



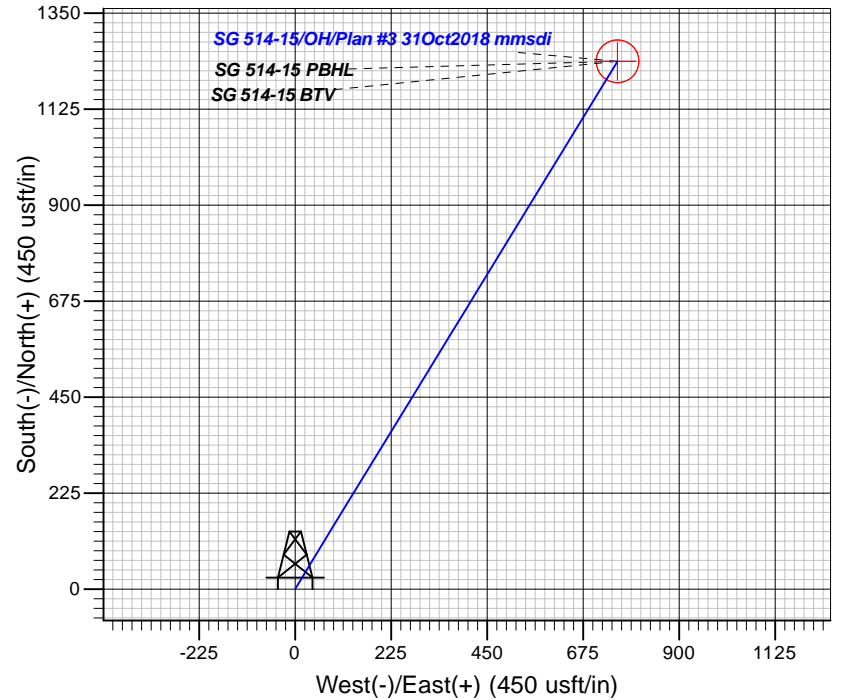
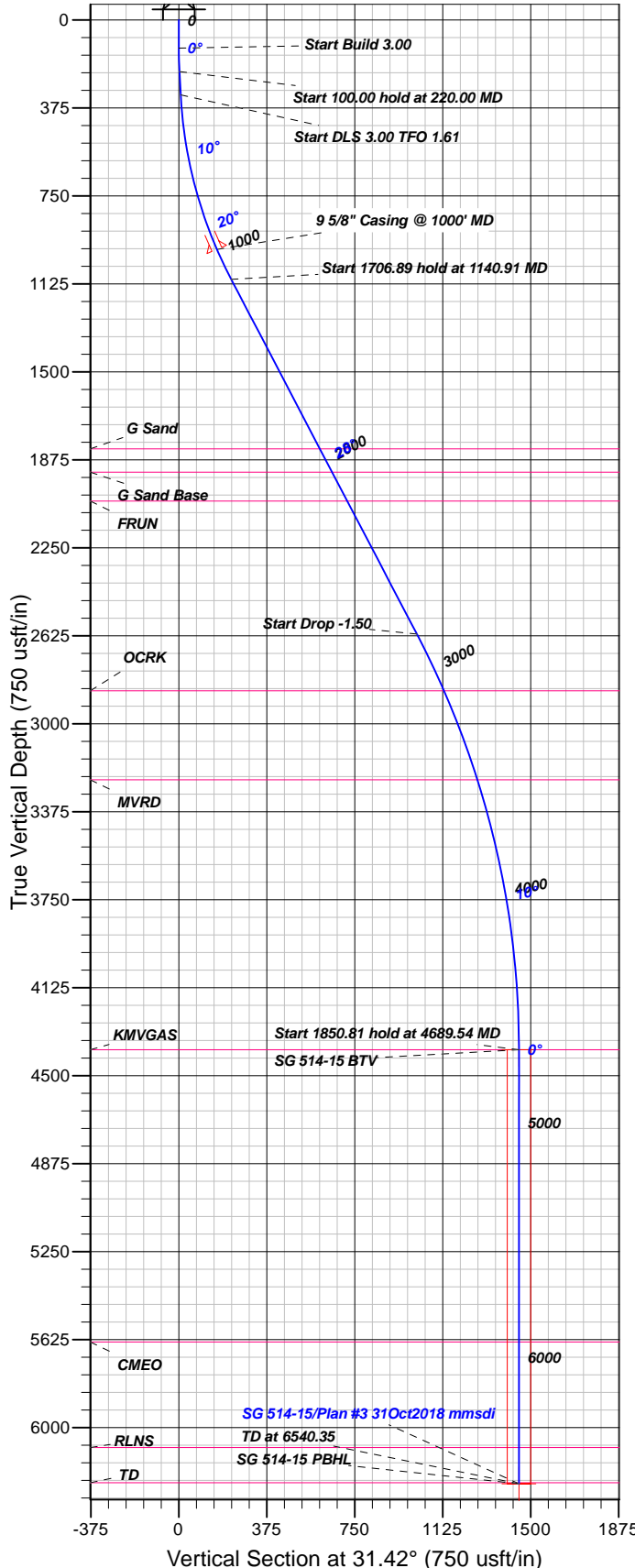
Azimuths to True North
Magnetic North: 9.48°

Magnetic Field
Strength: 51724.5nT
Dip Angle: 65.63°
Date: 3/9/2018
Model: HDGM

Well Details: SG 514-15

GL 6092.4' & RKB 24' @ 6116.40usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1591238.60	2264566.70	39.4277785	-108.1038999	SG 514-15 (B2)



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1828.00	1956.38	G Sand
1928.00	2069.24	G Sand Base
2050.91	2207.97	FRUN
2859.00	3115.36	OCRK
3238.85	3521.26	MVRD
4389.00	4689.54	KMGAS
5635.00	5935.54	CMEO
6085.00	6385.54	RLNS
6235.00	6535.54	TD

Plan: Plan #3 31Oct2018 mmsdi

12:16, October 31 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
978.36	1000.00	5/8" Casing @ 1000' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	220.00	3.00	30.00	219.95	2.27	1.31	3.00	30.00	2.62	
4	320.00	3.00	30.00	319.82	6.80	3.93	0.00	0.00	7.85	
5	1140.91	27.63	31.45	1105.50	190.62	115.69	3.00	1.61	222.97	
6	2847.80	27.63	31.45	2617.80	865.86	528.60	0.00	0.00	1014.46	
7	4689.54	0.00	0.00	4389.00	1237.38	755.79	1.50	180.00	1449.94	SG 514-15 BTM
8	6540.35	0.00	0.00	6239.81	1237.38	755.79	0.00	0.00	1449.94	SG 514-15 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 514-15 BTM	4389.00	1237.38	755.79	1592453.81	2265357.64	39.4311757	-108.1012242	Circle (Radius: 50.00)
- plan hits target center								
SG 514-15 PBHL	6239.81	1237.38	755.79	1592453.81	2265357.64	39.4311757	-108.1012242	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 11-22 Pad

SG 514-15 - Slot SG 514-15 (B2)

OH

Plan: Plan #3 31Oct2018 mmsdi

Standard Planning Report

31 October, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 514-15 - Slot SG 514-15 (B2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 514-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 31Oct2018 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		SG 11-22 Pad			
Site Position:		Northing:	1,591,239.00 usft	Latitude:	39.4277783
From:	Map	Easting:	2,264,548.70 usft	Longitude:	-108.1039637
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64

Well	SG 514-15 - Slot SG 514-15 (B2)					
Well Position	+N/-S	0.12 usft	Northing:	1,591,238.60 usft	Latitude:	39.4277786
	+E/-W	18.00 usft	Easting:	2,264,566.70 usft	Longitude:	-108.1038999
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,092.40 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/9/2018	9.48	65.63	51,725

Design	Plan #3 31Oct2018 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	31.42

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
220.00	3.00	30.00	219.95	2.27	1.31	3.00	3.00	0.00	30.00	
320.00	3.00	30.00	319.82	6.80	3.93	0.00	0.00	0.00	0.00	
1,140.91	27.63	31.45	1,105.50	190.62	115.69	3.00	3.00	0.18	1.61	
2,847.80	27.63	31.45	2,617.80	865.86	528.60	0.00	0.00	0.00	0.00	
4,689.54	0.00	0.00	4,389.00	1,237.38	755.79	1.50	-1.50	0.00	180.00	SG 514-15 BTV
6,540.35	0.00	0.00	6,239.81	1,237.38	755.79	0.00	0.00	0.00	0.00	SG 514-15 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 514-15 - Slot SG 514-15 (B2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 514-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 31Oct2018 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
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	2.40	30.00	199.98	1.45	0.84	1.67	3.00	3.00	0.00
220.00	3.00	30.00	219.95	2.27	1.31	2.62	3.00	3.00	0.00
Start 100.00 hold at 220.00 MD									
300.00	3.00	30.00	299.84	5.89	3.40	6.80	0.00	0.00	0.00
320.00	3.00	30.00	319.82	6.80	3.93	7.85	0.00	0.00	0.00
Start DLS 3.00 TFO 1.61									
400.00	5.40	30.72	399.60	11.85	6.90	13.71	3.00	3.00	0.90
500.00	8.40	31.04	498.86	22.15	13.07	25.72	3.00	3.00	0.32
600.00	11.40	31.19	597.36	36.87	21.95	42.91	3.00	3.00	0.15
700.00	14.40	31.28	694.83	55.95	33.53	65.23	3.00	3.00	0.09
800.00	17.40	31.34	790.99	79.36	47.76	92.62	3.00	3.00	0.06
900.00	20.40	31.38	885.59	107.01	64.62	125.00	3.00	3.00	0.04
1,000.00	23.40	31.41	978.36	138.84	84.04	162.30	3.00	3.00	0.03
9 5/8" Casing @ 1000' MD									
1,100.00	26.40	31.44	1,069.06	174.76	105.99	204.39	3.00	3.00	0.02
1,140.91	27.63	31.45	1,105.50	190.62	115.69	222.97	3.00	3.00	0.02
Start 1706.89 hold at 1140.91 MD									
1,200.00	27.63	31.45	1,157.86	213.99	129.98	250.37	0.00	0.00	0.00
1,300.00	27.63	31.45	1,246.46	253.55	154.17	296.74	0.00	0.00	0.00
1,400.00	27.63	31.45	1,335.05	293.11	178.36	343.11	0.00	0.00	0.00
1,500.00	27.63	31.45	1,423.65	332.67	202.55	389.48	0.00	0.00	0.00
1,600.00	27.63	31.45	1,512.25	372.23	226.74	435.85	0.00	0.00	0.00
1,700.00	27.63	31.45	1,600.85	411.79	250.94	482.22	0.00	0.00	0.00
1,800.00	27.63	31.45	1,689.45	451.35	275.13	528.59	0.00	0.00	0.00
1,900.00	27.63	31.45	1,778.05	490.91	299.32	574.96	0.00	0.00	0.00
1,956.38	27.63	31.45	1,828.00	513.21	312.96	601.11	0.00	0.00	0.00
G Sand									
2,000.00	27.63	31.45	1,866.65	530.47	323.51	621.33	0.00	0.00	0.00
2,069.24	27.63	31.45	1,928.00	557.86	340.26	653.44	0.00	0.00	0.00
G Sand Base									
2,100.00	27.63	31.45	1,955.25	570.03	347.70	667.70	0.00	0.00	0.00
2,200.00	27.63	31.45	2,043.85	609.59	371.89	714.07	0.00	0.00	0.00
2,207.97	27.63	31.45	2,050.91	612.74	373.82	717.77	0.00	0.00	0.00
FRUN									
2,300.00	27.63	31.45	2,132.45	649.15	396.08	760.44	0.00	0.00	0.00
2,400.00	27.63	31.45	2,221.05	688.71	420.27	806.81	0.00	0.00	0.00
2,500.00	27.63	31.45	2,309.65	728.27	444.46	853.18	0.00	0.00	0.00
2,600.00	27.63	31.45	2,398.25	767.83	468.66	899.55	0.00	0.00	0.00
2,700.00	27.63	31.45	2,486.84	807.39	492.85	945.92	0.00	0.00	0.00
2,800.00	27.63	31.45	2,575.44	846.95	517.04	992.30	0.00	0.00	0.00
2,847.80	27.63	31.45	2,617.80	865.86	528.60	1,014.46	0.00	0.00	0.00
Start Drop -1.50									
2,900.00	26.84	31.45	2,664.21	886.24	541.06	1,038.35	1.50	-1.50	0.00
3,000.00	25.34	31.45	2,754.01	923.76	564.01	1,082.33	1.50	-1.50	0.00
3,100.00	23.84	31.45	2,844.94	959.26	585.72	1,123.95	1.50	-1.50	0.00
3,115.36	23.61	31.45	2,859.00	964.54	588.94	1,130.13	1.50	-1.50	0.00
OCRK									
3,200.00	22.34	31.45	2,936.92	992.73	606.18	1,163.17	1.50	-1.50	0.00
3,300.00	20.84	31.45	3,029.90	1,024.12	625.38	1,199.97	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 514-15 - Slot SG 514-15 (B2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 514-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 31Oct2018 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)
3,400.00	19.34	31.45	3,123.81	1,053.43	643.30	1,234.32	1.50	-1.50	0.00
3,500.00	17.84	31.45	3,218.59	1,080.63	659.94	1,266.21	1.50	-1.50	0.00
3,521.26	17.52	31.45	3,238.85	1,086.14	663.31	1,272.66	1.50	-1.50	0.00
MVRD									
3,600.00	16.34	31.45	3,314.17	1,105.71	675.27	1,295.60	1.50	-1.50	0.00
3,700.00	14.84	31.45	3,410.49	1,128.64	689.29	1,322.48	1.50	-1.50	0.00
3,800.00	13.34	31.45	3,507.47	1,149.41	702.00	1,346.83	1.50	-1.50	0.00
3,900.00	11.84	31.45	3,605.07	1,168.01	713.37	1,368.63	1.50	-1.50	0.00
4,000.00	10.34	31.45	3,703.20	1,184.42	723.41	1,387.87	1.50	-1.50	0.00
4,100.00	8.84	31.45	3,801.79	1,198.64	732.10	1,404.53	1.50	-1.50	0.00
4,200.00	7.34	31.45	3,900.80	1,210.65	739.45	1,418.61	1.50	-1.50	0.00
4,300.00	5.84	31.45	4,000.13	1,220.45	745.44	1,430.09	1.50	-1.50	0.00
4,400.00	4.34	31.45	4,099.73	1,228.02	750.07	1,438.97	1.50	-1.50	0.00
4,500.00	2.84	31.45	4,199.53	1,233.37	753.34	1,445.24	1.50	-1.50	0.00
4,600.00	1.34	31.45	4,299.46	1,236.48	755.24	1,448.89	1.50	-1.50	0.00
4,689.54	0.00	0.00	4,389.00	1,237.38	755.79	1,449.94	1.50	-1.50	0.00
Start 1850.81 hold at 4689.54 MD - KMGAS - SG 514-15 BTV									
4,700.00	0.00	0.00	4,399.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
4,800.00	0.00	0.00	4,499.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
4,900.00	0.00	0.00	4,599.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,000.00	0.00	0.00	4,699.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,100.00	0.00	0.00	4,799.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,200.00	0.00	0.00	4,899.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,300.00	0.00	0.00	4,999.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,400.00	0.00	0.00	5,099.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,500.00	0.00	0.00	5,199.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,600.00	0.00	0.00	5,299.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,700.00	0.00	0.00	5,399.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,800.00	0.00	0.00	5,499.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,900.00	0.00	0.00	5,599.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
5,935.54	0.00	0.00	5,635.00	1,237.38	755.79	1,449.94	0.00	0.00	0.00
CMEO									
6,000.00	0.00	0.00	5,699.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,100.00	0.00	0.00	5,799.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,200.00	0.00	0.00	5,899.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,300.00	0.00	0.00	5,999.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,385.54	0.00	0.00	6,085.00	1,237.38	755.79	1,449.94	0.00	0.00	0.00
RLNS									
6,400.00	0.00	0.00	6,099.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,500.00	0.00	0.00	6,199.46	1,237.38	755.79	1,449.94	0.00	0.00	0.00
6,535.54	0.00	0.00	6,235.00	1,237.38	755.79	1,449.94	0.00	0.00	0.00
TD									
6,540.35	0.00	0.00	6,239.81	1,237.38	755.79	1,449.94	0.00	0.00	0.00
TD at 6540.35 - SG 514-15 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 514-15 - Slot SG 514-15 (B2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	North Reference:	True
Well:	SG 514-15	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 31Oct2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 514-15 BTV - hit/miss target - Shape	0.00	0.00	4,389.00	1,237.38	755.79	1,592,453.81	2,265,357.64	39.4311758	-108.1012242
SG 514-15 PBHL - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,239.81	1,237.38	755.79	1,592,453.81	2,265,357.64	39.4311758	-108.1012242

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	978.36	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,956.38	1,828.00	G Sand		0.00	0.00
2,069.24	1,928.00	G Sand Base		0.00	0.00
2,207.97	2,050.91	FRUN		0.00	0.00
3,115.36	2,859.00	OCRK		0.00	0.00
3,521.26	3,238.85	MVRD		0.00	0.00
4,689.54	4,389.00	KMVGAS		0.00	0.00
5,935.54	5,635.00	CME0		0.00	0.00
6,385.54	6,085.00	RLNS		0.00	0.00
6,535.54	6,235.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.00
220.00	219.95	2.27	1.31	Start 100.00 hold at 220.00 MD
320.00	319.82	6.80	3.93	Start DLS 3.00 TFO 1.61
1,140.91	1,105.50	190.62	115.69	Start 1706.89 hold at 1140.91 MD
2,847.80	2,617.80	865.86	528.60	Start Drop -1.50
4,689.54	4,389.00	1,237.38	755.79	Start 1850.81 hold at 4689.54 MD
6,540.35	6,239.81	1,237.38	755.79	TD at 6540.35