

Results of Directional Survey

API number:	30-025-41642		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	CONVOY BUC STATE # 2H

surface	ULSTR:	O	28	T 24S	R 33E
				15 FSL	2150 FEL

BH Loc	ULSTR:	B	28	T 24S	R 33E
15870	MD	11051.0	TVD	265 FNL	2193 FEL
5015 FSL					

Top Perf/OH	ULSTR:	O	28	T 24S	R 33E
11334	MD	11075.8	TVD	479 FSL	2233 FEL

Bot Perf/OH	ULSTR:	B	28	T 24S	R 33E
15680	MD	11051.9	TVD	455 FNL	2191 FEL
4825 FSL					

	MD	N/S	E/W	VD
	11324	454.20	-82.70	11075.5
TOP PERFS/OH	11334	464.20	-82.54	11075.81
	11356	486.20	-82.20	11076.50
	15591	4720.50	-40.10	11052.30
BOT PERFS/OH	15680	4809.50	-40.95	11051.92
	15685	4814.50	-41.00	11051.90

NEXT TO LAST	15807.00	4936.50	-42.30	11051.40
LAST READING	15870.00	4999.50	-43.00	11051.00
TD	15870	4999.50	-43.00	11051.00

Surface Location	15 FS	2150 FE
Projected BHL	5015 FS	2193 FE
Location of		
Top Perfs/OH	479 FS	2233 FE
Bottom Perfs/OH	4825 FS	2191 FE

SUMMARY of Subsurface Locations

Surface Location	O-28-24S-33E	15 FS	2150 FE	Vert. Depth
Top Perfs/OH	O-28-24S-33E	479 FS	2233 FE	11075.81
Bottom Perfs/OH	B-28-24S-33E	4825 FS	2191 FE	11051.92
Projected TD	B-28-24S-33E	5015 FS	2193 FE	11051.00

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Yates Petroleum

Lea County, NM (NAD-83)

Convoy BUC State

#2H

OH

Design: OH

Standard Survey Report

05 August, 2014

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Well:	#2H	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
From:	Map	Easting:	775,754.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 53.130 N
		Longitude:	103° 34' 32.289 W
		Grid Convergence:	0.40 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing: 430,562.70 usft
	+E/-W	0.0 usft	Easting: 775,754.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 10' 53.130 N
		Longitude:	103° 34' 32.289 W
		Ground Level:	3,480.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	6/13/2014	(°)
			7.22
			Dip Angle (°)
			60.07
			Field Strength (nT)
			48,290

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 (°)
			359.57

Survey Program	Date 8/5/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
50.0	1,149.0	Survey #1 - Gyro (OH)	CB-GYRO-MS
1,246.0	15,870.0	Survey #2 - Crescent MWD Surveys (OH)	MWD
			Description
			Camera based gyro multishot
			MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
50.0	0.22	150.98	50.0	-0.1	0.0	-0.1	0.44	0.44	0.00
100.0	0.35	127.72	100.0	-0.3	0.2	-0.3	0.34	0.26	-46.52
200.0	0.22	160.86	200.0	-0.6	0.5	-0.6	0.20	-0.13	33.14
300.0	0.28	151.92	300.0	-1.0	0.7	-1.0	0.07	0.06	-8.94
400.0	0.32	175.21	400.0	-1.5	0.8	-1.5	0.13	0.04	23.29
500.0	0.38	209.99	500.0	-2.1	0.7	-2.1	0.22	0.06	34.78
600.0	0.69	224.26	600.0	-2.8	0.1	-2.8	0.34	0.31	14.27
700.0	0.56	240.01	700.0	-3.5	-0.7	-3.5	0.21	-0.13	15.75
800.0	0.65	268.49	800.0	-3.7	-1.7	-3.7	0.31	0.09	28.48

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Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
900.0	0.77	269.39	900.0	-3.8	-3.0	-3.7	0.12	0.12	0.90
1,000.0	1.08	271.71	1,000.0	-3.7	-4.6	-3.7	0.31	0.31	2.32
1,100.0	1.20	275.54	1,099.9	-3.6	-6.6	-3.6	0.14	0.12	3.83
1,149.0	0.77	283.60	1,148.9	-3.5	-7.4	-3.4	0.92	-0.88	16.45
1,246.0	0.90	280.10	1,245.9	-3.2	-8.8	-3.1	0.14	0.13	-3.61
1,341.0	2.00	286.10	1,340.9	-2.6	-11.1	-2.5	1.17	1.16	6.32
1,436.0	3.40	287.50	1,435.8	-1.3	-15.4	-1.2	1.48	1.47	1.47
1,531.0	3.90	287.00	1,530.6	0.5	-21.2	0.7	0.53	0.53	-0.53
1,627.0	4.00	288.60	1,626.4	2.5	-27.5	2.7	0.16	0.10	1.67
1,720.0	3.90	289.80	1,719.1	4.6	-33.5	4.9	0.14	-0.11	1.29
1,814.0	3.70	292.60	1,812.9	6.9	-39.3	7.2	0.29	-0.21	2.98
1,908.0	3.40	273.60	1,906.8	8.2	-44.9	8.5	1.29	-0.32	-20.21
2,003.0	3.40	270.40	2,001.6	8.4	-50.5	8.8	0.20	0.00	-3.37
2,098.0	3.10	271.20	2,096.4	8.5	-55.9	8.9	0.32	-0.32	0.84
2,192.0	2.90	266.10	2,190.3	8.4	-60.8	8.8	0.35	-0.21	-5.43
2,286.0	1.10	269.50	2,284.2	8.2	-64.1	8.7	1.92	-1.91	3.62
2,381.0	0.50	333.40	2,379.2	8.6	-65.2	9.1	1.04	-0.63	67.26
2,475.0	0.90	346.40	2,473.2	9.6	-65.6	10.1	0.46	0.43	13.83
2,569.0	0.60	349.40	2,567.2	10.8	-65.8	11.3	0.32	-0.32	3.19
2,664.0	0.40	18.30	2,662.2	11.7	-65.8	12.1	0.33	-0.21	30.42
2,759.0	0.40	53.00	2,757.2	12.2	-65.4	12.7	0.25	0.00	36.53
2,854.0	0.60	86.60	2,852.2	12.4	-64.7	12.9	0.36	0.21	35.37
2,949.0	0.90	101.50	2,947.2	12.3	-63.4	12.8	0.37	0.32	15.68
3,043.0	1.10	105.50	3,041.2	11.9	-61.9	12.4	0.23	0.21	4.26
3,137.0	1.30	115.00	3,135.2	11.2	-60.0	11.6	0.30	0.21	10.11
3,232.0	1.10	142.90	3,230.1	10.0	-58.5	10.5	0.64	-0.21	29.37
3,326.0	0.70	196.00	3,324.1	8.7	-58.1	9.2	0.94	-0.43	56.49
3,422.0	0.40	222.80	3,420.1	7.9	-58.5	8.4	0.40	-0.31	27.92
3,516.0	0.20	203.90	3,514.1	7.5	-58.8	8.0	0.23	-0.21	-20.11
3,611.0	0.10	212.50	3,609.1	7.3	-58.9	7.8	0.11	-0.11	9.05
3,705.0	0.10	216.00	3,703.1	7.2	-59.0	7.6	0.01	0.00	3.72
3,800.0	0.20	299.90	3,798.1	7.2	-59.2	7.6	0.23	0.11	88.32
3,895.0	0.20	293.30	3,893.1	7.3	-59.5	7.8	0.02	0.00	-6.95
3,990.0	0.10	280.00	3,988.1	7.4	-59.7	7.9	0.11	-0.11	-14.00
4,084.0	0.10	293.30	4,082.1	7.5	-59.9	7.9	0.02	0.00	14.15
4,178.0	0.10	279.00	4,176.1	7.5	-60.0	8.0	0.03	0.00	-15.21
4,273.0	0.00	268.60	4,271.1	7.5	-60.1	8.0	0.11	-0.11	0.00
4,368.0	0.10	202.40	4,366.1	7.5	-60.1	7.9	0.11	0.11	0.00
4,463.0	0.20	130.20	4,461.1	7.3	-60.0	7.7	0.20	0.11	-76.00
4,557.0	0.50	122.20	4,555.1	6.9	-59.6	7.4	0.32	0.32	-8.51
4,652.0	0.60	132.20	4,650.1	6.4	-58.9	6.8	0.15	0.11	10.53
4,745.0	0.90	239.00	4,743.1	5.7	-59.1	6.1	1.31	0.32	114.84
4,840.0	1.10	230.50	4,838.1	4.7	-60.5	5.2	0.26	0.21	-8.95

Survey Report

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Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,934.0	0.50	71.10	4,932.1	4.3	-60.8	4.7	1.68	-0.64	-169.57	
5,030.0	0.50	58.00	5,028.1	4.6	-60.0	5.1	0.12	0.00	-13.65	
5,095.0	0.30	68.50	5,093.1	4.9	-59.6	5.3	0.33	-0.31	16.15	
5,210.0	0.30	212.10	5,208.1	4.7	-59.5	5.2	0.50	0.00	124.87	
5,399.0	0.30	216.70	5,397.1	3.9	-60.1	4.3	0.01	0.00	2.43	
5,589.0	0.20	272.40	5,587.1	3.5	-60.7	4.0	0.13	-0.05	29.32	
5,779.0	0.30	281.30	5,777.1	3.6	-61.5	4.1	0.06	0.05	4.68	
5,968.0	0.20	339.10	5,966.1	4.0	-62.1	4.5	0.14	-0.05	30.58	
6,157.0	0.30	253.50	6,155.1	4.2	-62.7	4.7	0.18	0.05	-45.29	
6,347.0	0.30	263.90	6,345.1	4.0	-63.7	4.5	0.03	0.00	5.47	
6,536.0	0.40	275.00	6,534.1	4.0	-64.8	4.5	0.06	0.05	5.87	
6,726.0	0.30	278.20	6,724.1	4.1	-66.0	4.6	0.05	-0.05	1.68	
6,916.0	0.40	292.20	6,914.1	4.5	-67.1	5.0	0.07	0.05	7.37	
7,106.0	0.40	276.90	7,104.1	4.8	-68.4	5.3	0.06	0.00	-8.05	
7,295.0	0.40	223.70	7,293.1	4.4	-69.5	4.9	0.19	0.00	-28.15	
7,386.0	0.60	238.10	7,384.1	3.9	-70.1	4.4	0.26	0.22	15.82	
7,576.0	0.50	235.80	7,574.1	2.9	-71.6	3.5	0.05	-0.05	-1.21	
7,765.0	1.00	39.40	7,763.0	3.7	-71.3	4.3	0.79	0.26	86.56	
7,954.0	0.70	34.00	7,952.0	6.0	-69.6	6.5	0.16	-0.16	-2.86	
8,144.0	0.40	53.00	8,142.0	7.3	-68.4	7.8	0.18	-0.16	10.00	
8,333.0	0.30	56.00	8,331.0	8.0	-67.4	8.5	0.05	-0.05	1.59	
8,521.0	0.20	344.70	8,519.0	8.6	-67.1	9.1	0.16	-0.05	-37.93	
8,711.0	0.20	266.90	8,709.0	8.9	-67.5	9.4	0.13	0.00	-40.95	
8,900.0	0.30	237.20	8,898.0	8.6	-68.3	9.1	0.08	0.05	-15.71	
9,090.0	0.60	250.80	9,088.0	8.0	-69.6	8.5	0.17	0.16	7.16	
9,279.0	0.80	307.30	9,277.0	8.5	-71.6	9.0	0.36	0.11	29.89	
9,469.0	0.60	341.30	9,467.0	10.2	-73.0	10.8	0.24	-0.11	17.89	
9,563.0	0.40	315.50	9,561.0	10.9	-73.4	11.5	0.32	-0.21	-27.45	
9,753.0	0.60	112.50	9,751.0	11.0	-72.9	11.6	0.52	0.11	82.63	
9,942.0	1.50	211.10	9,939.9	8.5	-73.3	9.1	0.90	0.48	52.17	
10,131.0	0.20	72.10	10,128.9	6.5	-74.3	7.1	0.88	-0.69	-73.54	
10,225.0	0.60	21.80	10,222.9	7.0	-73.9	7.6	0.53	0.43	-53.51	
10,320.0	0.60	19.50	10,317.9	7.9	-73.6	8.5	0.03	0.00	-2.42	
10,414.0	0.40	357.70	10,411.9	8.7	-73.4	9.3	0.29	-0.21	-23.19	
10,509.0	0.60	21.40	10,506.9	9.5	-73.3	10.1	0.30	0.21	24.95	
10,603.0	1.50	12.10	10,600.9	11.2	-72.8	11.7	0.97	0.96	-9.89	
KOP: 10603.0' MD, 10600.9' TVD										
10,635.0	4.00	2.20	10,632.9	12.7	-72.7	13.3	7.92	7.81	-30.94	
10,681.0	9.10	355.80	10,678.5	17.9	-72.9	18.5	11.18	11.09	-13.91	
10,727.0	13.30	359.60	10,723.7	26.9	-73.2	27.4	9.27	9.13	8.26	
10,774.0	18.90	1.20	10,768.8	39.9	-73.1	40.4	11.95	11.91	3.40	
10,822.0	23.70	359.80	10,813.5	57.3	-72.9	57.9	10.06	10.00	-2.92	
10,869.0	30.20	359.40	10,855.4	78.6	-73.1	79.2	13.84	13.83	-0.85	

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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)
10,917.0	35.20	358.90	10,895.8	104.5	-73.5	105.1	10.43	10.42	-1.04
10,964.0	42.30	357.70	10,932.4	133.9	-74.4	134.5	15.19	15.11	-2.55
11,012.0	48.80	356.50	10,966.0	168.1	-76.1	168.7	13.66	13.54	-2.50
11,058.0	56.50	356.30	10,993.9	204.6	-78.4	205.2	16.74	16.74	-0.43
11,106.0	62.50	357.10	11,018.2	245.9	-80.8	246.5	12.58	12.50	1.67
11,153.0	67.20	358.10	11,038.2	288.4	-82.6	289.0	10.18	10.00	2.13
11,181.0	70.23	359.11	11,048.4	314.4	-83.2	315.0	11.33	10.83	3.59
Cross 330' Hardline: 11181.0' MD, 11048.4' TVD, 70.23° INC									
11,201.0	72.40	359.80	11,054.8	333.4	-83.4	334.0	11.33	10.84	3.47
11,249.0	78.20	0.70	11,066.9	379.8	-83.2	380.4	12.22	12.08	1.88
11,264.0	80.40	0.70	11,069.7	394.5	-83.0	395.1	14.67	14.67	0.00
11,293.0	84.70	0.00	11,073.5	423.3	-82.8	423.9	15.02	14.83	-2.41
11,324.0	87.70	0.60	11,075.5	454.2	-82.7	454.8	9.87	9.68	1.94
11,356.0	89.00	1.20	11,076.5	486.2	-82.2	486.8	4.47	4.06	1.88
EOC: 11356.0' MD, 11076.5' TVD, 89.00° INC, 1.20° AZ, 486.8' VS									
11,419.0	89.90	1.50	11,077.1	549.2	-80.7	549.7	1.51	1.43	0.48
11,514.0	90.90	0.90	11,076.4	644.1	-78.7	644.7	1.23	1.05	-0.63
11,609.0	91.00	0.80	11,074.8	739.1	-77.3	739.7	0.15	0.11	-0.11
11,704.0	90.00	0.50	11,074.0	834.1	-76.2	834.6	1.10	-1.05	-0.32
11,799.0	91.00	0.50	11,073.2	929.1	-75.4	929.6	1.05	1.05	0.00
11,894.0	91.10	0.70	11,071.4	1,024.1	-74.4	1,024.6	0.24	0.11	0.21
11,989.0	90.90	0.70	11,069.8	1,119.0	-73.2	1,119.6	0.21	-0.21	0.00
12,084.0	88.80	0.90	11,070.0	1,214.0	-71.9	1,214.5	2.22	-2.21	0.21
12,179.0	89.90	0.90	11,071.1	1,309.0	-70.4	1,309.5	1.16	1.16	0.00
12,274.0	88.80	0.70	11,072.2	1,404.0	-69.1	1,404.5	1.18	-1.16	-0.21
12,369.0	90.00	0.80	11,073.2	1,499.0	-67.8	1,499.4	1.27	1.26	0.11
12,463.0	89.60	0.90	11,073.5	1,593.0	-66.4	1,593.4	0.44	-0.43	0.11
12,558.0	90.80	1.00	11,073.2	1,688.0	-64.9	1,688.4	1.27	1.26	0.11
12,653.0	90.90	1.40	11,071.8	1,782.9	-62.9	1,783.3	0.43	0.11	0.42
12,748.0	90.30	0.70	11,070.8	1,877.9	-61.1	1,878.3	0.97	-0.63	-0.74
12,843.0	89.80	0.70	11,070.7	1,972.9	-60.0	1,973.3	0.53	-0.53	0.00
12,937.0	90.90	0.70	11,070.1	2,066.9	-58.8	2,067.3	1.17	1.17	0.00
13,032.0	90.60	0.40	11,068.9	2,161.9	-57.9	2,162.2	0.45	-0.32	-0.32
13,127.0	89.60	0.40	11,068.7	2,256.9	-57.3	2,257.2	1.05	-1.05	0.00
13,222.0	90.10	0.70	11,068.9	2,351.9	-56.3	2,352.2	0.61	0.53	0.32
13,317.0	90.70	0.80	11,068.3	2,446.9	-55.1	2,447.2	0.64	0.63	0.11
13,412.0	91.90	1.00	11,066.1	2,541.8	-53.6	2,542.1	1.28	1.26	0.21
13,506.0	91.30	0.90	11,063.5	2,635.8	-52.0	2,636.1	0.65	-0.64	-0.11
13,601.0	89.60	0.40	11,062.7	2,730.8	-51.0	2,731.1	1.87	-1.79	-0.53
13,696.0	88.80	0.20	11,064.1	2,825.7	-50.5	2,826.0	0.87	-0.84	-0.21
13,791.0	90.10	0.30	11,065.0	2,920.7	-50.1	2,921.0	1.37	1.37	0.11
13,885.0	89.50	0.40	11,065.3	3,014.7	-49.5	3,015.0	0.65	-0.64	0.11
13,980.0	90.90	0.50	11,065.0	3,109.7	-48.7	3,110.0	1.48	1.47	0.11
14,075.0	90.80	0.50	11,063.6	3,204.7	-47.9	3,205.0	0.11	-0.11	0.00

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,170.0	90.50	0.40	11,062.5	3,299.7	-47.2	3,300.0	0.33	-0.32	-0.11	
14,264.0	91.50	0.50	11,060.9	3,393.7	-46.4	3,393.9	1.07	1.06	0.11	
14,359.0	90.90	0.10	11,058.9	3,488.7	-45.9	3,488.9	0.76	-0.63	-0.42	
14,454.0	90.70	0.20	11,057.5	3,583.7	-45.7	3,583.9	0.24	-0.21	0.11	
14,549.0	91.30	0.60	11,055.9	3,678.6	-45.0	3,678.9	0.76	0.63	0.42	
14,644.0	89.80	0.70	11,055.0	3,773.6	-43.9	3,773.8	1.58	-1.58	0.11	
14,738.0	88.90	0.00	11,056.0	3,867.6	-43.4	3,867.8	1.21	-0.96	-0.74	
14,833.0	89.20	0.50	11,057.6	3,962.6	-43.0	3,962.8	0.61	0.32	0.53	
14,928.0	89.70	0.70	11,058.5	4,057.6	-42.0	4,057.8	0.57	0.53	0.21	
15,022.0	89.80	0.50	11,058.9	4,151.6	-41.0	4,151.8	0.24	0.11	-0.21	
15,117.0	90.50	0.40	11,058.7	4,246.6	-40.2	4,246.8	0.74	0.74	-0.11	
15,212.0	91.00	0.30	11,057.4	4,341.6	-39.6	4,341.7	0.54	0.53	-0.11	
15,307.0	90.90	0.20	11,055.9	4,436.6	-39.2	4,436.7	0.15	-0.11	-0.11	
15,402.0	90.60	359.90	11,054.6	4,531.5	-39.1	4,531.7	0.45	-0.32	-0.32	
15,497.0	90.90	359.80	11,053.4	4,626.5	-39.4	4,626.7	0.33	0.32	-0.11	
15,591.0	90.40	359.30	11,052.3	4,720.5	-40.1	4,720.7	0.75	-0.53	-0.53	
15,685.0	90.10	359.60	11,051.9	4,814.5	-41.0	4,814.7	0.45	-0.32	0.32	
15,780.0	90.30	359.30	11,051.6	4,909.5	-41.9	4,909.7	0.38	0.21	-0.32	
15,806.6	90.40	359.30	11,051.4	4,936.1	-42.3	4,936.3	0.37	0.37	0.00	
Cross 330' Hardline: 15806.6' MD, 11051.4' TVD, 90.40° INC										
15,807.0	90.40	359.30	11,051.4	4,936.5	-42.3	4,936.7	0.37	0.37	0.00	
Final MWD Survey: 15807.0' MD, 11051.4' TVD, 4936.5' +N/-S, -42.3' +E/-W										
15,870.0	90.40	359.30	11,051.0	4,999.5	-43.0	4,999.7	0.00	0.00	0.00	
TD: 15870.0' MD, 11051.0' TVD - BHL: 15870.0' MD, 11051.0' TVD, 90.40° INC, 359.30° AZ, 4999.5' +N/-S, -43.0' +E/-W, 4999.7' VS										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,603.0	10,600.9	11.2	-72.8	KOP: 10603.0' MD, 10600.9' TVD	
11,181.0	11,048.4	314.4	-83.2	Cross 330' Hardline: 11181.0' MD, 11048.4' TVD, 70.23° INC	
11,356.0	11,076.5	486.2	-82.2	EOC: 11356.0' MD, 11076.5' TVD, 89.00° INC, 1.20° AZ, 486.8' VS	
15,806.6	11,051.4	4,936.1	-42.3	Cross 330' Hardline: 15806.6' MD, 11051.4' TVD, 90.40° INC	
15,807.0	11,051.4	4,936.5	-42.3	Final MWD Survey: 15807.0' MD, 11051.4' TVD, 4936.5' +N/-S, -42.3' +E/-W	
15,870.0	11,051.0	4,999.5	-43.0	TD: 15870.0' MD, 11051.0' TVD	
15,870.0	11,051.0	4,999.5	-43.0	BHL: 15870.0' MD, 11051.0' TVD, 90.40° INC, 359.30° AZ, 4999.5' +N/-S, -43.0	

Checked By: _____ Approved By: _____ Date: _____



Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Convoy BUC State
Well: #2H
Wellbore: OH
Plan: Plan #3 (#2H/OH)

WELL DETAILS: #2H

Ground Elevation:: 3480.0
RKB Elevation: RKB @ 3505.0usft (Cactus 124 - KB=25')
Rig Name: Cactus 124 - KB=25'

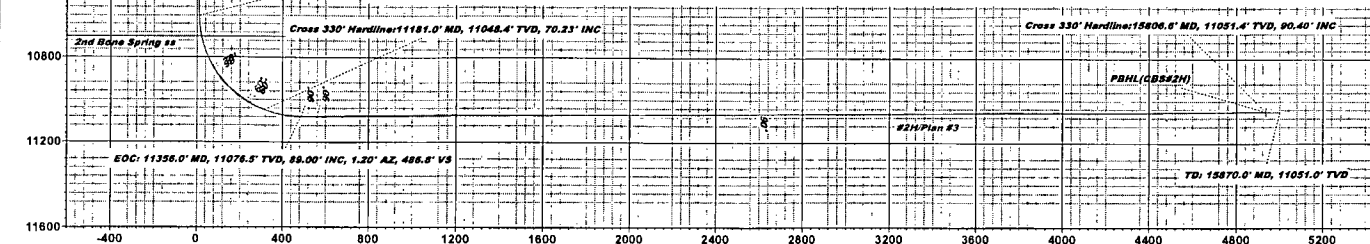
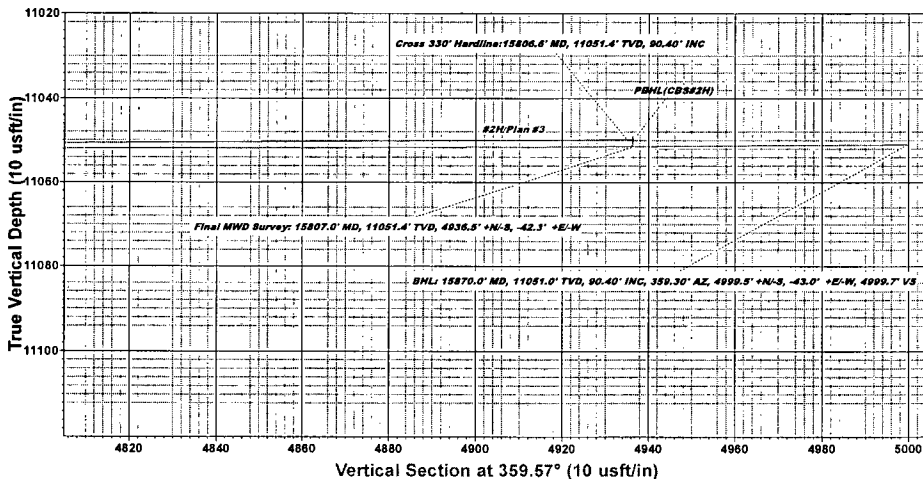
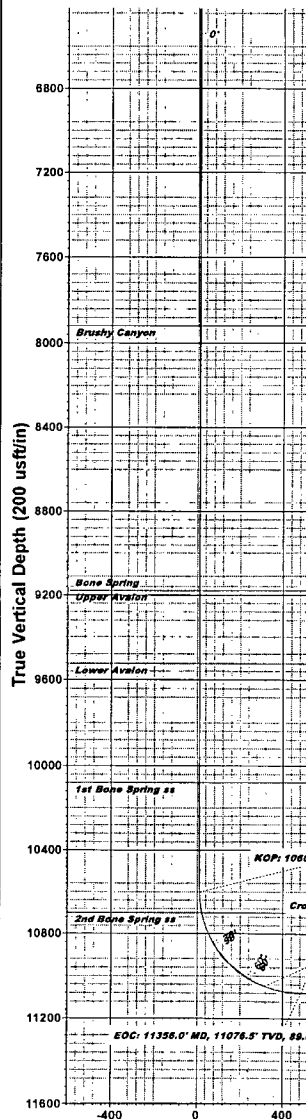
Surface Hole Location
Northing Easting Latitude Longitude
430562.70 775754.00 32° 10' 53.130 N 103° 34' 32.289 W



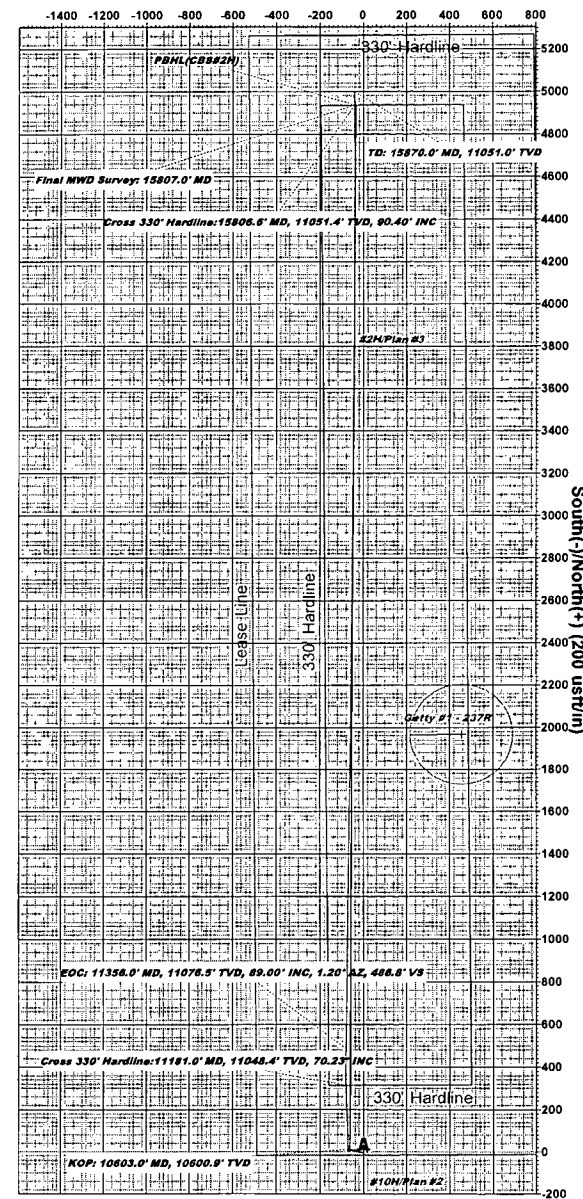
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.81°
Magnetic Field
Strength: 48290.1snT
Dip Angle: 60.07°
Date: 6/13/2014
Model: IGRF2010

Section Details

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	1149.0	0.77	283.60	1148.9	-3.5	-7.4	0.00	0.00	-3.4
2	1249.0	0.77	283.60	1248.9	-3.2	-8.7	0.00	0.00	-3.1
3	1397.7	3.00	283.60	1397.5	-2.0	-13.5	1.50	0.00	-1.9
4	2277.7	3.00	283.60	2276.3	8.8	-58.2	0.00	0.00	9.2
5	2477.7	0.00	0.00	2476.2	10.0	-63.3	1.50	180.00	10.5
6	10604.0	0.00	0.00	10602.5	10.0	-63.3	0.00	0.00	10.5
7	11357.3	90.39	0.31	11080.0	490.8	-60.7	12.00	0.31	491.2
8	15802.9	90.39	0.31	11049.7	4936.2	-36.7	0.00	0.00	4936.3



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



PROJECT DETAILS: Lea County, 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: Adrian Castro Date: 7:38, August 05 2014

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Yates Petroleum

Lea County, NM (NAD-83)

Convoy BUC State

#2H

OH

Design: OH

Survey Report - Geographic

05 August, 2014

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Well:	#2H	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	#2H					
Well Position	+N/-S	0.0 usft	Northing:	430,562.70 usft	Latitude:	32° 10' 53.130 N
	+E/-W	0.0 usft	Easting:	775,754.00 usft	Longitude:	103° 34' 32.289 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,480.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	6/13/2014	7.22	60.07	48,290

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	359.57	

Survey Program	Date	8/5/2014			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
50.0	1,149.0	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
1,246.0	15,870.0	Survey #2 - Crescent MWD Surveys (OH)	MWD	MWD - Standard	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude	
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting			
(usft)			(usft)			(usft)	(usft)			
0.0	0.00	0.00	0.0	0.0	0.0	430,562.70	775,754.00	32° 10' 53.130 N	103° 34' 32.289 W	
50.0	0.22	150.98	50.0	-0.1	0.0	430,562.62	775,754.04	32° 10' 53.130 N	103° 34' 32.288 W	
100.0	0.35	127.72	100.0	-0.3	0.2	430,562.44	775,754.21	32° 10' 53.128 N	103° 34' 32.286 W	
200.0	0.22	160.86	200.0	-0.6	0.5	430,562.07	775,754.52	32° 10' 53.124 N	103° 34' 32.283 W	
300.0	0.28	151.92	300.0	-1.0	0.7	430,561.67	775,754.69	32° 10' 53.120 N	103° 34' 32.281 W	
400.0	0.32	175.21	400.0	-1.5	0.8	430,561.18	775,754.83	32° 10' 53.115 N	103° 34' 32.279 W	
500.0	0.38	209.99	500.0	-2.1	0.7	430,560.61	775,754.69	32° 10' 53.110 N	103° 34' 32.281 W	
600.0	0.69	224.26	600.0	-2.8	0.1	430,559.90	775,754.10	32° 10' 53.103 N	103° 34' 32.288 W	
700.0	0.56	240.01	700.0	-3.5	-0.7	430,559.22	775,753.26	32° 10' 53.096 N	103° 34' 32.298 W	
800.0	0.65	268.49	800.0	-3.7	-1.7	430,558.96	775,752.27	32° 10' 53.094 N	103° 34' 32.309 W	
900.0	0.77	269.39	900.0	-3.8	-3.0	430,558.94	775,751.03	32° 10' 53.093 N	103° 34' 32.324 W	

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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
1,000.0	1.08	271.71	1,000.0	-3.7	-4.6	430,558.96	775,749.42	32° 10' 53.094 N	103° 34' 32.343 W
1,100.0	1.20	275.54	1,099.9	-3.6	-6.6	430,559.09	775,747.43	32° 10' 53.095 N	103° 34' 32.366 W
1,149.0	0.77	283.60	1,148.9	-3.5	-7.4	430,559.22	775,746.60	32° 10' 53.096 N	103° 34' 32.375 W
1,246.0	0.90	280.10	1,245.9	-3.2	-8.8	430,559.50	775,745.22	32° 10' 53.099 N	103° 34' 32.391 W
1,341.0	2.00	286.10	1,340.9	-2.6	-11.1	430,560.09	775,742.89	32° 10' 53.105 N	103° 34' 32.418 W
1,436.0	3.40	287.50	1,435.8	-1.3	-15.4	430,561.40	775,738.61	32° 10' 53.119 N	103° 34' 32.468 W
1,531.0	3.90	287.00	1,530.6	0.5	-21.2	430,563.19	775,732.84	32° 10' 53.137 N	103° 34' 32.535 W
1,627.0	4.00	288.60	1,626.4	2.5	-27.5	430,565.21	775,726.54	32° 10' 53.157 N	103° 34' 32.608 W
1,720.0	3.90	289.80	1,719.1	4.6	-33.5	430,567.32	775,720.49	32° 10' 53.178 N	103° 34' 32.678 W
1,814.0	3.70	292.60	1,812.9	6.9	-39.3	430,569.57	775,714.68	32° 10' 53.201 N	103° 34' 32.746 W
1,908.0	3.40	273.60	1,906.8	8.2	-44.9	430,570.91	775,709.10	32° 10' 53.215 N	103° 34' 32.811 W
2,003.0	3.40	270.40	2,001.6	8.4	-50.5	430,571.11	775,703.47	32° 10' 53.217 N	103° 34' 32.876 W
2,098.0	3.10	271.20	2,096.4	8.5	-55.9	430,571.18	775,698.09	32° 10' 53.218 N	103° 34' 32.939 W
2,192.0	2.90	266.10	2,190.3	8.4	-60.8	430,571.07	775,693.17	32° 10' 53.217 N	103° 34' 32.996 W
2,286.0	1.10	269.50	2,284.2	8.2	-64.1	430,570.90	775,689.90	32° 10' 53.216 N	103° 34' 33.034 W
2,381.0	0.50	333.40	2,379.2	8.6	-65.2	430,571.26	775,688.80	32° 10' 53.220 N	103° 34' 33.047 W
2,475.0	0.90	346.40	2,473.2	9.6	-65.6	430,572.35	775,688.44	32° 10' 53.230 N	103° 34' 33.051 W
2,569.0	0.60	349.40	2,567.2	10.8	-65.8	430,573.55	775,688.18	32° 10' 53.242 N	103° 34' 33.054 W
2,664.0	0.40	18.30	2,662.2	11.7	-65.8	430,574.35	775,688.19	32° 10' 53.250 N	103° 34' 33.054 W
2,759.0	0.40	53.00	2,757.2	12.2	-65.4	430,574.87	775,688.56	32° 10' 53.255 N	103° 34' 33.049 W
2,854.0	0.60	86.60	2,852.2	12.4	-64.7	430,575.10	775,689.32	32° 10' 53.258 N	103° 34' 33.040 W
2,949.0	0.90	101.50	2,947.2	12.3	-63.4	430,574.98	775,690.55	32° 10' 53.256 N	103° 34' 33.026 W
3,043.0	1.10	105.50	3,041.2	11.9	-61.9	430,574.59	775,692.14	32° 10' 53.252 N	103° 34' 33.008 W
3,137.0	1.30	115.00	3,135.2	11.2	-60.0	430,573.90	775,693.98	32° 10' 53.245 N	103° 34' 32.986 W
3,232.0	1.10	142.90	3,230.1	10.0	-58.5	430,572.71	775,695.51	32° 10' 53.234 N	103° 34' 32.969 W
3,326.0	0.70	196.00	3,324.1	8.7	-58.1	430,571.44	775,695.89	32° 10' 53.221 N	103° 34' 32.964 W
3,422.0	0.40	222.80	3,420.1	7.9	-58.5	430,570.63	775,695.50	32° 10' 53.213 N	103° 34' 32.969 W
3,516.0	0.20	203.90	3,514.1	7.5	-58.8	430,570.24	775,695.21	32° 10' 53.209 N	103° 34' 32.972 W
3,611.0	0.10	212.50	3,609.1	7.3	-58.9	430,570.02	775,695.10	32° 10' 53.207 N	103° 34' 32.974 W
3,705.0	0.10	216.00	3,703.1	7.2	-59.0	430,569.89	775,695.01	32° 10' 53.206 N	103° 34' 32.975 W
3,800.0	0.20	299.90	3,798.1	7.2	-59.2	430,569.90	775,694.82	32° 10' 53.206 N	103° 34' 32.977 W
3,895.0	0.20	293.30	3,893.1	7.3	-59.5	430,570.05	775,694.52	32° 10' 53.207 N	103° 34' 32.980 W
3,990.0	0.10	280.00	3,988.1	7.4	-59.7	430,570.13	775,694.29	32° 10' 53.208 N	103° 34' 32.983 W
4,084.0	0.10	293.30	4,082.1	7.5	-59.9	430,570.18	775,694.13	32° 10' 53.209 N	103° 34' 32.985 W
4,178.0	0.10	279.00	4,176.1	7.5	-60.0	430,570.22	775,693.97	32° 10' 53.209 N	103° 34' 32.987 W
4,273.0	0.00	268.60	4,271.1	7.5	-60.1	430,570.23	775,693.89	32° 10' 53.209 N	103° 34' 32.988 W
4,368.0	0.10	202.40	4,366.1	7.5	-60.1	430,570.16	775,693.86	32° 10' 53.208 N	103° 34' 32.988 W
4,463.0	0.20	130.20	4,461.1	7.3	-60.0	430,569.97	775,693.96	32° 10' 53.207 N	103° 34' 32.987 W
4,557.0	0.50	122.20	4,555.1	6.9	-59.6	430,569.65	775,694.43	32° 10' 53.203 N	103° 34' 32.981 W
4,652.0	0.60	132.20	4,650.1	6.4	-58.9	430,569.09	775,695.15	32° 10' 53.198 N	103° 34' 32.973 W
4,745.0	0.90	239.00	4,743.1	5.7	-59.1	430,568.39	775,694.88	32° 10' 53.191 N	103° 34' 32.976 W
4,840.0	1.10	230.50	4,838.1	4.7	-60.5	430,567.43	775,693.54	32° 10' 53.181 N	103° 34' 32.992 W
4,934.0	0.50	71.10	4,932.1	4.3	-60.8	430,566.99	775,693.23	32° 10' 53.177 N	103° 34' 32.996 W
5,030.0	0.50	58.00	5,028.1	4.6	-60.0	430,567.34	775,693.98	32° 10' 53.181 N	103° 34' 32.987 W
5,095.0	0.30	68.50	5,093.1	4.9	-59.6	430,567.56	775,694.38	32° 10' 53.183 N	103° 34' 32.982 W
5,210.0	0.30	212.10	5,208.1	4.7	-59.5	430,567.41	775,694.50	32° 10' 53.181 N	103° 34' 32.981 W
5,399.0	0.30	216.70	5,397.1	3.9	-60.1	430,566.60	775,693.94	32° 10' 53.173 N	103° 34' 32.987 W
5,589.0	0.20	272.40	5,587.1	3.5	-60.7	430,566.21	775,693.31	32° 10' 53.169 N	103° 34' 32.995 W
5,779.0	0.30	281.30	5,777.1	3.6	-61.5	430,566.32	775,692.49	32° 10' 53.171 N	103° 34' 33.004 W
5,968.0	0.20	339.10	5,966.1	4.0	-62.1	430,566.73	775,691.89	32° 10' 53.175 N	103° 34' 33.011 W
6,157.0	0.30	253.50	6,155.1	4.2	-62.7	430,566.89	775,691.30	32° 10' 53.176 N	103° 34' 33.018 W
6,347.0	0.30	263.90	6,345.1	4.0	-63.7	430,566.70	775,690.33	32° 10' 53.174 N	103° 34' 33.029 W
6,536.0	0.40	275.00	6,534.1	4.0	-64.8	430,566.71	775,689.18	32° 10' 53.175 N	103° 34' 33.043 W
6,726.0	0.30	278.20	6,724.1	4.1	-66.0	430,566.83	775,688.03	32° 10' 53.176 N	103° 34' 33.056 W
6,916.0	0.40	292.20	6,914.1	4.5	-67.1	430,567.16	775,686.92	32° 10' 53.179 N	103° 34' 33.069 W

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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
7,106.0	0.40	276.90	7,104.1	4.8	-68.4	430,567.49	775,685.65	32° 10' 53.183 N	103° 34' 33.084 W
7,295.0	0.40	223.70	7,293.1	4.4	-69.5	430,567.09	775,684.54	32° 10' 53.179 N	103° 34' 33.097 W
7,386.0	0.60	238.10	7,384.1	3.9	-70.1	430,566.61	775,683.91	32° 10' 53.174 N	103° 34' 33.104 W
7,576.0	0.50	235.80	7,574.1	2.9	-71.6	430,565.62	775,682.38	32° 10' 53.164 N	103° 34' 33.122 W
7,765.0	1.00	39.40	7,763.0	3.7	-71.3	430,566.43	775,682.75	32° 10' 53.172 N	103° 34' 33.118 W
7,954.0	0.70	34.00	7,952.0	6.0	-69.6	430,568.66	775,684.44	32° 10' 53.194 N	103° 34' 33.098 W
8,144.0	0.40	53.00	8,142.0	7.3	-68.4	430,570.02	775,685.62	32° 10' 53.208 N	103° 34' 33.084 W
8,333.0	0.30	56.00	8,331.0	8.0	-67.4	430,570.69	775,686.55	32° 10' 53.214 N	103° 34' 33.073 W
8,521.0	0.20	344.70	8,519.0	8.6	-67.1	430,571.28	775,686.88	32° 10' 53.220 N	103° 34' 33.069 W
8,711.0	0.20	266.90	8,709.0	8.9	-67.5	430,571.59	775,686.46	32° 10' 53.223 N	103° 34' 33.074 W
8,900.0	0.30	237.20	8,898.0	8.6	-68.3	430,571.30	775,685.71	32° 10' 53.220 N	103° 34' 33.083 W
9,090.0	0.60	250.80	9,088.0	8.0	-69.6	430,570.70	775,684.35	32° 10' 53.214 N	103° 34' 33.099 W
9,279.0	0.80	307.30	9,277.0	8.5	-71.6	430,571.18	775,682.37	32° 10' 53.219 N	103° 34' 33.122 W
9,469.0	0.60	341.30	9,467.0	10.2	-73.0	430,572.92	775,681.00	32° 10' 53.237 N	103° 34' 33.137 W
9,563.0	0.40	315.50	9,561.0	10.9	-73.4	430,573.62	775,680.61	32° 10' 53.244 N	103° 34' 33.142 W
9,753.0	0.60	112.50	9,751.0	11.0	-72.9	430,573.72	775,681.06	32° 10' 53.244 N	103° 34' 33.137 W
9,942.0	1.50	211.10	9,939.9	8.5	-73.3	430,571.22	775,680.70	32° 10' 53.220 N	103° 34' 33.141 W
10,131.0	0.20	72.10	10,128.9	6.5	-74.3	430,569.20	775,679.74	32° 10' 53.200 N	103° 34' 33.152 W
10,225.0	0.60	21.80	10,222.9	7.0	-73.9	430,569.71	775,680.07	32° 10' 53.205 N	103° 34' 33.148 W
10,320.0	0.60	19.50	10,317.9	7.9	-73.6	430,570.64	775,680.42	32° 10' 53.214 N	103° 34' 33.144 W
10,414.0	0.40	357.70	10,411.9	8.7	-73.4	430,571.43	775,680.58	32° 10' 53.222 N	103° 34' 33.142 W
10,509.0	0.60	21.40	10,506.9	9.5	-73.3	430,572.23	775,680.74	32° 10' 53.230 N	103° 34' 33.140 W
10,603.0	1.50	12.10	10,600.9	11.2	-72.8	430,573.89	775,681.18	32° 10' 53.246 N	103° 34' 33.135 W
KOP: 10603.0' MD, 10600.9' TVD									
10,635.0	4.00	2.20	10,632.9	12.7	-72.7	430,575.41	775,681.31	32° 10' 53.261 N	103° 34' 33.134 W
10,681.0	9.10	355.80	10,678.5	17.9	-72.9	430,580.65	775,681.11	32° 10' 53.313 N	103° 34' 33.136 W
10,727.0	13.30	359.60	10,723.7	26.9	-73.2	430,589.57	775,680.80	32° 10' 53.401 N	103° 34' 33.138 W
10,774.0	18.90	1.20	10,768.8	39.9	-73.1	430,602.60	775,680.93	32° 10' 53.530 N	103° 34' 33.136 W
10,822.0	23.70	359.80	10,813.5	57.3	-72.9	430,620.03	775,681.05	32° 10' 53.703 N	103° 34' 33.133 W
10,869.0	30.20	359.40	10,855.4	78.6	-73.1	430,641.32	775,680.90	32° 10' 53.913 N	103° 34' 33.133 W
10,917.0	35.20	358.90	10,895.8	104.5	-73.5	430,667.24	775,680.51	32° 10' 54.170 N	103° 34' 33.135 W
10,964.0	42.30	357.70	10,932.4	133.9	-74.4	430,696.62	775,679.61	32° 10' 54.461 N	103° 34' 33.143 W
11,012.0	48.80	356.50	10,966.0	168.1	-76.1	430,730.82	775,677.86	32° 10' 54.799 N	103° 34' 33.161 W
11,058.0	56.50	356.30	10,993.9	204.6	-78.4	430,767.29	775,675.56	32° 10' 55.160 N	103° 34' 33.185 W
11,106.0	62.50	357.10	11,018.2	245.9	-80.8	430,808.56	775,673.19	32° 10' 55.569 N	103° 34' 33.209 W
11,153.0	67.20	358.10	11,038.2	288.4	-82.6	430,851.05	775,671.42	32° 10' 55.989 N	103° 34' 33.226 W
11,181.0	70.23	359.11	11,048.4	314.4	-83.2	430,877.13	775,670.78	32° 10' 56.248 N	103° 34' 33.231 W
Cross 330' Hardline: 11181.0' MD, 11048.4' TVD, 70.23° INC									
11,201.0	72.40	359.80	11,054.8	333.4	-83.4	430,896.08	775,670.60	32° 10' 56.435 N	103° 34' 33.232 W
11,249.0	78.20	0.70	11,066.9	379.8	-83.2	430,942.49	775,670.81	32° 10' 56.894 N	103° 34' 33.226 W
11,264.0	80.40	0.70	11,069.7	394.5	-83.0	430,957.22	775,670.99	32° 10' 57.040 N	103° 34' 33.222 W
11,293.0	84.70	0.00	11,073.5	423.3	-82.8	430,985.97	775,671.16	32° 10' 57.325 N	103° 34' 33.218 W
11,324.0	87.70	0.60	11,075.5	454.2	-82.7	431,016.90	775,671.33	32° 10' 57.631 N	103° 34' 33.214 W
11,356.0	89.00	1.20	11,076.5	486.2	-82.2	431,048.88	775,671.83	32° 10' 57.947 N	103° 34' 33.205 W
EOC: 11356.0' MD, 11076.5' TVD, 89.00° INC, 1.20° AZ, 486.8' VS									
11,419.0	89.90	1.50	11,077.1	549.2	-80.7	431,111.86	775,673.31	32° 10' 58.570 N	103° 34' 33.183 W
11,514.0	90.90	0.90	11,076.4	644.1	-78.7	431,206.83	775,675.30	32° 10' 59.510 N	103° 34' 33.152 W
11,609.0	91.00	0.80	11,074.8	739.1	-77.3	431,301.81	775,676.71	32° 11' 0.449 N	103° 34' 33.128 W
11,704.0	90.00	0.50	11,074.0	834.1	-76.2	431,396.80	775,677.79	32° 11' 1.389 N	103° 34' 33.107 W
11,799.0	91.00	0.50	11,073.2	929.1	-75.4	431,491.79	775,678.62	32° 11' 2.329 N	103° 34' 33.090 W
11,894.0	91.10	0.70	11,071.4	1,024.1	-74.4	431,586.77	775,679.61	32° 11' 3.269 N	103° 34' 33.070 W
11,989.0	90.90	0.70	11,069.8	1,119.0	-73.2	431,681.75	775,680.77	32° 11' 4.209 N	103° 34' 33.049 W
12,084.0	88.80	0.90	11,070.0	1,214.0	-71.9	431,776.73	775,682.10	32° 11' 5.149 N	103° 34' 33.026 W
12,179.0	89.90	0.90	11,071.1	1,309.0	-70.4	431,871.71	775,683.59	32° 11' 6.088 N	103° 34' 33.001 W
12,274.0	88.80	0.70	11,072.2	1,404.0	-69.1	431,966.70	775,684.92	32° 11' 7.028 N	103° 34' 32.978 W

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
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	
12,369.0	90.00	0.80	11,073.2	1,499.0	-67.8	432,061.68	775,686.16	32° 11' 7.968 N	103° 34' 32.955 W	
12,463.0	89.60	0.90	11,073.5	1,593.0	-66.4	432,155.67	775,687.55	32° 11' 8.898 N	103° 34' 32.931 W	
12,558.0	90.80	1.00	11,073.2	1,688.0	-64.9	432,250.66	775,689.13	32° 11' 9.838 N	103° 34' 32.905 W	
12,653.0	90.90	1.40	11,071.8	1,782.9	-62.9	432,345.62	775,691.12	32° 11' 10.777 N	103° 34' 32.874 W	
12,748.0	90.30	0.70	11,070.8	1,877.9	-61.1	432,440.60	775,692.86	32° 11' 11.717 N	103° 34' 32.846 W	
12,843.0	89.80	0.70	11,070.7	1,972.9	-60.0	432,535.59	775,694.02	32° 11' 12.657 N	103° 34' 32.825 W	
12,937.0	90.90	0.70	11,070.1	2,066.9	-58.8	432,629.58	775,695.17	32° 11' 13.587 N	103° 34' 32.804 W	
13,032.0	90.60	0.40	11,068.9	2,161.9	-57.9	432,724.57	775,696.08	32° 11' 14.527 N	103° 34' 32.786 W	
13,127.0	89.60	0.40	11,068.7	2,256.9	-57.3	432,819.57	775,696.74	32° 11' 15.467 N	103° 34' 32.770 W	
13,222.0	90.10	0.70	11,068.9	2,351.9	-56.3	432,914.56	775,697.66	32° 11' 16.407 N	103° 34' 32.752 W	
13,317.0	90.70	0.80	11,068.3	2,446.9	-55.1	433,009.55	775,698.90	32° 11' 17.346 N	103° 34' 32.729 W	
13,412.0	91.90	1.00	11,066.1	2,541.8	-53.6	433,104.51	775,700.39	32° 11' 18.286 N	103° 34' 32.704 W	
13,506.0	91.30	0.90	11,063.5	2,635.8	-52.0	433,198.46	775,701.95	32° 11' 19.216 N	103° 34' 32.678 W	
13,601.0	89.60	0.40	11,062.7	2,730.8	-51.0	433,293.45	775,703.03	32° 11' 20.155 N	103° 34' 32.658 W	
13,696.0	88.80	0.20	11,064.1	2,825.7	-50.5	433,388.44	775,703.52	32° 11' 21.095 N	103° 34' 32.645 W	
13,791.0	90.10	0.30	11,065.0	2,920.7	-50.1	433,483.43	775,703.94	32° 11' 22.035 N	103° 34' 32.632 W	
13,885.0	89.50	0.40	11,065.3	3,014.7	-49.5	433,577.43	775,704.51	32° 11' 22.965 N	103° 34' 32.618 W	
13,980.0	90.90	0.50	11,065.0	3,109.7	-48.7	433,672.42	775,705.26	32° 11' 23.905 N	103° 34' 32.601 W	
14,075.0	90.80	0.50	11,063.6	3,204.7	-47.9	433,767.41	775,706.09	32° 11' 24.845 N	103° 34' 32.584 W	
14,170.0	90.50	0.40	11,062.5	3,299.7	-47.2	433,862.40	775,706.83	32° 11' 25.785 N	103° 34' 32.567 W	
14,264.0	91.50	0.50	11,060.9	3,393.7	-46.4	433,956.38	775,707.57	32° 11' 26.715 N	103° 34' 32.551 W	
14,359.0	90.90	0.10	11,058.9	3,488.7	-45.9	434,051.36	775,708.07	32° 11' 27.655 N	103° 34' 32.537 W	
14,454.0	90.70	0.20	11,057.5	3,583.7	-45.7	434,146.35	775,708.32	32° 11' 28.595 N	103° 34' 32.527 W	
14,549.0	91.30	0.60	11,055.9	3,678.6	-45.0	434,241.33	775,708.98	32° 11' 29.535 N	103° 34' 32.511 W	
14,644.0	89.80	0.70	11,055.0	3,773.6	-43.9	434,336.32	775,710.06	32° 11' 30.474 N	103° 34' 32.491 W	
14,738.0	88.90	0.00	11,056.0	3,867.6	-43.4	434,430.31	775,710.63	32° 11' 31.404 N	103° 34' 32.476 W	
14,833.0	89.20	0.50	11,057.6	3,962.6	-43.0	434,525.30	775,711.05	32° 11' 32.344 N	103° 34' 32.464 W	
14,928.0	89.70	0.70	11,058.5	4,057.6	-42.0	434,620.29	775,712.04	32° 11' 33.284 N	103° 34' 32.444 W	
15,022.0	89.80	0.50	11,058.9	4,151.6	-41.0	434,714.28	775,713.03	32° 11' 34.214 N	103° 34' 32.425 W	
15,117.0	90.50	0.40	11,058.7	4,246.6	-40.2	434,809.28	775,713.77	32° 11' 35.154 N	103° 34' 32.409 W	
15,212.0	91.00	0.30	11,057.4	4,341.6	-39.6	434,904.27	775,714.35	32° 11' 36.094 N	103° 34' 32.394 W	
15,307.0	90.90	0.20	11,055.9	4,436.6	-39.2	434,999.25	775,714.77	32° 11' 37.034 N	103° 34' 32.382 W	
15,402.0	90.60	359.90	11,054.6	4,531.5	-39.1	435,094.24	775,714.85	32° 11' 37.974 N	103° 34' 32.373 W	
15,497.0	90.90	359.80	11,053.4	4,626.5	-39.4	435,189.23	775,714.60	32° 11' 38.914 N	103° 34' 32.368 W	
15,591.0	90.40	359.30	11,052.3	4,720.5	-40.1	435,283.23	775,713.86	32° 11' 39.844 N	103° 34' 32.369 W	
15,685.0	90.10	359.60	11,051.9	4,814.5	-41.0	435,377.22	775,712.96	32° 11' 40.774 N	103° 34' 32.372 W	
15,780.0	90.30	359.30	11,051.6	4,909.5	-41.9	435,472.21	775,712.05	32° 11' 41.714 N	103° 34' 32.375 W	
15,806.6	90.40	359.30	11,051.4	4,936.1	-42.3	435,498.81	775,711.72	32° 11' 41.977 N	103° 34' 32.376 W	
Cross 330° Hardline: 15806.6' MD, 11051.4' TVD, 90.40° INC										
15,807.0	90.40	359.30	11,051.4	4,936.5	-42.3	435,499.21	775,711.72	32° 11' 41.981 N	103° 34' 32.376 W	
Final MWD Survey: 15807.0' MD, 11051.4' TVD, 4936.5' +N/-S, -42.3' +E/-W										
15,870.0	90.40	359.30	11,051.0	4,999.5	-43.0	435,562.21	775,710.95	32° 11' 42.605 N	103° 34' 32.380 W	
TD: 15870.0' MD, 11051.0' TVD - BHL: 15870.0' MD, 11051.0' TVD, 90.40° INC, 359.30° AZ, 4999.5' +N/-S, -43.0' +E/-W, 4999.7' VS										

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,603.0	10,600.9	11.2	-72.8	KOP: 10603.0' MD, 10600.9' TVD
11,181.0	11,048.4	314.4	-83.2	Cross 330' Hardline: 11181.0' MD, 11048.4' TVD, 70.23° INC
11,356.0	11,076.5	486.2	-82.2	EOC: 11356.0' MD, 11076.5' TVD, 89.00° INC, 1.20° AZ, 486.8' VS
15,806.6	11,051.4	4,936.1	-42.3	Cross 330' Hardline: 15806.6' MD, 11051.4' TVD, 90.40° INC
15,807.0	11,051.4	4,936.5	-42.3	Final MWD Survey: 15807.0' MD, 11051.4' TVD, 4936.5' +N/-S, -42.3' +E/-W
15,870.0	11,051.0	4,999.5	-43.0	TD: 15870.0' MD, 11051.0' TVD
15,870.0	11,051.0	4,999.5	-43.0	BHL: 15870.0' MD, 11051.0' TVD, 90.40° INC, 359.30° AZ, 4999.5' +N/-S, -43.0

Checked By: _____ Approved By: _____ Date: _____

HOBBS OCD

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Yates Petroleum

Lea County, NM (NAD-83)

Convoy BUC State

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Anticollision Report

05 August, 2014

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Reference	OH		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 20.00	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program		Date	8/5/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.0	1,149.0	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
1,246.0	15,870.0	Survey #2 - Crescent MWD Surveys (OH)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Caravan State Unit						
#10H - OH - Plan #2	791.6	790.6	26.5	18.0	3.113	CC
#10H - OH - Plan #2	1,149.0	1,147.9	27.7	15.2	2.219	ES
#10H - OH - Plan #2	10,603.0	10,599.9	83.8	37.7	1.821	SF
Convoy BUC State						
Getty #1 - OH - OH	12,840.5	11,052.2	335.8	271.4	5.217	CC
Getty #1 - OH - OH	12,843.0	11,052.2	335.8	271.4	5.215	ES, SF

Offset Design														Offset Site Error:	0.0 usft
Caravan State Unit - #10H - OH - Plan #2														Offset Well Error:	0.0 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	Offset (usft)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
200.0	200.0	199.0	199.0	1.5	0.3	20.14	-30.2	0.0	0.0	29.6	27.8	1.82	16.292		
300.0	300.0	299.0	299.0	2.4	0.5	29.45	-30.2	0.0	0.0	29.2	26.3	2.93	9.975		
400.0	400.0	399.0	399.0	3.3	0.8	6.46	-30.2	0.0	0.0	28.7	24.6	4.07	7.055		
500.0	500.0	499.0	499.0	4.3	1.0	-28.58	-30.2	0.0	0.0	28.1	22.9	5.25	5.361		
600.0	600.0	599.0	599.0	5.2	1.2	-44.04	-30.2	0.0	0.0	27.4	21.0	6.40	4.283		
700.0	700.0	699.0	699.0	6.1	1.4	-61.59	-30.2	0.0	0.0	26.7	19.2	7.49	3.570		
791.6	791.6	790.6	790.6	6.9	1.6	-90.00	-30.2	0.0	0.0	26.5	18.0	8.52	3.113	CC	
800.0	800.0	799.0	799.0	7.0	1.7	-92.22	-30.2	0.0	0.0	26.5	17.9	8.61	3.079		
900.0	900.0	899.0	899.0	7.8	1.9	-95.79	-30.2	0.0	0.0	26.6	16.9	9.72	2.736		
1,000.0	1,000.0	999.0	999.0	8.7	2.1	-101.53	-30.2	0.0	0.0	26.9	16.0	10.84	2.476		
1,100.0	1,099.9	1,098.9	1,098.9	9.6	2.3	-109.40	-30.2	0.0	0.0	27.4	15.4	11.96	2.289		
1,149.0	1,148.9	1,147.9	1,147.9	10.1	2.4	-119.07	-30.2	0.0	0.0	27.7	15.2	12.49	2.219	ES	
1,246.0	1,245.9	1,244.9	1,244.9	10.5	2.7	-118.11	-30.2	0.0	0.0	28.4	15.3	13.14	2.162		
1,341.0	1,340.9	1,339.9	1,339.9	10.5	2.9	-128.01	-30.2	0.0	0.0	29.7	16.4	13.35	2.228		
1,436.0	1,435.8	1,434.8	1,434.8	10.5	3.1	-135.48	-30.2	0.0	0.0	32.7	19.2	13.57	2.413		
1,531.0	1,530.6	1,529.6	1,529.6	10.5	3.3	-141.52	-30.2	0.0	0.0	37.3	23.5	13.79	2.704		
1,627.0	1,626.4	1,625.4	1,625.4	10.5	3.5	-148.54	-30.2	0.0	0.0	42.7	28.7	14.02	3.047		
1,720.0	1,719.1	1,718.1	1,718.1	10.5	3.7	-153.65	-30.2	0.0	0.0	48.3	34.1	14.24	3.393		
1,814.0	1,812.9	1,811.9	1,811.9	10.6	3.9	-159.24	-30.2	0.0	0.0	54.0	39.6	14.48	3.733		
1,908.0	1,906.8	1,905.8	1,905.8	10.6	4.1	-143.00	-30.2	0.0	0.0	59.1	44.4	14.72	4.014		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Reference															
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
2,003.0	2,001.6	2,000.6	2,000.6	10.6	4.4	-142.97		-30.2	0.0	63.6	48.6	14.96	4.249		
2,098.0	2,096.4	2,095.4	2,095.4	10.7	4.6	-146.49		-30.2	0.0	68.0	52.8	15.21	4.469		
2,192.0	2,190.3	2,189.3	2,189.3	10.7	4.8	-143.68		-30.2	0.0	72.0	56.6	15.46	4.658		
2,286.0	2,284.2	2,283.2	2,283.2	10.8	5.0	-148.57		-30.2	0.0	74.7	59.0	15.72	4.752		
2,381.0	2,379.2	2,378.2	2,378.2	10.8	5.2	147.33		-30.2	0.0	75.9	59.9	15.98	4.746		
2,475.0	2,473.2	2,472.2	2,472.2	10.9	5.4	134.89		-30.2	0.0	76.7	60.5	16.24	4.724		
2,569.0	2,567.2	2,566.2	2,566.2	10.9	5.6	132.55		-30.2	0.0	77.6	61.1	16.50	4.700		
2,664.0	2,662.2	2,661.2	2,661.2	11.0	5.8	104.16		-30.2	0.0	78.0	61.2	16.77	4.650		
2,759.0	2,757.2	2,756.2	2,756.2	11.0	6.1	69.92		-30.2	0.0	78.0	60.9	17.04	4.574		
2,854.0	2,852.2	2,851.2	2,851.2	11.1	6.3	36.77		-30.2	0.0	77.4	60.1	17.32	4.472		
2,949.0	2,947.2	2,946.2	2,946.2	11.1	6.5	22.30		-30.2	0.0	76.4	58.8	17.59	4.340		
3,043.0	3,041.2	3,040.2	3,040.2	11.2	6.7	18.74		-30.2	0.0	74.8	56.9	17.87	4.186		
3,137.0	3,135.2	3,134.2	3,134.2	11.3	6.9	9.60		-30.2	0.0	72.9	54.8	18.15	4.016		
3,232.0	3,230.1	3,229.1	3,229.1	11.4	7.1	-18.39		-30.2	0.0	71.0	52.5	18.44	3.849		
3,326.0	3,324.1	3,323.1	3,323.1	11.4	7.3	-72.17		-30.2	0.0	69.9	51.2	18.73	3.734		
3,398.7	3,396.9	3,395.9	3,395.9	11.5	7.5	-90.00		-30.2	0.0	69.8	50.9	18.95	3.683		
3,422.0	3,420.1	3,419.1	3,419.1	11.5	7.5	-99.70		-30.2	0.0	69.8	50.8	19.02	3.670		
3,516.0	3,514.1	3,513.1	3,513.1	11.6	7.8	-81.20		-30.2	0.0	69.9	50.5	19.32	3.617		
3,611.0	3,609.1	3,608.1	3,608.1	11.7	8.0	-90.00		-30.2	0.0	69.8	50.2	19.62	3.560		
3,611.0	3,609.1	3,608.1	3,608.1	11.7	8.0	-90.00		-30.2	0.0	69.8	50.2	19.62	3.560		
3,705.0	3,703.1	3,702.1	3,702.1	11.8	8.2	-93.63		-30.2	0.0	69.8	49.9	19.91	3.507		
3,800.0	3,798.1	3,797.1	3,797.1	11.8	8.4	-177.61		-30.2	0.0	70.0	49.8	20.21	3.463		
3,895.0	3,893.1	3,892.1	3,892.1	11.9	8.6	-171.03		-30.2	0.0	70.3	49.8	20.52	3.428		
3,990.0	3,988.1	3,987.1	3,987.1	12.0	8.8	-157.78		-30.2	0.0	70.6	49.7	20.83	3.388		
4,084.0	4,082.1	4,081.1	4,081.1	12.1	9.0	-171.12		-30.2	0.0	70.7	49.6	21.14	3.346		
4,178.0	4,176.1	4,175.1	4,175.1	12.2	9.2	-156.85		-30.2	0.0	70.9	49.4	21.45	3.305		
4,273.0	4,271.1	4,270.1	4,270.1	12.3	9.5	122.12		-30.2	0.0	71.0	49.2	21.76	3.261		
4,368.0	4,366.1	4,365.1	4,365.1	12.4	9.7	-80.35		-30.2	0.0	71.0	48.9	22.09	3.213		
4,463.0	4,461.1	4,460.1	4,460.1	12.5	9.9	-8.23		-30.2	0.0	70.8	48.4	22.41	3.158		
4,557.0	4,555.1	4,554.1	4,554.1	12.7	10.1	-0.25		-30.2	0.0	70.2	47.5	22.73	3.089		
4,652.0	4,650.1	4,649.1	4,649.1	12.8	10.3	-10.33		-30.2	0.0	69.3	46.2	23.06	3.006		
4,706.7	4,704.8	4,703.8	4,703.8	12.8	10.4	-90.00		-30.2	0.0	69.0	45.8	23.25	2.969		
4,745.0	4,743.1	4,742.1	4,742.1	12.9	10.5	-117.73		-30.2	0.0	69.2	45.8	23.38	2.958		
4,840.0	4,838.1	4,837.1	4,837.1	13.0	10.7	-110.48		-30.2	0.0	69.8	46.1	23.71	2.945		
4,934.0	4,932.1	4,931.1	4,931.1	13.1	10.9	48.48		-30.2	0.0	69.9	45.8	24.04	2.907		
5,030.0	5,028.1	5,027.1	5,027.1	13.2	11.2	62.14		-30.2	0.0	69.4	45.0	24.37	2.847		
5,095.0	5,093.1	5,092.1	5,092.1	13.3	11.3	51.96		-30.2	0.0	69.2	44.6	24.60	2.811		
5,204.8	5,202.9	5,201.9	5,201.9	13.5	11.6	-90.00		-30.2	0.0	69.0	44.0	24.99	2.760		
5,210.0	5,208.1	5,207.1	5,207.1	13.5	11.6	-91.70		-30.2	0.0	69.0	44.0	25.01	2.758		
5,399.0	5,397.1	5,396.1	5,396.1	13.7	12.0	-97.11		-30.2	0.0	69.1	43.4	25.68	2.689		
5,589.0	5,587.1	5,586.1	5,586.1	14.0	12.4	-153.35		-30.2	0.0	69.4	43.1	26.36	2.633		
5,779.0	5,777.1	5,776.1	5,776.1	14.2	12.8	-162.49		-30.2	0.0	70.2	43.1	27.05	2.594		
5,968.0	5,966.1	5,965.1	5,965.1	14.5	13.3	139.76		-30.2	0.0	70.9	43.2	27.75	2.556		
6,157.0	6,155.1	6,154.1	6,154.1	14.8	13.7	-134.75		-30.2	0.0	71.5	43.1	28.45	2.514		
6,347.0	6,345.1	6,344.1	6,344.1	15.1	14.1	-145.66		-30.2	0.0	72.3	43.1	29.16	2.479		
6,536.0	6,534.1	6,533.1	6,533.1	15.4	14.5	-157.18		-30.2	0.0	73.3	43.4	29.87	2.454		
6,726.0	6,724.1	6,723.1	6,723.1	15.6	15.0	-160.71		-30.2	0.0	74.4	43.8	30.59	2.431		
6,916.0	6,914.1	6,913.1	6,913.1	15.9	15.4	-174.88		-30.2	0.0	75.5	44.2	31.31	2.411		
7,106.0	7,104.1	7,103.1	7,103.1	16.2	15.8	-159.79		-30.2	0.0	76.8	44.7	32.04	2.396		
7,295.0	7,293.1	7,292.1	7,292.1	16.5	16.2	-107.23		-30.2	0.0	77.6	44.8	32.77	2.368		
7,386.0	7,384.1	7,383.1	7,383.1	16.7	16.5	-122.15		-30.2	0.0	77.9	44.8	33.12	2.353		
7,576.0	7,574.1	7,573.1	7,573.1	17.0	16.9	-120.98		-30.2	0.0	78.9	45.0	33.86	2.330		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

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Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:
Caravan State Unit - #10H - OH - Plan #2														0.0 usft
Survey Program: 0-MWD														Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,765.0	7,763.0	7,762.0	7,762.0	17.3	17.3	76.06	-30.2	0.0	78.9	44.3	34.60	2.281		
7,954.0	7,952.0	7,951.0	7,951.0	17.6	17.7	83.47	-30.2	0.0	78.4	43.1	35.34	2.218		
8,144.0	8,142.0	8,141.0	8,141.0	18.0	18.2	65.75	-30.2	0.0	78.0	41.9	36.09	2.161		
8,333.0	8,331.0	8,330.0	8,330.0	18.3	18.6	63.52	-30.2	0.0	77.5	40.7	36.84	2.104		
8,423.8	8,421.8	8,420.8	8,420.8	18.4	18.8	90.00	-30.2	0.0	77.4	40.2	37.20	2.081		
8,521.0	8,519.0	8,518.0	8,518.0	18.6	19.0	135.32	-30.2	0.0	77.5	39.9	37.58	2.063		
8,711.0	8,709.0	8,708.0	8,708.0	18.9	19.4	-146.84	-30.2	0.0	78.0	39.7	38.34	2.035		
8,900.0	8,898.0	8,897.0	8,897.0	19.3	19.9	-117.59	-30.2	0.0	78.5	39.4	39.10	2.008		
9,090.0	9,088.0	9,087.0	9,087.0	19.6	20.3	-132.05	-30.2	0.0	79.4	39.6	39.87	1.992		
9,279.0	9,277.0	9,276.0	9,276.0	19.9	20.7	171.07	-30.2	0.0	81.4	40.8	40.63	2.004		
9,469.0	9,467.0	9,466.0	9,466.0	20.3	21.1	137.67	-30.2	0.0	83.4	42.1	41.39	2.016		
9,563.0	9,561.0	9,560.0	9,560.0	20.5	21.3	163.76	-30.2	0.0	84.1	42.4	41.77	2.014		
9,753.0	9,751.0	9,750.0	9,750.0	20.8	21.8	6.97	-30.2	0.0	83.8	41.2	42.54	1.969		
9,920.7	9,918.6	9,917.6	9,917.6	21.1	22.2	-89.99	-30.2	0.0	82.9	39.7	43.23	1.917		
9,942.0	9,939.9	9,938.9	9,938.9	21.1	22.2	-93.25	-30.2	0.0	82.9	39.6	43.31	1.914		
10,131.0	10,128.9	10,127.9	10,127.9	21.5	22.6	44.20	-30.2	0.0	82.8	38.8	44.08	1.879		
10,200.7	10,198.6	10,197.6	10,197.6	21.6	22.8	90.00	-30.2	0.0	82.7	38.4	44.36	1.865		
10,225.0	10,222.9	10,221.9	10,221.9	21.7	22.8	94.92	-30.2	0.0	82.8	38.3	44.46	1.861		
10,320.0	10,317.9	10,316.9	10,316.9	21.8	23.0	97.90	-30.2	0.0	82.9	38.0	44.85	1.848		
10,414.0	10,411.9	10,410.9	10,410.9	22.0	23.3	120.24	-30.2	0.0	83.1	37.9	45.24	1.837		
10,509.0	10,506.9	10,505.9	10,505.9	22.2	23.5	97.07	-30.2	0.0	83.3	37.7	45.62	1.826		
10,603.0	10,600.9	10,599.9	10,599.9	22.3	23.7	107.51	-30.2	0.0	83.8	37.7	46.01	1.821 SF		
10,635.0	10,632.9	10,629.8	10,629.8	22.4	23.7	116.52	-30.7	0.0	84.7	38.6	46.11	1.837		
10,681.0	10,678.5	10,670.7	10,670.5	22.5	23.8	128.95	-34.4	0.0	90.0	43.9	46.11	1.952		
10,727.0	10,723.7	10,708.7	10,708.0	22.6	23.9	130.90	-40.9	0.1	100.9	54.8	46.03	2.191		
10,774.0	10,768.8	10,743.3	10,741.5	22.7	23.9	134.78	-49.4	0.1	118.4	72.8	45.65	2.594		
10,822.0	10,813.5	10,775.0	10,771.6	22.8	24.0	141.22	-59.3	0.2	143.6	98.7	44.95	3.195		
10,869.0	10,855.4	10,800.0	10,794.8	22.9	24.0	143.71	-68.5	0.3	174.8	131.0	43.83	3.989		
10,917.0	10,895.8	10,816.8	10,810.2	23.0	24.1	144.70	-75.3	0.3	212.0	169.2	42.84	4.950		
10,964.0	10,932.4	10,830.5	10,822.5	23.1	24.1	143.12	-81.4	0.4	252.6	211.0	41.59	6.072		
11,012.0	10,966.0	10,839.7	10,830.6	23.2	24.1	138.45	-85.5	0.4	297.1	255.9	41.17	7.216		
11,058.0	10,993.9	10,844.1	10,834.6	23.4	24.1	117.96	-87.6	0.4	341.6	297.0	44.60	7.658		
11,106.0	11,018.2	10,850.0	10,839.7	23.6	24.1	89.59	-90.5	0.4	388.9	341.3	47.63	8.165		
11,153.0	11,038.2	10,843.7	10,834.2	23.8	24.1	60.10	-87.4	0.4	435.1	391.4	43.73	9.949		
11,201.0	11,054.8	10,840.3	10,831.2	24.0	24.1	43.98	-85.8	0.4	482.0	443.6	38.34	12.572		
11,249.0	11,066.9	10,835.0	10,826.5	24.2	24.1	32.54	-83.4	0.4	528.1	494.8	33.27	15.874		
11,264.0	11,069.7	10,833.0	10,824.7	24.3	24.1	28.96	-82.5	0.4	542.2	510.7	31.56	17.180		

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Convoy BUC State - Getty #1 - OH - OH													Offset Well Error:	0.0 usft
Survey Program: 235-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
11,894.0	11,071.4	11,053.3	11,051.2	29.5	23.2	93.88	1,966.3	275.7	1,005.1	952.6	52.51	19.142		
11,989.0	11,069.8	11,051.6	11,049.5	30.5	23.2	93.06	1,966.3	275.8	916.3	862.8	53.52	17.120		
12,084.0	11,070.0	11,051.8	11,049.7	31.5	23.2	88.10	1,966.3	275.8	828.7	774.2	54.50	15.206		
12,179.0	11,071.1	11,052.9	11,050.8	32.6	23.2	90.60	1,966.3	275.7	742.8	687.2	55.65	13.348		
12,274.0	11,072.2	11,053.9	11,051.8	33.8	23.2	88.78	1,966.3	275.7	659.6	602.8	56.79	11.614		
12,369.0	11,073.2	11,054.9	11,052.8	35.0	23.2	90.79	1,966.3	275.7	580.0	522.0	58.01	9.998		
12,463.0	11,073.5	11,055.2	11,053.1	36.2	23.2	90.34	1,966.3	275.7	506.4	447.2	59.22	8.551		
12,558.0	11,073.2	11,054.8	11,052.8	37.5	23.2	91.46	1,966.3	275.7	439.8	379.4	60.47	7.274		
12,653.0	11,071.8	11,053.4	11,051.3	38.8	23.2	91.30	1,966.3	275.7	385.1	323.3	61.79	6.232		
12,748.0	11,070.8	11,052.3	11,050.3	40.1	23.2	90.85	1,966.3	275.7	348.3	285.2	63.10	5.520		
12,840.5	11,070.7	11,052.2	11,050.1	41.3	23.2	90.77	1,966.3	275.7	335.8	271.4	64.36	5.217 CC		
12,843.0	11,070.7	11,052.2	11,050.2	41.4	23.2	90.77	1,966.3	275.7	335.8	271.4	64.40	5.215 ES, SF		
12,937.0	11,070.1	11,051.6	11,049.6	42.7	23.2	90.50	1,966.3	275.8	349.4	283.7	65.74	5.315		
13,032.0	11,068.9	11,050.3	11,048.3	44.1	23.2	90.41	1,966.3	275.8	386.8	319.7	67.13	5.762		
13,127.0	11,068.7	11,050.2	11,048.1	45.5	23.2	91.10	1,966.3	275.8	442.0	373.5	68.49	6.454		
13,222.0	11,068.9	11,050.4	11,048.3	48.9	23.2	90.63	1,966.3	275.8	508.9	439.0	69.90	7.281		
13,317.0	11,068.3	11,049.7	11,047.6	48.3	23.2	89.75	1,966.3	275.8	583.5	512.1	71.36	8.177		
13,412.0	11,066.1	11,047.5	11,045.4	49.8	23.2	87.54	1,966.3	275.8	663.2	590.4	72.76	9.114		
13,506.0	11,063.5	11,044.8	11,042.7	51.3	23.2	88.17	1,966.3	275.8	745.5	671.3	74.22	10.044		
13,601.0	11,062.7	11,044.0	11,042.0	52.7	23.2	91.65	1,966.3	275.9	831.4	755.7	75.69	10.985		
13,696.0	11,064.1	11,045.4	11,043.3	54.1	23.2	93.85	1,966.3	275.8	919.4	842.3	77.05	11.932		
13,791.0	11,065.0	11,046.3	11,044.2	55.6	23.2	90.44	1,966.3	275.8	1,008.6	929.9	78.64	12.825		
13,885.0	11,065.3	11,046.6	11,044.5	57.1	23.2	92.29	1,966.3	275.8	1,097.8	1,017.7	80.08	13.709		
13,980.0	11,065.0	11,046.2	11,044.2	58.6	23.2	87.65	1,966.3	275.8	1,188.6	1,107.1	81.52	14.580		
14,075.0	11,063.6	11,044.8	11,042.7	60.1	23.2	87.76	1,966.3	275.8	1,280.1	1,197.0	83.03	15.417		
14,170.0	11,062.5	11,043.7	11,041.6	61.6	23.2	88.71	1,966.3	275.9	1,372.0	1,287.5	84.56	16.225		
14,264.0	11,060.9	11,042.0	11,039.9	63.1	23.2	84.33	1,966.3	275.9	1,463.4	1,377.7	85.71	17.074		
14,359.0	11,058.9	11,040.0	11,037.9	64.6	23.2	86.50	1,966.3	275.9	1,556.1	1,468.6	87.47	17.789		
14,454.0	11,057.5	11,038.7	11,036.6	66.1	23.2	87.26	1,966.3	275.9	1,649.1	1,560.0	89.04	18.521		
14,549.0	11,055.9	11,037.0	11,034.9	67.7	23.2	84.15	1,966.3	275.9	1,742.2	1,652.0	90.24	19.307		
14,644.0	11,055.0	11,036.1	11,034.0	69.2	23.2	91.73	1,966.3	276.0	1,835.5	1,743.3	92.19	19.910		

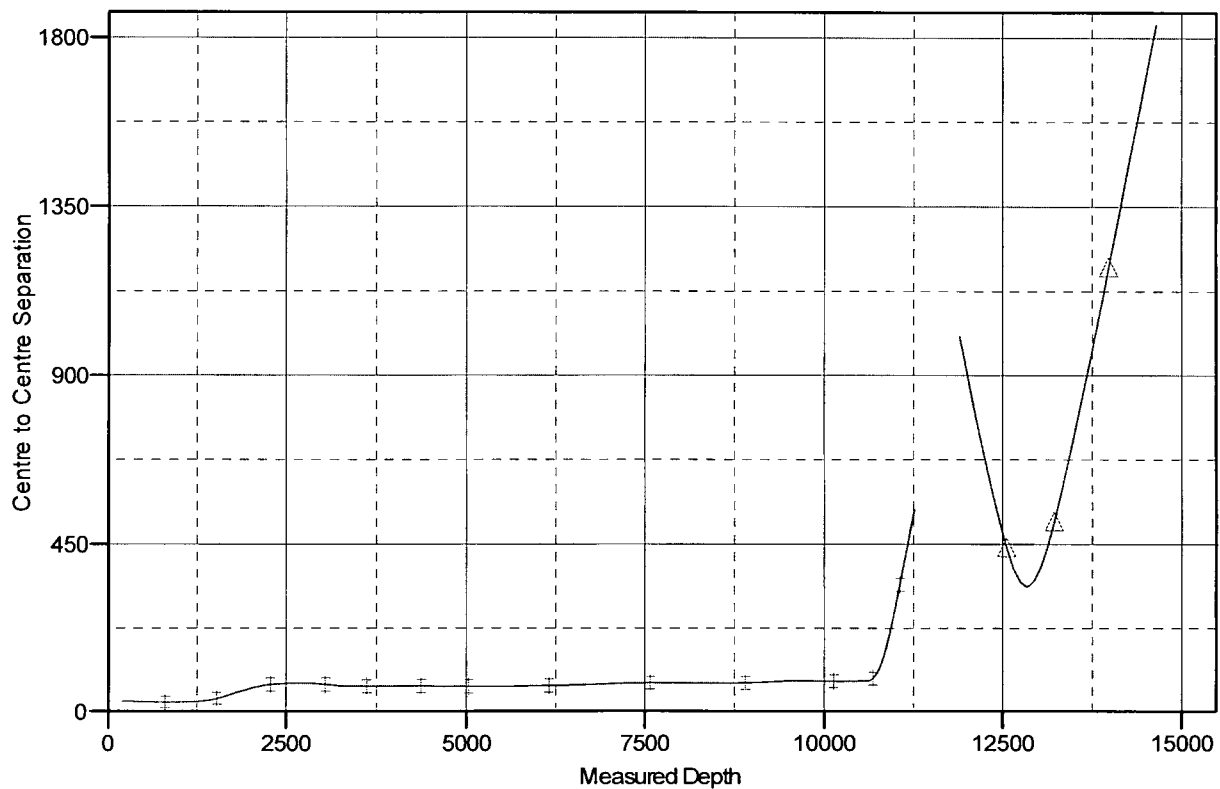
Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3505.0usft (Cactus 124 - KB=
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.40°

Ladder Plot



LEGEND

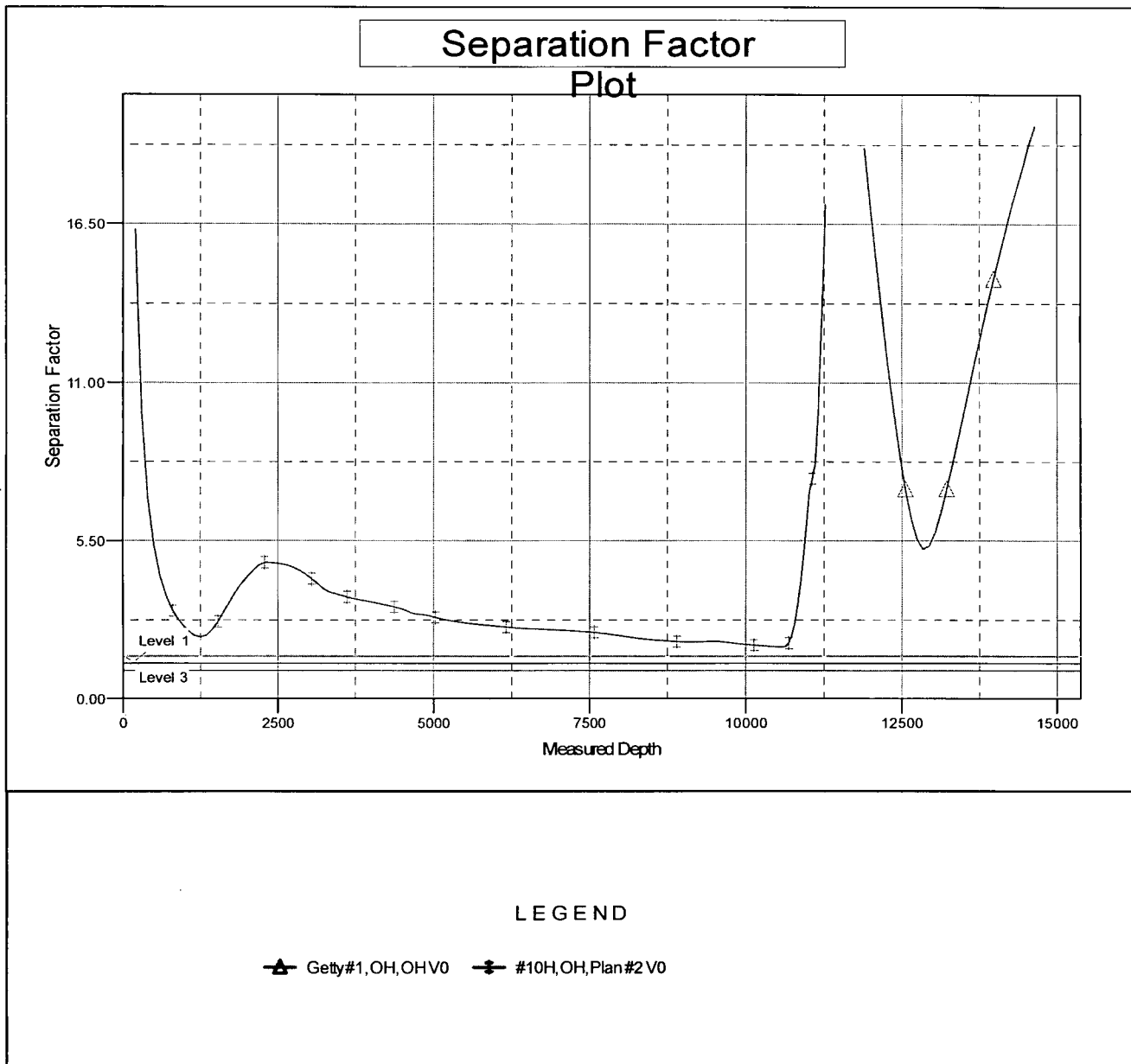
▲ Getty#1, OH, OHV0 ✕ #10H, OH, Plan#2 V0

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Reference Site:	Convoy BUC State	MD Reference:	RKB @ 3505.0usft (Cactus 124 - KB=25')
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Houston R5000 Database
Reference Design:	OH	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3505.0usft (Cactus 124 - KB=
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.40°



A Gyrodata Directional Survey

Field Copy Only, not definitive

for

YATES PETROLEUM

HOBBS OCD

NOV 18 2014

RECEIVED

Lease: CONVOY BUC STATE Well: 2H, 5" Drillpipe
Location: Cactus Drilling 124, Lea County, New Mexico

Job Number: MD0714GBM708

Run Date: 14 Jul 2014

Report Generated: 14 Jul 2014 09:22

Surveyor: Joshua Mosburg

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Well Plan/Plot

Survey Latitude: 32.181425 deg. N Longitude: 103.575636 deg. W

Azimuth Correction:

Gyro: -0.40000 deg to Grid North

Proposed Well Direction: 359.000 deg

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 25.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

A Gyrodata Directional Survey

Yates Petroleum

Lease: CONVOY BUC STATE Well: 2H, 5" Drillpipe

Location: Cactus Drilling 124, Lea County, New Mexico

Job Number: MD0714GBM708

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
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0.00	0.00	0.00	0.00	0.00	0.0 0.0	0.00 N 0.00 E
------	------	------	------	------	---------	---------------

0 - 1149.00 FT. RATE-GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 5" DRILLPIPE

ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO CACTUS 124 RKB HEIGHT OF 25 FT.

50.00	0.22	150.98	0.44	50.00	0.1 151.0	0.08 S 0.05 E
100.00	0.35	127.72	0.34	100.00	0.3 140.7	0.26 S 0.21 E
200.00	0.22	160.86	0.20	200.00	0.8 140.5	0.63 S 0.52 E
300.00	0.28	151.92	0.07	300.00	1.2 145.8	1.03 S 0.70 E
400.00	0.32	175.21	0.13	400.00	1.7 151.2	1.52 S 0.83 E
500.00	0.38	209.99	0.22	499.99	2.2 161.6	2.09 S 0.69 E
600.00	0.69	224.26	0.34	599.99	2.8 177.8	2.80 S 0.11 E
700.00	0.56	240.01	0.21	699.98	3.6 192.0	3.48 S 0.74 W
800.00	0.65	268.49	0.31	799.98	4.1 204.8	3.74 S 1.73 W
900.00	0.77	269.39	0.12	899.97	4.8 218.3	3.76 S 2.97 W
1000.00	1.08	271.71	0.31	999.96	5.9 230.8	3.74 S 4.58 W
1100.00	1.20	275.54	0.14	1099.94	7.5 241.2	3.61 S 6.56 W
1149.00	0.77	283.60	0.92	1148.93	8.2 244.8	3.48 S 7.40 W

Final Station Closure: Distance: 8.17 ft Az: 244.77 deg.