



Crestone Peak Resources

DJ BASIN

Sec.18-T1N-R67W (HINGLEY)

Hingley 1I-18H-A167

Hingley 1I-18H-A167 Wellbore #1

Survey: Survey #1

Standard Survey Report

31 October, 2019



CRESTONE PEAK
RESOURCES

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 11-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5081.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5081.0ft (Ensign 153 RKB - 23')
Well:	Hingley 11-18H-A167	North Reference:	True
Wellbore:	Hingley 11-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 11-18H-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 11-18H-A167					
Well Position	+N/-S	0.0 ft	Northing:	1,264,132.88 usft	Latitude:	40.057006
	+E/-W	0.0 ft	Easting:	3,160,704.25 usft	Longitude:	-104.925887
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,058.0 ft

Wellbore	Hingley 11-18H-A167 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/22/2019	8.20	66.38	51,975

Design	Hingley 11-18H-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	179.91	

Survey Program		Date	10/31/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
112.0	12,432.0	Survey #1 (Hingley 11-18H-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
	112.0	0.35	59.15	112.0	0.2	0.3	-0.2	0.31	0.31	0.00
	202.0	2.20	10.63	202.0	2.0	0.8	-2.0	2.21	2.06	-53.91
	294.0	2.29	8.53	293.9	5.6	1.4	-5.6	0.13	0.10	-2.28
	384.0	2.38	17.75	383.8	9.1	2.3	-9.1	0.43	0.10	10.24
	473.0	3.43	13.36	472.7	13.5	3.5	-13.5	1.21	1.18	-4.93
	563.0	4.66	10.28	562.5	19.7	4.7	-19.7	1.39	1.37	-3.42
	652.0	5.81	8.44	651.1	27.7	6.0	-27.7	1.31	1.29	-2.07
	715.0	6.08	5.75	713.8	34.2	6.8	-34.2	0.62	0.43	-4.27
	805.0	7.02	7.20	803.2	44.4	8.0	-44.4	1.06	1.04	1.61

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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)	
891.0	7.65	7.74	888.5	55.3	9.4	-55.3	0.74	0.73	0.63	
977.0	8.36	5.96	973.6	67.2	10.9	-67.1	0.87	0.83	-2.07	
1,063.0	9.44	6.66	1,058.6	80.4	12.3	-80.4	1.26	1.26	0.81	
1,152.0	10.00	7.70	1,146.3	95.3	14.2	-95.3	0.66	0.63	1.17	
1,242.0	8.08	6.24	1,235.2	109.3	15.9	-109.3	2.15	-2.13	-1.62	
1,331.0	8.38	7.39	1,323.3	122.0	17.5	-121.9	0.38	0.34	1.29	
1,418.0	7.22	1.88	1,409.5	133.7	18.5	-133.7	1.58	-1.33	-6.33	
1,508.0	7.39	0.79	1,498.8	145.2	18.7	-145.1	0.24	0.19	-1.21	
1,598.0	7.63	2.17	1,588.0	156.9	19.0	-156.9	0.33	0.27	1.53	
1,684.0	6.11	5.68	1,673.4	167.2	19.7	-167.1	1.83	-1.77	4.08	
1,774.0	6.77	7.46	1,762.8	177.2	20.9	-177.2	0.77	0.73	1.98	
1,863.0	5.52	357.76	1,851.3	186.7	21.4	-186.6	1.82	-1.40	-10.90	
1,952.0	5.32	355.73	1,939.9	195.1	20.9	-195.0	0.31	-0.22	-2.28	
2,041.0	5.61	355.86	2,028.5	203.5	20.3	-203.5	0.33	0.33	0.15	
2,131.0	6.01	358.53	2,118.0	212.6	19.8	-212.6	0.54	0.44	2.97	
2,221.0	6.13	359.81	2,207.5	222.1	19.7	-222.1	0.20	0.13	1.42	
2,310.0	6.10	4.60	2,296.0	231.6	20.1	-231.6	0.57	-0.03	5.38	
2,399.0	5.82	9.56	2,384.5	240.8	21.2	-240.7	0.66	-0.31	5.57	
2,489.0	5.74	11.67	2,474.1	249.7	22.9	-249.6	0.25	-0.09	2.34	
2,533.0	5.74	14.86	2,517.9	254.0	23.9	-253.9	0.73	0.00	7.25	
2,642.0	5.67	19.05	2,626.3	264.3	27.0	-264.3	0.39	-0.06	3.84	
2,731.0	6.05	5.41	2,714.9	273.1	28.9	-273.1	1.62	0.43	-15.33	
2,820.0	6.91	356.86	2,803.3	283.2	29.1	-283.1	1.45	0.97	-9.61	
2,909.0	7.25	357.41	2,891.6	294.1	28.5	-294.1	0.39	0.38	0.62	
2,998.0	7.48	3.00	2,979.9	305.5	28.6	-305.5	0.85	0.26	6.28	
3,087.0	6.61	358.61	3,068.2	316.4	28.7	-316.4	1.15	-0.98	-4.93	
3,176.0	6.98	0.18	3,156.6	326.9	28.6	-326.9	0.47	0.42	1.76	
3,266.0	7.23	0.83	3,245.9	338.1	28.7	-338.0	0.29	0.28	0.72	
3,355.0	7.79	4.64	3,334.1	349.7	29.3	-349.6	0.84	0.63	4.28	
3,444.0	6.79	359.50	3,422.4	361.0	29.7	-360.9	1.34	-1.12	-5.78	
3,533.0	6.84	6.65	3,510.8	371.5	30.3	-371.4	0.95	0.06	8.03	
3,622.0	5.73	2.32	3,599.2	381.2	31.1	-381.1	1.36	-1.25	-4.87	
3,733.0	6.16	7.05	3,709.6	392.6	32.1	-392.6	0.59	0.39	4.26	
3,822.0	6.76	0.93	3,798.1	402.6	32.7	-402.6	1.03	0.67	-6.88	
3,912.0	6.96	3.26	3,887.4	413.4	33.1	-413.3	0.38	0.22	2.59	
4,000.0	5.70	0.10	3,974.9	423.0	33.4	-423.0	1.49	-1.43	-3.59	
4,089.0	6.18	5.46	4,063.4	432.2	33.9	-432.2	0.82	0.54	6.02	
4,178.0	6.82	4.56	4,151.8	442.3	34.8	-442.2	0.73	0.72	-1.01	
4,267.0	7.40	7.32	4,240.2	453.2	35.9	-453.2	0.76	0.65	3.10	
4,356.0	6.13	5.75	4,328.5	463.6	37.1	-463.6	1.44	-1.43	-1.76	
4,445.0	7.08	4.60	4,416.9	473.8	38.0	-473.8	1.08	1.07	-1.29	
4,534.0	7.11	0.37	4,505.3	484.8	38.5	-484.7	0.59	0.03	-4.75	
4,623.0	7.80	2.81	4,593.5	496.3	38.9	-496.3	0.85	0.78	2.74	
4,712.0	6.44	1.93	4,681.8	507.4	39.3	-507.3	1.53	-1.53	-0.99	

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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)
4,801.0	7.25	358.31	4,770.2	518.0	39.3	-517.9	1.03	0.91	-4.07
4,890.0	8.08	5.21	4,858.4	529.8	39.7	-529.8	1.39	0.93	7.75
4,980.0	6.68	4.78	4,947.6	541.3	40.7	-541.3	1.56	-1.56	-0.48
5,069.0	6.64	3.76	5,036.0	551.6	41.5	-551.6	0.14	-0.04	-1.15
5,158.0	6.78	4.15	5,124.4	562.0	42.2	-561.9	0.17	0.16	0.44
5,247.0	7.76	10.47	5,212.7	573.1	43.7	-573.1	1.42	1.10	7.10
5,336.0	6.96	6.78	5,301.0	584.4	45.4	-584.3	1.04	-0.90	-4.15
5,425.0	7.25	3.63	5,389.3	595.4	46.4	-595.3	0.55	0.33	-3.54
5,514.0	6.65	359.69	5,477.7	606.1	46.7	-606.1	0.86	-0.67	-4.43
5,603.0	6.56	354.17	5,566.1	616.3	46.2	-616.3	0.72	-0.10	-6.20
5,692.0	6.82	352.22	5,654.5	626.6	45.0	-626.6	0.39	0.29	-2.19
5,781.0	7.09	358.96	5,742.8	637.4	44.1	-637.3	0.97	0.30	7.57
5,870.0	7.57	358.56	5,831.1	648.7	43.9	-648.6	0.54	0.54	-0.45
5,959.0	6.67	11.14	5,919.4	659.6	44.7	-659.6	2.02	-1.01	14.13
6,048.0	6.72	12.58	6,007.8	669.8	46.9	-669.7	0.20	0.06	1.62
6,137.0	7.05	12.48	6,096.1	680.2	49.2	-680.1	0.37	0.37	-0.11
6,226.0	6.42	11.62	6,184.5	690.4	51.4	-690.3	0.72	-0.71	-0.97
6,315.0	5.46	358.84	6,273.1	699.5	52.3	-699.4	1.83	-1.08	-14.36
6,404.0	6.42	4.81	6,361.6	708.7	52.6	-708.6	1.28	1.08	6.71
6,493.0	5.32	3.65	6,450.1	717.8	53.3	-717.7	1.24	-1.24	-1.30
6,582.0	5.54	7.08	6,538.7	726.2	54.1	-726.1	0.44	0.25	3.85
6,671.0	6.39	10.30	6,627.2	735.3	55.5	-735.2	1.03	0.96	3.62
6,760.0	5.37	9.68	6,715.8	744.3	57.1	-744.2	1.15	-1.15	-0.70
6,849.0	1.91	207.97	6,804.7	747.1	57.1	-747.0	8.10	-3.89	-181.70
6,938.0	6.94	178.00	6,893.4	740.4	56.6	-740.3	6.03	5.65	-33.67
7,028.0	10.20	180.22	6,982.4	727.0	56.8	-726.9	3.64	3.62	2.47
7,117.0	12.07	183.75	7,069.7	709.8	56.1	-709.7	2.24	2.10	3.97
7,206.0	18.25	182.54	7,155.5	686.6	54.9	-686.5	6.95	6.94	-1.36
7,295.0	24.20	180.46	7,238.5	654.4	54.1	-654.3	6.74	6.69	-2.34
7,384.0	28.86	180.90	7,318.1	614.7	53.6	-614.6	5.24	5.24	0.49
7,473.0	38.76	181.65	7,391.9	565.2	52.5	-565.1	11.13	11.12	0.84
7,562.0	48.69	176.88	7,456.2	503.8	53.5	-503.7	11.75	11.16	-5.36
7,651.0	60.49	178.10	7,507.7	431.5	56.6	-431.4	13.31	13.26	1.37
7,740.0	69.08	180.67	7,545.5	351.1	57.4	-351.0	10.00	9.65	2.89
7,830.0	75.34	180.92	7,573.0	265.4	56.2	-265.3	6.96	6.96	0.28
7,919.0	80.25	182.39	7,591.8	178.5	53.7	-178.4	5.75	5.52	1.65
8,008.0	84.39	181.24	7,603.7	90.3	50.9	-90.3	4.82	4.65	-1.29
8,045.6	86.10	180.95	7,606.9	52.9	50.2	-52.8	4.60	4.54	-0.77
Final TPZ - 460°FNL, 488°FEL									
8,097.0	88.43	180.56	7,609.3	1.6	49.5	-1.5	4.60	4.54	-0.76
8,186.0	88.03	179.52	7,612.1	-87.4	49.5	87.5	1.25	-0.45	-1.17
8,275.0	89.05	180.85	7,614.3	-176.4	49.2	176.4	1.88	1.15	1.49
8,364.0	89.61	179.97	7,615.4	-265.4	48.6	265.4	1.17	0.63	-0.99

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8,453.0	90.24	180.95	7,615.5	-354.4	47.8	354.4	1.31	0.71	1.10
8,542.0	90.34	179.98	7,615.0	-443.4	47.1	443.4	1.10	0.11	-1.09
8,631.0	90.21	180.87	7,614.6	-532.3	46.5	532.4	1.01	-0.15	1.00
8,720.0	89.38	180.06	7,614.9	-621.3	45.7	621.4	1.30	-0.93	-0.91
8,809.0	88.87	181.50	7,616.3	-710.3	44.5	710.4	1.72	-0.57	1.62
8,899.0	89.99	181.45	7,617.2	-800.3	42.2	800.4	1.25	1.24	-0.06
8,987.0	90.57	180.88	7,616.7	-888.3	40.4	888.3	0.92	0.66	-0.65
9,076.0	89.55	181.26	7,616.7	-977.2	38.8	977.3	1.22	-1.15	0.43
9,166.0	88.89	180.32	7,617.9	-1,067.2	37.5	1,067.3	1.28	-0.73	-1.04
9,255.0	89.42	179.78	7,619.2	-1,156.2	37.4	1,156.3	0.85	0.60	-0.61
9,344.0	89.90	179.08	7,619.7	-1,245.2	38.3	1,245.3	0.95	0.54	-0.79
9,433.0	89.82	180.10	7,619.9	-1,334.2	39.0	1,334.3	1.15	-0.09	1.15
9,522.0	88.85	180.70	7,621.0	-1,423.2	38.3	1,423.3	1.28	-1.09	0.67
9,611.0	88.52	181.07	7,623.0	-1,512.2	37.0	1,512.2	0.56	-0.37	0.42
9,700.0	88.17	181.24	7,625.6	-1,601.1	35.2	1,601.2	0.44	-0.39	0.19
9,789.0	89.82	181.43	7,627.1	-1,690.1	33.1	1,690.1	1.87	1.85	0.21
9,878.0	90.08	180.75	7,627.2	-1,779.1	31.4	1,779.1	0.82	0.29	-0.76
9,968.0	90.59	180.44	7,626.7	-1,869.0	30.5	1,869.1	0.66	0.57	-0.34
10,057.0	90.96	179.88	7,625.5	-1,958.0	30.2	1,958.1	0.75	0.42	-0.63
10,146.0	91.57	181.35	7,623.5	-2,047.0	29.3	2,047.1	1.79	0.69	1.65
10,235.0	90.63	182.09	7,621.8	-2,135.9	26.6	2,136.0	1.34	-1.06	0.83
10,324.0	91.01	180.32	7,620.5	-2,224.9	24.7	2,225.0	2.03	0.43	-1.99
10,413.0	91.69	180.11	7,618.4	-2,313.9	24.4	2,313.9	0.80	0.76	-0.24
10,502.0	90.62	180.05	7,616.6	-2,402.9	24.3	2,402.9	1.20	-1.20	-0.07
10,591.0	91.29	179.50	7,615.2	-2,491.9	24.6	2,491.9	0.97	0.75	-0.62
10,680.0	91.59	181.22	7,612.9	-2,580.8	24.1	2,580.9	1.96	0.34	1.93
10,769.0	92.23	180.64	7,610.0	-2,669.8	22.6	2,669.8	0.97	0.72	-0.65
10,858.0	91.10	181.89	7,607.4	-2,758.7	20.6	2,758.7	1.89	-1.27	1.40
10,947.0	91.22	182.95	7,605.6	-2,847.6	16.9	2,847.6	1.20	0.13	1.19
11,037.0	89.85	180.04	7,604.7	-2,937.6	14.5	2,937.6	3.57	-1.52	-3.23
11,126.0	90.10	178.72	7,604.8	-3,026.5	15.5	3,026.6	1.51	0.28	-1.48
11,215.0	90.83	178.35	7,604.1	-3,115.5	17.8	3,115.5	0.92	0.82	-0.42
11,304.0	89.76	177.59	7,603.6	-3,204.5	20.9	3,204.5	1.47	-1.20	-0.85
11,393.0	88.96	180.25	7,604.6	-3,293.4	22.6	3,293.5	3.12	-0.90	2.99
11,482.0	88.88	179.76	7,606.3	-3,382.4	22.6	3,382.4	0.56	-0.09	-0.55
11,571.0	89.24	180.73	7,607.7	-3,471.4	22.2	3,471.4	1.16	0.40	1.09
11,660.0	90.27	183.82	7,608.1	-3,560.3	18.7	3,560.3	3.66	1.16	3.47
11,749.0	90.82	182.77	7,607.3	-3,649.2	13.6	3,649.2	1.33	0.62	-1.18
11,838.0	92.60	181.99	7,604.6	-3,738.0	9.9	3,738.0	2.18	2.00	-0.88
11,927.0	91.38	181.45	7,601.5	-3,826.9	7.2	3,826.9	1.50	-1.37	-0.61
12,017.0	91.22	182.07	7,599.5	-3,916.9	4.4	3,916.9	0.71	-0.18	0.69
12,106.0	90.83	179.97	7,597.9	-4,005.8	2.9	4,005.8	2.40	-0.44	-2.36
12,195.0	90.80	179.41	7,596.6	-4,094.8	3.3	4,094.8	0.63	-0.03	-0.63
12,284.0	90.84	178.87	7,595.3	-4,183.8	4.7	4,183.8	0.61	0.04	-0.61

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1I-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5081.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5081.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1I-18H-A167	North Reference:	True
Wellbore:	Hingley 1I-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1I-18H-A167 Wellbore #1	Database:	US_EDM

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)
12,367.0	91.39	179.25	7,593.7	-4,266.8	6.0	4,266.8	0.81	0.66	0.46
Last Survey - 12,367' MD									
12,432.0	91.39	179.25	7,592.1	-4,331.8	6.9	4,331.8	0.00	0.00	0.00
PTB - 466'FSL, 487'FEL									

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
8,045.6	7,606.9	52.9	50.2	Final TPZ - 460'FNL, 488'FEL	
12,367.0	7,593.7	-4,266.8	6.0	Last Survey - 12,367' MD	
12,432.0	7,592.1	-4,331.8	6.9	PTB - 466'FSL, 487'FEL	

Checked By: _____ Approved By: _____ Date: _____