

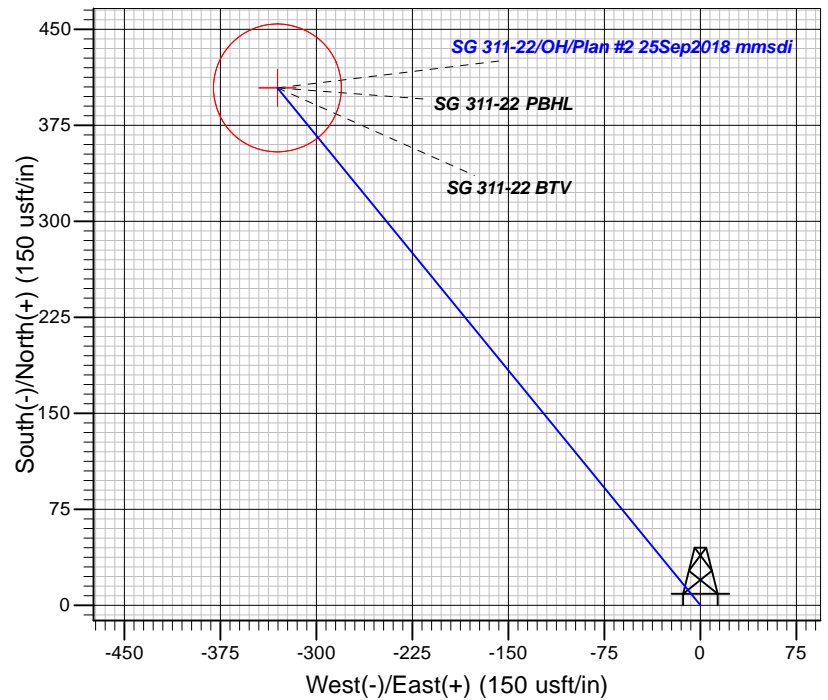
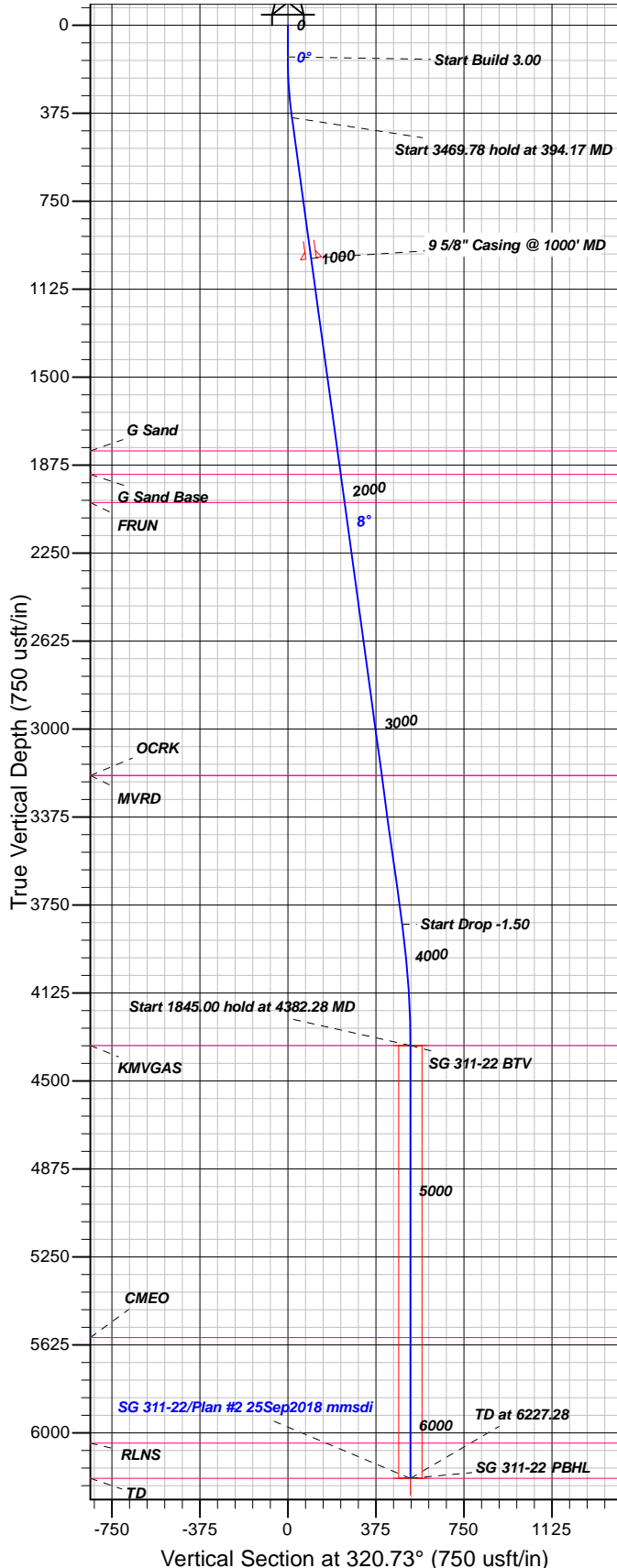


Azimuths to True North
Magnetic North: 9.48°

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

Well Details: SG 311-22

GL 6092.4' & RKB 24' @ 6116.40usft
+N/-S 0.00 +E/-W 0.00 Northing 1591231.00 Easting 2264536.00 Latitude 39.4277553 Longitude -108.1040078 Slot SG 311-22 (A6)



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1814.00	1827.98	G Sand
1914.00	1928.90	G Sand Base
2034.00	2050.02	FRUN
3198.00	3224.82	MVRD
3198.00	3224.82	OCRK
4348.00	4382.28	KMVGAS
5593.00	5627.28	CMEO
6043.00	6077.28	RLNS
6193.00	6227.28	TD

Plan: Plan #2 25Sep2018 mmsdi

18:08, September 26 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
993.64	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	394.17	7.78	320.73	393.37	13.59	-11.11	3.00	320.73	17.56	
4	3863.94	7.78	320.73	3831.25	376.99	-308.24	0.00	0.00	486.96	
5	4382.28	0.00	0.00	4348.00	404.17	-330.47	1.50	180.00	522.08	SG 311-22 BTV
6	6227.28	0.00	0.00	6193.00	404.17	-330.47	0.00	0.00	522.08	SG 311-22 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 311-22 BTV	4348.00	404.17	-330.47	1591644.48	2264217.25	39.4288649	-108.1051777	Circle (Radius: 50.00)
- plan hits target center								
SG 311-22 PBHL	6193.00	404.17	-330.47	1591644.48	2264217.25	39.4288649	-108.1051777	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 11-22 Pad

SG 311-22 - Slot SG 311-22 (A6)

OH

Plan: Plan #2 25Sep2018 mmsdi

Standard Planning Report

26 September, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
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 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 25Sep2018 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 311-22 - Slot SG 311-22 (A6)					
Well Position	+N/-S	-8.36 usft	Northing:	1,591,231.00 usft	Latitude:	39.4277553
	+E/-W	-12.47 usft	Easting:	2,264,536.00 usft	Longitude:	-108.1040078
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 #2 25Sep2018 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	320.73

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	
394.17	7.78	320.73	393.37	13.59	-11.11	3.00	3.00	0.00	320.73	
3,863.94	7.78	320.73	3,831.25	376.99	-308.24	0.00	0.00	0.00	0.00	
4,382.28	0.00	0.00	4,348.00	404.17	-330.47	1.50	-1.50	0.00	180.00	SG 311-22 BTV
6,227.28	0.00	0.00	6,193.00	404.17	-330.47	0.00	0.00	0.00	0.00	SG 311-22 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
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 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 25Sep2018 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	320.73	199.99	0.86	-0.70	1.11	3.00	3.00	0.00
300.00	4.95	320.73	299.79	5.51	-4.51	7.12	3.00	3.00	0.00
394.17	7.78	320.73	393.37	13.59	-11.11	17.56	3.00	3.00	0.00
Start 3469.78 hold at 394.17 MD									
400.00	7.78	320.73	399.15	14.20	-11.61	18.35	0.00	0.00	0.00
500.00	7.78	320.73	498.23	24.68	-20.18	31.88	0.00	0.00	0.00
600.00	7.78	320.73	597.31	35.15	-28.74	45.40	0.00	0.00	0.00
700.00	7.78	320.73	696.39	45.62	-37.30	58.93	0.00	0.00	0.00
800.00	7.78	320.73	795.47	56.10	-45.87	72.46	0.00	0.00	0.00
900.00	7.78	320.73	894.56	66.57	-54.43	85.99	0.00	0.00	0.00
1,000.00	7.78	320.73	993.64	77.04	-62.99	99.52	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	7.78	320.73	1,092.72	87.52	-71.56	113.05	0.00	0.00	0.00
1,200.00	7.78	320.73	1,191.80	97.99	-80.12	126.57	0.00	0.00	0.00
1,300.00	7.78	320.73	1,290.88	108.46	-88.68	140.10	0.00	0.00	0.00
1,400.00	7.78	320.73	1,389.96	118.94	-97.25	153.63	0.00	0.00	0.00
1,500.00	7.78	320.73	1,489.04	129.41	-105.81	167.16	0.00	0.00	0.00
1,600.00	7.78	320.73	1,588.12	139.88	-114.37	180.69	0.00	0.00	0.00
1,700.00	7.78	320.73	1,687.20	150.36	-122.94	194.22	0.00	0.00	0.00
1,800.00	7.78	320.73	1,786.28	160.83	-131.50	207.74	0.00	0.00	0.00
1,827.98	7.78	320.73	1,814.00	163.76	-133.90	211.53	0.00	0.00	0.00
G Sand									
1,900.00	7.78	320.73	1,885.36	171.30	-140.06	221.27	0.00	0.00	0.00
1,928.90	7.78	320.73	1,914.00	174.33	-142.54	225.18	0.00	0.00	0.00
G Sand Base									
2,000.00	7.78	320.73	1,984.44	181.77	-148.63	234.80	0.00	0.00	0.00
2,050.02	7.78	320.73	2,034.00	187.01	-152.91	241.57	0.00	0.00	0.00
FRUN									
2,100.00	7.78	320.73	2,083.52	192.25	-157.19	248.33	0.00	0.00	0.00
2,200.00	7.78	320.73	2,182.60	202.72	-165.75	261.86	0.00	0.00	0.00
2,300.00	7.78	320.73	2,281.68	213.19	-174.32	275.39	0.00	0.00	0.00
2,400.00	7.78	320.73	2,380.77	223.67	-182.88	288.92	0.00	0.00	0.00
2,500.00	7.78	320.73	2,479.85	234.14	-191.44	302.44	0.00	0.00	0.00
2,600.00	7.78	320.73	2,578.93	244.61	-200.01	315.97	0.00	0.00	0.00
2,700.00	7.78	320.73	2,678.01	255.09	-208.57	329.50	0.00	0.00	0.00
2,800.00	7.78	320.73	2,777.09	265.56	-217.13	343.03	0.00	0.00	0.00
2,900.00	7.78	320.73	2,876.17	276.03	-225.70	356.56	0.00	0.00	0.00
3,000.00	7.78	320.73	2,975.25	286.51	-234.26	370.09	0.00	0.00	0.00
3,100.00	7.78	320.73	3,074.33	296.98	-242.82	383.61	0.00	0.00	0.00
3,200.00	7.78	320.73	3,173.41	307.45	-251.39	397.14	0.00	0.00	0.00
3,224.82	7.78	320.73	3,198.00	310.05	-253.51	400.50	0.00	0.00	0.00
OCRK - MVRD									
3,300.00	7.78	320.73	3,272.49	317.93	-259.95	410.67	0.00	0.00	0.00
3,400.00	7.78	320.73	3,371.57	328.40	-268.51	424.20	0.00	0.00	0.00
3,500.00	7.78	320.73	3,470.65	338.87	-277.08	437.73	0.00	0.00	0.00
3,600.00	7.78	320.73	3,569.73	349.35	-285.64	451.26	0.00	0.00	0.00
3,700.00	7.78	320.73	3,668.81	359.82	-294.20	464.79	0.00	0.00	0.00
3,800.00	7.78	320.73	3,767.89	370.29	-302.77	478.31	0.00	0.00	0.00
3,863.94	7.78	320.73	3,831.25	376.99	-308.24	486.96	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
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 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 25Sep2018 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)
Start Drop -1.50									
3,900.00	7.23	320.73	3,867.00	380.64	-311.22	491.67	1.50	-1.50	0.00
4,000.00	5.73	320.73	3,966.36	389.38	-318.37	502.97	1.50	-1.50	0.00
4,100.00	4.23	320.73	4,065.97	396.10	-323.87	511.65	1.50	-1.50	0.00
4,200.00	2.73	320.73	4,165.79	400.81	-327.72	517.73	1.50	-1.50	0.00
4,300.00	1.23	320.73	4,265.72	403.49	-329.91	521.19	1.50	-1.50	0.00
4,382.28	0.00	0.00	4,348.00	404.17	-330.47	522.08	1.50	-1.50	0.00
Start 1845.00 hold at 4382.28 MD - KMGAS - SG 311-22 BTV									
4,400.00	0.00	0.00	4,365.72	404.17	-330.47	522.08	0.00	0.00	0.00
4,500.00	0.00	0.00	4,465.72	404.17	-330.47	522.08	0.00	0.00	0.00
4,600.00	0.00	0.00	4,565.72	404.17	-330.47	522.08	0.00	0.00	0.00
4,700.00	0.00	0.00	4,665.72	404.17	-330.47	522.08	0.00	0.00	0.00
4,800.00	0.00	0.00	4,765.72	404.17	-330.47	522.08	0.00	0.00	0.00
4,900.00	0.00	0.00	4,865.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,000.00	0.00	0.00	4,965.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,100.00	0.00	0.00	5,065.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,200.00	0.00	0.00	5,165.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,300.00	0.00	0.00	5,265.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,400.00	0.00	0.00	5,365.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,500.00	0.00	0.00	5,465.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,600.00	0.00	0.00	5,565.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,627.28	0.00	0.00	5,593.00	404.17	-330.47	522.08	0.00	0.00	0.00
CMEO									
5,700.00	0.00	0.00	5,665.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,800.00	0.00	0.00	5,765.72	404.17	-330.47	522.08	0.00	0.00	0.00
5,900.00	0.00	0.00	5,865.72	404.17	-330.47	522.08	0.00	0.00	0.00
6,000.00	0.00	0.00	5,965.72	404.17	-330.47	522.08	0.00	0.00	0.00
6,077.28	0.00	0.00	6,043.00	404.17	-330.47	522.08	0.00	0.00	0.00
RLNS									
6,100.00	0.00	0.00	6,065.72	404.17	-330.47	522.08	0.00	0.00	0.00
6,200.00	0.00	0.00	6,165.72	404.17	-330.47	522.08	0.00	0.00	0.00
6,227.28	0.00	0.00	6,193.00	404.17	-330.47	522.08	0.00	0.00	0.00
TD at 6227.28 - TD - SG 311-22 PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 311-22 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,348.00	404.17	-330.47	1,591,644.48	2,264,217.25	39.4288650	-108.1051777
SG 311-22 PBHL - plan hits target center - Point	0.00	0.00	6,193.00	404.17	-330.47	1,591,644.48	2,264,217.25	39.4288650	-108.1051777

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 311-22 - Slot SG 311-22 (A6)
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 311-22	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 25Sep2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	993.64	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,827.98	1,814.00	G Sand		0.00	0.00
1,928.90	1,914.00	G Sand Base		0.00	0.00
2,050.02	2,034.00	FRUN		0.00	0.00
3,224.82	3,198.00	OCRK		0.00	0.00
3,224.82	3,198.00	MVRD		0.00	0.00
4,382.28	4,348.00	KMVGAS		0.00	0.00
5,627.28	5,593.00	CME0		0.00	0.00
6,077.28	6,043.00	RLNS		0.00	0.00
6,227.28	6,193.00	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
394.17	393.37	13.59	-11.11	Start 3469.78 hold at 394.17 MD
3,863.94	3,831.25	376.99	-308.24	Start Drop -1.50
4,382.28	4,348.00	404.17	-330.47	Start 1845.00 hold at 4382.28 MD
6,227.28	6,193.00	404.17	-330.47	TD at 6227.28