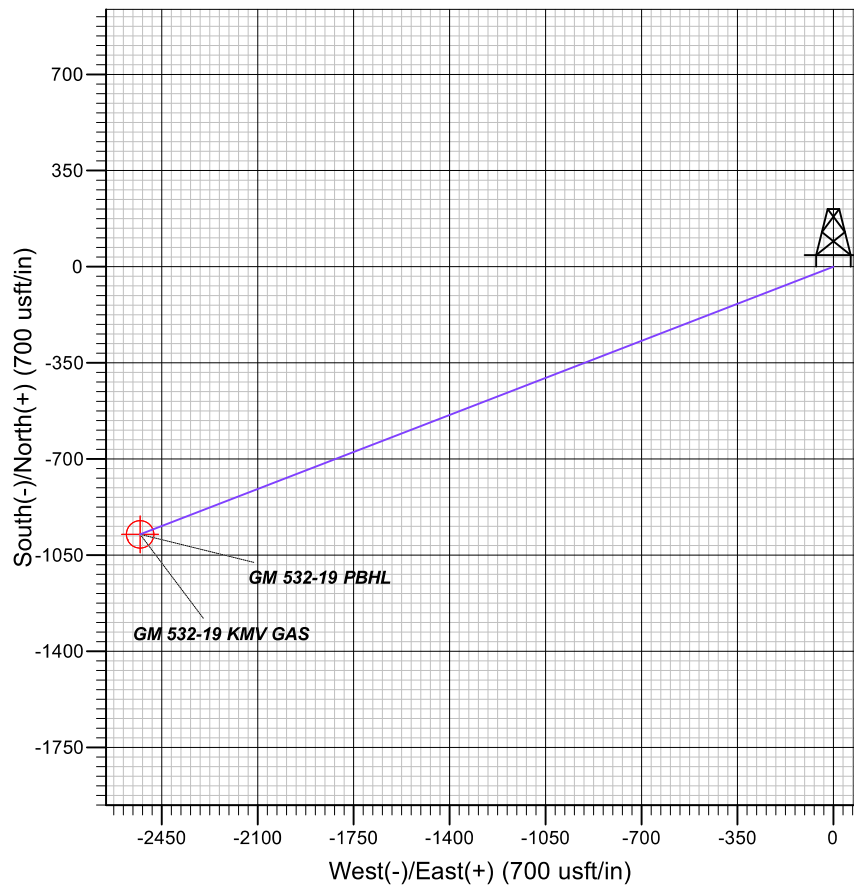
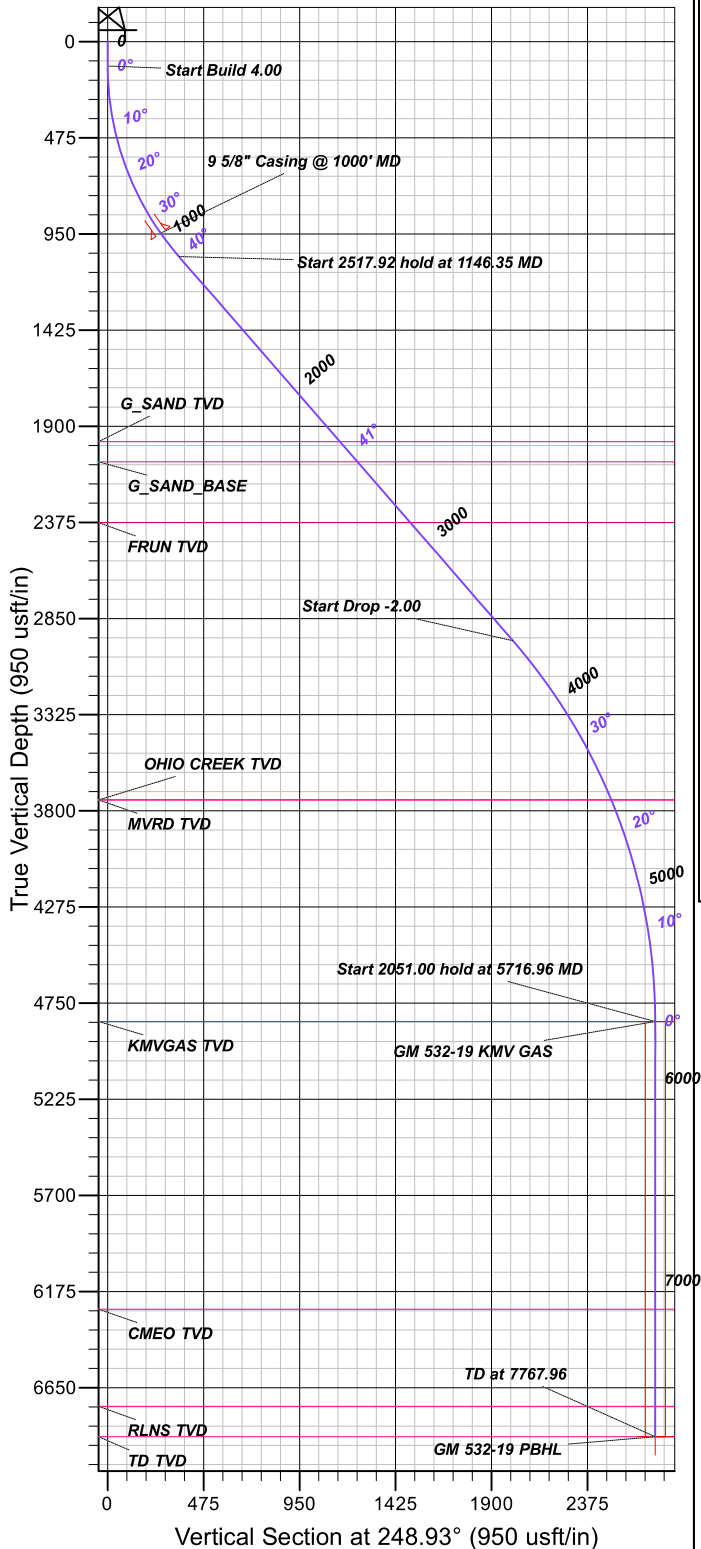


## Well Details: GM 532-19

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1622112.8000	2255395.0000	39.5117807	-108.1395306	GM 532-19

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Circle (Radius: 50.00)	Shape
GM 532-19 KMV GAS	4841.00	-974.49	-2529.16	1621212.2000	2252838.6000	39.5091050	-108.1484946	Circle (Radius: 50.00)	Point
GM 532-19 PBHL	6892.00	-974.49	-2529.16	1621212.2000	2252838.6000	39.5091050	-108.1484946		



### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1976.00	2360.05	G_SAND TVD
2076.00	2492.66	G_SAND_BASE
2376.00	2890.49	FRUN TVD
3746.00	4593.38	MVRD TVD
3746.00	4593.38	OHIO CREEK TVD
4841.00	5716.96	KMGAS TVD
6262.00	7137.96	CMEO TVD
6742.00	7617.96	RLNS TVD
6892.00	7767.96	TD TVD

### 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
945.68	1000.00	9 5/8" Casing @ 1000' MD	9.62

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
1146.35	41.05	248.93	1060.75	-126.64	-328.68	4.00	248.93	352.24
3664.27	41.05	248.93	2959.50	-721.20	-1871.79	0.00	0.00	2005.93
5716.96	0.00	0.00	4841.00	-974.49	-2529.16	2.00	180.00	2710.40
7767.96	0.00	0.00	6892.00	-974.49	-2529.16	0.00	0.00	2710.40

# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**GM 12-20 Pad**

**GM 532-19 - Slot GM 532-19**

**OH**

**Plan: Plan 2 13Jan2020 sbsdi**

## **Standard Planning Report**

**13 January, 2020**



# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well GM 532-19 - Slot GM 532-19
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Site:</b>	GM 12-20 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 532-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2 13Jan2020 sbsdi		

<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		

<b>Site</b>	GM 12-20 Pad, Site Center : GM 31-19		
<b>Site Position:</b>		<b>Northing:</b>	1,622,131.3600 usft
<b>From:</b>	Map	<b>Easting:</b>	2,255,369.4200 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	39.5118297
		<b>Longitude:</b>	-108.1396232
		<b>Grid Convergence:</b>	-1.66 °

Well	GM 532-19 - Slot GM 532-19					
Well Position	+N/-S	-17.81 usft	Northing:	1,622,112.8000 usft	Latitude:	39.5117808
	+E/-W	26.11 usft	Easting:	2,255,395.0000 usft	Longitude:	-108.1395306
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,752.10 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_FILE	1/13/2020	9.42	65.77	51,454.40000000

<b>Design</b>	Plan 2 13Jan2020 sbsdi				
<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	248.93	

<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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,146.35	41.05	248.93	1,060.75	-126.64	-328.68	4.00	4.00	0.00	248.93	
3,664.27	41.05	248.93	2,959.50	-721.20	-1,871.79	0.00	0.00	0.00	0.00	
5,716.96	0.00	0.00	4,841.00	-974.49	-2,529.16	2.00	-2.00	0.00	180.00	GM 532-19 KMV GAS
7,767.96	0.00	0.00	6,892.00	-974.49	-2,529.16	0.00	0.00	0.00	0.00	GM 532-19 PBHL

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well GM 532-19 - Slot GM 532-19
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Site:</b>	GM 12-20 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 532-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2 13Jan2020 sbsdi		

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 4.00										
200.00	3.20	248.93	199.96	-0.80	-2.08	2.23	4.00	4.00	0.00	
300.00	7.20	248.93	299.53	-4.06	-10.54	11.29	4.00	4.00	0.00	
400.00	11.20	248.93	398.22	-9.81	-25.46	27.28	4.00	4.00	0.00	
500.00	15.20	248.93	495.56	-18.02	-46.76	50.11	4.00	4.00	0.00	
600.00	19.20	248.93	591.07	-28.65	-74.35	79.67	4.00	4.00	0.00	
700.00	23.20	248.93	684.28	-41.64	-108.08	115.83	4.00	4.00	0.00	
800.00	27.20	248.93	774.74	-56.95	-147.81	158.40	4.00	4.00	0.00	
900.00	31.20	248.93	862.02	-74.49	-193.32	207.17	4.00	4.00	0.00	
1,000.00	35.20	248.93	945.68	-94.17	-244.41	261.92	4.00	4.00	0.00	
9 5/8" Casing @ 1000' MD										
1,100.00	39.20	248.93	1,025.31	-115.90	-300.81	322.37	4.00	4.00	0.00	
1,146.35	41.05	248.93	1,060.75	-126.64	-328.68	352.24	4.00	4.00	0.00	
Start 2517.92 hold at 1146.35 MD										
1,200.00	41.05	248.93	1,101.21	-139.31	-361.56	387.47	0.00	0.00	0.00	
1,300.00	41.05	248.93	1,176.62	-162.92	-422.85	453.15	0.00	0.00	0.00	
1,400.00	41.05	248.93	1,252.03	-186.54	-484.13	518.83	0.00	0.00	0.00	
1,500.00	41.05	248.93	1,327.44	-210.15	-545.42	584.50	0.00	0.00	0.00	
1,600.00	41.05	248.93	1,402.85	-233.76	-606.70	650.18	0.00	0.00	0.00	
1,700.00	41.05	248.93	1,478.25	-257.38	-667.99	715.86	0.00	0.00	0.00	
1,800.00	41.05	248.93	1,553.66	-280.99	-729.27	781.53	0.00	0.00	0.00	
1,900.00	41.05	248.93	1,629.07	-304.60	-790.56	847.21	0.00	0.00	0.00	
2,000.00	41.05	248.93	1,704.48	-328.22	-851.84	912.89	0.00	0.00	0.00	
2,100.00	41.05	248.93	1,779.89	-351.83	-913.13	978.56	0.00	0.00	0.00	
2,200.00	41.05	248.93	1,855.30	-375.44	-974.41	1,044.24	0.00	0.00	0.00	
2,300.00	41.05	248.93	1,930.71	-399.05	-1,035.70	1,109.92	0.00	0.00	0.00	
2,360.05	41.05	248.93	1,976.00	-413.24	-1,072.50	1,149.36	0.00	0.00	0.00	
G_SAND TVD										
2,400.00	41.05	248.93	2,006.12	-422.67	-1,096.98	1,175.59	0.00	0.00	0.00	
2,492.66	41.05	248.93	2,076.00	-444.55	-1,153.77	1,236.45	0.00	0.00	0.00	
G_SAND_BASE										
2,500.00	41.05	248.93	2,081.53	-446.28	-1,158.27	1,241.27	0.00	0.00	0.00	
2,599.99	41.05	248.93	2,156.94	-469.89	-1,219.55	1,306.95	0.00	0.00	0.00	
2,699.99	41.05	248.93	2,232.35	-493.51	-1,280.84	1,372.62	0.00	0.00	0.00	
2,799.99	41.05	248.93	2,307.76	-517.12	-1,342.12	1,438.30	0.00	0.00	0.00	
2,890.49	41.05	248.93	2,376.00	-538.49	-1,397.58	1,497.74	0.00	0.00	0.00	
FRUN TVD										
2,899.99	41.05	248.93	2,383.16	-540.73	-1,403.41	1,503.98	0.00	0.00	0.00	
2,999.99	41.05	248.93	2,458.57	-564.35	-1,464.69	1,569.65	0.00	0.00	0.00	
3,099.99	41.05	248.93	2,533.98	-587.96	-1,525.98	1,635.33	0.00	0.00	0.00	
3,199.99	41.05	248.93	2,609.39	-611.57	-1,587.26	1,701.01	0.00	0.00	0.00	
3,299.99	41.05	248.93	2,684.80	-635.19	-1,648.55	1,766.68	0.00	0.00	0.00	
3,399.99	41.05	248.93	2,760.21	-658.80	-1,709.83	1,832.36	0.00	0.00	0.00	
3,499.99	41.05	248.93	2,835.62	-682.41	-1,771.12	1,898.04	0.00	0.00	0.00	
3,599.99	41.05	248.93	2,911.03	-706.02	-1,832.40	1,963.71	0.00	0.00	0.00	
3,664.27	41.05	248.93	2,959.50	-721.20	-1,871.79	2,005.93	0.00	0.00	0.00	
Start Drop -2.00										
3,699.99	40.34	248.93	2,986.58	-729.58	-1,893.53	2,029.22	2.00	-2.00	0.00	
3,799.99	38.34	248.93	3,063.92	-752.37	-1,952.68	2,092.61	2.00	-2.00	0.00	

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well GM 532-19 - Slot GM 532-19
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Site:</b>	GM 12-20 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 532-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2 13Jan2020 sbsdi		

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)
3,899.99	36.34	248.93	3,143.42	-774.17	-2,009.27	2,153.26	2.00	-2.00	0.00
3,999.99	34.34	248.93	3,224.99	-794.97	-2,063.24	2,211.10	2.00	-2.00	0.00
4,099.99	32.34	248.93	3,308.53	-814.73	-2,114.53	2,266.05	2.00	-2.00	0.00
4,199.99	30.34	248.93	3,393.94	-833.43	-2,163.06	2,318.06	2.00	-2.00	0.00
4,299.99	28.34	248.93	3,481.10	-851.04	-2,208.78	2,367.06	2.00	-2.00	0.00
4,399.99	26.34	248.93	3,569.93	-867.55	-2,251.63	2,412.98	2.00	-2.00	0.00
4,499.99	24.34	248.93	3,660.30	-882.94	-2,291.56	2,455.78	2.00	-2.00	0.00
4,593.38	22.47	248.93	3,746.00	-896.28	-2,326.18	2,492.87	2.00	-2.00	0.00
OHIO CREEK TVD - MVRD TVD									
4,599.99	22.34	248.93	3,752.12	-897.18	-2,328.53	2,495.39	2.00	-2.00	0.00
4,699.99	20.34	248.93	3,845.26	-910.27	-2,362.48	2,531.78	2.00	-2.00	0.00
4,799.99	18.34	248.93	3,939.61	-922.17	-2,393.38	2,564.89	2.00	-2.00	0.00
4,899.99	16.34	248.93	4,035.06	-932.89	-2,421.19	2,594.70	2.00	-2.00	0.00
4,999.99	14.34	248.93	4,131.49	-942.40	-2,445.88	2,621.15	2.00	-2.00	0.00
5,099.99	12.34	248.93	4,228.79	-950.69	-2,467.40	2,644.22	2.00	-2.00	0.00
5,199.99	10.34	248.93	4,326.83	-957.76	-2,485.75	2,663.88	2.00	-2.00	0.00
5,299.99	8.34	248.93	4,425.50	-963.59	-2,500.89	2,680.11	2.00	-2.00	0.00
5,399.99	6.34	248.93	4,524.68	-968.19	-2,512.81	2,692.88	2.00	-2.00	0.00
5,499.99	4.34	248.93	4,624.24	-971.53	-2,521.49	2,702.19	2.00	-2.00	0.00
5,599.99	2.34	248.93	4,724.06	-973.63	-2,526.93	2,708.01	2.00	-2.00	0.00
5,699.99	0.34	248.93	4,824.03	-974.47	-2,529.11	2,710.35	2.00	-2.00	0.00
5,716.96	0.00	0.00	4,841.00	-974.49	-2,529.16	2,710.40	2.00	-2.00	654.44
Start 2051.00 hold at 5716.96 MD - KMGAS TVD									
5,799.99	0.00	0.00	4,924.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
5,899.99	0.00	0.00	5,024.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
5,999.99	0.00	0.00	5,124.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,099.99	0.00	0.00	5,224.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,199.99	0.00	0.00	5,324.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,299.99	0.00	0.00	5,424.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,399.99	0.00	0.00	5,524.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,499.99	0.00	0.00	5,624.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,599.99	0.00	0.00	5,724.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,699.99	0.00	0.00	5,824.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,799.99	0.00	0.00	5,924.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,899.99	0.00	0.00	6,024.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
6,999.99	0.00	0.00	6,124.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,099.99	0.00	0.00	6,224.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,137.96	0.00	0.00	6,262.00	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
CMEQ TVD									
7,199.99	0.00	0.00	6,324.03	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,299.99	0.00	0.00	6,424.02	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,399.99	0.00	0.00	6,524.02	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,499.99	0.00	0.00	6,624.02	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,599.98	0.00	0.00	6,724.02	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,617.96	0.00	0.00	6,742.00	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
RLNS TVD									
7,699.98	0.00	0.00	6,824.02	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
7,767.96	0.00	0.00	6,892.00	-974.49	-2,529.16	2,710.40	0.00	0.00	0.00
TD at 7767.96 - TD TVD									

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well GM 532-19 - Slot GM 532-19
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5752.1' & KB 24' @ 5776.10usft (H&P 318)
<b>Site:</b>	GM 12-20 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 532-19	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2 13Jan2020 sbsdi		

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
GM 532-19 KMV GAS - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,841.00	-974.49	-2,529.16	1,621,212.2000	2,252,838.6000	39.5091050	-108.1484946
GM 532-19 PBHL - plan hits target center - Point	0.00	0.00	6,892.00	-974.49	-2,529.16	1,621,212.2000	2,252,838.6000	39.5091050	-108.1484946

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	945.68	9 5/8" Casing @ 1000' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,360.05	1,976.00	G_SAND TVD		0.00		
2,492.66	2,076.00	G_SAND_BASE		0.00		
2,890.49	2,376.00	FRUN TVD		0.00		
4,593.38	3,746.00	OHIO CREEK TVD		0.00		
4,593.38	3,746.00	MVRD TVD		0.00		
5,716.96	4,841.00	KMVGAS TVD		0.00		
7,137.96	6,262.00	CMEO TVD		0.00		
7,617.96	6,742.00	RLNS TVD		0.00		
7,767.96	6,892.00	TD TVD		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 4.00	
1,146.35	1,060.75	-126.64	-328.68	Start 2517.92 hold at 1146.35 MD	
3,664.27	2,959.50	-721.20	-1,871.79	Start Drop -2.00	
5,716.96	4,841.00	-974.49	-2,529.16	Start 2051.00 hold at 5716.96 MD	
7,767.96	6,892.00	-974.49	-2,529.16	TD at 7767.96	