



Bill Barrett Corporation

Bill Barrett Corp.

Weld Co., CO (NAD 83)

SEC 16 T4N R62W

Anschutz Eq Farms 4-62-16-0857BH

OH

Survey: MWD Survey

Standard Survey Report

24 November, 2014





Bill Barrett Corp.
Project: Weld Co., CO (NAD 83)
Site: SEC 16 T4N R62W
Well: Anschutz Eq Farms 4-62-16-0857BH
Wellbore: OH
Design: WP02
Lat: 40.31889
Long: -104.32416
Pad GL: 4523.00
KB @ 4546.00ft



SECTION DETAILS

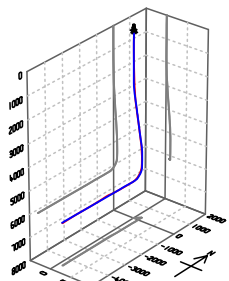
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
766.00	0.400	229.50	766.00	-0.88	-0.76	0.00	0.00	0.85	Start Drop -1.50
792.67	0.000	0.00	792.66	-0.94	-0.83	1.50	180.00	0.90	Start 1207.33 hold at 792.67 MD
2000.00	0.000	0.00	2000.00	-0.94	-0.83	0.00	0.00	0.90	Start Build 1.50
2457.14	6.857	45.79	2456.04	18.11	18.76	1.50	45.79	-17.33	Start 2416.75 hold at 2457.14 MD
4873.88	6.857	45.79	4855.50	219.31	225.58	0.00	0.00	-209.86	Start Drop -2.00
5216.74	0.000	0.00	5197.54	233.60	240.27	2.00	180.00	-223.53	Start 500.03 hold at 5216.74 MD
5716.77	0.000	0.00	5697.57	233.60	240.27	0.00	0.00	-223.53	Start Build 12.00
6469.56	90.335	180.65	6175.03	-246.63	234.80	12.00	180.65	256.06	Start 4280.22 hold at 6469.56 MD
10749.78	90.335	180.65	6150.00	-4526.50	186.03	0.00	0.00	4530.32	TD at 10749.78

WELL DETAILS: Anschutz Eq Farms 4-62-16-0857BH

+N/-S	+E/-W	Northing	Ground Level: Easting	4523.00 Latitude	Longitude	Slot
0.00	0.00	1361187.79	3327866.91	40.31889	-104.32416	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
AS EQ FM 4-62-16-0857BH WP02 VT	5197.54	233.60	240.27	40.31954	-104.32329	Point
AS EQ FM 4-62-16-0857BH WP02 PBHL	6150.00	-4526.50	186.03	40.30647	-104.32349	Point
AS EQ FM 4-62-16-0857BH LP	6175.00	-246.63	234.80	40.31822	-104.32331	Point



PROJECT DETAILS: Weld Co., CO (NAD 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level

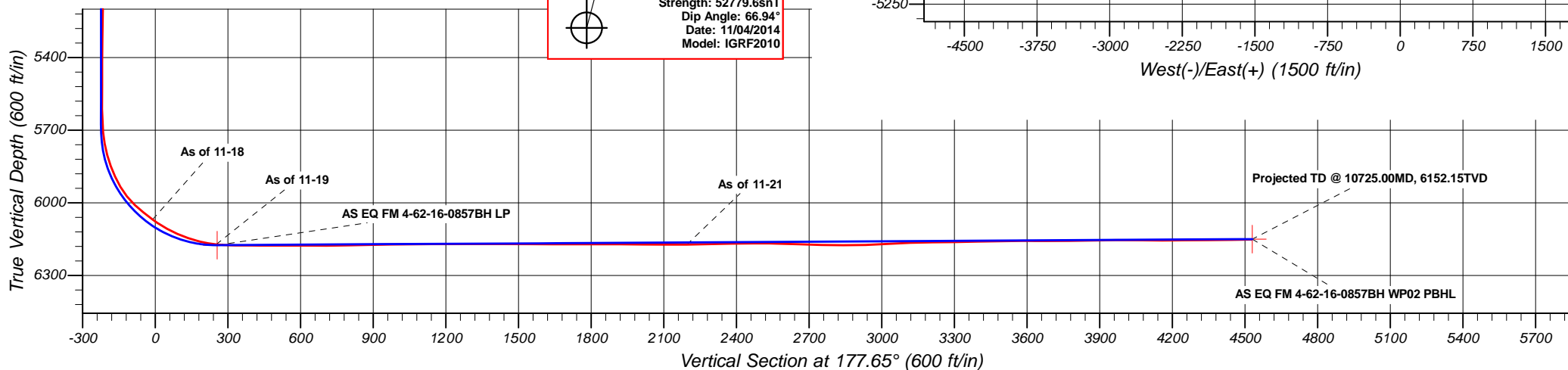
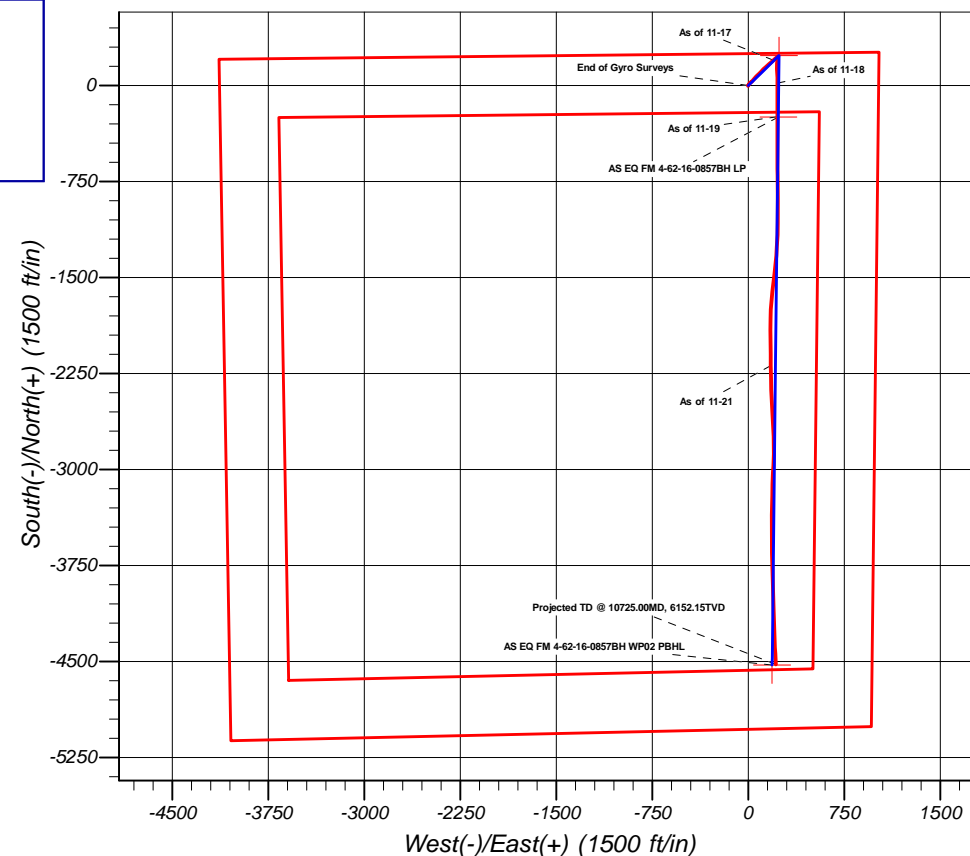
CASING DETAILS

No casing data is available



Azimuths to True North
Magnetic North: 8.16°

Magnetic Field
Strength: 52779.6snT
Dip Angle: 66.94°
Date: 11/04/2014
Model: IGRF2010



Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz Eq Farms 4-62-16-0857BH
Project:	Weld Co., CO (NAD 83)	TVD Reference:	KB @ 4546.00ft
Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0857BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

Project	Weld Co., CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 16 T4N R62W			
Site Position:		Northing:	1,361,185.49 usft	Latitude:	40.31889
From:	Lat/Long	Easting:	3,327,747.87 usft	Longitude:	-104.32459
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	0.76 °

Well		Anschutz Eq Farms 4-62-16-0857BH				
Well Position	+N/-S	0.00 ft	Northing:	1,361,187.79 usft	Latitude:	40.31889
	+E/-W	0.00 ft	Easting:	3,327,866.92 usft	Longitude:	-104.32416
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,523.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/04/14	8.16	66.94	52,780

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	220.75	

Survey Program	Date	11/24/14			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
418.00	766.00	Gyro Survey (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
905.00	10,725.00	MWD Survey (OH)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
766.00	0.400	229.50	766.00	-0.88	-0.76	1.16	0.00	0.00	0.00	
905.00	0.800	234.90	904.99	-1.75	-1.92	2.58	0.29	0.29	3.88	
979.00	0.200	326.30	978.99	-1.94	-2.41	3.05	1.12	-0.81	123.51	
1,070.00	1.500	30.30	1,069.98	-0.78	-1.90	1.83	1.56	1.43	70.33	
1,163.00	1.900	38.90	1,162.93	1.47	-0.32	-0.91	0.51	0.43	9.25	
1,256.00	2.200	37.50	1,255.88	4.09	1.74	-4.23	0.33	0.32	-1.51	
1,350.00	2.400	37.70	1,349.80	7.07	4.04	-7.99	0.21	0.21	0.21	
1,443.00	2.100	36.30	1,442.73	9.99	6.24	-11.64	0.33	-0.32	-1.51	
1,537.00	1.700	27.00	1,536.68	12.62	7.89	-14.71	0.54	-0.43	-9.89	
1,630.00	1.600	17.80	1,629.64	15.08	8.91	-17.25	0.30	-0.11	-9.89	

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz Eq Farms 4-62-16-0857BH
Project:	Weld Co., CO (NAD 83)	TVD Reference:	KB @ 4546.00ft
Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0857BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,724.00	1.700	27.30	1,723.60	17.57	9.95	-19.81	0.31	0.11	10.11
1,817.00	1.800	42.20	1,816.56	19.88	11.57	-22.61	0.50	0.11	16.02
1,911.00	1.200	45.90	1,910.52	21.66	13.27	-25.07	0.65	-0.64	3.94
2,004.00	0.900	56.20	2,003.51	22.74	14.57	-26.74	0.38	-0.32	11.08
2,098.00	1.000	79.20	2,097.49	23.31	15.99	-28.10	0.42	0.11	24.47
2,191.00	1.700	71.80	2,190.47	23.89	18.10	-29.91	0.77	0.75	-7.96
2,285.00	2.200	64.30	2,284.41	25.11	21.05	-32.76	0.60	0.53	-7.98
2,379.00	2.500	44.40	2,378.34	27.36	24.11	-36.46	0.92	0.32	-21.17
2,474.00	3.500	38.40	2,473.21	31.11	27.36	-41.43	1.10	1.05	-6.32
2,570.00	4.400	38.80	2,568.98	36.27	31.49	-48.03	0.94	0.94	0.42
2,665.00	5.300	45.60	2,663.64	42.19	36.91	-56.05	1.12	0.95	7.16
2,761.00	5.800	41.70	2,759.19	48.91	43.30	-65.32	0.65	0.52	-4.06
2,857.00	5.900	39.60	2,854.69	56.33	49.67	-75.10	0.25	0.10	-2.19
2,952.00	6.500	41.60	2,949.13	64.12	56.36	-85.36	0.67	0.63	2.11
3,048.00	5.400	40.40	3,044.61	71.62	62.89	-95.31	1.15	-1.15	-1.25
3,143.00	5.300	42.80	3,139.20	78.24	68.77	-104.16	0.26	-0.11	2.53
3,239.00	5.200	50.10	3,234.80	84.29	75.12	-112.89	0.70	-0.10	7.60
3,334.00	6.100	48.20	3,329.33	90.41	82.19	-122.14	0.97	0.95	-2.00
3,429.00	7.100	46.60	3,423.70	97.81	90.21	-132.99	1.07	1.05	-1.68
3,524.00	8.100	43.20	3,517.87	106.72	99.06	-145.51	1.15	1.05	-3.58
3,621.00	8.400	41.60	3,613.86	117.00	108.44	-159.43	0.39	0.31	-1.65
3,718.00	8.100	46.50	3,709.86	127.01	118.10	-173.31	0.79	-0.31	5.05
3,813.00	7.500	45.60	3,803.98	135.95	127.39	-186.15	0.64	-0.63	-0.95
3,908.00	7.400	48.70	3,898.18	144.33	136.41	-198.38	0.44	-0.11	3.26
4,003.00	6.600	49.20	3,992.47	151.93	145.14	-209.84	0.84	-0.84	0.53
4,098.00	6.700	49.30	4,086.83	159.11	153.48	-220.72	0.11	0.11	0.11
4,194.00	6.900	46.20	4,182.16	166.76	161.89	-232.00	0.44	0.21	-3.23
4,290.00	7.700	49.00	4,277.38	174.97	170.90	-244.11	0.91	0.83	2.92
4,386.00	6.800	45.60	4,372.61	183.16	179.82	-256.13	1.04	-0.94	-3.54
4,481.00	6.800	50.60	4,466.94	190.67	188.18	-267.28	0.62	0.00	5.26
4,576.00	6.000	48.40	4,561.35	197.53	196.24	-277.74	0.88	-0.84	-2.32
As of 11-17									
4,672.00	5.700	48.20	4,656.85	204.04	203.55	-287.44	0.31	-0.31	-0.21
4,767.00	5.500	47.50	4,751.40	210.26	210.42	-296.64	0.22	-0.21	-0.74
4,863.00	4.600	53.70	4,847.02	215.65	216.91	-304.96	1.10	-0.94	6.46
4,958.00	3.000	49.30	4,941.81	219.53	221.87	-311.13	1.71	-1.68	-4.63
5,054.00	2.600	52.50	5,037.70	222.49	225.50	-315.75	0.45	-0.42	3.33
5,149.00	2.400	60.30	5,132.61	224.79	228.94	-319.73	0.41	-0.21	8.21
5,245.00	1.000	20.90	5,228.57	226.57	230.98	-322.41	1.82	-1.46	-41.04
5,341.00	0.800	11.80	5,324.55	228.01	231.42	-323.79	0.26	-0.21	-9.48
5,436.00	0.500	50.70	5,419.55	228.92	231.88	-324.78	0.54	-0.32	40.95
5,532.00	0.600	77.80	5,515.54	229.29	232.69	-325.59	0.29	0.10	28.23
5,629.00	0.400	91.80	5,612.54	229.39	233.53	-326.21	0.24	-0.21	14.43

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz Eq Farms 4-62-16-0857BH
Project:	Weld Co., CO (NAD 83)	TVD Reference:	KB @ 4546.00ft
Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0857BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,725.00	5.300	186.70	5,708.40	224.97	233.34	-322.74	5.57	5.10	98.85
5,773.00	10.600	190.20	5,755.93	218.42	232.30	-317.10	11.08	11.04	7.29
5,821.00	15.400	190.80	5,802.68	207.81	230.33	-307.77	10.00	10.00	1.25
5,869.00	20.400	190.30	5,848.34	193.30	227.63	-295.03	10.42	10.42	-1.04
5,916.00	24.600	186.20	5,891.76	175.51	225.11	-279.90	9.53	8.94	-8.72
5,964.00	31.100	180.20	5,934.18	153.15	223.99	-262.23	14.73	13.54	-12.50
6,012.00	37.900	178.70	5,973.72	125.99	224.28	-241.84	14.28	14.17	-3.13
6,060.00	47.000	177.30	6,009.10	93.64	225.44	-218.09	19.06	18.96	-2.92
6,107.00	51.200	177.40	6,039.87	58.17	227.08	-192.29	8.94	8.94	0.21
6,155.00	54.200	179.50	6,068.95	20.00	228.10	-164.04	7.15	6.25	4.38
As of 11-18									
6,204.00	58.200	180.70	6,096.21	-20.70	228.02	-133.15	8.41	8.16	2.45
6,251.00	63.900	180.10	6,118.95	-61.81	227.74	-101.82	12.18	12.13	-1.28
6,298.00	69.400	180.10	6,137.57	-104.95	227.67	-69.09	11.70	11.70	0.00
6,345.00	72.800	179.60	6,152.79	-149.41	227.78	-35.48	7.30	7.23	-1.06
6,393.00	78.800	180.00	6,164.56	-195.92	227.94	-0.35	12.53	12.50	0.83
6,441.00	84.000	180.30	6,171.74	-243.36	227.82	35.67	10.85	10.83	0.63
As of 11-19									
6,523.00	90.000	179.60	6,176.03	-325.21	227.89	97.64	7.37	7.32	-0.85
6,617.00	89.600	180.10	6,176.35	-419.21	228.14	168.69	0.68	-0.43	0.53
6,710.00	89.900	180.30	6,176.76	-512.21	227.81	239.36	0.39	0.32	0.22
6,804.00	90.200	180.10	6,176.68	-606.21	227.48	310.79	0.38	0.32	-0.21
6,897.00	89.600	178.20	6,176.84	-699.19	228.86	380.33	2.14	-0.65	-2.04
6,991.00	91.800	179.40	6,175.69	-793.16	230.83	450.24	2.67	2.34	1.28
7,084.00	90.700	180.20	6,173.66	-886.13	231.16	520.47	1.46	-1.18	0.86
7,178.00	91.100	179.60	6,172.19	-980.12	231.32	591.56	0.77	0.43	-0.64
7,271.00	90.300	180.60	6,171.05	-1,073.11	231.16	662.12	1.38	-0.86	1.08
7,365.00	90.400	182.50	6,170.48	-1,167.07	228.62	734.97	2.02	0.11	2.02
7,458.00	90.000	184.30	6,170.15	-1,259.90	223.10	808.90	1.98	-0.43	1.94
7,553.00	89.900	183.90	6,170.23	-1,354.66	216.31	885.12	0.43	-0.11	-0.42
7,647.00	89.900	186.70	6,170.40	-1,448.25	207.63	961.69	2.98	0.00	2.98
7,740.00	89.900	186.30	6,170.56	-1,540.65	197.10	1,038.57	0.43	0.00	-0.43
7,834.00	89.800	186.90	6,170.81	-1,634.03	186.30	1,116.36	0.65	-0.11	0.64
7,927.00	89.900	184.00	6,171.05	-1,726.60	177.46	1,192.26	3.12	0.11	-3.12
8,020.00	90.000	181.00	6,171.13	-1,819.50	173.41	1,265.29	3.23	0.11	-3.23
8,112.00	89.700	179.90	6,171.37	-1,911.49	172.68	1,335.45	1.24	-0.33	-1.20
8,205.00	89.400	179.00	6,172.10	-2,004.48	173.58	1,405.32	1.02	-0.32	-0.97
8,297.00	89.300	179.60	6,173.15	-2,096.47	174.70	1,474.28	0.66	-0.11	0.65
8,390.00	91.300	179.10	6,172.66	-2,189.46	175.76	1,544.04	2.22	2.15	-0.54
As of 11-21									
8,483.00	91.600	178.60	6,170.31	-2,282.41	177.62	1,613.24	0.63	0.32	-0.54
8,576.00	90.700	179.60	6,168.44	-2,375.38	179.08	1,682.72	1.45	-0.97	1.08
8,669.00	90.400	176.70	6,167.55	-2,468.31	182.08	1,751.17	3.13	-0.32	-3.12
8,762.00	88.500	175.20	6,168.44	-2,561.07	188.65	1,817.16	2.60	-2.04	-1.61

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz Eq Farms 4-62-16-0857BH
Project:	Weld Co., CO (NAD 83)	TVD Reference:	KB @ 4546.00ft
Site:	SEC 16 T4N R62W	MD Reference:	KB @ 4546.00ft
Well:	Anschutz Eq Farms 4-62-16-0857BH	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Local Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,854.00	87.900	177.20	6,171.33	-2,652.82	194.75	1,882.69	2.27	-0.65	2.17
8,946.00	88.800	178.50	6,173.98	-2,744.71	198.20	1,950.06	1.72	0.98	1.41
9,037.00	89.700	180.20	6,175.17	-2,835.69	199.23	2,018.32	2.11	0.99	1.87
9,129.00	91.700	181.70	6,174.05	-2,927.67	197.70	2,088.99	2.72	2.17	1.63
9,222.00	93.700	183.10	6,169.66	-3,020.48	193.81	2,161.84	2.62	2.15	1.51
9,315.00	92.000	182.30	6,165.04	-3,113.25	189.44	2,234.99	2.02	-1.83	-0.86
9,407.00	90.500	180.00	6,163.03	-3,205.20	187.59	2,305.85	2.98	-1.63	-2.50
9,499.00	91.000	181.70	6,161.83	-3,297.18	186.23	2,376.43	1.93	0.54	1.85
9,591.00	90.800	180.10	6,160.38	-3,389.16	184.78	2,447.05	1.75	-0.22	-1.74
9,686.00	91.700	180.80	6,158.31	-3,484.13	184.04	2,519.49	1.20	0.95	0.74
9,782.00	89.200	178.80	6,157.56	-3,580.11	184.37	2,591.99	3.33	-2.60	-2.08
9,878.00	90.200	179.00	6,158.06	-3,676.09	186.22	2,663.50	1.06	1.04	0.21
9,973.00	90.900	178.90	6,157.15	-3,771.07	187.96	2,734.32	0.74	0.74	-0.11
10,068.00	91.400	178.60	6,155.24	-3,866.03	190.03	2,804.91	0.61	0.53	-0.32
10,163.00	89.600	178.00	6,154.41	-3,960.98	192.85	2,875.01	2.00	-1.89	-0.63
10,259.00	89.800	177.70	6,154.92	-4,056.91	196.45	2,945.34	0.38	0.21	-0.31
10,355.00	89.800	177.40	6,155.25	-4,152.82	200.55	3,015.32	0.31	0.00	-0.31
10,449.00	90.300	178.30	6,155.17	-4,246.76	204.08	3,084.18	1.10	0.53	0.96
10,545.00	90.900	178.20	6,154.16	-4,342.71	207.01	3,154.96	0.63	0.63	-0.10
10,641.00	90.600	176.60	6,152.91	-4,438.60	211.36	3,224.77	1.70	-0.31	-1.67
10,671.00	90.500	177.50	6,152.62	-4,468.55	212.91	3,246.46	3.02	-0.33	3.00
10,725.00	90.500	177.50	6,152.15	-4,522.50	215.26	3,285.79	0.00	0.00	0.00
Projected TD @ 10725.00MD, 6152.15TVD									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,576.00	4,561.35	197.53	196.24	As of 11-17
6,155.00	6,068.95	20.00	228.10	As of 11-18
6,441.00	6,171.74	-243.36	227.82	As of 11-19
8,390.00	6,172.66	-2,189.46	175.76	As of 11-21
10,725.00	6,152.15	-4,522.50	215.26	Projected TD @ 10725.00MD, 6152.15TVD

Checked By: _____ Approved By: _____ Date: _____