

30-015-39801

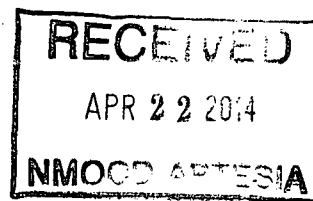


Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Hanagan APL Federal Com

#3H



OH

Design: OH

Standard Survey Report

12 February, 2014

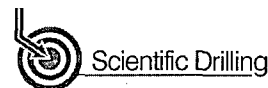


Scientific Drilling

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Scientific Drilling Survey Report



Company:	ATES Petroleum Corp	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Site:	Hanagan APL Federal Com	MD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Project:	Eddy 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:	Hanagan APL Federal Com		
Site Position:		Northing:	586,337.13 usft
From:	Map	Easting:	638,048.21 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 36' 41.398 N
		Longitude:	104° 1' 9.298 W
		Grid Convergence:	0.17 °

Well:	#3H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Ground Level:	3,326.00 usft
		Latitude:	32° 36' 41.398 N
		Longitude:	104° 1' 9.298 W

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	12/16/2013	7.51
			60.44
			48,597

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
			89.93

Survey Program	Date: 2/12/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
200.00	7,200.00	MS Gyro (OH)	SRG-MS
7,360.00	13,017.00	SDI MWD #1 (OH)	SDI MWD
			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
200.00	0.31	304.33	200.00	0.31	-0.45	-0.45	0.16	0.16	0.00
400.00	0.53	271.84	399.99	0.64	-1.82	-1.82	0.16	0.11	-16.25
600.00	0.55	246.41	599.99	0.29	-3.62	-3.62	0.12	0.01	-12.72
800.00	0.16	165.30	799.98	-0.37	-4.43	-4.43	0.27	-0.20	-40.56
1,000.00	0.89	44.39	999.97	0.47	-3.27	-3.27	0.49	0.37	-60.46
1,200.00	1.50	71.80	1,199.93	2.40	0.30	0.30	0.41	0.31	13.71
1,400.00	1.28	58.55	1,399.87	4.38	4.69	4.70	0.19	-0.11	-6.63
1,600.00	0.84	33.07	1,599.84	6.78	7.40	7.41	0.32	-0.22	-12.74
1,800.00	0.70	29.46	1,799.82	9.07	8.80	8.81	0.07	-0.07	-1.81



Scientific Drilling

Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Site:	Hanagan APL Federal Com.	MD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Well:	#3H	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)
2,000.00	0.57	11.36	1,999.81	11.11	9.60	9.61	0.12	-0.07	-9.05
2,200.00	0.57	11.39	2,199.80	13.06	9.99	10.00	0.00	0.00	0.02
2,400.00	0.71	343.48	2,399.79	15.22	9.83	9.85	0.17	0.07	-13.96
2,600.00	0.88	340.00	2,599.77	17.85	8.95	8.98	0.09	0.09	-1.74
2,800.00	0.82	347.50	2,799.75	20.69	8.12	8.15	0.06	-0.03	3.75
3,000.00	0.87	338.24	2,999.72	23.50	7.25	7.28	0.07	0.03	-4.63
3,200.00	0.94	336.99	3,199.70	26.42	6.04	6.08	0.04	0.04	-0.63
3,400.00	0.87	341.65	3,399.67	29.37	4.92	4.96	0.05	-0.04	2.33
3,600.00	0.52	358.88	3,599.66	31.72	4.43	4.47	0.20	-0.18	8.62
3,800.00	0.53	2.49	3,799.65	33.55	4.45	4.49	0.02	0.01	1.81
4,000.00	0.28	0.78	3,999.65	34.96	4.50	4.54	0.13	-0.13	-0.86
4,200.00	0.14	309.77	4,199.64	35.61	4.32	4.36	0.11	-0.07	-25.51
4,400.00	0.49	227.10	4,399.64	35.18	3.50	3.55	0.25	0.18	-41.34
4,600.00	0.55	227.75	4,599.63	33.96	2.16	2.21	0.03	0.03	0.33
4,800.00	0.60	224.58	4,799.62	32.56	0.72	0.76	0.03	0.03	-1.59
5,000.00	0.68	227.39	4,999.61	31.02	-0.89	-0.85	0.04	0.04	1.41
5,200.00	0.47	228.79	5,199.60	29.67	-2.38	-2.34	0.11	-0.11	0.70
5,400.00	0.74	249.49	5,399.59	28.68	-4.21	-4.17	0.17	0.14	10.35
5,600.00	1.15	246.90	5,599.56	27.44	-7.26	-7.23	0.21	0.21	-1.30
5,800.00	1.55	238.80	5,799.51	25.25	-11.42	-11.39	0.22	0.20	-4.05
6,000.00	1.69	242.91	5,999.43	22.51	-16.36	-16.33	0.09	0.07	2.06
6,200.00	1.82	230.45	6,199.33	19.14	-21.44	-21.41	0.20	0.07	-6.23
6,400.00	1.38	221.28	6,399.26	15.31	-25.47	-25.45	0.25	-0.22	-4.59
6,600.00	1.30	239.94	6,599.20	12.36	-29.03	-29.01	0.22	-0.04	9.33
6,800.00	1.80	264.24	6,799.13	10.91	-34.12	-34.10	0.41	0.25	12.15
7,000.00	2.19	284.85	6,999.01	11.57	-40.93	-40.92	0.41	0.20	10.31
7,200.00	2.12	267.80	7,198.87	12.41	-48.33	-48.31	0.32	-0.04	-8.53
7,360.00	1.70	245.05	7,358.78	11.30	-53.43	-53.42	0.54	-0.26	-14.22
7,610.00	1.58	237.16	7,608.68	7.86	-59.69	-59.68	0.10	-0.05	-3.16
7,846.00	1.23	225.74	7,844.61	4.33	-64.24	-64.23	0.19	-0.15	-4.84
7,865.00	1.00	222.66	7,863.61	4.07	-64.50	-64.49	1.25	-1.21	-16.21
7,897.00	1.49	124.84	7,895.60	3.62	-64.35	-64.34	5.95	1.53	-305.69
7,928.00	5.32	95.53	7,926.54	3.26	-62.58	-62.58	13.18	12.35	-94.55
7,960.00	9.51	93.48	7,958.27	2.95	-58.47	-58.46	13.12	13.09	-6.41
7,991.00	13.01	94.87	7,988.67	2.50	-52.43	-52.43	11.32	11.29	4.48
8,023.00	13.75	93.27	8,019.80	1.98	-45.05	-45.04	2.59	2.31	-5.00
8,054.00	15.65	94.87	8,049.78	1.41	-37.20	-37.20	6.27	6.13	5.16
8,086.00	18.55	94.60	8,080.37	0.64	-27.82	-27.82	9.07	9.06	-0.84
8,117.00	21.46	96.36	8,109.49	-0.39	-17.27	-17.27	9.58	9.39	5.68
8,149.00	24.01	97.15	8,139.00	-1.85	-4.99	-4.99	8.03	7.97	2.47
8,181.00	25.06	100.49	8,168.12	-3.89	8.13	8.13	5.43	3.28	10.44
8,212.00	27.52	101.64	8,195.91	-6.53	21.60	21.60	8.10	7.94	3.71
8,244.00	31.13	98.74	8,223.80	-9.28	37.03	37.02	12.12	11.28	-9.06



Scientific Drilling

Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Site:	Hanagan APL Federal Com	MD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Well:	#3H	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)
8,275.00	35.23	95.17	8,249.75	-11.30	53.86	53.85	14.65	13.23	-11.52
8,306.00	39.71	90.23	8,274.35	-12.15	72.68	72.67	17.39	14.45	-15.94
8,332.00	42.07	84.99	8,294.01	-11.42	89.67	89.66	16.01	9.08	-20.15
8,369.00	48.49	84.48	8,320.03	-9.01	115.84	115.83	17.38	17.35	-1.38
8,400.00	53.99	85.55	8,339.43	-6.91	139.91	139.90	17.94	17.74	3.45
8,431.00	58.92	87.22	8,356.56	-5.30	165.69	165.68	16.52	15.90	5.39
8,463.00	63.22	88.01	8,372.03	-4.14	193.66	193.66	13.61	13.44	2.47
8,494.00	68.15	89.33	8,384.79	-3.49	221.90	221.89	16.37	15.90	4.26
8,526.00	71.84	90.83	8,395.74	-3.53	251.96	251.95	12.34	11.53	4.69
8,557.00	74.99	89.02	8,404.59	-3.49	281.66	281.66	11.60	10.16	-5.84
8,588.00	78.74	87.67	8,411.63	-2.62	311.83	311.83	12.82	12.10	-4.35
8,620.00	82.66	87.31	8,416.80	-1.23	343.38	343.38	12.30	12.25	-1.13
8,651.00	86.35	85.55	8,419.77	0.69	374.17	374.17	13.18	11.90	-5.68
8,682.00	88.55	86.25	8,421.15	2.90	405.06	405.06	7.45	7.10	2.26
8,746.00	89.87	87.75	8,422.03	6.25	468.96	468.97	3.12	2.06	2.34
8,777.00	90.28	87.84	8,421.99	7.45	499.94	499.95	1.34	1.31	0.28
TGT#1 (#3H)									
8,840.00	91.10	88.01	8,421.24	9.73	562.89	562.90	1.34	1.31	0.28
8,934.00	90.92	88.45	8,419.58	12.63	656.83	656.85	0.51	-0.19	0.47
9,028.00	89.87	86.25	8,418.93	16.98	750.72	750.74	2.59	-1.12	-2.34
9,123.00	87.49	86.69	8,421.12	22.83	845.51	845.54	2.55	-2.51	0.46
9,217.00	87.58	87.13	8,425.16	27.89	939.28	939.32	0.48	0.10	0.47
9,276.83	88.58	89.82	8,427.16	29.48	999.05	999.09	4.79	1.68	4.49
TGT#2 (#3H)									
9,311.00	89.16	91.35	8,427.84	29.13	1,033.21	1,033.25	4.79	1.68	4.49
9,405.00	90.22	91.53	8,428.35	26.77	1,127.18	1,127.21	1.14	1.13	0.19
9,499.00	91.01	91.00	8,427.34	24.70	1,221.15	1,221.18	1.01	0.84	-0.56
9,593.00	91.71	90.21	8,425.11	23.70	1,315.12	1,315.15	1.12	0.74	-0.84
9,687.00	89.63	89.48	8,424.01	23.96	1,409.11	1,409.14	2.35	-2.21	-0.78
9,777.83	88.92	90.78	8,425.15	23.75	1,499.93	1,499.96	1.63	-0.78	1.44
TGT#3 (#3H)									
9,781.00	88.90	90.83	8,425.21	23.70	1,503.10	1,503.12	1.63	-0.78	1.44
9,875.00	89.78	90.65	8,426.29	22.49	1,597.08	1,597.11	0.96	0.94	-0.19
9,969.00	90.66	90.56	8,425.93	21.50	1,691.07	1,691.10	0.94	0.94	-0.10
10,064.00	91.54	90.83	8,424.11	20.34	1,786.05	1,786.07	0.97	0.93	0.28
10,158.00	90.40	90.21	8,422.52	19.49	1,880.03	1,880.05	1.38	-1.21	-0.66
10,252.00	91.54	90.74	8,420.93	18.71	1,974.01	1,974.03	1.34	1.21	0.56
10,278.25	91.32	90.74	8,420.27	18.37	2,000.25	2,000.27	0.84	-0.84	0.00
TGT#4 (#3H)									
10,346.00	90.75	90.74	8,419.05	17.50	2,067.98	2,068.00	0.84	-0.84	0.00
10,440.00	89.25	90.65	8,419.05	16.36	2,161.97	2,161.99	1.60	-1.60	-0.10
10,534.00	88.11	90.91	8,421.21	15.08	2,255.94	2,255.95	1.24	-1.21	0.28
10,628.00	89.06	91.01	8,423.54	13.51	2,349.89	2,349.91	1.02	1.01	0.11
10,723.00	89.90	90.70	8,424.40	12.09	2,444.88	2,444.89	0.94	0.88	-0.33



Scientific Drilling

Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #3H:
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Site:	Hanagan APL Federal Com	MD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Well:	#3H	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)
10,778.12	89.57	90.10	8,424.65	11.70	2,500.00	2,500.01	1.25	-0.60	-1.09
TGT#5 (#3H)									
10,818.00	89.33	89.66	8,425.04	11.79	2,539.87	2,539.89	1.25	-0.60	-1.09
10,912.00	90.17	89.19	8,425.45	12.73	2,633.87	2,633.88	1.02	0.89	-0.50
11,006.00	91.10	89.16	8,424.40	14.09	2,727.85	2,727.87	0.99	0.99	-0.03
11,100.00	91.14	87.23	8,422.57	17.05	2,821.78	2,821.80	2.05	0.04	-2.05
11,196.00	90.57	87.13	8,421.13	21.77	2,917.66	2,917.68	0.60	-0.59	-0.10
11,277.75	90.34	89.12	8,420.48	24.44	2,999.35	2,999.38	2.45	-0.28	2.44
TGT#6 (#3H)									
11,290.00	90.31	89.42	8,420.41	24.60	3,011.60	3,011.63	2.45	-0.28	2.44
11,385.00	91.63	90.74	8,418.80	24.47	3,106.59	3,106.61	1.96	1.39	1.39
11,479.00	91.28	91.45	8,416.42	22.67	3,200.54	3,200.56	0.84	-0.37	0.76
11,573.00	87.34	91.84	8,417.55	19.97	3,294.47	3,294.50	4.21	-4.19	0.41
11,667.00	90.48	91.00	8,419.34	17.64	3,388.41	3,388.43	3.46	3.34	-0.89
11,761.00	89.43	89.86	8,419.41	16.94	3,482.41	3,482.43	1.65	-1.12	-1.21
11,778.75	89.35	90.05	8,419.60	16.95	3,500.16	3,500.17	1.19	-0.46	1.09
TGT#7 (#3H)									
11,856.00	88.99	90.90	8,420.72	16.31	3,577.40	3,577.41	1.19	-0.46	1.09
11,950.00	87.58	91.88	8,423.53	14.03	3,671.32	3,671.34	1.83	-1.50	1.04
12,044.00	88.90	90.91	8,426.42	11.74	3,765.25	3,765.26	1.74	1.40	-1.03
12,139.00	87.78	89.71	8,429.17	11.23	3,860.20	3,860.21	1.73	-1.18	-1.26
12,233.00	89.80	90.19	8,431.16	11.31	3,954.18	3,954.19	2.21	2.15	0.51
12,278.92	90.95	90.33	8,430.86	11.10	4,000.10	4,000.11	2.52	2.50	0.30
TGT#8 (#3H)									
12,327.00	92.15	90.47	8,429.56	10.77	4,048.16	4,048.17	2.52	2.50	0.30
12,421.00	91.72	91.30	8,426.38	9.32	4,142.09	4,142.10	0.99	-0.46	0.88
12,515.00	87.58	90.56	8,426.96	7.79	4,236.05	4,236.06	4.47	-4.40	-0.79
12,610.00	90.04	89.77	8,428.93	7.52	4,331.03	4,331.03	2.72	2.59	-0.83
12,704.00	88.46	89.77	8,430.16	7.90	4,425.01	4,425.02	1.68	-1.68	0.00
12,778.95	90.01	89.35	8,431.16	8.47	4,499.95	4,499.96	2.14	2.06	-0.56
TGT#9 (#3H)									
12,798.00	90.40	89.24	8,431.10	8.71	4,519.00	4,519.01	2.14	2.06	-0.56
12,893.00	89.69	89.16	8,431.02	10.04	4,613.99	4,614.00	0.75	-0.75	-0.08
12,967.00	91.54	88.80	8,430.23	11.35	4,687.97	4,687.98	2.55	2.50	-0.49
MWD Survey									
13,017.00	91.54	88.80	8,428.88	12.40	4,737.94	4,737.95	0.00	0.00	0.00
Projection to Bit - PBHL (#3H)									



Scientific Drilling

Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Site:	Hanagan APL Federal Com	MD Reference:	KB = 18.5 @ 3344.50usft (McVay 8)
Well:	#3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
12,967.00	8,430.23	11.35	4,687.97	MWD Survey
13,017.00	8,428.88	12.40	4,737.94	Projection to Bit

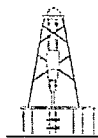
Checked By: _____ Approved By: _____ Date: _____



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.34°

Magnetic Field
Strength: 48597.1nT
Dip Angle: 60.44°
Date: 12/16/2013
Model: IGRF200510

Hanagan APL Federal Com #3H
Eddy County, NM (NAD83 NME)
Northing: (Y) 586337.13
Easting: (X) 638048.21
Plan #5



KB = 18.5 @ 3344.50usft (McVay 8)
Ground Level: 3326.00

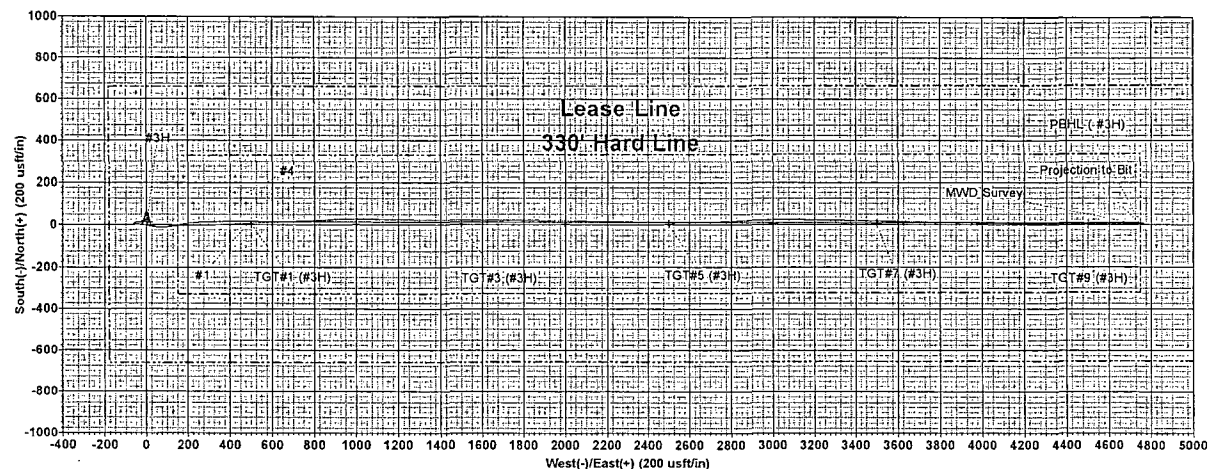
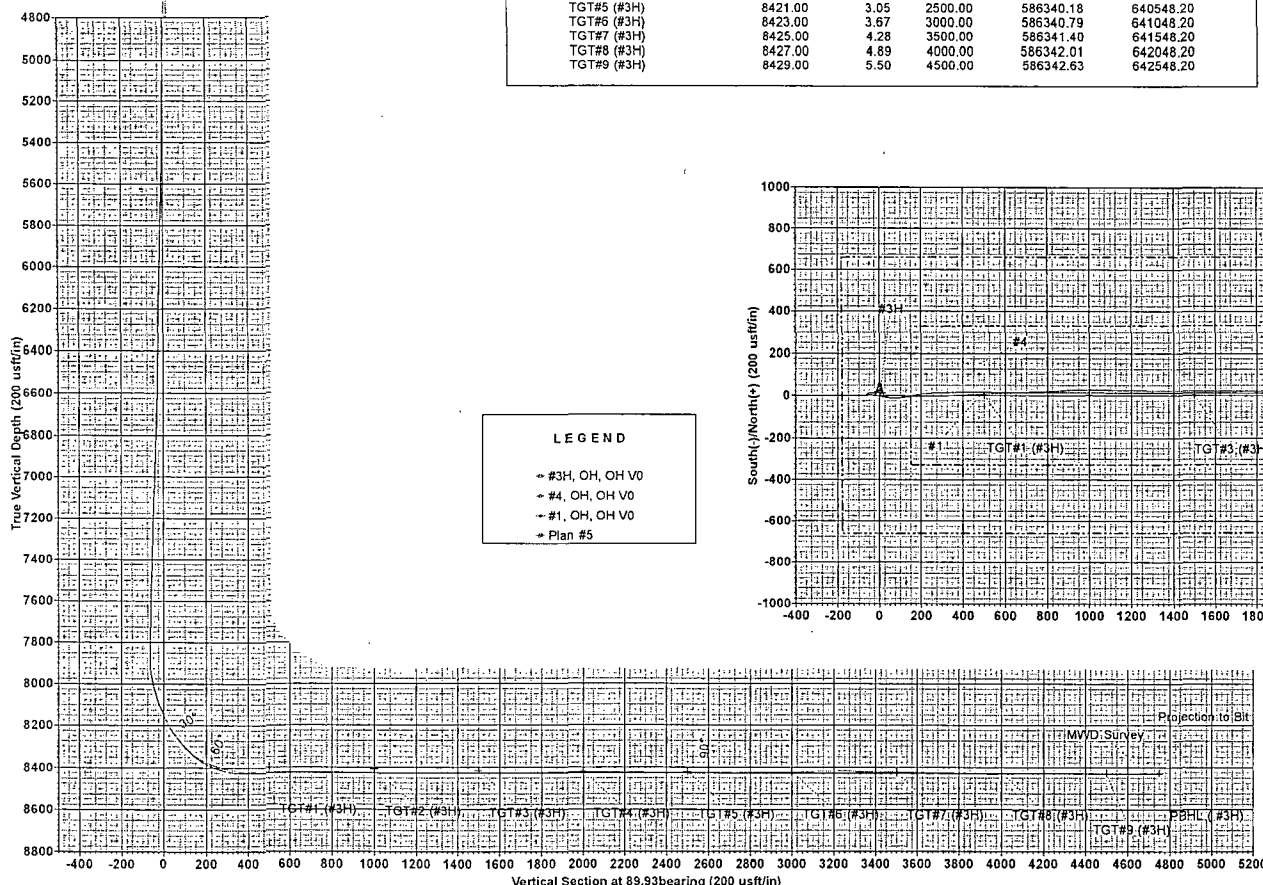
WELL DETAILS:					
Ground Level: 3326.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	586337.13	638048.21	32° 36' 41.398 N	104° 1' 9.298 W

SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSECT
8332.00	42.07	84.99	8294.01	-11.42	89.67	0.00	0.00	89.66
8372.00	45.70	77.37	8322.85	-7.12	117.02	16.01	-58.30	117.01
8648.85	89.95	90.12	8425.13	15.45	365.42	16.50	17.97	365.44
13031.99	89.95	90.12	8429.00	6.02	4748.54	0.00	0.00	4748.55
PBHL (#3H)								

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (#3H)	8429.00	6.02	4748.54	586343.14	642796.75
TGT#1 (#3H)	8399.00	0.61	500.00	586337.74	638548.21
TGT#2 (#3H)	8407.00	1.22	1000.00	586338.35	639048.21
TGT#3 (#3H)	8415.00	1.83	1500.00	586338.96	639548.20
TGT#4 (#3H)	8418.00	2.44	2000.00	586339.57	640048.20
TGT#5 (#3H)	8421.00	3.05	2500.00	586340.18	640548.20
TGT#6 (#3H)	8423.00	3.67	3000.00	586340.79	641048.20
TGT#7 (#3H)	8425.00	4.28	3500.00	586341.40	641548.20
TGT#8 (#3H)	8427.00	4.89	4000.00	586342.01	642048.20
TGT#9 (#3H)	8429.00	5.50	4500.00	586342.63	642548.20

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well #3H, Grid North
Latitude: 32° 36' 41.398 N
Longitude: 104° 1' 9.298 W
Grid East: 638048.21
Grid North: 586337.13
Scale Factor: 1.000
Geomagnetic Model: IGRF200510
Sample Date: 16-Dec-13
Magnetic Declination: 7.51°
Dip Angle from Horizontal: 60.44°
Magnetic Field Strength: 48597
To convert Magnetic North to Grid, Add 7.34°
To convert Magnetic North to True, Add 7.51° East
To convert True North to Grid, Subtract 0.17°

PROJECT DETAILS: Eddy 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





Job Number: SVMO-140119
 Company: Yates Petroleum Corporation
 Lease/Well: Hanagan APL Federal Com 3H
 Location: Eddy County, NM
 Rig Name: McVay #8
 RKB: 24'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.34°
 Grid: East To Grid North
 File name: S:\2014SU-1\YATES\MOI\HANAGA-113H.SVY
 Date/Time: 31-Jan-14 / 14:46
 Curve Name: Surface - 7800' M.D. (SRG)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 89.93
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 7800 MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
 Gary Sparks
 MS Energy Services
 11/31/14
 Date

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	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	.31	304.33	200.00	.31	-.45	-.45	.54	304.33	.15
400.00	.53	271.84	399.99	.64	-1.82	-1.82	1.93	289.39	.16
600.00	.55	246.41	599.99	.29	-3.62	-3.62	3.63	274.51	.12
800.00	.16	165.30	799.98	-.37	-4.43	-4.43	4.45	265.24	.27
1000.00	.89	44.39	999.97	.47	-3.27	-3.27	3.31	278.19	.49
1200.00	1.50	71.80	1199.93	2.40	.30	.30	2.42	7.12	.41
1400.00	1.28	58.55	1399.87	4.38	4.69	4.70	6.42	46.96	.19
1600.00	.84	33.07	1599.84	6.78	7.40	7.41	10.03	47.51	.32
1800.00	.70	29.46	1799.82	9.07	8.80	8.81	12.64	44.14	.07

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	
2000.00	.57	11.36	1999.81	11.11	9.60	9.61	14.68	40.82	.12
2200.00	.57	11.39	2199.80	13.06	9.99	10.00	16.44	37.41	.00
2400.00	.71	343.48	2399.79	15.22	9.83	9.85	18.12	32.86	.17
2600.00	.88	340.00	2599.77	17.85	8.95	8.98	19.97	26.64	.09
2800.00	.82	347.50	2799.75	20.69	8.12	8.14	22.23	21.42	.06
3000.00	.87	338.24	2999.72	23.50	7.25	7.28	24.59	17.14	.07
3200.00	.94	336.99	3199.70	26.42	6.04	6.07	27.10	12.88	.04
3400.00	.87	341.65	3399.67	29.37	4.92	4.96	29.78	9.52	.05
3600.00	.52	358.88	3599.66	31.72	4.43	4.47	32.03	7.95	.20
3800.00	.53	2.49	3799.65	33.55	4.45	4.49	33.85	7.55	.02
4000.00	.28	.78	3999.65	34.96	4.50	4.54	35.25	7.33	.13
4200.00	.14	309.77	4199.64	35.61	4.32	4.36	35.87	6.91	.11
4400.00	.49	227.10	4399.64	35.18	3.50	3.54	35.36	5.68	.25
4600.00	.55	227.75	4599.63	33.96	2.16	2.21	34.02	3.65	.03
4800.00	.60	224.58	4799.62	32.56	.72	.76	32.57	1.26	.03
5000.00	.68	227.39	4999.61	31.02	-.89	-.85	31.03	358.36	.04
5200.00	.47	228.79	5199.60	29.67	-2.38	-2.34	29.77	355.41	.11
5400.00	.74	249.49	5399.59	28.68	-4.21	-4.17	28.99	351.65	.17
5600.00	1.15	246.90	5599.56	27.44	-7.26	-7.23	28.38	345.17	.21
5800.00	1.55	238.80	5799.51	25.25	-11.42	-11.39	27.71	335.66	.22
6000.00	1.69	242.91	5999.43	22.51	-16.36	-16.33	27.82	323.98	.09
6200.00	1.82	230.45	6199.33	19.14	-21.44	-21.41	28.74	311.76	.20
6400.00	1.38	221.28	6399.26	15.31	-25.47	-25.46	29.72	301.00	.25
6600.00	1.30	239.94	6599.20	12.36	-29.03	-29.01	31.55	293.07	.22
6800.00	1.80	264.24	6799.13	10.91	-34.12	-34.10	35.82	287.73	.41
7000.00	2.19	284.85	6999.01	11.57	-40.93	-40.92	42.54	285.79	.41
7200.00	2.12	267.80	7198.87	12.41	-48.33	-48.31	49.89	284.40	.32
7400.00	1.88	234.40	7398.76	10.36	-54.69	-54.68	55.66	280.73	.59
7600.00	1.40	222.85	7598.67	6.66	-59.02	-59.01	59.39	276.44	.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	
Last Survey Depth Recorded									
7800.00	1.59	226.91	7798.61	2.97	-62.71	-62.70	62.78	272.71	11