



CRESTONE PEAK
RESOURCES

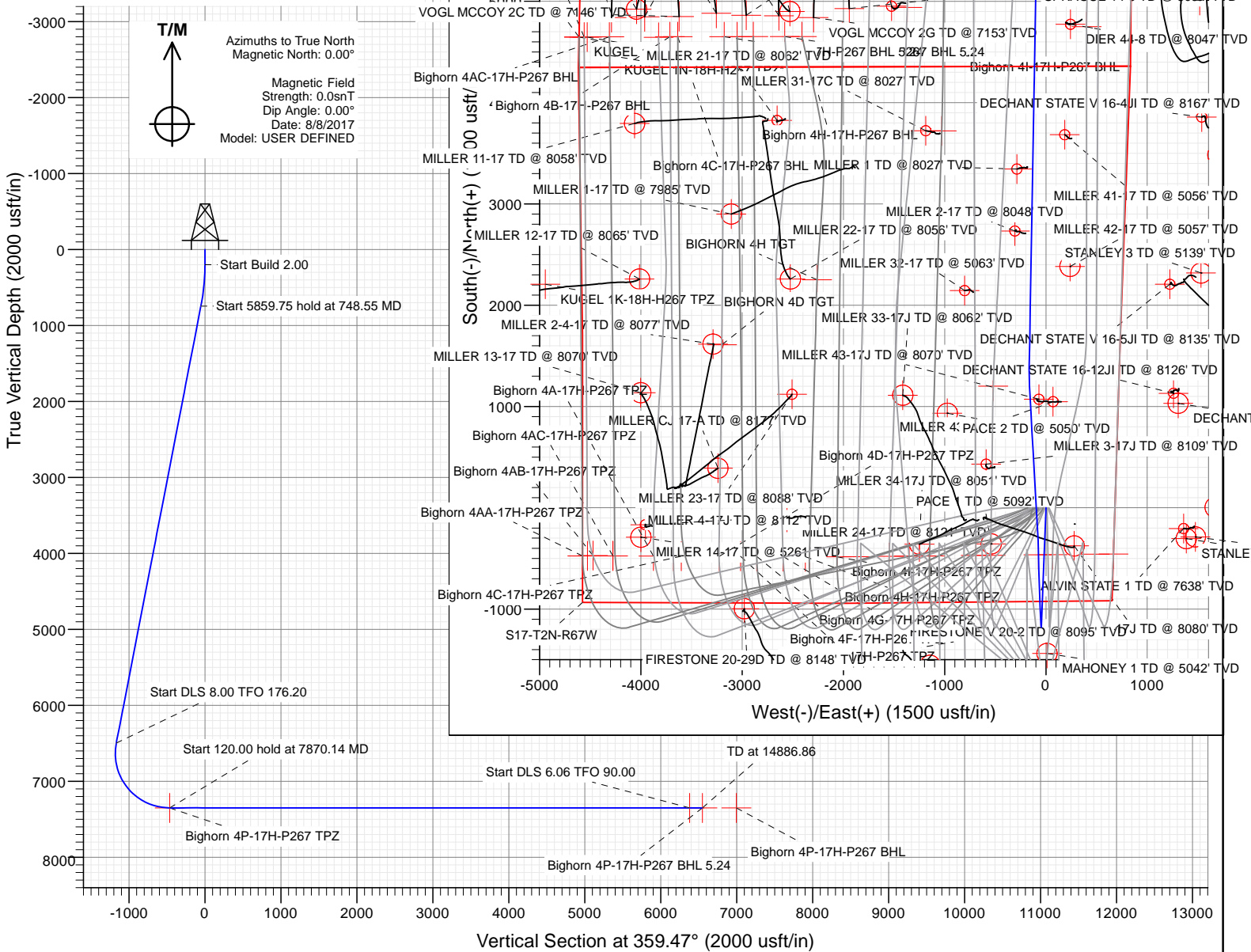
SECTION DETAILS

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	748.55	10.97	182.23	745.20	-52.32	-2.04	2.00	182.23	-52.30	
4	6608.30	10.97	182.23	6497.86	-1166.65	-45.51	0.00	0.00	-1166.19	
5	7870.14	90.00	358.50	7350.00	-464.01	-74.67	8.00	176.20	-463.31	Bighorn 4P-17H-P267 TPZ
6	7990.14	90.00	358.50	7350.00	-344.05	-77.81	0.00	0.00	-343.32	
7	8075.90	90.00	356.78	7350.00	-258.38	-81.34	2.00	-90.00	-257.62	
8	9506.62	90.00	356.78	7350.00	1170.10	-161.58	0.00	0.00	1171.53	
9	9717.37	90.00	1.00	7350.00	1380.76	-165.65	2.00	90.00	1382.23	
10	14717.37	90.00	1.00	7350.00	6380.00	-78.39	0.00	0.00	6380.45	
11	14886.86	90.00	11.27	7350.00	6548.29	-60.31	6.06	90.00	6548.56	Bighorn 4P-17H-P267 BHL 5.24

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

Type TD	Target No Target (Freehand)	Azimuth 359.47	Origin Type SLT	N/S 0.00	E/W 0.00	From TVD 0.00
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Bighorn 4P-17H-P267 BHL	7350.00	6997.90	154.02	40.152892	-104.907705	
Bighorn 4P-17H-P267 BHL 5.24	7350.00	6548.29	-60.31	40.151658	-104.907842	
Bighorn 4P-17H-P267 TPZ	7350.00	-464.01	-74.67	40.132408	-104.907893	
Interp @ 7350.00 (BIGHORN 4P-17H-P267 OH PLAN#03)		-78.39	-40.151196	-104.907906		

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



CATHEDRAL



Cathedral Energy Services

Planning Report

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

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		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 4P-17H-P267					
Well Position	+N/-S	0.00 usft	Northing:	1,292,097.20 usft	Latitude:	40.133682
	+E/-W	0.00 usft	Easting:	3,165,629.16 usft	Longitude:	-104.907626
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,960.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	User Defined	8/8/2017	0.00	0.00	0.00000000

Design	PLAN #3			
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	359.47

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	
748.55	10.97	182.23	745.20	-52.32	-2.04	2.00	2.00	0.00	182.23	
6,608.30	10.97	182.23	6,497.86	-1,166.65	-45.51	0.00	0.00	0.00	0.00	
7,870.14	90.00	358.50	7,350.00	-464.01	-74.67	8.00	6.26	13.97	176.20	Bighorn 4P-17H-P267
7,990.14	90.00	358.50	7,350.00	-344.05	-77.81	0.00	0.00	0.00	0.00	
8,075.90	90.00	356.78	7,350.00	-258.38	-81.34	2.00	0.00	-2.00	-90.00	
9,506.62	90.00	356.78	7,350.00	1,170.10	-161.58	0.00	0.00	0.00	0.00	
9,717.37	90.00	1.00	7,350.00	1,380.76	-165.65	2.00	0.00	2.00	90.00	
14,717.37	90.00	1.00	7,350.00	6,380.00	-78.39	0.00	0.00	0.00	0.00	Interp @ 7350.00 (BK
14,886.86	90.00	11.27	7,350.00	6,548.29	-60.31	6.06	0.00	6.06	90.00	Bighorn 4P-17H-P267

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4983.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4983.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	2.00	182.23	299.98	-1.74	-0.07	-1.74	2.00	2.00	
400.00	4.00	182.23	399.84	-6.97	-0.27	-6.97	2.00	2.00	
500.00	6.00	182.23	499.45	-15.68	-0.61	-15.68	2.00	2.00	
600.00	8.00	182.23	598.70	-27.86	-1.09	-27.85	2.00	2.00	
700.00	10.00	182.23	697.47	-43.49	-1.70	-43.47	2.00	2.00	
748.55	10.97	182.23	745.20	-52.32	-2.04	-52.30	2.00	2.00	
800.00	10.97	182.23	795.71	-62.10	-2.42	-62.08	0.00	0.00	
900.00	10.97	182.23	893.89	-81.12	-3.16	-81.09	0.00	0.00	
1,000.00	10.97	182.23	992.06	-100.14	-3.91	-100.10	0.00	0.00	
1,100.00	10.97	182.23	1,090.23	-119.15	-4.65	-119.10	0.00	0.00	
1,200.00	10.97	182.23	1,188.40	-138.17	-5.39	-138.11	0.00	0.00	
1,300.00	10.97	182.23	1,286.58	-157.19	-6.13	-157.12	0.00	0.00	
1,400.00	10.97	182.23	1,384.75	-176.20	-6.87	-176.13	0.00	0.00	
1,500.00	10.97	182.23	1,482.92	-195.22	-7.62	-195.14	0.00	0.00	
1,600.00	10.97	182.23	1,581.09	-214.24	-8.36	-214.15	0.00	0.00	
1,700.00	10.97	182.23	1,679.26	-233.25	-9.10	-233.16	0.00	0.00	
1,800.00	10.97	182.23	1,777.44	-252.27	-9.84	-252.17	0.00	0.00	
1,900.00	10.97	182.23	1,875.61	-271.29	-10.58	-271.18	0.00	0.00	
2,000.00	10.97	182.23	1,973.78	-290.30	-11.32	-290.19	0.00	0.00	
2,100.00	10.97	182.23	2,071.95	-309.32	-12.07	-309.20	0.00	0.00	
2,200.00	10.97	182.23	2,170.13	-328.34	-12.81	-328.21	0.00	0.00	
2,300.00	10.97	182.23	2,268.30	-347.35	-13.55	-347.21	0.00	0.00	
2,400.00	10.97	182.23	2,366.47	-366.37	-14.29	-366.22	0.00	0.00	
2,500.00	10.97	182.23	2,464.64	-385.39	-15.03	-385.23	0.00	0.00	
2,600.00	10.97	182.23	2,562.82	-404.40	-15.78	-404.24	0.00	0.00	
2,700.00	10.97	182.23	2,660.99	-423.42	-16.52	-423.25	0.00	0.00	
2,800.00	10.97	182.23	2,759.16	-442.44	-17.26	-442.26	0.00	0.00	
2,900.00	10.97	182.23	2,857.33	-461.45	-18.00	-461.27	0.00	0.00	
3,000.00	10.97	182.23	2,955.51	-480.47	-18.74	-480.28	0.00	0.00	
3,100.00	10.97	182.23	3,053.68	-499.49	-19.48	-499.29	0.00	0.00	
3,200.00	10.97	182.23	3,151.85	-518.51	-20.23	-518.30	0.00	0.00	
3,300.00	10.97	182.23	3,250.02	-537.52	-20.97	-537.31	0.00	0.00	
3,400.00	10.97	182.23	3,348.20	-556.54	-21.71	-556.32	0.00	0.00	
3,500.00	10.97	182.23	3,446.37	-575.56	-22.45	-575.32	0.00	0.00	
3,600.00	10.97	182.23	3,544.54	-594.57	-23.19	-594.33	0.00	0.00	
3,700.00	10.97	182.23	3,642.71	-613.59	-23.94	-613.34	0.00	0.00	
3,800.00	10.97	182.23	3,740.88	-632.61	-24.68	-632.35	0.00	0.00	
3,900.00	10.97	182.23	3,839.06	-651.62	-25.42	-651.36	0.00	0.00	
4,000.00	10.97	182.23	3,937.23	-670.64	-26.16	-670.37	0.00	0.00	
4,100.00	10.97	182.23	4,035.40	-689.66	-26.90	-689.38	0.00	0.00	
4,200.00	10.97	182.23	4,133.57	-708.67	-27.64	-708.39	0.00	0.00	
4,300.00	10.97	182.23	4,231.75	-727.69	-28.39	-727.40	0.00	0.00	
4,400.00	10.97	182.23	4,329.92	-746.71	-29.13	-746.41	0.00	0.00	
4,500.00	10.97	182.23	4,428.09	-765.72	-29.87	-765.42	0.00	0.00	
4,600.00	10.97	182.23	4,526.26	-784.74	-30.61	-784.42	0.00	0.00	
4,700.00	10.97	182.23	4,624.44	-803.76	-31.35	-803.43	0.00	0.00	
4,800.00	10.97	182.23	4,722.61	-822.77	-32.10	-822.44	0.00	0.00	
4,900.00	10.97	182.23	4,820.78	-841.79	-32.84	-841.45	0.00	0.00	
5,000.00	10.97	182.23	4,918.95	-860.81	-33.58	-860.46	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4983.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4983.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	10.97	182.23	5,017.13	-879.82	-34.32	-879.47	0.00	0.00	
5,200.00	10.97	182.23	5,115.30	-898.84	-35.06	-898.48	0.00	0.00	
5,300.00	10.97	182.23	5,213.47	-917.86	-35.80	-917.49	0.00	0.00	
5,400.00	10.97	182.23	5,311.64	-936.87	-36.55	-936.50	0.00	0.00	
5,500.00	10.97	182.23	5,409.81	-955.89	-37.29	-955.51	0.00	0.00	
5,600.00	10.97	182.23	5,507.99	-974.91	-38.03	-974.52	0.00	0.00	
5,700.00	10.97	182.23	5,606.16	-993.92	-38.77	-993.53	0.00	0.00	
5,800.00	10.97	182.23	5,704.33	-1,012.94	-39.51	-1,012.53	0.00	0.00	
5,900.00	10.97	182.23	5,802.50	-1,031.96	-40.26	-1,031.54	0.00	0.00	
6,000.00	10.97	182.23	5,900.68	-1,050.97	-41.00	-1,050.55	0.00	0.00	
6,100.00	10.97	182.23	5,998.85	-1,069.99	-41.74	-1,069.56	0.00	0.00	
6,200.00	10.97	182.23	6,097.02	-1,089.01	-42.48	-1,088.57	0.00	0.00	
6,300.00	10.97	182.23	6,195.19	-1,108.03	-43.22	-1,107.58	0.00	0.00	
6,400.00	10.97	182.23	6,293.37	-1,127.04	-43.96	-1,126.59	0.00	0.00	
6,500.00	10.97	182.23	6,391.54	-1,146.06	-44.71	-1,145.60	0.00	0.00	
6,600.00	10.97	182.23	6,489.71	-1,165.08	-45.45	-1,164.61	0.00	0.00	
6,608.30	10.97	182.23	6,497.86	-1,166.65	-45.51	-1,166.19	0.00	0.00	
6,700.00	3.68	189.81	6,588.75	-1,178.29	-46.35	-1,177.81	8.00	-7.95	
6,800.00	4.45	349.16	6,688.66	-1,177.65	-47.63	-1,177.16	8.00	0.76	
6,900.00	12.41	355.21	6,787.50	-1,163.11	-49.26	-1,162.60	8.00	7.96	
7,000.00	20.40	356.55	6,883.35	-1,134.96	-51.21	-1,134.44	8.00	7.99	
7,100.00	28.40	357.16	6,974.35	-1,093.74	-53.44	-1,093.20	8.00	8.00	
7,200.00	36.39	357.52	7,058.72	-1,040.27	-55.90	-1,039.71	8.00	8.00	
7,300.00	44.39	357.76	7,134.81	-975.57	-58.56	-974.99	8.00	8.00	
7,400.00	52.39	357.94	7,201.16	-900.91	-61.35	-900.31	8.00	8.00	
7,500.00	60.39	358.09	7,256.47	-817.74	-64.23	-817.12	8.00	8.00	
7,600.00	68.39	358.21	7,299.66	-727.69	-67.13	-727.04	8.00	8.00	
7,700.00	76.39	358.32	7,329.89	-632.50	-70.00	-631.82	8.00	8.00	
7,800.00	84.39	358.43	7,346.57	-534.02	-72.79	-533.33	8.00	8.00	
7,870.14	90.00	358.50	7,350.00	-464.01	-74.67	-463.31	8.00	8.00	Bighorn 4P-17H-P267 TPZ
7,900.00	90.00	358.50	7,350.00	-434.17	-75.45	-433.45	0.00	0.00	
7,990.14	90.00	358.50	7,350.00	-344.05	-77.81	-343.32	0.00	0.00	
8,000.00	90.00	358.30	7,350.00	-334.20	-78.09	-333.47	2.00	0.00	
8,075.90	90.00	356.78	7,350.00	-258.38	-81.34	-257.62	2.00	0.00	
8,100.00	90.00	356.78	7,350.00	-234.31	-82.69	-233.54	0.00	0.00	
8,200.00	90.00	356.78	7,350.00	-134.47	-88.30	-133.65	0.00	0.00	
8,300.00	90.00	356.78	7,350.00	-34.63	-93.91	-33.76	0.00	0.00	
8,400.00	90.00	356.78	7,350.00	65.22	-99.52	66.13	0.00	0.00	
8,500.00	90.00	356.78	7,350.00	165.06	-105.12	166.02	0.00	0.00	
8,600.00	90.00	356.78	7,350.00	264.90	-110.73	265.91	0.00	0.00	
8,700.00	90.00	356.78	7,350.00	364.74	-116.34	365.80	0.00	0.00	
8,800.00	90.00	356.78	7,350.00	464.59	-121.95	465.69	0.00	0.00	
8,900.00	90.00	356.78	7,350.00	564.43	-127.56	565.58	0.00	0.00	
9,000.00	90.00	356.78	7,350.00	664.27	-133.17	665.47	0.00	0.00	
9,100.00	90.00	356.78	7,350.00	764.12	-138.77	765.36	0.00	0.00	
9,200.00	90.00	356.78	7,350.00	863.96	-144.38	865.25	0.00	0.00	
9,300.00	90.00	356.78	7,350.00	963.80	-149.99	965.14	0.00	0.00	
9,400.00	90.00	356.78	7,350.00	1,063.64	-155.60	1,065.03	0.00	0.00	
9,500.00	90.00	356.78	7,350.00	1,163.49	-161.21	1,164.92	0.00	0.00	
9,506.62	90.00	356.78	7,350.00	1,170.10	-161.58	1,171.53	0.00	0.00	
9,600.00	90.00	358.65	7,350.00	1,263.40	-165.30	1,264.87	2.00	0.00	
9,700.00	90.00	0.65	7,350.00	1,363.39	-165.90	1,364.86	2.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4983.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4983.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
9,717.37	90.00	1.00	7,350.00	1,380.76	-165.65	1,382.23	2.00	0.00	
9,800.00	90.00	1.00	7,350.00	1,463.38	-164.21	1,464.83	0.00	0.00	
9,900.00	90.00	1.00	7,350.00	1,563.36	-162.46	1,564.79	0.00	0.00	
10,000.00	90.00	1.00	7,350.00	1,663.35	-160.72	1,664.75	0.00	0.00	
10,100.00	90.00	1.00	7,350.00	1,763.33	-158.97	1,764.72	0.00	0.00	
10,200.00	90.00	1.00	7,350.00	1,863.31	-157.23	1,864.68	0.00	0.00	
10,300.00	90.00	1.00	7,350.00	1,963.30	-155.48	1,964.65	0.00	0.00	
10,400.00	90.00	1.00	7,350.00	2,063.28	-153.74	2,064.61	0.00	0.00	
10,500.00	90.00	1.00	7,350.00	2,163.27	-151.99	2,164.58	0.00	0.00	
10,600.00	90.00	1.00	7,350.00	2,263.25	-150.25	2,264.54	0.00	0.00	
10,700.00	90.00	1.00	7,350.00	2,363.24	-148.50	2,364.51	0.00	0.00	
10,800.00	90.00	1.00	7,350.00	2,463.22	-146.76	2,464.47	0.00	0.00	
10,900.00	90.00	1.00	7,350.00	2,563.21	-145.01	2,564.43	0.00	0.00	
11,000.00	90.00	1.00	7,350.00	2,663.19	-143.27	2,664.40	0.00	0.00	
11,100.00	90.00	1.00	7,350.00	2,763.18	-141.52	2,764.36	0.00	0.00	
11,200.00	90.00	1.00	7,350.00	2,863.16	-139.78	2,864.33	0.00	0.00	
11,300.00	90.00	1.00	7,350.00	2,963.15	-138.03	2,964.29	0.00	0.00	
11,400.00	90.00	1.00	7,350.00	3,063.13	-136.29	3,064.26	0.00	0.00	
11,500.00	90.00	1.00	7,350.00	3,163.12	-134.54	3,164.22	0.00	0.00	
11,600.00	90.00	1.00	7,350.00	3,263.10	-132.80	3,264.19	0.00	0.00	
11,700.00	90.00	1.00	7,350.00	3,363.09	-131.05	3,364.15	0.00	0.00	
11,800.00	90.00	1.00	7,350.00	3,463.07	-129.31	3,464.12	0.00	0.00	
11,900.00	90.00	1.00	7,350.00	3,563.06	-127.56	3,564.08	0.00	0.00	
12,000.00	90.00	1.00	7,350.00	3,663.04	-125.81	3,664.04	0.00	0.00	
12,100.00	90.00	1.00	7,350.00	3,763.03	-124.07	3,764.01	0.00	0.00	
12,200.00	90.00	1.00	7,350.00	3,863.01	-122.32	3,863.97	0.00	0.00	
12,300.00	90.00	1.00	7,350.00	3,963.00	-120.58	3,963.94	0.00	0.00	
12,400.00	90.00	1.00	7,350.00	4,062.98	-118.83	4,063.90	0.00	0.00	
12,500.00	90.00	1.00	7,350.00	4,162.96	-117.09	4,163.87	0.00	0.00	
12,600.00	90.00	1.00	7,350.00	4,262.95	-115.34	4,263.83	0.00	0.00	
12,700.00	90.00	1.00	7,350.00	4,362.93	-113.60	4,363.80	0.00	0.00	
12,800.00	90.00	1.00	7,350.00	4,462.92	-111.85	4,463.76	0.00	0.00	
12,900.00	90.00	1.00	7,350.00	4,562.90	-110.11	4,563.72	0.00	0.00	
13,000.00	90.00	1.00	7,350.00	4,662.89	-108.36	4,663.69	0.00	0.00	
13,100.00	90.00	1.00	7,350.00	4,762.87	-106.62	4,763.65	0.00	0.00	
13,200.00	90.00	1.00	7,350.00	4,862.86	-104.87	4,863.62	0.00	0.00	
13,300.00	90.00	1.00	7,350.00	4,962.84	-103.13	4,963.58	0.00	0.00	
13,400.00	90.00	1.00	7,350.00	5,062.83	-101.38	5,063.55	0.00	0.00	
13,500.00	90.00	1.00	7,350.00	5,162.81	-99.64	5,163.51	0.00	0.00	
13,600.00	90.00	1.00	7,350.00	5,262.80	-97.89	5,263.48	0.00	0.00	
13,700.00	90.00	1.00	7,350.00	5,362.78	-96.15	5,363.44	0.00	0.00	
13,800.00	90.00	1.00	7,350.00	5,462.77	-94.40	5,463.40	0.00	0.00	
13,900.00	90.00	1.00	7,350.00	5,562.75	-92.66	5,563.37	0.00	0.00	
14,000.00	90.00	1.00	7,350.00	5,662.74	-90.91	5,663.33	0.00	0.00	
14,100.00	90.00	1.00	7,350.00	5,762.72	-89.16	5,763.30	0.00	0.00	
14,200.00	90.00	1.00	7,350.00	5,862.71	-87.42	5,863.26	0.00	0.00	
14,300.00	90.00	1.00	7,350.00	5,962.69	-85.67	5,963.23	0.00	0.00	
14,400.00	90.00	1.00	7,350.00	6,062.68	-83.93	6,063.19	0.00	0.00	
14,500.00	90.00	1.00	7,350.00	6,162.66	-82.18	6,163.16	0.00	0.00	
14,600.00	90.00	1.00	7,350.00	6,262.64	-80.44	6,263.12	0.00	0.00	
14,700.00	90.00	1.00	7,350.00	6,362.63	-78.69	6,363.08	0.00	0.00	
14,717.37	90.00	1.00	7,350.00	6,380.00	-78.39	6,380.45	0.00	0.00	Interp @ 7350.00 (BIGHORN 4P-17H-P267 OH)

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4983.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4983.00usft
Site:	BIGHORN	North Reference:	True
Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
14,800.00	90.00	6.01	7,350.00	6,462.45	-73.34	6,462.85	6.06	0.00	
14,886.86	90.00	11.27	7,350.00	6,548.29	-60.31	6,548.56	6.06	0.00	Bighorn 4P-17H-P267 BHL 5.24 - Bighorn 4P-1'

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									
Interp @ 7350.00 (BIGH - plan hits target center - Point	0.00	0.00	7,350.00	6,380.00	-78.39	1,298,476.53	3,165,508.15	40.151196	-104.907906
Bighorn 4P-17H-P267 B - plan hits target center - Point	0.00	0.00	7,350.00	6,548.29	-60.31	1,298,644.93	3,165,525.11	40.151658	-104.907842
Bighorn 4P-17H-P267 T - plan hits target center - Point	0.00	0.00	7,350.00	-464.01	-74.67	1,291,632.69	3,165,557.59	40.132408	-104.907893
Bighorn 4P-17H-P267 B - plan misses target center by 498.09usft at 14886.86usft MD (7350.00 TVD, 6548.29 N, -60.31 E) - Point	0.00	0.00	7,350.00	6,997.90	154.02	1,299,095.97	3,165,736.43	40.152892	-104.907075

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4P-17H-P267

OH

PLAN #3

Anticollision Summary Report

24 May, 2018

Cathedral Energy Services

Anticollision Summary Report

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

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

Survey Tool Program	Date	5/24/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	200.00	PLAN #3 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	14,886.86	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	370.00	368.90	149.79	148.71	139.152	CC
BIGHORN 4A-17H-P267 - OH - PLAN #2	400.00	401.16	149.80	148.61	126.344	ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	4,800.00	4,200.99	1,914.49	1,873.21	46.375	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	179.79	179.31	373.230	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	4,100.00	3,454.99	1,888.03	1,860.57	68.754	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	307.48	306.45	169.95	169.09	198.256	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	4,300.00	3,611.98	1,913.52	1,879.93	56.971	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	371.03	369.93	159.86	158.78	148.009	CC
BIGHORN 4AC-17H-P267 - OH - PLAN #1	400.00	398.84	159.87	158.69	135.301	ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	4,500.00	3,843.65	1,892.42	1,856.07	52.058	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	363.47	362.38	139.73	138.67	132.627	CC
BIGHORN 4B-17H-P267 - OH - PLAN #2	400.00	401.16	139.75	138.56	117.866	ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	5,100.00	4,539.39	1,884.90	1,839.77	41.767	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	199.00	130.02	129.54	269.909	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	1,200.00	1,160.15	206.65	202.49	49.622	SF
BIGHORN 4D-17H-P267 - OH - PLAN #3	349.93	348.86	119.89	118.88	119.166	CC
BIGHORN 4D-17H-P267 - OH - PLAN #3	400.00	401.16	119.93	118.74	101.149	ES
BIGHORN 4D-17H-P267 - OH - PLAN #3	5,400.00	4,906.51	1,894.35	1,843.22	37.047	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	339.67	338.48	109.76	108.79	113.053	CC, ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	5,500.00	5,060.21	1,910.06	1,861.87	39.633	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	334.80	333.75	99.77	98.82	104.686	CC
BIGHORN 4F-17H-P267 - OH - PLAN #1	400.00	401.16	99.84	98.66	84.208	ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	6,100.00	5,656.00	1,918.69	1,858.33	31.788	SF
BIGHORN 4G-17H-P267 - OH - PLAN #4	332.73	331.68	89.98	89.04	95.139	CC
BIGHORN 4G-17H-P267 - OH - PLAN #4	400.00	401.16	90.07	88.88	75.961	ES
BIGHORN 4G-17H-P267 - OH - PLAN #4	6,400.00	6,006.41	1,903.13	1,837.15	28.848	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	409.77	408.64	79.74	78.52	65.309	CC, ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	6,600.00	6,257.35	1,915.65	1,853.79	30.968	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	409.98	409.14	69.78	68.56	57.299	CC, ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	13,200.00	13,444.66	1,921.96	1,599.05	5.952	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	305.63	304.60	59.80	58.95	70.297	CC
BIGHORN 4J-17H-P267 - OH - PLAN #3	400.00	398.84	60.02	58.83	50.786	ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	14,886.86	15,189.67	1,649.29	1,320.53	5.017	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	294.90	306.12	49.75	48.91	59.608	CC
BIGHORN 4K-17H-P267 - OH - PLAN #2	400.00	401.16	50.04	48.85	42.195	ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	14,800.00	14,875.53	1,352.62	935.20	3.240	SF

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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 4L-17H-P267 - OH - PLAN #2	292.32	307.69	39.96	39.12	47.977	CC, ES
BIGHORN 4L-17H-P267 - OH - PLAN #2	14,800.00	14,923.07	997.97	579.57	2.385	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	200.00	200.00	29.92	29.43	61.883	CC
BIGHORN 4M-17H-P267 - OH - PLAN #1	300.00	299.85	30.09	29.25	36.107	ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	14,800.00	15,061.35	930.56	515.06	2.240	SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	265.13	265.13	19.84	19.13	27.902	CC
BIGHORN 4N-17H-P267 - OH - PLAN #2	300.00	300.02	19.86	19.03	23.848	ES
BIGHORN 4N-17H-P267 - OH - PLAN #2	14,886.86	15,054.65	541.11	121.97	1.291	Level 3, SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	245.72	245.71	9.78	9.14	15.205	CC
BIGHORN 4O-17H-P267 - OH - PLAN #2	13,800.00	13,755.80	236.42	-116.13	0.671	Level 1, ES, SF
BIGHORN 4Q-17H-P267 - OH - PLAN #3	200.00	200.00	10.07	9.59	20.829	CC
BIGHORN 4Q-17H-P267 - OH - PLAN #3	300.00	300.02	10.24	9.40	12.289	ES
BIGHORN 4Q-17H-P267 - OH - PLAN #3	14,886.86	15,067.81	450.99	45.62	1.113	Level 2, SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	200.00	200.00	20.13	19.65	41.646	CC
BIGHORN 4R-17H-P267 - OH - PLAN #2	300.00	299.98	20.25	19.42	24.316	ES
BIGHORN 4R-17H-P267 - OH - PLAN #2	14,886.86	14,820.90	591.67	168.33	1.398	Level 3, SF
BIGHORN 4S-17H-P267 - OH - PLAN #3	200.00	200.00	30.20	29.72	62.465	CC, ES
BIGHORN 4S-17H-P267 - OH - PLAN #3	14,886.86	14,880.78	938.35	608.65	2.846	SF

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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)						
ABBAY STATE V16-77HN - KMG WELL - SURVEYS						Out of range
ALFRED D SATER UNIT 2 - KMG WELL - GYRO						Out of range
ALVIN STATE 1 - PDC WELL - GYRO	8,062.97	7,389.56	1,446.63	1,396.06	28.607	CC, ES
ALVIN STATE 1 - PDC WELL - GYRO	8,600.00	7,389.53	1,548.19	1,489.41	26.340	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	200.00	190.00	1,663.18	1,662.45	2,263.795	CC, ES
DECHANT 7 - KPK WELL - NO SURVEYS	2,400.00	2,356.47	1,921.93	1,909.63	156.341	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS	10,412.05	6,890.73	1,782.26	1,677.68	17.042	CC, ES
DECHANT STATE 1 - KPK WELL - SURVEYS	10,600.00	6,845.14	1,791.51	1,683.86	16.641	SF
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,223.18	7,462.51	1,784.84	1,731.35	33.367	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,900.00	7,477.42	1,908.79	1,843.63	29.293	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,395.15	7,297.29	1,409.32	1,329.85	17.736	CC
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,400.00	7,297.18	1,409.32	1,329.74	17.708	ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,800.00	7,289.43	1,452.90	1,365.80	16.680	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO						Out of range
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,226.05	7,337.85	1,662.82	1,509.15	10.821	CC
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,300.00	7,336.54	1,664.46	1,509.12	10.715	ES
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,500.00	7,333.01	1,685.23	1,526.77	10.635	SF
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,572.33	7,354.95	1,387.79	1,278.14	12.657	CC
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,600.00	7,354.46	1,388.06	1,277.80	12.589	ES
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,800.00	7,350.82	1,406.33	1,292.72	12.378	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	1,678.49	1,660.15	1,485.28	1,476.58	170.765	CC
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	1,900.00	1,877.61	1,485.88	1,475.99	150.335	ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	5,300.00	5,100.00	1,641.46	1,604.06	43.887	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	14,703.97	7,326.50	193.64	-27.44	0.876	Level 1, CC, ES, SF
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	14,681.79	7,304.79	1,166.29	945.77	5.289	CC
DIER 33-8 - CPR WELL - GYRO	14,700.00	7,305.22	1,166.43	945.37	5.277	ES
DIER 33-8 - CPR WELL - GYRO	14,800.00	7,307.58	1,175.84	952.71	5.270	SF
DIER 34-8 - CPR WELL - GYRO	13,253.98	7,291.92	1,414.75	1,233.22	7.794	CC
DIER 34-8 - CPR WELL - GYRO	13,300.00	7,292.83	1,415.50	1,232.65	7.742	ES
DIER 34-8 - CPR WELL - GYRO	13,400.00	7,294.80	1,422.26	1,237.19	7.685	SF
DIER 44-8 - CPR WELL - GYRO	13,120.68	7,314.82	324.06	146.26	1.823	CC, ES, SF
DIER 4-4-8 - CPR WELL - SURVEYS	14,886.86	7,354.49	1,804.57	1,578.76	7.992	CC, ES, SF
DIER 4-8 - CPR WELL - GYRO						Out of range
DIER 8-4-8 - CPR WELL - SURVEYS	14,886.86	7,499.61	869.09	658.56	4.128	CC, ES, SF
DIER 8-6-8 - CPR WELL - SURVEYS	13,972.76	7,473.23	822.49	613.20	3.930	CC, ES
DIER 8-6-8 - CPR WELL - SURVEYS	14,000.00	7,473.17	822.94	613.35	3.926	SF
DIER J1A - CPR WELL - GYRO	13,820.86	7,332.87	525.28	328.14	2.665	CC, ES, SF

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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)						
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	5,383.57	5,200.00	1,652.50	1,613.97	42.885	CC
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,400.00	5,200.00	1,652.58	1,613.96	42.794	ES
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,600.00	5,200.00	1,666.61	1,627.24	42.326	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	2,857.85	2,511.99	1,647.32	1,638.21	180.887	CC
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,746.66	6,773.72	1,669.36	1,635.13	48.773	ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,900.00	6,936.64	1,685.12	1,650.26	48.339	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-2 - KMG WELL - GYRO	6,761.06	6,632.09	1,371.02	1,318.80	26.254	CC
FIRESTONE V 20-2 - KMG WELL - GYRO	6,800.00	6,671.42	1,371.19	1,318.75	26.148	ES
FIRESTONE V 20-2 - KMG WELL - GYRO	7,000.00	6,862.76	1,378.57	1,325.32	25.887	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	5,233.22	5,042.00	544.79	514.32	17.881	CC, ES, SF
MAHONEY 2 - KPK WELL - NO SURVEYS						Out of range
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,283.59	5,050.00	1,287.33	1,250.91	35.352	CC, ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,050.00	1,292.58	1,255.78	35.128	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	11,681.69	7,316.69	141.50	2.50	1.018	Level 2, CC, ES, 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	11,070.81	7,328.84	159.13	36.42	1.297	Level 3, 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

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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	12,035.03	7,266.15	1,026.47	878.09	6.918	CC, ES
MILLER 31-17C - EXTRACTION WELL - GYRO	12,200.00	7,266.60	1,039.64	887.86	6.850	SF
MILLER 3-17J - CPR WELL - GYRO	8,785.58	7,337.92	472.37	407.38	7.268	CC
MILLER 3-17J - CPR WELL - GYRO	8,800.00	7,338.24	472.59	407.33	7.242	ES, SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	1,127.50	1,102.28	784.84	781.25	218.402	CC
MILLER 33-17J - CPR WELL - SURVEYS	1,200.00	1,173.02	784.97	781.09	202.364	ES
MILLER 33-17J - CPR WELL - SURVEYS	9,700.00	7,589.87	1,239.67	1,138.33	12.232	SF
MILLER 34-17J - CPR WELL - SURVEYS	980.95	953.99	661.16	658.16	220.238	CC
MILLER 34-17J - CPR WELL - SURVEYS	1,000.00	972.14	661.18	658.10	215.052	ES
MILLER 34-17J - CPR WELL - SURVEYS	8,500.00	8,500.00	1,204.89	1,144.49	19.950	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	205.55	189.63	1,057.90	1,057.40	2,128.023	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,100.00	4,989.58	1,930.41	1,909.69	93.197	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,403.18	7,339.24	72.39	-7.48	0.906	Level 1, CC, ES, SF
MILLER 44-17J - CPR WELL - SURVEYS	7,935.98	7,488.93	322.10	269.74	6.152	CC, ES, SF
MILLER CJ 17-A - CPR WELL - SURVEYS						Out of range
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,454.92	2,407.39	526.46	513.61	40.973	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	2,600.00	2,549.82	527.19	513.27	37.867	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	5,200.00	5,092.00	741.75	707.06	21.382	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	200.00	175.00	1,349.03	1,348.35	2,006.272	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	4,400.00	4,304.92	1,927.51	1,900.91	72.461	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,253.78	1,231.20	287.29	280.92	45.086	CC
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,300.00	1,276.58	287.43	280.81	43.418	ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	5,100.00	5,007.13	786.34	755.29	25.322	SF
PERRIN GU 1 - KMG WELL - GYRO	6,752.74	6,654.33	747.92	717.52	24.606	CC, ES
PERRIN GU 1 - KMG WELL - GYRO	6,800.00	6,702.71	749.37	718.76	24.478	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 - KPK 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	3,140.40	3,162.46	1,064.95	1,038.39	40.101	CC
RUCA 20-1HZ - KMG - PLAN ONLY	3,200.00	3,210.31	1,065.54	1,038.33	39.153	ES
RUCA 20-1HZ - KMG - PLAN ONLY	8,700.00	7,500.00	1,916.24	1,826.05	21.247	SF
RUCA 20-2HZ - KMG - PLAN ONLY	3,347.26	3,407.83	946.57	917.98	33.113	CC, ES
RUCA 20-2HZ - KMG - PLAN ONLY	8,500.00	7,538.00	1,531.33	1,447.54	18.277	SF
RUCA 20-3HZ - KMG - PLAN ONLY	3,478.06	3,541.74	853.60	823.97	28.808	CC
RUCA 20-3HZ - KMG - PLAN ONLY	3,500.00	3,559.77	853.69	823.82	28.575	ES
RUCA 20-3HZ - KMG - PLAN ONLY	8,300.00	7,475.20	1,319.37	1,241.75	16.999	SF
RUCA 20-4HZ - KMG - PLAN ONLY	3,578.45	3,660.74	726.54	695.84	23.661	CC
RUCA 20-4HZ - KMG - PLAN ONLY	3,600.00	3,678.74	726.64	695.69	23.483	ES
RUCA 20-4HZ - KMG - PLAN ONLY	8,000.00	7,514.73	1,022.77	952.12	14.477	SF
RUCA 20-5HZ - KMG - PLAN ONLY	3,692.77	3,807.83	580.48	548.66	18.247	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	8,000.00	7,556.70	755.29	685.00	10.745	SF
RUCA 20-6HZ - KMG - PLAN ONLY	3,932.68	4,031.85	447.34	414.10	13.460	CC, ES
RUCA 20-6HZ - KMG - PLAN ONLY	7,700.00	7,667.31	557.32	491.91	8.520	SF
RUCA 20-7HZ - KMG - PLAN ONLY	7,537.71	7,618.15	122.05	60.03	1.968	CC, ES, SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,898.92	4,021.87	113.06	80.09	3.429	CC

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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)						
RUCA 20-8HZ - KMG - PLAN ONLY	3,900.00	4,022.78	113.06	80.08	3.428	ES
RUCA 20-8HZ - KMG - PLAN ONLY	7,800.00	7,624.17	191.84	126.08	2.917	SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,875.67	3,989.38	302.29	269.73	9.283	CC, ES
RUCA 20-9HZ - KMG - PLAN ONLY	7,700.00	7,645.58	438.24	374.07	6.829	SF
SATER 21-8 - KMG WELL - SURVEYS						Out of range
SATER 24-8 - KMG WELL - SURVEYS	14,886.86	7,437.26	704.76	545.86	4.435	CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	14,886.86	7,257.53	461.93	373.90	5.247	CC, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	14,886.86	7,099.99	908.72	714.49	4.678	CC, ES, SF
SATER 25C-5HZ - KMG WELL - SURVEYS	14,886.86	7,079.33	1,610.26	1,388.65	7.266	CC, ES, SF
SATER 2-8 - KMG WELL - SURVEYS						Out of range
SATER 28-8 - KMG WELL - SURVEYS						Out of range
SATER 40N-5HZ - KMG WELL - SURVEYS	14,886.86	7,126.94	582.96	446.44	4.270	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	14,886.86	7,367.54	1,579.89	1,397.76	8.675	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	14,886.86	7,704.90	1,160.74	1,071.12	12.952	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	14,886.86	7,248.33	1,626.49	1,525.27	16.068	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	14,886.86	7,376.60	1,718.80	1,493.90	7.643	CC, ES, SF
SPRAGUE 14-9 - CPR WELL - GYRO	13,385.55	7,439.47	1,653.74	1,468.60	8.932	CC
SPRAGUE 14-9 - CPR WELL - GYRO	13,400.00	7,439.19	1,653.80	1,468.31	8.916	ES
SPRAGUE 14-9 - CPR WELL - GYRO	13,600.00	7,435.48	1,667.58	1,478.62	8.825	SF
SPRAGUE 24-9 - CPR WELL - GYRO						Out of range
SPRAGUE 2-4-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 2-8-9 - CPR WELL - SURVEYS						Out of range
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,250.79	1,426.61	1,176.29	5.699	CC, ES, SF
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,437.45	1,220.62	969.76	4.866	CC, ES, SF
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,360.44	1,633.89	1,383.91	6.536	CC, ES, SF
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	14,886.86	9,094.65	1,919.45	1,668.76	7.656	CC, ES, SF
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS						Out of range
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	1,786.28	1,800.03	1,395.98	1,386.58	148.612	CC
STANLEY #2 - GERRITY WELL - NO SURVEYS	2,000.00	2,009.78	1,396.57	1,386.03	132.535	ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,300.00	5,175.00	1,549.67	1,512.01	41.154	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

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4P-17H-P267
Project:	DJ BASIN	TVD Reference:	23' KB @ 4983.00usft
Reference Site:	BIGHORN	MD Reference:	23' KB @ 4983.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	BIGHORN 4P-17H-P267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	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)						
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	14,714.35	13,495.39	1,837.61	1,519.24	5.772	CC, ES
VOGL MCCOY 2H-5H-F267 - CPR WELL - SURVEYS	14,800.00	13,438.12	1,840.71	1,520.87	5.755	SF

Cathedral Energy Services

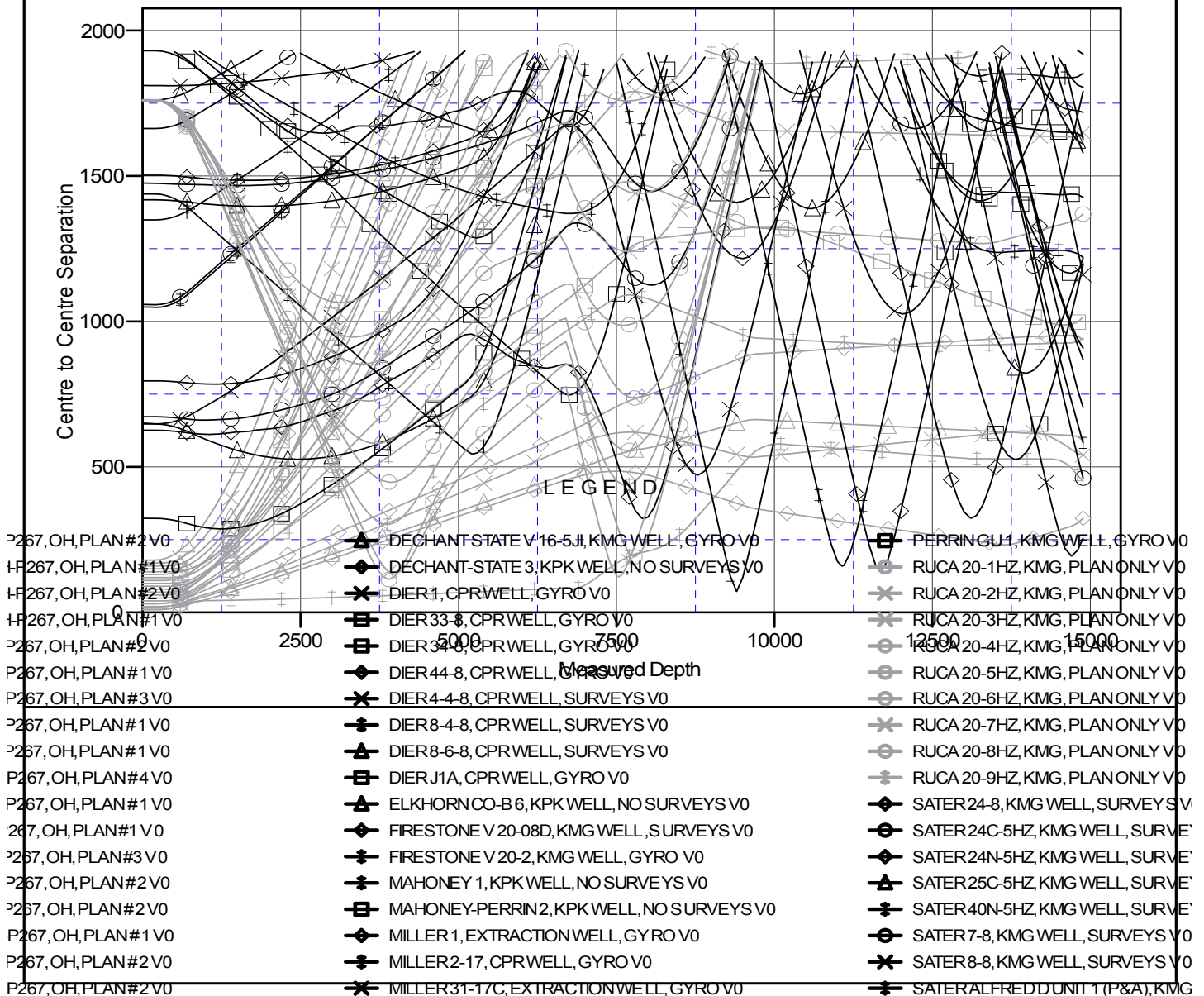
Anticollision Summary Report

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

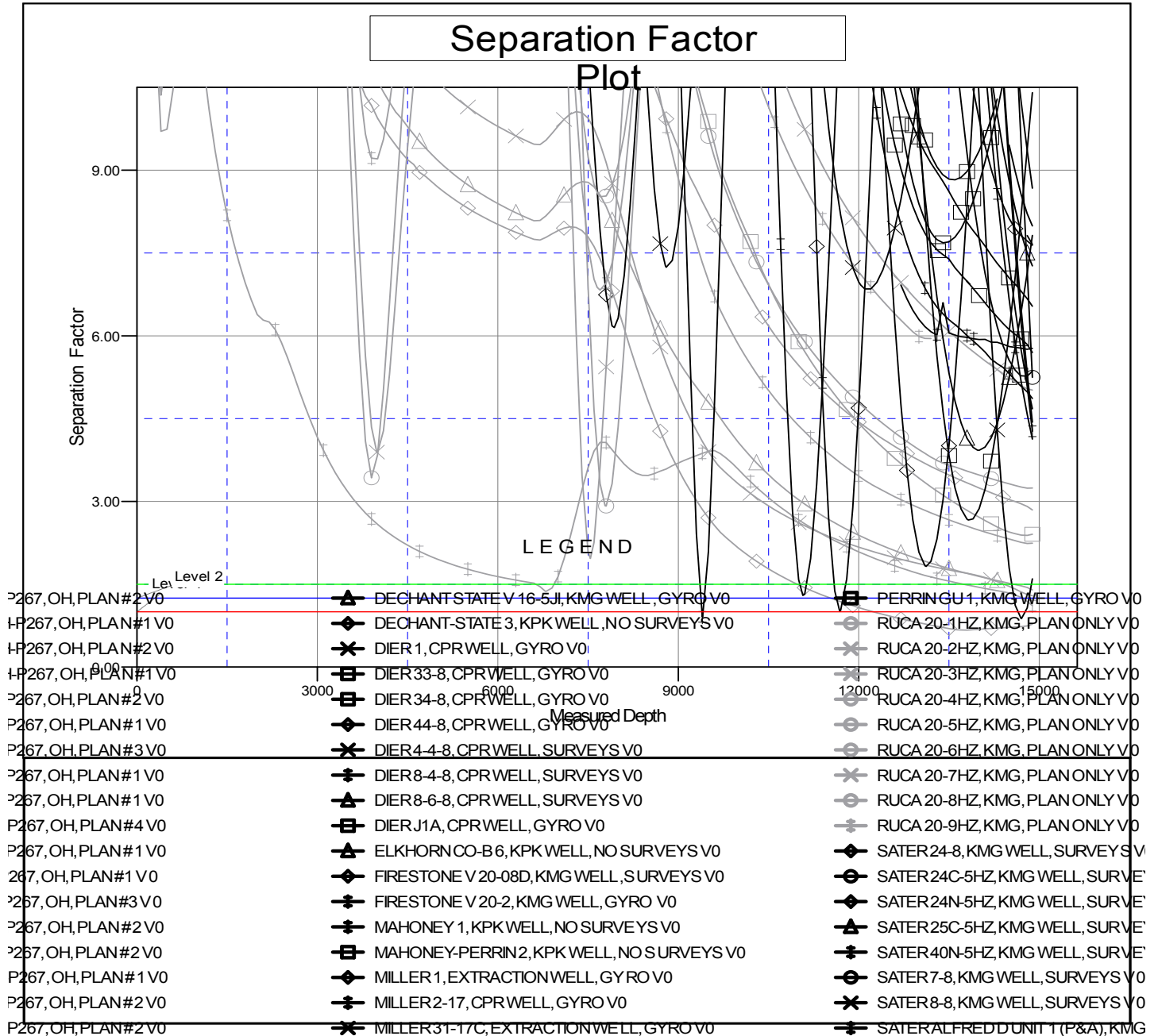
Cathedral Energy Services

Anticollision Summary Report

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

Reference Depths are relative to 23' KB @ 4983.00usft
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