

Results of Directional Survey

API number:	30-025-40990			
OGRID:		Operator:	YATES PETROLEUM CORPORATION	
		Property:	LUSK AHB FEDERAL	# 10H

surface	ULSTR:	D	35	T	19S	R	32E
				150	FNL	660	FWL

BH Loc	ULSTR:	M	35	T	19S	R	32E
14260	MD	9743.4	TVD	379	FSL	690	FWL
				4901	FNL		

Top Perf/OH	ULSTR:	D	35	T	19S	R	32E
10113	MD	9759.8	TVD	756	FNL	641	FWL

Bot Perf/OH	ULSTR:	M	35	T	19S	R	32E
14208	MD	9743.6	TVD	431	FSL	690	FWL
				4849	FNL		

	MD	N/S	E/W	VD
	10106	-598.95	-18.90	9759.42
TOP PERFS/OH	10113	-605.94	-18.92	9759.75
	10137	-629.91	-18.99	9760.89
	14183	-4674.02	30.36	9743.49
BOT PERFS/OH	14208	-4699.02	30.35	9743.55
	14210	-4701.02	30.35	9743.55

NEXT TO LAST	14210	-4701.02	30.35	9743.55
LAST READING	14260	-4751.02	30.43	9743.44
TD	14260	-4751.02	30.43	9743.44

Surface Location	150	FN	660	FW
Projected BHL	4901	FN	690	FW
Location of				
Top Perfs/OH	756	FN	641	FW
Bottom Perfs/OH	4849	FN	690	FW

SUMMARY of Subsurface Locations

Surface Location	D-35-19S-32E	150	FN	660	FW	Vert. Depth
Top Perfs/OH	D-35-19S-32E	756	FN	641	FW	9759.75
Bottom Perfs/OH	M-35-19S-32E	4849	FN	690	FW	9743.55
Projected TD	M-35-19S-32E	4901	FN	690	FW	9743.44

APR 14 2014



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (office)
936.442.2599 (fax)
www.msenergyservices.com

Surveyor Certification Form

Survey Company: MS ENERGY SERVICES
Surveyors Name: ARTURO CANTU
Survey Job Type: RATE GYRO
Customer: YATES PETROLEUM
Well: LUSK AHB FEDERAL 10H
API: 30-025-40990
Surveyed from: SURFACE TO A DEPTH OF 9052' MD
Survey Run Date: 11-20-13 to 11-21-13
Surface Location: LEA COUNTY, NM

HOBBS OCD

MAR 17 2014

RECEIVED

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

Arturo Cantu

Digitally signed by Arturo Cantu
DN: cn=Arturo Cantu, o=MS Energy Services, ou=MS
Survey, email=acantu@msenergyservices.com, c=US
Date: 2013.01.02 16:14:55 -06'00'

HOBBS OCD

MAR 17 2014

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Job Number: SVMO-131012

Company: Yates Petroleum Corporation

Lease/Well: Lusk AHB Federal 10H

Location: Lea County, NM

Rig Name: McVay #8

RKB: 18.5'

G.L. or M.S.L.: GL

State/Country: New Mexico/USA

Declination: 7.10°

Grid: East To Grid North

File name: S:\2013SU-1\YATESIMO\LUSKAH-1\10H.SVY

Date/Time: 21-Nov-13 / 11:34

Curve Name: Surface - 9052' M.D. (Rate Gyro)

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 179.67

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.15	189.97	100.00	-.13	-.02	.13	.13	189.97	.15
200.00	.31	282.28	200.00	-.20	-.31	.20	.37	237.10	.35
300.00	.44	276.93	300.00	-.10	-.96	.09	.96	264.23	.13
400.00	.23	234.65	400.00	-.17	-1.50	.16	1.51	263.68	.31
500.00	.35	295.20	499.99	-.15	-1.94	.14	1.95	265.51	.31
600.00	.49	284.42	599.99	.08	-2.63	-.10	2.63	271.83	.16
700.00	.46	258.50	699.99	.11	-3.44	-.13	3.44	271.84	.22
800.00	.39	301.30	799.99	.21	-4.12	-.23	4.13	272.88	.32
900.00	.53	273.67	899.98	.41	-4.87	-.44	4.89	274.85	.26

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.46	298.00	999.98	.63	-5.69	-.66	5.73	276.34	.22
1100.00	.36	265.37	1099.98	.80	-6.36	-.83	6.41	277.13	.25
1200.00	.53	129.27	1199.98	.48	-6.31	-.51	6.33	274.32	.83
1300.00	.36	138.30	1299.97	-.05	-5.75	.02	5.75	269.50	.18
1400.00	.13	344.00	1399.97	-.18	-5.57	.14	5.57	268.19	.48
1500.00	.26	295.85	1499.97	.03	-5.80	-.07	5.80	270.32	.20
1600.00	.35	130.38	1599.97	-.07	-5.78	.03	5.78	269.34	.61
1700.00	.35	16.74	1699.97	.03	-5.45	-.06	5.45	270.29	.59
1800.00	.49	319.40	1799.97	.64	-5.65	-.68	5.68	276.52	.42
1900.00	.37	295.96	1899.96	1.11	-6.21	-1.15	6.31	280.14	.21
2000.00	.38	209.86	1999.96	.96	-6.67	-1.00	6.74	278.23	.51
2100.00	.97	187.54	2099.96	-.16	-6.95	.12	6.95	268.66	.64
2200.00	.65	178.80	2199.95	-1.57	-7.04	1.53	7.22	257.45	.34
2300.00	.53	110.95	2299.94	-2.30	-6.60	2.26	6.99	250.78	.67
2400.00	.63	84.86	2399.94	-2.42	-5.62	2.38	6.12	246.73	.28
2500.00	.33	59.59	2499.93	-2.22	-4.83	2.19	5.31	245.28	.36
2600.00	.13	99.67	2599.93	-2.10	-4.47	2.07	4.93	244.86	.25
2700.00	.24	.46	2699.93	-1.90	-4.35	1.88	4.75	246.36	.29
2800.00	.16	7.95	2799.93	-1.56	-4.33	1.53	4.60	250.22	.08
2900.00	.30	209.12	2899.93	-1.65	-4.44	1.62	4.73	249.64	.45
3000.00	.38	218.71	2999.93	-2.13	-4.77	2.11	5.23	245.90	.10
3100.00	.55	199.17	3099.93	-2.85	-5.14	2.82	5.87	241.01	.23
3200.00	.98	201.28	3199.92	-4.10	-5.61	4.06	6.94	233.84	.43
3300.00	.61	165.35	3299.91	-5.41	-5.78	5.38	7.92	226.91	.60
3400.00	.61	166.80	3399.90	-6.44	-5.53	6.41	8.49	220.62	.02
3500.00	.91	164.72	3499.89	-7.73	-5.20	7.70	9.31	213.92	.30
3600.00	.89	154.19	3599.88	-9.19	-4.65	9.16	10.30	206.82	.17
3700.00	.99	172.07	3699.87	-10.75	-4.19	10.72	11.53	201.30	.31
3800.00	1.25	178.67	3799.85	-12.69	-4.05	12.67	13.32	197.68	.29

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	1.40	167.79	3899.82	-14.98	-3.76	14.96	15.44	194.10	.29
4000.00	1.37	167.71	3999.79	-17.34	-3.25	17.32	17.64	190.61	.03
4100.00	1.41	163.60	4099.76	-19.69	-2.65	19.67	19.86	187.66	.11
4200.00	1.35	164.31	4199.73	-22.00	-1.98	21.99	22.09	185.15	.06
4300.00	1.34	173.30	4299.71	-24.30	-1.53	24.29	24.35	183.60	.21
4400.00	1.32	174.74	4399.68	-26.61	-1.28	26.60	26.64	182.76	.04
4500.00	1.36	180.03	4499.65	-28.94	-1.18	28.93	28.96	182.33	.13
4600.00	1.37	181.93	4599.62	-31.32	-1.22	31.31	31.34	182.23	.05
4700.00	1.12	184.52	4699.60	-33.49	-1.34	33.48	33.52	182.29	.26
4800.00	.82	181.35	4799.59	-35.18	-1.43	35.17	35.21	182.33	.30
4900.00	.36	188.49	4899.58	-36.21	-1.49	36.20	36.24	182.36	.46
5000.00	.14	58.91	4999.58	-36.45	-1.44	36.44	36.48	182.26	.46
5100.00	.11	349.12	5099.58	-36.30	-1.35	36.29	36.32	182.13	.15
5200.00	.14	193.45	5199.58	-36.32	-1.40	36.31	36.35	182.20	.24
5300.00	.33	301.88	5299.58	-36.29	-1.67	36.28	36.33	182.63	.40
5400.00	.34	346.28	5399.58	-35.85	-1.98	35.83	35.90	183.17	.25
5500.00	.31	307.29	5499.58	-35.39	-2.27	35.38	35.47	183.67	.22
5600.00	.47	340.20	5599.57	-34.84	-2.62	34.83	34.94	184.31	.27
5700.00	.48	339.51	5699.57	-34.07	-2.91	34.05	34.19	184.88	.01
5800.00	.69	301.01	5799.57	-33.36	-3.57	33.34	33.55	186.11	.43
5900.00	.50	291.66	5899.56	-32.89	-4.49	32.87	33.20	187.78	.21
6000.00	.45	288.18	5999.56	-32.61	-5.27	32.58	33.03	189.18	.06
6100.00	.52	301.81	6099.55	-32.25	-6.03	32.21	32.81	190.59	.13
6200.00	.61	303.27	6199.55	-31.72	-6.86	31.68	32.45	192.21	.09
6300.00	.69	306.71	6299.54	-31.06	-7.79	31.02	32.03	194.08	.09
6400.00	.69	323.16	6399.53	-30.22	-8.63	30.17	31.43	195.94	.20
6500.00	.92	332.81	6499.52	-29.03	-9.36	28.97	30.50	197.88	.27
6600.00	.94	328.28	6599.51	-27.61	-10.16	27.56	29.42	200.20	.08
6700.00	1.07	313.17	6699.50	-26.28	-11.27	26.21	28.59	203.22	.29

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6800.00	.93	326.87	6799.48	-24.96	-12.40	24.89	27.87	206.41	.28
6900.00	1.09	323.63	6899.47	-23.51	-13.40	23.44	27.07	209.68	.17
7000.00	.96	323.80	6999.45	-22.07	-14.46	21.99	26.39	213.23	.13
7100.00	1.01	314.24	7099.43	-20.78	-15.59	20.69	25.98	216.88	.17
7200.00	.91	293.57	7199.42	-19.85	-16.95	19.75	26.10	220.49	.36
7300.00	.86	312.34	7299.41	-19.03	-18.23	18.92	26.35	223.78	.29
7400.00	.74	291.92	7399.40	-18.28	-19.38	18.17	26.64	226.68	.31
7500.00	.85	320.90	7499.39	-17.46	-20.45	17.34	26.89	229.51	.41
7600.00	.83	340.57	7599.38	-16.20	-21.16	16.08	26.65	232.56	.29
7700.00	.89	6.28	7699.37	-14.75	-21.32	14.63	25.92	235.32	.39
7800.00	1.22	41.68	7799.35	-13.18	-20.52	13.06	24.39	237.29	.71
7900.00	1.73	55.86	7899.32	-11.54	-18.57	11.43	21.86	238.14	.62
8000.00	1.65	48.96	7999.28	-9.75	-16.23	9.65	18.93	239.01	.22
8100.00	1.76	39.67	8099.23	-7.62	-14.16	7.54	16.08	241.72	.30
8200.00	1.49	30.00	8199.19	-5.31	-12.53	5.24	13.61	247.03	.38
8300.00	.89	6.18	8299.17	-3.41	-11.80	3.35	12.28	253.87	.77
8400.00	.88	354.71	8399.16	-1.88	-11.79	1.81	11.94	260.95	.18
8500.00	1.40	2.04	8499.14	.11	-11.81	-.18	11.82	270.53	.54
8600.00	1.04	16.40	8599.12	2.20	-11.52	-2.27	11.72	280.82	.47
8700.00	1.21	4.16	8699.10	4.12	-11.18	-4.19	11.92	290.24	.29
8800.00	1.06	8.54	8799.08	6.09	-10.97	-6.15	12.55	299.05	.17
8900.00	.90	338.14	8899.06	7.73	-11.12	-7.80	13.55	304.81	.54
9000.00	.56	319.46	8999.06	8.84	-11.73	-8.90	14.69	306.98	.41
Last Survey Depth Recorded									
9052.00	.81	287.74	9051.05	9.14	-12.25	-9.21	15.28	306.73	.86



Yates Petroleum Corp.

Lea County, NM (NAD83 NME)
Lusk "AHB" Federal
#10H

OH

Design: OH

Standard Survey Report

04 December, 2013

HOBBS OCD

MAR 17 2014

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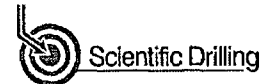


Scientific Drilling

www.scientificdrilling.com



Scientific Drilling Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.50usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.50usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Project	Lea County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lusk "AHB" Federal		
Site Position:		Northing:	591,135.861 usft
From:	Map	Easting:	722,995.963 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 37' 25.307 N
		Longitude:	103° 44' 35.848 W
		Grid Convergence:	0.32 °

Well	#10H		
Well Position	+N-S	0.00 usft	Northing: 591,135.861 usft
	+E-W	0.00 usft	Easting: 722,995.963 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 37' 25.307 N
		Longitude:	103° 44' 35.848 W
		Ground Level:	3,574.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	BGGM2012	10/15/2013	7.52
			Dip Angle
			60.43
			Field Strength
			48,565

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(bearing)
			179.67

Survey Program	Date 12/4/2013		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	9,052.00	MS Gyro #1 (OH)	SRG-MS
9,178.00	14,260.00	SDI MWD#1 (OH)	SDI MWD
			Description
			Surface readout gyro multishot
			SDI MWD - Standard ver 1.0.1

Survey									
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(bearing)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(*/100usft)	(*/100usft)	(*/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.15	189.97	100.00	-0.13	-0.02	0.13	0.15	0.15	0.00
200.00	0.31	282.28	200.00	-0.20	-0.31	0.20	0.35	0.16	92.31
300.00	0.44	278.93	300.00	-0.10	-0.98	0.09	0.13	0.13	-5.35
400.00	0.23	234.65	400.00	-0.17	-1.50	0.16	0.31	-0.21	-42.28
500.00	0.35	295.20	499.99	-0.15	-1.94	0.14	0.31	0.12	60.55
600.00	0.49	284.42	599.99	0.08	-2.63	-0.10	0.18	0.14	-10.78
700.00	0.48	258.50	699.99	0.11	-3.44	-0.13	0.22	-0.03	-25.92
800.00	0.39	301.30	799.99	0.21	-4.12	-0.23	0.32	-0.07	42.80
900.00	0.53	273.67	899.98	0.41	-4.87	-0.44	0.26	0.14	-27.63



Scientific Drilling Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.50usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.50usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.46	298.00	999.98	0.63	-5.69	-0.67	0.22	-0.07	24.33
1,100.00	0.36	265.37	1,099.98	0.80	-6.36	-0.83	0.25	-0.10	-32.63
1,200.00	0.53	129.27	1,199.98	0.48	-6.31	-0.51	0.83	0.17	-136.10
1,300.00	0.36	138.30	1,299.97	-0.05	-5.75	0.02	0.18	-0.17	9.03
1,400.00	0.13	344.00	1,399.97	-0.18	-5.57	0.14	0.48	-0.23	-154.30
1,500.00	0.26	295.85	1,499.97	0.03	-5.80	-0.07	0.20	0.13	-48.15
1,600.00	0.35	130.38	1,599.97	-0.07	-5.78	0.03	0.61	0.09	-165.47
1,700.00	0.35	16.74	1,699.97	0.03	-5.45	-0.06	0.59	0.00	-113.64
1,800.00	0.49	319.40	1,799.97	0.84	-5.65	-0.68	0.42	0.14	-57.34
1,900.00	0.37	295.96	1,899.96	1.11	-6.21	-1.15	0.21	-0.12	-23.44
2,000.00	0.38	209.86	1,999.96	0.96	-6.67	-1.00	0.51	0.01	-86.10
2,100.00	0.97	187.54	2,099.96	-0.16	-6.95	0.12	0.64	0.59	-22.32
2,200.00	0.65	178.80	2,199.95	-1.57	-7.04	1.53	0.34	-0.32	-8.74
2,300.00	0.53	110.95	2,299.94	-2.30	-6.60	2.26	0.67	-0.12	-67.85
2,400.00	0.63	84.86	2,399.94	-2.42	-5.62	2.38	0.28	0.10	-26.09
2,500.00	0.33	59.59	2,499.93	-2.22	-4.83	2.19	0.36	-0.30	-25.27
2,600.00	0.13	99.67	2,599.93	-2.10	-4.47	2.07	0.25	-0.20	40.08
2,700.00	0.24	0.46	2,699.93	-1.90	-4.35	1.88	0.29	0.11	-99.21
2,800.00	0.16	7.95	2,799.93	-1.56	-4.33	1.53	0.08	-0.08	7.49
2,900.00	0.30	209.12	2,899.93	-1.65	-4.44	1.62	0.45	0.14	-158.83
3,000.00	0.38	218.71	2,999.93	-2.13	-4.77	2.11	0.10	0.08	9.59
3,100.00	0.55	199.17	3,099.93	-2.85	-5.14	2.82	0.23	0.17	-19.54
3,200.00	0.98	201.28	3,199.92	-4.10	-5.61	4.06	0.43	0.43	2.11
3,300.00	0.61	165.35	3,299.91	-5.41	-5.78	5.38	0.60	-0.37	-35.93
3,400.00	0.61	166.80	3,399.90	-6.44	-5.53	6.41	0.02	0.00	1.45
3,500.00	0.91	164.72	3,499.89	-7.73	-5.20	7.70	0.30	0.30	-2.08
3,600.00	0.89	154.19	3,599.88	-9.19	-4.65	9.16	0.17	-0.02	-10.53
3,700.00	0.99	172.07	3,699.87	-10.75	-4.19	10.72	0.31	0.10	17.88
3,800.00	1.25	178.67	3,799.85	-12.69	-4.05	12.67	0.29	0.26	6.60
3,900.00	1.40	167.79	3,899.82	-14.98	-3.76	14.95	0.29	0.15	-10.88
4,000.00	1.37	167.71	3,999.79	-17.34	-3.25	17.32	0.03	-0.03	-0.08
4,100.00	1.41	163.60	4,099.76	-19.69	-2.65	19.67	0.11	0.04	-4.11
4,200.00	1.35	164.31	4,199.73	-22.00	-1.98	21.99	0.06	-0.06	0.71
4,300.00	1.34	173.30	4,299.71	-24.30	-1.53	24.29	0.21	-0.01	8.99
4,400.00	1.32	174.74	4,399.68	-26.61	-1.28	26.60	0.04	-0.02	1.44
4,500.00	1.36	180.03	4,499.65	-28.94	-1.18	28.93	0.13	0.04	5.29
4,600.00	1.37	181.93	4,599.62	-31.32	-1.22	31.31	0.05	0.01	1.90
4,700.00	1.12	184.52	4,699.60	-33.49	-1.34	33.48	0.26	-0.25	2.59
4,800.00	0.82	181.35	4,799.59	-35.18	-1.43	35.17	0.30	-0.30	-3.17
4,900.00	0.36	188.49	4,899.58	-36.21	-1.49	36.20	0.46	-0.46	7.14
5,000.00	0.14	58.91	4,999.58	-36.45	-1.44	36.44	0.46	-0.22	-129.58
5,100.00	0.11	349.12	5,099.58	-36.30	-1.35	36.29	0.15	-0.03	-69.79
5,200.00	0.14	193.45	5,199.58	-36.32	-1.40	36.31	0.24	0.03	-155.67



Scientific Drilling Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.50usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.50usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	0.33	301.88	5,299.58	-36.29	-1.67	36.28	0.40	0.19	108.43
5,400.00	0.34	346.28	5,399.58	-35.85	-1.98	35.83	0.25	0.01	44.40
5,500.00	0.31	307.29	5,499.58	-35.39	-2.27	35.38	0.22	-0.03	-38.99
5,600.00	0.47	340.20	5,599.57	-34.84	-2.62	34.83	0.27	0.16	32.91
5,700.00	0.48	339.51	5,699.57	-34.07	-2.91	34.05	0.01	0.01	-0.69
5,800.00	0.69	301.01	5,799.57	-33.36	-3.57	33.34	0.43	0.21	-38.50
5,900.00	0.50	291.66	5,899.56	-32.89	-4.49	32.87	0.21	-0.19	-9.35
6,000.00	0.45	288.18	5,999.56	-32.61	-5.27	32.58	0.06	-0.05	-3.48
6,100.00	0.52	301.81	6,099.55	-32.25	-6.03	32.21	0.13	0.07	13.63
6,200.00	0.61	303.27	6,199.55	-31.72	-6.86	31.68	0.09	0.09	1.46
6,300.00	0.69	306.71	6,299.54	-31.06	-7.79	31.02	0.09	0.08	3.44
6,400.00	0.69	323.16	6,399.53	-30.22	-8.63	30.17	0.20	0.00	16.45
6,500.00	0.92	332.81	6,499.52	-29.03	-9.36	28.97	0.27	0.23	9.65
6,600.00	0.94	328.28	6,599.51	-27.61	-10.16	27.55	0.08	0.02	-4.53
6,700.00	1.07	313.17	6,699.50	-26.28	-11.27	26.21	0.29	0.13	-15.11
6,800.00	0.93	326.87	6,799.48	-24.96	-12.40	24.89	0.28	-0.14	13.70
6,900.00	1.09	323.63	6,899.47	-23.51	-13.40	23.44	0.17	0.16	-3.24
7,000.00	0.98	323.80	6,999.45	-22.07	-14.46	21.99	0.13	-0.13	0.17
7,100.00	1.01	314.24	7,099.43	-20.78	-15.59	20.69	0.17	0.05	-9.56
7,200.00	0.91	293.57	7,199.42	-19.85	-16.95	19.75	0.36	-0.10	-20.67
7,300.00	0.86	312.34	7,299.41	-19.03	-18.23	18.92	0.29	-0.05	18.77
7,400.00	0.74	291.92	7,399.40	-18.28	-19.38	18.17	0.31	-0.12	-20.42
7,500.00	0.85	320.90	7,499.39	-17.46	-20.45	17.34	0.41	0.11	28.98
7,600.00	0.83	340.57	7,599.38	-16.20	-21.16	16.08	0.29	-0.02	19.67
7,700.00	0.89	6.28	7,699.37	-14.75	-21.32	14.62	0.39	0.06	25.71
7,800.00	1.22	41.68	7,799.35	-13.18	-20.52	13.06	0.71	0.33	35.40
7,900.00	1.73	55.86	7,899.32	-11.54	-18.57	11.43	0.62	0.51	14.18
8,000.00	1.65	48.96	7,999.28	-9.75	-16.23	9.65	0.22	-0.08	-6.90
8,100.00	1.76	39.67	8,099.23	-7.62	-14.16	7.54	0.30	0.11	-9.29
8,200.00	1.49	30.00	8,199.19	-5.31	-12.53	5.24	0.38	-0.27	-9.67
8,300.00	0.89	6.18	8,299.17	-3.41	-11.80	3.34	0.77	-0.60	-23.82
8,400.00	0.88	354.71	8,399.16	-1.88	-11.79	1.81	0.18	-0.01	-11.47
8,500.00	1.40	2.04	8,499.14	0.11	-11.81	-0.18	0.54	0.52	7.33
8,600.00	1.04	16.40	8,599.12	2.20	-11.52	-2.27	0.47	-0.36	14.36
8,700.00	1.21	4.16	8,699.10	4.12	-11.18	-4.19	0.29	0.17	-12.24
8,800.00	1.06	8.54	8,799.08	6.09	-10.97	-6.16	0.17	-0.15	4.38
8,900.00	0.90	338.14	8,899.06	7.73	-11.12	-7.80	0.54	-0.16	-30.40
9,000.00	0.56	319.46	8,999.06	8.84	-11.73	-8.90	0.41	-0.34	-18.68
9,052.00	0.81	287.74	9,051.05	9.14	-12.25	-9.21	0.86	0.48	-61.00
9,178.00	1.93	225.69	9,177.02	7.93	-14.62	-8.01	1.36	0.89	-49.25
9,209.00	3.52	204.33	9,207.98	6.70	-15.38	-6.79	6.00	5.13	-68.90
9,240.00	6.60	196.95	9,238.86	4.13	-16.29	-4.22	10.13	9.94	-23.81
9,271.00	10.64	194.93	9,269.50	-0.35	-17.55	0.24	13.07	13.03	-6.52



Scientific Drilling Survey Report



Company: Yates Petroleum Corp.
Project: Lea County, NM (NAD83 NME)
Site: Lusk "AHB" Federal
Well: #10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #10H
TVD Reference: KB = 18.5 @ 3592.50usft
MD Reference: KB = 18.5 @ 3592.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,303.00	13.89	192.46	9,300.77	-8.95	-19.14	6.84	10.29	10.16	-7.72
9,334.00	17.50	189.92	9,330.81	-15.18	-20.75	15.06	11.85	11.65	-8.19
9,365.00	22.02	186.49	9,359.78	-25.55	-22.21	25.42	15.05	14.58	-11.06
9,397.00	26.17	183.23	9,388.98	-38.56	-23.28	38.43	13.61	12.97	-10.19
9,428.00	29.37	180.95	9,416.41	-52.99	-23.79	52.85	10.87	10.32	-7.35
9,460.00	31.39	179.37	9,444.02	-69.17	-23.83	69.03	6.79	6.31	-4.94
9,491.00	33.24	178.93	9,470.21	-85.74	-23.59	85.60	6.02	5.97	-1.42
9,522.00	35.70	179.10	9,495.77	-103.28	-23.29	103.15	7.94	7.94	0.55
9,554.00	38.87	179.02	9,521.22	-122.66	-22.97	122.53	9.91	9.91	-0.25
9,585.00	41.77	179.10	9,544.86	-142.72	-22.84	142.58	9.36	9.35	0.26
9,617.00	43.62	179.37	9,568.38	-164.41	-22.35	164.28	5.81	5.78	0.84
9,648.00	46.17	179.37	9,590.33	-186.29	-22.11	186.16	8.23	8.23	0.00
9,680.00	48.28	179.28	9,612.07	-209.78	-21.83	209.65	6.60	6.59	-0.28
9,711.00	49.33	179.37	9,632.48	-233.10	-21.56	232.97	3.39	3.39	0.29
9,742.00	52.50	179.28	9,652.02	-257.16	-21.27	257.03	10.23	10.23	-0.29
9,774.00	57.24	178.75	9,670.43	-283.32	-20.82	283.19	14.87	14.81	-1.66
9,805.00	60.85	178.67	9,686.38	-309.89	-20.22	309.77	11.65	11.65	-0.26
9,836.00	63.66	179.02	9,700.81	-337.32	-19.67	337.20	9.12	9.06	1.13
9,867.00	67.18	179.28	9,713.70	-365.50	-19.25	365.39	11.38	11.35	0.84
9,899.00	71.40	179.46	9,725.01	-395.43	-18.92	395.31	13.20	13.19	0.56
9,918.00	73.16	179.72	9,730.80	-413.53	-18.79	413.41	9.35	9.26	1.37
9,949.00	77.21	180.07	9,738.72	-443.49	-18.74	443.37	13.11	13.06	1.13
9,981.00	79.58	180.16	9,745.16	-474.83	-18.80	474.71	7.41	7.41	0.28
10,012.00	82.04	180.07	9,750.11	-505.43	-18.86	505.31	7.94	7.94	-0.29
10,043.00	83.98	179.98	9,753.88	-536.20	-18.88	536.08	6.26	6.26	-0.29
10,075.00	84.94	179.98	9,756.97	-568.05	-18.87	567.93	3.00	3.00	0.00
10,106.00	86.00	180.16	9,759.42	-598.95	-18.90	598.83	3.47	3.42	0.58
10,137.00	88.55	180.16	9,760.89	-629.91	-18.99	629.79	8.23	8.23	0.00
10,169.00	90.92	179.98	9,761.04	-661.91	-19.03	661.79	7.43	7.41	-0.56
10,200.00	91.71	179.98	9,760.33	-692.80	-19.02	692.78	2.55	2.55	0.00
10,231.00	92.15	179.98	9,759.28	-723.89	-19.01	723.76	1.42	1.42	0.00
10,326.00	92.33	180.25	9,755.57	-818.81	-19.20	818.69	0.34	0.19	0.28
10,419.00	91.19	180.16	9,752.72	-911.77	-19.53	911.64	1.23	-1.23	-0.10
10,513.00	89.25	180.25	9,752.35	-1,005.76	-19.87	1,005.63	2.07	-2.06	0.10
10,607.00	87.76	180.07	9,754.81	-1,099.73	-20.13	1,099.59	1.60	-1.59	-0.19
10,701.00	90.48	180.69	9,756.25	-1,193.70	-20.75	1,193.56	2.97	2.89	0.66
10,796.00	90.75	179.90	9,755.23	-1,288.70	-21.24	1,288.55	0.88	0.28	-0.83
10,890.00	91.36	180.25	9,753.50	-1,382.68	-21.37	1,382.53	0.75	0.65	0.37
10,984.00	90.66	179.19	9,751.84	-1,476.66	-20.91	1,476.51	1.35	-0.74	-1.13
11,078.00	91.28	179.81	9,750.25	-1,570.64	-20.09	1,570.50	0.93	0.66	0.66
11,172.00	89.43	178.14	9,749.67	-1,664.62	-18.40	1,664.48	2.65	-1.97	-1.78
11,266.00	90.04	177.96	9,750.10	-1,758.58	-15.21	1,758.44	0.68	0.65	-0.19
11,360.00	91.10	178.40	9,749.17	-1,852.51	-12.22	1,852.41	1.22	1.13	0.47
11,454.00	87.32	178.58	9,750.46	-1,946.45	-9.74	1,946.36	4.03	-4.02	0.19



Scientific Drilling Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.50usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.50usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,548.00	87.38	178.98	9,754.81	-2,040.33	-7.75	2,040.25	0.43	0.06	0.43
11,642.00	87.85	179.81	9,758.72	-2,134.24	-6.75	2,134.17	1.01	0.50	0.88
11,736.00	88.72	180.34	9,761.54	-2,228.20	-6.88	2,228.12	1.08	0.93	0.56
11,830.00	89.69	181.39	9,762.84	-2,322.18	-8.30	2,322.09	1.52	1.03	1.12
11,924.00	90.57	180.07	9,762.63	-2,416.17	-9.49	2,416.07	1.69	0.94	-1.40
12,018.00	91.34	178.89	9,761.06	-2,510.15	-8.64	2,510.05	1.50	0.82	-1.26
12,112.00	91.10	178.49	9,759.06	-2,604.10	-6.49	2,604.02	0.50	-0.26	-0.43
12,206.00	88.55	177.72	9,759.35	-2,698.04	-3.38	2,697.97	2.83	-2.71	-0.82
12,300.00	89.66	177.39	9,760.81	-2,791.94	0.63	2,791.90	1.23	1.18	-0.35
12,394.00	91.45	176.82	9,759.90	-2,885.81	5.37	2,885.79	2.00	1.90	-0.61
12,488.00	90.03	177.22	9,758.69	-2,979.67	10.26	2,979.68	1.57	-1.51	0.43
12,583.00	90.31	176.73	9,758.41	-3,074.54	15.27	3,074.58	0.59	0.29	-0.52
12,677.00	91.71	177.08	9,756.75	-3,168.39	20.35	3,168.45	1.54	1.49	0.37
12,771.00	91.80	179.02	9,753.87	-3,262.28	23.54	3,262.37	2.07	0.10	2.06
12,865.00	91.89	179.37	9,750.84	-3,356.23	24.86	3,356.31	0.38	0.10	0.37
12,959.00	90.94	179.02	9,748.52	-3,450.19	26.18	3,450.28	1.08	-1.01	-0.37
13,053.00	89.25	178.49	9,748.37	-3,544.16	28.23	3,544.27	1.88	-1.80	-0.56
13,148.00	89.52	179.63	9,749.39	-3,639.14	29.78	3,639.25	1.23	0.28	1.20
13,242.00	90.13	180.60	9,749.67	-3,733.14	29.60	3,733.25	1.22	0.65	1.03
13,336.00	91.10	180.60	9,748.67	-3,827.13	28.61	3,827.23	1.03	1.03	0.00
13,430.00	91.01	179.81	9,746.94	-3,921.11	28.27	3,921.21	0.85	-0.10	-0.84
13,524.00	91.71	179.37	9,744.70	-4,015.08	28.95	4,015.18	0.88	0.74	-0.47
13,618.00	89.96	179.46	9,743.33	-4,109.06	29.91	4,109.17	1.86	-1.86	0.10
13,712.00	91.36	179.37	9,742.25	-4,203.05	30.87	4,203.16	1.49	1.49	-0.10
13,806.00	89.25	180.07	9,741.75	-4,297.04	31.33	4,297.15	2.36	-2.24	0.74
13,901.00	89.87	180.51	9,742.48	-4,392.04	30.85	4,392.14	0.80	0.65	0.46
13,995.00	90.66	179.98	9,742.05	-4,486.03	30.44	4,486.13	1.01	0.84	-0.56
14,089.00	88.99	179.98	9,742.33	-4,580.03	30.48	4,580.13	1.78	-1.78	0.00
14,183.00	89.60	180.16	9,743.49	-4,674.02	30.36	4,674.12	0.68	0.65	0.19
14,210.00	90.13	179.90	9,743.55	-4,701.02	30.35	4,701.12	2.19	1.96	-0.96
Last MWD Survey									
14,260.00	90.13	179.90	9,743.44	-4,751.02	30.43	4,751.12	0.00	0.00	0.00
Projection to Bit - 356.4' FSL, 663.8'FWL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,210.00	9,743.55	-4,701.02	30.35	Last MWD Survey
14,260.00	9,743.44	-4,751.02	30.43	Projection to Bit
14,260.00	9,743.44	-4,751.02	30.43	356.4' FSL, 663.8'FWL



Scientific Drilling

Survey Report



Company: Yates Petroleum Corp.

Project: Lea County, NM (NAD83 NME)

Site: Lusk "AHB" Federal

Well: #10H

Wellbore: OH

Design: OH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well #10H

KB = 18.5 @ 3592.50usft

KB = 18.5 @ 3592.50usft

Grid

Minimum Curvature

Midland District

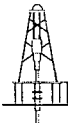
Checked By: _____ Approved By: _____ Date: _____



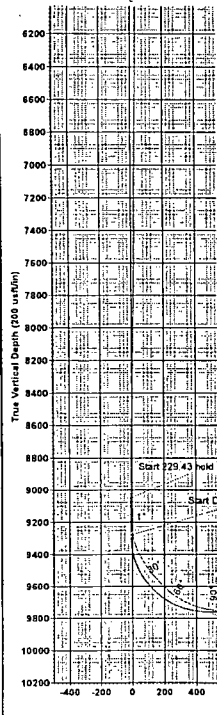
Azimuth to Grid North
True North: -0.32°
Magnetic North: 7.20°
Magnetic Field
Strength: 48564 Gauss
Dip Angle: 60.43°
Date: 10/15/2013
Model: BGM2012

To convert Magnetic North to Grid, Add 7.20°
To convert True North to Grid, Subtract 0.32°

Lusk "AHB" Federal #10H
Lea County, NM (NAD83 NME)
Northing: (Y) 591135.861
Easting: (X) 722995.963
Plan #4



KB = 18.5 @ 3592.50usft
Ground Level: 3574.00



LEGEND

- #10H, OH, OH VD
- Plan #4

WELL DETAILS:

Ground Level: 3574.00
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 591135.861 722995.963 32° 37' 25.307 N 03° 44' 35.848 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSeal	Target
9052.00	0.81	287.74	9051.05	9.14	-12.25	0.00	0.00	-9.21	
9281.43	0.81	287.74	9280.46	10.13	-15.34	0.00	0.00	-10.22	
10034.66	90.13	179.41	9760.00	-468.48	-16.82	12.00	-108.33	468.37	
14343.48	90.13	179.41	9750.00	-4777.06	27.91	0.00	0.00	4777.14	PBHL(#10H)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL(#10H)	9750.00	-4777.06	27.91	586358.806	723023.875

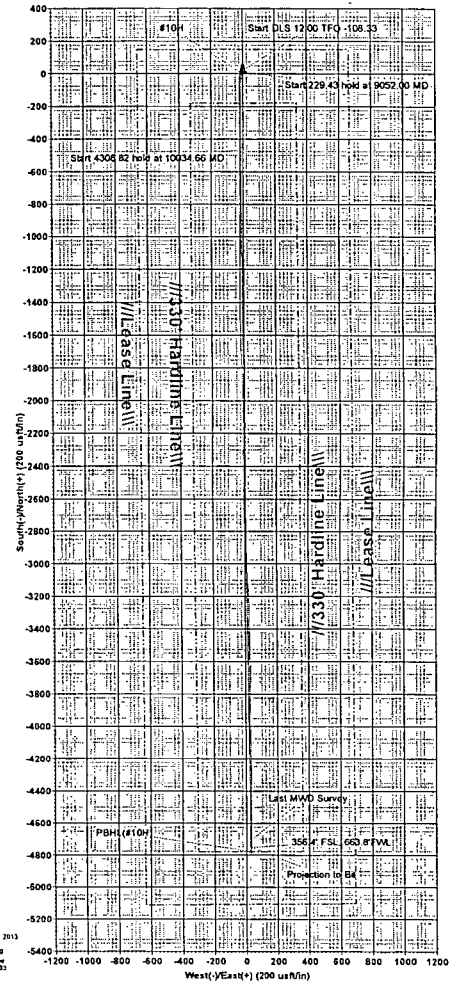
PROJECT DETAILS: Lea County, NM (NAD83 NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Eipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Map System: US State Plane 1983
Datum: North American Datum 1983
Eipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well #10H, Grid North
Latitude: 32° 37' 25.307 N
Longitude: 103° 44' 35.848 W
Grid East: 722995.963
Grid North: 591135.861
Scale Factor: 1.000

Geomagnetic Model: BGM2012
Sample Date: 15-Oct-13
Magnetic Declination: 7.52°
Dip Angle from Horizontal: 60.43°
Magnetic Field Strength: 48565

To convert Magnetic North to Grid, Add 7.20°
To convert Magnetic North to True, Add 7.52° East
To convert True North to Grid, Subtract 0.32°

CASING DETAILS			
TVD	MD	Name	Size
116.50	116.50	Conductor	30
1100.00	1100.02	Surface	20
2850.00	2850.07	Intermediate 1	13-3/8
4800.00	4800.41	Intermediate 2	9-5/8



Scale 0/10
10 01, December 04 2013
Scientific Drilling
3014 Trade Drive
Midland, TX 79705

Yates Petroleum Corp.

Lea County, NM (NAD83 NME)

Lusk "AHB" Federal

#10H

OH - Job #321113-MPH-1194

HOBBS OCD
MAR 17 2014
RECEIVED

Survey: SDI MWD#1

SDI Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 31st of December, 2013.

[Signature]

Notary Signature
County of Midland
State of Texas



SDI

SDI Survey Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H:
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.5usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.5usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH - Job #321113-MPH-1194	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-Regulatory

Project:	Lea County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Lusk "AHB" Federal		
Site Position:	From: Map	Northing:	591,135.86 usft
		Easting:	722,995.96 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 37' 25.307 N
		Longitude:	103° 44' 35.848 W
		Grid Convergence:	0.32 °

Well:	#10H		
Well Position:	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty:	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 37' 25.307 N
		Longitude:	103° 44' 35.848 W
		Ground Level:	3,574.0 usft

Wellbore:	OH - Job #321113-MPH-1194		
Magnetics:	Model Name	Sample Date	Declination
	BGGM2012	10/15/2013	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)

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
			(°)
			179.67

Survey Program	Date 1/15/2014		
From:	To:	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	9,052.0	MS Gyro #1 (OH - Job #321113-MPH-1194	SRG-MS
9,178.0	14,260.0	SDI MWD#1 (OH - Job #321113-MPH-119	SDI MWD
			Description:
			Surface readout gyro multishot
			SDI MWD - Standard ver 1.0.1

Survey	MD	Inc	Azi (azimuth)	TVD	N/S	E/W	Closure Azimuth	Closure Distance
	(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°)	(usft)
	9,052.0	0.81	287.74	9,051.1	9.1	-12.2	306.73	15.3
	9,178.0	1.93	225.69	9,177.0	7.9	-14.6	298.48	16.6
	9,209.0	3.52	204.33	9,208.0	6.7	-15.4	293.53	16.8
	9,240.0	6.60	196.95	9,238.9	4.1	-16.3	284.21	16.8
	9,271.0	10.64	194.93	9,269.5	-0.3	-17.6	268.87	17.6
	9,303.0	13.89	192.46	9,300.8	-7.0	-19.1	250.04	20.4
	9,334.0	17.50	189.92	9,330.6	-15.2	-20.7	233.81	25.7
	9,365.0	22.02	186.49	9,359.8	-25.6	-22.2	221.00	33.9
	9,397.0	26.17	183.23	9,389.0	-38.6	-23.3	211.12	45.0
	9,428.0	29.37	180.95	9,416.4	-53.0	-23.8	204.18	58.1
	9,460.0	31.39	179.37	9,444.0	-69.2	-23.8	199.01	73.2

SDI

SDI Survey Report

Company:	Yates/Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.5usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.5usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH - Job #321113-MPH-1194	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
9,491.0	33.24	178.93	9,470.2	-85.7	-23.6	195.38	88.9	
9,522.0	35.70	179.10	9,495.8	-103.3	-23.3	192.70	105.9	
9,554.0	38.87	179.02	9,521.2	-122.7	-23.0	190.60	124.8	
9,585.0	41.77	179.10	9,544.9	-142.7	-22.6	189.01	144.5	
9,617.0	43.62	179.37	9,568.4	-164.4	-22.3	187.74	165.9	
9,648.0	46.17	179.37	9,590.3	-186.3	-22.1	186.77	187.6	
9,680.0	48.28	179.28	9,612.1	-209.8	-21.8	185.94	210.9	
9,711.0	49.33	179.37	9,632.5	-233.1	-21.6	185.28	234.1	
9,742.0	52.50	179.28	9,652.0	-257.2	-21.3	184.73	258.0	
9,774.0	57.24	178.75	9,670.4	-283.3	-20.8	184.20	284.1	
9,805.0	60.85	178.67	9,686.4	-309.9	-20.2	183.73	310.6	
9,836.0	63.66	179.02	9,700.8	-337.3	-19.7	183.34	337.9	
9,867.0	67.18	179.28	9,713.7	-365.5	-19.3	183.02	366.0	
9,899.0	71.40	179.46	9,725.0	-395.4	-18.9	182.74	395.9	
9,918.0	73.16	179.72	9,730.8	-413.5	-18.8	182.60	414.0	
9,949.0	77.21	180.07	9,738.7	-443.5	-18.7	182.42	443.9	
9,981.0	79.58	180.16	9,745.2	-474.8	-18.8	182.27	475.2	
10,012.0	82.04	180.07	9,750.1	-505.4	-18.9	182.14	505.8	
10,043.0	83.98	179.98	9,753.9	-536.2	-18.9	182.02	536.5	
10,075.0	84.94	179.98	9,757.0	-568.0	-18.9	181.90	568.4	
10,106.0	86.00	180.16	9,759.4	-599.0	-18.9	181.81	599.3	
10,137.0	88.55	180.16	9,760.9	-629.9	-19.0	181.73	630.2	
10,169.0	90.92	179.98	9,761.0	-661.9	-19.0	181.65	662.2	
10,200.0	91.71	179.98	9,760.3	-692.9	-19.0	181.57	693.2	
10,231.0	92.15	179.98	9,759.3	-723.9	-19.0	181.50	724.1	
10,326.0	92.33	180.25	9,755.6	-818.8	-19.2	181.34	819.0	
10,419.0	91.19	180.16	9,752.7	-911.8	-19.5	181.23	912.0	
10,513.0	89.25	180.25	9,752.4	-1,005.8	-19.9	181.13	1,006.0	
10,607.0	87.76	180.07	9,754.8	-1,099.7	-20.1	181.05	1,099.9	
10,701.0	90.48	180.69	9,756.2	-1,193.7	-20.8	181.00	1,193.9	
10,796.0	90.75	179.90	9,755.2	-1,288.7	-21.2	180.94	1,288.9	
10,890.0	91.36	180.25	9,753.5	-1,382.7	-21.4	180.89	1,382.8	
10,984.0	90.66	179.19	9,751.8	-1,476.7	-20.9	180.81	1,476.8	
11,078.0	91.28	179.81	9,750.3	-1,570.6	-20.1	180.73	1,570.8	
11,172.0	89.43	178.14	9,749.7	-1,664.6	-18.4	180.63	1,664.7	
11,266.0	90.04	177.96	9,750.1	-1,758.6	-15.2	180.50	1,758.6	
11,360.0	91.10	178.40	9,749.2	-1,852.5	-12.2	180.38	1,852.6	
11,454.0	87.32	178.58	9,750.5	-1,946.5	-9.7	180.29	1,946.5	
11,548.0	87.38	178.98	9,754.8	-2,040.3	-7.7	180.22	2,040.3	
11,642.0	87.85	179.81	9,758.7	-2,134.2	-6.8	180.18	2,134.3	
11,736.0	88.72	180.34	9,761.5	-2,228.2	-6.9	180.18	2,228.2	
11,830.0	89.69	181.39	9,762.8	-2,322.2	-8.3	180.20	2,322.2	
11,924.0	90.57	180.07	9,762.6	-2,416.2	-9.5	180.23	2,416.2	
12,018.0	91.34	178.89	9,761.1	-2,510.1	-8.6	180.20	2,510.2	

SDI SDI Survey Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #10H
Project:	Lea County - NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3592.5usft
Site:	Lusk "AHB" Federal	MD Reference:	KB = 18.5 @ 3592.5usft
Well:	#10H	North Reference:	Grid
Wellbore:	OH - Job #321113-MPH-1194	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
12,112.0	91.10	178.49	9,759.1	-2,604.1	-6.5	180.14	2,604.1	
12,206.0	88.55	177.72	9,759.3	-2,698.0	-3.4	180.07	2,698.0	
12,300.0	89.66	177.39	9,760.8	-2,791.9	0.6	179.99	2,791.9	
12,394.0	91.45	176.82	9,759.9	-2,885.8	5.4	179.89	2,885.8	
12,488.0	90.03	177.22	9,758.7	-2,979.7	10.3	179.80	2,979.7	
12,583.0	90.31	176.73	9,758.4	-3,074.5	15.3	179.72	3,074.6	
12,677.0	91.71	177.08	9,756.8	-3,168.4	20.3	179.63	3,168.5	
12,771.0	91.80	179.02	9,753.9	-3,262.3	23.5	179.59	3,262.4	
12,865.0	91.89	179.37	9,750.8	-3,356.2	24.9	179.58	3,356.3	
12,959.0	90.94	179.02	9,748.5	-3,450.2	26.2	179.57	3,450.3	
13,053.0	89.25	178.49	9,748.4	-3,544.2	28.2	179.54	3,544.3	
13,148.0	89.52	179.63	9,749.4	-3,639.1	29.8	179.53	3,639.3	
13,242.0	90.13	180.60	9,749.7	-3,733.1	29.6	179.55	3,733.3	
13,336.0	91.10	180.60	9,748.7	-3,827.1	28.6	179.57	3,827.2	
13,430.0	91.01	179.81	9,746.9	-3,921.1	28.3	179.59	3,921.2	
13,524.0	91.71	179.37	9,744.7	-4,015.1	28.9	179.59	4,015.2	
13,618.0	89.96	179.46	9,743.3	-4,109.1	29.9	179.58	4,109.2	
13,712.0	91.36	179.37	9,742.3	-4,203.0	30.9	179.58	4,203.2	
13,806.0	89.25	180.07	9,741.8	-4,297.0	31.3	179.58	4,297.2	
13,901.0	89.87	180.51	9,742.5	-4,392.0	30.8	179.60	4,392.1	
13,995.0	90.66	179.98	9,742.0	-4,486.0	30.4	179.61	4,486.1	
14,089.0	88.99	179.98	9,742.3	-4,580.0	30.5	179.62	4,580.1	
14,183.0	89.60	180.16	9,743.5	-4,674.0	30.4	179.63	4,674.1	
14,210.0	90.13	179.90	9,743.6	-4,701.0	30.3	179.63	4,701.1	
Last MWD Survey								
14,260.0	90.13	179.90	9,743.4	-4,751.0	30.4	179.63	4,751.1	
Projection to Bit - 356.4' FSL, 663.8'FWL								

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,210.0	9,743.6	-4,701.0	30.3	Last MWD Survey
14,260.0	9,743.4	-4,751.0	30.4	Projection to Bit
14,260.0	9,743.4	-4,751.0	30.4	356.4' FSL, 663.8'FWL



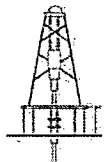
Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.20°

Magnetic Field
Strength: 48564.8nT
Dip Angle: 60.43°
Date: 10/15/2013
Model: BGGM2012

To convert Magnetic North to Grid, Add 7.20°
To convert True North to Grid, Subtract 0.32°

Lusk "AHB" Federal #10H
Lea County, NM (NAD83 NME)
Northing: (Y) 591135.861
Easting: (X) 722995.963

Plan #4



KB = 18.5 @ 3592.50usft
Ground Level: 3574.00

WELL DETAILS:					
Ground Level: 3574.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	591135.861	722995.963	32° 37' 25.307 N	103° 44' 35.848 W

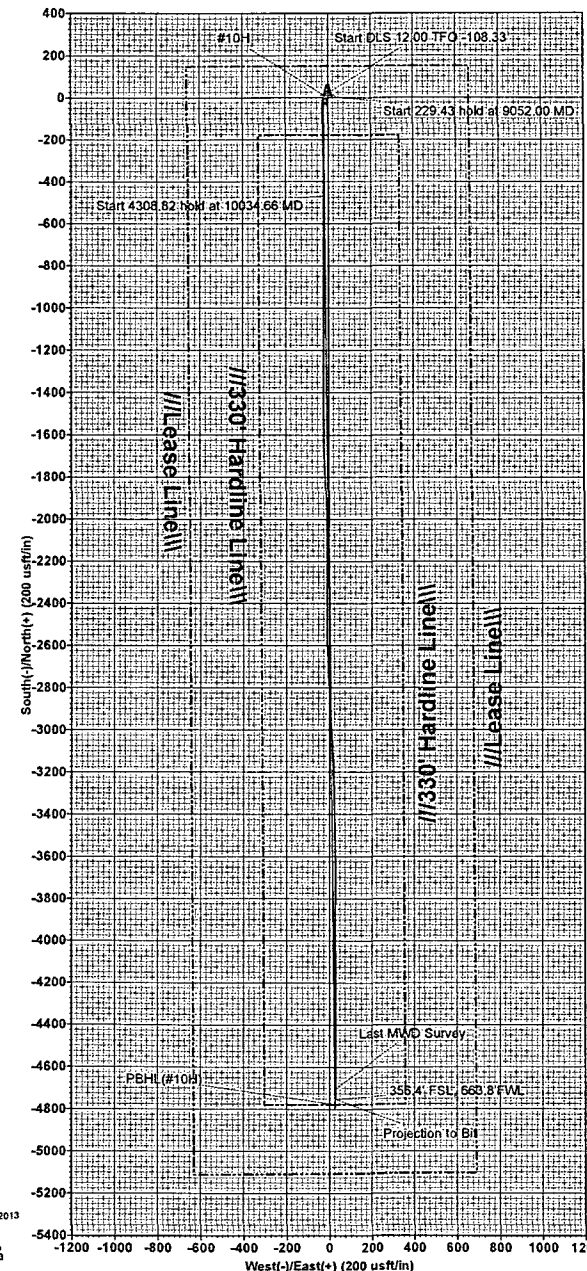
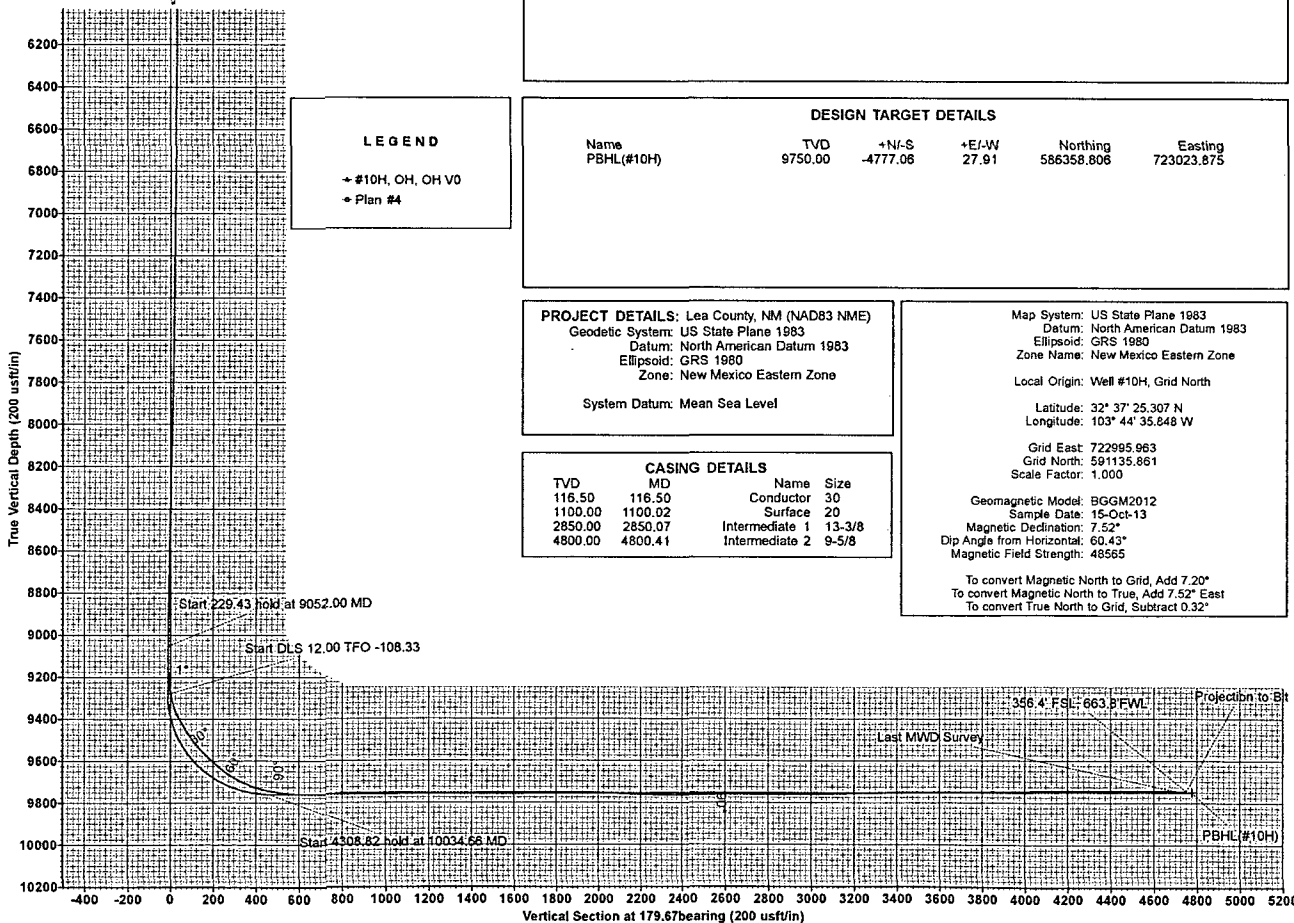
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
9052.00	0.81	287.74	9051.05	9.14	-12.25	0.00	0.00	-9.21	
9281.43	0.81	287.74	9280.46	10.13	-15.34	0.00	0.00	-10.22	
10034.66	90.13	179.41	9760.00	-468.48	-16.82	12.00	-108.33	468.37	
14343.48	90.13	179.41	9750.00	-4777.06	27.91	0.00	0.00	4777.14	PBHL(#10H)

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL(#10H)	9750.00	-4777.06	27.91	586358.806	723023.875

PROJECT DETAILS: Lea County, NM (NAD83 NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

CASING DETAILS			
TVD	MD	Name	Size
116.50	116.50	Conductor	30
1100.00	1100.02	Surface	20
2850.00	2850.07	Intermediate 1	13-3/8
4800.00	4800.41	Intermediate 2	9-5/8

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well #10H, Grid North
Latitude: 32° 37' 25.307 N
Longitude: 103° 44' 35.848 W
Grid East: 722995.963
Grid North: 591135.861
Scale Factor: 1.000
Geomagnetic Model: BGGM2012
Sample Date: 15-Oct-13
Magnetic Declination: 7.52°
Dip Angle from Horizontal: 60.43°
Magnetic Field Strength: 48565
To convert Magnetic North to Grid, Add 7.20°
To convert Magnetic North to True, Add 7.52° East
To convert True North to Grid, Subtract 0.32°



Sam Bille
10/01, December 04 2013
Scientific Drilling
2034 Trade Drive
Midland, TX 79703