



Crestone Peak Resources

Sec 2 T2N-R67W

Echeverria Pad

ECHEVERRIA 2I-2H-D267

Wellbore #1

Design: Wellbore #1

Standard Survey Report

17 April, 2019



Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well ECHEVERRIA 2I-2H-D267
Project:	Sec 2 T2N-R67W	TVD Reference:	GL 4881' & RKB 28' @ 4909.000usft (Ensign 142)
Site:	Echeverria Pad	MD Reference:	GL 4881' & RKB 28' @ 4909.000usft (Ensign 142)
Well:	ECHEVERRIA 2I-2H-D267	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Project	Sec 2 T2N-R67W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Echeverria Pad			
Site Position:		Northing:	1,306,149.76 usft	Latitude:	40.1720320
From:	Lat/Long	Easting:	3,177,475.48 usft	Longitude:	-104.8648990
Position Uncertainty:	0.000 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	ECHEVERRIA 2I-2H-D267					
Well Position	+N/-S	0.000 usft	Northing:	1,306,149.44 usft	Latitude:	40.1720300
	+E/-W	0.000 usft	Easting:	3,177,535.28 usft	Longitude:	-104.8646850
Position Uncertainty		0.000 usft	Wellhead Elevation:	0.000 usft	Ground Level:	4,881.000 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/17/2019	8.33	66.55	52,118

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.000
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.000	0.000	0.000	162.58	

Survey Program	Date	4/17/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
172.000	2,285.000	Survey #1 - Surface MWD Survey (Wellbo	MWD+HDGM	OWSG MWD + HDGM	
2,394.000	6,425.000	Survey #2 - Intermediate MWD Survey (W	MWD+HDGM	OWSG MWD + HDGM	
6,514.000	8,652.000	Survey #3 - Curve MWD Survey (Wellbore	MWD+HDGM	OWSG MWD + HDGM	
8,741.000	12,247.000	Survey #4 - Lateral MWD Survey (Wellbo	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)	
0.000	0.00	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.00	
172.000	0.26	16.61	171.999	0.374	0.112	-0.323	0.15	0.15	0.00	
267.000	1.50	66.36	266.987	1.079	1.312	-0.637	1.42	1.31	52.37	
361.000	3.96	52.91	360.874	3.530	5.029	-1.863	2.69	2.62	-14.31	
455.000	6.33	47.20	454.489	9.009	11.421	-5.177	2.58	2.52	-6.07	
549.000	8.09	43.07	547.743	17.363	19.741	-10.657	1.95	1.87	-4.39	

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Design:	Wellbore #1	Database:	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)
643.000	9.41	41.22	640.647	27.975	29.322	-17.914	1.44	1.40	-1.97
738.000	11.96	48.08	733.996	40.396	41.766	-26.039	3.00	2.68	7.22
832.000	14.16	43.42	825.561	55.256	56.919	-35.682	2.59	2.34	-4.96
927.000	13.64	39.11	917.782	72.388	71.972	-47.522	1.22	-0.55	-4.54
1,001.000	14.94	45.52	989.495	85.844	84.283	-56.674	2.76	1.76	8.66
1,095.000	15.45	41.04	1,080.211	103.778	101.150	-68.737	1.36	0.54	-4.77
1,190.000	16.07	36.45	1,171.643	123.899	117.271	-83.109	1.47	0.65	-4.83
1,284.000	15.43	35.22	1,262.114	144.581	132.213	-98.368	0.77	-0.68	-1.31
1,379.000	16.25	35.06	1,353.506	165.785	147.137	-114.133	0.86	0.86	-0.17
1,474.000	15.89	39.02	1,444.796	186.770	162.961	-129.418	1.21	-0.38	4.17
1,568.000	13.56	38.84	1,535.703	205.354	177.975	-142.654	2.48	-2.48	-0.19
1,663.000	13.48	41.90	1,628.071	222.270	192.355	-154.490	0.76	-0.08	3.22
1,757.000	14.68	41.42	1,719.246	239.357	207.552	-166.243	1.28	1.28	-0.51
1,851.000	15.96	42.13	1,809.904	257.874	224.102	-178.956	1.38	1.36	0.76
1,946.000	14.32	40.44	1,901.603	276.503	240.485	-191.826	1.79	-1.73	-1.78
2,040.000	14.04	39.99	1,992.739	294.086	255.353	-204.152	0.32	-0.30	-0.48
2,134.000	13.53	46.76	2,084.037	310.356	270.692	-215.084	1.80	-0.54	7.20
2,229.000	13.16	47.71	2,176.472	325.246	286.788	-224.472	0.45	-0.39	1.00
2,285.000	12.24	44.08	2,231.102	333.800	295.633	-229.986	2.17	-1.64	-6.48
2,394.000	12.05	38.57	2,337.666	350.997	310.766	-241.863	1.08	-0.17	-5.06
2,483.000	10.55	34.61	2,424.940	364.967	321.186	-252.073	1.90	-1.69	-4.45
2,572.000	12.57	42.87	2,512.136	378.773	332.405	-261.888	2.93	2.27	9.28
2,661.000	13.37	48.41	2,598.868	392.702	346.690	-270.901	1.66	0.90	6.22
2,750.000	14.33	45.51	2,685.281	407.252	362.244	-280.127	1.33	1.08	-3.26
2,839.000	15.04	40.59	2,771.376	423.740	377.615	-291.257	1.61	0.80	-5.53
2,928.000	15.30	38.83	2,857.275	441.656	392.491	-303.899	0.59	0.29	-1.98
3,017.000	15.56	38.13	2,943.067	460.194	407.224	-317.175	0.36	0.29	-0.79
3,106.000	14.68	40.24	3,028.986	478.192	421.880	-329.961	1.17	-0.99	2.37
3,196.000	14.42	42.00	3,116.100	495.225	436.746	-341.762	0.57	-0.29	1.96
3,285.000	13.72	38.57	3,202.431	511.713	450.742	-353.304	1.22	-0.79	-3.85
3,396.000	12.93	44.90	3,310.448	530.803	467.716	-366.436	1.49	-0.71	5.70
3,485.000	14.86	48.50	3,396.841	545.420	483.294	-375.719	2.38	2.17	4.04
3,574.000	17.23	56.15	3,482.377	560.328	502.793	-384.106	3.56	2.66	8.60
3,663.000	15.30	60.89	3,567.815	573.385	524.002	-390.214	2.63	-2.17	5.33
3,752.000	12.49	57.99	3,654.203	584.201	542.426	-395.019	3.25	-3.16	-3.26
3,841.000	13.45	58.08	3,740.932	594.775	559.372	-400.035	1.08	1.08	0.10
3,930.000	15.12	63.09	3,827.180	605.502	578.510	-404.541	2.33	1.88	5.63
4,019.000	16.18	63.53	3,912.879	616.283	599.962	-408.405	1.20	1.19	0.49
4,108.000	18.20	61.07	3,997.900	628.535	623.229	-413.129	2.41	2.27	-2.76
4,197.000	19.52	59.13	4,082.121	642.889	648.158	-419.362	1.64	1.48	-2.18
4,286.000	18.82	50.52	4,166.202	659.649	672.006	-428.214	3.27	-0.79	-9.67
4,375.000	16.97	42.35	4,250.906	678.380	691.840	-440.147	3.50	-2.08	-9.18

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Survey										
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4,464.000	15.92	41.91	4,336.264	697.063	708.744	-452.913	1.19	-1.18	-0.49	
4,553.000	15.30	36.02	4,421.987	715.645	723.803	-466.135	1.91	-0.70	-6.62	
4,643.000	16.71	31.89	4,508.499	736.237	737.623	-481.645	2.01	1.57	-4.59	
4,732.000	18.82	32.68	4,593.250	759.186	752.135	-499.197	2.39	2.37	0.89	
4,821.000	18.20	35.58	4,677.648	782.574	767.974	-516.771	1.25	-0.70	3.26	
4,910.000	17.15	32.59	4,762.447	804.935	783.129	-533.569	1.56	-1.18	-3.36	
4,999.000	17.76	37.95	4,847.354	826.696	798.546	-549.717	1.93	0.69	6.02	
5,088.000	19.43	38.92	4,931.705	848.919	816.195	-565.636	1.91	1.88	1.09	
5,177.000	18.29	35.23	5,015.928	871.845	833.552	-582.315	1.85	-1.28	-4.15	
5,266.000	15.65	32.77	5,101.047	893.350	848.108	-598.476	3.07	-2.97	-2.76	
5,355.000	14.07	34.79	5,187.068	912.330	860.779	-612.792	1.87	-1.78	2.27	
5,445.000	13.98	38.74	5,274.387	929.794	873.824	-625.550	1.07	-0.10	4.39	
5,534.000	14.16	47.53	5,360.727	945.531	888.583	-636.147	2.41	0.20	9.88	
5,623.000	14.77	50.78	5,446.907	960.055	905.403	-644.969	1.14	0.69	3.65	
5,712.000	15.21	49.64	5,532.878	974.789	923.088	-653.733	0.60	0.49	-1.28	
5,801.000	14.77	44.81	5,618.853	990.399	939.980	-663.570	1.49	-0.49	-5.43	
5,890.000	14.33	44.81	5,704.998	1,006.262	955.738	-673.987	0.49	-0.49	0.00	
5,979.000	12.05	49.11	5,791.647	1,020.159	970.526	-682.820	2.79	-2.56	4.83	
6,068.000	14.51	49.82	5,878.260	1,033.436	986.069	-690.835	2.77	2.76	0.80	
6,157.000	16.97	43.58	5,963.922	1,050.042	1,003.545	-701.448	3.35	2.76	-7.01	
6,247.000	15.48	40.50	6,050.337	1,068.691	1,020.401	-714.195	1.91	-1.66	-3.42	
6,336.000	15.04	41.56	6,136.199	1,086.363	1,035.776	-726.454	0.59	-0.49	1.19	
6,425.000	14.25	45.33	6,222.309	1,102.705	1,051.227	-737.421	1.39	-0.89	4.24	
6,514.000	14.86	53.33	6,308.461	1,117.223	1,068.172	-746.200	2.36	0.69	8.99	
6,603.000	18.38	64.41	6,393.751	1,130.106	1,089.994	-751.960	5.31	3.96	12.45	
6,692.000	16.71	96.31	6,478.802	1,134.772	1,115.426	-748.797	10.83	-1.88	35.84	
6,737.000	17.15	116.26	6,521.888	1,131.122	1,127.817	-741.605	12.89	0.98	44.33	
6,781.000	15.21	136.65	6,564.178	1,124.048	1,137.606	-731.926	13.56	-4.41	46.34	
6,870.000	21.02	148.08	6,648.757	1,101.985	1,154.079	-705.942	7.62	6.53	12.84	
6,959.000	25.15	153.88	6,730.623	1,071.439	1,170.854	-671.775	5.29	4.64	6.52	
7,048.000	28.49	161.00	6,810.058	1,034.368	1,186.099	-631.840	5.20	3.75	8.00	
7,137.000	34.65	173.83	6,885.936	989.048	1,195.750	-585.710	10.21	6.92	14.42	
7,226.000	39.66	179.28	6,956.866	935.446	1,198.829	-533.644	6.73	5.63	6.12	
7,316.000	46.69	182.18	7,022.466	873.924	1,197.943	-475.209	8.11	7.81	3.22	
7,405.000	53.29	183.24	7,079.655	805.873	1,194.691	-411.253	7.47	7.42	1.19	
7,494.000	55.75	182.18	7,131.309	733.486	1,191.275	-343.209	2.93	2.76	-1.19	
7,583.000	63.22	180.95	7,176.469	656.897	1,189.214	-270.750	8.48	8.39	-1.38	
7,672.000	73.25	180.60	7,209.429	574.355	1,188.106	-192.325	11.28	11.27	-0.39	
7,761.000	77.56	179.81	7,231.850	488.248	1,187.804	-110.258	4.92	4.84	-0.89	
7,850.000	80.64	181.30	7,248.679	400.871	1,186.952	-27.143	3.83	3.46	1.67	
7,856.963	80.94	181.37	7,249.793	394.000	1,186.792	-20.635	4.36	4.25	1.00	
(480' FNL & 1825.92' FWL) - TPZ @ 7856' MD / 7249' TVD										

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7,939.000	84.42	182.18	7,260.247	312.684	1,184.270	56.196	4.36	4.25	0.99	
8,028.000	86.70	182.71	7,267.137	224.039	1,180.484	139.643	2.63	2.56	0.60	
8,117.000	89.08	185.70	7,270.414	135.355	1,173.962	222.307	4.29	2.67	3.36	
8,206.000	89.69	185.87	7,271.370	46.814	1,164.992	304.101	0.71	0.69	0.19	
8,295.000	89.34	185.08	7,272.123	-41.776	1,156.501	386.086	0.97	-0.39	-0.89	
8,385.000	87.85	182.53	7,274.330	-131.541	1,150.530	469.946	3.28	-1.66	-2.83	
8,474.000	88.72	180.07	7,276.994	-220.470	1,148.512	554.193	2.93	0.98	-2.76	
8,563.000	88.37	178.23	7,279.254	-309.428	1,149.832	639.466	2.10	-0.39	-2.07	
8,652.000	91.71	177.26	7,279.192	-398.345	1,153.333	725.353	3.91	3.75	-1.09	
8,741.000	91.71	176.38	7,276.536	-487.168	1,158.268	811.580	0.99	0.00	-0.99	
8,830.000	91.89	176.64	7,273.741	-575.959	1,163.683	897.919	0.36	0.20	0.29	
8,919.000	92.05	176.41	7,270.681	-664.743	1,169.075	984.245	0.31	0.18	-0.26	
9,008.000	89.87	177.17	7,269.190	-753.584	1,174.057	1,070.504	2.59	-2.45	0.85	
9,097.000	89.34	176.38	7,269.804	-842.440	1,179.064	1,156.783	1.07	-0.60	-0.89	
9,186.000	90.31	179.10	7,270.075	-931.361	1,182.573	1,242.677	3.24	1.09	3.06	
9,275.000	90.70	179.46	7,269.291	-1,020.351	1,183.691	1,327.919	0.60	0.44	0.40	
9,364.000	89.69	178.49	7,268.988	-1,109.334	1,185.283	1,413.298	1.57	-1.13	-1.09	
9,454.000	89.16	177.87	7,269.891	-1,199.283	1,188.142	1,499.977	0.91	-0.59	-0.69	
9,543.000	89.96	177.87	7,270.575	-1,288.218	1,191.449	1,585.824	0.90	0.90	0.00	
9,632.000	90.75	178.05	7,270.023	-1,377.159	1,194.617	1,671.634	0.91	0.89	0.20	
9,721.000	90.84	178.05	7,268.788	-1,466.099	1,197.646	1,757.401	0.10	0.10	0.00	
9,808.000	91.36	177.70	7,267.118	-1,553.023	1,200.871	1,841.304	0.72	0.60	-0.40	
9,897.000	90.57	177.70	7,265.619	-1,641.938	1,204.442	1,927.210	0.89	-0.89	0.00	
9,986.000	89.96	176.47	7,265.208	-1,730.819	1,208.968	2,013.370	1.54	-0.69	-1.38	
10,075.000	91.10	180.95	7,264.384	-1,819.769	1,210.971	2,098.840	5.19	1.28	5.03	
10,164.000	91.36	180.95	7,262.474	-1,908.736	1,209.496	2,183.285	0.29	0.29	0.00	
10,253.000	91.01	179.98	7,260.633	-1,997.713	1,208.774	2,267.965	1.16	-0.39	-1.09	
10,342.000	90.22	179.54	7,259.678	-2,086.706	1,209.147	2,352.988	1.02	-0.89	-0.49	
10,432.000	90.48	180.42	7,259.128	-2,176.703	1,209.178	2,438.867	1.02	0.29	0.98	
10,521.000	89.52	178.84	7,259.128	-2,265.698	1,209.753	2,523.952	2.08	-1.08	-1.78	
10,610.000	90.31	178.75	7,259.260	-2,354.677	1,211.624	2,609.411	0.89	0.89	-0.10	
10,699.000	89.78	178.84	7,259.190	-2,443.657	1,213.496	2,694.870	0.60	-0.60	0.10	
10,788.000	89.69	179.19	7,259.602	-2,532.643	1,215.026	2,780.233	0.41	-0.10	0.39	
10,877.000	89.25	178.23	7,260.425	-2,621.615	1,217.030	2,865.724	1.19	-0.49	-1.08	
10,966.000	88.99	178.05	7,261.792	-2,710.558	1,219.918	2,951.452	0.36	-0.29	-0.20	
11,055.000	88.99	177.00	7,263.361	-2,799.460	1,223.761	3,037.427	1.18	0.00	-1.18	
11,144.000	88.90	177.00	7,264.999	-2,888.323	1,228.418	3,123.609	0.10	-0.10	0.00	
11,233.000	87.85	176.38	7,267.523	-2,977.137	1,233.554	3,209.887	1.37	-1.18	-0.70	
11,322.000	90.22	178.31	7,269.022	-3,066.018	1,237.675	3,295.926	3.43	2.66	2.17	
11,411.000	89.60	177.70	7,269.162	-3,154.963	1,240.773	3,381.719	0.98	-0.70	-0.69	
11,501.000	91.89	178.05	7,267.992	-3,244.888	1,244.110	3,468.518	2.57	2.54	0.39	
11,590.000	91.54	177.08	7,265.328	-3,333.766	1,247.890	3,554.452	1.16	-0.39	-1.09	

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well ECHEVERRIA 2I-2H-D267
Project:	Sec 2 T2N-R67W	TVD Reference:	GL 4881' & RKB 28' @ 4909.000usft (Ensign 142)
Site:	Echeverria Pad	MD Reference:	GL 4881' & RKB 28' @ 4909.000usft (Ensign 142)
Well:	ECHEVERRIA 2I-2H-D267	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)	
11,679.000	92.86	179.37	7,261.911	-3,422.650	1,250.645	3,640.084	2.97	1.48	2.57	
11,768.000	92.59	179.81	7,257.680	-3,511.547	1,251.281	3,725.094	0.58	-0.30	0.49	
11,857.000	92.51	179.19	7,253.720	-3,600.455	1,252.057	3,810.156	0.70	-0.09	-0.70	
11,946.000	91.71	179.19	7,250.443	-3,689.385	1,253.314	3,895.384	0.90	-0.90	0.00	
12,035.000	90.13	179.63	7,249.014	-3,778.366	1,254.231	3,980.558	1.84	-1.78	0.49	
12,125.000	90.31	180.77	7,248.669	-3,868.363	1,253.916	4,066.334	1.28	0.20	1.27	
12,185.000	90.04	180.33	7,248.486	-3,928.360	1,253.340	4,123.406	0.86	-0.45	-0.73	
(463' FSL & 1931.05' FWL) - Last Survey @ 12,185' MD / 7248' TVD										
12,247.000	90.04	180.33	7,248.442	-3,990.359	1,252.983	4,182.455	0.00	0.00	0.00	
PTB @ 12,247' MD / 7248' TVD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,856.963	7,249.793	394.000	1,186.792	(480' FNL & 1825.92' FWL)	
7,856.963	7,249.793	394.000	1,186.792	TPZ @ 7856' MD / 7249' TVD	
12,185.000	7,248.486	-3,928.360	1,253.340	(463' FSL & 1931.05' FWL)	
12,185.000	7,248.486	-3,928.360	1,253.340	Last Survey @ 12,185' MD / 7248' TVD	
12,247.000	7,248.442	-3,990.359	1,252.983	PTB @ 12,247' MD / 7248' TVD	

Checked By: _____ Approved By: _____ Date: _____