



Scientific
Drilling

Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

Operator	TEP Rocky Mountain LLC
Well Name & No.	PA 34-13
API #	05-045-24199
County & State	Garfield County, CO
SDI Job #	OP.025605
Rig	H&P 318
Survey Date	29-Jun-2020

I, Seth M. Burstad, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 9835 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

30-Jun-2020

Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



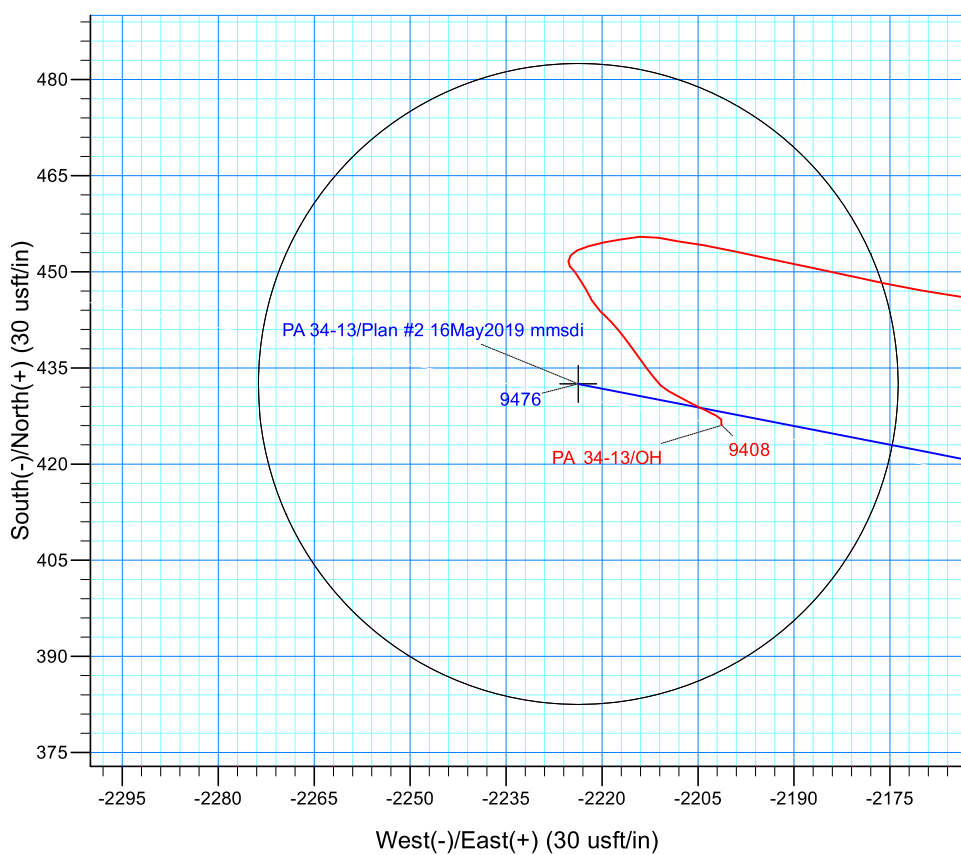
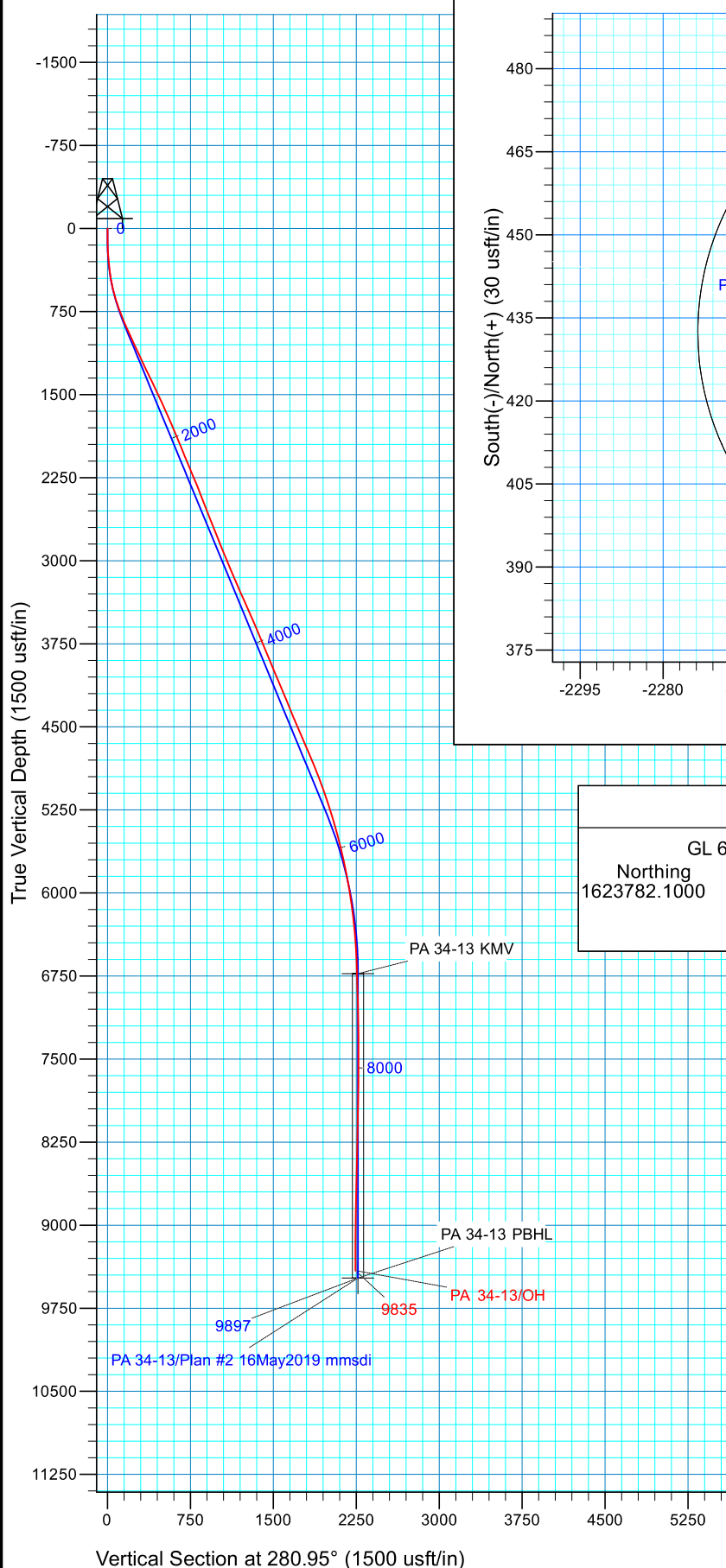
Project: Garfield County, CO NAD83

Site: PA 44-13 Pad

Well: PA 34-13

Wellbore: OH

Design: OH



WELL DETAILS: PA 34-13

GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)		6571.10	
Northing	Easting	Latitude	Longitude
1623782.1000	2311231.6000	39.5206485	-107.9418551

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PA 34-13 - Slot PA 34-13 (B7), True North
Vertical (TVD) Reference: GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Section (VS) Reference: Slot - PA 34-13 (B7)(0.00N, 0.00E)
Measured Depth Reference: GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Calculation Method: Minimum Curvature
Local North: True
Location:



TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13 Pad

PA 34-13 - Slot PA 34-13 (B7)

OH

Design: OH

Standard Survey Report

30 June, 2020



Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 34-13 - Slot PA 34-13 (B7)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 34-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

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		PA 44-13 Pad			
Site Position:		Northing:	1,623,813.7000 usft	Latitude:	39.5207354
From:	Map	Easting:	2,311,233.5000 usft	Longitude:	-107.9418514
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.54 °

Well		PA 34-13 - Slot PA 34-13 (B7)				
Well Position	+N/-S	0.00 usft	Northing:	1,623,782.1000 usft	Latitude:	39.5206486
	+E/-W	0.00 usft	Easting:	2,311,231.6000 usft	Longitude:	-107.9418552
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,571.10 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	6/27/2020	9.22	65.72	51,371.60000000

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	280.95	

Survey Program	Date	6/30/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.00	650.00	Survey #1 - Surface (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
744.00	1,027.00	Survey #2 - Surface MWD (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,074.00	9,835.00	Survey #3 - Production (OH)	MWD+HDGM	OWSG MWD + HDGM	

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	
122.00	0.62	278.61	122.00	0.10	-0.65	0.66	0.51	0.51	0.00	
First SDI Gyro Surface Survey										
213.00	3.61	281.78	212.92	0.76	-3.94	4.02	3.29	3.29	3.48	
304.00	5.37	283.36	303.64	2.33	-10.89	11.14	1.94	1.93	1.74	
394.00	7.57	282.30	393.06	4.56	-20.78	21.27	2.45	2.44	-1.18	
485.00	10.73	280.37	482.89	7.37	-34.98	35.74	3.49	3.47	-2.12	
575.00	14.25	279.40	570.75	10.68	-54.15	55.20	3.92	3.91	-1.08	
650.00	17.18	277.76	642.94	13.69	-74.24	75.49	3.95	3.91	-2.19	

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 34-13 - Slot PA 34-13 (B7)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 34-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

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)
Last SDI Gyro Surface Survey									
744.00	20.18	281.63	731.98	18.83	-103.88	105.57	3.45	3.19	4.12
First SDI MWD Surface Survey									
838.00	22.84	281.23	819.43	25.65	-137.66	140.03	2.83	2.83	-0.43
932.00	24.01	279.60	905.68	32.40	-174.42	177.39	1.42	1.24	-1.73
1,027.00	24.90	277.19	992.16	38.12	-213.32	216.67	1.41	0.94	-2.54
Last SDI MWD Surface Survey									
1,074.00	25.24	276.41	1,034.73	40.48	-233.09	236.54	1.01	0.72	-1.66
First SDI MWD Production Survey									
1,166.00	25.44	275.30	1,117.88	44.50	-272.26	275.75	0.56	0.22	-1.21
1,260.00	24.87	274.36	1,202.96	47.86	-312.07	315.48	0.74	-0.61	-1.00
1,355.00	25.95	278.11	1,288.78	52.31	-352.57	356.09	2.04	1.14	3.95
1,449.00	25.77	277.37	1,373.36	57.84	-393.20	397.02	0.39	-0.19	-0.79
1,543.00	25.64	280.55	1,458.07	64.18	-433.46	437.76	1.47	-0.14	3.38
1,637.00	25.01	282.98	1,543.03	72.37	-472.82	477.95	1.29	-0.67	2.59
1,732.00	24.37	282.22	1,629.35	81.03	-511.54	517.62	0.75	-0.67	-0.80
1,826.00	23.34	282.23	1,715.32	89.08	-548.70	555.63	1.10	-1.10	0.01
1,920.00	22.98	282.27	1,801.74	96.92	-584.82	592.59	0.38	-0.38	0.04
2,015.00	22.68	281.43	1,889.30	104.49	-620.90	629.44	0.47	-0.32	-0.88
2,109.00	22.72	283.91	1,976.02	112.45	-656.28	665.69	1.02	0.04	2.64
2,203.00	21.46	281.70	2,063.12	120.30	-690.74	701.02	1.61	-1.34	-2.35
2,298.00	23.37	283.89	2,150.94	128.35	-726.05	737.21	2.19	2.01	2.31
2,392.00	23.05	282.79	2,237.33	136.90	-762.10	774.22	0.57	-0.34	-1.17
2,486.00	22.37	282.20	2,324.05	144.75	-797.53	810.50	0.76	-0.72	-0.63
2,580.00	21.24	281.93	2,411.32	152.05	-831.67	845.41	1.21	-1.20	-0.29
2,674.00	22.55	285.62	2,498.54	160.43	-865.69	880.40	2.02	1.39	3.93
2,768.00	21.41	285.88	2,585.71	169.97	-899.55	915.46	1.22	-1.21	0.28
2,863.00	19.91	284.90	2,674.59	178.88	-931.86	948.88	1.62	-1.58	-1.03
2,957.00	20.85	284.79	2,762.71	187.26	-963.51	981.54	1.00	1.00	-0.12
3,051.00	22.77	285.13	2,849.98	196.28	-997.24	1,016.37	2.05	2.04	0.36
3,146.00	24.21	285.01	2,937.10	206.13	-1,033.81	1,054.14	1.52	1.52	-0.13
3,240.00	23.24	284.37	3,023.16	215.72	-1,070.39	1,091.88	1.07	-1.03	-0.68
3,334.00	22.00	284.74	3,109.92	224.80	-1,105.38	1,127.96	1.33	-1.32	0.39
3,428.00	22.87	283.93	3,196.81	233.68	-1,140.14	1,163.77	0.98	0.93	-0.86
3,523.00	24.23	281.83	3,283.90	242.12	-1,177.14	1,201.70	1.68	1.43	-2.21
3,617.00	23.34	280.92	3,369.91	249.60	-1,214.30	1,239.61	1.02	-0.95	-0.97
3,711.00	24.39	280.48	3,455.87	256.66	-1,251.67	1,277.64	1.13	1.12	-0.47
3,806.00	23.03	280.01	3,542.85	263.46	-1,289.26	1,315.83	1.45	-1.43	-0.49
3,900.00	24.15	280.59	3,629.00	270.19	-1,326.27	1,353.45	1.22	1.19	0.62
3,995.00	22.71	280.45	3,716.16	277.09	-1,363.41	1,391.22	1.52	-1.52	-0.15
4,089.00	23.11	282.23	3,802.75	284.29	-1,399.28	1,427.81	0.85	0.43	1.89
4,183.00	21.70	281.71	3,889.65	291.72	-1,434.33	1,463.63	1.51	-1.50	-0.55
4,278.00	22.91	282.04	3,977.54	299.14	-1,469.61	1,499.68	1.28	1.27	0.35
4,372.00	22.17	281.00	4,064.36	306.35	-1,504.92	1,535.71	0.89	-0.79	-1.11

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 34-13 - Slot PA 34-13 (B7)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 34-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

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)
4,466.00	23.42	280.91	4,151.02	313.27	-1,540.67	1,572.13	1.33	1.33	-0.10
4,561.00	22.83	280.54	4,238.38	320.21	-1,577.33	1,609.44	0.64	-0.62	-0.39
4,655.00	21.74	280.01	4,325.36	326.57	-1,612.40	1,645.08	1.18	-1.16	-0.56
4,749.00	22.62	280.81	4,412.40	332.99	-1,647.30	1,680.56	0.99	0.94	0.85
4,844.00	24.04	282.85	4,499.64	340.72	-1,684.12	1,718.18	1.72	1.49	2.15
4,938.00	23.16	283.24	4,585.77	349.21	-1,720.78	1,755.78	0.95	-0.94	0.41
5,033.00	24.13	283.88	4,672.80	358.15	-1,757.82	1,793.84	1.06	1.02	0.67
5,127.00	23.02	283.39	4,758.95	367.01	-1,794.35	1,831.40	1.20	-1.18	-0.52
5,221.00	21.93	283.77	4,845.81	375.45	-1,829.28	1,867.29	1.17	-1.16	0.40
5,315.00	21.16	283.35	4,933.24	383.54	-1,862.84	1,901.78	0.84	-0.82	-0.45
5,410.00	20.18	283.42	5,022.12	391.31	-1,895.46	1,935.28	1.03	-1.03	0.07
5,504.00	19.08	283.59	5,110.66	398.68	-1,926.16	1,966.83	1.17	-1.17	0.18
5,599.00	18.22	284.00	5,200.67	405.92	-1,955.67	1,997.17	0.92	-0.91	0.43
5,693.00	17.37	282.54	5,290.17	412.52	-1,983.62	2,025.87	1.02	-0.90	-1.55
5,788.00	16.30	282.57	5,381.10	418.50	-2,010.48	2,053.37	1.13	-1.13	0.03
5,882.00	14.89	281.77	5,471.64	423.84	-2,035.18	2,078.64	1.52	-1.50	-0.85
5,977.00	14.23	282.59	5,563.59	428.87	-2,058.52	2,102.51	0.73	-0.69	0.86
6,071.00	12.69	280.03	5,655.00	433.19	-2,079.97	2,124.39	1.76	-1.64	-2.72
6,166.00	11.53	278.61	5,747.89	436.43	-2,099.63	2,144.31	1.26	-1.22	-1.49
6,260.00	10.66	278.96	5,840.13	439.19	-2,117.51	2,162.38	0.93	-0.93	0.37
6,355.00	10.27	279.07	5,933.55	441.89	-2,134.55	2,179.63	0.41	-0.41	0.12
6,449.00	8.72	277.42	6,026.26	444.13	-2,149.89	2,195.12	1.67	-1.65	-1.76
6,544.00	8.28	278.42	6,120.21	446.07	-2,163.80	2,209.14	0.49	-0.46	1.05
6,638.00	6.56	282.05	6,213.42	448.18	-2,175.75	2,221.27	1.90	-1.83	3.86
6,733.00	5.34	282.20	6,307.91	450.25	-2,185.37	2,231.11	1.28	-1.28	0.16
6,827.00	4.31	281.28	6,401.58	451.86	-2,193.11	2,239.02	1.10	-1.10	-0.98
6,921.00	3.40	283.24	6,495.36	453.19	-2,199.29	2,245.34	0.98	-0.97	2.09
7,016.00	2.70	278.38	6,590.23	454.16	-2,204.25	2,250.39	0.78	-0.74	-5.12
7,110.00	1.98	279.42	6,684.15	454.75	-2,208.04	2,254.22	0.77	-0.77	1.11
7,205.00	1.88	281.05	6,779.09	455.32	-2,211.19	2,257.42	0.12	-0.11	1.72
7,299.00	1.76	263.82	6,873.05	455.46	-2,214.14	2,260.34	0.59	-0.13	-18.33
7,393.00	1.73	260.83	6,967.00	455.08	-2,216.97	2,263.05	0.10	-0.03	-3.18
7,488.00	1.62	259.03	7,061.96	454.59	-2,219.71	2,265.65	0.13	-0.12	-1.89
7,582.00	1.44	252.39	7,155.93	453.98	-2,222.14	2,267.92	0.27	-0.19	-7.06
7,676.00	0.87	244.85	7,249.91	453.32	-2,223.91	2,269.53	0.63	-0.61	-8.02
7,770.00	0.67	214.91	7,343.90	452.57	-2,224.87	2,270.33	0.47	-0.21	-31.85
7,865.00	0.54	191.63	7,438.90	451.67	-2,225.28	2,270.56	0.29	-0.14	-24.51
7,959.00	0.60	137.17	7,532.89	450.88	-2,225.03	2,270.17	0.56	0.06	-57.94
8,053.00	0.91	143.04	7,626.89	449.92	-2,224.25	2,269.22	0.34	0.33	6.24
8,147.00	0.92	147.37	7,720.87	448.69	-2,223.39	2,268.14	0.07	0.01	4.61
8,242.00	1.20	149.50	7,815.86	447.19	-2,222.48	2,266.96	0.30	0.29	2.24
8,336.00	1.09	154.58	7,909.84	445.53	-2,221.59	2,265.78	0.16	-0.12	5.40
8,430.00	1.55	133.96	8,003.81	443.84	-2,220.29	2,264.18	0.70	0.49	-21.94

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 34-13 - Slot PA 34-13 (B7)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Site:	PA 44-13 Pad	MD Reference:	GL 6571.1' & RKB 24' @ 6595.10usft (H&P 318)
Well:	PA 34-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

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)	
8,525.00	1.56	136.12	8,098.78	442.02	-2,218.47	2,262.05	0.06	0.01	2.27	
8,619.00	1.62	141.52	8,192.74	440.06	-2,216.76	2,259.99	0.17	0.06	5.74	
8,714.00	1.81	145.97	8,287.70	437.76	-2,215.08	2,257.91	0.24	0.20	4.68	
8,808.00	1.60	141.23	8,381.66	435.51	-2,213.43	2,255.86	0.27	-0.22	-5.04	
8,903.00	1.28	144.81	8,476.63	433.61	-2,211.99	2,254.08	0.35	-0.34	3.77	
8,997.00	0.86	131.82	8,570.61	432.28	-2,210.86	2,252.72	0.51	-0.45	-13.82	
9,092.00	1.04	121.66	8,665.60	431.35	-2,209.59	2,251.30	0.26	0.19	-10.69	
9,281.00	1.42	115.33	8,854.55	429.45	-2,206.02	2,247.43	0.21	0.20	-3.35	
9,375.00	1.37	116.02	8,948.53	428.46	-2,203.95	2,245.21	0.06	-0.05	0.73	
9,470.00	1.07	117.41	9,043.51	427.55	-2,202.15	2,243.27	0.32	-0.32	1.46	
9,565.00	0.22	182.20	9,138.50	426.96	-2,201.37	2,242.39	1.05	-0.89	68.20	
9,659.00	0.33	183.47	9,232.50	426.51	-2,201.39	2,242.33	0.12	0.12	1.35	
9,753.00	0.10	148.01	9,326.50	426.17	-2,201.36	2,242.24	0.27	-0.24	-37.72	
Last SDI MWD Production Survey										
9,835.00	0.10	148.01	9,408.50	426.05	-2,201.29	2,242.14	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
122.00	122.00	0.10	-0.65	First SDI Gyro Surface Survey	
650.00	642.94	13.69	-74.24	Last SDI Gyro Surface Survey	
744.00	731.98	18.83	-103.88	First SDI MWD Surface Survey	
1,027.00	992.16	38.12	-213.32	Last SDI MWD Surface Survey	
1,074.00	1,034.73	40.48	-233.09	First SDI MWD Production Survey	
9,753.00	9,326.50	426.17	-2,201.36	Last SDI MWD Production Survey	
9,835.00	9,408.50	426.05	-2,201.29	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____