

Crestone Peak Resources

DJ BASIN

S4-T1N-R65W

RUEGGE 3R-4H-N165

OH

PLAN #1

Anticollision Report

12 November, 2017

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference	PLAN #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,415.18usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	12,744.20	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
ANSCHUTZ 2 - KMG WELL - NO SURVEYS						Out of range
BANE 27N1-9HZ - KMG WELL - PLAN ONLY	7,048.86	12,079.69	1,109.33	992.77	9.517	CC
BANE 27N1-9HZ - KMG WELL - PLAN ONLY	7,100.00	12,072.14	1,110.49	992.36	9.401	ES
BANE 27N1-9HZ - KMG WELL - PLAN ONLY	7,250.00	12,061.72	1,127.27	1,005.67	9.270	SF
BANE 27N2-9HZ - KMG WELL - SURVEYS	7,261.25	11,984.00	1,130.55	1,019.38	10.169	CC
BANE 27N2-9HZ - KMG WELL - SURVEYS	7,300.00	11,984.00	1,131.48	1,019.11	10.069	ES
BANE 27N2-9HZ - KMG WELL - SURVEYS	7,400.00	11,984.00	1,142.38	1,027.49	9.943	SF
BANE 28N1-9HZ - KMG WELL - PLAN ONLY						Out of range
BANE 28N2-9HZ - KMG WELL - SURVEYS						Out of range
BANE 28N3-9HZ - KMG WELL - SURVEYS						Out of range
BANE 2N1-9HZ - KMG WELL - NO SURVEYS						Out of range
BANE 2N2-9HZ - KMG WELL - NO SURVEYS						Out of range
BANE 2N3-9HZ - KMG WELL - SURVEYS						Out of range
BAT 28C-9HZ - KMG WELL - SURVEYS						Out of range
BAT 28N-9HZ - KMG WELL - SURVEYS						Out of range
BAT 29C-9HZ - KMG WELL - SURVEYS						Out of range
BAT 29N1-9HZ - KMG WELL - SURVEYS						Out of range
BAT 29N2-9HZ - KMG WELL - SURVEYS						Out of range
BAT 3N1-9HZ - KMG WELL - NO SURVEYS						Out of range
BAT 3N1-9HZ - KMG WELL - SURVEYS						Out of range
BAT 3N2-9HZ - KMG WELL - SURVEYS						Out of range
BAT 4C-9HZ - KMG WELL - SURVEYS						Out of range
BOYD 1N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 26N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 27C-5HZ - KMG WELL - SURVEYS						Out of range
BOYD 27N-5HZ - KMG WELL - SURVEYS						Out of range
BOYD 28C-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 2N-32HZ - KMG WELL - SURVEYS						Out of range
BOYD 43-5 - KMG WELL - NO SURVEYS						Out of range
CHAPIN 33-4 - CPR WELL - GYRO	9,552.90	7,352.61	1,372.64	1,317.86	25.059	CC, ES
CHAPIN 33-4 - CPR WELL - GYRO	9,800.00	7,347.93	1,394.69	1,337.04	24.191	SF
CHAPIN 34-4 - CPR WELL - GYRO	3,430.13	3,175.05	556.43	526.90	18.841	CC, ES
CHAPIN 34-4 - CPR WELL - GYRO	3,800.00	3,510.38	576.97	544.37	17.695	SF
CHAPIN 43-4 - CPR WELL - GYRO	9,816.59	7,297.39	181.07	124.94	3.226	CC, ES, SF
CHAPIN 44-4 - CPR WELL - GYRO	8,578.75	7,302.41	440.35	392.30	9.165	CC
CHAPIN 44-4 - CPR WELL - GYRO	8,600.00	7,302.57	440.86	392.08	9.037	ES
CHAPIN 44-4 - CPR WELL - GYRO	8,800.00	7,304.11	492.80	434.64	8.472	SF
CHAVEZ 4A-4H - CPR WELL - SURVEYS	4,049.76	3,762.44	96.36	58.19	2.524	CC, ES, SF
CHAVEZ 4B-4H - CPR WELL - SURVEYS	5,886.93	5,442.52	96.36	35.25	1.577	CC, ES, SF
COLFER 13C-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 13N-34HZ - KMG WELL - SURVEYS	12,745.14	11,496.00	1,276.38	1,153.80	10.412	CC, ES, SF
COLFER 14C-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 14N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 35N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 36N-34HZ - KMG WELL - SURVEYS						Out of range
DREILING 27C-32HZ - KMG WELL - SURVEYS						Out of range
DREILING 27N-32HZ - KMG WELL - SURVEYS						Out of range
EARL YOUNG GAS UNIT 1 - KMG WELL - NO SURVEY						Out of range
ENGLISH FARMS 13N-9HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 15C-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 15N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 16N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 34C-9HZ - KMG 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 Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
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Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 36N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 37N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS 38N-8HZ - KMG WELL - SURVEYS						Out of range
ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08						Out of range
GITTLEIN 1 - KMG WELL - NO SURVEYS						Out of range
GITTLEIN 11-4 - CPR WELL - GYRO						Out of range
GITTLEIN 12-4J - CPR WELL - SURVEYS						Out of range
GITTLEIN 21-4J - CPR WELL - SURVEYS						Out of range
GITTLEIN 22-4J - CPR WELL - SURVEYS						Out of range
GITTLEIN 29N-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 30C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 30N-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS						Out of range
GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS						Out of range
GITTLEIN 3C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 3N-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 4C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS						Out of range
GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS						Out of range
GITTLEIN 4N-28HZ - KMG WELL - SURVEYS						Out of range
GREEN XX 8-3 - KMG WELL - NO SURVEYS						Out of range
HSR-DREILING 1-5A - KMG WELL - SURVEYS						Out of range
HSR-GITTLEIN 1A - KMG WELL - NO SURVEYS						Out of range
JOKER 1N1-9HZ - KMG WELL - SURVEYS	7,426.67	12,040.00	670.87	562.08	6.167	CC
JOKER 1N1-9HZ - KMG WELL - SURVEYS	7,450.00	12,040.00	671.43	561.30	6.096	ES
JOKER 1N1-9HZ - KMG WELL - SURVEYS	7,550.00	12,040.00	686.33	571.84	5.995	SF
JOKER 1N2-9HZ - KMG WELL - SURVEYS	7,430.38	11,954.00	508.15	407.03	5.025	CC
JOKER 1N2-9HZ - KMG WELL - SURVEYS	7,450.00	11,954.00	508.70	406.11	4.959	ES
JOKER 1N2-9HZ - KMG WELL - SURVEYS	7,500.00	11,954.00	515.05	409.36	4.873	SF
JOKER 1N3-9HZ - KMG WELL - SURVEYS	7,434.84	11,936.00	325.06	239.84	3.815	CC
JOKER 1N3-9HZ - KMG WELL - SURVEYS	7,450.00	11,936.00	325.55	238.78	3.752	ES
JOKER 1N3-9HZ - KMG WELL - SURVEYS	7,500.00	11,936.00	334.00	242.91	3.667	SF
JOKER 26N1-9HZ - KMG WELL - SURVEYS	7,532.49	12,052.00	404.64	330.71	5.473	CC
JOKER 26N1-9HZ - KMG WELL - SURVEYS	7,550.00	12,052.00	405.22	330.39	5.415	ES
JOKER 26N1-9HZ - KMG WELL - SURVEYS	7,600.00	12,052.00	413.16	335.46	5.317	SF
JOKER 26N2-9HZ - KMG WELL - SURVEYS	7,578.55	11,975.00	355.22	263.51	3.873	CC, ES
JOKER 26N2-9HZ - KMG WELL - SURVEYS	7,600.00	11,975.00	356.18	263.71	3.852	SF
JOKER 27N1-9HZ - KMG WELL - SURVEYS	7,282.36	11,921.00	961.09	847.96	8.496	CC
JOKER 27N1-9HZ - KMG WELL - SURVEYS	7,300.00	11,921.00	961.32	847.49	8.446	ES
JOKER 27N1-9HZ - KMG WELL - SURVEYS	7,400.00	11,921.00	971.17	854.06	8.293	SF
JOKER 27N2-9HZ - KMG WELL - SURVEYS	7,275.78	11,852.00	787.36	674.13	6.954	CC
JOKER 27N2-9HZ - KMG WELL - SURVEYS	7,300.00	11,852.00	787.89	673.53	6.890	ES
JOKER 27N2-9HZ - KMG WELL - SURVEYS	7,400.00	11,852.00	801.12	683.17	6.792	SF
MAYER 33-9P - KMG WELL - GYRO						Out of range
MAYER X 33-15DI - KMG WELL - GYRO						Out of range
MICHAEL R DREILING 1 - AMOCO WELL - NO SURVE						Out of range
MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS	6,741.31	6,203.43	861.62	793.95	12.733	CC
MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS	6,800.00	6,256.42	861.99	793.64	12.611	ES
MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS	7,120.23	6,545.53	876.89	805.44	12.274	SF
OLIN 1 - CPR WELL - GYRO						Out of range
OLIN 1-4 - CPR WELL - GYRO						Out of range

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S4-T1N-R65W						
OLIN 31-4 - CPR WELL - SURVEYS						Out of range
OLIN 32-4 - CPR WELL - GYRO						Out of range
OLIN 41-4 - CPR WELL - SURVEYS	12,500.00	7,490.98	430.04	333.44	4.452	ES, SF
OLIN 41-4 - CPR WELL - SURVEYS	12,521.98	7,492.12	429.48	333.47	4.473	CC
OLIN 42-4A - CPR WELL - SURVEYS	11,237.49	7,561.38	453.42	369.75	5.419	CC, ES
OLIN 42-4A - CPR WELL - SURVEYS	11,300.00	7,559.49	457.70	372.90	5.397	SF
OTTESEN 1 - GREAT WESTERN - NO SURVEYS	9,444.39	7,308.00	1,195.37	1,138.96	21.193	CC, ES
OTTESEN 1 - GREAT WESTERN - NO SURVEYS	9,900.00	7,308.00	1,279.25	1,216.58	20.412	SF
RANDLE RED XX 3-2D - KMG WELL - NO SURVEYS						Out of range
RANDLE RED XX 3-4DI - KMG WELL - NO SURVEYS	12,744.78	7,307.00	696.24	599.92	7.228	CC
RANDLE RED XX 3-4DI - KMG WELL - NO SURVEYS	12,745.14	7,307.00	696.24	599.91	7.228	ES, SF
RILEY 1 - CPR WELL - GYRO						Out of range
ROCKY 11-34A - KMG WELL - NO SURVEYS						Out of range
RUEGGE 3C-4H-N165 - OH - PLAN #1	140.00	143.00	150.00	149.43	261.527	CC, ES
RUEGGE 3C-4H-N165 - OH - PLAN #1	800.00	754.39	268.15	262.90	51.101	SF
RUEGGE 3D-4H-N165 - OH - PLAN #1	140.00	143.00	140.00	139.43	244.091	CC, ES
RUEGGE 3D-4H-N165 - OH - PLAN #1	800.00	773.41	229.00	223.75	43.565	SF
RUEGGE 3E-4H-N165 - OH - PLAN #1	140.00	142.00	130.00	129.43	228.081	CC, ES
RUEGGE 3E-4H-N165 - OH - PLAN #1	800.00	786.58	202.75	197.44	38.236	SF
RUEGGE 3F-4H-N165 - OH - PLAN #1	140.00	142.00	120.00	119.43	210.537	CC, ES
RUEGGE 3F-4H-N165 - OH - PLAN #1	900.00	888.59	212.51	206.44	35.002	SF
RUEGGE 3G-4H-N165 - OH - PLAN #1	140.00	142.00	110.00	109.43	192.993	CC, ES
RUEGGE 3G-4H-N165 - OH - PLAN #1	900.00	906.88	201.86	195.72	32.845	SF
RUEGGE 3H-4H-N165 - OH - PLAN #1	140.00	142.00	100.00	99.43	175.448	CC, ES
RUEGGE 3H-4H-N165 - OH - PLAN #1	900.00	906.88	192.24	186.10	31.293	SF
RUEGGE 3I-4H-N165 - OH - PLAN #1	140.00	142.00	90.00	89.43	157.904	CC, ES
RUEGGE 3I-4H-N165 - OH - PLAN #1	800.00	787.05	171.18	165.82	31.940	SF
RUEGGE 3J-4H-N165 - OH - PLAN #1	140.00	141.00	80.00	79.43	141.246	CC, ES
RUEGGE 3J-4H-N165 - OH - PLAN #1	900.00	905.49	163.88	157.49	25.653	SF
RUEGGE 3K-4H-N165 - OH - PLAN #1	140.00	141.00	70.00	69.43	123.590	CC, ES
RUEGGE 3K-4H-N165 - OH - PLAN #1	900.00	901.53	138.68	132.19	21.373	SF
RUEGGE 3L-4H-N165 - OH - PLAN #1	140.00	141.00	60.00	59.43	105.935	CC
RUEGGE 3L-4H-N165 - OH - PLAN #1	200.00	201.59	60.28	59.29	61.118	ES
RUEGGE 3L-4H-N165 - OH - PLAN #1	1,000.00	1,005.44	108.55	101.05	14.466	SF
RUEGGE 3M-4H-N165 - OH - PLAN #1	140.00	141.00	50.00	49.43	88.279	CC, ES
RUEGGE 3M-4H-N165 - OH - PLAN #1	1,200.00	1,214.59	142.97	134.31	16.508	SF
RUEGGE 3N-4H-N165 - OH - PLAN #1	140.00	141.00	40.00	39.43	70.624	CC
RUEGGE 3N-4H-N165 - OH - PLAN #1	300.00	302.64	40.70	39.01	24.039	ES
RUEGGE 3N-4H-N165 - OH - PLAN #1	1,200.00	1,210.04	63.06	53.44	6.552	SF
RUEGGE 3O-4H-N165 - OH - PLAN #1	140.00	141.00	30.00	29.43	52.966	CC, ES
RUEGGE 3O-4H-N165 - OH - PLAN #1	12,745.14	12,479.95	800.20	641.64	5.047	SF
RUEGGE 3P-4H-N165 - OH - PLAN #1	140.00	141.00	20.00	19.43	35.311	CC
RUEGGE 3P-4H-N165 - OH - PLAN #1	1,300.00	1,307.93	24.37	14.15	2.385	ES, SF
RUEGGE 3Q-4H-N165 - OH - PLAN #1	140.00	141.00	10.00	9.43	17.655	CC, ES
RUEGGE 3Q-4H-N165 - OH - PLAN #1	6,900.00	6,925.14	180.03	68.19	1.610	SF
SPARBOE 7C-3HZ - KMG WELL - SURVEYS						Out of range
SPARBOE 7N-3HZ - KMG WELL - SURVEYS						Out of range
STELLING 1 - CPR WELL - GYRO	0.00	0.00	1,320.23			
STELLING 1 - CPR WELL - GYRO	140.00	130.73	1,320.34	1,319.90	3,039.934	ES
STELLING 1 - CPR WELL - GYRO	800.00	787.75	1,396.85	1,392.85	348.996	SF
STELLING 13-4 - CPR WELL - GYRO						Out of range
STELLING 14-4 - CPR WELL - GYRO						Out of range
STELLING 23-4 - CPR WELL - GYRO						Out of range

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
S4-T1N-R65W						
STELLING 24-4 - CPR WELL - GYRO	0.00	0.00	234.07			
STELLING 24-4 - CPR WELL - GYRO	140.00	133.61	234.27	233.85	563.634	ES
STELLING 24-4 - CPR WELL - GYRO	1,300.00	1,262.72	447.42	440.48	64.437	SF
STELLING 3A-4H - CPR WELL - SURVEYS	155.66	149.53	195.48	194.95	366.075	CC, ES
STELLING 3A-4H - CPR WELL - SURVEYS	1,200.00	1,136.21	418.28	410.94	56.956	SF
STELLING 3B-4H - CPR WELL - SURVEYS	247.82	242.65	168.22	167.18	161.219	CC, ES
STELLING 3B-4H - CPR WELL - SURVEYS	1,300.00	1,280.07	322.30	313.84	38.076	SF
SUMMIT 14C-32HZ - KMG WELL - SURVEYS						Out of range
SUMMIT 36C-32HZ - KMG WELL - SURVEYS						Out of range
SUMMIT 36N-32HZ - KMG WELL - SURVEYS						Out of range
YOUNG EARL 1X - KMG WELL - NO SURVEYS						Out of range
ZIEMER 35C-5HZ - KMG WELL - SURVEYS						Out of range
ZIEMER 36N-5HZ - KMG WELL - SURVEYS						Out of range

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - BANE 27N1-9HZ - KMG WELL - PLAN ONLY												Offset Site Error: 0.00 usft	
Survey Program: 2960-ISCWSA MWD												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
6,200.00	5,698.72	12,204.90	6,971.80	49.01	89.83	169.13	-827.65	1,500.60	1,391.23	1,312.82	78.41	17.744	
6,300.00	5,789.01	12,190.15	6,971.91	49.91	89.60	168.39	-842.40	1,500.58	1,333.87	1,251.23	82.64	16.140	
6,400.00	5,879.29	12,175.40	6,972.01	50.81	89.37	167.64	-857.15	1,500.56	1,281.60	1,194.40	87.20	14.698	
6,500.00	5,969.57	12,160.65	6,972.12	51.71	89.14	166.89	-871.90	1,500.54	1,235.04	1,143.04	92.00	13.425	
6,600.00	6,059.85	12,145.90	6,972.22	52.61	88.91	166.14	-886.65	1,500.52	1,194.87	1,097.94	96.93	12.327	
6,700.00	6,150.14	12,131.15	6,972.33	53.51	88.67	165.39	-901.40	1,500.50	1,161.76	1,059.90	101.86	11.405	
6,800.00	6,240.42	12,116.40	6,972.43	54.42	88.44	164.64	-916.15	1,500.48	1,136.31	1,029.70	106.62	10.658	
6,900.00	6,330.70	12,101.64	6,972.54	55.32	88.21	163.89	-930.90	1,500.46	1,119.06	1,008.04	111.02	10.080	
7,000.00	6,420.98	12,086.89	6,972.65	56.22	87.98	163.13	-945.66	1,500.44	1,110.39	995.48	114.91	9.663	
7,048.86	6,465.10	12,079.69	6,972.70	56.66	87.87	162.76	-952.86	1,500.43	1,109.33	992.77	116.57	9.517 CC	
7,100.00	6,511.27	12,072.14	6,972.75	57.12	87.75	162.38	-960.41	1,500.42	1,110.49	992.36	118.12	9.401 ES	
7,120.23	6,529.53	12,069.16	6,972.77	57.31	87.70	162.23	-963.39	1,500.42	1,111.58	992.89	118.69	9.366	
7,150.00	6,556.48	12,065.38	6,972.80	57.57	87.64	167.12	-967.17	1,500.41	1,113.85	994.39	119.46	9.324	
7,200.00	6,601.96	12,061.81	6,972.83	58.00	87.59	176.06	-970.74	1,500.41	1,119.45	998.83	120.62	9.281	
7,250.00	6,647.52	12,061.72	6,972.83	58.40	87.58	-174.47	-970.83	1,500.41	1,127.27	1,005.67	121.60	9.270 SF	
7,300.00	6,692.94	12,065.12	6,972.80	58.77	87.64	-164.92	-967.43	1,500.41	1,137.24	1,014.83	122.40	9.291	
7,350.00	6,738.01	12,071.99	6,972.75	59.11	87.75	-155.67	-960.56	1,500.42	1,149.20	1,026.18	123.03	9.341	
7,400.00	6,782.50	12,082.29	6,972.68	59.41	87.91	-146.97	-950.26	1,500.43	1,162.99	1,039.51	123.49	9.418	
7,450.00	6,826.19	12,095.99	6,972.58	59.69	88.12	-138.92	-936.56	1,500.45	1,178.39	1,054.59	123.80	9.519	
7,500.00	6,868.87	12,113.00	6,972.46	59.94	88.39	-131.50	-919.55	1,500.48	1,195.14	1,071.15	123.98	9.639	
7,550.00	6,910.34	12,133.25	6,972.31	60.15	88.71	-124.69	-899.30	1,500.50	1,212.96	1,088.90	124.07	9.777	
7,600.00	6,950.38	12,156.64	6,972.15	60.34	89.07	-118.41	-875.91	1,500.53	1,231.58	1,107.51	124.07	9.926	
7,650.00	6,988.82	12,183.06	6,971.96	60.49	89.49	-112.63	-849.49	1,500.57	1,250.70	1,126.67	124.03	10.084	
7,700.00	7,025.45	12,212.37	6,971.75	60.63	89.95	-107.31	-820.18	1,500.61	1,270.01	1,146.06	123.95	10.246	
7,750.00	7,060.11	12,244.43	6,971.52	60.73	90.45	-102.43	-788.12	1,500.65	1,289.23	1,165.37	123.86	10.409	
7,800.00	7,092.61	11,808.08	6,974.64	60.82	83.60	-113.44	-1,224.46	1,500.07	1,390.28	1,268.26	122.03	11.393	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - BANE 27N2-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISWWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,500.00	5,969.57	11,984.00	7,177.04	51.71	77.15	149.31	-1,250.06	1,606.05	1,390.71	1,312.50	78.22	17.781	
6,600.00	6,059.85	11,984.00	7,177.04	52.61	77.15	149.31	-1,250.06	1,606.05	1,334.46	1,252.04	82.42	16.190	
6,700.00	6,150.14	11,984.00	7,177.04	53.51	77.15	149.31	-1,250.06	1,606.05	1,283.54	1,196.66	86.88	14.773	
6,800.00	6,240.42	11,984.00	7,177.04	54.42	77.15	149.31	-1,250.06	1,606.05	1,238.62	1,147.11	91.51	13.535	
6,900.00	6,330.70	11,984.00	7,177.04	55.32	77.15	149.31	-1,250.06	1,606.05	1,200.36	1,104.17	96.20	12.478	
7,000.00	6,420.98	11,984.00	7,177.04	56.22	77.15	149.31	-1,250.06	1,606.05	1,169.43	1,068.64	100.80	11.602	
7,100.00	6,511.27	11,984.00	7,177.04	57.12	77.15	149.31	-1,250.06	1,606.05	1,146.42	1,041.27	105.14	10.904	
7,120.23	6,529.53	11,984.00	7,177.04	57.31	77.15	149.31	-1,250.06	1,606.05	1,142.77	1,036.79	105.98	10.783	
7,150.00	6,556.48	11,984.00	7,177.04	57.57	77.15	153.86	-1,250.06	1,606.05	1,138.18	1,031.01	107.17	10.621	
7,200.00	6,601.96	11,984.00	7,177.04	58.00	77.15	162.12	-1,250.06	1,606.05	1,132.87	1,023.81	109.07	10.387	
7,250.00	6,647.52	11,984.00	7,177.04	58.40	77.15	170.78	-1,250.06	1,606.05	1,130.63	1,019.82	110.81	10.203	
7,261.25	6,657.76	11,984.00	7,177.04	58.48	77.15	172.74	-1,250.06	1,606.05	1,130.55	1,019.38	111.17	10.169 CC	
7,300.00	6,692.94	11,984.00	7,177.04	58.77	77.15	179.41	-1,250.06	1,606.05	1,131.48	1,019.11	112.37	10.069 ES	
7,350.00	6,738.01	11,984.00	7,177.04	59.11	77.15	-172.37	-1,250.06	1,606.05	1,135.42	1,021.68	113.74	9.983	
7,400.00	6,782.50	11,984.00	7,177.04	59.41	77.15	-164.79	-1,250.06	1,606.05	1,142.38	1,027.49	114.89	9.943 SF	
7,450.00	6,826.19	11,984.00	7,177.04	59.69	77.15	-157.91	-1,250.06	1,606.05	1,152.29	1,036.45	115.84	9.947	
7,500.00	6,868.87	11,984.00	7,177.04	59.94	77.15	-151.70	-1,250.06	1,606.05	1,165.02	1,048.43	116.59	9.993	
7,550.00	6,910.34	11,984.00	7,177.04	60.15	77.15	-146.05	-1,250.06	1,606.05	1,180.41	1,063.28	117.13	10.078	
7,600.00	6,950.38	11,984.00	7,177.04	60.34	77.15	-140.85	-1,250.06	1,606.05	1,198.30	1,080.81	117.49	10.199	
7,650.00	6,988.82	11,984.00	7,177.04	60.49	77.15	-136.01	-1,250.06	1,606.05	1,218.49	1,100.80	117.69	10.353	
7,700.00	7,025.45	11,984.00	7,177.04	60.63	77.15	-131.42	-1,250.06	1,606.05	1,240.76	1,123.02	117.74	10.538	
7,750.00	7,060.11	11,984.00	7,177.04	60.73	77.15	-127.02	-1,250.06	1,606.05	1,264.91	1,147.25	117.67	10.750	
7,800.00	7,092.61	11,984.00	7,177.04	60.82	77.15	-122.75	-1,250.06	1,606.05	1,290.72	1,173.23	117.48	10.987	
7,850.00	7,122.81	11,984.00	7,177.04	60.88	77.15	-118.59	-1,250.06	1,606.05	1,317.95	1,200.75	117.21	11.245	
7,900.00	7,150.56	11,984.00	7,177.04	60.92	77.15	-114.50	-1,250.06	1,606.05	1,346.41	1,229.55	116.86	11.522	
7,950.00	7,175.72	11,984.00	7,177.04	60.94	77.15	-110.49	-1,250.06	1,606.05	1,375.88	1,259.43	116.45	11.815	
8,000.00	7,198.17	11,984.00	7,177.04	60.95	77.15	-106.56	-1,250.06	1,606.05	1,406.15	1,290.15	116.00	12.122	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design													S4-T1N-R65W - CHAPIN 33-4 - CPR WELL - GYRO		Offset Site Error:		0.00 usft
Survey Program:													100-VESSI_GYROFLEX		Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft) +E/-W (usft)		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning				
9,300.00	7,272.00	7,357.13	7,354.59	59.98	12.78	-94.16	961.31	1,526.87	1,395.73	1,343.01	52.72	26.474					
9,400.00	7,272.00	7,355.37	7,352.84	59.94	12.78	-94.09	961.36	1,526.75	1,381.12	1,327.74	53.38	25.871					
9,500.00	7,272.00	7,353.58	7,351.04	59.90	12.78	-94.01	961.40	1,526.63	1,373.66	1,319.41	54.25	25.323					
9,552.90	7,272.00	7,352.61	7,350.08	59.88	12.78	-93.97	961.43	1,526.56	1,372.64	1,317.86	54.78	25.059	CC, ES				
9,600.00	7,272.00	7,351.74	7,349.21	59.87	12.77	-93.94	961.45	1,526.50	1,373.45	1,318.17	55.27	24.848					
9,700.00	7,272.00	7,349.86	7,347.33	59.85	12.77	-93.86	961.50	1,526.37	1,380.49	1,324.07	56.43	24.465					
9,800.00	7,272.00	7,347.93	7,345.41	59.84	12.77	-93.78	961.56	1,526.24	1,394.69	1,337.04	57.65	24.191	SF				

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAPIN 34-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	86.26	81.08	1,238.95	1,241.65				
100.00	100.00	77.75	77.75	0.14	0.06	86.26	81.03	1,239.31	1,242.00	1,241.80	0.20	6,257.618	
140.00	140.00	115.46	115.45	0.28	0.10	86.26	80.98	1,239.71	1,242.43	1,242.04	0.39	3,217.411	
200.00	200.00	179.28	179.27	0.49	0.22	-27.75	80.99	1,240.31	1,242.44	1,241.73	0.71	1,755.282	
300.00	299.92	282.95	282.94	0.85	0.40	-27.87	81.16	1,240.94	1,239.65	1,238.40	1.25	994.614	
400.00	399.64	382.38	382.37	1.21	0.58	-28.09	81.31	1,241.40	1,233.65	1,231.86	1.79	689.872	
500.00	499.05	491.21	491.20	1.59	0.77	-28.44	81.34	1,241.61	1,224.33	1,221.98	2.35	520.866	
600.00	598.03	588.58	588.57	1.99	0.93	-28.88	81.30	1,241.38	1,211.55	1,208.65	2.90	418.438	
700.00	696.44	684.45	684.44	2.41	1.10	-29.43	81.42	1,241.35	1,196.00	1,192.55	3.45	346.623	
800.00	794.18	785.19	785.18	2.87	1.28	-30.14	81.47	1,241.34	1,177.56	1,173.53	4.03	292.423	
900.00	891.12	880.63	880.62	3.36	1.44	-30.97	81.62	1,241.19	1,156.13	1,151.52	4.61	250.918	
1,000.00	987.14	977.36	977.35	3.89	1.61	-31.97	81.73	1,241.13	1,132.03	1,126.82	5.21	217.293	
1,100.00	1,082.13	1,073.68	1,073.67	4.48	1.78	-33.12	81.56	1,240.99	1,105.15	1,099.32	5.83	189.412	
1,200.00	1,175.98	1,168.50	1,168.48	5.12	1.94	-34.42	80.78	1,240.83	1,075.63	1,069.14	6.49	165.829	
1,300.00	1,268.56	1,263.06	1,263.04	5.82	2.10	-35.93	79.79	1,240.60	1,043.59	1,036.42	7.17	145.472	
1,390.00	1,350.71	1,343.31	1,343.28	6.51	2.24	-37.44	78.97	1,240.31	1,012.75	1,004.92	7.82	129.430	
1,400.00	1,359.78	1,351.82	1,351.79	6.59	2.26	-37.57	78.89	1,240.30	1,009.24	1,001.34	7.90	127.721	
1,500.00	1,450.41	1,444.63	1,444.60	7.40	2.42	-39.02	78.12	1,240.26	974.67	966.00	8.66	112.484	
1,600.00	1,541.04	1,541.53	1,541.49	8.22	2.59	-40.67	77.52	1,239.40	939.97	930.50	9.47	99.279	
1,700.00	1,631.67	1,631.62	1,631.58	9.06	2.75	-42.33	77.11	1,238.35	905.79	895.49	10.30	87.928	
1,800.00	1,722.30	1,721.35	1,721.30	9.90	2.91	-44.11	76.83	1,237.37	872.48	861.31	11.17	78.080	
1,900.00	1,812.93	1,813.44	1,813.38	10.75	3.07	-46.05	76.34	1,236.31	839.95	827.86	12.09	69.485	
2,000.00	1,903.56	1,905.20	1,905.13	11.60	3.23	-48.11	75.64	1,235.14	808.22	795.18	13.04	61.965	
2,100.00	1,994.19	1,993.11	1,993.03	12.46	3.38	-50.20	74.65	1,234.22	777.65	763.61	14.04	55.393	
2,200.00	2,084.82	2,082.27	2,082.18	13.32	3.54	-52.45	73.41	1,233.62	748.46	733.39	15.08	49.643	
2,300.00	2,175.45	2,173.87	2,173.77	14.18	3.70	-54.90	71.98	1,233.14	720.63	704.47	16.16	44.598	
2,400.00	2,266.08	2,262.12	2,262.00	15.04	3.86	-57.39	70.24	1,232.87	694.23	676.95	17.28	40.174	
2,500.00	2,356.71	2,349.88	2,349.75	15.91	4.01	-60.04	68.81	1,232.97	669.88	651.44	18.44	36.319	
2,600.00	2,447.34	2,437.92	2,437.78	16.78	4.17	-62.84	67.44	1,233.45	647.65	628.01	19.64	32.972	
2,700.00	2,537.98	2,525.14	2,524.99	17.64	4.32	-65.79	66.61	1,234.16	627.89	607.02	20.87	30.084	
2,800.00	2,628.61	2,612.77	2,612.61	18.51	4.47	-68.88	65.95	1,235.39	610.79	588.68	22.12	27.617	
2,890.00	2,710.17	2,690.30	2,690.13	19.30	4.61	-71.75	65.85	1,236.75	597.95	574.71	23.24	25.728	
2,900.00	2,719.24	2,698.90	2,698.73	19.38	4.62	-71.65	65.88	1,236.91	596.67	573.30	23.37	25.535	
2,994.40	2,804.62	2,779.73	2,779.53	20.22	4.76	-70.84	66.50	1,238.65	584.55	560.01	24.54	23.824	
3,000.00	2,809.68	2,784.53	2,784.33	20.27	4.77	-71.03	66.55	1,238.77	583.84	559.23	24.61	23.728	
3,100.00	2,899.96	2,874.76	2,874.52	21.16	4.93	-74.61	67.58	1,241.23	572.68	546.85	25.83	22.172	
3,200.00	2,990.24	2,965.15	2,964.87	22.05	5.08	-78.29	68.61	1,243.78	564.33	537.31	27.02	20.888	
3,300.00	3,080.52	3,056.36	3,056.04	22.94	5.24	-82.10	69.91	1,246.19	559.03	530.87	28.16	19.855	
3,400.00	3,170.81	3,147.84	3,147.47	23.84	5.40	-85.90	70.79	1,249.19	556.57	527.35	29.23	19.044	
3,430.13	3,198.01	3,175.05	3,174.66	24.10	5.45	-87.04	71.08	1,250.06	556.43	526.90	29.53	18.841 CC, ES	
3,500.00	3,261.09	3,239.06	3,238.63	24.73	5.56	-89.73	71.83	1,252.03	557.17	526.95	30.22	18.440	
3,600.00	3,351.37	3,330.49	3,330.02	25.62	5.72	-93.54	72.78	1,254.83	560.62	529.51	31.11	18.018	
3,700.00	3,441.66	3,419.63	3,419.12	26.52	5.87	-97.24	74.06	1,257.10	567.25	535.35	31.91	17.778	
3,800.00	3,531.94	3,510.38	3,509.83	27.42	6.03	-100.94	75.56	1,259.36	576.97	544.37	32.61	17.695 SF	
3,900.00	3,622.22	3,604.16	3,603.59	28.31	6.20	-104.67	76.91	1,261.27	589.23	556.00	33.22	17.735	
4,000.00	3,712.50	3,690.09	3,689.48	29.21	6.35	-107.98	78.33	1,262.79	604.32	570.60	33.72	17.921	
4,100.00	3,802.79	3,785.13	3,784.49	30.11	6.51	-111.47	80.00	1,264.65	621.98	587.79	34.19	18.192	
4,200.00	3,893.07	3,877.82	3,877.15	31.00	6.67	-114.69	81.07	1,266.49	641.33	606.74	34.59	18.541	
4,300.00	3,983.35	3,968.37	3,967.69	31.90	6.83	-117.67	82.04	1,268.40	662.66	627.72	34.93	18.968	
4,400.00	4,073.63	4,059.02	4,058.30	32.80	6.99	-120.45	83.15	1,270.55	685.92	650.67	35.25	19.459	
4,500.00	4,163.92	4,148.32	4,147.57	33.70	7.15	-123.03	84.32	1,272.68	710.90	675.37	35.53	20.007	
4,600.00	4,254.20	4,236.66	4,235.89	34.60	7.30	-125.47	85.65	1,274.19	737.72	701.94	35.78	20.616	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design										S4-T1N-R65W - CHAPIN 34-4 - CPR WELL - GYRO				Offset Site Error:		0.00 usft	
Survey Program:										100-VESSI_GYROFLEX				Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning				
4,700.00	4,344.48	4,327.63	4,326.83	35.50	7.46	-127.83	87.14	1,275.59	766.09	730.05	36.04	21.256					
4,800.00	4,434.77	4,419.88	4,419.06	36.40	7.63	-130.07	88.35	1,277.01	795.40	759.10	36.30	21.910					
4,900.00	4,525.05	4,504.21	4,503.37	37.30	7.77	-131.97	89.84	1,278.28	826.21	789.70	36.52	22.625					
5,000.00	4,615.33	4,596.11	4,595.24	38.20	7.94	-133.91	91.71	1,279.58	858.26	821.46	36.79	23.328					
5,100.00	4,705.61	4,684.85	4,683.95	39.10	8.09	-135.67	93.48	1,280.75	891.18	854.13	37.05	24.053					
5,200.00	4,795.90	4,772.52	4,771.60	40.00	8.24	-137.29	95.38	1,281.72	925.12	887.81	37.31	24.795					
5,300.00	4,886.18	4,856.81	4,855.87	40.90	8.39	-138.78	97.34	1,282.21	960.16	922.61	37.55	25.569					
5,400.00	4,976.46	4,945.40	4,944.42	41.80	8.55	-140.24	99.78	1,282.32	996.37	958.54	37.84	26.334					
5,500.00	5,066.74	5,035.70	5,034.70	42.70	8.71	-141.64	102.13	1,282.63	1,032.95	994.80	38.15	27.077					
5,600.00	5,157.03	5,124.21	5,123.15	43.60	8.86	-142.86	105.20	1,283.42	1,070.37	1,031.90	38.48	27.818					
5,700.00	5,247.31	5,225.81	5,224.68	44.50	9.04	-144.15	108.39	1,285.16	1,107.54	1,068.61	38.93	28.449					
5,800.00	5,337.59	5,316.74	5,315.54	45.40	9.20	-145.22	111.10	1,287.10	1,144.74	1,105.42	39.32	29.116					
5,900.00	5,427.87	5,407.96	5,406.72	46.30	9.36	-146.25	113.48	1,288.69	1,182.25	1,142.54	39.71	29.774					
6,000.00	5,518.16	5,501.06	5,499.78	47.20	9.52	-147.25	115.80	1,290.37	1,219.95	1,179.83	40.12	30.406					
6,100.00	5,608.44	5,595.89	5,594.57	48.11	9.69	-148.21	117.70	1,291.96	1,257.70	1,217.15	40.55	31.013					
6,200.00	5,698.72	5,678.21	5,676.88	49.01	9.84	-149.04	118.94	1,292.71	1,295.86	1,254.97	40.89	31.691					
6,300.00	5,789.01	5,768.32	5,766.98	49.91	9.99	-149.93	120.24	1,292.89	1,334.68	1,293.40	41.28	32.329					
6,400.00	5,879.29	5,853.04	5,851.69	50.81	10.14	-150.73	121.10	1,292.69	1,373.79	1,332.15	41.64	32.992					
6,500.00	5,969.57	5,946.80	5,945.44	51.71	10.31	-151.54	122.98	1,292.80	1,413.55	1,371.46	42.09	33.587					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAPIN 43-4 - CPR WELL - GYRO													Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,500.00	7,272.00	7,280.74	7,278.55	60.56	12.67	-85.13	1,212.56	2,717.39	1,328.87	1,257.93	70.94	18.732		
8,600.00	7,272.00	7,281.97	7,279.78	60.46	12.67	-85.51	1,212.58	2,717.40	1,229.89	1,159.01	70.88	17.352		
8,700.00	7,272.00	7,283.21	7,281.02	60.38	12.67	-85.90	1,212.59	2,717.41	1,131.08	1,060.28	70.80	15.975		
8,800.00	7,272.00	7,284.45	7,282.26	60.29	12.68	-86.29	1,212.61	2,717.42	1,032.51	961.80	70.70	14.603		
8,900.00	7,272.00	7,285.70	7,283.51	60.22	12.68	-86.69	1,212.62	2,717.43	934.23	863.65	70.58	13.237		
9,000.00	7,272.00	7,286.96	7,284.76	60.15	12.68	-87.08	1,212.64	2,717.44	836.36	765.95	70.41	11.879		
9,100.00	7,272.00	7,288.21	7,286.02	60.09	12.68	-87.48	1,212.66	2,717.44	739.05	668.88	70.17	10.532		
9,200.00	7,272.00	7,289.48	7,287.29	60.03	12.69	-87.88	1,212.67	2,717.45	642.58	572.74	69.84	9.201		
9,300.00	7,272.00	7,290.75	7,288.56	59.98	12.69	-88.28	1,212.69	2,717.46	547.36	478.03	69.34	7.894		
9,400.00	7,272.00	7,292.02	7,289.83	59.94	12.69	-88.68	1,212.71	2,717.47	454.21	385.68	68.53	6.628		
9,500.00	7,272.00	7,293.30	7,291.11	59.90	12.69	-89.09	1,212.72	2,717.48	364.69	297.55	67.14	5.432		
9,600.00	7,272.00	7,294.59	7,292.39	59.87	12.69	-89.49	1,212.74	2,717.49	282.30	217.74	64.56	4.373		
9,700.00	7,272.00	7,295.88	7,293.68	59.85	12.70	-89.90	1,212.76	2,717.50	215.36	155.39	59.96	3.592		
9,800.00	7,272.00	7,297.17	7,294.98	59.84	12.70	-90.31	1,212.77	2,717.51	181.83	125.82	56.02	3.246		
9,816.59	7,272.00	7,297.39	7,295.20	59.84	12.70	-90.38	1,212.78	2,717.51	181.07	124.94	56.13	3.226 CC, ES, SF		
9,900.00	7,272.00	7,298.47	7,296.28	59.83	12.70	-90.72	1,212.79	2,717.51	199.36	139.16	60.20	3.312		
10,000.00	7,272.00	7,299.78	7,297.59	59.84	12.70	-91.14	1,212.81	2,717.52	257.72	192.02	65.70	3.922		
10,100.00	7,272.00	7,301.13	7,298.94	59.86	12.71	-91.56	1,212.82	2,717.53	336.30	267.74	68.56	4.905		
10,200.00	7,272.00	7,302.50	7,300.31	59.90	12.71	-92.00	1,212.84	2,717.54	423.99	354.07	69.92	6.064		
10,300.00	7,272.00	7,303.89	7,301.70	59.96	12.71	-92.44	1,212.86	2,717.55	516.17	445.55	70.62	7.309		
10,400.00	7,272.00	7,305.31	7,303.11	60.04	12.71	-92.88	1,212.88	2,717.56	610.82	539.81	71.01	8.602		
10,500.00	7,272.00	7,306.74	7,304.55	60.15	12.72	-93.33	1,212.90	2,717.57	706.93	635.69	71.24	9.923		
10,600.00	7,272.00	7,308.19	7,306.00	60.31	12.72	-93.79	1,212.92	2,717.58	804.00	732.60	71.39	11.262		
10,700.00	7,272.00	7,309.66	7,307.47	60.52	12.72	-94.26	1,212.94	2,717.59	901.70	830.20	71.50	12.612		
10,800.00	7,272.00	7,311.16	7,308.96	60.80	12.72	-94.73	1,212.96	2,717.60	999.85	928.29	71.57	13.971		
10,900.00	7,272.00	7,312.67	7,310.48	61.17	12.73	-95.20	1,212.98	2,717.61	1,098.34	1,026.72	71.62	15.335		
11,000.00	7,272.00	7,314.21	7,312.02	61.65	12.73	-95.69	1,213.00	2,717.63	1,197.08	1,125.41	71.66	16.704		
11,100.00	7,272.00	7,315.77	7,313.58	62.26	12.73	-96.18	1,213.02	2,717.64	1,296.00	1,224.31	71.70	18.076		
11,200.00	7,272.00	7,317.35	7,315.16	62.99	12.73	-96.67	1,213.05	2,717.65	1,395.08	1,323.36	71.73	19.450		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAPIN 44-4 - CPR WELL - GYRO												Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
3,500.00	3,261.09	3,289.15	3,288.78	24.73	5.71	-37.18	-95.17	2,403.43	1,380.20	1,355.64	24.57	56.184	
3,600.00	3,351.37	3,384.07	3,383.69	25.62	5.88	-38.28	-95.72	2,403.08	1,344.45	1,318.91	25.55	52.628	
3,700.00	3,441.66	3,467.15	3,466.78	26.52	6.02	-39.31	-96.03	2,402.65	1,309.08	1,282.52	26.56	49.287	
3,800.00	3,531.94	3,556.25	3,555.87	27.42	6.18	-40.49	-95.65	2,402.48	1,274.69	1,247.09	27.61	46.174	
3,900.00	3,622.22	3,643.67	3,643.29	28.31	6.33	-41.72	-94.97	2,402.08	1,240.75	1,212.06	28.69	43.251	
4,000.00	3,712.50	3,729.09	3,728.70	29.21	6.48	-43.00	-93.86	2,402.03	1,207.93	1,178.12	29.81	40.526	
4,100.00	3,802.79	3,822.11	3,821.71	30.11	6.64	-44.46	-92.72	2,401.90	1,175.70	1,144.74	30.96	37.980	
4,200.00	3,893.07	3,908.57	3,908.17	31.00	6.78	-45.87	-91.84	2,401.88	1,144.25	1,112.11	32.14	35.600	
4,300.00	3,983.35	3,985.43	3,985.02	31.90	6.91	-47.18	-90.79	2,402.42	1,114.32	1,080.95	33.37	33.396	
4,400.00	4,073.63	4,069.89	4,069.45	32.80	7.06	-48.70	-89.04	2,403.62	1,086.11	1,051.48	34.63	31.365	
4,500.00	4,163.92	4,153.27	4,152.79	33.70	7.20	-50.28	-86.78	2,404.99	1,059.32	1,023.39	35.93	29.484	
4,600.00	4,254.20	4,240.52	4,239.98	34.60	7.35	-52.00	-84.24	2,407.01	1,034.20	996.94	37.26	27.755	
4,700.00	4,344.48	4,333.86	4,333.26	35.50	7.51	-53.91	-81.61	2,409.10	1,010.10	971.47	38.63	26.148	
4,800.00	4,434.77	4,428.28	4,427.62	36.40	7.67	-55.94	-78.85	2,410.88	986.99	946.96	40.03	24.656	
4,900.00	4,525.05	4,524.76	4,524.06	37.30	7.84	-58.12	-76.24	2,412.06	964.59	923.13	41.46	23.263	
5,000.00	4,615.33	4,613.31	4,612.58	38.20	7.99	-60.20	-73.94	2,413.04	943.46	900.54	42.92	21.984	
5,100.00	4,705.61	4,697.33	4,696.55	39.10	8.13	-62.25	-71.47	2,414.25	924.27	879.89	44.38	20.827	
5,200.00	4,795.90	4,785.96	4,785.11	40.00	8.29	-64.46	-68.70	2,415.92	907.10	861.25	45.85	19.784	
5,300.00	4,886.18	4,871.44	4,870.53	40.90	8.43	-66.66	-65.88	2,417.78	891.93	844.62	47.31	18.852	
5,400.00	4,976.46	4,958.49	4,957.48	41.80	8.58	-68.99	-62.32	2,419.68	879.06	830.29	48.77	18.026	
5,500.00	5,066.74	5,046.73	5,045.62	42.70	8.74	-71.42	-58.28	2,421.46	868.35	818.15	50.20	17.297	
5,600.00	5,157.03	5,137.48	5,136.23	43.60	8.89	-74.02	-53.43	2,422.67	859.85	808.23	51.61	16.659	
5,700.00	5,247.31	5,230.39	5,229.00	44.50	9.06	-76.77	-48.26	2,422.95	853.17	800.18	52.99	16.101	
5,800.00	5,337.59	5,323.69	5,322.17	45.40	9.22	-79.53	-43.58	2,423.71	848.60	794.31	54.30	15.629	
5,900.00	5,427.87	5,427.28	5,426.68	46.30	9.40	-82.60	-39.59	2,424.20	845.22	789.66	55.56	15.213	
6,000.00	5,518.16	5,527.77	5,526.14	47.20	9.58	-85.62	-36.89	2,423.64	842.78	786.05	56.73	14.855	
6,100.00	5,608.44	5,623.70	5,622.05	48.11	9.75	-88.51	-35.20	2,422.82	841.79	783.98	57.81	14.562	
6,107.06	5,614.81	5,630.32	5,628.67	48.17	9.76	-88.71	-35.11	2,422.75	841.79	783.91	57.88	14.544	
6,200.00	5,698.72	5,716.27	5,714.61	49.01	9.91	-91.30	-34.07	2,421.82	842.61	783.83	58.78	14.335	
6,300.00	5,789.01	5,803.57	5,801.89	49.91	10.06	-93.93	-32.94	2,420.73	845.78	786.15	59.64	14.182	
6,400.00	5,879.29	5,886.03	5,884.33	50.81	10.21	-96.38	-31.47	2,420.09	851.78	791.40	60.38	14.108	
6,500.00	5,969.57	5,980.41	5,978.70	51.71	10.37	-99.08	-29.72	2,420.32	860.21	799.14	61.06	14.087	
6,600.00	6,059.85	6,072.09	6,070.36	52.61	10.53	-101.61	-28.62	2,421.44	870.22	808.56	61.66	14.113	
6,700.00	6,150.14	6,164.32	6,162.57	53.51	10.69	-104.05	-27.63	2,423.27	882.09	819.90	62.19	14.184	
6,800.00	6,240.42	6,259.77	6,257.99	54.42	10.86	-106.49	-26.92	2,425.59	895.44	832.78	62.66	14.290	
6,900.00	6,330.70	6,355.89	6,354.07	55.32	11.02	-108.86	-26.77	2,428.18	909.92	846.84	63.08	14.425	
7,000.00	6,420.98	6,445.44	6,443.60	56.22	11.18	-111.02	-26.89	2,430.44	925.71	862.30	63.41	14.599	
7,100.00	6,511.27	6,530.37	6,528.50	57.12	11.32	-113.01	-26.50	2,432.61	943.54	879.88	63.66	14.821	
7,120.23	6,529.53	6,547.76	6,545.88	57.31	11.35	-113.40	-26.35	2,433.12	947.39	883.68	63.71	14.870	
7,150.00	6,556.48	6,573.45	6,571.56	57.57	11.40	-109.02	-26.08	2,433.92	952.59	888.82	63.78	14.936	
7,200.00	6,601.96	6,617.43	6,615.51	58.00	11.47	-101.26	-25.51	2,435.41	958.97	895.09	63.88	15.012	
7,250.00	6,647.52	6,662.18	6,660.24	58.40	11.55	-93.40	-24.89	2,436.73	962.34	898.39	63.96	15.047	
7,300.00	6,692.94	6,708.10	6,706.14	58.77	11.63	-85.91	-24.24	2,437.79	962.72	898.71	64.01	15.040	
7,350.00	6,738.01	6,761.98	6,760.00	59.11	11.72	-79.36	-23.77	2,438.90	959.86	895.79	64.07	14.981	
7,400.00	6,782.50	6,814.97	6,812.98	59.41	11.82	-73.79	-23.78	2,439.95	953.65	889.56	64.09	14.879	
7,450.00	6,826.19	6,856.29	6,854.29	59.69	11.89	-69.00	-23.84	2,440.74	944.51	880.50	64.01	14.755	
7,500.00	6,868.87	6,898.93	6,896.92	59.94	11.96	-65.31	-23.92	2,441.51	932.58	868.69	63.89	14.596	
7,550.00	6,910.34	6,938.85	6,936.84	60.15	12.03	-62.53	-23.97	2,442.13	918.02	854.32	63.71	14.410	
7,600.00	6,950.38	6,977.28	6,975.27	60.34	12.10	-60.63	-23.99	2,442.60	901.01	837.54	63.46	14.197	
7,650.00	6,988.82	7,013.93	7,011.91	60.49	12.16	-59.50	-23.97	2,442.91	881.67	818.53	63.15	13.962	
7,700.00	7,025.45	7,048.64	7,046.62	60.63	12.22	-59.07	-23.88	2,443.15	860.20	797.45	62.75	13.707	
7,750.00	7,060.11	7,081.57	7,079.55	60.73	12.28	-59.28	-23.73	2,443.33	836.78	774.49	62.28	13.435	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAPIN 44-4 - CPR WELL - GYRO													Offset Site Error:	0.00 usft
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
7,800.00	7,092.61	7,113.67	7,111.65	60.82	12.33	-60.17	-23.53	2,443.48	811.57	749.84	61.73	13.147		
7,850.00	7,122.81	7,145.08	7,143.06	60.88	12.39	-61.71	-23.33	2,443.67	784.74	723.64	61.10	12.844		
7,900.00	7,150.56	7,174.01	7,172.00	60.92	12.44	-63.79	-23.15	2,443.90	756.51	696.15	60.36	12.533		
7,950.00	7,175.72	7,200.31	7,198.29	60.94	12.48	-66.35	-22.99	2,444.16	727.16	667.66	59.51	12.220		
8,000.00	7,198.17	7,223.28	7,221.26	60.95	12.52	-69.28	-22.85	2,444.42	697.02	638.51	58.52	11.911		
8,050.00	7,217.79	7,243.46	7,241.43	60.94	12.56	-72.52	-22.72	2,444.66	666.43	609.03	57.40	11.611		
8,100.00	7,234.50	7,260.72	7,258.69	60.93	12.59	-75.96	-22.61	2,444.88	635.75	579.62	56.14	11.325		
8,150.00	7,248.21	7,274.98	7,272.96	60.90	12.61	-79.44	-22.51	2,445.07	605.39	550.65	54.74	11.060		
8,200.00	7,258.86	7,286.16	7,284.13	60.86	12.63	-82.81	-22.43	2,445.22	575.78	522.55	53.22	10.819		
8,250.00	7,266.39	7,294.19	7,292.16	60.81	12.65	-85.91	-22.37	2,445.33	547.37	495.75	51.62	10.604		
8,300.00	7,270.77	7,299.03	7,297.00	60.76	12.66	-88.62	-22.34	2,445.40	520.68	470.67	50.01	10.411		
8,343.93	7,272.00	7,300.61	7,298.58	60.72	12.66	-90.60	-22.32	2,445.43	499.04	450.36	48.68	10.252		
8,400.00	7,272.00	7,301.04	7,299.01	60.66	12.66	-90.65	-22.32	2,445.43	475.24	427.97	47.27	10.054		
8,500.00	7,272.00	7,301.81	7,299.77	60.56	12.66	-90.75	-22.31	2,445.44	447.33	400.86	46.47	9.625		
8,578.75	7,272.00	7,302.41	7,300.38	60.48	12.66	-90.83	-22.31	2,445.45	440.35	392.30	48.05	9.165 CC		
8,600.00	7,272.00	7,302.57	7,300.54	60.46	12.66	-90.85	-22.31	2,445.45	440.86	392.08	48.78	9.037 ES		
8,700.00	7,272.00	7,303.34	7,301.31	60.38	12.66	-90.95	-22.30	2,445.47	456.74	403.41	53.33	8.565		
8,800.00	7,272.00	7,304.11	7,302.08	60.29	12.66	-91.05	-22.30	2,445.48	492.80	434.64	58.17	8.472 SF		
8,900.00	7,272.00	7,304.88	7,302.85	60.22	12.67	-91.15	-22.29	2,445.49	545.07	482.93	62.14	8.771		
9,000.00	7,272.00	7,305.66	7,303.63	60.15	12.67	-91.25	-22.29	2,445.50	609.38	544.35	65.04	9.370		
9,100.00	7,272.00	7,306.44	7,304.41	60.09	12.67	-91.35	-22.28	2,445.51	682.34	615.31	67.03	10.179		
9,200.00	7,272.00	7,307.22	7,305.19	60.03	12.67	-91.46	-22.27	2,445.52	761.47	693.08	68.39	11.133		
9,300.00	7,272.00	7,308.00	7,305.97	59.98	12.67	-91.56	-22.27	2,445.53	845.03	775.71	69.32	12.190		
9,400.00	7,272.00	7,308.79	7,306.75	59.94	12.67	-91.66	-22.26	2,445.55	931.84	861.88	69.96	13.320		
9,500.00	7,272.00	7,309.57	7,307.54	59.90	12.67	-91.76	-22.26	2,445.56	1,021.06	950.66	70.40	14.504		
9,600.00	7,272.00	7,310.36	7,308.33	59.87	12.68	-91.86	-22.25	2,445.57	1,112.11	1,041.41	70.71	15.728		
9,700.00	7,272.00	7,311.16	7,309.12	59.85	12.68	-91.97	-22.24	2,445.58	1,204.59	1,133.66	70.93	16.983		
9,800.00	7,272.00	7,311.95	7,309.92	59.84	12.68	-92.07	-22.24	2,445.59	1,298.18	1,227.10	71.09	18.262		
9,900.00	7,272.00	7,312.76	7,310.72	59.83	12.68	-92.18	-22.23	2,445.60	1,392.66	1,321.47	71.20	19.561		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAVEZ 4A-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 110-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
1,390.00	1,350.71	1,472.36	1,471.10	6.51	3.03	-8.36	-505.17	1,561.51	1,380.66	1,372.67	7.99	172.832	
1,400.00	1,359.78	1,486.18	1,484.79	6.59	3.07	-8.34	-506.09	1,559.86	1,375.62	1,367.55	8.06	170.618	
1,500.00	1,450.41	1,579.48	1,577.13	7.40	3.31	-8.15	-512.44	1,548.04	1,324.64	1,315.98	8.67	152.841	
1,600.00	1,541.04	1,662.35	1,659.07	8.22	3.54	-7.94	-518.67	1,537.39	1,273.72	1,264.46	9.26	137.552	
1,700.00	1,631.67	1,747.54	1,743.37	9.06	3.77	-7.72	-524.70	1,526.77	1,223.01	1,213.15	9.86	124.003	
1,800.00	1,722.30	1,838.14	1,833.05	9.90	4.03	-7.49	-530.87	1,515.41	1,172.20	1,161.72	10.48	111.893	
1,900.00	1,812.93	1,934.99	1,929.00	10.75	4.30	-7.31	-535.72	1,503.12	1,120.82	1,109.73	11.09	101.072	
2,000.00	1,903.56	2,019.30	2,012.46	11.60	4.55	-7.15	-539.53	1,491.83	1,068.74	1,057.05	11.70	91.374	
2,100.00	1,994.19	2,093.49	2,086.01	12.46	4.75	-7.03	-542.77	1,482.70	1,017.51	1,005.20	12.31	82.677	
2,200.00	2,084.82	2,173.50	2,165.45	13.32	4.97	-6.92	-545.88	1,473.65	966.99	954.07	12.91	74.875	
2,300.00	2,175.45	2,246.16	2,237.60	14.18	5.17	-6.76	-549.57	1,465.98	917.41	903.86	13.55	67.730	
2,400.00	2,266.08	2,323.37	2,314.25	15.04	5.38	-6.48	-555.05	1,458.42	869.01	854.83	14.18	61.269	
2,500.00	2,356.71	2,404.47	2,394.84	15.91	5.60	-6.19	-560.70	1,451.35	821.50	806.68	14.82	55.424	
2,600.00	2,447.34	2,496.30	2,486.22	16.78	5.85	-5.91	-566.16	1,444.06	774.39	758.94	15.45	50.134	
2,700.00	2,537.98	2,596.00	2,585.16	17.64	6.13	-5.40	-573.33	1,434.15	725.95	709.90	16.05	45.239	
2,800.00	2,628.61	2,691.15	2,679.72	18.51	6.40	-5.09	-577.34	1,424.41	676.47	659.83	16.64	40.648	
2,890.00	2,710.17	2,776.28	2,764.26	19.30	6.64	-4.78	-580.35	1,414.80	630.99	613.83	17.16	36.766	
2,900.00	2,719.24	2,785.60	2,773.50	19.38	6.67	-4.21	-580.64	1,413.70	625.88	608.66	17.22	36.346	
2,994.40	2,804.62	2,875.46	2,862.63	20.22	6.94	1.38	-583.06	1,402.56	576.72	558.98	17.74	32.512	
3,000.00	2,809.68	2,880.94	2,868.07	20.27	6.96	1.43	-583.21	1,401.82	573.74	555.97	17.77	32.290	
3,100.00	2,899.96	2,969.44	2,955.61	21.16	7.23	2.44	-585.70	1,389.10	519.82	501.48	18.34	28.347	
3,200.00	2,990.24	3,051.62	3,036.94	22.05	7.48	3.59	-588.05	1,377.55	466.31	447.34	18.97	24.586	
3,300.00	3,080.52	3,138.39	3,122.75	22.94	7.76	5.18	-590.75	1,364.95	412.70	393.13	19.57	21.087	
3,400.00	3,170.81	3,223.63	3,206.91	23.84	8.04	7.36	-594.00	1,351.82	358.93	338.69	20.24	17.733	
3,500.00	3,261.09	3,301.20	3,283.52	24.73	8.29	10.10	-597.61	1,340.23	306.33	285.20	21.13	14.501	
3,600.00	3,351.37	3,382.62	3,364.04	25.62	8.55	14.05	-602.08	1,329.00	255.78	233.61	22.16	11.540	
3,700.00	3,441.66	3,465.53	3,446.06	26.52	8.81	19.89	-607.26	1,318.08	207.55	183.93	23.62	8.786	
3,800.00	3,531.94	3,550.68	3,530.32	27.42	9.08	29.03	-612.97	1,307.16	162.75	136.77	25.98	6.264	
3,900.00	3,622.22	3,635.39	3,614.11	28.31	9.35	43.40	-618.41	1,296.06	123.85	93.68	30.17	4.105	
4,000.00	3,712.50	3,719.62	3,697.43	29.21	9.62	65.03	-624.61	1,285.37	99.68	63.64	36.04	2.766	
4,049.76	3,757.43	3,762.44	3,739.83	29.66	9.76	78.02	-627.76	1,280.18	96.36	58.19	38.17	2.524 CC, ES, SF	
4,100.00	3,802.79	3,805.93	3,782.91	30.11	9.89	91.11	-630.84	1,275.13	99.69	60.83	38.87	2.565	
4,200.00	3,893.07	3,893.48	3,869.76	31.00	10.15	112.93	-636.71	1,265.84	122.53	85.25	37.28	3.287	
4,300.00	3,983.35	3,979.58	3,955.23	31.90	10.40	127.13	-642.66	1,257.27	158.40	123.22	35.17	4.503	
4,400.00	4,073.63	4,064.82	4,039.80	32.80	10.66	136.14	-648.85	1,248.59	200.75	166.88	33.87	5.927	
4,500.00	4,163.92	4,148.19	4,122.41	33.70	10.92	141.97	-655.40	1,239.44	246.87	213.67	33.20	7.435	
4,600.00	4,254.20	4,235.05	4,208.37	34.60	11.20	146.07	-662.91	1,229.51	295.07	262.00	33.07	8.922	
4,700.00	4,344.48	4,325.84	4,298.36	35.50	11.47	149.27	-669.99	1,219.87	343.32	310.10	33.22	10.334	
4,800.00	4,434.77	4,416.97	4,388.95	36.40	11.73	151.97	-675.16	1,211.26	390.95	357.50	33.45	11.689	
4,900.00	4,525.05	4,508.31	4,479.86	37.30	11.97	154.24	-679.17	1,203.47	438.19	404.46	33.73	12.989	
5,000.00	4,615.33	4,605.34	4,576.58	38.20	12.21	156.30	-682.33	1,196.44	484.70	450.54	34.16	14.189	
5,100.00	4,705.61	4,711.81	4,682.88	39.10	12.45	158.09	-686.03	1,191.77	529.02	494.23	34.80	15.203	
5,200.00	4,795.90	4,821.67	4,792.67	40.00	12.66	159.60	-689.89	1,190.94	570.32	534.85	35.47	16.079	
5,300.00	4,886.18	4,914.65	4,885.58	40.90	12.82	160.71	-693.06	1,192.15	609.94	574.00	35.94	16.973	
5,400.00	4,976.46	5,003.79	4,974.69	41.80	12.96	161.74	-695.05	1,193.21	649.88	613.53	36.35	17.877	
5,500.00	5,066.74	5,096.75	5,067.64	42.70	13.12	162.75	-696.56	1,194.25	690.08	653.26	36.82	18.741	
5,600.00	5,157.03	5,189.30	5,160.16	43.60	13.27	163.66	-697.83	1,195.63	730.12	692.82	37.30	19.574	
5,700.00	5,247.31	5,281.68	5,252.53	44.50	13.41	164.51	-698.65	1,197.18	770.15	732.37	37.78	20.383	
5,800.00	5,337.59	5,368.60	5,339.43	45.40	13.55	165.27	-698.91	1,198.65	810.37	772.15	38.22	21.204	
5,900.00	5,427.87	5,452.52	5,423.34	46.30	13.69	165.98	-698.63	1,199.46	851.41	812.79	38.62	22.044	
6,000.00	5,518.16	5,538.99	5,509.81	47.20	13.83	166.68	-697.67	1,199.75	893.23	854.17	39.06	22.869	
6,100.00	5,608.44	5,628.07	5,598.88	48.11	13.98	167.37	-696.35	1,199.97	935.28	895.75	39.53	23.661	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAVEZ 4A-4H - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 110-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,200.00	5,698.72	5,715.69	5,686.49	49.01	14.12	167.99	-694.99	1,199.95	977.68	937.69	39.99	24.445		
6,300.00	5,789.01	5,806.21	5,777.00	49.91	14.27	168.58	-693.57	1,199.88	1,020.24	979.74	40.50	25.191		
6,400.00	5,879.29	5,896.84	5,867.62	50.81	14.43	169.12	-692.15	1,199.87	1,062.81	1,021.79	41.02	25.912		
6,500.00	5,969.57	5,986.54	5,957.31	51.71	14.58	169.60	-690.94	1,199.81	1,105.47	1,063.94	41.53	26.616		
6,600.00	6,059.85	6,080.15	6,050.91	52.61	14.74	170.06	-690.00	1,199.83	1,148.05	1,105.95	42.10	27.269		
6,700.00	6,150.14	6,166.05	6,136.81	53.51	14.89	170.43	-689.36	1,199.77	1,190.74	1,148.13	42.60	27.949		
6,800.00	6,240.42	6,259.71	6,230.47	54.42	15.06	170.80	-688.81	1,199.66	1,233.47	1,190.28	43.19	28.560		
6,900.00	6,330.70	6,355.09	6,325.85	55.32	15.23	171.14	-688.45	1,199.91	1,275.86	1,232.06	43.79	29.134		
7,000.00	6,420.98	6,451.15	6,421.73	56.22	15.37	171.69	-683.64	1,201.34	1,318.05	1,273.71	44.34	29.726		
7,100.00	6,511.27	6,542.11	6,511.54	57.12	15.46	172.60	-669.88	1,204.99	1,360.03	1,315.32	44.71	30.418		
7,120.23	6,529.53	6,565.59	6,534.47	57.31	15.47	172.90	-665.00	1,206.28	1,368.52	1,323.72	44.80	30.545		
7,150.00	6,556.48	6,598.46	6,566.39	57.57	15.49	179.27	-657.44	1,208.42	1,380.81	1,335.89	44.92	30.739		
7,200.00	6,601.96	6,651.77	6,617.48	58.00	15.51	-169.76	-642.87	1,212.72	1,400.78	1,355.70	45.09	31.070		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAVEZ 4B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 104-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
1,400.00	1,359.78	1,247.11	1,246.66	6.59	2.55	-8.21	-506.66	1,603.37	1,414.86	1,407.18	7.67	184.378	
1,500.00	1,450.41	1,314.68	1,314.00	7.40	2.71	-8.31	-509.93	1,608.00	1,380.42	1,372.17	8.25	167.254	
1,600.00	1,541.04	1,380.00	1,378.87	8.22	2.87	-8.41	-513.69	1,614.54	1,348.74	1,339.90	8.84	152.555	
1,700.00	1,631.67	1,427.99	1,426.38	9.06	3.00	-8.50	-516.41	1,620.77	1,319.63	1,310.23	9.40	140.338	
1,800.00	1,722.30	1,498.35	1,495.81	9.90	3.19	-8.71	-519.50	1,631.71	1,292.96	1,282.94	10.02	129.095	
1,900.00	1,812.93	1,587.91	1,584.03	10.75	3.45	-8.97	-523.75	1,646.58	1,267.45	1,256.78	10.67	118.760	
2,000.00	1,903.56	1,689.01	1,683.62	11.60	3.75	-9.29	-528.43	1,663.31	1,241.89	1,230.54	11.36	109.367	
2,100.00	1,994.19	1,785.05	1,778.25	12.46	4.04	-9.61	-532.78	1,679.18	1,216.33	1,204.29	12.04	101.055	
2,200.00	2,084.82	1,892.18	1,883.84	13.32	4.37	-10.01	-537.04	1,696.68	1,190.51	1,177.77	12.74	93.480	
2,300.00	2,175.45	2,018.79	2,009.01	14.18	4.75	-10.53	-540.95	1,715.31	1,163.00	1,149.55	13.46	86.435	
2,400.00	2,266.08	2,127.90	2,117.22	15.04	5.07	-10.97	-544.59	1,728.87	1,133.41	1,119.26	14.15	80.082	
2,500.00	2,356.71	2,222.92	2,211.50	15.91	5.34	-11.35	-547.95	1,740.18	1,103.44	1,088.60	14.85	74.312	
2,600.00	2,447.34	2,339.56	2,327.31	16.78	5.68	-11.73	-553.95	1,752.61	1,072.72	1,057.17	15.55	68.988	
2,700.00	2,537.98	2,440.52	2,427.75	17.64	5.95	-12.13	-557.95	1,762.11	1,040.60	1,024.36	16.24	64.062	
2,800.00	2,628.61	2,529.03	2,515.76	18.51	6.20	-12.49	-561.89	1,770.52	1,008.70	991.75	16.95	59.505	
2,890.00	2,710.17	2,634.23	2,620.47	19.30	6.48	-12.95	-566.17	1,779.68	979.31	961.73	17.57	55.722	
2,900.00	2,719.24	2,633.34	2,619.58	19.38	6.48	-12.46	-566.18	1,779.70	976.09	958.44	17.65	55.288	
2,994.40	2,804.62	2,699.14	2,684.99	20.22	6.66	-8.21	-568.79	1,786.28	945.70	927.36	18.34	51.558	
3,000.00	2,809.68	2,703.07	2,688.90	20.27	6.67	-8.22	-568.95	1,786.73	943.93	925.55	18.38	51.347	
3,100.00	2,899.96	2,792.95	2,778.08	21.16	6.94	-8.46	-572.94	1,797.22	912.79	893.70	19.09	47.821	
3,200.00	2,990.24	2,891.15	2,875.49	22.05	7.24	-8.71	-577.84	1,808.60	881.70	861.91	19.79	44.560	
3,300.00	3,080.52	2,986.18	2,969.76	22.94	7.52	-8.91	-583.38	1,819.22	850.37	829.88	20.49	41.498	
3,400.00	3,170.81	3,091.02	3,073.84	23.84	7.83	-9.19	-588.91	1,830.47	818.55	797.38	21.17	38.659	
3,500.00	3,261.09	3,183.38	3,165.59	24.73	8.10	-9.43	-593.90	1,839.89	786.27	764.38	21.89	35.922	
3,600.00	3,351.37	3,252.47	3,234.01	25.62	8.32	-9.54	-599.02	1,847.94	755.70	733.02	22.68	33.317	
3,700.00	3,441.66	3,350.26	3,330.53	26.52	8.64	-9.65	-607.12	1,861.40	727.31	703.92	23.39	31.092	
3,800.00	3,531.94	3,458.69	3,437.94	27.42	8.98	-10.01	-613.33	1,874.84	697.17	673.09	24.07	28.960	
3,900.00	3,622.22	3,564.71	3,543.23	28.31	9.29	-10.51	-617.77	1,886.46	665.46	640.69	24.76	26.873	
4,000.00	3,712.50	3,651.76	3,629.65	29.21	9.55	-10.85	-622.63	1,895.60	633.56	608.01	25.55	24.793	
4,100.00	3,802.79	3,748.41	3,725.53	30.11	9.84	-11.17	-628.96	1,906.07	602.15	575.87	26.29	22.906	
4,200.00	3,893.07	3,856.49	3,832.95	31.00	10.14	-11.74	-634.40	1,916.60	569.53	542.58	26.95	21.133	
4,300.00	3,983.35	3,938.84	3,914.83	31.90	10.37	-12.30	-637.77	1,924.76	536.95	509.10	27.85	19.278	
4,400.00	4,073.63	4,023.52	3,998.84	32.80	10.63	-12.97	-641.33	1,934.75	506.26	477.49	28.78	17.592	
4,500.00	4,163.92	4,121.00	4,095.43	33.70	10.93	-13.84	-645.40	1,947.21	476.61	446.97	29.63	16.085	
4,600.00	4,254.20	4,207.96	4,181.59	34.60	11.20	-14.78	-648.53	1,958.57	447.29	416.65	30.64	14.596	
4,700.00	4,344.48	4,299.88	4,272.40	35.50	11.51	-15.77	-652.97	1,972.10	419.78	388.13	31.65	13.264	
4,800.00	4,434.77	4,402.53	4,373.80	36.40	11.86	-16.81	-659.29	1,986.75	392.08	359.54	32.54	12.049	
4,900.00	4,525.05	4,498.73	4,469.01	37.30	12.17	-17.95	-665.14	1,999.19	363.18	329.61	33.57	10.820	
5,000.00	4,615.33	4,596.76	4,566.00	38.20	12.49	-19.14	-672.04	2,011.63	334.23	299.63	34.59	9.661	
5,100.00	4,705.61	4,694.61	4,662.95	39.10	12.79	-20.67	-678.40	2,023.20	304.59	268.86	35.73	8.525	
5,200.00	4,795.90	4,789.70	4,757.24	40.00	13.09	-22.52	-684.39	2,034.00	274.75	237.68	37.07	7.412	
5,300.00	4,886.18	4,886.92	4,853.71	40.90	13.38	-25.01	-689.98	2,044.68	244.91	206.33	38.58	6.348	
5,400.00	4,976.46	4,989.69	4,956.01	41.80	13.65	-28.94	-694.30	2,053.42	213.45	173.10	40.35	5.290	
5,500.00	5,066.74	5,085.18	5,051.32	42.70	13.87	-34.65	-696.54	2,058.63	180.64	137.49	43.15	4.186	
5,600.00	5,157.03	5,178.98	5,145.03	43.60	14.07	-42.95	-698.22	2,062.47	149.08	101.93	47.16	3.161	
5,700.00	5,247.31	5,270.91	5,236.89	44.50	14.26	-54.98	-699.65	2,065.62	121.47	68.80	52.68	2.306	
5,800.00	5,337.59	5,362.37	5,328.30	45.40	14.44	-72.03	-700.81	2,068.68	102.24	43.61	58.63	1.744	
5,886.93	5,416.08	5,442.52	5,408.40	46.18	14.60	-90.44	-701.74	2,071.21	96.36	35.25	61.11	1.577 CC, ES, SF	
5,900.00	5,427.87	5,454.56	5,420.43	46.30	14.62	-93.31	-701.91	2,071.56	96.50	35.42	61.08	1.580	
6,000.00	5,518.16	5,544.00	5,509.85	47.20	14.79	-113.70	-702.48	2,073.37	107.23	49.56	57.67	1.859	
6,100.00	5,608.44	5,634.04	5,599.89	48.11	14.94	-129.71	-701.82	2,073.96	132.24	80.03	52.21	2.533	
6,200.00	5,698.72	5,725.04	5,690.89	49.01	15.09	-140.70	-701.32	2,074.50	164.57	116.40	48.16	3.417	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAVEZ 4B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 104-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,300.00	5,789.01	5,814.78	5,780.62	49.91	15.25	-148.03	-700.90	2,075.13	200.67	154.95	45.72	4.389	
6,400.00	5,879.29	5,905.24	5,871.07	50.81	15.40	-153.07	-699.82	2,075.90	239.26	194.83	44.43	5.385	
6,500.00	5,969.57	5,995.00	5,960.82	51.71	15.55	-156.79	-699.11	2,076.50	278.93	235.18	43.75	6.376	
6,600.00	6,059.85	6,084.62	6,050.44	52.61	15.69	-159.88	-699.24	2,075.84	319.86	276.48	43.39	7.373	
6,700.00	6,150.14	6,174.88	6,140.70	53.51	15.84	-162.29	-699.42	2,075.33	361.26	317.93	43.33	8.338	
6,800.00	6,240.42	6,264.83	6,230.65	54.42	15.99	-164.18	-699.43	2,074.78	403.21	359.75	43.46	9.277	
6,900.00	6,330.70	6,350.76	6,316.57	55.32	16.13	-165.55	-698.76	2,074.63	445.52	401.84	43.69	10.198	
7,000.00	6,420.98	6,417.00	6,382.49	56.22	16.23	-165.75	-692.74	2,075.56	490.77	446.96	43.81	11.202	
7,100.00	6,511.27	6,480.00	6,444.08	57.12	16.31	-165.07	-679.83	2,077.69	540.04	496.00	44.05	12.260	
7,120.23	6,529.53	6,492.45	6,456.06	57.31	16.32	-164.86	-676.48	2,078.17	550.55	506.45	44.11	12.483	
7,150.00	6,556.48	6,512.00	6,474.73	57.57	16.34	-158.41	-670.73	2,078.98	566.03	521.81	44.22	12.801	
7,200.00	6,601.96	6,539.85	6,501.03	58.00	16.36	-147.45	-661.64	2,080.15	591.49	547.27	44.22	13.377	
7,250.00	6,647.52	6,564.66	6,524.16	58.40	16.38	-136.59	-652.73	2,081.02	616.34	572.29	44.05	13.992	
7,300.00	6,692.94	6,588.02	6,545.64	58.77	16.40	-126.23	-643.56	2,081.49	640.71	596.95	43.77	14.639	
7,350.00	6,738.01	6,607.00	6,562.83	59.11	16.41	-116.68	-635.51	2,081.63	664.58	621.30	43.28	15.356	
7,400.00	6,782.50	6,639.00	6,591.25	59.41	16.41	-108.24	-620.81	2,081.47	687.71	644.53	43.18	15.926	
7,450.00	6,826.19	6,672.47	6,620.24	59.69	16.42	-100.93	-604.11	2,081.40	709.67	666.56	43.11	16.462	
7,500.00	6,868.87	6,702.00	6,645.19	59.94	16.43	-94.65	-588.31	2,081.68	730.12	687.24	42.89	17.025	
7,550.00	6,910.34	6,734.00	6,671.56	60.15	16.45	-89.37	-570.19	2,081.82	749.41	706.68	42.73	17.539	
7,600.00	6,950.38	6,757.31	6,690.30	60.34	16.45	-84.86	-556.32	2,081.69	767.57	725.31	42.27	18.160	
7,650.00	6,988.82	6,784.63	6,711.61	60.49	16.46	-81.08	-539.22	2,081.47	784.58	742.63	41.95	18.703	
7,700.00	7,025.45	6,814.47	6,734.03	60.63	16.48	-77.93	-519.55	2,081.19	800.33	758.60	41.73	19.180	
7,750.00	7,060.11	6,866.17	6,771.25	60.73	16.52	-75.56	-483.67	2,081.52	814.20	772.00	42.21	19.290	
7,800.00	7,092.61	6,904.78	6,798.16	60.82	16.57	-73.53	-456.02	2,082.51	825.61	783.33	42.28	19.529	
7,850.00	7,122.81	6,946.00	6,825.78	60.88	16.64	-71.94	-425.44	2,083.95	835.04	792.58	42.46	19.666	
7,900.00	7,150.56	6,980.72	6,847.88	60.92	16.72	-70.63	-398.73	2,085.59	842.53	800.06	42.47	19.838	
7,950.00	7,175.72	7,022.79	6,873.66	60.94	16.84	-69.76	-365.53	2,087.59	848.21	805.47	42.74	19.847	
8,000.00	7,198.17	7,059.01	6,895.08	60.95	16.96	-69.15	-336.39	2,089.37	851.94	809.07	42.88	19.869	
8,050.00	7,217.79	7,094.39	6,914.95	60.94	17.10	-68.81	-307.18	2,091.23	853.93	810.88	43.05	19.834	
8,100.00	7,234.50	7,122.02	6,929.57	60.93	17.22	-68.60	-283.77	2,092.64	854.44	811.35	43.09	19.828	
8,150.00	7,248.21	7,146.00	6,941.54	60.90	17.34	-68.55	-263.01	2,093.38	854.04	810.89	43.15	19.791	
8,200.00	7,258.86	7,165.73	6,950.74	60.86	17.44	-68.63	-245.56	2,093.65	852.78	809.51	43.27	19.709	
8,250.00	7,266.39	7,188.60	6,960.51	60.81	17.57	-68.94	-224.89	2,093.75	850.65	807.06	43.59	19.513	
8,300.00	7,270.77	7,212.72	6,969.71	60.76	17.71	-69.45	-202.60	2,093.55	847.70	803.62	44.08	19.232	
8,343.93	7,272.00	7,250.34	6,982.11	60.72	17.95	-70.38	-167.08	2,093.42	843.99	799.26	44.73	18.868	
8,400.00	7,272.00	7,297.54	6,994.94	60.66	18.30	-71.20	-121.68	2,094.25	838.42	792.86	45.56	18.401	
8,500.00	7,272.00	7,376.03	7,009.18	60.56	18.97	-72.10	-44.56	2,096.48	830.84	783.88	46.96	17.694	
8,600.00	7,272.00	7,449.74	7,017.62	60.46	19.69	-72.63	28.62	2,098.48	825.82	777.47	48.35	17.079	
8,700.00	7,272.00	7,537.76	7,021.83	60.38	20.62	-72.89	116.51	2,100.58	823.15	773.40	49.75	16.547	
8,751.70	7,272.00	7,575.48	7,022.47	60.33	21.04	-72.93	154.22	2,101.09	822.72	772.24	50.48	16.298	
8,800.00	7,272.00	7,620.57	7,022.88	60.29	21.55	-72.96	199.31	2,101.26	822.90	771.74	51.16	16.084	
8,900.00	7,272.00	7,706.97	7,022.43	60.22	22.58	-72.95	285.70	2,101.39	823.93	771.26	52.66	15.645	
9,000.00	7,272.00	7,813.24	7,022.42	60.15	23.78	-73.00	391.96	2,100.00	826.21	772.05	54.16	15.254	
9,100.00	7,272.00	7,885.15	7,023.01	60.09	24.65	-73.09	463.84	2,098.19	829.32	773.58	55.74	14.878	
9,200.00	7,272.00	8,012.80	7,026.18	60.03	26.20	-73.42	591.34	2,093.23	833.59	775.88	57.71	14.444	
9,300.00	7,272.00	8,130.03	7,030.18	59.98	27.83	-73.71	708.48	2,093.06	833.73	773.75	59.98	13.899	
9,329.43	7,272.00	8,153.62	7,030.26	59.97	28.18	-73.72	732.06	2,093.37	833.63	773.09	60.54	13.770	
9,400.00	7,272.00	8,212.12	7,030.19	59.94	29.05	-73.72	790.56	2,093.50	834.19	772.30	61.89	13.478	
9,500.00	7,272.00	8,293.00	7,029.64	59.90	30.25	-73.72	871.43	2,092.50	836.60	772.80	63.81	13.111	
9,600.00	7,272.00	8,384.97	7,029.84	59.87	31.62	-73.82	963.34	2,089.08	841.09	775.16	65.92	12.758	
9,700.00	7,272.00	8,484.30	7,029.35	59.85	33.19	-73.88	1,062.59	2,085.21	845.97	777.72	68.25	12.395	
9,800.00	7,272.00	8,598.72	7,028.52	59.84	34.90	-73.90	1,176.97	2,082.52	849.35	778.60	70.75	12.004	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - CHAVEZ 4B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 104-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Total Uncertainty Axis	Separation Factor
9,900.00	7,272.00	8,681.88	7,029.48	59.83	36.15	-74.03	1,260.07	2,079.59	853.41	780.57		72.84	11.716
10,000.00	7,272.00	8,784.79	7,030.05	59.84	37.79	-74.16	1,362.90	2,075.50	858.08	782.70		75.39	11.383
10,100.00	7,272.00	8,885.28	7,029.83	59.86	39.39	-74.24	1,463.30	2,071.34	863.12	785.22		77.90	11.080
10,200.00	7,272.00	8,989.18	7,029.54	59.90	41.03	-74.32	1,567.11	2,067.08	868.16	787.65		80.51	10.783
10,300.00	7,272.00	9,119.48	7,030.20	59.96	43.06	-74.41	1,697.40	2,065.71	869.89	786.17		83.71	10.391
10,400.00	7,272.00	9,231.34	7,030.66	60.04	44.86	-74.43	1,809.23	2,067.09	869.55	782.94		86.61	10.040
10,500.00	7,272.00	9,330.72	7,026.52	60.15	46.50	-74.14	1,908.49	2,069.71	869.14	779.99		89.16	9.749
10,579.43	7,272.00	9,404.62	7,025.28	60.27	47.64	-74.05	1,982.36	2,071.27	868.70	777.63		91.07	9.539
10,600.00	7,272.00	9,418.63	7,025.34	60.31	47.86	-74.06	1,996.37	2,071.35	868.77	777.33		91.44	9.501
10,700.00	7,272.00	9,503.26	7,026.37	60.52	49.24	-74.16	2,080.97	2,069.92	870.96	777.13		93.83	9.282
10,800.00	7,272.00	9,590.08	7,026.89	60.80	50.71	-74.25	2,167.76	2,067.69	874.26	777.93		96.33	9.075
10,900.00	7,272.00	9,677.46	7,024.91	61.17	52.22	-74.19	2,255.07	2,064.83	879.02	780.24		98.78	8.899
11,000.00	7,272.00	9,780.51	7,023.35	61.65	53.93	-74.19	2,358.00	2,060.27	884.71	782.98		101.72	8.697
11,100.00	7,272.00	9,895.30	7,021.99	62.26	55.83	-74.18	2,472.74	2,057.23	888.51	783.47		105.04	8.459
11,200.00	7,272.00	9,989.34	7,020.50	62.99	57.42	-74.15	2,566.73	2,054.68	892.54	784.81		107.73	8.285
11,300.00	7,272.00	10,113.99	7,021.73	63.85	59.49	-74.28	2,691.36	2,052.89	894.51	783.00		111.51	8.022
11,400.00	7,272.00	10,207.67	7,022.24	64.81	61.11	-74.35	2,785.03	2,051.95	896.31	782.00		114.31	7.841
11,500.00	7,272.00	10,297.08	7,024.31	65.86	62.62	-74.52	2,874.40	2,050.34	898.48	781.47		117.01	7.678
11,600.00	7,272.00	10,402.55	7,026.83	66.98	64.43	-74.75	2,979.79	2,047.10	901.83	781.49		120.35	7.494
11,700.00	7,272.00	10,514.78	7,028.43	68.15	66.38	-74.89	3,092.00	2,045.77	903.59	779.70		123.89	7.294
11,800.00	7,272.00	10,616.77	7,029.42	69.36	68.14	-74.97	3,193.98	2,045.72	904.37	777.35		127.03	7.120
11,900.00	7,272.00	10,719.83	7,029.98	70.60	69.92	-75.02	3,297.04	2,045.76	905.19	775.00		130.20	6.953
12,000.00	7,272.00	10,826.40	7,030.02	71.87	71.76	-75.03	3,403.61	2,046.20	905.80	772.33		133.47	6.787
12,005.79	7,272.00	10,833.07	7,030.00	71.95	71.88	-75.03	3,410.27	2,046.28	905.80	772.12		133.67	6.776
12,100.00	7,272.00	10,919.19	7,029.51	73.17	73.38	-75.01	3,496.39	2,046.72	906.39	770.13		136.26	6.652
12,200.00	7,272.00	11,018.85	7,028.96	74.48	75.08	-74.98	3,596.05	2,047.15	907.12	767.86		139.26	6.514
12,300.00	7,272.00	11,113.37	7,029.37	75.82	76.67	-75.03	3,690.57	2,047.00	908.17	766.06		142.11	6.391
12,400.00	7,272.00	11,208.49	7,031.37	77.16	78.28	-75.18	3,785.65	2,045.76	909.89	764.81		145.08	6.272
12,500.00	7,272.00	11,319.64	7,034.27	78.52	80.22	-75.40	3,896.75	2,044.26	911.56	762.81		148.75	6.128
12,600.00	7,272.00	11,410.00	7,036.65	79.89	81.79	-75.57	3,987.08	2,043.69	912.55	760.94		151.61	6.019
12,700.00	7,272.00	11,460.00	7,037.58	81.27	82.66	-75.65	4,037.06	2,042.53	916.20	763.48		152.71	6.000
12,745.14	7,272.00	11,460.00	7,037.58	82.10	82.66	-75.65	4,037.06	2,042.53	920.56	768.81		151.75	6.066

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design													S4-T1N-R65W - COLFER 13N-34HZ - KMG WELL - SURVEYS		Offset Site Error:		0.00 usft
Survey Program:				13-ISCWSA MWD									Offset Well Error:		0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
12,600.00	7,272.00	11,496.00	7,044.46	79.89	78.62	73.03	5,090.66	3,743.66	1,388.82	1,273.22	115.60	12.014					
12,700.00	7,272.00	11,496.00	7,044.46	81.27	78.62	73.03	5,090.66	3,743.66	1,310.66	1,191.09	119.57	10.961					
12,745.14	7,272.00	11,496.00	7,044.46	82.10	78.62	73.03	5,090.66	3,743.66	1,276.38	1,153.80	122.58	10.412	CC, ES, SF				

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 1N1-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 105-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,300.00	5,789.01	12,040.00	7,186.26	49.91	77.22	146.27	-1,202.96	2,137.29	1,387.38	1,333.58	53.80	25.788	
6,400.00	5,879.29	12,040.00	7,186.26	50.81	77.22	146.27	-1,202.96	2,137.29	1,299.46	1,244.08	55.38	23.464	
6,500.00	5,969.57	12,040.00	7,186.26	51.71	77.22	146.27	-1,202.96	2,137.29	1,213.41	1,156.05	57.36	21.155	
6,600.00	6,059.85	12,040.00	7,186.26	52.61	77.22	146.27	-1,202.96	2,137.29	1,129.66	1,069.82	59.84	18.878	
6,700.00	6,150.14	12,040.00	7,186.26	53.51	77.22	146.27	-1,202.96	2,137.29	1,048.76	985.81	62.95	16.660	
6,800.00	6,240.42	12,040.00	7,186.26	54.42	77.22	146.27	-1,202.96	2,137.29	971.43	904.59	66.84	14.535	
6,900.00	6,330.70	12,040.00	7,186.26	55.32	77.22	146.27	-1,202.96	2,137.29	898.58	826.95	71.63	12.545	
7,000.00	6,420.98	12,040.00	7,186.26	56.22	77.22	146.27	-1,202.96	2,137.29	831.39	753.96	77.43	10.737	
7,100.00	6,511.27	12,040.00	7,186.26	57.12	77.22	146.27	-1,202.96	2,137.29	771.35	687.12	84.23	9.158	
7,120.23	6,529.53	12,040.00	7,186.26	57.31	77.22	146.27	-1,202.96	2,137.29	760.23	674.52	85.71	8.869	
7,150.00	6,556.48	12,040.00	7,186.26	57.57	77.22	149.79	-1,202.96	2,137.29	744.72	656.76	87.96	8.466	
7,200.00	6,601.96	12,040.00	7,186.26	58.00	77.22	156.48	-1,202.96	2,137.29	721.47	629.59	91.88	7.852	
7,250.00	6,647.52	12,040.00	7,186.26	58.40	77.22	163.75	-1,202.96	2,137.29	702.15	606.25	95.89	7.322	
7,300.00	6,692.94	12,040.00	7,186.26	58.77	77.22	171.15	-1,202.96	2,137.29	687.17	587.30	99.87	6.881	
7,350.00	6,738.01	12,040.00	7,186.26	59.11	77.22	178.29	-1,202.96	2,137.29	676.90	573.24	103.66	6.530	
7,400.00	6,782.50	12,040.00	7,186.26	59.41	77.22	-175.07	-1,202.96	2,137.29	671.61	564.48	107.12	6.269	
7,426.67	6,805.91	12,040.00	7,186.26	59.56	77.22	-171.76	-1,202.96	2,137.29	670.87	562.08	108.79	6.167 CC	
7,450.00	6,826.19	12,040.00	7,186.26	59.69	77.22	-168.99	-1,202.96	2,137.29	671.43	561.30	110.14	6.096 ES	
7,500.00	6,868.87	12,040.00	7,186.26	59.94	77.22	-163.44	-1,202.96	2,137.29	676.39	563.78	112.61	6.007	
7,550.00	6,910.34	12,040.00	7,186.26	60.15	77.22	-158.31	-1,202.96	2,137.29	686.33	571.84	114.49	5.995 SF	
7,600.00	6,950.38	12,040.00	7,186.26	60.34	77.22	-153.49	-1,202.96	2,137.29	701.01	585.22	115.79	6.054	
7,650.00	6,988.82	12,040.00	7,186.26	60.49	77.22	-148.85	-1,202.96	2,137.29	720.06	603.51	116.55	6.178	
7,700.00	7,025.45	12,040.00	7,186.26	60.63	77.22	-144.28	-1,202.96	2,137.29	743.05	626.21	116.84	6.360	
7,750.00	7,060.11	12,040.00	7,186.26	60.73	77.22	-139.69	-1,202.96	2,137.29	769.54	652.80	116.74	6.592	
7,800.00	7,092.61	12,040.00	7,186.26	60.82	77.22	-135.01	-1,202.96	2,137.29	799.04	682.71	116.33	6.869	
7,850.00	7,122.81	12,040.00	7,186.26	60.88	77.22	-130.16	-1,202.96	2,137.29	831.11	715.42	115.70	7.184	
7,900.00	7,150.56	12,040.00	7,186.26	60.92	77.22	-125.12	-1,202.96	2,137.29	865.31	750.41	114.89	7.531	
7,950.00	7,175.72	12,040.00	7,186.26	60.94	77.22	-119.89	-1,202.96	2,137.29	901.24	787.26	113.98	7.907	
8,000.00	7,198.17	12,040.00	7,186.26	60.95	77.22	-114.48	-1,202.96	2,137.29	938.53	825.37	113.16	8.294	
8,050.00	7,217.79	12,040.00	7,186.26	60.94	77.22	-108.96	-1,202.96	2,137.29	976.87	864.43	112.43	8.689	
8,100.00	7,234.50	12,040.00	7,186.26	60.93	77.22	-103.40	-1,202.96	2,137.29	1,015.95	904.30	111.65	9.100	
8,150.00	7,248.21	12,040.00	7,186.26	60.90	77.22	-97.91	-1,202.96	2,137.29	1,055.51	944.68	110.83	9.524	
8,200.00	7,258.86	12,040.00	7,186.26	60.86	77.22	-92.58	-1,202.96	2,137.29	1,095.33	985.34	109.99	9.958	
8,250.00	7,266.39	12,040.00	7,186.26	60.81	77.22	-87.53	-1,202.96	2,137.29	1,135.18	1,026.04	109.13	10.402	
8,300.00	7,270.77	12,040.00	7,186.26	60.76	77.22	-82.82	-1,202.96	2,137.29	1,174.88	1,066.62	108.26	10.852	
8,343.93	7,272.00	12,040.00	7,186.26	60.72	77.22	-79.03	-1,202.96	2,137.29	1,209.51	1,102.01	107.49	11.252	
8,400.00	7,272.00	12,040.00	7,186.26	60.66	77.22	-79.03	-1,202.96	2,137.29	1,253.98	1,147.47	106.51	11.774	
8,500.00	7,272.00	12,040.00	7,186.26	60.56	77.22	-79.03	-1,202.96	2,137.29	1,335.47	1,230.67	104.80	12.743	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 1N2-9HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 105-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis					Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,300.00	5,789.01	11,954.00	7,112.84	49.91	77.29	132.33	-1,254.66	2,349.06	1,336.94	1,285.20	51.74	25.837		
6,400.00	5,879.29	11,954.00	7,112.84	50.81	77.29	132.33	-1,254.66	2,349.06	1,243.29	1,190.81	52.48	23.689		
6,500.00	5,969.57	11,954.00	7,112.84	51.71	77.29	132.33	-1,254.66	2,349.06	1,150.71	1,097.29	53.43	21.537		
6,600.00	6,059.85	11,954.00	7,112.84	52.61	77.29	132.33	-1,254.66	2,349.06	1,059.49	1,004.83	54.66	19.383		
6,700.00	6,150.14	11,954.00	7,112.84	53.51	77.29	132.33	-1,254.66	2,349.06	969.99	913.69	56.29	17.231		
6,800.00	6,240.42	11,954.00	7,112.84	54.42	77.29	132.33	-1,254.66	2,349.06	882.75	824.24	58.51	15.088		
6,900.00	6,330.70	11,954.00	7,112.84	55.32	77.29	132.33	-1,254.66	2,349.06	798.50	736.95	61.55	12.973		
7,000.00	6,420.98	11,954.00	7,112.84	56.22	77.29	132.33	-1,254.66	2,349.06	718.31	652.54	65.77	10.921		
7,100.00	6,511.27	11,954.00	7,112.84	57.12	77.29	132.33	-1,254.66	2,349.06	643.69	572.10	71.59	8.991		
7,120.23	6,529.53	11,954.00	7,112.84	57.31	77.29	132.33	-1,254.66	2,349.06	629.45	556.45	73.00	8.622		
7,150.00	6,556.48	11,954.00	7,112.84	57.57	77.29	135.39	-1,254.66	2,349.06	609.35	534.11	75.24	8.099		
7,200.00	6,601.96	11,954.00	7,112.84	58.00	77.29	141.47	-1,254.66	2,349.06	578.70	499.26	79.44	7.285		
7,250.00	6,647.52	11,954.00	7,112.84	58.40	77.29	148.33	-1,254.66	2,349.06	552.61	468.51	84.10	6.571		
7,300.00	6,692.94	11,954.00	7,112.84	58.77	77.29	155.45	-1,254.66	2,349.06	531.90	442.86	89.04	5.974		
7,350.00	6,738.01	11,954.00	7,112.84	59.11	77.29	162.42	-1,254.66	2,349.06	517.32	423.33	93.99	5.504		
7,400.00	6,782.50	11,954.00	7,112.84	59.41	77.29	168.96	-1,254.66	2,349.06	509.47	410.86	98.61	5.166		
7,430.38	6,809.15	11,954.00	7,112.84	59.58	77.29	172.69	-1,254.66	2,349.06	508.15	407.03	101.12	5.025 CC		
7,450.00	6,826.19	11,954.00	7,112.84	59.69	77.29	175.01	-1,254.66	2,349.06	508.70	406.11	102.59	4.959 ES		
7,500.00	6,868.87	11,954.00	7,112.84	59.94	77.29	-179.41	-1,254.66	2,349.06	515.05	409.36	105.69	4.873 SF		
7,550.00	6,910.34	11,954.00	7,112.84	60.15	77.29	-174.18	-1,254.66	2,349.06	528.23	420.41	107.82	4.899		
7,600.00	6,950.38	11,954.00	7,112.84	60.34	77.29	-169.17	-1,254.66	2,349.06	547.68	438.67	109.01	5.024		
7,650.00	6,988.82	11,954.00	7,112.84	60.49	77.29	-164.21	-1,254.66	2,349.06	572.67	463.27	109.40	5.235		
7,700.00	7,025.45	11,954.00	7,112.84	60.63	77.29	-159.16	-1,254.66	2,349.06	602.42	493.24	109.17	5.518		
7,750.00	7,060.11	11,954.00	7,112.84	60.73	77.29	-153.85	-1,254.66	2,349.06	636.10	527.15	108.95	5.838		
7,800.00	7,092.61	11,954.00	7,112.84	60.82	77.29	-148.13	-1,254.66	2,349.06	672.99	564.56	108.43	6.207		
7,850.00	7,122.81	11,954.00	7,112.84	60.88	77.29	-141.86	-1,254.66	2,349.06	712.42	604.73	107.69	6.615		
7,900.00	7,150.56	11,954.00	7,112.84	60.92	77.29	-134.95	-1,254.66	2,349.06	753.82	647.00	106.82	7.057		
7,950.00	7,175.72	11,954.00	7,112.84	60.94	77.29	-127.33	-1,254.66	2,349.06	796.68	690.81	105.88	7.525		
8,000.00	7,198.17	11,954.00	7,112.84	60.95	77.29	-119.09	-1,254.66	2,349.06	840.61	735.70	104.90	8.013		
8,050.00	7,217.79	11,954.00	7,112.84	60.94	77.29	-110.42	-1,254.66	2,349.06	885.23	781.31	103.92	8.518		
8,100.00	7,234.50	11,954.00	7,112.84	60.93	77.29	-101.65	-1,254.66	2,349.06	930.25	827.31	102.94	9.037		
8,150.00	7,248.21	11,954.00	7,112.84	60.90	77.29	-93.16	-1,254.66	2,349.06	975.42	873.44	101.98	9.565		
8,200.00	7,258.86	11,954.00	7,112.84	60.86	77.29	-85.29	-1,254.66	2,349.06	1,020.49	919.46	101.03	10.101		
8,250.00	7,266.39	11,954.00	7,112.84	60.81	77.29	-78.26	-1,254.66	2,349.06	1,065.29	965.19	100.10	10.643		
8,300.00	7,270.77	11,954.00	7,112.84	60.76	77.29	-72.17	-1,254.66	2,349.06	1,109.63	1,010.46	99.17	11.189		
8,343.93	7,272.00	11,954.00	7,112.84	60.72	77.29	-67.58	-1,254.66	2,349.06	1,148.10	1,049.73	98.37	11.671		
8,400.00	7,272.00	11,954.00	7,112.84	60.66	77.29	-67.58	-1,254.66	2,349.06	1,197.18	1,099.80	97.38	12.294		
8,500.00	7,272.00	11,954.00	7,112.84	60.56	77.29	-67.58	-1,254.66	2,349.06	1,286.14	1,190.40	95.74	13.434		
8,600.00	7,272.00	11,954.00	7,112.84	60.46	77.29	-67.58	-1,254.66	2,349.06	1,376.61	1,282.36	94.25	14.606		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 1N3-9HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft				
Survey Program: 105-ISCWSA MWD													Offset Well Error: 0.00 usft				
Reference				Offset				Semi Major Axis					Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
6,200.00	5,698.72	11,936.00	7,017.22	49.01	77.77	115.25	-1,208.41	2,548.09	1,366.25	1,314.13	52.11	26.217					
6,300.00	5,789.01	11,936.00	7,017.22	49.91	77.77	115.25	-1,208.41	2,548.09	1,268.05	1,215.69	52.36	24.219					
6,400.00	5,879.29	11,936.00	7,017.22	50.81	77.77	115.25	-1,208.41	2,548.09	1,170.16	1,117.51	52.65	22.227					
6,500.00	5,969.57	11,936.00	7,017.22	51.71	77.77	115.25	-1,208.41	2,548.09	1,072.65	1,019.66	53.00	20.240					
6,600.00	6,059.85	11,936.00	7,017.22	52.61	77.77	115.25	-1,208.41	2,548.09	975.66	922.22	53.43	18.259					
6,700.00	6,150.14	11,936.00	7,017.22	53.51	77.77	115.25	-1,208.41	2,548.09	879.33	825.34	54.00	16.285					
6,800.00	6,240.42	11,936.00	7,017.22	54.42	77.77	115.25	-1,208.41	2,548.09	783.93	729.19	54.74	14.320					
6,900.00	6,330.70	11,936.00	7,017.22	55.32	77.77	115.25	-1,208.41	2,548.09	689.83	634.05	55.78	12.368					
7,000.00	6,420.98	11,936.00	7,017.22	56.22	77.77	115.25	-1,208.41	2,548.09	597.65	540.38	57.27	10.436					
7,100.00	6,511.27	11,936.00	7,017.22	57.12	77.77	115.25	-1,208.41	2,548.09	508.44	448.86	59.57	8.535					
7,120.23	6,529.53	11,936.00	7,017.22	57.31	77.77	115.25	-1,208.41	2,548.09	490.89	430.70	60.19	8.155					
7,150.00	6,556.48	11,936.00	7,017.22	57.57	77.77	117.69	-1,208.41	2,548.09	465.73	404.47	61.26	7.603					
7,200.00	6,601.96	11,936.00	7,017.22	58.00	77.77	123.14	-1,208.41	2,548.09	426.14	362.54	63.60	6.701					
7,250.00	6,647.52	11,936.00	7,017.22	58.40	77.77	129.68	-1,208.41	2,548.09	390.98	324.22	66.76	5.856					
7,300.00	6,692.94	11,936.00	7,017.22	58.77	77.77	136.65	-1,208.41	2,548.09	361.73	290.86	70.87	5.104					
7,350.00	6,738.01	11,936.00	7,017.22	59.11	77.77	143.53	-1,208.41	2,548.09	340.07	264.20	75.87	4.482					
7,400.00	6,782.50	11,936.00	7,017.22	59.41	77.77	150.03	-1,208.41	2,548.09	327.64	246.22	81.42	4.024					
7,434.84	6,813.03	11,936.00	7,017.22	59.61	77.77	154.27	-1,208.41	2,548.09	325.06	239.84	85.21	3.815 CC					
7,450.00	6,826.19	11,936.00	7,017.22	59.69	77.77	156.04	-1,208.41	2,548.09	325.55	238.78	86.76	3.752 ES					
7,500.00	6,868.87	11,936.00	7,017.22	59.94	77.77	161.58	-1,208.41	2,548.09	334.00	242.91	91.09	3.667 SF					
7,550.00	6,910.34	11,936.00	7,017.22	60.15	77.77	166.79	-1,208.41	2,548.09	352.20	257.52	94.69	3.720					
7,600.00	6,950.38	11,936.00	7,017.22	60.34	77.77	171.84	-1,208.41	2,548.09	378.67	281.84	96.83	3.911					
7,650.00	6,988.82	11,936.00	7,017.22	60.49	77.77	176.94	-1,208.41	2,548.09	411.70	313.91	97.79	4.210					
7,700.00	7,025.45	11,936.00	7,017.22	60.63	77.77	-177.63	-1,208.41	2,548.09	449.71	351.73	97.98	4.590					
7,750.00	7,060.11	11,936.00	7,017.22	60.73	77.77	-171.52	-1,208.41	2,548.09	491.37	393.67	97.70	5.029					
7,800.00	7,092.61	11,936.00	7,017.22	60.82	77.77	-164.24	-1,208.41	2,548.09	535.67	438.49	97.17	5.512					
7,850.00	7,122.81	11,936.00	7,017.22	60.88	77.77	-155.17	-1,208.41	2,548.09	581.80	485.27	96.53	6.027					
7,900.00	7,150.56	11,936.00	7,017.22	60.92	77.77	-143.54	-1,208.41	2,548.09	629.17	533.33	95.84	6.565					
7,950.00	7,175.72	11,936.00	7,017.22	60.94	77.77	-128.85	-1,208.41	2,548.09	677.31	582.16	95.15	7.118					
8,000.00	7,198.17	11,936.00	7,017.22	60.95	77.77	-111.76	-1,208.41	2,548.09	725.86	631.39	94.47	7.683					
8,050.00	7,217.79	11,936.00	7,017.22	60.94	77.77	-94.59	-1,208.41	2,548.09	774.52	680.71	93.81	8.257					
8,100.00	7,234.50	11,936.00	7,017.22	60.93	77.77	-79.82	-1,208.41	2,548.09	823.06	729.90	93.16	8.835					
8,150.00	7,248.21	11,936.00	7,017.22	60.90	77.77	-68.39	-1,208.41	2,548.09	871.28	778.75	92.53	9.417					
8,200.00	7,258.86	11,936.00	7,017.22	60.86	77.77	-59.91	-1,208.41	2,548.09	919.01	827.12	91.90	10.000					
8,250.00	7,266.39	11,936.00	7,017.22	60.81	77.77	-53.67	-1,208.41	2,548.09	966.12	874.85	91.28	10.585					
8,300.00	7,270.77	11,936.00	7,017.22	60.76	77.77	-49.04	-1,208.41	2,548.09	1,012.48	921.83	90.65	11.169					
8,343.93	7,272.00	11,936.00	7,017.22	60.72	77.77	-45.95	-1,208.41	2,548.09	1,052.50	962.40	90.10	11.681					
8,400.00	7,272.00	11,936.00	7,017.22	60.66	77.77	-45.95	-1,208.41	2,548.09	1,103.38	1,013.96	89.41	12.340					
8,500.00	7,272.00	11,936.00	7,017.22	60.56	77.77	-45.95	-1,208.41	2,548.09	1,195.28	1,106.97	88.31	13.536					
8,600.00	7,272.00	11,936.00	7,017.22	60.46	77.77	-45.95	-1,208.41	2,548.09	1,288.38	1,201.05	87.33	14.753					
8,700.00	7,272.00	11,936.00	7,017.22	60.38	77.77	-45.95	-1,208.41	2,548.09	1,382.45	1,295.98	86.47	15.987					

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 26N1-9HZ - KMG WELL - SURVEYS												Offset Site Error: 0.00 usft		
Survey Program: 105-ISCWSA MWD												Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,400.00	5,879.29	12,052.00	7,160.49	50.81	78.30	107.85	-1,251.43	2,641.09	1,339.55	1,285.99	53.55	25.014		
6,500.00	5,969.57	12,052.00	7,160.49	51.71	78.30	107.85	-1,251.43	2,641.09	1,241.40	1,187.53	53.87	23.045		
6,600.00	6,059.85	12,052.00	7,160.49	52.61	78.30	107.85	-1,251.43	2,641.09	1,143.57	1,089.33	54.24	21.083		
6,700.00	6,150.14	12,052.00	7,160.49	53.51	78.30	107.85	-1,251.43	2,641.09	1,046.15	991.46	54.69	19.130		
6,800.00	6,240.42	12,052.00	7,160.49	54.42	78.30	107.85	-1,251.43	2,641.09	949.27	894.04	55.23	17.187		
6,900.00	6,330.70	12,052.00	7,160.49	55.32	78.30	107.85	-1,251.43	2,641.09	853.11	797.19	55.91	15.257		
7,000.00	6,420.98	12,052.00	7,160.49	56.22	78.30	107.85	-1,251.43	2,641.09	757.94	701.14	56.80	13.345		
7,100.00	6,511.27	12,052.00	7,160.49	57.12	78.30	107.85	-1,251.43	2,641.09	664.19	606.22	57.97	11.458		
7,120.23	6,529.53	12,052.00	7,160.49	57.31	78.30	107.85	-1,251.43	2,641.09	645.46	587.20	58.25	11.080		
7,150.00	6,556.48	12,052.00	7,160.49	57.57	78.30	109.82	-1,251.43	2,641.09	618.27	559.53	58.73	10.527		
7,200.00	6,601.96	12,052.00	7,160.49	58.00	78.30	114.78	-1,251.43	2,641.09	574.30	514.53	59.77	9.608		
7,250.00	6,647.52	12,052.00	7,160.49	58.40	78.30	120.99	-1,251.43	2,641.09	533.13	471.99	61.14	8.720		
7,300.00	6,692.94	12,052.00	7,160.49	58.77	78.30	127.67	-1,251.43	2,641.09	495.67	432.83	62.85	7.887		
7,350.00	6,738.01	12,052.00	7,160.49	59.11	78.30	134.23	-1,251.43	2,641.09	463.04	398.15	64.89	7.136		
7,400.00	6,782.50	12,052.00	7,160.49	59.41	78.30	140.33	-1,251.43	2,641.09	436.47	369.28	67.20	6.496		
7,450.00	6,826.19	12,052.00	7,160.49	59.69	78.30	145.82	-1,251.43	2,641.09	417.29	347.61	69.68	5.988		
7,500.00	6,868.87	12,052.00	7,160.49	59.94	78.30	150.70	-1,251.43	2,641.09	406.63	334.38	72.26	5.628		
7,532.49	6,895.97	12,052.00	7,160.49	60.08	78.30	153.58	-1,251.43	2,641.09	404.64	330.71	73.93	5.473 CC		
7,550.00	6,910.34	12,052.00	7,160.49	60.15	78.30	155.04	-1,251.43	2,641.09	405.22	330.39	74.83	5.415 ES		
7,600.00	6,950.38	12,052.00	7,160.49	60.34	78.30	158.95	-1,251.43	2,641.09	413.16	335.46	77.70	5.317 SF		
7,650.00	6,988.82	12,052.00	7,160.49	60.49	78.30	162.56	-1,251.43	2,641.09	429.90	349.27	80.63	5.332		
7,700.00	7,025.45	12,052.00	7,160.49	60.63	78.30	166.00	-1,251.43	2,641.09	454.38	371.29	83.09	5.469		
7,750.00	7,060.11	12,052.00	7,160.49	60.73	78.30	169.41	-1,251.43	2,641.09	485.34	400.37	84.97	5.712		
7,800.00	7,092.61	12,052.00	7,160.49	60.82	78.30	172.98	-1,251.43	2,641.09	521.47	435.19	86.29	6.043		
7,850.00	7,122.81	12,052.00	7,160.49	60.88	78.30	176.92	-1,251.43	2,641.09	561.64	474.51	87.13	6.446		
7,900.00	7,150.56	12,052.00	7,160.49	60.92	78.30	-178.42	-1,251.43	2,641.09	604.85	517.25	87.60	6.905		
7,950.00	7,175.72	12,052.00	7,160.49	60.94	78.30	-172.53	-1,251.43	2,641.09	650.32	562.52	87.79	7.407		
8,000.00	7,198.17	12,052.00	7,160.49	60.95	78.30	-164.55	-1,251.43	2,641.09	697.40	609.61	87.79	7.944		
8,050.00	7,217.79	12,052.00	7,160.49	60.94	78.30	-153.06	-1,251.43	2,641.09	745.58	657.94	87.64	8.507		
8,100.00	7,234.50	12,052.00	7,160.49	60.93	78.30	-136.22	-1,251.43	2,641.09	794.45	707.06	87.39	9.091		
8,150.00	7,248.21	12,052.00	7,160.49	60.90	78.30	-113.77	-1,251.43	2,641.09	843.67	756.61	87.05	9.691		
8,200.00	7,258.86	12,052.00	7,160.49	60.86	78.30	-90.62	-1,251.43	2,641.09	892.96	806.30	86.66	10.304		
8,250.00	7,266.39	12,052.00	7,160.49	60.81	78.30	-72.67	-1,251.43	2,641.09	942.09	855.87	86.23	10.926		
8,300.00	7,270.77	12,052.00	7,160.49	60.76	78.30	-60.62	-1,251.43	2,641.09	990.87	905.11	85.75	11.555		
8,343.93	7,272.00	12,052.00	7,160.49	60.72	78.30	-53.52	-1,251.43	2,641.09	1,033.29	947.97	85.31	12.111		
8,400.00	7,272.00	12,052.00	7,160.49	60.66	78.30	-53.52	-1,251.43	2,641.09	1,087.24	1,002.47	84.78	12.825		
8,500.00	7,272.00	12,052.00	7,160.49	60.56	78.30	-53.52	-1,251.43	2,641.09	1,183.96	1,100.00	83.96	14.102		
8,600.00	7,272.00	12,052.00	7,160.49	60.46	78.30	-53.52	-1,251.43	2,641.09	1,281.18	1,197.89	83.29	15.383		
8,700.00	7,272.00	12,052.00	7,160.49	60.38	78.30	-53.52	-1,251.43	2,641.09	1,378.79	1,296.06	82.74	16.665		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 26N2-9HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 107-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,400.00	5,879.29	11,975.00	7,098.60	50.81	78.89	34.56	-1,187.25	2,882.93	1,361.02	1,301.80	59.22	22.982		
6,500.00	5,969.57	11,975.00	7,098.60	51.71	78.89	34.56	-1,187.25	2,882.93	1,261.83	1,202.06	59.78	21.109		
6,600.00	6,059.85	11,975.00	7,098.60	52.61	78.89	34.56	-1,187.25	2,882.93	1,162.79	1,102.38	60.41	19.248		
6,700.00	6,150.14	11,975.00	7,098.60	53.51	78.89	34.56	-1,187.25	2,882.93	1,063.93	1,002.78	61.15	17.400		
6,800.00	6,240.42	11,975.00	7,098.60	54.42	78.89	34.56	-1,187.25	2,882.93	965.29	903.28	62.01	15.566		
6,900.00	6,330.70	11,975.00	7,098.60	55.32	78.89	34.56	-1,187.25	2,882.93	866.98	803.91	63.06	13.748		
7,000.00	6,420.98	11,975.00	7,098.60	56.22	78.89	34.56	-1,187.25	2,882.93	769.09	704.73	64.37	11.949		
7,100.00	6,511.27	11,975.00	7,098.60	57.12	78.89	34.56	-1,187.25	2,882.93	671.83	605.79	66.04	10.173		
7,120.23	6,529.53	11,975.00	7,098.60	57.31	78.89	34.56	-1,187.25	2,882.93	652.26	585.81	66.44	9.817		
7,150.00	6,556.48	11,975.00	7,098.60	57.57	78.89	44.32	-1,187.25	2,882.93	623.66	556.57	67.09	9.295		
7,200.00	6,601.96	11,975.00	7,098.60	58.00	78.89	58.64	-1,187.25	2,882.93	576.69	508.25	68.44	8.426		
7,250.00	6,647.52	11,975.00	7,098.60	58.40	78.89	71.20	-1,187.25	2,882.93	531.56	461.37	70.18	7.574		
7,300.00	6,692.94	11,975.00	7,098.60	58.77	78.89	82.31	-1,187.25	2,882.93	489.02	416.63	72.39	6.755		
7,350.00	6,738.01	11,975.00	7,098.60	59.11	78.89	92.00	-1,187.25	2,882.93	450.05	374.94	75.11	5.992		
7,400.00	6,782.50	11,975.00	7,098.60	59.41	78.89	100.28	-1,187.25	2,882.93	415.86	337.01	78.85	5.274		
7,450.00	6,826.19	11,975.00	7,098.60	59.69	78.89	107.22	-1,187.25	2,882.93	387.92	304.95	82.97	4.675		
7,500.00	6,868.87	11,975.00	7,098.60	59.94	78.89	112.95	-1,187.25	2,882.93	367.79	280.79	87.00	4.228		
7,550.00	6,910.34	11,975.00	7,098.60	60.15	78.89	117.59	-1,187.25	2,882.93	356.91	266.58	90.33	3.951		
7,578.55	6,933.39	11,975.00	7,098.60	60.26	78.89	119.81	-1,187.25	2,882.93	355.22	263.51	91.72	3.873 CC, ES		
7,600.00	6,950.38	11,975.00	7,098.60	60.34	78.89	121.29	-1,187.25	2,882.93	356.18	263.71	92.46	3.852 SF		
7,650.00	6,988.82	11,975.00	7,098.60	60.49	78.89	124.16	-1,187.25	2,882.93	365.65	272.43	93.23	3.922		
7,700.00	7,025.45	11,975.00	7,098.60	60.63	78.89	126.28	-1,187.25	2,882.93	384.55	291.67	92.88	4.140		
7,750.00	7,060.11	11,975.00	7,098.60	60.73	78.89	127.67	-1,187.25	2,882.93	411.48	319.60	91.88	4.478		
7,800.00	7,092.61	11,975.00	7,098.60	60.82	78.89	128.35	-1,187.25	2,882.93	444.87	354.19	90.68	4.906		
7,850.00	7,122.81	11,975.00	7,098.60	60.88	78.89	128.22	-1,187.25	2,882.93	483.24	393.69	89.54	5.397		
7,900.00	7,150.56	11,975.00	7,098.60	60.92	78.89	127.12	-1,187.25	2,882.93	525.33	436.74	88.59	5.930		
7,950.00	7,175.72	11,975.00	7,098.60	60.94	78.89	124.72	-1,187.25	2,882.93	570.15	482.31	87.84	6.491		
8,000.00	7,198.17	11,975.00	7,098.60	60.95	78.89	120.33	-1,187.25	2,882.93	616.90	529.64	87.26	7.070		
8,050.00	7,217.79	11,975.00	7,098.60	60.94	78.89	112.65	-1,187.25	2,882.93	664.98	578.16	86.81	7.660		
8,100.00	7,234.50	11,975.00	7,098.60	60.93	78.89	99.08	-1,187.25	2,882.93	713.89	627.43	86.46	8.257		
8,150.00	7,248.21	11,975.00	7,098.60	60.90	78.89	76.32	-1,187.25	2,882.93	763.28	677.10	86.18	8.857		
8,200.00	7,258.86	11,975.00	7,098.60	60.86	78.89	47.41	-1,187.25	2,882.93	812.83	726.88	85.95	9.457		
8,250.00	7,266.39	11,975.00	7,098.60	60.81	78.89	24.23	-1,187.25	2,882.93	862.30	776.55	85.75	10.056		
8,300.00	7,270.77	11,975.00	7,098.60	60.76	78.89	10.01	-1,187.25	2,882.93	911.47	825.90	85.57	10.652		
8,343.93	7,272.00	11,975.00	7,098.60	60.72	78.89	2.28	-1,187.25	2,882.93	954.29	868.87	85.43	11.171		
8,400.00	7,272.00	11,975.00	7,098.60	60.66	78.89	2.28	-1,187.25	2,882.93	1,008.77	923.51	85.26	11.832		
8,500.00	7,272.00	11,975.00	7,098.60	60.56	78.89	2.28	-1,187.25	2,882.93	1,106.31	1,021.32	84.99	13.017		
8,600.00	7,272.00	11,975.00	7,098.60	60.46	78.89	2.28	-1,187.25	2,882.93	1,204.26	1,119.50	84.76	14.208		
8,700.00	7,272.00	11,975.00	7,098.60	60.38	78.89	2.28	-1,187.25	2,882.93	1,302.52	1,217.97	84.55	15.405		
8,800.00	7,272.00	11,975.00	7,098.60	60.29	78.89	2.28	-1,187.25	2,882.93	1,401.03	1,316.66	84.37	16.605		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 27N1-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 103-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,400.00	5,879.29	11,921.00	7,134.04	50.81	78.13	146.70	-1,257.09	1,781.22	1,343.93	1,274.21	69.72	19.277	
6,500.00	5,969.57	11,921.00	7,134.04	51.71	78.13	146.70	-1,257.09	1,781.22	1,275.43	1,201.82	73.61	17.326	
6,600.00	6,059.85	11,921.00	7,134.04	52.61	78.13	146.70	-1,257.09	1,781.22	1,211.33	1,133.34	77.98	15.533	
6,700.00	6,150.14	11,921.00	7,134.04	53.51	78.13	146.70	-1,257.09	1,781.22	1,152.34	1,069.53	82.81	13.915	
6,800.00	6,240.42	11,921.00	7,134.04	54.42	78.13	146.70	-1,257.09	1,781.22	1,099.31	1,011.28	88.03	12.488	
6,900.00	6,330.70	11,921.00	7,134.04	55.32	78.13	146.70	-1,257.09	1,781.22	1,053.12	959.60	93.52	11.261	
7,000.00	6,420.98	11,921.00	7,134.04	56.22	78.13	146.70	-1,257.09	1,781.22	1,014.71	915.62	99.09	10.240	
7,100.00	6,511.27	11,921.00	7,134.04	57.12	78.13	146.70	-1,257.09	1,781.22	985.00	880.48	104.52	9.424	
7,120.23	6,529.53	11,921.00	7,134.04	57.31	78.13	146.70	-1,257.09	1,781.22	980.12	874.55	105.57	9.284	
7,150.00	6,556.48	11,921.00	7,134.04	57.57	78.13	151.12	-1,257.09	1,781.22	973.83	866.74	107.09	9.094	
7,200.00	6,601.96	11,921.00	7,134.04	58.00	78.13	159.18	-1,257.09	1,781.22	966.05	856.53	109.53	8.820	
7,250.00	6,647.52	11,921.00	7,134.04	58.40	78.13	167.70	-1,257.09	1,781.22	961.86	850.07	111.79	8.604	
7,282.36	6,676.95	11,921.00	7,134.04	58.64	78.13	173.24	-1,257.09	1,781.22	961.09	847.96	113.13	8.496 CC	
7,300.00	6,692.94	11,921.00	7,134.04	58.77	78.13	176.22	-1,257.09	1,781.22	961.32	847.49	113.82	8.446 ES	
7,350.00	6,738.01	11,921.00	7,134.04	59.11	78.13	-175.63	-1,257.09	1,781.22	964.44	848.84	115.60	8.343	
7,400.00	6,782.50	11,921.00	7,134.04	59.41	78.13	-168.08	-1,257.09	1,781.22	971.17	854.06	117.11	8.293 SF	
7,450.00	6,826.19	11,921.00	7,134.04	59.69	78.13	-161.18	-1,257.09	1,781.22	981.41	863.08	118.33	8.294	
7,500.00	6,868.87	11,921.00	7,134.04	59.94	78.13	-154.90	-1,257.09	1,781.22	995.00	875.73	119.28	8.342	
7,550.00	6,910.34	11,921.00	7,134.04	60.15	78.13	-149.15	-1,257.09	1,781.22	1,011.74	891.78	119.95	8.434	
7,600.00	6,950.38	11,921.00	7,134.04	60.34	78.13	-143.80	-1,257.09	1,781.22	1,031.39	911.00	120.39	8.567	
7,650.00	6,988.82	11,921.00	7,134.04	60.49	78.13	-138.74	-1,257.09	1,781.22	1,053.70	933.09	120.61	8.736	
7,700.00	7,025.45	11,921.00	7,134.04	60.63	78.13	-133.89	-1,257.09	1,781.22	1,078.40	957.76	120.65	8.939	
7,750.00	7,060.11	11,921.00	7,134.04	60.73	78.13	-129.16	-1,257.09	1,781.22	1,105.22	984.69	120.53	9.170	
7,800.00	7,092.61	11,921.00	7,134.04	60.82	78.13	-124.51	-1,257.09	1,781.22	1,133.87	1,013.59	120.28	9.427	
7,850.00	7,122.81	11,921.00	7,134.04	60.88	78.13	-119.91	-1,257.09	1,781.22	1,164.09	1,044.16	119.93	9.706	
7,900.00	7,150.56	11,921.00	7,134.04	60.92	78.13	-115.34	-1,257.09	1,781.22	1,195.62	1,076.12	119.50	10.005	
7,950.00	7,175.72	11,921.00	7,134.04	60.94	78.13	-110.81	-1,257.09	1,781.22	1,228.21	1,109.19	119.02	10.320	
8,000.00	7,198.17	11,921.00	7,134.04	60.95	78.13	-106.33	-1,257.09	1,781.22	1,261.62	1,143.13	118.49	10.648	
8,050.00	7,217.79	11,921.00	7,134.04	60.94	78.13	-101.94	-1,257.09	1,781.22	1,295.64	1,177.71	117.93	10.987	
8,100.00	7,234.50	11,921.00	7,134.04	60.93	78.13	-97.68	-1,257.09	1,781.22	1,330.05	1,212.71	117.35	11.334	
8,150.00	7,248.21	11,921.00	7,134.04	60.90	78.13	-93.58	-1,257.09	1,781.22	1,364.68	1,247.87	116.81	11.683	
8,200.00	7,258.86	11,921.00	7,134.04	60.86	78.13	-89.68	-1,257.09	1,781.22	1,399.33	1,282.93	116.40	12.022	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - JOKER 27N2-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 105-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
6,200.00	5,698.72	11,852.00	7,050.02	49.01	78.37	142.22	-1,266.03	1,948.24	1,380.00	1,321.64	58.36	23.648	
6,300.00	5,789.01	11,852.00	7,050.02	49.91	78.37	142.22	-1,266.03	1,948.24	1,298.66	1,237.74	60.92	21.319	
6,400.00	5,879.29	11,852.00	7,050.02	50.81	78.37	142.22	-1,266.03	1,948.24	1,220.09	1,156.10	64.00	19.065	
6,500.00	5,969.57	11,852.00	7,050.02	51.71	78.37	142.22	-1,266.03	1,948.24	1,144.88	1,077.19	67.68	16.916	
6,600.00	6,059.85	11,852.00	7,050.02	52.61	78.37	142.22	-1,266.03	1,948.24	1,073.71	1,001.67	72.04	14.904	
6,700.00	6,150.14	11,852.00	7,050.02	53.51	78.37	142.22	-1,266.03	1,948.24	1,007.46	930.34	77.12	13.063	
6,800.00	6,240.42	11,852.00	7,050.02	54.42	78.37	142.22	-1,266.03	1,948.24	947.15	864.24	82.91	11.424	
6,900.00	6,330.70	11,852.00	7,050.02	55.32	78.37	142.22	-1,266.03	1,948.24	893.99	804.69	89.30	10.011	
7,000.00	6,420.98	11,852.00	7,050.02	56.22	78.37	142.22	-1,266.03	1,948.24	849.31	753.25	96.06	8.841	
7,100.00	6,511.27	11,852.00	7,050.02	57.12	78.37	142.22	-1,266.03	1,948.24	814.52	711.68	102.84	7.920	
7,120.23	6,529.53	11,852.00	7,050.02	57.31	78.37	142.22	-1,266.03	1,948.24	808.81	704.63	104.17	7.764	
7,150.00	6,556.48	11,852.00	7,050.02	57.57	78.37	146.57	-1,266.03	1,948.24	801.47	695.37	106.09	7.554	
7,200.00	6,601.96	11,852.00	7,050.02	58.00	78.37	154.56	-1,266.03	1,948.24	792.52	683.37	109.15	7.261	
7,250.00	6,647.52	11,852.00	7,050.02	58.40	78.37	163.06	-1,266.03	1,948.24	787.96	676.03	111.93	7.039	
7,275.78	6,670.97	11,852.00	7,050.02	58.59	78.37	167.49	-1,266.03	1,948.24	787.36	674.13	113.23	6.954 CC	
7,300.00	6,692.94	11,852.00	7,050.02	58.77	78.37	171.61	-1,266.03	1,948.24	787.89	673.53	114.36	6.890 ES	
7,350.00	6,738.01	11,852.00	7,050.02	59.11	78.37	179.85	-1,266.03	1,948.24	792.31	675.93	116.38	6.808	
7,400.00	6,782.50	11,852.00	7,050.02	59.41	78.37	-172.44	-1,266.03	1,948.24	801.12	683.17	117.95	6.792 SF	
7,450.00	6,826.19	11,852.00	7,050.02	59.69	78.37	-165.34	-1,266.03	1,948.24	814.15	695.05	119.10	6.836	
7,500.00	6,868.87	11,852.00	7,050.02	59.94	78.37	-158.79	-1,266.03	1,948.24	831.12	711.30	119.83	6.936	
7,550.00	6,910.34	11,852.00	7,050.02	60.15	78.37	-152.69	-1,266.03	1,948.24	851.73	731.54	120.19	7.087	
7,600.00	6,950.38	11,852.00	7,050.02	60.34	78.37	-146.92	-1,266.03	1,948.24	875.62	755.38	120.23	7.283	
7,650.00	6,988.82	11,852.00	7,050.02	60.49	78.37	-141.36	-1,266.03	1,948.24	902.42	782.39	120.02	7.519	
7,700.00	7,025.45	11,852.00	7,050.02	60.63	78.37	-135.91	-1,266.03	1,948.24	931.75	812.14	119.61	7.790	
7,750.00	7,060.11	11,852.00	7,050.02	60.73	78.37	-130.50	-1,266.03	1,948.24	963.24	844.20	119.04	8.092	
7,800.00	7,092.61	11,852.00	7,050.02	60.82	78.37	-125.08	-1,266.03	1,948.24	996.56	878.19	118.37	8.419	
7,850.00	7,122.81	11,852.00	7,050.02	60.88	78.37	-119.64	-1,266.03	1,948.24	1,031.35	913.73	117.62	8.768	
7,900.00	7,150.56	11,852.00	7,050.02	60.92	78.37	-114.17	-1,266.03	1,948.24	1,067.33	950.50	116.83	9.136	
7,950.00	7,175.72	11,852.00	7,050.02	60.94	78.37	-108.73	-1,266.03	1,948.24	1,104.20	988.19	116.01	9.518	
8,000.00	7,198.17	11,852.00	7,050.02	60.95	78.37	-103.35	-1,266.03	1,948.24	1,141.72	1,026.35	115.37	9.896	
8,050.00	7,217.79	11,852.00	7,050.02	60.94	78.37	-98.11	-1,266.03	1,948.24	1,179.63	1,064.85	114.78	10.277	
8,100.00	7,234.50	11,852.00	7,050.02	60.93	78.37	-93.08	-1,266.03	1,948.24	1,217.74	1,103.56	114.19	10.665	
8,150.00	7,248.21	11,852.00	7,050.02	60.90	78.37	-88.31	-1,266.03	1,948.24	1,255.84	1,142.26	113.58	11.057	
8,200.00	7,258.86	11,852.00	7,050.02	60.86	78.37	-83.87	-1,266.03	1,948.24	1,293.77	1,180.79	112.98	11.451	
8,250.00	7,266.39	11,852.00	7,050.02	60.81	78.37	-79.78	-1,266.03	1,948.24	1,331.35	1,218.97	112.37	11.848	
8,300.00	7,270.77	11,852.00	7,050.02	60.76	78.37	-76.08	-1,266.03	1,948.24	1,368.44	1,256.67	111.76	12.244	
8,343.93	7,272.00	11,852.00	7,050.02	60.72	78.37	-73.15	-1,266.03	1,948.24	1,400.51	1,289.28	111.23	12.591	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS													Offset Site Error:	0.00 usft
Survey Program:		100-ISCWSA MWD											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,200.00	3,893.07	3,909.07	3,909.07	31.00	8.66	41.13	-1,727.49	2,103.29	1,391.60	1,360.64	30.96	44.950		
4,300.00	3,983.35	4,000.65	3,999.35	31.90	8.87	42.27	-1,727.49	2,103.29	1,358.09	1,326.00	32.09	42.316		
4,400.00	4,073.63	4,089.63	4,089.63	32.80	9.07	43.47	-1,727.49	2,103.29	1,325.13	1,291.88	33.26	39.845		
4,500.00	4,163.92	4,179.92	4,179.92	33.70	9.27	44.72	-1,727.49	2,103.29	1,292.77	1,258.31	34.46	37.515		
4,600.00	4,254.20	4,270.20	4,270.20	34.60	9.47	46.03	-1,727.49	2,103.29	1,261.04	1,225.34	35.70	35.324		
4,700.00	4,344.48	4,360.48	4,360.48	35.50	9.68	47.39	-1,727.49	2,103.29	1,229.99	1,193.01	36.98	33.263		
4,800.00	4,434.77	4,450.77	4,450.77	36.40	9.88	48.82	-1,727.49	2,103.29	1,199.68	1,161.39	38.29	31.328		
4,900.00	4,525.05	4,541.05	4,541.05	37.30	10.08	50.32	-1,727.49	2,103.29	1,170.17	1,130.51	39.65	29.511		
5,000.00	4,615.33	4,631.33	4,631.33	38.20	10.29	51.88	-1,727.49	2,103.29	1,141.51	1,100.46	41.05	27.807		
5,100.00	4,705.61	4,721.61	4,721.61	39.10	10.49	53.52	-1,727.49	2,103.29	1,113.78	1,071.29	42.49	26.213		
5,200.00	4,795.90	4,811.90	4,811.90	40.00	10.69	55.22	-1,727.49	2,103.29	1,087.04	1,043.07	43.97	24.724		
5,300.00	4,886.18	4,902.18	4,902.18	40.90	10.89	57.00	-1,727.49	2,103.29	1,061.37	1,015.89	45.48	23.336		
5,400.00	4,976.46	5,007.54	4,992.46	41.80	11.13	58.85	-1,727.49	2,103.29	1,036.85	989.78	47.07	22.029		
5,500.00	5,066.74	5,082.74	5,082.74	42.70	11.30	60.78	-1,727.49	2,103.29	1,013.56	964.94	48.62	20.848		
5,600.00	5,157.03	5,173.03	5,173.03	43.60	11.50	62.79	-1,727.49	2,103.29	991.59	941.36	50.23	19.743		
5,700.00	5,247.31	5,263.31	5,263.31	44.50	11.71	64.86	-1,727.49	2,103.29	971.02	919.17	51.86	18.725		
5,800.00	5,337.59	5,353.59	5,353.59	45.40	11.91	67.02	-1,727.49	2,103.29	951.96	898.46	53.50	17.793		
5,900.00	5,427.87	5,443.87	5,443.87	46.30	12.11	69.24	-1,727.49	2,103.29	934.49	879.34	55.15	16.944		
6,000.00	5,518.16	5,534.16	5,534.16	47.20	12.32	71.53	-1,727.49	2,103.29	918.69	861.90	56.79	16.176		
6,100.00	5,608.44	5,624.44	5,624.44	48.11	12.52	73.88	-1,727.49	2,103.29	904.67	846.25	58.42	15.485		
6,200.00	5,698.72	5,714.72	5,714.72	49.01	12.72	76.29	-1,727.49	2,103.29	892.51	832.48	60.02	14.869		
6,300.00	5,789.01	5,805.01	5,805.01	49.91	12.92	78.75	-1,727.49	2,103.29	882.27	820.69	61.58	14.327		
6,400.00	5,879.29	5,904.71	5,895.29	50.81	13.15	81.26	-1,727.49	2,103.29	874.03	810.92	63.11	13.849		
6,500.00	5,969.57	5,985.57	5,985.57	51.71	13.33	83.79	-1,727.49	2,103.29	867.85	803.32	64.53	13.449		
6,600.00	6,059.85	6,075.85	6,075.85	52.61	13.53	86.36	-1,727.49	2,103.29	863.76	797.87	65.89	13.109		
6,700.00	6,150.14	6,166.14	6,166.14	53.51	13.74	88.93	-1,727.49	2,103.29	861.80	794.63	67.17	12.830		
6,741.31	6,187.43	6,203.43	6,203.43	53.89	13.82	90.00	-1,727.49	2,103.29	861.62	793.95	67.67	12.733 CC		
6,800.00	6,240.42	6,256.42	6,256.42	54.42	13.94	91.51	-1,727.49	2,103.29	861.99	793.64	68.35	12.611 ES		
6,900.00	6,330.70	6,346.70	6,346.70	55.32	14.14	94.09	-1,727.49	2,103.29	864.32	794.88	69.43	12.448		
7,000.00	6,420.98	6,436.98	6,436.98	56.22	14.34	96.65	-1,727.49	2,103.29	868.77	798.36	70.41	12.339		
7,100.00	6,511.27	6,527.27	6,527.27	57.12	14.55	99.18	-1,727.49	2,103.29	875.32	804.03	71.28	12.280		
7,120.23	6,529.53	6,545.53	6,545.53	57.31	14.59	99.69	-1,727.49	2,103.29	876.89	805.44	71.45	12.274 SF		
7,150.00	6,556.48	6,572.48	6,572.48	57.57	14.65	105.44	-1,727.49	2,103.29	879.91	808.23	71.68	12.276		
7,200.00	6,601.96	6,617.96	6,617.96	58.00	14.75	115.57	-1,727.49	2,103.29	887.77	815.74	72.03	12.325		
7,250.00	6,647.52	6,663.52	6,663.52	58.40	14.85	125.93	-1,727.49	2,103.29	899.01	826.66	72.35	12.426		
7,300.00	6,692.94	6,708.94	6,708.94	58.77	14.96	136.06	-1,727.49	2,103.29	913.45	840.82	72.63	12.577		
7,350.00	6,738.01	6,754.01	6,754.01	59.11	15.06	145.60	-1,727.49	2,103.29	930.90	858.02	72.88	12.773		
7,400.00	6,782.50	6,801.50	6,798.50	59.41	15.16	154.31	-1,727.49	2,103.29	951.19	878.08	73.11	13.010		
7,450.00	6,826.19	6,842.19	6,842.19	59.69	15.26	162.15	-1,727.49	2,103.29	974.14	900.83	73.31	13.288		
7,500.00	6,868.87	6,884.87	6,884.87	59.94	15.35	169.17	-1,727.49	2,103.29	999.57	926.07	73.50	13.600		
7,550.00	6,910.34	6,926.34	6,926.34	60.15	15.44	175.47	-1,727.49	2,103.29	1,027.32	953.64	73.67	13.944		
7,600.00	6,950.38	6,966.38	6,966.38	60.34	15.53	-178.81	-1,727.49	2,103.29	1,057.23	983.39	73.84	14.318		
7,650.00	6,988.82	7,004.82	7,004.82	60.49	15.62	-173.52	-1,727.49	2,103.29	1,089.15	1,015.15	74.00	14.719		
7,700.00	7,025.45	7,041.45	7,041.45	60.63	15.70	-168.54	-1,727.49	2,103.29	1,122.94	1,048.79	74.15	15.144		
7,750.00	7,060.11	7,076.11	7,076.11	60.73	15.78	-163.74	-1,727.49	2,103.29	1,158.45	1,084.16	74.29	15.593		
7,800.00	7,092.61	7,108.61	7,108.61	60.82	15.85	-158.99	-1,727.49	2,103.29	1,195.55	1,121.12	74.43	16.062		
7,850.00	7,122.81	7,138.81	7,138.81	60.88	15.92	-154.19	-1,727.49	2,103.29	1,234.09	1,159.53	74.56	16.551		
7,900.00	7,150.56	7,166.56	7,166.56	60.92	15.98	-149.22	-1,727.49	2,103.29	1,273.94	1,199.25	74.69	17.057		
7,950.00	7,175.72	7,208.28	7,191.72	60.94	16.08	-143.97	-1,727.49	2,103.29	1,314.94	1,240.10	74.84	17.570		
8,000.00	7,198.17	7,214.17	7,214.17	60.95	16.09	-138.36	-1,727.49	2,103.29	1,356.96	1,282.05	74.91	18.114		
8,050.00	7,217.79	7,233.79	7,233.79	60.94	16.14	-132.31	-1,727.49	2,103.29	1,399.84	1,324.82	75.01	18.661		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - OLIN 41-4 - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 1129-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,200.00	7,272.00	7,412.91	7,210.51	62.99	23.35	-83.23	3,916.26	2,492.72	1,388.15	1,301.03	87.12	15.934	
11,300.00	7,272.00	7,420.83	7,218.39	63.85	23.37	-84.25	3,916.73	2,493.27	1,293.60	1,205.99	87.61	14.766	
11,400.00	7,272.00	7,428.39	7,225.92	64.81	23.38	-85.24	3,917.18	2,493.80	1,199.89	1,111.72	88.17	13.609	
11,500.00	7,272.00	7,435.61	7,233.12	65.86	23.40	-86.18	3,917.59	2,494.30	1,107.24	1,018.42	88.82	12.466	
11,600.00	7,272.00	7,442.53	7,240.01	66.98	23.42	-87.08	3,917.98	2,494.78	1,015.95	926.36	89.59	11.340	
11,700.00	7,272.00	7,449.15	7,246.60	68.15	23.43	-87.96	3,918.34	2,495.24	926.42	835.92	90.50	10.237	
11,800.00	7,272.00	7,454.11	7,251.54	69.36	23.45	-88.61	3,918.61	2,495.57	839.22	747.66	91.55	9.166	
11,900.00	7,272.00	7,459.60	7,257.01	70.60	23.46	-89.34	3,918.91	2,495.94	755.16	662.35	92.80	8.137	
12,000.00	7,272.00	7,464.95	7,262.35	71.87	23.47	-90.05	3,919.19	2,496.30	675.41	581.17	94.24	7.167	
12,100.00	7,272.00	7,470.16	7,267.54	73.17	23.48	-90.74	3,919.46	2,496.64	601.70	505.89	95.81	6.280	
12,200.00	7,272.00	7,475.27	7,272.63	74.48	23.49	-91.42	3,919.72	2,496.97	536.51	439.19	97.32	5.513	
12,300.00	7,272.00	7,480.53	7,277.87	75.82	23.51	-92.12	3,919.99	2,497.30	483.32	384.95	98.37	4.913	
12,400.00	7,272.00	7,485.77	7,283.09	77.16	23.52	-92.81	3,920.26	2,497.64	446.42	348.11	98.31	4.541	
12,500.00	7,272.00	7,490.98	7,288.28	78.52	23.53	-93.51	3,920.53	2,497.97	430.04	333.44	96.61	4.452 ES, SF	
12,521.98	7,272.00	7,492.12	7,289.42	78.82	23.53	-93.66	3,920.58	2,498.05	429.48	333.47	96.02	4.473 CC	
12,600.00	7,272.00	7,496.16	7,293.45	79.89	23.54	-94.20	3,920.79	2,498.31	436.49	343.01	93.49	4.669	
12,700.00	7,272.00	7,501.32	7,298.59	81.27	23.55	-94.89	3,921.05	2,498.64	464.83	374.91	89.91	5.170	
12,745.14	7,272.00	7,503.64	7,300.90	82.10	23.56	-95.19	3,921.17	2,498.79	483.86	395.40	88.46	5.470	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - OLIN 42-4A - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 1021-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,900.00	7,272.00	7,591.28	7,303.97	59.83	28.13	-96.31	2,635.53	2,461.57	1,411.77	1,331.92	79.85	17.680	
10,000.00	7,272.00	7,589.63	7,302.31	59.84	28.12	-96.10	2,635.57	2,461.51	1,317.49	1,237.85	79.64	16.543	
10,100.00	7,272.00	7,587.90	7,300.59	59.86	28.12	-95.89	2,635.62	2,461.45	1,224.11	1,144.70	79.41	15.415	
10,200.00	7,272.00	7,586.11	7,298.80	59.90	28.12	-95.66	2,635.67	2,461.38	1,131.86	1,052.70	79.15	14.299	
10,300.00	7,272.00	7,584.24	7,296.94	59.96	28.11	-95.43	2,635.72	2,461.31	1,041.03	962.16	78.88	13.198	
10,400.00	7,272.00	7,582.30	7,294.99	60.04	28.11	-95.18	2,635.77	2,461.23	952.04	873.46	78.58	12.116	
10,500.00	7,272.00	7,580.27	7,292.97	60.15	28.11	-94.93	2,635.83	2,461.16	865.45	787.17	78.28	11.056	
10,600.00	7,272.00	7,578.15	7,290.85	60.31	28.10	-94.66	2,635.89	2,461.07	782.06	704.05	78.01	10.025	
10,700.00	7,272.00	7,575.93	7,288.64	60.52	28.10	-94.38	2,635.96	2,460.98	703.01	625.18	77.83	9.033	
10,800.00	7,272.00	7,573.61	7,286.32	60.80	28.10	-94.09	2,636.03	2,460.89	629.93	552.07	77.85	8.091	
10,900.00	7,272.00	7,571.19	7,283.90	61.17	28.09	-93.78	2,636.10	2,460.78	565.14	486.88	78.26	7.221	
11,000.00	7,272.00	7,568.65	7,281.37	61.65	28.09	-93.46	2,636.18	2,460.68	511.80	432.59	79.20	6.462	
11,100.00	7,272.00	7,565.58	7,278.29	62.26	28.08	-93.07	2,636.28	2,460.54	473.79	393.12	80.66	5.874	
11,200.00	7,272.00	7,562.52	7,275.24	62.99	28.08	-92.69	2,636.38	2,460.41	454.96	372.09	82.88	5.490	
11,237.49	7,272.00	7,561.38	7,274.11	63.30	28.07	-92.54	2,636.42	2,460.36	453.42	369.75	83.67	5.419 CC, ES	
11,300.00	7,272.00	7,559.49	7,272.21	63.85	28.07	-92.30	2,636.48	2,460.27	457.70	372.90	84.80	5.397 SF	
11,400.00	7,272.00	7,556.48	7,269.21	64.81	28.07	-91.92	2,636.58	2,460.14	481.64	395.65	85.98	5.601	
11,500.00	7,272.00	7,553.49	7,266.23	65.86	28.06	-91.54	2,636.67	2,460.01	523.86	437.42	86.44	6.060	
11,600.00	7,272.00	7,550.52	7,263.26	66.98	28.05	-91.17	2,636.77	2,459.87	580.41	494.00	86.41	6.717	
11,700.00	7,272.00	7,547.58	7,260.32	68.15	28.05	-90.80	2,636.86	2,459.74	647.54	561.40	86.14	7.517	
11,800.00	7,272.00	7,544.65	7,257.40	69.36	28.04	-90.43	2,636.95	2,459.61	722.29	636.53	85.77	8.422	
11,900.00	7,272.00	7,542.90	7,255.65	70.60	28.04	-90.21	2,637.01	2,459.53	802.55	717.17	85.39	9.399	
12,000.00	7,272.00	7,539.30	7,252.06	71.87	28.03	-89.76	2,637.12	2,459.36	886.83	801.82	85.01	10.432	
12,100.00	7,272.00	7,535.62	7,248.39	73.17	28.03	-89.29	2,637.23	2,459.19	974.07	889.40	84.67	11.504	
12,200.00	7,272.00	7,531.87	7,244.64	74.48	28.02	-88.82	2,637.35	2,459.02	1,063.56	979.18	84.37	12.605	
12,300.00	7,272.00	7,528.03	7,240.80	75.82	28.01	-88.34	2,637.47	2,458.85	1,154.75	1,070.65	84.11	13.730	
12,400.00	7,272.00	7,524.10	7,236.89	77.16	28.01	-87.84	2,637.60	2,458.68	1,247.29	1,163.42	83.87	14.871	
12,500.00	7,272.00	7,520.09	7,232.88	78.52	28.00	-87.34	2,637.73	2,458.51	1,340.89	1,257.22	83.67	16.026	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - OTTESEN 1 - GREAT WESTERN - NO SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 100-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,272.00	7,308.00	7,308.00	60.38	16.30	90.00	826.32	4,090.01	1,408.20	1,344.15	64.05	21.987		
8,800.00	7,272.00	7,308.00	7,308.00	60.29	16.30	90.00	826.32	4,090.01	1,357.99	1,295.60	62.39	21.765		
8,900.00	7,272.00	7,308.00	7,308.00	60.22	16.30	90.00	826.32	4,090.01	1,313.49	1,252.74	60.76	21.619		
9,000.00	7,272.00	7,308.00	7,308.00	60.15	16.30	90.00	826.32	4,090.01	1,275.30	1,216.08	59.22	21.536		
9,100.00	7,272.00	7,308.00	7,308.00	60.09	16.30	90.00	826.32	4,090.01	1,243.99	1,186.10	57.88	21.491		
9,200.00	7,272.00	7,308.00	7,308.00	60.03	16.30	90.00	826.32	4,090.01	1,220.09	1,163.22	56.87	21.453		
9,300.00	7,272.00	7,308.00	7,308.00	59.98	16.30	90.00	826.32	4,090.01	1,204.06	1,147.76	56.30	21.386		
9,400.00	7,272.00	7,308.00	7,308.00	59.94	16.30	90.00	826.32	4,090.01	1,196.19	1,139.94	56.25	21.267		
9,444.39	7,272.00	7,308.00	7,308.00	59.92	16.30	90.00	826.32	4,090.01	1,195.37	1,138.96	56.40	21.193 CC, ES		
9,500.00	7,272.00	7,308.00	7,308.00	59.90	16.30	90.00	826.32	4,090.01	1,196.66	1,139.93	56.74	21.092		
9,600.00	7,272.00	7,308.00	7,308.00	59.87	16.30	90.00	826.32	4,090.01	1,205.45	1,147.73	57.73	20.882		
9,700.00	7,272.00	7,308.00	7,308.00	59.85	16.30	90.00	826.32	4,090.01	1,222.39	1,163.26	59.13	20.673		
9,800.00	7,272.00	7,308.00	7,308.00	59.84	16.30	90.00	826.32	4,090.01	1,247.14	1,186.32	60.82	20.506		
9,900.00	7,272.00	7,308.00	7,308.00	59.83	16.30	90.00	826.32	4,090.01	1,279.25	1,216.58	62.67	20.412 SF		
10,000.00	7,272.00	7,308.00	7,308.00	59.84	16.30	90.00	826.32	4,090.01	1,318.18	1,253.61	64.58	20.413		
10,100.00	7,272.00	7,308.00	7,308.00	59.86	16.30	90.00	826.32	4,090.01	1,363.35	1,296.90	66.45	20.516		
10,200.00	7,272.00	7,308.00	7,308.00	59.90	16.30	90.00	826.32	4,090.01	1,414.16	1,345.92	68.24	20.722		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RANDLE RED XX 3-4DI - KMG WELL - NO SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 100-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,600.00	7,272.00	7,307.00	7,293.00	66.98	16.30	90.00	4,131.71	3,625.14	1,339.88	1,266.51	73.37	18.263	
11,700.00	7,272.00	7,307.00	7,293.00	68.15	16.30	90.00	4,131.71	3,625.14	1,255.51	1,181.93	73.58	17.062	
11,800.00	7,272.00	7,307.00	7,293.00	69.36	16.30	90.00	4,131.71	3,625.14	1,173.61	1,099.63	73.98	15.865	
11,900.00	7,272.00	7,307.00	7,293.00	70.60	16.30	90.00	4,131.71	3,625.14	1,094.72	1,020.11	74.61	14.673	
12,000.00	7,272.00	7,307.00	7,293.00	71.87	16.30	90.00	4,131.71	3,625.14	1,019.53	943.98	75.55	13.494	
12,100.00	7,272.00	7,307.00	7,293.00	73.17	16.30	90.00	4,131.71	3,625.14	948.94	872.03	76.91	12.338	
12,200.00	7,272.00	7,307.00	7,293.00	74.48	16.30	90.00	4,131.71	3,625.14	884.05	805.27	78.78	11.222	
12,300.00	7,272.00	7,307.00	7,293.00	75.82	16.30	90.00	4,131.71	3,625.14	826.18	744.97	81.21	10.173	
12,400.00	7,272.00	7,307.00	7,293.00	77.16	16.30	90.00	4,131.71	3,625.14	776.93	692.70	84.23	9.224	
12,500.00	7,272.00	7,307.00	7,293.00	78.52	16.30	90.00	4,131.71	3,625.14	738.02	650.30	87.72	8.413	
12,600.00	7,272.00	7,307.00	7,293.00	79.89	16.30	90.00	4,131.71	3,625.14	711.13	619.70	91.43	7.778	
12,700.00	7,272.00	7,307.00	7,293.00	81.27	16.30	90.00	4,131.71	3,625.14	697.68	602.67	95.01	7.344	
12,744.78	7,272.00	7,307.00	7,293.00	82.10	16.30	90.00	4,131.71	3,625.14	696.24	599.92	96.32	7.228 CC	
12,745.14	7,272.00	7,307.00	7,293.00	82.10	16.30	90.00	4,131.71	3,625.14	696.24	599.91	96.33	7.228 ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3C-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	3.00	3.00	0.00	0.00	-98.45	-22.05	-148.37	150.00					
100.00	100.00	103.00	103.00	0.14	0.15	-98.45	-22.05	-148.37	150.00	149.71	0.29	523.054		
140.00	140.00	143.00	143.00	0.28	0.29	-98.45	-22.05	-148.37	150.00	149.43	0.57	261.527	CC, ES	
200.00	200.00	203.00	203.00	0.49	0.51	147.67	-22.05	-148.37	150.53	149.53	1.00	150.773		
300.00	299.92	298.04	298.02	0.85	0.84	148.10	-22.91	-149.81	155.41	153.72	1.69	91.801		
400.00	399.64	392.55	392.41	1.21	1.17	148.61	-25.36	-153.93	166.30	163.90	2.40	69.300		
500.00	499.05	485.90	485.42	1.59	1.51	149.12	-29.34	-160.62	183.13	180.02	3.11	58.846		
600.00	598.03	577.60	576.51	1.99	1.86	149.57	-34.75	-169.73	205.82	201.99	3.83	53.799		
700.00	696.44	667.23	665.16	2.41	2.21	149.92	-41.48	-181.05	234.21	229.68	4.54	51.613		
800.00	794.18	754.39	750.94	2.87	2.58	150.16	-49.38	-194.33	268.15	262.90	5.25	51.101	SF	
900.00	891.12	838.73	833.45	3.36	2.95	150.28	-58.30	-209.32	307.43	301.48	5.95	51.640		
1,000.00	987.14	919.97	912.41	3.89	3.34	150.30	-68.05	-225.72	351.82	345.17	6.65	52.868		
1,100.00	1,082.13	997.86	987.58	4.48	3.72	150.22	-78.48	-243.25	401.10	393.75	7.35	54.588		
1,200.00	1,175.98	1,072.21	1,058.80	5.12	4.12	150.03	-89.40	-261.61	455.01	446.98	8.03	56.642		
1,300.00	1,268.56	1,148.96	1,131.81	5.82	4.55	149.82	-101.49	-281.94	513.03	504.26	8.77	58.508		
1,390.00	1,350.71	1,220.47	1,199.79	6.51	4.96	149.69	-112.84	-301.02	567.51	558.04	9.47	59.940		
1,400.00	1,359.78	1,228.33	1,207.26	6.59	5.01	149.76	-114.08	-303.12	573.67	564.12	9.55	60.062		
1,500.00	1,450.41	1,306.91	1,281.96	7.40	5.46	150.35	-126.55	-324.08	635.33	625.00	10.32	61.548		
1,600.00	1,541.04	1,385.49	1,356.66	8.22	5.93	150.83	-139.02	-345.05	697.02	685.91	11.10	62.772		
1,700.00	1,631.67	1,464.07	1,431.35	9.06	6.39	151.23	-151.49	-366.01	758.73	746.84	11.89	63.794		
1,800.00	1,722.30	1,542.65	1,506.05	9.90	6.86	151.58	-163.96	-386.98	820.47	807.78	12.69	64.656		
1,900.00	1,812.93	1,621.23	1,580.75	10.75	7.34	151.87	-176.43	-407.95	882.22	868.73	13.49	65.391		
2,000.00	1,903.56	1,700.19	1,655.45	11.60	7.81	152.13	-188.90	-428.91	943.98	929.68	14.30	66.016		
2,100.00	1,994.19	1,778.39	1,730.15	12.46	8.29	152.36	-201.37	-449.88	1,005.76	990.65	15.11	66.572		
2,200.00	2,084.82	1,856.97	1,804.84	13.32	8.77	152.56	-213.84	-470.84	1,067.54	1,051.62	15.92	67.052		
2,300.00	2,175.45	1,935.55	1,879.54	14.18	9.25	152.73	-226.31	-491.81	1,129.33	1,112.59	16.74	67.474		
2,400.00	2,266.08	2,014.13	1,954.24	15.04	9.73	152.89	-238.78	-512.77	1,191.13	1,173.57	17.56	67.848		
2,500.00	2,356.71	2,107.29	2,028.94	15.91	10.30	153.04	-251.25	-533.74	1,252.93	1,234.48	18.45	67.921		
2,600.00	2,447.34	2,171.29	2,103.64	16.78	10.69	153.17	-263.72	-554.71	1,314.73	1,295.53	19.20	68.478		
2,700.00	2,537.98	2,249.87	2,178.33	17.64	11.17	153.29	-276.19	-575.67	1,376.54	1,356.52	20.02	68.746		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3D-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	3.00	3.00	0.00	0.00	-98.45	-20.58	-138.48	140.00					
100.00	100.00	103.00	103.00	0.14	0.15	-98.45	-20.58	-138.48	140.00	139.71	0.29	488.181		
140.00	140.00	143.00	143.00	0.28	0.29	-98.45	-20.58	-138.48	140.00	139.43	0.57	244.091	CC, ES	
200.00	200.00	203.00	203.00	0.49	0.51	147.68	-20.58	-138.48	140.53	139.53	1.00	140.756		
300.00	299.92	302.92	302.92	0.85	0.87	148.46	-20.58	-138.48	143.79	142.08	1.71	84.023		
400.00	399.64	402.64	402.64	1.21	1.22	149.86	-20.58	-138.48	150.08	147.65	2.43	61.650		
500.00	499.05	497.34	497.33	1.59	1.55	151.31	-21.52	-139.84	161.02	157.88	3.14	51.256		
600.00	598.03	591.07	590.93	1.99	1.87	152.48	-24.20	-143.72	177.91	174.07	3.84	46.275		
700.00	696.44	683.23	682.77	2.41	2.20	153.33	-28.53	-149.99	200.63	196.08	4.55	44.090		
800.00	794.18	773.41	772.35	2.87	2.53	153.86	-34.39	-158.48	229.00	223.75	5.26	43.565	SF	
900.00	891.12	861.21	859.22	3.36	2.87	154.13	-41.63	-168.96	262.85	256.89	5.96	44.093		
1,000.00	987.14	946.29	942.98	3.89	3.21	154.20	-50.08	-181.21	301.97	295.30	6.66	45.315		
1,100.00	1,082.13	1,028.35	1,023.33	4.48	3.55	154.11	-59.57	-194.96	346.14	338.77	7.36	47.010		
1,200.00	1,175.98	1,107.16	1,100.00	5.12	3.91	153.89	-69.92	-209.94	395.13	387.07	8.06	49.041		
1,300.00	1,268.56	1,182.51	1,172.81	5.82	4.26	153.56	-80.92	-225.88	448.71	439.97	8.75	51.304		
1,390.00	1,350.71	1,248.06	1,235.73	6.51	4.59	153.20	-91.37	-241.02	500.65	491.28	9.37	53.423		
1,400.00	1,359.78	1,256.10	1,243.43	6.59	4.63	153.22	-92.70	-242.93	506.59	497.14	9.45	53.586		
1,500.00	1,450.41	1,336.48	1,320.36	7.40	5.05	153.46	-105.92	-262.09	566.06	555.85	10.22	55.409		
1,600.00	1,541.04	1,416.86	1,397.29	8.22	5.48	153.65	-119.14	-281.24	625.53	614.54	10.99	56.911		
1,700.00	1,631.67	1,502.77	1,474.23	9.06	5.94	153.80	-132.36	-300.39	685.01	673.21	11.80	58.038		
1,800.00	1,722.30	1,577.61	1,551.16	9.90	6.35	153.93	-145.59	-319.54	744.49	731.92	12.57	59.213		
1,900.00	1,812.93	1,657.99	1,628.10	10.75	6.79	154.05	-158.81	-338.69	803.97	790.60	13.38	60.107		
2,000.00	1,903.56	1,738.36	1,705.03	11.60	7.24	154.14	-172.03	-357.84	863.46	849.27	14.18	60.875		
2,100.00	1,994.19	1,818.74	1,781.97	12.46	7.69	154.23	-185.25	-377.00	922.94	907.94	15.00	61.539		
2,200.00	2,084.82	1,900.88	1,858.90	13.32	8.15	154.30	-198.47	-396.15	982.43	966.60	15.82	62.085		
2,300.00	2,175.45	1,979.49	1,935.83	14.18	8.60	154.37	-211.70	-415.30	1,041.91	1,025.27	16.64	62.624		
2,400.00	2,266.08	2,059.87	2,012.77	15.04	9.06	154.43	-224.92	-434.45	1,101.40	1,083.94	17.46	63.072		
2,500.00	2,356.71	2,140.25	2,089.70	15.91	9.52	154.48	-238.14	-453.60	1,160.89	1,142.60	18.29	63.471		
2,600.00	2,447.34	2,220.63	2,166.64	16.78	9.98	154.53	-251.36	-472.75	1,220.38	1,201.26	19.12	63.826		
2,700.00	2,537.98	2,301.00	2,243.57	17.64	10.44	154.57	-264.59	-491.91	1,279.86	1,259.91	19.95	64.145		
2,800.00	2,628.61	2,381.38	2,320.50	18.51	10.90	154.61	-277.81	-511.06	1,339.35	1,318.57	20.79	64.433		
2,890.00	2,710.17	2,453.72	2,389.75	19.30	11.31	154.64	-289.71	-528.29	1,392.90	1,371.36	21.54	64.668		
2,900.00	2,719.24	2,461.75	2,397.43	19.38	11.36	155.18	-291.03	-530.21	1,398.85	1,377.23	21.62	64.693		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3E-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	2.00	2.00	0.00	0.00	-98.45	-19.11	-128.59	130.00				
100.00	100.00	102.00	102.00	0.14	0.15	-98.45	-19.11	-128.59	130.00	129.72	0.28	459.049	
140.00	140.00	142.00	142.00	0.28	0.29	-98.45	-19.11	-128.59	130.00	129.43	0.57	228.081	CC, ES
200.00	200.00	202.00	202.00	0.49	0.50	147.69	-19.11	-128.59	130.53	129.54	0.99	131.212	
300.00	299.92	301.92	301.92	0.85	0.86	148.53	-19.11	-128.59	133.79	132.08	1.71	78.344	
400.00	399.64	401.64	401.64	1.21	1.22	150.03	-19.11	-128.59	140.09	137.66	2.43	57.631	
500.00	499.05	501.05	501.05	1.59	1.58	152.01	-19.11	-128.59	149.55	146.39	3.16	47.342	
600.00	598.03	600.03	600.03	1.99	1.93	154.26	-19.11	-128.59	162.31	158.41	3.89	41.711	
700.00	696.44	694.01	693.99	2.41	2.25	156.15	-20.11	-129.76	179.67	175.07	4.60	39.042	
800.00	794.18	786.58	786.44	2.87	2.57	157.41	-23.04	-133.22	202.75	197.44	5.30	38.236	SF
900.00	891.12	877.31	876.88	3.36	2.88	158.13	-27.79	-138.81	231.30	225.30	6.00	38.529	
1,000.00	987.14	965.84	964.85	3.89	3.20	158.43	-34.21	-146.37	265.13	258.43	6.70	39.548	
1,100.00	1,082.13	1,051.82	1,049.95	4.48	3.52	158.42	-42.12	-155.69	304.05	296.64	7.40	41.062	
1,200.00	1,175.98	1,134.95	1,131.85	5.12	3.84	158.19	-51.34	-166.55	347.84	339.74	8.10	42.922	
1,300.00	1,268.56	1,214.99	1,210.28	5.82	4.16	157.80	-61.67	-178.71	396.31	387.51	8.80	45.026	
1,390.00	1,350.71	1,284.21	1,277.73	6.51	4.46	157.36	-71.74	-190.58	443.77	434.34	9.43	47.070	
1,400.00	1,359.78	1,291.74	1,285.04	6.59	4.49	157.35	-72.90	-191.94	449.24	439.74	9.50	47.278	
1,500.00	1,450.41	1,369.01	1,359.84	7.40	4.84	157.21	-85.43	-206.70	504.77	494.57	10.21	49.452	
1,600.00	1,541.04	1,451.92	1,439.99	8.22	5.22	157.05	-99.18	-222.90	560.66	549.68	10.98	51.073	
1,700.00	1,631.67	1,534.84	1,520.14	9.06	5.62	156.92	-112.93	-239.09	616.55	604.79	11.76	52.424	
1,800.00	1,722.30	1,617.76	1,600.28	9.90	6.02	156.81	-126.68	-255.28	672.44	659.89	12.55	53.561	
1,900.00	1,812.93	1,700.67	1,680.43	10.75	6.43	156.72	-140.43	-271.48	728.33	714.98	13.36	54.526	
2,000.00	1,903.56	1,783.59	1,760.58	11.60	6.84	156.64	-154.18	-287.67	784.23	770.06	14.17	55.350	
2,100.00	1,994.19	1,866.50	1,840.73	12.46	7.25	156.57	-167.93	-303.86	840.12	825.14	14.99	56.062	
2,200.00	2,084.82	1,949.42	1,920.88	13.32	7.67	156.51	-181.67	-320.06	896.02	880.21	15.81	56.682	
2,300.00	2,175.45	2,032.34	2,001.03	14.18	8.10	156.46	-195.42	-336.25	951.91	935.28	16.63	57.225	
2,400.00	2,266.08	2,115.25	2,081.18	15.04	8.52	156.41	-209.17	-352.44	1,007.81	990.35	17.47	57.704	
2,500.00	2,356.71	2,201.83	2,161.33	15.91	8.97	156.37	-222.92	-368.64	1,063.71	1,045.39	18.32	58.075	
2,600.00	2,447.34	2,281.09	2,241.48	16.78	9.38	156.33	-236.67	-384.83	1,119.61	1,100.47	19.14	58.506	
2,700.00	2,537.98	2,364.00	2,321.62	17.64	9.81	156.29	-250.42	-401.02	1,175.50	1,155.53	19.98	58.844	
2,800.00	2,628.61	2,446.92	2,401.77	18.51	10.24	156.26	-264.17	-417.22	1,231.40	1,210.58	20.82	59.149	
2,890.00	2,710.17	2,521.54	2,473.91	19.30	10.63	156.24	-276.54	-431.79	1,281.71	1,260.13	21.58	59.398	
2,900.00	2,719.24	2,529.83	2,481.92	19.38	10.67	156.76	-277.92	-433.41	1,287.31	1,265.65	21.66	59.424	
2,994.40	2,804.62	2,607.47	2,556.97	20.22	11.08	161.64	-290.79	-448.57	1,340.95	1,318.50	22.45	59.724	
3,000.00	2,809.68	2,612.05	2,561.39	20.27	11.10	161.63	-291.55	-449.47	1,344.18	1,321.68	22.50	59.739	
3,100.00	2,899.96	2,693.74	2,640.36	21.16	11.53	161.46	-305.09	-465.42	1,401.76	1,378.43	23.33	60.093	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3F-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	2.00	2.00	0.00	0.00	-98.45	-17.64	-118.70	120.00				
100.00	100.00	102.00	102.00	0.14	0.15	-98.45	-17.64	-118.70	120.00	119.72	0.28	423.739	
140.00	140.00	142.00	142.00	0.28	0.29	-98.45	-17.64	-118.70	120.00	119.43	0.57	210.537 CC, ES	
200.00	200.00	202.00	202.00	0.49	0.50	147.70	-17.64	-118.70	120.53	119.54	0.99	121.160	
300.00	299.92	301.92	301.92	0.85	0.86	148.62	-17.64	-118.70	123.79	122.08	1.71	72.489	
400.00	399.64	401.64	401.64	1.21	1.22	150.23	-17.64	-118.70	130.10	127.67	2.43	53.521	
500.00	499.05	501.05	501.05	1.59	1.58	152.34	-17.64	-118.70	139.59	136.43	3.16	44.188	
600.00	598.03	600.03	600.03	1.99	1.93	154.72	-17.64	-118.70	152.39	148.49	3.89	39.165	
700.00	696.44	701.56	698.44	2.41	2.29	157.16	-17.64	-118.70	168.60	163.96	4.64	36.362	
800.00	794.18	796.18	796.18	2.87	2.63	159.51	-17.64	-118.70	188.30	182.94	5.36	35.119	
900.00	891.12	888.59	888.58	3.36	2.95	161.29	-18.53	-119.74	212.51	206.44	6.07	35.002 SF	
1,000.00	987.14	979.05	978.93	3.89	3.26	162.37	-21.26	-122.96	242.19	235.43	6.77	35.793	
1,100.00	1,082.13	1,067.34	1,066.96	4.48	3.56	162.88	-25.70	-128.20	277.09	269.63	7.46	37.153	
1,200.00	1,175.98	1,153.13	1,152.24	5.12	3.86	163.00	-31.70	-135.28	316.98	308.83	8.15	38.906	
1,300.00	1,268.56	1,236.10	1,234.42	5.82	4.16	162.83	-39.06	-143.97	361.66	352.83	8.83	40.942	
1,390.00	1,350.71	1,308.17	1,305.51	6.51	4.43	162.50	-46.71	-152.98	405.81	396.36	9.45	42.951	
1,400.00	1,359.78	1,316.02	1,313.24	6.59	4.46	162.49	-47.61	-154.05	410.93	401.40	9.52	43.155	
1,500.00	1,450.41	1,393.62	1,389.38	7.40	4.76	162.29	-57.27	-165.44	462.92	452.73	10.19	45.438	
1,600.00	1,541.04	1,469.44	1,463.36	8.22	5.07	161.93	-67.99	-178.08	516.43	505.58	10.86	47.572	
1,700.00	1,631.67	1,544.44	1,536.09	9.06	5.39	161.46	-79.83	-192.05	571.43	559.89	11.53	49.546	
1,800.00	1,722.30	1,627.44	1,616.37	9.90	5.76	160.95	-93.47	-208.14	627.03	614.73	12.30	50.984	
1,900.00	1,812.93	1,710.44	1,696.64	10.75	6.14	160.53	-107.11	-224.22	682.67	669.59	13.08	52.209	
2,000.00	1,903.56	1,793.43	1,776.91	11.60	6.53	160.17	-120.75	-240.31	738.33	724.46	13.86	53.256	
2,100.00	1,994.19	1,876.43	1,857.19	12.46	6.93	159.86	-134.39	-256.40	794.00	779.34	14.66	54.157	
2,200.00	2,084.82	1,959.43	1,937.46	13.32	7.33	159.59	-148.03	-272.48	849.69	834.22	15.47	54.941	
2,300.00	2,175.45	2,042.43	2,017.73	14.18	7.73	159.36	-161.67	-288.57	905.39	889.11	16.28	55.627	
2,400.00	2,266.08	2,125.42	2,098.00	15.04	8.14	159.15	-175.31	-304.66	961.10	944.00	17.09	56.230	
2,500.00	2,356.71	2,208.42	2,178.28	15.91	8.56	158.96	-188.95	-320.74	1,016.81	998.90	17.91	56.764	
2,600.00	2,447.34	2,308.58	2,258.55	16.78	9.06	158.80	-202.59	-336.83	1,072.54	1,053.72	18.82	57.003	
2,700.00	2,537.98	2,374.42	2,338.82	17.64	9.39	158.65	-216.23	-352.92	1,128.27	1,108.70	19.57	57.662	
2,800.00	2,628.61	2,457.41	2,419.10	18.51	9.81	158.51	-229.87	-369.01	1,184.00	1,163.60	20.40	58.043	
2,890.00	2,710.17	2,532.11	2,491.34	19.30	10.19	158.40	-242.14	-383.48	1,234.16	1,213.01	21.15	58.354	
2,900.00	2,719.24	2,540.40	2,499.36	19.38	10.23	158.92	-243.51	-385.09	1,239.75	1,218.51	21.23	58.386	
2,994.40	2,804.62	2,618.13	2,574.54	20.22	10.63	163.73	-256.28	-400.16	1,293.19	1,271.18	22.02	58.741	
3,000.00	2,809.68	2,622.71	2,578.97	20.27	10.66	163.72	-257.03	-401.04	1,296.41	1,274.34	22.06	58.759	
3,100.00	2,899.96	2,704.49	2,658.06	21.16	11.08	163.46	-270.47	-416.90	1,353.75	1,330.87	22.88	59.162	
3,200.00	2,990.24	2,786.26	2,737.15	22.05	11.50	163.22	-283.91	-432.75	1,411.12	1,387.41	23.70	59.533	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3G-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: O-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	2.00	2.00	0.00	0.00	-98.45	-16.17	-108.81	110.00					
100.00	100.00	102.00	102.00	0.14	0.15	-98.45	-16.17	-108.81	110.00	109.72	0.28	388.428		
140.00	140.00	142.00	142.00	0.28	0.29	-98.45	-16.17	-108.81	110.00	109.43	0.57	192.993	CC, ES	
200.00	200.00	202.00	202.00	0.49	0.50	147.72	-16.17	-108.81	110.53	109.54	0.99	111.108		
300.00	299.92	301.92	301.92	0.85	0.86	148.71	-16.17	-108.81	113.79	112.09	1.71	66.635		
400.00	399.64	401.64	401.64	1.21	1.22	150.46	-16.17	-108.81	120.12	117.68	2.43	49.413		
500.00	499.05	501.05	501.05	1.59	1.58	152.73	-16.17	-108.81	129.63	126.47	3.16	41.037		
600.00	598.03	600.03	600.03	1.99	1.93	155.24	-16.17	-108.81	142.48	138.59	3.89	36.621		
700.00	696.44	701.56	698.44	2.41	2.29	157.79	-16.17	-108.81	158.76	154.13	4.64	34.246		
800.00	794.18	803.82	796.18	2.87	2.66	160.21	-16.17	-108.81	178.55	173.16	5.39	33.140		
900.00	891.12	906.88	893.12	3.36	3.03	162.42	-16.17	-108.81	201.86	195.72	6.15	32.845	SF	
1,000.00	987.14	989.14	989.14	3.89	3.33	164.38	-16.17	-108.81	228.69	221.86	6.83	33.469		
1,100.00	1,082.13	1,081.69	1,081.67	4.48	3.64	165.78	-17.18	-109.39	259.38	251.84	7.55	34.374		
1,200.00	1,175.98	1,172.43	1,172.32	5.12	3.95	166.42	-20.66	-111.40	294.38	286.13	8.25	35.695		
1,300.00	1,268.56	1,261.36	1,261.00	5.82	4.24	166.52	-26.49	-114.76	333.49	324.54	8.95	37.260		
1,390.00	1,350.71	1,339.62	1,338.83	6.51	4.51	166.27	-33.58	-118.86	372.09	362.50	9.59	38.807		
1,400.00	1,359.78	1,348.21	1,347.36	6.59	4.54	166.25	-34.47	-119.37	376.55	366.89	9.66	38.963		
1,500.00	1,450.41	1,433.61	1,431.96	7.40	4.84	165.87	-44.53	-125.18	421.72	411.35	10.37	40.672		
1,600.00	1,541.04	1,517.99	1,515.17	8.22	5.15	165.24	-56.61	-132.16	467.76	456.68	11.09	42.195		
1,700.00	1,631.67	1,601.22	1,596.82	9.06	5.46	164.44	-70.60	-140.23	514.73	502.91	11.82	43.565		
1,800.00	1,722.30	1,674.80	1,668.66	9.90	5.75	163.69	-83.93	-148.85	563.33	550.84	12.49	45.114		
1,900.00	1,812.93	1,746.36	1,738.27	10.75	6.04	163.02	-97.04	-159.01	614.15	601.00	13.15	46.718		
2,000.00	1,903.56	1,826.66	1,816.13	11.60	6.39	162.33	-111.85	-171.92	666.61	652.71	13.90	47.971		
2,100.00	1,994.19	1,911.44	1,898.32	12.46	6.75	161.70	-127.50	-185.63	719.23	704.53	14.70	48.926		
2,200.00	2,084.82	2,003.77	1,980.52	13.32	7.17	161.16	-143.15	-199.35	771.91	756.36	15.55	49.648		
2,300.00	2,175.45	2,081.02	2,062.71	14.18	7.52	160.69	-158.80	-213.06	824.63	808.29	16.34	50.468		
2,400.00	2,266.08	2,165.81	2,144.91	15.04	7.91	160.27	-174.45	-226.77	877.39	860.22	17.17	51.095		
2,500.00	2,356.71	2,250.59	2,227.10	15.91	8.30	159.90	-190.10	-240.49	930.18	912.17	18.01	51.647		
2,600.00	2,447.34	2,335.38	2,309.29	16.78	8.70	159.57	-205.75	-254.20	982.99	964.14	18.85	52.136		
2,700.00	2,537.98	2,420.17	2,391.49	17.64	9.11	159.27	-221.40	-267.91	1,035.82	1,016.12	19.70	52.571		
2,800.00	2,628.61	2,504.96	2,473.68	18.51	9.52	159.01	-237.05	-281.63	1,088.68	1,068.12	20.56	52.960		
2,890.00	2,710.17	2,581.27	2,547.66	19.30	9.89	158.79	-251.14	-293.97	1,136.26	1,114.93	21.33	53.275		
2,900.00	2,719.24	2,589.74	2,555.87	19.38	9.93	159.29	-252.70	-295.34	1,141.55	1,120.14	21.41	53.308		
2,994.40	2,804.62	2,669.15	2,632.86	20.22	10.31	163.91	-267.36	-308.19	1,192.31	1,170.09	22.22	53.661		
3,000.00	2,809.68	2,673.84	2,637.40	20.27	10.34	163.89	-268.23	-308.94	1,195.36	1,173.10	22.27	53.680		
3,100.00	2,899.96	2,757.40	2,718.41	21.16	10.75	163.53	-283.65	-322.46	1,249.89	1,226.78	23.11	54.076		
3,200.00	2,990.24	2,840.97	2,799.42	22.05	11.16	163.19	-299.08	-335.98	1,304.45	1,280.49	23.96	54.439		
3,300.00	3,080.52	2,924.54	2,880.44	22.94	11.57	162.88	-314.50	-349.49	1,359.05	1,334.23	24.81	54.774		
3,400.00	3,170.81	3,008.11	2,961.45	23.84	11.99	162.60	-329.93	-363.01	1,413.66	1,388.00	25.66	55.083		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3H-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	2.00	2.00	0.00	0.00	-98.45	-14.70	-98.91	100.00				
100.00	100.00	102.00	102.00	0.14	0.15	-98.45	-14.70	-98.91	100.00	99.72	0.28	353.117	
140.00	140.00	142.00	142.00	0.28	0.29	-98.45	-14.70	-98.91	100.00	99.43	0.57	175.448 CC, ES	
200.00	200.00	202.00	202.00	0.49	0.50	147.73	-14.70	-98.91	100.53	99.54	0.99	101.056	
300.00	299.92	301.92	301.92	0.85	0.86	148.83	-14.70	-98.91	103.80	102.09	1.71	60.780	
400.00	399.64	401.64	401.64	1.21	1.22	150.74	-14.70	-98.91	110.13	107.70	2.43	45.305	
500.00	499.05	501.05	501.05	1.59	1.58	153.18	-14.70	-98.91	119.68	116.52	3.16	37.887	
600.00	598.03	600.03	600.03	1.99	1.93	155.85	-14.70	-98.91	132.58	128.69	3.89	34.080	
700.00	696.44	701.56	698.44	2.41	2.29	158.51	-14.70	-98.91	148.94	144.31	4.64	32.135	
800.00	794.18	803.82	796.18	2.87	2.66	161.00	-14.70	-98.91	168.83	163.44	5.39	31.345	
900.00	891.12	906.88	893.12	3.36	3.03	163.24	-14.70	-98.91	192.24	186.10	6.14	31.293 SF	
1,000.00	987.14	989.14	989.14	3.89	3.33	165.19	-14.70	-98.91	219.17	212.34	6.83	32.092	
1,100.00	1,082.13	1,084.13	1,084.13	4.48	3.67	166.88	-14.70	-98.91	249.57	242.01	7.56	32.993	
1,200.00	1,175.98	1,177.98	1,177.98	5.12	4.00	168.31	-14.70	-98.91	283.39	275.09	8.30	34.149	
1,300.00	1,268.56	1,268.80	1,268.80	5.82	4.32	169.35	-15.43	-99.29	320.76	311.75	9.01	35.592	
1,390.00	1,350.71	1,348.69	1,348.62	6.51	4.58	169.76	-18.12	-100.69	357.70	348.06	9.64	37.093	
1,400.00	1,359.78	1,357.48	1,357.40	6.59	4.61	169.79	-18.54	-100.91	361.98	352.26	9.72	37.249	
1,500.00	1,450.41	1,445.14	1,444.84	7.40	4.90	169.88	-24.00	-103.75	405.09	394.69	10.41	38.929	
1,600.00	1,541.04	1,532.19	1,531.45	8.22	5.20	169.58	-31.77	-107.79	448.81	437.71	11.10	40.418	
1,700.00	1,631.67	1,618.48	1,617.00	9.06	5.49	169.01	-41.77	-112.99	493.16	481.35	11.81	41.744	
1,800.00	1,722.30	1,703.87	1,701.27	9.90	5.80	168.24	-53.91	-119.30	538.19	525.66	12.53	42.936	
1,900.00	1,812.93	1,788.21	1,784.09	10.75	6.11	167.32	-68.09	-126.67	583.98	570.71	13.27	44.005	
2,000.00	1,903.56	1,875.05	1,868.98	11.60	6.44	166.32	-84.32	-135.10	630.39	616.34	14.05	44.877	
2,100.00	1,994.19	1,963.09	1,955.02	12.46	6.79	165.44	-100.85	-143.70	676.96	662.12	14.85	45.590	
2,200.00	2,084.82	2,051.13	2,041.07	13.32	7.14	164.67	-117.38	-152.29	723.65	707.99	15.66	46.199	
2,300.00	2,175.45	2,139.17	2,127.11	14.18	7.50	163.99	-133.91	-160.88	770.43	753.94	16.49	46.721	
2,400.00	2,266.08	2,227.20	2,213.16	15.04	7.87	163.39	-150.44	-169.47	817.28	799.95	17.33	47.172	
2,500.00	2,356.71	2,315.24	2,299.20	15.91	8.25	162.85	-166.97	-178.07	864.19	846.02	18.17	47.562	
2,600.00	2,447.34	2,403.28	2,385.24	16.78	8.62	162.37	-183.50	-186.66	911.16	892.14	19.02	47.902	
2,700.00	2,537.98	2,508.68	2,471.29	17.64	9.08	161.94	-200.03	-195.25	958.17	938.22	19.95	48.019	
2,800.00	2,628.61	2,579.35	2,557.33	18.51	9.39	161.55	-216.57	-203.84	1,005.22	984.48	20.74	48.460	
2,890.00	2,710.17	2,658.59	2,634.77	19.30	9.74	161.22	-231.44	-211.58	1,047.60	1,026.07	21.52	48.669	
2,900.00	2,719.24	2,667.39	2,643.37	19.38	9.78	161.70	-233.10	-212.44	1,052.32	1,030.70	21.61	48.691	
2,994.40	2,804.62	2,749.93	2,724.04	20.22	10.15	166.09	-248.59	-220.49	1,097.61	1,075.18	22.43	48.934	
3,000.00	2,809.68	2,754.80	2,728.80	20.27	10.17	166.07	-249.51	-220.97	1,100.34	1,077.86	22.48	48.947	
3,100.00	2,899.96	2,841.74	2,813.77	21.16	10.56	165.59	-265.83	-229.45	1,149.08	1,125.74	23.34	49.226	
3,200.00	2,990.24	2,928.67	2,898.73	22.05	10.95	165.16	-282.16	-237.94	1,197.88	1,173.67	24.21	49.480	
3,300.00	3,080.52	3,015.60	2,983.70	22.94	11.34	164.75	-298.48	-246.42	1,246.73	1,221.65	25.08	49.713	
3,400.00	3,170.81	3,102.54	3,068.66	23.84	11.74	164.38	-314.80	-254.91	1,295.62	1,269.67	25.95	49.927	
3,500.00	3,261.09	3,189.47	3,153.63	24.73	12.13	164.04	-331.13	-263.39	1,344.55	1,317.73	26.83	50.123	
3,600.00	3,351.37	3,276.40	3,238.59	25.62	12.53	163.72	-347.45	-271.88	1,393.52	1,365.82	27.70	50.304	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3I-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	2.00	2.00	0.00	0.00	-98.45	-13.23	-89.02	90.00				
100.00	100.00	102.00	102.00	0.14	0.15	-98.45	-13.23	-89.02	90.00	89.72	0.28	317.806	
140.00	140.00	142.00	142.00	0.28	0.29	-98.45	-13.23	-89.02	90.00	89.43	0.57	157.904 CC, ES	
200.00	200.00	202.00	202.00	0.49	0.50	147.75	-13.23	-89.02	90.53	89.54	0.99	91.004	
300.00	299.92	301.92	301.92	0.85	0.86	148.97	-13.23	-89.02	93.80	92.09	1.71	54.926	
400.00	399.64	400.37	400.35	1.21	1.20	150.10	-14.92	-89.50	100.79	98.37	2.41	41.756	
500.00	499.05	498.41	498.25	1.59	1.54	150.26	-19.84	-90.88	112.06	108.94	3.12	35.891	
600.00	598.03	595.71	595.18	1.99	1.88	149.68	-27.91	-93.15	127.56	123.72	3.85	33.144	
700.00	696.44	691.99	690.77	2.41	2.24	148.64	-39.01	-96.27	147.28	142.68	4.59	32.058	
800.00	794.18	787.05	784.71	2.87	2.61	147.36	-52.99	-100.20	171.18	165.82	5.36	31.940 SF	
900.00	891.12	883.20	879.49	3.36	3.00	146.42	-68.56	-104.58	198.56	192.41	6.16	32.253	
1,000.00	987.14	978.53	973.46	3.89	3.39	146.10	-84.00	-108.92	228.74	221.77	6.97	32.812	
1,100.00	1,082.13	1,072.93	1,066.51	4.48	3.79	146.19	-99.29	-113.22	261.67	253.87	7.80	33.541	
1,200.00	1,175.98	1,166.28	1,158.53	5.12	4.18	146.53	-114.41	-117.47	297.36	288.71	8.65	34.386	
1,300.00	1,268.56	1,258.46	1,249.39	5.82	4.58	147.02	-129.34	-121.67	335.81	326.31	9.51	35.326	
1,390.00	1,350.71	1,340.33	1,330.10	6.51	4.93	147.54	-142.60	-125.39	372.79	362.50	10.29	36.234	
1,400.00	1,359.78	1,349.37	1,339.01	6.59	4.97	147.65	-144.07	-125.81	377.02	366.64	10.38	36.324	
1,500.00	1,450.41	1,439.73	1,428.08	7.40	5.35	148.61	-158.70	-129.92	419.42	408.18	11.25	37.298	
1,600.00	1,541.04	1,530.10	1,517.16	8.22	5.74	149.39	-173.34	-134.04	461.90	449.78	12.12	38.122	
1,700.00	1,631.67	1,620.46	1,606.24	9.06	6.13	150.05	-187.98	-138.15	504.43	491.44	12.99	38.828	
1,800.00	1,722.30	1,710.83	1,695.31	9.90	6.53	150.60	-202.61	-142.27	547.01	533.14	13.87	39.438	
1,900.00	1,812.93	1,801.19	1,784.39	10.75	6.92	151.07	-217.25	-146.38	589.63	574.88	14.75	39.971	
2,000.00	1,903.56	1,908.44	1,873.47	11.60	7.38	151.48	-231.89	-150.50	632.28	616.57	15.71	40.252	
2,100.00	1,994.19	1,981.92	1,962.54	12.46	7.70	151.84	-246.52	-154.61	674.94	658.42	16.52	40.855	
2,200.00	2,084.82	2,072.28	2,051.62	13.32	8.10	152.15	-261.16	-158.72	717.63	700.22	17.41	41.225	
2,300.00	2,175.45	2,162.65	2,140.70	14.18	8.49	152.43	-275.80	-162.84	760.33	742.04	18.30	41.557	
2,400.00	2,266.08	2,253.01	2,229.77	15.04	8.89	152.68	-290.43	-166.95	803.05	783.86	19.19	41.857	
2,500.00	2,356.71	2,343.38	2,318.85	15.91	9.28	152.91	-305.07	-171.07	845.78	825.70	20.08	42.129	
2,600.00	2,447.34	2,433.74	2,407.93	16.78	9.68	153.11	-319.70	-175.18	888.51	867.55	20.97	42.376	
2,700.00	2,537.98	2,524.11	2,497.00	17.64	10.07	153.29	-334.34	-179.30	931.26	909.40	21.86	42.602	
2,800.00	2,628.61	2,614.47	2,586.08	18.51	10.47	153.46	-348.98	-183.41	974.01	951.26	22.75	42.809	
2,890.00	2,710.17	2,695.80	2,666.25	19.30	10.82	153.60	-362.15	-187.12	1,012.50	988.94	23.56	42.982	
2,900.00	2,719.24	2,704.84	2,675.15	19.38	10.86	154.11	-363.61	-187.53	1,016.78	993.14	23.65	43.000	
2,994.40	2,804.62	2,789.67	2,758.78	20.22	11.23	158.79	-377.35	-191.39	1,058.17	1,033.68	24.49	43.217	
3,000.00	2,809.68	2,794.68	2,763.72	20.27	11.25	158.79	-378.16	-191.62	1,060.67	1,036.14	24.54	43.229	
3,100.00	2,899.96	2,884.12	2,851.88	21.16	11.65	158.76	-392.65	-195.69	1,105.40	1,079.98	25.42	43.489	
3,200.00	2,990.24	2,973.56	2,940.05	22.05	12.04	158.72	-407.14	-199.77	1,150.12	1,123.82	26.30	43.729	
3,300.00	3,080.52	3,063.00	3,028.21	22.94	12.43	158.69	-421.62	-203.84	1,194.84	1,167.66	27.18	43.953	
3,400.00	3,170.81	3,152.44	3,116.38	23.84	12.82	158.67	-436.11	-207.91	1,239.56	1,211.50	28.07	44.162	
3,500.00	3,261.09	3,241.88	3,204.54	24.73	13.21	158.64	-450.60	-211.98	1,284.29	1,255.33	28.95	44.357	
3,600.00	3,351.37	3,331.32	3,292.71	25.62	13.60	158.62	-465.08	-216.06	1,329.01	1,299.17	29.84	44.540	
3,700.00	3,441.66	3,420.76	3,380.87	26.52	14.00	158.60	-479.57	-220.13	1,373.74	1,343.01	30.72	44.711	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3J-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-11.76	-79.13	80.00					
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-11.76	-79.13	80.00	79.72	0.28	286.113		
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-11.76	-79.13	80.00	79.43	0.57	141.246	CC, ES	
200.00	200.00	201.00	201.00	0.49	0.50	147.78	-11.76	-79.13	80.53	79.54	0.99	81.255		
300.00	299.92	301.04	301.02	0.85	0.84	147.93	-13.51	-78.82	83.72	82.04	1.69	49.558		
400.00	399.64	400.92	400.76	1.21	1.19	146.99	-18.70	-77.91	89.77	87.37	2.40	37.399		
500.00	499.05	500.49	499.94	1.59	1.55	145.23	-27.27	-76.41	98.72	95.58	3.14	31.486		
600.00	598.03	599.60	598.30	1.99	1.93	142.99	-39.16	-74.33	110.67	106.77	3.90	28.399		
700.00	696.44	701.75	695.80	2.41	2.34	140.72	-53.96	-71.73	125.67	120.96	4.70	26.716		
800.00	794.18	803.37	792.96	2.87	2.75	139.59	-69.18	-69.06	143.46	137.93	5.53	25.923		
900.00	891.12	905.49	889.63	3.36	3.18	139.43	-84.32	-66.41	163.88	157.49	6.39	25.653	SF	
1,000.00	987.14	1,008.21	985.70	3.89	3.61	139.92	-99.37	-63.77	186.90	179.63	7.27	25.724		
1,100.00	1,082.13	1,088.35	1,081.06	4.48	3.95	140.82	-114.30	-61.15	212.58	204.51	8.07	26.353		
1,200.00	1,175.98	1,184.05	1,175.58	5.12	4.35	141.96	-129.11	-58.55	240.97	232.02	8.95	26.927		
1,300.00	1,268.56	1,278.80	1,269.15	5.82	4.75	143.20	-143.76	-55.99	272.16	262.32	9.84	27.652		
1,390.00	1,350.71	1,363.16	1,352.46	6.51	5.11	144.36	-156.81	-53.70	302.67	292.02	10.65	28.411		
1,400.00	1,359.78	1,372.48	1,361.66	6.59	5.15	144.53	-158.25	-53.44	306.19	295.45	10.75	28.491		
1,500.00	1,450.41	1,465.69	1,453.72	7.40	5.55	146.03	-172.67	-50.92	341.52	329.88	11.64	29.333		
1,600.00	1,541.04	1,558.90	1,545.78	8.22	5.95	147.26	-187.09	-48.39	377.01	364.47	12.54	30.063		
1,700.00	1,631.67	1,652.11	1,637.83	9.06	6.35	148.27	-201.51	-45.86	412.63	399.19	13.44	30.703		
1,800.00	1,722.30	1,745.33	1,729.89	9.90	6.74	149.12	-215.92	-43.33	448.35	434.01	14.34	31.267		
1,900.00	1,812.93	1,838.54	1,821.94	10.75	7.14	149.85	-230.34	-40.80	484.14	468.90	15.24	31.767		
2,000.00	1,903.56	1,931.75	1,914.00	11.60	7.54	150.48	-244.76	-38.28	519.98	503.84	16.14	32.213		
2,100.00	1,994.19	2,024.96	2,006.05	12.46	7.94	151.03	-259.18	-35.75	555.88	538.83	17.04	32.615		
2,200.00	2,084.82	2,118.18	2,098.11	13.32	8.34	151.51	-273.60	-33.22	591.81	573.87	17.95	32.976		
2,300.00	2,175.45	2,211.39	2,190.17	14.18	8.74	151.93	-288.02	-30.69	627.78	608.93	18.85	33.305		
2,400.00	2,266.08	2,304.60	2,282.22	15.04	9.14	152.31	-302.43	-28.16	663.77	644.02	19.75	33.603		
2,500.00	2,356.71	2,402.19	2,374.28	15.91	9.56	152.65	-316.85	-25.64	699.79	679.11	20.68	33.846		
2,600.00	2,447.34	2,508.98	2,466.33	16.78	10.02	152.96	-331.27	-23.11	735.82	714.19	21.64	34.006		
2,700.00	2,537.98	2,584.24	2,558.39	17.64	10.34	153.24	-345.69	-20.58	771.88	749.41	22.47	34.358		
2,800.00	2,628.61	2,677.45	2,650.44	18.51	10.74	153.49	-360.11	-18.05	807.94	784.57	23.37	34.571		
2,890.00	2,710.17	2,761.34	2,733.29	19.30	11.10	153.70	-373.08	-15.78	840.41	816.23	24.19	34.749		
2,900.00	2,719.24	2,770.66	2,742.50	19.38	11.14	154.21	-374.52	-15.52	844.03	819.76	24.28	34.768		
2,994.40	2,804.62	2,858.27	2,829.02	20.22	11.52	158.81	-388.07	-13.15	879.15	854.02	25.13	34.984		
3,000.00	2,809.68	2,863.45	2,834.13	20.27	11.54	158.81	-388.88	-13.01	881.28	856.10	25.18	34.997		
3,100.00	2,899.96	2,955.90	2,925.44	21.16	11.94	158.81	-403.18	-10.50	919.39	893.31	26.08	35.248		
3,200.00	2,990.24	3,048.35	3,016.75	22.05	12.34	158.82	-417.48	-7.99	957.50	930.51	26.99	35.481		
3,300.00	3,080.52	3,140.81	3,108.05	22.94	12.73	158.82	-431.78	-5.48	995.61	967.72	27.89	35.699		
3,400.00	3,170.81	3,233.26	3,199.36	23.84	13.13	158.82	-446.08	-2.98	1,033.72	1,004.93	28.79	35.902		
3,500.00	3,261.09	3,325.71	3,290.67	24.73	13.53	158.83	-460.38	-0.47	1,071.83	1,042.13	29.70	36.093		
3,600.00	3,351.37	3,418.17	3,381.97	25.62	13.93	158.83	-474.68	2.04	1,109.94	1,079.33	30.60	36.272		
3,700.00	3,441.66	3,510.62	3,473.28	26.52	14.32	158.83	-488.98	4.55	1,148.04	1,116.54	31.51	36.440		
3,800.00	3,531.94	3,603.08	3,564.59	27.42	14.72	158.83	-503.28	7.05	1,186.15	1,153.74	32.41	36.598		
3,900.00	3,622.22	3,704.47	3,665.89	28.31	15.16	158.84	-517.58	9.56	1,224.26	1,190.91	33.35	36.705		
4,000.00	3,712.50	3,787.98	3,747.20	29.21	15.52	158.84	-531.88	12.07	1,262.37	1,228.15	34.22	36.888		
4,100.00	3,802.79	3,880.44	3,838.51	30.11	15.91	158.84	-546.18	14.58	1,300.48	1,265.35	35.13	37.021		
4,200.00	3,893.07	3,972.89	3,929.81	31.00	16.31	158.84	-560.49	17.08	1,338.59	1,302.55	36.03	37.148		
4,300.00	3,983.35	4,065.35	4,021.12	31.90	16.71	158.85	-574.79	19.59	1,376.70	1,339.76	36.94	37.268		
4,400.00	4,073.63	4,157.80	4,112.43	32.80	17.11	158.85	-589.09	22.10	1,414.81	1,376.96	37.85	37.382		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3K-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-10.29	-69.24	70.00				
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-10.29	-69.24	70.00	69.72	0.28	250.349	
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-10.29	-69.24	70.00	69.43	0.57	123.590 CC, ES	
200.00	200.00	201.28	201.28	0.49	0.49	147.45	-10.72	-69.07	70.43	69.44	0.98	71.550	
300.00	299.92	301.77	301.70	0.85	0.85	146.33	-14.03	-67.78	72.89	71.21	1.69	43.237	
400.00	399.64	402.11	401.78	1.21	1.21	144.17	-20.62	-65.20	77.61	75.20	2.41	32.158	
500.00	499.05	502.18	501.30	1.59	1.58	141.32	-30.43	-61.37	84.72	81.55	3.17	26.760	
600.00	598.03	601.89	600.02	1.99	1.98	138.16	-43.42	-56.29	94.35	90.40	3.95	23.892	
700.00	696.44	701.10	697.83	2.41	2.39	135.33	-58.91	-50.24	106.60	101.84	4.77	22.362	
800.00	794.18	800.03	795.25	2.87	2.81	134.10	-74.57	-44.12	121.43	115.82	5.61	21.644	
900.00	891.12	901.53	892.31	3.36	3.25	134.12	-90.18	-38.02	138.68	132.19	6.49	21.373 SF	
1,000.00	987.14	1,003.53	988.89	3.89	3.69	134.96	-105.71	-31.95	158.34	150.95	7.39	21.427	
1,100.00	1,082.13	1,106.14	1,084.85	4.48	4.14	136.31	-121.14	-25.91	180.51	172.20	8.31	21.716	
1,200.00	1,175.98	1,209.49	1,180.10	5.12	4.59	137.93	-136.46	-19.93	205.32	196.06	9.25	22.186	
1,300.00	1,268.56	1,286.32	1,274.51	5.82	4.93	139.68	-151.64	-14.00	232.87	222.78	10.09	23.072	
1,390.00	1,350.71	1,371.72	1,358.66	6.51	5.30	141.26	-165.17	-8.71	260.11	249.18	10.93	23.801	
1,400.00	1,359.78	1,381.16	1,367.97	6.59	5.34	141.48	-166.67	-8.12	263.26	252.24	11.02	23.882	
1,500.00	1,450.41	1,475.58	1,461.02	7.40	5.76	143.36	-181.63	-2.27	295.01	283.06	11.94	24.697	
1,600.00	1,541.04	1,570.01	1,554.06	8.22	6.17	144.89	-196.60	3.57	326.98	314.12	12.87	25.414	
1,700.00	1,631.67	1,664.43	1,647.11	9.06	6.59	146.14	-211.56	9.42	359.13	345.35	13.79	26.049	
1,800.00	1,722.30	1,758.86	1,740.16	9.90	7.00	147.18	-226.52	15.27	391.41	376.70	14.71	26.612	
1,900.00	1,812.93	1,853.28	1,833.21	10.75	7.42	148.07	-241.48	21.12	423.79	408.16	15.63	27.115	
2,000.00	1,903.56	1,947.71	1,926.26	11.60	7.83	148.83	-256.45	26.97	456.24	439.69	16.55	27.567	
2,100.00	1,994.19	2,042.13	2,019.30	12.46	8.25	149.49	-271.41	32.81	488.76	471.29	17.47	27.975	
2,200.00	2,084.82	2,136.56	2,112.35	13.32	8.66	150.07	-286.37	38.66	521.33	502.94	18.39	28.344	
2,300.00	2,175.45	2,230.98	2,205.40	14.18	9.08	150.58	-301.34	44.51	553.94	534.63	19.31	28.680	
2,400.00	2,266.08	2,325.40	2,298.45	15.04	9.50	151.04	-316.30	50.36	586.59	566.35	20.24	28.987	
2,500.00	2,356.71	2,419.83	2,391.49	15.91	9.91	151.44	-331.26	56.20	619.26	598.10	21.16	29.268	
2,600.00	2,447.34	2,514.25	2,484.54	16.78	10.33	151.81	-346.22	62.05	651.96	629.88	22.08	29.526	
2,700.00	2,537.98	2,608.68	2,577.59	17.64	10.75	152.14	-361.19	67.90	684.69	661.68	23.00	29.765	
2,800.00	2,628.61	2,703.10	2,670.64	18.51	11.17	152.44	-376.15	73.75	717.43	693.50	23.93	29.986	
2,890.00	2,710.17	2,788.08	2,754.38	19.30	11.54	152.69	-389.61	79.01	746.91	722.15	24.76	30.171	
2,900.00	2,719.24	2,802.48	2,763.68	19.38	11.60	153.19	-391.11	79.60	750.19	725.32	24.87	30.164	
2,994.40	2,804.62	2,886.31	2,851.17	20.22	11.97	157.75	-405.18	85.09	782.21	756.49	25.72	30.410	
3,000.00	2,809.68	2,908.44	2,856.35	20.27	12.07	157.75	-406.01	85.42	784.17	758.32	25.85	30.337	
3,100.00	2,899.96	2,985.28	2,948.70	21.16	12.41	157.77	-420.86	91.22	819.03	792.33	26.70	30.676	
3,200.00	2,990.24	3,079.01	3,041.06	22.05	12.83	157.79	-435.72	97.03	853.90	826.27	27.63	30.910	
3,300.00	3,080.52	3,172.73	3,133.42	22.94	13.24	157.81	-450.57	102.83	888.76	860.21	28.55	31.129	
3,400.00	3,170.81	3,266.46	3,225.78	23.84	13.65	157.82	-465.42	108.64	923.63	894.15	29.48	31.334	
3,500.00	3,261.09	3,360.18	3,318.14	24.73	14.07	157.84	-480.27	114.44	958.50	928.09	30.40	31.526	
3,600.00	3,351.37	3,453.90	3,410.49	25.62	14.48	157.85	-495.12	120.25	993.36	962.03	31.33	31.706	
3,700.00	3,441.66	3,547.63	3,502.85	26.52	14.90	157.87	-509.97	126.05	1,028.23	995.97	32.26	31.875	
3,800.00	3,531.94	3,641.35	3,595.21	27.42	15.31	157.88	-524.83	131.86	1,063.09	1,029.91	33.19	32.034	
3,900.00	3,622.22	3,735.08	3,687.57	28.31	15.72	157.89	-539.68	137.66	1,097.96	1,063.84	34.11	32.185	
4,000.00	3,712.50	3,828.80	3,779.93	29.21	16.14	157.90	-554.53	143.46	1,132.82	1,097.78	35.04	32.327	
4,100.00	3,802.79	3,922.53	3,872.29	30.11	16.55	157.91	-569.38	149.27	1,167.69	1,131.72	35.97	32.462	
4,200.00	3,893.07	4,016.25	3,964.64	31.00	16.97	157.92	-584.23	155.07	1,202.56	1,165.66	36.90	32.590	
4,300.00	3,983.35	4,109.98	4,057.00	31.90	17.38	157.93	-599.09	160.88	1,237.42	1,199.59	37.83	32.711	
4,400.00	4,073.63	4,203.70	4,149.36	32.80	17.80	157.94	-613.94	166.68	1,272.29	1,233.53	38.76	32.826	
4,500.00	4,163.92	4,302.57	4,241.72	33.70	18.23	157.95	-628.79	172.49	1,307.15	1,267.44	39.71	32.917	
4,600.00	4,254.20	4,408.85	4,334.08	34.60	18.70	157.96	-643.64	178.29	1,342.02	1,301.33	40.70	32.977	
4,700.00	4,344.48	4,484.88	4,426.44	35.50	19.04	157.96	-658.49	184.10	1,376.89	1,335.34	41.55	33.140	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design												S4-T1N-R65W - RUEGGE 3K-4H-N165 - OH - PLAN #1		Offset Site Error:		0.00 usft	
Survey Program:												0-MWD+HDGM		Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis				Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
4,800.00	4,434.77	4,578.60	4,518.79	36.40	19.45	157.97	-673.34	189.90	1,411.75	1,369.27	42.48	33.235					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3L-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-8.82	-59.35	60.00	59.72	0.28	214.585	
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-8.82	-59.35	60.00	59.43	0.57	105.935 CC	
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-8.82	-59.35	60.00	59.29	0.99	61.118 ES	
200.00	200.00	201.59	201.59	0.49	0.50	147.50	-9.17	-59.04	60.28	59.89	1.69	36.438	
300.00	299.92	302.73	302.66	0.85	0.85	146.61	-11.87	-56.65	61.58	59.89	2.42	26.452	
400.00	399.64	403.84	403.50	1.21	1.22	144.79	-17.24	-51.90	63.96	61.54	3.17	21.307	
500.00	499.05	504.86	503.95	1.59	1.60	142.24	-25.26	-44.81	67.50	64.33	3.95	18.311	
600.00	598.03	605.77	603.85	1.99	2.00	139.17	-35.92	-35.38	72.31	68.36	4.78	16.437	
700.00	696.44	706.53	703.04	2.41	2.43	135.84	-49.19	-23.65	78.49	73.72	5.65	15.249	
800.00	794.18	806.74	801.06	2.87	2.88	132.63	-64.77	-9.87	86.22	80.56	6.57	14.653	
900.00	891.12	906.21	898.23	3.36	3.34	131.15	-80.70	4.22	96.23	89.66	7.50	14.466 SF	
1,000.00	987.14	1,005.44	995.17	3.89	3.80	131.30	-96.60	18.27	108.55	101.05	8.46	14.568	
1,100.00	1,082.13	1,104.31	1,091.75	4.48	4.27	132.57	-112.44	32.28	123.20	114.74	9.42	14.898	
1,200.00	1,175.98	1,202.71	1,187.87	5.12	4.74	134.53	-128.20	46.22	140.31	130.90	10.38	15.420	
1,300.00	1,268.56	1,300.50	1,283.40	5.82	5.21	136.86	-143.86	60.07	160.08	149.70	11.25	16.032	
1,390.00	1,350.71	1,387.90	1,368.78	6.51	5.63	139.06	-157.86	72.45	180.29	169.05	11.37	16.072	
1,400.00	1,359.78	1,402.42	1,378.23	6.59	5.70	139.34	-159.41	73.82	182.67	171.31	12.35	16.737	
1,500.00	1,450.41	1,505.67	1,472.75	7.40	6.20	141.74	-174.91	87.53	206.66	194.31	13.33	17.328	
1,600.00	1,541.04	1,608.91	1,567.27	8.22	6.70	143.64	-190.41	101.23	230.91	217.59	14.19	17.994	
1,700.00	1,631.67	1,687.85	1,661.79	9.06	7.08	145.18	-205.91	114.94	255.36	241.17	15.14	18.492	
1,800.00	1,722.30	1,784.60	1,756.31	9.90	7.55	146.45	-221.41	128.65	279.96	264.82	16.09	18.938	
1,900.00	1,812.93	1,881.36	1,850.82	10.75	8.02	147.52	-236.91	142.35	304.66	288.58	17.04	19.339	
2,000.00	1,903.56	1,978.12	1,945.34	11.60	8.49	148.42	-252.41	156.06	329.45	312.42	17.98	19.702	
2,100.00	1,994.19	2,074.87	2,039.86	12.46	8.96	149.20	-267.91	169.76	354.31	336.32	18.93	20.031	
2,200.00	2,084.82	2,171.63	2,134.38	13.32	9.43	149.88	-283.41	183.47	379.21	360.28	19.88	20.330	
2,300.00	2,175.45	2,268.39	2,228.90	14.18	9.91	150.47	-298.91	197.18	404.17	384.29	20.83	20.604	
2,400.00	2,266.08	2,365.15	2,323.42	15.04	10.38	151.00	-314.41	210.88	429.15	408.32	21.78	20.854	
2,500.00	2,356.71	2,461.90	2,417.94	15.91	10.85	151.47	-329.91	224.59	454.17	432.39	22.73	21.085	
2,600.00	2,447.34	2,558.66	2,512.46	16.78	11.32	151.88	-345.41	238.29	479.22	456.49	23.68	21.298	
2,700.00	2,537.98	2,655.42	2,606.98	17.64	11.79	152.26	-360.91	252.00	504.28	480.60	24.63	21.495	
2,800.00	2,628.61	2,752.17	2,701.49	18.51	12.27	152.60	-376.41	265.71	529.36	504.74	25.48	21.660	
2,890.00	2,710.17	2,839.25	2,786.56	19.30	12.69	152.88	-390.36	278.04	551.95	526.47	25.58	21.678	
2,900.00	2,719.24	2,848.93	2,796.01	19.38	12.74	153.37	-391.91	279.41	554.47	528.90	26.49	21.871	
2,994.40	2,804.62	2,939.99	2,884.97	20.22	13.18	157.80	-406.50	292.31	579.29	552.80	26.54	21.883	
3,000.00	2,809.68	2,945.38	2,890.24	20.27	13.21	157.79	-407.36	293.08	580.82	554.28	27.51	22.101	
3,100.00	2,899.96	3,041.60	2,984.23	21.16	13.68	157.78	-422.77	306.71	608.07	580.56	28.48	22.304	
3,200.00	2,990.24	3,137.81	3,078.21	22.05	14.15	157.76	-438.19	320.33	635.33	606.84	29.46	22.493	
3,300.00	3,080.52	3,234.03	3,172.20	22.94	14.62	157.75	-453.60	333.96	662.58	633.12	30.43	22.670	
3,400.00	3,170.81	3,330.24	3,266.19	23.84	15.09	157.74	-469.01	347.59	689.84	659.41	31.40	22.835	
3,500.00	3,261.09	3,426.46	3,360.18	24.73	15.56	157.73	-484.43	361.22	717.09	685.69	32.38	22.990	
3,600.00	3,351.37	3,522.67	3,454.17	25.62	16.03	157.71	-499.84	374.85	744.35	711.97	33.35	23.136	
3,700.00	3,441.66	3,618.88	3,548.16	26.52	16.50	157.70	-515.25	388.48	771.60	738.25	34.32	23.273	
3,800.00	3,531.94	3,715.10	3,642.14	27.42	16.97	157.69	-530.66	402.11	798.86	764.53	35.30	23.403	
3,900.00	3,622.22	3,811.31	3,736.13	28.31	17.44	157.69	-546.08	415.74	826.11	790.81	36.27	23.525	
4,000.00	3,712.50	3,907.53	3,830.12	29.21	17.91	157.68	-561.49	429.37	853.37	817.09	37.25	23.641	
4,100.00	3,802.79	4,003.74	3,924.11	30.11	18.38	157.67	-576.90	443.00	880.62	843.37	38.23	23.750	
4,200.00	3,893.07	4,100.05	4,018.10	31.00	18.86	157.66	-592.31	456.63	907.88	869.65	39.24	23.834	
4,300.00	3,983.35	4,203.83	4,112.09	31.90	19.36	157.66	-607.73	470.26	935.13	895.89	40.18	23.954	
4,400.00	4,073.63	4,292.38	4,206.08	32.80	19.80	157.65	-623.14	483.89	962.39	922.21	41.15	24.048	
4,500.00	4,163.92	4,388.60	4,300.06	33.70	20.27	157.64	-638.55	497.52	989.64	948.49	42.13	24.137	
4,600.00	4,254.20	4,484.81	4,394.05	34.60	20.74	157.64	-653.97	511.14	1,016.90	974.77	43.11	24.223	
4,700.00	4,344.48	4,581.02	4,488.04	35.50	21.21	157.63	-669.38	524.77	1,044.15	1,001.04			

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3L-4H-N165 - OH - PLAN #1											Offset Site Error: 0.00 usft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
4,800.00	4,434.77	4,677.24	4,582.03	36.40	21.68	157.63	-684.79	538.40	1,071.41	1,027.32	44.08	24.304	
4,900.00	4,525.05	4,773.45	4,676.02	37.30	22.15	157.62	-700.20	552.03	1,098.66	1,053.60	45.06	24.382	
5,000.00	4,615.33	4,869.67	4,770.01	38.20	22.62	157.62	-715.62	565.66	1,125.92	1,079.88	46.04	24.457	
5,100.00	4,705.61	4,965.88	4,864.00	39.10	23.09	157.61	-731.03	579.29	1,153.17	1,106.16	47.01	24.528	
5,200.00	4,795.90	5,062.10	4,957.98	40.00	23.56	157.61	-746.44	592.92	1,180.43	1,132.43	47.99	24.596	
5,300.00	4,886.18	5,158.31	5,051.97	40.90	24.03	157.60	-761.85	606.55	1,207.68	1,158.71	48.97	24.662	
5,400.00	4,976.46	5,254.52	5,145.96	41.80	24.51	157.60	-777.27	620.18	1,234.94	1,184.99	49.95	24.725	
5,500.00	5,066.74	5,350.74	5,239.95	42.70	24.98	157.60	-792.68	633.81	1,262.19	1,211.27	50.92	24.785	
5,600.00	5,157.03	5,446.95	5,333.94	43.60	25.45	157.59	-808.09	647.44	1,289.45	1,237.54	51.90	24.844	
5,700.00	5,247.31	5,543.17	5,427.93	44.50	25.92	157.59	-823.51	661.07	1,316.70	1,263.82	52.88	24.899	
5,800.00	5,337.59	5,639.38	5,521.92	45.40	26.39	157.59	-838.92	674.70	1,343.96	1,290.10	53.86	24.953	
5,900.00	5,427.87	5,735.59	5,615.90	46.30	26.86	157.58	-854.33	688.32	1,371.21	1,316.37	54.84	25.005	
6,000.00	5,518.16	5,831.81	5,709.89	47.20	27.33	157.58	-869.74	701.95	1,398.47	1,342.65	55.82	25.055	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3M-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-7.35	-49.46	50.00					
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-7.35	-49.46	50.00	49.72	0.28	178.822		
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-7.35	-49.46	50.00	49.43	0.57	88.279	CC, ES	
200.00	200.00	201.00	201.00	0.49	0.50	147.92	-7.35	-49.46	50.53	49.54	0.99	50.979		
300.00	299.92	300.92	300.92	0.85	0.86	150.06	-7.35	-49.46	53.82	52.12	1.70	31.582		
400.00	399.64	400.65	400.65	1.21	1.22	153.48	-7.35	-49.46	60.28	57.85	2.43	24.835		
500.00	499.05	501.95	501.92	1.59	1.57	156.46	-8.53	-48.08	68.75	65.61	3.14	21.886		
600.00	598.03	603.52	603.35	1.99	1.91	158.10	-12.06	-43.97	77.82	73.96	3.86	20.183		
700.00	696.44	705.37	704.80	2.41	2.27	158.77	-17.94	-37.12	87.38	82.79	4.59	19.046		
800.00	794.18	807.48	806.11	2.87	2.65	158.74	-26.20	-27.51	97.38	92.04	5.34	18.244		
900.00	891.12	909.82	907.14	3.36	3.05	158.21	-36.82	-15.13	107.81	101.69	6.11	17.633		
1,000.00	987.14	1,012.39	1,007.74	3.89	3.48	157.30	-49.83	0.02	118.68	111.76	6.92	17.145		
1,100.00	1,082.13	1,115.17	1,107.76	4.48	3.94	156.12	-65.20	17.92	130.01	122.24	7.77	16.731		
1,200.00	1,175.98	1,214.59	1,204.03	5.12	4.41	155.18	-81.37	36.76	142.97	134.31	8.66	16.508	SF	
1,300.00	1,268.56	1,313.27	1,299.59	5.82	4.89	154.89	-97.43	55.46	159.06	149.49	9.57	16.622		
1,390.00	1,350.71	1,401.62	1,385.13	6.51	5.33	155.05	-111.81	72.21	176.22	165.82	10.40	16.947		
1,400.00	1,359.78	1,411.40	1,394.61	6.59	5.38	155.10	-113.40	74.06	178.26	167.77	10.49	16.989		
1,500.00	1,450.41	1,509.28	1,489.38	7.40	5.87	155.56	-129.32	92.61	198.73	187.31	11.42	17.408		
1,600.00	1,541.04	1,607.15	1,584.15	8.22	6.37	155.94	-145.25	111.16	219.20	206.85	12.35	17.752		
1,700.00	1,631.67	1,705.02	1,678.92	9.06	6.88	156.25	-161.18	129.71	239.68	226.40	13.29	18.039		
1,800.00	1,722.30	1,802.89	1,773.69	9.90	7.38	156.51	-177.11	148.26	260.17	245.94	14.23	18.282		
1,900.00	1,812.93	1,900.77	1,868.46	10.75	7.89	156.74	-193.03	166.81	280.66	265.48	15.18	18.490		
2,000.00	1,903.56	2,001.36	1,963.22	11.60	8.42	156.93	-208.96	185.37	301.16	285.02	16.14	18.656		
2,100.00	1,994.19	2,103.49	2,057.99	12.46	8.95	157.10	-224.89	203.92	321.66	304.54	17.12	18.792		
2,200.00	2,084.82	2,205.62	2,152.76	13.32	9.49	157.25	-240.81	222.47	342.16	324.07	18.09	18.911		
2,300.00	2,175.45	2,307.75	2,247.53	14.18	10.03	157.38	-256.74	241.02	362.66	343.59	19.07	19.017		
2,400.00	2,266.08	2,390.13	2,342.30	15.04	10.46	157.50	-272.67	259.57	383.17	363.21	19.96	19.196		
2,500.00	2,356.71	2,488.00	2,437.07	15.91	10.98	157.61	-288.59	278.12	403.68	382.75	20.92	19.293		
2,600.00	2,447.34	2,585.87	2,531.84	16.78	11.50	157.70	-304.52	296.67	424.18	402.30	21.89	19.381		
2,700.00	2,537.98	2,683.74	2,626.61	17.64	12.02	157.79	-320.45	315.22	444.69	421.84	22.85	19.461		
2,800.00	2,628.61	2,781.62	2,721.38	18.51	12.53	157.87	-336.37	333.77	465.20	441.39	23.82	19.533		
2,890.00	2,710.17	2,869.70	2,806.67	19.30	13.00	157.93	-350.71	350.47	483.66	458.98	24.69	19.593		
2,900.00	2,719.24	2,879.49	2,816.14	19.38	13.05	158.39	-352.30	352.32	485.72	460.94	24.78	19.600		
2,994.40	2,804.62	2,971.65	2,905.39	20.22	13.54	162.52	-367.30	369.79	506.08	480.37	25.71	19.682		
3,000.00	2,809.68	2,977.11	2,910.67	20.27	13.57	162.51	-368.19	370.82	507.34	481.57	25.77	19.688		
3,100.00	2,899.96	3,074.53	3,005.00	21.16	14.09	162.24	-384.04	389.29	529.78	503.01	26.77	19.791		
3,200.00	2,990.24	3,171.95	3,099.34	22.05	14.61	161.99	-399.89	407.75	552.23	524.46	27.77	19.886		
3,300.00	3,080.52	3,269.37	3,193.67	22.94	15.13	161.76	-415.75	426.22	574.69	545.92	28.77	19.973		
3,400.00	3,170.81	3,366.79	3,288.00	23.84	15.65	161.55	-431.60	444.68	597.16	567.38	29.78	20.055		
3,500.00	3,261.09	3,464.21	3,382.33	24.73	16.17	161.35	-447.45	463.15	619.64	588.86	30.78	20.130		
3,600.00	3,351.37	3,561.63	3,476.66	25.62	16.69	161.17	-463.31	481.61	642.12	610.33	31.79	20.201		
3,700.00	3,441.66	3,659.05	3,570.99	26.52	17.21	161.00	-479.16	500.08	664.61	631.82	32.79	20.266		
3,800.00	3,531.94	3,756.47	3,665.32	27.42	17.73	160.84	-495.01	518.54	687.10	653.30	33.80	20.328		
3,900.00	3,622.22	3,853.89	3,759.66	28.31	18.25	160.69	-510.87	537.01	709.60	674.79	34.81	20.385		
4,000.00	3,712.50	3,951.31	3,853.99	29.21	18.77	160.55	-526.72	555.47	732.11	696.29	35.82	20.439		
4,100.00	3,802.79	4,048.73	3,948.32	30.11	19.29	160.42	-542.57	573.94	754.61	717.78	36.83	20.490		
4,200.00	3,893.07	4,146.15	4,042.65	31.00	19.82	160.30	-558.43	592.40	777.12	739.29	37.84	20.538		
4,300.00	3,983.35	4,243.57	4,136.98	31.90	20.34	160.18	-574.28	610.87	799.64	760.79	38.85	20.583		
4,400.00	4,073.63	4,340.99	4,231.31	32.80	20.86	160.07	-590.13	629.33	822.15	782.29	39.86	20.626		
4,500.00	4,163.92	4,438.41	4,325.64	33.70	21.38	159.97	-605.99	647.80	844.67	803.80	40.87	20.667		
4,600.00	4,254.20	4,535.83	4,419.97	34.60	21.90	159.87	-621.84	666.26	867.20	825.31	41.88	20.705		
4,700.00	4,344.48	4,633.25	4,514.31	35.50	22.42	159.77	-637.69	684.73	889.72	846.82	42.90	20.741		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3M-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,800.00	4,434.77	4,730.67	4,608.64	36.40	22.95	159.68	-653.55	703.19	912.25	868.34	43.91	20.776		
4,900.00	4,525.05	4,828.09	4,702.97	37.30	23.47	159.60	-669.40	721.66	934.77	889.85	44.92	20.809		
5,000.00	4,615.33	4,925.51	4,797.30	38.20	23.99	159.52	-685.25	740.12	957.30	911.37	45.94	20.840		
5,100.00	4,705.61	5,022.93	4,891.63	39.10	24.51	159.44	-701.11	758.59	979.84	932.89	46.95	20.870		
5,200.00	4,795.90	5,120.35	4,985.96	40.00	25.03	159.37	-716.96	777.05	1,002.37	954.41	47.96	20.899		
5,300.00	4,886.18	5,217.77	5,080.29	40.90	25.56	159.29	-732.81	795.52	1,024.91	975.93	48.98	20.926		
5,400.00	4,976.46	5,315.19	5,174.63	41.80	26.08	159.23	-748.67	813.98	1,047.44	997.45	49.99	20.952		
5,500.00	5,066.74	5,412.61	5,268.96	42.70	26.60	159.16	-764.52	832.45	1,069.98	1,018.97	51.01	20.977		
5,600.00	5,157.03	5,510.03	5,363.29	43.60	27.12	159.10	-780.37	850.91	1,092.52	1,040.50	52.02	21.001		
5,700.00	5,247.31	5,607.45	5,457.62	44.50	27.65	159.04	-796.23	869.38	1,115.06	1,062.02	53.04	21.024		
5,800.00	5,337.59	5,704.87	5,551.95	45.40	28.17	158.98	-812.08	887.84	1,137.60	1,083.55	54.05	21.046		
5,900.00	5,427.87	5,802.29	5,646.28	46.30	28.69	158.93	-827.93	906.31	1,160.14	1,105.08	55.07	21.067		
6,000.00	5,518.16	5,899.71	5,740.61	47.20	29.21	158.88	-843.79	924.77	1,182.69	1,126.60	56.08	21.087		
6,100.00	5,608.44	6,002.87	5,834.94	48.11	29.77	158.82	-859.64	943.24	1,205.23	1,148.10	57.13	21.097		
6,200.00	5,698.72	6,105.45	5,929.28	49.01	30.32	158.78	-875.49	961.70	1,227.78	1,169.61	58.17	21.107		
6,300.00	5,789.01	6,208.03	6,023.61	49.91	30.87	158.73	-891.35	980.17	1,250.32	1,191.11	59.21	21.117		
6,400.00	5,879.29	6,289.39	6,117.94	50.81	31.30	158.68	-907.20	998.63	1,272.87	1,212.72	60.15	21.161		
6,500.00	5,969.57	6,386.81	6,212.27	51.71	31.83	158.64	-923.05	1,017.10	1,295.42	1,234.25	61.17	21.178		
6,600.00	6,059.85	6,484.23	6,306.60	52.61	32.35	158.60	-938.91	1,035.56	1,317.97	1,255.78	62.18	21.194		
6,700.00	6,150.14	6,581.65	6,400.93	53.51	32.87	158.55	-954.76	1,054.03	1,340.52	1,277.31	63.20	21.210		
6,800.00	6,240.42	6,682.89	6,499.15	54.42	33.40	158.57	-969.90	1,073.27	1,363.01	1,298.80	64.21	21.227		
6,900.00	6,330.70	6,788.03	6,602.17	55.32	33.85	159.13	-972.92	1,093.58	1,385.02	1,320.15	64.87	21.351		
7,000.00	6,420.98	6,887.64	6,699.15	56.22	34.16	160.22	-961.57	1,112.85	1,406.81	1,341.72	65.09	21.612		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3N-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-5.88	-39.57	40.00				
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-5.88	-39.57	40.00	39.72	0.28	143.058	
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-5.88	-39.57	40.00	39.43	0.57	70.624 CC	
200.00	200.00	201.55	201.55	0.49	0.50	147.60	-6.12	-39.17	40.18	39.19	0.99	40.692	
300.00	299.92	302.64	302.56	0.85	0.85	147.25	-8.02	-36.11	40.70	39.01	1.69	24.039 ES	
400.00	399.64	403.73	403.40	1.21	1.22	146.35	-11.79	-30.02	41.48	39.06	2.42	17.157	
500.00	499.05	504.82	503.91	1.59	1.60	144.93	-17.44	-20.91	42.53	39.38	3.16	13.465	
600.00	598.03	605.90	603.98	1.99	2.00	143.08	-24.95	-8.79	43.89	39.97	3.92	11.184	
700.00	696.44	706.97	703.47	2.41	2.43	140.85	-34.31	6.31	45.58	40.86	4.73	9.647	
800.00	794.18	808.03	802.26	2.87	2.89	138.35	-45.51	24.39	47.64	42.07	5.57	8.547	
900.00	891.12	909.07	900.22	3.36	3.38	135.66	-58.54	45.42	50.10	43.61	6.49	7.724	
1,000.00	987.14	1,010.08	997.22	3.89	3.92	132.87	-73.37	69.36	52.99	45.51	7.48	7.081	
1,100.00	1,082.13	1,110.24	1,092.68	4.48	4.49	130.94	-89.34	95.14	56.89	48.34	8.55	6.651	
1,200.00	1,175.98	1,210.04	1,187.77	5.12	5.07	131.60	-105.31	120.90	63.06	53.44	9.62	6.552 SF	
1,300.00	1,268.56	1,309.62	1,282.64	5.82	5.66	134.17	-121.23	146.60	71.62	60.96	10.66	6.717	
1,390.00	1,350.71	1,398.95	1,367.76	6.51	6.20	137.41	-135.52	169.66	81.60	70.04	11.55	7.062	
1,400.00	1,359.78	1,408.86	1,377.19	6.59	6.26	137.81	-137.10	172.22	82.84	71.19	11.65	7.110	
1,500.00	1,450.41	1,507.92	1,471.58	7.40	6.86	141.22	-152.95	197.79	95.42	82.80	12.61	7.565	
1,600.00	1,541.04	1,606.99	1,565.97	8.22	7.46	143.83	-168.79	223.36	108.25	94.68	13.57	7.977	
1,700.00	1,631.67	1,706.06	1,660.36	9.06	8.06	145.88	-184.64	248.93	121.26	106.73	14.53	8.346	
1,800.00	1,722.30	1,805.12	1,754.75	9.90	8.67	147.54	-200.48	274.51	134.39	118.90	15.49	8.676	
1,900.00	1,812.93	1,904.19	1,849.14	10.75	9.28	148.90	-216.33	300.08	147.62	131.17	16.45	8.973	
2,000.00	1,903.56	2,003.26	1,943.52	11.60	9.89	150.04	-232.17	325.65	160.91	143.49	17.41	9.240	
2,100.00	1,994.19	2,102.32	2,037.91	12.46	10.50	151.00	-248.02	351.22	174.25	155.88	18.38	9.482	
2,200.00	2,084.82	2,201.39	2,132.30	13.32	11.11	151.83	-263.86	376.80	187.64	168.30	19.34	9.701	
2,300.00	2,175.45	2,300.46	2,226.69	14.18	11.72	152.54	-279.71	402.37	201.06	180.75	20.31	9.900	
2,400.00	2,266.08	2,400.48	2,321.08	15.04	12.34	153.17	-295.56	427.94	214.50	193.22	21.28	10.079	
2,500.00	2,356.71	2,501.41	2,415.46	15.91	12.97	153.72	-311.40	453.51	227.97	205.71	22.26	10.241	
2,600.00	2,447.34	2,602.35	2,509.85	16.78	13.59	154.21	-327.25	479.09	241.46	218.22	23.24	10.391	
2,700.00	2,537.98	2,703.28	2,604.24	17.64	14.22	154.65	-343.09	504.66	254.96	230.74	24.22	10.528	
2,800.00	2,628.61	2,804.21	2,698.63	18.51	14.85	155.04	-358.94	530.23	268.48	243.28	25.20	10.655	
2,890.00	2,710.17	2,884.95	2,783.58	19.30	15.35	155.37	-373.20	553.24	280.65	254.62	26.03	10.781	
2,900.00	2,719.24	2,894.85	2,793.02	19.38	15.41	155.84	-374.78	555.80	282.01	255.89	26.13	10.793	
2,994.40	2,804.62	2,988.22	2,881.98	20.22	15.99	159.97	-389.71	579.90	295.87	268.77	27.09	10.920	
3,000.00	2,809.68	3,006.24	2,887.25	20.27	16.10	159.96	-390.60	581.33	296.74	269.53	27.22	10.904	
3,100.00	2,899.96	3,107.48	2,981.35	21.16	16.73	159.71	-406.40	606.83	312.36	284.07	28.29	11.041	
3,200.00	2,990.24	3,208.71	3,075.45	22.05	17.36	159.49	-422.19	632.32	327.98	298.61	29.37	11.168	
3,300.00	3,080.52	3,309.95	3,169.55	22.94	17.99	159.29	-437.99	657.82	343.60	313.16	30.44	11.286	
3,400.00	3,170.81	3,388.82	3,263.65	23.84	18.48	159.11	-453.79	683.31	359.23	327.82	31.41	11.436	
3,500.00	3,261.09	3,487.58	3,357.76	24.73	19.10	158.94	-469.58	708.80	374.87	342.39	32.48	11.542	
3,600.00	3,351.37	3,586.35	3,451.86	25.62	19.71	158.78	-485.38	734.30	390.50	356.96	33.54	11.641	
3,700.00	3,441.66	3,685.11	3,545.96	26.52	20.33	158.64	-501.18	759.79	406.14	371.53	34.61	11.735	
3,800.00	3,531.94	3,783.88	3,640.06	27.42	20.94	158.51	-516.97	785.29	421.78	386.10	35.68	11.822	
3,900.00	3,622.22	3,882.64	3,734.16	28.31	21.56	158.39	-532.77	810.78	437.42	400.68	36.74	11.905	
4,000.00	3,712.50	3,981.41	3,828.26	29.21	22.17	158.27	-548.57	836.28	453.07	415.25	37.81	11.982	
4,100.00	3,802.79	4,080.17	3,922.36	30.11	22.79	158.17	-564.36	861.77	468.71	429.83	38.88	12.056	
4,200.00	3,893.07	4,178.93	4,016.46	31.00	23.41	158.07	-580.16	887.26	484.36	444.41	39.95	12.125	
4,300.00	3,983.35	4,277.70	4,110.56	31.90	24.02	157.97	-595.96	912.76	500.01	458.99	41.01	12.191	
4,400.00	4,073.63	4,376.46	4,204.66	32.80	24.64	157.88	-611.76	938.25	515.66	473.58	42.08	12.254	
4,500.00	4,163.92	4,475.23	4,298.76	33.70	25.25	157.80	-627.55	963.75	531.31	488.16	43.15	12.313	
4,600.00	4,254.20	4,573.99	4,392.87	34.60	25.87	157.72	-643.35	989.24	546.96	502.74	44.22	12.370	
4,700.00	4,344.48	4,672.76	4,486.97	35.50	26.49	157.65	-659.15	1,014.74	562.61	517.33	45.29	12.423	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3N-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,800.00	4,434.77	4,771.52	4,581.07	36.40	27.10	157.58	-674.94	1,040.23	578.27	531.91	46.35	12.475	
4,900.00	4,525.05	4,870.29	4,675.17	37.30	27.72	157.51	-690.74	1,065.73	593.92	546.50	47.42	12.524	
5,000.00	4,615.33	4,969.05	4,769.27	38.20	28.34	157.45	-706.54	1,091.22	609.58	561.08	48.49	12.570	
5,100.00	4,705.61	5,067.82	4,863.37	39.10	28.95	157.39	-722.33	1,116.71	625.23	575.67	49.56	12.615	
5,200.00	4,795.90	5,166.58	4,957.47	40.00	29.57	157.34	-738.13	1,142.21	640.89	590.26	50.63	12.658	
5,300.00	4,886.18	5,265.35	5,051.57	40.90	30.19	157.28	-753.93	1,167.70	656.54	604.84	51.70	12.699	
5,400.00	4,976.46	5,364.11	5,145.67	41.80	30.80	157.23	-769.72	1,193.20	672.20	619.43	52.77	12.738	
5,500.00	5,066.74	5,462.88	5,239.77	42.70	31.42	157.18	-785.52	1,218.69	687.86	634.02	53.84	12.776	
5,600.00	5,157.03	5,561.64	5,333.88	43.60	32.04	157.13	-801.32	1,244.19	703.52	648.61	54.91	12.813	
5,700.00	5,247.31	5,660.41	5,427.98	44.50	32.65	157.09	-817.11	1,269.68	719.18	663.20	55.98	12.847	
5,800.00	5,337.59	5,759.17	5,522.08	45.40	33.27	157.05	-832.91	1,295.18	734.84	677.79	57.05	12.881	
5,900.00	5,427.87	5,857.94	5,616.18	46.30	33.89	157.01	-848.71	1,320.67	750.50	692.38	58.12	12.913	
6,000.00	5,518.16	5,956.70	5,710.28	47.20	34.50	156.97	-864.50	1,346.16	766.16	706.97	59.19	12.945	
6,100.00	5,608.44	6,055.47	5,804.38	48.11	35.12	156.93	-880.30	1,371.66	781.82	721.56	60.26	12.975	
6,200.00	5,698.72	6,154.23	5,898.48	49.01	35.74	156.89	-896.10	1,397.15	797.48	736.15	61.33	13.004	
6,300.00	5,789.01	6,253.00	5,992.58	49.91	36.35	156.86	-911.89	1,422.65	813.14	750.74	62.40	13.031	
6,400.00	5,879.29	6,351.76	6,086.68	50.81	36.97	156.82	-927.69	1,448.14	828.80	765.33	63.47	13.058	
6,500.00	5,969.57	6,450.53	6,180.78	51.71	37.59	156.79	-943.49	1,473.64	844.46	779.92	64.54	13.085	
6,600.00	6,059.85	6,549.29	6,274.88	52.61	38.20	156.76	-959.29	1,499.13	860.13	794.52	65.61	13.110	
6,700.00	6,150.14	6,655.57	6,376.58	53.51	38.84	156.97	-972.68	1,526.72	875.51	808.94	66.57	13.152	
6,800.00	6,240.42	6,763.08	6,480.19	54.42	39.36	158.15	-971.04	1,554.99	889.87	823.05	66.82	13.318	
6,900.00	6,330.70	6,863.50	6,575.71	55.32	39.72	160.12	-955.02	1,581.20	903.99	837.55	66.44	13.606	
7,000.00	6,420.98	6,954.06	6,659.21	56.22	39.96	162.56	-928.82	1,604.24	919.21	853.52	65.69	13.993	
7,100.00	6,511.27	7,033.68	6,729.47	57.12	40.10	165.17	-896.92	1,623.73	936.97	872.19	64.78	14.464	
7,120.23	6,529.53	7,048.46	6,742.11	57.31	40.12	165.69	-890.11	1,627.24	940.99	876.40	64.59	14.569	
7,150.00	6,556.48	7,069.76	6,760.08	57.57	40.15	171.87	-879.83	1,632.25	947.17	882.87	64.31	14.729	
7,200.00	6,601.96	7,104.97	6,789.11	58.00	40.19	-177.36	-861.65	1,640.35	958.17	894.30	63.88	15.000	
7,250.00	6,647.52	7,139.53	6,816.73	58.40	40.21	-166.44	-842.37	1,648.08	969.81	906.32	63.48	15.277	
7,300.00	6,692.94	7,173.54	6,843.00	58.77	40.23	-155.85	-822.07	1,655.46	981.93	918.81	63.12	15.556	
7,350.00	6,738.01	7,207.07	6,867.96	59.11	40.24	-145.95	-800.81	1,662.48	994.41	931.62	62.79	15.838	
7,400.00	6,782.50	7,240.17	6,891.62	59.41	40.25	-137.00	-778.66	1,669.17	1,007.10	944.62	62.47	16.120	
7,450.00	6,826.19	7,272.90	6,914.03	59.69	40.24	-129.06	-755.66	1,675.51	1,019.88	957.70	62.18	16.402	
7,500.00	6,868.87	7,305.31	6,935.18	59.94	40.23	-122.10	-731.87	1,681.53	1,032.64	970.73	61.91	16.681	
7,550.00	6,910.34	7,337.42	6,955.10	60.15	40.22	-116.03	-707.33	1,687.21	1,045.24	983.60	61.65	16.955	
7,600.00	6,950.38	7,369.28	6,973.79	60.34	40.20	-110.76	-682.10	1,692.57	1,057.60	996.19	61.40	17.224	
7,650.00	6,988.82	7,400.00	6,990.76	60.49	40.18	-106.18	-656.97	1,697.46	1,069.60	1,008.42	61.18	17.482	
7,700.00	7,025.45	7,432.35	7,007.50	60.63	40.15	-102.16	-629.71	1,702.30	1,081.15	1,020.18	60.97	17.732	
7,750.00	7,060.11	7,463.62	7,022.52	60.73	40.11	-98.67	-602.65	1,706.68	1,092.18	1,031.39	60.79	17.966	
7,800.00	7,092.61	7,500.00	7,038.55	60.82	40.07	-95.56	-570.33	1,711.39	1,102.63	1,042.02	60.60	18.195	
7,850.00	7,122.81	7,525.70	7,048.91	60.88	40.04	-92.98	-547.01	1,714.45	1,112.36	1,051.84	60.51	18.382	
7,900.00	7,150.56	7,556.56	7,060.27	60.92	40.00	-90.68	-518.52	1,717.84	1,121.36	1,060.94	60.43	18.557	
7,950.00	7,175.72	7,587.32	7,070.40	60.94	39.95	-88.69	-489.64	1,720.91	1,129.58	1,069.19	60.39	18.706	
8,000.00	7,198.17	7,617.99	7,079.30	60.95	39.91	-87.00	-460.42	1,723.64	1,136.95	1,076.55	60.39	18.825	
8,050.00	7,217.79	7,650.00	7,087.29	60.94	39.86	-85.56	-429.53	1,726.13	1,143.43	1,082.99	60.44	18.919	
8,100.00	7,234.50	7,679.13	7,093.40	60.93	39.81	-84.38	-401.12	1,728.09	1,148.98	1,088.40	60.58	18.967	
8,150.00	7,248.21	7,709.61	7,098.59	60.90	39.76	-83.43	-371.13	1,729.82	1,153.57	1,092.81	60.76	18.986	
8,200.00	7,258.86	7,740.05	7,102.54	60.86	39.71	-82.70	-340.98	1,731.21	1,157.18	1,096.17	61.01	18.966	
8,250.00	7,266.39	7,770.46	7,105.25	60.81	39.66	-82.19	-310.71	1,732.26	1,159.79	1,098.45	61.34	18.909	
8,300.00	7,270.77	7,800.00	7,106.69	60.76	39.61	-81.89	-281.22	1,732.96	1,161.37	1,099.63	61.75	18.809	
8,343.93	7,272.00	7,831.46	7,107.00	60.72	39.56	-81.79	-249.77	1,733.37	1,161.90	1,099.84	62.06	18.722	
8,400.00	7,272.00	7,887.53	7,107.00	60.66	39.47	-81.79	-193.70	1,733.95	1,161.90	1,099.70	62.20	18.679	
8,500.00	7,272.00	7,987.53	7,107.00	60.56	39.32	-81.79	-93.71	1,734.99	1,161.91	1,099.32	62.58	18.566	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3N-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: O-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis			Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,600.00	7,272.00	8,087.53	7,107.00	60.46	39.18	-81.79	6.29	1,736.02	1,161.91	1,098.80	63.11	18.411		
8,700.00	7,272.00	8,187.53	7,107.00	60.38	39.05	-81.79	106.28	1,737.06	1,161.91	1,098.12	63.79	18.215		
8,800.00	7,272.00	8,287.53	7,107.00	60.29	38.93	-81.79	206.28	1,738.10	1,161.91	1,097.30	64.61	17.983		
8,900.00	7,272.00	8,387.53	7,107.00	60.22	38.82	-81.79	306.27	1,739.13	1,161.91	1,096.34	65.57	17.720		
9,000.00	7,272.00	8,487.53	7,107.00	60.15	38.72	-81.79	406.27	1,740.17	1,161.91	1,095.25	66.67	17.429		
9,100.00	7,272.00	8,587.53	7,107.00	60.09	38.63	-81.79	506.26	1,741.20	1,161.91	1,094.03	67.89	17.116		
9,200.00	7,272.00	8,687.53	7,107.00	60.03	38.54	-81.79	606.25	1,742.24	1,161.91	1,092.69	69.22	16.785		
9,300.00	7,272.00	8,787.53	7,107.00	59.98	38.47	-81.79	706.25	1,743.27	1,161.92	1,091.24	70.68	16.440		
9,400.00	7,272.00	8,887.53	7,107.00	59.94	38.43	-81.79	806.24	1,744.31	1,161.92	1,089.68	72.24	16.085		
9,500.00	7,272.00	8,987.53	7,107.00	59.90	38.44	-81.79	906.24	1,745.35	1,161.92	1,088.03	73.89	15.725		
9,600.00	7,272.00	9,087.53	7,107.00	59.87	38.86	-81.79	1,006.23	1,746.38	1,161.92	1,086.28	75.64	15.361		
9,700.00	7,272.00	9,187.53	7,107.00	59.85	39.77	-81.79	1,106.23	1,747.42	1,161.92	1,084.44	77.48	14.997		
9,800.00	7,272.00	9,287.53	7,107.00	59.84	40.80	-81.79	1,206.22	1,748.45	1,161.92	1,082.53	79.40	14.635		
9,900.00	7,272.00	9,387.53	7,107.00	59.83	41.87	-81.79	1,306.22	1,749.49	1,161.92	1,080.54	81.39	14.276		
10,000.00	7,272.00	9,487.53	7,107.00	59.84	42.98	-81.79	1,406.21	1,750.53	1,161.92	1,078.48	83.45	13.924		
10,100.00	7,272.00	9,587.53	7,107.00	59.86	44.12	-81.79	1,506.21	1,751.56	1,161.93	1,076.35	85.57	13.578		
10,200.00	7,272.00	9,687.53	7,107.00	59.90	45.28	-81.79	1,606.20	1,752.60	1,161.93	1,074.17	87.76	13.240		
10,300.00	7,272.00	9,787.53	7,107.00	59.96	46.46	-81.79	1,706.20	1,753.63	1,161.93	1,071.93	90.00	12.910		
10,400.00	7,272.00	9,887.53	7,107.00	60.04	47.67	-81.79	1,806.19	1,754.67	1,161.93	1,069.64	92.29	12.590		
10,500.00	7,272.00	9,987.53	7,107.00	60.15	48.89	-81.79	1,906.19	1,755.71	1,161.93	1,067.30	94.63	12.279		
10,600.00	7,272.00	10,087.53	7,107.00	60.31	50.13	-81.79	2,006.18	1,756.74	1,161.93	1,064.92	97.01	11.977		
10,700.00	7,272.00	10,187.53	7,107.00	60.52	51.39	-81.79	2,106.17	1,757.78	1,161.93	1,062.50	99.44	11.685		
10,800.00	7,272.00	10,287.53	7,107.00	60.80	52.67	-81.79	2,206.17	1,758.81	1,161.93	1,060.03	101.90	11.403		
10,900.00	7,272.00	10,387.53	7,107.00	61.17	53.96	-81.79	2,306.16	1,759.85	1,161.94	1,057.54	104.40	11.130		
11,000.00	7,272.00	10,487.53	7,107.00	61.65	55.26	-81.79	2,406.16	1,760.89	1,161.94	1,055.01	106.93	10.867		
11,100.00	7,272.00	10,587.53	7,107.00	62.26	56.58	-81.79	2,506.15	1,761.92	1,161.94	1,052.45	109.49	10.612		
11,200.00	7,272.00	10,687.53	7,107.00	62.99	57.90	-81.79	2,606.15	1,762.96	1,161.94	1,049.86	112.08	10.367		
11,300.00	7,272.00	10,787.53	7,107.00	63.85	59.24	-81.79	2,706.14	1,763.99	1,161.94	1,047.24	114.70	10.131		
11,400.00	7,272.00	10,887.53	7,107.00	64.81	60.59	-81.79	2,806.14	1,765.03	1,161.94	1,044.60	117.34	9.903		
11,500.00	7,272.00	10,987.53	7,107.00	65.86	61.95	-81.79	2,906.13	1,766.07	1,161.94	1,041.94	120.00	9.683		
11,600.00	7,272.00	11,087.53	7,107.00	66.98	63.32	-81.79	3,006.13	1,767.10	1,161.94	1,039.26	122.69	9.471		
11,700.00	7,272.00	11,187.53	7,107.00	68.15	64.70	-81.79	3,106.12	1,768.14	1,161.95	1,036.55	125.39	9.266		
11,800.00	7,272.00	11,287.53	7,107.00	69.36	66.09	-81.79	3,206.12	1,769.17	1,161.95	1,033.83	128.12	9.069		
11,900.00	7,272.00	11,387.53	7,107.00	70.60	67.48	-81.79	3,306.11	1,770.21	1,161.95	1,031.09	130.86	8.879		
12,000.00	7,272.00	11,487.53	7,107.00	71.87	68.88	-81.79	3,406.10	1,771.25	1,161.95	1,028.33	133.62	8.696		
12,100.00	7,272.00	11,587.53	7,107.00	73.17	70.29	-81.79	3,506.10	1,772.28	1,161.95	1,025.55	136.40	8.519		
12,200.00	7,272.00	11,687.53	7,107.00	74.48	71.70	-81.79	3,606.09	1,773.32	1,161.95	1,022.76	139.19	8.348		
12,300.00	7,272.00	11,787.53	7,107.00	75.82	73.12	-81.79	3,706.09	1,774.35	1,161.95	1,019.96	141.99	8.183		
12,400.00	7,272.00	11,887.53	7,107.00	77.16	74.55	-81.79	3,806.08	1,775.39	1,161.95	1,017.14	144.81	8.024		
12,500.00	7,272.00	11,987.53	7,107.00	78.52	75.98	-81.79	3,906.08	1,776.43	1,161.96	1,014.32	147.64	7.870		
12,600.00	7,272.00	12,087.53	7,107.00	79.89	77.42	-81.79	4,006.07	1,777.46	1,161.96	1,011.48	150.48	7.722		
12,700.00	7,272.00	12,187.53	7,107.00	81.27	78.86	-81.79	4,106.07	1,778.50	1,161.96	1,008.62	153.33	7.578		
12,700.00	7,272.00	12,187.53	7,107.00	81.27	78.86	-81.79	4,106.07	1,778.50	1,161.96	1,008.62	153.33	7.578		
12,745.14	7,272.00	12,209.20	7,107.00	82.10	79.17	-81.79	4,127.74	1,778.72	1,162.20	1,008.48	153.72	7.561		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3O-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-4.41	-29.67	30.00	29.72	0.28	107.291	
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-4.41	-29.67	30.00	29.43	0.57	52.966 CC, ES	
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-4.41	-29.67	30.00	29.54	0.99	30.802	
200.00	200.00	201.00	201.00	0.49	0.50	148.17	-4.41	-29.67	30.53	32.15	1.70	19.863	
300.00	299.92	300.92	300.92	0.85	0.86	151.57	-4.41	-29.67	33.85	38.02	2.43	16.663	
400.00	399.64	400.65	400.65	1.21	1.22	156.46	-4.41	-29.67	40.45	45.76	3.14	15.573	
500.00	499.05	501.67	501.65	1.59	1.57	160.57	-5.24	-28.07	48.90	53.70	3.85	14.941	
600.00	598.03	603.02	602.85	1.99	1.92	163.23	-7.73	-23.30	57.55	61.73	4.58	14.490	
700.00	696.44	704.69	704.12	2.41	2.28	165.00	-11.89	-15.32	66.31	69.80	5.31	14.143	
800.00	794.18	806.69	805.33	2.87	2.66	166.18	-17.72	-4.11	75.11	77.86	6.06	13.854	
900.00	891.12	909.01	906.34	3.36	3.06	166.96	-25.25	10.33	83.91	85.88	6.82	13.598	
1,000.00	987.14	1,011.66	1,007.03	3.89	3.49	167.44	-34.46	28.02	92.70	93.85	7.59	13.361	
1,100.00	1,082.13	1,114.64	1,107.25	4.48	3.95	167.70	-45.38	48.97	101.45	101.76	8.38	13.137	
1,200.00	1,175.98	1,217.93	1,206.87	5.12	4.46	167.79	-57.99	73.18	110.14	109.57	9.20	12.913	
1,300.00	1,268.56	1,321.55	1,305.74	5.82	5.01	167.75	-72.30	100.65	118.77	116.52	9.95	12.710	
1,390.00	1,350.71	1,415.07	1,393.97	6.51	5.55	167.62	-86.62	128.16	126.47	127.30	10.04	12.685	
1,400.00	1,359.78	1,425.48	1,403.72	6.59	5.62	167.61	-88.30	131.38	127.30	124.60	10.93	12.405	
1,500.00	1,450.41	1,525.07	1,497.02	7.40	6.24	167.44	-104.39	162.27	135.53	131.93	11.83	12.155	
1,600.00	1,541.04	1,624.73	1,590.38	8.22	6.88	167.30	-120.50	193.19	143.75	139.24	12.74	11.930	
1,700.00	1,631.67	1,724.39	1,683.75	9.06	7.54	167.17	-136.60	224.10	151.98	146.55	13.66	11.728	
1,800.00	1,722.30	1,824.05	1,777.11	9.90	8.20	167.05	-152.71	255.02	160.21	153.85	14.59	11.545	
1,900.00	1,812.93	1,923.71	1,870.48	10.75	8.87	166.95	-168.81	285.93	168.44	161.15	15.52	11.381	
2,000.00	1,903.56	2,023.37	1,963.84	11.60	9.55	166.85	-184.92	316.85	176.67	168.44	16.46	11.231	
2,100.00	1,994.19	2,123.03	2,057.21	12.46	10.23	166.76	-201.02	347.77	184.90	175.73	17.41	11.095	
2,200.00	2,084.82	2,222.69	2,150.57	13.32	10.91	166.68	-217.12	378.68	193.13	183.01	18.35	10.971	
2,300.00	2,175.45	2,322.35	2,243.94	14.18	11.60	166.61	-233.23	409.60	201.36	190.29	19.30	10.857	
2,400.00	2,266.08	2,422.01	2,337.30	15.04	12.29	166.54	-249.33	440.52	209.59	197.57	20.26	10.753	
2,500.00	2,356.71	2,521.67	2,430.67	15.91	12.99	166.48	-265.44	471.43	217.83	204.85	21.21	10.656	
2,600.00	2,447.34	2,621.33	2,524.03	16.78	13.68	166.43	-281.54	502.35	226.06	212.12	22.17	10.567	
2,700.00	2,537.98	2,720.99	2,617.40	17.64	14.38	166.37	-297.65	533.27	234.29	219.39	23.13	10.485	
2,800.00	2,628.61	2,820.65	2,710.76	18.51	15.08	166.32	-313.75	564.18	242.52	225.94	24.00	10.416	
2,890.00	2,710.17	2,910.35	2,794.79	19.30	15.71	166.28	-328.25	592.01	249.93	226.67	24.09	10.408	
2,900.00	2,719.24	2,920.31	2,804.13	19.38	15.78	166.71	-329.86	595.10	250.76	234.27	25.05	10.353	
2,994.40	2,804.62	3,014.30	2,892.17	20.22	16.44	170.34	-345.04	624.25	259.32	234.76	25.11	10.350	
3,000.00	2,809.68	3,019.87	2,897.39	20.27	16.48	170.30	-345.94	625.98	259.87	243.48	26.17	10.305	
3,100.00	2,899.96	3,119.33	2,890.58	21.16	17.18	169.57	-362.02	656.84	269.65	252.24	27.24	10.261	
3,200.00	2,990.24	3,218.80	3,083.76	22.05	17.88	168.89	-378.09	687.69	279.47	261.02	28.31	10.221	
3,300.00	3,080.52	3,318.26	3,176.94	22.94	18.58	168.25	-394.16	718.55	289.33	269.84	29.39	10.182	
3,400.00	3,170.81	3,417.72	3,270.12	23.84	19.28	167.66	-410.23	749.40	299.23	278.67	30.47	10.145	
3,500.00	3,261.09	3,517.19	3,363.30	24.73	19.98	167.10	-426.31	780.26	309.15	287.53	31.56	10.110	
3,600.00	3,351.37	3,616.65	3,456.48	25.62	20.69	166.58	-442.38	811.11	319.10	296.41	32.66	10.076	
3,700.00	3,441.66	3,716.11	3,549.66	26.52	21.39	166.09	-458.45	841.97	329.07	305.31	33.76	10.045	
3,800.00	3,531.94	3,815.58	3,642.84	27.42	22.10	165.63	-474.52	872.82	339.07	314.23	34.86	10.014	
3,900.00	3,622.22	3,915.04	3,736.02	28.31	22.80	165.20	-490.60	903.68	349.09	323.16	35.96	9.986	
4,000.00	3,712.50	4,014.50	3,829.20	29.21	23.51	164.79	-506.67	934.54	359.12	332.10	37.07	9.958	
4,100.00	3,802.79	4,113.97	3,922.38	30.11	24.21	164.40	-522.74	965.39	369.17	341.06	38.18	9.932	
4,200.00	3,893.07	4,213.43	4,015.56	31.00	24.92	164.04	-538.82	996.25	379.24	350.03	39.30	9.907	
4,300.00	3,983.35	4,312.89	4,108.74	31.90	25.62	163.69	-554.89	1,027.10	389.33	359.01	40.42	9.883	
4,400.00	4,073.63	4,412.36	4,201.92	32.80	26.33	163.36	-570.96	1,057.96	399.42	368.00	41.53	9.860	
4,500.00	4,163.92	4,511.82	4,295.10	33.70	27.03	163.04	-587.03	1,088.81	409.53	377.00	42.66	9.838	
4,600.00	4,254.20	4,611.28	4,388.28	34.60	27.74	162.75	-603.11	1,119.67	419.65				
4,700.00	4,344.48	4,710.75	4,481.46	35.50	28.45	162.46	-619.18	1,150.52	429.78				

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 30-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,800.00	4,434.77	4,810.21	4,574.64	36.40	29.16	162.19	-635.25	1,181.38	439.93	395.02	44.90	9.797	
4,900.00	4,525.05	4,909.67	4,667.82	37.30	29.86	161.93	-651.32	1,212.23	450.08	404.05	46.03	9.778	
5,000.00	4,615.33	5,009.14	4,761.00	38.20	30.57	161.68	-667.40	1,243.09	460.24	413.08	47.16	9.759	
5,100.00	4,705.61	5,108.60	4,854.18	39.10	31.28	161.44	-683.47	1,273.94	470.41	422.12	48.29	9.742	
5,200.00	4,795.90	5,208.06	4,947.36	40.00	31.98	161.22	-699.54	1,304.80	480.58	431.16	49.42	9.725	
5,300.00	4,886.18	5,307.53	5,040.54	40.90	32.69	161.00	-715.61	1,335.65	490.76	440.21	50.55	9.708	
5,400.00	4,976.46	5,406.99	5,133.72	41.80	33.40	160.79	-731.69	1,366.51	500.95	449.27	51.69	9.692	
5,500.00	5,066.74	5,506.45	5,226.90	42.70	34.11	160.59	-747.76	1,397.36	511.15	458.33	52.82	9.677	
5,600.00	5,157.03	5,605.92	5,320.08	43.60	34.82	160.40	-763.83	1,428.22	521.35	467.39	53.96	9.662	
5,700.00	5,247.31	5,705.38	5,413.26	44.50	35.52	160.21	-779.90	1,459.07	531.56	476.46	55.09	9.648	
5,800.00	5,337.59	5,804.84	5,506.44	45.40	36.23	160.03	-795.98	1,489.93	541.77	485.54	56.23	9.635	
5,900.00	5,427.87	5,904.31	5,599.62	46.30	36.94	159.86	-812.05	1,520.79	551.99	494.62	57.37	9.622	
6,000.00	5,518.16	6,003.77	5,692.80	47.20	37.65	159.70	-828.12	1,551.64	562.21	503.70	58.51	9.609	
6,100.00	5,608.44	6,103.23	5,785.98	48.11	38.36	159.54	-844.20	1,582.50	572.44	512.79	59.65	9.597	
6,200.00	5,698.72	6,202.69	5,879.16	49.01	39.07	159.38	-860.27	1,613.35	582.67	521.88	60.79	9.585	
6,300.00	5,789.01	6,302.16	5,972.34	49.91	39.77	159.23	-876.34	1,644.21	592.90	530.97	61.93	9.573	
6,400.00	5,879.29	6,401.62	6,065.52	50.81	40.48	159.09	-892.41	1,675.06	603.14	540.07	63.08	9.562	
6,500.00	5,969.57	6,501.08	6,158.70	51.71	41.19	158.95	-908.49	1,705.92	613.39	549.17	64.22	9.551	
6,600.00	6,059.85	6,600.55	6,251.88	52.61	41.90	158.82	-924.56	1,736.77	623.63	558.27	65.36	9.541	
6,700.00	6,150.14	6,700.01	6,345.07	53.51	42.61	158.69	-940.63	1,767.63	633.88	567.37	66.51	9.531	
6,800.00	6,240.42	6,800.53	6,438.25	54.42	43.33	158.56	-956.70	1,798.48	644.13	576.48	67.66	9.521	
6,900.00	6,330.70	6,902.05	6,534.59	55.32	44.03	158.61	-971.35	1,830.40	654.27	585.58	68.69	9.525	
7,000.00	6,420.98	7,005.95	6,633.08	56.22	44.66	159.79	-973.01	1,863.18	663.73	594.84	68.89	9.635	
7,100.00	6,511.27	7,104.17	6,725.42	57.12	45.13	162.04	-960.77	1,894.05	673.24	604.97	68.27	9.861	
7,120.23	6,529.53	7,123.06	6,742.96	57.31	45.21	162.59	-956.89	1,899.93	675.30	607.22	68.08	9.920	
7,150.00	6,556.48	7,150.42	6,768.16	57.57	45.32	168.57	-950.41	1,908.38	678.47	610.68	67.79	10.008	
7,200.00	6,601.96	7,195.60	6,809.18	58.00	45.47	179.02	-937.50	1,922.17	684.17	616.83	67.34	10.160	
7,250.00	6,647.52	7,239.87	6,848.56	58.40	45.60	-170.41	-922.23	1,935.44	690.27	623.34	66.93	10.314	
7,300.00	6,692.94	7,283.33	6,886.26	58.77	45.71	-160.16	-904.77	1,948.18	696.72	630.15	66.57	10.467	
7,350.00	6,738.01	7,326.05	6,922.26	59.11	45.80	-150.61	-885.29	1,960.36	703.43	637.18	66.25	10.618	
7,400.00	6,782.50	7,368.09	6,956.55	59.41	45.88	-142.00	-863.94	1,972.00	710.34	644.37	65.97	10.767	
7,450.00	6,826.19	7,409.51	6,989.11	59.69	45.94	-134.39	-840.86	1,983.08	717.38	651.65	65.74	10.913	
7,500.00	6,868.87	7,450.38	7,019.93	59.94	45.98	-127.75	-816.19	1,993.59	724.48	658.95	65.53	11.056	
7,550.00	6,910.34	7,490.73	7,049.00	60.15	46.01	-121.99	-790.03	2,003.54	731.57	666.22	65.35	11.194	
7,600.00	6,950.38	7,530.63	7,076.32	60.34	46.03	-117.01	-762.51	2,012.92	738.58	673.38	65.20	11.328	
7,650.00	6,988.82	7,570.11	7,101.87	60.49	46.04	-112.68	-733.74	2,021.73	745.45	680.38	65.07	11.457	
7,700.00	7,025.45	7,609.22	7,125.66	60.63	46.04	-108.92	-703.81	2,029.96	752.11	687.15	64.96	11.579	
7,750.00	7,060.11	7,648.00	7,147.67	60.73	46.03	-105.66	-672.83	2,037.61	758.51	693.65	64.87	11.694	
7,800.00	7,092.61	7,686.47	7,167.91	60.82	46.01	-102.81	-640.89	2,044.68	764.61	699.81	64.80	11.799	
7,850.00	7,122.81	7,724.67	7,186.36	60.88	45.98	-100.35	-608.08	2,051.16	770.34	705.58	64.76	11.895	
7,900.00	7,150.56	7,762.63	7,203.02	60.92	45.95	-98.21	-574.49	2,057.05	775.66	710.91	64.76	11.978	
7,950.00	7,175.72	7,800.00	7,217.75	60.94	45.92	-96.36	-540.55	2,062.31	780.54	715.75	64.79	12.047	
8,000.00	7,198.17	7,837.94	7,230.96	60.95	45.88	-94.78	-505.31	2,067.07	784.94	720.08	64.86	12.102	
8,050.00	7,217.79	7,875.35	7,242.23	60.94	45.83	-93.45	-469.88	2,071.19	788.82	723.83	64.99	12.138	
8,100.00	7,234.50	7,912.62	7,251.70	60.93	45.79	-92.35	-434.01	2,074.72	792.15	726.99	65.16	12.157	
8,150.00	7,248.21	7,950.00	7,259.40	60.90	45.74	-91.47	-397.56	2,077.66	794.92	729.53	65.39	12.156	
8,200.00	7,258.86	7,986.85	7,265.22	60.86	45.69	-90.79	-361.24	2,079.97	797.11	731.41	65.70	12.132	
8,250.00	7,266.39	8,023.86	7,269.27	60.81	45.63	-90.31	-324.51	2,081.70	798.69	732.62	66.07	12.089	
8,300.00	7,270.77	8,060.81	7,271.51	60.76	45.58	-90.02	-287.64	2,082.83	799.66	733.15	66.50	12.024	
8,343.93	7,272.00	8,104.93	7,272.00	60.72	45.52	-89.93	-253.39	2,083.35	799.99	733.08	66.91	11.957	
8,400.00	7,272.00	8,151.14	7,272.00	60.66	45.45	-89.93	-197.32	2,083.93	799.99	732.90	67.09	11.925	
8,500.00	7,272.00	8,251.14	7,272.00	60.56	45.32	-89.93	-97.33	2,084.96	799.99	732.46	67.53	11.846	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3O-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,600.00	7,272.00	8,351.14	7,272.00	60.46	45.19	-89.93	2.66	2,086.00	799.99	731.87	68.12	11.743		
8,700.00	7,272.00	8,451.14	7,272.00	60.38	45.08	-89.93	102.66	2,087.04	799.99	731.14	68.85	11.619		
8,800.00	7,272.00	8,551.14	7,272.00	60.29	44.97	-89.93	202.65	2,088.07	799.99	730.28	69.72	11.475		
8,900.00	7,272.00	8,651.14	7,272.00	60.22	44.87	-89.93	302.65	2,089.11	799.99	729.28	70.71	11.314		
9,000.00	7,272.00	8,751.14	7,272.00	60.15	44.79	-89.93	402.64	2,090.15	800.00	728.17	71.83	11.137		
9,100.00	7,272.00	8,851.14	7,272.00	60.09	44.71	-89.93	502.64	2,091.18	800.00	726.93	73.07	10.949		
9,200.00	7,272.00	8,951.14	7,272.00	60.03	44.64	-89.93	602.63	2,092.22	800.00	725.58	74.42	10.750		
9,300.00	7,272.00	9,051.14	7,272.00	59.98	44.58	-89.93	702.63	2,093.25	800.00	724.12	75.87	10.544		
9,400.00	7,272.00	9,151.14	7,272.00	59.94	44.53	-89.93	802.62	2,094.29	800.00	722.57	77.43	10.332		
9,500.00	7,272.00	9,251.14	7,272.00	59.90	44.50	-89.93	902.62	2,095.33	800.00	720.92	79.08	10.116		
9,600.00	7,272.00	9,351.14	7,272.00	59.87	44.49	-89.93	1,002.61	2,096.36	800.00	719.18	80.83	9.898		
9,700.00	7,272.00	9,451.14	7,272.00	59.85	44.51	-89.93	1,102.61	2,097.40	800.00	717.35	82.65	9.680		
9,800.00	7,272.00	9,551.14	7,272.00	59.84	44.60	-89.93	1,202.60	2,098.44	800.00	715.45	84.55	9.462		
9,900.00	7,272.00	9,651.14	7,272.00	59.83	44.81	-89.93	1,302.59	2,099.47	800.00	713.48	86.53	9.246		
10,000.00	7,272.00	9,751.14	7,272.00	59.84	45.22	-89.93	1,402.59	2,100.51	800.00	711.44	88.57	9.033		
10,100.00	7,272.00	9,851.14	7,272.00	59.86	45.90	-89.93	1,502.58	2,101.55	800.01	709.33	90.68	8.823		
10,200.00	7,272.00	9,951.14	7,272.00	59.90	46.79	-89.93	1,602.58	2,102.58	800.01	707.17	92.84	8.617		
10,300.00	7,272.00	10,051.14	7,272.00	59.96	47.82	-89.93	1,702.57	2,103.62	800.01	704.95	95.06	8.416		
10,400.00	7,272.00	10,151.14	7,272.00	60.04	48.92	-89.93	1,802.57	2,104.65	800.01	702.68	97.33	8.219		
10,500.00	7,272.00	10,251.14	7,272.00	60.15	50.07	-89.93	1,902.56	2,105.69	800.01	700.36	99.65	8.028		
10,600.00	7,272.00	10,351.14	7,272.00	60.31	51.25	-89.93	2,002.56	2,106.73	800.01	697.99	102.02	7.842		
10,700.00	7,272.00	10,451.14	7,272.00	60.52	52.46	-89.93	2,102.55	2,107.76	800.01	695.59	104.42	7.661		
10,800.00	7,272.00	10,551.14	7,272.00	60.80	53.70	-89.93	2,202.55	2,108.80	800.01	693.15	106.86	7.486		
10,900.00	7,272.00	10,651.14	7,272.00	61.17	54.95	-89.93	2,302.54	2,109.84	800.01	690.67	109.34	7.316		
11,000.00	7,272.00	10,751.14	7,272.00	61.65	56.22	-89.93	2,402.54	2,110.87	800.01	688.16	111.86	7.152		
11,100.00	7,272.00	10,851.14	7,272.00	62.26	57.51	-89.93	2,502.53	2,111.91	800.01	685.61	114.40	6.993		
11,200.00	7,272.00	10,951.14	7,272.00	62.99	58.81	-89.93	2,602.52	2,112.95	800.02	683.04	116.98	6.839		
11,300.00	7,272.00	11,051.14	7,272.00	63.85	60.13	-89.93	2,702.52	2,113.98	800.02	680.44	119.58	6.690		
11,400.00	7,272.00	11,151.14	7,272.00	64.81	61.46	-89.93	2,802.51	2,115.02	800.02	677.81	122.21	6.546		
11,500.00	7,272.00	11,251.14	7,272.00	65.86	62.80	-89.93	2,902.51	2,116.05	800.02	675.16	124.86	6.407		
11,600.00	7,272.00	11,351.14	7,272.00	66.98	64.14	-89.93	3,002.50	2,117.09	800.02	672.49	127.53	6.273		
11,700.00	7,272.00	11,451.14	7,272.00	68.15	65.50	-89.93	3,102.50	2,118.13	800.02	669.79	130.23	6.143		
11,800.00	7,272.00	11,551.14	7,272.00	69.36	66.87	-89.93	3,202.49	2,119.16	800.02	667.08	132.94	6.018		
11,900.00	7,272.00	11,651.14	7,272.00	70.60	68.25	-89.93	3,302.49	2,120.20	800.02	664.35	135.68	5.897		
12,000.00	7,272.00	11,751.14	7,272.00	71.87	69.63	-89.93	3,402.48	2,121.24	800.02	661.59	138.43	5.779		
12,100.00	7,272.00	11,851.14	7,272.00	73.17	71.02	-89.93	3,502.48	2,122.27	800.02	658.83	141.20	5.666		
12,200.00	7,272.00	11,951.14	7,272.00	74.48	72.42	-89.93	3,602.47	2,123.31	800.02	656.04	143.98	5.557		
12,300.00	7,272.00	12,051.14	7,272.00	75.82	73.83	-89.93	3,702.47	2,124.34	800.02	653.25	146.78	5.451		
12,400.00	7,272.00	12,151.14	7,272.00	77.16	75.24	-89.93	3,802.46	2,125.38	800.03	650.43	149.59	5.348		
12,500.00	7,272.00	12,251.14	7,272.00	78.52	76.66	-89.93	3,902.45	2,126.42	800.03	647.61	152.42	5.249		
12,600.00	7,272.00	12,351.14	7,272.00	79.89	78.08	-89.93	4,002.45	2,127.45	800.03	644.77	155.25	5.153		
12,700.00	7,272.00	12,451.14	7,272.00	81.27	79.51	-89.93	4,102.44	2,128.49	800.03	641.92	158.10	5.060		
12,700.98	7,272.00	12,452.12	7,272.00	81.28	79.53	-89.93	4,103.42	2,128.50	800.03	641.90	158.13	5.059		
12,745.14	7,272.00	12,479.95	7,272.00	82.10	79.93	-89.93	4,131.25	2,128.79	800.20	641.64	158.55	5.047 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3P-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-2.94	-19.78	20.00	19.72	0.28	71.527		
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-2.94	-19.78	20.00	19.43	0.57	35.311 CC		
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-2.94	-19.78	20.00	19.16	0.99	20.414		
200.00	200.00	201.30	201.30	0.49	0.50	147.79	-3.13	-19.37	20.15	18.74	1.69	12.075		
300.00	299.92	301.90	301.83	0.85	0.85	148.09	-4.64	-16.13	20.43	18.31	2.41	8.588		
400.00	399.64	402.50	402.18	1.21	1.22	148.21	-7.63	-9.70	20.72	17.88	3.15	6.680		
500.00	499.05	503.12	502.23	1.59	1.60	148.17	-12.11	-0.07	21.03	17.45	3.90	5.475		
600.00	598.03	603.75	601.85	1.99	2.00	147.97	-18.06	12.73	21.35	17.01	4.67	4.640		
700.00	696.44	704.38	700.92	2.41	2.42	147.61	-25.49	28.70	21.68	16.55	5.47	4.023		
800.00	794.18	805.02	799.32	2.87	2.88	147.11	-34.38	47.82	22.02	16.07	6.31	3.546		
900.00	891.12	905.66	896.93	3.36	3.37	146.47	-44.73	70.06	22.38	15.56	7.19	3.163		
1,000.00	987.14	1,006.31	993.62	3.89	3.90	145.70	-56.51	95.40	22.75	15.01	8.13	2.846		
1,100.00	1,082.13	1,106.96	1,089.27	4.48	4.49	144.81	-69.72	123.80	23.15	14.41	9.14	2.576		
1,200.00	1,175.98	1,207.62	1,183.76	5.12	5.13	143.81	-84.34	155.23	23.56	14.15	10.22	2.385 ES, SF		
1,300.00	1,268.56	1,307.93	1,276.84	5.82	5.82	143.41	-100.11	189.13	24.37	16.18	11.07	2.461		
1,390.00	1,350.71	1,397.87	1,360.17	6.51	6.47	146.35	-114.38	219.83	27.25	16.55	11.16	2.482		
1,400.00	1,359.78	1,407.86	1,369.42	6.59	6.54	146.82	-115.97	223.24	27.71	16.55	11.16	2.482		
1,500.00	1,450.41	1,507.73	1,461.95	7.40	7.26	150.80	-131.82	257.32	32.35	20.32	12.02	2.690		
1,600.00	1,541.04	1,607.60	1,554.47	8.22	8.00	153.76	-147.68	291.41	37.10	24.21	12.89	2.878		
1,700.00	1,631.67	1,707.47	1,647.00	9.06	8.74	156.05	-163.53	325.49	41.93	28.17	13.77	3.046		
1,800.00	1,722.30	1,807.34	1,739.52	9.90	9.48	157.86	-179.38	359.58	46.82	32.17	14.65	3.195		
1,900.00	1,812.93	1,907.21	1,832.05	10.75	10.23	159.33	-195.24	393.66	51.74	36.20	15.54	3.329		
2,000.00	1,903.56	2,007.08	1,924.57	11.60	10.98	160.55	-211.09	427.75	56.69	40.26	16.44	3.449		
2,100.00	1,994.19	2,106.95	2,017.10	12.46	11.74	161.56	-226.94	461.84	61.67	44.33	17.33	3.557		
2,200.00	2,084.82	2,206.83	2,109.63	13.32	12.49	162.43	-242.80	495.92	66.66	48.42	18.24	3.655		
2,300.00	2,175.45	2,306.70	2,202.15	14.18	13.25	163.17	-258.65	530.01	71.66	52.52	19.14	3.743		
2,400.00	2,266.08	2,406.57	2,294.68	15.04	14.01	163.82	-274.51	564.09	76.67	56.62	20.05	3.824		
2,500.00	2,356.71	2,506.44	2,387.20	15.91	14.77	164.39	-290.36	598.18	81.69	60.73	20.96	3.897		
2,600.00	2,447.34	2,606.31	2,479.73	16.78	15.53	164.89	-306.21	632.26	86.72	64.85	21.87	3.964		
2,700.00	2,537.98	2,706.18	2,572.25	17.64	16.30	165.34	-322.07	666.35	91.75	68.97	22.79	4.026		
2,800.00	2,628.61	2,806.05	2,664.78	18.51	17.06	165.74	-337.92	700.44	96.79	73.09	23.71	4.083		
2,890.00	2,710.17	2,904.07	2,748.05	19.30	17.81	166.07	-352.19	731.11	101.33	76.76	24.57	4.124		
2,900.00	2,719.24	2,905.92	2,757.31	19.38	17.83	166.52	-353.77	734.52	101.84	77.22	24.62	4.136		
2,994.40	2,804.62	3,000.14	2,844.60	20.22	18.55	169.91	-368.73	766.68	107.40	81.77	25.63	4.190		
3,000.00	2,809.68	3,005.73	2,849.78	20.27	18.59	169.84	-369.62	768.59	107.77	82.07	25.70	4.193		
3,100.00	2,899.96	3,105.48	2,942.19	21.16	19.35	168.52	-385.45	802.63	114.39	87.50	26.90	4.253		
3,200.00	2,990.24	3,205.23	3,034.60	22.05	20.12	167.35	-401.29	836.67	121.07	92.97	28.10	4.308		
3,300.00	3,080.52	3,304.98	3,127.01	22.94	20.88	166.30	-417.12	870.72	127.79	98.48	29.31	4.360		
3,400.00	3,170.81	3,404.72	3,219.42	23.84	21.65	165.36	-432.95	904.76	134.55	104.02	30.53	4.408		
3,500.00	3,261.09	3,504.47	3,311.84	24.73	22.42	164.50	-448.79	938.81	141.34	109.60	31.74	4.453		
3,600.00	3,351.37	3,604.22	3,404.25	25.62	23.18	163.73	-464.62	972.85	148.17	115.20	32.96	4.495		
3,700.00	3,441.66	3,703.97	3,496.66	26.52	23.95	163.02	-480.46	1,006.89	155.01	120.83	34.19	4.534		
3,800.00	3,531.94	3,803.72	3,589.07	27.42	24.71	162.37	-496.29	1,040.94	161.88	126.47	35.41	4.572		
3,900.00	3,622.22	3,903.46	3,681.48	28.31	25.48	161.78	-512.12	1,074.98	168.77	132.13	36.63	4.607		
4,000.00	3,712.50	4,003.21	3,773.89	29.21	26.25	161.23	-527.96	1,109.02	175.67	137.81	37.86	4.640		
4,100.00	3,802.79	4,102.96	3,866.31	30.11	27.02	160.73	-543.79	1,143.07	182.59	143.51	39.08	4.672		
4,200.00	3,893.07	4,202.71	3,958.72	31.00	27.78	160.26	-559.63	1,177.11	189.52	149.21	40.31	4.702		
4,300.00	3,983.35	4,302.46	4,051.13	31.90	28.55	159.82	-575.46	1,211.16	196.46	154.93	41.53	4.730		
4,400.00	4,073.63	4,402.20	4,143.54	32.80	29.32	159.41	-591.29	1,245.20	203.42	160.66	42.76	4.758		
4,500.00	4,163.92	4,501.95	4,235.95	33.70	30.09	159.04	-607.13	1,279.24	210.38	166.40	43.98	4.783		
4,600.00	4,254.20	4,601.70	4,328.37	34.60	30.85	158.68	-622.96	1,313.29	217.35	172.14	45.21	4.808		
4,700.00	4,344.48	4,701.45	4,420.78	35.50	31.62	158.35	-638.80	1,347.33	224.33	177.90	46.43	4.831		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3P-4H-N165 - OH - PLAN #1													Offset Site Error: 0.00 usft			
Survey Program: 0-MWD+HDGM															Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor				
4,800.00	4,434.77	4,801.19	4,513.19	36.40	32.39	158.03	-654.63	1,381.37	231.32	183.66	47.66	4.854				
4,900.00	4,525.05	4,900.94	4,605.60	37.30	33.16	157.74	-670.46	1,415.42	238.31	189.43	48.88	4.875				
5,000.00	4,615.33	5,000.69	4,698.01	38.20	33.93	157.46	-686.30	1,449.46	245.31	195.20	50.11	4.896				
5,100.00	4,705.61	5,100.44	4,790.43	39.10	34.70	157.20	-702.13	1,483.51	252.31	200.98	51.33	4.916				
5,200.00	4,795.90	5,200.19	4,882.84	40.00	35.46	156.95	-717.97	1,517.55	259.32	206.77	52.55	4.934				
5,300.00	4,886.18	5,299.93	4,975.25	40.90	36.23	156.72	-733.80	1,551.59	266.34	212.56	53.78	4.952				
5,400.00	4,976.46	5,399.68	5,067.66	41.80	37.00	156.49	-749.63	1,585.64	273.36	218.35	55.00	4.970				
5,500.00	5,066.74	5,500.57	5,160.07	42.70	37.78	156.28	-765.47	1,619.68	280.38	224.14	56.23	4.986				
5,600.00	5,157.03	5,600.82	5,252.48	43.60	38.55	156.08	-781.30	1,653.72	287.40	229.94	57.46	5.002				
5,700.00	5,247.31	5,698.93	5,344.90	44.50	39.31	155.89	-797.14	1,687.77	294.43	235.76	58.67	5.018				
5,800.00	5,337.59	5,801.33	5,437.31	45.40	40.10	155.71	-812.97	1,721.81	301.46	241.55	59.91	5.032				
5,900.00	5,427.87	5,901.58	5,529.72	46.30	40.87	155.53	-828.80	1,755.86	308.50	247.36	61.14	5.046				
6,000.00	5,518.16	6,001.83	5,622.13	47.20	41.64	155.37	-844.64	1,789.90	315.54	253.17	62.36	5.060				
6,100.00	5,608.44	6,097.92	5,714.54	48.11	42.38	155.21	-860.47	1,823.94	322.58	259.01	63.57	5.075				
6,200.00	5,698.72	6,202.33	5,806.96	49.01	43.19	155.05	-876.31	1,857.99	329.62	264.81	64.82	5.086				
6,300.00	5,789.01	6,297.41	5,899.37	49.91	43.92	154.91	-892.14	1,892.03	336.67	270.65	66.01	5.100				
6,400.00	5,879.29	6,402.84	5,991.78	50.81	44.74	154.77	-907.97	1,926.07	343.71	276.45	67.27	5.110				
6,500.00	5,969.57	6,503.09	6,084.19	51.71	45.51	154.63	-923.81	1,960.12	350.76	282.27	68.49	5.121				
6,600.00	6,059.85	6,596.66	6,176.60	52.61	46.23	154.50	-939.64	1,994.16	357.81	288.13	69.68	5.135				
6,700.00	6,150.14	6,696.41	6,269.01	53.51	47.00	154.38	-955.48	2,028.21	364.86	293.96	70.90	5.146				
6,800.00	6,240.42	6,798.77	6,363.97	54.42	47.78	154.39	-970.82	2,063.19	371.80	299.77	72.03	5.162				
6,900.00	6,330.70	6,904.89	6,463.37	55.32	48.50	156.25	-974.52	2,099.91	377.31	305.60	71.71	5.262				
7,000.00	6,420.98	7,005.59	6,557.14	56.22	49.07	160.10	-963.52	2,134.66	382.30	312.44	69.86	5.473				
7,100.00	6,511.27	7,097.70	6,640.87	57.12	49.47	165.26	-941.26	2,165.79	389.45	322.19	67.27	5.790				
7,120.23	6,529.53	7,115.13	6,656.36	57.31	49.53	166.39	-935.77	2,171.56	391.44	324.72	66.73	5.866				
7,150.00	6,556.48	7,140.27	6,678.49	57.57	49.62	173.22	-927.14	2,179.80	394.77	328.79	65.99	5.983				
7,200.00	6,601.96	7,181.71	6,714.30	58.00	49.75	-174.97	-911.13	2,193.16	401.31	336.36	64.94	6.180				
7,250.00	6,647.52	7,222.26	6,748.43	58.40	49.87	-163.11	-893.34	2,205.91	408.86	344.76	64.10	6.378				
7,300.00	6,692.94	7,262.01	6,780.91	58.77	49.96	-151.66	-873.94	2,218.07	417.28	353.85	63.42	6.579				
7,350.00	6,738.01	7,301.04	6,811.77	59.11	50.04	-141.00	-853.04	2,229.64	426.36	363.52	62.84	6.785				
7,400.00	6,782.50	7,339.42	6,841.03	59.41	50.10	-131.37	-830.77	2,240.62	435.96	373.64	62.32	6.996				
7,450.00	6,826.19	7,377.23	6,868.71	59.69	50.15	-122.84	-807.22	2,251.04	445.90	384.08	61.81	7.213				
7,500.00	6,868.87	7,414.52	6,894.83	59.94	50.19	-115.38	-782.51	2,260.88	456.03	394.73	61.30	7.439				
7,550.00	6,910.34	7,450.00	6,918.53	60.15	50.21	-108.94	-757.67	2,269.83	466.23	405.49	60.73	7.677				
7,600.00	6,950.38	7,487.75	6,942.44	60.34	50.23	-103.25	-729.90	2,278.88	476.34	416.15	60.19	7.913				
7,650.00	6,988.82	7,523.78	6,963.95	60.49	50.24	-98.36	-702.17	2,287.04	486.28	426.68	59.60	8.159				
7,700.00	7,025.45	7,559.47	6,983.94	60.63	50.24	-94.12	-673.60	2,294.65	495.92	436.94	58.98	8.408				
7,750.00	7,060.11	7,594.87	7,002.41	60.73	50.23	-90.43	-644.25	2,301.70	505.18	446.82	58.36	8.656				
7,800.00	7,092.61	7,630.00	7,019.38	60.82	50.22	-87.22	-614.19	2,308.20	513.99	456.23	57.76	8.899				
7,850.00	7,122.81	7,664.89	7,034.84	60.88	50.20	-84.44	-583.48	2,314.15	522.25	465.06	57.19	9.133				
7,900.00	7,150.56	7,700.00	7,048.96	60.92	50.18	-82.04	-551.81	2,319.61	529.92	473.24	56.68	9.350				
7,950.00	7,175.72	7,734.08	7,061.26	60.94	50.15	-79.99	-520.39	2,324.40	536.93	480.68	56.25	9.546				
8,000.00	7,198.17	7,768.42	7,072.22	60.95	50.12	-78.23	-488.13	2,328.70	543.23	487.30	55.93	9.713				
8,050.00	7,217.79	7,800.00	7,081.00	60.94	50.09	-76.79	-458.00	2,332.17	548.81	493.04	55.77	9.841				
8,100.00	7,234.50	7,836.72	7,089.64	60.93	50.04	-75.55	-422.48	2,335.64	553.58	497.87	55.71	9.938				
8,150.00	7,248.21	7,870.72	7,096.10	60.90	50.00	-74.58	-389.21	2,338.28	557.55	501.72	55.84	9.985				
8,200.00	7,258.86	7,904.64	7,101.07	60.86	49.96	-73.84	-355.72	2,340.37	560.69	504.55	56.15	9.986				
8,250.00	7,266.39	7,938.51	7,104.53	60.81	49.92	-73.32	-322.07	2,341.90	562.98	506.33	56.65	9.938				
8,300.00	7,270.77	7,972.34	7,106.50	60.76	49.87	-73.01	-288.31	2,342.89	564.41	507.07	57.34	9.843				
8,343.93	7,272.00	8,003.09	7,107.00	60.72	49.83	-72.91	-257.58	2,343.31	564.94	506.89	58.05	9.732				
8,400.00	7,272.00	8,059.16	7,107.00	60.66	49.76	-72.92	-201.51	2,343.73	565.09	506.96	58.13	9.721				
8,500.00	7,272.00	8,159.16	7,107.00	60.56	49.63	-72.93	-101.52	2,344.49	565.36	506.97	58.39	9.683				

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3P-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,600.00	7,272.00	8,259.16	7,107.00	60.46	49.51	-72.93	-1.52	2,345.25	565.62	506.82	58.80	9.620	
8,700.00	7,272.00	8,359.16	7,107.00	60.38	49.41	-72.94	98.48	2,346.01	565.89	506.52	59.37	9.532	
8,800.00	7,272.00	8,459.16	7,107.00	60.29	49.31	-72.95	198.47	2,346.77	566.15	506.07	60.08	9.423	
8,900.00	7,272.00	8,559.16	7,107.00	60.22	49.22	-72.96	298.47	2,347.53	566.42	505.48	60.94	9.294	
9,000.00	7,272.00	8,659.15	7,107.00	60.15	49.13	-72.97	398.47	2,348.29	566.68	504.74	61.94	9.149	
9,100.00	7,272.00	8,759.15	7,107.00	60.09	49.06	-72.97	498.46	2,349.05	566.95	503.88	63.07	8.989	
9,200.00	7,272.00	8,859.15	7,107.00	60.03	48.99	-72.98	598.46	2,349.81	567.21	502.89	64.33	8.818	
9,300.00	7,272.00	8,959.15	7,107.00	59.98	48.93	-72.99	698.46	2,350.57	567.48	501.78	65.70	8.637	
9,400.00	7,272.00	9,059.15	7,107.00	59.94	48.88	-73.00	798.46	2,351.33	567.74	500.56	67.18	8.451	
9,500.00	7,272.00	9,159.15	7,107.00	59.90	48.84	-73.01	898.45	2,352.09	568.01	499.24	68.77	8.260	
9,600.00	7,272.00	9,259.15	7,107.00	59.87	48.81	-73.02	998.45	2,352.85	568.28	497.82	70.45	8.066	
9,700.00	7,272.00	9,359.15	7,107.00	59.85	48.80	-73.02	1,098.45	2,353.61	568.54	496.31	72.23	7.872	
9,800.00	7,272.00	9,459.15	7,107.00	59.84	48.81	-73.03	1,198.44	2,354.37	568.81	494.73	74.08	7.678	
9,900.00	7,272.00	9,559.15	7,107.00	59.83	48.85	-73.04	1,298.44	2,355.13	569.07	493.06	76.02	7.486	
10,000.00	7,272.00	9,659.15	7,107.00	59.84	48.93	-73.05	1,398.44	2,355.89	569.34	491.32	78.02	7.297	
10,100.00	7,272.00	9,759.15	7,107.00	59.86	49.08	-73.06	1,498.43	2,356.65	569.60	489.51	80.09	7.112	
10,200.00	7,272.00	9,859.15	7,107.00	59.90	49.34	-73.06	1,598.43	2,357.41	569.87	487.64	82.22	6.931	
10,300.00	7,272.00	9,959.15	7,107.00	59.96	49.77	-73.07	1,698.43	2,358.17	570.13	485.72	84.41	6.754	
10,400.00	7,272.00	10,059.15	7,107.00	60.04	50.39	-73.08	1,798.42	2,358.92	570.40	483.74	86.66	6.582	
10,500.00	7,272.00	10,159.15	7,107.00	60.15	51.22	-73.09	1,898.42	2,359.68	570.66	481.72	88.94	6.416	
10,600.00	7,272.00	10,259.15	7,107.00	60.31	52.19	-73.10	1,998.42	2,360.44	570.93	479.65	91.28	6.255	
10,700.00	7,272.00	10,359.15	7,107.00	60.52	53.26	-73.10	2,098.41	2,361.20	571.20	477.54	93.65	6.099	
10,800.00	7,272.00	10,459.15	7,107.00	60.80	54.40	-73.11	2,198.41	2,361.96	571.46	475.39	96.07	5.948	
10,900.00	7,272.00	10,559.15	7,107.00	61.17	55.59	-73.12	2,298.41	2,362.72	571.73	473.21	98.52	5.803	
11,000.00	7,272.00	10,659.15	7,107.00	61.65	56.81	-73.13	2,398.40	2,363.48	571.99	470.99	101.00	5.663	
11,100.00	7,272.00	10,759.15	7,107.00	62.26	58.07	-73.14	2,498.40	2,364.24	572.26	468.74	103.51	5.528	
11,200.00	7,272.00	10,859.15	7,107.00	62.99	59.34	-73.15	2,598.40	2,365.00	572.52	466.47	106.06	5.398	
11,300.00	7,272.00	10,959.15	7,107.00	63.85	60.63	-73.15	2,698.39	2,365.76	572.79	464.17	108.62	5.273	
11,400.00	7,272.00	11,059.15	7,107.00	64.81	61.94	-73.16	2,798.39	2,366.52	573.06	461.84	111.22	5.153	
11,500.00	7,272.00	11,159.15	7,107.00	65.86	63.26	-73.17	2,898.39	2,367.28	573.32	459.49	113.83	5.036	
11,600.00	7,272.00	11,259.14	7,107.00	66.98	64.59	-73.18	2,998.38	2,368.04	573.59	457.12	116.47	4.925	
11,700.00	7,272.00	11,359.14	7,107.00	68.15	65.94	-73.19	3,098.38	2,368.80	573.85	454.72	119.13	4.817	
11,800.00	7,272.00	11,459.14	7,107.00	69.36	67.30	-73.19	3,198.38	2,369.56	574.12	452.31	121.80	4.713	
11,900.00	7,272.00	11,559.14	7,107.00	70.60	68.67	-73.20	3,298.37	2,370.32	574.38	449.89	124.50	4.614	
12,000.00	7,272.00	11,659.14	7,107.00	71.87	70.04	-73.21	3,398.37	2,371.08	574.65	447.44	127.21	4.517	
12,100.00	7,272.00	11,759.14	7,107.00	73.17	71.43	-73.22	3,498.37	2,371.84	574.92	444.98	129.93	4.425	
12,200.00	7,272.00	11,859.14	7,107.00	74.48	72.82	-73.23	3,598.36	2,372.60	575.18	442.51	132.67	4.335	
12,300.00	7,272.00	11,959.14	7,107.00	75.82	74.22	-73.23	3,698.36	2,373.36	575.45	440.02	135.43	4.249	
12,400.00	7,272.00	12,059.14	7,107.00	77.16	75.63	-73.24	3,798.36	2,374.12	575.71	437.52	138.20	4.166	
12,500.00	7,272.00	12,407.82	7,107.00	78.52	80.13	-71.29	4,134.37	2,438.85	568.30	423.30	145.00	3.919	
12,600.00	7,272.00	12,407.82	7,107.00	79.89	80.13	-71.29	4,134.37	2,438.85	534.73	388.14	146.59	3.648	
12,700.00	7,272.00	12,407.82	7,107.00	81.27	80.13	-71.29	4,134.37	2,438.85	518.56	372.55	146.01	3.551	
12,735.14	7,272.00	12,407.82	7,107.00	81.91	80.13	-71.29	4,134.37	2,438.85	517.37	372.26	145.11	3.565	
12,745.14	7,272.00	12,407.82	7,107.00	82.10	80.13	-71.29	4,134.37	2,438.85	517.47	372.70	144.77	3.574	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3Q-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-98.45	-1.47	-9.89	10.00				
100.00	100.00	101.00	101.00	0.14	0.14	-98.45	-1.47	-9.89	10.00	9.72	0.28	35.763	
140.00	140.00	141.00	141.00	0.28	0.28	-98.45	-1.47	-9.89	10.00	9.43	0.57	17.655 CC, ES	
200.00	200.00	201.00	201.00	0.49	0.50	149.38	-1.47	-9.89	10.54	9.54	0.99	10.628	
300.00	299.92	300.92	300.92	0.85	0.86	157.39	-1.47	-9.89	13.98	12.27	1.70	8.199	
400.00	399.64	400.65	400.65	1.21	1.22	165.09	-1.47	-9.89	20.93	18.50	2.43	8.622	
500.00	499.05	501.12	501.10	1.59	1.57	169.99	-1.99	-8.18	29.72	26.59	3.14	9.476	
600.00	598.03	601.91	601.74	1.99	1.92	173.30	-3.54	-3.09	38.59	34.74	3.85	10.034	
700.00	696.44	703.01	702.45	2.41	2.28	175.90	-6.12	5.43	47.50	42.93	4.56	10.409	
800.00	794.18	804.43	803.09	2.87	2.66	178.12	-9.75	17.38	56.44	51.15	5.29	10.673	
900.00	891.12	906.15	903.52	3.36	3.05	-179.87	-14.43	32.78	65.41	59.39	6.02	10.863	
1,000.00	987.14	1,008.19	1,003.63	3.89	3.48	-178.00	-20.16	51.65	74.41	67.64	6.77	10.998	
1,100.00	1,082.13	1,110.53	1,103.27	4.48	3.94	-176.22	-26.95	73.99	83.45	75.93	7.52	11.095	
1,200.00	1,175.98	1,213.17	1,202.30	5.12	4.44	-174.51	-34.78	99.80	92.53	84.23	8.30	11.153	
1,300.00	1,268.56	1,316.12	1,300.58	5.82	4.99	-172.85	-43.68	129.08	101.65	92.56	9.09	11.178	
1,390.00	1,350.71	1,409.02	1,388.29	6.51	5.53	-171.39	-52.58	158.39	109.90	100.06	9.84	11.173	
1,400.00	1,359.78	1,419.36	1,397.99	6.59	5.60	-171.23	-53.62	161.82	110.80	100.88	9.92	11.168	
1,500.00	1,450.41	1,523.03	1,494.48	7.40	6.27	-169.47	-64.62	198.04	117.96	107.18	10.78	10.939	
1,600.00	1,541.04	1,627.00	1,589.83	8.22	7.02	-167.36	-76.67	237.71	121.79	110.09	11.70	10.407	
1,700.00	1,631.67	1,731.02	1,683.64	9.06	7.84	-164.75	-89.72	280.68	122.39	109.69	12.71	9.633	
1,800.00	1,722.30	1,831.04	1,772.98	9.90	8.69	-161.88	-102.79	323.72	121.40	107.54	13.87	8.754	
1,900.00	1,812.93	1,930.85	1,862.13	10.75	9.55	-158.97	-115.84	366.67	120.72	105.59	15.13	7.977	
2,000.00	1,903.56	2,030.66	1,951.27	11.60	10.44	-156.04	-128.88	409.63	120.35	103.85	16.51	7.291	
2,066.19	1,963.54	2,103.29	2,010.27	12.17	11.08	-154.10	-137.52	438.05	120.28	102.77	17.51	6.868	
2,100.00	1,994.19	2,130.46	2,040.42	12.46	11.33	-153.10	-141.93	452.58	120.30	102.31	17.99	6.688	
2,200.00	2,084.82	2,230.27	2,129.56	13.32	12.23	-150.17	-154.97	495.53	120.57	100.99	19.58	6.158	
2,300.00	2,175.45	2,330.08	2,218.70	14.18	13.14	-147.26	-168.02	538.48	121.15	99.88	21.27	5.695	
2,400.00	2,266.08	2,429.89	2,307.85	15.04	14.06	-144.38	-181.06	581.43	122.04	98.98	23.06	5.292	
2,500.00	2,356.71	2,529.70	2,396.99	15.91	14.98	-141.55	-194.11	624.38	123.24	98.30	24.93	4.943	
2,600.00	2,447.34	2,629.51	2,486.14	16.78	15.91	-138.78	-207.15	667.33	124.73	97.85	26.88	4.640	
2,700.00	2,537.98	2,729.32	2,575.28	17.64	16.84	-136.08	-220.20	710.29	126.51	97.62	28.89	4.380	
2,800.00	2,628.61	2,829.12	2,664.43	18.51	17.77	-133.46	-233.24	753.24	128.56	97.62	30.94	4.155	
2,890.00	2,710.17	2,918.95	2,744.66	19.30	18.61	-131.18	-244.99	791.89	130.63	97.81	32.82	3.980	
2,900.00	2,719.24	2,928.93	2,753.57	19.38	18.70	-130.51	-246.29	796.19	130.86	97.83	33.03	3.962	
2,994.40	2,804.62	3,023.24	2,837.80	20.22	19.59	-124.91	-258.62	836.77	132.05	97.15	34.90	3.784	
3,000.00	2,809.68	3,028.84	2,842.80	20.27	19.64	-124.84	-259.35	839.18	132.06	97.06	35.01	3.773	
3,100.00	2,899.96	3,128.80	2,932.08	21.16	20.58	-123.62	-272.41	882.20	132.36	95.45	36.91	3.586	
3,200.00	2,990.24	3,228.76	3,021.36	22.05	21.52	-122.41	-285.48	925.21	132.71	93.88	38.83	3.418	
3,300.00	3,080.52	3,328.72	3,110.64	22.94	22.46	-121.20	-298.54	968.23	133.13	92.35	40.78	3.265	
3,400.00	3,170.81	3,428.68	3,199.92	23.84	23.40	-120.00	-311.61	1,011.25	133.60	90.86	42.74	3.126	
3,500.00	3,261.09	3,528.64	3,289.20	24.73	24.35	-118.81	-324.67	1,054.26	134.13	89.41	44.73	2.999	
3,600.00	3,351.37	3,628.60	3,378.48	25.62	25.29	-117.62	-337.74	1,097.28	134.72	87.99	46.73	2.883	
3,700.00	3,441.66	3,728.56	3,467.76	26.52	26.24	-116.45	-350.80	1,140.30	135.37	86.63	48.74	2.777	
3,800.00	3,531.94	3,828.52	3,557.04	27.42	27.19	-115.30	-363.87	1,183.31	136.07	85.30	50.76	2.680	
3,900.00	3,622.22	3,928.48	3,646.32	28.31	28.13	-114.15	-376.93	1,226.33	136.82	84.03	52.80	2.591	
4,000.00	3,712.50	4,028.44	3,735.60	29.21	29.08	-113.01	-390.00	1,269.35	137.63	82.80	54.84	2.510	
4,100.00	3,802.79	4,128.40	3,824.88	30.11	30.03	-111.90	-403.06	1,312.36	138.50	81.61	56.89	2.435	
4,200.00	3,893.07	4,228.36	3,914.16	31.00	30.98	-110.79	-416.13	1,355.38	139.42	80.48	58.94	2.365	
4,300.00	3,983.35	4,328.32	4,003.44	31.90	31.93	-109.70	-429.19	1,398.40	140.38	79.39	60.99	2.302	
4,400.00	4,073.63	4,428.28	4,092.72	32.80	32.88	-108.62	-442.26	1,441.41	141.40	78.36	63.04	2.243	
4,500.00	4,163.92	4,528.24	4,182.00	33.70	33.83	-107.56	-455.32	1,484.43	142.47	77.37	65.10	2.189	
4,600.00	4,254.20	4,628.20	4,271.28	34.60	34.78	-106.52	-468.39	1,527.45	143.58	76.44	67.14	2.138	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3Q-4H-N165 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
4,700.00	4,344.48	4,728.16	4,360.56	35.50	35.73	-105.49	-481.45	1,570.46	144.74	75.55	69.19	2.092	
4,800.00	4,434.77	4,828.12	4,449.84	36.40	36.68	-104.48	-494.52	1,613.48	145.95	74.72	71.23	2.049	
4,900.00	4,525.05	4,928.08	4,539.12	37.30	37.63	-103.49	-507.58	1,656.50	147.20	73.94	73.27	2.009	
5,000.00	4,615.33	5,028.04	4,628.40	38.20	38.58	-102.51	-520.65	1,699.51	148.50	73.20	75.30	1.972	
5,100.00	4,705.61	5,128.00	4,717.68	39.10	39.54	-101.55	-533.71	1,742.53	149.84	72.52	77.32	1.938	
5,200.00	4,795.90	5,227.96	4,806.96	40.00	40.49	-100.61	-546.77	1,785.54	151.22	71.89	79.33	1.906	
5,300.00	4,886.18	5,327.92	4,896.24	40.90	41.44	-99.69	-559.84	1,828.56	152.64	71.30	81.33	1.877	
5,400.00	4,976.46	5,427.88	4,985.52	41.80	42.39	-98.78	-572.90	1,871.58	154.10	70.77	83.33	1.849	
5,500.00	5,066.74	5,527.84	5,074.80	42.70	43.35	-97.89	-585.97	1,914.59	155.59	70.28	85.31	1.824	
5,600.00	5,157.03	5,627.80	5,164.08	43.60	44.30	-97.01	-599.03	1,957.61	157.13	69.84	87.29	1.800	
5,700.00	5,247.31	5,727.76	5,253.36	44.50	45.25	-96.16	-612.10	2,000.63	158.70	69.45	89.25	1.778	
5,800.00	5,337.59	5,827.72	5,342.64	45.40	46.21	-95.32	-625.16	2,043.64	160.30	69.10	91.20	1.758	
5,900.00	5,427.87	5,927.68	5,431.91	46.30	47.16	-94.50	-638.23	2,086.66	161.94	68.80	93.14	1.739	
6,000.00	5,518.16	6,027.64	5,521.19	47.20	48.11	-93.69	-651.29	2,129.68	163.61	68.54	95.07	1.721	
6,100.00	5,608.44	6,127.59	5,610.47	48.11	49.07	-92.90	-664.36	2,172.69	165.31	68.33	96.98	1.705	
6,200.00	5,698.72	6,227.55	5,699.75	49.01	50.02	-92.13	-677.42	2,215.71	167.04	68.16	98.89	1.689	
6,300.00	5,789.01	6,327.51	5,789.03	49.91	50.98	-91.37	-690.49	2,258.73	168.81	68.03	100.78	1.675	
6,400.00	5,879.29	6,427.47	5,878.31	50.81	51.93	-90.63	-703.55	2,301.74	170.60	67.94	102.66	1.662	
6,500.00	5,969.57	6,527.43	5,967.59	51.71	52.88	-89.90	-716.62	2,344.76	172.42	67.89	104.53	1.649	
6,600.00	6,059.85	6,627.39	6,056.87	52.61	53.84	-89.19	-729.68	2,387.78	174.27	67.88	106.39	1.638	
6,700.00	6,150.14	6,727.35	6,146.15	53.51	54.79	-88.50	-742.75	2,430.79	176.14	67.91	108.23	1.627	
6,800.00	6,240.42	6,827.31	6,235.43	54.42	55.75	-87.82	-755.81	2,473.81	178.04	67.97	110.07	1.618	
6,900.00	6,330.70	6,925.14	6,322.81	55.32	56.68	-87.17	-768.54	2,515.91	180.03	68.19	111.84	1.610 SF	
7,000.00	6,420.98	7,005.39	6,394.91	56.22	57.41	-87.23	-773.55	2,550.70	188.42	75.89	112.54	1.674	
7,100.00	6,511.27	7,083.26	6,464.89	57.12	58.07	-88.09	-769.83	2,584.57	207.18	95.16	112.02	1.850	
7,120.23	6,529.53	7,100.00	6,479.85	57.31	58.20	-88.36	-767.92	2,591.82	212.20	100.23	111.97	1.895	
7,150.00	6,556.48	7,120.92	6,498.49	57.57	58.36	-83.97	-765.00	2,600.86	219.73	108.42	111.31	1.974	
7,200.00	6,601.96	7,158.17	6,531.45	58.00	58.64	-76.08	-758.30	2,616.86	231.77	121.47	110.30	2.101	
7,250.00	6,647.52	7,195.13	6,563.79	58.40	58.89	-67.89	-749.78	2,632.58	243.00	134.01	108.99	2.230	
7,300.00	6,692.94	7,231.81	6,595.45	58.77	59.13	-59.87	-739.50	2,647.99	253.38	145.98	107.40	2.359	
7,350.00	6,738.01	7,268.25	6,626.38	59.11	59.35	-52.40	-727.52	2,663.06	262.88	157.33	105.55	2.491	
7,400.00	6,782.50	7,304.49	6,656.55	59.41	59.55	-45.73	-713.88	2,677.78	271.48	168.04	103.43	2.625	
7,450.00	6,826.19	7,340.53	6,685.90	59.69	59.73	-39.93	-698.65	2,692.13	279.15	178.08	101.08	2.762	
7,500.00	6,868.87	7,376.42	6,714.39	59.94	59.90	-34.97	-681.87	2,706.07	285.89	187.40	98.49	2.903	
7,550.00	6,910.34	7,412.18	6,741.98	60.15	60.06	-30.75	-663.60	2,719.60	291.67	195.99	95.68	3.048	
7,600.00	6,950.38	7,450.00	6,770.23	60.34	60.21	-27.18	-642.62	2,733.47	296.49	203.28	93.22	3.181	
7,650.00	6,988.82	7,483.38	6,794.30	60.49	60.32	-24.15	-622.75	2,745.31	300.31	210.86	89.46	3.357	
7,700.00	7,025.45	7,518.88	6,818.93	60.63	60.43	-21.55	-600.28	2,757.45	303.16	217.09	86.08	3.522	
7,750.00	7,060.11	7,554.32	6,842.51	60.73	60.53	-19.32	-576.51	2,769.09	305.01	222.48	82.53	3.696	
7,800.00	7,092.61	7,589.75	6,864.97	60.82	60.62	-17.39	-551.48	2,780.21	305.87	227.02	78.85	3.879	
7,850.00	7,122.81	7,625.17	6,886.29	60.88	60.69	-15.69	-525.24	2,790.78	305.74	230.69	75.05	4.074	
7,900.00	7,150.56	7,660.62	6,906.42	60.92	60.76	-14.19	-497.85	2,800.80	304.61	233.46	71.15	4.281	
7,950.00	7,175.72	7,696.10	6,925.32	60.94	60.81	-12.86	-469.34	2,810.23	302.49	235.29	67.20	4.502	
8,000.00	7,198.17	7,731.65	6,942.95	60.95	60.85	-11.65	-439.77	2,819.05	299.39	236.18	63.21	4.736	
8,050.00	7,217.79	7,767.28	6,959.27	60.94	60.88	-10.55	-409.18	2,827.26	295.31	236.06	59.25	4.984	
8,100.00	7,234.50	7,800.00	6,973.03	60.93	60.91	-9.55	-380.32	2,834.21	290.29	235.87	54.42	5.334	
8,150.00	7,248.21	7,838.88	6,987.82	60.90	60.93	-8.57	-345.17	2,841.72	284.28	232.65	51.63	5.506	
8,200.00	7,258.86	7,874.89	6,999.96	60.86	60.94	-7.65	-311.84	2,847.94	277.36	229.22	48.14	5.761	
8,250.00	7,266.39	7,911.09	7,010.63	60.81	60.94	-6.76	-277.69	2,853.45	269.54	224.53	45.01	5.989	
8,300.00	7,270.77	7,950.00	7,020.34	60.76	60.94	-5.84	-240.36	2,858.53	260.84	217.81	43.03	6.062	
8,343.93	7,272.00	7,979.67	7,026.51	60.72	60.93	-5.10	-211.53	2,861.81	252.46	211.88	40.57	6.222	
8,400.00	7,272.00	8,021.33	7,033.35	60.66	60.91	-4.46	-170.61	2,865.54	242.89	203.86	39.03	6.224	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - RUEGGE 3Q-4H-N165 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,500.00	7,272.00	8,097.35	7,040.25	60.56	60.87	-3.78	-95.06	2,869.66	233.48	195.12	38.37	6.086		
8,538.01	7,272.00	8,138.61	7,041.00	60.52	60.84	-3.70	-67.45	2,870.31	232.48	193.50	38.98	5.964		
8,600.00	7,272.00	8,186.95	7,041.00	60.46	60.81	-3.70	-5.47	2,870.95	232.48	192.89	39.59	5.872		
8,700.00	7,272.00	8,286.95	7,041.00	60.38	60.74	-3.70	94.52	2,871.99	232.48	191.75	40.73	5.708		
8,800.00	7,272.00	8,386.95	7,041.00	60.29	60.69	-3.70	194.52	2,873.03	232.48	190.59	41.90	5.549		
8,900.00	7,272.00	8,486.95	7,041.00	60.22	60.64	-3.70	294.51	2,874.06	232.48	189.40	43.09	5.396		
9,000.00	7,272.00	8,586.95	7,041.00	60.15	60.59	-3.70	394.51	2,875.10	232.48	188.18	44.30	5.248		
9,100.00	7,272.00	8,686.95	7,041.00	60.09	60.55	-3.70	494.50	2,876.14	232.48	186.94	45.54	5.105		
9,200.00	7,272.00	8,786.95	7,041.00	60.03	60.52	-3.70	594.50	2,877.17	232.48	185.68	46.80	4.967		
9,300.00	7,272.00	8,886.95	7,041.00	59.98	60.50	-3.70	694.49	2,878.21	232.48	184.41	48.08	4.835		
9,400.00	7,272.00	8,986.95	7,041.00	59.94	60.48	-3.70	794.49	2,879.25	232.48	183.11	49.37	4.709		
9,500.00	7,272.00	9,086.95	7,041.00	59.90	60.47	-3.70	894.48	2,880.29	232.48	181.80	50.69	4.587		
9,600.00	7,272.00	9,186.95	7,041.00	59.87	60.47	-3.70	994.48	2,881.32	232.48	180.47	52.01	4.470		
9,700.00	7,272.00	9,286.95	7,041.00	59.85	60.48	-3.70	1,094.47	2,882.36	232.48	179.13	53.35	4.358		
9,800.00	7,272.00	9,386.95	7,041.00	59.84	60.49	-3.70	1,194.46	2,883.40	232.48	177.78	54.71	4.250		
9,900.00	7,272.00	9,486.95	7,041.00	59.83	60.52	-3.70	1,294.46	2,884.43	232.48	176.41	56.07	4.146		
10,000.00	7,272.00	9,586.95	7,041.00	59.84	60.56	-3.70	1,394.45	2,885.47	232.48	175.04	57.45	4.047		
10,100.00	7,272.00	9,686.95	7,041.00	59.86	60.62	-3.70	1,494.45	2,886.51	232.48	173.65	58.83	3.952		
10,200.00	7,272.00	9,786.95	7,041.00	59.90	60.69	-3.70	1,594.44	2,887.55	232.48	172.26	60.23	3.860		
10,300.00	7,272.00	9,886.95	7,041.00	59.96	60.78	-3.70	1,694.44	2,888.58	232.48	170.85	61.63	3.772		
10,400.00	7,272.00	9,986.95	7,041.00	60.04	60.89	-3.70	1,794.43	2,889.62	232.48	169.44	63.04	3.688		
10,500.00	7,272.00	10,086.95	7,041.00	60.15	61.02	-3.70	1,894.43	2,890.66	232.48	168.02	64.46	3.606		
10,600.00	7,272.00	10,186.95	7,041.00	60.31	61.19	-3.70	1,994.42	2,891.69	232.48	166.59	65.89	3.528		
10,700.00	7,272.00	10,286.95	7,041.00	60.52	61.40	-3.70	2,094.42	2,892.73	232.48	165.16	67.33	3.453		
10,800.00	7,272.00	10,386.95	7,041.00	60.80	61.65	-3.70	2,194.41	2,893.77	232.48	163.72	68.77	3.381		
10,900.00	7,272.00	10,486.95	7,041.00	61.17	61.96	-3.70	2,294.41	2,894.81	232.48	162.27	70.21	3.311		
11,000.00	7,272.00	10,586.95	7,041.00	61.65	62.33	-3.70	2,394.40	2,895.84	232.48	160.82	71.67	3.244		
11,100.00	7,272.00	10,686.95	7,041.00	62.26	62.78	-3.70	2,494.39	2,896.88	232.48	159.36	73.12	3.179		
11,200.00	7,272.00	10,786.95	7,041.00	62.99	63.31	-3.70	2,594.39	2,897.92	232.48	157.90	74.59	3.117		
11,300.00	7,272.00	10,886.95	7,041.00	63.85	63.93	-3.70	2,694.38	2,898.95	232.48	156.43	76.05	3.057		
11,400.00	7,272.00	10,986.95	7,041.00	64.81	64.65	-3.70	2,794.38	2,899.99	232.48	154.96	77.52	2.999		
11,500.00	7,272.00	11,086.95	7,041.00	65.86	65.46	-3.70	2,894.37	2,901.03	232.48	153.48	79.00	2.943		
11,600.00	7,272.00	11,186.95	7,041.00	66.98	66.36	-3.70	2,994.37	2,902.07	232.48	152.00	80.48	2.889		
11,700.00	7,272.00	11,286.95	7,041.00	68.15	67.33	-3.70	3,094.36	2,903.10	232.48	150.52	81.96	2.836		
11,800.00	7,272.00	11,386.95	7,041.00	69.36	68.37	-3.70	3,194.36	2,904.14	232.48	149.03	83.45	2.786		
11,900.00	7,272.00	11,486.95	7,041.00	70.60	69.46	-3.70	3,294.35	2,905.18	232.48	147.54	84.94	2.737		
12,000.00	7,272.00	11,586.95	7,041.00	71.87	70.61	-3.70	3,394.35	2,906.21	232.48	146.05	86.43	2.690		
12,100.00	7,272.00	11,686.95	7,041.00	73.17	71.79	-3.70	3,494.34	2,907.25	232.48	144.55	87.93	2.644		
12,200.00	7,272.00	11,786.95	7,041.00	74.48	73.01	-3.70	3,594.34	2,908.29	232.48	143.06	89.43	2.600		
12,300.00	7,272.00	11,886.95	7,041.00	75.82	74.26	-3.70	3,694.33	2,909.33	232.48	141.55	90.93	2.557		
12,400.00	7,272.00	11,986.95	7,041.00	77.16	75.54	-3.70	3,794.32	2,910.36	232.48	140.05	92.44	2.515		
12,500.00	7,272.00	12,086.95	7,041.00	78.52	76.84	-3.70	3,894.32	2,911.40	232.48	138.54	93.94	2.475		
12,600.00	7,272.00	12,186.95	7,041.00	79.89	78.16	-3.70	3,994.31	2,912.44	232.48	137.03	95.45	2.436		
12,700.00	7,272.00	12,286.95	7,041.00	81.27	79.49	-3.70	4,094.31	2,913.47	232.48	135.52	96.96	2.398		
12,745.14	7,272.00	12,332.10	7,041.00	82.10	80.10	-3.70	4,139.45	2,913.94	232.48	135.01	97.48	2.385		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - STELLING 1 - CPR WELL - GYRO													Offset Site Error: 0.00 usft
Survey Program: 77-VESSI_GYROFLEX													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-61.93	621.29	-1,164.88	1,320.23				
100.00	100.00	91.24	91.24	0.14	0.09	-61.94	621.15	-1,165.03	1,320.27	1,320.05	0.22	5,957.071	
140.00	140.00	130.73	130.73	0.28	0.16	-61.94	621.07	-1,165.14	1,320.34	1,319.90	0.43	3,039.934 ES	
200.00	200.00	190.07	190.07	0.49	0.26	-175.95	621.02	-1,165.30	1,321.08	1,320.33	0.75	1,763.974	
300.00	299.92	289.18	289.18	0.85	0.43	-175.95	621.25	-1,165.45	1,325.15	1,323.87	1.28	1,035.930	
400.00	399.64	386.58	386.58	1.21	0.60	-175.94	621.83	-1,165.57	1,332.85	1,331.03	1.82	734.130	
500.00	499.05	489.65	489.65	1.59	0.78	-175.94	622.29	-1,165.68	1,343.92	1,341.56	2.36	568.567	
600.00	598.03	590.06	590.05	1.99	0.96	-175.94	622.86	-1,165.54	1,358.29	1,355.38	2.91	466.873	
700.00	696.44	691.86	691.85	2.41	1.14	-175.94	623.41	-1,165.15	1,375.87	1,372.41	3.46	397.790	
800.00	794.18	787.75	787.74	2.87	1.31	-175.95	623.87	-1,164.80	1,396.85	1,392.85	4.00	348.996 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - STELLING 24-4 - CPR WELL - GYRO													Offset Site Error: 0.00 usft	
Survey Program: 100-VESSI_GYROFLEX													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-105.76	-63.57	-225.19	234.07					
100.00	100.00	93.19	93.19	0.14	0.07	-105.65	-63.18	-225.47	234.15	233.95	0.21	1,123.365		
140.00	140.00	133.61	133.61	0.28	0.14	-105.55	-62.82	-225.69	234.27	233.85	0.42	563.634 ES		
200.00	200.00	194.47	194.46	0.49	0.24	140.68	-62.25	-225.84	234.74	234.01	0.73	320.983		
300.00	299.92	292.80	292.79	0.85	0.42	141.48	-61.23	-226.21	237.84	236.58	1.26	189.013		
400.00	399.64	391.17	391.14	1.21	0.59	142.75	-60.20	-227.23	244.38	242.58	1.80	135.910		
500.00	499.05	489.30	489.27	1.59	0.77	144.24	-59.81	-228.59	254.34	252.00	2.35	108.426		
600.00	598.03	587.67	587.62	1.99	0.94	145.96	-59.68	-230.19	267.65	264.75	2.90	92.254		
700.00	696.44	688.61	688.55	2.41	1.12	148.04	-58.89	-231.56	283.79	280.33	3.47	81.878		
800.00	794.18	786.17	786.10	2.87	1.29	150.09	-58.26	-232.23	302.63	298.60	4.03	75.015		
900.00	891.12	883.02	882.95	3.36	1.46	152.04	-58.23	-232.91	324.94	320.34	4.61	70.516		
1,000.00	987.14	979.24	979.17	3.89	1.63	153.77	-59.25	-233.47	350.59	345.40	5.19	67.593		
1,100.00	1,082.13	1,074.05	1,073.97	4.48	1.79	155.39	-60.51	-233.99	379.59	373.82	5.77	65.808		
1,200.00	1,175.98	1,168.72	1,168.62	5.12	1.96	156.94	-61.78	-234.48	411.96	405.60	6.35	64.832		
1,300.00	1,268.56	1,262.72	1,262.61	5.82	2.12	158.38	-63.17	-234.71	447.42	440.48	6.94	64.437 SF		
1,390.00	1,350.71	1,345.01	1,344.89	6.51	2.26	159.56	-64.41	-234.74	482.03	474.55	7.47	64.506		
1,400.00	1,359.78	1,353.97	1,353.86	6.59	2.28	159.71	-64.53	-234.75	486.03	478.49	7.54	64.501		
1,500.00	1,450.41	1,443.92	1,443.79	7.40	2.43	161.14	-65.71	-234.94	526.32	518.22	8.11	64.920		
1,600.00	1,541.04	1,536.07	1,535.94	8.22	2.59	162.44	-66.49	-235.12	566.90	558.21	8.68	65.275		
1,700.00	1,631.67	1,630.89	1,630.76	9.06	2.76	163.70	-66.43	-234.59	607.14	597.87	9.27	65.508		
1,800.00	1,722.30	1,724.12	1,723.99	9.90	2.92	164.75	-66.77	-233.65	647.11	637.27	9.85	65.715		
1,900.00	1,812.93	1,815.14	1,815.00	10.75	3.07	165.68	-66.89	-232.57	687.12	676.70	10.42	65.954		
2,000.00	1,903.56	1,905.33	1,905.18	11.60	3.23	166.47	-67.33	-231.64	727.34	716.35	10.99	66.196		
2,100.00	1,994.19	1,989.43	1,989.28	12.46	3.38	167.11	-67.88	-231.26	768.15	756.62	11.53	66.602		
2,200.00	2,084.82	2,078.37	2,078.22	13.32	3.53	167.73	-68.32	-231.37	809.58	797.48	12.10	66.914		
2,300.00	2,175.45	2,164.88	2,164.72	14.18	3.69	168.27	-68.73	-231.70	851.33	838.67	12.65	67.277		
2,400.00	2,266.08	2,251.13	2,250.97	15.04	3.84	168.78	-68.73	-232.43	893.64	880.43	13.21	67.663		
2,500.00	2,356.71	2,341.52	2,341.35	15.91	4.00	169.23	-69.25	-233.60	936.27	922.49	13.78	67.938		
2,600.00	2,447.34	2,434.59	2,434.41	16.78	4.16	169.64	-70.04	-234.56	978.66	964.29	14.37	68.107		
2,700.00	2,537.98	2,527.42	2,527.24	17.64	4.32	170.05	-70.27	-235.29	1,021.01	1,006.06	14.96	68.272		
2,800.00	2,628.61	2,624.25	2,624.07	18.51	4.49	170.46	-70.58	-235.37	1,062.76	1,047.20	15.56	68.302		
2,890.00	2,710.17	2,699.81	2,699.63	19.30	4.63	170.75	-70.77	-235.53	1,100.49	1,084.44	16.05	68.572		
2,900.00	2,719.24	2,708.85	2,708.67	19.38	4.64	171.29	-70.78	-235.57	1,104.71	1,088.61	16.11	68.589		
2,994.40	2,804.62	2,794.15	2,793.97	20.22	4.79	176.26	-70.54	-235.87	1,145.12	1,128.47	16.65	68.783		
3,000.00	2,809.68	2,799.20	2,799.02	20.27	4.80	176.27	-70.50	-235.88	1,147.54	1,130.86	16.68	68.793		
3,100.00	2,899.96	2,889.28	2,889.09	21.16	4.96	176.41	-70.27	-236.20	1,190.84	1,173.59	17.25	69.022		
3,200.00	2,990.24	2,994.39	2,994.20	22.05	5.14	176.55	-70.49	-236.11	1,233.66	1,215.76	17.90	68.921		
3,300.00	3,080.52	3,074.41	3,074.22	22.94	5.28	176.66	-70.48	-235.72	1,276.19	1,257.77	18.42	69.272		
3,400.00	3,170.81	3,158.83	3,158.64	23.84	5.43	176.76	-70.27	-235.96	1,319.43	1,300.46	18.97	69.558		
3,500.00	3,261.09	3,246.81	3,246.63	24.73	5.58	176.87	-69.93	-236.36	1,362.88	1,343.34	19.53	69.773		
3,600.00	3,351.37	3,333.55	3,333.36	25.62	5.73	176.99	-69.23	-236.79	1,406.46	1,386.37	20.09	70.007		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - STELLING 3A-4H - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 108-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-101.31	-38.43	-192.17	196.10					
100.00	100.00	94.00	94.00	0.14	0.09	-101.39	-38.65	-191.88	195.74	195.51	0.23	844.546		
140.00	140.00	133.98	133.97	0.28	0.16	-101.47	-38.87	-191.62	195.52	195.08	0.45	438.832		
155.66	155.66	149.53	149.53	0.34	0.20	144.50	-38.98	-191.52	195.48	194.95	0.53	366.075	CC, ES	
200.00	200.00	193.72	193.71	0.49	0.30	144.45	-39.43	-191.25	195.79	195.00	0.79	249.020		
300.00	299.92	293.10	293.03	0.85	0.53	144.14	-42.48	-190.31	198.60	197.23	1.37	144.928		
400.00	399.64	391.92	391.56	1.21	0.78	143.15	-49.90	-189.06	204.86	202.87	1.99	102.870		
500.00	499.05	487.92	486.88	1.59	1.05	141.64	-61.14	-187.31	214.40	211.76	2.64	81.153		
600.00	598.03	577.95	576.11	1.99	1.32	140.61	-73.02	-188.32	229.93	226.63	3.30	69.762		
700.00	696.44	667.98	665.24	2.41	1.57	140.32	-84.74	-192.99	251.92	247.99	3.93	64.072		
800.00	794.18	760.80	757.22	2.87	1.84	141.00	-94.77	-200.34	278.59	274.01	4.58	60.824		
900.00	891.12	852.60	848.15	3.36	2.11	141.93	-104.44	-208.54	308.88	303.64	5.24	58.935		
1,000.00	987.14	942.03	936.55	3.89	2.41	142.88	-114.40	-217.72	343.28	337.36	5.92	57.954		
1,100.00	1,082.13	1,041.45	1,034.83	4.48	2.70	143.99	-125.66	-227.58	380.22	373.58	6.64	57.271		
1,200.00	1,175.98	1,136.21	1,128.74	5.12	2.97	145.13	-135.65	-235.33	418.28	410.94	7.34	56.956	SF	
1,300.00	1,268.56	1,222.14	1,213.84	5.82	3.24	146.10	-144.85	-242.89	459.82	451.77	8.05	57.135		
1,390.00	1,350.71	1,300.41	1,291.30	6.51	3.50	146.95	-153.34	-250.23	500.15	491.45	8.71	57.445		
1,400.00	1,359.78	1,309.22	1,300.02	6.59	3.53	147.11	-154.28	-251.07	504.78	495.99	8.78	57.466		
1,500.00	1,450.41	1,398.31	1,388.21	7.40	3.80	148.52	-163.65	-259.52	551.11	541.61	9.50	57.988		
1,600.00	1,541.04	1,490.06	1,479.15	8.22	4.07	149.81	-172.74	-267.74	597.18	586.96	10.22	58.425		
1,700.00	1,631.67	1,575.81	1,564.16	9.06	4.32	150.87	-180.98	-275.21	643.22	632.30	10.91	58.941		
1,800.00	1,722.30	1,648.81	1,636.39	9.90	4.55	151.61	-188.55	-282.62	690.70	679.14	11.55	59.795		
1,900.00	1,812.93	1,733.50	1,720.01	10.75	4.85	152.32	-197.89	-292.30	739.41	727.14	12.27	60.251		
2,000.00	1,903.56	1,834.94	1,820.28	11.60	5.19	153.09	-208.74	-303.18	787.61	774.53	13.08	60.221		
2,100.00	1,994.19	1,930.86	1,915.32	12.46	5.47	153.79	-218.17	-312.01	834.53	820.71	13.83	60.353		
2,200.00	2,084.82	2,026.95	2,010.71	13.32	5.75	154.49	-226.56	-319.95	880.71	866.14	14.57	60.466		
2,300.00	2,175.45	2,101.91	2,085.08	14.18	5.98	154.96	-233.43	-326.43	927.29	912.08	15.20	61.002		
2,400.00	2,266.08	2,211.73	2,193.98	15.04	6.31	155.54	-244.17	-335.59	973.68	957.64	16.04	60.714		
2,500.00	2,356.71	2,292.09	2,273.67	15.91	6.56	155.89	-252.49	-341.73	1,019.43	1,002.72	16.71	60.996		
2,600.00	2,447.34	2,400.90	2,381.59	16.78	6.89	156.31	-264.14	-349.35	1,064.66	1,047.11	17.55	60.647		
2,700.00	2,537.98	2,459.86	2,440.06	17.64	7.07	156.53	-270.20	-353.91	1,110.47	1,092.36	18.11	61.323		
2,800.00	2,628.61	2,540.39	2,519.81	18.51	7.33	156.81	-278.34	-361.50	1,157.89	1,139.11	18.78	61.649		
2,890.00	2,710.17	2,627.73	2,606.38	19.30	7.60	157.12	-286.76	-369.45	1,200.38	1,180.90	19.47	61.647		
2,900.00	2,719.24	2,637.84	2,616.40	19.38	7.63	157.67	-287.75	-370.32	1,205.07	1,185.52	19.55	61.638		
2,994.40	2,804.62	2,725.16	2,702.98	20.22	7.90	162.61	-296.49	-377.57	1,249.87	1,229.62	20.25	61.731		
3,000.00	2,809.68	2,730.01	2,707.79	20.27	7.91	162.61	-297.00	-377.97	1,252.57	1,232.28	20.29	61.740		
3,100.00	2,899.96	2,804.19	2,781.28	21.16	8.15	162.68	-304.82	-384.30	1,301.04	1,280.12	20.92	62.202		
3,200.00	2,990.24	2,866.44	2,842.89	22.05	8.35	162.74	-311.08	-390.66	1,350.96	1,329.49	21.47	62.931		
3,300.00	3,080.52	2,970.56	2,945.99	22.94	8.68	162.88	-320.69	-401.51	1,401.12	1,378.85	22.27	62.918		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T1N-R65W - STELLING 3B-4H - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 140-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-99.82	-28.96	-167.26	170.11				
100.00	100.00	90.39	90.39	0.14	0.10	-99.88	-29.07	-166.87	169.39	169.15	0.23	721.071	
140.00	140.00	131.01	131.00	0.28	0.14	-99.95	-29.18	-166.44	168.99	168.57	0.42	401.414	
200.00	200.00	193.06	193.04	0.49	0.27	145.90	-29.82	-165.23	168.46	167.70	0.76	221.242	
247.82	247.79	242.65	242.58	0.66	0.39	145.64	-31.12	-163.52	168.22	167.18	1.04	161.219 CC, ES	
300.00	299.92	294.19	294.04	0.85	0.51	145.34	-33.02	-161.55	168.62	167.27	1.35	125.339	
400.00	399.64	394.41	394.03	1.21	0.76	144.68	-38.40	-157.41	171.59	169.64	1.95	87.809	
500.00	499.05	494.24	493.36	1.59	1.04	143.56	-47.08	-152.43	177.25	174.64	2.60	68.082	
600.00	598.03	593.37	591.74	1.99	1.31	142.39	-58.04	-147.13	185.91	182.65	3.26	57.097	
700.00	696.44	693.65	691.22	2.41	1.59	141.82	-69.40	-141.60	197.27	193.33	3.93	50.144	
800.00	794.18	792.62	789.31	2.87	1.90	141.70	-81.12	-135.78	211.10	206.45	4.65	45.402	
900.00	891.12	890.95	886.76	3.36	2.21	142.05	-92.91	-130.05	227.75	222.37	5.38	42.306	
1,000.00	987.14	989.01	983.88	3.89	2.54	142.67	-105.14	-124.19	247.11	240.96	6.15	40.175	
1,100.00	1,082.13	1,085.66	1,079.33	4.48	2.88	143.15	-119.15	-118.27	269.50	262.56	6.94	38.817	
1,200.00	1,175.98	1,183.00	1,175.50	5.12	3.17	143.98	-132.91	-112.32	294.63	286.93	7.70	38.276	
1,300.00	1,268.56	1,280.07	1,271.54	5.82	3.46	145.15	-145.70	-106.23	322.30	313.84	8.46	38.076 SF	
1,390.00	1,350.71	1,364.98	1,355.60	6.51	3.71	146.31	-156.38	-100.87	349.64	340.48	9.15	38.194	
1,400.00	1,359.78	1,374.39	1,364.93	6.59	3.74	146.48	-157.53	-100.28	352.82	343.58	9.23	38.210	
1,500.00	1,450.41	1,468.35	1,458.03	7.40	4.03	148.09	-168.74	-94.49	384.77	374.79	9.99	38.532	
1,600.00	1,541.04	1,561.04	1,549.99	8.22	4.30	149.56	-179.01	-89.12	417.25	406.53	10.72	38.917	
1,700.00	1,631.67	1,658.75	1,646.95	9.06	4.60	150.91	-189.61	-83.20	449.68	438.20	11.48	39.173	
1,800.00	1,722.30	1,755.47	1,742.79	9.90	4.91	151.96	-200.86	-76.65	481.65	469.40	12.25	39.311	
1,900.00	1,812.93	1,850.62	1,837.02	10.75	5.21	152.84	-212.12	-69.89	513.42	500.41	13.02	39.445	
2,000.00	1,903.56	1,943.54	1,929.06	11.60	5.50	153.60	-223.11	-63.39	545.40	531.64	13.76	39.634	
2,100.00	1,994.19	2,035.33	2,020.03	12.46	5.79	154.30	-233.71	-57.29	577.79	563.30	14.49	39.868	
2,200.00	2,084.82	2,123.16	2,107.11	13.32	6.06	154.89	-243.95	-52.15	611.01	595.81	15.20	40.196	
2,300.00	2,175.45	2,215.28	2,198.54	14.18	6.33	155.50	-254.17	-47.36	644.90	628.98	15.92	40.501	
2,400.00	2,266.08	2,323.53	2,306.12	15.04	6.64	156.32	-264.19	-40.68	678.01	661.31	16.70	40.594	
2,500.00	2,356.71	2,424.76	2,406.73	15.91	6.92	157.16	-271.83	-32.66	709.60	692.19	17.41	40.767	
2,600.00	2,447.34	2,513.25	2,494.64	16.78	7.17	157.78	-279.14	-25.70	741.33	723.27	18.06	41.055	
2,700.00	2,537.98	2,600.59	2,581.40	17.64	7.43	158.27	-287.24	-19.64	773.96	755.25	18.72	41.351	
2,800.00	2,628.61	2,686.86	2,667.11	18.51	7.67	158.67	-295.78	-14.85	807.88	788.50	19.38	41.689	
2,890.00	2,710.17	2,777.24	2,756.89	19.30	7.94	159.06	-304.76	-9.53	838.16	818.11	20.05	41.797	
2,900.00	2,719.24	2,787.12	2,766.69	19.38	7.97	159.58	-305.79	-8.92	841.51	821.39	20.13	41.808	
2,994.40	2,804.62	2,886.71	2,865.46	20.22	8.27	164.26	-316.70	-2.22	873.41	852.52	20.89	41.811	
3,000.00	2,809.68	2,892.64	2,871.33	20.27	8.29	164.26	-317.37	-1.78	875.31	854.38	20.94	41.809	
3,100.00	2,899.96	2,980.59	2,958.45	21.16	8.58	164.29	-327.80	4.25	909.71	888.05	21.65	42.009	
3,200.00	2,990.24	3,076.53	3,053.48	22.05	8.88	164.31	-339.23	10.77	944.16	921.74	22.42	42.106	
3,300.00	3,080.52	3,163.62	3,139.82	22.94	9.15	164.35	-349.20	16.48	978.88	955.75	23.12	42.331	
3,400.00	3,170.81	3,251.63	3,227.12	23.84	9.42	164.41	-358.91	21.77	1,014.15	990.32	23.82	42.567	
3,500.00	3,261.09	3,358.69	3,333.40	24.73	9.73	164.53	-369.89	28.59	1,049.15	1,024.52	24.63	42.593	
3,600.00	3,351.37	3,448.63	3,422.65	25.62	10.00	164.62	-379.14	34.77	1,083.68	1,058.35	25.33	42.778	
3,700.00	3,441.66	3,540.74	3,513.98	26.52	10.29	164.66	-389.53	40.81	1,118.41	1,092.35	26.07	42.905	
3,800.00	3,531.94	3,630.52	3,602.98	27.42	10.57	164.68	-399.83	46.46	1,153.38	1,126.59	26.79	43.055	
3,900.00	3,622.22	3,722.16	3,693.94	28.31	10.84	164.75	-409.44	52.07	1,188.60	1,161.09	27.50	43.217	
4,000.00	3,712.50	3,827.01	3,798.12	29.21	11.14	164.89	-419.09	58.96	1,223.51	1,195.24	28.28	43.269	
4,100.00	3,802.79	3,906.47	3,877.05	30.11	11.37	164.99	-426.61	64.12	1,258.47	1,229.57	28.90	43.550	
4,200.00	3,893.07	3,995.85	3,965.75	31.00	11.64	165.02	-436.40	69.06	1,294.20	1,264.59	29.61	43.713	
4,300.00	3,983.35	4,085.38	4,054.50	31.90	11.92	165.00	-447.24	73.74	1,330.11	1,299.77	30.34	43.842	
4,400.00	4,073.63	4,199.29	4,167.31	32.80	12.29	164.95	-461.76	80.02	1,365.73	1,334.47	31.26	43.690	
4,500.00	4,163.92	4,282.99	4,250.13	33.70	12.56	164.90	-472.59	85.23	1,400.64	1,368.68	31.96	43.820	

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

Cathedral Energy Services

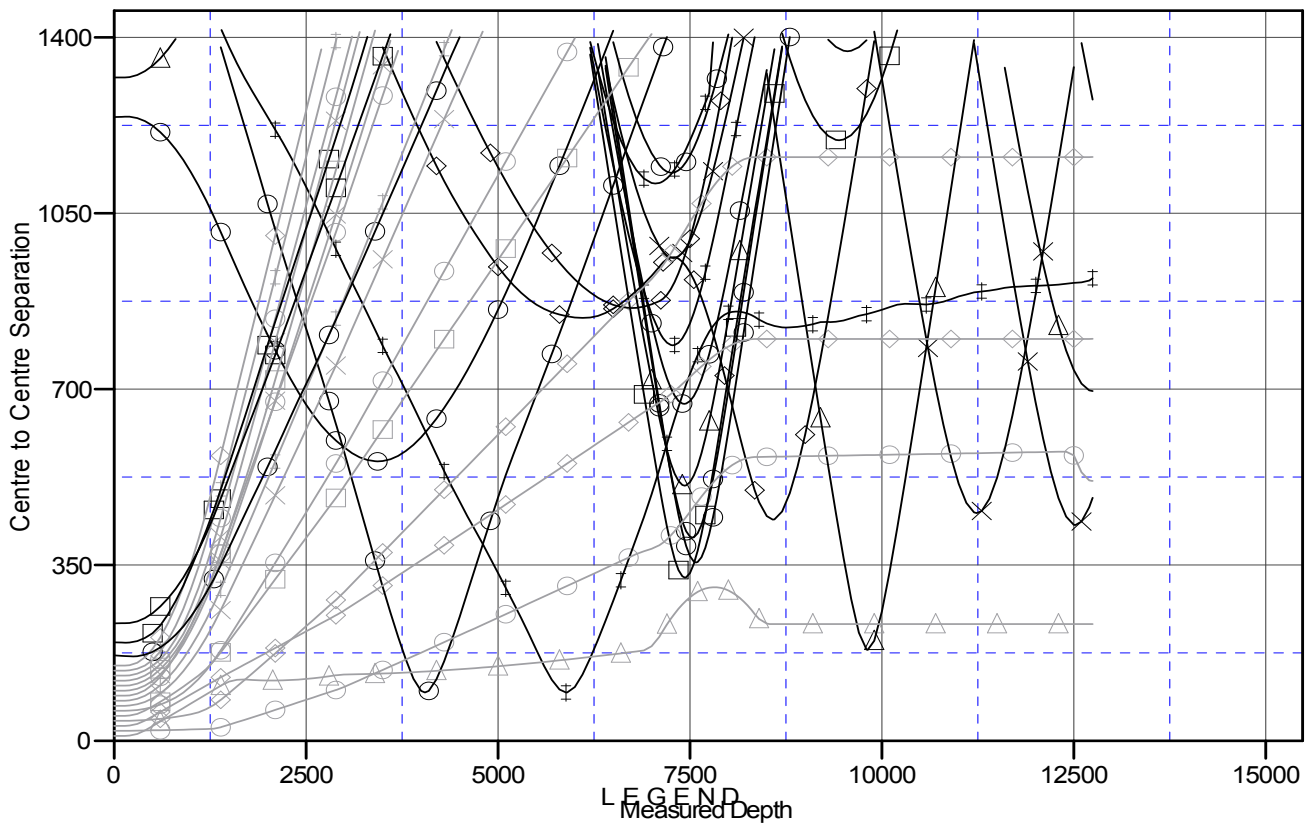
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3R-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4937.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4937.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3R-4H-N165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 4937.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: RUEGGE 3R-4H-N165 - Slot RUEGGE 3R-4H-N165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54 °

Ladder Plot



27N1-9HZ,KMG WELL,PLAN ONLY V0	✱ JOKER27N1-9HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3J-4H-N165,OH,PLAN#1 V0
27N2-9HZ,KMG WELL,SURVEYS V0	✱ JOKER27N2-9HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3K-4H-N165,OH,PLAN#1 V0
N33-4,CPR WELL,GYRO V0	✱ MORITZ-ANSCHUTZ 1,KMG WELL,NO SURVEYS V0	✱ RUEGGE 3L-4H-N165,OH,PLAN#1 V0
N34-4,CPR WELL,GYRO V0	✱ OLIN41-4,CPR WELL,SURVEYS V0	✱ RUEGGE 3M-4H-N165,OH,PLAN#1 V0
N43-4,CPR WELL,GYRO V0	✱ OLIN42-4A,CPR WELL,SURVEYS V0	✱ RUEGGE 3N-4H-N165,OH,PLAN#1 V0
N44-4,CPR WELL,GYRO V0	✱ OTTESEN 1,GREAT WESTERN,NO SURVEYS V0	✱ RUEGGE 3O-4H-N165,OH,PLAN#1 V0
EZ4A-4H,CPR WELL,SURVEYS V0	✱ RANDLE RED XX 3-4DI,KMG WELL,NO SURVEYS V0	✱ RUEGGE 3P-4H-N165,OH,PLAN#1 V0
EZ4B-4H,CPR WELL,SURVEYS V0	✱ RUEGGE 3C-4H-N165,OH,PLAN#1 V0	✱ RUEGGE 3Q-4H-N165,OH,PLAN#1 V0
ER13N-34HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3D-4H-N165,OH,PLAN#1 V0	✱ STELLING 1,CPR WELL,GYRO V0
R1N1-9HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3E-4H-N165,OH,PLAN#1 V0	✱ STELLING 24-4,CPR WELL,GYRO V0
R1N2-9HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3F-4H-N165,OH,PLAN#1 V0	✱ STELLING 3A-4H,CPR WELL,SURVEYS V0
R1N3-9HZ,KMG WELL,SURVEYS V0	✱ RUEGGE 3G-4H-N165,OH,PLAN#1 V0	✱ STELLING 3B-4H,CPR WELL,SURVEYS V0

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