



Crestone Peak Resources

DJ BASIN

Sec.18-T1N-R67W (HINGLEY)

Hingley 1A-18H-A167

Hingley 1A-18H-A167 Wellbore #1

Survey: Survey #1

Standard Survey Report

03 October, 2019



CRESTONE PEAK
RESOURCES

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1A-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5077.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5077.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1A-18H-A167	North Reference:	True
Wellbore:	Hingley 1A-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1A-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 1A-18H-A167					
Well Position	+N/-S	0.0 ft	Northing:	1,264,132.73 usft	Latitude:	40.057007
	+E/-W	0.0 ft	Easting:	3,160,624.47 usft	Longitude:	-104.926172
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,054.0 ft

Wellbore	Hingley 1A-18H-A167 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/28/2019	8.20	66.38	51,993

Design	Hingley 1A-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	202.95	

Survey Program	Date	10/2/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
172.0	12,664.0	Survey #1 (Hingley 1A-18H-A167 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	
172.0	0.35	213.75	172.0	-0.4	-0.3	0.5	0.20	0.20	0.00	
262.0	1.85	269.65	262.0	-0.7	-1.9	1.4	1.87	1.67	62.11	
335.0	3.52	280.27	334.9	-0.3	-5.3	2.3	2.38	2.29	14.55	
409.0	4.56	283.90	408.7	0.8	-10.4	3.3	1.45	1.41	4.91	
498.0	5.54	283.80	497.4	2.7	-18.0	4.5	1.10	1.10	-0.11	
588.0	6.99	285.24	586.8	5.2	-27.5	5.9	1.62	1.61	1.60	
673.0	9.21	292.83	671.0	9.2	-38.7	6.7	2.89	2.61	8.93	
759.0	11.85	299.64	755.5	16.2	-52.8	5.6	3.39	3.07	7.92	
845.0	13.65	301.43	839.4	25.9	-69.1	3.1	2.14	2.09	2.08	

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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)	
935.0	14.86	299.84	926.6	37.2	-88.2	0.2	1.41	1.34	-1.77	
1,021.0	15.41	299.76	1,009.6	48.3	-107.7	-2.5	0.64	0.64	-0.09	
1,107.0	16.45	299.31	1,092.3	59.9	-128.2	-5.2	1.22	1.21	-0.52	
1,196.0	16.75	299.28	1,177.6	72.4	-150.4	-8.0	0.34	0.34	-0.03	
1,286.0	17.25	299.13	1,263.7	85.2	-173.3	-10.9	0.56	0.56	-0.17	
1,372.0	15.58	296.41	1,346.2	96.6	-194.8	-13.0	2.14	-1.94	-3.16	
1,462.0	16.00	297.34	1,432.8	107.6	-216.7	-14.7	0.54	0.47	1.03	
1,553.0	15.70	293.01	1,520.3	118.2	-239.1	-15.6	1.34	-0.33	-4.76	
1,642.0	16.26	293.28	1,605.9	127.9	-261.7	-15.7	0.63	0.63	0.30	
1,728.0	14.54	297.50	1,688.8	137.6	-282.3	-16.6	2.39	-2.00	4.91	
1,818.0	14.72	297.79	1,775.9	148.1	-302.4	-18.5	0.22	0.20	0.32	
1,907.0	15.09	297.69	1,861.9	158.8	-322.7	-20.4	0.42	0.42	-0.11	
1,996.0	14.98	296.46	1,947.9	169.3	-343.3	-22.1	0.38	-0.12	-1.38	
2,086.0	14.91	295.52	2,034.8	179.5	-364.1	-23.3	0.28	-0.08	-1.04	
2,175.0	14.90	297.16	2,120.8	189.6	-384.6	-24.7	0.47	-0.01	1.84	
2,265.0	14.66	298.00	2,207.8	200.3	-405.0	-26.5	0.36	-0.27	0.93	
2,354.0	13.99	297.82	2,294.1	210.6	-424.4	-28.4	0.75	-0.75	-0.20	
2,443.0	15.10	296.22	2,380.2	220.7	-444.4	-30.0	1.33	1.25	-1.80	
2,532.0	14.85	297.73	2,466.2	231.1	-464.9	-31.6	0.52	-0.28	1.70	
2,554.0	15.12	298.99	2,487.4	233.8	-469.9	-32.2	1.92	1.23	5.73	
2,731.0	15.54	296.79	2,658.1	255.7	-511.2	-36.2	0.41	0.24	-1.24	
2,820.0	16.63	296.42	2,743.7	266.8	-533.3	-37.8	1.23	1.22	-0.42	
2,909.0	15.44	294.05	2,829.2	277.3	-555.5	-38.8	1.53	-1.34	-2.66	
2,999.0	15.82	295.88	2,915.9	287.5	-577.5	-39.6	0.69	0.42	2.03	
3,088.0	16.12	297.92	3,001.4	298.6	-599.3	-41.3	0.72	0.34	2.29	
3,176.0	14.82	297.10	3,086.2	309.4	-620.1	-43.2	1.50	-1.48	-0.93	
3,266.0	14.71	297.22	3,173.3	319.9	-640.5	-44.9	0.13	-0.12	0.13	
3,355.0	15.33	299.01	3,259.2	330.8	-660.9	-46.9	0.87	0.70	2.01	
3,444.0	16.83	296.22	3,344.8	342.2	-682.7	-48.9	1.90	1.69	-3.13	
3,533.0	16.59	294.51	3,430.0	353.1	-705.8	-50.0	0.61	-0.27	-1.92	
3,622.0	15.76	297.44	3,515.5	364.0	-728.1	-51.3	1.31	-0.93	3.29	
3,711.0	15.67	296.70	3,601.1	374.9	-749.6	-53.0	0.25	-0.10	-0.83	
3,825.0	16.21	298.89	3,710.8	389.5	-777.3	-55.7	0.71	0.47	1.92	
3,914.0	15.81	297.83	3,796.3	401.2	-798.9	-58.0	0.56	-0.45	-1.19	
4,003.0	16.19	297.76	3,881.9	412.6	-820.6	-60.1	0.43	0.43	-0.08	
4,092.0	16.51	298.06	3,967.3	424.4	-842.7	-62.3	0.37	0.36	0.34	
4,181.0	16.67	296.16	4,052.6	436.0	-865.3	-64.1	0.64	0.18	-2.13	
4,270.0	15.99	292.57	4,138.0	446.3	-888.1	-64.7	1.37	-0.76	-4.03	
4,359.0	15.15	296.37	4,223.7	456.2	-909.8	-65.3	1.48	-0.94	4.27	
4,448.0	14.78	296.09	4,309.7	466.3	-930.5	-66.7	0.42	-0.42	-0.31	
4,537.0	15.43	297.12	4,395.6	476.7	-951.2	-68.1	0.79	0.73	1.16	
4,626.0	14.80	297.29	4,481.5	487.3	-971.8	-69.9	0.71	-0.71	0.19	
4,715.0	15.45	298.82	4,567.4	498.2	-992.3	-71.9	0.86	0.73	1.72	
4,804.0	16.08	295.85	4,653.1	509.3	-1,013.8	-73.8	1.15	0.71	-3.34	

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Survey										
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4,893.0	16.43	295.68	4,738.5	520.2	-1,036.2	-75.0	0.40	0.39	-0.19	
4,982.0	17.70	296.74	4,823.6	531.7	-1,059.7	-76.5	1.47	1.43	1.19	
5,071.0	17.84	296.54	4,908.4	543.9	-1,083.9	-78.2	0.17	0.16	-0.22	
5,160.0	15.94	296.03	4,993.5	555.3	-1,107.1	-79.8	2.14	-2.13	-0.57	
5,249.0	13.30	294.50	5,079.6	564.9	-1,127.4	-80.7	3.00	-2.97	-1.72	
5,338.0	14.38	297.74	5,166.1	574.3	-1,146.5	-81.9	1.49	1.21	3.64	
5,427.0	16.34	300.54	5,251.9	585.8	-1,167.1	-84.5	2.35	2.20	3.15	
5,516.0	17.11	298.53	5,337.1	598.5	-1,189.4	-87.4	1.08	0.87	-2.26	
5,605.0	14.66	298.21	5,422.7	610.0	-1,210.8	-89.7	2.75	-2.75	-0.36	
5,695.0	13.33	291.80	5,510.0	619.3	-1,230.5	-90.5	2.27	-1.48	-7.12	
5,784.0	13.81	295.74	5,596.6	627.7	-1,249.6	-90.9	1.17	0.54	4.43	
5,873.0	15.44	297.19	5,682.7	637.7	-1,269.7	-92.3	1.88	1.83	1.63	
5,962.0	15.88	299.80	5,768.4	649.2	-1,290.8	-94.6	0.93	0.49	2.93	
6,051.0	16.34	297.75	5,853.9	661.1	-1,312.4	-97.1	0.82	0.52	-2.30	
6,140.0	16.35	298.29	5,939.3	672.8	-1,334.5	-99.3	0.17	0.01	0.61	
6,229.0	15.85	295.18	6,024.8	683.9	-1,356.6	-100.9	1.12	-0.56	-3.49	
6,318.0	16.41	297.31	6,110.3	694.9	-1,378.7	-102.4	0.92	0.63	2.39	
6,407.0	15.60	295.36	6,195.8	705.8	-1,400.7	-103.8	1.09	-0.91	-2.19	
6,496.0	15.70	292.88	6,281.5	715.6	-1,422.6	-104.3	0.76	0.11	-2.79	
6,585.0	15.02	295.67	6,367.4	725.3	-1,444.1	-104.9	1.13	-0.76	3.13	
6,674.0	16.55	298.76	6,453.0	736.4	-1,465.6	-106.7	1.96	1.72	3.47	
6,763.0	16.52	302.09	6,538.3	749.2	-1,487.5	-110.0	1.07	-0.03	3.74	
6,852.0	16.10	295.67	6,623.7	761.2	-1,509.3	-112.6	2.08	-0.47	-7.21	
6,941.0	15.66	293.99	6,709.4	771.5	-1,531.4	-113.4	0.71	-0.49	-1.89	
7,030.0	14.88	294.21	6,795.2	781.0	-1,552.8	-113.9	0.88	-0.88	0.25	
7,119.0	16.26	273.15	6,881.0	786.4	-1,575.7	-109.9	6.50	1.55	-23.66	
7,208.0	18.32	247.41	6,966.1	781.7	-1,601.1	-95.7	8.82	2.31	-28.92	
7,297.0	21.76	221.53	7,049.9	764.0	-1,625.0	-70.0	10.59	3.87	-29.08	
7,386.0	26.21	201.95	7,131.3	733.3	-1,643.3	-34.6	10.18	5.00	-22.00	
7,475.0	28.29	201.40	7,210.4	695.5	-1,658.3	6.1	2.35	2.34	-0.62	
7,565.0	30.40	202.01	7,288.9	654.5	-1,674.7	50.2	2.37	2.34	0.68	
7,654.0	38.56	205.44	7,362.2	608.5	-1,695.1	100.5	9.42	9.17	3.85	
7,743.0	46.54	200.65	7,427.7	553.1	-1,718.4	160.6	9.67	8.97	-5.38	
7,832.0	54.11	194.79	7,484.5	487.9	-1,739.0	228.7	9.89	8.51	-6.58	
7,921.0	62.18	186.77	7,531.5	413.7	-1,752.9	302.4	11.86	9.07	-9.01	
8,010.0	67.89	186.60	7,569.0	333.6	-1,762.3	379.8	6.42	6.42	-0.19	
8,099.0	72.29	184.61	7,599.3	250.4	-1,770.5	459.7	5.37	4.94	-2.24	
8,188.0	75.67	181.99	7,623.9	165.0	-1,775.4	540.2	4.74	3.80	-2.94	
8,277.0	80.70	181.36	7,642.1	77.9	-1,777.9	621.4	5.69	5.65	-0.71	
8,277.2	80.70	181.36	7,642.2	77.7	-1,777.9	621.6	0.00	0.00	0.00	
Final TPZ - 460'FNL, 2396'FEL, Sec.18										
8,366.0	90.27	182.54	7,649.1	-10.6	-1,780.9	704.1	10.86	10.78	1.33	
8,455.0	90.40	181.55	7,648.6	-99.6	-1,784.1	787.3	1.12	0.15	-1.11	

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8,545.0	90.16	180.59	7,648.2	-189.5	-1,785.8	870.8	1.10	-0.27	-1.07	
8,634.0	90.15	180.37	7,647.9	-278.5	-1,786.5	953.0	0.25	-0.01	-0.25	
8,723.0	91.44	181.48	7,646.7	-367.5	-1,788.0	1,035.5	1.91	1.45	1.25	
8,812.0	90.76	180.80	7,645.0	-456.5	-1,789.7	1,118.1	1.08	-0.76	-0.76	
8,901.0	90.85	180.98	7,643.7	-545.5	-1,791.1	1,200.6	0.23	0.10	0.20	
8,990.0	90.36	180.34	7,642.8	-634.5	-1,792.1	1,283.0	0.91	-0.55	-0.72	
9,079.0	90.43	179.27	7,642.2	-723.5	-1,791.8	1,364.8	1.20	0.08	-1.20	
9,168.0	91.01	180.27	7,641.1	-812.4	-1,791.5	1,446.6	1.30	0.65	1.12	
9,257.0	90.68	179.49	7,639.7	-901.4	-1,791.3	1,528.5	0.95	-0.37	-0.88	
9,346.0	90.29	180.85	7,639.0	-990.4	-1,791.6	1,610.5	1.59	-0.44	1.53	
9,435.0	91.04	180.30	7,638.0	-1,079.4	-1,792.5	1,692.8	1.04	0.84	-0.62	
9,524.0	92.51	182.38	7,635.2	-1,168.3	-1,794.5	1,775.5	2.86	1.65	2.34	
9,613.0	92.57	181.85	7,631.3	-1,257.2	-1,797.8	1,858.6	0.60	0.07	-0.60	
9,702.0	90.10	181.08	7,629.2	-1,346.1	-1,800.1	1,941.4	2.91	-2.78	-0.87	
9,792.0	89.95	180.55	7,629.1	-1,436.1	-1,801.4	2,024.8	0.61	-0.17	-0.59	
9,881.0	89.57	179.94	7,629.5	-1,525.1	-1,801.8	2,106.9	0.81	-0.43	-0.69	
9,970.0	89.96	179.17	7,629.9	-1,614.1	-1,801.1	2,188.6	0.97	0.44	-0.87	
10,059.0	90.34	180.14	7,629.6	-1,703.1	-1,800.5	2,270.3	1.17	0.43	1.09	
10,148.0	90.92	181.25	7,628.7	-1,792.1	-1,801.6	2,352.7	1.41	0.65	1.25	
10,237.0	90.03	180.92	7,627.9	-1,881.1	-1,803.3	2,435.3	1.07	-1.00	-0.37	
10,326.0	91.14	181.41	7,627.0	-1,970.1	-1,805.1	2,517.9	1.36	1.25	0.55	
10,415.0	91.05	181.47	7,625.3	-2,059.0	-1,807.3	2,600.7	0.12	-0.10	0.07	
10,504.0	89.71	181.07	7,624.7	-2,148.0	-1,809.3	2,683.4	1.57	-1.51	-0.45	
10,594.0	92.07	180.87	7,623.3	-2,238.0	-1,810.8	2,766.8	2.63	2.62	-0.22	
10,683.0	91.97	181.17	7,620.2	-2,326.9	-1,812.4	2,849.4	0.36	-0.11	0.34	
10,772.0	91.81	181.47	7,617.3	-2,415.8	-1,814.5	2,932.1	0.38	-0.18	0.34	
10,861.0	91.65	180.91	7,614.6	-2,504.8	-1,816.3	3,014.7	0.65	-0.18	-0.63	
10,950.0	90.38	179.81	7,613.0	-2,593.7	-1,816.9	3,096.8	1.89	-1.43	-1.24	
11,039.0	92.10	178.53	7,611.1	-2,682.7	-1,815.6	3,178.3	2.41	1.93	-1.44	
11,128.0	92.33	178.70	7,607.6	-2,771.6	-1,813.4	3,259.3	0.32	0.26	0.19	
11,217.0	89.84	179.21	7,605.9	-2,860.6	-1,811.8	3,340.6	2.86	-2.80	0.57	
11,306.0	89.26	178.49	7,606.6	-2,949.5	-1,810.0	3,421.8	1.04	-0.65	-0.81	
11,395.0	89.85	179.78	7,607.3	-3,038.5	-1,808.7	3,503.2	1.59	0.66	1.45	
11,485.0	89.94	181.26	7,607.5	-3,128.5	-1,809.5	3,586.4	1.65	0.10	1.64	
11,574.0	90.29	180.95	7,607.3	-3,217.5	-1,811.2	3,669.0	0.53	0.39	-0.35	
11,663.0	90.43	179.53	7,606.8	-3,306.5	-1,811.6	3,751.1	1.60	0.16	-1.60	
11,752.0	91.48	179.99	7,605.3	-3,395.5	-1,811.2	3,832.9	1.29	1.18	0.52	
11,841.0	90.43	180.20	7,603.8	-3,484.5	-1,811.4	3,914.9	1.20	-1.18	0.24	
11,930.0	90.36	181.83	7,603.2	-3,573.5	-1,812.9	3,997.5	1.83	-0.08	1.83	
12,019.0	90.08	180.55	7,602.8	-3,662.4	-1,814.8	4,080.2	1.47	-0.31	-1.44	
12,108.0	89.98	181.93	7,602.8	-3,751.4	-1,816.7	4,162.8	1.55	-0.11	1.55	
12,197.0	89.78	181.41	7,603.0	-3,840.4	-1,819.3	4,245.8	0.63	-0.22	-0.58	
12,286.0	89.50	180.69	7,603.5	-3,929.4	-1,820.9	4,328.4	0.87	-0.31	-0.81	
12,375.0	89.34	179.86	7,604.4	-4,018.3	-1,821.4	4,410.5	0.95	-0.18	-0.93	

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1A-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5077.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5077.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1A-18H-A167	North Reference:	True
Wellbore:	Hingley 1A-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1A-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)
12,464.0	89.08	179.87	7,605.7	-4,107.3	-1,821.2	4,492.3	0.29	-0.29	0.01
12,553.0	88.69	178.87	7,607.4	-4,196.3	-1,820.2	4,573.9	1.21	-0.44	-1.12
12,599.0	88.80	178.46	7,608.4	-4,242.3	-1,819.1	4,615.8	0.92	0.24	-0.89
Last survey - 12,599' MD									
12,664.0	88.80	178.46	7,609.8	-4,307.3	-1,817.4	4,675.0	0.00	0.00	0.00
PTB - 466'FSL, 2391'FEL, Sec.18									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,277.2	7,642.2	77.7	-1,777.9	Final TPZ - 460'FNL, 2396'FEL, Sec.18
12,599.0	7,608.4	-4,242.3	-1,819.1	Last survey - 12,599' MD
12,664.0	7,609.8	-4,307.3	-1,817.4	PTB - 466'FSL, 2391'FEL, Sec.18

Checked By: _____ Approved By: _____ Date: _____