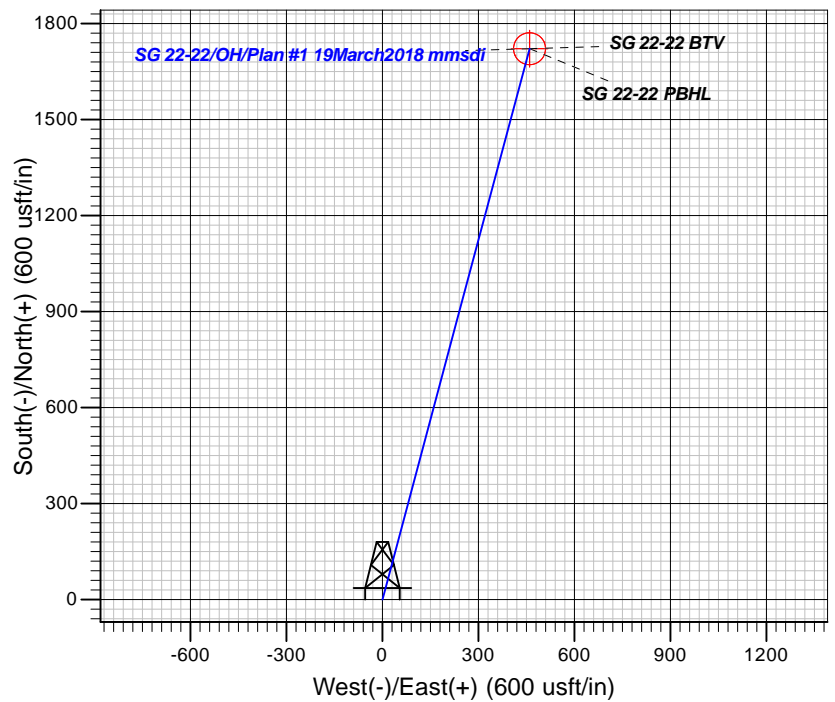
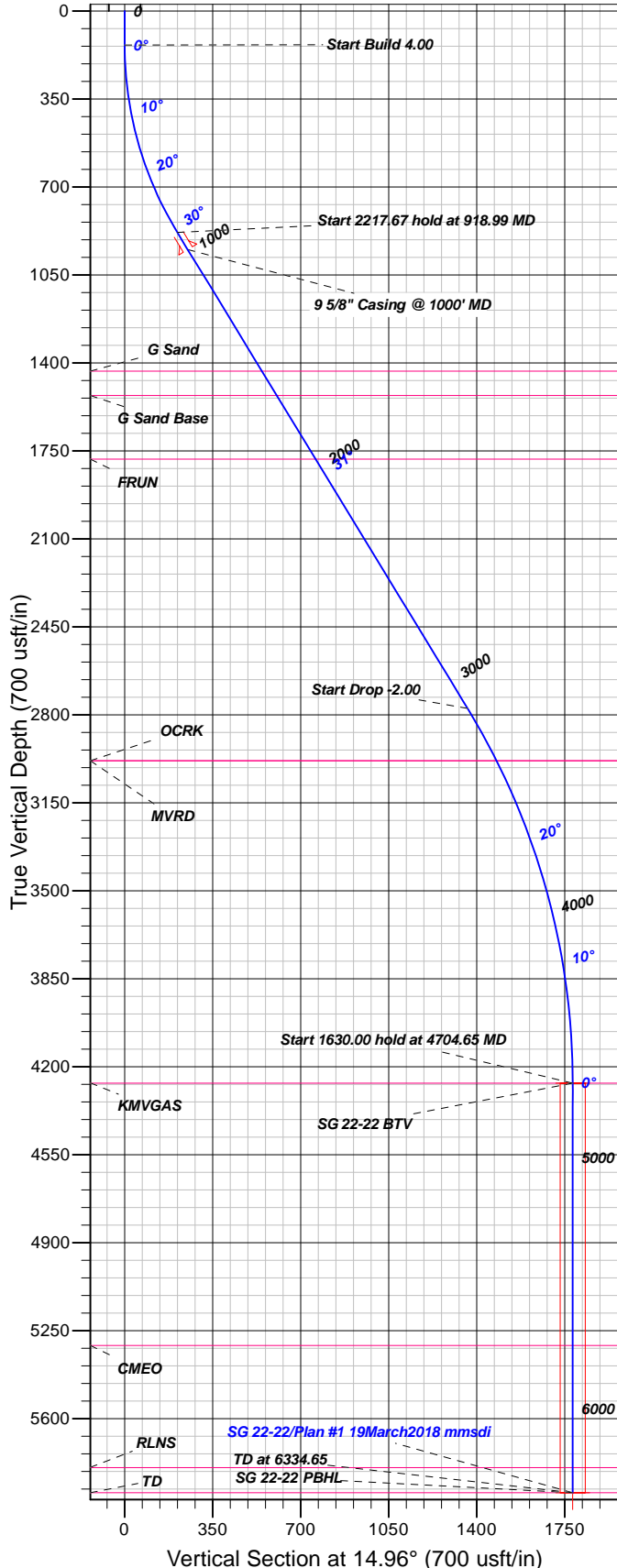




Azimuths to True North  
Magnetic North: 9.47°  
  
Magnetic Field  
Strength: 51729.1snT  
Dip Angle: 65.62°  
Date: 3/19/2018  
Model: HDGM

## Well Details: SG 22-22

GL 5665' & RKB 24' @ 5689.00usft  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.00 0.00 1588949.90 2265672.20 39.4215844 -108.0997560 SG 22-22 (B2)



## FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
1433.00	1566.09	G Sand
1530.00	1679.69	G Sand Base
1783.00	1975.97	FRUN
2983.00	3375.47	MVRD
2983.00	3375.47	OCRK
4265.00	4704.65	KMVGAS
5309.00	5748.65	CMEO
5795.00	6234.65	RLNS
5895.00	6334.65	TD

Plan: Plan #1 19March2018 mmsdi

15:51, March 20 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

TVD	MD	Name	Size
949.60	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	918.99	31.36	14.96	880.43	202.16	54.00	4.00	14.96	209.25	
4	3136.66	31.36	14.96	2774.14	1317.16	351.85	0.00	0.00	1363.35	
5	4704.65	0.00	0.00	4265.00	1721.48	459.85	2.00	180.00	1781.84	SG 22-22 BTV
6	6334.65	0.00	0.00	5895.00	1721.48	459.85	0.00	0.00	1781.84	SG 22-22 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 22-22 BTV	4265.00	1721.48	459.85	1590657.52	2266181.12	39.4263107	-108.0981281	Circle (Radius: 50.00)
- plan hits target center								
SG 22-22 PBHL	5895.00	1721.48	459.85	1590657.52	2266181.12	39.4263107	-108.0981281	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 23-22 Pad**

**SG 22-22 - Slot SG 22-22 (B2)**

**OH**

**Plan: Plan #1 19March2018 mmsdi**

## **Standard Planning Report**

**20 March, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 22-22 - Slot SG 22-22 (B2)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 22-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 19March2018 mmsdi		

<b>Project</b>	Garfield 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 Central Zone		

Site		SG 23-22 Pad			
Site Position:		Northing:	1,588,957.40 usft	Latitude:	39.4216042
From:	Map	Easting:	2,265,662.20 usft	Longitude:	-108.0997922
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well	SG 22-22 - Slot SG 22-22 (B2)					
Well Position	+N/-S	-7.21 usft	Northing:	1,588,949.90 usft	Latitude:	39.4215844
	+E/-W	10.21 usft	Easting:	2,265,672.20 usft	Longitude:	-108.0997561
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,665.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	3/19/2018	9.47	65.62	51,729

<b>Design</b>	Plan #1 19March2018 mmsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	14.96

<b>Plan Sections</b>										
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	
918.99	31.36	14.96	880.43	202.16	54.00	4.00	4.00	0.00	14.96	
3,136.66	31.36	14.96	2,774.14	1,317.16	351.85	0.00	0.00	0.00	0.00	
4,704.65	0.00	0.00	4,265.00	1,721.48	459.85	2.00	-2.00	0.00	180.00	SG 22-22 BTV
6,334.65	0.00	0.00	5,895.00	1,721.48	459.85	0.00	0.00	0.00	0.00	SG 22-22 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 22-22 - Slot SG 22-22 (B2)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 22-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 19March2018 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
<b>Start Build 4.00</b>									
200.00	2.60	14.96	199.98	1.42	0.38	1.47	4.00	4.00	0.00
300.00	6.60	14.96	299.64	9.17	2.45	9.49	4.00	4.00	0.00
400.00	10.60	14.96	398.49	23.62	6.31	24.44	4.00	4.00	0.00
500.00	14.60	14.96	496.06	44.69	11.94	46.25	4.00	4.00	0.00
600.00	18.60	14.96	591.88	72.28	19.31	74.82	4.00	4.00	0.00
700.00	22.60	14.96	685.46	106.27	28.39	109.99	4.00	4.00	0.00
800.00	26.60	14.96	776.37	146.48	39.13	151.61	4.00	4.00	0.00
900.00	30.60	14.96	864.15	192.72	51.48	199.47	4.00	4.00	0.00
918.99	31.36	14.96	880.43	202.16	54.00	209.25	4.00	4.00	0.00
<b>Start 2217.67 hold at 918.99 MD</b>									
1,000.00	31.36	14.96	949.60	242.89	64.88	251.41	0.00	0.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,100.00	31.36	14.96	1,035.00	293.17	78.31	303.45	0.00	0.00	0.00
1,200.00	31.36	14.96	1,120.39	343.45	91.74	355.49	0.00	0.00	0.00
1,300.00	31.36	14.96	1,205.78	393.72	105.17	407.53	0.00	0.00	0.00
1,400.00	31.36	14.96	1,291.17	444.00	118.60	459.57	0.00	0.00	0.00
1,500.00	31.36	14.96	1,376.56	494.28	132.03	511.61	0.00	0.00	0.00
1,566.09	31.36	14.96	1,433.00	527.51	140.91	546.01	0.00	0.00	0.00
<b>G Sand</b>									
1,600.00	31.36	14.96	1,461.95	544.56	145.46	563.65	0.00	0.00	0.00
1,679.69	31.36	14.96	1,530.00	584.62	156.17	605.12	0.00	0.00	0.00
<b>G Sand Base</b>									
1,700.00	31.36	14.96	1,547.35	594.84	158.90	615.69	0.00	0.00	0.00
1,800.00	31.36	14.96	1,632.74	645.11	172.33	667.73	0.00	0.00	0.00
1,900.00	31.36	14.96	1,718.13	695.39	185.76	719.77	0.00	0.00	0.00
1,975.97	31.36	14.96	1,783.00	733.59	195.96	759.31	0.00	0.00	0.00
<b>FRUN</b>									
2,000.00	31.36	14.96	1,803.52	745.67	199.19	771.82	0.00	0.00	0.00
2,100.00	31.36	14.96	1,888.91	795.95	212.62	823.86	0.00	0.00	0.00
2,200.00	31.36	14.96	1,974.30	846.23	226.05	875.90	0.00	0.00	0.00
2,300.00	31.36	14.96	2,059.70	896.50	239.48	927.94	0.00	0.00	0.00
2,400.00	31.36	14.96	2,145.09	946.78	252.91	979.98	0.00	0.00	0.00
2,500.00	31.36	14.96	2,230.48	997.06	266.34	1,032.02	0.00	0.00	0.00
2,600.00	31.36	14.96	2,315.87	1,047.34	279.77	1,084.06	0.00	0.00	0.00
2,700.00	31.36	14.96	2,401.26	1,097.62	293.20	1,136.10	0.00	0.00	0.00
2,800.00	31.36	14.96	2,486.65	1,147.89	306.63	1,188.14	0.00	0.00	0.00
2,900.00	31.36	14.96	2,572.05	1,198.17	320.06	1,240.18	0.00	0.00	0.00
3,000.00	31.36	14.96	2,657.44	1,248.45	333.49	1,292.23	0.00	0.00	0.00
3,100.00	31.36	14.96	2,742.83	1,298.73	346.92	1,344.27	0.00	0.00	0.00
3,136.66	31.36	14.96	2,774.14	1,317.16	351.85	1,363.35	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
3,200.00	30.09	14.96	2,828.58	1,348.43	360.20	1,395.71	2.00	-2.00	0.00
3,300.00	28.09	14.96	2,915.96	1,395.40	372.75	1,444.33	2.00	-2.00	0.00
3,375.47	26.58	14.96	2,983.00	1,428.88	381.69	1,478.99	2.00	-2.00	0.00
<b>OCRK - MVRD</b>									
3,400.00	26.09	14.96	3,004.98	1,439.40	384.50	1,489.87	2.00	-2.00	0.00
3,500.00	24.09	14.96	3,095.54	1,480.37	395.44	1,532.28	2.00	-2.00	0.00
3,600.00	22.09	14.96	3,187.52	1,518.26	405.57	1,571.50	2.00	-2.00	0.00
3,700.00	20.09	14.96	3,280.82	1,553.03	414.85	1,607.48	2.00	-2.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 22-22 - Slot SG 22-22 (B2)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 22-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 19March2018 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)
3,800.00	18.09	14.96	3,375.31	1,584.63	423.29	1,640.19	2.00	-2.00	0.00
3,900.00	16.09	14.96	3,470.89	1,613.02	430.88	1,669.58	2.00	-2.00	0.00
4,000.00	14.09	14.96	3,567.44	1,638.18	437.60	1,695.62	2.00	-2.00	0.00
4,100.00	12.09	14.96	3,664.83	1,660.06	443.44	1,718.27	2.00	-2.00	0.00
4,200.00	10.09	14.96	3,762.96	1,678.65	448.41	1,737.51	2.00	-2.00	0.00
4,300.00	8.09	14.96	3,861.70	1,693.92	452.49	1,753.31	2.00	-2.00	0.00
4,400.00	6.09	14.96	3,960.93	1,705.85	455.67	1,765.66	2.00	-2.00	0.00
4,500.00	4.09	14.96	4,060.53	1,714.42	457.97	1,774.54	2.00	-2.00	0.00
4,600.00	2.09	14.96	4,160.37	1,719.64	459.36	1,779.93	2.00	-2.00	0.00
4,700.00	0.09	14.96	4,260.35	1,721.48	459.85	1,781.84	2.00	-2.00	0.00
4,704.65	0.00	0.00	4,265.00	1,721.48	459.85	1,781.84	2.00	-2.00	0.00
Start 1630.00 hold at 4704.65 MD - KMGAS - SG 22-22 BTV									
4,800.00	0.00	0.00	4,360.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
4,900.00	0.00	0.00	4,460.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,000.00	0.00	0.00	4,560.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,100.00	0.00	0.00	4,660.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,200.00	0.00	0.00	4,760.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,300.00	0.00	0.00	4,860.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,400.00	0.00	0.00	4,960.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,500.00	0.00	0.00	5,060.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,600.00	0.00	0.00	5,160.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,700.00	0.00	0.00	5,260.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,748.65	0.00	0.00	5,309.00	1,721.48	459.85	1,781.84	0.00	0.00	0.00
CME0									
5,800.00	0.00	0.00	5,360.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
5,900.00	0.00	0.00	5,460.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
6,000.00	0.00	0.00	5,560.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
6,100.00	0.00	0.00	5,660.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
6,200.00	0.00	0.00	5,760.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
6,234.65	0.00	0.00	5,795.00	1,721.48	459.85	1,781.84	0.00	0.00	0.00
RLNS									
6,300.00	0.00	0.00	5,860.35	1,721.48	459.85	1,781.84	0.00	0.00	0.00
6,334.65	0.00	0.00	5,895.00	1,721.48	459.85	1,781.84	0.00	0.00	0.00
TD at 6334.65 - TD - SG 22-22 PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 22-22 BTV	0.00	0.00	4,265.00	1,721.48	459.85	1,590,657.52	2,266,181.12	39.4263108	-108.0981282
- plan hits target center									
- Circle (radius 50.00)									
SG 22-22 PBHL	0.00	0.00	5,895.00	1,721.48	459.85	1,590,657.52	2,266,181.12	39.4263108	-108.0981282
- plan hits target center									
- Point									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 22-22 - Slot SG 22-22 (B2)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 22-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 19March2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	949.60	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,566.09	1,433.00	G Sand		0.00	0.00
1,679.69	1,530.00	G Sand Base		0.00	0.00
1,975.97	1,783.00	FRUN		0.00	0.00
3,375.47	2,983.00	OCRK		0.00	0.00
3,375.47	2,983.00	MVRD		0.00	0.00
4,704.65	4,265.00	KMVGAS		0.00	0.00
5,748.65	5,309.00	CMEO		0.00	0.00
6,234.65	5,795.00	RLNS		0.00	0.00
6,334.65	5,895.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
135.00	135.00	0.00	0.00	Start Build 4.00
918.99	880.43	202.16	54.00	Start 2217.67 hold at 918.99 MD
3,136.66	2,774.14	1,317.16	351.85	Start Drop -2.00
4,704.65	4,265.00	1,721.48	459.85	Start 1630.00 hold at 4704.65 MD
6,334.65	5,895.00	1,721.48	459.85	TD at 6334.65