453.1	1,100.5	710,488.09	628,291.70	32° 57' 10.151 N	104° 2' 59.478 W
8,266.0	87.60	92.90	7,247.8	-455.1	1,131.4	710,486.09	628,322.62	32° 57' 10.130 N	104° 2' 59.115 W
8,297.0	88.50	91.80	7,248.8	-456.4	1,162.4	710,484.82	628,353.57	32° 57' 10.117 N	104° 2' 58.752 W
8,328.0	89.90	90.60	7,249.2	-457.0	1,193.4	710,484.17	628,384.56	32° 57' 10.109 N	104° 2' 58.388 W
8,359.0	90.40	89.90	7,249.2	-457.2	1,224.4	710,484.03	628,415.56	32° 57' 10.107 N	104° 2' 58.024 W
8,452.0	91.10	91.10	7,247.9	-458.0	1,317.4	710,483.22	628,508.55	32° 57' 10.097 N	104° 2' 56.933 W
8,545.0	89.70	92.40	7,247.3	-460.8	1,410.3	710,480.38	628,601.50	32° 57' 10.066 N	104° 2' 55.842 W
8,639.0	89.90	92.40	7,247.6	-464.7	1,504.2	710,476.44	628,695.41	32° 57' 10.025 N	104° 2' 54.740 W
8,732.0	89.90	91.00	7,247.8	-467.5	1,597.2	710,473.69	628,788.37	32° 57' 9.995 N	104° 2' 53.649 W
8,825.0	88.90	89.90	7,248.8	-468.2	1,690.2	710,472.96	628,881.36	32° 57' 9.985 N	104° 2' 52.558 W
8,918.0	89.00	90.10	7,250.5	-468.2	1,783.2	710,472.96	628,974.34	32° 57' 9.983 N	104° 2' 51.467 W
9,011.0	89.20	90.30	7,251.9	-468.6	1,876.2	710,472.63	629,067.33	32° 57' 9.977 N	104° 2' 50.375 W
9,104.0	89.40	90.60	7,253.1	-469.3	1,969.2	710,471.90	629,160.32	32° 57' 9.967 N	104° 2' 49.284 W
9,199.0	89.70	90.10	7,253.8	-469.9	2,064.1	710,471.32	629,255.32	32° 57' 9.959 N	104° 2' 48.169 W
9,292.0	90.30	90.30	7,253.8	-470.2	2,157.1	710,471.00	629,348.31	32° 57' 9.953 N	104° 2' 47.078 W
9,385.0	90.10	89.60	7,253.5	-470.1	2,250.1	710,471.08	629,441.31	32° 57' 9.951 N	104° 2' 45.986 W
9,478.0	90.40	90.10	7,253.1	-469.9	2,343.1	710,471.32	629,534.31	32° 57' 9.951 N	104° 2' 44.895 W
9,571.0	91.30	89.40	7,251.7	-469.5	2,436.1	710,471.73	629,627.30	32° 57' 9.953 N	104° 2' 43.803 W
9,663.0	90.10	89.20	7,250.6	-468.3	2,528.1	710,472.85	629,719.28	32° 57' 9.962 N	104° 2' 42.724 W
9,756.0	90.10	89.00	7,250.4	-466.9	2,621.1	710,474.31	629,812.27	32° 57' 9.973 N	104° 2' 41.633 W
9,849.0	90.40	89.20	7,250.0	-465.4	2,714.1	710,475.77	629,905.26	32° 57' 9.985 N	104° 2' 40.541 W
9,942.0	89.00	89.70	7,250.5	-464.5	2,807.1	710,476.66	629,998.25	32° 57' 9.992 N	104° 2' 39.450 W



Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Site:	Grande Mike AKZ State	MD Reference:	WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Well:	#2H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,035.0	89.40	89.70	7,251.8	-464.0	2,900.1	710,477.15	630,091.24	32° 57' 9.994 N	104° 2' 38.358 W
10,127.0	89.60	89.60	7,252.6	-463.5	2,992.1	710,477.71	630,183.24	32° 57' 9.997 N	104° 2' 37.279 W
10,220.0	89.40	89.60	7,253.4	-462.8	3,085.1	710,478.36	630,276.23	32° 57' 10.001 N	104° 2' 36.187 W
10,313.0	89.20	88.90	7,254.5	-461.6	3,178.0	710,479.58	630,369.21	32° 57' 10.010 N	104° 2' 35.096 W
10,406.0	91.10	88.70	7,254.3	-459.7	3,271.0	710,481.53	630,462.19	32° 57' 10.027 N	104° 2' 34.005 W
10,500.0	92.00	91.00	7,251.8	-459.4	3,365.0	710,481.77	630,556.15	32° 57' 10.027 N	104° 2' 32.902 W
10,594.0	91.30	91.30	7,249.0	-461.3	3,458.9	710,479.89	630,650.09	32° 57' 10.006 N	104° 2' 31.800 W
10,687.0	91.00	89.40	7,247.2	-461.9	3,551.9	710,479.32	630,743.06	32° 57' 9.998 N	104° 2' 30.708 W
10,780.0	89.60	90.30	7,246.7	-461.6	3,644.9	710,479.56	630,836.06	32° 57' 9.998 N	104° 2' 29.617 W
10,872.0	88.30	90.40	7,248.4	-462.2	3,736.9	710,479.00	630,928.04	32° 57' 9.989 N	104° 2' 28.538 W
10,965.0	87.80	90.40	7,251.5	-462.8	3,829.8	710,478.35	631,020.98	32° 57' 9.980 N	104° 2' 27.447 W
11,058.0	88.90	91.30	7,254.2	-464.2	3,922.8	710,476.97	631,113.93	32° 57' 9.964 N	104° 2' 26.356 W
11,152.0	88.90	91.10	7,256.0	-466.2	4,016.7	710,475.00	631,207.89	32° 57' 9.942 N	104° 2' 25.253 W
11,245.0	88.70	91.70	7,258.0	-468.5	4,109.7	710,472.73	631,300.85	32° 57' 9.917 N	104° 2' 24.162 W
11,338.0	88.70	90.80	7,260.1	-470.5	4,202.6	710,470.70	631,393.80	32° 57' 9.895 N	104° 2' 23.072 W
11,431.0	90.30	90.30	7,260.9	-471.4	4,295.6	710,469.81	631,486.79	32° 57' 9.883 N	104° 2' 21.980 W
11,524.0	91.10	89.60	7,259.8	-471.3	4,388.6	710,469.89	631,579.78	32° 57' 9.881 N	104° 2' 20.889 W
11,616.0	91.50	90.30	7,257.7	-471.2	4,480.6	710,469.97	631,671.75	32° 57' 9.880 N	104° 2' 19.809 W
11,710.0	91.80	89.90	7,255.0	-471.4	4,574.5	710,469.81	631,765.72	32° 57' 9.875 N	104° 2' 18.707 W
11,804.0	91.70	90.10	7,252.1	-471.4	4,668.5	710,469.81	631,859.67	32° 57' 9.873 N	104° 2' 17.604 W
11,846.0	90.80	90.10	7,251.2	-471.5	4,710.5	710,469.74	631,901.66	32° 57' 9.871 N	104° 2' 17.111 W
11,902.8	90.80	90.10	7,250.4	-471.6	4,767.3	710,469.64	631,958.46	32° 57' 9.868 N	104° 2' 16.445 W
BHL - 11902.8' MD, 7250.4' TVD, 90.80° INC, 90.10° AZI, -471.6' N, 4767.3' E, 4790.5' VS									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,570.0	6,569.1	37.5	-2.7	KOP - 6570.0' MD, 6569.1' TVD, 0.40° INC, -6.2' VS
7,522.4	7,250.3	-229.7	430.0	Cross into 330' Lease - 7522.4' MD, 7250.3' TVD, 82.02° INC, 450.0' VS
7,644.0	7,255.8	-281.3	539.8	EOC - 7644.0' MD, 7255.8' TVD, 90.10° INC, 564.3' VS
11,902.8	7,250.4	-471.6	4,767.3	BHL - 11902.8' MD, 7250.4' TVD, 90.80° INC, 90.10° AZI, -471.6' N, 4767.3' E, 4790.5' VS

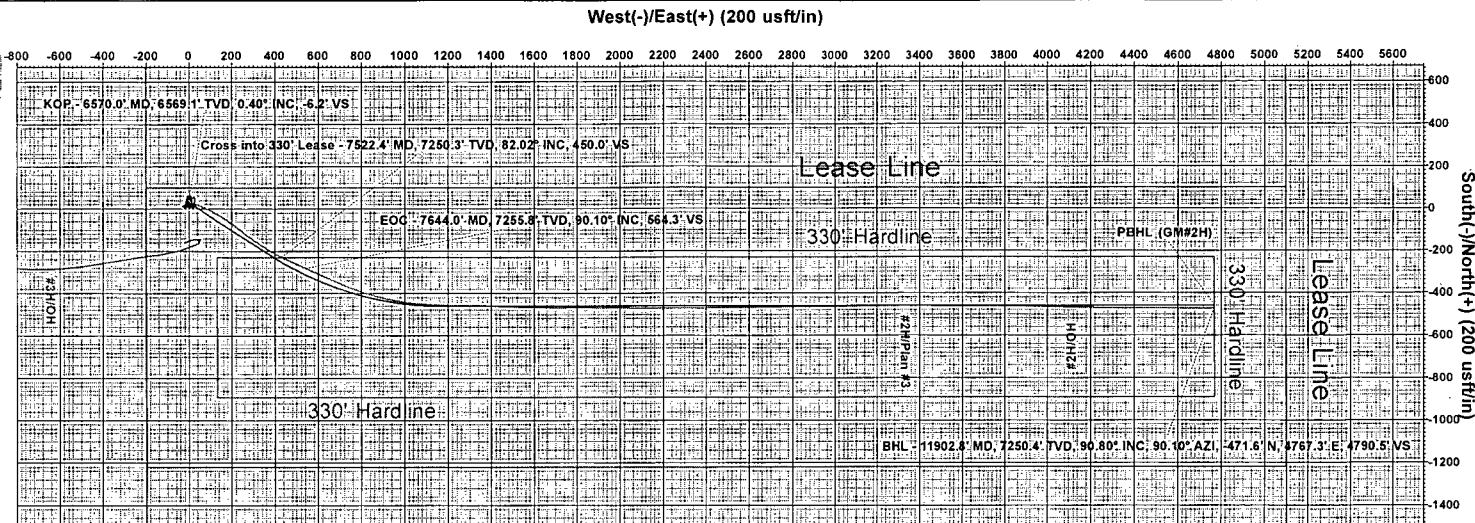
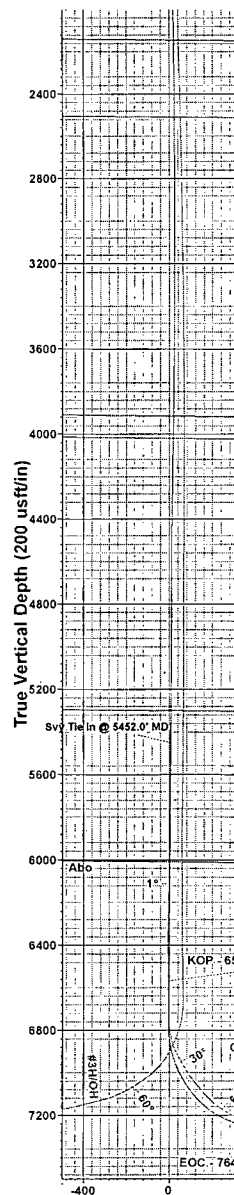
Checked By: _____ Approved By: _____ Date: _____

Yates Petroleum
Project: Eddy, NM (NAD-83)
Site: Grande Mike AKZ State
Well: #2H
Wellbore: OH
Plan: Plan #3 (#2H/OH)



Azimuths to Grid North
True North: -0.15°
Magnetic North: 7.47°

Magnetic Field
Strength: 48804.2snT
Dip Angle: 60.73°
Date: 5/28/2013
Model: IGRF2010



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	5452.0	0.70	224.70	5451.2	43.9	11.6	0.00	0.00	7.3	
2	6777.2	0.70	224.70	6776.3	32.4	0.2	0.00	0.00	-2.9	
3	7524.7	89.55	122.95	7255.0	-230.1	394.7	12.00	-101.75	414.9	
4	8348.5	89.55	90.00	7261.7	-460.5	1173.8	4.00	-90.14	1212.6	
5	11943.2	89.55	90.00	7290.0	-460.3	4768.3	0.00	0.00	4790.5	PBHL (GM#2H)

Section Details

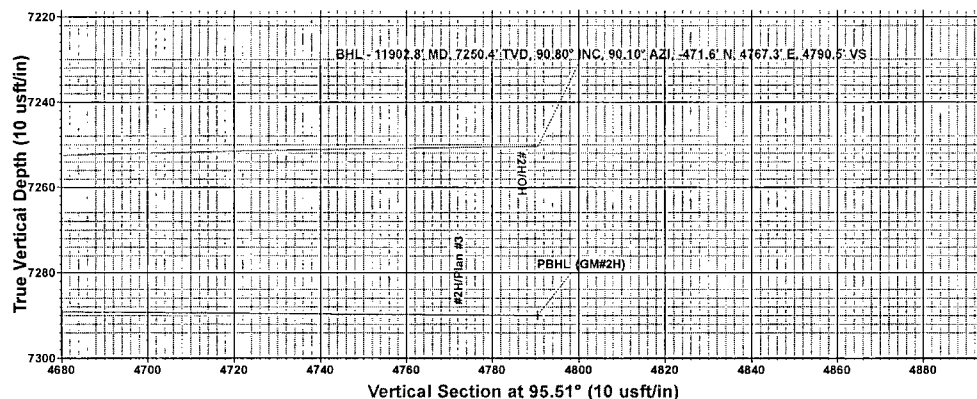
Ground Elevation:: 3747.0
RKB Elevation: WELL @ 3768.5usft (Nomac #22 - 21.5' KB)
Rig Name: Nomac #22 - 21.5' KB

WELL DETAILS: #2H

Surface Hole Location
Northing: 710941.20 Easting: 627191.17 Latitude: 32° 57' 14.663 N Longitude: 104° 3' 12.380 W

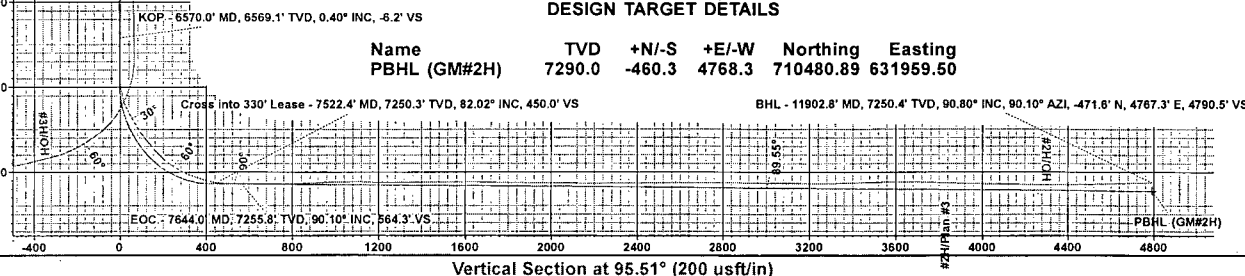
FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
520.0	520.0	T of Salt	0.54	95.51
870.0	870.0	B of Salt	0.54	95.51
1000.0	1000.1	Yates	0.54	95.51
1220.0	1220.1	Seven Rivers	0.54	95.51
1730.1	1730.3	Queen	0.54	95.51
2145.2	2145.6	Grayburg	0.54	95.51
2510.2	2510.6	San Andres	0.54	95.51
3915.2	3915.8	Glorieta	0.54	95.51
4020.2	4020.8	Yeso	0.54	95.51
5300.1	5300.8	Tubb	0.54	95.51
6010.0	6010.8	Abo	0.54	95.51



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (GM#2H)	7290.0	-460.3	4768.3	710480.89	631959.50



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



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

Plan: Plan #3 (#2H/OH)
Created By: Matt Higgins Date: 6:25, August 29 2013

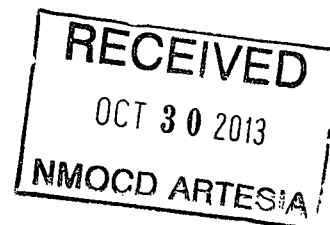


3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (office)
936.442.2599 (fax)
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Surveyor Certification Form

Survey Company: MS ENERGY SERVICES
Surveyors Name: MARK SIMMONS
Survey Job Type: RATE GYRO
Customer: YATES PETROLEUM CORPORATION
Well: GRANDE MIKE AKZ STATE 2H
API: 30-015-41408
Surveyed from: SURFACE TO A DEPTH OF 469'MD
Survey Run Date: 8-8-13 to 8-9-13
Surface Location: EDDY COUNTY, NM



I certify that the data is true, correct, and complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

Mark Simmons

Digitally signed by Mark Simmons
DN: cn=Mark Simmons, o=MS Energy Services, ou=MS
Survey, email=msimmons@msenergyservices.com, c=US
Date: 2013.01.02 16:59:11 -06'00'



Job Number: SVMO-130576
 Company: Yates Petroleum Corporation
 Lease/Well: Grande Mike AKZ State 2H
 Location: Eddy County, NM
 Rig Name: Nomac #22
 RKB: 21.5'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 8.51°
 Grid: East To Grid North
 File name: F:\SURVEY\2013SU~1\YATES\MO\GRANDE~1\2H.SVY
 Date/Time: 12-Aug-13 / 16:30
 Curve Name: Surface - 469' M.D. (Rate Gyro)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 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	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	.15	274.26	100.00	.01	-.13	.01	.13	274.26	.15
200.00	.15	247.77	200.00	-.03	-.38	-.03	.38	265.50	.07
300.00	.16	316.10	300.00	.02	-.60	.02	.60	272.01	.17
400.00	.22	.62	400.00	.31	-.69	.31	.76	294.29	.15

Last Survey Depth Recorded									
469.00	.55	11.93	469.00	.77	-.63	.77	.99	320.93	.49