



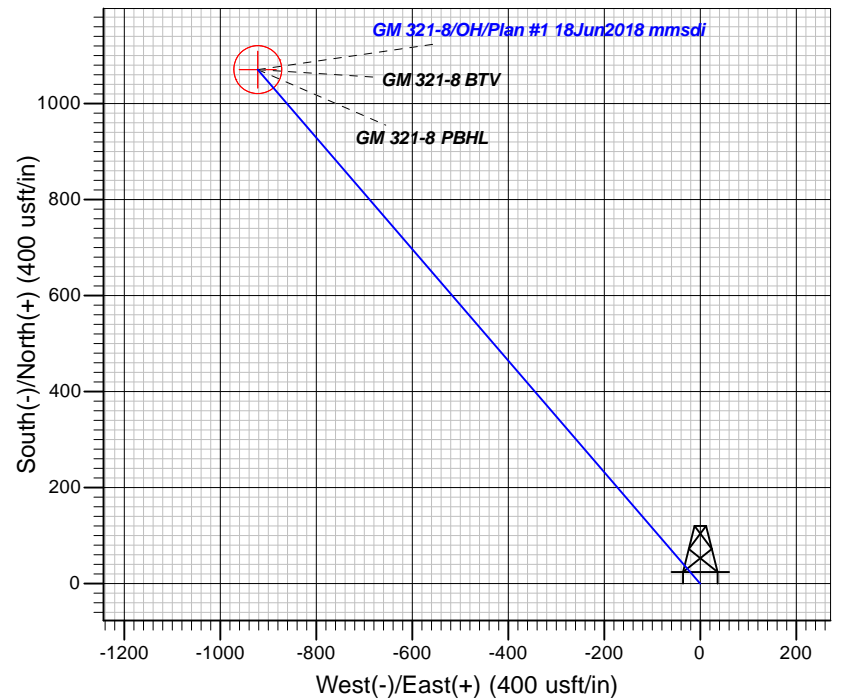
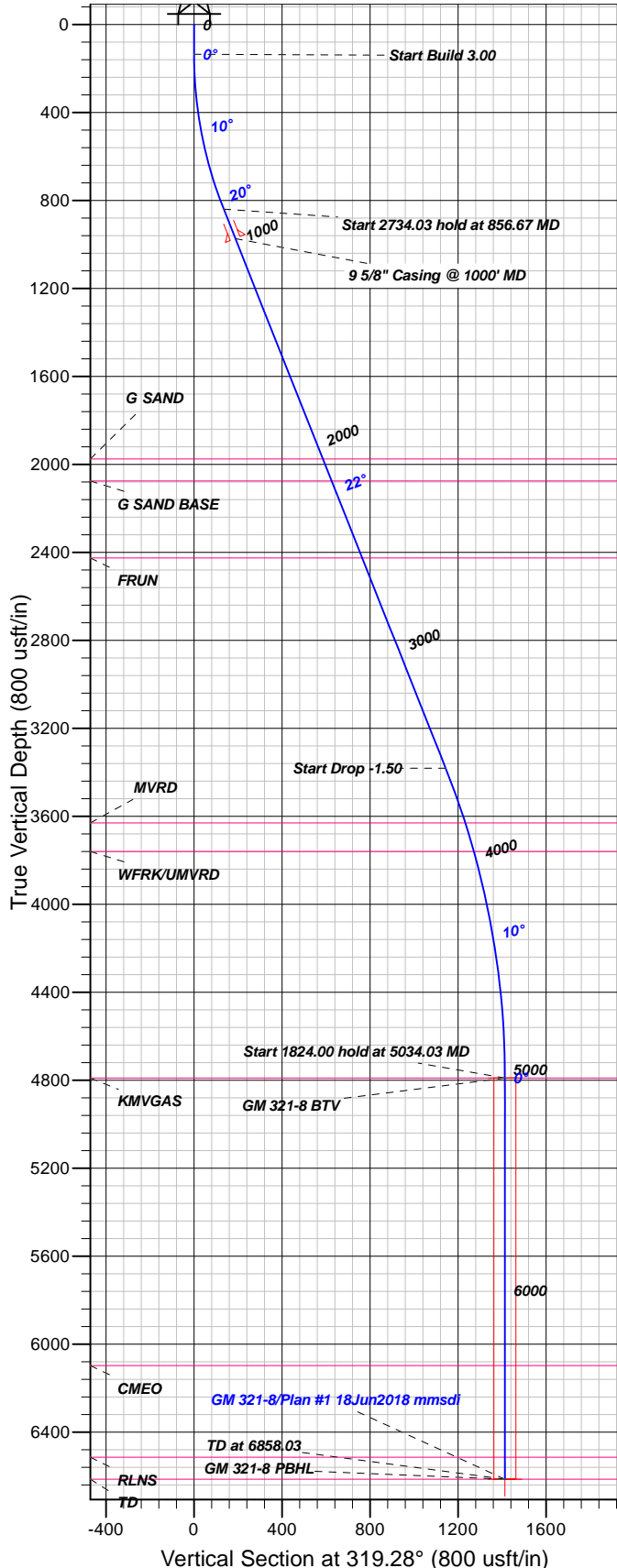
Azimuths to True North
Magnetic North: 9.52°

Magnetic Field
Strength: 51678.7snT
Dip Angle: 65.68°
Date: 6/18/2018
Model: HDGM

Well Details: GM 321-8

GL 6175' & RKB 24' @ 6199.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1601157.18	2257379.51	39.4544302	-108.1303495	GM 321-8 (A8)



FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
1975.00	2078.23	G SAND
2075.00	2185.82	G SAND BASE
2425.22	2562.62	FRUN
3630.00	3855.41	MVRD
3760.00	3991.12	WFRK/UMVRD
4790.00	5034.03	KMVGAS
6097.00	6341.03	CMEO
6514.00	6758.03	RLNS
6614.00	6858.03	TD

Plan: Plan #1 18Jun2018 mmsdi

22:10, June 19 2018
Created By: Mel Mireles

PROJECT DETAILS: Garfield County, CO NAD83

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

System Datum: Mean Sea Level

CASING DETAILS

TVDPATH	MDPATH	NAME	SIZE
972.84	1000.00	5/8" Casing @ 1000' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	856.67	21.65	319.28	839.61	102.12	-87.89	3.00	319.28	134.73	
4	3590.69	21.65	319.28	3380.77	866.63	-745.88	0.00	0.00	143.41	
5	5034.03	0.00	0.00	4790.00	1070.87	-921.66	1.50	180.00	1412.87	GM 321-8 BTV
6	6858.03	0.00	0.00	6614.00	1070.87	-921.66	0.00	0.00	1412.87	GM 321-8 PBHL

DESIGN TARGET DETAILS

Name	TVDPATH	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 321-8 BTV	4790.00	1070.87	-921.66	1602254.28	2256489.24	39.4573702	-108.1336137	Circle (Radius: 50.00)
- plan hits target center								
GM 321-8 PBHL	6614.00	1070.87	-921.66	1602254.28	2256489.24	39.4573702	-108.1336137	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 60-8D Pad

GM 321-8 - Slot GM 321-8 (A8)

OH

Plan: Plan #1 18Jun2018 mmsdi

Standard Planning Report

19 June, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 321-8 - Slot GM 321-8 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 321-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		MV 60-8D Pad			
Site Position:		Northing:	1,601,172.03 usft	Latitude:	39.4544712
From:	Map	Easting:	2,257,381.57 usft	Longitude:	-108.1303437
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 321-8 - Slot GM 321-8 (A8)					
Well Position	+N/-S	-14.90 usft	Northing:	1,601,157.18 usft	Latitude:	39.4544302
	+E/-W	-1.63 usft	Easting:	2,257,379.51 usft	Longitude:	-108.1303495
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,175.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/18/2018	9.52	65.68	51,679

Design	Plan #1 18Jun2018 mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	319.28

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
856.67	21.65	319.28	839.61	102.12	-87.89	3.00	3.00	0.00	319.28	
3,590.69	21.65	319.28	3,380.77	866.63	-745.88	0.00	0.00	0.00	0.00	
5,034.03	0.00	0.00	4,790.00	1,070.87	-921.66	1.50	-1.50	0.00	180.00	GM 321-8 BTV
6,858.03	0.00	0.00	6,614.00	1,070.87	-921.66	0.00	0.00	0.00	0.00	GM 321-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 321-8 - Slot GM 321-8 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 321-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	1.95	319.28	199.99	0.84	-0.72	1.11	3.00	3.00	0.00
300.00	4.95	319.28	299.79	5.40	-4.65	7.12	3.00	3.00	0.00
400.00	7.95	319.28	399.15	13.91	-11.97	18.36	3.00	3.00	0.00
500.00	10.95	319.28	497.78	26.36	-22.68	34.77	3.00	3.00	0.00
600.00	13.95	319.28	595.42	42.69	-36.74	56.33	3.00	3.00	0.00
700.00	16.95	319.28	691.79	62.88	-54.12	82.97	3.00	3.00	0.00
800.00	19.95	319.28	786.64	86.87	-74.76	114.61	3.00	3.00	0.00
856.67	21.65	319.28	839.61	102.12	-87.89	134.73	3.00	3.00	0.00
Start 2734.03 hold at 856.67 MD									
900.00	21.65	319.28	879.89	114.23	-98.32	150.72	0.00	0.00	0.00
1,000.00	21.65	319.28	972.84	142.20	-122.38	187.61	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	21.65	319.28	1,065.78	170.16	-146.45	224.51	0.00	0.00	0.00
1,200.00	21.65	319.28	1,158.73	198.12	-170.52	261.40	0.00	0.00	0.00
1,300.00	21.65	319.28	1,251.67	226.09	-194.58	298.29	0.00	0.00	0.00
1,400.00	21.65	319.28	1,344.62	254.05	-218.65	335.19	0.00	0.00	0.00
1,500.00	21.65	319.28	1,437.56	282.01	-242.72	372.08	0.00	0.00	0.00
1,600.00	21.65	319.28	1,530.51	309.98	-266.79	408.97	0.00	0.00	0.00
1,700.00	21.65	319.28	1,623.46	337.94	-290.85	445.87	0.00	0.00	0.00
1,800.00	21.65	319.28	1,716.40	365.90	-314.92	482.76	0.00	0.00	0.00
1,900.00	21.65	319.28	1,809.35	393.86	-338.99	519.65	0.00	0.00	0.00
2,000.00	21.65	319.28	1,902.29	421.83	-363.05	556.55	0.00	0.00	0.00
2,078.23	21.65	319.28	1,975.00	443.70	-381.88	585.41	0.00	0.00	0.00
G SAND									
2,100.00	21.65	319.28	1,995.24	449.79	-387.12	593.44	0.00	0.00	0.00
2,185.82	21.65	319.28	2,075.00	473.79	-407.77	625.10	0.00	0.00	0.00
G SAND BASE									
2,200.00	21.65	319.28	2,088.18	477.75	-411.19	630.33	0.00	0.00	0.00
2,300.00	21.65	319.28	2,181.13	505.72	-435.25	667.23	0.00	0.00	0.00
2,400.00	21.65	319.28	2,274.07	533.68	-459.32	704.12	0.00	0.00	0.00
2,500.00	21.65	319.28	2,367.02	561.64	-483.39	741.02	0.00	0.00	0.00
2,562.62	21.65	319.28	2,425.22	579.15	-498.46	764.12	0.00	0.00	0.00
FRUN									
2,600.00	21.65	319.28	2,459.97	589.61	-507.45	777.91	0.00	0.00	0.00
2,700.00	21.65	319.28	2,552.91	617.57	-531.52	814.80	0.00	0.00	0.00
2,800.00	21.65	319.28	2,645.86	645.53	-555.59	851.70	0.00	0.00	0.00
2,900.00	21.65	319.28	2,738.80	673.49	-579.65	888.59	0.00	0.00	0.00
3,000.00	21.65	319.28	2,831.75	701.46	-603.72	925.48	0.00	0.00	0.00
3,100.00	21.65	319.28	2,924.69	729.42	-627.79	962.38	0.00	0.00	0.00
3,200.00	21.65	319.28	3,017.64	757.38	-651.85	999.27	0.00	0.00	0.00
3,300.00	21.65	319.28	3,110.58	785.35	-675.92	1,036.16	0.00	0.00	0.00
3,400.00	21.65	319.28	3,203.53	813.31	-699.99	1,073.06	0.00	0.00	0.00
3,500.00	21.65	319.28	3,296.47	841.27	-724.05	1,109.95	0.00	0.00	0.00
3,590.69	21.65	319.28	3,380.77	866.63	-745.88	1,143.41	0.00	0.00	0.00
Start Drop -1.50									
3,600.00	21.51	319.28	3,389.42	869.23	-748.11	1,146.83	1.50	-1.50	0.00
3,700.00	20.01	319.28	3,482.93	896.09	-771.23	1,182.28	1.50	-1.50	0.00
3,800.00	18.51	319.28	3,577.33	921.09	-792.75	1,215.26	1.50	-1.50	0.00
3,855.41	17.68	319.28	3,630.00	934.14	-803.98	1,232.47	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 321-8 - Slot GM 321-8 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 321-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

Planned 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)
MVRD									
3,900.00	17.01	319.28	3,672.56	944.21	-812.65	1,245.77	1.50	-1.50	0.00
3,991.12	15.64	319.28	3,760.00	963.63	-829.36	1,271.38	1.50	-1.50	0.00
WFRK/UMVRD									
4,000.00	15.51	319.28	3,768.56	965.43	-830.91	1,273.77	1.50	-1.50	0.00
4,100.00	14.01	319.28	3,865.26	984.74	-847.53	1,299.24	1.50	-1.50	0.00
4,200.00	12.51	319.28	3,962.59	1,002.13	-862.50	1,322.18	1.50	-1.50	0.00
4,300.00	11.01	319.28	4,060.48	1,017.58	-875.79	1,342.56	1.50	-1.50	0.00
4,400.00	9.51	319.28	4,158.88	1,031.08	-887.41	1,360.37	1.50	-1.50	0.00
4,500.00	8.01	319.28	4,257.71	1,042.62	-897.35	1,375.60	1.50	-1.50	0.00
4,600.00	6.51	319.28	4,356.91	1,052.20	-905.59	1,388.24	1.50	-1.50	0.00
4,700.00	5.01	319.28	4,456.40	1,059.80	-912.14	1,398.28	1.50	-1.50	0.00
4,800.00	3.51	319.28	4,556.12	1,065.44	-916.98	1,405.71	1.50	-1.50	0.00
4,900.00	2.01	319.28	4,656.00	1,069.09	-920.12	1,410.52	1.50	-1.50	0.00
5,000.00	0.51	319.28	4,755.98	1,070.75	-921.56	1,412.72	1.50	-1.50	0.00
5,034.03	0.00	0.00	4,790.00	1,070.87	-921.66	1,412.87	1.50	-1.50	119.67
Start 1824.00 hold at 5034.03 MD - KMGAS - GM 321-8 BTV									
5,100.00	0.00	0.00	4,855.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,200.00	0.00	0.00	4,955.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,300.00	0.00	0.00	5,055.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,400.00	0.00	0.00	5,155.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,500.00	0.00	0.00	5,255.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,600.00	0.00	0.00	5,355.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,700.00	0.00	0.00	5,455.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,800.00	0.00	0.00	5,555.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
5,900.00	0.00	0.00	5,655.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,000.00	0.00	0.00	5,755.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,100.00	0.00	0.00	5,855.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,200.00	0.00	0.00	5,955.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,300.00	0.00	0.00	6,055.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,341.03	0.00	0.00	6,097.00	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
CME0									
6,400.00	0.00	0.00	6,155.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,255.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,355.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,455.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,758.03	0.00	0.00	6,514.00	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
RLNS									
6,800.00	0.00	0.00	6,555.97	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
6,858.03	0.00	0.00	6,614.00	1,070.87	-921.66	1,412.87	0.00	0.00	0.00
TD at 6858.03 - TD - GM 321-8 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 321-8 - Slot GM 321-8 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 321-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 321-8 BTV - hit/miss target - Shape	0.00	0.00	4,790.00	1,070.87	-921.66	1,602,254.28	2,256,489.24	39.4573702	-108.1336137
GM 321-8 PBHL - plan hits target center - Point	0.00	0.00	6,614.00	1,070.87	-921.66	1,602,254.28	2,256,489.24	39.4573702	-108.1336137

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	972.84	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,078.23	1,975.00	G SAND		0.00	0.00
2,185.82	2,075.00	G SAND BASE		0.00	0.00
2,562.62	2,425.22	FRUN		0.00	0.00
3,855.41	3,630.00	MVRD		0.00	0.00
3,991.12	3,760.00	WFRK/UMVRD		0.00	0.00
5,034.03	4,790.00	KMVGAS		0.00	0.00
6,341.03	6,097.00	CME0		0.00	0.00
6,758.03	6,514.00	RLNS		0.00	0.00
6,858.03	6,614.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
135.00	135.00	0.00	0.00	Start Build 3.00
856.67	839.61	102.12	-87.89	Start 2734.03 hold at 856.67 MD
3,590.69	3,380.77	866.63	-745.88	Start Drop -1.50
5,034.03	4,790.00	1,070.87	-921.66	Start 1824.00 hold at 5034.03 MD
6,858.03	6,614.00	1,070.87	-921.66	TD at 6858.03