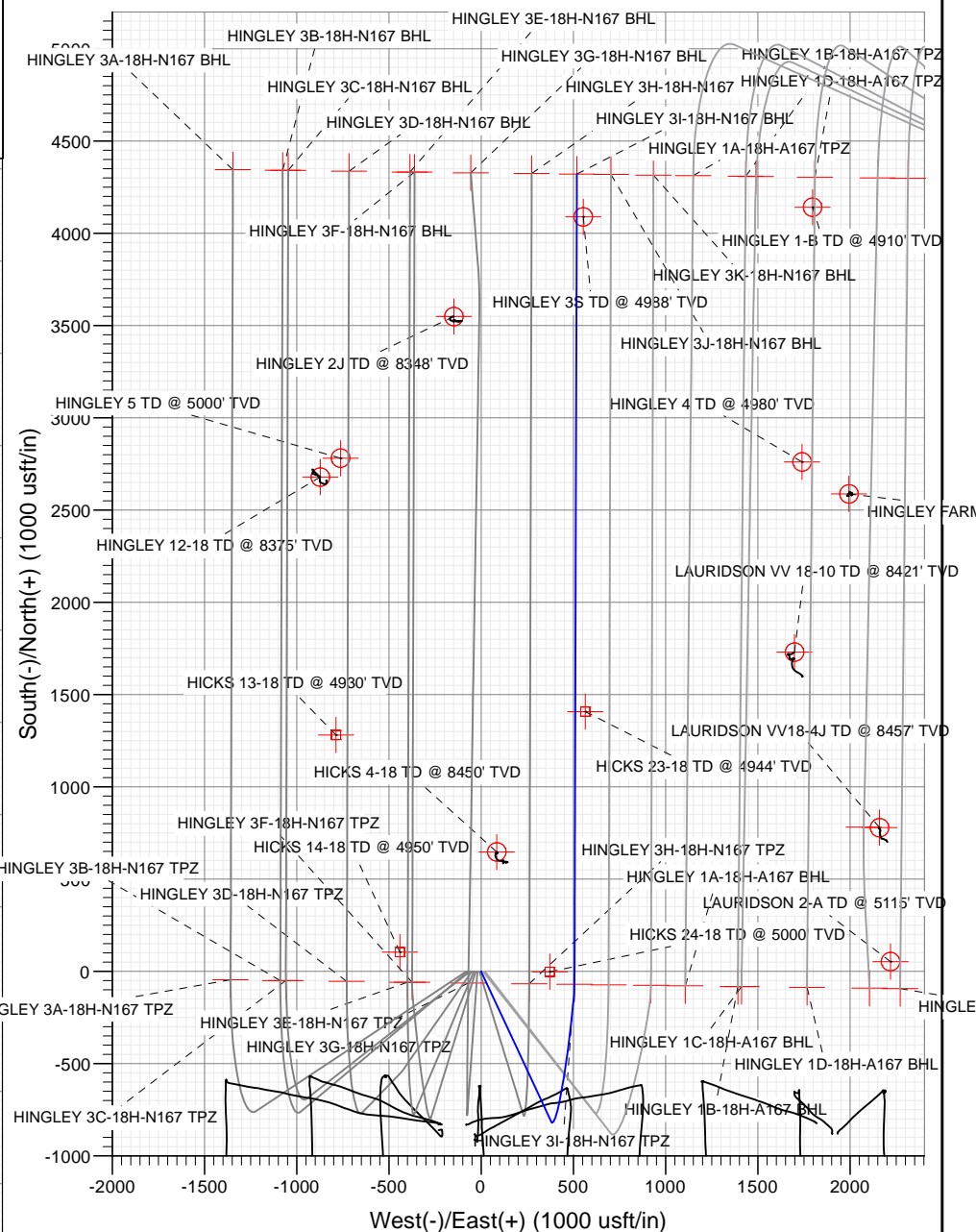
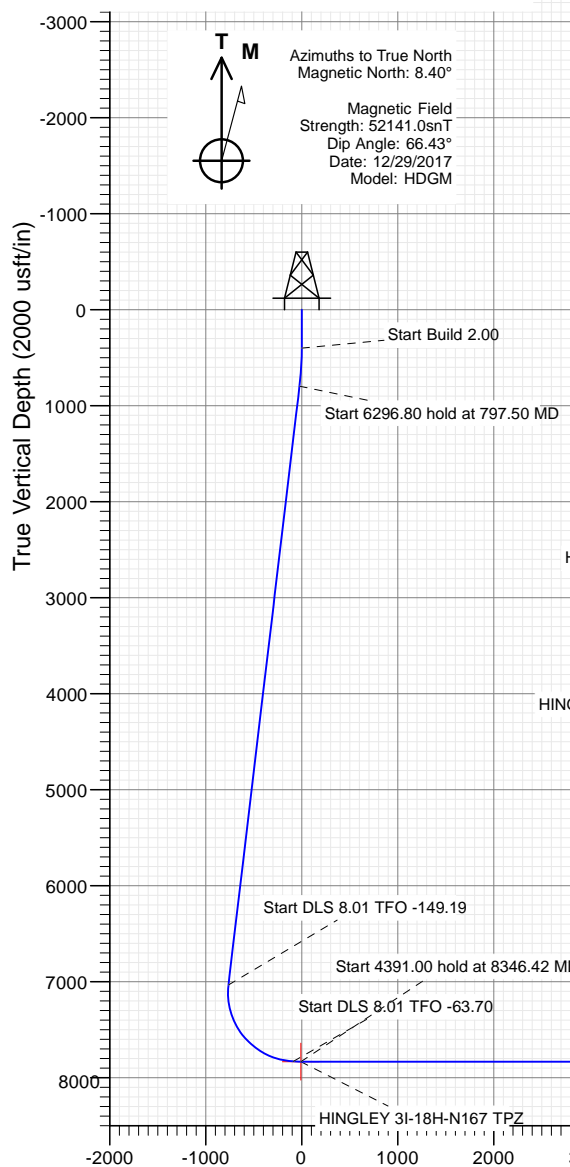




Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	797.50	7.95	155.00	796.23	-24.95	11.64	2.00	155.00	-23.39	
4	7094.30	7.95	155.00	7032.51	-814.26	379.70	0.00	0.00	-763.21	
5	8268.51	87.23	5.76	7830.11	-147.46	501.58	8.01	-149.19	-86.64	
6	8346.42	90.00	0.17	7832.00	-69.72	505.61	8.01	-63.70	-8.97	HINGLEY 31-18H-N167 TPZ
7	12737.42	90.00	0.17	7832.00	4321.26	518.67	0.00	0.00	4352.28	HINGLEY 31-18H-N167 BHL

PLAN 1						
HINGLEY 31-18H-N167						
23 KB @ 5130.0usbit						
Ground Level @ 5110.0						
North American Datum 1983						
Well Hingley 31-18H-N167 - Slot Hingley 31-18H-N167 SHL True North						
Type	Target	Azimuth	Origin Type	N/S	E/W	From TWD
TD	No Target (Freehand)	6.84	Slot	0.00	0.00	
Name	TWD	+N/S	E/W	Latitude	Longitude	
HINGLEY 31-18H-N167 BHL	7832.00	4321.26	-518.67	40.07250	-104.83506	
HINGLEY 31-18H-N167 BHL	7832.00	-60.72	506.61	40.045196	-104.835553	

Project: DJ BASIN  
Site: S18-T1N-R67W (HINGLEY)  
Well: HINGLEY 3I-18H-N167  
Wellbore: OH  
Design: PLAN #1



Vertical Section at 6.84° (2000 usft/in)



# CATHEDRAL

WELL DETAILS: HINGLEY 3I-18H-N167

5110.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1259880.05	3157519.95	40.045387	-104.937055



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 3I-18H-N167 - Slot Hingley 3I-18
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5133.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5133.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 3I-18H-N167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

<b>Project</b>	DJ BASIN		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 3I-18H-N167 - Slot Hingley 3I-18H-N167 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,259,880.05 usft	Latitude:	40.045387
	+E/-W	0.00 usft	Easting:	3,157,519.95 usft	Longitude:	-104.937359
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,110.00 usft

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

<b>Design</b>	PLAN #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	6.84

<b>Plan Sections</b>										
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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
797.50	7.95	155.00	796.23	-24.95	11.64	2.00	2.00	0.00	155.00	
7,094.30	7.95	155.00	7,032.51	-814.26	379.70	0.00	0.00	0.00	0.00	
8,268.51	87.23	5.76	7,830.11	-147.46	501.58	8.01	6.75	-12.71	-149.19	
8,346.42	90.00	0.17	7,832.00	-69.72	505.61	8.01	3.56	-7.18	-63.70	HINGLEY 3I-18H-N167
12,737.42	90.00	0.17	7,832.00	4,321.26	518.67	0.00	0.00	0.00	0.00	HINGLEY 3I-18H-N167

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 3I-18H-N167 - Slot Hingley 3I-18
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5133.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5133.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 3I-18H-N167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### 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	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	2.00	155.00	499.98	-1.58	0.74	-1.48	2.00	2.00	
600.00	4.00	155.00	599.84	-6.32	2.95	-5.93	2.00	2.00	
700.00	6.00	155.00	699.45	-14.22	6.63	-13.33	2.00	2.00	
797.50	7.95	155.00	796.23	-24.95	11.64	-23.39	2.00	2.00	
800.00	7.95	155.00	798.70	-25.27	11.78	-23.68	0.00	0.00	
900.00	7.95	155.00	897.74	-37.80	17.63	-35.43	0.00	0.00	
1,000.00	7.95	155.00	996.78	-50.34	23.47	-47.18	0.00	0.00	
1,100.00	7.95	155.00	1,095.82	-62.87	29.32	-58.93	0.00	0.00	
1,200.00	7.95	155.00	1,194.86	-75.41	35.16	-70.68	0.00	0.00	
1,300.00	7.95	155.00	1,293.90	-87.94	41.01	-82.43	0.00	0.00	
1,400.00	7.95	155.00	1,392.94	-100.48	46.85	-94.18	0.00	0.00	
1,500.00	7.95	155.00	1,491.97	-113.01	52.70	-105.93	0.00	0.00	
1,600.00	7.95	155.00	1,591.01	-125.55	58.54	-117.68	0.00	0.00	
1,700.00	7.95	155.00	1,690.05	-138.08	64.39	-129.42	0.00	0.00	
1,800.00	7.95	155.00	1,789.09	-150.62	70.23	-141.17	0.00	0.00	
1,900.00	7.95	155.00	1,888.13	-163.15	76.08	-152.92	0.00	0.00	
2,000.00	7.95	155.00	1,987.17	-175.69	81.92	-164.67	0.00	0.00	
2,100.00	7.95	155.00	2,086.21	-188.22	87.77	-176.42	0.00	0.00	
2,200.00	7.95	155.00	2,185.25	-200.76	93.61	-188.17	0.00	0.00	
2,300.00	7.95	155.00	2,284.29	-213.29	99.46	-199.92	0.00	0.00	
2,400.00	7.95	155.00	2,383.32	-225.83	105.31	-211.67	0.00	0.00	
2,500.00	7.95	155.00	2,482.36	-238.36	111.15	-223.42	0.00	0.00	
2,600.00	7.95	155.00	2,581.40	-250.90	117.00	-235.17	0.00	0.00	
2,700.00	7.95	155.00	2,680.44	-263.43	122.84	-246.92	0.00	0.00	
2,800.00	7.95	155.00	2,779.48	-275.97	128.69	-258.67	0.00	0.00	
2,900.00	7.95	155.00	2,878.52	-288.50	134.53	-270.41	0.00	0.00	
3,000.00	7.95	155.00	2,977.56	-301.04	140.38	-282.16	0.00	0.00	
3,100.00	7.95	155.00	3,076.60	-313.57	146.22	-293.91	0.00	0.00	
3,200.00	7.95	155.00	3,175.64	-326.11	152.07	-305.66	0.00	0.00	
3,300.00	7.95	155.00	3,274.67	-338.64	157.91	-317.41	0.00	0.00	
3,400.00	7.95	155.00	3,373.71	-351.18	163.76	-329.16	0.00	0.00	
3,500.00	7.95	155.00	3,472.75	-363.71	169.60	-340.91	0.00	0.00	
3,600.00	7.95	155.00	3,571.79	-376.25	175.45	-352.66	0.00	0.00	
3,700.00	7.95	155.00	3,670.83	-388.78	181.29	-364.41	0.00	0.00	
3,800.00	7.95	155.00	3,769.87	-401.32	187.14	-376.16	0.00	0.00	
3,900.00	7.95	155.00	3,868.91	-413.85	192.98	-387.91	0.00	0.00	
4,000.00	7.95	155.00	3,967.95	-426.39	198.83	-399.65	0.00	0.00	
4,100.00	7.95	155.00	4,066.99	-438.92	204.67	-411.40	0.00	0.00	
4,200.00	7.95	155.00	4,166.02	-451.46	210.52	-423.15	0.00	0.00	
4,300.00	7.95	155.00	4,265.06	-463.99	216.36	-434.90	0.00	0.00	
4,400.00	7.95	155.00	4,364.10	-476.53	222.21	-446.65	0.00	0.00	
4,500.00	7.95	155.00	4,463.14	-489.06	228.05	-458.40	0.00	0.00	
4,600.00	7.95	155.00	4,562.18	-501.60	233.90	-470.15	0.00	0.00	
4,700.00	7.95	155.00	4,661.22	-514.13	239.74	-481.90	0.00	0.00	
4,800.00	7.95	155.00	4,760.26	-526.67	245.59	-493.65	0.00	0.00	
4,900.00	7.95	155.00	4,859.30	-539.20	251.43	-505.40	0.00	0.00	
5,000.00	7.95	155.00	4,958.34	-551.74	257.28	-517.15	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 3I-18H-N167 - Slot Hingley 3I-18
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5133.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5133.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 3I-18H-N167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### 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
5,100.00	7.95	155.00	5,057.38	-564.27	263.13	-528.89	0.00	0.00	
5,200.00	7.95	155.00	5,156.41	-576.81	268.97	-540.64	0.00	0.00	
5,300.00	7.95	155.00	5,255.45	-589.34	274.82	-552.39	0.00	0.00	
5,400.00	7.95	155.00	5,354.49	-601.88	280.66	-564.14	0.00	0.00	
5,500.00	7.95	155.00	5,453.53	-614.41	286.51	-575.89	0.00	0.00	
5,600.00	7.95	155.00	5,552.57	-626.95	292.35	-587.64	0.00	0.00	
5,700.00	7.95	155.00	5,651.61	-639.48	298.20	-599.39	0.00	0.00	
5,800.00	7.95	155.00	5,750.65	-652.02	304.04	-611.14	0.00	0.00	
5,900.00	7.95	155.00	5,849.69	-664.55	309.89	-622.89	0.00	0.00	
6,000.00	7.95	155.00	5,948.73	-677.09	315.73	-634.64	0.00	0.00	
6,100.00	7.95	155.00	6,047.76	-689.62	321.58	-646.39	0.00	0.00	
6,200.00	7.95	155.00	6,146.80	-702.16	327.42	-658.14	0.00	0.00	
6,300.00	7.95	155.00	6,245.84	-714.69	333.27	-669.88	0.00	0.00	
6,400.00	7.95	155.00	6,344.88	-727.23	339.11	-681.63	0.00	0.00	
6,500.00	7.95	155.00	6,443.92	-739.76	344.96	-693.38	0.00	0.00	
6,600.00	7.95	155.00	6,542.96	-752.30	350.80	-705.13	0.00	0.00	
6,700.00	7.95	155.00	6,642.00	-764.83	356.65	-716.88	0.00	0.00	
6,800.00	7.95	155.00	6,741.04	-777.37	362.49	-728.63	0.00	0.00	
6,900.00	7.95	155.00	6,840.08	-789.90	368.34	-740.38	0.00	0.00	
7,000.00	7.95	155.00	6,939.11	-802.44	374.18	-752.13	0.00	0.00	
7,094.30	7.95	155.00	7,032.51	-814.26	379.70	-763.21	0.00	0.00	
7,100.00	7.56	153.22	7,038.16	-814.95	380.03	-763.85	8.01	-6.82	
7,200.00	4.38	73.71	7,137.74	-819.76	386.67	-767.84	8.01	-3.19	
7,300.00	10.45	28.21	7,236.92	-810.69	394.63	-757.88	8.01	6.08	
7,400.00	18.09	18.12	7,333.78	-787.90	403.76	-734.16	8.01	7.64	
7,500.00	25.96	13.95	7,426.41	-751.84	413.88	-697.16	8.01	7.86	
7,600.00	33.88	11.64	7,513.02	-703.22	424.80	-647.58	8.01	7.93	
7,700.00	41.84	10.11	7,591.91	-642.98	436.30	-586.41	8.01	7.96	
7,800.00	49.81	9.00	7,661.54	-572.31	448.15	-514.82	8.01	7.97	
7,900.00	57.79	8.13	7,720.55	-492.57	460.13	-434.23	8.01	7.98	
8,000.00	65.77	7.40	7,767.79	-405.33	472.01	-346.19	8.01	7.98	
8,100.00	73.76	6.75	7,802.35	-312.29	483.54	-252.44	8.01	7.99	
8,200.00	81.75	6.16	7,823.54	-215.26	494.50	-154.80	8.01	7.99	
8,268.51	87.23	5.76	7,830.11	-147.46	501.58	-86.64	8.01	7.99	
8,300.00	88.35	3.50	7,831.33	-116.10	504.12	-55.20	8.01	3.56	
8,346.42	90.00	0.17	7,832.00	-69.72	505.61	-8.97	8.01	3.56	
8,400.00	90.00	0.17	7,832.00	-16.14	505.77	44.25	0.00	0.00	
8,500.00	90.00	0.17	7,832.00	83.86	506.06	143.57	0.00	0.00	
8,600.00	90.00	0.17	7,832.00	183.86	506.36	242.89	0.00	0.00	
8,700.00	90.00	0.17	7,832.00	283.86	506.66	342.22	0.00	0.00	
8,800.00	90.00	0.17	7,832.00	383.86	506.96	441.54	0.00	0.00	
8,900.00	90.00	0.17	7,832.00	483.86	507.25	540.86	0.00	0.00	
9,000.00	90.00	0.17	7,832.00	583.86	507.55	640.18	0.00	0.00	
9,100.00	90.00	0.17	7,832.00	683.86	507.85	739.50	0.00	0.00	
9,200.00	90.00	0.17	7,832.00	783.86	508.15	838.83	0.00	0.00	
9,300.00	90.00	0.17	7,832.00	883.86	508.44	938.15	0.00	0.00	
9,400.00	90.00	0.17	7,832.00	983.86	508.74	1,037.47	0.00	0.00	
9,500.00	90.00	0.17	7,832.00	1,083.85	509.04	1,136.79	0.00	0.00	
9,600.00	90.00	0.17	7,832.00	1,183.85	509.34	1,236.12	0.00	0.00	
9,700.00	90.00	0.17	7,832.00	1,283.85	509.64	1,335.44	0.00	0.00	
9,800.00	90.00	0.17	7,832.00	1,383.85	509.93	1,434.76	0.00	0.00	
9,900.00	90.00	0.17	7,832.00	1,483.85	510.23	1,534.08	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 3I-18H-N167 - Slot Hingley 3I-18
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5133.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5133.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 3I-18H-N167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### 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
10,000.00	90.00	0.17	7,832.00	1,583.85	510.53	1,633.41	0.00	0.00	
10,100.00	90.00	0.17	7,832.00	1,683.85	510.83	1,732.73	0.00	0.00	
10,200.00	90.00	0.17	7,832.00	1,783.85	511.12	1,832.05	0.00	0.00	
10,300.00	90.00	0.17	7,832.00	1,883.85	511.42	1,931.37	0.00	0.00	
10,400.00	90.00	0.17	7,832.00	1,983.85	511.72	2,030.70	0.00	0.00	
10,500.00	90.00	0.17	7,832.00	2,083.85	512.02	2,130.02	0.00	0.00	
10,600.00	90.00	0.17	7,832.00	2,183.85	512.31	2,229.34	0.00	0.00	
10,700.00	90.00	0.17	7,832.00	2,283.85	512.61	2,328.66	0.00	0.00	
10,800.00	90.00	0.17	7,832.00	2,383.85	512.91	2,427.99	0.00	0.00	
10,900.00	90.00	0.17	7,832.00	2,483.85	513.21	2,527.31	0.00	0.00	
11,000.00	90.00	0.17	7,832.00	2,583.85	513.50	2,626.63	0.00	0.00	
11,100.00	90.00	0.17	7,832.00	2,683.85	513.80	2,725.95	0.00	0.00	
11,200.00	90.00	0.17	7,832.00	2,783.85	514.10	2,825.27	0.00	0.00	
11,300.00	90.00	0.17	7,832.00	2,883.85	514.40	2,924.60	0.00	0.00	
11,400.00	90.00	0.17	7,832.00	2,983.85	514.69	3,023.92	0.00	0.00	
11,500.00	90.00	0.17	7,832.00	3,083.85	514.99	3,123.24	0.00	0.00	
11,600.00	90.00	0.17	7,832.00	3,183.85	515.29	3,222.56	0.00	0.00	
11,700.00	90.00	0.17	7,832.00	3,283.84	515.59	3,321.89	0.00	0.00	
11,800.00	90.00	0.17	7,832.00	3,383.84	515.88	3,421.21	0.00	0.00	
11,900.00	90.00	0.17	7,832.00	3,483.84	516.18	3,520.53	0.00	0.00	
12,000.00	90.00	0.17	7,832.00	3,583.84	516.48	3,619.85	0.00	0.00	
12,100.00	90.00	0.17	7,832.00	3,683.84	516.78	3,719.18	0.00	0.00	
12,200.00	90.00	0.17	7,832.00	3,783.84	517.07	3,818.50	0.00	0.00	
12,300.00	90.00	0.17	7,832.00	3,883.84	517.37	3,917.82	0.00	0.00	
12,400.00	90.00	0.17	7,832.00	3,983.84	517.67	4,017.14	0.00	0.00	
12,500.00	90.00	0.17	7,832.00	4,083.84	517.97	4,116.47	0.00	0.00	
12,600.00	90.00	0.17	7,832.00	4,183.84	518.27	4,215.79	0.00	0.00	
12,700.00	90.00	0.17	7,832.00	4,283.84	518.56	4,315.11	0.00	0.00	
12,737.42	90.00	0.17	7,832.00	4,321.26	518.67	4,352.28	0.00	0.00	

### 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 3I-18H-N167 - plan hits target center - Point	0.00	0.00	7,832.00	-69.72	505.61	1,259,813.54	3,158,025.99	40.045196	-104.935553
HINGLEY 3I-18H-N167 - plan hits target center - Point	0.00	0.00	7,832.00	4,321.26	518.67	1,264,204.51	3,158,011.20	40.057250	-104.935506