



Crestone Peak Resources

DJ BASIN

Sec.18-T1N-R67W (HINGLEY)

Hingley 1E-18H-A167

Hingley 1E-18H-A67 Wellbore #1

Survey: Survey #1

Standard Survey Report

14 October, 2019



CRESTONE PEAK
RESOURCES

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1E-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5079.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5079.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1E-18H-A167	North Reference:	True
Wellbore:	Hingley 1E-18H-A67 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1E-18H-A167 Wellbore #1	Database:	US_EDM

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec.18-T1N-R67W (HINGLEY)				
Site Position:		Northing:	1,264,132.76 usft	Latitude:	40.057007
From:	Lat/Long	Easting:	3,160,624.47 usft	Longitude:	-104.926172
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	Hingley 1E-18H-A167					
Well Position	+N/-S	0.0 ft	Northing:	1,264,132.97 usft	Latitude:	40.057007
	+E/-W	0.0 ft	Easting:	3,160,664.50 usft	Longitude:	-104.926029
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,056.0 ft

Wellbore	Hingley 1E-18H-A67 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/7/2019	8.20	66.38	51,980

Design	Hingley 1E-18H-A167 Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	191.97	

Survey Program	Date	10/14/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
112.0	12,514.0	Survey #1 (Hingley 1E-18H-A67 Wellbore)	MWD+HDGM	OWSG MWD + HDGM	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
112.0	0.35	303.57	112.0	0.2	-0.3	-0.1	0.31	0.31	0.00	
202.0	0.26	269.91	202.0	0.3	-0.7	-0.2	0.22	-0.10	-37.40	
293.0	0.26	352.00	293.0	0.5	-1.0	-0.3	0.38	0.00	90.21	
384.0	0.35	319.22	384.0	1.0	-1.2	-0.7	0.21	0.10	-36.02	
473.0	0.88	324.84	473.0	1.7	-1.7	-1.3	0.60	0.60	6.31	
562.0	1.14	261.91	562.0	2.2	-3.0	-1.5	1.21	0.29	-70.71	
633.0	1.58	264.83	633.0	2.0	-4.7	-1.0	0.63	0.62	4.11	
715.0	3.07	293.76	714.9	2.8	-7.8	-1.1	2.26	1.82	35.28	
804.0	4.13	302.51	803.7	5.4	-12.7	-2.7	1.34	1.19	9.83	

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Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
890.0	4.73	298.64	889.5	8.8	-18.4	-4.8	0.78	0.70	-4.50	
977.0	5.31	298.69	976.1	12.5	-25.1	-7.0	0.67	0.67	0.06	
1,062.0	6.59	304.67	1,060.7	17.1	-32.6	-10.0	1.67	1.51	7.04	
1,152.0	9.61	316.65	1,149.8	25.5	-42.0	-16.3	3.83	3.36	13.31	
1,241.0	12.37	323.60	1,237.1	38.6	-52.7	-26.8	3.43	3.10	7.81	
1,331.0	12.99	324.21	1,324.9	54.6	-64.4	-40.0	0.70	0.69	0.68	
1,418.0	12.23	321.56	1,409.8	69.7	-75.8	-52.5	1.10	-0.87	-3.05	
1,508.0	12.37	319.82	1,497.8	84.5	-88.0	-64.5	0.44	0.16	-1.93	
1,597.0	11.74	319.35	1,584.8	98.7	-100.0	-75.8	0.72	-0.71	-0.53	
1,684.0	10.11	319.27	1,670.2	111.2	-110.8	-85.8	1.87	-1.87	-0.09	
1,773.0	9.31	317.94	1,757.9	122.5	-120.7	-94.8	0.93	-0.90	-1.49	
1,863.0	9.37	317.77	1,846.8	133.3	-130.5	-103.3	0.07	0.07	-0.19	
1,952.0	9.23	319.11	1,934.6	144.1	-140.0	-111.9	0.29	-0.16	1.51	
2,041.0	9.61	318.12	2,022.4	155.0	-149.7	-120.6	0.46	0.43	-1.11	
2,131.0	10.10	318.73	2,111.1	166.5	-159.9	-129.7	0.56	0.54	0.68	
2,220.0	10.56	317.77	2,198.6	178.4	-170.5	-139.2	0.55	0.52	-1.08	
2,310.0	9.98	319.81	2,287.2	190.5	-181.1	-148.8	0.76	-0.64	2.27	
2,399.0	9.69	323.45	2,374.9	202.4	-190.5	-158.5	0.77	-0.33	4.09	
2,488.0	11.08	321.13	2,462.4	215.1	-200.3	-168.8	1.63	1.56	-2.61	
2,535.0	11.17	321.66	2,508.5	222.1	-206.0	-174.6	0.29	0.19	1.13	
2,642.0	10.76	325.02	2,613.6	238.5	-218.2	-188.0	0.71	-0.38	3.14	
2,731.0	10.34	317.24	2,701.1	251.1	-228.3	-198.3	1.67	-0.47	-8.74	
2,820.0	11.08	312.36	2,788.5	262.8	-240.1	-207.2	1.31	0.83	-5.48	
2,909.0	10.33	308.18	2,876.0	273.5	-252.7	-215.1	1.21	-0.84	-4.70	
2,999.0	10.39	311.13	2,964.5	283.8	-265.1	-222.6	0.59	0.07	3.28	
3,088.0	10.94	309.10	3,052.0	294.4	-277.7	-230.4	0.75	0.62	-2.28	
3,177.0	12.05	309.78	3,139.2	305.7	-291.4	-238.6	1.26	1.25	0.76	
3,266.0	11.25	305.66	3,226.3	316.7	-305.6	-246.4	1.30	-0.90	-4.63	
3,355.0	11.29	315.90	3,313.6	328.0	-318.7	-254.7	2.25	0.04	11.51	
3,444.0	10.78	321.47	3,401.0	340.7	-330.0	-264.9	1.33	-0.57	6.26	
3,533.0	9.63	320.15	3,488.6	353.0	-339.9	-274.8	1.32	-1.29	-1.48	
3,622.0	9.43	323.26	3,576.4	364.5	-349.1	-284.2	0.62	-0.22	3.49	
3,711.0	8.31	319.81	3,664.3	375.3	-357.6	-293.0	1.39	-1.26	-3.88	
3,825.0	9.12	310.70	3,777.0	387.5	-369.8	-302.4	1.40	0.71	-7.99	
3,914.0	9.12	307.56	3,864.9	396.4	-380.7	-308.8	0.56	0.00	-3.53	
4,003.0	10.45	308.70	3,952.6	405.7	-392.6	-315.5	1.51	1.49	1.28	
4,092.0	10.74	313.18	4,040.0	416.4	-404.9	-323.4	0.98	0.33	5.03	
4,181.0	11.91	319.95	4,127.3	429.1	-416.9	-333.3	1.99	1.31	7.61	
4,270.0	10.34	318.68	4,214.6	442.2	-428.1	-343.8	1.79	-1.76	-1.43	
4,359.0	9.39	317.36	4,302.3	453.5	-438.3	-352.8	1.10	-1.07	-1.48	
4,448.0	10.30	313.86	4,390.0	464.4	-448.9	-361.2	1.22	1.02	-3.93	
4,537.0	10.70	323.32	4,477.5	476.5	-459.6	-370.8	1.99	0.45	10.63	
4,626.0	9.60	321.15	4,565.1	488.9	-469.2	-381.0	1.31	-1.24	-2.44	
4,715.0	8.62	313.69	4,653.0	499.3	-478.7	-389.2	1.72	-1.10	-8.38	

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Survey										
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4,804.0	9.78	313.18	4,740.9	509.1	-489.0	-396.6	1.31	1.30	-0.57	
4,893.0	10.09	322.70	4,828.5	520.5	-499.2	-405.6	1.88	0.35	10.70	
4,982.0	10.84	316.89	4,916.1	532.8	-509.7	-415.5	1.45	0.84	-6.53	
5,071.0	11.41	310.64	5,003.4	544.6	-522.1	-424.5	1.50	0.64	-7.02	
5,160.0	10.90	312.76	5,090.7	556.1	-534.9	-433.0	0.74	-0.57	2.38	
5,249.0	11.59	318.94	5,178.0	568.5	-547.0	-442.7	1.56	0.78	6.94	
5,338.0	11.67	316.66	5,265.2	581.8	-559.0	-453.2	0.52	0.09	-2.56	
5,427.0	10.36	314.57	5,352.5	594.0	-570.9	-462.6	1.54	-1.47	-2.35	
5,516.0	10.07	312.83	5,440.1	604.9	-582.3	-470.9	0.48	-0.33	-1.96	
5,606.0	10.32	313.19	5,528.7	615.7	-594.0	-479.2	0.29	0.28	0.40	
5,695.0	9.59	312.67	5,616.4	626.2	-605.2	-487.1	0.83	-0.82	-0.58	
5,784.0	9.48	318.17	5,704.1	636.7	-615.6	-495.2	1.03	-0.12	6.18	
5,873.0	10.00	311.10	5,791.9	647.2	-626.3	-503.3	1.46	0.58	-7.94	
5,962.0	10.23	310.34	5,879.5	657.4	-638.1	-510.8	0.30	0.26	-0.85	
6,051.0	10.68	311.65	5,967.0	668.0	-650.3	-518.6	0.57	0.51	1.47	
6,140.0	10.13	310.44	6,054.5	678.6	-662.4	-526.4	0.66	-0.62	-1.36	
6,229.0	10.45	313.19	6,142.1	689.2	-674.3	-534.4	0.66	0.36	3.09	
6,318.0	9.84	313.29	6,229.7	699.9	-685.7	-542.5	0.69	-0.69	0.11	
6,407.0	10.07	318.77	6,317.4	711.0	-696.4	-551.1	1.09	0.26	6.16	
6,496.0	9.07	322.03	6,405.1	722.4	-705.8	-560.3	1.28	-1.12	3.66	
6,585.0	8.80	313.49	6,493.1	732.6	-715.1	-568.4	1.52	-0.30	-9.60	
6,674.0	9.36	311.29	6,580.9	742.1	-725.4	-575.5	0.74	0.63	-2.47	
6,763.0	10.13	313.61	6,668.7	752.2	-736.5	-583.1	0.97	0.87	2.61	
6,852.0	9.73	314.00	6,756.3	762.9	-747.6	-591.2	0.46	-0.45	0.44	
6,941.0	8.86	282.30	6,844.2	769.5	-759.7	-595.2	5.76	-0.98	-35.62	
7,030.0	10.01	240.64	6,932.1	767.2	-773.2	-590.2	7.61	1.29	-46.81	
7,119.0	12.29	209.07	7,019.5	755.1	-784.5	-576.0	7.21	2.56	-35.47	
7,208.0	16.26	196.74	7,105.8	734.9	-792.7	-554.5	5.60	4.46	-13.85	
7,297.0	20.17	189.11	7,190.3	707.8	-798.8	-526.8	5.14	4.39	-8.57	
7,386.0	27.49	188.23	7,271.6	672.3	-804.1	-490.9	8.23	8.22	-0.99	
7,476.0	36.30	188.16	7,348.0	625.3	-810.9	-443.5	9.79	9.79	-0.08	
7,565.0	43.61	185.22	7,416.2	568.5	-817.5	-386.6	8.48	8.21	-3.30	
7,654.0	51.53	182.46	7,476.2	503.0	-821.7	-321.7	9.19	8.90	-3.10	
7,743.0	61.17	183.03	7,525.4	429.1	-825.3	-248.6	10.84	10.83	0.64	
7,832.0	65.50	184.95	7,565.4	349.8	-830.9	-169.9	5.23	4.87	2.16	
7,921.0	73.22	185.16	7,596.7	266.9	-838.2	-87.3	8.68	8.67	0.24	
8,010.0	79.26	184.40	7,617.9	180.8	-845.4	-1.5	6.84	6.79	-0.85	
8,099.0	82.98	183.88	7,631.6	93.1	-851.7	85.6	4.22	4.18	-0.58	
8,127.0	84.89	182.96	7,634.6	65.3	-853.4	113.1	7.57	6.83	-3.30	
Final TPZ - 460'FNL, 1431'FEL, Sec.18										
8,188.0	89.06	180.96	7,637.8	4.5	-855.5	173.1	7.57	6.83	-3.27	
8,277.0	89.54	180.38	7,638.9	-84.5	-856.5	260.3	0.85	0.54	-0.65	
8,366.0	91.91	183.91	7,637.7	-173.4	-859.9	348.0	4.78	2.66	3.97	

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8,456.0	91.68	182.72	7,634.9	-263.2	-865.1	436.9	1.35	-0.26	-1.32	
8,545.0	90.29	180.95	7,633.4	-352.2	-867.9	524.5	2.53	-1.56	-1.99	
8,634.0	90.91	180.49	7,632.5	-441.2	-869.0	611.8	0.87	0.70	-0.52	
8,723.0	90.70	182.03	7,631.2	-530.1	-871.0	699.2	1.75	-0.24	1.73	
8,812.0	89.73	183.08	7,630.9	-619.0	-874.9	787.0	1.61	-1.09	1.18	
8,901.0	89.85	182.36	7,631.2	-707.9	-879.2	874.9	0.82	0.13	-0.81	
8,990.0	90.61	181.42	7,630.8	-796.9	-882.1	962.5	1.36	0.85	-1.06	
9,079.0	89.66	180.30	7,630.6	-885.9	-883.4	1,049.8	1.65	-1.07	-1.26	
9,168.0	90.25	179.83	7,630.7	-974.9	-883.5	1,136.9	0.85	0.66	-0.53	
9,257.0	89.25	180.24	7,631.1	-1,063.9	-883.6	1,224.0	1.21	-1.12	0.46	
9,346.0	89.41	179.48	7,632.1	-1,152.9	-883.4	1,311.0	0.87	0.18	-0.85	
9,435.0	89.71	179.12	7,632.8	-1,241.8	-882.3	1,397.8	0.53	0.34	-0.40	
9,524.0	90.63	179.36	7,632.6	-1,330.8	-881.1	1,484.6	1.07	1.03	0.27	
9,613.0	90.15	179.87	7,632.0	-1,419.8	-880.5	1,571.6	0.79	-0.54	0.57	
9,703.0	90.19	180.91	7,631.7	-1,509.8	-881.1	1,659.7	1.16	0.04	1.16	
9,792.0	90.82	180.82	7,630.9	-1,598.8	-882.5	1,747.1	0.72	0.71	-0.10	
9,881.0	89.54	181.53	7,630.6	-1,687.8	-884.3	1,834.5	1.64	-1.44	0.80	
9,970.0	90.10	180.08	7,630.9	-1,776.8	-885.5	1,921.8	1.75	0.63	-1.63	
10,059.0	90.64	179.52	7,630.3	-1,865.8	-885.2	2,008.8	0.87	0.61	-0.63	
10,148.0	91.28	178.97	7,628.8	-1,954.8	-884.1	2,095.6	0.95	0.72	-0.62	
10,237.0	91.12	180.00	7,627.0	-2,043.7	-883.3	2,182.5	1.17	-0.18	1.16	
10,326.0	90.61	180.76	7,625.6	-2,132.7	-883.8	2,269.7	1.03	-0.57	0.85	
10,415.0	90.92	181.40	7,624.4	-2,221.7	-885.5	2,357.0	0.80	0.35	0.72	
10,505.0	91.70	181.86	7,622.4	-2,311.6	-888.1	2,445.6	1.01	0.87	0.51	
10,594.0	91.03	180.88	7,620.3	-2,400.6	-890.2	2,533.0	1.33	-0.75	-1.10	
10,683.0	90.99	182.48	7,618.7	-2,489.5	-892.8	2,620.6	1.80	-0.04	1.80	
10,772.0	89.90	182.84	7,618.0	-2,578.4	-897.0	2,708.4	1.29	-1.22	0.40	
10,861.0	90.38	182.11	7,617.8	-2,667.3	-900.8	2,796.2	0.98	0.54	-0.82	
10,950.0	91.11	182.52	7,616.6	-2,756.3	-904.4	2,883.9	0.94	0.82	0.46	
11,039.0	90.16	180.76	7,615.6	-2,845.2	-906.9	2,971.4	2.25	-1.07	-1.98	
11,128.0	90.62	180.71	7,615.0	-2,934.2	-908.1	3,058.7	0.52	0.52	-0.06	
11,217.0	89.88	180.40	7,614.6	-3,023.2	-908.9	3,146.0	0.90	-0.83	-0.35	
11,306.0	90.89	181.52	7,614.0	-3,112.2	-910.4	3,233.3	1.69	1.13	1.26	
11,395.0	90.00	179.93	7,613.4	-3,201.2	-911.6	3,320.6	2.05	-1.00	-1.79	
11,485.0	90.75	180.78	7,612.8	-3,291.2	-912.1	3,408.8	1.26	0.83	0.94	
11,574.0	90.68	178.47	7,611.7	-3,380.1	-911.5	3,495.7	2.60	-0.08	-2.60	
11,663.0	91.56	179.14	7,609.9	-3,469.1	-909.7	3,582.3	1.24	0.99	0.75	
11,752.0	90.62	179.06	7,608.2	-3,558.1	-908.3	3,669.1	1.06	-1.06	-0.09	
11,841.0	91.00	178.33	7,607.0	-3,647.0	-906.3	3,755.7	0.92	0.43	-0.82	
11,930.0	91.64	179.76	7,604.9	-3,736.0	-904.8	3,842.4	1.76	0.72	1.61	
12,019.0	90.69	181.23	7,603.1	-3,825.0	-905.5	3,929.6	1.97	-1.07	1.65	
12,108.0	91.31	180.96	7,601.6	-3,914.0	-907.2	4,017.0	0.76	0.70	-0.30	
12,197.0	90.78	181.90	7,599.9	-4,002.9	-909.5	4,104.5	1.21	-0.60	1.06	
12,286.0	91.22	181.43	7,598.4	-4,091.9	-912.0	4,192.0	0.72	0.49	-0.53	

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1E-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5079.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5079.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1E-18H-A167	North Reference:	True
Wellbore:	Hingley 1E-18H-A67 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1E-18H-A167 Wellbore #1	Database:	US_EDM

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,375.0	92.01	181.22	7,595.9	-4,180.8	-914.1	4,279.5	0.92	0.89	-0.24
12,449.0	92.52	180.53	7,592.9	-4,254.7	-915.2	4,352.0	1.16	0.69	-0.93
Last Survey Drilled - 12,449' MD									
12,514.0	92.52	180.53	7,590.1	-4,319.7	-915.8	4,415.7	0.00	0.00	0.00
PTB - 466'FSL, 1450'FEL, Sec.18									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,127.0	7,634.6	65.3	-853.4	Final TPZ - 460'FNL, 1431'FEL, Sec.18
12,449.0	7,592.9	-4,254.7	-915.2	Last Survey Drilled - 12,449' MD
12,514.0	7,590.1	-4,319.7	-915.8	PTB - 466'FSL, 1450'FEL, Sec.18

Checked By: _____ Approved By: _____ Date: _____