



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	561.25	7.22	162.95	560.29	-21.75	6.67	2.00	162.95	-21.26	
4	6847.20	7.22	162.95	6796.33	-777.57	238.43	0.00	0.00	-760.29	
5	8058.44	90.00	0.17	7598.00	-66.65	270.64	8.00	-162.65	-48.79	HINGLEY 3H-18H-N167 TPZ
6	12449.81	90.00	0.17	7598.00	4324.69	283.74	0.00	0.00	4333.99	HINGLEY 3H-18H-N167 BH

The map displays the following borehole locations and depths (TVD):

- HINGLEY 3A-18H-N167 BHL
- HINGLEY 3B-18H-N167 BHL
- HINGLEY 3C-18H-N167 BHL
- HINGLEY 3D-18H-N167 BHL
- HINGLEY 3E-18H-N167 BHL
- HINGLEY 3F-18H-N167 BHL
- HINGLEY 3G-18H-N167 BHL
- HINGLEY 3H-18H-N167 BHL
- HINGLEY 3I-18H-N167 BHL
- HINGLEY 3J-18H-N167 BHL
- HINGLEY 3K-18H-N167 BHL
- HINGLEY 1A TPZ OLD
- HINGLEY 1B TD @ 4910' TVD
- HINGLEY 1C TD @ 4910' TVD
- HINGLEY 1D TD @ 4910' TVD
- HINGLEY 1E BHL 1.19'
- HINGLEY 1F TPZ OLD
- HINGLEY 2J TD @ 8348' TVD
- HINGLEY 2K TD @ 8348' TVD
- HINGLEY 2L TD @ 8348' TVD
- HINGLEY 2M TD @ 8348' TVD
- HINGLEY 2N TD @ 8348' TVD
- HINGLEY 2O TD @ 8348' TVD
- HINGLEY 2P TD @ 8348' TVD
- HINGLEY 2Q TD @ 8348' TVD
- HINGLEY 2R TD @ 8348' TVD
- HINGLEY 2S TD @ 8348' TVD
- HINGLEY 2T TD @ 8348' TVD
- HINGLEY 2U TD @ 8348' TVD
- HINGLEY 2V TD @ 8348' TVD
- HINGLEY 2W TD @ 8348' TVD
- HINGLEY 2X TD @ 8348' TVD
- HINGLEY 2Y TD @ 8348' TVD
- HINGLEY 2Z TD @ 8348' TVD
- HINGLEY 3A-18H-N167 TPZ
- HINGLEY 3B-18H-N167 TPZ
- HINGLEY 3C-18H-N167 TPZ
- HINGLEY 3D-18H-N167 TPZ
- HINGLEY 3E-18H-N167 TPZ
- HINGLEY 3F-18H-N167 TPZ
- HINGLEY 3G-18H-N167 TPZ
- HINGLEY 3H-18H-N167 TPZ
- HINGLEY 3I-18H-N167 TPZ
- HINGLEY 3J-18H-N167 TPZ
- HINGLEY 3K-18H-N167 TPZ
- HINGLEY 3L-18H-N167 TPZ
- HINGLEY 3M-18H-N167 TPZ
- HINGLEY 3N-18H-N167 TPZ
- HINGLEY 3O-18H-N167 TPZ
- HINGLEY 3P-18H-N167 TPZ
- HINGLEY 3Q-18H-N167 TPZ
- HINGLEY 3R-18H-N167 TPZ
- HINGLEY 3S-18H-N167 TPZ
- HINGLEY 3T-18H-N167 TPZ
- HINGLEY 3U-18H-N167 TPZ
- HINGLEY 3V-18H-N167 TPZ
- HINGLEY 3W-18H-N167 TPZ
- HINGLEY 3X-18H-N167 TPZ
- HINGLEY 3Y-18H-N167 TPZ
- HINGLEY 3Z-18H-N167 TPZ
- HINGLEY 4 TD @ 4980' TVD
- HINGLEY 5 TD @ 5000' TVD
- HINGLEY 12-18 TD @ 8375' TVD
- HICKS 13-18 TD @ 4930' TVD
- HICKS 4-18 TD @ 8450' TVD
- HICKS 14-18 TD @ 4950' TVD
- HICKS 23-18 TD @ 4944' TVD
- HICKS 24-18 TD @ 5000' TVD
- LAURIDSON VV 18-10 TD @ 8421' TVD
- LAURIDSON VV18-4J TD @ 8457' TVD
- LAURIDSON 2-A TD @ 5115' TVD

Vertical Section at 3.75° (2000 usft/in)



			5110.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1259879.83	3157509.95	40.045388	-104.937395



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3H-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3H-18H-N167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

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		S18-T1N-R67W (HINGLEY)			
Site Position:		Northing:	1,257,176.93 usft	Latitude:	40.038044
From:	Lat/Long	Easting:	3,153,030.55 usft	Longitude:	-104.953454
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	HINGLEY 3H-18H-N167					
Well Position	+N/-S	0.00 usft	Northing:	1,259,879.83 usft	Latitude:	40.045388
	+E/-W	0.00 usft	Easting:	3,157,509.95 usft	Longitude:	-104.937395
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,110.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	12/29/2017	8.40	66.43	52,141.00000000

Design	PLAN #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	3.75

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
561.25	7.22	162.95	560.29	-21.75	6.67	2.00	2.00	0.00	162.95	
6,847.20	7.22	162.95	6,796.33	-777.57	238.43	0.00	0.00	0.00	0.00	
8,058.44	90.00	0.17	7,598.00	-66.65	270.64	8.00	6.83	-13.44	-162.65	HINGLEY 3H-18H-N1
12,449.81	90.00	0.17	7,598.00	4,324.69	283.74	0.00	0.00	0.00	0.00	HINGLEY 3H-18H-N1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3H-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3H-18H-N167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	2.00	162.95	299.98	-1.67	0.51	-1.63	2.00	2.00	
400.00	4.00	162.95	399.84	-6.67	2.05	-6.52	2.00	2.00	
500.00	6.00	162.95	499.45	-15.00	4.60	-14.67	2.00	2.00	
561.25	7.22	162.95	560.29	-21.75	6.67	-21.26	2.00	2.00	
600.00	7.22	162.95	598.73	-26.41	8.10	-25.82	0.00	0.00	
700.00	7.22	162.95	697.94	-38.43	11.78	-37.58	0.00	0.00	
800.00	7.22	162.95	797.15	-50.45	15.47	-49.33	0.00	0.00	
900.00	7.22	162.95	896.35	-62.48	19.16	-61.09	0.00	0.00	
1,000.00	7.22	162.95	995.56	-74.50	22.84	-72.85	0.00	0.00	
1,100.00	7.22	162.95	1,094.76	-86.53	26.53	-84.60	0.00	0.00	
1,200.00	7.22	162.95	1,193.97	-98.55	30.22	-96.36	0.00	0.00	
1,300.00	7.22	162.95	1,293.18	-110.57	33.91	-108.12	0.00	0.00	
1,400.00	7.22	162.95	1,392.38	-122.60	37.59	-119.87	0.00	0.00	
1,500.00	7.22	162.95	1,491.59	-134.62	41.28	-131.63	0.00	0.00	
1,600.00	7.22	162.95	1,590.79	-146.65	44.97	-143.39	0.00	0.00	
1,700.00	7.22	162.95	1,690.00	-158.67	48.65	-155.14	0.00	0.00	
1,800.00	7.22	162.95	1,789.20	-170.69	52.34	-166.90	0.00	0.00	
1,900.00	7.22	162.95	1,888.41	-182.72	56.03	-178.66	0.00	0.00	
2,000.00	7.22	162.95	1,987.62	-194.74	59.71	-190.41	0.00	0.00	
2,100.00	7.22	162.95	2,086.82	-206.77	63.40	-202.17	0.00	0.00	
2,200.00	7.22	162.95	2,186.03	-218.79	67.09	-213.93	0.00	0.00	
2,300.00	7.22	162.95	2,285.23	-230.81	70.78	-225.69	0.00	0.00	
2,400.00	7.22	162.95	2,384.44	-242.84	74.46	-237.44	0.00	0.00	
2,500.00	7.22	162.95	2,483.64	-254.86	78.15	-249.20	0.00	0.00	
2,599.99	7.22	162.95	2,582.85	-266.89	81.84	-260.96	0.00	0.00	
2,699.99	7.22	162.95	2,682.06	-278.91	85.52	-272.71	0.00	0.00	
2,799.99	7.22	162.95	2,781.26	-290.93	89.21	-284.47	0.00	0.00	
2,899.99	7.22	162.95	2,880.47	-302.96	92.90	-296.23	0.00	0.00	
2,999.99	7.22	162.95	2,979.67	-314.98	96.58	-307.98	0.00	0.00	
3,099.99	7.22	162.95	3,078.88	-327.01	100.27	-319.74	0.00	0.00	
3,199.99	7.22	162.95	3,178.09	-339.03	103.96	-331.50	0.00	0.00	
3,299.99	7.22	162.95	3,277.29	-351.05	107.64	-343.25	0.00	0.00	
3,399.99	7.22	162.95	3,376.50	-363.08	111.33	-355.01	0.00	0.00	
3,499.99	7.22	162.95	3,475.70	-375.10	115.02	-366.77	0.00	0.00	
3,599.99	7.22	162.95	3,574.91	-387.13	118.71	-378.52	0.00	0.00	
3,699.99	7.22	162.95	3,674.11	-399.15	122.39	-390.28	0.00	0.00	
3,799.99	7.22	162.95	3,773.32	-411.17	126.08	-402.04	0.00	0.00	
3,899.99	7.22	162.95	3,872.53	-423.20	129.77	-413.79	0.00	0.00	
3,999.99	7.22	162.95	3,971.73	-435.22	133.45	-425.55	0.00	0.00	
4,099.99	7.22	162.95	4,070.94	-447.25	137.14	-437.31	0.00	0.00	
4,199.99	7.22	162.95	4,170.14	-459.27	140.83	-449.06	0.00	0.00	
4,299.99	7.22	162.95	4,269.35	-471.29	144.51	-460.82	0.00	0.00	
4,399.99	7.22	162.95	4,368.55	-483.32	148.20	-472.58	0.00	0.00	
4,499.99	7.22	162.95	4,467.76	-495.34	151.89	-484.34	0.00	0.00	
4,599.99	7.22	162.95	4,566.97	-507.37	155.58	-496.09	0.00	0.00	
4,699.99	7.22	162.95	4,666.17	-519.39	159.26	-507.85	0.00	0.00	
4,799.99	7.22	162.95	4,765.38	-531.41	162.95	-519.61	0.00	0.00	
4,899.99	7.22	162.95	4,864.58	-543.44	166.64	-531.36	0.00	0.00	
4,999.99	7.22	162.95	4,963.79	-555.46	170.32	-543.12	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3H-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3H-18H-N167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,099.99	7.22	162.95	5,063.00	-567.49	174.01	-554.88	0.00	0.00	
5,199.99	7.22	162.95	5,162.20	-579.51	177.70	-566.63	0.00	0.00	
5,299.99	7.22	162.95	5,261.41	-591.53	181.38	-578.39	0.00	0.00	
5,399.99	7.22	162.95	5,360.61	-603.56	185.07	-590.15	0.00	0.00	
5,499.99	7.22	162.95	5,459.82	-615.58	188.76	-601.90	0.00	0.00	
5,599.99	7.22	162.95	5,559.02	-627.61	192.44	-613.66	0.00	0.00	
5,699.99	7.22	162.95	5,658.23	-639.63	196.13	-625.42	0.00	0.00	
5,799.99	7.22	162.95	5,757.44	-651.65	199.82	-637.17	0.00	0.00	
5,899.99	7.22	162.95	5,856.64	-663.68	203.51	-648.93	0.00	0.00	
5,999.99	7.22	162.95	5,955.85	-675.70	207.19	-660.69	0.00	0.00	
6,099.99	7.22	162.95	6,055.05	-687.73	210.88	-672.44	0.00	0.00	
6,199.99	7.22	162.95	6,154.26	-699.75	214.57	-684.20	0.00	0.00	
6,299.99	7.22	162.95	6,253.46	-711.77	218.25	-695.96	0.00	0.00	
6,399.99	7.22	162.95	6,352.67	-723.80	221.94	-707.71	0.00	0.00	
6,499.99	7.22	162.95	6,451.88	-735.82	225.63	-719.47	0.00	0.00	
6,599.99	7.22	162.95	6,551.08	-747.85	229.31	-731.23	0.00	0.00	
6,699.99	7.22	162.95	6,650.29	-759.87	233.00	-742.98	0.00	0.00	
6,799.99	7.22	162.95	6,749.49	-771.89	236.69	-754.74	0.00	0.00	
6,847.20	7.22	162.95	6,796.33	-777.57	238.43	-760.29	0.00	0.00	
6,899.99	3.43	141.44	6,848.89	-781.98	240.39	-764.57	8.00	-7.19	
6,999.99	5.74	22.09	6,948.71	-779.68	244.14	-762.03	8.00	2.31	
7,099.99	13.49	9.17	7,047.24	-763.51	247.89	-745.64	8.00	7.75	
7,199.99	21.43	5.66	7,142.56	-733.77	251.55	-715.72	8.00	7.93	
7,299.99	29.40	3.99	7,232.81	-691.04	255.07	-672.86	8.00	7.97	
7,399.99	37.38	2.99	7,316.24	-636.16	258.36	-617.88	8.00	7.98	
7,499.99	45.36	2.29	7,391.23	-570.19	261.37	-551.85	8.00	7.99	
7,599.98	53.35	1.77	7,456.31	-494.42	264.04	-476.07	8.00	7.99	
7,699.98	61.35	1.35	7,510.21	-410.32	266.31	-392.00	8.00	7.99	
7,799.98	69.34	0.98	7,551.90	-319.53	268.15	-301.29	8.00	7.99	
7,899.98	77.33	0.65	7,580.55	-223.82	269.51	-205.69	8.00	7.99	
7,999.98	85.33	0.35	7,595.62	-125.05	270.37	-107.08	8.00	7.99	
8,058.44	90.00	0.17	7,598.00	-66.65	270.64	-48.79	8.00	7.99	HINGLEY 3H-18H-N167 TPZ
8,099.98	90.00	0.17	7,598.00	-25.11	270.76	-7.33	0.00	0.00	
8,199.98	90.00	0.17	7,598.00	74.89	271.06	92.47	0.00	0.00	
8,299.98	90.00	0.17	7,598.00	174.89	271.36	192.28	0.00	0.00	
8,399.98	90.00	0.17	7,598.00	274.89	271.65	292.08	0.00	0.00	
8,499.98	90.00	0.17	7,598.00	374.89	271.95	391.89	0.00	0.00	
8,599.98	90.00	0.17	7,598.00	474.89	272.25	491.69	0.00	0.00	
8,699.98	90.00	0.17	7,598.00	574.88	272.55	591.49	0.00	0.00	
8,799.98	90.00	0.17	7,598.00	674.88	272.85	691.30	0.00	0.00	
8,899.98	90.00	0.17	7,598.00	774.88	273.15	791.10	0.00	0.00	
8,999.98	90.00	0.17	7,598.00	874.88	273.45	890.91	0.00	0.00	
9,099.98	90.00	0.17	7,598.00	974.88	273.74	990.71	0.00	0.00	
9,199.98	90.00	0.17	7,598.00	1,074.88	274.04	1,090.52	0.00	0.00	
9,299.98	90.00	0.17	7,598.00	1,174.88	274.34	1,190.32	0.00	0.00	
9,399.98	90.00	0.17	7,598.00	1,274.88	274.64	1,290.13	0.00	0.00	
9,499.98	90.00	0.17	7,598.00	1,374.88	274.94	1,389.93	0.00	0.00	
9,599.98	90.00	0.17	7,598.00	1,474.88	275.24	1,489.73	0.00	0.00	
9,699.98	90.00	0.17	7,598.00	1,574.88	275.54	1,589.54	0.00	0.00	
9,799.98	90.00	0.17	7,598.00	1,674.88	275.83	1,689.34	0.00	0.00	
9,899.98	90.00	0.17	7,598.00	1,774.88	276.13	1,789.15	0.00	0.00	
9,999.98	90.00	0.17	7,598.00	1,874.88	276.43	1,888.95	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3H-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3H-18H-N167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,099.98	90.00	0.17	7,598.00	1,974.88	276.73	1,988.76	0.00	0.00	
10,199.98	90.00	0.17	7,598.00	2,074.87	277.03	2,088.56	0.00	0.00	
10,299.98	90.00	0.17	7,598.00	2,174.87	277.33	2,188.36	0.00	0.00	
10,399.98	90.00	0.17	7,598.00	2,274.87	277.62	2,288.17	0.00	0.00	
10,499.98	90.00	0.17	7,598.00	2,374.87	277.92	2,387.97	0.00	0.00	
10,599.98	90.00	0.17	7,598.00	2,474.87	278.22	2,487.78	0.00	0.00	
10,699.98	90.00	0.17	7,598.00	2,574.87	278.52	2,587.58	0.00	0.00	
10,799.98	90.00	0.17	7,598.00	2,674.87	278.82	2,687.39	0.00	0.00	
10,899.98	90.00	0.17	7,598.00	2,774.87	279.12	2,787.19	0.00	0.00	
10,999.98	90.00	0.17	7,598.00	2,874.87	279.42	2,886.99	0.00	0.00	
11,099.98	90.00	0.17	7,598.00	2,974.87	279.71	2,986.80	0.00	0.00	
11,199.98	90.00	0.17	7,598.00	3,074.87	280.01	3,086.60	0.00	0.00	
11,299.98	90.00	0.17	7,598.00	3,174.87	280.31	3,186.41	0.00	0.00	
11,399.98	90.00	0.17	7,598.00	3,274.87	280.61	3,286.21	0.00	0.00	
11,499.98	90.00	0.17	7,598.00	3,374.87	280.91	3,386.02	0.00	0.00	
11,599.98	90.00	0.17	7,598.00	3,474.87	281.21	3,485.82	0.00	0.00	
11,699.98	90.00	0.17	7,598.00	3,574.87	281.51	3,585.63	0.00	0.00	
11,799.98	90.00	0.17	7,598.00	3,674.86	281.80	3,685.43	0.00	0.00	
11,899.98	90.00	0.17	7,598.00	3,774.86	282.10	3,785.23	0.00	0.00	
11,999.98	90.00	0.17	7,598.00	3,874.86	282.40	3,885.04	0.00	0.00	
12,099.98	90.00	0.17	7,598.00	3,974.86	282.70	3,984.84	0.00	0.00	
12,199.98	90.00	0.17	7,598.00	4,074.86	283.00	4,084.65	0.00	0.00	
12,299.98	90.00	0.17	7,598.00	4,174.86	283.30	4,184.45	0.00	0.00	
12,399.98	90.00	0.17	7,598.00	4,274.86	283.59	4,284.26	0.00	0.00	
12,449.81	90.00	0.17	7,598.00	4,324.69	283.74	4,333.99	0.00	0.00	HINGLEY 3H-18H-N167 BHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
HINGLEY 3H-18H-N167	0.00	0.00	7,598.00	-66.65	270.64	1,259,814.89	3,157,781.00	40.045204	-104.936428
- plan hits target center									
- Point									
HINGLEY 3H-18H-N167	0.00	0.00	7,598.00	4,324.69	283.74	1,264,206.23	3,157,766.25	40.057259	-104.936381
- plan hits target center									
- Point									