

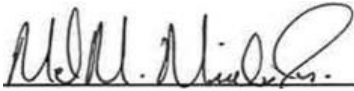


## Directional Survey Certification

2948 I-70 Business Loop  
Grand Junction, CO 81504  
(970)-245-9447 Fax (970)-245-9454

Operator	TEP Rocky Mountain, LLC.
Well Name & No.	RU 522-17
County & State	Garfield County, CO
SDI Job No.	OP.008258
Rig	H&P 318

I,                     Mel Mireles Jr.                    , having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of           198           feet to a measured depth of   10,493   feet is true and correct as determined from all available records.



Signature

                    7-Mar-18                    

Date

### **Mel Mireles Jr.**

Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well RU 522-17 - Slot RU 522-17 (B1)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8368.6' & RKB 24' @ 8392.60usft
<b>Site:</b>	RU 23-17 Pad	<b>MD Reference:</b>	GL 8368.6' & RKB 24' @ 8392.60usft
<b>Well:</b>	RU 522-17	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

<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>	RU 23-17 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,594,634.40 usft	<b>Latitude:</b>	39.4435163
<b>From:</b>	Map	<b>Easting:</b>	2,351,232.80 usft	<b>Longitude:</b>	-107.7974906
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b>	-1.45 °

<b>Well</b>	RU 522-17 - Slot RU 522-17 (B1)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,594,658.30 usft	<b>Latitude:</b>	39.4435815
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,351,226.70 usft	<b>Longitude:</b>	-107.7975143
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	8,368.60 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	2/19/2018	9.20	65.58	51,590

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	341.84	

<b>Survey Program</b>	<b>Date</b>	3/7/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
198.00	1,084.00	Survey #1 - Surface MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
1,183.00	10,493.00	Survey #2 - Production MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
198.00	3.45	10.44	197.88	5.86	1.08	5.23	1.74	1.74	0.00	
<b>First SDI Surface MWD Survey</b>										
289.00	5.90	3.96	288.57	13.22	1.90	11.97	2.75	2.69	-7.12	
382.00	9.42	353.49	380.73	25.56	1.37	23.86	4.06	3.78	-11.26	
475.00	11.32	343.30	472.22	41.86	-2.12	40.44	2.83	2.04	-10.96	
567.00	12.02	331.90	562.33	58.96	-9.23	58.90	2.61	0.76	-12.39	
660.00	11.72	324.50	653.34	75.20	-19.27	77.46	1.67	-0.32	-7.96	
755.00	10.43	326.71	746.57	90.24	-29.60	94.97	1.43	-1.36	2.33	
849.00	9.31	338.72	839.19	104.44	-37.03	110.78	2.49	-1.19	12.78	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well RU 522-17 - Slot RU 522-17 (B1)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8368.6' & RKB 24' @ 8392.60usft
<b>Site:</b>	RU 23-17 Pad	<b>MD Reference:</b>	GL 8368.6' & RKB 24' @ 8392.60usft
<b>Well:</b>	RU 522-17	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

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)	
943.00	9.41	346.70	931.94	119.00	-41.56	126.03	1.38	0.11	8.49	
1,038.00	10.38	348.55	1,025.53	134.95	-45.04	142.27	1.07	1.02	1.95	
1,084.00	10.82	345.21	1,070.74	143.19	-46.97	150.69	1.64	0.96	-7.26	
<b>Last SDI Surface MWD Survey</b>										
1,183.00	11.62	339.19	1,167.85	161.49	-52.88	169.93	1.43	0.81	-6.08	
<b>First SDI Production MWD Survey</b>										
1,277.00	11.21	338.22	1,259.99	178.83	-59.63	188.50	0.48	-0.44	-1.03	
1,372.00	10.59	338.25	1,353.28	195.51	-66.30	206.43	0.65	-0.65	0.03	
1,466.00	10.30	337.00	1,445.72	211.27	-72.78	223.43	0.39	-0.31	-1.33	
1,560.00	9.95	335.43	1,538.26	226.39	-79.44	239.87	0.47	-0.37	-1.67	
1,655.00	9.59	334.53	1,631.88	241.00	-86.26	255.88	0.41	-0.38	-0.95	
1,749.00	9.46	333.24	1,724.58	254.96	-93.10	271.28	0.27	-0.14	-1.37	
1,844.00	9.58	331.61	1,818.28	268.89	-100.38	286.78	0.31	0.13	-1.72	
1,938.00	9.43	330.48	1,910.98	282.47	-107.89	302.03	0.25	-0.16	-1.20	
2,033.00	9.32	328.68	2,004.72	295.82	-115.72	317.15	0.33	-0.12	-1.89	
2,124.00	9.23	326.49	2,094.53	308.20	-123.58	331.36	0.40	-0.10	-2.41	
2,219.00	9.45	325.43	2,188.27	320.97	-132.21	346.19	0.29	0.23	-1.12	
2,316.00	9.65	334.83	2,283.93	334.89	-140.19	361.90	1.62	0.21	9.69	
2,410.00	9.41	333.67	2,376.63	348.90	-146.95	377.32	0.33	-0.26	-1.23	
2,504.00	9.66	333.35	2,469.33	362.84	-153.90	392.73	0.27	0.27	-0.34	
2,599.00	9.67	331.14	2,562.98	376.95	-161.32	408.45	0.39	0.01	-2.33	
2,693.00	9.32	331.06	2,655.70	390.53	-168.82	423.69	0.37	-0.37	-0.09	
2,787.00	8.83	332.70	2,748.52	403.60	-175.81	438.29	0.59	-0.52	1.74	
2,881.00	8.53	332.29	2,841.44	416.18	-182.36	452.29	0.33	-0.32	-0.44	
2,976.00	8.00	332.81	2,935.46	428.30	-188.66	465.76	0.56	-0.56	0.55	
3,070.00	8.77	343.06	3,028.46	440.97	-193.73	479.39	1.79	0.82	10.90	
3,164.00	8.61	343.13	3,121.38	454.56	-197.86	493.59	0.17	-0.17	0.07	
3,259.00	8.48	343.28	3,215.32	468.08	-201.94	507.70	0.14	-0.14	0.16	
3,353.00	8.27	344.06	3,308.32	481.21	-205.79	521.38	0.25	-0.22	0.83	
3,448.00	8.13	344.63	3,402.35	494.26	-209.45	534.92	0.17	-0.15	0.60	
3,543.00	9.76	343.80	3,496.19	508.47	-213.48	549.68	1.72	1.72	-0.87	
3,637.00	9.74	342.82	3,588.83	523.72	-218.05	565.59	0.18	-0.02	-1.04	
3,732.00	9.67	343.01	3,682.47	539.03	-222.75	581.60	0.08	-0.07	0.20	
3,826.00	9.34	343.36	3,775.18	553.89	-227.24	597.12	0.36	-0.35	0.37	
3,920.00	9.20	342.67	3,867.95	568.37	-231.67	612.26	0.19	-0.15	-0.73	
4,015.00	9.11	343.77	3,961.74	582.84	-236.03	627.37	0.21	-0.09	1.16	
4,109.00	8.87	345.28	4,054.59	596.99	-239.95	642.04	0.36	-0.26	1.61	
4,204.00	10.24	341.28	4,148.27	612.07	-244.52	657.80	1.60	1.44	-4.21	
4,298.00	10.29	340.11	4,240.77	627.88	-250.06	674.54	0.23	0.05	-1.24	
4,393.00	9.69	341.49	4,334.33	643.44	-255.49	691.02	0.68	-0.63	1.45	
4,487.00	9.09	341.09	4,427.07	657.97	-260.40	706.36	0.64	-0.64	-0.43	
4,582.00	8.76	340.63	4,520.92	671.89	-265.24	721.09	0.36	-0.35	-0.48	
4,676.00	8.40	342.04	4,613.86	685.18	-269.73	735.11	0.44	-0.38	1.50	

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<b>Site:</b>	RU 23-17 Pad	<b>MD Reference:</b>	GL 8368.6' & RKB 24' @ 8392.60usft
<b>Well:</b>	RU 522-17	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

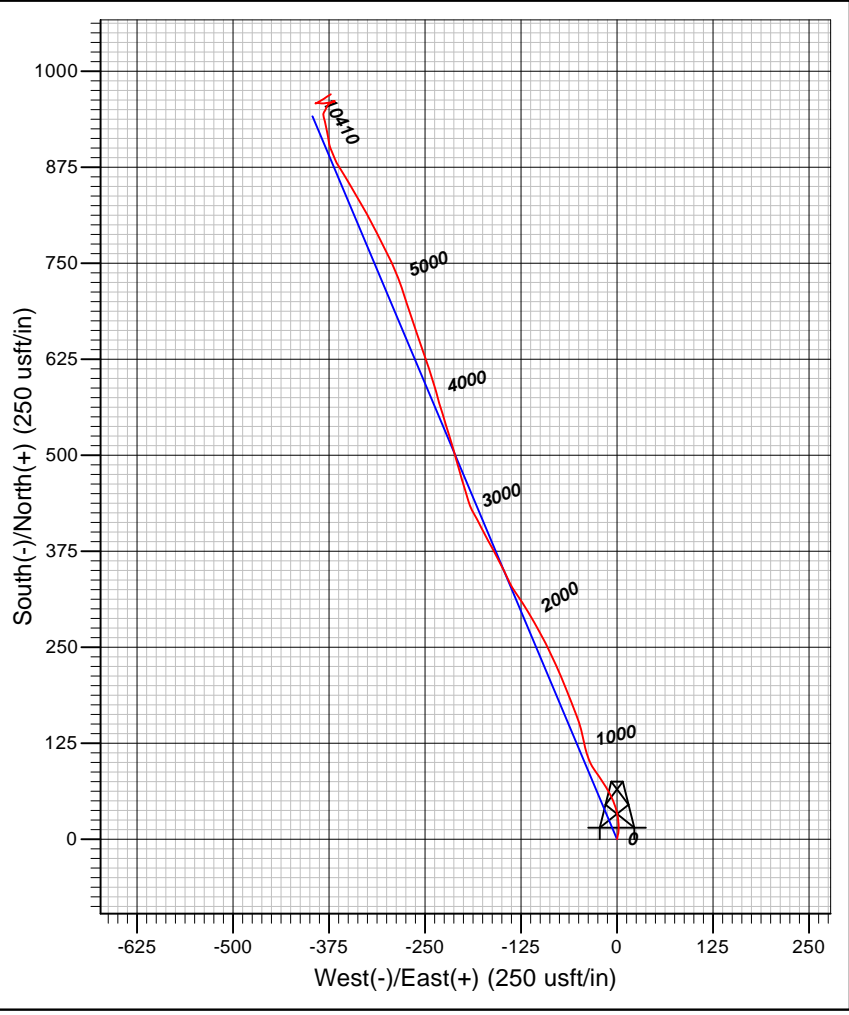
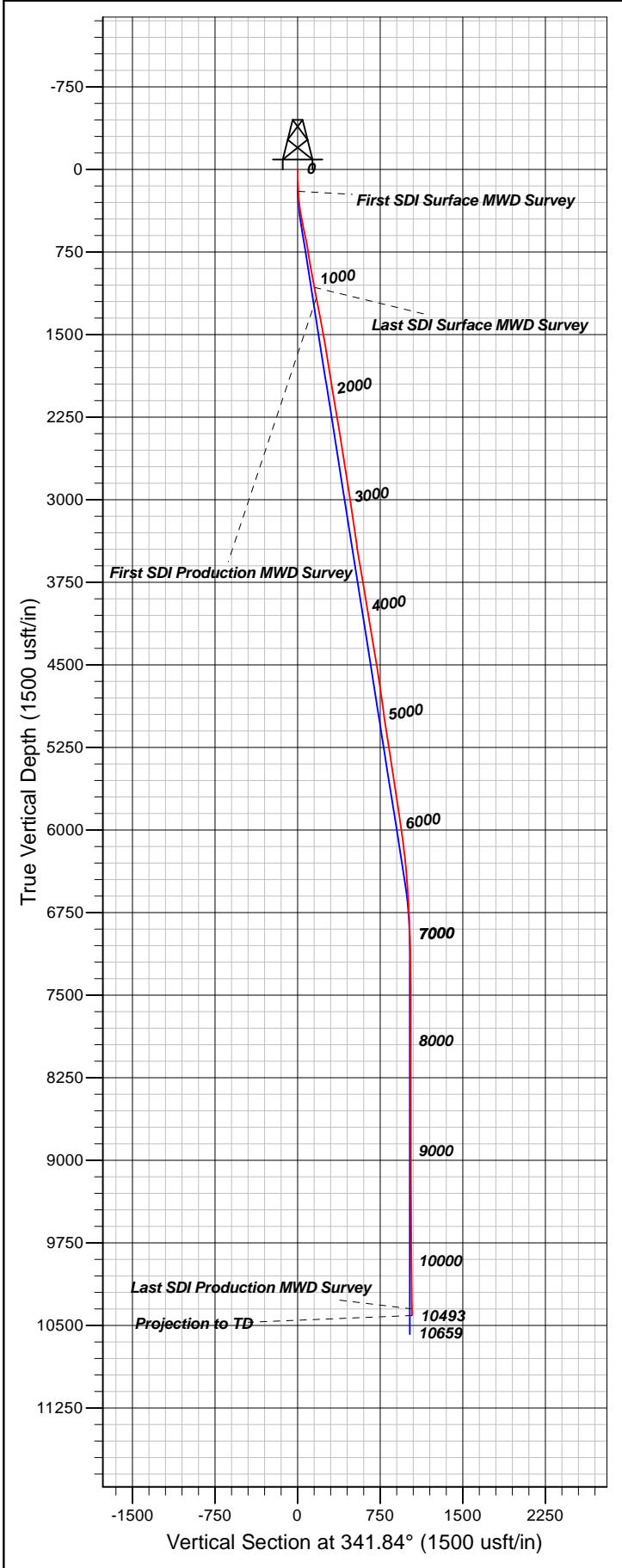
Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,771.00	8.24	342.11	4,707.86	698.26	-273.96	748.86	0.17	-0.17	0.07	
4,865.00	8.18	341.43	4,800.90	711.01	-278.16	762.28	0.12	-0.06	-0.72	
4,960.00	7.78	340.93	4,894.98	723.49	-282.41	775.47	0.43	-0.42	-0.53	
5,054.00	7.47	339.23	4,988.15	735.22	-286.65	787.94	0.41	-0.33	-1.81	
5,148.00	9.15	333.78	5,081.16	747.64	-292.12	801.44	1.97	1.79	-5.80	
5,243.00	9.09	334.02	5,174.96	761.16	-298.75	816.36	0.07	-0.06	0.25	
5,338.00	9.06	333.93	5,268.77	774.62	-305.32	831.20	0.03	-0.03	-0.09	
5,432.00	9.06	333.43	5,361.60	787.89	-311.89	845.85	0.08	0.00	-0.53	
5,527.00	8.77	331.77	5,455.45	800.96	-318.66	860.38	0.41	-0.31	-1.75	
5,621.00	8.88	330.88	5,548.34	813.61	-325.58	874.56	0.19	0.12	-0.95	
5,716.00	8.85	330.25	5,642.20	826.36	-332.77	888.92	0.11	-0.03	-0.66	
5,810.00	8.69	330.22	5,735.10	838.80	-339.89	902.96	0.17	-0.17	-0.03	
5,905.00	8.62	328.95	5,829.02	851.13	-347.12	916.93	0.21	-0.07	-1.34	
5,999.00	8.27	328.42	5,922.00	862.93	-354.30	930.37	0.38	-0.37	-0.56	
6,094.00	8.44	328.07	6,015.99	874.66	-361.56	943.79	0.19	0.18	-0.37	
6,189.00	7.12	338.09	6,110.12	886.04	-367.45	956.43	1.99	-1.39	10.55	
6,283.00	7.14	336.21	6,203.39	896.79	-371.98	968.06	0.25	0.02	-2.00	
6,378.00	5.28	350.83	6,297.84	906.51	-375.06	978.25	2.56	-1.96	15.39	
6,472.00	4.75	351.89	6,391.48	914.64	-376.29	986.36	0.57	-0.56	1.13	
6,567.00	4.37	347.48	6,486.18	922.06	-377.63	993.83	0.54	-0.40	-4.64	
6,661.00	3.96	347.07	6,579.93	928.72	-379.14	1,000.63	0.44	-0.44	-0.44	
6,756.00	3.51	345.75	6,674.73	934.74	-380.59	1,006.80	0.48	-0.47	-1.39	
6,850.00	3.28	345.20	6,768.56	940.13	-381.98	1,012.35	0.25	-0.24	-0.59	
6,944.00	1.85	10.52	6,862.47	944.22	-382.39	1,016.37	1.91	-1.52	26.94	
7,039.00	1.85	28.18	6,957.42	947.08	-381.39	1,018.77	0.60	0.00	18.59	
7,133.00	1.41	33.63	7,051.38	949.38	-380.03	1,020.54	0.50	-0.47	5.80	
7,228.00	1.49	23.88	7,146.35	951.48	-378.88	1,022.18	0.27	0.08	-10.26	
7,322.00	1.67	28.10	7,240.32	953.81	-377.74	1,024.03	0.23	0.19	4.49	
7,417.00	1.49	35.20	7,335.28	956.04	-376.38	1,025.73	0.28	-0.19	7.47	
7,511.00	1.13	54.88	7,429.26	957.57	-374.92	1,026.72	0.61	-0.38	20.94	
7,605.00	0.79	56.92	7,523.24	958.46	-373.62	1,027.16	0.36	-0.36	2.17	
7,699.00	0.70	72.74	7,617.23	958.98	-372.52	1,027.32	0.24	-0.10	16.83	
7,794.00	0.88	47.34	7,712.23	959.65	-371.43	1,027.61	0.41	0.19	-26.74	
7,888.00	0.87	35.19	7,806.21	960.72	-370.49	1,028.34	0.20	-0.01	-12.93	
7,983.00	0.44	103.77	7,901.21	961.22	-369.72	1,028.58	0.86	-0.45	72.19	
8,077.00	0.62	106.32	7,995.21	960.99	-368.88	1,028.10	0.19	0.19	2.71	
8,172.00	0.35	104.56	8,090.20	960.78	-368.11	1,027.65	0.28	-0.28	-1.85	
8,267.00	0.18	52.09	8,185.20	960.80	-367.71	1,027.54	0.29	-0.18	-55.23	
8,361.00	0.18	279.38	8,279.20	960.91	-367.74	1,027.66	0.35	0.00	-141.18	
8,456.00	0.18	353.29	8,374.20	961.08	-367.90	1,027.88	0.23	0.00	77.80	
8,551.00	0.18	280.52	8,469.20	961.26	-368.07	1,028.09	0.22	0.00	-76.60	
8,646.00	0.35	192.63	8,564.20	961.00	-368.28	1,027.92	0.41	0.18	-92.52	
8,740.00	0.26	169.60	8,658.20	960.51	-368.30	1,027.46	0.16	-0.10	-24.50	
8,835.00	0.35	234.20	8,753.20	960.13	-368.50	1,027.16	0.35	0.09	68.00	

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<b>Well:</b>	RU 522-17	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

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)	
8,930.00	0.53	279.73	8,848.19	960.04	-369.17	1,027.27	0.40	0.19	47.93	
9,024.00	0.88	252.83	8,942.19	959.90	-370.29	1,027.49	0.50	0.37	-28.62	
9,119.00	1.32	265.49	9,037.17	959.59	-372.07	1,027.76	0.53	0.46	13.33	
9,214.00	1.32	262.85	9,132.14	959.37	-374.25	1,028.23	0.06	0.00	-2.78	
9,308.00	1.58	257.40	9,226.11	958.95	-376.59	1,028.56	0.31	0.28	-5.80	
9,403.00	1.49	260.39	9,321.08	958.46	-379.09	1,028.87	0.13	-0.09	3.15	
9,498.00	2.11	269.27	9,416.03	958.23	-382.05	1,029.58	0.71	0.65	9.35	
9,592.00	1.85	270.24	9,509.98	958.22	-385.30	1,030.58	0.28	-0.28	1.03	
9,687.00	1.58	280.78	9,604.93	958.47	-388.12	1,031.69	0.44	-0.28	11.09	
9,782.00	1.49	266.02	9,699.90	958.63	-390.64	1,032.63	0.43	-0.09	-15.54	
9,876.00	0.91	254.78	9,793.88	958.35	-392.58	1,032.97	0.66	-0.62	-11.96	
9,971.00	0.53	89.80	9,888.88	958.15	-392.87	1,032.87	1.50	-0.40	-173.66	
10,066.00	2.02	68.26	9,983.85	958.77	-390.87	1,032.84	1.62	1.57	-22.67	
10,160.00	3.43	57.19	10,077.74	960.91	-386.97	1,033.66	1.59	1.50	-11.78	
10,255.00	3.69	56.75	10,172.56	964.13	-382.02	1,035.17	0.28	0.27	-0.46	
10,350.00	2.55	57.72	10,267.42	966.93	-377.68	1,036.48	1.20	-1.20	1.02	
10,433.00	2.29	58.68	10,350.34	968.78	-374.70	1,037.31	0.32	-0.31	1.16	
<b>Last SDI Production MWD Survey</b>										
10,493.00	2.29	58.68	10,410.30	970.03	-372.65	1,037.86	0.00	0.00	0.00	
<b>Projection to TD - PBHL(RU_522-17)</b>										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
198.00	197.88	5.86	1.08	First SDI Surface MWD Survey	
1,084.00	1,070.74	143.19	-46.97	Last SDI Surface MWD Survey	
1,183.00	1,167.85	161.49	-52.88	First SDI Production MWD Survey	
10,433.00	10,350.34	968.78	-374.70	Last SDI Production MWD Survey	
10,493.00	10,410.30	970.03	-372.65	Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



<b>Well Details: RU 522-17</b>					
TVD Reference: GL 8368.6' & RKB 24' @ 8392.60usft Grid Level: 8368.60					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1594658.30	2351226.70	39.4435815	-107.7975143
Slot RU 522-17 (B1)					
<b>REFERENCE INFORMATION</b>					
Co-ordinate (N/E) Reference: Well RU 522-17 - Slot RU 522-17 (B1), True North					
Vertical (TVD) Reference: GL 8368.6' & RKB 24' @ 8392.60usft					
Section (VS) Reference: Slot - RU 522-17 (B1)(0.00N, 0.00E)					
Measured Depth Reference: GL 8368.6' & RKB 24' @ 8392.60usft					
Calculation Method: Minimum Curvature					
<b>PROJECT DETAILS: Garfield County, CO NAD83</b>					
Geodetic System: US State Plane 1983					
Datum: North American Datum 1983					
Ellipsoid: GRS 1980					
Zone: Colorado Central Zone					
System Datum: Mean Sea Level					
<b>Plan: OH</b>					
17:21, March 07 2018 Created By: Mel Mireles Jr.					