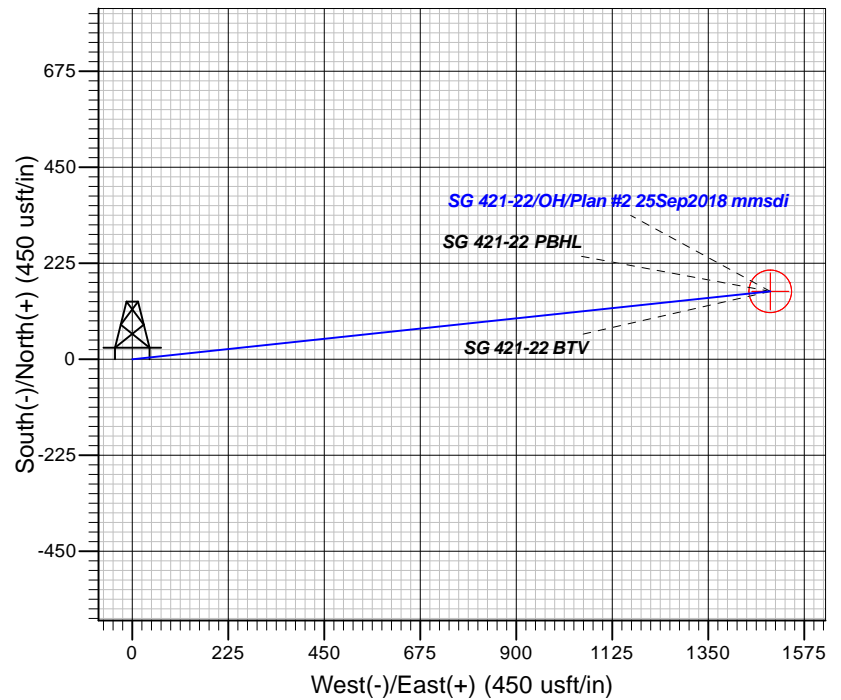
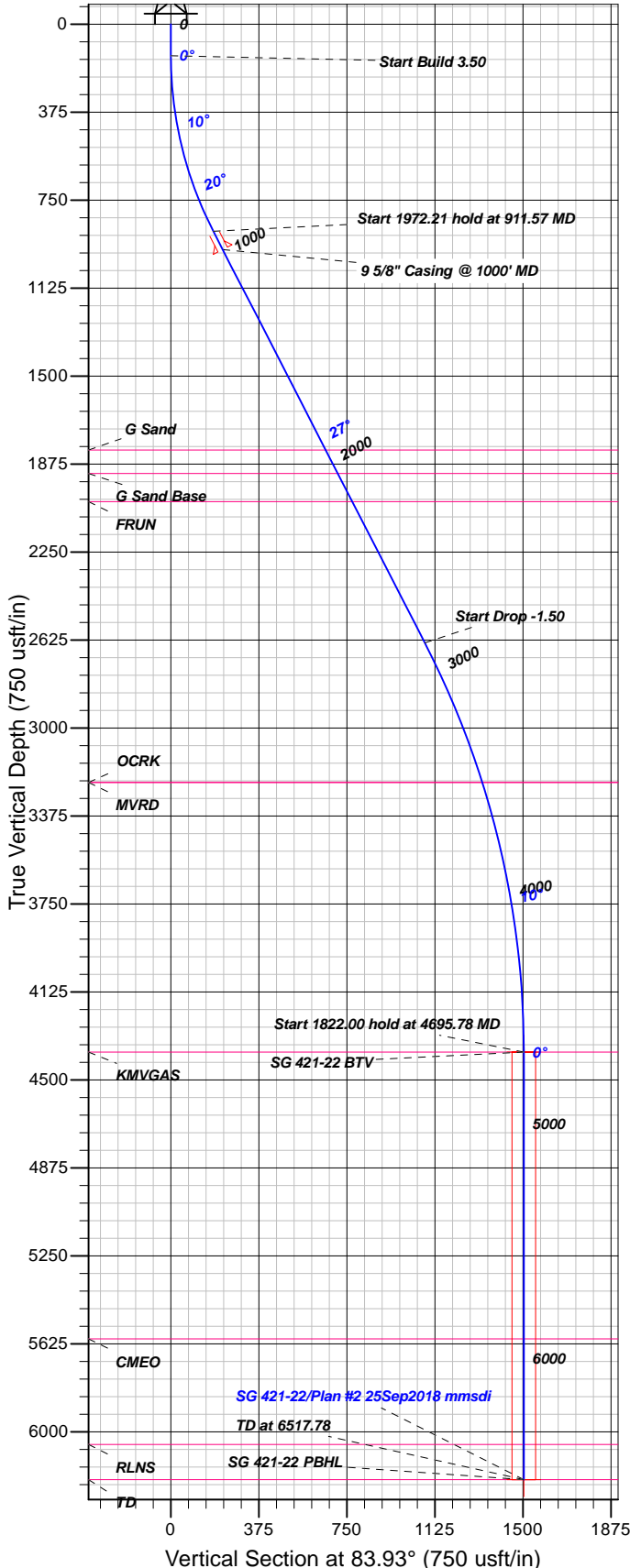


Well Details: SG 421-22

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1591239.00	2264548.70	39.4277782	-108.1039636	SG 421-22 (A4)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1815.00	1959.52	G Sand
1915.00	2071.93	G Sand Base
2035.00	2206.83	FRUN
3232.00	3527.66	MVRD
3232.00	3527.66	OCRK
4382.00	4695.78	KMVGAS
5604.00	5917.78	CMEO
6054.00	6367.78	RLNS
6204.00	6517.78	TD

Plan: Plan #2 25Sep2018 mmsdi

10:39, September 27 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
961.44	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	911.57	27.18	83.93	882.77	19.13	179.75	3.50	83.93	180.77	
4	2883.78	27.18	83.93	2637.20	114.47	1075.57	0.00	0.001081.65		
5	4695.78	0.00	0.00	4382.00	159.10	1494.99	1.50	180.001503.44		SG 421-22 BTM
6	6517.78	0.00	0.00	6204.00	159.10	1494.99	0.00	0.001503.44		SG 421-22 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 421-22 BTM	4382.00	159.10	1494.99	1591355.19	2266047.64	39.4282149	-108.0986711	Circle (Radius: 50.00)
- plan hits target center								
SG 421-22 PBHL	6204.00	159.10	1494.99	1591355.19	2266047.64	39.4282149	-108.0986711	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 11-22 Pad

SG 421-22 - Slot SG 421-22 (A4)

OH

Plan: Plan #2 25Sep2018 mmsdi

Standard Planning Report

27 September, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 421-22 - Slot SG 421-22 (A4)
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 421-22	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 421-22 - Slot SG 421-22 (A4)			
Well Position	+N/-S	0.00 usft	Northing:	1,591,239.00 usft
	+E/-W	0.00 usft	Easting:	2,264,548.70 usft
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	83.93

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	
911.57	27.18	83.93	882.77	19.13	179.75	3.50	3.50	0.00	83.93	
2,883.78	27.18	83.93	2,637.20	114.47	1,075.57	0.00	0.00	0.00	0.00	
4,695.78	0.00	0.00	4,382.00	159.10	1,494.99	1.50	-1.50	0.00	180.00	SG 421-22 BTV
6,517.78	0.00	0.00	6,204.00	159.10	1,494.99	0.00	0.00	0.00	0.00	SG 421-22 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 421-22 - Slot SG 421-22 (A4)
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 421-22	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 3.50									
200.00	2.28	83.93	199.98	0.14	1.28	1.29	3.50	3.50	0.00
300.00	5.78	83.93	299.72	0.88	8.26	8.31	3.50	3.50	0.00
400.00	9.28	83.93	398.84	2.26	21.28	21.40	3.50	3.50	0.00
500.00	12.78	83.93	496.98	4.29	40.30	40.52	3.50	3.50	0.00
600.00	16.28	83.93	593.77	6.94	65.23	65.60	3.50	3.50	0.00
700.00	19.78	83.93	688.85	10.22	96.00	96.54	3.50	3.50	0.00
800.00	23.28	83.93	781.86	14.10	132.47	133.22	3.50	3.50	0.00
900.00	26.78	83.93	872.46	18.57	174.53	175.52	3.50	3.50	0.00
911.57	27.18	83.93	882.77	19.13	179.75	180.77	3.50	3.50	0.00
Start 1972.21 hold at 911.57 MD									
1,000.00	27.18	83.93	961.44	23.40	219.92	221.16	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	27.18	83.93	1,050.39	28.24	265.34	266.84	0.00	0.00	0.00
1,200.00	27.18	83.93	1,139.35	33.07	310.76	312.52	0.00	0.00	0.00
1,300.00	27.18	83.93	1,228.31	37.91	356.18	358.20	0.00	0.00	0.00
1,400.00	27.18	83.93	1,317.27	42.74	401.61	403.87	0.00	0.00	0.00
1,500.00	27.18	83.93	1,406.22	47.57	447.03	449.55	0.00	0.00	0.00
1,600.00	27.18	83.93	1,495.18	52.41	492.45	495.23	0.00	0.00	0.00
1,700.00	27.18	83.93	1,584.14	57.24	537.87	540.91	0.00	0.00	0.00
1,800.00	27.18	83.93	1,673.10	62.08	583.30	586.59	0.00	0.00	0.00
1,900.00	27.18	83.93	1,762.05	66.91	628.72	632.27	0.00	0.00	0.00
1,959.52	27.18	83.93	1,815.00	69.79	655.75	659.46	0.00	0.00	0.00
G Sand									
2,000.00	27.18	83.93	1,851.01	71.74	674.14	677.95	0.00	0.00	0.00
2,071.93	27.18	83.93	1,915.00	75.22	706.81	710.81	0.00	0.00	0.00
G Sand Base									
2,100.00	27.18	83.93	1,939.97	76.58	719.56	723.63	0.00	0.00	0.00
2,200.00	27.18	83.93	2,028.93	81.41	764.99	769.30	0.00	0.00	0.00
2,206.83	27.18	83.93	2,035.00	81.74	768.09	772.42	0.00	0.00	0.00
FRUN									
2,300.00	27.18	83.93	2,117.88	86.25	810.41	814.98	0.00	0.00	0.00
2,400.00	27.18	83.93	2,206.84	91.08	855.83	860.66	0.00	0.00	0.00
2,500.00	27.18	83.93	2,295.80	95.91	901.25	906.34	0.00	0.00	0.00
2,600.00	27.18	83.93	2,384.76	100.75	946.67	952.02	0.00	0.00	0.00
2,700.00	27.18	83.93	2,473.71	105.58	992.10	997.70	0.00	0.00	0.00
2,800.00	27.18	83.93	2,562.67	110.42	1,037.52	1,043.38	0.00	0.00	0.00
2,883.78	27.18	83.93	2,637.20	114.47	1,075.57	1,081.65	0.00	0.00	0.00
Start Drop -1.50									
2,900.00	26.94	83.93	2,651.64	115.25	1,082.91	1,089.03	1.50	-1.50	0.00
3,000.00	25.44	83.93	2,741.38	119.92	1,126.79	1,133.15	1.50	-1.50	0.00
3,100.00	23.94	83.93	2,832.24	124.34	1,168.32	1,174.92	1.50	-1.50	0.00
3,200.00	22.44	83.93	2,924.16	128.50	1,207.47	1,214.29	1.50	-1.50	0.00
3,300.00	20.94	83.93	3,017.08	132.41	1,244.22	1,251.24	1.50	-1.50	0.00
3,400.00	19.44	83.93	3,110.93	136.06	1,278.53	1,285.75	1.50	-1.50	0.00
3,500.00	17.94	83.93	3,205.66	139.45	1,310.39	1,317.79	1.50	-1.50	0.00
3,527.66	17.52	83.93	3,232.00	140.35	1,318.76	1,326.21	1.50	-1.50	0.00
OCRK - MVRD									
3,600.00	16.44	83.93	3,301.19	142.58	1,339.77	1,347.34	1.50	-1.50	0.00
3,700.00	14.94	83.93	3,397.46	145.44	1,366.66	1,374.37	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 421-22 - Slot SG 421-22 (A4)
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 421-22	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)	
3,800.00	13.44	83.93	3,494.41	148.04	1,391.03	1,398.88	1.50	-1.50	0.00	
3,900.00	11.94	83.93	3,591.96	150.36	1,412.86	1,420.84	1.50	-1.50	0.00	
4,000.00	10.44	83.93	3,690.06	152.41	1,432.15	1,440.24	1.50	-1.50	0.00	
4,100.00	8.94	83.93	3,788.63	154.19	1,448.89	1,457.07	1.50	-1.50	0.00	
4,200.00	7.44	83.93	3,887.61	155.70	1,463.05	1,471.31	1.50	-1.50	0.00	
4,300.00	5.94	83.93	3,986.93	156.93	1,474.62	1,482.95	1.50	-1.50	0.00	
4,400.00	4.44	83.93	4,086.52	157.89	1,483.61	1,491.99	1.50	-1.50	0.00	
4,500.00	2.94	83.93	4,186.31	158.57	1,490.01	1,498.42	1.50	-1.50	0.00	
4,600.00	1.44	83.93	4,286.23	158.97	1,493.80	1,502.24	1.50	-1.50	0.00	
4,695.78	0.00	0.00	4,382.00	159.10	1,494.99	1,503.44	1.50	-1.50	0.00	
Start 1822.00 hold at 4695.78 MD - KMGAS - SG 421-22 BTV										
4,700.00	0.00	0.00	4,386.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,486.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,586.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,686.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,786.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,200.00	0.00	0.00	4,886.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,300.00	0.00	0.00	4,986.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,086.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,186.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,286.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,386.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,486.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,586.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
5,917.78	0.00	0.00	5,604.00	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
CME0										
6,000.00	0.00	0.00	5,686.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,786.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,886.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,986.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,367.78	0.00	0.00	6,054.00	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
RLNS										
6,400.00	0.00	0.00	6,086.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,186.22	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
6,517.78	0.00	0.00	6,204.00	159.10	1,494.99	1,503.44	0.00	0.00	0.00	
TD at 6517.78 - TD - SG 421-22 PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
SG 421-22 BTV	0.00	0.00	4,382.00	159.10	1,494.99	1,591,355.19	2,266,047.64	39.4282150		-108.0986711
- plan hits target center										
- Circle (radius 50.00)										
SG 421-22 PBHL	0.00	0.00	6,204.00	159.10	1,494.99	1,591,355.19	2,266,047.64	39.4282150		-108.0986711
- plan hits target center										
- Point										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 421-22 - Slot SG 421-22 (A4)
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 421-22	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	961.44	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,959.52	1,815.00	G Sand		0.00	0.00
2,071.93	1,915.00	G Sand Base		0.00	0.00
2,206.83	2,035.00	FRUN		0.00	0.00
3,527.66	3,232.00	OCRK		0.00	0.00
3,527.66	3,232.00	MVRD		0.00	0.00
4,695.78	4,382.00	KMVGAS		0.00	0.00
5,917.78	5,604.00	CMEO		0.00	0.00
6,367.78	6,054.00	RLNS		0.00	0.00
6,517.78	6,204.00	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 3.50
911.57	882.77	19.13	179.75	Start 1972.21 hold at 911.57 MD
2,883.78	2,637.20	114.47	1,075.57	Start Drop -1.50
4,695.78	4,382.00	159.10	1,494.99	Start 1822.00 hold at 4695.78 MD
6,517.78	6,204.00	159.10	1,494.99	TD at 6517.78