



30 015 42253

Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Boyd X State Com

#14H

WB1/Job #1410510

Design: Surveys (McVay 8)

Standard Survey Report

03 May, 2014

NM OIL CONSERVATION

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PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services

Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR DB

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	Boyd X State Com		
Site Position:		Northing:	605,917.80 usft
From:	Map	Easting:	490,589.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 39' 56.18038 N
		Longitude:	104° 29' 53.68395 W
		Grid Convergence:	-0.09 °

Well	#14H, 990' FNL & 15' FWL		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 39' 56.18038 N
		Longitude:	104° 29' 53.68395 W
		Ground Level:	3,531.00 usft

Wellbore	WB1/Job #1410510		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	03/24/14	7.70
			Dip Angle
			(°)
			60.37
			Field Strength
			(nT)
			48,501

Design:	Surveys (McVay 8)		
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
			(°)
			86.38

Survey Program	Date 05/03/14		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	2,000.00	Gyro Surveys (WB1/Job #1410510)	NS-GYRO-MS
2,062.00	7,350.00	Phoenix MWD Surveys (WB1/Job #14105)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	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	0.60	154.57	100.00	-0.47	0.22	0.19	0.60	0.60	0.00
200.00	0.48	166.78	199.99	-1.35	0.55	0.46	0.17	-0.12	12.21
300.00	0.49	112.26	299.99	-1.92	1.04	0.91	0.44	0.01	-54.52
400.00	0.19	197.50	399.99	-2.24	1.38	1.24	0.51	-0.30	85.24
500.00	0.39	204.80	499.99	-2.71	1.19	1.02	0.20	0.20	7.30
600.00	0.45	158.56	599.99	-3.38	1.19	0.97	0.33	0.06	-46.24
700.00	0.94	171.42	699.98	-4.56	1.46	1.17	0.51	0.49	12.86
800.00	0.35	194.34	799.97	-5.67	1.50	1.14	0.63	-0.59	22.92
900.00	0.75	166.00	899.97	-6.60	1.59	1.17	0.47	0.40	-28.34



Phoenix Technology Services

Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83:NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR DB

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)
1,000.00	1.62	214.28	999.95	-8.40	0.95	0.42	1.25	0.87	48.28
1,100.00	1.49	230.44	1,099.91	-10.40	-0.85	-1.50	0.46	-0.13	16.16
1,200.00	1.32	234.38	1,199.88	-11.90	-2.79	-3.53	0.20	-0.17	3.94
1,300.00	0.81	238.39	1,299.86	-12.94	-4.33	-5.14	0.52	-0.51	4.01
1,400.00	0.62	237.97	1,399.85	-13.60	-5.39	-6.24	0.19	-0.19	-0.42
1,500.00	0.53	245.46	1,499.85	-14.08	-6.27	-7.14	0.12	-0.09	7.49
1,600.00	0.45	252.18	1,599.85	-14.39	-7.06	-7.96	0.10	-0.08	6.72
1,700.00	0.54	233.90	1,699.84	-14.79	-7.82	-8.73	0.18	0.09	-18.28
1,800.00	0.58	194.01	1,799.84	-15.55	-8.32	-9.28	0.38	0.04	-39.89
1,900.00	0.38	207.23	1,899.83	-16.34	-8.59	-9.61	0.23	-0.20	13.22
2,000.00	0.53	202.97	1,999.83	-17.06	-8.93	-9.99	0.15	0.15	-4.26
Tie In to Gyro Surveys									
2,062.00	1.00	192.10	2,061.83	-17.85	-9.15	-10.26	0.79	0.76	-17.53
First Phoenix MWD Survey									
2,093.00	1.30	192.70	2,092.82	-18.46	-9.29	-10.43	0.97	0.97	1.94
2,125.00	4.30	92.70	2,124.79	-18.87	-8.17	-9.34	14.70	9.38	-312.50
2,157.00	11.90	83.60	2,156.45	-18.56	-3.68	-4.85	24.01	23.75	-28.44
2,188.00	20.40	79.20	2,186.20	-17.19	4.82	3.72	27.68	27.42	-14.19
2,220.00	25.60	75.90	2,215.64	-14.46	17.01	16.06	16.74	16.25	-10.31
2,252.00	27.40	75.60	2,244.28	-10.94	30.85	30.09	5.64	5.63	-0.94
2,283.00	29.40	77.90	2,271.55	-7.57	45.20	44.63	7.35	6.45	7.42
2,315.00	32.60	81.50	2,298.98	-4.65	61.41	60.99	11.55	10.00	11.25
2,347.00	35.40	84.70	2,325.51	-2.52	79.17	78.85	10.38	8.75	10.00
2,378.00	38.40	85.80	2,350.29	-0.99	97.72	97.46	9.91	9.68	3.55
2,410.00	42.50	85.80	2,374.64	0.53	118.42	118.21	12.81	12.81	0.00
2,442.00	45.80	86.40	2,397.60	2.05	140.65	140.50	10.39	10.31	1.88
2,473.00	48.60	87.40	2,418.66	3.27	163.36	163.24	9.34	9.03	3.23
2,505.00	51.30	88.60	2,439.25	4.12	187.84	187.72	8.91	8.44	3.75
2,537.00	53.90	88.80	2,458.68	4.70	213.25	213.12	8.14	8.13	0.63
2,569.00	57.20	88.20	2,476.78	5.39	239.63	239.49	10.43	10.31	-1.88
2,600.00	60.30	88.00	2,492.86	6.27	266.11	265.98	10.02	10.00	-0.65
2,632.00	63.20	87.10	2,508.01	7.48	294.27	294.15	9.39	9.06	-2.81
2,655.04	65.36	86.96	2,518.00	8.56	315.00	314.91	9.39	9.37	-0.63
2655.04' MD, 330' Heel Crossing Point									
2,664.00	66.20	86.90	2,521.68	8.99	323.16	323.08	9.39	9.38	-0.61
2,695.00	69.50	87.80	2,533.37	10.32	351.83	351.78	10.98	10.65	2.90
2,727.00	72.70	87.30	2,543.73	11.61	382.08	382.05	10.11	10.00	-1.56
2,758.00	76.80	87.70	2,551.88	12.92	411.95	411.94	13.28	13.23	1.29
2,790.00	80.80	87.50	2,558.10	14.23	443.31	443.32	12.52	12.50	-0.63
2,822.00	83.90	87.80	2,562.36	15.53	474.99	475.03	9.73	9.69	0.94
2,843.00	85.30	88.30	2,564.33	16.24	495.89	495.92	7.08	6.67	2.38
2,874.00	88.40	89.20	2,566.04	16.92	526.83	526.85	10.41	10.00	2.90
2,938.00	88.60	88.80	2,567.71	18.03	590.80	590.76	0.70	0.31	-0.63



Phoenix Technology Services

Survey Report



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Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR DB

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)	
3,033.00	88.60	87.40	2,570.03	21.18	685.71	685.68	1.47	0.00	-1.47	
3,128.00	89.10	89.00	2,571.94	24.17	780.64	780.61	1.76	0.53	1.68	
3,222.00	89.80	89.40	2,572.84	25.48	874.63	874.49	0.86	0.74	0.43	
3,317.00	89.80	89.10	2,573.17	26.72	969.62	969.37	0.32	0.00	-0.32	
3,412.00	90.20	89.30	2,573.17	28.05	1,064.61	1,064.26	0.47	0.42	0.21	
3,507.00	89.60	89.20	2,573.34	29.29	1,159.60	1,159.14	0.64	-0.63	-0.11	
3,602.00	89.40	89.30	2,574.17	30.53	1,254.59	1,254.02	0.24	-0.21	0.11	
3,697.00	88.90	89.10	2,575.58	31.86	1,349.57	1,348.89	0.57	-0.53	-0.21	
3,792.00	88.50	89.70	2,577.73	32.86	1,444.54	1,443.73	0.76	-0.42	0.63	
3,887.00	88.10	89.90	2,580.55	33.19	1,539.50	1,538.52	0.47	-0.42	0.21	
3,982.00	88.00	90.80	2,583.78	32.61	1,634.44	1,633.24	0.95	-0.11	0.95	
4,077.00	88.40	89.60	2,586.77	32.28	1,729.39	1,727.98	1.33	0.42	-1.26	
4,172.00	88.90	88.80	2,589.01	33.60	1,824.35	1,822.84	0.99	0.53	-0.84	
4,267.00	88.80	88.70	2,590.91	35.67	1,919.31	1,917.74	0.15	-0.11	-0.11	
4,362.00	88.80	88.60	2,592.90	37.91	2,014.27	2,012.64	0.11	0.00	-0.11	
4,457.00	88.20	87.40	2,595.39	41.23	2,109.17	2,107.57	1.41	-0.63	-1.26	
4,553.00	88.50	88.40	2,598.15	44.74	2,205.07	2,203.49	1.09	0.31	1.04	
4,648.00	88.40	87.60	2,600.72	48.06	2,299.97	2,298.42	0.85	-0.11	-0.84	
4,743.00	88.00	88.50	2,603.71	51.29	2,394.87	2,393.33	1.04	-0.42	0.95	
4,838.00	89.00	89.10	2,606.19	53.28	2,489.82	2,488.21	1.23	1.05	0.63	
4,933.00	89.90	89.30	2,607.11	54.60	2,584.80	2,583.09	0.97	0.95	0.21	
5,028.00	89.40	88.30	2,607.69	56.59	2,679.78	2,678.00	1.18	-0.53	-1.05	
5,123.00	90.70	90.30	2,607.60	57.75	2,774.76	2,772.87	2.51	1.37	2.11	
5,218.00	90.30	90.10	2,606.77	57.42	2,869.76	2,867.66	0.47	-0.42	-0.21	
5,313.00	89.80	89.60	2,606.69	57.67	2,964.76	2,962.48	0.74	-0.53	-0.53	
5,408.00	88.90	88.60	2,607.77	59.16	3,059.74	3,057.37	1.42	-0.95	-1.05	
5,503.00	88.60	90.00	2,609.84	60.32	3,154.71	3,152.22	1.51	-0.32	1.47	
5,598.00	88.00	89.20	2,612.66	60.98	3,249.66	3,247.03	1.05	-0.63	-0.84	
5,693.00	89.20	88.10	2,614.98	63.22	3,344.60	3,341.92	1.71	1.26	-1.16	
5,789.00	89.60	84.60	2,615.99	69.33	3,440.39	3,437.90	3.67	0.42	-3.65	
5,884.00	89.20	84.60	2,616.98	78.27	3,534.96	3,532.85	0.42	-0.42	0.00	
5,979.00	89.70	82.60	2,617.89	88.86	3,629.36	3,627.73	2.17	0.53	-2.11	
6,074.00	89.50	80.00	2,618.56	103.23	3,723.25	3,722.34	2.74	-0.21	-2.74	
6,169.00	87.60	78.90	2,620.96	120.62	3,816.61	3,816.61	2.31	-2.00	-1.16	
6,264.00	87.00	78.40	2,625.44	139.29	3,909.65	3,910.65	0.82	-0.63	-0.53	
6,359.00	87.40	80.30	2,630.08	156.83	4,002.90	4,004.81	2.04	0.42	2.00	
6,453.00	88.80	81.30	2,633.19	171.85	4,095.64	4,098.31	1.83	1.49	1.06	
6,548.00	89.80	81.90	2,634.35	185.72	4,189.61	4,192.97	1.23	1.05	0.63	
6,642.00	89.00	81.30	2,635.34	199.45	4,282.59	4,286.64	1.06	-0.85	-0.64	
6,738.00	90.50	82.10	2,635.76	213.31	4,377.58	4,382.32	1.77	1.56	0.83	
6,832.00	89.90	82.40	2,635.43	225.99	4,470.72	4,476.07	0.71	-0.64	0.32	
6,928.00	88.80	81.70	2,636.52	239.26	4,565.79	4,571.79	1.36	-1.15	-0.73	
7,023.00	90.00	81.00	2,637.51	253.55	4,659.70	4,666.42	1.46	1.26	-0.74	
7,118.00	91.40	80.80	2,636.35	268.57	4,753.50	4,760.97	1.49	1.47	-0.21	



Phoenix Technology Services

Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	GCR DB

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)
7,213.00	90.80	79.90	2,634.53	284.49	4,847.14	4,855.43	1.14	-0.63	-0.95
7,280.04	90.25	78.61	2,633.92	296.99	4,913.00	4,921.95	2.09	-0.82	-1.92
7280.04' MD, 330' Toe Crossing Point									
7,286.00	90.20	78.50	2,633.89	298.17	4,918.84	4,927.85	2.09	-0.82	-1.92
Last Phoenix MWD Survey									
7,350.00	90.20	78.50	2,633.67	310.93	4,981.55	4,991.25	0.00	0.00	0.00
Projection to TD at 11' N & 69' E of BHL									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	1,999.83	-17.06	-8.93	Tie In to Gyro Surveys
2,062.00	2,061.83	-17.85	-9.15	First Phoenix MWD Survey
2,655.04	2,518.00	8.56	315.00	2655.04' MD, 330' Heel Crossing Point
7,280.04	2,633.92	296.99	4,913.00	7280.04' MD, 330' Toe Crossing Point
7,286.00	2,633.89	298.17	4,918.84	Last Phoenix MWD Survey
7,350.00	2,633.67	310.93	4,981.55	Projection to TD at 11' N & 69' E of BHL

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County, NM (NAD83 NME)
Site: Boyd X State Com
Well: #14H
Wellbore: WB1/Job #1410510
Design: Plan #1 03-24-14
Rig: Silver Oak 11



Azimuth to Grid North
True North: 0.09°
Magnetic North: 7.79°
Magnetic Field
Strength: 48501.2 nT
Dip Angle: 60.37°
Date: 03/24/2014
Model: IGRF2010_14

WELL DETAILS

+N-S	+E-W	Northing	Ground Level	3531.00	Latitude	Longitude
0.00	0.00	605917.80	Easting	490589.40	32° 39' 56.18038 N	104° 29' 53.68395 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSet	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2090.25	0.00	0.00	2090.25	0.00	0.00	0.00	0.00	0.00	0.00	KOP, 12°/100' Build
3	2832.50	89.07	88.90	2567.65	9.02	469.63	12.00	88.90	488.26		LP, Hold 89.07° Inc, 88.90° Azm
4	5666.34	89.07	88.90	2613.65	63.41	3302.58	0.00	0.00	3300.00		Begin 2°/100' Turn
5	6083.05	89.07	80.56	2620.41	101.63	3717.10	2.00	-90.04	3716.11		Hold 89.07° Inc, 80.56° Azm
6	7295.10	89.07	80.56	2640.00	300.30	4912.60	0.00	0.00	4921.76		PBHL at 7295.10 MD
7	7395.10	89.07	80.56	2641.62	316.69	5011.23	0.00	0.00	5021.23		TD at 7395.10

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Boyd X St #14H	2640.00	300.30	4912.60	606218.10	495502.00	32° 39' 56.18038 N	104° 29' 53.68395 W	Point
- plan hits target center								

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone

Local Origin: Well #14H, Grid North

Latitude: 32° 39' 56.18038 N
Longitude: 104° 29' 53.68395 W

Grid East: 490589.40
Grid North: 605917.80
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 24-Mar-14

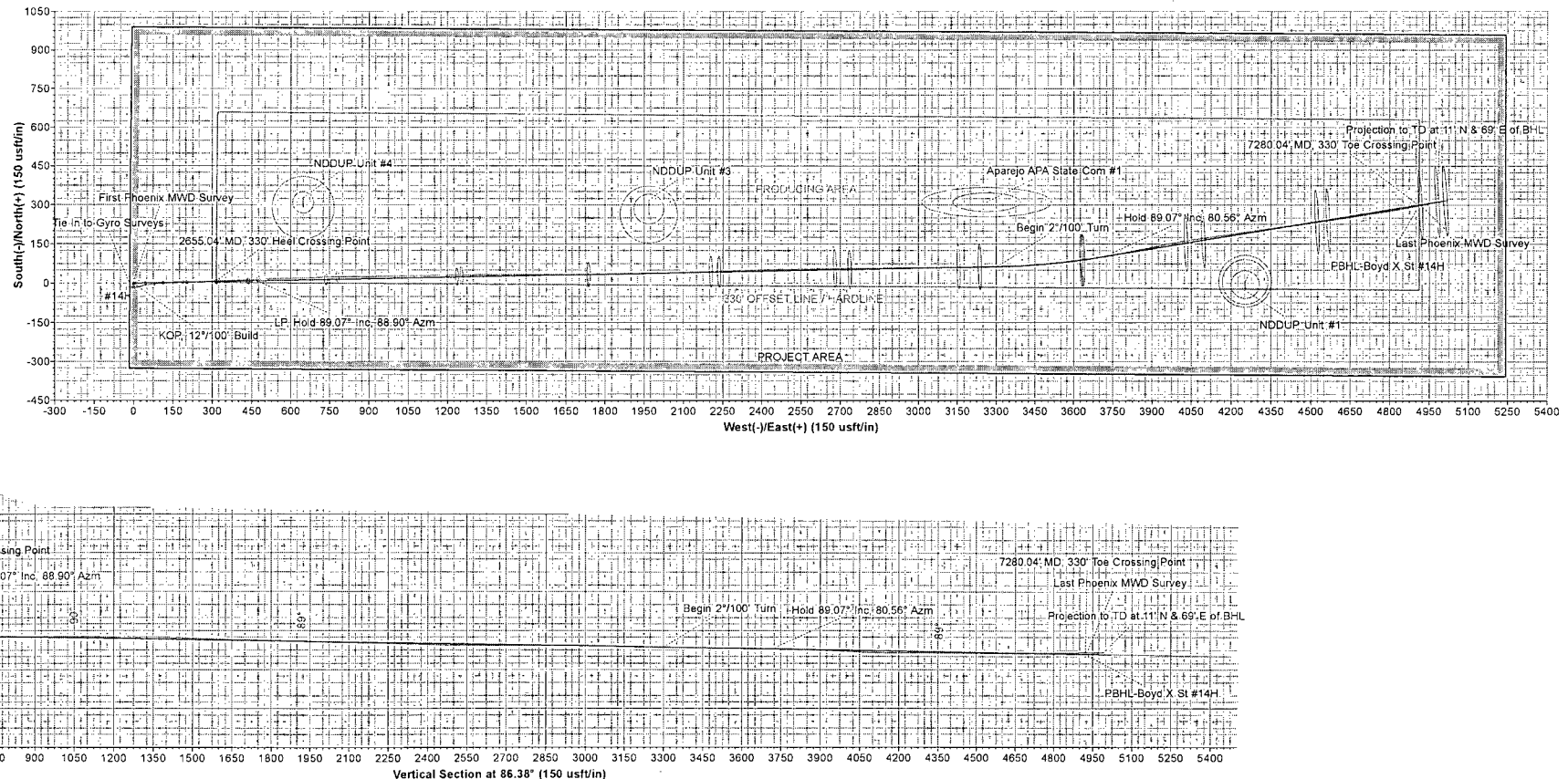
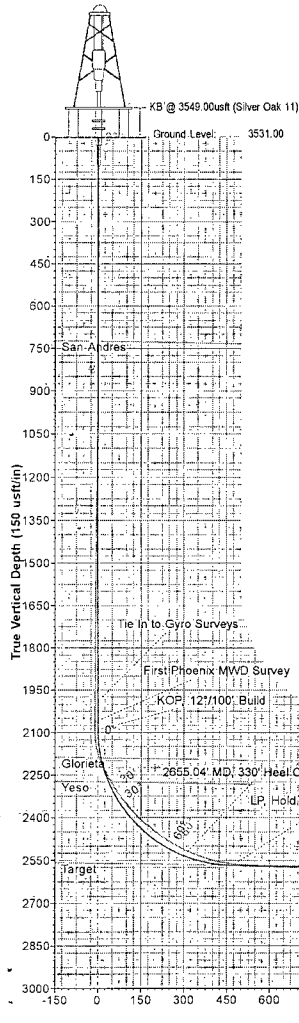
Magnetic Declination: 7.70°
Dip Angle from Horizontal: 60.37°
Magnetic Field Strength: 48501
To convert a Magnetic Direction to a Grid Direction, Add 7.79°
To convert a Magnetic Direction to a True Direction, Add 7.70° East
To convert a True Direction to a Grid Direction, Add 0.09°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
725.00	725.00	San Andres	0.93	86.50
2190.17	2190.92	Glorieta	0.93	86.50
2274.60	2279.52	Yeso	0.93	86.50
2567.53	2626.83	Target	0.93	86.50

LEGEND

- #1, WB1, Inc Surveys V0
- #4, WB1, Inc Surveys V0
- #1, WB1, Inc Surveys V0
- #3, WB1, Inc Surveys V0
- #14H, WB1/Job #1410510, Surveys (McVay 8) V0
- Plan #1 03-24-14





Job Number: SVMO-140498

Company: Yates Petroleum Corporation

Lease/Well: Boyd X State Com-14-H

Location: Eddy County, NM

Rig Name: Silver Oaks #11

RKB: 18'

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

State/Country: New Mexico/USA

Declination: 7.70°

Grid: East To Grid North

File name: Y:\WINSER~1\2014SU~1\YATES\MO\BOYDXS~1\14H.SVY

Date/Time: 22-Apr-14 / 10:26

Curve Name: Surface - 894' M.D. (Rate Gyro)

MS Survey

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 86.38

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
Surface MD to 894' MD is, to the best of
our knowledge a true and accurate account of
the well bore.

Travis Pack
MS Energy Services

4/22/14
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
100.00	.40	211.81	100.00	-.30	-.18	-.20	.35	211.81	.40
200.00	.28	117.07	200.00	-.70	-.15	-.19	.72	192.05	.51
300.00	.22	91.25	300.00	-.82	.26	.21	.86	162.46	.13
400.00	.25	100.70	400.00	-.86	.67	.61	1.09	142.41	.05
500.00	.04	199.16	500.00	-.94	.87	.81	1.28	137.21	.26
600.00	.42	216.17	599.99	-1.27	.64	.56	1.42	153.18	.38
700.00	.64	189.14	699.99	-2.11	.34	.20	2.14	170.98	.33
800.00	.80	196.48	799.98	-3.33	.05	-.16	3.34	179.16	.18

Last Survey Depth Recorded

894.00	.72	199.86	893.97	-4.52	-.34	-.62	4.53	184.28	.10
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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	1.62	214.28	999.95	-8.40	.95	.42	8.46	173.56	1.25
1100.00	1.49	230.44	1099.91	-10.40	-.85	-1.50	10.43	184.67	.46
1200.00	1.32	234.38	1199.88	-11.90	-2.79	-3.53	12.22	193.19	.20
1300.00	.81	238.39	1299.86	-12.94	-4.33	-5.14	13.64	198.49	.52
1400.00	.62	237.97	1399.85	-13.60	-5.39	-6.24	14.62	201.62	.19
1500.00	.53	245.46	1499.85	-14.08	-6.27	-7.14	15.41	204.00	.12
1600.00	.45	252.18	1599.85	-14.39	-7.06	-7.96	16.03	206.14	.10
1700.00	.54	233.90	1699.84	-14.79	-7.82	-8.73	16.72	207.86	.18
1800.00	.58	194.01	1799.84	-15.55	-8.32	-9.28	17.64	208.14	.38
1900.00	.38	207.23	1899.83	-16.34	-8.59	-9.61	18.46	207.74	.23

Last Survey Depth Recorded

2000.00	.53	202.97	1999.83	-17.06	-8.93	-9.99	19.25	207.62	.15
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Job Number: SVMO-140533
 Company: Yates Petroleum Corporation
 Lease/Well: Boyd X State Com 14-H
 Location: Eddy County, NM
 Rig Name: Silver Oaks #11
 RKB: 17'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.70°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\YATES\MO\BOYDXS~1\14H.SVY
 Date/Time: 28-Apr-14 / 09:51
 Curve Name: Surface - 2000' M.D. (Rate Gyro)

MS Survey

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 86.38

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 2000' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Negon Reed 4/28/14
 MS Energy Services Date

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	.60	154.57	100.00	-.47	.22	.19	.52	154.57	.60
200.00	.48	166.78	199.99	-1.35	.55	.46	1.46	158.05	.17
300.00	.49	112.26	299.99	-1.92	1.04	.91	2.19	151.67	.44
400.00	.19	197.50	399.99	-2.24	1.38	1.24	2.64	148.35	.51
500.00	.39	204.80	499.99	-2.71	1.19	1.02	2.96	156.29	.20
600.00	.45	158.56	599.99	-3.38	1.19	.97	3.59	160.61	.33
700.00	.94	171.42	699.98	-4.56	1.46	1.17	4.79	162.29	.51
800.00	.35	194.34	799.97	-5.67	1.50	1.14	5.86	165.14	.63
900.00	.75	166.00	899.97	-6.60	1.59	1.17	6.79	166.48	.47

Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Boyd X State Com

#14H

WB1/Job #1410510

Survey: Phoenix MWD Surveys

Anticollision Report

28 April, 2014

Anticollision Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83: NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Reference Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#14H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	WB1/Job #1410510	Database:	Compass 5000 GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Reference	Survey: Phoenix MWD Surveys		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program	Date 04/28/14			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	2,000.00	Gyro Surveys (WB1/Job #1410510)	NS-GYRO-MS	North sensing gyrocompassing m/s
2,062.00	2,505.00	Phoenix MWD Surveys (WB1/Job #14105)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Roy AET Com						
#9H - WB1/Job #1410611 - Plan #1 04-08-14	1,744.40	1,744.24	26.79	19.03	3.452	CC
#9H - WB1/Job #1410611 - Plan #1 04-08-14	2,000.00	1,999.83	27.35	18.35	3.039	ES
#9H - WB1/Job #1410611 - Plan #1 04-08-14	2,029.82	2,029.64	27.51	18.42	3.025	SF

Offset Design	Roy AET Com - #9H - WB1/Job #1410611 - Plan #1 04-08-14												Offset Site Error:	0.00 usft
Survey Program:	0-MWD												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-89.04	0.50	-29.90	29.90					
100.00	100.00	100.00	100.00	0.11	0.09	-88.15	0.50	-29.90	30.14	29.94	0.20	149.441		
200.00	199.99	199.99	199.99	0.37	0.32	-86.52	0.50	-29.90	30.50	29.81	0.69	44.188		
300.00	299.99	299.99	299.99	0.62	0.54	-85.52	0.50	-29.90	31.03	29.87	1.16	26.759		
400.00	399.99	399.99	399.99	0.84	0.77	-84.99	0.50	-29.90	31.40	29.79	1.61	19.492		
500.00	499.99	499.99	499.99	1.07	0.99	-84.10	0.50	-29.90	31.26	29.19	2.06	15.150		
537.06	537.04	537.04	537.04	1.16	1.07	-83.66	0.50	-29.90	31.21	28.98	2.24	13.945		
600.00	599.99	599.99	599.99	1.32	1.22	-82.88	0.50	-29.90	31.33	28.80	2.54	12.354		
700.00	699.98	699.98	699.98	1.58	1.44	-80.83	0.50	-29.90	31.76	28.74	3.02	10.500		
800.00	799.97	799.97	799.97	1.84	1.67	-78.89	0.50	-29.90	32.00	28.50	3.51	9.125		
805.70	805.68	805.68	805.68	1.86	1.68	-78.82	0.50	-29.90	32.00	28.47	3.53	9.054		
900.00	899.97	899.97	899.97	2.10	1.89	-77.29	0.50	-29.90	32.28	28.29	3.99	8.088		
1,000.00	999.95	999.95	999.95	2.35	2.11	-73.90	0.50	-29.90	32.11	27.65	4.46	7.197		
1,100.00	1,099.91	1,099.91	1,099.91	2.57	2.34	-69.44	0.50	-29.90	31.03	26.12	4.90	6.326		
1,200.00	1,199.88	1,199.88	1,199.88	2.78	2.56	-65.43	0.50	-29.90	29.81	24.47	5.34	5.583		
1,300.00	1,299.86	1,299.86	1,299.86	2.99	2.79	-62.28	0.50	-29.90	28.89	23.11	5.78	5.001		
1,400.00	1,399.85	1,399.85	1,399.85	3.20	3.01	-60.10	0.50	-29.90	28.28	22.06	6.22	4.547		
1,500.00	1,499.85	1,499.85	1,499.85	3.42	3.24	-58.34	0.50	-29.90	27.77	21.11	6.66	4.169		
1,600.00	1,599.85	1,599.85	1,599.85	3.63	3.46	-56.90	0.50	-29.90	27.26	20.17	7.10	3.841		
1,700.00	1,699.84	1,699.84	1,699.84	3.86	3.69	-55.31	0.50	-29.90	26.86	19.31	7.55	3.558		
1,744.40	1,744.24	1,744.24	1,744.24	3.97	3.79	-54.45	0.50	-29.90	26.79	19.03	7.76	3.452	CC	
1,800.00	1,799.84	1,799.84	1,799.84	4.11	3.91	-53.35	0.50	-29.90	26.90	18.87	8.03	3.351		
1,900.00	1,899.83	1,899.83	1,899.83	4.38	4.14	-51.68	0.50	-29.90	27.16	18.64	8.51	3.190		

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

Anticollision Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83, NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Reference Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#14H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	WB1/Job #1410510	Database:	Compass 5000 GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error: 0.00 usft	
Roy AET Com - #9H - WB1/Job #1410611 - Plan #1 04-08-14												Offset Well Error: 0.00 usft	
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,000.00	1,999.83	1,999.83	1,999.83	4.64	4.36	-50.06	0.50	-29.90	27.35	18.35	9.00	3.039	ES
2,029.82	2,029.64	2,029.64	2,029.64	4.67	4.43	-49.53	0.50	-29.90	27.51	18.42	9.09	3.025	SF
2,100.00	2,099.82	2,097.97	2,097.93	4.73	4.58	-49.31	0.54	-31.55	29.40	20.10	9.30	3.161	
2,200.00	2,197.37	2,183.81	2,182.37	4.81	4.78	-72.75	0.89	-46.30	59.86	50.66	9.20	6.505	
2,300.00	2,286.24	2,242.55	2,238.01	4.93	4.93	-86.50	1.33	-65.01	128.18	119.30	8.88	14.431	
2,400.00	2,367.19	2,279.28	2,271.48	5.42	5.04	-89.51	1.69	-80.12	214.39	206.15	8.24	26.020	
2,500.00	2,436.11	2,300.00	2,289.81	6.41	5.12	-90.44	1.92	-89.77	310.32	302.79	7.52	41.243	
2,505.00	2,439.25	2,300.00	2,289.81	6.47	5.12	-90.46	1.92	-89.77	315.23	307.75	7.48	42.124	

Anticollision Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well: #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Reference Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#14H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1/Job #1410510	Database:	Compass 5000 GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3549.00usft (Silver Oak 11)

Offset Depths are relative to Offset Datum

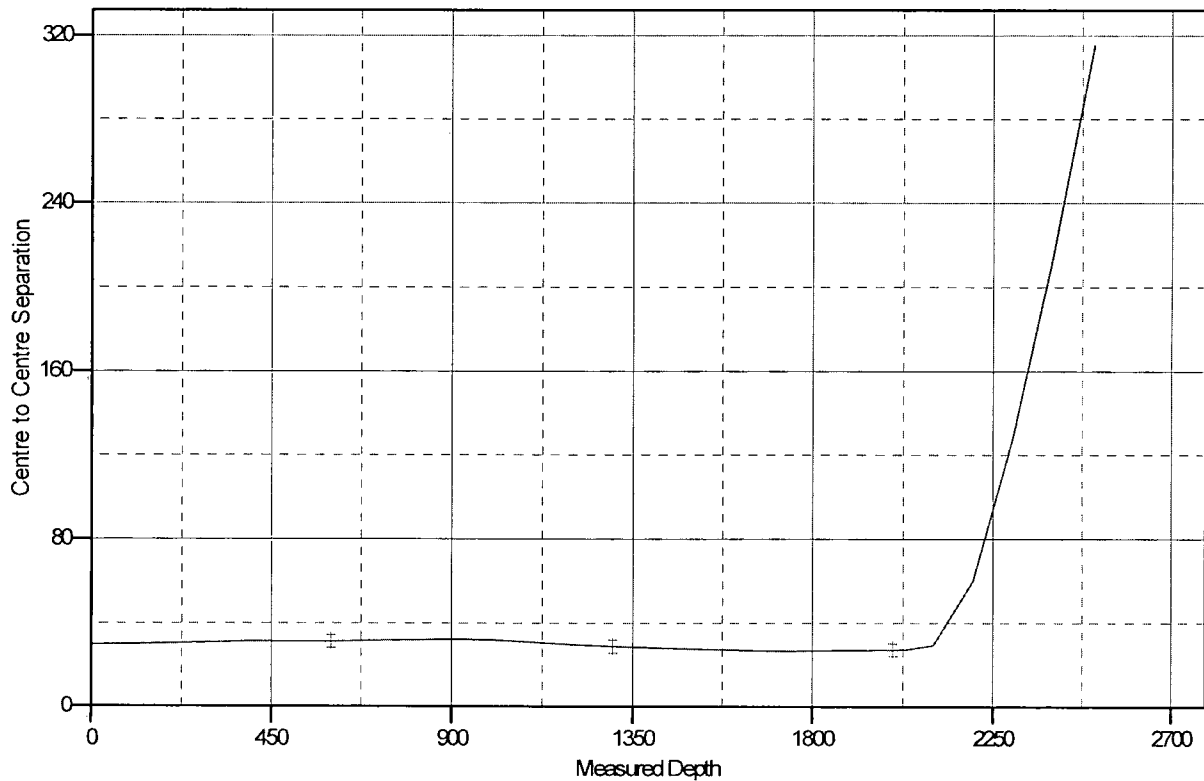
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #14H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: -0.09°

Ladder Plot



LEGEND

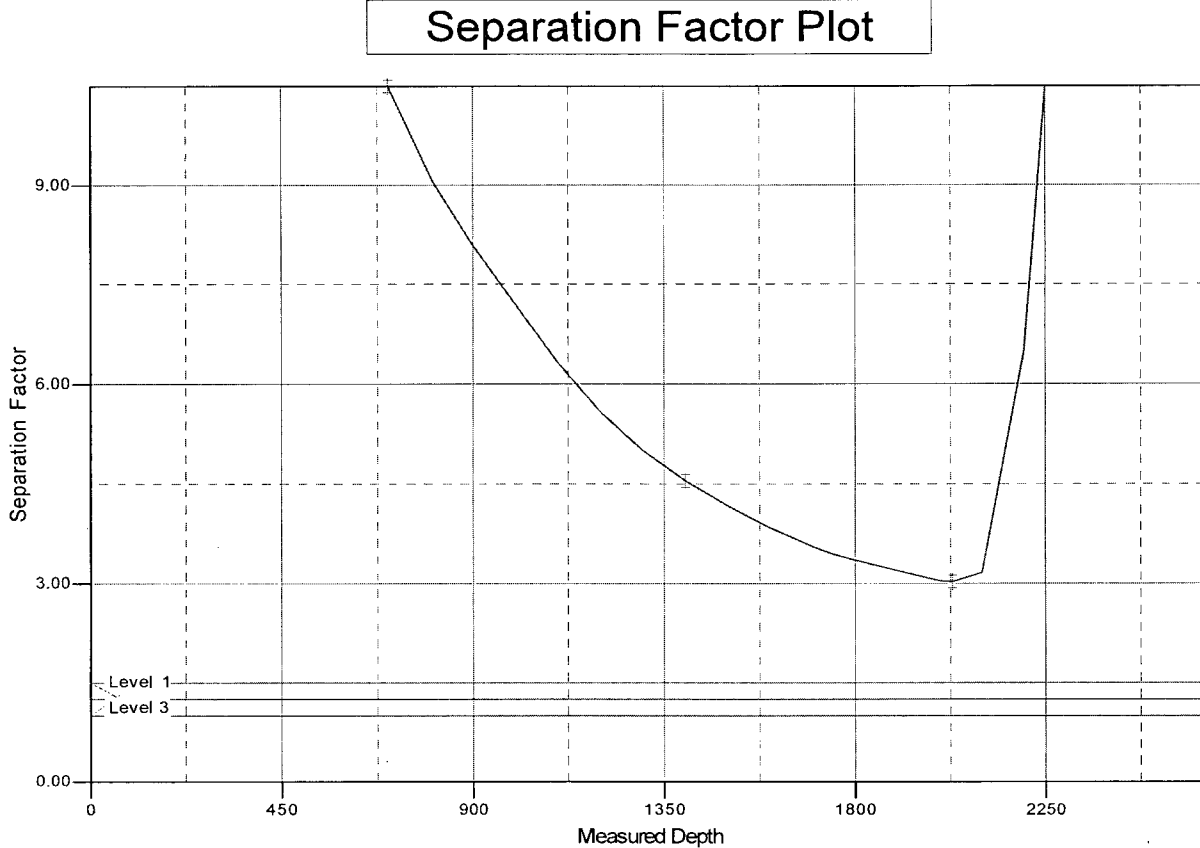
#9H, WB1/Job #1410611, Plan #1 04-08-14 V0

Anticollision Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Reference Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#14H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	WB1/Job #1410510	Database:	Compass 5000 GCR DB
Reference Design:	Survey: Phoenix MWD Surveys	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3549.00usft (Silver Oak 11)
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #14H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: -0.09°



LEGEND

— #9H, WB1/Job #1410611, Plan #1 04-08-14 V0



Project: Eddy County, NM (NAD83 NME)
Site: Boyd X State Com
Well: #14H
Wellbore: WB1/Job #1410510
Design: Plan #1 03-24-14
Rig: Silver Oak 11



Azimuths to Grid North
True North: 0.09°
Magnetic North: 7.79°
Magnetic Field
Strength: 48501.2snT
Dip Angle: 60.37°
Date: 03/24/2014
Model: IGRF2010_14

WELL DETAILS

	+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
	0.00	0.00	605917.80	490589.40	32° 39' 56.18038 N	104° 29' 53.68395 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	VSection	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		KOP: 12°/100' Build
2	2090.25	0.00	0.00	2090.25	0.00	0.00	0.00	0.00	0.00		LP: Hold 89.07° Inc. 88.90° Azm
3	2832.50	89.07	88.90	2567.65	9.02	469.63	12.00	88.90	469.26		Begin 2°/100' Turn
4	5666.34	89.07	88.90	2613.65	63.41	3302.58	0.00	0.00	3300.00		Hold 89.07° Inc. 80.56° Azm
5	6083.05	89.07	80.56	2620.41	101.63	3717.10	2.00	-90.04	3716.11		PBHL at 7295.10 MD
6	7295.10	89.07	80.56	2640.00	300.30	4912.60	0.00	0.00	4921.76		TD at 7395.10
7	7395.10	89.07	80.56	2641.62	316.69	5011.23	0.00	0.00	5021.23		

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Boyd X St #14H	2640.00	300.30	4912.60	606218.10	495502.00	32° 39' 59.22381 N	104° 28' 56.21830 W	Point
- plan hits target center								

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: New Mexico Eastern Zone
Local Origin: Well #14H, Grid North
Latitude: 32° 39' 56.18038 N
Longitude: 104° 29' 53.68395 W
Grid East: 490589.40
Grid North: 605917.80
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 24-Mar-14
Magnetic Declination: 7.70°
Dip Angle from Horizontal: 60.37°
Magnetic Field Strength: 48501

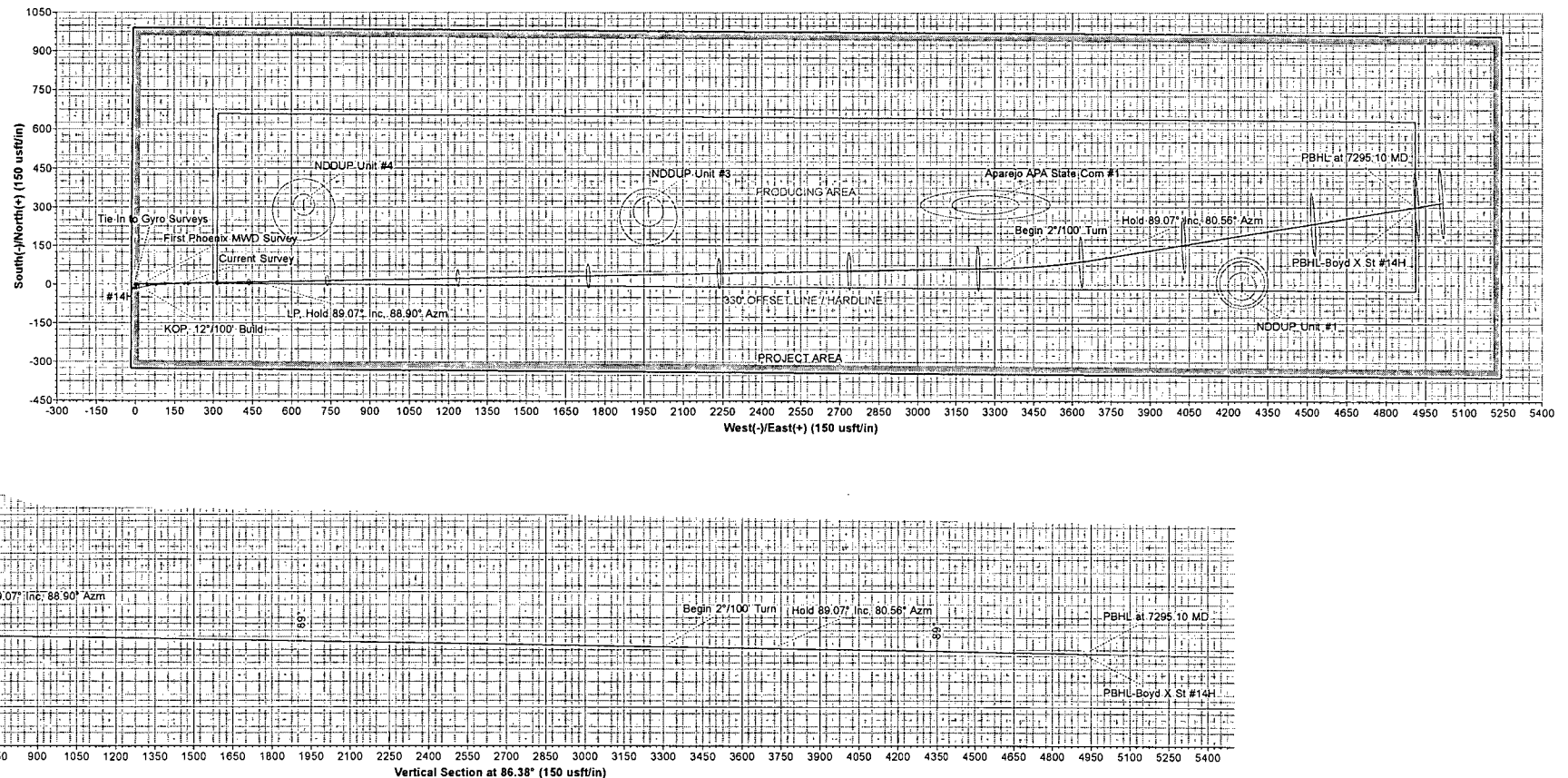
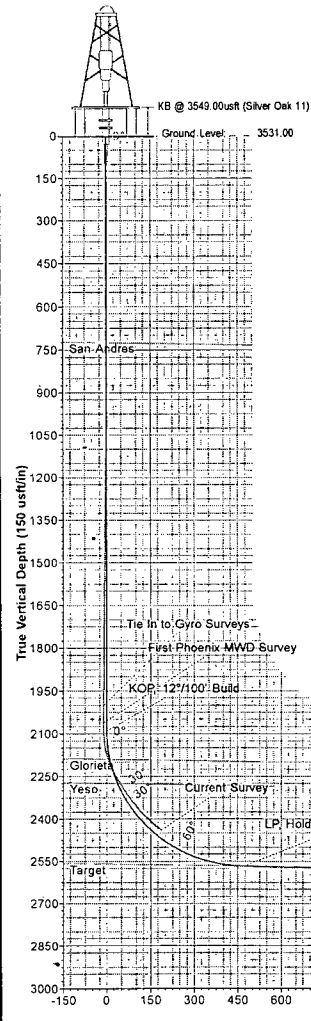
To convert a Magnetic Direction to a Grid Direction, Add 7.79°
To convert a Magnetic Direction to a True Direction, Add 7.70° East
To convert a True Direction to a Grid Direction, Add 0.09°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
725.00	725.00	San Andres	0.93	86.50
2190.17	2190.92	Glorieta	0.93	86.50
2274.60	2279.52	Yeso	0.93	86.50
2567.53	2826.83	Target	0.93	86.50

LEGEND

- #1, WB1, Inc Surveys V0
- #4, WB1, Inc Surveys V0
- #1, WB1, Inc Surveys V0
- #3, WB1, Inc Surveys V0
- #14H, WB1/Job #1410510, Surveys (McVay 8) V0
- Plan #1 03-24-14



Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)

Boyd X State Com

#14H

WB1/Job #1410510

Design: Surveys (McVay 8)

Standard Survey Report

28 April, 2014

Survey Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site:	Boyd X State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	Compass 5000 GCR DB

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	Boyd X State Com				
Site Position:		Northing:	605,917.80 usft	Latitude:	32° 39' 56.18038 N
From:	Map	Easting:	490,589.40 usft	Longitude:	104° 29' 53.68395 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.09 °

Well	#14H, 990' FNL & 15' FWL					
Well Position	+N/-S	0.00 usft	Northing:	605,917.80 usft	Latitude:	32° 39' 56.18038 N
	+E/-W	0.00 usft	Easting:	490,589.40 usft	Longitude:	104° 29' 53.68395 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,531.00 usft

Wellbore	WB1/Job #1410510				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010_14	03/24/14	7.70	60.37	48,501

Design	Surveys (McVay 8)			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	86.38

Survey Program	Date	04/28/14		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.00	2,000.00	Gyro Surveys (WB1/Job #1410510)	NS-GYRO-MS	North sensing gyrocompassing m/s
2,062.00	2,505.00	Phoenix MWD Surveys (WB1/Job #14105)	MWD	MWD - Standard.

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	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	0.60	154.57	100.00	-0.47	0.22	0.19	0.60	0.60	0.00	
200.00	0.48	166.78	199.99	-1.35	0.55	0.46	0.17	-0.12	12.21	
300.00	0.49	112.26	299.99	-1.92	1.04	0.91	0.44	0.01	-54.52	
400.00	0.19	197.50	399.99	-2.24	1.38	1.24	0.51	-0.30	85.24	
500.00	0.39	204.80	499.99	-2.71	1.19	1.02	0.20	0.20	7.30	
600.00	0.45	158.56	599.99	-3.38	1.19	0.97	0.33	0.06	-46.24	
700.00	0.94	171.42	699.98	-4.56	1.46	1.17	0.51	0.49	12.86	
800.00	0.35	194.34	799.97	-5.67	1.50	1.14	0.63	-0.59	22.92	
900.00	0.75	166.00	899.97	-6.60	1.59	1.17	0.47	0.40	-28.34	

Survey Report

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #14H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB @ 3549.00usft (Silver Oak 11)
Site:	Boyd X-State Com	MD Reference:	KB @ 3549.00usft (Silver Oak 11)
Well:	#14H	North Reference:	Grid
Wellbore:	WB1/Job #1410510	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay,8)	Database:	Compass 5000 GCR DB

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)	
1,000.00	1.62	214.28	999.95	-8.40	0.95	0.42	1.25	0.87	48.28	
1,100.00	1.49	230.44	1,099.91	-10.40	-0.85	-1.50	0.46	-0.13	16.16	
1,200.00	1.32	234.38	1,199.88	-11.90	-2.79	-3.53	0.20	-0.17	3.94	
1,300.00	0.81	238.39	1,299.86	-12.94	-4.33	-5.14	0.52	-0.51	4.01	
1,400.00	0.62	237.97	1,399.85	-13.60	-5.39	-6.24	0.19	-0.19	-0.42	
1,500.00	0.53	245.46	1,499.85	-14.08	-6.27	-7.14	0.12	-0.09	7.49	
1,600.00	0.45	252.18	1,599.85	-14.39	-7.06	-7.96	0.10	-0.08	6.72	
1,700.00	0.54	233.90	1,699.84	-14.79	-7.82	-8.73	0.18	0.09	-18.28	
1,800.00	0.58	194.01	1,799.84	-15.55	-8.32	-9.28	0.38	0.04	-39.89	
1,900.00	0.38	207.23	1,899.83	-16.34	-8.59	-9.61	0.23	-0.20	13.22	
2,000.00	0.53	202.97	1,999.83	-17.06	-8.93	-9.99	0.15	0.15	-4.26	
Tie In to Gyro Surveys										
2,062.00	1.00	192.10	2,061.83	-17.85	-9.15	-10.26	0.79	0.76	-17.53	
First Phoenix MWD Survey										
2,093.00	1.30	197.70	2,092.82	-18.45	-9.31	-10.46	1.03	0.97	18.06	
2,125.00	4.30	92.70	2,124.79	-18.86	-8.23	-9.40	15.01	9.38	-328.13	
2,157.00	11.90	83.60	2,156.45	-18.54	-3.74	-4.91	24.01	23.75	-28.44	
2,188.00	20.40	79.20	2,186.20	-17.17	4.76	3.66	27.68	27.42	-14.19	
2,220.00	25.60	75.90	2,215.64	-14.44	16.95	16.00	16.74	16.25	-10.31	
2,252.00	27.40	75.60	2,244.28	-10.93	30.79	30.04	5.64	5.63	-0.94	
2,283.00	29.40	77.90	2,271.55	-7.56	45.14	44.57	7.35	6.45	7.42	
2,315.00	32.60	81.50	2,298.98	-4.64	61.35	60.93	11.55	10.00	11.25	
2,347.00	35.40	84.70	2,325.51	-2.50	79.11	78.79	10.38	8.75	10.00	
2,378.00	38.40	85.80	2,350.29	-0.97	97.66	97.40	9.91	9.68	3.55	
2,410.00	42.50	85.80	2,374.64	0.55	118.36	118.16	12.81	12.81	0.00	
2,442.00	45.80	86.40	2,397.60	2.06	140.59	140.44	10.39	10.31	1.88	
2,473.00	48.60	87.40	2,418.66	3.29	163.30	163.18	9.34	9.03	3.23	
2,505.00	51.30	88.60	2,439.25	4.14	187.78	187.67	8.91	8.44	3.75	
Current Survey										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,000.00	1,999.83	-17.06	-8.93	Tie In to Gyro Surveys	
2,062.00	2,061.83	-17.85	-9.15	First Phoenix MWD Survey	
2,505.00	2,439.25	4.14	187.78	Current Survey	

Checked By: _____ Approved By: _____ Date: _____