



PHOENIX
TECHNOLOGY SERVICES

Jay-Bee Oil & Gas Inc.

Tyler County, WV (NAD83 - UTM 17N)

Grumpy

1

OH / 68140

Survey: Phoenix MWD Surveys

Standard Survey Report

12 August, 2021

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Office of Oil and Gas

JUL 07 2022

WV Department of
Environmental Protection



03/17/2023



Company:	Jay-Bee Oil & Gas Inc.	Local Co-ordinate Reference:	Well 1
Project:	Tyler County, WV (NAD83 - UTM 17N)	TVD Reference:	RKB @ 1312.70usft (Precision 823)
Site:	Grumpy	MD Reference:	RKB @ 1312.70usft (Precision 823)
Well:	1	North Reference:	Grid
Wellbore:	OH / 68140	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 823)	Database:	USA Compass

Project	Tyler County, WV (NAD83 - UTM 17N)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Grumpy				
Site Position:		Northing:	14,332,970.69 usft	Latitude:	39.467626
From:	Map	Easting:	1,706,976.69 usft	Longitude:	-80.764151
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	1					
Well Position	+N/-S	0.00 usft	Northing:	14,332,970.69 usft	Latitude:	39.467626
	+E/-W	0.00 usft	Easting:	1,706,976.69 usft	Longitude:	-80.764151
Position Uncertainty	1.00 usft		Wellhead Elevation:	usft	Ground Level:	1,299.20 usft

Wellbore	OH / 68140				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	9/8/2021	-7.75	66.44	51,770.63291838

Design	Surveys (Patterson 823)				
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	182.87	

Survey Program	Date 8/12/2021				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
13.50	307.50	Gyrodata Gyro Surveys (Adjusted) (OH / 6	GYD_CT_C011Ga	Gyrodata continuous	RECEIVED Office of Oil and Gas
407.00	13,222.00	Phoenix MWD Surveys (OH / 68140)	MWD+HRGM	OWSG MWD + HRGM	

JUL 07 2022										
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)	WV Dependent of Environment Detection
307.50	1.27	165.82	307.46	-0.27	2.23	0.16	0.00	0.00	0.00	
Tie In										
407.00	0.80	157.54	406.95	-1.98	2.77	1.84	0.49	-0.47	-8.32	
First Phoenix MWD Survey										
496.00	1.04	76.70	495.94	-2.37	3.79	2.17	1.36	0.27	-90.83	
585.00	2.01	67.90	584.91	-1.59	6.02	1.29	1.12	1.09	-9.89	
629.00	2.52	65.94	628.87	-0.91	7.62	0.53	1.17	1.16	-4.45	
674.00	3.08	54.64	673.82	0.19	9.51	-0.67	1.74	1.24	-25.11	
763.00	3.90	49.04	762.65	3.56	13.75	-4.25	1.00	0.92	-6.29	



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Survey

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808.00	4.22	48.51	807.54	5.66	16.14	-6.46	0.72	0.71	-1.18
852.00	4.78	43.59	851.40	8.06	18.62	-8.98	1.54	1.27	-11.18
942.00	4.72	34.29	941.10	13.84	23.29	-14.99	0.86	-0.07	-10.33
1,031.00	4.82	30.09	1,029.79	20.10	27.23	-21.44	0.41	0.11	-4.72
1,120.00	4.88	29.31	1,118.47	26.63	30.96	-28.15	0.10	0.07	-0.88
1,209.00	3.43	15.86	1,207.23	32.50	33.54	-34.14	1.95	-1.63	-15.11
1,254.00	2.52	1.75	1,252.17	34.78	33.94	-36.44	2.58	-2.02	-31.36
1,298.00	2.20	355.77	1,296.14	36.59	33.90	-38.24	0.92	-0.73	-13.59
1,387.00	1.43	349.90	1,385.09	39.39	33.58	-41.02	0.89	-0.87	-6.60
1,432.00	1.30	337.95	1,430.08	40.41	33.29	-42.03	0.69	-0.29	-26.56
1,521.00	0.69	321.55	1,519.07	41.77	32.58	-43.35	0.75	-0.69	-18.43
1,566.00	0.52	296.15	1,564.06	42.07	32.23	-43.63	0.70	-0.38	-56.44
1,655.00	0.66	304.15	1,653.06	42.54	31.44	-44.06	0.18	0.16	8.99
1,744.00	0.76	314.58	1,742.05	43.24	30.60	-44.72	0.18	0.11	11.72
1,833.00	0.85	317.19	1,831.04	44.14	29.73	-45.57	0.11	0.10	2.93
1,922.00	1.20	350.45	1,920.03	45.54	29.12	-46.94	0.76	0.39	37.37
2,011.00	2.00	358.94	2,008.99	48.01	28.94	-49.40	0.94	0.90	9.54
2,101.00	3.00	357.43	2,098.91	51.93	28.81	-53.31	1.11	1.11	-1.68
2,190.00	5.00	354.92	2,187.69	58.13	28.36	-59.47	2.26	2.25	-2.82
2,281.00	7.03	338.80	2,278.19	67.27	25.99	-68.49	2.88	2.23	-17.71
2,370.00	9.20	335.59	2,366.29	78.83	21.08	-79.78	2.49	2.44	-3.61
2,485.00	11.91	342.75	2,479.34	98.54	13.76	-99.10	2.61	2.36	6.23
2,589.00	10.22	340.65	2,581.40	117.49	7.52	-117.72	1.67	-1.63	-2.02
2,678.00	12.51	335.52	2,668.65	133.72	0.91	-133.59	2.81	2.57	-5.76
2,767.00	16.40	327.62	2,754.83	153.11	-9.82	-152.42	4.89	4.37	-8.88
2,856.00	18.11	324.41	2,839.82	174.97	-24.60	-173.52	2.20	1.92	-3.61
2,945.00	19.17	321.59	2,924.15	197.67	-41.73	-195.33	1.56	1.19	-3.17
3,034.00	18.14	316.75	3,008.48	219.21	-60.30	-215.92	2.09	-1.16	-5.44
3,123.00	18.43	315.17	3,092.99	239.28	-79.71	-234.99	0.65	0.33	-1.78
3,212.00	16.92	308.71	3,177.79	257.36	-99.74	-252.04	2.78	-1.70	-7.26
3,301.00	16.44	306.09	3,263.05	272.88	-120.02	-266.53	1.00	-0.54	-2.94
3,391.00	15.17	297.25	3,349.66	285.78	-140.79	-278.37	3.02	-1.41	-9.82
3,480.00	14.40	285.49	3,435.73	294.06	-161.81	-285.59	3.47	-0.87	-13.21
3,569.00	15.08	275.36	3,521.81	298.10	-184.00	-288.52	2.99	0.76	-11.38
3,658.00	15.91	270.10	3,607.58	299.21	-207.73	-288.43	1.83	0.93	-5.91
3,747.00	17.15	269.33	3,692.90	299.07	-233.05	-287.03	1.41	1.39	-0.87
3,836.00	19.10	268.58	3,777.48	298.56	-260.73	-285.13	2.21	2.19	-0.84
3,925.00	20.66	270.53	3,861.18	298.34	-290.99	-283.40	1.90	1.75	2.19
4,014.00	21.89	271.59	3,944.11	298.95	-323.28	-282.39	1.45	1.38	1.19
4,103.00	23.03	270.50	4,026.36	299.56	-357.27	-281.30	1.36	1.28	-1.22
4,194.00	24.36	269.67	4,109.69	299.61	-393.84	-279.51	1.51	1.46	-0.91
4,283.00	24.89	267.56	4,190.59	298.71	-430.91	-276.76	1.15	0.60	-2.37
4,372.00	25.25	265.46	4,271.21	296.41	-468.54	-272.57	1.08	0.40	-2.36

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Survey Report



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Survey

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4,461.00	26.52	263.05	4,351.28	292.50	-507.19	-266.74	1.85	1.43	-2.71	
4,550.00	26.31	260.51	4,430.99	286.84	-546.37	-259.13	1.29	-0.24	-2.85	
4,639.00	26.47	260.01	4,510.72	280.15	-585.36	-250.49	0.31	0.18	-0.56	
4,728.00	27.28	259.46	4,590.10	272.98	-624.95	-241.34	0.95	0.91	-0.62	
4,817.00	26.04	259.01	4,669.64	265.52	-664.18	-231.93	1.41	-1.39	-0.51	
4,906.00	25.54	260.98	4,749.78	258.79	-702.30	-223.30	1.11	-0.56	2.21	
4,995.00	25.95	260.49	4,829.94	252.56	-740.46	-215.17	0.52	0.46	-0.55	
5,084.00	26.79	258.86	4,909.68	245.47	-779.34	-206.14	1.25	0.94	-1.83	
5,173.00	27.46	259.90	4,988.89	238.00	-819.22	-196.68	0.92	0.75	1.17	
5,262.00	27.22	262.49	5,067.95	231.74	-859.61	-188.41	1.36	-0.27	2.91	
5,351.00	27.25	262.70	5,147.09	226.49	-900.00	-181.14	0.11	0.03	0.24	
5,439.00	27.43	262.66	5,225.26	221.34	-940.08	-173.99	0.21	0.20	-0.05	
5,528.00	27.69	262.63	5,304.16	216.07	-980.92	-166.68	0.29	0.29	-0.03	
5,618.00	27.71	263.73	5,383.84	211.10	-1,022.46	-159.64	0.57	0.02	1.22	
5,707.00	28.03	263.14	5,462.52	206.34	-1,063.79	-152.82	0.47	0.36	-0.66	
5,796.00	26.15	261.82	5,541.75	201.05	-1,103.97	-145.53	2.22	-2.11	-1.48	
5,887.00	25.61	260.56	5,623.63	194.98	-1,143.22	-137.49	0.85	-0.59	-1.38	
5,976.00	25.50	259.48	5,703.92	188.32	-1,181.03	-128.95	0.54	-0.12	-1.21	
6,065.00	26.55	259.51	5,783.90	181.20	-1,219.43	-119.92	1.18	1.18	0.03	
6,154.00	27.14	258.49	5,863.31	173.53	-1,258.88	-110.28	0.84	0.66	-1.15	
6,243.00	27.34	260.66	5,942.44	166.16	-1,298.94	-100.92	1.14	0.22	2.44	
6,332.00	27.54	264.15	6,021.43	160.75	-1,339.57	-93.48	1.82	0.22	3.92	
6,421.00	25.39	264.35	6,101.10	156.77	-1,379.03	-87.53	2.42	-2.42	0.22	
6,509.00	25.10	260.70	6,180.70	151.90	-1,416.23	-80.80	1.80	-0.33	-4.15	
6,598.00	25.14	259.15	6,261.28	145.29	-1,453.43	-72.33	0.74	0.04	-1.74	
6,628.00	26.87	260.95	6,288.24	143.02	-1,466.38	-69.42	6.34	5.77	6.00	
6,673.00	25.54	259.29	6,328.62	139.62	-1,485.96	-65.04	3.37	-2.96	-3.69	
6,717.00	27.08	256.87	6,368.06	135.58	-1,505.03	-60.06	4.26	3.50	-5.50	
6,762.00	25.91	256.08	6,408.33	130.89	-1,524.55	-54.39	2.72	-2.60	-1.76	
6,807.00	26.82	253.53	6,448.65	125.65	-1,543.83	-48.19	3.23	2.02	-5.67	
6,852.00	25.29	251.65	6,489.08	119.74	-1,562.69	-41.35	RECEIVED Office of Oil and Gas JUL 07 2022 5.85	2.35	-3.40	-4.18
6,896.00	26.00	246.45	6,528.75	112.93	-1,580.45	-33.95	5.26	1.61	-11.82	
6,941.00	26.47	237.72	6,569.13	103.63	-1,597.98	-23.49	8.63	1.04	-19.40	
6,986.00	27.25	227.19	6,609.30	91.26	-1,614.03	-10.34	10.70	1.73	-23.40	
7,031.00	28.72	218.29	6,649.05	75.77	-1,628.29	5.85	9.83	3.27	-19.78	
7,075.00	30.08	210.64	6,687.40	57.98	-1,640.47	24.23	23 Department of Environmental Protection	3.09	-17.39	
7,120.00	31.33	203.58	6,726.10	37.55	-1,650.90	55.16	2.78	2.78	-15.69	
7,165.00	32.68	198.02	6,764.27	15.26	-1,659.34	67.84	7.20	3.00	-12.36	
7,210.00	35.32	192.81	6,801.58	-8.98	-1,665.98	92.39	8.73	5.87	-11.58	
7,254.00	39.01	190.17	6,836.64	-35.03	-1,671.25	118.66	9.13	8.39	-6.00	
7,299.00	42.69	186.94	6,870.68	-64.12	-1,675.60	147.94	9.43	8.18	-7.18	
7,344.00	45.58	182.47	6,902.98	-95.34	-1,678.13	179.24	9.44	6.42	-9.93	
7,389.00	49.26	181.04	6,933.42	-128.45	-1,679.14	212.36	8.51	8.18	-3.18	
7,434.00	53.68	180.55	6,961.45	-163.64	-1,679.62	247.53	9.86	9.82	-1.09	



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7,478.00	58.87	181.03	6,985.87	-200.22	-1,680.13	284.09	11.83	11.80	1.09
7,523.00	65.16	180.39	7,006.97	-239.93	-1,680.61	323.78	14.03	13.98	-1.42
7,567.00	71.11	179.92	7,023.35	-280.75	-1,680.72	364.55	13.56	13.52	-1.07
7,612.00	74.95	178.07	7,036.48	-323.77	-1,679.96	407.48	9.40	8.53	-4.11
7,657.00	78.98	175.51	7,046.63	-367.53	-1,677.50	451.06	10.53	8.96	-5.69
7,701.00	83.40	173.62	7,053.37	-410.80	-1,673.38	494.08	10.91	10.05	-4.30
7,746.00	89.18	171.82	7,056.28	-455.33	-1,667.69	538.26	13.45	12.84	-4.00
7,791.00	89.76	169.54	7,056.70	-499.73	-1,660.40	582.24	5.23	1.29	-5.07
7,835.00	89.22	166.72	7,057.09	-542.78	-1,651.35	624.78	6.53	-1.23	-6.41
7,880.00	92.86	167.38	7,056.27	-586.62	-1,641.27	668.06	8.22	8.09	1.47
7,925.00	93.30	167.70	7,053.86	-630.50	-1,631.57	711.40	1.21	0.98	0.71
7,969.00	91.72	167.40	7,051.93	-673.42	-1,622.10	753.79	3.65	-3.59	-0.68
8,014.00	91.99	167.04	7,050.47	-717.28	-1,612.15	797.10	1.00	0.60	-0.80
8,059.00	90.98	167.81	7,049.31	-761.19	-1,602.35	840.46	2.82	-2.24	1.71
8,148.00	89.05	166.95	7,049.28	-848.03	-1,582.91	926.23	2.37	-2.17	-0.97
8,237.00	89.02	167.44	7,050.78	-934.81	-1,563.19	1,011.90	0.55	-0.03	0.55
8,326.00	90.12	168.11	7,051.45	-1,021.78	-1,544.34	1,097.83	1.45	1.24	0.75
8,415.00	90.30	167.65	7,051.12	-1,108.80	-1,525.66	1,183.80	0.56	0.20	-0.52
8,504.00	90.21	167.45	7,050.73	-1,195.71	-1,506.47	1,269.63	0.25	-0.10	-0.22
8,593.00	89.24	165.35	7,051.15	-1,282.20	-1,485.54	1,354.98	2.60	-1.09	-2.36
8,682.00	89.47	165.82	7,052.16	-1,368.40	-1,463.39	1,439.95	0.59	0.26	0.53
8,771.00	90.32	166.73	7,052.32	-1,454.85	-1,442.27	1,525.24	1.40	0.96	1.02
8,860.00	90.19	165.93	7,051.92	-1,541.33	-1,421.24	1,610.56	0.91	-0.15	-0.90
8,949.00	90.21	165.41	7,051.61	-1,627.56	-1,399.21	1,695.58	0.58	0.02	-0.58
9,038.00	89.98	164.98	7,051.47	-1,713.60	-1,376.47	1,780.38	0.55	-0.26	-0.48
9,127.00	89.88	164.42	7,051.57	-1,799.45	-1,352.99	1,864.94	0.64	-0.11	-0.63
9,216.00	89.79	164.55	7,051.83	-1,885.21	-1,329.18	1,949.39	0.18	-0.10	0.15
9,305.00	91.13	165.02	7,051.12	-1,971.08	-1,305.82	2,033.99	1.60	1.51	0.53
9,394.00	90.95	165.42	7,049.50	-2,057.12	-1,283.12	2,118.79	0.49	-0.20	0.45
9,483.00	91.04	166.08	7,047.96	-2,143.37	-1,261.22	2,203.83	0.75	0.10	0.74
9,572.00	90.95	166.67	7,046.41	-2,229.85	-1,240.26	2,289.16	0.67	-0.10	0.66
9,661.00	90.05	166.17	7,045.63	-2,316.36	-1,219.36	2,374.51	1.16	-1.01	-0.56
9,750.00	89.25	165.51	7,046.18	-2,402.65	-1,197.59	2,459.60	1.17	-0.90	-0.74
9,839.00	89.84	165.51	7,046.88	-2,488.82	-1,175.32	2,544.55	0.66	0.66	0.00
9,928.00	89.62	165.03	7,047.30	-2,574.89	-1,152.69	2,629.38	0.55	-0.25	-0.54
10,017.00	89.79	165.56	7,047.76	-2,660.98	-1,130.10	2,714.22	0.65	0.19	0.60
10,106.00	89.59	165.33	7,048.24	-2,747.12	-1,107.73	2,799.14	0.92	0.22	-0.26
10,195.00	89.53	166.15	7,048.93	-2,833.37	-1,085.81	2,884.19	1.12	-0.07	0.92
10,284.00	89.81	167.11	7,049.44	-2,919.96	-1,065.23	2,969.63	1.12	0.31	1.08
10,374.00	89.84	164.46	7,049.71	-3,007.19	-1,043.13	3,055.65	0.94	0.03	-2.94
10,463.00	89.59	164.43	7,050.16	-3,092.93	-1,019.27	3,140.09	0.28	-0.28	-0.03
10,552.00	89.58	164.78	7,050.80	-3,178.74	-995.64	3,224.60	0.39	-0.01	0.39
10,641.00	89.47	164.68	7,051.54	-3,264.59	-972.20	3,309.18	0.17	-0.12	-0.11

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Company:	Jay-Bee Oil & Gas Inc.	Local Co-ordinate Reference:	Well 1
Project:	Tyler County, WV (NAD83 - UTM 17N)	TVD Reference:	RKB @ 1312.70usft (Precision 823)
Site:	Grumpy	MD Reference:	RKB @ 1312.70usft (Precision 823)
Well:	1	North Reference:	Grid
Wellbore:	OH / 68140	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 823)	Database:	USA Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,732.00	89.08	164.37	7,052.69	-3,352.29	-947.92	3,395.54	0.55	-0.43	-0.34
10,821.00	89.22	164.82	7,054.01	-3,438.08	-924.28	3,480.05	0.53	0.16	0.51
10,910.00	89.45	165.03	7,055.04	-3,524.01	-901.14	3,564.71	0.35	0.26	0.24
11,000.00	89.72	165.57	7,055.70	-3,611.06	-878.30	3,650.51	0.67	0.30	0.60
11,090.00	89.72	166.20	7,056.14	-3,698.34	-856.35	3,736.58	0.70	0.00	0.70
11,180.00	89.76	166.03	7,056.54	-3,785.71	-834.76	3,822.76	0.19	0.04	-0.19
11,271.00	89.92	163.91	7,056.80	-3,873.59	-811.16	3,909.35	2.34	0.18	-2.33
11,360.00	89.58	163.27	7,057.19	-3,958.97	-786.02	3,993.36	0.81	-0.38	-0.72
11,450.00	88.59	162.93	7,058.62	-4,045.07	-759.86	4,078.04	1.16	-1.10	-0.38
11,540.00	88.84	162.70	7,060.64	-4,131.03	-733.27	4,162.56	0.38	0.28	-0.26
11,630.00	89.25	165.66	7,062.14	-4,217.60	-708.74	4,247.79	3.32	0.46	3.29
11,720.00	89.81	163.05	7,062.88	-4,304.25	-684.47	4,333.13	2.97	0.62	-2.90
11,810.00	90.89	163.21	7,062.33	-4,390.38	-658.36	4,417.83	1.21	1.20	0.18
11,901.00	89.16	158.61	7,062.29	-4,476.35	-628.61	4,502.21	5.40	1.96	-5.05
11,991.00	90.30	157.85	7,062.71	-4,559.92	-595.23	4,584.01	1.52	1.27	-0.84
12,081.00	92.07	158.01	7,060.85	-4,643.31	-561.42	4,665.59	1.97	1.29	0.18
12,171.00	92.52	156.35	7,057.25	-4,726.19	-526.54	4,746.63	1.97	0.50	-1.84
12,261.00	92.53	160.29	7,053.28	-4,809.73	-493.33	4,828.40	4.37	0.01	4.38
12,351.00	91.78	162.00	7,049.90	-4,894.84	-464.27	4,911.94	3.07	0.83	1.90
12,441.00	89.87	164.55	7,048.60	-4,981.01	-438.38	4,996.71	3.54	-2.12	2.83
12,531.00	88.85	166.01	7,049.61	-5,068.05	-415.51	5,082.49	1.98	-1.13	1.62
12,622.00	88.34	165.70	7,051.84	-5,156.26	-393.28	5,169.48	0.66	-0.56	-0.34
12,711.00	87.84	165.33	7,054.81	-5,242.38	-371.03	5,254.39	0.70	-0.56	-0.42
12,802.00	89.95	165.37	7,056.56	-5,330.40	-348.02	5,341.14	2.32	2.32	0.04
12,892.00	93.26	165.79	7,054.04	-5,417.52	-325.62	5,427.03	3.71	3.68	0.47
12,982.00	92.89	165.19	7,049.21	-5,504.52	-303.10	5,512.80	0.78	-0.41	-0.67
13,073.00	93.12	165.17	7,044.44	-5,592.38	-279.86	5,599.37	0.25	0.25	-0.02
13,154.00	92.46	165.03	7,040.50	-5,670.56	-259.06	5,676.42	0.83	-0.81	-0.17
Final Phoenix MWD Survey									
13,222.00	92.46	165.03	7,037.58	-5,736.19	-241.51	5,741.09	0.00	0.00	0.00
Projection to TD									

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Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
307.50	307.46	-0.27	2.23	Tie In
407.00	406.95	-1.98	2.77	First Phoenix MWD Survey
13,154.00	7,040.50	-5,670.56	-259.06	Final Phoenix MWD Survey
13,222.00	7,037.58	-5,736.19	-241.51	Projection to TD