



# **Extraction Oil & Gas**

**Weld County, CO (NAD83)**

**RBF**

**5**

**OH / Job #61105**

**Survey: Phoenix MWD Surveys**

## **Standard Survey Report**

**23 May, 2017**





# Phoenix Technology Services LP

## Survey Report



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well 5
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Site:</b>	RBF	<b>MD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Well:</b>	5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH / Job #61105	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Patterson 346)	<b>Database:</b>	Compass 5000 RMR

<b>Project</b>	Weld County, CO (NAD83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		RBF			
Site Position:		Northing:	1,416,272.86 usft	Latitude:	40° 28' 27.728 N
From:	Lat/Long	Easting:	3,174,878.37 usft	Longitude:	104° 52' 17.036 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	5					
Well Position	+N/-S	0.00 usft	Northing:	1,416,208.73 usft	Latitude:	40° 28' 27.095 N
	+E/-W	0.00 usft	Easting:	3,174,878.55 usft	Longitude:	104° 52' 17.040 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,778.00 usft

<b>Wellbore</b>	OH / Job #61105				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	5/15/2017	8.42	66.93	52,461

<b>Design</b>	Surveys (Patterson 346)				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	276.59	

<b>Survey Program</b>	<b>Date</b>	5/23/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.00	1,570.00	Total MWD Surveys (OH / Surface)	MWD	OWSG Rev.2 MWD - Standard	
1,520.00	16,995.00	Phoenix MWD Surveys (OH / Job #61105)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
1,520.00	13.75	26.62	1,504.23	144.00	54.62	-37.74	0.00	0.00	0.00	
<b>Tie In</b>										
1,607.00	13.77	28.39	1,588.73	162.35	64.17	-45.12	0.48	0.02	2.03	
<b>First Phoenix MWD Survey</b>										
1,702.00	13.24	23.71	1,681.11	182.26	73.93	-52.52	1.28	-0.56	-4.93	
1,796.00	12.04	22.54	1,772.83	201.17	82.01	-58.39	1.31	-1.28	-1.24	
1,891.00	14.02	22.26	1,865.38	220.97	90.17	-64.22	2.09	2.08	-0.29	
1,985.00	13.59	20.32	1,956.66	241.87	98.32	-69.92	0.67	-0.46	-2.06	
2,080.00	12.78	17.88	2,049.16	262.33	105.42	-74.62	1.03	-0.85	-2.57	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well 5
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Site:</b>	RBF	<b>MD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Well:</b>	5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH / Job #61105	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Patterson 346)	<b>Database:</b>	Compass 5000 RMR

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,174.00	13.83	24.25	2,140.64	282.47	113.23	-80.07	1.92	1.12	6.78	
2,269.00	13.49	22.59	2,232.95	303.06	122.15	-86.57	0.55	-0.36	-1.75	
2,363.00	12.89	20.86	2,324.47	322.98	130.09	-92.17	0.76	-0.64	-1.84	
2,457.00	12.35	19.19	2,416.20	342.27	137.13	-96.95	0.69	-0.57	-1.78	
2,552.00	13.47	25.31	2,508.80	361.87	145.20	-102.72	1.86	1.18	6.44	
2,741.00	11.67	20.82	2,693.27	399.64	161.41	-114.48	1.08	-0.95	-2.38	
2,836.00	10.70	20.84	2,786.46	416.86	167.96	-119.02	1.02	-1.02	0.02	
2,931.00	11.47	27.30	2,879.69	433.50	175.43	-124.53	1.54	0.81	6.80	
3,026.00	9.74	23.79	2,973.07	449.25	183.01	-130.25	1.94	-1.82	-3.69	
3,121.00	10.68	26.74	3,066.56	464.46	190.21	-135.66	1.13	0.99	3.11	
3,216.00	11.42	24.54	3,159.80	480.88	198.07	-141.59	0.90	0.78	-2.32	
3,309.00	12.70	27.94	3,250.75	498.29	206.69	-148.15	1.57	1.38	3.66	
3,402.00	13.21	28.56	3,341.38	516.65	216.56	-155.84	0.57	0.55	0.67	
3,497.00	11.17	26.91	3,434.23	534.39	225.91	-163.10	2.18	-2.15	-1.74	
3,591.00	11.73	25.72	3,526.36	551.12	234.18	-169.40	0.65	0.60	-1.27	
3,686.00	11.83	24.37	3,619.36	568.69	242.39	-175.53	0.31	0.11	-1.42	
3,780.00	11.86	19.19	3,711.36	586.59	249.54	-180.58	1.13	0.03	-5.51	
3,875.00	13.88	26.43	3,803.98	606.02	257.82	-186.58	2.72	2.13	7.62	
3,967.00	13.17	25.71	3,893.43	625.34	267.28	-193.76	0.79	-0.77	-0.78	
4,061.00	11.35	27.94	3,985.28	643.16	276.26	-200.64	2.00	-1.94	2.37	
4,155.00	12.60	26.61	4,077.23	660.50	285.19	-207.52	1.36	1.33	-1.41	
4,250.00	13.45	23.49	4,169.79	679.90	294.23	-214.27	1.16	0.89	-3.28	
4,344.00	12.07	25.26	4,261.46	698.81	302.79	-220.60	1.53	-1.47	1.88	
4,438.00	13.49	21.86	4,353.14	717.88	311.06	-226.63	1.71	1.51	-3.62	
4,533.00	12.07	18.57	4,445.78	737.58	318.35	-231.61	1.68	-1.49	-3.46	
4,627.00	13.72	20.52	4,537.41	757.34	325.39	-236.34	1.82	1.76	2.07	
4,721.00	12.95	20.02	4,628.87	777.67	332.90	-241.47	0.83	-0.82	-0.53	
4,816.00	14.37	19.30	4,721.18	798.80	340.44	-246.54	1.51	1.49	-0.76	
4,910.00	13.49	18.06	4,812.42	820.24	347.70	-251.28	0.99	-0.94	-1.32	
5,004.00	13.24	18.89	4,903.87	840.85	354.58	-255.76	0.34	-0.27	0.88	
5,099.00	13.70	22.64	4,996.26	861.52	362.44	-261.19	1.04	0.48	3.95	
5,192.00	11.17	19.23	5,087.07	880.19	369.64	-266.20	2.83	-2.72	-3.67	
5,287.00	11.64	16.69	5,180.20	898.06	375.43	-269.90	0.72	0.49	-2.67	
5,381.00	11.71	22.67	5,272.26	915.95	381.83	-274.20	1.29	0.07	6.36	
5,475.00	11.16	21.37	5,364.39	933.22	388.82	-279.17	0.65	-0.59	-1.38	
5,569.00	10.32	23.55	5,456.74	949.41	395.50	-283.94	0.99	-0.89	2.32	
5,664.00	8.50	20.91	5,550.46	963.77	401.40	-288.16	1.97	-1.92	-2.78	
5,758.00	7.40	15.93	5,643.56	976.08	405.54	-290.86	1.38	-1.17	-5.30	
5,852.00	5.98	12.83	5,736.91	986.68	408.29	-292.38	1.56	-1.51	-3.30	
5,946.00	3.44	27.39	5,830.59	993.96	410.68	-293.91	2.97	-2.70	15.49	
6,040.00	1.36	41.61	5,924.51	997.30	412.72	-295.55	2.28	-2.21	15.13	
6,135.00	1.21	27.55	6,019.48	999.03	413.93	-296.56	0.37	-0.16	-14.80	
6,229.00	1.06	37.20	6,113.46	1,000.60	414.91	-297.36	0.26	-0.16	10.27	

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<b>Site:</b>	RBF	<b>MD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Well:</b>	5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH / Job #61105	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Patterson 346)	<b>Database:</b>	Compass 5000 RMR

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)	
6,323.00	0.64	45.21	6,207.45	1,001.67	415.81	-298.13	0.46	-0.45	8.52	
6,417.00	0.42	6.82	6,301.45	1,002.38	416.23	-298.46	0.43	-0.23	-40.84	
6,512.00	0.22	7.39	6,396.45	1,002.90	416.29	-298.46	0.21	-0.21	0.60	
6,629.00	0.17	136.09	6,513.45	1,003.00	416.44	-298.60	0.30	-0.04	110.00	
6,723.00	9.66	266.42	6,607.01	1,002.41	408.65	-290.92	10.39	10.10	138.65	
6,817.00	20.01	272.69	6,697.76	1,002.67	384.64	-267.05	11.13	11.01	6.67	
6,912.00	28.03	272.72	6,784.46	1,004.50	346.05	-228.50	8.44	8.44	0.03	
7,006.00	35.83	270.41	6,864.18	1,005.74	296.40	-179.03	8.40	8.30	-2.46	
7,100.00	42.44	269.52	6,937.05	1,005.67	237.10	-120.14	7.06	7.03	-0.95	
7,194.00	49.33	268.91	7,002.44	1,004.73	169.66	-53.25	7.34	7.33	-0.65	
7,288.00	58.54	272.64	7,057.74	1,005.90	93.79	22.25	10.31	9.80	3.97	
7,383.00	65.42	274.05	7,102.34	1,010.82	10.12	105.93	7.36	7.24	1.48	
7,477.00	72.45	271.38	7,136.11	1,014.93	-77.43	193.38	7.93	7.48	-2.84	
7,571.00	78.23	270.68	7,159.89	1,016.55	-168.32	283.85	6.19	6.15	-0.74	
7,665.00	84.66	269.87	7,173.87	1,016.99	-261.22	376.19	6.89	6.84	-0.86	
7,760.00	89.57	270.34	7,178.65	1,017.17	-356.07	470.44	5.19	5.17	0.49	
7,854.00	89.37	269.61	7,179.52	1,017.13	-450.07	563.81	0.81	-0.21	-0.78	
7,948.00	89.71	269.04	7,180.27	1,016.02	-544.06	657.05	0.71	0.36	-0.61	
8,042.00	89.16	271.19	7,181.20	1,016.21	-638.05	750.44	2.36	-0.59	2.29	
8,137.00	89.52	270.59	7,182.29	1,017.68	-733.03	844.96	0.74	0.38	-0.63	
8,231.00	89.71	269.83	7,182.92	1,018.03	-827.02	938.38	0.83	0.20	-0.81	
8,325.00	90.37	270.88	7,182.86	1,018.61	-921.02	1,031.82	1.32	0.70	1.12	
8,420.00	90.64	270.86	7,182.02	1,020.05	-1,016.01	1,126.34	0.28	0.28	-0.02	
8,514.00	90.62	270.27	7,180.99	1,020.98	-1,110.00	1,219.82	0.63	-0.02	-0.63	
8,608.00	91.12	271.17	7,179.56	1,022.16	-1,203.98	1,313.31	1.10	0.53	0.96	
8,703.00	91.15	270.23	7,177.68	1,023.32	-1,298.95	1,407.79	0.99	0.03	-0.99	
8,797.00	90.27	272.54	7,176.51	1,025.59	-1,392.91	1,501.39	2.63	-0.94	2.46	
8,892.00	90.43	271.67	7,175.93	1,029.08	-1,487.84	1,596.10	0.93	0.17	-0.92	
8,986.00	90.72	270.69	7,174.99	1,031.02	-1,581.81	1,689.67	1.09	0.31	-1.04	
9,081.00	90.86	270.33	7,173.68	1,031.86	-1,676.80	1,784.13	0.41	0.15	-0.38	
9,175.00	89.90	269.38	7,173.06	1,031.63	-1,770.80	1,877.48	1.44	-1.02	-1.01	
9,269.00	90.07	269.03	7,173.08	1,030.32	-1,864.79	1,970.70	0.41	0.18	-0.37	
9,364.00	90.77	269.34	7,172.38	1,028.97	-1,959.78	2,064.90	0.81	0.74	0.33	
9,458.00	90.19	268.61	7,171.60	1,027.29	-2,053.76	2,158.07	0.99	-0.62	-0.78	
9,552.00	89.71	269.52	7,171.68	1,025.76	-2,147.74	2,251.26	1.09	-0.51	0.97	
9,647.00	90.54	270.83	7,171.47	1,026.05	-2,242.74	2,345.66	1.63	0.87	1.38	
9,741.00	90.92	272.36	7,170.27	1,028.66	-2,336.69	2,439.29	1.68	0.40	1.63	
9,836.00	89.32	271.05	7,170.07	1,031.49	-2,431.64	2,533.94	2.18	-1.68	-1.38	
9,930.00	87.21	269.39	7,172.92	1,031.85	-2,525.59	2,627.31	2.86	-2.24	-1.77	
10,025.00	89.04	270.83	7,176.03	1,032.03	-2,620.53	2,721.65	2.45	1.93	1.52	
10,119.00	89.45	270.42	7,177.27	1,033.06	-2,714.52	2,815.13	0.62	0.44	-0.44	
10,214.00	90.05	271.19	7,177.68	1,034.39	-2,809.51	2,909.64	1.03	0.63	0.81	
10,308.00	90.79	270.89	7,176.99	1,036.10	-2,903.49	3,003.20	0.85	0.79	-0.32	
10,403.00	89.87	270.98	7,176.45	1,037.65	-2,998.47	3,097.74	0.97	-0.97	0.09	

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<b>Wellbore:</b>	OH / Job #61105	<b>Survey Calculation Method:</b>	Minimum Curvature
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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)
10,497.00	89.22	271.00	7,177.19	1,039.27	-3,092.46	3,191.28	0.69	-0.69	0.02
10,592.00	88.74	270.35	7,178.88	1,040.39	-3,187.43	3,285.76	0.85	-0.51	-0.68
10,686.00	90.30	270.92	7,179.67	1,041.43	-3,281.42	3,379.25	1.77	1.66	0.61
10,780.00	90.49	270.47	7,179.02	1,042.57	-3,375.41	3,472.75	0.52	0.20	-0.48
10,874.00	90.27	269.83	7,178.40	1,042.82	-3,469.41	3,566.15	0.72	-0.23	-0.68
10,968.00	90.90	272.00	7,177.44	1,044.32	-3,563.39	3,659.68	2.40	0.67	2.31
11,062.00	91.20	271.52	7,175.72	1,047.21	-3,657.33	3,753.33	0.60	0.32	-0.51
11,156.00	91.18	270.13	7,173.76	1,048.56	-3,751.29	3,846.83	1.48	-0.02	-1.48
11,251.00	90.61	271.28	7,172.28	1,049.73	-3,846.27	3,941.32	1.35	-0.60	1.21
11,345.00	90.09	270.06	7,171.71	1,050.83	-3,940.26	4,034.82	1.41	-0.55	-1.30
11,439.00	90.13	269.15	7,171.53	1,050.18	-4,034.26	4,128.12	0.97	0.04	-0.97
11,533.00	89.20	270.09	7,172.08	1,049.56	-4,128.25	4,221.42	1.41	-0.99	1.00
11,628.00	88.76	269.10	7,173.77	1,048.89	-4,223.23	4,315.70	1.14	-0.46	-1.04
11,722.00	88.98	270.36	7,175.62	1,048.44	-4,317.21	4,409.00	1.36	0.23	1.34
11,817.00	90.88	271.25	7,175.74	1,049.78	-4,412.20	4,503.51	2.21	2.00	0.94
11,910.00	91.40	269.47	7,173.89	1,050.36	-4,505.17	4,595.94	1.99	0.56	-1.91
12,005.00	90.88	270.41	7,172.00	1,050.26	-4,600.15	4,690.28	1.13	-0.55	0.99
12,100.00	89.86	271.69	7,171.38	1,052.00	-4,695.13	4,784.83	1.72	-1.07	1.35
12,195.00	88.81	269.41	7,172.49	1,052.92	-4,790.11	4,879.29	2.64	-1.11	-2.40
12,290.00	89.80	272.11	7,173.64	1,054.18	-4,885.09	4,973.79	3.03	1.04	2.84
12,386.00	90.29	271.99	7,173.56	1,057.61	-4,981.03	5,069.48	0.53	0.51	-0.13
12,481.00	90.42	271.80	7,172.97	1,060.75	-5,075.97	5,164.16	0.24	0.14	-0.20
12,576.00	90.66	270.92	7,172.08	1,063.01	-5,170.94	5,258.76	0.96	0.25	-0.93
12,671.00	91.18	270.64	7,170.55	1,064.30	-5,265.92	5,353.26	0.62	0.55	-0.29
12,766.00	91.24	270.09	7,168.55	1,064.90	-5,360.90	5,447.68	0.58	0.06	-0.58
12,861.00	89.30	270.80	7,168.10	1,065.64	-5,455.89	5,542.13	2.17	-2.04	0.75
12,957.00	88.92	270.72	7,169.59	1,066.91	-5,551.87	5,637.62	0.40	-0.40	-0.08
13,052.00	89.51	270.66	7,170.89	1,068.06	-5,646.85	5,732.11	0.62	0.62	-0.06
13,147.00	88.23	269.99	7,172.77	1,068.60	-5,741.83	5,826.52	1.52	-1.35	-0.71
13,242.00	88.25	269.92	7,175.68	1,068.52	-5,836.78	5,920.84	0.08	0.02	-0.07
13,337.00	87.33	269.01	7,179.35	1,067.64	-5,931.71	6,015.03	1.36	-0.97	-0.96
13,432.00	87.41	269.93	7,183.71	1,066.76	-6,026.60	6,109.20	0.97	0.08	0.97
13,527.00	89.26	271.64	7,186.47	1,068.06	-6,121.55	6,203.67	2.65	1.95	1.80
13,622.00	89.65	271.53	7,187.37	1,070.69	-6,216.50	6,298.30	0.43	0.41	-0.12
13,717.00	89.90	270.97	7,187.74	1,072.76	-6,311.48	6,392.89	0.65	0.26	-0.59
13,811.00	90.22	270.19	7,187.64	1,073.71	-6,405.48	6,486.37	0.90	0.34	-0.83
13,907.00	90.24	269.10	7,187.26	1,073.12	-6,501.47	6,581.66	1.14	0.02	-1.14
14,002.00	90.97	268.79	7,186.26	1,071.37	-6,596.45	6,675.81	0.83	0.77	-0.33
14,095.00	90.66	269.14	7,184.93	1,069.69	-6,689.42	6,767.98	0.50	-0.33	0.38
14,191.00	87.73	270.17	7,186.28	1,069.11	-6,785.40	6,863.26	3.24	-3.05	1.07
14,285.00	88.47	269.90	7,189.40	1,069.17	-6,879.35	6,956.59	0.84	0.79	-0.29
14,379.00	88.87	272.04	7,191.58	1,070.76	-6,973.30	7,050.11	2.32	0.43	2.28
14,475.00	89.76	272.21	7,192.73	1,074.32	-7,069.23	7,145.81	0.94	0.93	0.18

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well 5
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Site:</b>	RBF	<b>MD Reference:</b>	RKB @ 4803.00usft (Patterson 346)
<b>Well:</b>	5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH / Job #61105	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Patterson 346)	<b>Database:</b>	Compass 5000 RMR

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)
14,569.00	88.75	271.31	7,193.95	1,077.20	-7,163.18	7,239.47	1.44	-1.07	-0.96
14,663.00	89.35	271.94	7,195.51	1,079.87	-7,257.12	7,333.10	0.93	0.64	0.67
14,758.00	90.64	271.98	7,195.52	1,083.12	-7,352.07	7,427.79	1.36	1.36	0.04
14,852.00	90.42	271.89	7,194.65	1,086.29	-7,446.01	7,521.47	0.25	-0.23	-0.10
14,946.00	90.13	271.81	7,194.20	1,089.33	-7,539.96	7,615.15	0.32	-0.31	-0.09
15,040.00	90.44	272.62	7,193.73	1,092.96	-7,633.89	7,708.88	0.92	0.33	0.86
15,135.00	89.46	271.76	7,193.81	1,096.59	-7,728.81	7,803.59	1.37	-1.03	-0.91
15,230.00	89.91	272.53	7,194.33	1,100.15	-7,823.75	7,898.31	0.94	0.47	0.81
15,325.00	89.29	273.80	7,195.00	1,105.39	-7,918.60	7,993.13	1.49	-0.65	1.34
15,418.00	87.50	273.17	7,197.60	1,111.04	-8,011.38	8,085.96	2.04	-1.92	-0.68
15,509.00	89.74	272.13	7,199.79	1,115.25	-8,102.25	8,176.71	2.71	2.46	-1.14
15,602.00	91.50	272.19	7,198.79	1,118.75	-8,195.18	8,269.42	1.89	1.89	0.06
15,696.00	92.89	272.03	7,195.19	1,122.21	-8,289.04	8,363.06	1.49	1.48	-0.17
15,790.00	92.27	269.95	7,190.96	1,123.83	-8,382.93	8,456.51	2.31	-0.66	-2.21
15,884.00	90.15	269.43	7,188.97	1,123.32	-8,476.90	8,549.81	2.32	-2.26	-0.55
16,071.00	90.03	268.95	7,188.68	1,120.68	-8,663.88	8,735.25	0.26	-0.06	-0.26
16,165.00	90.76	268.76	7,188.03	1,118.80	-8,757.86	8,828.39	0.80	0.78	-0.20
16,258.00	92.54	269.32	7,185.35	1,117.24	-8,850.80	8,920.54	2.01	1.91	0.60
16,352.00	91.48	269.94	7,182.05	1,116.64	-8,944.74	9,013.79	1.31	-1.13	0.66
16,446.00	89.77	269.43	7,181.03	1,116.12	-9,038.73	9,107.10	1.90	-1.82	-0.54
16,539.00	90.18	269.04	7,181.07	1,114.88	-9,131.72	9,199.33	0.61	0.44	-0.42
16,633.00	91.76	269.38	7,179.48	1,113.58	-9,225.70	9,292.54	1.72	1.68	0.36
16,726.00	89.93	269.22	7,178.11	1,112.45	-9,318.68	9,384.77	1.98	-1.97	-0.17
16,820.00	87.78	268.71	7,179.98	1,110.75	-9,412.64	9,477.92	2.35	-2.29	-0.54
16,913.00	88.13	268.73	7,183.30	1,108.67	-9,505.55	9,569.98	0.38	0.38	0.02
<b>Final Phoenix MWD Survey</b>									
16,995.00	88.13	268.73	7,185.98	1,106.86	-9,587.49	9,651.17	0.00	0.00	0.00
<b>Projection to TD</b>									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,520.00	1,504.23	144.00	54.62	Tie In
1,607.00	1,588.73	162.35	64.17	First Phoenix MWD Survey
16,913.00	7,183.30	1,108.67	-9,505.55	Final Phoenix MWD Survey
16,995.00	7,185.98	1,106.86	-9,587.49	Projection to TD