Results of Directional Survey

API number:	30-025-40514			
OGRID:		Operator:	YATES PETROLEUM CORPORATION	
		Property:	GUAVA BRU STATE	# 1H

surface	ULSTR:	H	31	T	20S	R	35E
				2210	FNL	28	FEL
BH Loc	ULSTR:	H	32	T	20S	R	35E
15570	MD	10798.4	TVD	2168	FNL	334	FEL
						4946	FWL
Top Perf/OH	ULSTR:	D	32	T	20S	R	35E
11402	MD	10823.4	TVD	2210	FNL	779	FWL
Bot Perf/OH	ULSTR:	H	32	T	20S	R	35E
15497	MD	10798.6	TVD	2167	FNL	407	FEL
						4873	FWL

	MD	N/S	E/W	VD
	11381	0.40	786.10	10823.2
TOP PERFS/OH	**11402**	0.00	807.10	10823.36
	11475	-1.40	880.10	10823.90
	15475	43.30	4878.80	10798.60
BOT PERFS/OH	**15497**	43.07	4900.80	10798.55
	15570	42.30	4973.80	10798.40

NEXT TO LAST	15475	43.30	4878.80	10798.60
LAST READING	15570	42.30	4973.80	10798.40
TD	**15570**	42.30	4973.80	10798.40

Surface Location	2210	FN	28	FE
Projected BHL	2168	FN	4946	FW
Location of				
Top Perfs/OH	2210	FN	779	FW
Bottom Perfs/OH	2167	FN	4873	FW

SUMMARY of Subsurface Locations

Surface Location	H-31-20S-35E	2210	FN	28	FE	Vert. Depth
Top Perfs/OH	D-32-20S-35E	2210	FN	779	FW	10823.36
Bottom Perfs/OH	H-32-20S-35E	2167	FN	4873	FW	10798.55
Projected TD	H-32-20S-35E	2168	FN	4946	FW	10798.40

MS Energy Services

Job Number: SVMO-130833
Company: Yates Petroleum Corporation
Lease/Well: GUAVA BRU ST 1H
Location: Lea County, NM
Rig Name: Cactus #124
RKB: 25'
G.L. or M.S.L.: GL

State/Country: New Mexico/USA
Declination: 6.85°
Grid: East To Grid North
File name: S:\SURVEY\NEWSUR~1\RRC\WINSER~1\2013SU~1\YATES\MO\GUAVAB·
Date/Time: 08-Oct-13 / 11:03
Curve Name: Surface - 6000' M.D. (Rate Gyro)

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 89.53
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
200.00	.53	186.38	200.00	-.92	-.10	-.11	.93	186.38	.27
400.00	.52	182.83	399.99	-2.75	-.25	-.27	2.76	185.21	.02
600.00	.36	191.98	599.98	-4.27	-.43	-.46	4.29	185.70	.09
800.00	.12	122.67	799.98	-4.99	-.38	-.42	5.01	184.35	.17
1000.00	.27	199.66	999.98	-5.55	-.36	-.41	5.56	183.73	.13
1200.00	.19	221.57	1199.98	-6.24	-.74	-.79	6.29	186.77	.06
1400.00	.20	235.29	1399.98	-6.69	-1.25	-1.30	6.80	190.56	.02
1600.00	.63	255.65	1599.97	-7.16	-2.60	-2.66	7.62	199.95	.22
1800.00	.67	254.24	1799.96	-7.75	-4.79	-4.85	9.11	211.72	.02

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
2000.00	.43	241.84	1999.95	-8.42	-6.58	-6.65	10.69	217.99	.13
2200.00	.05	149.06	2199.95	-8.85	-7.19	-7.27	11.41	219.10	.22
2400.00	.25	316.47	2399.95	-8.61	-7.45	-7.52	11.39	220.87	.15
2600.00	.10	50.84	2599.95	-8.18	-7.61	-7.68	11.18	222.94	.14
2800.00	.20	276.37	2799.95	-8.03	-7.83	-7.89	11.22	224.25	.14
3000.00	.08	326.95	2999.95	-7.88	-8.25	-8.31	11.41	226.32	.08
3200.00	.52	49.65	3199.94	-7.17	-7.63	-7.69	10.48	226.78	.26
3400.00	.41	60.19	3399.94	-6.23	-6.32	-6.37	8.88	225.41	.07
3600.00	.67	70.57	3599.93	-5.49	-4.60	-4.64	7.16	219.97	.14
3800.00	.57	56.04	3799.92	-4.54	-2.67	-2.71	5.27	210.45	.09
4000.00	.44	76.78	3999.91	-3.81	-1.10	-1.13	3.96	196.07	.11
4200.00	.25	60.66	4199.90	-3.42	.03	.00	3.42	179.49	.11
4400.00	.34	75.24	4399.90	-3.06	.98	.96	3.21	162.14	.06
4600.00	.07	330.02	4599.90	-2.80	1.50	1.47	3.17	151.85	.18
4800.00	1.04	354.25	4799.89	-.89	1.25	1.25	1.54	125.25	.49
5000.00	.80	339.44	4999.86	2.23	.58	.60	2.30	14.66	.17
5200.00	.78	317.46	5199.84	4.54	-.83	-.79	4.61	349.65	.15
5400.00	.69	297.69	5399.83	6.10	-2.81	-2.76	6.72	335.23	.13
5600.00	.91	302.01	5599.81	7.50	-5.23	-5.17	9.14	325.12	.11
5800.00	.74	278.51	5799.79	8.53	-7.85	-7.78	11.60	317.38	.19
Last Survey Depth Recorded									
6000.00	.71	281.27	5999.77	8.97	-10.34	-10.27	13.69	310.92	.02

Yates Petroleum

Lea County, NM (NAD-83)
Guava BRU State
#1H

OH

Design: OH

Survey Report - Geographic

24 October, 2013

CRESCENT
DIRECTIONAL DRILLING

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Project Lea County, NM (NAD-83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Guava BRU State

Site Position:		**Northing:**	557,866.30 usft	**Latitude:**	32° 31' 50.854 N
From:	Map	**Easting:**	801,819.40 usft	**Longitude:**	103° 29' 17.320 W
Position Uncertainty:	2.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.45 °

Well #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	557,866.30 usft	**Latitude:**	32° 31' 50.854 N
	+E/-W	0.0 usft	**Easting:**	801,819.40 usft	**Longitude:**	103° 29' 17.320 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,718.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/15/2013	7.30	60.43	48,591

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	89.53

Survey Program Date 10/24/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	6,000.0	Survey #1 - MS Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
6,048.0	15,475.0	Survey #2 - MWD1 (OH)	MWD	MWD - Standard
15,570.0	15,570.0	Survey #3 - PTB (OH)	BLIND	Blind drilling, where no tool is applied

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	557,866.30	801,819.40	32° 31' 50.854 N	103° 29' 17.320 W
200.0	0.53	186.38	200.0	-0.9	-0.1	557,865.38	801,819.30	32° 31' 50.845 N	103° 29' 17.321 W
400.0	0.52	182.83	400.0	-2.7	-0.3	557,863.56	801,819.15	32° 31' 50.827 N	103° 29' 17.323 W
600.0	0.36	191.98	600.0	-4.3	-0.4	557,862.04	801,818.97	32° 31' 50.812 N	103° 29' 17.325 W
800.0	0.12	122.67	800.0	-5.0	-0.4	557,861.31	801,819.02	32° 31' 50.805 N	103° 29' 17.325 W
1,000.0	0.27	199.66	1,000.0	-5.6	-0.4	557,860.75	801,819.04	32° 31' 50.799 N	103° 29' 17.325 W
1,200.0	0.19	221.57	1,200.0	-6.2	-0.7	557,860.06	801,818.66	32° 31' 50.792 N	103° 29' 17.329 W
1,400.0	0.20	235.29	1,400.0	-6.7	-1.2	557,859.61	801,818.15	32° 31' 50.788 N	103° 29' 17.335 W
1,600.0	0.63	255.65	1,600.0	-7.2	-2.6	557,859.14	801,816.80	32° 31' 50.783 N	103° 29' 17.351 W
1,800.0	0.67	254.24	1,800.0	-7.8	-4.8	557,858.55	801,814.61	32° 31' 50.778 N	103° 29' 17.377 W

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,000.0	0.43	241.84	1,999.9	-8.4	-6.6	557,857.88	801,812.82	32° 31' 50.771 N	103° 29' 17.398 W
2,200.0	0.05	149.06	2,199.9	-8.9	-7.2	557,857.45	801,812.20	32° 31' 50.767 N	103° 29' 17.405 W
2,400.0	0.25	316.47	2,399.9	-8.6	-7.4	557,857.69	801,811.95	32° 31' 50.769 N	103° 29' 17.408 W
2,600.0	0.10	50.84	2,599.9	-8.2	-7.6	557,858.12	801,811.78	32° 31' 50.774 N	103° 29' 17.410 W
2,800.0	0.20	276.37	2,799.9	-8.0	-7.8	557,858.27	801,811.57	32° 31' 50.775 N	103° 29' 17.412 W
3,000.0	0.08	326.95	2,999.9	-7.9	-8.2	557,858.42	801,811.15	32° 31' 50.777 N	103° 29' 17.417 W
3,200.0	0.52	49.65	3,199.9	-7.2	-7.6	557,859.13	801,811.76	32° 31' 50.784 N	103° 29' 17.410 W
3,400.0	0.41	60.19	3,399.9	-6.2	-6.3	557,860.07	801,813.08	32° 31' 50.793 N	103° 29' 17.394 W
3,600.0	0.67	70.57	3,599.9	-5.5	-4.6	557,860.82	801,814.80	32° 31' 50.800 N	103° 29' 17.374 W
3,800.0	0.57	56.04	3,799.9	-4.5	-2.7	557,861.76	801,816.73	32° 31' 50.809 N	103° 29' 17.352 W
4,000.0	0.44	76.78	3,999.9	-3.8	-1.1	557,862.49	801,818.30	32° 31' 50.816 N	103° 29' 17.333 W
4,200.0	0.25	60.66	4,199.9	-3.4	0.0	557,862.88	801,819.43	32° 31' 50.820 N	103° 29' 17.320 W
4,400.0	0.34	75.24	4,399.9	-3.1	1.0	557,863.25	801,820.38	32° 31' 50.824 N	103° 29' 17.309 W
4,600.0	0.07	330.02	4,599.9	-2.8	1.5	557,863.50	801,820.90	32° 31' 50.826 N	103° 29' 17.303 W
4,800.0	1.04	354.25	4,799.9	-0.9	1.3	557,865.42	801,820.65	32° 31' 50.845 N	103° 29' 17.305 W
5,000.0	0.80	339.44	4,999.9	2.2	0.6	557,868.53	801,819.98	32° 31' 50.876 N	103° 29' 17.313 W
5,200.0	0.78	317.46	5,199.8	4.5	-0.8	557,870.84	801,818.57	32° 31' 50.899 N	103° 29' 17.329 W
5,400.0	0.69	297.69	5,399.8	6.1	-2.8	557,872.40	801,816.58	32° 31' 50.915 N	103° 29' 17.352 W
5,600.0	0.91	302.01	5,599.8	7.5	-5.2	557,873.80	801,814.17	32° 31' 50.929 N	103° 29' 17.380 W
5,800.0	0.74	278.51	5,799.8	8.5	-7.9	557,874.84	801,811.55	32° 31' 50.939 N	103° 29' 17.411 W
6,000.0	0.71	281.27	5,999.8	9.0	-10.3	557,875.27	801,809.05	32° 31' 50.944 N	103° 29' 17.440 W
Gyro Tie in @ 6000.0' MD									
6,048.0	0.60	305.11	6,047.8	9.2	-10.8	557,875.47	801,808.56	32° 31' 50.946 N	103° 29' 17.446 W
6,143.0	0.50	310.61	6,142.8	9.7	-11.6	557,876.03	801,807.83	32° 31' 50.951 N	103° 29' 17.454 W
6,237.0	0.30	297.81	6,236.8	10.1	-12.1	557,876.41	801,807.31	32° 31' 50.955 N	103° 29' 17.460 W
6,332.0	0.60	326.21	6,331.8	10.6	-12.6	557,876.94	801,806.81	32° 31' 50.960 N	103° 29' 17.466 W
6,426.0	0.40	312.01	6,425.8	11.3	-13.1	557,877.57	801,806.29	32° 31' 50.967 N	103° 29' 17.472 W
6,521.0	0.40	314.41	6,520.8	11.7	-13.6	557,878.02	801,805.81	32° 31' 50.971 N	103° 29' 17.478 W
6,616.0	0.40	312.61	6,615.8	12.2	-14.1	557,878.48	801,805.33	32° 31' 50.976 N	103° 29' 17.483 W
6,711.0	0.40	331.51	6,710.7	12.7	-14.5	557,878.99	801,804.92	32° 31' 50.981 N	103° 29' 17.488 W
6,806.0	0.20	303.11	6,805.7	13.1	-14.8	557,879.38	801,804.63	32° 31' 50.985 N	103° 29' 17.491 W
6,901.0	0.40	286.61	6,900.7	13.3	-15.2	557,879.56	801,804.17	32° 31' 50.986 N	103° 29' 17.497 W
6,995.0	0.50	290.71	6,994.7	13.5	-15.9	557,879.80	801,803.47	32° 31' 50.989 N	103° 29' 17.505 W
7,090.0	0.50	270.81	7,089.7	13.7	-16.7	557,879.95	801,802.67	32° 31' 50.990 N	103° 29' 17.514 W
7,185.0	0.30	344.41	7,184.7	13.9	-17.2	557,880.20	801,802.19	32° 31' 50.993 N	103° 29' 17.520 W
7,280.0	0.10	169.50	7,279.7	14.1	-17.3	557,880.36	801,802.14	32° 31' 50.994 N	103° 29' 17.520 W
7,469.0	0.40	155.71	7,468.7	13.3	-17.0	557,879.59	801,802.44	32° 31' 50.987 N	103° 29' 17.517 W
7,564.0	0.50	213.71	7,563.7	12.6	-17.1	557,878.95	801,802.35	32° 31' 50.980 N	103° 29' 17.518 W
7,659.0	0.50	160.21	7,658.7	11.9	-17.1	557,878.21	801,802.26	32° 31' 50.973 N	103° 29' 17.519 W
7,754.0	1.20	160.21	7,753.7	10.6	-16.7	557,876.89	801,802.73	32° 31' 50.960 N	103° 29' 17.514 W
7,848.0	0.50	27.91	7,847.7	10.0	-16.1	557,876.32	801,803.26	32° 31' 50.954 N	103° 29' 17.508 W
7,943.0	0.70	88.61	7,942.7	10.4	-15.4	557,876.70	801,804.03	32° 31' 50.958 N	103° 29' 17.499 W
8,038.0	0.70	98.01	8,037.7	10.3	-14.2	557,876.63	801,805.19	32° 31' 50.957 N	103° 29' 17.485 W
8,133.0	0.70	107.21	8,132.7	10.1	-13.1	557,876.38	801,806.32	32° 31' 50.955 N	103° 29' 17.472 W
8,227.0	0.70	109.11	8,226.7	9.7	-12.0	557,876.02	801,807.41	32° 31' 50.951 N	103° 29' 17.459 W
8,322.0	0.70	113.31	8,321.7	9.3	-10.9	557,875.60	801,808.49	32° 31' 50.947 N	103° 29' 17.447 W
8,416.0	0.60	122.71	8,415.7	8.8	-10.0	557,875.11	801,809.43	32° 31' 50.942 N	103° 29' 17.436 W
8,510.0	0.70	136.11	8,509.7	8.1	-9.2	557,874.43	801,810.24	32° 31' 50.935 N	103° 29' 17.426 W
8,605.0	0.70	148.01	8,604.7	7.2	-8.4	557,873.52	801,810.95	32° 31' 50.926 N	103° 29' 17.418 W
8,700.0	0.70	148.01	8,699.7	6.2	-7.8	557,872.54	801,811.57	32° 31' 50.916 N	103° 29' 17.411 W
8,796.0	0.60	144.61	8,795.6	5.3	-7.2	557,871.63	801,812.17	32° 31' 50.907 N	103° 29' 17.404 W
8,890.0	0.70	156.41	8,889.6	4.4	-6.7	557,870.70	801,812.68	32° 31' 50.898 N	103° 29' 17.398 W
8,985.0	0.50	158.61	8,984.6	3.5	-6.3	557,869.78	801,813.07	32° 31' 50.889 N	103° 29' 17.394 W
9,079.0	0.90	155.30	9,078.6	2.4	-5.9	557,868.73	801,813.52	32° 31' 50.879 N	103° 29' 17.388 W
9,174.0	0.50	51.30	9,173.6	2.0	-5.2	557,868.31	801,814.16	32° 31' 50.874 N	103° 29' 17.381 W

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,269.0	0.60	43.71	9,268.6	2.6	-4.6	557,868.93	801,814.83	32° 31' 50.880 N	103° 29' 17.373 W
9,364.0	0.70	16.41	9,363.6	3.5	-4.1	557,869.85	801,815.34	32° 31' 50.889 N	103° 29' 17.367 W
9,459.0	0.70	359.41	9,458.6	4.7	-3.9	557,870.99	801,815.49	32° 31' 50.901 N	103° 29' 17.365 W
9,554.0	0.70	15.71	9,553.6	5.8	-3.8	557,872.12	801,815.64	32° 31' 50.912 N	103° 29' 17.363 W
9,649.0	0.60	35.11	9,648.6	6.8	-3.3	557,873.09	801,816.09	32° 31' 50.921 N	103° 29' 17.358 W
9,744.0	0.80	39.71	9,743.6	7.7	-2.6	557,874.01	801,816.80	32° 31' 50.930 N	103° 29' 17.350 W
9,839.0	0.20	105.81	9,838.6	8.2	-2.0	557,874.47	801,817.38	32° 31' 50.935 N	103° 29' 17.343 W
9,934.0	0.20	79.61	9,933.6	8.2	-1.7	557,874.46	801,817.70	32° 31' 50.935 N	103° 29' 17.339 W
10,028.0	0.40	117.21	10,027.6	8.0	-1.2	557,874.34	801,818.16	32° 31' 50.934 N	103° 29' 17.334 W
10,123.0	0.50	127.91	10,122.6	7.6	-0.6	557,873.93	801,818.78	32° 31' 50.930 N	103° 29' 17.327 W
10,218.0	0.20	239.81	10,217.6	7.3	-0.4	557,873.59	801,818.96	32° 31' 50.926 N	103° 29' 17.324 W
10,276.0	0.40	158.31	10,275.6	7.1	-0.4	557,873.35	801,818.95	32° 31' 50.924 N	103° 29' 17.325 W
10,307.0	0.50	149.21	10,306.6	6.8	-0.3	557,873.14	801,819.06	32° 31' 50.922 N	103° 29' 17.323 W
KOP - 10307.0' MD, 10306.6' TVD, 0.50° INC, -0.3' VS									
10,339.0	3.00	105.01	10,338.6	6.5	0.5	557,872.80	801,819.94	32° 31' 50.918 N	103° 29' 17.313 W
10,370.0	7.50	103.91	10,369.4	5.8	3.3	557,872.10	801,822.69	32° 31' 50.911 N	103° 29' 17.281 W
10,402.0	11.80	102.21	10,401.0	4.6	8.5	557,870.91	801,827.92	32° 31' 50.899 N	103° 29' 17.220 W
10,434.0	15.50	98.71	10,432.1	3.3	15.9	557,869.57	801,835.34	32° 31' 50.885 N	103° 29' 17.133 W
10,465.0	18.80	94.71	10,461.7	2.2	25.0	557,868.53	801,844.42	32° 31' 50.874 N	103° 29' 17.028 W
10,477.0	20.11	93.73	10,473.0	1.9	29.0	557,868.24	801,848.40	32° 31' 50.871 N	103° 29' 16.981 W
Cross into Lease - 10477.0' MD, 10473.0' TVD, 20.11° INC, 29.0' VS									
10,496.0	22.20	92.41	10,490.7	1.6	35.9	557,867.87	801,855.25	32° 31' 50.867 N	103° 29' 16.901 W
10,528.0	26.00	92.41	10,519.9	1.0	48.9	557,867.32	801,868.30	32° 31' 50.860 N	103° 29' 16.749 W
10,559.0	29.70	92.51	10,547.3	0.4	63.4	557,866.70	801,882.77	32° 31' 50.853 N	103° 29' 16.580 W
10,591.0	33.40	91.21	10,574.6	-0.1	80.1	557,866.17	801,899.50	32° 31' 50.846 N	103° 29' 16.384 W
10,622.0	36.90	89.31	10,599.9	-0.2	97.9	557,866.10	801,917.34	32° 31' 50.844 N	103° 29' 16.176 W
10,653.0	40.20	88.61	10,624.2	0.2	117.3	557,866.46	801,936.66	32° 31' 50.846 N	103° 29' 15.950 W
10,685.0	42.60	87.71	10,648.2	0.8	138.4	557,867.14	801,957.81	32° 31' 50.851 N	103° 29' 15.703 W
10,716.0	45.00	87.81	10,670.5	1.7	159.8	557,867.98	801,979.24	32° 31' 50.858 N	103° 29' 15.453 W
10,748.0	47.60	88.61	10,692.6	2.4	183.0	557,868.70	802,002.37	32° 31' 50.863 N	103° 29' 15.183 W
10,779.0	51.90	89.51	10,712.7	2.8	206.6	557,869.08	802,026.02	32° 31' 50.865 N	103° 29' 14.906 W
10,810.0	56.50	89.91	10,730.8	2.9	231.8	557,869.20	802,051.15	32° 31' 50.865 N	103° 29' 14.613 W
10,842.0	60.60	89.91	10,747.5	2.9	259.0	557,869.25	802,078.45	32° 31' 50.863 N	103° 29' 14.294 W
10,874.0	64.20	90.31	10,762.3	2.9	287.4	557,869.19	802,106.80	32° 31' 50.860 N	103° 29' 13.963 W
10,905.0	66.80	90.11	10,775.2	2.8	315.6	557,869.09	802,135.01	32° 31' 50.857 N	103° 29' 13.634 W
10,937.0	70.10	89.11	10,786.9	3.0	345.4	557,869.29	802,164.76	32° 31' 50.856 N	103° 29' 13.286 W
10,951.4	71.96	88.78	10,791.6	3.2	359.0	557,869.54	802,178.38	32° 31' 50.858 N	103° 29' 13.127 W
Cross into 330' Lease - 10951.4' MD, 10791.6' TVD, 71.96° INC, 359.0' VS									
10,968.0	74.10	88.41	10,796.4	3.6	374.9	557,869.93	802,194.25	32° 31' 50.860 N	103° 29' 12.941 W
10,999.0	78.50	88.71	10,803.8	4.4	405.0	557,870.69	802,224.35	32° 31' 50.866 N	103° 29' 12.590 W
11,033.0	83.60	90.91	10,809.1	4.5	438.5	557,870.80	802,257.92	32° 31' 50.864 N	103° 29' 12.198 W
11,097.0	86.60	90.61	10,814.5	3.6	502.3	557,869.95	802,321.68	32° 31' 50.851 N	103° 29' 11.453 W
11,191.0	88.70	90.11	10,818.4	3.1	596.2	557,869.36	802,415.59	32° 31' 50.837 N	103° 29' 10.356 W
11,286.0	88.50	90.91	10,820.7	2.2	691.2	557,868.51	802,510.56	32° 31' 50.822 N	103° 29' 9.247 W
11,381.0	88.50	91.31	10,823.2	0.4	786.1	557,866.67	802,605.51	32° 31' 50.796 N	103° 29' 8.138 W
11,475.0	90.70	90.81	10,823.9	-1.4	880.1	557,864.94	802,699.48	32° 31' 50.771 N	103° 29' 7.041 W
11,570.0	91.90	91.21	10,821.7	-3.0	975.0	557,863.26	802,794.44	32° 31' 50.747 N	103° 29' 5.932 W
EOC - 11570.0' MD, 10821.7' TVD, 91.90° INC, 975.0' VS									
11,664.0	91.50	90.21	10,818.9	-4.2	1,069.0	557,862.10	802,888.39	32° 31' 50.728 N	103° 29' 4.835 W
11,759.0	89.90	89.51	10,817.8	-4.0	1,164.0	557,862.33	802,983.38	32° 31' 50.723 N	103° 29' 3.725 W
11,854.0	89.00	88.01	10,818.7	-1.9	1,259.0	557,864.39	803,078.35	32° 31' 50.736 N	103° 29' 2.616 W
11,949.0	88.40	87.91	10,820.8	1.5	1,353.9	557,867.77	803,173.26	32° 31' 50.762 N	103° 29' 1.507 W
12,044.0	88.50	88.01	10,823.4	4.8	1,448.8	557,871.15	803,268.17	32° 31' 50.788 N	103° 29' 0.398 W
12,139.0	88.90	88.91	10,825.5	7.4	1,543.7	557,873.70	803,363.11	32° 31' 50.806 N	103° 28' 59.289 W

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

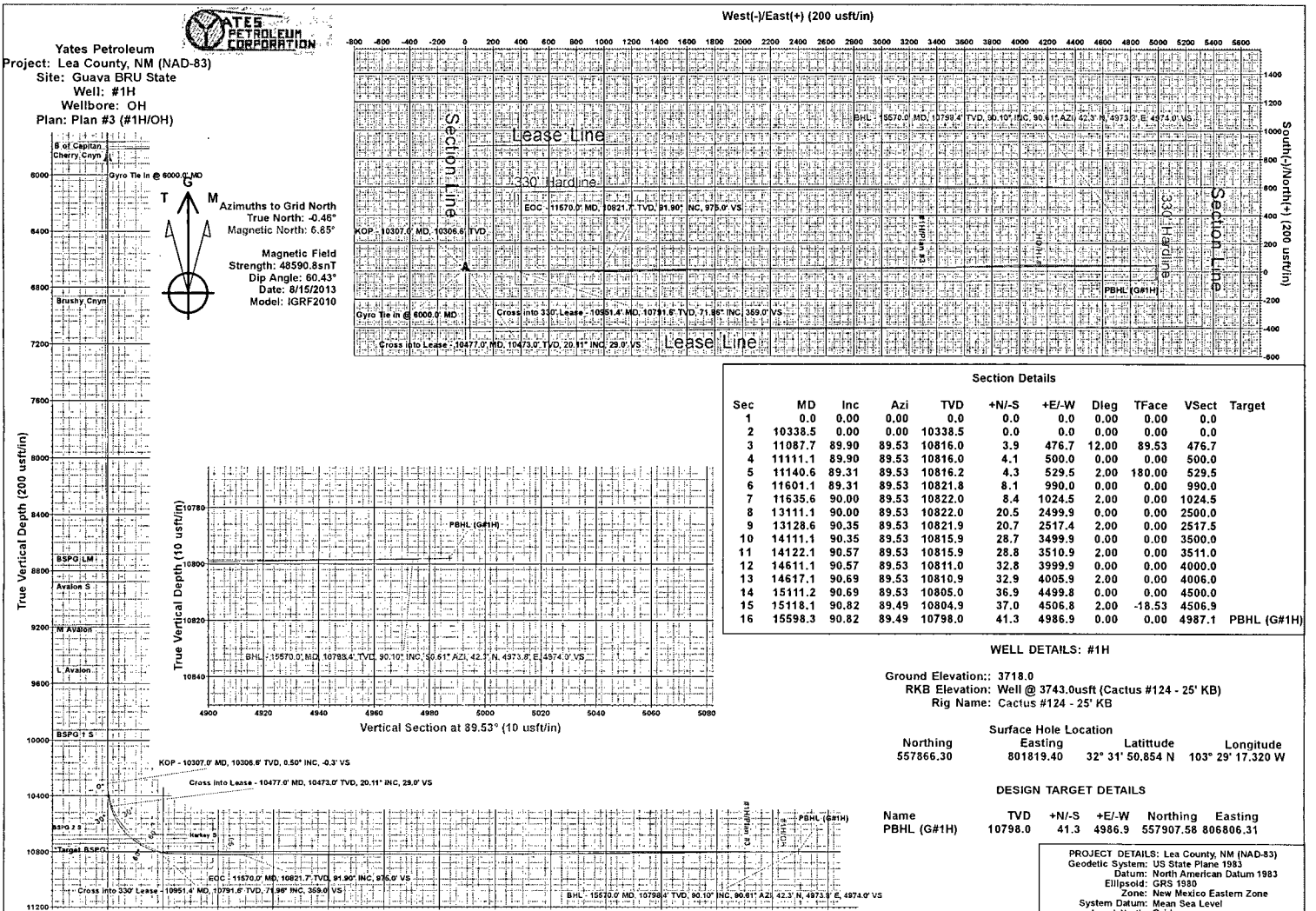
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,233.0	89.80	88.11	10,826.6	9.8	1,637.7	557,876.14	803,457.07	32° 31' 50.822 N	103° 28' 58.191 W
12,328.0	91.40	88.71	10,825.6	12.5	1,732.6	557,878.78	803,552.02	32° 31' 50.841 N	103° 28' 57.082 W
12,423.0	91.90	88.71	10,822.9	14.6	1,827.6	557,880.92	803,646.96	32° 31' 50.855 N	103° 28' 55.973 W
12,518.0	91.30	88.61	10,820.2	16.8	1,922.5	557,883.14	803,741.90	32° 31' 50.869 N	103° 28' 54.864 W
12,613.0	91.00	89.11	10,818.3	18.7	2,017.5	557,885.03	803,836.86	32° 31' 50.880 N	103° 28' 53.755 W
12,707.0	90.20	90.60	10,817.3	19.0	2,111.5	557,885.27	803,930.85	32° 31' 50.875 N	103° 28' 52.657 W
12,779.0	89.30	90.11	10,817.7	18.5	2,183.4	557,884.82	804,002.85	32° 31' 50.865 N	103° 28' 51.816 W
12,827.0	88.80	92.31	10,818.5	17.5	2,231.4	557,883.81	804,050.83	32° 31' 50.851 N	103° 28' 51.256 W
12,922.0	89.10	89.31	10,820.2	16.2	2,326.4	557,882.46	804,145.79	32° 31' 50.831 N	103° 28' 50.147 W
13,017.0	89.40	89.81	10,821.4	16.9	2,421.4	557,883.19	804,240.78	32° 31' 50.830 N	103° 28' 49.037 W
13,111.0	90.50	89.51	10,821.5	17.4	2,515.4	557,883.75	804,334.78	32° 31' 50.828 N	103° 28' 47.939 W
13,204.0	90.10	89.61	10,821.0	18.2	2,608.4	557,884.46	804,427.77	32° 31' 50.828 N	103° 28' 46.853 W
13,298.0	90.30	89.71	10,820.7	18.7	2,702.4	557,885.02	804,521.77	32° 31' 50.826 N	103° 28' 45.755 W
13,394.0	91.00	89.21	10,819.6	19.6	2,798.4	557,885.93	804,617.76	32° 31' 50.827 N	103° 28' 44.634 W
13,488.0	90.60	90.10	10,818.3	20.2	2,892.3	557,886.49	804,711.75	32° 31' 50.826 N	103° 28' 43.536 W
13,582.0	90.60	90.21	10,817.3	19.9	2,986.3	557,886.24	804,805.74	32° 31' 50.816 N	103° 28' 42.438 W
13,677.0	90.20	89.81	10,816.7	19.9	3,081.3	557,886.22	804,900.74	32° 31' 50.808 N	103° 28' 41.329 W
13,771.0	90.50	89.51	10,816.1	20.5	3,175.3	557,886.78	804,994.73	32° 31' 50.806 N	103° 28' 40.231 W
13,866.0	90.70	89.01	10,815.1	21.7	3,270.3	557,888.01	805,089.72	32° 31' 50.810 N	103° 28' 39.121 W
13,960.0	90.50	88.31	10,814.1	23.9	3,364.3	557,890.21	805,183.69	32° 31' 50.825 N	103° 28' 38.023 W
14,055.0	90.90	88.01	10,812.9	27.0	3,459.2	557,893.26	805,278.63	32° 31' 50.847 N	103° 28' 36.914 W
14,150.0	90.30	87.91	10,811.9	30.3	3,554.2	557,896.64	805,373.57	32° 31' 50.873 N	103° 28' 35.805 W
14,244.0	90.20	88.21	10,811.5	33.5	3,648.1	557,899.82	805,467.51	32° 31' 50.897 N	103° 28' 34.707 W
14,339.0	91.30	88.21	10,810.3	36.5	3,743.1	557,902.79	805,562.46	32° 31' 50.919 N	103° 28' 33.598 W
14,434.0	91.50	88.11	10,808.0	39.5	3,838.0	557,905.84	805,657.38	32° 31' 50.942 N	103° 28' 32.489 W
14,529.0	90.10	88.50	10,806.6	42.3	3,932.9	557,908.65	805,752.33	32° 31' 50.962 N	103° 28' 31.380 W
14,624.0	89.60	90.01	10,806.9	43.6	4,027.9	557,909.88	805,847.31	32° 31' 50.967 N	103° 28' 30.270 W
14,719.0	90.40	89.61	10,806.9	43.9	4,122.9	557,910.20	805,942.31	32° 31' 50.962 N	103° 28' 29.161 W
14,814.0	91.50	90.81	10,805.3	43.5	4,217.9	557,909.85	806,037.30	32° 31' 50.951 N	103° 28' 28.052 W
14,908.0	90.60	89.01	10,803.6	43.7	4,311.9	557,910.00	806,131.27	32° 31' 50.945 N	103° 28' 26.954 W
15,003.0	90.60	90.11	10,802.6	44.4	4,406.9	557,910.72	806,226.27	32° 31' 50.945 N	103° 28' 25.844 W
15,097.0	90.40	90.21	10,801.8	44.2	4,500.9	557,910.46	806,320.26	32° 31' 50.935 N	103° 28' 24.746 W
15,192.0	90.50	89.91	10,801.0	44.1	4,595.9	557,910.36	806,415.26	32° 31' 50.926 N	103° 28' 23.637 W
15,287.0	90.60	89.91	10,800.1	44.2	4,690.9	557,910.51	806,510.25	32° 31' 50.920 N	103° 28' 22.527 W
15,381.0	90.60	90.31	10,799.1	44.0	4,784.9	557,910.33	806,604.25	32° 31' 50.911 N	103° 28' 21.430 W
15,475.0	90.10	90.61	10,798.6	43.3	4,878.8	557,909.58	806,698.24	32° 31' 50.896 N	103° 28' 20.332 W
15,570.0	90.10	90.61	10,798.4	42.3	4,973.8	557,908.57	806,793.24	32° 31' 50.878 N	103° 28' 19.222 W
BHL - 15570.0' MD, 10798.4' TVD, 90.10° INC, 90.61° AZI, 42.3' N, 4973.8' E, 4974.0' VS									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,000.0	5,999.8	9.0	-10.3	Gyro Tie in @ 6000.0' MD
10,307.0	10,306.6	6.8	-0.3	KOP - 10307.0' MD, 10306.6' TVD, 0.50° INC, -0.3' VS
10,477.0	10,473.0	1.9	29.0	Cross into Lease - 10477.0' MD, 10473.0' TVD, 20.11° INC, 29.0' VS
10,951.4	10,791.6	3.2	359.0	Cross into 330' Lease - 10951.4' MD, 10791.6' TVD, 71.96° INC, 359.0' VS
11,570.0	10,821.7	-3.0	975.0	EOC - 11570.0' MD, 10821.7' TVD, 91.90° INC, 975.0' VS
15,570.0	10,798.4	42.3	4,973.8	BHL - 15570.0' MD, 10798.4' TVD, 90.10° INC, 90.61° AZI, 42.3' N, 4973.8' E, 4

Checked By: _____ Approved By: _____ Date: _____

Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Guava BRU State
Well: #1H
Wellbore: OH
Plan: Plan #3 (#1H/OH)



Azimuths to Grid North
True North: -0.46°
Magnetic North: 6.85°

Magnetic Field
Strength: 48590.8snT
Dip Angle: 60.43°
Date: 8/15/2013
Model: IGRF2010

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	10338.5	0.00	0.00	10338.5	0.0	0.0	0.00	0.00	0.0	
3	11087.7	89.90	89.53	10816.0	3.9	476.7	12.00	89.53	476.7	
4	11111.1	89.90	89.53	10816.0	4.1	500.0	0.00	0.00	500.0	
5	11140.6	89.31	89.53	10816.2	4.3	529.5	2.00	180.00	529.5	
6	11601.1	89.31	89.53	10821.8	8.1	990.0	0.00	0.00	990.0	
7	11635.6	90.00	89.53	10822.0	8.4	1024.5	2.00	0.00	1024.5	
8	13111.1	90.00	89.53	10822.0	20.5	2499.9	0.00	0.00	2500.0	
9	13128.6	90.35	89.53	10821.9	20.7	2517.4	2.00	0.00	2517.5	
10	14111.1	90.35	89.53	10815.9	28.7	3499.9	0.00	0.00	3500.0	
11	14122.1	90.57	89.53	10815.9	28.8	3510.9	2.00	0.00	3511.0	
12	14611.1	90.57	89.53	10811.0	32.8	3999.9	0.00	0.00	4000.0	
13	14617.1	90.69	89.53	10810.9	32.9	4005.9	2.00	0.00	4006.0	
14	15111.2	90.69	89.53	10805.0	36.9	4499.8	0.00	0.00	4500.0	
15	15118.1	90.82	89.49	10804.9	37.0	4506.8	2.00	-18.53	4506.9	
16	15598.3	90.82	89.49	10798.0	41.3	4986.9	0.00	0.00	4987.1	PBHL (G#1H)

WELL DETAILS: #1H

Ground Elevation:: 3718.0
RKB Elevation: Well @ 3743.0usft (Cactus #124 - 25' KB)
Rig Name: Cactus #124 - 25' KB

Surface Hole Location

Northing	Easting	Latitude	Longitude
557866.30	801819.40	32° 31' 50.854 N	103° 29' 17.320 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (G#1H)	10798.0	41.3	4986.9	557907.58	806806.31

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 (#1H/OH)
Created By: Matt Higgins Date: 10:18, October 24 2013

Yates Petroleum

Lea County, NM (NAD-83)
Guava BRU State
#1H

OH

Design: OH

Standard Survey Report

24 October, 2013

CRESCENT DIRECTIONAL DRILLING

YATES PETROLEUM CORPORATION

Survey Report

CRESCENT DIRECTIONAL DRILLING

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Project Lea County, NM (NAD-83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Guava BRU State

Site Position:		**Northing:**	557,866.30 usft	**Latitude:**	32° 31' 50.854 N
From:	Map	**Easting:**	801,819.40 usft	**Longitude:**	103° 29' 17.320 W
Position Uncertainty:	2.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.45 °

Well #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	557,866.30 usft	**Latitude:**	32° 31' 50.854 N
	+E/-W	0.0 usft	**Easting:**	801,819.40 usft	**Longitude:**	103° 29' 17.320 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,718.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/15/2013	7.30	60.43	48,591

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	89.53

Survey Program **Date** 10/24/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	6,000.0	Survey #1 - MS Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
6,048.0	15,475.0	Survey #2 - MWD1 (OH)	MWD	MWD - Standard
15,570.0	15,570.0	Survey #3 - PTB (OH)	BLIND	Blind drilling, where no tool is applied

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
200.0	0.53	186.38	200.0	-0.9	-0.1	-0.1	0.27	0.27	0.00
400.0	0.52	182.83	400.0	-2.7	-0.3	-0.3	0.02	-0.01	-1.78
600.0	0.36	191.98	600.0	-4.3	-0.4	-0.5	0.09	-0.08	4.58
800.0	0.12	122.67	800.0	-5.0	-0.4	-0.4	0.17	-0.12	-34.66
1,000.0	0.27	199.66	1,000.0	-5.6	-0.4	-0.4	0.13	0.08	38.50
1,200.0	0.19	221.57	1,200.0	-6.2	-0.7	-0.8	0.06	-0.04	10.96
1,400.0	0.20	235.29	1,400.0	-6.7	-1.2	-1.3	0.02	0.01	6.86
1,600.0	0.63	255.65	1,600.0	-7.2	-2.6	-2.7	0.22	0.22	10.18

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,800.0	0.67	254.24	1,800.0	-7.8	-4.8	-4.9	0.02	0.02	-0.71
2,000.0	0.43	241.84	1,999.9	-8.4	-6.6	-6.6	0.13	-0.12	-6.20
2,200.0	0.05	149.06	2,199.9	-8.9	-7.2	-7.3	0.22	-0.19	-46.39
2,400.0	0.25	316.47	2,399.9	-8.6	-7.4	-7.5	0.15	0.10	83.71
2,600.0	0.10	50.84	2,599.9	-8.2	-7.6	-7.7	0.14	-0.08	47.19
2,800.0	0.20	276.37	2,799.9	-8.0	-7.8	-7.9	0.14	0.05	-67.24
3,000.0	0.08	326.95	2,999.9	-7.9	-8.2	-8.3	0.08	-0.06	25.29
3,200.0	0.52	49.65	3,199.9	-7.2	-7.6	-7.7	0.26	0.22	41.35
3,400.0	0.41	60.19	3,399.9	-6.2	-6.3	-6.4	0.07	-0.06	5.27
3,600.0	0.67	70.57	3,599.9	-5.5	-4.6	-4.6	0.14	0.13	5.19
3,800.0	0.57	56.04	3,799.9	-4.5	-2.7	-2.7	0.09	-0.05	-7.27
4,000.0	0.44	76.78	3,999.9	-3.8	-1.1	-1.1	0.11	-0.07	10.37
4,200.0	0.25	60.66	4,199.9	-3.4	0.0	0.0	0.11	-0.10	-8.06
4,400.0	0.34	75.24	4,399.9	-3.1	1.0	1.0	0.06	0.05	7.29
4,600.0	0.07	330.02	4,599.9	-2.8	1.5	1.5	0.18	-0.14	-52.61
4,800.0	1.04	354.25	4,799.9	-0.9	1.3	1.2	0.49	0.49	12.12
5,000.0	0.80	339.44	4,999.9	2.2	0.6	0.6	0.17	-0.12	-7.41
5,200.0	0.78	317.46	5,199.8	4.5	-0.8	-0.8	0.15	-0.01	-10.99
5,400.0	0.69	297.69	5,399.8	6.1	-2.8	-2.8	0.13	-0.05	-9.89
5,600.0	0.91	302.01	5,599.8	7.5	-5.2	-5.2	0.11	0.11	2.16
5,800.0	0.74	278.51	5,799.8	8.5	-7.9	-7.8	0.19	-0.09	-11.75
6,000.0	0.71	281.27	5,999.8	9.0	-10.3	-10.3	0.02	-0.02	1.38
Gyro Tie in @ 6000.0' MD									
6,048.0	0.60	305.11	6,047.8	9.2	-10.8	-10.8	0.61	-0.23	49.67
6,143.0	0.50	310.61	6,142.8	9.7	-11.6	-11.5	0.12	-0.11	5.79
6,237.0	0.30	297.81	6,236.8	10.1	-12.1	-12.0	0.23	-0.21	-13.62
6,332.0	0.60	326.21	6,331.8	10.6	-12.6	-12.5	0.38	0.32	29.89
6,426.0	0.40	312.01	6,425.8	11.3	-13.1	-13.0	0.25	-0.21	-15.11
6,521.0	0.40	314.41	6,520.8	11.7	-13.6	-13.5	0.02	0.00	2.53
6,616.0	0.40	312.61	6,615.8	12.2	-14.1	-14.0	0.01	0.00	-1.89
6,711.0	0.40	331.51	6,710.7	12.7	-14.5	-14.4	0.14	0.00	19.89
6,806.0	0.20	303.11	6,805.7	13.1	-14.8	-14.7	0.26	-0.21	-29.89
6,901.0	0.40	286.61	6,900.7	13.3	-15.2	-15.1	0.23	0.21	-17.37
6,995.0	0.50	290.71	6,994.7	13.5	-15.9	-15.8	0.11	0.11	4.36
7,090.0	0.50	270.81	7,089.7	13.7	-16.7	-16.6	0.18	0.00	-20.95
7,185.0	0.30	344.41	7,184.7	13.9	-17.2	-17.1	0.53	-0.21	77.47
7,280.0	0.10	169.50	7,279.7	14.1	-17.3	-17.1	0.42	-0.21	-184.12
7,469.0	0.40	155.71	7,468.7	13.3	-17.0	-16.8	0.16	0.16	-7.30
7,564.0	0.50	213.71	7,563.7	12.6	-17.1	-16.9	0.47	0.11	61.05
7,659.0	0.50	160.21	7,658.7	11.9	-17.1	-17.0	0.47	0.00	-56.32
7,754.0	1.20	160.21	7,753.7	10.6	-16.7	-16.6	0.74	0.74	0.00
7,848.0	0.50	27.91	7,847.7	10.0	-16.1	-16.1	1.68	-0.74	-140.74
7,943.0	0.70	88.61	7,942.7	10.4	-15.4	-15.3	0.66	0.21	63.89

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,038.0	0.70	98.01	8,037.7	10.3	-14.2	-14.1	0.12	0.00	9.89
8,133.0	0.70	107.21	8,132.7	10.1	-13.1	-13.0	0.12	0.00	9.68
8,227.0	0.70	109.11	8,226.7	9.7	-12.0	-11.9	0.02	0.00	2.02
8,322.0	0.70	113.31	8,321.7	9.3	-10.9	-10.8	0.05	0.00	4.42
8,416.0	0.60	122.71	8,415.7	8.8	-10.0	-9.9	0.16	-0.11	10.00
8,510.0	0.70	136.11	8,509.7	8.1	-9.2	-9.1	0.19	0.11	14.26
8,605.0	0.70	148.01	8,604.7	7.2	-8.4	-8.4	0.15	0.00	12.53
8,700.0	0.70	148.01	8,699.7	6.2	-7.8	-7.8	0.00	0.00	0.00
8,796.0	0.60	144.61	8,795.6	5.3	-7.2	-7.2	0.11	-0.10	-3.54
8,890.0	0.70	156.41	8,889.6	4.4	-6.7	-6.7	0.18	0.11	12.55
8,985.0	0.50	158.61	8,984.6	3.5	-6.3	-6.3	0.21	-0.21	2.32
9,079.0	0.90	155.30	9,078.6	2.4	-5.9	-5.9	0.43	0.43	-3.52
9,174.0	0.50	51.30	9,173.6	2.0	-5.2	-5.2	1.19	-0.42	-109.47
9,269.0	0.60	43.71	9,268.6	2.6	-4.6	-4.5	0.13	0.11	-7.99
9,364.0	0.70	16.41	9,363.6	3.5	-4.1	-4.0	0.34	0.11	-28.74
9,459.0	0.70	359.41	9,458.6	4.7	-3.9	-3.9	0.22	0.00	-17.89
9,554.0	0.70	15.71	9,553.6	5.8	-3.8	-3.7	0.21	0.00	17.16
9,649.0	0.60	35.11	9,648.6	6.8	-3.3	-3.3	0.25	-0.11	20.42
9,744.0	0.80	39.71	9,743.6	7.7	-2.6	-2.5	0.22	0.21	4.84
9,839.0	0.20	105.81	9,838.6	8.2	-2.0	-2.0	0.78	-0.63	69.58
9,934.0	0.20	79.61	9,933.6	8.2	-1.7	-1.6	0.10	0.00	-27.58
10,028.0	0.40	117.21	10,027.6	8.0	-1.2	-1.2	0.29	0.21	40.00
10,123.0	0.50	127.91	10,122.6	7.6	-0.6	-0.6	0.14	0.11	11.26
10,218.0	0.20	239.81	10,217.6	7.3	-0.4	-0.4	0.64	-0.32	117.79
10,276.0	0.40	158.31	10,275.6	7.1	-0.4	-0.4	0.72	0.34	-140.52
10,307.0	0.50	149.21	10,306.6	6.8	-0.3	-0.3	0.40	0.32	-29.35
KOP - 10307.0' MD, 10306.6' TVD, 0.50° INC, -0.3' VS									
10,339.0	3.00	105.01	10,338.6	6.5	0.5	0.6	8.33	7.81	-138.13
10,370.0	7.50	103.91	10,369.4	5.8	3.3	3.3	14.52	14.52	-3.55
10,402.0	11.80	102.21	10,401.0	4.6	8.5	8.6	13.47	13.44	-5.31
10,434.0	15.50	98.71	10,432.1	3.3	15.9	16.0	11.84	11.56	-10.94
10,465.0	18.80	94.71	10,461.7	2.2	25.0	25.0	11.30	10.65	-12.90
10,477.0	20.11	93.73	10,473.0	1.9	29.0	29.0	11.27	10.94	-8.15
Cross into Lease - 10477.0' MD, 10473.0' TVD, 20.11° INC, 29.0' VS									
10,496.0	22.20	92.41	10,490.7	1.6	35.9	35.9	11.27	10.99	-6.95
10,528.0	26.00	92.41	10,519.9	1.0	48.9	48.9	11.88	11.88	0.00
10,559.0	29.70	92.51	10,547.3	0.4	63.4	63.4	11.94	11.94	0.32
10,591.0	33.40	91.21	10,574.6	-0.1	80.1	80.1	11.76	11.56	-4.06
10,622.0	36.90	89.31	10,599.9	-0.2	97.9	97.9	11.83	11.29	-6.13
10,653.0	40.20	88.61	10,624.2	0.2	117.3	117.3	10.74	10.65	-2.26
10,685.0	42.60	87.71	10,648.2	0.8	138.4	138.4	7.73	7.50	-2.81
10,716.0	45.00	87.81	10,670.5	1.7	159.8	159.9	7.75	7.74	0.32
10,748.0	47.60	88.61	10,692.6	2.4	183.0	183.0	8.32	8.13	2.50
10,779.0	51.90	89.51	10,712.7	2.8	206.6	206.6	14.05	13.87	2.90

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,810.0	56.50	89.91	10,730.8	2.9	231.8	231.8	14.88	14.84	1.29
10,842.0	60.60	89.91	10,747.5	2.9	259.0	259.1	12.81	12.81	0.00
10,874.0	64.20	90.31	10,762.3	2.9	287.4	287.4	11.30	11.25	1.25
10,905.0	66.80	90.11	10,775.2	2.8	315.6	315.6	8.41	8.39	-0.65
10,937.0	70.10	89.11	10,786.9	3.0	345.4	345.4	10.71	10.31	-3.13
10,951.4	71.96	88.78	10,791.6	3.2	359.0	359.0	13.08	12.90	-2.29
Cross into 330' Lease - 10951.4' MD, 10791.6' TVD, 71.96° INC, 359.0' VS									
10,968.0	74.10	88.41	10,796.4	3.6	374.9	374.9	13.08	12.91	-2.23
10,999.0	78.50	88.71	10,803.8	4.4	405.0	405.0	14.22	14.19	0.97
11,033.0	83.60	90.91	10,809.1	4.5	438.5	438.5	16.30	15.00	6.47
11,097.0	86.60	90.61	10,814.5	3.6	502.3	502.3	4.71	4.69	-0.47
11,191.0	88.70	90.11	10,818.4	3.1	596.2	596.2	2.30	2.23	-0.53
11,286.0	88.50	90.91	10,820.7	2.2	691.2	691.2	0.87	-0.21	0.84
11,381.0	88.50	91.31	10,823.2	0.4	786.1	786.1	0.42	0.00	0.42
11,475.0	90.70	90.81	10,823.9	-1.4	880.1	880.0	2.40	2.34	-0.53
11,570.0	91.90	91.21	10,821.7	-3.0	975.0	975.0	1.33	1.26	0.42
EOC - 11570.0' MD, 10821.7' TVD, 91.90° INC, 975.0' VS									
11,664.0	91.50	90.21	10,818.9	-4.2	1,069.0	1,068.9	1.15	-0.43	-1.06
11,759.0	89.90	89.51	10,817.8	-4.0	1,164.0	1,163.9	1.84	-1.68	-0.74
11,854.0	89.00	88.01	10,818.7	-1.9	1,259.0	1,258.9	1.84	-0.95	-1.58
11,949.0	88.40	87.91	10,820.8	1.5	1,353.9	1,353.8	0.64	-0.63	-0.11
12,044.0	88.50	88.01	10,823.4	4.8	1,448.8	1,448.8	0.15	0.11	0.11
12,139.0	88.90	88.91	10,825.5	7.4	1,543.7	1,543.7	1.04	0.42	0.95
12,233.0	89.80	88.11	10,826.6	9.8	1,637.7	1,637.7	1.28	0.96	-0.85
12,328.0	91.40	88.71	10,825.6	12.5	1,732.6	1,732.7	1.80	1.68	0.63
12,423.0	91.90	88.71	10,822.9	14.6	1,827.6	1,827.6	0.53	0.53	0.00
12,518.0	91.30	88.61	10,820.2	16.8	1,922.5	1,922.6	0.64	-0.63	-0.11
12,613.0	91.00	89.11	10,818.3	18.7	2,017.5	2,017.5	0.61	-0.32	0.53
12,707.0	90.20	90.60	10,817.3	19.0	2,111.5	2,111.5	1.80	-0.85	1.59
12,779.0	89.30	90.11	10,817.7	18.5	2,183.4	2,183.5	1.42	-1.25	-0.68
12,827.0	88.80	92.31	10,818.5	17.5	2,231.4	2,231.5	4.70	-1.04	4.58
12,922.0	89.10	89.31	10,820.2	16.2	2,326.4	2,326.4	3.17	0.32	-3.16
13,017.0	89.40	89.81	10,821.4	16.9	2,421.4	2,421.4	0.61	0.32	0.53
13,111.0	90.50	89.51	10,821.5	17.4	2,515.4	2,515.4	1.21	1.17	-0.32
13,204.0	90.10	89.61	10,821.0	18.2	2,608.4	2,608.4	0.44	-0.43	0.11
13,298.0	90.30	89.71	10,820.7	18.7	2,702.4	2,702.4	0.24	0.21	0.11
13,394.0	91.00	89.21	10,819.6	19.6	2,798.4	2,798.4	0.90	0.73	-0.52
13,488.0	90.60	90.10	10,818.3	20.2	2,892.3	2,892.4	1.04	-0.43	0.95
13,582.0	90.60	90.21	10,817.3	19.9	2,986.3	2,986.4	0.12	0.00	0.12
13,677.0	90.20	89.81	10,816.7	19.9	3,081.3	3,081.4	0.60	-0.42	-0.42
13,771.0	90.50	89.51	10,816.1	20.5	3,175.3	3,175.4	0.45	0.32	-0.32
13,866.0	90.70	89.01	10,815.1	21.7	3,270.3	3,270.4	0.57	0.21	-0.53
13,960.0	90.50	88.31	10,814.1	23.9	3,364.3	3,364.4	0.77	-0.21	-0.74
14,055.0	90.90	88.01	10,812.9	27.0	3,459.2	3,459.3	0.53	0.42	-0.32

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD-83)	**TVD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Site:	Guava BRU State	**MD Reference:**	Well @ 3743.0usft (Cactus #124 - 25' KB)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,150.0	90.30	87.91	10,811.9	30.3	3,554.2	3,554.3	0.64	-0.63	-0.11
14,244.0	90.20	88.21	10,811.5	33.5	3,648.1	3,648.3	0.34	-0.11	0.32
14,339.0	91.30	88.21	10,810.3	36.5	3,743.1	3,743.2	1.16	1.16	0.00
14,434.0	91.50	88.11	10,808.0	39.5	3,838.0	3,838.2	0.24	0.21	-0.11
14,529.0	90.10	88.50	10,806.6	42.3	3,932.9	3,933.1	1.53	-1.47	0.41
14,624.0	89.60	90.01	10,806.9	43.6	4,027.9	4,028.1	1.67	-0.53	1.59
14,719.0	90.40	89.61	10,806.9	43.9	4,122.9	4,123.1	0.94	0.84	-0.42
14,814.0	91.50	90.81	10,805.3	43.5	4,217.9	4,218.1	1.71	1.16	1.26
14,908.0	90.60	89.01	10,803.6	43.7	4,311.9	4,312.1	2.14	-0.96	-1.91
15,003.0	90.60	90.11	10,802.6	44.4	4,406.9	4,407.1	1.16	0.00	1.16
15,097.0	90.40	90.21	10,801.8	44.2	4,500.9	4,501.1	0.24	-0.21	0.11
15,192.0	90.50	89.91	10,801.0	44.1	4,595.9	4,596.1	0.33	0.11	-0.32
15,287.0	90.60	89.91	10,800.1	44.2	4,690.9	4,691.1	0.11	0.11	0.00
15,381.0	90.60	90.31	10,799.1	44.0	4,784.9	4,785.1	0.43	0.00	0.43
15,475.0	90.10	90.61	10,798.6	43.3	4,878.8	4,879.0	0.62	-0.53	0.32
15,570.0	90.10	90.61	10,798.4	42.3	4,973.8	4,974.0	0.00	0.00	0.00
BHL - 15570.0' MD, 10798.4' TVD, 90.10° INC, 90.61° AZI, 42.3' N, 4973.8' E, 4974.0' VS									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,000.0	5,999.8	9.0	-10.3	Gyro Tie in @ 6000.0' MD
10,307.0	10,306.6	6.8	-0.3	KOP - 10307.0' MD, 10306.6' TVD, 0.50° INC, -0.3' VS
10,477.0	10,473.0	1.9	29.0	Cross into Lease - 10477.0' MD, 10473.0' TVD, 20.11° INC, 29.0' VS
10,951.4	10,791.6	3.2	359.0	Cross into 330' Lease - 10951.4' MD, 10791.6' TVD, 71.96° INC, 359.0' VS
11,570.0	10,821.7	-3.0	975.0	EOC - 11570.0' MD, 10821.7' TVD, 91.90° INC, 975.0' VS
15,570.0	10,798.4	42.3	4,973.8	BHL - 15570.0' MD, 10798.4' TVD, 90.10° INC, 90.61° AZI, 42.3' N, 4973.8' E, 4

Checked By: _____ Approved By: _____ Date: _____