

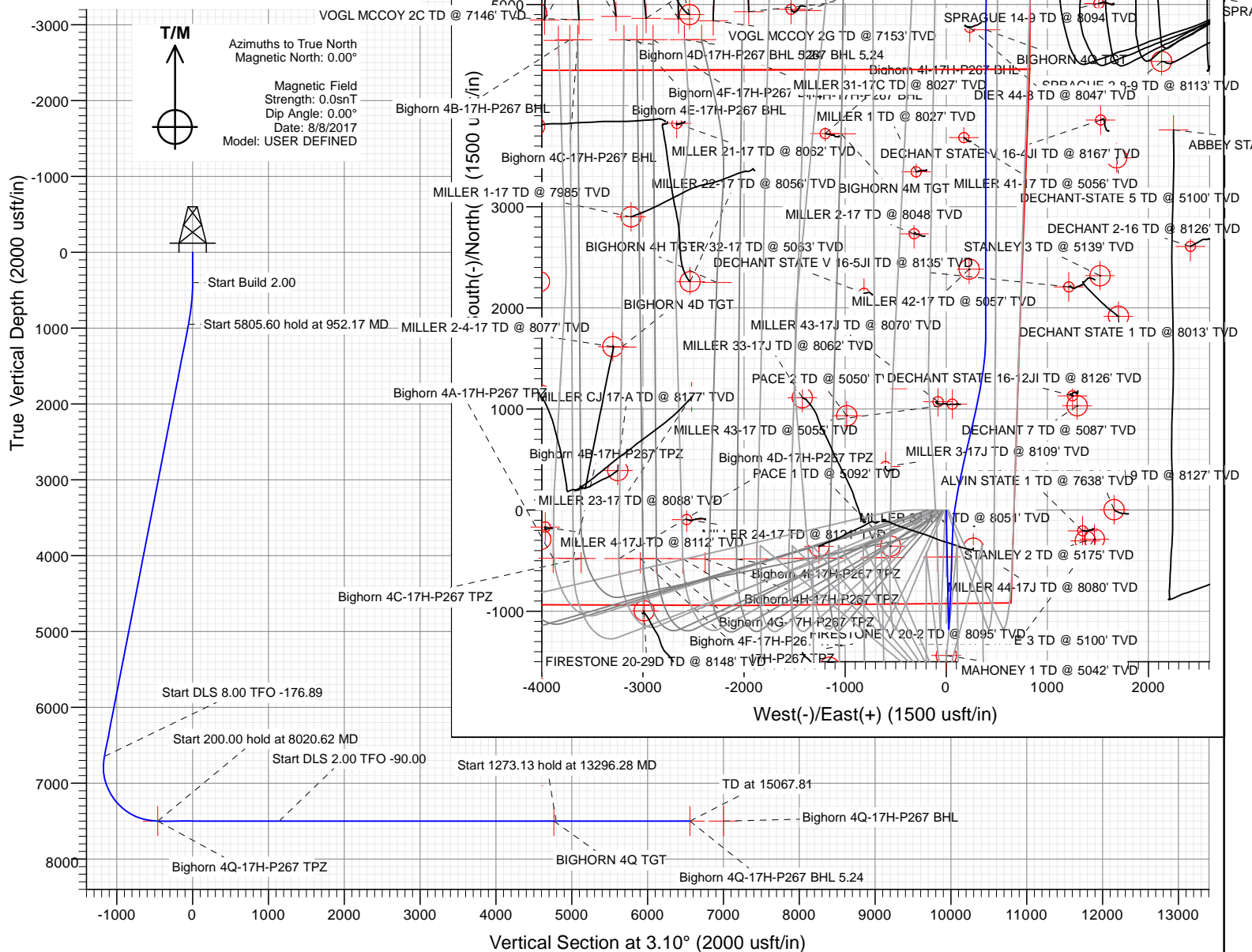


CRESTONE PEAK  
RESOURCES

PLAN #3  
BIGHORN 4Q-17H-P267  
23 KB @ 4963.00usft  
Ground Level @ 4960.00  
North American Datum 1983  
Well BIGHORN 4Q-17H-P267, True North

Type	Target	No Target (Freehand)	MD	Inc	Azi	Origin Type	N/S	E/W	From TVD
Name									
BIGHORN 4Q TGT			7500.00	0.00	4750.00	390.00	40.146720	-104.906195	
Bighorn 4Q-17H-P267 BHL			7500.00	0.00	7000.38	244.03	40.152898	-104.906717	
Bighorn 4Q-17H-P267 BHL 5.24			7500.00	0.00	6548.45	354.95	40.151857	-104.906320	
Bighorn 4Q-17H-P267 TPZ			7500.00	0.00	-462.62	55.36	40.132411	-104.907392	

Project: DJ BASIN  
Site: BIGHORN  
Well: BIGHORN 4Q-17H-P267  
Wellbore: OH  
Design: PLAN #3



CATHEDRAL

WELL DETAILS: BIGHORN 4Q-17H-P267

+N/-S 0.00 +E/-W 0.00 Northing 1292096.97 Easting 3165639.23 Latitude 40.133681 Longitude -104.907590



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site:</b>	BIGHORN	<b>North Reference:</b>	True
<b>Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3		

<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		BIGHORN			
Site Position:		Northing:	1,292,097.01 usft	Latitude:	40.133684
From:	Lat/Long	Easting:	3,165,479.29 usft	Longitude:	-104.908162
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	BIGHORN 4Q-17H-P267					
Well Position	+N/-S	0.00 usft	Northing:	1,292,096.97 usft	Latitude:	40.133681
	+E/-W	0.00 usft	Easting:	3,165,639.23 usft	Longitude:	-104.907590
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,960.00 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)
	User Defined	8/8/2017	0.00	0.00	0.00000000

<b>Design</b>	PLAN #3			
<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	3.10

<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	
952.17	11.04	178.88	948.76	-53.04	1.04	2.00	2.00	0.00	178.88	
6,757.77	11.04	178.88	6,646.85	-1,164.90	22.83	0.00	0.00	0.00	0.00	
8,020.62	90.00	1.93	7,500.00	-462.62	55.36	8.00	6.25	-14.01	-176.89	Bighorn 4Q-17H-P267
8,220.62	90.00	1.93	7,500.00	-262.74	62.10	0.00	0.00	0.00	0.00	
8,274.12	90.00	3.00	7,500.00	-209.29	64.40	2.00	0.00	2.00	90.00	
8,752.38	90.00	12.57	7,500.00	264.02	129.09	2.00	0.00	2.00	90.00	
9,636.29	90.00	12.57	7,500.00	1,126.76	321.38	0.00	0.00	0.00	0.00	
10,264.55	90.00	0.00	7,500.00	1,750.00	390.00	2.00	0.00	-2.00	-90.00	
13,264.55	90.00	0.00	7,500.00	4,750.00	390.00	0.00	0.00	0.00	0.00	BIGHORN 4Q TGT
13,296.28	90.00	0.95	7,500.00	4,781.73	390.26	3.00	0.00	3.00	90.00	
14,569.41	90.00	0.95	7,500.00	6,054.68	411.42	0.00	0.00	0.00	0.00	
15,067.81	90.00	346.00	7,500.00	6,548.45	354.95	3.00	0.00	-3.00	-90.00	Bighorn 4Q-17H-P267

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site:</b>	BIGHORN	<b>North Reference:</b>	True
<b>Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3		

### 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	178.88	499.98	-1.74	0.03	-1.74	2.00	2.00	
600.00	4.00	178.88	599.84	-6.98	0.14	-6.96	2.00	2.00	
700.00	6.00	178.88	699.45	-15.69	0.31	-15.65	2.00	2.00	
800.00	8.00	178.88	798.70	-27.87	0.55	-27.80	2.00	2.00	
900.00	10.00	178.88	897.47	-43.51	0.85	-43.40	2.00	2.00	
952.17	11.04	178.88	948.76	-53.04	1.04	-52.90	2.00	2.00	
1,000.00	11.04	178.88	995.70	-62.20	1.22	-62.04	0.00	0.00	
1,100.00	11.04	178.88	1,093.85	-81.35	1.59	-81.15	0.00	0.00	
1,200.00	11.04	178.88	1,192.00	-100.50	1.97	-100.25	0.00	0.00	
1,300.00	11.04	178.88	1,290.15	-119.65	2.34	-119.35	0.00	0.00	
1,400.00	11.04	178.88	1,388.29	-138.81	2.72	-138.45	0.00	0.00	
1,500.00	11.04	178.88	1,486.44	-157.96	3.10	-157.56	0.00	0.00	
1,600.00	11.04	178.88	1,584.59	-177.11	3.47	-176.66	0.00	0.00	
1,700.00	11.04	178.88	1,682.74	-196.26	3.85	-195.76	0.00	0.00	
1,800.00	11.04	178.88	1,780.89	-215.41	4.22	-214.87	0.00	0.00	
1,900.00	11.04	178.88	1,879.04	-234.56	4.60	-233.97	0.00	0.00	
2,000.00	11.04	178.88	1,977.18	-253.71	4.97	-253.07	0.00	0.00	
2,100.00	11.04	178.88	2,075.33	-272.87	5.35	-272.18	0.00	0.00	
2,200.00	11.04	178.88	2,173.48	-292.02	5.72	-291.28	0.00	0.00	
2,300.00	11.04	178.88	2,271.63	-311.17	6.10	-310.38	0.00	0.00	
2,400.00	11.04	178.88	2,369.78	-330.32	6.47	-329.49	0.00	0.00	
2,500.00	11.04	178.88	2,467.93	-349.47	6.85	-348.59	0.00	0.00	
2,600.00	11.04	178.88	2,566.07	-368.62	7.22	-367.69	0.00	0.00	
2,700.00	11.04	178.88	2,664.22	-387.77	7.60	-386.79	0.00	0.00	
2,800.00	11.04	178.88	2,762.37	-406.93	7.97	-405.90	0.00	0.00	
2,900.00	11.04	178.88	2,860.52	-426.08	8.35	-425.00	0.00	0.00	
3,000.00	11.04	178.88	2,958.67	-445.23	8.72	-444.10	0.00	0.00	
3,100.00	11.04	178.88	3,056.82	-464.38	9.10	-463.21	0.00	0.00	
3,200.00	11.04	178.88	3,154.96	-483.53	9.47	-482.31	0.00	0.00	
3,300.00	11.04	178.88	3,253.11	-502.68	9.85	-501.41	0.00	0.00	
3,400.00	11.04	178.88	3,351.26	-521.83	10.23	-520.52	0.00	0.00	
3,500.00	11.04	178.88	3,449.41	-540.99	10.60	-539.62	0.00	0.00	
3,600.00	11.04	178.88	3,547.56	-560.14	10.98	-558.72	0.00	0.00	
3,700.00	11.04	178.88	3,645.70	-579.29	11.35	-577.83	0.00	0.00	
3,800.00	11.04	178.88	3,743.85	-598.44	11.73	-596.93	0.00	0.00	
3,900.00	11.04	178.88	3,842.00	-617.59	12.10	-616.03	0.00	0.00	
4,000.00	11.04	178.88	3,940.15	-636.74	12.48	-635.14	0.00	0.00	
4,100.00	11.04	178.88	4,038.30	-655.90	12.85	-654.24	0.00	0.00	
4,200.00	11.04	178.88	4,136.45	-675.05	13.23	-673.34	0.00	0.00	
4,300.00	11.04	178.88	4,234.59	-694.20	13.60	-692.44	0.00	0.00	
4,400.00	11.04	178.88	4,332.74	-713.35	13.98	-711.55	0.00	0.00	
4,500.00	11.04	178.88	4,430.89	-732.50	14.35	-730.65	0.00	0.00	
4,600.00	11.04	178.88	4,529.04	-751.65	14.73	-749.75	0.00	0.00	
4,700.00	11.04	178.88	4,627.19	-770.80	15.10	-768.86	0.00	0.00	
4,800.00	11.04	178.88	4,725.34	-789.96	15.48	-787.96	0.00	0.00	
4,900.00	11.04	178.88	4,823.48	-809.11	15.85	-807.06	0.00	0.00	
5,000.00	11.04	178.88	4,921.63	-828.26	16.23	-826.17	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 BIGHORN 4Q-17H-P267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site:</b>	BIGHORN	<b>North Reference:</b>	True
<b>Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3		

### 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	11.04	178.88	5,019.78	-847.41	16.60	-845.27	0.00	0.00	
5,200.00	11.04	178.88	5,117.93	-866.56	16.98	-864.37	0.00	0.00	
5,300.00	11.04	178.88	5,216.08	-885.71	17.36	-883.48	0.00	0.00	
5,400.00	11.04	178.88	5,314.22	-904.86	17.73	-902.58	0.00	0.00	
5,500.00	11.04	178.88	5,412.37	-924.02	18.11	-921.68	0.00	0.00	
5,600.00	11.04	178.88	5,510.52	-943.17	18.48	-940.78	0.00	0.00	
5,700.00	11.04	178.88	5,608.67	-962.32	18.86	-959.89	0.00	0.00	
5,800.00	11.04	178.88	5,706.82	-981.47	19.23	-978.99	0.00	0.00	
5,900.00	11.04	178.88	5,804.97	-1,000.62	19.61	-998.09	0.00	0.00	
6,000.00	11.04	178.88	5,903.11	-1,019.77	19.98	-1,017.20	0.00	0.00	
6,100.00	11.04	178.88	6,001.26	-1,038.92	20.36	-1,036.30	0.00	0.00	
6,200.00	11.04	178.88	6,099.41	-1,058.08	20.73	-1,055.40	0.00	0.00	
6,300.00	11.04	178.88	6,197.56	-1,077.23	21.11	-1,074.51	0.00	0.00	
6,400.00	11.04	178.88	6,295.71	-1,096.38	21.48	-1,093.61	0.00	0.00	
6,500.00	11.04	178.88	6,393.86	-1,115.53	21.86	-1,112.71	0.00	0.00	
6,600.00	11.04	178.88	6,492.00	-1,134.68	22.23	-1,131.82	0.00	0.00	
6,700.00	11.04	178.88	6,590.15	-1,153.83	22.61	-1,150.92	0.00	0.00	
6,757.77	11.04	178.88	6,646.85	-1,164.90	22.83	-1,161.96	0.00	0.00	
6,800.00	7.67	177.51	6,688.51	-1,171.76	23.03	-1,168.80	8.00	-7.98	
6,900.00	0.69	61.43	6,788.23	-1,178.15	23.85	-1,175.13	8.00	-6.98	
7,000.00	8.37	5.98	6,887.85	-1,170.61	25.14	-1,167.53	8.00	7.68	
7,100.00	16.36	3.96	6,985.45	-1,149.28	26.87	-1,146.15	8.00	7.99	
7,200.00	24.36	3.25	7,079.13	-1,114.59	29.02	-1,111.38	8.00	8.00	
7,300.00	32.36	2.87	7,167.06	-1,067.20	31.53	-1,063.93	8.00	8.00	
7,400.00	40.35	2.63	7,247.53	-1,008.04	34.36	-1,004.70	8.00	8.00	
7,500.00	48.35	2.46	7,318.97	-938.25	37.45	-934.85	8.00	8.00	
7,600.00	56.35	2.33	7,380.00	-859.21	40.75	-855.74	8.00	8.00	
7,700.00	64.35	2.22	7,429.43	-772.44	44.19	-768.91	8.00	8.00	
7,800.00	72.35	2.12	7,466.29	-679.63	47.70	-676.05	8.00	8.00	
7,900.00	80.35	2.03	7,489.87	-582.60	51.21	-578.97	8.00	8.00	
8,000.00	88.35	1.95	7,499.70	-483.22	54.67	-479.56	8.00	8.00	
8,020.62	90.00	1.93	7,500.00	-462.62	55.36	-458.95	8.00	8.00	Bighorn 4Q-17H-P267 TPZ
8,100.00	90.00	1.93	7,500.00	-383.28	58.04	-379.58	0.00	0.00	
8,200.00	90.00	1.93	7,500.00	-283.34	61.40	-279.60	0.00	0.00	
8,220.62	90.00	1.93	7,500.00	-262.74	62.10	-258.99	0.00	0.00	
8,274.12	90.00	3.00	7,500.00	-209.29	64.40	-205.49	2.00	0.00	
8,300.00	90.00	3.52	7,500.00	-183.44	65.87	-179.61	2.00	0.00	
8,400.00	90.00	5.52	7,500.00	-83.76	73.75	-79.65	2.00	0.00	
8,500.00	90.00	7.52	7,500.00	15.59	85.10	20.17	2.00	0.00	
8,600.00	90.00	9.52	7,500.00	114.48	99.91	119.72	2.00	0.00	
8,700.00	90.00	11.52	7,500.00	212.80	118.16	218.88	2.00	0.00	
8,752.38	90.00	12.57	7,500.00	264.02	129.09	270.62	2.00	0.00	
8,800.00	90.00	12.57	7,500.00	310.50	139.45	317.59	0.00	0.00	
8,900.00	90.00	12.57	7,500.00	408.11	161.20	416.23	0.00	0.00	
9,000.00	90.00	12.57	7,500.00	505.71	182.96	514.87	0.00	0.00	
9,100.00	90.00	12.57	7,500.00	603.32	204.71	613.51	0.00	0.00	
9,200.00	90.00	12.57	7,500.00	700.92	226.47	712.15	0.00	0.00	
9,300.00	90.00	12.57	7,500.00	798.53	248.22	810.79	0.00	0.00	
9,400.00	90.00	12.57	7,500.00	896.13	269.98	909.43	0.00	0.00	
9,500.00	90.00	12.57	7,500.00	993.74	291.73	1,008.07	0.00	0.00	
9,600.00	90.00	12.57	7,500.00	1,091.34	313.49	1,106.71	0.00	0.00	
9,636.29	90.00	12.57	7,500.00	1,126.76	321.38	1,142.50	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 BIGHORN 4Q-17H-P267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site:</b>	BIGHORN	<b>North Reference:</b>	True
<b>Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3		

### 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
9,700.00	90.00	11.29	7,500.00	1,189.09	334.55	1,205.46	2.00	0.00	
9,800.00	90.00	9.29	7,500.00	1,287.48	352.42	1,304.67	2.00	0.00	
9,900.00	90.00	7.29	7,500.00	1,386.43	366.84	1,404.25	2.00	0.00	
10,000.00	90.00	5.29	7,500.00	1,485.82	377.79	1,504.09	2.00	0.00	
10,100.00	90.00	3.29	7,500.00	1,585.54	385.28	1,604.07	2.00	0.00	
10,200.00	90.00	1.29	7,500.00	1,685.45	389.27	1,704.05	2.00	0.00	
10,264.55	90.00	0.00	7,500.00	1,750.00	390.00	1,768.54	2.00	0.00	
10,300.00	90.00	0.00	7,500.00	1,785.45	390.00	1,803.94	0.00	0.00	
10,400.00	90.00	0.00	7,500.00	1,885.45	390.00	1,903.79	0.00	0.00	
10,500.00	90.00	0.00	7,500.00	1,985.45	390.00	2,003.65	0.00	0.00	
10,600.00	90.00	0.00	7,500.00	2,085.45	390.00	2,103.50	0.00	0.00	
10,700.00	90.00	0.00	7,500.00	2,185.45	390.00	2,203.35	0.00	0.00	
10,800.00	90.00	0.00	7,500.00	2,285.45	390.00	2,303.21	0.00	0.00	
10,900.00	90.00	0.00	7,500.00	2,385.45	390.00	2,403.06	0.00	0.00	
11,000.00	90.00	0.00	7,500.00	2,485.45	390.00	2,502.91	0.00	0.00	
11,100.00	90.00	0.00	7,500.00	2,585.45	390.00	2,602.77	0.00	0.00	
11,200.00	90.00	0.00	7,500.00	2,685.45	390.00	2,702.62	0.00	0.00	
11,300.00	90.00	0.00	7,500.00	2,785.45	390.00	2,802.47	0.00	0.00	
11,400.00	90.00	0.00	7,500.00	2,885.45	390.00	2,902.33	0.00	0.00	
11,500.00	90.00	0.00	7,500.00	2,985.45	390.00	3,002.18	0.00	0.00	
11,600.00	90.00	0.00	7,500.00	3,085.45	390.00	3,102.03	0.00	0.00	
11,700.00	90.00	0.00	7,500.00	3,185.45	390.00	3,201.89	0.00	0.00	
11,800.00	90.00	0.00	7,500.00	3,285.45	390.00	3,301.74	0.00	0.00	
11,900.00	90.00	0.00	7,500.00	3,385.45	390.00	3,401.59	0.00	0.00	
12,000.00	90.00	0.00	7,500.00	3,485.45	390.00	3,501.45	0.00	0.00	
12,100.00	90.00	0.00	7,500.00	3,585.45	390.00	3,601.30	0.00	0.00	
12,200.00	90.00	0.00	7,500.00	3,685.45	390.00	3,701.15	0.00	0.00	
12,300.00	90.00	0.00	7,500.00	3,785.45	390.00	3,801.01	0.00	0.00	
12,400.00	90.00	0.00	7,500.00	3,885.45	390.00	3,900.86	0.00	0.00	
12,500.00	90.00	0.00	7,500.00	3,985.45	390.00	4,000.71	0.00	0.00	
12,600.00	90.00	0.00	7,500.00	4,085.45	390.00	4,100.57	0.00	0.00	
12,700.00	90.00	0.00	7,500.00	4,185.45	390.00	4,200.42	0.00	0.00	
12,800.00	90.00	0.00	7,500.00	4,285.45	390.00	4,300.27	0.00	0.00	
12,900.00	90.00	0.00	7,500.00	4,385.45	390.00	4,400.13	0.00	0.00	
13,000.00	90.00	0.00	7,500.00	4,485.45	390.00	4,499.98	0.00	0.00	
13,100.00	90.00	0.00	7,500.00	4,585.45	390.00	4,599.83	0.00	0.00	
13,200.00	90.00	0.00	7,500.00	4,685.45	390.00	4,699.69	0.00	0.00	
13,264.55	90.00	0.00	7,500.00	4,750.00	390.00	4,764.15	0.00	0.00	BIGHORN 4Q TGT
13,296.28	90.00	0.95	7,500.00	4,781.73	390.26	4,795.84	3.00	0.00	
13,300.00	90.00	0.95	7,500.00	4,785.45	390.33	4,799.56	0.00	0.00	
13,400.00	90.00	0.95	7,500.00	4,885.43	391.99	4,899.49	0.00	0.00	
13,500.00	90.00	0.95	7,500.00	4,985.42	393.65	4,999.42	0.00	0.00	
13,600.00	90.00	0.95	7,500.00	5,085.40	395.31	5,099.35	0.00	0.00	
13,700.00	90.00	0.95	7,500.00	5,185.39	396.97	5,199.28	0.00	0.00	
13,800.00	90.00	0.95	7,500.00	5,285.38	398.63	5,299.21	0.00	0.00	
13,900.00	90.00	0.95	7,500.00	5,385.36	400.29	5,399.13	0.00	0.00	
14,000.00	90.00	0.95	7,500.00	5,485.35	401.96	5,499.06	0.00	0.00	
14,100.00	90.00	0.95	7,500.00	5,585.34	403.62	5,598.99	0.00	0.00	
14,200.00	90.00	0.95	7,500.00	5,685.32	405.28	5,698.92	0.00	0.00	
14,300.00	90.00	0.95	7,500.00	5,785.31	406.94	5,798.85	0.00	0.00	
14,400.00	90.00	0.95	7,500.00	5,885.29	408.60	5,898.78	0.00	0.00	
14,500.00	90.00	0.95	7,500.00	5,985.28	410.26	5,998.71	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 BIGHORN 4Q-17H-P267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site:</b>	BIGHORN	<b>North Reference:</b>	True
<b>Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #3		

### 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
14,569.41	90.00	0.95	7,500.00	6,054.68	411.42	6,068.08	0.00	0.00	
14,600.00	90.00	0.03	7,500.00	6,085.27	411.68	6,098.63	3.00	0.00	
14,700.00	90.00	357.03	7,500.00	6,185.22	409.12	6,198.30	3.00	0.00	
14,800.00	90.00	354.03	7,500.00	6,284.91	401.34	6,297.42	3.00	0.00	
14,900.00	90.00	351.03	7,500.00	6,384.05	388.34	6,395.71	3.00	0.00	
15,000.00	90.00	348.03	7,500.00	6,482.38	370.18	6,492.91	3.00	0.00	
15,067.81	90.00	346.00	7,500.00	6,548.45	354.95	6,558.06	3.00	0.00	Bighorn 4Q-17H-P267 BHL 5.24 - Bighorn 4Q-1

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Bighorn 4Q-17H-P267 T - plan hits target center - Point	0.00	0.00	7,500.00	-462.62	55.36	1,291,634.73	3,165,697.68	40.132411	-104.907392
BIGHORN 4Q TGT - plan hits target center - Point	0.00	0.00	7,500.00	4,750.00	390.00	1,296,849.47	3,165,997.49	40.146720	-104.906195
Bighorn 4Q-17H-P267 B - plan hits target center - Point	0.00	0.00	7,500.00	6,548.45	354.95	1,298,647.65	3,165,950.42	40.151657	-104.906320
Bighorn 4Q-17H-P267 B - plan misses target center by 465.35usft at 15067.81usft MD (7500.00 TVD, 6548.45 N, 354.95 E) - Point	0.00	0.00	7,500.00	7,000.38	244.03	1,299,098.83	3,165,836.48	40.152898	-104.906717

# **Crestone Peak Resources**

**DJ BASIN**

**BIGHORN**

**BIGHORN 4Q-17H-P267**

**OH**

**PLAN #3**

## **Anticollision Summary Report**

**24 May, 2018**



# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #3		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,933.21 usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	5/24/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	400.00	PLAN #3 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro	
2,001.00	15,067.81	PLAN #3 (OH)	MWD+HDGM	OWSG MWD + HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BIGHORN						
BIGHORN 4A-17H-P267 - OH - PLAN #2	400.00	401.00	159.94	158.75	135.158	CC
BIGHORN 4A-17H-P267 - OH - PLAN #2	500.00	498.98	159.99	158.46	104.639	ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	4,700.00	4,080.77	1,906.89	1,868.28	49.390	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	189.86	189.38	394.130	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	4,100.00	3,424.91	1,927.41	1,900.81	72.445	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	300.00	299.00	180.07	179.24	216.750	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	4,200.00	3,501.67	1,891.64	1,860.66	61.062	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	400.00	399.00	170.01	168.83	144.091	CC, ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	4,400.00	3,727.18	1,877.71	1,843.97	55.651	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	400.00	401.00	149.87	148.69	126.652	CC
BIGHORN 4B-17H-P267 - OH - PLAN #2	600.00	598.84	150.22	148.34	79.952	ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	5,000.00	4,418.65	1,885.36	1,842.82	44.314	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	199.00	140.09	139.60	290.809	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	4,800.00	4,219.61	1,888.85	1,854.31	54.690	SF
BIGHORN 4D-17H-P267 - OH - PLAN #3	400.00	401.00	130.02	128.84	109.876	CC
BIGHORN 4D-17H-P267 - OH - PLAN #3	600.00	601.16	130.40	128.52	69.252	ES
BIGHORN 4D-17H-P267 - OH - PLAN #3	5,300.00	4,784.42	1,902.26	1,853.75	39.212	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	263.71	262.72	119.95	119.25	170.269	CC
BIGHORN 4E-17H-P267 - OH - PLAN #1	300.00	298.96	119.96	119.13	144.307	ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	5,400.00	4,938.90	1,927.50	1,881.58	41.975	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	400.00	401.00	109.89	108.71	92.864	CC
BIGHORN 4F-17H-P267 - OH - PLAN #1	500.00	501.02	109.95	108.42	71.745	ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	5,900.00	5,440.33	1,898.00	1,841.62	33.664	SF
BIGHORN 4G-17H-P267 - OH - PLAN #4	400.00	401.00	100.10	98.92	84.592	CC
BIGHORN 4G-17H-P267 - OH - PLAN #4	500.00	501.02	100.16	98.63	65.357	ES
BIGHORN 4G-17H-P267 - OH - PLAN #4	6,300.00	5,880.63	1,931.20	1,867.75	30.438	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	253.13	252.14	90.03	89.37	134.882	CC
BIGHORN 4H-17H-P267 - OH - PLAN #1	300.00	298.95	90.05	89.22	108.331	ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	6,400.00	6,039.63	1,921.59	1,863.20	32.910	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	352.52	351.53	79.97	78.95	78.839	CC
BIGHORN 4I-17H-P267 - OH - PLAN #1	400.00	398.95	79.99	78.81	67.780	ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	6,800.00	6,518.46	1,783.45	1,719.94	28.084	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	400.00	399.00	69.90	68.72	59.249	CC, ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	6,800.00	6,560.67	1,666.39	1,613.42	31.463	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	400.00	401.00	59.84	58.66	50.568	CC
BIGHORN 4K-17H-P267 - OH - PLAN #2	500.00	498.98	59.92	58.39	39.187	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BIGHORN						
BIGHORN 4K-17H-P267 - OH - PLAN #2	15,067.81	14,942.86	1,805.74	1,385.97	4.302	SF
BIGHORN 4L-17H-P267 - OH - PLAN #2	400.00	400.00	50.05	48.87	42.359	CC
BIGHORN 4L-17H-P267 - OH - PLAN #2	500.00	500.02	50.13	48.60	32.745	ES
BIGHORN 4L-17H-P267 - OH - PLAN #2	15,067.81	14,968.79	1,447.65	1,027.61	3.446	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	200.00	200.00	39.98	39.50	82.706	CC
BIGHORN 4M-17H-P267 - OH - PLAN #1	300.00	299.75	40.27	39.44	48.345	ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	15,067.81	15,152.48	1,355.65	929.06	3.178	SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	400.00	400.00	29.92	28.74	25.321	CC, ES
BIGHORN 4N-17H-P267 - OH - PLAN #2	15,067.81	15,167.30	966.98	548.29	2.310	SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	300.00	300.00	19.85	19.02	23.848	CC, ES
BIGHORN 4O-17H-P267 - OH - PLAN #2	15,067.81	14,811.57	772.87	363.50	1.888	SF
BIGHORN 4P-17H-P267 - OH - PLAN #2	208.86	208.86	10.07	9.56	19.576	CC
BIGHORN 4P-17H-P267 - OH - PLAN #2	300.00	299.96	10.24	9.40	12.287	ES
BIGHORN 4P-17H-P267 - OH - PLAN #2	15,067.81	15,025.40	439.05	50.50	1.130	Level 2, SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	300.00	10.07	9.23	12.091	CC
BIGHORN 4R-17H-P267 - OH - PLAN #2	15,067.81	14,823.53	273.33	0.31	1.001	Level 2, ES, SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	200.00	20.13	19.65	41.641	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	14,700.00	14,529.19	474.50	171.49	1.566	SF

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S17-T2N-R67W (OFFSETS)						
ABBEY STATE V16-77HN - KMG WELL - SURVEYS	10,921.72	10,458.82	1,844.27	1,679.56	11.198	CC
ABBEY STATE V16-77HN - KMG WELL - SURVEYS	12,300.00	11,812.00	1,859.31	1,634.08	8.255	ES
ABBEY STATE V16-77HN - KMG WELL - SURVEYS	12,500.00	11,812.00	1,872.79	1,643.25	8.159	SF
ALFRED D SATER UNIT 2 - KMG WELL - GYRO						Out of range
ALVIN STATE 1 - PDC WELL - GYRO	8,405.18	7,536.72	1,283.13	1,228.25	23.378	CC, ES
ALVIN STATE 1 - PDC WELL - GYRO	8,900.00	7,534.36	1,338.35	1,276.59	21.673	SF
ASPEN STATE V16-75HN - KMG WELL - SURVEYS						Out of range
CHENG 3-8A - KMG WELL - SURVEYS						Out of range
CIRBO 4-6-5 - CPR WELL - SURVEYS						Out of range
CIRBO 6-4-5 - CPR WELL - SURVEYS						Out of range
DECHANT 2-16 - KMG WELL - GYRO						Out of range
DECHANT 6 - KPK WELL - NO SURVEYS						Out of range
DECHANT 7 - KPK WELL - NO SURVEYS	400.00	390.00	1,655.48	1,653.68	917.969	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	2,800.00	2,752.37	1,930.14	1,915.22	129.364	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS	10,468.84	7,383.40	1,277.93	1,169.84	11.823	CC
DECHANT STATE 1 - KPK WELL - SURVEYS	10,500.00	7,376.73	1,278.30	1,169.32	11.730	ES
DECHANT STATE 1 - KPK WELL - SURVEYS	10,700.00	7,316.36	1,298.03	1,184.85	11.468	SF
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,823.30	7,595.97	1,569.18	1,505.93	24.806	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	9,300.00	7,601.72	1,639.98	1,569.14	23.151	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,795.12	7,460.20	909.02	820.38	10.255	CC
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,800.00	7,460.12	909.04	820.28	10.242	ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,900.00	7,458.23	916.95	826.29	10.114	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,371.79	7,482.02	1,141.29	986.38	7.368	CC
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,400.00	7,481.52	1,141.64	985.77	7.324	ES
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,500.00	7,479.71	1,148.47	989.87	7.241	SF
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,724.04	7,510.09	836.04	724.04	7.465	CC, ES
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,800.00	7,509.13	839.48	725.04	7.335	SF
DECHANT V 16-3JI - KMG WELL - GYRO						Out of range
DECHANT-STATE 2 - KPK WELL - NO SURVEYS						Out of range
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	2,321.85	2,304.93	1,459.24	1,447.20	121.139	CC
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	2,600.00	2,568.07	1,460.22	1,446.24	104.435	ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	5,300.00	5,100.00	1,571.23	1,533.48	41.624	SF
DECHANT-STATE 4 - KPK WELL - NO SURVEYS						Out of range
DECHANT-STATE 5 - KPK WELL - NO SURVEYS						Out of range
DIER 1 - CPR WELL - GYRO	14,900.00	7,459.80	288.85	67.15	1.303	Level 3, ES, SF
DIER 1 - CPR WELL - GYRO	14,929.66	7,460.11	287.55	68.70	1.314	Level 3, CC
DIER 13-8 - CPR WELL - SURVEYS						Out of range
DIER 14-8 - CPR WELL - SURVEYS						Out of range
DIER 23-8 - CPR WELL - SURVEYS						Out of range
DIER 24-8 - CPR WELL - SURVEYS						Out of range
DIER 33-8 - CPR WELL - GYRO	15,067.81	7,444.25	1,621.26	1,396.53	7.214	CC, ES, SF
DIER 34-8 - CPR WELL - GYRO	13,427.07	7,437.26	1,923.42	1,740.08	10.491	CC
DIER 34-8 - CPR WELL - GYRO	13,500.00	7,438.67	1,924.80	1,739.89	10.409	ES
DIER 34-8 - CPR WELL - GYRO	13,600.00	7,440.62	1,931.17	1,744.50	10.345	SF
DIER 44-8 - CPR WELL - GYRO	13,286.04	7,484.63	176.99	-2.47	0.986	Level 1, CC, ES, SF
DIER 4-4-8 - CPR WELL - SURVEYS						Out of range
DIER 4-8 - CPR WELL - GYRO						Out of range
DIER 8-4-8 - CPR WELL - SURVEYS	15,067.81	7,549.96	520.99	359.84	3.233	CC, ES, SF
DIER 8-6-8 - CPR WELL - SURVEYS	14,141.00	7,599.09	311.20	100.32	1.476	Level 3, CC, ES, SF
DIER J1A - CPR WELL - GYRO	13,988.08	7,496.54	1,029.87	831.15	5.183	CC

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S17-T2N-R67W (OFFSETS)						
DIER J1A - CPR WELL - GYRO	14,000.00	7,496.41	1,029.94	831.00	5.177	ES, SF
ELKHORN CO B 3 - KPK WELL - NO SURVEYS						Out of range
ELKHORN CO UNIT 2 - KMG WELL - GYRO						Out of range
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,404.61	5,200.00	1,608.12	1,569.88	42.057	CC, ES
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,600.00	5,200.00	1,619.95	1,580.99	41.586	SF
ELKHORN CO-B 7 - KPK WELL - NO SURVEYS						Out of range
ELKHORN COMPANY B 2 - KMG WELL - GYRO						Out of range
FIRESTONE 20-29D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-04D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,904.34	6,940.84	1,656.26	1,621.43	47.547	CC, ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	7,000.00	7,040.41	1,662.38	1,627.15	47.176	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-2 - KMG WELL - GYRO	6,835.03	6,705.59	1,451.31	1,397.78	27.112	CC, ES
FIRESTONE V 20-2 - KMG WELL - GYRO	7,100.00	6,961.88	1,462.80	1,407.89	26.643	SF
FIRESTONE V 20-3 - KMG WELL - GYRO						Out of range
HOMESTEAD 22-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 29-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 31-4 - KMG WELL - SURVEYS						Out of range
HOMESTEAD 4-4 - KMG WELL - GYRO						Out of range
HSR-DODERO 6-4A - KMG WELL - GYRO						Out of range
HSR-MCHALE 7-5A - KMG WELL - GYRO						Out of range
HSR-RHOADES 8-5A - KMG WELL - GYRO						Out of range
HSR-SATER 1-8A - KMG WELL - GYRO						Out of range
HSR-VOGL 3-5A - KMG WELL - GYRO						Out of range
MAHONEY 1 - KPK WELL - NO SURVEYS	5,237.78	5,042.00	575.00	544.64	18.941	CC, ES, SF
MAHONEY 2 - KPK WELL - NO SURVEYS						Out of range
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,275.40	5,050.00	1,357.74	1,320.95	36.902	CC, ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,050.00	1,363.45	1,326.21	36.610	SF
MCCLAY 5-4A - KMG WELL - GYRO						Out of range
MCCOY 1 - CPR WELL - GYRO						Out of range
MCCOY 13-5 - CPR WELL - GYRO						Out of range
MCCOY 14-5 - CPR WELL - GYRO						Out of range
MCCOY 23-5 - CPR WELL - GYRO						Out of range
MCCOY 24-5 - CPR WELL - GYRO						Out of range
MCCOY 2-4-5 - CPR WELL - SURVEYS						Out of range
MCHALE 2-5 - KMG WELL - GYRO						Out of range
MCHALE UNIT 1 - KMG WELL - GYRO						Out of range
MCHALE-B 1 - AMOCO WELL - NO SURVEYS						Out of range
MERLE L MCHALE UNIT 2 - KMG WELL - GYRO						Out of range
MILLER 1 - EXTRACTION WELL - GYRO	11,861.62	7,454.83	675.87	534.50	4.781	CC, ES
MILLER 1 - EXTRACTION WELL - GYRO	11,900.00	7,454.70	676.95	535.36	4.781	SF
MILLER 11-17 - CPR WELL - SURVEYS						Out of range
MILLER 1-17 - CPR WELL - SURVEYS						Out of range
MILLER 12-17 - CPR WELL - SURVEYS						Out of range
MILLER 13-17 - CPR WELL - SURVEYS						Out of range
MILLER 14-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 21-17 - CPR WELL - GYRO						Out of range
MILLER 2-17 - CPR WELL - GYRO	11,249.82	7,468.78	701.70	576.30	5.596	CC, ES, SF
MILLER 22-17 - CPR WELL - SURVEYS						Out of range
MILLER 23-17 - CPR WELL - SURVEYS						Out of range
MILLER 24-17 - CPR WELL - GYRO						Out of range
MILLER 2-4-17 - CPR WELL - SURVEYS						Out of range
MILLER 31-17C - EXTRACTION WELL - GYRO	12,231.62	7,380.44	1,557.74	1,406.80	10.320	CC, ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S17-T2N-R67W (OFFSETS)						
MILLER 31-17C - EXTRACTION WELL - GYRO	12,400.00	7,382.00	1,566.81	1,413.31	10.207	SF
MILLER 3-17J - CPR WELL - GYRO	417.35	399.87	655.18	653.94	528.328	CC, ES
MILLER 3-17J - CPR WELL - GYRO	8,900.00	7,483.99	762.51	697.16	11.669	SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	1,076.13	1,055.31	802.05	798.69	238.162	CC
MILLER 33-17J - CPR WELL - SURVEYS	1,200.00	1,176.14	802.45	798.59	208.176	ES
MILLER 33-17J - CPR WELL - SURVEYS	9,900.00	7,697.28	1,782.85	1,679.44	17.241	SF
MILLER 34-17J - CPR WELL - SURVEYS	965.37	942.30	678.51	675.59	232.250	CC
MILLER 34-17J - CPR WELL - SURVEYS	1,000.00	975.20	678.53	675.48	222.400	ES
MILLER 34-17J - CPR WELL - SURVEYS	8,400.00	7,447.75	1,330.14	1,273.98	23.684	SF
MILLER 41-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 4-17J - CPR WELL - GYRO						Out of range
MILLER 42-17 - EXTRACTION WELL - NO SURVEYS						Out of range
MILLER 43-17 - EXTRACTION WELL - GYRO	417.61	406.04	1,055.86	1,054.61	842.159	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,200.00	5,056.00	1,915.97	1,894.80	90.508	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,492.49	7,497.14	390.33	310.05	4.862	CC
MILLER 43-17J - EXTRACTION WELL - GYRO	9,500.00	7,497.17	390.40	309.81	4.844	ES, SF
MILLER 44-17J - CPR WELL - SURVEYS	8,100.00	7,666.79	191.53	138.16	3.589	CC, ES, SF
MILLER CJ 17-A - CPR WELL - SURVEYS						Out of range
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,477.04	2,432.39	557.70	544.70	42.910	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,600.00	2,553.07	558.19	544.27	40.098	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	5,200.00	5,092.00	763.71	728.75	21.845	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	400.00	375.00	1,356.51	1,354.77	778.854	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	4,400.00	4,307.74	1,925.78	1,899.28	72.686	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,534.44	1,510.25	268.05	260.19	34.117	CC
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,600.00	1,574.59	268.34	260.13	32.694	ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	3,700.00	3,635.70	493.88	472.57	23.173	SF
PERRIN GU 1 - KMG WELL - GYRO	6,892.70	6,788.90	774.68	742.09	23.774	CC
PERRIN GU 1 - KMG WELL - GYRO	6,900.00	6,795.92	774.71	742.09	23.746	ES
PERRIN GU 1 - KMG WELL - GYRO	7,000.00	6,898.61	782.08	749.03	23.666	SF
PERRIN GU 2-20 - KMG WELL - GYRO						Out of range
PERRIN V 20-5D - KMG WELL - GYRO						Out of range
PERRIN V 20-7DI - KMG WELL - GYRO						Out of range
PERRIN-MAHONEY 1 - KPG WELL - NO SURVEYS						Out of range
PROMINENCE 4-8 - KMG WELL - GYRO						Out of range
RHOADES 1-5A - KMG WELL - GYRO						Out of range
ROBERT E BALDWIN 2 - KMG WELL - GYRO						Out of range
RUCA 20-1HZ - KMG - PLAN ONLY	3,124.01	3,148.21	1,117.09	1,090.61	42.192	CC, ES
RUCA 20-1HZ - KMG - PLAN ONLY	8,100.00	7,800.00	1,928.93	1,853.59	25.602	SF
RUCA 20-2HZ - KMG - PLAN ONLY	3,334.16	3,382.03	999.99	971.54	35.139	CC
RUCA 20-2HZ - KMG - PLAN ONLY	3,400.00	3,436.05	1,000.70	971.51	34.283	ES
RUCA 20-2HZ - KMG - PLAN ONLY	8,500.00	7,650.00	1,694.51	1,613.40	20.890	SF
RUCA 20-3HZ - KMG - PLAN ONLY	3,469.43	3,536.45	907.81	878.10	30.564	CC
RUCA 20-3HZ - KMG - PLAN ONLY	3,500.00	3,561.44	907.98	877.93	30.218	ES
RUCA 20-3HZ - KMG - PLAN ONLY	8,300.00	7,600.00	1,467.54	1,392.15	19.466	SF
RUCA 20-4HZ - KMG - PLAN ONLY	3,577.53	3,663.94	780.75	749.87	25.284	CC
RUCA 20-4HZ - KMG - PLAN ONLY	3,600.00	3,682.63	780.85	749.72	25.084	ES
RUCA 20-4HZ - KMG - PLAN ONLY	7,700.00	7,836.62	1,114.21	1,047.93	16.811	SF
RUCA 20-5HZ - KMG - PLAN ONLY	3,701.82	3,805.92	634.52	602.53	19.833	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	7,900.00	7,788.07	876.52	808.70	12.925	SF
RUCA 20-6HZ - KMG - PLAN ONLY	3,950.06	4,053.97	502.59	468.97	14.949	CC, ES
RUCA 20-6HZ - KMG - PLAN ONLY	7,700.00	7,830.18	679.67	614.70	10.462	SF
RUCA 20-7HZ - KMG - PLAN ONLY	4,033.68	4,148.61	182.26	147.92	5.308	CC, ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S17-T2N-R67W (OFFSETS)						
RUCA 20-7HZ - KMG - PLAN ONLY	7,504.90	7,776.19	235.22	173.32	3.800	SF
RUCA 20-8HZ - KMG - PLAN ONLY	7,792.38	7,816.82	62.58	-2.19	0.966	Level 1, CC, ES, SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,957.57	4,077.72	261.08	227.51	7.778	CC, ES
RUCA 20-9HZ - KMG - PLAN ONLY	7,664.51	7,832.28	316.71	253.39	5.002	SF
SATER 21-8 - KMG WELL - SURVEYS						Out of range
SATER 24-8 - KMG WELL - SURVEYS	15,067.81	7,545.85	1,032.11	824.33	4.967	CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	15,067.81	7,333.00	756.66	570.32	4.061	CC, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	15,067.81	7,176.16	1,322.86	1,112.00	6.274	CC, ES, SF
SATER 25C-5HZ - KMG WELL - SURVEYS						Out of range
SATER 2-8 - KMG WELL - SURVEYS						Out of range
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS	15,067.81	7,200.00	590.79	514.60	7.754	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	15,067.81	7,511.59	1,923.72	1,718.13	9.357	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	15,067.81	7,831.43	1,147.78	1,056.20	12.533	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	15,067.81	7,389.58	1,844.80	1,696.69	12.456	CC, ES, SF
SCOTT 1C-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 26N-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 27N-32HZ - KMG WELL - SURVEYS						Out of range
SCOTT 28C-32HZ - KMG WELL - SURVEYS						Out of range
SHELEY 1 - CPR WELL - GYRO						Out of range
SHELEY 14-4 - CPR WELL - GYRO						Out of range
SHELEY 24-4 - MACHII-ROSS WELL - GYRO						Out of range
SHELEY 3A-4H - CPR WELL - SURVEYS						Out of range
SHELEY 3B-4H - CPR WELL - SURVEYS						Out of range
SHELEY 4-6-4 - CPR WELL - SURVEYS						Out of range
SPRAGUE 11-9 - CPR WELL - GYRO						Out of range
SPRAGUE 13-9 - CPR WELL - GYRO	14,770.13	7,518.63	1,237.33	1,019.43	5.679	CC
SPRAGUE 13-9 - CPR WELL - GYRO	14,800.00	7,519.09	1,237.92	1,018.60	5.644	ES
SPRAGUE 13-9 - CPR WELL - GYRO	14,900.00	7,520.66	1,248.50	1,025.37	5.595	SF
SPRAGUE 14-9 - CPR WELL - GYRO	13,550.80	7,564.88	1,140.18	953.52	6.108	CC
SPRAGUE 14-9 - CPR WELL - GYRO	13,600.00	7,564.05	1,141.25	953.08	6.065	ES
SPRAGUE 14-9 - CPR WELL - GYRO	13,700.00	7,562.32	1,149.90	959.68	6.045	SF
SPRAGUE 24-9 - CPR WELL - GYRO						Out of range
SPRAGUE 2-4-9 - CPR WELL - SURVEYS	15,026.19	7,592.37	1,899.08	1,675.68	8.501	CC
SPRAGUE 2-4-9 - CPR WELL - SURVEYS	15,067.81	7,593.56	1,899.99	1,674.27	8.418	ES, SF
SPRAGUE 2-8-9 - CPR WELL - SURVEYS	12,948.79	7,624.95	1,748.27	1,573.06	9.978	CC
SPRAGUE 2-8-9 - CPR WELL - SURVEYS	13,000.00	7,625.09	1,749.02	1,572.10	9.886	ES
SPRAGUE 2-8-9 - CPR WELL - SURVEYS	13,300.00	7,625.87	1,782.88	1,598.56	9.673	SF
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	13,504.29	7,716.72	951.32	762.72	5.044	CC
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	14,600.00	8,816.82	951.38	722.31	4.153	ES
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	14,800.00	8,991.57	965.42	729.06	4.085	SF
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	13,768.49	8,132.43	722.96	520.38	3.569	CC
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	14,600.00	8,948.13	729.48	495.63	3.119	ES
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	14,900.00	9,289.79	753.21	505.91	3.046	SF
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,600.00	8,923.26	1,140.40	907.02	4.886	CC
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,700.00	9,021.75	1,143.56	905.94	4.813	ES
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,900.00	9,220.75	1,167.02	921.25	4.748	SF
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,604.03	8,652.00	1,448.09	1,216.78	6.260	CC
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,700.00	8,727.78	1,451.10	1,216.03	6.173	ES
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	15,067.81	9,100.05	1,507.96	1,258.04	6.034	SF
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS	14,065.74	8,102.90	1,691.65	1,481.98	8.068	CC
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS	14,700.00	8,784.71	1,700.91	1,464.71	7.201	ES
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS	15,067.81	9,128.00	1,748.65	1,497.67	6.967	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S17-T2N-R67W (OFFSETS)						
SPRAGUE 3E-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3E-9HX1-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3F-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3G-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3H-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3I-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3J-9H-N267 - CPR WELL - SURVEYS						Out of range
SPRAGUE 4-6-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 4-8-9 - CPR WELL - SURVEYS						Out of range
STANLEY #2 - GERRITY WELL - NO SURVEYS	2,401.46	2,407.21	1,368.90	1,356.26	108.296	CC
STANLEY #2 - GERRITY WELL - NO SURVEYS	2,700.00	2,700.22	1,370.09	1,355.19	91.933	ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,300.00	5,175.00	1,479.22	1,441.21	38.916	SF
STANLEY 3 - GERRITY WELL - NO SURVEYS						Out of range
TEETS PERRIN 1 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 2 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 3 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 4 - KPK WELL - NO SURVEYS						Out of range
TEETS-PERRIN 5 - KPK WELL - NO SURVEYS						Out of range
TOWNSEND 33-5 - CPR WELL - GYRO						Out of range
TOWNSEND 34-5 - CPR WELL - GYRO						Out of range
TOWNSEND 43-5 - CPR WELL - GYRO						Out of range
TOWNSEND 44-5 - CPR WELL - GYRO						Out of range
VOGL 21-5 - KMG WELL - SURVEYS						Out of range
VOGL 21-5X - KMG WELL - SURVEYS						Out of range
VOGL 5-5 - KMG WELL - GYRO						Out of range
VOGL 5-8A - KMG WELL - GYRO						Out of range
VOGL 6-5A - KMG WELL - GYRO						Out of range
VOGL GEIST 2A-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2B-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2C-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2D-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2E-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL GEIST 2F-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2A-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2B-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2C-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2D-5H-E267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2E-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2F-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2G-5H-F267 - CPR WELL - SURVEYS						Out of range
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS						Out of range



# Cathedral Energy Services

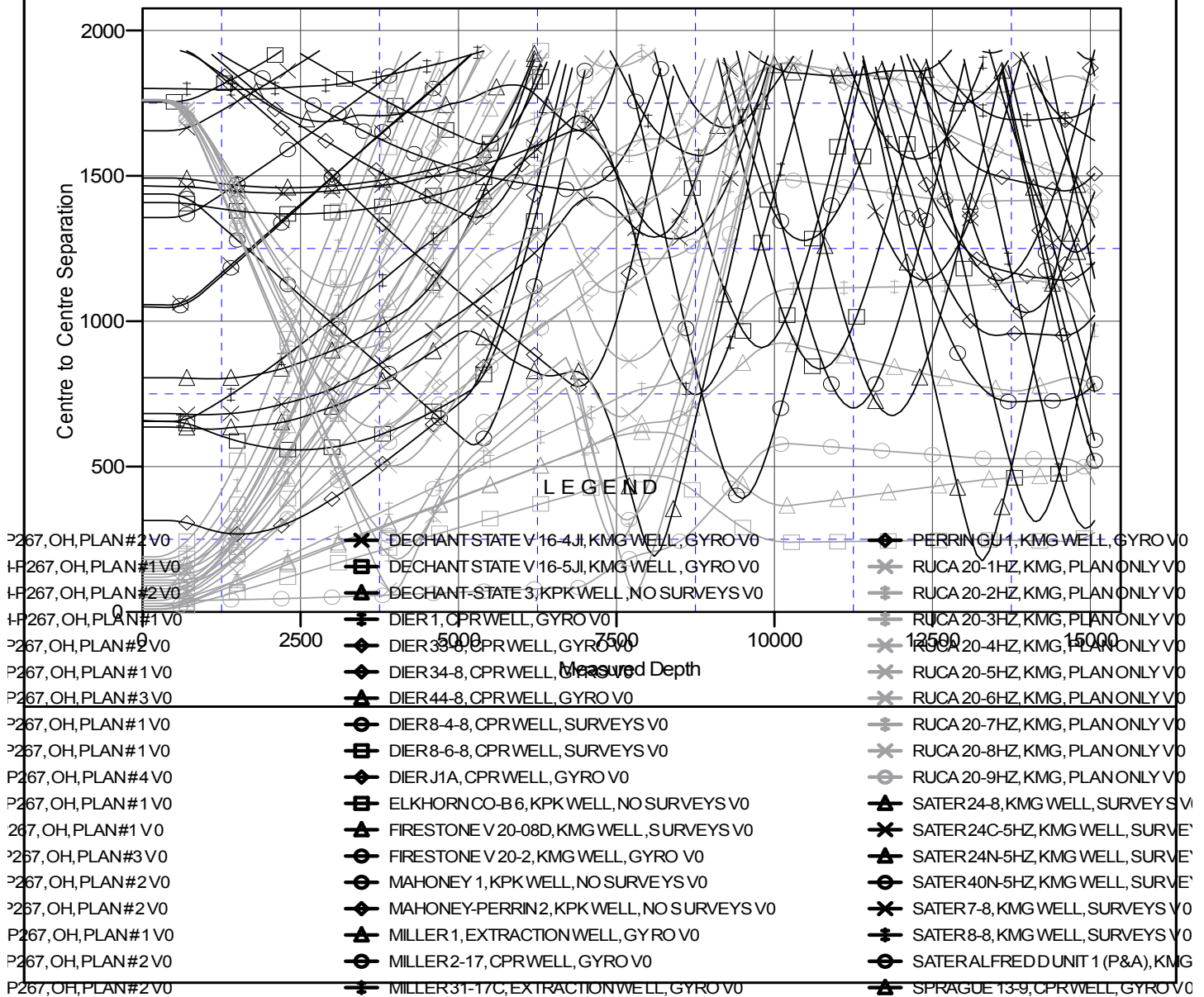
## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 23' KB @ 4983.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4Q-17H-P267  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.38°

### Ladder Plot



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



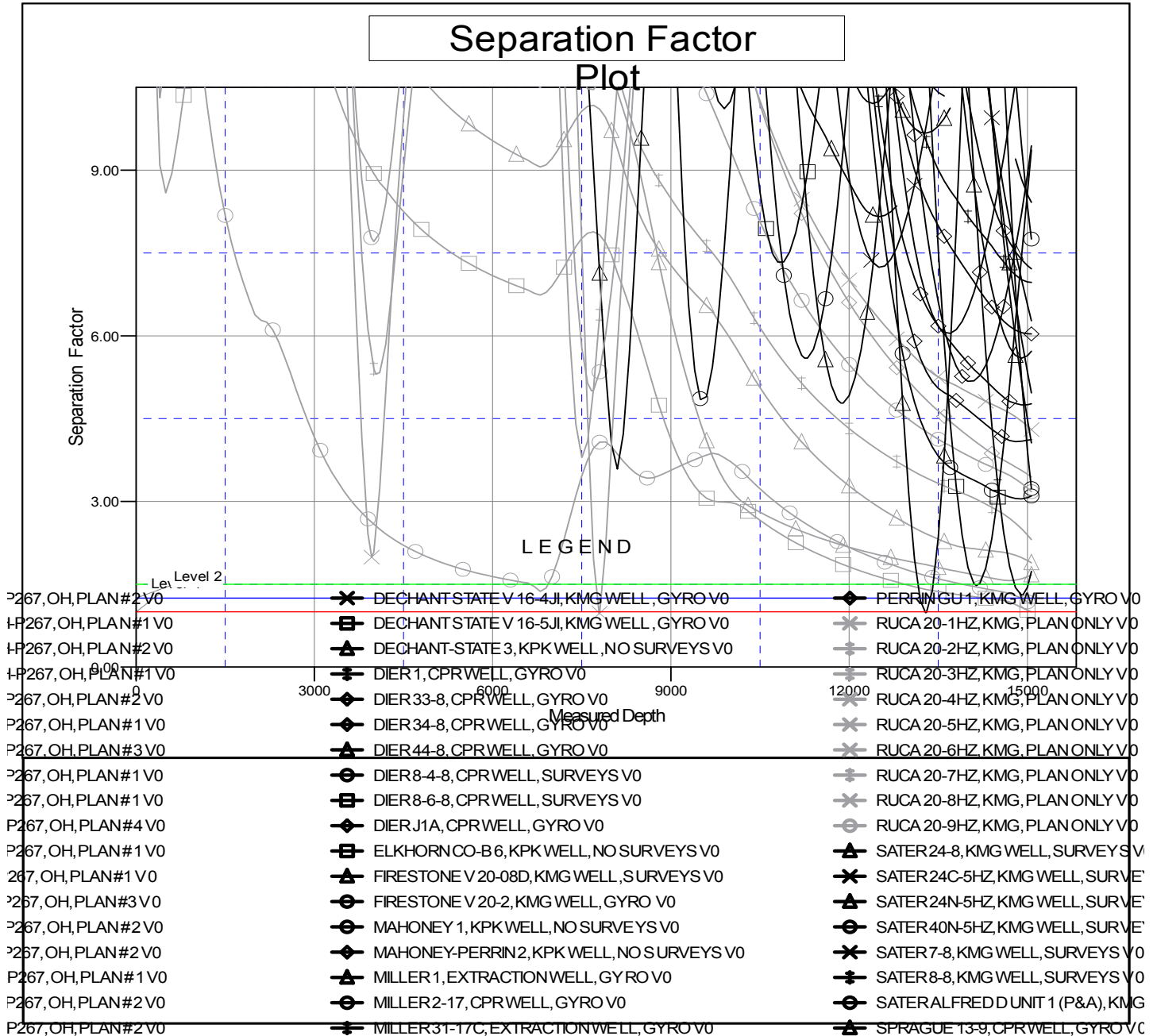
# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well BIGHORN 4Q-17H-P267
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4983.00usft
<b>Reference Site:</b>	BIGHORN	<b>MD Reference:</b>	23' KB @ 4983.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BIGHORN 4Q-17H-P267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 23' KB @ 4983.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: BIGHORN 4Q-17H-P267  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.38°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation