

# **Crestone Peak Resources**

**DJ BASIN**

**S18-T2N-R67W (KUGEL)**

**KUGEL 1L-18H-H267**

**OH**

**PLAN #2 (6.11)**

## **Anticollision Summary Report**

**11 June, 2018**

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4976.00usft
<b>Reference Site:</b>	S18-T2N-R67W (KUGEL)	<b>MD Reference:</b>	23' KB @ 4976.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	KUGEL 1L-18H-H267	<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 #2 (6.11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #2 (6.11)		
<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 ellipse separation of 1,000.00 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>	6/11/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	2,000.00	PLAN #2 (6.11) (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	13,893.73	PLAN #2 (6.11) (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						
S18-T2N-R67W (KUGEL)						
BRETT 1 - HS RESOURCES - NO SURVEYS	300.00	291.00	1,112.59	1,111.34	886.036	CC, ES
BRETT 1 - HS RESOURCES - NO SURVEYS	13,400.00	5,037.00	2,826.38	2,757.74	41.176	SF
BRETT 2 - HS RESOURCES WELL - NO SURVEYS	300.00	279.00	2,840.89	2,839.66	2,304.525	CC, ES
BRETT 2 - HS RESOURCES WELL - NO SURVEYS	13,893.73	5,035.00	3,199.84	3,119.77	39.960	SF
BRETT 3 - KMG WELL - NO SURVEY	13,825.89	5,040.00	2,537.56	2,471.75	38.559	CC
BRETT 3 - KMG WELL - NO SURVEY	13,893.73	5,040.00	2,538.46	2,471.67	38.003	ES, SF
BRETT 4 - KMG WELL - GYRO	161.53	146.52	1,668.11	1,667.77	4,854.686	CC
BRETT 4 - KMG WELL - GYRO	200.00	177.22	1,668.20	1,667.74	3,586.029	ES
BRETT 4 - KMG WELL - GYRO	12,600.00	7,673.84	2,102.59	2,025.69	27.341	SF
DREW 1 - KMG WELL - GYRO	138.40	107.07	3,312.62	3,312.39	10,000.000	CC
DREW 1 - KMG WELL - GYRO	200.00	160.03	3,312.70	3,312.28	7,799.024	ES
DREW 1 - KMG WELL - GYRO	13,893.73	7,448.33	3,937.22	3,846.68	43.482	SF
DREW GAS UNIT-TRUE 1 - KMG WELL - GYRO	13,075.52	7,539.13	1,510.55	1,426.40	17.951	CC
DREW GAS UNIT-TRUE 1 - KMG WELL - GYRO	13,100.00	7,538.64	1,510.75	1,426.32	17.894	ES
DREW GAS UNIT-TRUE 1 - KMG WELL - GYRO	13,300.00	7,534.53	1,527.13	1,441.05	17.741	SF
FARNSWORTH 9-18A - KMG WELL - GYRO	12,095.79	7,480.82	521.12	449.52	7.278	CC
FARNSWORTH 9-18A - KMG WELL - GYRO	12,100.00	7,480.87	521.14	449.50	7.275	ES, SF
GTF RED V 6-16JI - KMG WELL - GYRO	7,627.26	6,574.53	4,839.98	4,801.61	126.138	CC, ES
GTF RED V 6-16JI - KMG WELL - GYRO	7,900.00	6,958.14	4,889.09	4,849.87	124.661	SF
GTF RED V 6-4D - KMG WELL - GYRO	7,606.35	6,524.54	5,543.84	5,502.08	132.763	CC, ES
GTF RED V 6-4D - KMG WELL - GYRO	7,800.00	6,720.25	5,568.82	5,526.35	131.120	SF
GTF RED V6-16 - KMG WELL - GYRO	7,629.32	6,600.00	4,889.05	4,850.35	126.317	CC, ES
GTF RED V6-16 - KMG WELL - GYRO	7,800.00	6,788.80	4,909.13	4,869.79	124.789	SF
HSR-OWEN 15-18A - KMG WELL - SURVEYS	100.00	85.25	1,618.76	1,618.60	9,865.763	CC
HSR-OWEN 15-18A - KMG WELL - SURVEYS	300.00	283.50	1,618.96	1,618.22	2,188.324	ES
HSR-OWEN 15-18A - KMG WELL - SURVEYS	13,893.73	7,906.70	2,129.25	2,017.21	19.005	SF
KUGEL 1 - EXTRACTION WELL - GYRO	3,303.94	3,009.92	518.33	502.12	31.989	CC, ES
KUGEL 1 - EXTRACTION WELL - GYRO	10,200.00	7,483.49	1,038.71	983.95	18.969	SF
KUGEL 1-18 - CPR WELL - GYRO	1,813.37	1,693.89	3,241.98	3,236.33	573.104	CC
KUGEL 1-18 - CPR WELL - GYRO	1,900.00	1,766.58	3,242.29	3,236.24	535.766	ES
KUGEL 1-18 - CPR WELL - GYRO	11,800.00	7,500.00	4,139.11	4,075.04	64.600	SF
KUGEL 12-18 - KMG WELL - GYRO	0.00	0.00	2,598.94			
KUGEL 12-18 - KMG WELL - GYRO	12,200.00	7,472.50	3,558.02	3,488.24	50.989	SF
KUGEL 1A-18H-H267 - OH - PLAN #3 (6.11)	767.85	763.64	77.59	75.07	30.804	CC, ES
KUGEL 1A-18H-H267 - OH - PLAN #3 (6.11)	8,000.00	11,304.92	2,550.09	2,449.40	25.326	SF
KUGEL 1B-18H-H267 - OH - PLAN #3 (6.11)	809.02	804.67	61.92	59.26	23.324	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 KUGEL 1L-18H-H267 - Slot KUGEL 1L
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4976.00usft
<b>Reference Site:</b>	S18-T2N-R67W (KUGEL)	<b>MD Reference:</b>	23' KB @ 4976.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	KUGEL 1L-18H-H267	<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 #2 (6.11)	<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
<b>Offset Well - Wellbore - Design</b>						
S18-T2N-R67W (KUGEL)						
KUGEL 1B-18H-H267 - OH - PLAN #3 (6.11)	900.00	889.25	68.77	65.77	22.960	SF
KUGEL 1C-18H-H267 - OH - PLAN #2 (6.11)	839.53	835.39	46.53	43.77	16.884	CC, ES
KUGEL 1C-18H-H267 - OH - PLAN #2 (6.11)	900.00	892.15	50.29	47.31	16.882	SF
KUGEL 1D-18H-H267 - OH - PLAN #2 (6.11)	858.52	854.94	31.59	28.77	11.220	CC, ES, SF
KUGEL 1E-18H-H267 - OH - PLAN #2 (6.11)	865.34	861.06	20.84	18.00	7.356	CC, ES, SF
KUGEL 1F-18H-H267 - OH - PLAN #2 (6.11)	637.91	637.34	31.36	29.32	15.379	CC, ES, SF
KUGEL 1G-18H-H267 - OH - PLAN #2 (6.11)	830.40	827.34	8.53	5.83	3.158	CC, ES, SF
KUGEL 1H-18H-H267 - OH - PLAN #3 (6.11)	577.87	578.30	13.91	12.09	7.655	CC, ES, SF
KUGEL 1I-18H-H267 - OH - PLAN #3 (6.11)	711.87	710.46	5.08	2.80	2.230	CC, ES, SF
KUGEL 1J-18H-H267 - OH - PLAN #2 (6.11)	443.41	443.97	6.21	4.87	4.628	CC, ES, SF
KUGEL 1K-18H-H267 - OH - PLAN #2 (6.11)	357.61	357.64	8.28	7.24	7.917	CC, ES
KUGEL 1K-18H-H267 - OH - PLAN #2 (6.11)	8,150.37	10,720.66	272.93	171.48	2.690	SF
KUGEL 1M-18H-H267 - OH - PLAN #2 (6.11)	845.17	841.23	3.10	0.31	1.112	Level 2, CC
KUGEL 1M-18H-H267 - OH - PLAN #2 (6.11)	900.00	896.05	3.24	0.25	1.085	Level 2, ES
KUGEL 1M-18H-H267 - OH - PLAN #2 (6.11)	7,600.00	7,611.89	91.42	3.93	1.045	Level 2, SF
KUGEL 1N-18H-H267 - OH - PLAN #2 (6.11)	584.13	580.44	6.47	4.63	3.515	CC, ES
KUGEL 1N-18H-H267 - OH - PLAN #2 (6.11)	13,893.73	13,452.27	369.45	219.51	2.464	SF
KUGEL 21-18 - CPR WELL - GYRO	3,480.92	3,150.74	2,909.12	2,891.35	163.686	CC
KUGEL 21-18 - CPR WELL - GYRO	3,500.00	3,163.80	2,909.15	2,891.21	162.163	ES
KUGEL 21-18 - CPR WELL - GYRO	10,300.00	7,466.32	3,445.05	3,390.14	62.740	SF
KUGEL 2-18 - CPR WELL - GYRO	2,122.07	1,987.04	433.60	425.82	55.723	CC, ES
KUGEL 2-18 - CPR WELL - GYRO	10,700.00	7,497.39	1,083.74	1,025.76	18.694	SF
KUGEL 22-18 - CPR WELL - GYRO	805.74	825.28	2,442.85	2,440.18	914.216	CC, ES
KUGEL 22-18 - CPR WELL - GYRO	12,100.00	7,404.93	3,419.11	3,350.37	49.735	SF
KUGEL 31-18 - CPR WELL - GYRO	3,964.10	3,529.34	1,762.88	1,740.66	79.357	CC
KUGEL 31-18 - CPR WELL - GYRO	4,000.00	3,560.46	1,762.96	1,740.41	78.177	ES
KUGEL 31-18 - CPR WELL - GYRO	9,600.00	7,545.16	2,171.81	2,118.69	40.888	SF
KUGEL 32-18 - EXTRACTION WELL - NO SURVEYS	916.57	904.82	1,269.98	1,265.41	277.532	CC
KUGEL 32-18 - EXTRACTION WELL - NO SURVEYS	1,000.00	986.06	1,270.13	1,265.10	252.773	ES
KUGEL 32-18 - EXTRACTION WELL - NO SURVEYS	12,400.00	5,018.00	3,426.91	3,361.39	52.303	SF
KUGEL 41-18 - CPR WELL - GYRO	4,539.31	4,041.86	147.23	119.59	5.326	CC, ES, SF
KUGEL 42-18 - CPR WELL - GYRO	1,008.68	986.55	202.77	199.43	60.651	CC, ES
KUGEL 42-18 - CPR WELL - GYRO	11,300.00	7,503.56	557.98	494.77	8.828	SF
KUGEL V18-3 - KMG WELL - GYRO	3,368.47	3,038.85	2,934.47	2,917.73	175.293	CC
KUGEL V18-3 - KMG WELL - GYRO	3,400.00	3,065.03	2,934.52	2,917.49	172.395	ES
KUGEL V18-3 - KMG WELL - GYRO	10,500.00	7,416.62	3,524.38	3,468.67	63.261	SF
LINCOLN 2 - LINCOLN 2 - HS RESOURCES WELL	300.00	272.00	2,921.30	2,920.10	2,435.896	CC, ES
LINCOLN 2 - LINCOLN 2 - HS RESOURCES WELL	13,893.73	5,010.00	4,350.96	4,264.37	50.252	SF
LISA 1 - KMG WELL - GYRO	211.14	185.14	2,763.65	2,763.16	5,659.076	CC
LISA 1 - KMG WELL - GYRO	300.00	271.71	2,763.69	2,762.90	3,476.787	ES
LISA 1 - KMG WELL - GYRO	13,200.00	7,457.51	3,494.46	3,412.00	42.374	SF
LISA 2 - KMG WELL - GYRO	13,415.55	7,450.89	3,361.26	3,272.85	38.015	CC
LISA 2 - KMG WELL - GYRO	13,500.00	7,450.11	3,362.32	3,272.83	37.572	ES
LISA 2 - KMG WELL - GYRO	13,893.73	7,446.39	3,395.10	3,301.18	36.147	SF
ROCKY MOUNTAIN FUEL 12 - HS RESOURCES WELL	13,893.73	5,100.00	3,332.17	3,256.23	43.881	CC, ES, SF
ROCKY MTN FUEL D 8 - HS RESOURCES WELL - NO	13,893.73	5,026.00	4,083.77	4,000.97	49.321	CC, ES, SF
STREAR V 06-23D - KMG WELL - GYRO	7,630.02	6,740.81	5,822.48	5,782.01	143.867	CC, ES
STREAR V 06-23D - KMG WELL - GYRO	7,900.00	7,102.81	5,869.75	5,828.45	142.130	SF
STREAR V 06-63HN - KMG WELL - SURVEYS	7,636.61	6,671.00	5,232.00	5,182.95	106.665	CC, ES
STREAR V 06-63HN - KMG WELL - SURVEYS	7,800.00	6,735.00	5,252.14	5,202.33	105.447	SF
WANDELL 1 - CPR WELL - GYRO	7,621.90	6,661.74	3,500.39	3,459.45	85.489	CC, ES
WANDELL 1 - CPR WELL - GYRO	7,800.00	6,930.89	3,519.10	3,477.53	84.656	SF
WANDELL 21-7 - CPR WELL - GYRO	7,585.08	6,628.06	4,525.10	4,476.18	92.506	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 KUGEL 1L-18H-H267 - Slot KUGEL 1L
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4976.00usft
<b>Reference Site:</b>	S18-T2N-R67W (KUGEL)	<b>MD Reference:</b>	23' KB @ 4976.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	KUGEL 1L-18H-H267	<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 #2 (6.11)	<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
S18-T2N-R67W (KUGEL)						
WANDELL 21-7 - CPR WELL - GYRO	7,800.00	6,839.59	4,549.73	4,500.06	91.601	SF
WANDELL 22-7 - CPR WELL - SURVEYS	7,556.23	6,916.25	3,688.07	3,626.13	59.547	CC, ES
WANDELL 22-7 - CPR WELL - SURVEYS	7,700.00	7,059.51	3,697.39	3,634.89	59.158	SF
WANDELL 24-7 - CPR WELL - SURVEYS	4,567.75	4,089.24	2,938.07	2,901.24	79.785	CC
WANDELL 24-7 - CPR WELL - SURVEYS	4,700.00	4,196.52	2,938.67	2,900.21	76.411	ES
WANDELL 24-7 - CPR WELL - SURVEYS	8,100.00	7,306.51	3,175.46	3,103.92	44.390	SF
WANDELL 31-7 - CPR WELL - SURVEYS	7,618.21	6,824.44	4,223.05	4,164.83	72.531	CC, ES
WANDELL 31-7 - CPR WELL - SURVEYS	7,800.00	7,051.84	4,243.64	4,184.47	71.719	SF
WANDELL 32-7 - CPR WELL - GYRO	7,578.62	6,600.00	3,014.43	2,966.56	62.964	CC, ES
WANDELL 32-7 - CPR WELL - GYRO	7,700.00	6,728.87	3,022.59	2,974.15	62.394	SF
WANDELL 33-7 - CPR WELL - SURVEYS	7,550.16	6,834.00	2,126.48	2,055.27	29.862	CC, ES
WANDELL 33-7 - CPR WELL - SURVEYS	7,700.00	6,961.73	2,135.31	2,063.25	29.634	SF
WANDELL 34-7 - CPR WELL - GYRO	5,301.25	4,732.80	1,762.49	1,727.16	49.898	CC
WANDELL 34-7 - CPR WELL - GYRO	5,500.00	4,924.15	1,763.42	1,726.05	47.189	ES
WANDELL 34-7 - CPR WELL - GYRO	8,200.00	7,380.70	1,969.64	1,913.83	35.294	SF
WANDELL 4-0-7 - CPR WELL - SURVEYS	7,607.48	6,951.84	4,974.41	4,904.77	71.436	CC, ES
WANDELL 4-0-7 - CPR WELL - SURVEYS	7,700.00	7,076.50	4,979.30	4,909.42	71.256	SF
WANDELL 41-7 - CPR WELL - SURVEYS	7,630.69	6,723.43	3,874.99	3,836.25	100.050	CC, ES
WANDELL 41-7 - CPR WELL - SURVEYS	7,800.00	6,863.10	3,895.38	3,855.99	98.883	SF
WANDELL 42-7 - CPR WELL - SURVEYS	7,636.29	6,883.84	2,333.27	2,280.63	44.324	CC, ES
WANDELL 42-7 - CPR WELL - SURVEYS	7,800.00	7,041.89	2,351.82	2,298.30	43.941	SF
WANDELL 43-7 - CPR WELL - SURVEYS	7,620.11	7,095.20	1,130.28	1,069.99	18.747	CC, ES
WANDELL 43-7 - CPR WELL - SURVEYS	7,700.00	7,170.58	1,134.34	1,073.58	18.669	SF
WANDELL 4-4-7 - CPR WELL - SURVEYS	7,544.11	6,981.94	3,042.45	2,980.39	49.026	CC, ES
WANDELL 4-4-7 - CPR WELL - SURVEYS	7,700.00	7,136.12	3,051.78	2,989.09	48.679	SF
WANDELL 4-6-7 - CPR WELL - SURVEYS	2,515.56	1,731.04	2,136.43	2,124.38	177.330	CC
WANDELL 4-6-7 - CPR WELL - SURVEYS	2,600.00	1,791.09	2,136.97	2,124.22	167.601	ES
WANDELL 4-6-7 - CPR WELL - SURVEYS	7,700.00	7,155.05	2,288.97	2,208.82	28.558	SF
WANDELL 6-0-7 - CPR WELL - SURVEYS	7,631.41	6,822.97	4,493.66	4,439.80	83.437	CC, ES
WANDELL 6-0-7 - CPR WELL - SURVEYS	7,900.00	7,098.64	4,540.81	4,485.72	82.411	SF
WANDELL 6-4-7 - CPR WELL - SURVEYS	7,597.87	7,070.45	1,922.94	1,854.47	28.085	CC
WANDELL 6-4-7 - CPR WELL - SURVEYS	7,600.00	7,072.52	1,922.95	1,854.46	28.078	ES
WANDELL 6-4-7 - CPR WELL - SURVEYS	7,700.00	7,171.88	1,928.87	1,859.78	27.919	SF
WANDELL 6-8-7 - CPR WELL - SURVEYS	5,427.16	4,983.47	986.97	939.29	20.700	CC, ES
WANDELL 6-8-7 - CPR WELL - SURVEYS	9,000.00	7,599.72	1,257.47	1,189.16	18.408	SF
WANDELL 8-2-7 - CPR WELL - SURVEYS	7,646.93	6,866.68	2,978.89	2,923.52	53.801	CC, ES
WANDELL 8-2-7 - CPR WELL - SURVEYS	7,800.00	7,015.77	2,995.07	2,939.03	53.446	SF
WANDELL 8-4-7 - CPR WELL - SURVEYS	7,642.34	7,092.13	1,766.32	1,709.19	30.922	CC, ES
WANDELL 8-4-7 - CPR WELL - SURVEYS	7,700.00	7,147.99	1,768.67	1,711.30	30.830	SF
WANDELL E UNIT 1 - CPR WELL - NO SURVEYS	7,201.99	6,326.86	762.96	706.92	13.614	CC, ES
WANDELL E UNIT 1 - CPR WELL - NO SURVEYS	7,400.00	6,502.38	770.76	713.07	13.362	SF

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

# Cathedral Energy Services

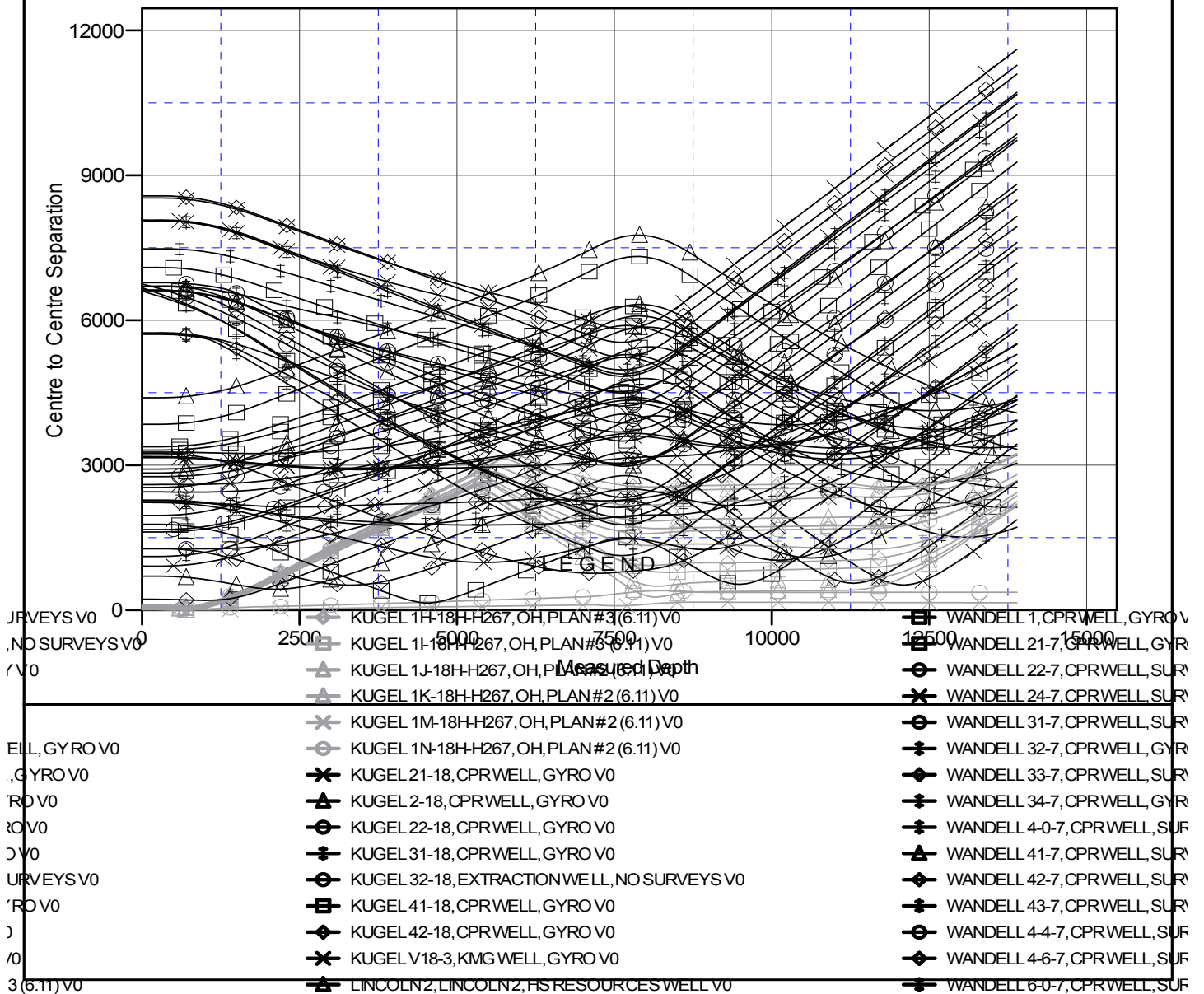
## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4976.00usft
<b>Reference Site:</b>	S18-T2N-R67W (KUGEL)	<b>MD Reference:</b>	23' KB @ 4976.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	KUGEL 1L-18H-H267	<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 #2 (6.11)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 23' KB @ 4976.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: KUGEL 1L-18H-H267 - Slot KUGEL 1L  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.37°

### Ladder Plot



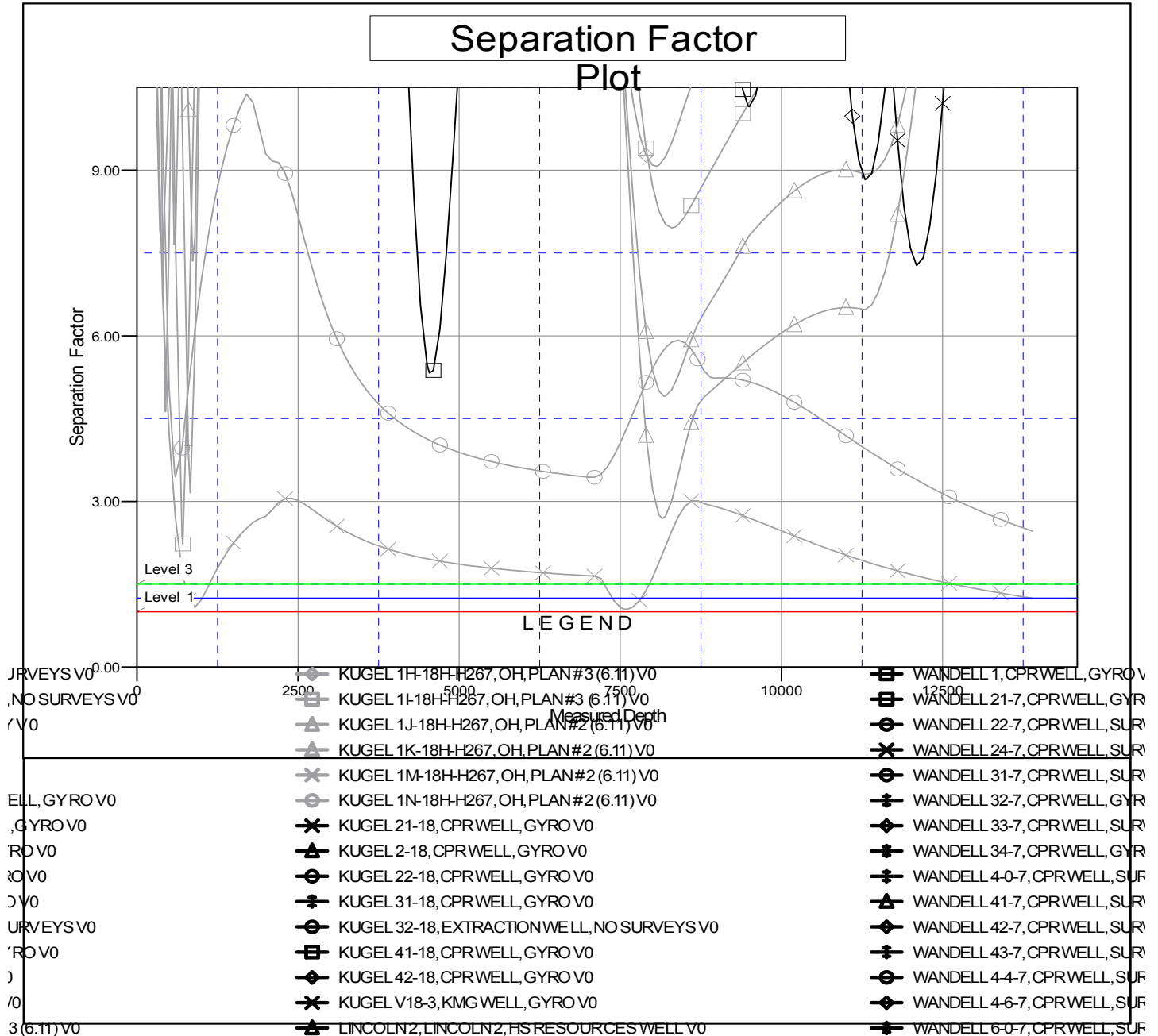
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Cathedral Energy Services**  
Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4976.00usft
<b>Reference Site:</b>	S18-T2N-R67W (KUGEL)	<b>MD Reference:</b>	23' KB @ 4976.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	KUGEL 1L-18H-H267	<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 #2 (6.11)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 23' KB @ 4976.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: KUGEL 1L-18H-H267 - Slot KUGEL 1L  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.37°



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