

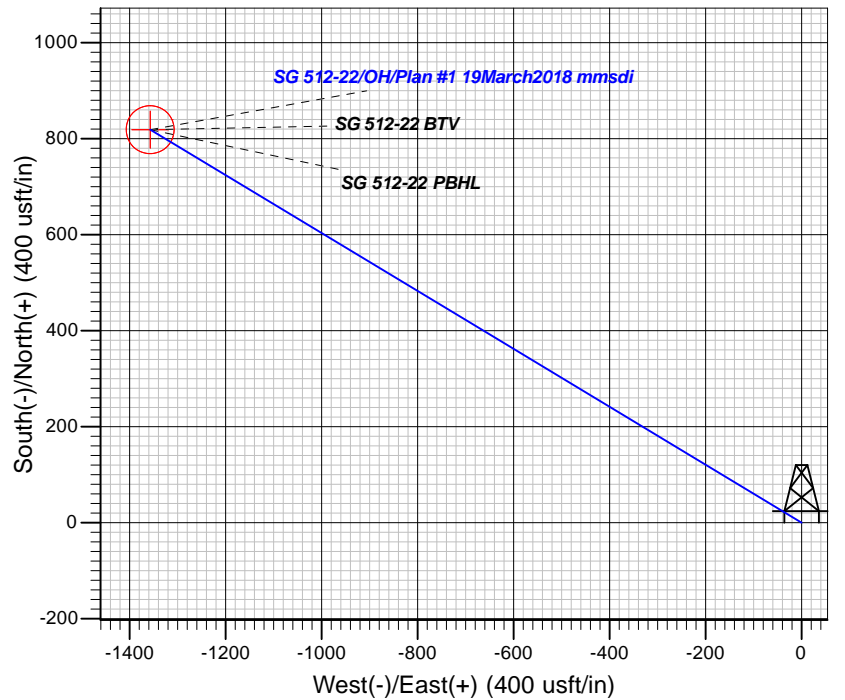
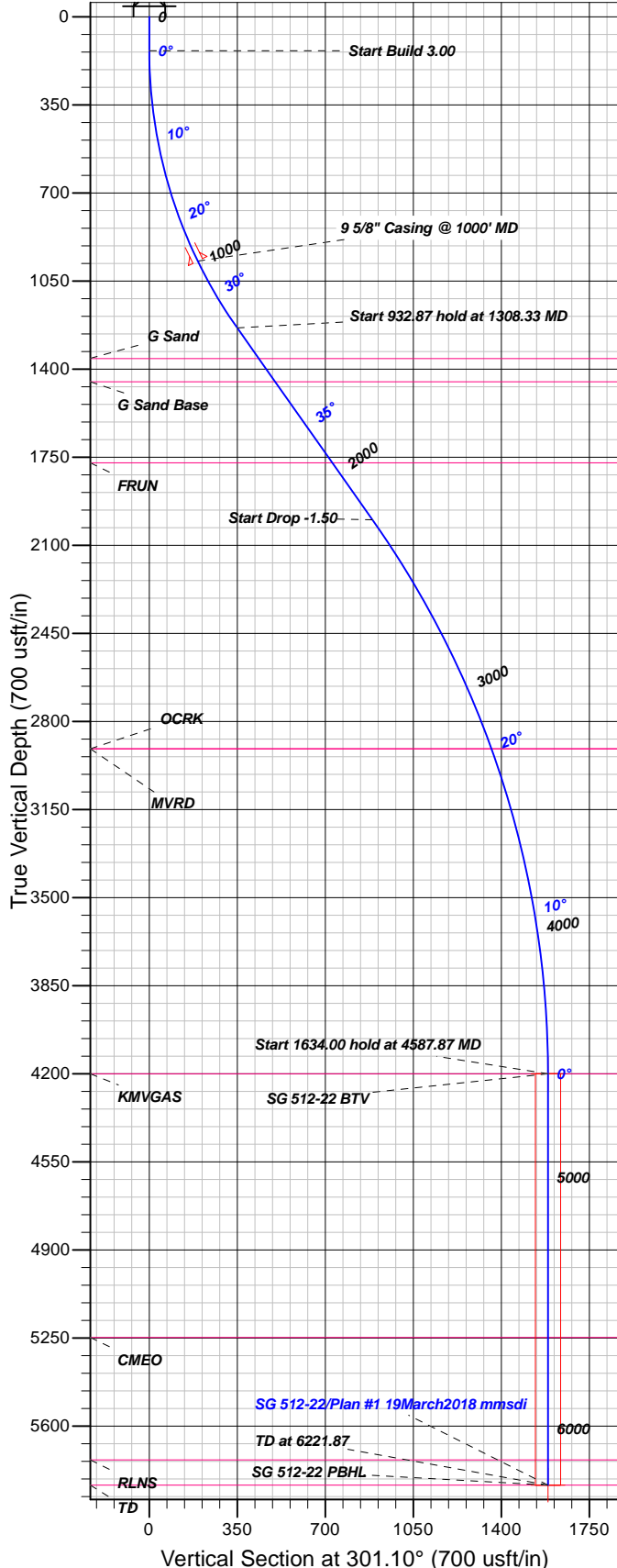


Azimuths to True North
Magnetic North: 9.47°

Magnetic Field
Strength: 51729.1snT
Dip Angle: 65.62°
Date: 3/19/2018
Model: HDGM

Well Details: SG 512-22

+N/-S	+E/-W	Northing	GL 5665' & RKB 24' @ 5689.00usft	Easting	Latitude	Longitude	Slot
0.00	0.00	1588934.90		2265662.30	39.4215425	-108.0997895	SG 512-22 (A4)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1358.00	1457.75	G Sand
1450.00	1570.34	G Sand Base
1772.00	1964.39	FRUN
2908.00	3269.87	MVRD
2908.00	3269.87	OCRK
4200.00	4587.87	KMVGAS
5248.00	5635.87	CMEO
5734.00	6121.87	RLNS
5834.00	6221.87	TD

Plan: Plan #1 19March2018 mmsdi

16:58, 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
970.73	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	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	1308.33	35.20	301.10	1235.90	180.38	-299.04	3.00	301.10	349.23	
4	2241.20	35.20	301.10	1998.19	458.13	-759.49	0.00	0.00	886.96	
5	4587.87	0.00	0.00	4200.00	818.89	-1357.56	1.50	180.00	1585.42	SG 512-22 BTV
6	6221.87	0.00	0.00	5834.00	818.89	-1357.56	0.00	0.00	1585.42	SG 512-22 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 512-22 BTV	4200.00	818.89	-1357.56	1589792.30	2264328.73	39.4237906	-108.1045952	Circle (Radius: 50.00)
- plan hits target center								
SG 512-22 PBHL	5834.00	818.89	-1357.56	1589792.30	2264328.73	39.4237906	-108.1045952	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 23-22 Pad

SG 512-22 - Slot SG 512-22 (A4)

OH

Plan: Plan #1 19March2018 mmsdi

Standard Planning Report

20 March, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 512-22 - Slot SG 512-22 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 512-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 19March2018 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 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 512-22 - Slot SG 512-22 (A4)			
Well Position	+N/-S	-22.49 usft	Northing:	1,588,934.90 usft
	+E/-W	0.74 usft	Easting:	2,265,662.30 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	5,665.00 usft

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

Design	Plan #1 19March2018 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	301.10

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	
1,308.33	35.20	301.10	1,235.90	180.38	-299.04	3.00	3.00	0.00	301.10	
2,241.20	35.20	301.10	1,998.19	458.13	-759.49	0.00	0.00	0.00	0.00	
4,587.87	0.00	0.00	4,200.00	818.89	-1,357.56	1.50	-1.50	0.00	180.00	SG 512-22 BTV
6,221.87	0.00	0.00	5,834.00	818.89	-1,357.56	0.00	0.00	0.00	0.00	SG 512-22 PBHL

Database: Grand Junction District
Company: TEP Rocky Mountain LLC
Project: Garfield County, CO NAD83
Site: SG 23-22 Pad
Well: SG 512-22
Wellbore: OH
Design: Plan #1 19March2018 mmsdi

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well SG 512-22 - Slot SG 512-22 (A4)
GL 5665' & RKB 24' @ 5689.00usft
GL 5665' & RKB 24' @ 5689.00usft
True
Minimum Curvature

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	301.10	199.99	0.57	-0.95	1.11	3.00	3.00	0.00
300.00	4.95	301.10	299.79	3.68	-6.10	7.12	3.00	3.00	0.00
400.00	7.95	301.10	399.15	9.48	-15.72	18.36	3.00	3.00	0.00
500.00	10.95	301.10	497.78	17.96	-29.77	34.77	3.00	3.00	0.00
600.00	13.95	301.10	595.42	29.09	-48.23	56.33	3.00	3.00	0.00
700.00	16.95	301.10	691.79	42.85	-71.04	82.97	3.00	3.00	0.00
800.00	19.95	301.10	786.64	59.20	-98.14	114.61	3.00	3.00	0.00
900.00	22.95	301.10	879.71	78.08	-129.45	151.17	3.00	3.00	0.00
1,000.00	25.95	301.10	970.73	99.46	-164.88	192.56	3.00	3.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	28.95	301.10	1,059.46	123.27	-204.35	238.65	3.00	3.00	0.00
1,200.00	31.95	301.10	1,145.66	149.44	-247.74	289.32	3.00	3.00	0.00
1,300.00	34.95	301.10	1,229.08	177.91	-294.94	344.44	3.00	3.00	0.00
1,308.33	35.20	301.10	1,235.90	180.38	-299.04	349.23	3.00	3.00	0.00
Start 932.87 hold at 1308.33 MD									
1,400.00	35.20	301.10	1,310.81	207.67	-344.28	402.07	0.00	0.00	0.00
1,457.75	35.20	301.10	1,358.00	224.87	-372.79	435.36	0.00	0.00	0.00
G Sand									
1,500.00	35.20	301.10	1,392.52	237.45	-393.64	459.71	0.00	0.00	0.00
1,570.34	35.20	301.10	1,450.00	258.39	-428.36	500.26	0.00	0.00	0.00
G Sand Base									
1,600.00	35.20	301.10	1,474.24	267.22	-443.00	517.35	0.00	0.00	0.00
1,700.00	35.20	301.10	1,555.95	296.99	-492.36	575.00	0.00	0.00	0.00
1,800.00	35.20	301.10	1,637.67	326.77	-541.72	632.64	0.00	0.00	0.00
1,900.00	35.20	301.10	1,719.38	356.54	-591.07	690.28	0.00	0.00	0.00
1,964.39	35.20	301.10	1,772.00	375.71	-622.86	727.40	0.00	0.00	0.00
FRUN									
2,000.00	35.20	301.10	1,801.10	386.32	-640.43	747.93	0.00	0.00	0.00
2,100.00	35.20	301.10	1,882.81	416.09	-689.79	805.57	0.00	0.00	0.00
2,200.00	35.20	301.10	1,964.53	445.86	-739.15	863.21	0.00	0.00	0.00
2,241.20	35.20	301.10	1,998.19	458.13	-759.49	886.96	0.00	0.00	0.00
Start Drop -1.50									
2,300.00	34.32	301.10	2,046.50	475.44	-788.19	920.48	1.50	-1.50	0.00
2,400.00	32.82	301.10	2,129.82	504.00	-835.54	975.78	1.50	-1.50	0.00
2,500.00	31.32	301.10	2,214.56	531.42	-881.00	1,028.87	1.50	-1.50	0.00
2,600.00	29.82	301.10	2,300.66	557.69	-924.54	1,079.72	1.50	-1.50	0.00
2,700.00	28.32	301.10	2,388.06	582.79	-966.14	1,128.30	1.50	-1.50	0.00
2,800.00	26.82	301.10	2,476.71	606.69	-1,005.77	1,174.58	1.50	-1.50	0.00
2,900.00	25.32	301.10	2,566.53	629.39	-1,043.40	1,218.53	1.50	-1.50	0.00
3,000.00	23.82	301.10	2,657.47	650.86	-1,079.00	1,260.10	1.50	-1.50	0.00
3,100.00	22.32	301.10	2,749.48	671.10	-1,112.55	1,299.28	1.50	-1.50	0.00
3,200.00	20.82	301.10	2,842.47	690.09	-1,144.02	1,336.04	1.50	-1.50	0.00
3,269.87	19.77	301.10	2,908.00	702.60	-1,164.77	1,360.27	1.50	-1.50	0.00
OCRK - MVRD									
3,300.00	19.32	301.10	2,936.40	707.81	-1,173.41	1,370.36	1.50	-1.50	0.00
3,400.00	17.82	301.10	3,031.19	724.26	-1,200.67	1,402.20	1.50	-1.50	0.00
3,500.00	16.32	301.10	3,126.78	739.42	-1,225.80	1,431.55	1.50	-1.50	0.00
3,600.00	14.82	301.10	3,223.11	753.28	-1,248.78	1,458.38	1.50	-1.50	0.00
3,700.00	13.32	301.10	3,320.11	765.83	-1,269.60	1,482.69	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 512-22 - Slot SG 512-22 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 512-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	11.82	301.10	3,417.71	777.07	-1,288.23	1,504.45	1.50	-1.50	0.00	
3,900.00	10.32	301.10	3,515.85	786.99	-1,304.67	1,523.65	1.50	-1.50	0.00	
4,000.00	8.82	301.10	3,614.45	795.57	-1,318.90	1,540.27	1.50	-1.50	0.00	
4,100.00	7.32	301.10	3,713.46	802.82	-1,330.92	1,554.30	1.50	-1.50	0.00	
4,200.00	5.82	301.10	3,812.80	808.73	-1,340.71	1,565.74	1.50	-1.50	0.00	
4,300.00	4.32	301.10	3,912.41	813.29	-1,348.27	1,574.57	1.50	-1.50	0.00	
4,400.00	2.82	301.10	4,012.21	816.51	-1,353.60	1,580.80	1.50	-1.50	0.00	
4,500.00	1.32	301.10	4,112.14	818.37	-1,356.69	1,584.41	1.50	-1.50	0.00	
4,587.87	0.00	0.00	4,200.00	818.89	-1,357.56	1,585.42	1.50	-1.50	67.04	
Start 1634.00 hold at 4587.87 MD - KMGAS - SG 512-22 BTV										
4,600.00	0.00	0.00	4,212.13	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,312.13	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,412.13	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,512.13	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,612.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,712.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,200.00	0.00	0.00	4,812.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,300.00	0.00	0.00	4,912.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,012.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,112.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,212.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,635.87	0.00	0.00	5,248.00	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
CMEO										
5,700.00	0.00	0.00	5,312.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,412.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,512.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,612.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,712.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
6,121.87	0.00	0.00	5,734.00	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
RLNS										
6,200.00	0.00	0.00	5,812.14	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
6,221.87	0.00	0.00	5,834.00	818.89	-1,357.56	1,585.42	0.00	0.00	0.00	
TD at 6221.87 - TD - SG 512-22 PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SG 512-22 BTV	0.00	0.00	4,200.00	818.89	-1,357.56	1,589,792.30	2,264,328.73	39.4237907	-108.1045953	
- plan hits target center										
- Circle (radius 50.00)										
SG 512-22 PBHL	0.00	0.00	5,834.00	818.89	-1,357.56	1,589,792.30	2,264,328.73	39.4237907	-108.1045953	
- plan hits target center										
- Point										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 512-22 - Slot SG 512-22 (A4)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft
Site:	SG 23-22 Pad	North Reference:	True
Well:	SG 512-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 19March2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	970.73	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,457.75	1,358.00	G Sand		0.00	0.00
1,570.34	1,450.00	G Sand Base		0.00	0.00
1,964.39	1,772.00	FRUN		0.00	0.00
3,269.87	2,908.00	OCRK		0.00	0.00
3,269.87	2,908.00	MVRD		0.00	0.00
4,587.87	4,200.00	KMVGAS		0.00	0.00
5,635.87	5,248.00	CMEO		0.00	0.00
6,121.87	5,734.00	RLNS		0.00	0.00
6,221.87	5,834.00	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 3.00
1,308.33	1,235.90	180.38	-299.04	Start 932.87 hold at 1308.33 MD
2,241.20	1,998.19	458.13	-759.49	Start Drop -1.50
4,587.87	4,200.00	818.89	-1,357.56	Start 1634.00 hold at 4587.87 MD
6,221.87	5,834.00	818.89	-1,357.56	TD at 6221.87