Results of Directional Survey

API number:	30-025-40718			
OGRID:		Operator:	YATES PETROLEUM CORPORATION	
		Property:	BOMBAY BSB FEDERAL COM	# 1H

surface	ULSTR:	H	32	T	24S	R	32E
				2310	FNL	430	FEL

BH Loc	ULSTR:	I	29	T	24S	R	32E
12837	MD	8382.6	TVD	2308	FSL	465	FEL

Top Perf/OH	ULSTR:	H	32	T	24S	R	32E
8803	MD	8394.5	TVD	1714	FNL	349	FEL

Bot Perf/OH	ULSTR:	I	29	T	24S	R	32E
12740	MD	8385.2	TVD	2211	FSL	464	FEL

	MD	N/S	E/W	VD
	8780	573.40	86.80	8394.2
TOP PERFS/OH	**8803**	595.69	81.10	8394.46
	8868	658.70	65.00	8395.20
	12676	4457.20	-32.80	8386.00
BOT PERFS/OH	**12740**	4521.14	-33.78	8385.19
	12787	4568.10	-34.50	8384.60

NEXT TO LAST	12787	4568.10	-34.50	8384.60
LAST READING	12837	4618.10	-35.30	8382.60
TD	**12837**	4618.10	-35.30	8382.60

Surface Location	2310	FN	430	FE
Projected BHL	2308	FS	465	FE
Location of				
Top Perfs/OH	1714	FN	349	FE
Bottom Perfs/OH	2211	FS	464	FE

SUMMARY of Subsurface Locations

Surface Location	H-32-24S-32E	2310	FN	430	FE	Vert. Depth
Top Perfs/OH	H-32-24S-32E	1714	FN	349	FE	8394.46
Bottom Perfs/OH	I-29-24S-32E	2211	FS	464	FE	8385.19
Projected TD	I-29-24S-32E	2308	FS	465	FE	8382.60

UNION DRILLING, INC.

SUR: H-32-24s-32e, 2310/N & 430/E
BHL: I-29-24s-32e, 2308/S & 465/E
API # 30-025-40718

HOBBS OCD

JAN 03 2013

RECEIVED

Well Name & Number: Bombay "BSB" Federal Com #1H

API Number: 30-025-40718

Location: 2310 FNL & 430 FEL, Lot H, Sec. 32, Township 24-S, Range 32-E, Lea County, New Mexico

Operator: Yates Petroleum Corporation

Drilling Contractor: Union Drilling, Inc.

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

RECORD OF INCLINATION

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
249	249	.75	1.31	3.26	3.26
1248	999	1.1	1.92	19.18	22.44
2008	760	1.6	2.79	21.22	43.66
2768	760	2.9	5.06	38.46	82.12
3623	855	2.1	3.66	31.34	113.46
4550	927	1.8	3.14	29.12	142.58
5223	673	1.3	2.27	15.27	157.85
5763	540	1.56	2.72	14.70	172.55
6742	979	1	1.75	17.09	189.64
7692	950	1.4	2.44	23.21	212.85
7920	228	5.1	8.90	20.29	233.14
DIRECTIONAL					
TOOK OVER					

4725 Loop 322 / Abilene, Texas 79602

325.698.9864 / Fax 325.698.6470

Drilling Contractor: Union Drilling, Inc.

By: Jim Mayfield

Jim Mayfield

Title: Division Manager

Subscribed and sworn to before me this 11TH Day of October, 2012.

Laura Jo Young

Notary Public

My Commission Expires: July 29, 2014

COUNTY OF TAYLOR)
)
STATE OF TEXAS)

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

CRESCENT
DIRECTIONAL DRILLING

Yates Petroleum

Lea County, NM
Bombay BSB Federal Com
#1H

OH

Design: OH

SUR: H-32-24s-32e, 2310/N & 430/E
BHL: I-29-24s-32e, 2308/S & 465/E
API # 30-025-40718

Standard Survey Report

02 October, 2012

YATES PETROLEUM CORPORATION

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM	**TVD Reference:**	RKB @ 3521.0usft (Union 223)
Site:	Bombay BSB Federal Com	**MD Reference:**	RKB @ 3521.0usft (Union 223)
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	Houston R5000 Database

Project Lea County, NM

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

Site Bombay BSB Federal Com

Site Position:		**Northing:**	427,942.43 usft	**Latitude:**	32° 10' 29.472 N
From:	Map	**Easting:**	740,530.24 usft	**Longitude:**	103° 41' 22.317 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.34 °

Well #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	427,942.43 usft	**Latitude:**	32° 10' 29.472 N
	+E/-W	0.0 usft	**Easting:**	740,530.24 usft	**Longitude:**	103° 41' 22.317 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,496.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/10/2012	7.48	60.09	48,449

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.55

Survey Program **Date** 10/2/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	7,815.0	MS Gyro (OH)	Good_gyro	Good Gyro
7,857.0	12,787.0	Crescent MWD (OH)	MWD	MWD - Standard
12,837.0	12,837.0	PTB (OH)	MWD	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.64	191.21	200.0	-1.1	-0.2	-1.1	0.32	0.32	0.00
400.0	0.57	182.99	400.0	-3.2	-0.5	-3.2	0.06	-0.04	-4.11
600.0	0.51	201.12	600.0	-5.0	-0.9	-5.0	0.09	-0.03	9.07
800.0	0.65	205.66	800.0	-6.9	-1.7	-6.8	0.07	0.07	2.27
1,000.0	0.46	162.15	1,000.0	-8.6	-1.9	-8.6	0.22	-0.10	-21.76
1,200.0	0.60	154.14	1,199.9	-10.4	-1.2	-10.3	0.08	0.07	-4.01
1,400.0	0.66	162.30	1,399.9	-12.4	-0.4	-12.4	0.05	0.03	4.08
1,800.0	0.63	101.93	1,799.9	-15.0	2.4	-15.1	0.16	-0.01	-15.09

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM	**TVD Reference:**	RKB @ 3521.0usft (Union 223)
Site:	Bombay BSB Federal Com	**MD Reference:**	RKB @ 3521.0usft (Union 223)
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)
2,000.0	1.06	81.45	1,999.9	-15.0	5.4	-15.0	0.26	0.22	-10.24
2,200.0	1.99	80.39	2,199.8	-14.1	10.6	-14.2	0.47	0.47	-0.53
2,400.0	2.37	86.09	2,399.7	-13.3	18.2	-13.4	0.22	0.19	2.85
2,600.0	2.50	88.64	2,599.5	-12.9	26.6	-13.1	0.08	0.07	1.28
2,800.0	2.86	90.49	2,799.3	-12.8	36.0	-13.1	0.19	0.18	0.93
3,000.0	3.48	82.57	2,999.0	-12.1	47.0	-12.5	0.38	0.31	-3.96
3,200.0	2.29	77.97	3,198.7	-10.5	56.9	-10.9	0.61	-0.60	-2.30
3,400.0	2.35	73.59	3,398.5	-8.5	64.8	-9.0	0.09	0.03	-2.19
3,600.0	2.47	71.32	3,598.4	-5.9	72.8	-6.5	0.08	0.06	-1.14
3,800.0	2.31	61.51	3,798.2	-2.6	80.4	-3.3	0.22	-0.08	-4.91
4,000.0	2.71	95.67	3,998.0	-1.2	88.7	-1.9	0.76	0.20	17.08
4,051.2	2.93	97.41	4,049.2	-1.5	91.2	-2.2	0.46	0.42	3.39
Cross out of 330' Lease - 4051.2' MD, 4049.2' TVD, 2.93° INC, -2.2' VS									
4,200.0	3.57	101.24	4,197.7	-2.9	99.5	-3.6	0.46	0.43	2.58
4,400.0	2.53	121.52	4,397.4	-6.4	109.3	-7.2	0.74	-0.52	10.14
4,600.0	1.66	132.38	4,597.3	-10.6	115.2	-11.6	0.48	-0.44	5.43
4,800.0	1.11	134.80	4,797.2	-14.0	118.8	-14.9	0.28	-0.28	1.21
5,000.0	1.12	126.64	4,997.2	-16.5	121.7	-17.5	0.08	0.01	-4.08
5,200.0	1.09	128.49	5,197.2	-18.8	124.8	-19.8	0.02	-0.02	0.93
5,400.0	1.56	133.42	5,397.1	-21.9	128.2	-22.9	0.24	0.24	2.47
5,600.0	1.06	126.42	5,597.0	-24.9	131.7	-25.9	0.26	-0.25	-3.50
5,800.0	1.45	140.13	5,797.0	-27.9	134.8	-29.0	0.24	0.20	6.86
6,000.0	1.40	140.04	5,996.9	-31.7	138.0	-32.8	0.03	-0.03	-0.05
6,200.0	0.58	155.83	6,196.9	-34.5	140.0	-35.6	0.43	-0.41	7.90
6,400.0	0.94	154.74	6,396.9	-36.9	141.1	-38.0	0.18	0.18	-0.55
6,600.0	0.50	166.10	6,596.9	-39.3	142.0	-40.4	0.23	-0.22	5.68
6,800.0	0.72	148.30	6,796.9	-41.2	142.9	-42.3	0.14	0.11	-8.90
7,000.0	0.49	155.59	6,996.8	-43.0	143.9	-44.2	0.12	-0.12	3.65
7,200.0	0.57	153.23	7,196.8	-44.7	144.7	-45.8	0.04	0.04	-1.18
7,400.0	0.82	141.61	7,396.8	-46.7	146.0	-47.8	0.14	0.13	-5.81
7,600.0	1.15	224.63	7,596.8	-49.3	145.5	-50.4	0.66	0.17	41.51
7,800.0	1.43	145.25	7,796.8	-52.7	145.5	-53.9	0.83	0.14	-39.69
7,815.0	1.36	153.94	7,811.8	-53.0	145.7	-54.2	1.48	-0.47	57.87
Tie into Gyro @ 7815' MD									
7,857.0	1.10	150.00	7,853.8	-53.8	146.1	-55.0	0.65	-0.62	-9.38
KOP - 7857.0' MD, 7853.8' TVD, 1.10° INC, 150.00° AZI, -55.0' VS									
7,888.0	1.60	21.20	7,884.7	-53.7	146.4	-54.8	7.89	1.61	-415.70
7,920.0	5.10	7.00	7,916.7	-51.9	146.8	-53.0	11.16	10.94	-44.38
7,952.0	9.50	4.90	7,948.4	-47.8	147.2	-49.0	13.77	13.75	-6.56
7,983.0	14.30	7.30	7,978.7	-41.5	147.9	-42.6	15.56	15.48	7.74
8,015.0	18.80	9.10	8,009.4	-32.5	149.2	-33.6	14.15	14.06	5.63
8,046.0	23.90	8.20	8,038.3	-21.3	150.9	-22.5	16.49	16.45	-2.90
8,078.0	29.00	5.90	8,066.9	-7.2	152.6	-8.4	16.25	15.94	-7.19
8,110.0	33.30	3.80	8,094.3	9.3	154.0	8.1	13.86	13.44	-6.56

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM	**TVD Reference:**	RKB @ 3521.0usft (Union 223)
Site:	Bombay BSB Federal Com	**MD Reference:**	RKB @ 3521.0usft (Union 223)
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)
8,141.0	37.00	1.70	8,119.6	27.2	154.8	25.9	12.56	11.94	-6.77
8,173.0	39.80	0.10	8,144.7	47.0	155.1	45.8	9.28	8.75	-5.00
8,205.0	42.60	358.70	8,168.8	68.1	154.9	66.9	9.21	8.75	-4.38
8,236.0	45.70	357.50	8,191.0	89.7	154.2	88.5	10.36	10.00	-3.87
8,268.0	48.20	356.90	8,212.9	113.0	153.0	111.8	7.93	7.81	-1.88
8,300.0	50.70	356.40	8,233.7	137.3	151.6	136.1	7.90	7.81	-1.56
8,331.0	52.40	355.90	8,253.0	161.5	150.0	160.3	5.63	5.48	-1.61
8,363.0	53.80	354.80	8,272.2	187.0	147.9	185.9	5.17	4.38	-3.44
8,395.0	55.80	353.40	8,290.6	213.0	145.2	211.9	7.20	6.25	-4.38
8,426.0	58.90	352.20	8,307.3	238.9	141.9	237.8	10.52	10.00	-3.87
8,458.0	62.60	351.30	8,323.0	266.5	137.9	265.5	11.82	11.56	-2.81
8,490.0	66.90	351.50	8,336.6	295.2	133.6	294.1	13.45	13.44	0.63
8,521.0	69.70	351.80	8,348.1	323.7	129.4	322.6	9.08	9.03	0.97
8,553.0	71.60	352.00	8,358.7	353.5	125.2	352.5	5.97	5.94	0.63
8,585.0	74.60	352.00	8,368.0	383.9	120.9	382.9	9.37	9.37	0.00
8,616.0	76.90	351.50	8,375.6	413.6	116.6	412.7	7.58	7.42	-1.61
8,648.0	79.90	351.00	8,382.0	444.6	111.8	443.7	9.50	9.38	-1.56
8,680.0	82.70	350.30	8,386.9	475.8	106.7	474.9	9.01	8.75	-2.19
8,711.0	84.80	349.20	8,390.3	506.1	101.2	505.3	7.64	6.77	-3.55
8,743.0	86.60	349.00	8,392.7	537.4	95.2	536.7	5.66	5.63	-0.63
8,771.9	88.24	345.72	8,394.0	565.6	88.8	564.9	12.68	5.67	-11.35
Cross into 330' Lease - 8771.9' MD, 8394.0' TVD, 88.24° INC, 345.72° AZI, 564.9' VS									
8,780.0	88.70	344.80	8,394.2	573.4	86.8	572.7	12.68	5.69	-11.34
8,868.0	90.00	346.56	8,395.2	658.7	65.0	658.2	2.48	1.47	2.00
EOC - 8868.0' MD, 8395.2' TVD, 90.00° INC, 346.56° AZI, 658.2' VS									
8,875.0	90.10	346.70	8,395.2	665.5	63.4	665.0	2.48	1.47	2.00
8,970.0	90.10	347.80	8,395.0	758.2	42.4	757.8	1.16	0.00	1.16
9,065.0	91.00	348.00	8,394.1	851.1	22.5	850.8	0.97	0.95	0.21
9,160.0	89.70	349.90	8,393.5	944.3	4.3	944.2	2.42	-1.37	2.00
9,255.0	88.90	353.60	8,394.7	1,038.3	-9.3	1,038.3	3.98	-0.84	3.89
9,350.0	88.50	356.10	8,396.8	1,132.9	-17.8	1,133.0	2.66	-0.42	2.63
9,445.0	90.60	359.20	8,397.6	1,227.8	-21.7	1,227.9	3.94	2.21	3.26
9,540.0	91.10	1.30	8,396.2	1,322.7	-21.3	1,322.9	2.27	0.53	2.21
9,635.0	90.10	0.80	8,395.2	1,417.7	-19.6	1,417.8	1.18	-1.05	-0.53
9,730.0	90.10	1.00	8,395.0	1,512.7	-18.1	1,512.8	0.21	0.00	0.21
9,825.0	91.80	2.40	8,393.4	1,607.6	-15.3	1,607.7	2.32	1.79	1.47
9,920.0	91.10	1.30	8,391.0	1,702.6	-12.2	1,702.6	1.37	-0.74	-1.16
10,015.0	89.00	359.20	8,390.9	1,797.6	-11.8	1,797.6	3.13	-2.21	-2.21
10,110.0	90.30	359.10	8,391.5	1,892.5	-13.2	1,892.6	1.37	1.37	-0.11
10,205.0	88.70	357.60	8,392.4	1,987.5	-15.9	1,987.6	2.31	-1.68	-1.58
10,300.0	90.30	358.00	8,393.2	2,082.4	-19.6	2,082.5	1.74	1.68	0.42
10,395.0	91.10	357.50	8,392.0	2,177.3	-23.3	2,177.4	0.99	0.84	-0.53
10,490.0	90.40	357.10	8,390.8	2,272.2	-27.8	2,272.4	0.85	-0.74	-0.42

Company:	Yates Petroleum	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM	**TVD Reference:**	RKB @ 3521.0usft (Union 223)
Site:	Bombay BSB Federal Com	**MD Reference:**	RKB @ 3521.0usft (Union 223)
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)
10,586.0	89.90	358.20	8,390.5	2,368.1	-31.7	2,368.3	1.26	-0.52	1.15
10,681.0	88.00	357.60	8,392.3	2,463.0	-35.2	2,463.3	2.10	-2.00	-0.63
10,775.0	89.00	357.80	8,394.7	2,556.9	-39.0	2,557.2	1.08	1.06	0.21
10,870.0	90.80	358.00	8,394.9	2,651.9	-42.5	2,652.1	1.91	1.89	0.21
10,965.0	91.30	358.20	8,393.2	2,746.8	-45.6	2,747.1	0.57	0.53	0.21
11,060.0	91.50	358.90	8,390.8	2,841.7	-48.0	2,842.0	0.77	0.21	0.74
11,155.0	90.80	359.80	8,388.9	2,936.7	-49.1	2,937.0	1.20	-0.74	0.95
11,251.0	91.70	1.50	8,386.8	3,032.7	-48.0	3,033.0	2.00	0.94	1.77
11,346.0	91.30	2.00	8,384.3	3,127.6	-45.1	3,127.9	0.67	-0.42	0.53
11,441.0	89.70	3.80	8,383.5	3,222.5	-40.3	3,222.7	2.53	-1.68	1.89
11,536.0	89.60	2.00	8,384.1	3,317.3	-35.5	3,317.5	1.90	-0.11	-1.89
11,631.0	89.20	0.50	8,385.1	3,412.3	-33.4	3,412.5	1.63	-0.42	-1.58
11,726.0	89.60	359.80	8,386.1	3,507.3	-33.2	3,507.5	0.85	0.42	-0.74
11,821.0	89.20	358.70	8,387.1	3,602.3	-34.4	3,602.5	1.23	-0.42	-1.16
11,916.0	90.30	359.20	8,387.5	3,697.3	-36.1	3,697.4	1.27	1.16	0.53
12,011.0	90.40	358.50	8,386.9	3,792.3	-38.1	3,792.4	0.74	0.11	-0.74
12,106.0	90.10	0.10	8,386.5	3,887.2	-39.2	3,887.4	1.71	-0.32	1.68
12,201.0	90.40	1.20	8,386.1	3,982.2	-38.1	3,982.4	1.20	0.32	1.16
12,296.0	90.30	0.60	8,385.5	4,077.2	-36.6	4,077.4	0.64	-0.11	-0.63
12,391.0	90.10	1.20	8,385.2	4,172.2	-35.2	4,172.4	0.67	-0.21	0.63
12,486.0	89.90	1.20	8,385.2	4,267.2	-33.2	4,267.3	0.21	-0.21	0.00
12,581.0	89.70	0.10	8,385.5	4,362.2	-32.1	4,362.3	1.18	-0.21	-1.16
12,676.0	89.70	359.10	8,386.0	4,457.2	-32.8	4,457.3	1.05	0.00	-1.05
12,787.0	91.80	359.10	8,384.6	4,568.1	-34.5	4,568.3	1.89	1.89	0.00
12,837.0	92.70	359.10	8,382.6	4,618.1	-35.3	4,618.2	1.80	1.80	0.00

BHL - 12837.0' MD, 8382.6' TVD, 92.70° INC, 359.10° AZI, 4618.1' N, -35.3' E, 4618.2' VS

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,051.2	4,049.2	-1.5	91.2	Cross out of 330' Lease - 4051.2' MD, 4049.2' TVD, 2.93° INC, -2.2' VS
7,815.0	7,811.8	-53.0	145.7	Tie into Gyro @ 7815' MD
7,857.0	7,853.8	-53.8	146.1	KOP - 7857.0' MD, 7853.8' TVD, 1.10° INC, 150.00° AZI, -55.0' VS
8,771.9	8,394.0	565.6	88.8	Cross into 330' Lease - 8771.9' MD, 8394.0' TVD, 88.24° INC, 345.72° AZI, 564
8,868.0	8,395.2	658.7	65.0	EOC - 8868.0' MD, 8395.2' TVD, 90.00° INC, 346.56° AZI, 658.2' VS
12,837.0	8,382.6	4,618.1	-35.3	BHL - 12837.0' MD, 8382.6' TVD, 92.70° INC, 359.10° AZI, 4618.1' N, -35.3' E,

Checked By: _____ Approved By: _____ Date: _____

Yates Petroleum
Project: Lea County, NM
Site: Bombay BSB Federal Com
Well: #1H
Wellbore: OH
Plan: Plan #3 (#1H/OH)

YATES PETROLEUM CORPORATION

Azimuths to Grid North
True North: -0.34°
Magnetic North: 7.14°

Magnetic Field
Strength: 48449.2snT
Dip Angle: 60.09°
Date: 9/10/2012
Model: IGRF2010

WELL DETAILS: #1H

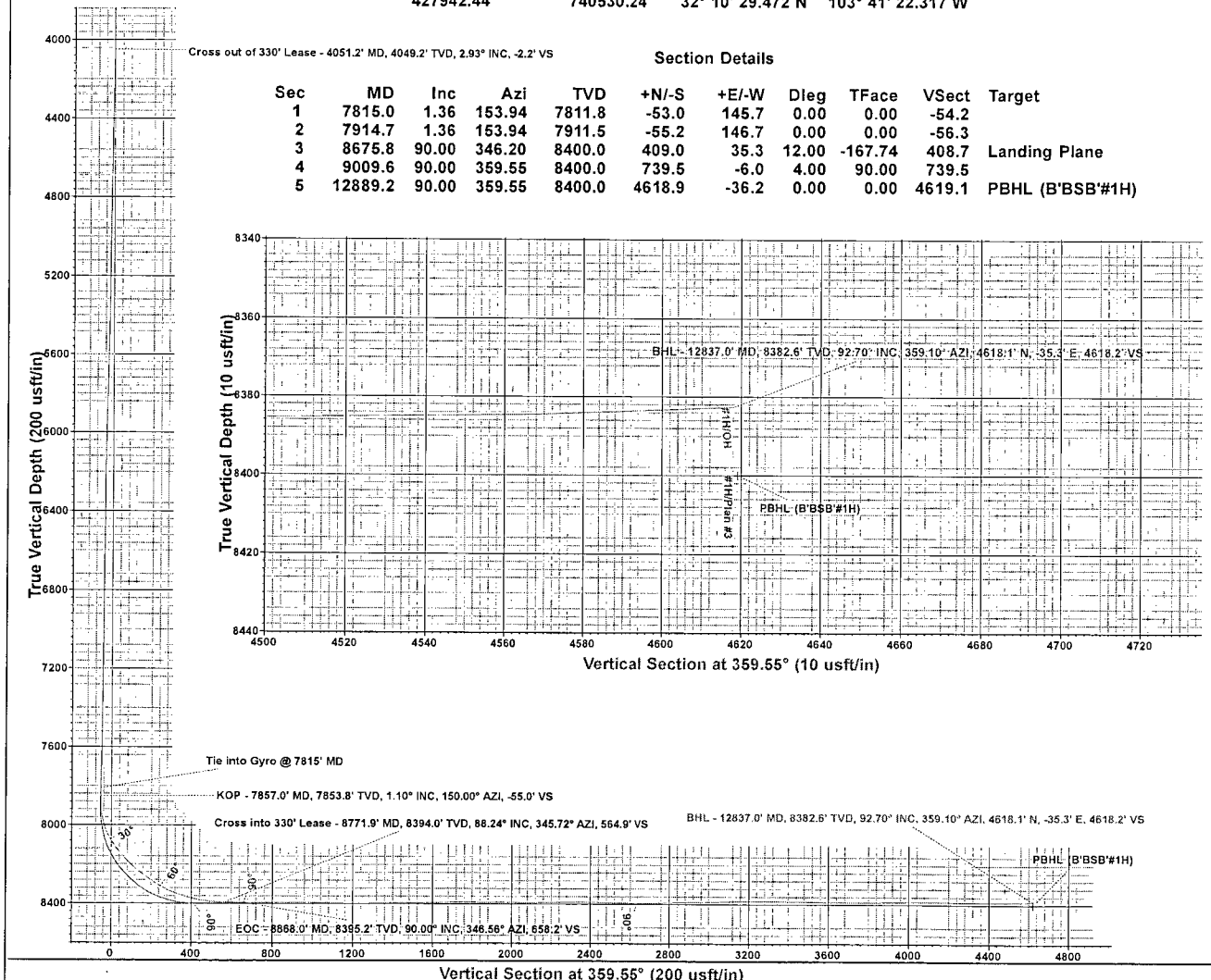
Ground Elevation:: 3496.0
RKB Elevation: RKB @ 3521.0usft (Union 223)
Rig Name: Union #223

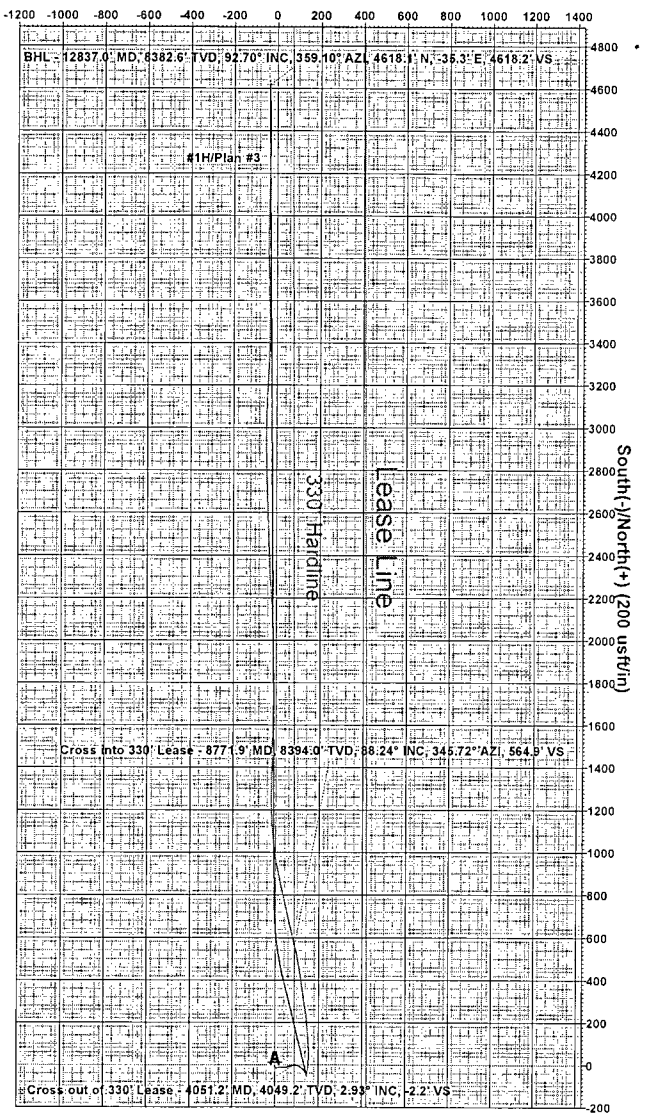
Surface Hole Location

Northing	Easting	Latittude	Longitude
427942.44	740530.24	32° 10' 29.472 N	103° 41' 22.317 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	7815.0	1.36	153.94	7811.8	-53.0	145.7	0.00	0.00	-54.2	
2	7914.7	1.36	153.94	7911.5	-55.2	146.7	0.00	0.00	-56.3	
3	8675.8	90.00	346.20	8400.0	409.0	35.3	12.00	-167.74	408.7	Landing Plane
4	9009.6	90.00	359.55	8400.0	739.5	-6.0	4.00	90.00	739.5	
5	12889.2	90.00	359.55	8400.0	4618.9	-36.2	0.00	0.00	4619.1	PBHL (B'BSB'#1H)





DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (B'BSB'#1H)	8400.0	4618.9	-36.2	432561.35	740494.04

PROJECT DETAILS: Lea County, NM
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

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

Plan: Plan #3 (#1H/OH)
Created By: Matt Higgins Date: 10:34, October 02 2012

MS Energy Services

Job Number: SVMO-120001
Company: Yates Petroleum Corporation
Lease/Well: Bombay BSB Federal Com 1H
Location: Lea County, NM
Rig Name: UDI #223
RKB: 25'
G.L. or M.S.L.: GL

State/Country: New Mexico / USA
Declination: 7.14°
Grid: East To Grid North
File name: F:\SURVEY\2012SU~1\YATES\MIDLAND\BOMBAY~1\1H.SVY
Date/Time: 24-Sep-12 / 09:23
Curve Name: Surface - 7815' M.D. (SRG)

HOBBS OCD

JAN 03 2013

RECEIVED

MS Survey

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 359.55
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from Surface MD to 7,815' MD is, to the best of our knowledge a true and accurate account of the well bore.

Daniel West 9/24/12
MS Energy Services Date

SUR: H-32-24s-32e, 2310/N & 430/E
BHL: I-29-24s-32e, 2308/S & 465/E
API # 30-025-40718

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	.64	191.21	200.00	-1.10	-.22	-1.09	1.12	191.21	.32
400.00	.57	182.99	399.98	-3.18	-.49	-3.18	3.22	188.68	.06
600.00	.51	201.12	599.98	-5.01	-.86	-5.00	5.08	189.73	.09
800.00	.65	205.66	799.97	-6.86	-1.67	-6.85	7.06	193.69	.07
1000.00	.46	162.15	999.96	-8.65	-1.92	-8.63	8.86	192.49	.22
1200.00	.60	154.14	1199.95	-10.35	-1.21	-10.34	10.43	186.68	.08
1400.00	.66	162.30	1399.94	-12.39	-.41	-12.39	12.40	181.88	.05
1800.00	.63	101.93	1799.92	-15.04	2.45	-15.06	15.24	170.77	.16
2000.00	1.06	81.45	1999.89	-15.00	5.35	-15.04	15.92	160.36	.26

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
2200.00	1.99	80.39	2199.82	-14.14	10.60	-14.22	17.68	143.13	.47
2400.00	2.37	86.09	2399.68	-13.28	18.15	-13.42	22.49	126.19	.22
2600.00	2.50	88.64	2599.50	-12.89	26.64	-13.10	29.60	115.83	.08
2800.00	2.86	90.49	2799.28	-12.83	35.99	-13.12	38.21	109.62	.19
3000.00	3.48	82.57	2998.97	-12.09	47.00	-12.46	48.53	104.43	.38
3200.00	2.29	77.97	3198.71	-10.47	56.93	-10.92	57.88	100.42	.61
3400.00	2.35	73.59	3398.55	-8.48	64.77	-8.99	65.32	97.46	.09
3600.00	2.47	71.32	3598.37	-5.94	72.78	-6.51	73.03	94.67	.08
3800.00	2.31	61.51	3798.20	-2.64	80.41	-3.27	80.45	91.88	.22
4000.00	2.71	95.67	3998.02	-1.18	88.66	-1.88	88.66	90.77	.76
4200.00	3.57	101.24	4197.72	-2.87	99.47	-3.65	99.51	91.65	.46
4400.00	2.53	121.52	4397.44	-6.39	109.34	-7.25	109.53	93.34	.74
4600.00	1.66	132.38	4597.30	-10.65	115.24	-11.55	115.73	95.28	.48
4800.00	1.11	134.80	4797.24	-13.97	118.76	-14.90	119.58	96.71	.28
5000.00	1.12	126.64	4997.20	-16.50	121.70	-17.45	122.81	97.72	.08
5200.00	1.09	128.49	5197.17	-18.85	124.76	-19.83	126.17	98.59	.02
5400.00	1.56	133.42	5397.11	-21.90	128.22	-22.91	130.08	99.69	.24
5600.00	1.06	126.42	5597.06	-24.87	131.69	-25.91	134.02	100.70	.26
5800.00	1.45	140.13	5797.01	-27.91	134.80	-28.97	137.66	101.70	.24
6000.00	1.40	140.04	5996.95	-31.73	137.99	-32.81	141.59	102.95	.03
6200.00	.58	155.83	6196.92	-34.52	139.98	-35.62	144.17	103.85	.43
6400.00	.94	154.74	6396.90	-36.93	141.09	-38.04	145.84	104.67	.18
6600.00	.50	166.10	6596.89	-39.26	142.00	-40.38	147.33	105.46	.23
6800.00	.72	148.30	6796.87	-41.18	142.87	-42.30	148.69	106.08	.14
7000.00	.49	155.59	6996.86	-43.03	143.88	-44.15	150.18	106.65	.12
7200.00	.57	153.23	7196.85	-44.69	144.69	-45.83	151.43	107.17	.04
7400.00	.82	141.61	7396.84	-46.70	146.02	-47.85	153.31	107.74	.14
7600.00	1.15	224.63	7596.82	-49.25	145.50	-50.39	153.61	108.70	.66
7800.00	1.43	145.25	7796.78	-52.73	145.51	-53.87	154.77	109.92	.83
Last Survey Depth Recorded									
7815.00	1.36	153.94	7811.78	-53.05	145.70	-54.19	155.05	110.01	1.48

Surface - 7815' M.D. (SRG) File: F:\SURVEY\2012SU~1\YATES\MIDLAND\BOMBAY~1\1H.SVY