

Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4S-17H-P267

OH

PLAN #3

Anticollision Summary Report

12 April, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-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 4S-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 2,237.05 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	4/12/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	PLAN #3 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	15,359.47	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	200.00	201.00	180.07	179.58	371.121	CC, ES
BIGHORN 4A-17H-P267 - OH - PLAN #2	4,700.00	3,879.60	2,212.87	2,180.14	67.614	SF
BIGHORN 4AA-17H-P267 - OH - PLAN #1	200.00	199.00	209.99	209.51	435.921	CC, ES
BIGHORN 4AA-17H-P267 - OH - PLAN #1	4,100.00	3,241.88	2,190.70	2,168.42	98.336	SF
BIGHORN 4AB-17H-P267 - OH - PLAN #2	200.00	201.00	200.20	199.72	412.616	CC, ES
BIGHORN 4AB-17H-P267 - OH - PLAN #2	4,300.00	3,376.99	2,219.32	2,192.74	83.501	SF
BIGHORN 4AC-17H-P267 - OH - PLAN #1	200.00	201.00	190.14	189.65	391.871	CC, ES
BIGHORN 4AC-17H-P267 - OH - PLAN #1	4,500.00	3,603.84	2,221.85	2,192.33	75.247	SF
BIGHORN 4B-17H-P267 - OH - PLAN #2	200.00	201.00	170.00	169.52	350.376	CC, ES
BIGHORN 4B-17H-P267 - OH - PLAN #2	5,000.00	4,210.67	2,221.51	2,185.01	60.866	SF
BIGHORN 4C-17H-P267 - OH - PLAN #1	200.00	199.00	160.22	159.74	332.600	CC, ES
BIGHORN 4C-17H-P267 - OH - PLAN #1	1,100.00	1,053.18	272.79	269.01	72.269	SF
BIGHORN 4D-17H-P267 - OH - PLAN #2	200.00	201.00	150.15	149.67	309.462	CC, ES
BIGHORN 4D-17H-P267 - OH - PLAN #2	5,200.00	4,505.32	2,216.14	2,175.59	54.647	SF
BIGHORN 4E-17H-P267 - OH - PLAN #1	200.00	199.00	140.09	139.60	290.809	CC, ES
BIGHORN 4E-17H-P267 - OH - PLAN #1	5,200.00	4,576.36	2,215.72	2,178.49	59.506	SF
BIGHORN 4F-17H-P267 - OH - PLAN #1	200.00	201.00	130.02	129.54	267.971	CC, ES
BIGHORN 4F-17H-P267 - OH - PLAN #1	5,700.00	5,056.57	2,220.75	2,174.71	48.231	SF
BIGHORN 4G-17H-P267 - OH - PLAN #2	200.00	201.00	120.23	119.75	247.798	CC, ES
BIGHORN 4G-17H-P267 - OH - PLAN #2	5,900.00	5,314.74	2,199.81	2,149.51	43.736	SF
BIGHORN 4H-17H-P267 - OH - PLAN #1	200.00	199.00	110.17	109.68	228.698	CC, ES
BIGHORN 4H-17H-P267 - OH - PLAN #1	6,000.00	5,488.53	2,233.04	2,187.06	48.565	SF
BIGHORN 4I-17H-P267 - OH - PLAN #1	200.00	201.00	100.10	99.62	206.308	CC, ES
BIGHORN 4I-17H-P267 - OH - PLAN #1	6,600.00	6,158.61	2,226.85	2,174.14	42.244	SF
BIGHORN 4J-17H-P267 - OH - PLAN #3	200.00	201.00	90.04	89.55	185.563	CC, ES
BIGHORN 4J-17H-P267 - OH - PLAN #3	6,800.00	6,404.28	2,186.58	2,142.01	49.062	SF
BIGHORN 4K-17H-P267 - OH - PLAN #2	200.00	201.00	79.97	79.48	164.818	CC, ES
BIGHORN 4K-17H-P267 - OH - PLAN #2	13,800.00	13,820.45	2,232.34	1,954.56	8.036	SF
BIGHORN 4L-17H-P267 - OH - PLAN #2	200.00	200.00	70.18	69.70	145.167	CC, ES
BIGHORN 4L-17H-P267 - OH - PLAN #2	15,360.33	15,308.86	1,966.99	1,627.15	5.788	SF
BIGHORN 4M-17H-P267 - OH - PLAN #1	200.00	200.00	60.12	59.63	124.346	CC, ES
BIGHORN 4M-17H-P267 - OH - PLAN #1	15,360.33	15,596.08	1,844.60	1,496.37	5.297	SF
BIGHORN 4N-17H-P267 - OH - PLAN #2	200.00	200.00	50.05	49.57	103.526	CC, ES
BIGHORN 4N-17H-P267 - OH - PLAN #2	15,360.33	15,405.24	1,354.34	1,004.25	3.868	SF
BIGHORN 4O-17H-P267 - OH - PLAN #2	200.00	200.00	39.98	39.50	82.706	CC, ES
BIGHORN 4O-17H-P267 - OH - PLAN #2	15,360.33	15,233.26	1,254.02	907.20	3.616	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 4S-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 4S-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 4P-17H-P267 - OH - PLAN #2	200.00	200.00	30.20	29.72	62.465	CC, ES
BIGHORN 4P-17H-P267 - OH - PLAN #2	15,360.33	15,390.61	699.38	349.14	1.997	SF
BIGHORN 4Q-17H-P267 - OH - PLAN #2	200.00	200.00	20.13	19.65	41.641	CC, ES
BIGHORN 4Q-17H-P267 - OH - PLAN #2	14,600.00	14,741.08	488.83	184.31	1.605	SF
BIGHORN 4R-17H-P267 - OH - PLAN #2	200.00	200.00	10.07	9.58	20.820	CC
BIGHORN 4R-17H-P267 - OH - PLAN #2	15,360.33	15,274.55	330.76	-11.87	0.965	Level 1, ES, SF

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Summary						
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Offset Well - Wellbore - Design						
S17-T2N-R67W (OFFSETS)						
ABBEY STATE V16-77HN - KMG WELL - SURVEYS	12,159.13	11,812.00	1,461.28	1,301.86	9.166	CC, ES
ABBEY STATE V16-77HN - KMG WELL - SURVEYS	12,200.00	11,812.00	1,461.85	1,302.01	9.145	SF
ALFRED D SATER UNIT 2 - KMG WELL - GYRO						Out of range
ALVIN STATE 1 - PDC WELL - GYRO	8,169.40	7,372.15	690.79	653.33	18.442	CC, ES
ALVIN STATE 1 - PDC WELL - GYRO	8,200.00	7,372.06	691.46	653.89	18.404	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	11,025.69	7,406.34	1,684.17	1,612.83	23.606	CC, ES
DECHANT 2-16 - KMG WELL - GYRO	11,400.00	7,400.11	1,725.26	1,649.32	22.720	SF
DECHANT 6 - KPK WELL - NO SURVEYS						Out of range
DECHANT 7 - KPK WELL - NO SURVEYS	200.00	190.00	1,639.81	1,639.07	2,231.816	CC
DECHANT 7 - KPK WELL - NO SURVEYS	300.00	289.98	1,640.24	1,638.97	1,293.838	ES
DECHANT 7 - KPK WELL - NO SURVEYS	5,300.00	5,087.00	2,121.05	2,088.41	64.975	SF
DECHANT 8 - GERRITY WELL - NO SURVEYS						Out of range
DECHANT STATE 1 - KPK WELL - SURVEYS	10,355.26	7,226.26	915.08	850.07	14.076	CC, ES
DECHANT STATE 1 - KPK WELL - SURVEYS	10,500.00	7,177.63	925.94	859.51	13.938	SF
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,371.91	7,432.01	1,013.24	974.42	26.102	CC, ES
DECHANT STATE GAS U 9 - KMG WELL - GYRO	8,500.00	7,434.31	1,021.30	981.63	25.747	SF
DECHANT STATE V 16-11JI - KMG WELL - GYRO	9,498.26	7,423.15	2,148.54	2,098.04	42.549	CC
DECHANT STATE V 16-11JI - KMG WELL - GYRO	9,500.00	7,423.05	2,148.54	2,098.02	42.530	ES
DECHANT STATE V 16-11JI - KMG WELL - GYRO	10,100.00	7,387.41	2,230.94	2,173.45	38.809	SF
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,506.85	7,325.20	536.50	486.02	10.627	CC, ES
DECHANT STATE V 16-12JI - KMG WELL - GYRO	9,600.00	7,323.49	544.53	493.02	10.571	SF
DECHANT STATE V 16-14JI - KMG WELL - GYRO	7,941.64	7,373.18	2,187.02	2,150.70	60.227	CC, ES
DECHANT STATE V 16-14JI - KMG WELL - GYRO	8,400.00	7,374.12	2,234.53	2,195.92	57.869	SF
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,237.38	7,336.51	739.56	650.57	8.311	CC, ES
DECHANT STATE V 16-4JI - KMG WELL - GYRO	12,300.00	7,335.26	742.20	652.28	8.254	SF
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,580.02	7,353.29	487.39	422.50	7.510	CC, ES
DECHANT STATE V 16-5JI - KMG WELL - GYRO	10,600.00	7,352.94	487.80	422.57	7.478	SF
DECHANT V 16-3JI - KMG WELL - GYRO	12,202.63	7,366.03	2,026.38	1,937.79	22.873	CC, ES
DECHANT V 16-3JI - KMG WELL - GYRO	12,600.00	7,359.52	2,064.97	1,971.31	22.047	SF
DECHANT-STATE 2 - KPK WELL - NO SURVEYS						Out of range
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	4,664.42	4,577.79	1,192.40	1,163.12	40.727	CC
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	4,900.00	4,808.24	1,193.40	1,162.22	38.270	ES
DECHANT-STATE 3 - KPK WELL - NO SURVEYS	5,300.00	5,100.00	1,203.80	1,169.85	35.460	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	14,699.10	7,293.40	758.03	631.84	6.007	CC
DIER 1 - CPR WELL - GYRO	14,700.00	7,293.41	758.03	631.83	6.007	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	14,668.47	7,302.65	2,118.36	1,992.55	16.838	CC
DIER 33-8 - CPR WELL - GYRO	14,700.00	7,303.44	2,118.59	1,992.37	16.784	ES
DIER 33-8 - CPR WELL - GYRO	14,900.00	7,308.49	2,130.97	2,002.67	16.609	SF
DIER 34-8 - CPR WELL - GYRO						Out of range
DIER 44-8 - CPR WELL - GYRO	13,112.34	7,352.90	610.65	508.39	5.972	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	15,300.00	7,422.78	157.44	20.34	1.148	Level 2, ES, SF

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

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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)						
DIER 8-4-8 - CPR WELL - SURVEYS	15,360.33	7,423.59	149.18	31.75	1.270	Level 3, CC
DIER 8-6-8 - CPR WELL - SURVEYS	13,973.02	7,432.44	123.72	0.37	1.003	Level 2, CC, ES, SF
DIER J1A - CPR WELL - GYRO	13,801.77	7,333.31	1,470.36	1,357.63	13.043	CC, ES
DIER J1A - CPR WELL - GYRO	13,900.00	7,331.00	1,473.64	1,359.83	12.949	SF
ELKHORN CO B 3 - KPK WELL - NO SURVEYS						Out of range
ELKHORN CO UNIT 2 - KMG WELL - GYRO	6,936.19	6,826.18	1,925.54	1,892.60	58.455	CC, ES
ELKHORN CO UNIT 2 - KMG WELL - GYRO	7,100.00	6,965.56	1,933.78	1,900.51	58.134	SF
ELKHORN CO-B 6 - KPK WELL - NO SURVEYS	5,500.23	5,200.00	1,222.46	1,189.44	37.021	CC, ES, SF
ELKHORN CO-B 7 - KPK WELL - NO SURVEYS						Out of range
ELKHORN COMPANY B 2 - KMG WELL - GYRO	6,805.95	6,696.76	1,971.78	1,941.71	65.581	CC, ES
ELKHORN COMPANY B 2 - KMG WELL - GYRO	7,000.00	6,864.66	1,995.94	1,965.08	64.667	SF
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	6,761.51	6,764.37	1,676.30	1,638.50	44.345	CC, ES
FIRESTONE V 20-08D - KMG WELL - SURVEYS	6,900.00	6,904.93	1,689.45	1,650.97	43.897	SF
FIRESTONE V 20-18D - KMG WELL - SURVEYS						Out of range
FIRESTONE V 20-2 - KMG WELL - GYRO	4,011.10	3,913.97	1,861.73	1,837.87	78.047	CC
FIRESTONE V 20-2 - KMG WELL - GYRO	4,100.00	3,993.96	1,862.00	1,837.46	75.871	ES
FIRESTONE V 20-2 - KMG WELL - GYRO	7,100.00	6,924.28	2,033.59	1,986.00	42.733	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	5,213.19	5,042.00	700.26	667.47	21.355	CC, ES, SF
MAHONEY 2 - KPK WELL - NO SURVEYS	5,540.37	5,100.00	2,033.74	2,000.63	61.422	CC, ES
MAHONEY 2 - KPK WELL - NO SURVEYS	5,700.00	5,100.00	2,039.99	2,006.50	60.904	SF
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	4,928.78	4,819.39	1,717.64	1,686.28	54.762	CC
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,100.00	4,986.88	1,718.01	1,685.25	52.439	ES
MAHONEY-PERRIN 2 - KPK WELL - NO SURVEYS	5,400.00	5,050.00	1,735.78	1,701.65	50.861	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	11,668.16	7,304.67	1,056.96	976.48	13.134	CC, ES
MILLER 1 - EXTRACTION WELL - GYRO	11,800.00	7,304.30	1,065.15	983.54	13.051	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

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Cathedral Energy Services

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Summary						
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Offset Well - Wellbore - Design						
S17-T2N-R67W (OFFSETS)						
MILLER 21-17 - CPR WELL - GYRO						Out of range
MILLER 2-17 - CPR WELL - GYRO	11,056.96	7,334.97	1,066.24	994.58	14.879	CC, ES
MILLER 2-17 - CPR WELL - GYRO	11,200.00	7,333.23	1,075.79	1,002.88	14.756	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	12,009.16	7,238.48	1,946.23	1,860.85	22.796	CC, ES
MILLER 31-17C - EXTRACTION WELL - GYRO	12,300.00	7,238.78	1,967.84	1,879.32	22.230	SF
MILLER 3-17J - CPR WELL - GYRO	224.78	209.90	672.45	671.89	1,192.363	CC, ES
MILLER 3-17J - CPR WELL - GYRO	9,000.00	7,353.89	1,312.14	1,268.07	29.773	SF
MILLER 32-17 - EXTRACTION WELL - GYRO						Out of range
MILLER 33-17J - CPR WELL - SURVEYS	200.00	190.00	825.79	825.34	1,836.188	CC, ES
MILLER 33-17J - CPR WELL - SURVEYS	9,600.00	9,600.00	2,099.33	2,029.43	30.033	SF
MILLER 34-17J - CPR WELL - SURVEYS	200.00	190.00	702.40	701.95	1,561.085	CC, ES
MILLER 34-17J - CPR WELL - SURVEYS	8,400.00	6,673.33	1,881.49	1,842.74	48.566	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	206.02	189.91	1,054.39	1,053.90	2,115.720	CC, ES
MILLER 43-17 - EXTRACTION WELL - GYRO	5,200.00	5,061.04	1,970.27	1,948.82	91.815	SF
MILLER 43-17J - EXTRACTION WELL - GYRO	9,398.80	7,354.41	796.52	747.24	16.164	CC
MILLER 43-17J - EXTRACTION WELL - GYRO	9,400.00	7,354.41	796.52	747.23	16.160	ES
MILLER 43-17J - EXTRACTION WELL - GYRO	9,500.00	7,354.55	802.92	752.81	16.021	SF
MILLER 44-17J - CPR WELL - SURVEYS	7,948.48	7,567.00	417.73	377.35	10.345	CC, ES
MILLER 44-17J - CPR WELL - SURVEYS	8,000.00	7,567.00	420.89	379.71	10.221	SF
MILLER CJ 17-A - CPR WELL - SURVEYS						Out of range
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	904.74	885.08	667.53	663.03	148.530	CC
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	1,000.00	978.26	667.82	662.81	133.385	ES
PACE 1 - GO PUMPING & CONS WELL - NO SURVEYS	5,200.00	5,086.70	1,114.13	1,082.31	35.020	SF
PACE 2 - TEXAS TEA WELL - NO SURVEYS	200.00	175.00	1,371.21	1,370.54	2,039.486	CC, ES
PACE 2 - TEXAS TEA WELL - NO SURVEYS	4,800.00	4,683.42	2,223.50	2,195.61	79.708	SF
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	1,701.05	1,667.03	161.39	152.61	18.379	CC, ES
PACE 3 - DENVER EAST MACHINERY WELL - NO SUR	2,000.00	1,959.46	172.92	162.54	16.660	SF
PERRIN GU 1 - KMG WELL - GYRO	6,700.00	6,560.27	1,098.30	1,064.73	32.722	CC, ES
PERRIN GU 1 - KMG WELL - GYRO	6,800.00	6,661.09	1,104.55	1,070.45	32.390	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	2,712.30	2,725.77	1,265.59	1,244.95	61.332	CC, ES
RUCA 20-1HZ - KMG - PLAN ONLY	3,800.00	3,557.73	1,446.60	1,416.88	48.675	SF
RUCA 20-2HZ - KMG - PLAN ONLY	2,892.41	2,933.18	1,175.93	1,153.68	52.846	CC
RUCA 20-2HZ - KMG - PLAN ONLY	2,900.00	2,939.20	1,175.94	1,153.61	52.677	ES
RUCA 20-2HZ - KMG - PLAN ONLY	8,300.00	7,586.20	2,228.01	2,164.58	35.125	SF
RUCA 20-3HZ - KMG - PLAN ONLY	3,044.58	3,103.38	1,102.20	1,078.77	47.055	CC
RUCA 20-3HZ - KMG - PLAN ONLY	3,100.00	3,147.26	1,102.72	1,078.76	46.024	ES
RUCA 20-3HZ - KMG - PLAN ONLY	8,400.00	7,450.00	2,075.37	2,012.34	32.931	SF
RUCA 20-4HZ - KMG - PLAN ONLY	3,157.68	3,239.29	996.56	971.94	40.486	CC
RUCA 20-4HZ - KMG - PLAN ONLY	3,200.00	3,273.59	996.87	971.85	39.845	ES

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 4S-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 4S-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 20-4HZ - KMG - PLAN ONLY	8,100.00	7,478.97	1,765.06	1,706.04	29.903	SF
RUCA 20-5HZ - KMG - PLAN ONLY	3,315.81	3,416.21	873.30	847.42	33.750	CC, ES
RUCA 20-5HZ - KMG - PLAN ONLY	8,100.00	7,523.59	1,503.92	1,445.48	25.735	SF
RUCA 20-6HZ - KMG - PLAN ONLY	3,590.28	3,689.97	770.58	743.21	28.151	CC
RUCA 20-6HZ - KMG - PLAN ONLY	3,600.00	3,698.03	770.60	743.14	28.055	ES
RUCA 20-6HZ - KMG - PLAN ONLY	7,700.00	7,691.14	1,282.97	1,227.32	23.052	SF
RUCA 20-7HZ - KMG - PLAN ONLY	3,808.77	3,923.12	481.24	452.06	16.489	CC, ES
RUCA 20-7HZ - KMG - PLAN ONLY	7,500.00	7,646.59	832.47	779.08	15.590	SF
RUCA 20-8HZ - KMG - PLAN ONLY	3,888.15	4,017.76	239.20	209.09	7.943	CC
RUCA 20-8HZ - KMG - PLAN ONLY	3,900.00	4,027.82	239.28	209.03	7.911	ES, SF
RUCA 20-9HZ - KMG - PLAN ONLY	3,991.78	4,113.18	50.92	19.99	1.646	CC, ES
RUCA 20-9HZ - KMG - PLAN ONLY	4,000.00	4,120.22	51.09	20.02	1.644	SF
SATER 21-8 - KMG WELL - SURVEYS						Out of range
SATER 24-8 - KMG WELL - SURVEYS	15,360.33	7,405.64	1,360.73	1,217.97	9.532	CC, ES, SF
SATER 24C-5HZ - KMG WELL - SURVEYS	15,360.33	7,405.36	1,051.01	909.53	7.429	CC, ES, SF
SATER 24N-5HZ - KMG WELL - SURVEYS	15,360.33	7,332.62	1,671.10	1,529.93	11.837	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	15,360.33	7,372.95	615.00	476.67	4.446	CC, ES, SF
SATER 7-8 - KMG WELL - SURVEYS	15,360.33	7,388.26	2,198.94	2,058.61	15.670	CC, ES, SF
SATER 8-8 - KMG WELL - SURVEYS	15,360.33	7,666.49	954.53	821.06	7.151	CC, ES, SF
SATER ALFRED D UNIT 1 (P&A) - KMG WELL - GYRO	15,360.33	7,237.37	1,886.33	1,764.37	15.467	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	15,360.33	7,323.45	2,073.17	2,017.77	37.424	CC, ES, SF
SPRAGUE 13-9 - CPR WELL - GYRO	14,736.03	7,365.08	774.41	647.55	6.104	CC, ES
SPRAGUE 13-9 - CPR WELL - GYRO	14,800.00	7,365.82	777.05	649.27	6.081	SF
SPRAGUE 14-9 - CPR WELL - GYRO	13,397.36	7,389.56	715.63	609.24	6.726	CC
SPRAGUE 14-9 - CPR WELL - GYRO	13,400.00	7,389.53	715.64	609.19	6.723	ES, SF
SPRAGUE 24-9 - CPR WELL - GYRO	13,247.02	7,381.81	2,086.92	1,982.89	20.062	CC
SPRAGUE 24-9 - CPR WELL - GYRO	13,300.00	7,381.97	2,087.59	1,982.71	19.906	ES
SPRAGUE 24-9 - CPR WELL - GYRO	13,600.00	7,382.84	2,116.56	2,007.95	19.489	SF
SPRAGUE 2-4-9 - CPR WELL - SURVEYS	15,222.32	7,446.22	1,346.45	1,207.25	9.673	CC
SPRAGUE 2-4-9 - CPR WELL - SURVEYS	15,300.00	7,448.25	1,347.73	1,206.60	9.549	ES, SF
SPRAGUE 2-8-9 - CPR WELL - SURVEYS	12,830.14	7,482.97	1,332.06	1,229.32	12.966	CC, ES
SPRAGUE 2-8-9 - CPR WELL - SURVEYS	13,000.00	7,482.05	1,342.84	1,237.22	12.714	SF
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	15,204.83	9,585.04	485.98	321.94	2.963	CC, ES
SPRAGUE 3A-9H-N267 - CPR WELL - SURVEYS	15,300.00	9,672.82	490.02	323.23	2.938	SF
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	15,211.30	9,749.93	303.96	154.61	2.035	CC
SPRAGUE 3AA-9H-N267 - CPR WELL - SURVEYS	15,300.00	9,835.34	305.89	153.98	2.014	ES, SF
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	14,944.25	9,415.32	703.56	551.12	4.616	CC
SPRAGUE 3B-9H-N267 - CPR WELL - SURVEYS	15,300.00	9,802.24	705.94	541.83	4.302	ES, SF
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	15,211.66	9,426.63	978.12	813.77	5.951	CC
SPRAGUE 3C-9H-N267 - CPR WELL - SURVEYS	15,300.00	9,532.40	978.67	811.09	5.840	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 4S-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 4S-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)						
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS	15,215.67	9,467.04	1,235.13	1,073.04	7.620	CC
SPRAGUE 3D-9H-N267 - CPR WELL - SURVEYS	15,300.00	9,540.51	1,236.12	1,071.42	7.505	ES, SF
SPRAGUE 3E-9H-N267 - CPR WELL - SURVEYS	13,485.74	7,784.00	1,752.47	1,640.38	15.634	CC
SPRAGUE 3E-9H-N267 - CPR WELL - SURVEYS	13,500.00	7,784.00	1,752.53	1,640.19	15.601	ES
SPRAGUE 3E-9H-N267 - CPR WELL - SURVEYS	13,700.00	7,784.00	1,765.52	1,650.48	15.347	SF
SPRAGUE 3E-9HX1-N267 - CPR WELL - SURVEYS	15,213.75	9,537.96	1,821.80	1,659.07	11.195	CC
SPRAGUE 3E-9HX1-N267 - CPR WELL - SURVEYS	15,300.00	9,624.64	1,822.88	1,657.21	11.003	ES
SPRAGUE 3E-9HX1-N267 - CPR WELL - SURVEYS	15,360.33	9,677.23	1,851.78	1,683.16	10.982	SF
SPRAGUE 3F-9H-N267 - CPR WELL - SURVEYS	15,204.11	9,758.95	1,856.81	1,695.75	11.529	CC, ES
SPRAGUE 3F-9H-N267 - CPR WELL - SURVEYS	15,360.33	9,929.93	1,890.92	1,723.39	11.288	SF
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	4,557.41	4,507.11	1,103.51	1,074.98	38.680	CC
STANLEY #2 - GERRITY WELL - NO SURVEYS	4,800.00	4,744.42	1,104.65	1,074.17	36.233	ES
STANLEY #2 - GERRITY WELL - NO SURVEYS	5,300.00	5,175.00	1,115.76	1,081.52	32.580	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

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

Cathedral Energy Services

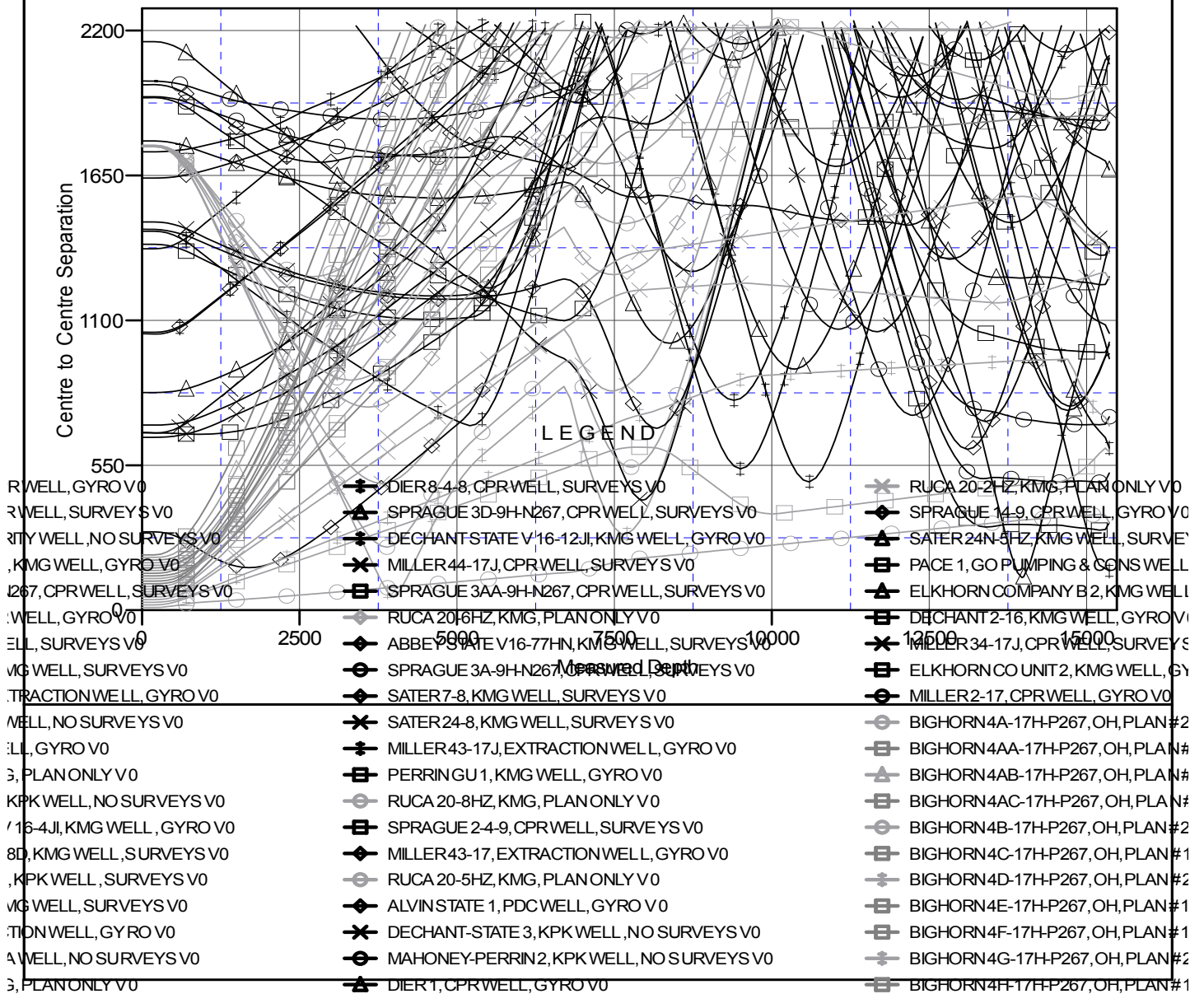
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-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 4S-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 4S-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

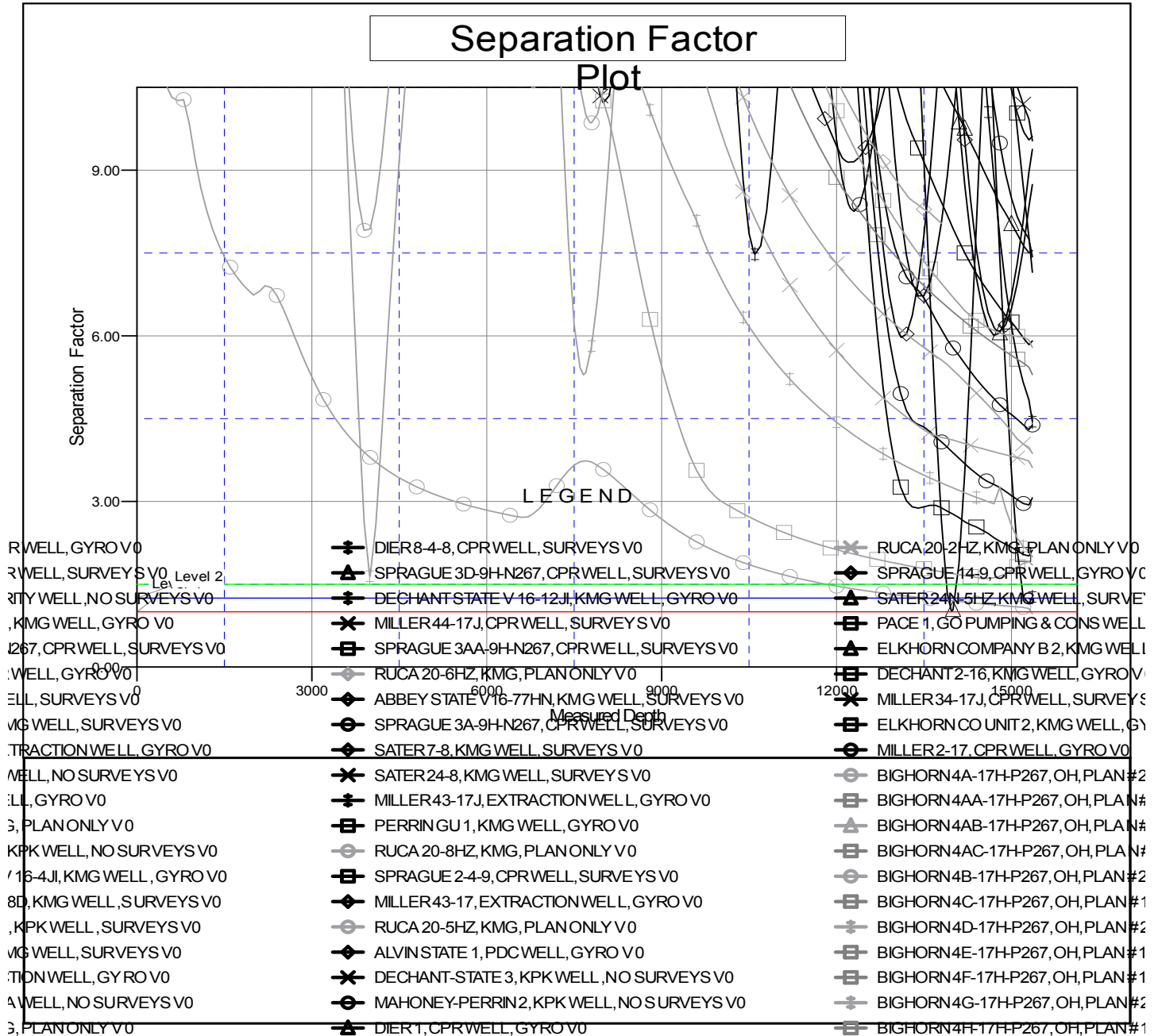
Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-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 4S-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 4S-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