

Crestone Peak Resources

DJ BASIN

S4-T1N-R65W

RUEGGE 3D-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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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:	Stations	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	12,122.72	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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						Out of range
BANE 27N2-9HZ - KMG WELL - SURVEYS						Out of range
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	7,081.50	12,205.00	1,142.94	1,045.51	11.731	CC, ES
BAT 29C-9HZ - KMG WELL - SURVEYS	7,150.00	12,205.00	1,146.20	1,048.18	11.693	SF
BAT 29N1-9HZ - KMG WELL - SURVEYS	7,065.57	12,122.00	678.87	592.04	7.819	CC, ES
BAT 29N1-9HZ - KMG WELL - SURVEYS	7,100.00	12,122.00	680.19	593.06	7.806	SF
BAT 29N2-9HZ - KMG WELL - SURVEYS	6,897.01	11,735.00	1,044.27	957.68	12.060	CC
BAT 29N2-9HZ - KMG WELL - SURVEYS	6,900.00	11,735.00	1,044.28	957.64	12.053	ES
BAT 29N2-9HZ - KMG WELL - SURVEYS	6,950.00	11,735.00	1,046.64	959.35	11.990	SF
BAT 3N1-9HZ - KMG WELL - NO SURVEYS						Out of range
BAT 3N1-9HZX - KMG WELL - SURVEYS	6,957.00	12,010.00	1,267.96	1,164.00	12.196	CC, ES
BAT 3N1-9HZX - KMG WELL - SURVEYS	7,050.00	12,010.00	1,272.89	1,167.86	12.120	SF
BAT 3N2-9HZ - KMG WELL - SURVEYS						Out of range
BAT 4C-9HZ - KMG WELL - SURVEYS	7,150.00	12,230.00	671.19	605.84	10.270	ES, SF
BAT 4C-9HZ - KMG WELL - SURVEYS	7,151.68	12,230.00	671.19	605.85	10.272	CC
BOYD 1N-32HZ - KMG WELL - SURVEYS	10,518.45	9,716.65	981.62	874.23	9.141	CC
BOYD 1N-32HZ - KMG WELL - SURVEYS	10,600.00	9,767.24	982.95	873.25	8.960	ES
BOYD 1N-32HZ - KMG WELL - SURVEYS	12,122.72	11,298.02	1,044.67	887.16	6.633	SF
BOYD 26N-32HZ - KMG WELL - SURVEYS	8,127.75	7,345.95	529.25	481.47	11.077	CC
BOYD 26N-32HZ - KMG WELL - SURVEYS	12,100.00	11,304.49	542.62	386.34	3.472	ES
BOYD 26N-32HZ - KMG WELL - SURVEYS	12,122.72	11,324.35	543.35	386.37	3.461	SF
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						Out of range
CHAPIN 34-4 - CPR WELL - GYRO	0.00	0.00	1,381.25			
CHAPIN 34-4 - CPR WELL - GYRO	800.00	787.23	1,407.70	1,403.81	361.556	SF
CHAPIN 43-4 - CPR WELL - GYRO						Out of range
CHAPIN 44-4 - CPR WELL - GYRO						Out of range
CHAVEZ 4A-4H - CPR WELL - SURVEYS						Out of range
CHAVEZ 4B-4H - CPR WELL - SURVEYS						Out of range
COLFER 13C-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 13N-34HZ - KMG WELL - SURVEYS						Out of range
COLFER 14C-34HZX - 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	7,264.09	7,074.32	431.53	385.29	9.334	CC, ES, SF
ENGLISH FARMS 15C-8HZ - 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

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Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 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	7,400.00	7,132.47	322.15	274.13	6.709	SF
ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS	7,424.23	7,129.71	321.16	273.44	6.731	CC, ES
ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS	7,300.00	7,114.58	123.25	74.89	2.549	SF
ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS	7,313.46	7,113.55	122.50	74.69	2.562	CC, ES
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS	7,110.20	7,116.24	181.55	136.10	3.995	CC, ES
ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS	7,150.00	7,118.44	185.68	137.96	3.891	SF
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	8,244.27	7,635.50	894.92	835.35	15.025	CC
ENGLISH FARMS 38N-8HZ - KMG WELL - SURVEYS	8,300.00	7,599.83	895.63	835.29	14.844	ES
ENGLISH FARMS 38N-8HZ - KMG WELL - SURVEYS	8,700.00	7,352.82	951.08	884.28	14.238	SF
ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08	7,200.00	6,913.19	1,239.96	1,197.18	28.979	SF
ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08	7,250.00	6,919.17	1,238.43	1,195.76	29.021	ES
ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08	7,253.24	6,919.44	1,238.43	1,195.76	29.025	CC
GITTLEIN 1 - KMG WELL - NO SURVEYS						Out of range
GITTLEIN 11-4 - CPR WELL - GYRO	12,100.00	7,102.23	278.58	189.53	3.128	ES, SF
GITTLEIN 11-4 - CPR WELL - GYRO	12,113.15	7,102.07	278.27	189.55	3.136	CC
GITTLEIN 12-4J - CPR WELL - SURVEYS	10,623.36	7,329.82	178.76	106.14	2.462	CC, ES, SF
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	12,122.72	6,965.00	678.05	620.80	11.843	CC, ES, SF
GITTLEIN 30N-28HZ - KMG WELL - SURVEYS	12,122.72	6,797.98	741.29	683.32	12.788	CC, ES, SF
GITTLEIN 30N-28HZX - KMG WELL - SURVEYS	12,122.72	6,798.31	740.22	681.34	12.571	CC, ES, SF
GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS	12,122.72	6,797.94	741.20	682.38	12.602	CC, ES, SF
GITTLEIN 3C-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 3N-28HZ - KMG WELL - SURVEYS						Out of range
GITTLEIN 4C-28HZ - KMG WELL - SURVEYS	12,122.72	6,950.52	894.14	810.95	10.748	CC, ES, SF
GITTLEIN 4C-28HZX - KMG WELL - SURVEYS	12,122.72	6,870.00	911.26	829.93	11.205	CC, ES, SF
GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS	12,122.72	6,870.00	919.20	837.54	11.256	CC, ES, SF
GITTLEIN 4N-28HZ - KMG WELL - SURVEYS	12,122.72	6,780.79	1,204.21	1,120.60	14.401	CC, ES, SF
GREEN XX 8-3 - KMG WELL - NO SURVEYS						Out of range
HSR-DREILING 1-5A - KMG WELL - SURVEYS	11,689.34	6,757.99	1,366.82	1,281.10	15.946	CC
HSR-DREILING 1-5A - KMG WELL - SURVEYS	11,700.00	6,756.37	1,366.91	1,281.02	15.914	ES
HSR-DREILING 1-5A - KMG WELL - SURVEYS	11,900.00	6,724.17	1,383.51	1,294.81	15.597	SF
HSR-GITTLEIN 1A - KMG WELL - NO SURVEYS						Out of range
JOKER 1N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 1N2-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 1N3-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 26N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 26N2-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 27N1-9HZ - KMG WELL - SURVEYS						Out of range
JOKER 27N2-9HZ - KMG WELL - SURVEYS						Out of range
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 SURVEYS						Out of range
MORITZ-ANSCHUTZ 1 - KMG WELL - NO SURVEYS						Out of range
OLIN 1 - CPR WELL - GYRO						Out of range
OLIN 1-4 - CPR WELL - GYRO	10,983.84	7,088.98	1,176.16	1,103.70	16.231	CC, ES
OLIN 1-4 - CPR WELL - GYRO	11,000.00	7,088.82	1,176.27	1,103.74	16.217	SF
OLIN 31-4 - CPR WELL - SURVEYS						Out of range

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 32-4 - CPR WELL - GYRO						Out of range
OLIN 41-4 - CPR WELL - SURVEYS						Out of range
OLIN 42-4A - CPR WELL - SURVEYS						Out of range
OTTESEN 1 - GREAT WESTERN - NO SURVEYS						Out of range
RANDLE RED XX 3-2D - KMG WELL - NO SURVEYS						Out of range
RANDLE RED XX 3-4DI - KMG WELL - NO SURVEYS						Out of range
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	200.00	200.00	10.00	9.01	10.072	CC, ES
RUEGGE 3C-4H-N165 - OH - PLAN #1	12,122.72	12,152.97	251.06	97.22	1.632	SF
RUEGGE 3E-4H-N165 - OH - PLAN #1	400.00	401.00	10.00	7.57	4.114	CC, ES
RUEGGE 3E-4H-N165 - OH - PLAN #1	12,122.72	12,229.68	259.95	120.85	1.869	SF
RUEGGE 3F-4H-N165 - OH - PLAN #1	400.00	401.00	20.00	17.57	8.229	CC, ES
RUEGGE 3F-4H-N165 - OH - PLAN #1	12,122.72	11,940.03	410.59	259.30	2.714	SF
RUEGGE 3G-4H-N165 - OH - PLAN #1	400.00	401.00	30.00	27.57	12.343	CC, ES
RUEGGE 3G-4H-N165 - OH - PLAN #1	12,122.72	12,017.44	659.99	506.77	4.307	SF
RUEGGE 3H-4H-N165 - OH - PLAN #1	400.00	401.00	40.00	37.57	16.458	CC, ES
RUEGGE 3H-4H-N165 - OH - PLAN #1	12,122.72	12,133.72	1,053.16	898.93	6.829	SF
RUEGGE 3I-4H-N165 - OH - PLAN #1	471.36	471.55	47.88	44.98	16.519	CC
RUEGGE 3I-4H-N165 - OH - PLAN #1	500.00	500.25	47.99	44.89	15.488	ES
RUEGGE 3I-4H-N165 - OH - PLAN #1	12,122.72	11,981.46	1,320.90	1,166.47	8.553	SF
RUEGGE 3J-4H-N165 - OH - PLAN #1	200.00	198.00	60.00	59.01	60.864	CC
RUEGGE 3J-4H-N165 - OH - PLAN #1	400.00	397.58	60.56	58.17	25.329	ES
RUEGGE 3J-4H-N165 - OH - PLAN #1	700.00	706.07	83.24	78.64	18.089	SF
RUEGGE 3K-4H-N165 - OH - PLAN #1	106.59	104.59	70.00	69.68	221.463	CC
RUEGGE 3K-4H-N165 - OH - PLAN #1	200.00	197.74	70.09	69.11	71.678	ES
RUEGGE 3K-4H-N165 - OH - PLAN #1	700.00	689.81	104.74	100.16	22.882	SF
RUEGGE 3L-4H-N165 - OH - PLAN #1	106.08	104.08	80.00	79.69	256.042	CC
RUEGGE 3L-4H-N165 - OH - PLAN #1	200.00	197.28	80.22	79.24	82.061	ES
RUEGGE 3L-4H-N165 - OH - PLAN #1	700.00	682.67	127.08	122.54	27.993	SF
RUEGGE 3M-4H-N165 - OH - PLAN #1	400.00	398.00	90.00	87.58	37.195	CC, ES
RUEGGE 3M-4H-N165 - OH - PLAN #1	700.00	690.06	114.04	109.56	25.470	SF
RUEGGE 3N-4H-N165 - OH - PLAN #1	105.96	103.96	100.00	99.69	320.955	CC
RUEGGE 3N-4H-N165 - OH - PLAN #1	200.00	196.75	100.30	99.32	102.645	ES
RUEGGE 3N-4H-N165 - OH - PLAN #1	700.00	676.11	154.71	150.20	34.336	SF
RUEGGE 3O-4H-N165 - OH - PLAN #1	400.00	398.00	110.00	107.58	45.460	CC, ES
RUEGGE 3O-4H-N165 - OH - PLAN #1	800.00	780.80	156.43	151.26	30.285	SF
RUEGGE 3P-4H-N165 - OH - PLAN #1	105.93	103.93	120.00	119.69	385.395	CC
RUEGGE 3P-4H-N165 - OH - PLAN #1	200.00	196.37	120.32	119.35	123.226	ES
RUEGGE 3P-4H-N165 - OH - PLAN #1	800.00	762.39	204.59	199.40	39.437	SF
RUEGGE 3Q-4H-N165 - OH - PLAN #1	400.00	398.00	130.00	127.58	53.726	CC, ES
RUEGGE 3Q-4H-N165 - OH - PLAN #1	800.00	777.04	178.23	173.08	34.583	SF
RUEGGE 3R-4H-N165 - OH - PLAN #1	102.53	100.47	140.00	139.71	488.181	CC
RUEGGE 3R-4H-N165 - OH - PLAN #1	200.00	194.66	140.47	139.50	144.702	ES
RUEGGE 3R-4H-N165 - OH - PLAN #1	800.00	755.91	227.84	222.68	44.121	SF
SPARBOE 7C-3HZ - KMG WELL - SURVEYS						Out of range
SPARBOE 7N-3HZ - KMG WELL - SURVEYS						Out of range
STELLING 1 - CPR WELL - GYRO	8,741.49	7,094.42	560.74	514.30	12.075	CC, ES, SF
STELLING 13-4 - CPR WELL - GYRO	9,631.02	7,100.79	110.61	55.05	1.991	CC, ES, SF
STELLING 14-4 - CPR WELL - GYRO	7,882.88	7,104.09	67.29	24.77	1.582	CC, ES, SF
STELLING 23-4 - CPR WELL - GYRO						Out of range
STELLING 24-4 - CPR WELL - GYRO	1,170.26	1,152.30	20.81	14.68	3.397	CC, ES, SF
STELLING 3A-4H - CPR WELL - SURVEYS	1,400.98	1,379.16	49.35	40.53	5.594	CC, ES

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

Cathedral Energy Services

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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)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S4-T1N-R65W						
STELLING 3A-4H - CPR WELL - SURVEYS	1,500.00	1,476.94	51.78	41.92	5.252	SF
STELLING 3B-4H - CPR WELL - SURVEYS	368.55	354.81	25.74	23.99	14.642	CC
STELLING 3B-4H - CPR WELL - SURVEYS	400.00	386.07	25.90	23.95	13.272	ES
STELLING 3B-4H - CPR WELL - SURVEYS	600.00	584.01	32.83	29.73	10.580	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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BAT 29C-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-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	6,166.99	12,205.00	7,304.30	34.37	79.42	-140.30	-1,184.66	-517.21	1,411.13	1,334.42	76.71	18.395	
6,500.00	6,262.70	12,205.00	7,304.30	34.95	79.42	-140.30	-1,184.66	-517.21	1,347.75	1,267.57	80.18	16.809	
6,535.31	6,296.50	12,205.00	7,304.30	35.16	79.42	-140.30	-1,184.66	-517.21	1,326.44	1,244.98	81.46	16.283	
6,550.00	6,310.58	12,205.00	7,304.30	35.25	79.42	-142.81	-1,184.66	-517.21	1,317.77	1,235.77	82.00	16.071	
6,600.00	6,358.81	12,205.00	7,304.30	35.52	79.42	-153.39	-1,184.66	-517.21	1,289.31	1,205.49	83.82	15.381	
6,650.00	6,407.28	12,205.00	7,304.30	35.77	79.42	-166.51	-1,184.66	-517.21	1,262.68	1,177.06	85.62	14.747	
6,700.00	6,455.79	12,205.00	7,304.30	35.99	79.42	179.86	-1,184.66	-517.21	1,238.14	1,150.76	87.37	14.171	
6,750.00	6,504.07	12,205.00	7,304.30	36.18	79.42	167.93	-1,184.66	-517.21	1,215.92	1,126.88	89.04	13.656	
6,800.00	6,551.91	12,205.00	7,304.30	36.34	79.42	158.62	-1,184.66	-517.21	1,196.27	1,105.68	90.59	13.205	
6,850.00	6,599.07	12,205.00	7,304.30	36.48	79.42	151.71	-1,184.66	-517.21	1,179.42	1,087.41	92.01	12.819	
6,900.00	6,645.31	12,205.00	7,304.30	36.59	79.42	146.60	-1,184.66	-517.21	1,165.57	1,072.11	93.47	12.471	
6,950.00	6,690.42	12,205.00	7,304.30	36.68	79.42	142.73	-1,184.66	-517.21	1,154.90	1,060.03	94.87	12.173	
7,000.00	6,734.17	12,205.00	7,304.30	36.74	79.42	139.67	-1,184.66	-517.21	1,147.56	1,051.51	96.05	11.947	
7,050.00	6,776.35	12,205.00	7,304.30	36.79	79.42	137.14	-1,184.66	-517.21	1,143.63	1,046.65	96.98	11.792	
7,081.50	6,802.02	12,205.00	7,304.30	36.80	79.42	135.71	-1,184.66	-517.21	1,142.94	1,045.51	97.43	11.731 CC, ES	
7,100.00	6,816.75	12,205.00	7,304.30	36.81	79.42	134.92	-1,184.66	-517.21	1,143.17	1,045.53	97.64	11.708	
7,150.00	6,855.18	12,205.00	7,304.30	36.81	79.42	132.88	-1,184.66	-517.21	1,146.20	1,048.18	98.03	11.693 SF	
7,200.00	6,891.45	12,205.00	7,304.30	36.80	79.42	130.92	-1,184.66	-517.21	1,152.67	1,054.54	98.13	11.746	
7,250.00	6,925.38	12,205.00	7,304.30	36.77	79.42	128.96	-1,184.66	-517.21	1,162.49	1,064.53	97.96	11.867	
7,300.00	6,956.82	12,205.00	7,304.30	36.73	79.42	126.94	-1,184.66	-517.21	1,175.52	1,077.99	97.53	12.052	
7,350.00	6,985.59	12,205.00	7,304.30	36.67	79.42	124.82	-1,184.66	-517.21	1,191.61	1,094.74	96.87	12.301	
7,400.00	7,011.57	12,205.00	7,304.30	36.59	79.42	122.57	-1,184.66	-517.21	1,210.55	1,114.55	96.00	12.610	
7,450.00	7,034.63	12,205.00	7,304.30	36.51	79.42	120.16	-1,184.66	-517.21	1,232.12	1,137.18	94.94	12.978	
7,500.00	7,054.66	12,205.00	7,304.30	36.42	79.42	117.58	-1,184.66	-517.21	1,256.09	1,162.36	93.73	13.401	
7,550.00	7,071.55	12,205.00	7,304.30	36.32	79.42	114.81	-1,184.66	-517.21	1,282.20	1,189.80	92.40	13.877	
7,600.00	7,085.23	12,205.00	7,304.30	36.22	79.42	111.85	-1,184.66	-517.21	1,310.21	1,219.24	90.97	14.403	
7,650.00	7,095.63	12,205.00	7,304.30	36.11	79.42	108.71	-1,184.66	-517.21	1,339.86	1,250.40	89.46	14.977	
7,700.00	7,102.70	12,205.00	7,304.30	36.00	79.42	105.41	-1,184.66	-517.21	1,370.91	1,283.00	87.91	15.594	
7,750.00	7,106.40	12,205.00	7,304.30	35.89	79.42	101.97	-1,184.66	-517.21	1,403.12	1,316.79	86.33	16.253	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BAT 29N1-9HZ - 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
6,000.00	5,784.12	12,122.00	7,136.98	32.02	82.44	-137.43	-1,151.11	-983.61	1,393.59	1,339.29	54.31	25.662	
6,100.00	5,879.84	12,122.00	7,136.98	32.61	82.44	-137.43	-1,151.11	-983.61	1,303.13	1,247.34	55.78	23.360	
6,200.00	5,975.55	12,122.00	7,136.98	33.19	82.44	-137.43	-1,151.11	-983.61	1,214.16	1,156.59	57.57	21.091	
6,300.00	6,071.27	12,122.00	7,136.98	33.78	82.44	-137.43	-1,151.11	-983.61	1,127.04	1,067.30	59.74	18.867	
6,400.00	6,166.99	12,122.00	7,136.98	34.37	82.44	-137.43	-1,151.11	-983.61	1,042.23	979.85	62.38	16.707	
6,500.00	6,262.70	12,122.00	7,136.98	34.95	82.44	-137.43	-1,151.11	-983.61	960.36	894.74	65.62	14.635	
6,535.31	6,296.50	12,122.00	7,136.98	35.16	82.44	-137.43	-1,151.11	-983.61	932.29	865.36	66.93	13.930	
6,550.00	6,310.58	12,122.00	7,136.98	35.25	82.44	-139.32	-1,151.11	-983.61	920.78	853.28	67.49	13.643	
6,600.00	6,358.81	12,122.00	7,136.98	35.52	82.44	-148.03	-1,151.11	-983.61	882.59	813.08	69.50	12.698	
6,650.00	6,407.28	12,122.00	7,136.98	35.77	82.44	-159.57	-1,151.11	-983.61	846.25	774.63	71.62	11.816	
6,700.00	6,455.79	12,122.00	7,136.98	35.99	82.44	-171.91	-1,151.11	-983.61	812.20	738.39	73.81	11.004	
6,750.00	6,504.07	12,122.00	7,136.98	36.18	82.44	177.18	-1,151.11	-983.61	780.91	704.89	76.02	10.272	
6,800.00	6,551.91	12,122.00	7,136.98	36.34	82.44	168.66	-1,151.11	-983.61	752.90	674.71	78.19	9.629	
6,850.00	6,599.07	12,122.00	7,136.98	36.48	82.44	162.33	-1,151.11	-983.61	728.68	648.45	80.24	9.082	
6,900.00	6,645.31	12,122.00	7,136.98	36.59	82.44	157.64	-1,151.11	-983.61	708.77	626.71	82.05	8.638	
6,950.00	6,690.42	12,122.00	7,136.98	36.68	82.44	154.03	-1,151.11	-983.61	693.63	609.78	83.85	8.272	
7,000.00	6,734.17	12,122.00	7,136.98	36.74	82.44	151.10	-1,151.11	-983.61	683.66	598.18	85.48	7.998	
7,050.00	6,776.35	12,122.00	7,136.98	36.79	82.44	148.58	-1,151.11	-983.61	679.14	592.54	86.60	7.842	
7,065.57	6,789.13	12,122.00	7,136.98	36.79	82.44	147.84	-1,151.11	-983.61	678.87	592.04	86.83	7.819 CC, ES	
7,100.00	6,816.75	12,122.00	7,136.98	36.81	82.44	146.26	-1,151.11	-983.61	680.19	593.06	87.14	7.806 SF	
7,150.00	6,855.18	12,122.00	7,136.98	36.81	82.44	144.00	-1,151.11	-983.61	686.79	599.71	87.08	7.887	
7,200.00	6,891.45	12,122.00	7,136.98	36.80	82.44	141.69	-1,151.11	-983.61	698.75	612.28	86.47	8.081	
7,250.00	6,925.38	12,122.00	7,136.98	36.77	82.44	139.24	-1,151.11	-983.61	715.74	630.38	85.36	8.385	
7,300.00	6,956.82	12,122.00	7,136.98	36.73	82.44	136.57	-1,151.11	-983.61	737.34	653.49	83.85	8.793	
7,350.00	6,985.59	12,122.00	7,136.98	36.67	82.44	133.62	-1,151.11	-983.61	763.05	681.00	82.05	9.300	
7,400.00	7,011.57	12,122.00	7,136.98	36.59	82.44	130.32	-1,151.11	-983.61	792.36	712.32	80.04	9.899	
7,450.00	7,034.63	12,122.00	7,136.98	36.51	82.44	126.62	-1,151.11	-983.61	824.74	746.82	77.92	10.584	
7,500.00	7,054.66	12,122.00	7,136.98	36.42	82.44	122.46	-1,151.11	-983.61	859.71	783.94	75.76	11.347	
7,550.00	7,071.55	12,122.00	7,136.98	36.32	82.44	117.82	-1,151.11	-983.61	896.80	823.18	73.62	12.182	
7,600.00	7,085.23	12,122.00	7,136.98	36.22	82.44	112.71	-1,151.11	-983.61	935.58	864.06	71.52	13.081	
7,650.00	7,095.63	12,122.00	7,136.98	36.11	82.44	107.15	-1,151.11	-983.61	975.68	906.18	69.50	14.038	
7,700.00	7,102.70	12,122.00	7,136.98	36.00	82.44	101.25	-1,151.11	-983.61	1,016.76	949.18	67.59	15.044	
7,750.00	7,106.40	12,122.00	7,136.98	35.89	82.44	95.14	-1,151.11	-983.61	1,058.52	992.74	65.78	16.092	
7,779.70	7,107.00	12,122.00	7,136.98	35.83	82.44	91.48	-1,151.11	-983.61	1,083.54	1,018.77	64.76	16.731	
7,800.00	7,107.00	12,122.00	7,136.98	35.79	82.44	91.48	-1,151.11	-983.61	1,100.72	1,036.63	64.10	17.172	
7,900.00	7,107.00	12,122.00	7,136.98	35.59	82.44	91.48	-1,151.11	-983.61	1,186.83	1,125.62	61.21	19.389	
8,000.00	7,107.00	12,122.00	7,136.98	35.42	82.44	91.48	-1,151.11	-983.61	1,274.96	1,216.04	58.92	21.639	
8,100.00	7,107.00	12,122.00	7,136.98	35.28	82.44	91.48	-1,151.11	-983.61	1,364.73	1,307.58	57.15	23.880	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BAT 29N2-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-ISOWSA 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	5,975.55	11,735.00	7,048.01	33.19	75.23	-122.51	-1,431.20	-631.99	1,356.17	1,291.34	64.82	20.921	
6,300.00	6,071.27	11,735.00	7,048.01	33.78	75.23	-122.51	-1,431.20	-631.99	1,288.33	1,220.68	67.65	19.044	
6,400.00	6,166.99	11,735.00	7,048.01	34.37	75.23	-122.51	-1,431.20	-631.99	1,224.91	1,154.15	70.76	17.311	
6,500.00	6,262.70	11,735.00	7,048.01	34.95	75.23	-122.51	-1,431.20	-631.99	1,166.62	1,092.50	74.12	15.740	
6,535.31	6,296.50	11,735.00	7,048.01	35.16	75.23	-122.51	-1,431.20	-631.99	1,147.42	1,072.06	75.36	15.226	
6,550.00	6,310.58	11,735.00	7,048.01	35.25	75.23	-125.20	-1,431.20	-631.99	1,139.71	1,063.83	75.88	15.021	
6,600.00	6,358.81	11,735.00	7,048.01	35.52	75.23	-136.52	-1,431.20	-631.99	1,115.35	1,037.75	77.60	14.373	
6,650.00	6,407.28	11,735.00	7,048.01	35.77	75.23	-150.44	-1,431.20	-631.99	1,094.14	1,014.65	79.49	13.765	
6,700.00	6,455.79	11,735.00	7,048.01	35.99	75.23	-164.93	-1,431.20	-631.99	1,076.38	995.05	81.32	13.236	
6,750.00	6,504.07	11,735.00	7,048.01	36.18	75.23	-177.76	-1,431.20	-631.99	1,062.32	979.32	83.00	12.799	
6,800.00	6,551.91	11,735.00	7,048.01	36.34	75.23	-172.01	-1,431.20	-631.99	1,052.18	967.72	84.47	12.457	
6,850.00	6,599.07	11,735.00	7,048.01	36.48	75.23	164.15	-1,431.20	-631.99	1,046.14	960.45	85.69	12.208	
6,897.01	6,642.58	11,735.00	7,048.01	36.58	75.23	158.41	-1,431.20	-631.99	1,044.27	957.68	86.59	12.060 CC	
6,900.00	6,645.31	11,735.00	7,048.01	36.59	75.23	158.08	-1,431.20	-631.99	1,044.28	957.64	86.64	12.053 ES	
6,950.00	6,690.42	11,735.00	7,048.01	36.68	75.23	153.23	-1,431.20	-631.99	1,046.64	959.35	87.29	11.990 SF	
7,000.00	6,734.17	11,735.00	7,048.01	36.74	75.23	149.17	-1,431.20	-631.99	1,053.18	965.54	87.65	12.016	
7,050.00	6,776.35	11,735.00	7,048.01	36.79	75.23	145.60	-1,431.20	-631.99	1,063.80	976.10	87.70	12.130	
7,100.00	6,816.75	11,735.00	7,048.01	36.81	75.23	142.29	-1,431.20	-631.99	1,078.31	990.84	87.47	12.328	
7,150.00	6,855.18	11,735.00	7,048.01	36.81	75.23	139.11	-1,431.20	-631.99	1,096.50	1,009.52	86.98	12.606	
7,200.00	6,891.45	11,735.00	7,048.01	36.80	75.23	135.92	-1,431.20	-631.99	1,118.10	1,031.83	86.27	12.960	
7,250.00	6,925.38	11,735.00	7,048.01	36.77	75.23	132.64	-1,431.20	-631.99	1,142.82	1,057.45	85.37	13.387	
7,300.00	6,956.82	11,735.00	7,048.01	36.73	75.23	129.21	-1,431.20	-631.99	1,170.34	1,086.03	84.30	13.883	
7,350.00	6,985.59	11,735.00	7,048.01	36.67	75.23	125.57	-1,431.20	-631.99	1,200.33	1,117.22	83.11	14.442	
7,400.00	7,011.57	11,735.00	7,048.01	36.59	75.23	121.67	-1,431.20	-631.99	1,232.49	1,150.66	81.83	15.061	
7,450.00	7,034.63	11,735.00	7,048.01	36.51	75.23	117.50	-1,431.20	-631.99	1,266.49	1,186.00	80.49	15.735	
7,500.00	7,054.66	11,735.00	7,048.01	36.42	75.23	113.06	-1,431.20	-631.99	1,302.03	1,222.93	79.10	16.460	
7,550.00	7,071.55	11,735.00	7,048.01	36.32	75.23	108.37	-1,431.20	-631.99	1,338.82	1,261.13	77.70	17.232	
7,600.00	7,085.23	11,735.00	7,048.01	36.22	75.23	103.48	-1,431.20	-631.99	1,376.59	1,300.31	76.28	18.046	
7,650.00	7,095.63	11,735.00	7,048.01	36.11	75.23	98.45	-1,431.20	-631.99	1,415.09	1,340.21	74.88	18.898	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BAT 3N1-9HZX - 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						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	
6,500.00	6,262.70	12,010.00	7,134.61	34.95	79.01	-139.38	-1,187.29	-304.20	1,378.39	1,288.24	90.15	15.290	CC, ES SF
6,535.31	6,296.50	12,010.00	7,134.61	35.16	79.01	-139.38	-1,187.29	-304.20	1,363.09	1,271.71	91.38	14.916	
6,550.00	6,310.58	12,010.00	7,134.61	35.25	79.01	-142.20	-1,187.29	-304.20	1,356.97	1,265.07	91.89	14.767	
6,600.00	6,358.81	12,010.00	7,134.61	35.52	79.01	-153.85	-1,187.29	-304.20	1,337.39	1,243.70	93.69	14.274	
6,650.00	6,407.28	12,010.00	7,134.61	35.77	79.01	-167.97	-1,187.29	-304.20	1,319.93	1,224.36	95.57	13.812	
6,700.00	6,455.79	12,010.00	7,134.61	35.99	79.01	177.46	-1,187.29	-304.20	1,304.76	1,207.42	97.34	13.404	
6,750.00	6,504.07	12,010.00	7,134.61	36.18	79.01	164.64	-1,187.29	-304.20	1,292.05	1,193.06	98.99	13.053	
6,800.00	6,551.91	12,010.00	7,134.61	36.34	79.01	154.50	-1,187.29	-304.20	1,281.91	1,181.43	100.48	12.758	
6,850.00	6,599.07	12,010.00	7,134.61	36.48	79.01	146.81	-1,187.29	-304.20	1,274.47	1,172.67	101.81	12.519	
6,900.00	6,645.31	12,010.00	7,134.61	36.59	79.01	140.98	-1,187.29	-304.20	1,269.82	1,166.88	102.93	12.336	
6,950.00	6,690.42	12,010.00	7,134.61	36.68	79.01	136.43	-1,187.29	-304.20	1,267.99	1,164.14	103.85	12.209	
6,957.00	6,696.63	12,010.00	7,134.61	36.69	79.01	135.87	-1,187.29	-304.20	1,267.96	1,164.00	103.97	12.196	
7,000.00	6,734.17	12,010.00	7,134.61	36.74	79.01	132.74	-1,187.29	-304.20	1,269.02	1,164.46	104.55	12.137	
7,050.00	6,776.35	12,010.00	7,134.61	36.79	79.01	129.61	-1,187.29	-304.20	1,272.89	1,167.86	105.03	12.120	
7,100.00	6,816.75	12,010.00	7,134.61	36.81	79.01	126.84	-1,187.29	-304.20	1,279.55	1,174.28	105.27	12.155	
7,150.00	6,855.18	12,010.00	7,134.61	36.81	79.01	124.28	-1,187.29	-304.20	1,288.94	1,183.65	105.30	12.241	
7,200.00	6,891.45	12,010.00	7,134.61	36.80	79.01	121.84	-1,187.29	-304.20	1,300.95	1,195.84	105.11	12.377	
7,250.00	6,925.38	12,010.00	7,134.61	36.77	79.01	119.44	-1,187.29	-304.20	1,315.45	1,210.73	104.72	12.562	
7,300.00	6,956.82	12,010.00	7,134.61	36.73	79.01	117.03	-1,187.29	-304.20	1,332.28	1,228.13	104.15	12.792	
7,350.00	6,985.59	12,010.00	7,134.61	36.67	79.01	114.57	-1,187.29	-304.20	1,351.28	1,247.87	103.41	13.067	
7,400.00	7,011.57	12,010.00	7,134.61	36.59	79.01	112.05	-1,187.29	-304.20	1,372.27	1,269.74	102.53	13.384	
7,450.00	7,034.63	12,010.00	7,134.61	36.51	79.01	109.44	-1,187.29	-304.20	1,395.07	1,293.54	101.53	13.741	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BAT 4C-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 20-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	5,975.55	12,230.00	7,301.64	33.19	82.76	-132.58	-1,196.13	-1,189.62	1,349.62	1,298.53	51.09	26.415	
6,300.00	6,071.27	12,230.00	7,301.64	33.78	82.76	-132.58	-1,196.13	-1,189.62	1,254.95	1,203.01	51.94	24.164	
6,400.00	6,166.99	12,230.00	7,301.64	34.37	82.76	-132.58	-1,196.13	-1,189.62	1,161.16	1,108.19	52.98	21.919	
6,500.00	6,262.70	12,230.00	7,301.64	34.95	82.76	-132.58	-1,196.13	-1,189.62	1,068.51	1,014.23	54.28	19.684	
6,535.31	6,296.50	12,230.00	7,301.64	35.16	82.76	-132.58	-1,196.13	-1,189.62	1,036.11	981.29	54.82	18.899	
6,550.00	6,310.58	12,230.00	7,301.64	35.25	82.76	-133.41	-1,196.13	-1,189.62	1,022.71	967.65	55.06	18.574	
6,600.00	6,358.81	12,230.00	7,301.64	35.52	82.76	-138.95	-1,196.13	-1,189.62	977.68	921.75	55.93	17.480	
6,650.00	6,407.28	12,230.00	7,301.64	35.77	82.76	-148.03	-1,196.13	-1,189.62	933.82	876.93	56.89	16.415	
6,700.00	6,455.79	12,230.00	7,301.64	35.99	82.76	-158.54	-1,196.13	-1,189.62	891.55	833.62	57.93	15.391	
6,750.00	6,504.07	12,230.00	7,301.64	36.18	82.76	-168.11	-1,196.13	-1,189.62	851.32	792.28	59.04	14.419	
6,800.00	6,551.91	12,230.00	7,301.64	36.34	82.76	-175.63	-1,196.13	-1,189.62	813.64	753.44	60.20	13.515	
6,850.00	6,599.07	12,230.00	7,301.64	36.48	82.76	178.82	-1,196.13	-1,189.62	779.09	717.70	61.39	12.692	
6,900.00	6,645.31	12,230.00	7,301.64	36.59	82.76	174.75	-1,196.13	-1,189.62	748.26	685.72	62.54	11.965	
6,950.00	6,690.42	12,230.00	7,301.64	36.68	82.76	171.70	-1,196.13	-1,189.62	721.81	658.21	63.60	11.350	
7,000.00	6,734.17	12,230.00	7,301.64	36.74	82.76	169.29	-1,196.13	-1,189.62	700.35	635.86	64.49	10.861	
7,050.00	6,776.35	12,230.00	7,301.64	36.79	82.76	167.30	-1,196.13	-1,189.62	684.47	619.35	65.12	10.511	
7,100.00	6,816.75	12,230.00	7,301.64	36.81	82.76	165.54	-1,196.13	-1,189.62	674.65	609.22	65.43	10.312	
7,150.00	6,855.18	12,230.00	7,301.64	36.81	82.76	163.90	-1,196.13	-1,189.62	671.19	605.84	65.35	10.270 ES, SF	
7,151.68	6,856.43	12,230.00	7,301.64	36.81	82.76	163.85	-1,196.13	-1,189.62	671.19	605.85	65.34	10.272 CC	
7,200.00	6,891.45	12,230.00	7,301.64	36.80	82.76	162.27	-1,196.13	-1,189.62	674.22	609.33	64.89	10.390	
7,250.00	6,925.38	12,230.00	7,301.64	36.77	82.76	160.59	-1,196.13	-1,189.62	683.62	619.10	64.52	10.595	
7,300.00	6,956.82	12,230.00	7,301.64	36.73	82.76	158.78	-1,196.13	-1,189.62	699.11	635.23	63.88	10.944	
7,350.00	6,985.59	12,230.00	7,301.64	36.67	82.76	156.77	-1,196.13	-1,189.62	720.21	657.23	62.98	11.436	
7,400.00	7,011.57	12,230.00	7,301.64	36.59	82.76	154.47	-1,196.13	-1,189.62	746.35	684.44	61.91	12.056	
7,450.00	7,034.63	12,230.00	7,301.64	36.51	82.76	151.82	-1,196.13	-1,189.62	776.90	716.13	60.77	12.784	
7,500.00	7,054.66	12,230.00	7,301.64	36.42	82.76	148.68	-1,196.13	-1,189.62	811.22	751.58	59.64	13.602	
7,550.00	7,071.55	12,230.00	7,301.64	36.32	82.76	144.94	-1,196.13	-1,189.62	848.71	790.13	58.58	14.487	
7,600.00	7,085.23	12,230.00	7,301.64	36.22	82.76	140.43	-1,196.13	-1,189.62	888.79	831.14	57.65	15.418	
7,650.00	7,095.63	12,230.00	7,301.64	36.11	82.76	134.99	-1,196.13	-1,189.62	930.93	874.08	56.85	16.374	
7,700.00	7,102.70	12,230.00	7,301.64	36.00	82.76	128.43	-1,196.13	-1,189.62	974.70	918.47	56.22	17.337	
7,750.00	7,106.40	12,230.00	7,301.64	35.89	82.76	120.65	-1,196.13	-1,189.62	1,019.66	963.92	55.75	18.291	
7,779.70	7,107.00	12,230.00	7,301.64	35.83	82.76	115.46	-1,196.13	-1,189.62	1,046.80	991.26	55.54	18.849	
7,800.00	7,107.00	12,230.00	7,301.64	35.79	82.76	115.46	-1,196.13	-1,189.62	1,065.46	1,010.04	55.42	19.225	
7,900.00	7,107.00	12,230.00	7,301.64	35.59	82.76	115.46	-1,196.13	-1,189.62	1,158.20	1,103.07	55.13	21.009	
8,000.00	7,107.00	12,230.00	7,301.64	35.42	82.76	115.46	-1,196.13	-1,189.62	1,252.06	1,196.88	55.18	22.692	
8,100.00	7,107.00	12,230.00	7,301.64	35.28	82.76	115.46	-1,196.13	-1,189.62	1,346.80	1,291.37	55.43	24.298	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BOYD 1N-32HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 25-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
6,000.00	5,784.12	5,807.63	5,790.92	32.02	12.66	57.02	-338.65	-2,550.06	1,412.11	1,370.26	41.86	33.738	
6,100.00	5,879.84	5,902.11	5,885.39	32.61	12.85	57.94	-339.16	-2,550.97	1,396.77	1,354.05	42.73	32.691	
6,200.00	5,975.55	5,996.36	5,979.64	33.19	13.05	58.90	-339.14	-2,551.78	1,381.95	1,338.33	43.61	31.686	
6,300.00	6,071.27	6,090.38	6,073.65	33.78	13.24	59.90	-338.59	-2,552.49	1,367.67	1,323.16	44.51	30.725	
6,400.00	6,166.99	6,185.21	6,168.47	34.37	13.43	60.94	-337.57	-2,553.12	1,353.98	1,308.56	45.42	29.813	
6,500.00	6,262.70	6,281.15	6,264.41	34.95	13.63	62.01	-336.57	-2,553.77	1,340.78	1,294.46	46.32	28.946	
6,535.31	6,296.50	6,315.04	6,298.30	35.16	13.70	62.39	-336.24	-2,554.01	1,336.23	1,289.59	46.64	28.650	
6,550.00	6,310.58	6,329.17	6,312.42	35.25	13.73	59.05	-336.10	-2,554.11	1,334.28	1,287.51	46.77	28.529	
6,600.00	6,358.81	6,377.56	6,360.81	35.52	13.83	45.63	-335.66	-2,554.46	1,326.65	1,279.47	47.18	28.116	
6,650.00	6,407.28	6,426.25	6,409.50	35.77	13.93	29.71	-335.24	-2,554.82	1,317.44	1,269.89	47.55	27.709	
6,700.00	6,455.79	6,472.06	6,455.30	35.99	14.02	13.30	-334.89	-2,555.24	1,306.69	1,258.83	47.86	27.300	
6,750.00	6,504.07	6,511.51	6,494.74	36.18	14.10	-1.38	-334.35	-2,555.68	1,294.60	1,246.45	48.15	26.886	
6,800.00	6,551.91	6,545.47	6,528.69	36.34	14.17	-13.34	-333.30	-2,556.05	1,281.39	1,232.98	48.41	26.471	
6,850.00	6,599.07	6,579.10	6,562.23	36.48	14.24	-22.74	-331.03	-2,556.24	1,267.31	1,218.70	48.61	26.069	
6,900.00	6,645.31	6,616.00	6,598.92	36.59	14.32	-30.22	-327.04	-2,556.01	1,252.27	1,203.50	48.76	25.681	
6,950.00	6,690.42	6,650.28	6,632.76	36.68	14.39	-36.30	-321.67	-2,555.27	1,236.36	1,187.49	48.87	25.297	
7,000.00	6,734.17	6,675.92	6,657.83	36.74	14.44	-41.34	-316.35	-2,554.39	1,219.87	1,170.92	48.96	24.918	
7,050.00	6,776.35	6,697.17	6,678.29	36.79	14.49	-45.63	-310.73	-2,553.52	1,203.20	1,154.21	48.99	24.560	
7,100.00	6,816.75	6,720.51	6,700.39	36.81	14.54	-49.40	-303.31	-2,552.47	1,186.46	1,137.49	48.98	24.226	
7,150.00	6,855.18	6,746.80	6,724.90	36.81	14.59	-52.82	-293.89	-2,551.23	1,169.61	1,120.69	48.92	23.910	
7,200.00	6,891.45	6,769.83	6,746.05	36.80	14.64	-55.93	-284.82	-2,550.16	1,152.74	1,103.93	48.81	23.615	
7,250.00	6,925.38	6,790.84	6,765.04	36.77	14.69	-58.80	-275.88	-2,549.35	1,136.14	1,087.47	48.67	23.345	
7,300.00	6,956.82	6,804.00	6,776.79	36.73	14.72	-61.34	-269.96	-2,548.93	1,120.00	1,071.53	48.46	23.110	
7,350.00	6,985.59	6,830.05	6,799.68	36.67	14.78	-63.95	-257.55	-2,548.39	1,104.35	1,056.08	48.27	22.878	
7,400.00	7,011.57	6,851.00	6,817.73	36.59	14.84	-66.33	-246.91	-2,548.28	1,089.52	1,041.48	48.04	22.677	
7,450.00	7,034.63	6,872.41	6,835.79	36.51	14.90	-68.58	-235.41	-2,548.35	1,075.51	1,027.69	47.81	22.494	
7,500.00	7,054.66	6,899.00	6,857.63	36.42	14.98	-70.83	-220.26	-2,548.53	1,062.35	1,014.75	47.60	22.319	
7,550.00	7,071.55	6,925.69	6,878.84	36.32	15.06	-72.96	-204.05	-2,548.68	1,050.09	1,002.69	47.40	22.154	
7,600.00	7,085.23	6,954.37	6,900.72	36.22	15.16	-75.02	-185.52	-2,548.70	1,038.77	991.54	47.22	21.997	
7,650.00	7,095.63	6,980.21	6,919.50	36.11	15.26	-76.85	-167.78	-2,548.67	1,028.64	981.57	47.06	21.858	
7,700.00	7,102.70	7,004.80	6,936.51	36.00	15.37	-78.49	-150.01	-2,548.67	1,019.89	972.97	46.92	21.738	
7,750.00	7,106.40	7,027.95	6,951.75	35.89	15.47	-79.92	-132.60	-2,548.82	1,012.75	965.96	46.79	21.643	
7,779.70	7,107.00	7,042.60	6,961.01	35.83	15.54	-80.71	-121.25	-2,549.00	1,009.33	962.60	46.73	21.598	
7,800.00	7,107.00	7,056.24	6,969.40	35.79	15.61	-81.19	-110.49	-2,549.17	1,007.29	960.58	46.72	21.562	
7,900.00	7,107.00	7,139.36	7,015.99	35.59	16.10	-83.84	-41.71	-2,549.58	999.54	952.76	46.78	21.366	
8,000.00	7,107.00	7,227.46	7,058.00	35.42	16.74	-86.25	35.67	-2,548.73	994.31	947.21	47.10	21.110	
8,091.97	7,107.00	7,280.19	7,077.81	35.29	17.19	-87.39	84.51	-2,548.55	992.40	944.83	47.57	20.861	
8,100.00	7,107.00	7,285.48	7,079.50	35.28	17.24	-87.49	89.52	-2,548.60	992.42	944.78	47.64	20.833	
8,200.00	7,107.00	7,364.74	7,098.79	35.18	18.02	-88.60	166.32	-2,550.32	994.29	945.58	48.71	20.412	
8,300.00	7,107.00	7,448.17	7,109.43	35.11	18.94	-89.22	248.98	-2,553.05	997.93	947.84	50.08	19.925	
8,400.00	7,107.00	7,538.35	7,114.17	35.11	20.03	-89.49	338.93	-2,557.05	1,002.90	951.15	51.75	19.379	
8,500.00	7,107.00	7,633.16	7,117.49	35.20	21.25	-89.69	433.56	-2,561.92	1,008.60	954.98	53.63	18.808	
8,600.00	7,107.00	7,728.78	7,119.95	35.43	22.58	-89.83	529.00	-2,567.15	1,014.66	958.99	55.67	18.225	
8,700.00	7,107.00	7,827.39	7,118.94	35.85	23.98	-89.77	627.43	-2,573.05	1,021.24	963.36	57.88	17.645	
8,800.00	7,107.00	7,938.11	7,117.33	36.44	25.47	-89.68	737.97	-2,578.96	1,027.19	967.03	60.16	17.075	
8,900.00	7,107.00	8,041.18	7,118.59	37.18	26.79	-89.75	840.93	-2,583.61	1,032.28	969.95	62.33	16.561	
9,000.00	7,107.00	8,140.64	7,120.50	38.02	28.20	-89.86	940.27	-2,588.09	1,037.38	972.73	64.65	16.045	
9,100.00	7,107.00	8,278.22	7,120.91	38.93	30.30	-89.88	1,077.78	-2,591.79	1,040.65	973.20	67.45	15.428	
9,200.00	7,107.00	8,387.06	7,121.30	39.90	31.91	-89.91	1,186.62	-2,592.35	1,041.77	971.79	69.98	14.886	
9,300.00	7,107.00	8,493.34	7,121.66	40.91	33.55	-89.93	1,292.91	-2,591.97	1,042.00	969.40	72.60	14.352	
9,400.00	7,107.00	8,594.85	7,120.70	41.96	35.23	-89.87	1,394.41	-2,591.33	1,041.97	966.63	75.34	13.830	
9,474.03	7,107.00	8,667.86	7,119.65	42.76	36.41	-89.82	1,467.40	-2,590.82	1,041.90	964.54	77.36	13.468	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BOYD 1N-32HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 25-ISOWSA 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		
9,500.00	7,107.00	8,692.92	7,119.34	43.05	36.80	-89.80	1,492.46	-2,590.68	1,041.91	963.86	78.05	13.349		
9,600.00	7,107.00	8,795.78	7,118.13	44.16	38.44	-89.73	1,595.31	-2,590.11	1,041.95	961.16	80.79	12.896		
9,700.00	7,107.00	8,900.41	7,116.23	45.31	40.20	-89.63	1,699.92	-2,589.03	1,041.54	957.86	83.68	12.447		
9,800.00	7,107.00	9,006.50	7,113.41	46.48	42.03	-89.47	1,805.96	-2,587.41	1,040.63	953.98	86.65	12.010		
9,900.00	7,107.00	9,116.72	7,110.77	47.67	43.81	-89.33	1,916.12	-2,584.84	1,038.91	949.38	89.53	11.605		
10,000.00	7,107.00	9,238.73	7,109.60	48.88	45.72	-89.26	2,038.04	-2,580.59	1,036.12	943.77	92.35	11.219		
10,100.00	7,107.00	9,509.00	7,106.54	50.11	50.10	-89.06	2,305.23	-2,543.54	1,022.00	927.44	94.57	10.807		
10,200.00	7,107.00	9,553.36	7,105.93	51.36	50.79	-89.01	2,348.70	-2,534.75	1,003.38	905.57	97.80	10.259		
10,300.00	7,107.00	9,588.75	7,106.02	52.63	51.34	-89.01	2,383.79	-2,530.25	991.10	890.12	100.98	9.814		
10,400.00	7,107.00	9,644.32	7,108.26	53.91	52.21	-89.14	2,439.18	-2,526.42	984.48	880.54	103.94	9.472		
10,500.00	7,107.00	9,705.96	7,110.39	55.20	53.24	-89.26	2,500.74	-2,524.35	981.70	874.84	106.86	9.187		
10,518.45	7,107.00	9,716.65	7,110.53	55.45	53.42	-89.27	2,511.44	-2,524.24	981.62	874.23	107.39	9.141 CC		
10,600.00	7,107.00	9,767.24	7,110.94	56.51	54.27	-89.30	2,562.01	-2,524.79	982.95	873.25	109.70	8.960 ES		
10,700.00	7,107.00	9,844.31	7,113.34	57.84	55.54	-89.44	2,638.97	-2,528.04	987.62	875.09	112.53	8.777		
10,800.00	7,107.00	9,952.13	7,117.63	59.17	57.35	-89.69	2,746.57	-2,533.54	993.34	877.75	115.59	8.594		
10,900.00	7,107.00	10,036.01	7,119.49	60.52	58.83	-89.80	2,830.30	-2,537.82	999.00	880.43	118.57	8.426		
11,000.00	7,107.00	10,145.15	7,116.91	61.87	60.74	-89.65	2,939.28	-2,543.19	1,004.50	882.71	121.80	8.247		
11,100.00	7,107.00	10,245.14	7,117.03	63.24	62.44	-89.66	3,039.16	-2,547.91	1,009.82	884.94	124.87	8.087		
11,200.00	7,107.00	10,347.16	7,117.75	64.61	64.20	-89.70	3,141.06	-2,552.62	1,015.03	887.02	128.01	7.929		
11,300.00	7,107.00	10,445.65	7,118.24	65.99	65.92	-89.73	3,239.45	-2,557.14	1,020.21	889.06	131.14	7.779		
11,400.00	7,107.00	10,542.80	7,118.30	67.39	67.65	-89.74	3,336.49	-2,561.82	1,025.62	891.32	134.30	7.637		
11,500.00	7,107.00	10,642.79	7,119.24	68.78	69.36	-89.79	3,436.35	-2,566.81	1,031.20	893.78	137.42	7.504		
11,600.00	7,107.00	10,754.53	7,122.09	70.19	71.26	-89.95	3,547.94	-2,571.91	1,036.38	895.77	140.61	7.371		
11,700.00	7,107.00	10,880.47	7,124.17	71.60	73.49	-90.06	3,673.81	-2,575.13	1,039.54	895.60	143.94	7.222		
11,800.00	7,107.00	11,002.16	7,123.89	73.02	75.67	-90.05	3,795.49	-2,575.39	1,040.35	893.10	147.25	7.065		
11,804.23	7,107.00	11,007.28	7,123.83	73.08	75.77	-90.05	3,800.61	-2,575.35	1,040.34	892.95	147.39	7.058		
11,900.00	7,107.00	11,094.77	7,122.46	74.45	77.33	-89.97	3,888.10	-2,575.04	1,040.56	890.09	150.47	6.915		
12,000.00	7,107.00	11,179.47	7,122.42	75.88	78.79	-89.97	3,972.78	-2,575.60	1,041.82	888.21	153.61	6.782		
12,100.00	7,107.00	11,273.13	7,123.18	77.31	80.41	-90.01	4,066.43	-2,577.19	1,044.10	887.35	156.75	6.661		
12,122.72	7,107.00	11,298.02	7,123.25	77.64	80.85	-90.01	4,091.31	-2,577.65	1,044.67	887.16	157.50	6.633 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BOYD 26N-32HZ - KMG WELL - SURVEYS												Offset Site Error: 0.00 usft			
Survey Program: 25-ISWWSA 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			
3,700.00	3,582.64	3,633.57	3,617.14	18.55	8.60	41.90	-329.79	-2,086.07	1,406.85	1,383.00	23.85	58.987			
3,800.00	3,678.36	3,724.33	3,707.89	19.14	8.78	42.70	-328.65	-2,084.90	1,383.88	1,359.27	24.61	56.222			
3,900.00	3,774.07	3,815.32	3,798.87	19.72	8.95	43.52	-327.67	-2,084.03	1,361.51	1,336.12	25.39	53.629			
4,000.00	3,869.79	3,906.53	3,890.07	20.31	9.13	44.35	-326.87	-2,083.48	1,339.75	1,313.58	26.17	51.196			
4,100.00	3,965.51	3,992.84	3,976.38	20.89	9.29	45.11	-327.28	-2,083.70	1,318.90	1,291.95	26.95	48.937			
4,200.00	4,061.22	4,088.74	4,072.28	21.47	9.47	45.97	-327.81	-2,084.17	1,298.55	1,270.82	27.74	46.817			
4,300.00	4,156.94	4,184.42	4,167.96	22.06	9.64	46.88	-327.82	-2,084.54	1,278.52	1,249.99	28.53	44.807			
4,400.00	4,252.66	4,279.88	4,263.42	22.64	9.82	47.83	-327.32	-2,084.83	1,258.85	1,229.50	29.34	42.902			
4,500.00	4,348.37	4,371.73	4,355.26	23.23	9.99	48.71	-328.17	-2,085.62	1,239.75	1,209.59	30.16	41.111			
4,600.00	4,444.09	4,466.52	4,450.04	23.82	10.17	49.64	-329.30	-2,086.65	1,221.13	1,190.16	30.97	39.425			
4,700.00	4,539.81	4,561.16	4,544.68	24.40	10.34	50.60	-329.98	-2,087.67	1,202.97	1,171.16	31.80	37.827			
4,800.00	4,635.52	4,661.69	4,645.20	24.99	10.53	51.68	-330.28	-2,088.72	1,185.25	1,152.62	32.63	36.323			
4,900.00	4,731.24	4,774.01	4,757.49	25.57	10.74	52.86	-332.35	-2,088.83	1,166.59	1,133.15	33.44	34.890			
5,000.00	4,826.96	4,870.29	4,853.75	26.16	10.93	53.90	-334.28	-2,088.51	1,147.91	1,113.63	34.28	33.484			
5,100.00	4,922.67	4,966.35	4,949.80	26.74	11.12	55.00	-335.76	-2,088.04	1,129.61	1,094.47	35.14	32.146			
5,200.00	5,018.39	5,061.21	5,044.65	27.33	11.31	56.13	-336.85	-2,087.44	1,111.76	1,075.75	36.01	30.870			
5,300.00	5,114.11	5,155.06	5,138.50	27.92	11.50	57.30	-337.74	-2,086.93	1,094.52	1,057.62	36.90	29.658			
5,400.00	5,209.82	5,248.92	5,232.35	28.50	11.69	58.50	-338.48	-2,086.53	1,077.95	1,040.15	37.80	28.514			
5,500.00	5,305.54	5,342.79	5,326.22	29.09	11.88	59.74	-339.08	-2,086.25	1,062.08	1,023.36	38.71	27.435			
5,600.00	5,401.25	5,431.25	5,414.68	29.67	12.05	60.94	-339.59	-2,086.26	1,047.05	1,007.40	39.64	26.412			
5,700.00	5,496.97	5,518.71	5,502.13	30.26	12.22	62.10	-340.62	-2,087.53	1,033.56	992.99	40.57	25.475			
5,800.00	5,592.69	5,614.11	5,597.51	30.85	12.40	63.39	-341.61	-2,089.19	1,020.94	979.46	41.48	24.612			
5,900.00	5,688.40	5,710.04	5,693.42	31.43	12.58	64.74	-342.24	-2,090.75	1,008.96	966.56	42.40	23.798			
6,000.00	5,784.12	5,806.88	5,790.25	32.02	12.78	66.16	-342.38	-2,091.99	997.56	954.24	43.32	23.027			
6,100.00	5,879.84	5,903.35	5,886.71	32.61	12.97	67.65	-342.00	-2,092.83	986.76	942.50	44.25	22.299			
6,200.00	5,975.55	5,999.44	5,982.80	33.19	13.16	69.20	-341.09	-2,093.28	976.63	931.45	45.19	21.613			
6,300.00	6,071.27	6,103.35	6,086.70	33.78	13.36	70.92	-340.01	-2,093.41	967.09	921.00	46.09	20.983			
6,400.00	6,166.99	6,206.43	6,189.77	34.37	13.56	72.55	-341.27	-2,093.65	957.10	910.12	46.98	20.374			
6,500.00	6,262.70	6,302.14	6,285.47	34.95	13.75	74.09	-342.48	-2,093.72	947.71	899.81	47.89	19.789			
6,535.31	6,296.50	6,335.89	6,319.23	35.16	13.82	74.65	-342.85	-2,093.71	944.58	896.36	48.21	19.591			
6,550.00	6,310.58	6,349.95	6,333.28	35.25	13.85	71.44	-342.99	-2,093.70	943.21	894.86	48.35	19.509			
6,600.00	6,358.81	6,393.68	6,377.01	35.52	13.94	58.38	-343.26	-2,093.70	937.32	888.52	48.80	19.209			
6,650.00	6,407.28	6,438.40	6,421.73	35.77	14.03	42.83	-343.33	-2,093.73	929.45	880.25	49.20	18.893			
6,700.00	6,455.79	6,482.14	6,465.48	35.99	14.12	26.79	-343.15	-2,093.82	919.61	870.05	49.56	18.557			
6,750.00	6,504.07	6,525.78	6,509.11	36.18	14.21	12.46	-342.70	-2,093.97	907.82	857.95	49.87	18.204			
6,800.00	6,551.91	6,556.24	6,539.55	36.34	14.27	0.77	-341.77	-2,094.05	894.44	844.25	50.19	17.821			
6,850.00	6,599.07	6,583.38	6,566.64	36.48	14.33	-8.39	-340.06	-2,094.03	879.90	829.43	50.47	17.435			
6,900.00	6,645.31	6,606.88	6,590.00	36.59	14.38	-15.59	-337.55	-2,093.96	864.53	813.84	50.69	17.055			
6,950.00	6,690.42	6,631.21	6,614.05	36.68	14.43	-21.40	-333.88	-2,093.83	848.42	797.57	50.85	16.686			
7,000.00	6,734.17	6,656.42	6,638.79	36.74	14.48	-26.26	-329.06	-2,093.64	831.57	780.63	50.94	16.324			
7,050.00	6,776.35	6,681.68	6,663.37	36.79	14.54	-30.46	-323.22	-2,093.42	814.05	763.07	50.98	15.969			
7,100.00	6,816.75	6,713.00	6,693.52	36.81	14.60	-34.30	-314.74	-2,093.24	795.96	744.98	50.98	15.613			
7,150.00	6,855.18	6,737.17	6,716.52	36.81	14.65	-37.78	-307.33	-2,093.05	777.19	726.29	50.90	15.269			
7,200.00	6,891.45	6,768.51	6,746.00	36.80	14.72	-41.19	-296.70	-2,092.54	757.70	706.88	50.82	14.909			
7,250.00	6,925.38	6,798.98	6,774.28	36.77	14.79	-44.52	-285.38	-2,091.91	737.61	686.91	50.70	14.549			
7,300.00	6,956.82	6,825.81	6,798.82	36.73	14.85	-47.75	-274.57	-2,091.31	717.16	666.65	50.51	14.198			
7,350.00	6,985.59	6,855.00	6,824.94	36.67	14.92	-51.02	-261.57	-2,090.62	696.73	646.42	50.31	13.848			
7,400.00	7,011.57	6,876.72	6,843.92	36.59	14.98	-54.04	-251.01	-2,090.06	676.47	626.46	50.01	13.528			
7,450.00	7,034.63	6,902.00	6,865.41	36.51	15.05	-57.12	-237.73	-2,089.32	656.62	606.90	49.72	13.207			
7,500.00	7,054.66	6,930.05	6,888.54	36.42	15.13	-60.29	-221.89	-2,088.42	637.31	587.86	49.45	12.887			
7,550.00	7,071.55	6,949.00	6,903.74	36.32	15.19	-63.02	-210.60	-2,087.78	618.82	569.77	49.06	12.614			
7,600.00	7,085.23	6,977.80	6,926.05	36.22	15.28	-66.13	-192.40	-2,086.99	601.48	552.68	48.81	12.324			

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BOYD 26N-32HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 25-ISCSWA 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	
7,650.00	7,095.63	6,997.00	6,940.28	36.11	15.35	-68.65	-179.52	-2,086.68	585.89	537.46	48.43	12.098	
7,700.00	7,102.70	7,025.58	6,960.58	36.00	15.45	-71.56	-159.41	-2,086.48	572.10	523.90	48.20	11.869	
7,750.00	7,106.40	7,052.89	6,979.01	35.89	15.56	-74.28	-139.26	-2,086.53	560.39	512.42	47.96	11.684	
7,779.70	7,107.00	7,072.12	6,991.49	35.83	15.65	-76.02	-124.64	-2,086.57	554.38	506.53	47.86	11.584	
7,800.00	7,107.00	7,085.55	6,999.97	35.79	15.71	-76.89	-114.22	-2,086.57	550.70	502.92	47.78	11.525	
7,900.00	7,107.00	7,152.50	7,038.75	35.59	16.06	-80.94	-59.68	-2,086.45	537.43	489.96	47.47	11.322	
8,000.00	7,107.00	7,231.55	7,075.90	35.42	16.57	-84.91	10.02	-2,086.55	531.40	484.03	47.37	11.218	
8,100.00	7,107.00	7,321.71	7,106.70	35.28	17.29	-88.24	94.67	-2,086.21	529.37	481.74	47.63	11.113	
8,127.75	7,107.00	7,345.95	7,112.97	35.25	17.51	-88.91	118.08	-2,086.12	529.25	481.47	47.78	11.077 CC	
8,200.00	7,107.00	7,413.16	7,125.96	35.18	18.17	-90.32	184.01	-2,086.37	529.84	481.31	48.53	10.918	
8,300.00	7,107.00	7,523.80	7,133.15	35.11	19.37	-91.10	294.30	-2,085.96	530.16	479.98	50.18	10.565	
8,400.00	7,107.00	7,621.83	7,132.02	35.11	20.56	-90.98	392.31	-2,084.86	529.61	477.68	51.93	10.198	
8,500.00	7,107.00	7,720.05	7,128.94	35.20	21.84	-90.64	490.48	-2,084.05	529.34	475.47	53.88	9.825	
8,502.61	7,107.00	7,722.51	7,128.85	35.20	21.87	-90.63	492.94	-2,084.04	529.34	475.41	53.93	9.815	
8,600.00	7,107.00	7,816.27	7,125.15	35.43	23.09	-90.23	586.63	-2,084.00	529.84	473.97	55.88	9.482	
8,700.00	7,107.00	7,919.81	7,123.42	35.85	24.36	-90.05	690.14	-2,083.61	530.05	472.14	57.92	9.152	
8,800.00	7,107.00	8,018.31	7,123.74	36.44	25.59	-90.08	788.64	-2,083.22	530.26	470.30	59.96	8.844	
8,900.00	7,107.00	8,117.78	7,123.12	37.18	26.99	-90.01	888.11	-2,083.00	530.63	468.41	62.22	8.528	
9,000.00	7,107.00	8,216.73	7,124.11	38.02	28.37	-90.12	987.06	-2,082.88	531.11	466.62	64.50	8.235	
9,100.00	7,107.00	8,316.65	7,125.94	38.93	29.80	-90.32	1,086.95	-2,082.99	531.82	464.96	66.86	7.955	
9,200.00	7,107.00	8,416.23	7,126.98	39.90	31.36	-90.43	1,186.53	-2,082.99	532.42	463.02	69.40	7.671	
9,300.00	7,107.00	8,513.38	7,127.08	40.91	32.94	-90.44	1,283.68	-2,083.32	533.37	461.33	72.03	7.404	
9,400.00	7,107.00	8,613.04	7,126.95	41.96	34.51	-90.42	1,383.33	-2,084.09	534.73	460.05	74.68	7.160	
9,500.00	7,107.00	8,712.98	7,127.50	43.05	36.00	-90.48	1,483.27	-2,084.78	536.03	458.75	77.27	6.937	
9,600.00	7,107.00	8,810.23	7,128.04	44.16	37.54	-90.54	1,580.52	-2,085.69	537.56	457.61	79.96	6.723	
9,700.00	7,107.00	8,916.69	7,127.92	45.31	39.27	-90.52	1,686.97	-2,086.51	538.93	456.13	82.80	6.509	
9,800.00	7,107.00	9,025.97	7,128.07	46.48	41.02	-90.54	1,796.24	-2,085.60	538.70	453.04	85.66	6.289	
9,900.00	7,107.00	9,125.81	7,127.36	47.67	42.68	-90.46	1,896.06	-2,083.86	537.54	449.01	88.53	6.072	
9,966.28	7,107.00	9,186.38	7,127.75	48.47	43.66	-90.51	1,956.62	-2,083.17	537.19	446.82	90.37	5.944	
10,000.00	7,107.00	9,218.84	7,128.39	48.88	44.20	-90.58	1,989.08	-2,083.04	537.26	445.93	91.32	5.883	
10,100.00	7,107.00	9,320.33	7,129.99	50.11	45.88	-90.75	2,090.55	-2,082.47	537.31	443.09	94.22	5.703	
10,140.01	7,107.00	9,360.13	7,130.51	50.61	46.56	-90.80	2,130.35	-2,082.22	537.31	441.92	95.39	5.633	
10,200.00	7,107.00	9,419.09	7,131.27	51.36	47.55	-90.88	2,189.31	-2,081.89	537.34	440.20	97.15	5.531	
10,300.00	7,107.00	9,516.73	7,132.01	52.63	49.22	-90.96	2,286.94	-2,081.75	537.80	437.69	100.11	5.372	
10,400.00	7,107.00	9,615.19	7,132.08	53.91	50.94	-90.97	2,385.40	-2,081.87	538.52	435.37	103.15	5.221	
10,500.00	7,107.00	9,712.36	7,131.28	55.20	52.66	-90.88	2,482.57	-2,082.47	539.73	433.50	106.23	5.081	
10,600.00	7,107.00	9,813.89	7,129.76	56.51	54.44	-90.72	2,584.08	-2,083.41	541.23	431.87	109.36	4.949	
10,700.00	7,107.00	9,921.50	7,128.02	57.84	56.27	-90.53	2,691.67	-2,083.32	541.72	429.26	112.46	4.817	
10,800.00	7,107.00	10,023.27	7,127.68	59.17	57.98	-90.50	2,793.44	-2,082.10	541.11	425.60	115.51	4.685	
10,900.00	7,107.00	10,122.10	7,127.60	60.52	59.67	-90.49	2,892.26	-2,081.06	540.66	422.09	118.57	4.560	
11,000.00	7,107.00	10,221.69	7,129.14	61.87	61.37	-90.65	2,991.84	-2,080.15	540.36	418.73	121.63	4.443	
11,100.00	7,107.00	10,324.27	7,129.94	63.24	63.18	-90.74	3,094.40	-2,079.06	539.90	415.12	124.78	4.327	
11,200.00	7,107.00	10,423.21	7,130.04	64.61	64.87	-90.75	3,193.33	-2,077.78	539.20	411.33	127.88	4.217	
11,300.00	7,107.00	10,527.26	7,130.64	65.99	66.62	-90.81	3,297.37	-2,076.21	538.30	407.36	130.95	4.111	
11,400.00	7,107.00	10,632.08	7,131.00	67.39	68.43	-90.85	3,402.16	-2,073.79	536.60	402.53	134.07	4.002	
11,500.00	7,107.00	10,735.11	7,131.46	68.78	70.20	-90.91	3,505.13	-2,070.19	533.70	396.52	137.18	3.891	
11,600.00	7,107.00	10,822.64	7,131.00	70.19	71.71	-90.86	3,592.63	-2,068.32	532.14	391.79	140.35	3.791	
11,625.49	7,107.00	10,845.78	7,130.87	70.55	72.11	-90.85	3,615.77	-2,068.13	532.09	390.93	141.15	3.770	
11,700.00	7,107.00	10,914.09	7,131.02	71.60	73.29	-90.86	3,684.08	-2,068.16	532.56	389.08	143.48	3.712	
11,800.00	7,107.00	11,010.01	7,131.08	73.02	74.96	-90.87	3,780.00	-2,069.10	534.14	387.49	146.64	3.642	
11,900.00	7,107.00	11,106.55	7,130.26	74.45	76.70	-90.78	3,876.52	-2,070.59	536.27	386.39	149.87	3.578	
12,000.00	7,107.00	11,199.71	7,129.37	75.88	78.34	-90.68	3,969.63	-2,073.28	539.72	386.68	153.04	3.527	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - BOYD 26N-32HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 25-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
12,100.00	7,107.00	11,304.49	7,128.80	77.31	80.15	-90.61	4,074.39	-2,075.73	542.62	386.34	156.28	3.472 ES	
12,122.72	7,107.00	11,324.35	7,128.76	77.64	80.49	-90.61	4,094.24	-2,076.24	543.35	386.37	156.97	3.461 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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	85.78	101.66	1,377.43	1,381.25				
100.00	100.00	74.10	74.10	0.14	0.06	85.78	101.62	1,377.75	1,381.54	1,381.35	0.20	7,063.172	
200.00	200.00	174.89	174.88	0.50	0.21	85.79	101.57	1,378.76	1,382.54	1,381.83	0.71	1,958.003	
300.00	300.00	279.21	279.20	0.85	0.39	85.78	101.74	1,379.40	1,383.16	1,381.91	1.25	1,106.963	
400.00	400.00	379.01	379.00	1.21	0.57	85.78	101.89	1,379.86	1,383.63	1,381.85	1.79	774.996	
500.00	499.98	489.33	489.32	1.56	0.76	-149.63	101.93	1,380.09	1,385.36	1,383.04	2.32	596.476	
600.00	599.84	587.66	587.65	1.90	0.93	-149.69	101.88	1,379.86	1,389.64	1,386.81	2.83	490.416	
700.00	699.45	684.30	684.29	2.26	1.10	-149.79	102.00	1,379.83	1,397.15	1,393.80	3.35	416.522	
800.00	798.70	787.23	787.22	2.63	1.28	-149.95	102.06	1,379.81	1,407.70	1,403.81	3.89	361.556 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 13N-9HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 16-ISWWSA 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		
3,300.00	3,199.78	3,466.00	3,381.85	16.22	14.30	29.53	-582.82	-1,974.43	1,404.77	1,379.83	24.93	56.345		
3,400.00	3,295.49	3,555.03	3,469.48	16.80	14.63	30.60	-570.25	-1,965.05	1,367.69	1,341.86	25.83	52.941		
3,500.00	3,391.21	3,623.01	3,536.63	17.39	14.86	31.40	-562.10	-1,958.19	1,331.72	1,304.99	26.73	49.828		
3,600.00	3,486.92	3,694.02	3,606.99	17.97	15.08	32.21	-554.74	-1,952.14	1,297.70	1,270.08	27.62	46.991		
3,700.00	3,582.64	3,769.90	3,682.35	18.55	15.30	33.08	-547.84	-1,946.61	1,265.33	1,236.82	28.50	44.394		
3,800.00	3,678.36	3,848.61	3,760.64	19.14	15.50	33.98	-541.37	-1,941.72	1,234.41	1,205.02	29.39	42.002		
3,900.00	3,774.07	3,923.87	3,835.66	19.72	15.67	34.81	-536.60	-1,937.95	1,205.08	1,174.82	30.26	39.822		
4,000.00	3,869.79	4,005.51	3,917.16	20.31	15.83	35.66	-533.09	-1,934.87	1,177.32	1,146.21	31.11	37.846		
4,100.00	3,965.51	4,086.28	3,997.84	20.89	15.97	36.51	-530.23	-1,932.63	1,150.86	1,118.91	31.95	36.019		
4,200.00	4,061.22	4,164.25	4,075.79	21.47	16.08	37.28	-529.02	-1,931.51	1,125.96	1,093.18	32.78	34.347		
4,300.00	4,156.94	4,245.00	4,156.54	22.06	16.18	38.07	-528.31	-1,931.72	1,102.92	1,069.32	33.60	32.824		
4,400.00	4,252.66	4,342.42	4,253.96	22.64	16.30	39.06	-527.49	-1,932.35	1,080.59	1,046.19	34.40	31.416		
4,500.00	4,348.37	4,438.88	4,350.41	23.23	16.41	40.08	-526.57	-1,932.84	1,058.44	1,023.23	35.21	30.063		
4,600.00	4,444.09	4,533.11	4,444.63	23.82	16.53	41.12	-525.65	-1,933.37	1,036.69	1,000.65	36.04	28.765		
4,700.00	4,539.81	4,627.40	4,538.92	24.40	16.64	42.21	-524.74	-1,934.03	1,015.44	978.56	36.88	27.530		
4,800.00	4,635.52	4,722.58	4,634.09	24.99	16.76	43.35	-523.82	-1,934.82	994.70	956.96	37.74	26.355		
4,900.00	4,731.24	4,819.79	4,731.29	25.57	16.89	44.57	-522.63	-1,935.51	974.30	935.68	38.62	25.230		
5,000.00	4,826.96	4,916.78	4,828.27	26.16	17.02	45.87	-521.08	-1,936.00	954.22	914.71	39.51	24.152		
5,100.00	4,922.67	5,015.04	4,926.51	26.74	17.17	47.25	-519.17	-1,936.26	934.47	894.05	40.42	23.118		
5,200.00	5,018.39	5,115.74	5,027.19	27.33	17.33	48.76	-516.92	-1,935.95	914.81	873.46	41.36	22.121		
5,300.00	5,114.11	5,216.01	5,127.41	27.92	17.49	50.36	-514.41	-1,934.99	895.21	852.91	42.31	21.161		
5,400.00	5,209.82	5,315.81	5,227.17	28.50	17.66	52.04	-511.64	-1,933.38	875.75	832.48	43.27	20.239		
5,500.00	5,305.54	5,411.97	5,323.26	29.09	17.82	53.76	-508.79	-1,931.32	856.60	812.33	44.27	19.348		
5,600.00	5,401.25	5,505.70	5,416.93	29.67	17.99	55.49	-506.12	-1,929.41	838.31	793.01	45.30	18.506		
5,700.00	5,496.97	5,599.58	5,510.76	30.26	18.15	57.27	-503.61	-1,927.66	820.97	774.64	46.33	17.719		
5,800.00	5,592.69	5,693.61	5,604.75	30.85	18.32	59.12	-501.24	-1,926.07	804.61	757.25	47.37	16.987		
5,900.00	5,688.40	5,786.71	5,697.81	31.43	18.48	61.00	-499.03	-1,924.69	789.31	740.91	48.40	16.309		
6,000.00	5,784.12	5,879.09	5,790.16	32.02	18.63	62.91	-496.94	-1,923.70	775.26	725.84	49.42	15.686		
6,100.00	5,879.84	5,971.71	5,882.76	32.61	18.78	64.87	-494.93	-1,923.10	762.54	712.10	50.44	15.118		
6,200.00	5,975.55	6,064.58	5,975.60	33.19	18.93	66.87	-493.00	-1,922.90	751.16	699.72	51.44	14.603		
6,300.00	6,071.27	6,159.06	6,070.07	33.78	19.09	68.94	-491.14	-1,923.06	741.09	688.68	52.41	14.141		
6,400.00	6,166.99	6,255.38	6,166.37	34.37	19.23	71.08	-489.44	-1,923.30	732.05	678.72	53.33	13.726		
6,500.00	6,262.70	6,351.79	6,262.77	34.95	19.38	73.26	-487.94	-1,923.55	724.01	669.77	54.23	13.350		
6,535.31	6,296.50	6,385.85	6,296.83	35.16	19.44	74.03	-487.46	-1,923.64	721.40	666.86	54.54	13.226		
6,550.00	6,310.58	6,400.05	6,311.02	35.25	19.46	70.92	-487.27	-1,923.67	720.26	665.59	54.67	13.175		
6,600.00	6,358.81	6,449.32	6,360.30	35.52	19.53	58.25	-486.68	-1,923.83	715.03	659.97	55.06	12.986		
6,650.00	6,407.28	6,589.00	6,499.35	35.77	19.63	43.54	-495.95	-1,925.34	707.29	652.93	54.36	13.012		
6,700.00	6,455.79	6,664.65	6,572.58	35.99	19.53	26.18	-514.64	-1,927.68	690.53	636.46	54.07	12.771		
6,750.00	6,504.07	6,743.29	6,645.91	36.18	19.34	9.14	-542.43	-1,932.90	669.71	616.29	53.42	12.536		
6,800.00	6,551.91	6,800.00	6,795.89	36.34	19.20	-13.67	-640.85	-1,946.07	642.91	593.30	49.61	12.960		
6,850.00	6,599.07	7,067.70	6,891.30	36.48	18.07	-39.39	-747.10	-1,945.62	608.59	564.31	44.27	13.746		
6,900.00	6,645.31	7,082.14	6,899.44	36.59	18.00	-51.21	-759.02	-1,945.22	574.02	529.36	44.65	12.855		
6,950.00	6,690.42	7,093.30	6,905.61	36.68	17.95	-60.80	-768.31	-1,944.93	541.45	496.44	45.01	12.029		
7,000.00	6,734.17	7,099.54	6,909.01	36.74	17.93	-68.20	-773.54	-1,944.78	511.69	466.30	45.39	11.274		
7,050.00	6,776.35	7,101.53	6,910.10	36.79	17.92	-73.73	-775.22	-1,944.73	485.57	439.86	45.71	10.622		
7,100.00	6,816.75	7,099.86	6,909.19	36.81	17.92	-77.65	-773.81	-1,944.77	463.88	417.97	45.91	10.104		
7,150.00	6,855.18	7,095.03	6,906.56	36.81	17.94	-80.20	-769.76	-1,944.89	447.35	401.44	45.91	9.745		
7,200.00	6,891.45	7,087.46	6,902.39	36.80	17.98	-81.56	-763.44	-1,945.08	436.53	390.35	46.18	9.453		
7,250.00	6,925.38	7,077.51	6,896.85	36.77	18.02	-81.86	-755.18	-1,945.34	431.77	385.51	46.25	9.335		
7,264.09	6,934.50	7,074.32	6,895.05	36.76	18.03	-81.77	-752.55	-1,945.43	431.53	385.29	46.23	9.334 CC, ES, SF		
7,300.00	6,956.82	7,065.77	6,890.20	36.73	18.07	-81.26	-745.51	-1,945.68	433.07	386.97	46.10	9.394		
7,350.00	6,985.59	7,050.85	6,881.56	36.67	18.13	-79.66	-733.36	-1,946.11	440.14	394.32	45.82	9.605		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 13N-9HZ - KMG WELL - SURVEYS		Offset Site Error:		0.00 usft
Survey Program:													16-ISWWSA 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					
7,400.00	7,011.57	7,035.07	6,872.12	36.59	18.20	-77.40	-720.71	-1,946.52	452.43	406.99	45.45	9.955					
7,450.00	7,034.63	7,018.58	6,861.94	36.51	18.26	-74.57	-707.76	-1,946.89	469.27	424.20	45.07	10.412					
7,500.00	7,054.66	7,001.52	6,851.05	36.42	18.34	-71.26	-694.62	-1,947.20	489.92	445.15	44.77	10.943					
7,550.00	7,071.55	6,983.98	6,839.50	36.32	18.41	-67.59	-681.42	-1,947.46	513.63	469.04	44.59	11.519					
7,600.00	7,085.23	6,969.00	6,829.36	36.22	18.48	-63.94	-670.40	-1,947.62	539.73	495.15	44.58	12.107					
7,650.00	7,095.63	6,946.16	6,813.34	36.11	18.57	-59.40	-654.12	-1,947.59	567.53	522.91	44.62	12.720					
7,700.00	7,102.70	6,926.83	6,799.24	36.00	18.65	-55.17	-640.92	-1,947.19	596.55	551.73	44.82	13.310					
7,750.00	7,106.40	6,907.70	6,784.81	35.89	18.73	-51.02	-628.39	-1,946.45	626.37	581.24	45.13	13.880					
7,779.70	7,107.00	6,896.43	6,776.09	35.83	18.78	-48.60	-621.26	-1,945.86	644.31	598.96	45.35	14.207					
7,800.00	7,107.00	6,888.88	6,770.17	35.79	18.81	-48.08	-616.60	-1,945.39	656.74	611.22	45.52	14.428					
7,900.00	7,107.00	6,856.20	6,743.83	35.59	18.94	-45.80	-597.42	-1,942.91	721.46	675.02	46.44	15.536					
8,000.00	7,107.00	6,828.44	6,720.70	35.42	19.05	-43.90	-582.27	-1,940.57	791.40	743.99	47.41	16.693					
8,100.00	7,107.00	6,804.18	6,699.94	35.28	19.14	-42.28	-569.89	-1,938.42	865.66	817.32	48.34	17.908					
8,200.00	7,107.00	6,779.00	6,677.92	35.18	19.24	-40.63	-557.91	-1,936.07	943.51	894.36	49.15	19.195					
8,300.00	7,107.00	6,779.00	6,677.92	35.11	19.24	-40.63	-557.91	-1,936.07	1,024.54	974.43	50.11	20.444					
8,400.00	7,107.00	6,748.88	6,650.98	35.11	19.32	-38.75	-544.73	-1,933.36	1,107.54	1,056.89	50.66	21.864					
8,500.00	7,107.00	6,734.45	6,637.84	35.20	19.36	-37.89	-538.86	-1,932.19	1,192.85	1,141.60	51.25	23.275					
8,600.00	7,107.00	6,721.35	6,625.81	35.43	19.40	-37.13	-533.79	-1,931.20	1,279.85	1,228.08	51.77	24.722					
8,700.00	7,107.00	6,684.00	6,590.94	35.85	19.50	-35.07	-520.67	-1,928.73	1,369.03	1,316.95	52.08	26.285					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 16-ISWWSA 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		
3,300.00	3,199.78	3,532.03	3,450.14	16.22	14.38	28.22	-617.55	-1,935.18	1,381.34	1,357.07	24.26	56.928		
3,400.00	3,295.49	3,587.21	3,503.87	16.80	14.62	28.98	-607.38	-1,927.78	1,340.19	1,314.98	25.21	53.161		
3,500.00	3,391.21	3,647.52	3,563.03	17.39	14.86	29.77	-598.04	-1,920.71	1,301.51	1,275.36	26.15	49.774		
3,600.00	3,486.92	3,737.47	3,651.68	17.97	15.19	30.91	-586.36	-1,910.98	1,264.41	1,237.35	27.06	46.720		
3,700.00	3,582.64	3,835.00	3,747.74	18.55	15.55	32.21	-573.58	-1,899.92	1,227.31	1,199.31	28.00	43.830		
3,800.00	3,678.36	3,909.54	3,821.09	19.14	15.83	33.29	-563.26	-1,891.60	1,190.89	1,161.88	29.00	41.064		
3,900.00	3,774.07	3,982.33	3,892.81	19.72	16.09	34.41	-553.02	-1,884.60	1,156.41	1,126.38	30.03	38.507		
4,000.00	3,869.79	4,059.13	3,968.59	20.31	16.35	35.63	-542.29	-1,878.25	1,123.83	1,092.75	31.08	36.155		
4,100.00	3,965.51	4,143.47	4,051.94	20.89	16.63	37.02	-531.03	-1,871.96	1,092.74	1,060.59	32.15	33.992		
4,200.00	4,061.22	4,237.49	4,145.11	21.47	16.92	38.53	-520.44	-1,865.07	1,062.49	1,029.30	33.19	32.013		
4,300.00	4,156.94	4,304.72	4,211.93	22.06	17.09	39.59	-514.25	-1,861.00	1,034.00	999.75	34.25	30.191		
4,400.00	4,252.66	4,376.34	4,283.29	22.64	17.25	40.67	-509.02	-1,858.23	1,008.13	972.85	35.27	28.580		
4,500.00	4,348.37	4,457.77	4,364.65	23.23	17.39	41.79	-505.80	-1,856.89	984.63	948.40	36.23	27.177		
4,600.00	4,444.09	4,551.01	4,457.88	23.82	17.52	42.93	-505.10	-1,856.17	962.13	925.02	37.11	25.929		
4,700.00	4,539.81	4,645.21	4,552.07	24.40	17.64	44.12	-504.68	-1,855.61	940.17	902.19	37.98	24.752		
4,800.00	4,635.52	4,739.31	4,646.17	24.99	17.76	45.38	-503.90	-1,855.13	918.80	879.92	38.88	23.632		
4,900.00	4,731.24	4,833.33	4,740.18	25.57	17.88	46.72	-502.75	-1,854.73	898.05	858.26	39.80	22.566		
5,000.00	4,826.96	4,929.40	4,836.24	26.16	18.01	48.17	-501.23	-1,854.37	877.95	837.22	40.73	21.553		
5,100.00	4,922.67	5,028.51	4,935.33	26.74	18.16	49.75	-499.48	-1,853.61	858.12	816.43	41.69	20.584		
5,200.00	5,018.39	5,127.32	5,034.11	27.33	18.31	51.42	-497.61	-1,852.37	838.52	795.86	42.66	19.657		
5,300.00	5,114.11	5,225.82	5,132.58	27.92	18.46	53.17	-495.61	-1,850.66	819.21	775.57	43.64	18.771		
5,400.00	5,209.82	5,321.10	5,227.82	28.50	18.61	54.96	-493.61	-1,848.66	800.38	755.72	44.66	17.923		
5,500.00	5,305.54	5,414.33	5,321.02	29.09	18.75	56.76	-491.87	-1,846.94	782.52	736.83	45.69	17.128		
5,600.00	5,401.25	5,507.81	5,414.48	29.67	18.90	58.62	-490.36	-1,845.52	765.73	719.01	46.72	16.390		
5,700.00	5,496.97	5,601.55	5,508.20	30.26	19.05	60.53	-489.10	-1,844.40	750.02	702.27	47.75	15.708		
5,800.00	5,592.69	5,695.81	5,602.44	30.85	19.19	62.50	-488.05	-1,843.55	735.40	686.64	48.77	15.080		
5,900.00	5,688.40	5,790.43	5,697.06	31.43	19.33	64.54	-487.05	-1,842.85	721.86	672.10	49.77	14.505		
6,000.00	5,784.12	5,885.12	5,791.75	32.02	19.46	66.64	-486.08	-1,842.27	709.44	658.68	50.76	13.977		
6,100.00	5,879.84	5,979.89	5,886.51	32.61	19.60	68.80	-485.14	-1,841.81	698.17	646.44	51.73	13.497		
6,200.00	5,975.55	6,074.69	5,981.30	33.19	19.74	71.02	-484.24	-1,841.49	688.10	635.42	52.68	13.063		
6,300.00	6,071.27	6,169.58	6,076.19	33.78	19.87	73.27	-483.48	-1,841.39	679.27	625.68	53.59	12.675		
6,400.00	6,166.99	6,264.65	6,171.26	34.37	20.00	75.56	-482.89	-1,841.53	671.69	617.22	54.47	12.332		
6,500.00	6,262.70	6,359.90	6,266.50	34.95	20.14	77.87	-482.46	-1,841.91	665.38	610.07	55.31	12.031		
6,535.31	6,296.50	6,393.57	6,300.17	35.16	20.19	78.69	-482.34	-1,842.10	663.45	607.85	55.59	11.934		
6,550.00	6,310.58	6,407.61	6,314.21	35.25	20.21	79.62	-482.30	-1,842.18	662.58	606.87	55.71	11.894		
6,600.00	6,358.81	6,455.58	6,362.18	35.52	20.27	80.06	-482.15	-1,842.49	658.22	602.14	56.07	11.738		
6,650.00	6,407.28	6,503.83	6,410.43	35.77	20.34	80.95	-481.98	-1,842.82	651.57	595.17	56.40	11.552		
6,700.00	6,455.79	6,552.12	6,458.72	35.99	20.40	81.89	-481.79	-1,843.15	642.56	585.87	56.69	11.335		
6,750.00	6,504.07	6,600.38	6,506.98	36.18	20.47	82.88	-481.58	-1,843.50	631.16	574.22	56.94	11.085		
6,800.00	6,551.91	6,649.20	6,555.79	36.34	20.54	83.91	-481.34	-1,843.77	617.30	560.16	57.15	10.802		
6,850.00	6,599.07	6,704.74	6,611.33	36.48	20.61	85.00	-481.18	-1,843.94	600.95	543.71	57.24	10.499		
6,900.00	6,645.31	6,790.41	6,696.75	36.59	20.67	86.15	-480.96	-1,845.08	580.17	523.40	57.66	10.221		
6,950.00	6,690.42	6,851.82	6,757.26	36.68	20.62	87.36	-480.72	-1,847.65	555.20	498.70	58.00	9.927		
7,000.00	6,734.17	6,923.59	6,826.55	36.74	20.52	88.61	-515.06	-1,852.44	527.05	471.24	58.81	9.444		
7,050.00	6,776.35	6,995.76	6,894.31	36.79	20.37	90.00	-539.54	-1,856.23	495.44	440.86	59.58	9.077		
7,100.00	6,816.75	7,052.17	6,945.26	36.81	20.23	91.50	-563.63	-1,858.31	461.84	408.62	60.44	8.678		
7,150.00	6,855.18	7,090.72	6,978.80	36.81	20.11	93.10	-582.60	-1,859.22	428.36	376.32	61.40	8.231		
7,200.00	6,891.45	7,115.24	6,999.55	36.80	20.03	94.80	-595.64	-1,859.48	396.83	345.76	62.40	7.771		
7,250.00	6,925.38	7,128.95	7,010.95	36.77	19.98	96.60	-603.26	-1,859.51	368.95	318.74	63.40	7.348		
7,300.00	6,956.82	7,135.10	7,016.01	36.73	19.96	98.50	-606.75	-1,859.49	346.31	296.98	64.40	7.021		
7,350.00	6,985.59	7,135.80	7,016.59	36.67	19.96	100.50	-607.16	-1,859.49	330.34	281.74	65.40	6.798		
7,400.00	7,011.57	7,132.47	7,013.85	36.59	19.97	102.60	-605.26	-1,859.50	322.15	274.13	66.40	6.709 SF		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 34C-9HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 16-ISWWSA 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		
7,424.23	7,023.12	7,129.71	7,011.58	36.55	19.98	-86.07	-603.69	-1,859.51	321.16	273.44	47.72	6.731	CC, ES	
7,450.00	7,034.63	7,126.08	7,008.58	36.51	19.99	-85.61	-601.65	-1,859.51	322.27	274.87	47.40	6.799		
7,500.00	7,054.66	7,117.31	7,001.28	36.42	20.02	-83.87	-596.78	-1,859.49	330.53	283.66	46.87	7.052		
7,550.00	7,071.55	7,106.66	6,992.34	36.32	20.06	-81.09	-590.99	-1,859.42	346.11	299.57	46.53	7.438		
7,600.00	7,085.23	7,094.49	6,982.02	36.22	20.10	-77.38	-584.55	-1,859.28	367.78	321.35	46.43	7.921		
7,650.00	7,095.63	7,081.09	6,970.52	36.11	20.14	-72.89	-577.68	-1,859.05	394.23	347.68	46.55	8.470		
7,700.00	7,102.70	7,068.00	6,959.16	36.00	20.18	-68.00	-571.18	-1,858.75	424.23	377.38	46.85	9.056		
7,750.00	7,106.40	7,052.38	6,945.44	35.89	20.22	-62.44	-563.72	-1,858.31	456.77	409.52	47.24	9.668		
7,779.70	7,107.00	7,043.50	6,937.57	35.83	20.25	-59.15	-559.64	-1,858.04	476.96	429.43	47.52	10.036		
7,800.00	7,107.00	7,037.47	6,932.19	35.79	20.26	-58.37	-556.92	-1,857.84	491.10	443.37	47.72	10.291		
7,900.00	7,107.00	7,010.75	6,908.05	35.59	20.33	-55.03	-545.50	-1,856.86	564.94	516.20	48.74	11.590		
8,000.00	7,107.00	6,973.00	6,873.20	35.42	20.44	-50.60	-531.10	-1,855.17	644.63	595.08	49.55	13.011		
8,100.00	7,107.00	6,973.00	6,873.20	35.28	20.44	-50.60	-531.10	-1,855.17	727.70	677.11	50.60	14.383		
8,200.00	7,107.00	6,950.05	6,851.66	35.18	20.48	-48.07	-523.28	-1,853.98	813.98	762.72	51.27	15.878		
8,300.00	7,107.00	6,933.79	6,836.27	35.11	20.51	-46.36	-518.13	-1,853.05	902.48	850.62	51.86	17.402		
8,400.00	7,107.00	6,919.39	6,822.54	35.11	20.53	-44.90	-513.84	-1,852.18	992.70	940.33	52.36	18.958		
8,500.00	7,107.00	6,906.54	6,810.25	35.20	20.56	-43.64	-510.22	-1,851.35	1,084.26	1,031.48	52.79	20.540		
8,600.00	7,107.00	6,878.00	6,782.73	35.43	20.61	-40.99	-502.91	-1,849.37	1,177.21	1,124.11	53.10	22.170		
8,700.00	7,107.00	6,878.00	6,782.73	35.85	20.61	-40.99	-502.91	-1,849.37	1,270.51	1,217.07	53.44	23.774		
8,800.00	7,107.00	6,878.00	6,782.73	36.44	20.61	-40.99	-502.91	-1,849.37	1,364.76	1,311.04	53.72	25.405		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 16-ISOWSA 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
3,300.00	3,199.78	3,595.57	3,524.51	16.22	13.39	22.77	-743.11	-1,910.58	1,397.31	1,375.28	22.03	63.425	
3,400.00	3,295.49	3,647.50	3,574.88	16.80	13.64	23.34	-734.55	-1,901.34	1,350.38	1,327.50	22.88	59.014	
3,500.00	3,391.21	3,764.58	3,688.67	17.39	14.18	24.67	-716.04	-1,880.96	1,304.41	1,280.75	23.66	55.134	
3,600.00	3,486.92	3,873.14	3,793.39	17.97	14.74	26.06	-697.59	-1,859.13	1,255.99	1,231.50	24.49	51.289	
3,700.00	3,582.64	3,940.41	3,858.09	18.55	15.09	27.07	-684.59	-1,846.08	1,208.23	1,182.77	25.46	47.454	
3,800.00	3,678.36	4,020.40	3,935.05	19.14	15.50	28.39	-668.43	-1,831.45	1,161.81	1,135.35	26.46	43.905	
3,900.00	3,774.07	4,109.58	4,020.99	19.72	15.95	29.93	-651.16	-1,815.02	1,116.04	1,088.56	27.48	40.618	
4,000.00	3,869.79	4,220.97	4,128.32	20.31	16.52	31.92	-631.41	-1,792.75	1,069.86	1,041.43	28.44	37.623	
4,100.00	3,965.51	4,298.11	4,202.62	20.89	16.91	33.35	-618.90	-1,776.21	1,023.25	993.72	29.53	34.648	
4,200.00	4,061.22	4,368.04	4,270.18	21.47	17.25	34.73	-607.72	-1,762.00	978.34	947.63	30.71	31.855	
4,300.00	4,156.94	4,439.91	4,339.92	22.06	17.59	36.21	-596.75	-1,748.59	935.67	903.74	31.93	29.300	
4,400.00	4,252.66	4,523.34	4,421.15	22.64	17.97	38.00	-585.01	-1,733.60	894.57	861.42	33.15	26.988	
4,500.00	4,348.37	4,610.26	4,505.72	23.23	18.36	40.06	-572.30	-1,718.07	854.51	820.08	34.43	24.822	
4,600.00	4,444.09	4,681.86	4,575.44	23.82	18.68	41.91	-561.41	-1,705.94	816.39	780.52	35.87	22.761	
4,700.00	4,539.81	4,758.99	4,650.81	24.40	19.01	44.01	-550.12	-1,694.10	780.97	743.63	37.34	20.915	
4,800.00	4,635.52	4,841.63	4,731.77	24.99	19.35	46.37	-538.42	-1,682.30	747.88	709.04	38.84	19.255	
4,900.00	4,731.24	4,923.46	4,812.03	25.57	19.66	48.86	-527.17	-1,671.08	716.86	676.47	40.40	17.746	
5,000.00	4,826.96	5,004.35	4,891.89	26.16	19.95	51.26	-518.40	-1,661.65	688.78	646.85	41.93	16.428	
5,100.00	4,922.67	5,094.37	4,981.21	26.74	20.21	53.79	-512.31	-1,652.31	662.46	619.14	43.32	15.291	
5,200.00	5,018.39	5,163.94	5,050.50	27.33	20.37	55.68	-509.15	-1,647.13	639.51	594.71	44.81	14.272	
5,300.00	5,114.11	5,243.01	5,129.48	27.92	20.51	57.75	-506.74	-1,644.26	620.74	574.60	46.14	13.453	
5,400.00	5,209.82	5,334.12	5,220.58	28.50	20.64	60.00	-505.82	-1,643.31	604.69	557.36	47.33	12.776	
5,500.00	5,305.54	5,429.77	5,316.22	29.09	20.77	62.47	-504.87	-1,642.38	589.81	541.34	48.48	12.167	
5,600.00	5,401.25	5,525.32	5,411.76	29.67	20.90	65.07	-503.79	-1,641.32	576.10	526.48	49.62	11.611	
5,700.00	5,496.97	5,620.75	5,507.18	30.26	21.02	67.80	-502.60	-1,640.15	563.66	512.93	50.74	11.109	
5,800.00	5,592.69	5,717.34	5,603.75	30.85	21.16	70.67	-501.41	-1,638.84	552.54	500.73	51.82	10.663	
5,900.00	5,688.40	5,814.58	5,700.98	31.43	21.29	73.63	-500.66	-1,637.45	542.59	489.75	52.84	10.268	
6,000.00	5,784.12	5,911.95	5,798.33	32.02	21.42	76.66	-500.40	-1,635.97	533.82	480.02	53.80	9.922	
6,100.00	5,879.84	6,009.44	5,895.81	32.61	21.56	79.75	-500.63	-1,634.40	526.26	471.57	54.69	9.622	
6,200.00	5,975.55	6,103.98	5,990.33	33.19	21.69	82.80	-501.09	-1,632.88	520.15	464.62	55.53	9.367	
6,300.00	6,071.27	6,197.81	6,084.16	33.78	21.81	85.89	-501.33	-1,631.54	516.00	459.71	56.29	9.167	
6,400.00	6,166.99	6,291.66	6,178.00	34.37	21.94	89.01	-501.34	-1,630.37	513.85	456.90	56.95	9.023	
6,462.61	6,226.91	6,351.14	6,237.47	34.73	22.01	90.99	-501.28	-1,629.75	513.51	456.21	57.31	8.961	
6,500.00	6,262.70	6,386.97	6,273.30	34.95	22.06	92.17	-501.33	-1,629.49	513.63	456.13	57.50	8.933	
6,535.31	6,296.50	6,420.86	6,307.20	35.16	22.10	93.27	-501.43	-1,629.33	513.94	456.28	57.66	8.913	
6,550.00	6,310.58	6,435.00	6,321.34	35.25	22.12	90.36	-501.49	-1,629.28	514.00	456.27	57.73	8.904	
6,600.00	6,358.81	6,483.49	6,369.82	35.52	22.18	78.38	-501.78	-1,629.24	512.46	454.52	57.94	8.845	
6,650.00	6,407.28	6,559.49	6,445.78	35.77	22.25	64.44	-504.12	-1,629.33	507.32	449.57	57.75	8.784	
6,700.00	6,455.79	6,631.62	6,517.51	35.99	22.27	49.52	-511.49	-1,629.53	495.96	438.51	57.45	8.633	
6,750.00	6,504.07	6,689.73	6,574.98	36.18	22.26	35.72	-519.99	-1,630.90	480.37	422.88	57.48	8.357	
6,800.00	6,551.91	6,755.73	6,639.72	36.34	22.20	24.20	-532.51	-1,633.48	460.35	403.06	57.29	8.035	
6,850.00	6,599.07	6,820.18	6,702.20	36.48	22.12	14.48	-548.04	-1,636.39	435.60	378.65	56.95	7.649	
6,900.00	6,645.31	6,880.59	6,759.90	36.59	22.03	5.74	-565.70	-1,638.96	406.23	349.75	56.48	7.192	
6,950.00	6,690.42	6,954.55	6,828.37	36.68	21.85	-4.41	-593.31	-1,642.49	371.84	316.84	55.00	6.760	
7,000.00	6,734.17	7,018.42	6,884.41	36.74	21.66	-18.03	-623.72	-1,645.79	332.82	279.72	53.09	6.268	
7,050.00	6,776.35	7,063.54	6,921.88	36.79	21.52	-35.04	-648.80	-1,647.10	290.66	239.17	51.49	5.645	
7,100.00	6,816.75	7,091.25	6,943.88	36.81	21.43	-52.64	-665.64	-1,647.48	247.66	197.07	50.58	4.896	
7,150.00	6,855.18	7,106.87	6,955.88	36.81	21.38	-67.10	-675.63	-1,647.61	205.91	155.63	50.28	4.095	
7,200.00	6,891.45	7,114.42	6,961.58	36.80	21.35	-76.75	-680.59	-1,647.65	168.07	117.86	50.21	3.347	
7,250.00	6,925.38	7,116.46	6,963.11	36.77	21.34	-81.89	-681.94	-1,647.66	138.37	88.81	49.56	2.792	
7,300.00	6,956.82	7,114.58	6,961.70	36.73	21.35	-83.28	-680.69	-1,647.65	123.25	74.89	48.36	2.549 SF	
7,313.46	6,964.83	7,113.55	6,960.93	36.71	21.35	-83.10	-680.01	-1,647.65	122.50	74.69	47.81	2.562 CC, ES	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 34N-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 16-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
7,350.00	6,985.59	7,109.84	6,958.13	36.67	21.36	-81.53	-677.57	-1,647.63	127.93	81.81	46.12	2.774	
7,400.00	7,011.57	7,102.95	6,952.90	36.59	21.39	-77.02	-673.09	-1,647.59	150.29	105.50	44.79	3.355	
7,450.00	7,034.63	7,094.42	6,946.34	36.51	21.42	-70.18	-667.63	-1,647.51	183.59	138.66	44.93	4.086	
7,500.00	7,054.66	7,084.58	6,938.67	36.42	21.45	-61.64	-661.48	-1,647.41	222.58	176.84	45.74	4.866	
7,550.00	7,071.55	7,073.00	6,929.49	36.32	21.50	-52.13	-654.42	-1,647.25	264.34	217.70	46.64	5.667	
7,600.00	7,085.23	7,061.59	6,920.30	36.22	21.53	-43.22	-647.66	-1,647.06	307.34	259.74	47.60	6.457	
7,650.00	7,095.63	7,048.50	6,909.60	36.11	21.57	-35.02	-640.12	-1,646.76	350.70	302.27	48.43	7.242	
7,700.00	7,102.70	7,034.75	6,898.19	36.00	21.61	-28.12	-632.46	-1,646.37	393.91	344.72	49.19	8.008	
7,750.00	7,106.40	7,020.44	6,886.13	35.89	21.66	-22.45	-624.78	-1,645.87	436.65	386.76	49.89	8.752	
7,779.70	7,107.00	7,011.71	6,878.68	35.83	21.68	-19.60	-620.24	-1,645.51	461.72	411.44	50.28	9.183	
7,800.00	7,107.00	7,005.79	6,873.59	35.79	21.70	-19.17	-617.23	-1,645.25	478.83	428.30	50.53	9.475	
7,900.00	7,107.00	6,976.00	6,847.55	35.59	21.80	-17.13	-602.85	-1,643.70	564.75	513.22	51.54	10.958	
8,000.00	7,107.00	6,976.00	6,847.55	35.42	21.80	-17.13	-602.85	-1,643.70	653.49	600.66	52.83	12.370	
8,100.00	7,107.00	6,937.45	6,812.85	35.28	21.89	-14.90	-586.20	-1,641.58	742.87	689.73	53.14	13.980	
8,200.00	7,107.00	6,920.44	6,797.22	35.18	21.93	-14.06	-579.55	-1,640.73	834.23	780.56	53.67	15.545	
8,300.00	7,107.00	6,881.00	6,760.29	35.11	22.03	-12.39	-565.83	-1,638.98	927.54	873.69	53.85	17.225	
8,400.00	7,107.00	6,881.00	6,760.29	35.11	22.03	-12.39	-565.83	-1,638.98	1,020.31	965.96	54.35	18.773	
8,500.00	7,107.00	6,881.00	6,760.29	35.20	22.03	-12.39	-565.83	-1,638.98	1,114.33	1,059.61	54.72	20.364	
8,600.00	7,107.00	6,881.00	6,760.29	35.43	22.03	-12.39	-565.83	-1,638.98	1,209.31	1,154.31	55.00	21.988	
8,700.00	7,107.00	6,850.13	6,730.92	35.85	22.07	-11.30	-556.42	-1,637.70	1,304.26	1,249.16	55.11	23.668	
8,800.00	7,107.00	6,836.82	6,718.18	36.44	22.10	-10.87	-552.60	-1,637.13	1,399.83	1,344.57	55.26	25.329	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 16-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
2,800.00	2,721.19	3,286.06	3,175.34	13.32	15.20	16.31	-790.38	-1,710.39	1,395.50	1,377.08	18.42	75.765	
2,900.00	2,816.91	3,356.92	3,242.46	13.90	15.63	16.83	-778.83	-1,690.87	1,338.68	1,319.57	19.11	70.066	
3,000.00	2,912.63	3,437.40	3,318.84	14.48	16.12	17.45	-765.99	-1,668.97	1,282.34	1,262.55	19.80	64.781	
3,100.00	3,008.34	3,518.39	3,395.67	15.06	16.61	18.16	-752.81	-1,647.01	1,226.12	1,205.61	20.51	59.793	
3,200.00	3,104.06	3,596.17	3,469.42	15.64	17.09	18.95	-739.22	-1,626.39	1,170.18	1,148.92	21.25	55.055	
3,300.00	3,199.78	3,674.04	3,543.36	16.22	17.55	19.84	-725.49	-1,606.16	1,114.81	1,092.78	22.03	50.595	
3,400.00	3,295.49	3,760.44	3,625.26	16.80	18.08	20.98	-709.31	-1,583.91	1,059.58	1,036.75	22.83	46.407	
3,500.00	3,391.21	3,837.96	3,698.71	17.39	18.55	22.14	-694.42	-1,564.08	1,004.67	980.96	23.71	42.375	
3,600.00	3,486.92	3,933.65	3,789.23	17.97	19.14	23.73	-676.05	-1,539.11	949.72	925.16	24.56	38.668	
3,700.00	3,582.64	3,997.88	3,849.95	18.55	19.53	24.94	-663.45	-1,522.37	895.16	869.54	25.62	34.943	
3,800.00	3,678.36	4,079.35	3,927.32	19.14	20.02	26.67	-647.29	-1,502.61	842.55	815.87	26.68	31.581	
3,900.00	3,774.07	4,175.11	4,018.04	19.72	20.61	28.78	-630.22	-1,477.17	789.01	761.31	27.70	28.489	
4,000.00	3,869.79	4,256.58	4,095.18	20.31	21.11	30.77	-616.41	-1,454.88	735.65	706.77	28.88	25.476	
4,100.00	3,965.51	4,334.18	4,168.71	20.89	21.58	32.93	-603.30	-1,433.86	683.33	653.12	30.21	22.617	
4,200.00	4,061.22	4,409.12	4,239.91	21.47	22.03	35.30	-590.68	-1,414.18	632.70	600.97	31.73	19.938	
4,300.00	4,156.94	4,473.80	4,301.67	22.06	22.39	37.61	-579.68	-1,398.42	584.94	551.39	33.54	17.439	
4,400.00	4,252.66	4,538.46	4,363.86	22.64	22.72	40.21	-568.53	-1,384.71	541.48	505.93	35.56	15.229	
4,500.00	4,348.37	4,605.28	4,428.82	23.23	23.04	43.04	-558.13	-1,373.01	503.15	465.45	37.70	13.346	
4,600.00	4,444.09	4,689.59	4,511.23	23.82	23.39	46.89	-545.94	-1,360.08	468.91	429.04	39.87	11.762	
4,700.00	4,539.81	4,772.35	4,592.52	24.40	23.70	50.88	-535.63	-1,348.48	438.08	395.95	42.13	10.398	
4,800.00	4,635.52	4,859.86	4,678.99	24.99	23.99	55.19	-527.53	-1,337.72	410.79	366.43	44.36	9.260	
4,900.00	4,731.24	4,949.25	4,767.47	25.57	24.26	59.91	-520.18	-1,327.47	386.75	340.15	46.60	8.299	
5,000.00	4,826.96	5,035.63	4,853.38	26.16	24.47	64.40	-516.22	-1,319.49	366.28	317.57	48.71	7.519	
5,100.00	4,922.67	5,126.17	4,943.79	26.74	24.62	68.78	-515.46	-1,314.83	350.17	299.67	50.50	6.934	
5,200.00	5,018.39	5,218.37	5,035.92	27.33	24.72	72.94	-517.77	-1,312.45	336.64	284.62	52.02	6.471	
5,300.00	5,114.11	5,310.29	5,127.83	27.92	24.80	77.26	-519.65	-1,311.56	326.73	273.33	53.40	6.119	
5,400.00	5,209.82	5,405.70	5,223.21	28.50	24.88	81.95	-521.40	-1,310.97	319.48	264.93	54.56	5.856	
5,500.00	5,305.54	5,501.16	5,318.66	29.09	24.96	86.79	-523.10	-1,310.52	314.79	259.29	55.50	5.672	
5,600.00	5,401.25	5,596.55	5,414.04	29.67	25.05	91.72	-524.73	-1,310.20	312.73	256.54	56.19	5.565	
5,624.87	5,425.06	5,620.24	5,437.73	29.82	25.07	92.95	-525.10	-1,310.12	312.65	256.32	56.33	5.551	
5,700.00	5,496.97	5,691.77	5,509.25	30.26	25.13	96.68	-526.15	-1,309.89	313.43	256.81	56.62	5.535	
5,800.00	5,592.69	5,786.92	5,604.39	30.85	25.22	101.59	-527.34	-1,309.58	316.91	260.12	56.78	5.581	
5,900.00	5,688.40	5,882.00	5,699.46	31.43	25.31	106.37	-528.30	-1,309.27	323.10	266.39	56.70	5.698	
6,000.00	5,784.12	5,977.28	5,794.74	32.02	25.40	110.98	-529.05	-1,308.95	331.87	275.44	56.43	5.881	
6,100.00	5,879.84	6,072.74	5,890.20	32.61	25.50	115.37	-529.69	-1,308.53	342.93	286.93	56.00	6.123	
6,200.00	5,975.55	6,168.12	5,985.57	33.19	25.60	119.50	-530.24	-1,308.02	356.10	300.62	55.48	6.418	
6,300.00	6,071.27	6,263.70	6,081.15	33.78	25.70	123.35	-530.72	-1,307.45	371.16	316.24	54.92	6.758	
6,400.00	6,166.99	6,359.62	6,177.06	34.37	25.79	126.88	-531.22	-1,307.12	387.78	333.42	54.36	7.134	
6,500.00	6,262.70	6,455.68	6,273.13	34.95	25.89	130.09	-531.77	-1,307.07	405.72	351.88	53.84	7.535	
6,535.31	6,296.50	6,489.65	6,307.09	35.16	25.93	131.15	-531.97	-1,307.12	412.33	358.65	53.67	7.682	
6,550.00	6,310.58	6,510.77	6,328.21	35.25	25.94	128.42	-532.23	-1,307.17	414.90	361.36	53.54	7.750	
6,600.00	6,358.81	6,643.40	6,459.83	35.52	25.95	119.33	-546.67	-1,307.79	418.19	366.17	52.02	8.040	
6,650.00	6,407.28	6,765.76	6,575.33	35.77	25.79	109.03	-566.57	-1,308.65	405.62	356.40	49.22	8.241	
6,700.00	6,455.79	6,843.12	6,644.75	35.99	25.61	98.07	-620.63	-1,309.75	385.94	338.81	47.13	8.188	
6,750.00	6,504.07	6,907.65	6,700.34	36.18	25.43	89.88	-653.30	-1,311.96	360.90	315.72	45.18	7.989	
6,800.00	6,551.91	6,960.00	6,743.71	36.34	25.28	85.78	-682.58	-1,313.25	332.19	288.77	43.41	7.651	
6,850.00	6,599.07	7,011.81	6,784.67	36.48	25.11	87.18	-714.28	-1,313.93	300.93	259.83	41.10	7.321	
6,900.00	6,645.31	7,051.30	6,814.05	36.59	24.99	91.58	-740.65	-1,314.14	268.44	229.10	39.34	6.824	
6,950.00	6,690.42	7,078.67	6,833.41	36.68	24.92	96.58	-760.00	-1,314.12	237.25	198.63	38.63	6.142	
7,000.00	6,734.17	7,095.55	6,845.11	36.74	24.85	100.18	-772.15	-1,314.18	210.31	170.88	39.44	5.333	
7,050.00	6,776.35	7,107.86	6,853.49	36.79	24.81	102.74	-781.18	-1,314.23	190.72	149.13	41.59	4.585	
7,100.00	6,816.75	7,115.26	6,858.47	36.81	24.79	103.52	-786.65	-1,314.27	181.83	137.04	44.79	4.060	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 35N1-9HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 16-ISWWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Total		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)	Uncertainty Axis	Separation Factor		
7,110.20	6,824.75	7,116.24	6,859.12	36.81	24.78	103.44	-787.37	-1,314.28	181.55	136.10	45.45	3.995 CC, ES		
7,150.00	6,855.18	7,118.44	6,860.59	36.81	24.77	102.39	-789.01	-1,314.29	185.68	137.96	47.72	3.891 SF		
7,200.00	6,891.45	7,117.97	6,860.28	36.80	24.78	99.42	-788.66	-1,314.29	201.71	152.29	49.42	4.082		
7,250.00	6,925.38	7,114.35	6,857.85	36.77	24.79	94.74	-785.97	-1,314.27	227.27	176.92	50.34	4.514		
7,300.00	6,956.82	7,108.01	6,853.59	36.73	24.81	88.61	-781.29	-1,314.23	259.32	208.42	50.90	5.095		
7,350.00	6,985.59	7,099.31	6,847.68	36.67	24.84	81.42	-774.90	-1,314.20	295.44	244.36	51.08	5.784		
7,400.00	7,011.57	7,088.57	6,840.32	36.59	24.87	73.70	-767.09	-1,314.16	333.93	282.80	51.13	6.531		
7,450.00	7,034.63	7,076.05	6,831.62	36.51	24.92	66.04	-758.08	-1,314.14	373.66	322.48	51.18	7.301		
7,500.00	7,054.66	7,065.00	6,823.84	36.42	24.96	59.43	-750.23	-1,314.14	413.89	362.43	51.47	8.042		
7,550.00	7,071.55	7,049.85	6,813.00	36.32	25.00	53.02	-739.65	-1,314.13	454.13	402.52	51.61	8.799		
7,600.00	7,085.23	7,036.49	6,803.22	36.22	25.04	47.86	-730.54	-1,314.09	494.10	442.13	51.97	9.508		
7,650.00	7,095.63	7,022.51	6,792.79	36.11	25.08	43.47	-721.24	-1,314.01	533.51	481.13	52.37	10.186		
7,700.00	7,102.70	7,008.00	6,781.74	36.00	25.13	39.80	-711.83	-1,313.90	572.16	519.34	52.82	10.833		
7,750.00	7,106.40	6,993.03	6,770.12	35.89	25.17	36.74	-702.40	-1,313.74	609.89	556.60	53.29	11.445		
7,779.70	7,107.00	6,970.00	6,751.80	35.83	25.25	34.36	-688.45	-1,313.42	632.11	579.05	53.07	11.912		
7,800.00	7,107.00	6,970.00	6,751.80	35.79	25.25	34.36	-688.45	-1,313.42	646.84	593.34	53.50	12.090		
7,900.00	7,107.00	6,945.64	6,731.97	35.59	25.32	33.00	-674.30	-1,312.96	722.62	668.09	54.53	13.252		
8,000.00	7,107.00	6,915.30	6,706.77	35.42	25.41	31.42	-657.42	-1,312.19	801.53	746.39	55.14	14.536		
8,100.00	7,107.00	6,875.00	6,672.49	35.28	25.53	29.53	-636.29	-1,310.81	883.12	827.71	55.41	15.939		
8,200.00	7,107.00	6,875.00	6,672.49	35.18	25.53	29.53	-636.29	-1,310.81	966.59	910.27	56.32	17.163		
8,300.00	7,107.00	6,836.68	6,639.08	35.11	25.62	27.88	-617.58	-1,309.58	1,051.56	995.11	56.44	18.630		
8,400.00	7,107.00	6,814.04	6,618.98	35.11	25.68	26.95	-607.16	-1,309.10	1,138.14	1,081.38	56.76	20.053		
8,500.00	7,107.00	6,781.00	6,589.23	35.20	25.77	25.65	-592.81	-1,308.73	1,226.10	1,169.20	56.90	21.547		
8,600.00	7,107.00	6,781.00	6,589.23	35.43	25.77	25.65	-592.81	-1,308.73	1,314.93	1,257.59	57.33	22.934		
8,700.00	7,107.00	6,781.00	6,589.23	35.85	25.77	25.65	-592.81	-1,308.73	1,405.25	1,347.59	57.66	24.370		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS 38N-8HZ - KMG WELL - SURVEYS												Offset Site Error: 0.00 usft			
Survey Program: 16-ISWWSA 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			
6,500.00	6,262.70	8,859.94	7,136.39	34.95	19.11	42.55	-981.03	-2,444.05	1,392.81	1,353.71	39.10	35.620			
6,535.31	6,296.50	8,865.17	7,136.29	35.16	19.12	42.21	-986.26	-2,443.90	1,365.19	1,325.65	39.54	34.529			
6,550.00	6,310.58	8,867.19	7,136.25	35.25	19.12	37.29	-988.28	-2,443.85	1,353.78	1,314.06	39.72	34.082			
6,600.00	6,358.81	8,871.67	7,136.17	35.52	19.12	18.85	-992.76	-2,443.72	1,315.30	1,274.96	40.34	32.605			
6,650.00	6,407.28	8,872.46	7,136.15	35.77	19.12	-1.40	-993.55	-2,443.70	1,277.53	1,236.58	40.95	31.197			
6,700.00	6,455.79	8,869.56	7,136.21	35.99	19.12	-21.36	-990.65	-2,443.78	1,240.75	1,199.20	41.55	29.864			
6,750.00	6,504.07	8,863.00	7,136.33	36.18	19.12	-38.77	-984.10	-2,443.96	1,205.20	1,163.07	42.13	28.608			
6,800.00	6,551.91	8,852.83	7,136.52	36.34	19.11	-52.72	-973.93	-2,444.24	1,171.12	1,128.43	42.69	27.431			
6,850.00	6,599.07	8,839.09	7,136.78	36.48	19.10	-63.43	-960.19	-2,444.61	1,138.73	1,095.49	43.24	26.335			
6,900.00	6,645.31	8,821.86	7,137.10	36.59	19.08	-71.57	-942.98	-2,445.06	1,108.21	1,064.45	43.77	25.321			
6,950.00	6,690.42	8,801.24	7,137.48	36.68	19.07	-77.73	-922.36	-2,445.58	1,079.72	1,035.46	44.27	24.391			
7,000.00	6,734.17	8,777.32	7,137.92	36.74	19.05	-82.40	-898.46	-2,446.15	1,053.38	1,008.64	44.74	23.545			
7,050.00	6,776.35	8,750.55	7,138.39	36.79	19.07	-85.92	-871.70	-2,446.78	1,029.28	984.06	45.22	22.763			
7,100.00	6,816.75	8,721.03	7,138.83	36.81	19.10	-88.55	-842.19	-2,447.46	1,007.47	961.80	45.67	22.058			
7,150.00	6,855.18	8,688.87	7,139.21	36.81	19.14	-90.46	-810.04	-2,448.21	987.97	941.87	46.10	21.430			
7,200.00	6,891.45	8,654.54	7,139.53	36.80	19.21	-91.82	-775.72	-2,449.01	970.76	924.23	46.53	20.864			
7,250.00	6,925.38	8,617.89	7,139.86	36.77	19.31	-92.72	-739.09	-2,449.85	955.79	908.85	46.94	20.361			
7,300.00	6,956.82	8,578.93	7,140.21	36.73	19.42	-93.25	-700.14	-2,450.72	942.97	895.64	47.33	19.922			
7,350.00	6,985.59	8,537.97	7,140.55	36.67	19.58	-93.49	-659.19	-2,451.63	932.17	884.45	47.73	19.531			
7,400.00	7,011.57	8,495.14	7,140.85	36.59	19.74	-93.51	-616.37	-2,452.58	923.26	875.16	48.10	19.194			
7,450.00	7,034.63	8,451.02	7,141.09	36.51	19.96	-93.38	-572.26	-2,453.56	916.09	867.59	48.51	18.885			
7,500.00	7,054.66	8,405.53	7,141.26	36.42	20.21	-93.14	-526.78	-2,454.59	910.53	861.62	48.91	18.616			
7,550.00	7,071.55	8,357.48	7,141.38	36.32	20.54	-92.82	-478.74	-2,455.67	906.38	857.00	49.38	18.354			
7,600.00	7,085.23	8,307.99	7,141.44	36.22	20.89	-92.48	-429.27	-2,456.70	903.46	853.59	49.87	18.117			
7,650.00	7,095.63	8,257.00	7,141.47	36.11	21.33	-92.17	-378.28	-2,457.68	901.61	851.19	50.42	17.882			
7,700.00	7,102.70	8,206.05	7,141.49	36.00	21.76	-91.92	-327.34	-2,458.53	900.72	849.77	50.94	17.680			
7,750.00	7,106.40	8,139.40	7,140.73	35.89	22.49	-91.66	-260.70	-2,459.02	900.32	848.48	51.84	17.367			
7,779.70	7,107.00	8,101.84	7,139.53	35.83	22.90	-91.56	-223.16	-2,458.77	900.11	847.77	52.34	17.198			
7,800.00	7,107.00	8,081.53	7,138.78	35.79	23.14	-91.51	-202.86	-2,458.57	900.01	847.40	52.60	17.110			
7,900.00	7,107.00	7,980.10	7,135.08	35.59	24.28	-91.28	-101.50	-2,457.51	899.47	845.53	53.94	16.676			
8,000.00	7,107.00	7,877.64	7,130.18	35.42	25.42	-90.97	0.82	-2,456.12	898.61	843.25	55.36	16.232			
8,100.00	7,107.00	7,766.05	7,116.53	35.28	26.73	-90.10	111.51	-2,454.26	897.45	840.32	57.13	15.709			
8,200.00	7,107.00	7,670.35	7,093.86	35.18	27.89	-88.65	204.32	-2,451.35	895.22	836.37	58.85	15.211			
8,244.27	7,107.00	7,635.50	7,081.21	35.14	28.31	-87.84	236.77	-2,450.54	894.92	835.35	59.56	15,025 CC			
8,300.00	7,107.00	7,599.83	7,066.19	35.11	28.73	-86.87	269.12	-2,450.06	895.63	835.29	60.34	14,844 ES			
8,400.00	7,107.00	7,540.00	7,037.35	35.11	29.44	-85.04	321.52	-2,450.42	900.83	839.08	61.75	14.589			
8,500.00	7,107.00	7,490.88	7,010.91	35.20	29.99	-83.38	362.88	-2,452.10	911.87	848.75	63.12	14.447			
8,600.00	7,107.00	7,443.94	6,983.96	35.43	30.51	-81.71	401.18	-2,455.18	929.30	864.64	64.66	14.372			
8,700.00	7,107.00	7,352.82	6,926.61	35.85	31.47	-78.25	471.73	-2,460.56	951.08	884.28	66.80	14,238 SF			
8,800.00	7,107.00	7,281.04	6,877.42	36.44	32.19	-75.34	523.95	-2,462.72	976.41	907.97	68.44	14.268			
8,900.00	7,107.00	7,225.70	6,837.69	37.18	32.73	-73.04	562.45	-2,463.72	1,006.43	936.75	69.68	14.444			
9,000.00	7,107.00	7,180.67	6,804.09	38.02	33.16	-71.15	592.41	-2,464.67	1,042.05	971.41	70.64	14.751			
9,100.00	7,107.00	7,132.67	6,766.97	38.93	33.58	-69.11	622.82	-2,465.65	1,083.04	1,011.61	71.44	15.161			
9,200.00	7,107.00	7,085.43	6,728.88	39.90	33.99	-67.05	650.76	-2,465.59	1,128.74	1,056.71	72.03	15.671			
9,300.00	7,107.00	7,047.94	6,697.60	40.91	34.28	-65.39	671.39	-2,464.75	1,179.06	1,106.70	72.36	16.294			
9,400.00	7,107.00	7,017.75	6,671.69	41.96	34.49	-64.03	686.84	-2,463.65	1,234.03	1,161.53	72.51	17.020			
9,500.00	7,107.00	6,991.38	6,648.57	43.05	34.68	-62.83	699.46	-2,462.40	1,293.32	1,220.79	72.53	17.831			
9,600.00	7,107.00	6,972.00	6,631.31	44.16	34.81	-61.95	708.20	-2,461.29	1,356.56	1,284.10	72.46	18.722			

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - ENGLISH FARMS XX08-72HN - ENGLISH FARMS XX08-72HN - KMG WELL													Offset Site Error:	0.00 usft
Survey Program: 1168-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	6,166.99	6,218.51	6,173.00	34.37	14.38	42.95	-741.49	-2,730.25	1,411.36	1,369.45	41.91	33.679		
6,500.00	6,262.70	6,310.73	6,265.20	34.95	14.54	43.77	-739.91	-2,731.24	1,391.15	1,348.43	42.73	32.560		
6,535.31	6,296.50	6,347.47	6,301.93	35.16	14.61	44.10	-739.38	-2,731.62	1,384.07	1,341.06	43.01	32.178		
6,550.00	6,310.58	6,362.78	6,317.24	35.25	14.64	40.64	-739.19	-2,731.76	1,381.09	1,337.96	43.13	32.021		
6,600.00	6,358.81	6,409.60	6,364.06	35.52	14.72	26.77	-738.68	-2,732.16	1,370.55	1,327.05	43.50	31.506		
6,650.00	6,407.28	6,454.25	6,408.70	35.77	14.80	10.46	-738.32	-2,732.70	1,359.62	1,315.80	43.82	31.029		
6,700.00	6,455.79	6,502.06	6,456.48	35.99	14.89	-6.34	-739.65	-2,733.63	1,348.23	1,304.17	44.06	30.601		
6,750.00	6,504.07	6,555.67	6,509.84	36.18	14.97	-21.52	-744.38	-2,735.12	1,336.37	1,292.16	44.20	30.233		
6,800.00	6,551.91	6,610.52	6,563.74	36.34	15.04	-34.27	-754.32	-2,737.04	1,323.89	1,279.66	44.24	29.928		
6,850.00	6,599.07	6,675.10	6,626.47	36.48	15.11	-44.89	-769.51	-2,739.08	1,310.94	1,266.80	44.14	29.697		
6,900.00	6,645.31	6,736.45	6,684.67	36.59	15.15	-53.80	-788.75	-2,740.72	1,297.76	1,253.80	43.96	29.524		
6,950.00	6,690.42	6,826.40	6,765.02	36.68	15.19	-62.70	-828.97	-2,740.84	1,283.71	1,240.27	43.45	29.547		
7,000.00	6,734.17	6,847.67	6,783.22	36.74	15.19	-68.20	-839.96	-2,740.63	1,270.85	1,227.49	43.36	29.310		
7,050.00	6,776.35	6,868.91	6,801.17	36.79	15.19	-72.80	-851.32	-2,740.51	1,259.82	1,216.60	43.23	29.145		
7,100.00	6,816.75	6,888.44	6,817.50	36.81	15.20	-76.61	-862.04	-2,740.38	1,250.84	1,207.77	43.07	29.042		
7,150.00	6,855.18	6,903.32	6,829.82	36.81	15.20	-79.61	-870.38	-2,740.27	1,244.15	1,201.23	42.92	28.988		
7,200.00	6,891.45	6,913.19	6,837.93	36.80	15.20	-81.87	-876.00	-2,740.19	1,239.96	1,197.18	42.79	28.979 SF		
7,250.00	6,925.38	6,919.17	6,842.81	36.77	15.20	-83.47	-879.46	-2,740.14	1,238.43	1,195.76	42.67	29.021 ES		
7,253.24	6,927.50	6,919.44	6,843.03	36.77	15.20	-83.56	-879.61	-2,740.14	1,238.43	1,195.76	42.67	29.025 CC		
7,300.00	6,956.82	6,921.84	6,844.98	36.73	15.21	-84.51	-881.01	-2,740.12	1,239.62	1,197.02	42.60	29.100		
7,350.00	6,985.59	6,921.65	6,844.83	36.67	15.21	-85.02	-880.90	-2,740.12	1,243.55	1,200.87	42.68	29.139		
7,400.00	7,011.57	6,919.02	6,842.68	36.59	15.20	-85.06	-879.37	-2,740.14	1,250.16	1,207.37	42.79	29.219		
7,450.00	7,034.63	6,914.26	6,838.80	36.51	15.20	-84.67	-876.61	-2,740.18	1,259.37	1,216.43	42.93	29.332		
7,500.00	7,054.66	6,904.00	6,830.38	36.42	15.20	-83.72	-870.76	-2,740.27	1,271.04	1,227.90	43.14	29.462		
7,550.00	7,071.55	6,898.60	6,825.93	36.32	15.20	-82.69	-867.72	-2,740.31	1,284.99	1,241.63	43.35	29.640		
7,600.00	7,085.23	6,887.02	6,816.32	36.22	15.20	-81.12	-861.25	-2,740.39	1,301.02	1,257.39	43.63	29.822		
7,650.00	7,095.63	6,873.76	6,805.24	36.11	15.19	-79.23	-853.96	-2,740.48	1,318.90	1,274.97	43.93	30.021		
7,700.00	7,102.70	6,856.00	6,790.29	36.00	15.19	-76.94	-844.37	-2,740.58	1,338.40	1,294.12	44.28	30.226		
7,750.00	7,106.40	6,846.28	6,782.04	35.89	15.19	-74.78	-839.23	-2,740.64	1,359.27	1,314.65	44.62	30.463		
7,779.70	7,107.00	6,838.75	6,775.62	35.83	15.19	-73.35	-835.30	-2,740.71	1,372.26	1,327.42	44.84	30.605		
7,800.00	7,107.00	6,833.55	6,771.16	35.79	15.19	-73.15	-832.61	-2,740.76	1,381.38	1,336.38	44.99	30.704		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 11-4 - 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				
10,800.00	7,107.00	7,118.50	7,117.27	59.17	12.37	94.17	4,098.39	-1,255.18	1,342.21	1,289.88	52.33	25.650					
10,900.00	7,107.00	7,117.25	7,116.02	60.52	12.37	93.91	4,098.40	-1,255.17	1,244.56	1,191.57	52.99	23.485					
11,000.00	7,107.00	7,115.99	7,114.76	61.87	12.37	93.66	4,098.42	-1,255.15	1,147.32	1,093.53	53.79	21.331					
11,100.00	7,107.00	7,114.74	7,113.51	63.24	12.37	93.40	4,098.43	-1,255.14	1,050.59	995.85	54.74	19.191					
11,200.00	7,107.00	7,113.49	7,112.26	64.61	12.36	93.14	4,098.45	-1,255.12	954.54	898.62	55.92	17.070					
11,300.00	7,107.00	7,112.23	7,111.01	65.99	12.36	92.88	4,098.47	-1,255.11	859.38	802.00	57.38	14.976					
11,400.00	7,107.00	7,110.98	7,109.75	67.39	12.36	92.63	4,098.48	-1,255.09	765.46	706.22	59.24	12.921					
11,500.00	7,107.00	7,109.73	7,108.50	68.78	12.36	92.37	4,098.50	-1,255.08	673.30	611.65	61.64	10.923					
11,600.00	7,107.00	7,108.48	7,107.25	70.19	12.36	92.11	4,098.52	-1,255.06	583.71	518.92	64.79	9.009					
11,700.00	7,107.00	7,107.23	7,106.00	71.60	12.35	91.85	4,098.53	-1,255.04	498.10	429.13	68.96	7.222					
11,800.00	7,107.00	7,105.98	7,104.75	73.02	12.35	91.60	4,098.55	-1,255.03	418.90	344.48	74.42	5.629					
11,900.00	7,107.00	7,104.73	7,103.50	74.45	12.35	91.34	4,098.56	-1,255.01	350.51	269.46	81.06	4.324					
12,000.00	7,107.00	7,103.48	7,102.26	75.88	12.35	91.08	4,098.58	-1,254.99	300.39	213.10	87.29	3.441					
12,100.00	7,107.00	7,102.23	7,101.01	77.31	12.35	90.83	4,098.60	-1,254.98	278.58	189.53	89.05	3.128 ES, SF					
12,113.15	7,107.00	7,102.07	7,100.84	77.50	12.34	90.79	4,098.60	-1,254.97	278.27	189.55	88.72	3.136 CC					
12,122.72	7,107.00	7,101.95	7,100.72	77.64	12.34	90.77	4,098.60	-1,254.97	278.43	190.04	88.39	3.150					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 12-4J - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1191-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		
9,300.00	7,107.00	7,383.94	7,163.78	40.91	24.56	111.89	2,606.99	-1,368.46	1,334.08	1,272.23	61.86	21.568		
9,400.00	7,107.00	7,380.50	7,160.35	41.96	24.55	110.88	2,607.13	-1,368.20	1,235.15	1,173.14	62.01	19.919		
9,500.00	7,107.00	7,376.85	7,156.71	43.05	24.55	109.80	2,607.29	-1,367.92	1,136.38	1,074.19	62.19	18.274		
9,600.00	7,107.00	7,372.99	7,152.87	44.16	24.54	108.64	2,607.46	-1,367.63	1,037.84	975.43	62.40	16.631		
9,700.00	7,107.00	7,369.07	7,148.97	45.31	24.53	107.46	2,607.63	-1,367.32	939.58	876.91	62.67	14.992		
9,800.00	7,107.00	7,365.09	7,145.00	46.48	24.52	106.24	2,607.81	-1,367.01	841.72	778.71	63.01	13.359		
9,900.00	7,107.00	7,361.05	7,140.98	47.67	24.51	104.99	2,607.99	-1,366.69	744.40	680.96	63.43	11.735		
10,000.00	7,107.00	7,356.94	7,136.89	48.88	24.50	103.71	2,608.17	-1,366.35	647.86	583.86	64.00	10.123		
10,100.00	7,107.00	7,352.77	7,132.73	50.11	24.49	102.40	2,608.36	-1,366.01	552.53	487.76	64.77	8.531		
10,200.00	7,107.00	7,348.53	7,128.52	51.36	24.48	101.07	2,608.56	-1,365.66	459.14	393.30	65.84	6.973		
10,300.00	7,107.00	7,344.19	7,124.19	52.63	24.47	99.69	2,608.76	-1,365.29	369.18	301.80	67.39	5.479		
10,400.00	7,107.00	7,339.80	7,119.82	53.91	24.45	98.29	2,608.96	-1,364.92	285.90	216.34	69.56	4.110		
10,500.00	7,107.00	7,335.36	7,115.41	55.20	24.44	96.87	2,609.17	-1,364.53	217.12	145.06	72.06	3.013		
10,600.00	7,107.00	7,330.88	7,110.94	56.51	24.43	95.44	2,609.38	-1,364.13	180.28	107.28	73.00	2.469		
10,623.36	7,107.00	7,329.82	7,109.89	56.82	24.43	95.10	2,609.43	-1,364.04	178.76	106.14	72.62	2.462 CC, ES, SF		
10,700.00	7,107.00	7,326.34	7,106.43	57.84	24.42	93.99	2,609.59	-1,363.73	194.47	124.85	69.62	2.793		
10,800.00	7,107.00	7,321.75	7,101.87	59.17	24.41	92.52	2,609.81	-1,363.31	251.18	187.15	64.03	3.923		
10,900.00	7,107.00	7,317.11	7,097.25	60.52	24.40	91.04	2,610.03	-1,362.89	329.12	268.69	60.43	5.446		
11,000.00	7,107.00	7,312.39	7,092.56	61.87	24.38	89.54	2,610.26	-1,362.44	416.54	357.85	58.69	7.097		
11,100.00	7,107.00	7,307.51	7,087.70	63.24	24.37	88.00	2,610.49	-1,361.98	508.57	450.67	57.90	8.784		
11,200.00	7,107.00	7,302.46	7,082.68	64.61	24.36	86.41	2,610.75	-1,361.48	603.10	545.56	57.54	10.482		
11,300.00	7,107.00	7,297.23	7,077.49	65.99	24.34	84.79	2,611.01	-1,360.95	699.12	641.73	57.39	12.183		
11,400.00	7,107.00	7,291.81	7,072.11	67.39	24.33	83.13	2,611.29	-1,360.39	796.08	738.74	57.34	13.884		
11,500.00	7,107.00	7,286.23	7,066.56	68.78	24.31	81.44	2,611.58	-1,359.80	893.68	836.34	57.34	15.586		
11,600.00	7,107.00	7,280.24	7,060.62	70.19	24.30	79.66	2,611.90	-1,359.15	991.73	934.36	57.37	17.286		
11,700.00	7,107.00	7,274.02	7,054.44	71.60	24.28	77.84	2,612.24	-1,358.46	1,090.10	1,032.69	57.41	18.986		
11,800.00	7,107.00	7,267.54	7,048.02	73.02	24.26	75.99	2,612.60	-1,357.73	1,188.72	1,131.25	57.47	20.685		
11,900.00	7,107.00	7,260.80	7,041.33	74.45	24.24	74.12	2,612.98	-1,356.96	1,287.51	1,229.99	57.52	22.383		
12,000.00	7,107.00	7,253.78	7,034.37	75.88	24.22	72.22	2,613.38	-1,356.13	1,386.46	1,328.88	57.58	24.080		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 30C-28HZ - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 25-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		
11,400.00	7,107.00	6,870.00	6,758.28	67.39	20.92	-29.87	4,671.62	-1,731.20	1,345.55	1,290.44	55.11	24.416		
11,500.00	7,107.00	6,870.00	6,758.28	68.78	20.92	-29.87	4,671.62	-1,731.20	1,250.53	1,195.46	55.07	22.709		
11,600.00	7,107.00	6,870.00	6,758.28	70.19	20.92	-29.87	4,671.62	-1,731.20	1,156.36	1,101.28	55.08	20.994		
11,700.00	7,107.00	6,893.03	6,780.13	71.60	20.93	-31.32	4,678.79	-1,729.90	1,062.69	1,007.53	55.16	19.266		
11,800.00	7,107.00	6,917.00	6,802.64	73.02	20.93	-32.97	4,686.90	-1,728.44	969.99	914.68	55.31	17.538		
11,900.00	7,107.00	6,925.94	6,810.97	74.45	20.94	-33.62	4,690.08	-1,727.89	878.06	822.44	55.63	15.785		
12,000.00	7,107.00	6,946.04	6,829.62	75.88	20.94	-35.21	4,697.49	-1,726.80	787.34	731.23	56.12	14.030		
12,100.00	7,107.00	6,965.00	6,847.10	77.31	20.95	-36.86	4,704.80	-1,725.94	698.03	641.08	56.95	12.257		
12,122.72	7,107.00	6,965.00	6,847.10	77.64	20.95	-36.86	4,704.80	-1,725.94	678.05	620.80	57.25	11.843	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 30N-28HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 1225-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	
11,400.00	7,107.00	6,686.61	6,640.85	67.39	15.42	21.30	4,677.87	-1,347.21	1,386.15	1,333.13	53.01	26.148	
11,500.00	7,107.00	6,696.67	6,650.26	68.78	15.43	21.68	4,681.42	-1,347.41	1,293.32	1,239.97	53.36	24.239	
11,600.00	7,107.00	6,717.00	6,669.07	70.19	15.46	22.48	4,689.10	-1,347.69	1,201.45	1,147.62	53.83	22.320	
11,700.00	7,107.00	6,717.00	6,669.07	71.60	15.46	22.48	4,689.10	-1,347.69	1,110.34	1,056.10	54.24	20.471	
11,800.00	7,107.00	6,734.81	6,685.32	73.02	15.48	23.23	4,696.39	-1,347.78	1,020.47	965.61	54.86	18.600	
11,900.00	7,107.00	6,751.01	6,699.91	74.45	15.50	23.97	4,703.43	-1,347.74	931.99	876.39	55.60	16.763	
12,000.00	7,107.00	6,764.00	6,711.47	75.88	15.51	24.59	4,709.36	-1,347.64	845.21	788.74	56.46	14.969	
12,100.00	7,107.00	6,792.42	6,736.30	77.31	15.55	26.03	4,723.17	-1,347.46	760.27	702.60	57.67	13.184	
12,122.72	7,107.00	6,797.98	6,741.10	77.64	15.55	26.32	4,726.00	-1,347.45	741.29	683.32	57.97	12.788	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 30N-28HZX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-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	
11,400.00	7,107.00	6,686.74	6,640.97	67.39	16.44	21.32	4,676.58	-1,347.08	1,384.93	1,330.94	53.99	25.652	
11,500.00	7,107.00	6,696.82	6,650.40	68.78	16.46	21.70	4,680.14	-1,347.29	1,292.11	1,237.79	54.33	23.784	
11,600.00	7,107.00	6,717.00	6,669.08	70.19	16.49	22.49	4,687.77	-1,347.56	1,200.25	1,145.45	54.80	21.904	
11,700.00	7,107.00	6,717.00	6,669.08	71.60	16.49	22.49	4,687.77	-1,347.56	1,109.16	1,053.97	55.19	20.096	
11,800.00	7,107.00	6,735.01	6,685.51	73.02	16.51	23.26	4,695.14	-1,347.65	1,019.31	963.50	55.81	18.263	
11,900.00	7,107.00	6,751.24	6,700.12	74.45	16.53	23.99	4,702.20	-1,347.61	930.85	874.31	56.54	16.464	
12,000.00	7,107.00	6,764.00	6,711.47	75.88	16.54	24.61	4,708.04	-1,347.51	844.10	786.71	57.39	14.709	
12,100.00	7,107.00	6,792.74	6,736.58	77.31	16.58	26.07	4,722.00	-1,347.33	759.19	700.61	58.59	12.959	
12,122.72	7,107.00	6,798.31	6,741.38	77.64	16.58	26.36	4,724.84	-1,347.32	740.22	681.34	58.88	12.571	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 30N-28HZXX - KMG WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 25-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		
11,400.00	7,107.00	6,686.59	6,640.83	67.39	16.44	21.21	4,678.03	-1,348.11	1,386.18	1,332.21	53.97	25.685		
11,500.00	7,107.00	6,696.65	6,650.24	68.78	16.46	21.58	4,681.57	-1,348.32	1,293.34	1,239.04	54.30	23.816		
11,600.00	7,107.00	6,717.00	6,669.08	70.19	16.49	22.37	4,689.27	-1,348.59	1,201.46	1,146.69	54.77	21.937		
11,700.00	7,107.00	6,717.00	6,669.08	71.60	16.49	22.37	4,689.27	-1,348.59	1,110.34	1,055.17	55.16	20.128		
11,800.00	7,107.00	6,734.78	6,685.30	73.02	16.51	23.13	4,696.54	-1,348.68	1,020.45	964.68	55.78	18.296		
11,900.00	7,107.00	6,750.98	6,699.89	74.45	16.53	23.86	4,703.58	-1,348.65	931.95	875.46	56.50	16.496		
12,000.00	7,107.00	6,764.00	6,711.47	75.88	16.54	24.48	4,709.53	-1,348.55	845.15	787.81	57.34	14.739		
12,100.00	7,107.00	6,792.38	6,736.27	77.31	16.58	25.92	4,723.31	-1,348.36	760.19	701.66	58.52	12.989		
12,122.72	7,107.00	6,797.94	6,741.06	77.64	16.58	26.21	4,726.15	-1,348.36	741.20	682.38	58.82	12.602 CC, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 4C-28HZ - KMG WELL - SURVEYS		Offset Site Error:		0.00 usft
Survey Program:													25-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					
11,500.00	7,107.00	6,847.48	6,836.26	68.78	14.47	68.18	4,631.86	-848.81	1,363.18	1,297.15	66.03	20.646					
11,600.00	7,107.00	6,868.00	6,856.11	70.19	14.50	69.62	4,637.03	-849.28	1,279.94	1,211.84	68.09	18.797					
11,700.00	7,107.00	6,868.00	6,856.11	71.60	14.50	69.62	4,637.03	-849.28	1,198.93	1,128.66	70.28	17.060					
11,800.00	7,107.00	6,889.42	6,876.71	73.02	14.53	71.14	4,642.90	-849.93	1,120.61	1,047.73	72.88	15.377					
11,900.00	7,107.00	6,905.04	6,891.64	74.45	14.55	72.26	4,647.45	-850.39	1,045.63	969.90	75.73	13.807					
12,000.00	7,107.00	6,923.05	6,908.76	75.88	14.58	73.57	4,653.01	-850.94	974.65	895.74	78.90	12.352					
12,100.00	7,107.00	6,944.99	6,929.42	77.31	14.61	75.17	4,660.32	-851.81	908.43	826.06	82.37	11.029					
12,122.72	7,107.00	6,950.52	6,934.59	77.64	14.62	75.57	4,662.27	-852.07	894.14	810.95	83.19	10.748	CC, ES, SF				

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 4C-28HZX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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)	Uncertainty Axis	Factor	
11,500.00	7,107.00	6,775.00	6,762.42	68.78	14.29	62.41	4,637.95	-866.77	1,376.07	1,311.32	64.75	21.254	
11,600.00	7,107.00	6,775.00	6,762.42	70.19	14.29	62.41	4,637.95	-866.77	1,293.29	1,226.75	66.54	19.436	
11,700.00	7,107.00	6,793.63	6,780.37	71.60	14.32	63.72	4,642.41	-864.55	1,212.85	1,144.06	68.79	17.630	
11,800.00	7,107.00	6,808.33	6,794.48	73.02	14.34	64.76	4,646.22	-862.92	1,135.24	1,063.98	71.27	15.929	
11,900.00	7,107.00	6,823.00	6,808.50	74.45	14.36	65.80	4,650.26	-861.42	1,061.00	986.97	74.02	14.333	
12,000.00	7,107.00	6,843.63	6,828.11	75.88	14.38	67.27	4,656.39	-859.51	990.77	913.63	77.14	12.844	
12,100.00	7,107.00	6,865.47	6,848.70	77.31	14.41	68.83	4,663.47	-857.76	925.36	844.83	80.53	11.490	
12,122.72	7,107.00	6,870.00	6,852.94	77.64	14.42	69.15	4,665.01	-857.43	911.26	829.93	81.33	11.205 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 4C-28HZXX - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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)	Uncertainty Axis		
11,500.00	7,107.00	6,775.00	6,762.42	68.78	14.29	62.83	4,636.17	-854.66	1,380.52	1,315.49	65.03	21.227	
11,600.00	7,107.00	6,775.00	6,762.42	70.19	14.29	62.83	4,636.17	-854.66	1,298.16	1,231.31	66.85	19.418	
11,700.00	7,107.00	6,793.11	6,779.87	71.60	14.32	64.09	4,640.50	-852.49	1,218.20	1,149.08	69.12	17.625	
11,800.00	7,107.00	6,807.85	6,794.03	73.02	14.34	65.12	4,644.30	-850.86	1,141.12	1,069.51	71.61	15.936	
11,900.00	7,107.00	6,823.00	6,808.50	74.45	14.36	66.18	4,648.48	-849.30	1,067.45	993.07	74.38	14.352	
12,000.00	7,107.00	6,843.31	6,827.80	75.88	14.38	67.61	4,654.51	-847.42	997.86	920.37	77.49	12.877	
12,100.00	7,107.00	6,865.27	6,848.51	77.31	14.41	69.16	4,661.61	-845.66	933.14	852.27	80.87	11.539	
12,122.72	7,107.00	6,870.00	6,852.94	77.64	14.42	69.49	4,663.22	-845.31	919.20	837.54	81.66	11.256 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - GITTLEIN 4N-28HZ - KMG WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 25-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	
11,800.00	7,107.00	6,714.00	6,685.36	73.02	14.66	66.12	4,707.49	-572.72	1,397.39	1,321.96	75.43	18.526	
11,900.00	7,107.00	6,729.73	6,699.51	74.45	14.68	66.83	4,714.35	-572.77	1,333.01	1,255.18	77.82	17.129	
12,000.00	7,107.00	6,751.31	6,718.51	75.88	14.71	67.79	4,724.57	-573.16	1,272.53	1,192.16	80.37	15.833	
12,100.00	7,107.00	6,775.14	6,738.87	77.31	14.74	68.82	4,736.92	-574.01	1,216.34	1,133.33	83.01	14.653	
12,122.72	7,107.00	6,780.79	6,743.59	77.64	14.75	69.06	4,740.00	-574.25	1,204.21	1,120.60	83.62	14.401	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 - HSR-DREILING 1-5A - KMG WELL - SURVEYS											Offset Site Error: 0.00 usft		
Survey Program: 1253-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
11,400.00	7,107.00	6,817.53	6,664.53	67.39	17.82	-71.26	3,663.84	-2,831.34	1,394.22	1,314.10	80.12	17.403	
11,500.00	7,107.00	6,797.10	6,645.86	68.78	17.69	-70.42	3,667.92	-2,824.13	1,378.28	1,296.05	82.22	16.763	
11,600.00	7,107.00	6,773.66	6,624.52	70.19	17.53	-69.46	3,672.94	-2,815.82	1,369.13	1,285.01	84.13	16.274	
11,689.34	7,107.00	6,757.99	6,610.30	71.45	17.43	-68.83	3,676.49	-2,810.27	1,366.82	1,281.10	85.71	15.946 CC	
11,700.00	7,107.00	6,756.37	6,608.83	71.60	17.42	-68.76	3,676.86	-2,809.70	1,366.91	1,281.02	85.89	15.914 ES	
11,800.00	7,107.00	6,740.71	6,594.61	73.02	17.31	-68.12	3,680.52	-2,804.26	1,371.74	1,284.30	87.43	15.689	
11,900.00	7,107.00	6,724.17	6,579.58	74.45	17.20	-67.45	3,684.49	-2,798.61	1,383.51	1,294.81	88.70	15.597 SF	
12,000.00	7,107.00	6,706.69	6,563.68	75.88	17.09	-66.74	3,688.81	-2,792.76	1,402.03	1,312.34	89.70	15.631	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 1-4 - 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
10,200.00	7,107.00	7,097.27	7,096.37	51.36	12.31	89.97	2,963.87	-363.78	1,413.40	1,350.82	62.58	22.585	
10,300.00	7,107.00	7,096.16	7,095.27	52.63	12.30	89.92	2,963.88	-363.78	1,360.50	1,296.34	64.16	21.206	
10,400.00	7,107.00	7,095.07	7,094.17	53.91	12.30	89.86	2,963.89	-363.79	1,313.09	1,247.35	65.74	19.975	
10,500.00	7,107.00	7,094.00	7,093.10	55.20	12.30	89.81	2,963.90	-363.80	1,271.78	1,204.50	67.28	18.903	
10,600.00	7,107.00	7,092.93	7,092.04	56.51	12.30	89.76	2,963.91	-363.81	1,237.21	1,168.47	68.74	17.999	
10,700.00	7,107.00	7,091.88	7,090.99	57.84	12.30	89.71	2,963.92	-363.81	1,209.92	1,139.88	70.04	17.274	
10,800.00	7,107.00	7,090.85	7,089.95	59.17	12.29	89.66	2,963.93	-363.82	1,190.44	1,119.30	71.15	16.733	
10,900.00	7,107.00	7,089.83	7,088.93	60.52	12.29	89.61	2,963.94	-363.83	1,179.15	1,107.16	71.99	16.380	
10,983.84	7,107.00	7,088.98	7,088.08	61.65	12.29	89.57	2,963.95	-363.83	1,176.16	1,103.70	72.47	16.231 CC, ES	
11,000.00	7,107.00	7,088.82	7,087.92	61.87	12.29	89.56	2,963.95	-363.84	1,176.27	1,103.74	72.53	16.217 SF	
11,100.00	7,107.00	7,087.82	7,086.92	63.24	12.29	89.51	2,963.96	-363.84	1,181.88	1,109.12	72.76	16.243	
11,200.00	7,107.00	7,086.83	7,085.94	64.61	12.29	89.46	2,963.97	-363.85	1,195.86	1,123.18	72.68	16.454	
11,300.00	7,107.00	7,085.86	7,084.97	65.99	12.29	89.41	2,963.98	-363.86	1,217.91	1,145.61	72.30	16.844	
11,400.00	7,107.00	7,084.90	7,084.01	67.39	12.28	89.37	2,963.99	-363.87	1,247.61	1,175.93	71.68	17.405	
11,500.00	7,107.00	7,083.95	7,083.06	68.78	12.28	89.32	2,964.00	-363.87	1,284.43	1,213.57	70.86	18.126	
11,600.00	7,107.00	7,083.02	7,082.12	70.19	12.28	89.28	2,964.00	-363.88	1,327.77	1,257.88	69.89	18.998	
11,700.00	7,107.00	7,082.09	7,081.20	71.60	12.28	89.23	2,964.01	-363.89	1,377.03	1,308.21	68.82	20.009	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	-98.45	-1.47	-9.89	10.00				
100.00	100.00	100.00	100.00	0.14	0.14	-98.45	-1.47	-9.89	10.00	9.72	0.28	36.231	
200.00	200.00	200.00	200.00	0.50	0.50	-98.45	-1.47	-9.89	10.00	9.01	0.99	10.072 CC, ES	
300.00	300.00	299.64	299.62	0.85	0.84	-101.69	-2.36	-11.38	11.63	9.93	1.70	6.833	
400.00	400.00	399.04	398.88	1.21	1.20	-107.53	-5.00	-15.83	16.64	14.23	2.41	6.904	
500.00	499.98	498.11	497.58	1.56	1.55	13.49	-9.39	-23.21	23.46	20.36	3.10	7.558	
600.00	599.84	596.96	595.69	1.90	1.93	11.95	-15.51	-33.49	30.34	26.55	3.79	8.006	
700.00	699.45	695.57	693.10	2.26	2.33	11.34	-23.33	-46.64	37.22	32.74	4.48	8.305	
800.00	798.70	793.95	789.70	2.63	2.75	11.22	-32.83	-62.62	44.09	38.91	5.18	8.512	
900.00	897.47	892.10	885.39	3.02	3.20	11.39	-44.00	-81.40	50.94	45.05	5.89	8.655	
1,000.00	995.62	990.02	980.05	3.43	3.68	11.75	-56.80	-102.93	57.76	51.16	6.60	8.753	
1,100.00	1,093.06	1,087.73	1,073.59	3.87	4.21	12.23	-71.22	-127.16	64.55	57.23	7.32	8.822	
1,200.00	1,189.64	1,187.19	1,168.15	4.35	4.77	12.97	-86.98	-153.66	70.14	62.04	8.10	8.661	
1,241.53	1,229.48	1,228.69	1,207.61	4.56	5.01	13.43	-93.56	-164.74	71.49	63.06	8.43	8.477	
1,300.00	1,285.45	1,287.14	1,263.16	4.86	5.35	14.14	-102.84	-180.33	72.99	64.08	8.91	8.191	
1,400.00	1,381.16	1,387.09	1,358.18	5.39	5.94	15.29	-118.70	-207.00	75.58	65.84	9.74	7.759	
1,500.00	1,476.88	1,487.05	1,453.20	5.93	6.53	16.37	-134.56	-233.67	78.19	67.61	10.58	7.387	
1,600.00	1,572.59	1,587.00	1,548.21	6.47	7.13	17.37	-150.42	-260.33	80.83	69.39	11.44	7.065	
1,700.00	1,668.31	1,686.96	1,643.23	7.03	7.73	18.31	-166.28	-287.00	83.49	71.18	12.31	6.783	
1,800.00	1,764.03	1,786.92	1,738.25	7.59	8.34	19.19	-182.15	-313.67	86.18	72.99	13.19	6.534	
1,900.00	1,859.74	1,886.87	1,833.27	8.15	8.95	20.02	-198.01	-340.34	88.88	74.80	14.08	6.314	
2,000.00	1,955.46	1,986.83	1,928.28	8.72	9.56	20.80	-213.87	-367.01	91.60	76.63	14.97	6.117	
2,100.00	2,051.18	2,086.78	2,023.30	9.29	10.17	21.54	-229.73	-393.68	94.34	78.46	15.88	5.941	
2,200.00	2,146.89	2,186.74	2,118.32	9.86	10.79	22.23	-245.59	-420.35	97.09	80.30	16.79	5.781	
2,300.00	2,242.61	2,286.69	2,213.34	10.43	11.40	22.89	-261.45	-447.01	99.85	82.14	17.71	5.637	
2,400.00	2,338.33	2,386.65	2,308.35	11.01	12.02	23.51	-277.31	-473.68	102.63	83.99	18.64	5.506	
2,500.00	2,434.04	2,486.60	2,403.37	11.58	12.63	24.09	-293.17	-500.35	105.42	85.85	19.57	5.386	
2,600.00	2,529.76	2,586.56	2,498.39	12.16	13.25	24.65	-309.04	-527.02	108.22	87.71	20.51	5.276	
2,700.00	2,625.48	2,686.51	2,593.41	12.74	13.87	25.18	-324.90	-553.69	111.03	89.57	21.45	5.175	
2,800.00	2,721.19	2,786.47	2,688.42	13.32	14.48	25.68	-340.76	-580.36	113.85	91.44	22.40	5.082	
2,900.00	2,816.91	2,886.43	2,783.44	13.90	15.10	26.16	-356.62	-607.03	116.67	93.32	23.35	4.996	
3,000.00	2,912.63	2,986.38	2,878.46	14.48	15.72	26.61	-372.48	-633.70	119.50	95.19	24.31	4.916	
3,100.00	3,008.34	3,086.34	2,973.47	15.06	16.34	27.05	-388.34	-660.36	122.35	97.07	25.27	4.841	
3,200.00	3,104.06	3,186.29	3,068.49	15.64	16.96	27.46	-404.20	-687.03	125.19	98.96	26.24	4.772	
3,300.00	3,199.78	3,286.25	3,163.51	16.22	17.58	27.86	-420.07	-713.70	128.05	100.84	27.20	4.707	
3,400.00	3,295.49	3,386.20	3,258.53	16.80	18.20	28.24	-435.93	-740.37	130.91	102.73	28.17	4.647	
3,500.00	3,391.21	3,486.16	3,353.54	17.39	18.82	28.60	-451.79	-767.04	133.77	104.63	29.15	4.590	
3,600.00	3,486.92	3,586.11	3,448.56	17.97	19.44	28.95	-467.65	-793.71	136.64	106.52	30.12	4.536	
3,700.00	3,582.64	3,686.07	3,543.58	18.55	20.06	29.28	-483.51	-820.38	139.52	108.42	31.10	4.486	
3,800.00	3,678.36	3,786.02	3,638.60	19.14	20.68	29.60	-499.37	-847.04	142.40	110.32	32.08	4.439	
3,900.00	3,774.07	3,885.98	3,733.61	19.72	21.30	29.91	-515.23	-873.71	145.28	112.22	33.06	4.394	
4,000.00	3,869.79	3,985.94	3,828.63	20.31	21.92	30.20	-531.10	-900.38	148.17	114.12	34.05	4.351	
4,100.00	3,965.51	4,085.89	3,923.65	20.89	22.54	30.49	-546.96	-927.05	151.06	116.02	35.04	4.311	
4,200.00	4,061.22	4,185.85	4,018.66	21.47	23.16	30.76	-562.82	-953.72	153.96	117.93	36.03	4.273	
4,300.00	4,156.94	4,285.80	4,113.68	22.06	23.78	31.02	-578.68	-980.39	156.85	119.84	37.02	4.237	
4,400.00	4,252.66	4,385.76	4,208.70	22.64	24.41	31.28	-594.54	-1,007.06	159.76	121.75	38.01	4.203	
4,500.00	4,348.37	4,485.71	4,303.72	23.23	25.03	31.52	-610.40	-1,033.72	162.66	123.66	39.00	4.170	
4,600.00	4,444.09	4,585.67	4,398.73	23.82	25.65	31.76	-626.26	-1,060.39	165.57	125.57	40.00	4.139	
4,700.00	4,539.81	4,685.62	4,493.75	24.40	26.27	31.98	-642.13	-1,087.06	168.48	127.48	41.00	4.110	
4,800.00	4,635.52	4,785.58	4,588.77	24.99	26.89	32.20	-657.99	-1,113.73	171.39	129.40	42.00	4.081	
4,900.00	4,731.24	4,885.53	4,683.79	25.57	27.51	32.42	-673.85	-1,140.40	174.31	131.31	42.99	4.054	
5,000.00	4,826.96	4,985.49	4,778.80	26.16	28.14	32.62	-689.71	-1,167.07	177.23	133.23	44.00	4.028	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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		
5,100.00	4,922.67	5,085.45	4,873.82	26.74	28.76	32.82	-705.57	-1,193.74	180.15	135.15	45.00	4.003		
5,200.00	5,018.39	5,185.40	4,968.84	27.33	29.38	33.01	-721.43	-1,220.41	183.07	137.07	46.00	3.980		
5,300.00	5,114.11	5,285.36	5,063.86	27.92	30.00	33.20	-737.29	-1,247.07	185.99	138.99	47.00	3.957		
5,400.00	5,209.82	5,385.31	5,158.87	28.50	30.62	33.38	-753.16	-1,273.74	188.92	140.91	48.01	3.935		
5,500.00	5,305.54	5,485.27	5,253.89	29.09	31.25	33.56	-769.02	-1,300.41	191.84	142.83	49.02	3.914		
5,600.00	5,401.25	5,585.22	5,348.91	29.67	31.87	33.72	-784.88	-1,327.08	194.77	144.75	50.02	3.894		
5,700.00	5,496.97	5,685.18	5,443.92	30.26	32.49	33.89	-800.74	-1,353.75	197.71	146.68	51.03	3.874		
5,800.00	5,592.69	5,785.13	5,538.94	30.85	33.11	34.05	-816.60	-1,380.42	200.64	148.60	52.04	3.856		
5,900.00	5,688.40	5,885.09	5,633.96	31.43	33.73	34.21	-832.46	-1,407.09	203.57	150.52	53.05	3.838		
6,000.00	5,784.12	5,985.04	5,728.98	32.02	34.36	34.36	-848.32	-1,433.75	206.51	152.45	54.06	3.820		
6,100.00	5,879.84	6,085.00	5,823.99	32.61	34.98	34.50	-864.19	-1,460.42	209.45	154.38	55.07	3.803		
6,200.00	5,975.55	6,184.96	5,919.01	33.19	35.60	34.65	-880.05	-1,487.09	212.38	156.30	56.08	3.787		
6,300.00	6,071.27	6,284.91	6,014.03	33.78	36.22	34.78	-895.91	-1,513.76	215.32	158.23	57.09	3.772		
6,400.00	6,166.99	6,384.87	6,109.05	34.37	36.85	34.92	-911.77	-1,540.43	218.26	160.16	58.10	3.756		
6,500.00	6,262.70	6,484.82	6,204.06	34.95	37.47	35.05	-927.63	-1,567.10	221.21	162.09	59.12	3.742		
6,535.31	6,296.50	6,520.12	6,237.62	35.16	37.69	35.10	-933.23	-1,576.52	222.25	162.77	59.48	3.737		
6,550.00	6,310.58	6,534.80	6,251.57	35.25	37.78	31.76	-935.56	-1,580.43	222.67	163.07	59.61	3.736		
6,600.00	6,358.81	6,584.62	6,298.96	35.52	38.09	17.94	-943.29	-1,593.73	224.10	164.25	59.85	3.744		
6,650.00	6,407.28	6,634.35	6,346.58	35.77	38.38	1.67	-948.37	-1,607.08	225.55	165.58	59.97	3.761		
6,700.00	6,455.79	6,684.29	6,394.64	35.99	38.65	-14.82	-950.00	-1,620.53	227.05	167.00	60.05	3.781		
6,750.00	6,504.07	6,734.45	6,442.91	36.18	38.89	-29.33	-948.14	-1,634.02	228.58	168.50	60.08	3.805		
6,800.00	6,551.91	6,784.84	6,491.15	36.34	39.10	-40.93	-942.74	-1,647.48	230.14	170.06	60.08	3.831		
6,850.00	6,599.07	6,835.45	6,539.12	36.48	39.28	-49.83	-933.79	-1,660.84	231.72	171.66	60.06	3.858		
6,900.00	6,645.31	6,886.28	6,586.58	36.59	39.44	-56.63	-921.28	-1,674.04	233.30	173.28	60.03	3.887		
6,950.00	6,690.42	6,937.34	6,633.27	36.68	39.57	-61.91	-905.23	-1,687.00	234.89	174.91	59.98	3.916		
7,000.00	6,734.17	6,988.61	6,678.94	36.74	39.68	-66.09	-885.68	-1,699.66	236.46	176.52	59.93	3.945		
7,050.00	6,776.35	7,040.11	6,723.34	36.79	39.76	-69.46	-862.69	-1,711.94	238.00	178.12	59.88	3.975		
7,100.00	6,816.75	7,091.81	6,766.20	36.81	39.82	-72.21	-836.33	-1,723.77	239.51	179.68	59.83	4.003		
7,150.00	6,855.18	7,143.72	6,807.29	36.81	39.86	-74.51	-806.71	-1,735.09	240.97	181.18	59.79	4.030		
7,200.00	6,891.45	7,195.83	6,846.35	36.80	39.88	-76.43	-773.96	-1,745.81	242.37	182.61	59.75	4.056		
7,250.00	6,925.38	7,248.12	6,883.15	36.77	39.87	-78.06	-738.21	-1,755.89	243.70	183.97	59.73	4.080		
7,300.00	6,956.82	7,300.59	6,917.45	36.73	39.85	-79.44	-699.64	-1,765.26	244.94	185.22	59.72	4.102		
7,350.00	6,985.59	7,353.22	6,949.04	36.67	39.81	-80.61	-658.44	-1,773.85	246.10	186.37	59.73	4.120		
7,400.00	7,011.57	7,406.01	6,977.71	36.59	39.75	-81.60	-614.82	-1,781.60	247.15	187.39	59.76	4.136		
7,450.00	7,034.63	7,458.93	7,003.27	36.51	39.68	-82.43	-569.01	-1,788.48	248.09	188.28	59.82	4.148		
7,500.00	7,054.66	7,511.97	7,025.56	36.42	39.60	-83.12	-521.27	-1,794.43	248.92	189.02	59.90	4.156		
7,550.00	7,071.55	7,565.11	7,044.42	36.32	39.51	-83.68	-471.85	-1,799.41	249.61	189.61	60.01	4.160		
7,600.00	7,085.23	7,618.33	7,059.73	36.22	39.41	-84.11	-421.04	-1,803.39	250.18	190.03	60.15	4.159		
7,650.00	7,095.63	7,671.62	7,071.37	36.11	39.31	-84.43	-369.13	-1,806.33	250.61	190.29	60.32	4.155		
7,700.00	7,102.70	7,724.96	7,079.27	36.00	39.20	-84.64	-316.43	-1,808.23	250.89	190.37	60.52	4.146		
7,750.00	7,106.40	7,778.32	7,083.37	35.89	39.09	-84.74	-263.25	-1,809.06	251.04	190.28	60.75	4.132		
7,779.70	7,107.00	7,810.02	7,084.00	35.83	39.03	-84.74	-231.56	-1,809.05	251.06	190.15	60.90	4.122		
7,779.83	7,107.00	7,810.16	7,084.00	35.83	39.03	-84.74	-231.42	-1,809.04	251.06	190.15	60.91	4.122		
7,800.00	7,107.00	7,830.25	7,084.00	35.79	38.99	-84.74	-211.33	-1,808.93	251.06	190.10	60.96	4.118		
7,900.00	7,107.00	7,930.25	7,084.00	35.59	38.81	-84.74	-111.33	-1,808.33	251.06	189.73	61.32	4.094		
8,000.00	7,107.00	8,030.25	7,084.00	35.42	38.66	-84.74	-11.33	-1,807.73	251.06	189.22	61.84	4.060		
8,100.00	7,107.00	8,130.25	7,084.00	35.28	38.54	-84.74	88.67	-1,807.14	251.06	188.54	62.51	4.016		
8,200.00	7,107.00	8,230.25	7,084.00	35.18	38.46	-84.74	188.66	-1,806.54	251.06	187.72	63.33	3.964		
8,300.00	7,107.00	8,330.25	7,084.00	35.11	38.41	-84.74	288.66	-1,805.94	251.06	186.76	64.30	3.905		
8,400.00	7,107.00	8,430.25	7,084.00	35.11	38.41	-84.74	388.66	-1,805.35	251.06	185.66	65.40	3.839		
8,500.00	7,107.00	8,530.25	7,084.00	35.20	38.47	-84.74	488.66	-1,804.75	251.06	184.43	66.63	3.768		
8,600.00	7,107.00	8,630.25	7,084.00	35.43	38.60	-84.74	588.66	-1,804.16	251.06	183.07	67.99	3.693		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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		
8,700.00	7,107.00	8,730.25	7,084.00	35.85	38.82	-84.74	688.66	-1,803.56	251.06	181.60	69.46	3.615	
8,800.00	7,107.00	8,830.25	7,084.00	36.44	39.16	-84.74	788.65	-1,802.96	251.06	180.02	71.04	3.534	
8,900.00	7,107.00	8,930.25	7,084.00	37.18	39.61	-84.74	888.65	-1,802.37	251.06	178.34	72.72	3.452	
9,000.00	7,107.00	9,030.25	7,084.00	38.02	40.18	-84.74	988.65	-1,801.77	251.06	176.56	74.49	3.370	
9,100.00	7,107.00	9,130.25	7,084.00	38.93	40.87	-84.74	1,088.65	-1,801.17	251.06	174.70	76.36	3.288	
9,200.00	7,107.00	9,230.25	7,084.00	39.90	41.65	-84.74	1,188.65	-1,800.58	251.06	172.75	78.31	3.206	
9,300.00	7,107.00	9,330.25	7,084.00	40.91	42.52	-84.74	1,288.64	-1,799.98	251.06	170.73	80.33	3.125	
9,400.00	7,107.00	9,430.25	7,084.00	41.96	43.44	-84.74	1,388.64	-1,799.39	251.06	168.64	82.42	3.046	
9,500.00	7,107.00	9,530.25	7,084.00	43.05	44.43	-84.74	1,488.64	-1,798.79	251.06	166.48	84.58	2.968	
9,600.00	7,107.00	9,630.25	7,084.00	44.16	45.46	-84.74	1,588.64	-1,798.19	251.06	164.26	86.80	2.892	
9,700.00	7,107.00	9,730.25	7,084.00	45.31	46.53	-84.74	1,688.64	-1,797.60	251.06	161.99	89.07	2.819	
9,800.00	7,107.00	9,830.25	7,084.00	46.48	47.63	-84.74	1,788.64	-1,797.00	251.06	159.66	91.40	2.747	
9,900.00	7,107.00	9,930.25	7,084.00	47.67	48.77	-84.74	1,888.63	-1,796.41	251.06	157.29	93.77	2.677	
10,000.00	7,107.00	10,030.25	7,084.00	48.88	49.93	-84.74	1,988.63	-1,795.81	251.06	154.87	96.19	2.610	
10,100.00	7,107.00	10,130.25	7,084.00	50.11	51.11	-84.74	2,088.63	-1,795.21	251.06	152.41	98.65	2.545	
10,200.00	7,107.00	10,230.25	7,084.00	51.36	52.32	-84.74	2,188.63	-1,794.62	251.06	149.91	101.15	2.482	
10,300.00	7,107.00	10,330.25	7,084.00	52.63	53.55	-84.74	2,288.63	-1,794.02	251.06	147.38	103.68	2.422	
10,400.00	7,107.00	10,430.25	7,084.00	53.91	54.79	-84.74	2,388.63	-1,793.42	251.06	144.82	106.24	2.363	
10,500.00	7,107.00	10,530.25	7,084.00	55.20	56.06	-84.74	2,488.62	-1,792.83	251.06	142.22	108.84	2.307	
10,600.00	7,107.00	10,630.25	7,084.00	56.51	57.34	-84.74	2,588.62	-1,792.23	251.06	139.60	111.46	2.252	
10,700.00	7,107.00	10,730.25	7,084.00	57.84	58.63	-84.74	2,688.62	-1,791.64	251.06	136.95	114.11	2.200	
10,800.00	7,107.00	10,830.25	7,084.00	59.17	59.94	-84.74	2,788.62	-1,791.04	251.06	134.27	116.79	2.150	
10,900.00	7,107.00	10,930.25	7,084.00	60.52	61.26	-84.74	2,888.62	-1,790.44	251.06	131.58	119.48	2.101	
11,000.00	7,107.00	11,030.25	7,084.00	61.87	62.59	-84.74	2,988.61	-1,789.85	251.06	128.86	122.20	2.054	
11,100.00	7,107.00	11,130.25	7,084.00	63.24	63.93	-84.74	3,088.61	-1,789.25	251.06	126.12	124.94	2.009	
11,200.00	7,107.00	11,230.25	7,084.00	64.61	65.28	-84.74	3,188.61	-1,788.66	251.06	123.36	127.70	1.966	
11,300.00	7,107.00	11,330.25	7,084.00	65.99	66.64	-84.74	3,288.61	-1,788.06	251.06	120.59	130.48	1.924	
11,400.00	7,107.00	11,430.25	7,084.00	67.39	68.01	-84.74	3,388.61	-1,787.46	251.06	117.80	133.27	1.884	
11,500.00	7,107.00	11,530.25	7,084.00	68.78	69.39	-84.74	3,488.61	-1,786.87	251.06	114.99	136.07	1.845	
11,600.00	7,107.00	11,630.25	7,084.00	70.19	70.78	-84.74	3,588.60	-1,786.27	251.06	112.17	138.90	1.808	
11,700.00	7,107.00	11,730.25	7,084.00	71.60	72.17	-84.74	3,688.60	-1,785.67	251.06	109.33	141.73	1.771	
11,800.00	7,107.00	11,830.25	7,084.00	73.02	73.58	-84.74	3,788.60	-1,785.08	251.06	106.49	144.58	1.737	
11,900.00	7,107.00	11,930.25	7,084.00	74.45	74.99	-84.74	3,888.60	-1,784.48	251.06	103.63	147.44	1.703	
12,000.00	7,107.00	12,030.25	7,084.00	75.88	76.40	-84.74	3,988.60	-1,783.89	251.06	100.75	150.31	1.670	
12,100.00	7,107.00	12,130.25	7,084.00	77.31	77.82	-84.74	4,088.60	-1,783.29	251.06	97.87	153.19	1.639	
12,122.72	7,107.00	12,152.97	7,084.00	77.64	78.14	-84.74	4,111.32	-1,783.15	251.06	97.22	153.85	1.632 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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		Total		Separation		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)	Uncertainty Axis	Factor	
0.00	0.00	1.00	-1.00	0.00	0.00	81.54	1.47	9.89	10.00	9.72	0.28	35.764	
100.00	100.00	101.00	99.00	0.14	0.14	81.54	1.47	9.89	10.00	9.00	1.00	10.035	
200.00	200.00	201.00	199.00	0.50	0.50	81.54	1.47	9.89	10.00	8.29	1.71	5.836	
300.00	300.00	301.00	299.00	0.85	0.86	81.54	1.47	9.89	10.00	7.57	2.43	4.114 CC, ES	
400.00	400.00	401.00	399.00	1.21	1.22	81.54	1.47	9.89	10.00	8.46	3.14	3.697	
500.00	499.98	501.02	498.98	1.56	1.58	-157.63	1.47	9.89	11.59	16.55	12.72	3.83	4.322
600.00	599.84	598.84	598.84	1.90	1.93	-164.51	1.47	9.89	16.55	23.42	18.90	4.52	5.180
700.00	699.45	699.25	699.23	2.26	2.27	-168.70	0.36	8.58	23.42	30.42	25.21	5.21	5.840
800.00	798.70	799.91	799.75	2.63	2.61	-170.32	-3.04	4.58	30.42	31.57	5.90	6.348	
900.00	897.47	900.81	900.26	3.02	2.96	-170.79	-8.74	-2.14	37.47	37.96	6.61	6.747	
1,000.00	995.62	1,001.96	1,000.64	3.43	3.33	-170.66	-16.75	-11.57	44.57	65.44	56.67	8.77	7.458
1,100.00	1,093.06	1,103.35	1,100.76	3.87	3.71	-170.17	-27.08	-23.73	51.69	60.14	9.55	7.299	
1,200.00	1,189.64	1,204.98	1,200.49	4.35	4.12	-169.45	-39.72	-38.62	58.84	66.73	11.17	6.975	
1,241.53	1,229.48	1,247.26	1,241.76	4.56	4.30	-169.10	-45.65	-45.61	61.82	70.05	12.00	6.839	
1,300.00	1,285.45	1,306.88	1,299.73	4.86	4.56	-168.49	-54.69	-56.25	65.44	73.39	12.84	6.717	
1,400.00	1,381.16	1,407.55	1,397.10	5.39	5.01	-167.06	-71.25	-75.75	69.69	76.73	13.69	6.606	
1,500.00	1,476.88	1,507.46	1,493.67	5.93	5.48	-165.76	-87.81	-95.26	73.78	80.09	14.55	6.505	
1,600.00	1,572.59	1,607.36	1,590.24	6.47	5.97	-164.59	-104.38	-114.77	77.90	83.45	15.41	6.414	
1,700.00	1,668.31	1,707.26	1,686.80	7.03	6.46	-163.54	-120.94	-134.28	82.05	86.83	16.29	6.331	
1,800.00	1,764.03	1,807.17	1,783.37	7.59	6.96	-162.59	-137.51	-153.80	86.23	90.21	17.17	6.254	
1,900.00	1,859.74	1,907.07	1,879.94	8.15	7.46	-161.73	-154.07	-173.31	90.42	93.59	18.05	6.184	
2,000.00	1,955.46	2,006.97	1,976.51	8.72	7.97	-160.94	-170.64	-192.82	94.64	96.98	18.94	6.119	
2,100.00	2,051.18	2,106.88	2,073.08	9.29	8.48	-160.23	-187.20	-212.33	98.87	100.37	19.84	6.060	
2,200.00	2,146.89	2,206.78	2,169.65	9.86	8.99	-159.57	-203.77	-231.84	103.11	103.77	20.74	6.004	
2,300.00	2,242.61	2,306.68	2,266.22	10.43	9.51	-158.96	-220.34	-251.35	107.37	107.17	21.64	5.953	
2,400.00	2,338.33	2,406.59	2,362.79	11.01	10.03	-158.40	-236.90	-270.86	111.64	110.58	22.54	5.905	
2,500.00	2,434.04	2,506.49	2,459.36	11.58	10.55	-157.88	-253.47	-290.37	115.92	113.98	23.45	5.860	
2,600.00	2,529.76	2,606.39	2,555.92	12.16	11.08	-157.40	-270.03	-309.88	120.21	117.39	24.36	5.819	
2,700.00	2,625.48	2,706.29	2,652.49	12.74	11.60	-156.95	-286.60	-329.39	124.51	120.80	25.27	5.780	
2,800.00	2,721.19	2,806.20	2,749.06	13.32	12.13	-156.53	-303.16	-348.90	128.81	124.22	26.19	5.743	
2,900.00	2,816.91	2,906.10	2,845.63	13.90	12.65	-156.14	-319.73	-368.41	133.12	127.64	27.11	5.709	
3,000.00	2,912.63	3,006.00	2,942.20	14.48	13.18	-155.77	-336.30	-387.92	137.43	124.22	28.03	5.676	
3,100.00	3,008.34	3,105.91	3,038.77	15.06	13.71	-155.43	-352.86	-407.43	141.75	124.22	28.95	5.645	
3,200.00	3,104.06	3,205.81	3,135.34	15.64	14.24	-155.10	-369.43	-426.95	146.08	124.22	29.87	5.617	
3,300.00	3,199.78	3,305.71	3,231.91	16.22	14.77	-154.80	-385.99	-446.46	150.41	124.22	30.79	5.589	
3,400.00	3,295.49	3,405.62	3,328.48	16.80	15.30	-154.51	-402.56	-465.97	154.74	124.22	31.72	5.563	
3,500.00	3,391.21	3,505.52	3,425.04	17.39	15.83	-154.24	-419.12	-485.48	159.08	124.22	32.65	5.539	
3,600.00	3,486.92	3,605.42	3,521.61	17.97	16.36	-153.98	-435.69	-504.99	163.42	124.22	33.57	5.515	
3,700.00	3,582.64	3,705.33	3,618.18	18.55	16.89	-153.73	-452.25	-524.50	167.77	124.22	34.50	5.493	
3,800.00	3,678.36	3,805.23	3,714.75	19.14	17.42	-153.50	-468.82	-544.01	172.11	124.22	35.43	5.472	
3,900.00	3,774.07	3,905.13	3,811.32	19.72	17.95	-153.28	-485.39	-563.52	176.46	124.22	36.36	5.452	
4,000.00	3,869.79	4,005.03	3,907.89	20.31	18.49	-153.07	-501.95	-583.03	180.81	124.22	37.29	5.433	
4,100.00	3,965.51	4,104.94	4,004.46	20.89	19.02	-152.87	-518.52	-602.54	185.17	124.22	38.23	5.414	
4,200.00	4,061.22	4,204.84	4,101.03	21.47	19.55	-152.68	-535.08	-622.05	189.53	124.22	39.16	5.397	
4,300.00	4,156.94	4,304.74	4,197.59	22.06	20.09	-152.49	-551.65	-641.56	193.88	124.22	40.09	5.380	
4,400.00	4,252.66	4,404.65	4,294.16	22.64	20.62	-152.32	-568.21	-661.07	198.25	124.22	41.03	5.364	
4,500.00	4,348.37	4,504.55	4,390.73	23.23	21.16	-152.15	-584.78	-680.58	202.61	124.22	41.96	5.348	
4,600.00	4,444.09	4,604.45	4,487.30	23.82	21.69	-151.99	-601.34	-700.09	206.97	124.22			
4,700.00	4,539.81	4,704.36	4,583.87	24.40	22.22	-151.84	-617.91	-719.61	211.34	124.22			
4,800.00	4,635.52	4,804.26	4,680.44	24.99	22.76	-151.69	-634.48	-739.12	215.70	124.22			
4,900.00	4,731.24	4,904.16	4,777.01	25.57	23.29	-151.55	-651.04	-758.63	220.07	124.22			
5,000.00	4,826.96	5,004.07	4,873.58	26.16	23.83	-151.41	-667.61	-778.14	224.44	124.22			

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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
5,100.00	4,922.67	5,103.97	4,970.15	26.74	24.36	-151.28	-684.17	-797.65	228.81	185.91	42.90	5.334	
5,200.00	5,018.39	5,203.87	5,066.71	27.33	24.90	-151.16	-700.74	-817.16	233.19	189.35	43.84	5.319	
5,300.00	5,114.11	5,303.78	5,163.28	27.92	25.43	-151.04	-717.30	-836.67	237.56	192.78	44.77	5.306	
5,400.00	5,209.82	5,403.68	5,259.85	28.50	25.97	-150.92	-733.87	-856.18	241.93	196.22	45.71	5.293	
5,500.00	5,305.54	5,503.58	5,356.42	29.09	26.50	-150.81	-750.44	-875.69	246.31	199.66	46.65	5.280	
5,600.00	5,401.25	5,603.48	5,452.99	29.67	27.04	-150.70	-767.00	-895.20	250.68	203.10	47.59	5.268	
5,700.00	5,496.97	5,703.39	5,549.56	30.26	27.58	-150.59	-783.57	-914.71	255.06	206.53	48.53	5.256	
5,800.00	5,592.69	5,803.29	5,646.13	30.85	28.11	-150.49	-800.13	-934.22	259.44	209.97	49.47	5.245	
5,900.00	5,688.40	5,903.19	5,742.70	31.43	28.65	-150.39	-816.70	-953.73	263.82	213.41	50.41	5.234	
6,000.00	5,784.12	6,003.10	5,839.27	32.02	29.18	-150.30	-833.26	-973.24	268.20	216.85	51.35	5.223	
6,100.00	5,879.84	6,103.00	5,935.83	32.61	29.72	-150.21	-849.83	-992.75	272.58	220.29	52.29	5.213	
6,200.00	5,975.55	6,202.90	6,032.40	33.19	30.26	-150.12	-866.39	-1,012.27	276.96	223.73	53.23	5.203	
6,300.00	6,071.27	6,302.81	6,128.97	33.78	30.79	-150.03	-882.96	-1,031.78	281.34	227.17	54.17	5.194	
6,400.00	6,166.99	6,402.71	6,225.54	34.37	31.33	-149.95	-899.53	-1,051.29	285.72	230.61	55.11	5.185	
6,500.00	6,262.70	6,502.61	6,322.11	34.95	31.86	-149.87	-916.09	-1,070.80	290.10	234.05	56.05	5.176	
6,535.31	6,296.50	6,537.89	6,356.21	35.16	32.05	-149.84	-921.94	-1,077.69	291.65	235.27	56.38	5.173	
6,550.00	6,310.58	6,552.56	6,370.39	35.25	32.13	-153.21	-924.37	-1,080.55	292.28	235.76	56.53	5.171	
6,600.00	6,358.81	6,602.42	6,418.59	35.52	32.40	-166.12	-932.64	-1,090.29	294.31	237.18	57.13	5.152	
6,650.00	6,407.28	6,651.84	6,466.37	35.77	32.66	179.34	-940.74	-1,099.95	296.23	238.35	57.88	5.118	
6,700.00	6,455.79	6,701.00	6,514.23	35.99	32.91	164.74	-946.41	-1,109.63	298.24	239.59	58.65	5.085	
6,750.00	6,504.07	6,750.66	6,562.83	36.18	33.14	152.11	-948.72	-1,119.50	300.36	241.00	59.36	5.060	
6,800.00	6,551.91	6,800.84	6,611.97	36.34	33.33	142.36	-947.56	-1,129.50	302.60	242.59	60.01	5.043	
6,850.00	6,599.07	6,851.54	6,661.43	36.48	33.50	135.28	-942.83	-1,139.59	304.93	244.35	60.58	5.034	
6,900.00	6,645.31	6,902.79	6,710.95	36.59	33.64	130.24	-934.43	-1,149.72	307.34	246.28	61.07	5.033	
6,950.00	6,690.42	6,954.60	6,760.28	36.68	33.76	126.68	-922.28	-1,159.84	309.81	248.35	61.46	5.041	
7,000.00	6,734.17	7,006.97	6,809.13	36.74	33.86	124.17	-906.34	-1,169.89	312.30	250.55	61.75	5.058	
7,050.00	6,776.35	7,059.91	6,857.21	36.79	33.93	122.40	-886.57	-1,179.82	314.81	252.87	61.93	5.083	
7,100.00	6,816.75	7,113.42	6,904.21	36.81	33.98	121.17	-862.95	-1,189.55	317.29	255.28	62.01	5.117	
7,150.00	6,855.18	7,167.50	6,949.82	36.81	34.01	120.32	-835.51	-1,199.03	319.71	257.74	61.97	5.159	
7,200.00	6,891.45	7,222.13	6,993.70	36.80	34.02	119.76	-804.31	-1,208.18	322.06	260.23	61.83	5.209	
7,250.00	6,925.38	7,277.30	7,035.51	36.77	34.01	119.41	-769.42	-1,216.95	324.30	262.70	61.60	5.265	
7,300.00	6,956.82	7,332.99	7,074.92	36.73	33.97	119.21	-730.97	-1,225.25	326.39	265.11	61.28	5.326	
7,350.00	6,985.59	7,389.18	7,111.59	36.67	33.92	119.12	-689.12	-1,233.02	328.31	267.40	60.91	5.390	
7,400.00	7,011.57	7,445.84	7,145.18	36.59	33.86	119.11	-644.09	-1,240.18	330.03	269.53	60.50	5.455	
7,450.00	7,034.63	7,502.92	7,175.39	36.51	33.77	119.16	-596.12	-1,246.68	331.52	271.44	60.08	5.518	
7,500.00	7,054.66	7,560.38	7,201.93	36.42	33.67	119.23	-545.50	-1,252.46	332.75	273.08	59.68	5.576	
7,550.00	7,071.55	7,618.17	7,224.51	36.32	33.57	119.33	-492.55	-1,257.45	333.71	274.40	59.32	5.626	
7,600.00	7,085.23	7,676.24	7,242.92	36.22	33.45	119.44	-437.65	-1,261.60	334.38	275.35	59.03	5.665	
7,650.00	7,095.63	7,734.53	7,256.95	36.11	33.32	119.55	-381.18	-1,264.87	334.73	275.90	58.83	5.690	
7,700.00	7,102.70	7,792.98	7,266.45	36.00	33.20	119.65	-323.57	-1,267.24	334.77	276.02	58.74	5.699	
7,750.00	7,106.40	7,851.53	7,271.32	35.89	33.07	119.74	-265.26	-1,268.66	334.48	275.70	58.78	5.690	
7,779.70	7,107.00	7,886.32	7,271.99	35.83	32.99	119.79	-230.48	-1,269.06	334.15	275.29	58.86	5.677	
7,800.00	7,107.00	7,906.15	7,272.00	35.79	32.95	119.81	-210.65	-1,269.21	333.91	274.94	58.97	5.662	
7,900.00	7,107.00	8,006.15	7,272.00	35.59	32.75	119.93	-110.66	-1,269.96	332.74	273.16	59.59	5.584	
8,000.00	7,107.00	8,106.14	7,272.00	35.42	32.57	120.04	-10.67	-1,270.71	331.58	271.25	60.33	5.496	
8,100.00	7,107.00	8,206.13	7,272.00	35.28	32.41	120.16	89.31	-1,271.46	330.42	269.23	61.19	5.400	
8,200.00	7,107.00	8,306.12	7,272.00	35.18	32.27	120.28	189.30	-1,272.21	329.25	267.08	62.17	5.296	
8,300.00	7,107.00	8,406.11	7,272.00	35.11	32.16	120.40	289.29	-1,272.95	328.09	264.82	63.27	5.186	
8,400.00	7,107.00	8,506.10	7,272.00	35.11	32.26	120.52	389.28	-1,273.70	326.93	262.46	64.47	5.071	
8,500.00	7,107.00	8,606.09	7,272.00	35.20	32.92	120.64	489.27	-1,274.45	325.78	260.01	65.77	4.953	
8,600.00	7,107.00	8,706.08	7,272.00	35.43	33.72	120.76	589.25	-1,275.20	324.62	257.46	67.16	4.833	
8,700.00	7,107.00	8,806.07	7,272.00	35.85	34.57	120.88	689.24	-1,275.95	323.47	254.82	68.64	4.712	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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				Total Uncertainty Axis	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)			
8,800.00	7,107.00	8,906.06	7,272.00	36.44	35.47	121.00	789.23	-1,276.70	322.31	252.11	70.20	4.591	
8,900.00	7,107.00	9,006.05	7,272.00	37.18	36.41	121.13	889.22	-1,277.44	321.16	249.32	71.84	4.471	
9,000.00	7,107.00	9,106.05	7,272.00	38.02	37.39	121.25	989.21	-1,278.19	320.01	246.47	73.54	4.351	
9,100.00	7,107.00	9,206.04	7,272.00	38.93	38.40	121.37	1,089.20	-1,278.94	318.86	243.55	75.31	4.234	
9,200.00	7,107.00	9,306.03	7,272.00	39.90	39.45	121.50	1,189.18	-1,279.69	317.71	240.58	77.14	4.119	
9,300.00	7,107.00	9,406.02	7,272.00	40.91	40.53	121.63	1,289.17	-1,280.44	316.57	237.55	79.02	4.006	
9,400.00	7,107.00	9,506.01	7,272.00	41.96	41.64	121.76	1,389.16	-1,281.19	315.42	234.48	80.94	3.897	
9,500.00	7,107.00	9,606.00	7,272.00	43.05	42.78	121.89	1,489.15	-1,281.93	314.28	231.36	82.92	3.790	
9,600.00	7,107.00	9,705.99	7,272.00	44.16	43.94	122.02	1,589.14	-1,282.68	313.14	228.20	84.94	3.687	
9,700.00	7,107.00	9,805.98	7,272.00	45.31	45.13	122.15	1,689.12	-1,283.43	312.00	225.01	86.99	3.587	
9,800.00	7,107.00	9,905.97	7,272.00	46.48	46.34	122.28	1,789.11	-1,284.18	310.86	221.78	89.08	3.490	
9,900.00	7,107.00	10,005.96	7,272.00	47.67	47.57	122.41	1,889.10	-1,284.93	309.73	218.53	91.20	3.396	
10,000.00	7,107.00	10,105.96	7,272.00	48.88	48.82	122.54	1,989.09	-1,285.68	308.59	215.24	93.35	3.306	
10,100.00	7,107.00	10,205.95	7,272.00	50.11	50.09	122.68	2,089.08	-1,286.42	307.46	211.93	95.53	3.219	
10,200.00	7,107.00	10,305.94	7,272.00	51.36	51.37	122.82	2,189.07	-1,287.17	306.33	208.60	97.73	3.135	
10,300.00	7,107.00	10,405.93	7,272.00	52.63	52.67	122.95	2,289.05	-1,287.92	305.20	205.25	99.95	3.054	
10,400.00	7,107.00	10,505.92	7,272.00	53.91	53.98	123.09	2,389.04	-1,288.67	304.07	201.88	102.19	2.976	
10,500.00	7,107.00	10,605.91	7,272.00	55.20	55.31	123.23	2,489.03	-1,289.42	302.95	198.49	104.45	2.900	
10,600.00	7,107.00	10,706.63	7,272.00	56.51	56.66	123.37	2,589.75	-1,290.18	301.81	195.03	106.78	2.826	
10,700.00	7,107.00	10,811.14	7,272.00	57.84	58.08	123.70	2,694.23	-1,292.69	299.30	189.96	109.34	2.737	
10,800.00	7,107.00	10,911.08	7,272.00	59.17	59.46	124.07	2,794.13	-1,295.54	296.44	184.91	111.53	2.658	
10,900.00	7,107.00	11,011.02	7,272.00	60.52	60.86	124.45	2,894.03	-1,298.39	293.59	179.87	113.71	2.582	
11,000.00	7,107.00	11,110.97	7,272.00	61.87	62.26	124.83	2,993.93	-1,301.24	290.75	174.86	115.89	2.509	
11,100.00	7,107.00	11,210.91	7,272.00	63.24	63.67	125.22	3,093.83	-1,304.09	287.93	169.86	118.07	2.439	
11,200.00	7,107.00	11,310.85	7,272.00	64.61	65.09	125.62	3,193.73	-1,306.94	285.12	164.89	120.23	2.371	
11,300.00	7,107.00	11,410.79	7,272.00	65.99	66.51	126.03	3,293.63	-1,309.78	282.32	159.94	122.38	2.307	
11,400.00	7,107.00	11,510.73	7,272.00	67.39	67.95	126.45	3,393.53	-1,312.63	279.54	155.02	124.52	2.245	
11,500.00	7,107.00	11,610.67	7,272.00	68.78	69.39	126.87	3,493.43	-1,315.48	276.78	150.13	126.65	2.185	
11,600.00	7,107.00	11,710.61	7,272.00	70.19	70.84	127.30	3,593.33	-1,318.33	274.03	145.27	128.75	2.128	
11,700.00	7,107.00	11,810.55	7,272.00	71.60	72.29	127.74	3,693.23	-1,321.18	271.29	140.45	130.84	2.073	
11,800.00	7,107.00	11,910.49	7,272.00	73.02	73.75	128.19	3,793.13	-1,324.03	268.58	135.67	132.91	2.021	
11,900.00	7,107.00	12,010.43	7,272.00	74.45	75.22	128.65	3,893.03	-1,326.88	265.88	130.92	134.96	1.970	
12,000.00	7,107.00	12,110.37	7,272.00	75.88	76.69	129.12	3,992.93	-1,329.73	263.19	126.22	136.98	1.921	
12,100.00	7,107.00	12,210.31	7,272.00	77.31	78.16	129.60	4,092.83	-1,332.57	260.53	121.56	138.97	1.875	
12,122.72	7,107.00	12,229.68	7,272.00	77.64	78.45	129.69	4,112.19	-1,333.13	259.95	120.85	139.09	1.869 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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	1.00	-1.00	0.00	0.00	81.55	2.94	19.78	20.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	2.94	19.78	20.00	19.72	0.28	71.527		
200.00	200.00	201.00	199.00	0.50	0.50	81.55	2.94	19.78	20.00	19.00	1.00	20.069		
300.00	300.00	301.00	299.00	0.85	0.86	81.55	2.94	19.78	20.00	18.29	1.71	11.672		
400.00	400.00	401.00	399.00	1.21	1.22	81.55	2.94	19.78	20.00	17.57	2.43	8.229 CC, ES		
500.00	499.98	501.02	498.98	1.56	1.58	-155.86	2.94	19.78	21.58	18.44	3.14	6.883		
600.00	599.84	601.16	598.84	1.90	1.93	-160.47	2.94	19.78	26.44	22.60	3.84	6.890		
700.00	699.45	701.55	698.45	2.26	2.29	-165.23	2.94	19.78	34.78	30.23	4.55	7.645		
800.00	798.70	797.70	797.70	2.63	2.64	-169.00	2.94	19.78	46.67	41.42	5.25	8.887		
900.00	897.47	898.50	898.48	3.02	2.99	-171.37	1.85	18.49	60.49	54.54	5.95	10.160		
1,000.00	995.62	999.84	999.68	3.43	3.33	-172.58	-1.57	14.47	74.40	67.75	6.65	11.189		
1,100.00	1,093.06	1,101.68	1,101.12	3.87	3.68	-173.18	-7.32	7.68	88.34	80.98	7.35	12.014		
1,200.00	1,189.64	1,204.03	1,202.70	4.35	4.04	-173.40	-15.45	-1.91	102.26	94.20	8.06	12.682		
1,241.53	1,229.48	1,246.69	1,244.88	4.56	4.20	-173.42	-19.54	-6.73	108.04	99.67	8.36	12.916		
1,300.00	1,285.45	1,306.98	1,304.33	4.86	4.42	-173.37	-25.99	-14.34	115.57	106.78	8.78	13.159		
1,400.00	1,381.16	1,410.73	1,406.12	5.39	4.83	-173.01	-39.00	-29.68	125.67	116.16	9.51	13.219		
1,500.00	1,476.88	1,515.09	1,507.69	5.93	5.27	-172.35	-54.48	-47.94	132.24	122.00	10.24	12.912		
1,600.00	1,572.59	1,615.93	1,605.24	6.47	5.71	-171.51	-71.00	-67.43	136.43	125.42	11.01	12.391		
1,700.00	1,668.31	1,715.83	1,701.86	7.03	6.17	-170.73	-87.42	-86.79	140.57	128.78	11.80	11.917		
1,800.00	1,764.03	1,815.72	1,798.47	7.59	6.64	-169.99	-103.84	-106.15	144.74	132.15	12.59	11.496		
1,900.00	1,859.74	1,915.62	1,895.09	8.15	7.12	-169.29	-120.25	-125.51	148.93	135.54	13.40	11.118		
2,000.00	1,955.46	2,015.52	1,991.71	8.72	7.60	-168.63	-136.67	-144.88	153.14	138.94	14.21	10.779		
2,100.00	2,051.18	2,115.41	2,088.32	9.29	8.09	-168.01	-153.09	-164.24	157.37	142.35	15.03	10.473		
2,200.00	2,146.89	2,215.31	2,184.94	9.86	8.59	-167.42	-169.50	-183.60	161.62	145.77	15.85	10.195		
2,300.00	2,242.61	2,315.21	2,281.56	10.43	9.09	-166.86	-185.92	-202.96	165.89	149.20	16.68	9.942		
2,400.00	2,338.33	2,415.10	2,378.17	11.01	9.60	-166.33	-202.34	-222.33	170.16	152.64	17.52	9.711		
2,500.00	2,434.04	2,515.00	2,474.79	11.58	10.11	-165.82	-218.75	-241.69	174.46	156.09	18.37	9.499		
2,600.00	2,529.76	2,614.89	2,571.41	12.16	10.62	-165.34	-235.17	-261.05	178.76	159.55	19.21	9.304		
2,700.00	2,625.48	2,714.79	2,668.03	12.74	11.13	-164.88	-251.59	-280.41	183.08	163.02	20.06	9.125		
2,800.00	2,721.19	2,814.69	2,764.64	13.32	11.64	-164.44	-268.00	-299.77	187.41	166.49	20.92	8.958		
2,900.00	2,816.91	2,914.58	2,861.26	13.90	12.16	-164.02	-284.42	-319.14	191.75	169.97	21.78	8.804		
3,000.00	2,912.63	3,014.48	2,957.88	14.48	12.68	-163.62	-300.84	-338.50	196.10	173.46	22.64	8.660		
3,100.00	3,008.34	3,114.38	3,054.49	15.06	13.20	-163.24	-317.25	-357.86	200.46	176.95	23.51	8.526		
3,200.00	3,104.06	3,214.27	3,151.11	15.64	13.72	-162.87	-333.67	-377.22	204.83	180.45	24.38	8.401		
3,300.00	3,199.78	3,314.17	3,247.73	16.22	14.24	-162.52	-350.09	-396.59	209.20	183.95	25.25	8.284		
3,400.00	3,295.49	3,414.06	3,344.34	16.80	14.77	-162.19	-366.51	-415.95	213.58	187.46	26.13	8.174		
3,500.00	3,391.21	3,513.96	3,440.96	17.39	15.29	-161.86	-382.92	-435.31	217.97	190.97	27.01	8.071		
3,600.00	3,486.92	3,613.86	3,537.58	17.97	15.81	-161.55	-399.34	-454.67	222.37	194.48	27.89	7.974		
3,700.00	3,582.64	3,713.75	3,634.20	18.55	16.34	-161.25	-415.76	-474.04	226.77	198.00	28.77	7.882		
3,800.00	3,678.36	3,813.65	3,730.81	19.14	16.87	-160.97	-432.17	-493.40	231.18	201.53	29.66	7.795		
3,900.00	3,774.07	3,913.55	3,827.43	19.72	17.39	-160.69	-448.59	-512.76	235.60	205.05	30.54	7.714		
4,000.00	3,869.79	4,013.44	3,924.05	20.31	17.92	-160.43	-465.01	-532.12	240.02	208.58	31.43	7.636		
4,100.00	3,965.51	4,113.34	4,020.66	20.89	18.45	-160.17	-481.42	-551.48	244.44	212.12	32.32	7.562		
4,200.00	4,061.22	4,213.23	4,117.28	21.47	18.98	-159.92	-497.84	-570.85	248.87	215.65	33.22	7.492		
4,300.00	4,156.94	4,313.13	4,213.90	22.06	19.50	-159.68	-514.26	-590.21	253.30	219.19	34.11	7.426		
4,400.00	4,252.66	4,413.03	4,310.51	22.64	20.03	-159.45	-530.67	-609.57	257.74	222.73	35.01	7.363		
4,500.00	4,348.37	4,512.92	4,407.13	23.23	20.56	-159.23	-547.09	-628.93	262.18	226.28	35.90	7.302		
4,600.00	4,444.09	4,612.82	4,503.75	23.82	21.09	-159.02	-563.51	-648.30	266.63	229.83	36.80	7.245		
4,700.00	4,539.81	4,712.71	4,600.37	24.40	21.62	-158.81	-579.92	-667.66	271.08	233.37	37.70	7.190		
4,800.00	4,635.52	4,812.61	4,696.98	24.99	22.15	-158.61	-596.34	-687.02	275.53	236.93	38.60	7.137		
4,900.00	4,731.24	4,912.51	4,793.60	25.57	22.68	-158.41	-612.76	-706.38	279.99	240.48	39.51	7.087		
5,000.00	4,826.96	5,012.40	4,890.22	26.16	23.21	-158.22	-629.17	-725.75	284.45	244.03	40.41	7.039		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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	
5,100.00	4,922.67	5,112.30	4,986.83	26.74	23.74	-158.04	-645.59	-745.11	288.91	247.59	41.32	6.993	
5,200.00	5,018.39	5,212.20	5,083.45	27.33	24.27	-157.86	-662.01	-764.47	293.37	251.15	42.22	6.948	
5,300.00	5,114.11	5,312.09	5,180.07	27.92	24.80	-157.69	-678.43	-783.83	297.84	254.71	43.13	6.906	
5,400.00	5,209.82	5,411.99	5,276.68	28.50	25.34	-157.52	-694.84	-803.19	302.31	258.27	44.04	6.865	
5,500.00	5,305.54	5,511.88	5,373.30	29.09	25.87	-157.36	-711.26	-822.56	306.78	261.84	44.95	6.826	
5,600.00	5,401.25	5,611.78	5,469.92	29.67	26.40	-157.20	-727.68	-841.92	311.26	265.40	45.85	6.788	
5,700.00	5,496.97	5,711.68	5,566.54	30.26	26.93	-157.05	-744.09	-861.28	315.74	268.97	46.77	6.751	
5,800.00	5,592.69	5,811.57	5,663.15	30.85	27.46	-156.90	-760.51	-880.64	320.21	272.54	47.68	6.716	
5,900.00	5,688.40	5,911.47	5,759.77	31.43	27.99	-156.76	-776.93	-900.01	324.70	276.11	48.59	6.683	
6,000.00	5,784.12	6,011.37	5,856.39	32.02	28.53	-156.62	-793.34	-919.37	329.18	279.68	49.50	6.650	
6,100.00	5,879.84	6,111.26	5,953.00	32.61	29.06	-156.48	-809.76	-938.73	333.67	283.25	50.42	6.618	
6,200.00	5,975.55	6,211.16	6,049.62	33.19	29.59	-156.35	-826.18	-958.09	338.15	286.82	51.33	6.588	
6,300.00	6,071.27	6,311.05	6,146.24	33.78	30.12	-156.22	-842.59	-977.46	342.64	290.40	52.24	6.558	
6,400.00	6,166.99	6,410.95	6,242.85	34.37	30.66	-156.09	-859.01	-996.82	347.13	293.97	53.16	6.530	
6,500.00	6,262.70	6,504.39	6,333.68	34.95	31.13	-156.53	-870.93	-1,014.99	352.33	298.44	53.88	6.539	
6,535.31	6,296.50	6,536.34	6,364.98	35.16	31.27	-157.10	-872.34	-1,021.23	354.74	300.73	54.01	6.568	
6,550.00	6,310.58	6,549.53	6,377.92	35.25	31.33	-160.82	-872.51	-1,023.81	355.82	301.77	54.05	6.583	
6,600.00	6,358.81	6,594.22	6,421.73	35.52	31.50	-175.34	-871.28	-1,032.51	359.54	305.37	54.16	6.638	
6,650.00	6,407.28	6,638.59	6,465.06	35.77	31.65	167.96	-867.30	-1,041.10	363.29	309.03	54.26	6.695	
6,700.00	6,455.79	6,682.65	6,507.78	35.99	31.78	151.10	-860.65	-1,049.55	367.04	312.70	54.34	6.755	
6,750.00	6,504.07	6,726.44	6,549.77	36.18	31.89	136.30	-851.40	-1,057.83	370.75	316.36	54.40	6.816	
6,800.00	6,551.91	6,769.97	6,590.89	36.34	31.98	124.48	-839.63	-1,065.92	374.39	319.95	54.44	6.877	
6,850.00	6,599.07	6,813.29	6,631.04	36.48	32.05	115.42	-825.42	-1,073.79	377.93	323.46	54.47	6.939	
6,900.00	6,645.31	6,856.41	6,670.09	36.59	32.11	108.52	-808.84	-1,081.42	381.33	326.84	54.48	6.999	
6,950.00	6,690.42	6,899.35	6,707.95	36.68	32.16	103.20	-789.97	-1,088.80	384.56	330.08	54.49	7.058	
7,000.00	6,734.17	6,942.15	6,744.52	36.74	32.19	99.04	-768.91	-1,095.90	387.62	333.13	54.48	7.115	
7,050.00	6,776.35	6,984.82	6,779.68	36.79	32.20	95.74	-745.73	-1,102.71	390.46	335.98	54.48	7.168	
7,100.00	6,816.75	7,027.38	6,813.35	36.81	32.21	93.11	-720.52	-1,109.20	393.07	338.60	54.47	7.216	
7,150.00	6,855.18	7,069.86	6,845.44	36.81	32.20	90.99	-693.38	-1,115.36	395.44	340.97	54.47	7.259	
7,200.00	6,891.45	7,112.29	6,875.85	36.80	32.18	89.28	-664.39	-1,121.17	397.55	343.06	54.49	7.296	
7,250.00	6,925.38	7,154.68	6,904.51	36.77	32.15	87.91	-633.64	-1,126.62	399.39	344.87	54.52	7.325	
7,300.00	6,956.82	7,197.05	6,931.32	36.73	32.12	86.84	-601.23	-1,131.69	400.95	346.37	54.58	7.346	
7,350.00	6,985.59	7,239.43	6,956.22	36.67	32.07	86.01	-567.26	-1,136.37	402.23	347.57	54.66	7.358	
7,400.00	7,011.57	7,281.85	6,979.12	36.59	32.01	85.41	-531.83	-1,140.63	403.21	348.43	54.78	7.361	
7,450.00	7,034.63	7,324.31	6,999.95	36.51	31.95	85.00	-495.03	-1,144.47	403.91	348.98	54.93	7.353	
7,500.00	7,054.66	7,366.84	7,018.64	36.42	31.88	84.77	-456.98	-1,147.87	404.32	349.20	55.12	7.335	
7,550.00	7,071.55	7,409.48	7,035.11	36.32	31.81	84.71	-417.78	-1,150.83	404.45	349.09	55.35	7.307	
7,600.00	7,085.23	7,452.22	7,049.31	36.22	31.73	84.81	-377.54	-1,153.32	404.29	348.67	55.62	7.269	
7,650.00	7,095.63	7,495.11	7,061.16	36.11	31.64	85.06	-336.38	-1,155.34	403.88	347.94	55.93	7.221	
7,700.00	7,102.70	7,538.16	7,070.60	36.00	31.56	85.45	-294.41	-1,156.87	403.20	346.92	56.28	7.165	
7,750.00	7,106.40	7,581.40	7,077.59	35.89	31.47	85.98	-251.76	-1,157.91	402.28	345.63	56.65	7.101	
7,779.70	7,107.00	7,607.18	7,080.54	35.83	31.42	86.36	-226.16	-1,158.29	401.63	344.74	56.89	7.060	
7,800.00	7,107.00	7,624.86	7,082.05	35.79	31.38	86.58	-208.54	-1,158.44	401.23	344.18	57.05	7.033	
7,853.41	7,107.00	7,671.65	7,083.97	35.68	31.29	86.85	-161.80	-1,158.44	400.79	343.38	57.41	6.981	
7,900.00	7,107.00	7,717.32	7,084.00	35.59	31.20	86.85	-116.13	-1,158.06	400.89	343.30	57.58	6.962	
8,000.00	7,107.00	7,817.32	7,084.00	35.42	31.01	86.86	-16.13	-1,157.24	401.12	343.06	58.05	6.910	
8,100.00	7,107.00	7,917.32	7,084.00	35.28	30.85	86.86	83.86	-1,156.41	401.34	342.66	58.69	6.839	
8,200.00	7,107.00	8,017.32	7,084.00	35.18	30.70	86.86	183.86	-1,155.59	401.57	342.09	59.48	6.751	
8,300.00	7,107.00	8,117.32	7,084.00	35.11	30.56	86.86	283.86	-1,154.76	401.80	341.37	60.43	6.649	
8,400.00	7,107.00	8,217.32	7,084.00	35.11	30.66	86.86	383.85	-1,153.93	402.03	340.50	61.53	6.534	
8,500.00	7,107.00	8,317.32	7,084.00	35.20	31.39	86.86	483.85	-1,153.11	402.26	339.50	62.76	6.409	
8,600.00	7,107.00	8,417.32	7,084.00	35.43	32.18	86.87	583.85	-1,152.28	402.49	338.36	64.13	6.276	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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
8,700.00	7,107.00	8,517.32	7,084.00	35.85	33.01	86.87	683.84	-1,151.45	402.72	337.10	65.62	6.137	
8,800.00	7,107.00	8,617.32	7,084.00	36.44	33.90	86.87	783.84	-1,150.63	402.95	335.73	67.23	5.994	
8,900.00	7,107.00	8,717.32	7,084.00	37.18	34.82	86.87	883.83	-1,149.80	403.18	334.25	68.94	5.849	
9,000.00	7,107.00	8,817.32	7,084.00	38.02	35.79	86.87	983.83	-1,148.97	403.41	332.67	70.75	5.702	
9,100.00	7,107.00	8,917.32	7,084.00	38.93	36.80	86.88	1,083.83	-1,148.15	403.64	330.99	72.65	5.556	
9,200.00	7,107.00	9,017.32	7,084.00	39.90	37.84	86.88	1,183.82	-1,147.32	403.87	329.24	74.63	5.411	
9,300.00	7,107.00	9,117.32	7,084.00	40.91	38.91	86.88	1,283.82	-1,146.50	404.10	327.40	76.70	5.269	
9,400.00	7,107.00	9,217.32	7,084.00	41.96	40.01	86.88	1,383.82	-1,145.67	404.33	325.50	78.83	5.129	
9,500.00	7,107.00	9,317.32	7,084.00	43.05	41.14	86.88	1,483.81	-1,144.84	404.56	323.52	81.04	4.992	
9,600.00	7,107.00	9,417.31	7,084.00	44.16	42.30	86.88	1,583.81	-1,144.02	404.79	321.49	83.30	4.859	
9,700.00	7,107.00	9,517.31	7,084.00	45.31	43.48	86.89	1,683.81	-1,143.19	405.02	319.40	85.62	4.730	
9,800.00	7,107.00	9,617.31	7,084.00	46.48	44.68	86.89	1,783.80	-1,142.36	405.25	317.26	87.99	4.606	
9,900.00	7,107.00	9,717.31	7,084.00	47.67	45.90	86.89	1,883.80	-1,141.54	405.48	315.07	90.41	4.485	
10,000.00	7,107.00	9,817.31	7,084.00	48.88	47.15	86.89	1,983.79	-1,140.71	405.71	312.84	92.87	4.368	
10,100.00	7,107.00	9,917.31	7,084.00	50.11	48.41	86.89	2,083.79	-1,139.88	405.94	310.56	95.37	4.256	
10,200.00	7,107.00	10,017.31	7,084.00	51.36	49.69	86.90	2,183.79	-1,139.06	406.17	308.25	97.92	4.148	
10,300.00	7,107.00	10,117.31	7,084.00	52.63	50.98	86.90	2,283.78	-1,138.23	406.40	305.91	100.49	4.044	
10,400.00	7,107.00	10,217.31	7,084.00	53.91	52.29	86.90	2,383.78	-1,137.41	406.63	303.53	103.10	3.944	
10,500.00	7,107.00	10,317.31	7,084.00	55.20	53.61	86.90	2,483.78	-1,136.58	406.86	301.12	105.73	3.848	
10,600.00	7,107.00	10,417.31	7,084.00	56.51	54.95	86.90	2,583.77	-1,135.75	407.09	298.69	108.40	3.756	
10,700.00	7,107.00	10,517.31	7,084.00	57.84	56.30	86.90	2,683.77	-1,134.93	407.32	296.23	111.09	3.667	
10,800.00	7,107.00	10,617.31	7,084.00	59.17	57.65	86.91	2,783.76	-1,134.10	407.55	293.75	113.80	3.581	
10,900.00	7,107.00	10,717.31	7,084.00	60.52	59.02	86.91	2,883.76	-1,133.27	407.78	291.24	116.54	3.499	
11,000.00	7,107.00	10,817.31	7,084.00	61.87	60.40	86.91	2,983.76	-1,132.45	408.01	288.72	119.29	3.420	
11,100.00	7,107.00	10,917.31	7,084.00	63.24	61.79	86.91	3,083.75	-1,131.62	408.24	286.17	122.07	3.344	
11,200.00	7,107.00	11,017.31	7,084.00	64.61	63.18	86.91	3,183.75	-1,130.79	408.47	283.61	124.86	3.271	
11,300.00	7,107.00	11,117.31	7,084.00	65.99	64.58	86.91	3,283.75	-1,129.97	408.70	281.03	127.67	3.201	
11,400.00	7,107.00	11,217.31	7,084.00	67.39	65.99	86.92	3,383.74	-1,129.14	408.93	278.43	130.49	3.134	
11,500.00	7,107.00	11,317.31	7,084.00	68.78	67.41	86.92	3,483.74	-1,128.31	409.16	275.82	133.33	3.069	
11,600.00	7,107.00	11,417.31	7,084.00	70.19	68.83	86.92	3,583.74	-1,127.49	409.39	273.20	136.18	3.006	
11,700.00	7,107.00	11,517.31	7,084.00	71.60	70.27	86.92	3,683.73	-1,126.66	409.61	270.56	139.05	2.946	
11,800.00	7,107.00	11,617.31	7,084.00	73.02	71.70	86.92	3,783.73	-1,125.84	409.84	267.92	141.93	2.888	
11,900.00	7,107.00	11,717.31	7,084.00	74.45	73.14	86.92	3,883.72	-1,125.01	410.07	265.26	144.82	2.832	
12,000.00	7,107.00	11,817.31	7,084.00	75.88	74.59	86.93	3,983.72	-1,124.18	410.30	262.59	147.72	2.778	
12,100.00	7,107.00	11,917.31	7,084.00	77.31	76.04	86.93	4,083.72	-1,123.36	410.53	259.91	150.63	2.725	
12,122.72	7,107.00	11,940.03	7,084.00	77.64	76.37	86.93	4,106.44	-1,123.17	410.59	259.30	151.29	2.714 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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	81.55	4.41	29.67	30.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	4.41	29.67	30.00	29.72	0.28	107.291		
200.00	200.00	201.00	199.00	0.50	0.50	81.55	4.41	29.67	30.00	29.00	1.00	30.103		
300.00	300.00	301.00	299.00	0.85	0.86	81.55	4.41	29.67	30.00	28.29	1.71	17.508		
400.00	400.00	401.00	399.00	1.21	1.22	81.55	4.41	29.67	30.00	27.57	2.43	12.343 CC, ES		
500.00	499.98	501.02	498.98	1.56	1.58	-155.21	4.41	29.67	31.58	28.44	3.14	10.072		
600.00	599.84	601.16	598.84	1.90	1.93	-158.63	4.41	29.67	36.39	32.56	3.84	9.483		
700.00	699.45	701.55	698.45	2.26	2.29	-162.66	4.41	29.67	44.62	40.07	4.55	9.808		
800.00	798.70	802.30	797.70	2.63	2.66	-166.30	4.41	29.67	56.38	51.11	5.27	10.701		
900.00	897.47	903.53	896.47	3.02	3.02	-169.20	4.41	29.67	71.68	65.69	5.99	11.960		
1,000.00	995.62	994.62	994.62	3.43	3.34	-171.41	4.41	29.67	90.50	83.81	6.68	13.538		
1,100.00	1,093.06	1,095.52	1,095.50	3.87	3.69	-172.81	3.20	28.64	111.37	103.98	7.40	15.056		
1,200.00	1,189.64	1,197.29	1,197.14	4.35	4.03	-173.36	-0.75	25.26	132.46	124.36	8.10	16.346		
1,241.53	1,229.48	1,239.77	1,239.49	4.56	4.18	-173.43	-3.21	23.15	141.26	132.86	8.40	16.812		
1,300.00	1,285.45	1,299.91	1,299.36	4.86	4.38	-173.41	-7.50	19.47	153.11	144.29	8.82	17.363		
1,400.00	1,381.16	1,403.81	1,402.47	5.39	4.74	-173.02	-17.17	11.19	170.76	161.22	9.54	17.901		
1,500.00	1,476.88	1,508.81	1,506.14	5.93	5.12	-172.25	-29.82	0.36	185.08	174.81	10.27	18.018		
1,600.00	1,572.59	1,614.64	1,609.94	6.47	5.53	-171.16	-45.48	-13.05	196.07	185.05	11.02	17.793		
1,700.00	1,668.31	1,721.02	1,713.43	7.03	5.96	-169.72	-64.15	-29.03	203.76	191.98	11.78	17.296		
1,800.00	1,764.03	1,819.94	1,809.34	7.59	6.38	-168.32	-82.55	-44.79	210.26	197.69	12.58	16.716		
1,900.00	1,859.74	1,919.60	1,905.96	8.15	6.81	-166.99	-101.11	-60.68	216.87	203.48	13.39	16.198		
2,000.00	1,955.46	2,019.26	2,002.57	8.72	7.26	-165.73	-119.67	-76.58	223.59	209.37	14.21	15.732		
2,100.00	2,051.18	2,118.92	2,099.19	9.29	7.72	-164.56	-138.23	-92.47	230.40	215.35	15.05	15.309		
2,200.00	2,146.89	2,218.58	2,195.81	9.86	8.18	-163.44	-156.78	-108.36	237.31	221.41	15.90	14.926		
2,300.00	2,242.61	2,318.23	2,292.42	10.43	8.65	-162.40	-175.34	-124.25	244.30	227.54	16.76	14.576		
2,400.00	2,338.33	2,417.89	2,389.04	11.01	9.13	-161.41	-193.90	-140.15	251.37	233.74	17.63	14.257		
2,500.00	2,434.04	2,517.55	2,485.66	11.58	9.61	-160.47	-212.46	-156.04	258.51	240.00	18.51	13.964		
2,600.00	2,529.76	2,617.21	2,582.27	12.16	10.09	-159.59	-231.02	-171.93	265.72	246.31	19.40	13.694		
2,700.00	2,625.48	2,716.87	2,678.89	12.74	10.58	-158.75	-249.58	-187.82	272.98	252.68	20.30	13.446		
2,800.00	2,721.19	2,816.53	2,775.51	13.32	11.07	-157.96	-268.14	-203.71	280.30	259.09	21.21	13.216		
2,900.00	2,816.91	2,916.18	2,872.13	13.90	11.56	-157.20	-286.70	-219.61	287.67	265.55	22.12	13.004		
3,000.00	2,912.63	3,015.84	2,968.74	14.48	12.05	-156.49	-305.25	-235.50	295.09	272.05	23.04	12.806		
3,100.00	3,008.34	3,115.50	3,065.36	15.06	12.55	-155.81	-323.81	-251.39	302.55	278.58	23.97	12.623		
3,200.00	3,104.06	3,215.16	3,161.98	15.64	13.05	-155.16	-342.37	-267.28	310.05	285.15	24.90	12.451		
3,300.00	3,199.78	3,314.82	3,258.59	16.22	13.55	-154.54	-360.93	-283.18	317.59	291.75	25.84	12.291		
3,400.00	3,295.49	3,414.48	3,355.21	16.80	14.05	-153.95	-379.49	-299.07	325.17	298.39	26.78	12.142		
3,500.00	3,391.21	3,514.13	3,451.83	17.39	14.55	-153.39	-398.05	-314.96	332.77	305.05	27.73	12.002		
3,600.00	3,486.92	3,613.79	3,548.44	17.97	15.06	-152.85	-416.61	-330.85	340.41	311.73	28.68	11.870		
3,700.00	3,582.64	3,713.45	3,645.06	18.55	15.56	-152.34	-435.16	-346.74	348.08	318.44	29.63	11.746		
3,800.00	3,678.36	3,813.11	3,741.68	19.14	16.07	-151.85	-453.72	-362.64	355.77	325.18	30.59	11.630		
3,900.00	3,774.07	3,912.77	3,838.29	19.72	16.57	-151.38	-472.28	-378.53	363.49	331.93	31.55	11.520		
4,000.00	3,869.79	4,012.43	3,934.91	20.31	17.08	-150.93	-490.84	-394.42	371.23	338.71	32.52	11.416		
4,100.00	3,965.51	4,112.08	4,031.53	20.89	17.59	-150.50	-509.40	-410.31	378.99	345.50	33.49	11.318		
4,200.00	4,061.22	4,211.74	4,128.14	21.47	18.10	-150.08	-527.96	-426.20	386.77	352.32	34.46	11.225		
4,300.00	4,156.94	4,311.40	4,224.76	22.06	18.61	-149.68	-546.52	-442.10	394.57	359.14	35.43	11.137		
4,400.00	4,252.66	4,411.06	4,321.38	22.64	19.12	-149.30	-565.07	-457.99	402.39	365.99	36.40	11.054		
4,500.00	4,348.37	4,510.72	4,417.99	23.23	19.63	-148.93	-583.63	-473.88	410.23	372.85	37.38	10.974		
4,600.00	4,444.09	4,610.38	4,514.61	23.82	20.14	-148.58	-602.19	-489.77	418.09	379.72	38.36	10.899		
4,700.00	4,539.81	4,710.03	4,611.23	24.40	20.65	-148.24	-620.75	-505.67	425.96	386.61	39.34	10.827		
4,800.00	4,635.52	4,809.69	4,707.84	24.99	21.16	-147.91	-639.31	-521.56	433.84	393.51	40.33	10.758		
4,900.00	4,731.24	4,909.35	4,804.46	25.57	21.67	-147.59	-657.87	-537.45	441.74	400.42	41.31	10.693		
5,000.00	4,826.96	5,009.01	4,901.08	26.16	22.18	-147.28	-676.43	-553.34	449.65	407.35	42.30	10.630		

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

Cathedral Energy Services

Anticollision Report

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Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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
5,100.00	4,922.67	5,108.67	4,997.69	26.74	22.69	-146.99	-694.98	-569.23	457.57	414.28	43.29	10.571	
5,200.00	5,018.39	5,208.33	5,094.31	27.33	23.21	-146.70	-713.54	-585.13	465.50	421.23	44.28	10.514	
5,300.00	5,114.11	5,307.98	5,190.93	27.92	23.72	-146.43	-732.10	-601.02	473.45	428.18	45.27	10.459	
5,400.00	5,209.82	5,407.64	5,287.54	28.50	24.23	-146.16	-750.66	-616.91	481.41	435.15	46.26	10.407	
5,500.00	5,305.54	5,507.30	5,384.16	29.09	24.75	-145.90	-769.22	-632.80	489.37	442.12	47.25	10.356	
5,600.00	5,401.25	5,606.96	5,480.78	29.67	25.26	-145.65	-787.78	-648.70	497.35	449.10	48.25	10.308	
5,700.00	5,496.97	5,706.62	5,577.39	30.26	25.77	-145.41	-806.34	-664.59	505.33	456.09	49.24	10.262	
5,800.00	5,592.69	5,806.28	5,674.01	30.85	26.29	-145.18	-824.89	-680.48	513.33	463.09	50.24	10.217	
5,900.00	5,688.40	5,905.93	5,770.63	31.43	26.80	-144.95	-843.45	-696.37	521.33	470.09	51.24	10.174	
6,000.00	5,784.12	6,005.59	5,867.24	32.02	27.32	-144.73	-862.01	-712.26	529.34	477.10	52.24	10.133	
6,100.00	5,879.84	6,105.25	5,963.86	32.61	27.83	-144.51	-880.57	-728.16	537.36	484.12	53.24	10.094	
6,200.00	5,975.55	6,204.91	6,060.48	33.19	28.35	-144.31	-899.13	-744.05	545.38	491.14	54.24	10.055	
6,300.00	6,071.27	6,304.57	6,157.09	33.78	28.86	-144.10	-917.69	-759.94	553.41	498.17	55.24	10.019	
6,400.00	6,166.99	6,404.23	6,253.71	34.37	29.38	-143.91	-936.25	-775.83	561.45	505.21	56.24	9.983	
6,500.00	6,262.70	6,505.37	6,352.53	34.95	29.86	-144.25	-949.87	-792.04	569.38	512.30	57.08	9.976	
6,535.31	6,296.50	6,540.70	6,387.37	35.16	30.00	-144.69	-951.33	-797.73	572.14	514.88	57.26	9.993	
6,550.00	6,310.58	6,555.28	6,401.76	35.25	30.05	-148.36	-951.43	-800.08	573.29	515.98	57.32	10.002	
6,600.00	6,358.81	6,604.58	6,450.38	35.52	30.22	-162.75	-949.55	-807.98	577.32	519.84	57.49	10.043	
6,650.00	6,407.28	6,653.39	6,498.27	35.77	30.36	-179.38	-944.36	-815.74	581.48	523.87	57.61	10.093	
6,700.00	6,455.79	6,701.72	6,545.26	35.99	30.47	163.78	-935.98	-823.32	585.73	528.03	57.69	10.153	
6,750.00	6,504.07	6,749.61	6,591.16	36.18	30.56	148.93	-924.53	-830.71	590.04	532.30	57.74	10.219	
6,800.00	6,551.91	6,797.08	6,635.81	36.34	30.63	137.01	-910.13	-837.86	594.41	536.64	57.76	10.290	
6,850.00	6,599.07	6,844.14	6,679.07	36.48	30.68	127.81	-892.94	-844.76	598.78	541.02	57.76	10.366	
6,900.00	6,645.31	6,890.83	6,720.79	36.59	30.72	120.71	-873.07	-851.40	603.13	545.39	57.74	10.445	
6,950.00	6,690.42	6,937.17	6,760.85	36.68	30.74	115.15	-850.68	-857.74	607.45	549.74	57.71	10.526	
7,000.00	6,734.17	6,983.18	6,799.13	36.74	30.75	110.72	-825.89	-863.77	611.68	554.02	57.66	10.608	
7,050.00	6,776.35	7,028.89	6,835.53	36.79	30.74	107.11	-798.86	-869.47	615.81	558.20	57.61	10.689	
7,100.00	6,816.75	7,074.31	6,869.95	36.81	30.73	104.12	-769.72	-874.84	619.82	562.26	57.56	10.769	
7,150.00	6,855.18	7,119.48	6,902.30	36.81	30.70	101.62	-738.61	-879.85	623.66	566.16	57.50	10.846	
7,200.00	6,891.45	7,164.41	6,932.50	36.80	30.66	99.50	-705.68	-884.50	627.32	569.87	57.45	10.919	
7,250.00	6,925.38	7,209.13	6,960.48	36.77	30.61	97.69	-671.07	-888.77	630.78	573.37	57.41	10.987	
7,300.00	6,956.82	7,253.65	6,986.17	36.73	30.56	96.15	-634.92	-892.66	634.00	576.63	57.38	11.050	
7,350.00	6,985.59	7,298.01	7,009.51	36.67	30.50	94.83	-597.37	-896.15	636.98	579.62	57.36	11.105	
7,400.00	7,011.57	7,342.21	7,030.44	36.59	30.44	93.71	-558.58	-899.24	639.68	582.32	57.36	11.152	
7,450.00	7,034.63	7,386.28	7,048.93	36.51	30.37	92.76	-518.67	-901.92	642.10	584.72	57.38	11.190	
7,500.00	7,054.66	7,430.24	7,064.91	36.42	30.29	91.97	-477.79	-904.19	644.22	586.79	57.43	11.218	
7,550.00	7,071.55	7,474.10	7,078.37	36.32	30.22	91.33	-436.09	-906.04	646.02	588.53	57.50	11.236	
7,600.00	7,085.23	7,517.89	7,089.28	36.22	30.15	90.83	-393.70	-907.46	647.50	589.91	57.59	11.243	
7,650.00	7,095.63	7,561.63	7,097.59	36.11	30.08	90.46	-350.78	-908.46	648.65	590.93	57.71	11.239	
7,700.00	7,102.70	7,605.33	7,103.30	36.00	30.01	90.22	-307.47	-909.03	649.45	591.58	57.86	11.224	
7,750.00	7,106.40	7,649.02	7,106.40	35.89	29.94	90.10	-263.90	-909.18	649.90	591.86	58.04	11.197	
7,779.70	7,107.00	7,674.96	7,106.99	35.83	29.90	90.09	-237.96	-909.06	650.01	591.85	58.16	11.177	
7,800.00	7,107.00	7,705.26	7,107.00	35.79	29.86	90.09	-218.19	-908.90	650.05	591.81	58.24	11.161	
7,900.00	7,107.00	7,805.26	7,107.00	35.59	29.77	90.09	-118.19	-908.07	650.28	591.65	58.64	11.090	
8,000.00	7,107.00	7,894.74	7,107.00	35.42	29.75	90.09	-18.20	-907.25	650.51	591.36	59.16	10.996	
8,100.00	7,107.00	8,005.27	7,107.00	35.28	29.85	90.09	81.80	-906.42	650.74	590.83	59.91	10.861	
8,200.00	7,107.00	8,105.27	7,107.00	35.18	30.12	90.09	181.79	-905.59	650.97	590.18	60.79	10.709	
8,300.00	7,107.00	8,205.27	7,107.00	35.11	30.57	90.09	281.79	-904.77	651.20	589.39	61.81	10.535	
8,400.00	7,107.00	8,294.73	7,107.00	35.11	31.09	90.09	381.79	-903.94	651.43	588.52	62.91	10.355	
8,500.00	7,107.00	8,405.27	7,107.00	35.20	31.85	90.09	481.78	-903.11	651.66	587.39	64.28	10.138	
8,600.00	7,107.00	8,505.27	7,107.00	35.43	32.62	90.09	581.78	-902.29	651.89	586.19	65.70	9.922	
8,700.00	7,107.00	8,605.27	7,107.00	35.85	33.46	90.09	681.78	-901.46	652.12	584.88	67.24	9.698	

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

Cathedral Energy Services

Anticollision Report

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Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
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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		
8,800.00	7,107.00	8,705.27	7,107.00	36.44	34.35	90.09	781.77	-900.64	652.35	583.46	68.89	9.469		
8,900.00	7,107.00	8,805.27	7,107.00	37.18	35.29	90.09	881.77	-899.81	652.58	581.93	70.65	9.237		
9,000.00	7,107.00	8,905.27	7,107.00	38.02	36.27	90.09	981.77	-898.98	652.81	580.32	72.50	9.005		
9,100.00	7,107.00	9,005.27	7,107.00	38.93	37.30	90.09	1,081.76	-898.16	653.04	578.61	74.43	8.773		
9,200.00	7,107.00	9,105.27	7,107.00	39.90	38.35	90.09	1,181.76	-897.33	653.27	576.82	76.45	8.545		
9,300.00	7,107.00	9,205.27	7,107.00	40.91	39.45	90.09	1,281.75	-896.50	653.50	574.96	78.54	8.320		
9,400.00	7,107.00	9,305.27	7,107.00	41.96	40.57	90.09	1,381.75	-895.68	653.73	573.03	80.70	8.100		
9,500.00	7,107.00	9,405.27	7,107.00	43.05	41.72	90.09	1,481.75	-894.85	653.96	571.03	82.93	7.886		
9,600.00	7,107.00	9,505.27	7,107.00	44.16	42.89	90.09	1,581.74	-894.03	654.19	568.98	85.21	7.677		
9,700.00	7,107.00	9,605.27	7,107.00	45.31	44.09	90.09	1,681.74	-893.20	654.42	566.87	87.55	7.475		
9,800.00	7,107.00	9,705.27	7,107.00	46.48	45.31	90.09	1,781.74	-892.37	654.65	564.72	89.94	7.279		
9,900.00	7,107.00	9,805.27	7,107.00	47.67	46.56	90.09	1,881.73	-891.55	654.88	562.51	92.37	7.090		
10,000.00	7,107.00	9,905.27	7,107.00	48.88	47.82	90.09	1,981.73	-890.72	655.11	560.27	94.85	6.907		
10,100.00	7,107.00	10,005.27	7,107.00	50.11	49.09	90.09	2,081.73	-889.89	655.34	557.98	97.36	6.731		
10,200.00	7,107.00	10,105.27	7,107.00	51.36	50.39	90.09	2,181.72	-889.07	655.57	555.66	99.91	6.561		
10,300.00	7,107.00	10,205.27	7,107.00	52.63	51.70	90.09	2,281.72	-888.24	655.80	553.31	102.50	6.398		
10,400.00	7,107.00	10,305.27	7,107.00	53.91	53.02	90.09	2,381.71	-887.41	656.03	550.92	105.11	6.241		
10,500.00	7,107.00	10,405.27	7,107.00	55.20	54.36	90.09	2,481.71	-886.59	656.26	548.51	107.76	6.090		
10,600.00	7,107.00	10,505.27	7,107.00	56.51	55.71	90.09	2,581.71	-885.76	656.49	546.06	110.43	5.945		
10,700.00	7,107.00	10,605.27	7,107.00	57.84	57.07	90.09	2,681.70	-884.94	656.72	543.60	113.12	5.805		
10,800.00	7,107.00	10,705.27	7,107.00	59.17	58.43	90.09	2,781.70	-884.11	656.95	541.11	115.84	5.671		
10,900.00	7,107.00	10,805.27	7,107.00	60.52	59.81	90.09	2,881.70	-883.28	657.18	538.60	118.58	5.542		
11,000.00	7,107.00	10,894.73	7,107.00	61.87	61.06	90.09	2,981.69	-882.46	657.41	536.22	121.20	5.424		
11,100.00	7,107.00	11,005.27	7,107.00	63.24	62.60	90.09	3,081.69	-881.63	657.64	533.52	124.12	5.298		
11,200.00	7,107.00	11,105.27	7,107.00	64.61	64.01	90.09	3,181.68	-880.80	657.87	530.95	126.92	5.183		
11,300.00	7,107.00	11,205.27	7,107.00	65.99	65.42	90.09	3,281.68	-879.98	658.10	528.37	129.73	5.073		
11,400.00	7,107.00	11,305.27	7,107.00	67.39	66.84	90.09	3,381.68	-879.15	658.33	525.77	132.56	4.966		
11,500.00	7,107.00	11,405.27	7,107.00	68.78	68.27	90.09	3,481.67	-878.33	658.56	523.16	135.40	4.864		
11,600.00	7,107.00	11,505.27	7,107.00	70.19	69.70	90.09	3,581.67	-877.50	658.79	520.53	138.26	4.765		
11,700.00	7,107.00	11,605.27	7,107.00	71.60	71.14	90.09	3,681.67	-876.67	659.02	517.89	141.13	4.670		
11,800.00	7,107.00	11,694.73	7,107.00	73.02	72.43	90.09	3,781.66	-875.85	659.25	515.39	143.86	4.583		
11,900.00	7,107.00	11,805.28	7,107.00	74.45	74.03	90.09	3,881.66	-875.02	659.48	512.58	146.90	4.489		
12,000.00	7,107.00	11,905.28	7,107.00	75.88	75.48	90.09	3,981.66	-874.19	659.71	509.91	149.81	4.404		
12,100.00	7,107.00	11,994.72	7,107.00	77.31	76.79	90.09	4,081.65	-873.37	659.94	507.38	152.56	4.326		
12,122.72	7,107.00	12,017.44	7,107.00	77.64	77.12	90.09	4,104.37	-873.18	659.99	506.77	153.23	4.307 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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	81.55	5.88	39.56	40.00					
100.00	100.00	101.00	99.00	0.14	0.14	81.55	5.88	39.56	40.00	39.72	0.28	143.055		
200.00	200.00	201.00	199.00	0.50	0.50	81.55	5.88	39.56	40.00	39.00	1.00	40.138		
300.00	300.00	301.00	299.00	0.85	0.86	81.55	5.88	39.56	40.00	38.29	1.71	23.344		
400.00	400.00	401.00	399.00	1.21	1.22	81.55	5.88	39.56	40.00	37.57	2.43	16.458 CC, ES		
500.00	499.98	501.02	498.98	1.56	1.58	-154.88	5.88	39.56	41.57	38.44	3.14	13.261		
600.00	599.84	601.16	598.84	1.90	1.93	-157.59	5.88	39.56	46.36	42.53	3.84	12.081		
700.00	699.45	701.55	698.45	2.26	2.29	-161.03	5.88	39.56	54.53	49.98	4.55	11.985		
800.00	798.70	802.30	797.70	2.63	2.66	-164.40	5.88	39.56	66.17	60.91	5.27	12.560		
900.00	897.47	903.53	896.47	3.02	3.02	-167.29	5.88	39.56	81.36	75.36	5.99	13.574		
1,000.00	995.62	1,005.38	994.62	3.43	3.38	-169.63	5.88	39.56	100.07	93.34	6.72	14.882		
1,100.00	1,093.06	1,107.94	1,092.06	3.87	3.75	-171.46	5.88	39.56	122.28	114.81	7.46	16.388		
1,200.00	1,189.64	1,188.64	1,188.64	4.35	4.04	-172.88	5.88	39.56	147.93	139.81	8.12	18.211		
1,241.53	1,229.48	1,229.85	1,229.85	4.56	4.18	-173.36	5.74	39.49	159.47	151.04	8.43	18.926		
1,300.00	1,285.45	1,288.98	1,288.97	4.86	4.39	-173.79	4.65	38.93	175.34	166.49	8.85	19.822		
1,400.00	1,381.16	1,391.42	1,391.27	5.39	4.72	-173.92	0.21	36.62	200.22	190.67	9.56	20.952		
1,500.00	1,476.88	1,495.31	1,494.79	5.93	5.07	-173.46	-7.61	32.55	222.21	211.93	10.28	21.614		
1,600.00	1,572.59	1,600.43	1,599.13	6.47	5.43	-172.57	-18.91	26.68	241.27	230.25	11.02	21.895		
1,700.00	1,668.31	1,706.49	1,703.86	7.03	5.81	-171.29	-33.74	18.97	257.44	245.66	11.77	21.865		
1,800.00	1,764.03	1,813.05	1,808.38	7.59	6.20	-169.66	-52.10	9.43	270.79	258.24	12.55	21.582		
1,900.00	1,859.74	1,912.01	1,905.10	8.15	6.58	-168.07	-70.68	-0.23	282.94	269.61	13.33	21.220		
2,000.00	1,955.46	2,010.97	2,001.82	8.72	6.98	-166.61	-89.26	-9.89	295.30	281.16	14.13	20.892		
2,100.00	2,051.18	2,109.94	2,098.54	9.29	7.38	-165.27	-107.84	-19.55	307.82	292.87	14.95	20.590		
2,200.00	2,146.89	2,208.90	2,195.27	9.86	7.79	-164.03	-126.43	-29.21	320.50	304.73	15.78	20.315		
2,300.00	2,242.61	2,307.86	2,291.99	10.43	8.21	-162.89	-145.01	-38.87	333.32	316.70	16.62	20.059		
2,400.00	2,338.33	2,406.82	2,388.71	11.01	8.64	-161.83	-163.59	-48.53	346.26	328.79	17.47	19.824		
2,500.00	2,434.04	2,505.79	2,485.43	11.58	9.07	-160.85	-182.17	-58.18	359.31	340.98	18.33	19.607		
2,600.00	2,529.76	2,604.75	2,582.15	12.16	9.50	-159.94	-200.75	-67.84	372.45	353.26	19.19	19.405		
2,700.00	2,625.48	2,703.71	2,678.87	12.74	9.94	-159.08	-219.34	-77.50	385.68	365.61	20.07	19.218		
2,800.00	2,721.19	2,802.68	2,775.60	13.32	10.38	-158.29	-237.92	-87.16	398.99	378.04	20.95	19.043		
2,900.00	2,816.91	2,901.64	2,872.32	13.90	10.83	-157.55	-256.50	-96.82	412.37	390.53	21.84	18.881		
3,000.00	2,912.63	3,000.60	2,969.04	14.48	11.27	-156.85	-275.08	-106.48	425.81	403.08	22.74	18.729		
3,100.00	3,008.34	3,100.43	3,065.76	15.06	11.73	-156.20	-293.67	-116.14	439.32	415.68	23.64	18.584		
3,200.00	3,104.06	3,201.47	3,162.48	15.64	12.19	-155.58	-312.25	-125.80	452.87	428.32	24.55	18.445		
3,300.00	3,199.78	3,302.51	3,259.21	16.22	12.65	-155.00	-330.83	-135.46	466.47	441.00	25.47	18.314		
3,400.00	3,295.49	3,396.46	3,355.93	16.80	13.08	-154.46	-349.41	-145.11	480.12	453.76	26.36	18.212		
3,500.00	3,391.21	3,504.58	3,452.65	17.39	13.58	-153.94	-367.99	-154.77	493.81	466.49	27.32	18.075		
3,600.00	3,486.92	3,605.62	3,549.37	17.97	14.05	-153.45	-386.58	-164.43	507.54	479.29	28.25	17.967		
3,700.00	3,582.64	3,693.35	3,646.09	18.55	14.45	-152.99	-405.16	-174.09	521.30	492.17	29.12	17.900		
3,800.00	3,678.36	3,807.69	3,742.81	19.14	14.99	-152.55	-423.74	-183.75	535.09	504.97	30.12	17.767		
3,900.00	3,774.07	3,908.73	3,839.54	19.72	15.46	-152.13	-442.32	-193.41	548.91	517.85	31.05	17.676		
4,000.00	3,869.79	3,990.24	3,936.26	20.31	15.84	-151.74	-460.90	-203.07	562.76	530.85	31.91	17.637		
4,100.00	3,965.51	4,089.20	4,032.98	20.89	16.30	-151.36	-479.49	-212.73	576.63	543.79	32.84	17.558		
4,200.00	4,061.22	4,188.16	4,129.70	21.47	16.76	-151.00	-498.07	-222.39	590.53	556.75	33.78	17.483		
4,300.00	4,156.94	4,287.12	4,226.42	22.06	17.23	-150.66	-516.65	-232.04	604.44	569.73	34.71	17.412		
4,400.00	4,252.66	4,386.09	4,323.15	22.64	17.69	-150.33	-535.23	-241.70	618.38	582.73	35.65	17.345		
4,500.00	4,348.37	4,485.05	4,419.87	23.23	18.16	-150.01	-553.82	-251.36	632.34	595.75	36.59	17.280		
4,600.00	4,444.09	4,584.01	4,516.59	23.82	18.62	-149.71	-572.40	-261.02	646.32	608.78	37.53	17.219		
4,700.00	4,539.81	4,682.98	4,613.31	24.40	19.09	-149.43	-590.98	-270.68	660.31	621.83	38.48	17.161		
4,800.00	4,635.52	4,781.94	4,710.03	24.99	19.55	-149.15	-609.56	-280.34	674.32	634.89	39.42	17.105		
4,900.00	4,731.24	4,880.90	4,806.76	25.57	20.02	-148.89	-628.14	-290.00	688.34	647.97	40.37	17.051		
5,000.00	4,826.96	4,979.87	4,903.48	26.16	20.49	-148.64	-646.73	-299.66	702.37	661.06	41.32	17.000		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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
5,100.00	4,922.67	5,078.83	5,000.20	26.74	20.96	-148.39	-665.31	-309.32	716.42	674.16	42.26	16.951	
5,200.00	5,018.39	5,177.79	5,096.92	27.33	21.42	-148.16	-683.89	-318.98	730.48	687.27	43.21	16.904	
5,300.00	5,114.11	5,276.76	5,193.64	27.92	21.89	-147.93	-702.47	-328.63	744.56	700.39	44.16	16.860	
5,400.00	5,209.82	5,375.72	5,290.36	28.50	22.36	-147.72	-721.05	-338.29	758.64	713.53	45.11	16.816	
5,500.00	5,305.54	5,474.68	5,387.09	29.09	22.83	-147.51	-739.64	-347.95	772.73	726.67	46.07	16.775	
5,600.00	5,401.25	5,573.65	5,483.81	29.67	23.30	-147.30	-758.22	-357.61	786.84	739.82	47.02	16.735	
5,700.00	5,496.97	5,672.61	5,580.53	30.26	23.77	-147.11	-776.80	-367.27	800.95	752.98	47.97	16.697	
5,800.00	5,592.69	5,771.57	5,677.25	30.85	24.24	-146.92	-795.38	-376.93	815.07	766.15	48.92	16.660	
5,900.00	5,688.40	5,870.54	5,773.97	31.43	24.71	-146.74	-813.97	-386.59	829.20	779.32	49.88	16.624	
6,000.00	5,784.12	5,969.50	5,870.70	32.02	25.18	-146.57	-832.55	-396.25	843.34	792.51	50.83	16.590	
6,100.00	5,879.84	6,068.46	5,967.42	32.61	25.65	-146.40	-851.13	-405.91	857.49	805.70	51.79	16.557	
6,200.00	5,975.55	6,167.42	6,064.14	33.19	26.12	-146.23	-869.71	-415.56	871.64	818.89	52.75	16.525	
6,300.00	6,071.27	6,266.39	6,160.86	33.78	26.59	-146.07	-888.29	-425.22	885.80	832.09	53.70	16.494	
6,400.00	6,166.99	6,365.35	6,257.58	34.37	27.06	-145.92	-906.88	-434.88	899.96	845.30	54.66	16.464	
6,500.00	6,262.70	6,464.31	6,354.31	34.95	27.53	-145.77	-925.46	-444.54	914.13	858.52	55.62	16.436	
6,535.31	6,296.50	6,500.74	6,388.46	35.16	27.71	-145.72	-932.02	-447.95	919.14	863.18	55.96	16.424	
6,550.00	6,310.58	6,513.79	6,402.66	35.25	27.77	-149.21	-934.75	-449.37	921.22	865.12	56.10	16.421	
6,600.00	6,358.81	6,562.66	6,450.51	35.52	28.00	-162.91	-943.45	-454.14	928.34	871.76	56.58	16.409	
6,650.00	6,407.28	6,611.26	6,498.53	35.77	28.20	-178.84	-949.19	-458.91	935.51	878.50	57.01	16.411	
6,700.00	6,455.79	6,660.11	6,547.07	35.99	28.38	165.00	-951.65	-463.70	942.71	885.32	57.38	16.428	
6,750.00	6,504.07	6,709.23	6,595.93	36.18	28.53	150.81	-950.77	-468.50	949.90	892.19	57.71	16.460	
6,800.00	6,551.91	6,758.62	6,644.89	36.34	28.66	139.53	-946.49	-473.27	957.04	899.06	57.99	16.505	
6,850.00	6,599.07	6,808.31	6,693.74	36.48	28.77	130.94	-938.77	-478.01	964.12	905.90	58.22	16.560	
6,900.00	6,645.31	6,858.31	6,742.24	36.59	28.86	124.44	-927.59	-482.68	971.08	912.66	58.41	16.624	
6,950.00	6,690.42	6,908.64	6,790.16	36.68	28.94	119.45	-912.93	-487.27	977.90	919.33	58.57	16.696	
7,000.00	6,734.17	6,959.29	6,837.23	36.74	29.00	115.55	-894.80	-491.75	984.54	925.85	58.69	16.775	
7,050.00	6,776.35	7,010.29	6,883.22	36.79	29.04	112.45	-873.22	-496.09	990.97	932.19	58.78	16.860	
7,100.00	6,816.75	7,061.64	6,927.87	36.81	29.08	109.94	-848.23	-500.27	997.16	938.32	58.83	16.949	
7,150.00	6,855.18	7,113.34	6,970.91	36.81	29.10	107.88	-819.88	-504.27	1,003.07	944.21	58.86	17.041	
7,200.00	6,891.45	7,165.38	7,012.07	36.80	29.10	106.18	-788.27	-508.05	1,008.68	949.81	58.87	17.134	
7,250.00	6,925.38	7,217.78	7,051.09	36.77	29.10	104.76	-753.50	-511.60	1,013.95	955.09	58.86	17.226	
7,300.00	6,956.82	7,270.52	7,087.71	36.73	29.09	103.57	-715.71	-514.88	1,018.87	960.02	58.84	17.316	
7,350.00	6,985.59	7,323.58	7,121.66	36.67	29.08	102.57	-675.06	-517.88	1,023.39	964.57	58.82	17.400	
7,400.00	7,011.57	7,376.96	7,152.70	36.59	29.06	101.73	-631.73	-520.58	1,027.50	968.71	58.79	17.477	
7,450.00	7,034.63	7,430.64	7,180.60	36.51	29.04	101.04	-585.94	-522.94	1,031.18	972.40	58.78	17.544	
7,500.00	7,054.66	7,484.59	7,205.12	36.42	29.02	100.47	-537.94	-524.95	1,034.40	975.62	58.78	17.599	
7,550.00	7,071.55	7,538.79	7,226.06	36.32	29.01	100.01	-487.99	-526.60	1,037.15	978.35	58.80	17.640	
7,600.00	7,085.23	7,593.21	7,243.24	36.22	29.00	99.66	-436.39	-527.86	1,039.40	980.57	58.84	17.666	
7,650.00	7,095.63	7,647.81	7,256.52	36.11	29.01	99.40	-383.45	-528.73	1,041.16	982.25	58.91	17.674	
7,700.00	7,102.70	7,702.56	7,265.77	36.00	29.03	99.23	-329.50	-529.19	1,042.40	983.39	59.01	17.665	
7,750.00	7,106.40	7,757.43	7,270.89	35.89	29.06	99.16	-274.89	-529.24	1,043.12	983.97	59.14	17.637	
7,779.70	7,107.00	7,790.05	7,271.96	35.83	29.09	99.15	-242.29	-529.08	1,043.30	984.06	59.24	17.612	
7,800.00	7,107.00	7,811.01	7,272.00	35.79	29.12	99.15	-221.33	-528.91	1,043.34	984.03	59.32	17.589	
7,900.00	7,107.00	7,911.01	7,272.00	35.59	29.28	99.15	-121.33	-528.08	1,043.57	983.77	59.80	17.452	
8,000.00	7,107.00	8,011.01	7,272.00	35.42	29.54	99.15	-21.34	-527.26	1,043.80	983.36	60.43	17.272	
8,100.00	7,107.00	8,111.01	7,272.00	35.28	29.91	99.15	78.66	-526.43	1,044.03	982.80	61.22	17.052	
8,200.00	7,107.00	8,211.01	7,272.00	35.18	30.37	99.15	178.66	-525.61	1,044.25	982.09	62.16	16.799	
8,300.00	7,107.00	8,311.01	7,272.00	35.11	30.91	99.14	278.65	-524.78	1,044.48	981.24	63.24	16.516	
8,400.00	7,107.00	8,411.01	7,272.00	35.11	31.54	99.14	378.65	-523.95	1,044.71	980.26	64.45	16.210	
8,500.00	7,107.00	8,511.01	7,272.00	35.20	32.24	99.14	478.65	-523.13	1,044.93	979.15	65.79	15.884	
8,600.00	7,107.00	8,611.00	7,272.00	35.43	33.01	99.14	578.64	-522.30	1,045.16	977.92	67.24	15.543	
8,700.00	7,107.00	8,711.00	7,272.00	35.85	33.83	99.14	678.64	-521.47	1,045.39	976.58	68.81	15.193	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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		
8,800.00	7,107.00	8,811.00	7,272.00	36.44	34.71	99.13	778.63	-520.65	1,045.61	975.14	70.48	14.836		
8,900.00	7,107.00	8,911.00	7,272.00	37.18	35.63	99.13	878.63	-519.82	1,045.84	973.60	72.24	14.476		
9,000.00	7,107.00	9,011.00	7,272.00	38.02	36.61	99.13	978.63	-519.00	1,046.07	971.97	74.10	14.117		
9,100.00	7,107.00	9,111.00	7,272.00	38.93	37.62	99.13	1,078.62	-518.17	1,046.29	970.26	76.04	13.760		
9,200.00	7,107.00	9,211.00	7,272.00	39.90	38.67	99.13	1,178.62	-517.34	1,046.52	968.47	78.05	13.408		
9,300.00	7,107.00	9,311.00	7,272.00	40.91	39.76	99.12	1,278.62	-516.52	1,046.75	966.61	80.14	13.061		
9,400.00	7,107.00	9,411.00	7,272.00	41.96	40.87	99.12	1,378.61	-515.69	1,046.98	964.68	82.29	12.723		
9,500.00	7,107.00	9,511.00	7,272.00	43.05	42.02	99.12	1,478.61	-514.86	1,047.20	962.70	84.51	12.392		
9,600.00	7,107.00	9,611.00	7,272.00	44.16	43.19	99.12	1,578.60	-514.04	1,047.43	960.66	86.77	12.071		
9,700.00	7,107.00	9,711.00	7,272.00	45.31	44.39	99.12	1,678.60	-513.21	1,047.66	958.56	89.09	11.759		
9,800.00	7,107.00	9,811.00	7,272.00	46.48	45.61	99.11	1,778.60	-512.39	1,047.88	956.42	91.46	11.457		
9,900.00	7,107.00	9,911.00	7,272.00	47.67	46.86	99.11	1,878.59	-511.56	1,048.11	954.24	93.87	11.165		
10,000.00	7,107.00	10,011.00	7,272.00	48.88	48.12	99.11	1,978.59	-510.73	1,048.34	952.01	96.33	10.883		
10,100.00	7,107.00	10,111.00	7,272.00	50.11	49.40	99.11	2,078.59	-509.91	1,048.56	949.75	98.82	10.611		
10,200.00	7,107.00	10,211.00	7,272.00	51.36	50.69	99.11	2,178.58	-509.08	1,048.79	947.45	101.34	10.349		
10,300.00	7,107.00	10,311.00	7,272.00	52.63	52.00	99.10	2,278.58	-508.26	1,049.02	945.12	103.90	10.096		
10,400.00	7,107.00	10,411.00	7,272.00	53.91	53.33	99.10	2,378.58	-507.43	1,049.25	942.75	106.49	9.853		
10,500.00	7,107.00	10,511.00	7,272.00	55.20	54.67	99.10	2,478.57	-506.60	1,049.47	940.36	109.11	9.619		
10,600.00	7,107.00	10,611.00	7,272.00	56.51	56.02	99.10	2,578.57	-505.78	1,049.70	937.95	111.75	9.393		
10,700.00	7,107.00	10,711.00	7,272.00	57.84	57.38	99.10	2,678.56	-504.95	1,049.93	935.51	114.42	9.176		
10,800.00	7,107.00	10,811.00	7,272.00	59.17	58.75	99.10	2,778.56	-504.12	1,050.15	933.05	117.11	8.967		
10,900.00	7,107.00	10,911.00	7,272.00	60.52	60.13	99.09	2,878.56	-503.30	1,050.38	930.56	119.82	8.767		
11,000.00	7,107.00	11,011.00	7,272.00	61.87	61.52	99.09	2,978.55	-502.47	1,050.61	928.06	122.55	8.573		
11,100.00	7,107.00	11,111.00	7,272.00	63.24	62.92	99.09	3,078.55	-501.65	1,050.83	925.54	125.30	8.387		
11,200.00	7,107.00	11,211.00	7,272.00	64.61	64.33	99.09	3,178.55	-500.82	1,051.06	923.00	128.06	8.207		
11,300.00	7,107.00	11,311.00	7,272.00	65.99	65.75	99.09	3,278.54	-499.99	1,051.29	920.44	130.84	8.035		
11,400.00	7,107.00	11,411.00	7,272.00	67.39	67.17	99.08	3,378.54	-499.17	1,051.51	917.87	133.64	7.868		
11,500.00	7,107.00	11,511.00	7,272.00	68.78	68.60	99.08	3,478.53	-498.34	1,051.74	915.29	136.45	7.708		
11,600.00	7,107.00	11,611.00	7,272.00	70.19	70.04	99.08	3,578.53	-497.51	1,051.97	912.69	139.28	7.553		
11,700.00	7,107.00	11,711.00	7,272.00	71.60	71.48	99.08	3,678.53	-496.69	1,052.20	910.08	142.11	7.404		
11,800.00	7,107.00	11,811.00	7,272.00	73.02	72.92	99.08	3,778.52	-495.86	1,052.42	907.46	144.96	7.260		
11,900.00	7,107.00	11,911.00	7,272.00	74.45	74.38	99.07	3,878.52	-495.04	1,052.65	904.83	147.82	7.121		
12,000.00	7,107.00	12,011.00	7,272.00	75.88	75.83	99.07	3,978.52	-494.21	1,052.88	902.18	150.69	6.987		
12,100.00	7,107.00	12,111.00	7,272.00	77.31	77.29	99.07	4,078.51	-493.38	1,053.10	899.53	153.57	6.857		
12,122.72	7,107.00	12,133.72	7,272.00	77.64	77.63	99.07	4,101.23	-493.20	1,053.16	898.93	154.23	6.829 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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	1.00	-1.00	0.00	0.00	81.55	7.35	49.46	50.00				
100.00	100.00	101.00	99.00	0.14	0.14	81.55	7.35	49.46	50.00	49.72	0.28	178.818	
200.00	200.00	201.00	199.00	0.50	0.50	81.55	7.35	49.46	50.00	49.00	1.00	50.172	
300.00	300.00	299.35	299.35	0.85	0.84	81.99	6.94	49.34	49.83	48.13	1.70	29.318	
400.00	400.00	399.94	399.87	1.21	1.19	85.78	3.57	48.39	48.53	46.13	2.40	20.232	
471.36	471.36	471.55	471.33	1.46	1.44	-144.92	-0.89	47.14	47.88	44.98	2.90	16.519 CC	
500.00	499.98	500.25	499.93	1.56	1.54	-142.79	-3.16	46.50	47.99	44.89	3.10	15.488 ES	
600.00	599.84	600.26	599.39	1.90	1.91	-134.71	-13.24	43.66	50.27	46.46	3.81	13.192	
700.00	699.45	699.87	698.03	2.26	2.30	-126.70	-26.58	39.91	55.70	51.15	4.55	12.236	
800.00	798.70	800.73	796.05	2.63	2.71	-120.51	-42.39	35.46	64.17	58.85	5.33	12.044	
900.00	897.47	901.34	894.05	3.02	3.12	-118.00	-58.35	30.97	74.81	68.68	6.13	12.211	
1,000.00	995.62	1,002.11	991.89	3.43	3.55	-118.12	-74.28	26.48	87.12	80.17	6.95	12.534	
1,100.00	1,093.06	1,103.16	1,089.46	3.87	3.98	-119.87	-90.17	22.01	101.13	93.33	7.80	12.962	
1,200.00	1,189.64	1,204.60	1,186.64	4.35	4.41	-122.58	-105.99	17.56	117.06	108.38	8.68	13.492	
1,241.53	1,229.48	1,236.19	1,226.85	4.56	4.55	-123.87	-112.54	15.71	124.32	115.32	9.00	13.811	
1,300.00	1,285.45	1,306.46	1,283.41	4.86	4.85	-125.75	-121.75	13.12	134.88	125.31	9.57	14.097	
1,400.00	1,381.16	1,408.36	1,380.13	5.39	5.29	-128.35	-137.50	8.69	153.22	142.76	10.46	14.646	
1,500.00	1,476.88	1,489.73	1,476.85	5.93	5.64	-130.40	-153.25	4.26	171.80	160.53	11.27	15.247	
1,600.00	1,572.59	1,587.82	1,573.56	6.47	6.06	-132.04	-169.00	-0.18	190.54	178.40	12.15	15.685	
1,700.00	1,668.31	1,685.92	1,670.28	7.03	6.49	-133.40	-184.75	-4.61	209.42	196.39	13.03	16.071	
1,800.00	1,764.03	1,784.01	1,767.00	7.59	6.92	-134.52	-200.50	-9.04	228.38	214.47	13.91	16.414	
1,900.00	1,859.74	1,882.11	1,863.72	8.15	7.34	-135.48	-216.25	-13.47	247.42	232.62	14.80	16.720	
2,000.00	1,955.46	1,980.20	1,960.44	8.72	7.77	-136.30	-232.00	-17.91	266.52	250.83	15.68	16.994	
2,100.00	2,051.18	2,078.29	2,057.16	9.29	8.20	-137.01	-247.75	-22.34	285.66	269.09	16.57	17.240	
2,200.00	2,146.89	2,176.39	2,153.88	9.86	8.62	-137.63	-263.50	-26.77	304.84	287.38	17.46	17.463	
2,300.00	2,242.61	2,274.48	2,250.60	10.43	9.05	-138.17	-279.25	-31.21	324.05	305.70	18.34	17.666	
2,400.00	2,338.33	2,372.57	2,347.32	11.01	9.48	-138.66	-295.00	-35.64	343.28	324.05	19.23	17.851	
2,500.00	2,434.04	2,470.67	2,444.04	11.58	9.91	-139.09	-310.75	-40.07	362.54	342.42	20.12	18.020	
2,600.00	2,529.76	2,568.76	2,540.76	12.16	10.34	-139.48	-326.50	-44.50	381.81	360.80	21.01	18.175	
2,700.00	2,625.48	2,666.85	2,637.48	12.74	10.76	-139.83	-342.25	-48.94	401.10	379.20	21.90	18.318	
2,800.00	2,721.19	2,764.95	2,734.20	13.32	11.19	-140.15	-358.00	-53.37	420.40	397.61	22.78	18.451	
2,900.00	2,816.91	2,863.04	2,830.92	13.90	11.62	-140.45	-373.76	-57.80	439.71	416.04	23.67	18.573	
3,000.00	2,912.63	2,961.14	2,927.64	14.48	12.05	-140.71	-389.51	-62.23	459.04	434.47	24.56	18.687	
3,100.00	3,008.34	3,059.23	3,024.36	15.06	12.48	-140.96	-405.26	-66.67	478.37	452.91	25.45	18.794	
3,200.00	3,104.06	3,157.32	3,121.08	15.64	12.91	-141.19	-421.01	-71.10	497.71	471.37	26.34	18.893	
3,300.00	3,199.78	3,255.42	3,217.79	16.22	13.34	-141.40	-436.76	-75.53	517.06	489.82	27.23	18.986	
3,400.00	3,295.49	3,353.51	3,314.51	16.80	13.77	-141.59	-452.51	-79.97	536.41	508.28	28.12	19.073	
3,500.00	3,391.21	3,451.60	3,411.23	17.39	14.20	-141.77	-468.26	-84.40	555.77	526.75	29.02	19.154	
3,600.00	3,486.92	3,549.70	3,507.95	17.97	14.62	-141.94	-484.01	-88.83	575.13	545.23	29.91	19.231	
3,700.00	3,582.64	3,647.79	3,604.67	18.55	15.05	-142.10	-499.76	-93.26	594.50	563.70	30.80	19.304	
3,800.00	3,678.36	3,745.88	3,701.39	19.14	15.48	-142.25	-515.51	-97.70	613.87	582.19	31.69	19.372	
3,900.00	3,774.07	3,843.98	3,798.11	19.72	15.91	-142.39	-531.26	-102.13	633.25	600.67	32.58	19.437	
4,000.00	3,869.79	3,942.07	3,894.83	20.31	16.34	-142.52	-547.01	-106.56	652.63	619.16	33.47	19.499	
4,100.00	3,965.51	4,040.17	3,991.55	20.89	16.77	-142.64	-562.76	-110.99	672.01	637.65	34.36	19.557	
4,200.00	4,061.22	4,138.26	4,088.27	21.47	17.20	-142.76	-578.51	-115.43	691.40	656.14	35.25	19.612	
4,300.00	4,156.94	4,236.35	4,184.99	22.06	17.63	-142.87	-594.26	-119.86	710.79	674.64	36.14	19.665	
4,400.00	4,252.66	4,334.45	4,281.71	22.64	18.06	-142.97	-610.01	-124.29	730.18	693.14	37.04	19.715	
4,500.00	4,348.37	4,432.54	4,378.43	23.23	18.49	-143.07	-625.76	-128.73	749.57	711.64	37.93	19.763	
4,600.00	4,444.09	4,530.63	4,475.15	23.82	18.92	-143.16	-641.51	-133.16	768.96	730.14	38.82	19.808	
4,700.00	4,539.81	4,628.73	4,571.87	24.40	19.35	-143.25	-657.26	-137.59	788.36	748.65	39.71	19.852	
4,800.00	4,635.52	4,726.82	4,668.59	24.99	19.78	-143.34	-673.01	-142.02	807.76	767.15	40.60	19.894	
4,900.00	4,731.24	4,824.91	4,765.30	25.57	20.21	-143.42	-688.76	-146.46	827.16	785.66	41.50	19.933	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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
5,000.00	4,826.96	4,923.01	4,862.02	26.16	20.64	-143.50	-704.51	-150.89	846.56	804.17	42.39	19.972	
5,100.00	4,922.67	5,021.10	4,958.74	26.74	21.07	-143.57	-720.26	-155.32	865.96	822.68	43.28	20.008	
5,200.00	5,018.39	5,119.20	5,055.46	27.33	21.50	-143.64	-736.01	-159.75	885.37	841.19	44.17	20.043	
5,300.00	5,114.11	5,217.29	5,152.18	27.92	21.93	-143.71	-751.76	-164.19	904.77	859.71	45.07	20.077	
5,400.00	5,209.82	5,315.38	5,248.90	28.50	22.36	-143.77	-767.51	-168.62	924.18	878.22	45.96	20.109	
5,500.00	5,305.54	5,413.48	5,345.62	29.09	22.79	-143.83	-783.26	-173.05	943.59	896.74	46.85	20.141	
5,600.00	5,401.25	5,511.57	5,442.34	29.67	23.22	-143.89	-799.01	-177.48	962.99	915.25	47.74	20.171	
5,700.00	5,496.97	5,609.66	5,539.06	30.26	23.65	-143.95	-814.76	-181.92	982.40	933.77	48.64	20.199	
5,800.00	5,592.69	5,707.76	5,635.78	30.85	24.08	-144.01	-830.51	-186.35	1,001.82	952.29	49.53	20.227	
5,900.00	5,688.40	5,805.85	5,732.50	31.43	24.50	-144.06	-846.26	-190.78	1,021.23	970.81	50.42	20.254	
6,000.00	5,784.12	5,903.94	5,829.22	32.02	24.93	-144.11	-862.01	-195.22	1,040.64	989.33	51.31	20.280	
6,100.00	5,879.84	6,002.04	5,925.94	32.61	25.36	-144.16	-877.76	-199.65	1,060.05	1,007.85	52.21	20.305	
6,200.00	5,975.55	6,100.13	6,022.66	33.19	25.79	-144.21	-893.51	-204.08	1,079.47	1,026.37	53.10	20.329	
6,300.00	6,071.27	6,201.77	6,119.38	33.78	26.24	-144.25	-909.26	-208.51	1,098.88	1,044.87	54.01	20.347	
6,400.00	6,166.99	6,303.68	6,216.10	34.37	26.69	-144.30	-925.01	-212.95	1,118.29	1,063.38	54.92	20.363	
6,500.00	6,262.70	6,394.41	6,312.82	34.95	27.08	-144.34	-940.76	-217.38	1,137.71	1,081.93	55.78	20.397	
6,535.31	6,296.50	6,428.92	6,346.90	35.16	27.23	-144.37	-945.94	-218.94	1,144.57	1,088.48	56.08	20.408	
6,550.00	6,310.58	6,443.23	6,361.09	35.25	27.29	-147.99	-947.65	-219.58	1,147.43	1,091.22	56.21	20.415	
6,600.00	6,358.81	6,491.85	6,409.51	35.52	27.47	-162.21	-951.32	-221.77	1,157.22	1,100.65	56.58	20.454	
6,650.00	6,407.28	6,540.33	6,457.94	35.77	27.62	-178.69	-951.69	-223.93	1,167.08	1,110.19	56.89	20.515	
6,700.00	6,455.79	6,588.72	6,506.18	35.99	27.74	164.61	-948.80	-226.05	1,176.95	1,119.81	57.15	20.595	
6,750.00	6,504.07	6,637.02	6,554.03	36.18	27.84	149.90	-942.66	-228.13	1,186.79	1,129.43	57.36	20.690	
6,800.00	6,551.91	6,685.26	6,601.30	36.34	27.93	138.11	-933.32	-230.15	1,196.54	1,139.00	57.54	20.796	
6,850.00	6,599.07	6,733.45	6,647.80	36.48	28.01	129.01	-920.84	-232.12	1,206.16	1,148.48	57.68	20.912	
6,900.00	6,645.31	6,781.63	6,693.34	36.59	28.08	122.02	-905.26	-234.01	1,215.60	1,157.81	57.79	21.036	
6,950.00	6,690.42	6,829.80	6,737.73	36.68	28.13	116.56	-886.65	-235.83	1,224.82	1,166.95	57.87	21.166	
7,000.00	6,734.17	6,877.98	6,780.78	36.74	28.18	112.21	-865.10	-237.57	1,233.76	1,175.84	57.92	21.300	
7,050.00	6,776.35	6,926.20	6,822.31	36.79	28.21	108.67	-840.67	-239.22	1,242.39	1,184.43	57.96	21.436	
7,100.00	6,816.75	6,974.47	6,862.15	36.81	28.24	105.76	-813.48	-240.76	1,250.67	1,192.69	57.97	21.573	
7,150.00	6,855.18	7,022.80	6,900.11	36.81	28.26	103.32	-783.63	-242.21	1,258.55	1,200.57	57.98	21.708	
7,200.00	6,891.45	7,071.19	6,936.03	36.80	28.28	101.25	-751.24	-243.54	1,265.99	1,208.02	57.97	21.839	
7,250.00	6,925.38	7,119.67	6,969.73	36.77	28.30	99.50	-716.43	-244.75	1,272.96	1,215.01	57.96	21.964	
7,300.00	6,956.82	7,168.23	7,001.07	36.73	28.31	98.00	-679.35	-245.84	1,279.44	1,221.49	57.95	22.080	
7,350.00	6,985.59	7,216.88	7,029.87	36.67	28.33	96.72	-640.17	-246.79	1,285.37	1,227.43	57.94	22.185	
7,400.00	7,011.57	7,265.63	7,055.99	36.59	28.35	95.63	-599.03	-247.62	1,290.74	1,232.80	57.94	22.276	
7,450.00	7,034.63	7,314.47	7,079.30	36.51	28.37	94.72	-556.13	-248.30	1,295.52	1,237.57	57.96	22.353	
7,500.00	7,054.66	7,363.40	7,099.68	36.42	28.41	93.95	-511.66	-248.84	1,299.69	1,241.70	57.99	22.412	
7,550.00	7,071.55	7,412.42	7,117.00	36.32	28.45	93.34	-465.81	-249.23	1,303.23	1,245.18	58.04	22.453	
7,600.00	7,085.23	7,461.52	7,131.17	36.22	28.50	92.85	-418.81	-249.47	1,306.11	1,247.99	58.12	22.474	
7,650.00	7,095.63	7,510.70	7,142.10	36.11	28.57	92.50	-370.87	-249.56	1,308.33	1,250.11	58.22	22.473	
7,700.00	7,102.70	7,559.94	7,149.73	36.00	28.64	92.26	-322.23	-249.50	1,309.87	1,251.53	58.34	22.451	
7,750.00	7,106.40	7,609.25	7,154.01	35.89	28.73	92.15	-273.12	-249.28	1,310.74	1,252.24	58.49	22.408	
7,779.70	7,107.00	7,638.55	7,154.95	35.83	28.79	92.14	-243.83	-249.08	1,310.92	1,252.33	58.60	22.372	
7,800.00	7,107.00	7,658.75	7,155.00	35.79	28.84	92.14	-223.64	-248.92	1,310.97	1,252.30	58.67	22.344	
7,900.00	7,107.00	7,758.75	7,155.00	35.59	29.11	92.14	-123.65	-248.09	1,311.20	1,252.05	59.15	22.169	
8,000.00	7,107.00	7,858.75	7,155.00	35.42	29.47	92.14	-23.65	-247.27	1,311.43	1,251.66	59.77	21.940	
8,100.00	7,107.00	7,958.75	7,155.00	35.28	29.91	92.14	76.35	-246.44	1,311.66	1,251.10	60.56	21.660	
8,200.00	7,107.00	8,058.75	7,155.00	35.18	30.42	92.14	176.34	-245.61	1,311.89	1,250.40	61.49	21.334	
8,300.00	7,107.00	8,158.75	7,155.00	35.11	31.01	92.14	276.34	-244.79	1,312.12	1,249.54	62.57	20.969	
8,400.00	7,107.00	8,258.75	7,155.00	35.11	31.67	92.14	376.34	-243.96	1,312.35	1,248.56	63.79	20.572	
8,500.00	7,107.00	8,358.75	7,155.00	35.20	32.40	92.14	476.33	-243.14	1,312.58	1,247.44	65.14	20.150	
8,600.00	7,107.00	8,458.75	7,155.00	35.43	33.19	92.14	576.33	-242.31	1,312.81	1,246.20	66.61	19.709	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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		
8,700.00	7,107.00	8,558.74	7,155.00	35.85	34.03	92.14	676.33	-241.48	1,313.04	1,244.85	68.19	19.255		
8,800.00	7,107.00	8,658.74	7,155.00	36.44	34.92	92.14	776.32	-240.66	1,313.27	1,243.39	69.88	18.793		
8,900.00	7,107.00	8,758.74	7,155.00	37.18	35.86	92.14	876.32	-239.83	1,313.50	1,241.83	71.67	18.327		
9,000.00	7,107.00	8,858.74	7,155.00	38.02	36.85	92.14	976.31	-239.01	1,313.73	1,240.18	73.55	17.862		
9,100.00	7,107.00	8,958.74	7,155.00	38.93	37.87	92.14	1,076.31	-238.18	1,313.96	1,238.44	75.51	17.400		
9,200.00	7,107.00	9,058.74	7,155.00	39.90	38.93	92.14	1,176.31	-237.35	1,314.19	1,236.63	77.56	16.945		
9,300.00	7,107.00	9,158.74	7,155.00	40.91	40.03	92.14	1,276.30	-236.53	1,314.41	1,234.74	79.67	16.498		
9,400.00	7,107.00	9,258.74	7,155.00	41.96	41.15	92.14	1,376.30	-235.70	1,314.64	1,232.79	81.85	16.061		
9,500.00	7,107.00	9,358.74	7,155.00	43.05	42.31	92.14	1,476.30	-234.88	1,314.87	1,230.78	84.10	15.635		
9,600.00	7,107.00	9,458.74	7,155.00	44.16	43.49	92.14	1,576.29	-234.05	1,315.10	1,228.71	86.40	15.222		
9,700.00	7,107.00	9,558.74	7,155.00	45.31	44.70	92.13	1,676.29	-233.22	1,315.33	1,226.58	88.75	14.821		
9,800.00	7,107.00	9,658.74	7,155.00	46.48	45.93	92.13	1,776.28	-232.40	1,315.56	1,224.41	91.15	14.433		
9,900.00	7,107.00	9,758.74	7,155.00	47.67	47.18	92.13	1,876.28	-231.57	1,315.79	1,222.20	93.59	14.058		
10,000.00	7,107.00	9,858.74	7,155.00	48.88	48.44	92.13	1,976.28	-230.74	1,316.02	1,219.94	96.08	13.697		
10,100.00	7,107.00	9,958.74	7,155.00	50.11	49.73	92.13	2,076.27	-229.92	1,316.25	1,217.65	98.61	13.349		
10,200.00	7,107.00	10,058.74	7,155.00	51.36	51.03	92.13	2,176.27	-229.09	1,316.48	1,215.32	101.16	13.013		
10,300.00	7,107.00	10,158.74	7,155.00	52.63	52.35	92.13	2,276.27	-228.27	1,316.71	1,212.95	103.76	12.690		
10,400.00	7,107.00	10,258.74	7,155.00	53.91	53.68	92.13	2,376.26	-227.44	1,316.94	1,210.56	106.38	12.380		
10,500.00	7,107.00	10,358.74	7,155.00	55.20	55.02	92.13	2,476.26	-226.61	1,317.17	1,208.14	109.03	12.081		
10,600.00	7,107.00	10,458.74	7,155.00	56.51	56.38	92.13	2,576.26	-225.79	1,317.40	1,205.69	111.71	11.793		
10,700.00	7,107.00	10,558.74	7,155.00	57.84	57.75	92.13	2,676.25	-224.96	1,317.63	1,203.22	114.41	11.517		
10,800.00	7,107.00	10,658.74	7,155.00	59.17	59.12	92.13	2,776.25	-224.14	1,317.86	1,200.73	117.13	11.251		
10,900.00	7,107.00	10,758.74	7,155.00	60.52	60.51	92.13	2,876.24	-223.31	1,318.09	1,198.21	119.87	10.996		
11,000.00	7,107.00	10,858.74	7,155.00	61.87	61.91	92.13	2,976.24	-222.48	1,318.32	1,195.68	122.64	10.750		
11,100.00	7,107.00	10,958.74	7,155.00	63.24	63.31	92.13	3,076.24	-221.66	1,318.55	1,193.13	125.42	10.513		
11,200.00	7,107.00	11,058.74	7,155.00	64.61	64.72	92.13	3,176.23	-220.83	1,318.78	1,190.56	128.22	10.285		
11,300.00	7,107.00	11,158.74	7,155.00	65.99	66.14	92.13	3,276.23	-220.00	1,319.01	1,187.97	131.04	10.066		
11,400.00	7,107.00	11,258.74	7,155.00	67.39	67.57	92.13	3,376.23	-219.18	1,319.24	1,185.37	133.87	9.855		
11,500.00	7,107.00	11,358.74	7,155.00	68.78	69.00	92.13	3,476.22	-218.35	1,319.47	1,182.76	136.71	9.652		
11,600.00	7,107.00	11,458.74	7,155.00	70.19	70.44	92.13	3,576.22	-217.53	1,319.70	1,180.13	139.57	9.456		
11,700.00	7,107.00	11,558.74	7,155.00	71.60	71.89	92.13	3,676.21	-216.70	1,319.93	1,177.49	142.44	9.267		
11,800.00	7,107.00	11,658.74	7,155.00	73.02	73.34	92.13	3,776.21	-215.87	1,320.16	1,174.84	145.32	9.085		
11,900.00	7,107.00	11,758.74	7,155.00	74.45	74.79	92.13	3,876.21	-215.05	1,320.39	1,172.17	148.21	8.909		
12,000.00	7,107.00	11,858.74	7,155.00	75.88	76.25	92.13	3,976.20	-214.22	1,320.61	1,169.50	151.11	8.739		
12,100.00	7,107.00	11,958.74	7,155.00	77.31	77.53	92.13	4,076.20	-213.40	1,320.84	1,167.00	153.84	8.586		
12,122.72	7,107.00	11,981.46	7,155.00	77.64	77.79	92.13	4,098.92	-213.21	1,320.90	1,166.47	154.43	8.553 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							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	81.55	8.82	59.35	60.00					
100.00	100.00	102.00	98.00	0.14	0.15	81.55	8.82	59.35	60.00	59.72	0.28	211.870		
200.00	200.00	198.00	198.00	0.50	0.49	81.55	8.82	59.35	60.00	59.01	0.99	60.864 CC		
300.00	300.00	297.91	297.89	0.85	0.83	83.14	7.17	59.64	60.07	58.38	1.69	35.586		
400.00	400.00	397.58	397.42	1.21	1.18	88.00	2.11	60.52	60.56	58.17	2.39	25.329 ES		
500.00	499.98	496.83	496.30	1.56	1.54	-140.53	-6.31	62.00	63.68	60.59	3.10	20.560		
600.00	599.84	595.49	594.24	1.90	1.91	-133.77	-18.03	64.06	71.29	67.48	3.82	18.686		
700.00	699.45	706.07	691.54	2.26	2.35	-128.23	-32.71	66.63	83.24	78.64	4.60	18.089 SF		
800.00	798.70	792.75	789.13	2.63	2.71	-125.39	-48.00	69.31	97.99	92.68	5.31	18.454		
900.00	897.47	908.69	886.47	3.02	3.19	-124.65	-63.25	71.98	114.83	108.67	6.16	18.653		
1,000.00	995.62	989.51	983.44	3.43	3.53	-125.26	-78.43	74.65	133.64	126.76	6.88	19.421		
1,100.00	1,093.06	1,087.20	1,079.93	3.87	3.94	-126.67	-93.55	77.30	154.50	146.81	7.70	20.070		
1,200.00	1,189.64	1,184.29	1,175.81	4.35	4.35	-128.54	-108.56	79.93	177.59	169.06	8.53	20.811		
1,241.53	1,229.48	1,224.40	1,215.43	4.56	4.52	-129.40	-114.77	81.02	187.88	178.99	8.89	21.139		
1,300.00	1,285.45	1,280.78	1,271.11	4.86	4.76	-130.75	-123.49	82.55	202.71	193.33	9.38	21.602		
1,400.00	1,381.16	1,377.21	1,366.34	5.39	5.17	-132.65	-138.40	85.16	228.29	218.05	10.23	22.306		
1,500.00	1,476.88	1,473.64	1,461.57	5.93	5.58	-134.17	-153.32	87.78	254.04	242.96	11.09	22.910		
1,600.00	1,572.59	1,570.06	1,556.80	6.47	6.00	-135.41	-168.23	90.39	279.94	267.99	11.95	23.434		
1,700.00	1,668.31	1,666.49	1,652.03	7.03	6.41	-136.44	-183.15	93.01	305.94	293.13	12.81	23.891		
1,800.00	1,764.03	1,762.92	1,747.26	7.59	6.82	-137.31	-198.07	95.62	332.02	318.35	13.67	24.293		
1,900.00	1,859.74	1,859.35	1,842.49	8.15	7.23	-138.05	-212.98	98.24	358.15	343.62	14.53	24.649		
2,000.00	1,955.46	1,955.77	1,937.72	8.72	7.65	-138.69	-227.90	100.86	384.34	368.94	15.39	24.966		
2,100.00	2,051.18	2,052.20	2,032.95	9.29	8.06	-139.25	-242.81	103.47	410.56	394.30	16.26	25.250		
2,200.00	2,146.89	2,148.63	2,128.18	9.86	8.47	-139.74	-257.73	106.09	436.82	419.69	17.13	25.506		
2,300.00	2,242.61	2,245.05	2,223.41	10.43	8.89	-140.18	-272.64	108.70	463.10	445.11	17.99	25.738		
2,400.00	2,338.33	2,341.48	2,318.65	11.01	9.30	-140.57	-287.56	111.32	489.41	470.55	18.86	25.949		
2,500.00	2,434.04	2,437.91	2,413.88	11.58	9.71	-140.92	-302.47	113.93	515.74	496.01	19.73	26.142		
2,600.00	2,529.76	2,534.34	2,509.11	12.16	10.13	-141.24	-317.39	116.55	542.08	521.48	20.60	26.318		
2,700.00	2,625.48	2,630.76	2,604.34	12.74	10.54	-141.52	-332.30	119.16	568.43	546.97	21.47	26.481		
2,800.00	2,721.19	2,727.19	2,699.57	13.32	10.96	-141.79	-347.22	121.78	594.80	572.46	22.34	26.631		
2,900.00	2,816.91	2,823.62	2,794.80	13.90	11.37	-142.02	-362.13	124.39	621.18	597.97	23.20	26.769		
3,000.00	2,912.63	2,920.04	2,890.03	14.48	11.79	-142.24	-377.05	127.01	647.56	623.49	24.07	26.898		
3,100.00	3,008.34	3,016.47	2,985.26	15.06	12.20	-142.45	-391.97	129.62	673.96	649.01	24.95	27.018		
3,200.00	3,104.06	3,112.90	3,080.49	15.64	12.61	-142.63	-406.88	132.24	700.36	674.55	25.82	27.129		
3,300.00	3,199.78	3,209.33	3,175.72	16.22	13.03	-142.81	-421.80	134.85	726.77	700.08	26.69	27.234		
3,400.00	3,295.49	3,305.75	3,270.95	16.80	13.44	-142.97	-436.71	137.47	753.19	725.63	27.56	27.331		
3,500.00	3,391.21	3,402.18	3,366.18	17.39	13.86	-143.12	-451.63	140.09	779.61	751.18	28.43	27.423		
3,600.00	3,486.92	3,501.39	3,461.41	17.97	14.28	-143.26	-466.54	142.70	806.03	776.72	29.31	27.498		
3,700.00	3,582.64	3,604.97	3,556.65	18.55	14.73	-143.39	-481.46	145.32	832.46	802.25	30.21	27.552		
3,800.00	3,678.36	3,708.54	3,651.88	19.14	15.18	-143.52	-496.37	147.93	858.89	827.78	31.12	27.602		
3,900.00	3,774.07	3,787.89	3,747.11	19.72	15.52	-143.63	-511.29	150.55	885.33	853.41	31.92	27.740		
4,000.00	3,869.79	3,884.32	3,842.34	20.31	15.93	-143.74	-526.20	153.16	911.77	878.98	32.79	27.809		
4,100.00	3,965.51	3,980.74	3,937.57	20.89	16.35	-143.85	-541.12	155.78	938.21	904.55	33.66	27.874		
4,200.00	4,061.22	4,077.17	4,032.80	21.47	16.76	-143.94	-556.03	158.39	964.66	930.12	34.53	27.935		
4,300.00	4,156.94	4,173.60	4,128.03	22.06	17.18	-144.04	-570.95	161.01	991.10	955.70	35.40	27.994		
4,400.00	4,252.66	4,270.03	4,223.26	22.64	17.59	-144.12	-585.87	163.62	1,017.55	981.28	36.28	28.050		
4,500.00	4,348.37	4,366.45	4,318.49	23.23	18.01	-144.21	-600.78	166.24	1,044.01	1,006.86	37.15	28.103		
4,600.00	4,444.09	4,462.88	4,413.72	23.82	18.42	-144.29	-615.70	168.85	1,070.46	1,032.44	38.02	28.154		
4,700.00	4,539.81	4,559.31	4,508.95	24.40	18.84	-144.36	-630.61	171.47	1,096.92	1,058.02	38.90	28.202		
4,800.00	4,635.52	4,655.73	4,604.18	24.99	19.25	-144.43	-645.53	174.08	1,123.37	1,083.60	39.77	28.248		
4,900.00	4,731.24	4,752.16	4,699.41	25.57	19.67	-144.50	-660.44	176.70	1,149.83	1,109.19	40.64	28.292		
5,000.00	4,826.96	4,848.59	4,794.64	26.16	20.08	-144.57	-675.36	179.32	1,176.29	1,134.78	41.51	28.334		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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				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						
5,100.00	4,922.67	4,945.02	4,889.88	26.74	20.50	-144.63	-690.27	181.93	1,202.75	1,160.37	42.39	28.375						
5,200.00	5,018.39	5,041.44	4,985.11	27.33	20.91	-144.69	-705.19	184.55	1,229.22	1,185.96	43.26	28.414						
5,300.00	5,114.11	5,137.87	5,080.34	27.92	21.33	-144.75	-720.10	187.16	1,255.68	1,211.55	44.13	28.451						
5,400.00	5,209.82	5,234.30	5,175.57	28.50	21.74	-144.80	-735.02	189.78	1,282.15	1,237.14	45.01	28.487						
5,500.00	5,305.54	5,330.72	5,270.80	29.09	22.16	-144.85	-749.93	192.39	1,308.61	1,262.73	45.88	28.521						
5,600.00	5,401.25	5,427.15	5,366.03	29.67	22.57	-144.91	-764.85	195.01	1,335.08	1,288.33	46.76	28.554						
5,700.00	5,496.97	5,523.58	5,461.26	30.26	22.99	-144.95	-779.77	197.62	1,361.55	1,313.92	47.63	28.586						
5,800.00	5,592.69	5,620.01	5,556.49	30.85	23.40	-145.00	-794.68	200.24	1,388.02	1,339.52	48.50	28.617						
5,900.00	5,688.40	5,716.43	5,651.72	31.43	23.82	-145.05	-809.60	202.85	1,414.49	1,365.11	49.38	28.646						

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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	2.00	-2.00	0.00	0.00	81.55	10.29	69.24	70.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	10.29	69.24	70.00	69.72	0.28	247.180	
106.59	106.59	104.59	104.59	0.16	0.15	81.55	10.29	69.24	70.00	69.68	0.32	221.463 CC	
200.00	200.00	197.74	197.73	0.50	0.48	81.86	9.92	69.38	70.09	69.11	0.98	71.678 ES	
300.00	300.00	297.07	297.00	0.85	0.83	84.52	6.77	70.61	70.94	69.26	1.68	42.210	
400.00	400.00	396.05	395.75	1.21	1.19	89.64	0.45	73.08	73.12	70.72	2.40	30.496	
500.00	499.98	494.47	493.64	1.56	1.55	-139.46	-8.98	76.77	78.73	75.62	3.11	25.279	
600.00	599.84	592.11	590.36	1.90	1.94	-133.77	-21.42	81.63	89.42	85.58	3.84	23.298	
700.00	699.45	689.81	686.70	2.26	2.35	-129.37	-36.54	87.54	104.74	100.16	4.58	22.882 SF	
800.00	798.70	788.09	783.54	2.63	2.76	-127.14	-52.11	93.63	122.79	117.46	5.33	23.021	
900.00	897.47	886.02	880.05	3.02	3.18	-126.51	-67.63	99.69	142.97	136.86	6.11	23.408	
1,000.00	995.62	983.49	976.10	3.43	3.61	-126.93	-83.08	105.73	165.20	158.30	6.90	23.943	
1,100.00	1,093.06	1,080.38	1,071.58	3.87	4.03	-127.98	-98.43	111.73	189.53	181.82	7.71	24.571	
1,200.00	1,189.64	1,176.58	1,166.37	4.35	4.45	-129.41	-113.67	117.69	216.11	207.56	8.55	25.286	
1,241.53	1,229.48	1,216.29	1,205.50	4.56	4.62	-130.08	-119.96	120.15	227.83	218.93	8.90	25.599	
1,300.00	1,285.45	1,272.10	1,260.50	4.86	4.86	-131.21	-128.81	123.60	244.67	235.28	9.39	26.044	
1,400.00	1,381.16	1,367.55	1,354.56	5.39	5.28	-132.83	-143.93	129.52	273.65	263.41	10.24	26.715	
1,500.00	1,476.88	1,463.01	1,448.62	5.93	5.70	-134.14	-159.06	135.43	302.79	291.70	11.10	27.287	
1,600.00	1,572.59	1,558.46	1,542.68	6.47	6.12	-135.21	-174.19	141.34	332.05	320.10	11.95	27.778	
1,700.00	1,668.31	1,653.91	1,636.74	7.03	6.54	-136.12	-189.31	147.25	361.40	348.59	12.81	28.205	
1,800.00	1,764.03	1,749.36	1,730.80	7.59	6.96	-136.89	-204.44	153.16	390.82	377.15	13.68	28.579	
1,900.00	1,859.74	1,844.81	1,824.86	8.15	7.38	-137.55	-219.56	159.07	420.30	405.76	14.54	28.909	
2,000.00	1,955.46	1,940.27	1,918.92	8.72	7.80	-138.12	-234.69	164.98	449.82	434.42	15.40	29.203	
2,100.00	2,051.18	2,035.72	2,012.98	9.29	8.22	-138.63	-249.81	170.90	479.38	463.11	16.27	29.465	
2,200.00	2,146.89	2,131.17	2,107.04	9.86	8.64	-139.07	-264.94	176.81	508.97	491.83	17.14	29.701	
2,300.00	2,242.61	2,226.62	2,201.10	10.43	9.06	-139.47	-280.06	182.72	538.58	520.57	18.00	29.914	
2,400.00	2,338.33	2,322.07	2,295.17	11.01	9.48	-139.83	-295.19	188.63	568.21	549.34	18.87	30.107	
2,500.00	2,434.04	2,417.53	2,389.23	11.58	9.90	-140.15	-310.32	194.54	597.86	578.12	19.74	30.284	
2,600.00	2,529.76	2,512.98	2,483.29	12.16	10.33	-140.44	-325.44	200.45	627.53	606.92	20.61	30.445	
2,700.00	2,625.48	2,608.43	2,577.35	12.74	10.75	-140.70	-340.57	206.37	657.21	635.73	21.48	30.594	
2,800.00	2,721.19	2,703.88	2,671.41	13.32	11.17	-140.94	-355.69	212.28	686.90	664.55	22.35	30.730	
2,900.00	2,816.91	2,800.66	2,765.47	13.90	11.60	-141.16	-370.82	218.19	716.60	693.37	23.23	30.849	
3,000.00	2,912.63	2,905.21	2,859.53	14.48	12.06	-141.36	-385.94	224.10	746.32	722.18	24.14	30.916	
3,100.00	3,008.34	3,009.76	2,953.59	15.06	12.52	-141.55	-401.07	230.01	776.03	750.98	25.05	30.978	
3,200.00	3,104.06	3,085.69	3,047.65	15.64	12.86	-141.73	-416.19	235.92	805.76	779.92	25.84	31.185	
3,300.00	3,199.78	3,181.14	3,141.71	16.22	13.28	-141.89	-431.32	241.83	835.49	808.78	26.71	31.280	
3,400.00	3,295.49	3,276.60	3,235.77	16.80	13.70	-142.04	-446.44	247.75	865.23	837.65	27.58	31.368	
3,500.00	3,391.21	3,372.05	3,329.83	17.39	14.12	-142.18	-461.57	253.66	894.97	866.52	28.46	31.452	
3,600.00	3,486.92	3,467.50	3,423.89	17.97	14.54	-142.31	-476.70	259.57	924.72	895.39	29.33	31.530	
3,700.00	3,582.64	3,562.95	3,517.95	18.55	14.96	-142.43	-491.82	265.48	954.47	924.27	30.20	31.604	
3,800.00	3,678.36	3,658.40	3,612.01	19.14	15.39	-142.55	-506.95	271.39	984.23	953.15	31.07	31.673	
3,900.00	3,774.07	3,753.86	3,706.07	19.72	15.81	-142.66	-522.07	277.30	1,013.99	982.04	31.95	31.739	
4,000.00	3,869.79	3,849.31	3,800.13	20.31	16.23	-142.76	-537.20	283.22	1,043.75	1,010.93	32.82	31.801	
4,100.00	3,965.51	3,944.76	3,894.19	20.89	16.65	-142.86	-552.32	289.13	1,073.51	1,039.82	33.69	31.860	
4,200.00	4,061.22	4,040.21	3,988.26	21.47	17.07	-142.95	-567.45	295.04	1,103.28	1,068.71	34.57	31.916	
4,300.00	4,156.94	4,135.67	4,082.32	22.06	17.50	-143.04	-582.57	300.95	1,133.05	1,097.61	35.44	31.968	
4,400.00	4,252.66	4,231.12	4,176.38	22.64	17.92	-143.12	-597.70	306.86	1,162.82	1,126.51	36.32	32.019	
4,500.00	4,348.37	4,326.57	4,270.44	23.23	18.34	-143.20	-612.83	312.77	1,192.60	1,155.41	37.19	32.067	
4,600.00	4,444.09	4,422.02	4,364.50	23.82	18.76	-143.27	-627.95	318.68	1,222.37	1,184.31	38.07	32.112	
4,700.00	4,539.81	4,517.47	4,458.56	24.40	19.18	-143.34	-643.08	324.60	1,252.15	1,213.21	38.94	32.156	
4,800.00	4,635.52	4,612.93	4,552.62	24.99	19.61	-143.41	-658.20	330.51	1,281.93	1,242.12	39.81	32.198	
4,900.00	4,731.24	4,708.38	4,646.68	25.57	20.03	-143.48	-673.33	336.42	1,311.71	1,271.02	40.69	32.237	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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						
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
5,000.00	4,826.96	4,803.83	4,740.74	26.16	20.45	-143.54	-688.45	342.33	1,341.50	1,299.93	41.56	32.275	
5,100.00	4,922.67	4,900.72	4,834.80	26.74	20.88	-143.60	-703.58	348.24	1,371.28	1,328.83	42.45	32.307	
5,200.00	5,018.39	4,994.73	4,928.86	27.33	21.29	-143.65	-718.70	354.15	1,401.07	1,357.75	43.31	32.347	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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)	+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	81.55	11.76	79.13	80.00					
100.00	100.00	102.00	98.00	0.14	0.15	81.55	11.76	79.13	80.00	79.72	0.28	282.492		
106.08	106.08	104.08	104.08	0.16	0.15	81.55	11.76	79.13	80.00	79.69	0.31	256.042 CC		
200.00	200.00	197.28	197.27	0.50	0.48	81.78	11.47	79.39	80.22	79.24	0.98	82.061 ES		
300.00	300.00	295.66	295.59	0.85	0.83	83.71	8.99	81.58	82.11	80.43	1.68	48.870		
400.00	400.00	393.69	393.40	1.21	1.18	87.34	4.00	85.99	86.21	83.81	2.39	36.013		
500.00	499.98	491.12	490.31	1.56	1.54	-143.78	-3.43	92.57	94.35	91.24	3.10	30.393		
600.00	599.84	587.56	585.86	1.90	1.93	-140.08	-13.22	101.22	108.03	104.21	3.82	28.297		
700.00	699.45	682.67	679.61	2.26	2.32	-137.19	-25.23	111.84	127.08	122.54	4.54	27.993 SF		
800.00	798.70	776.47	771.49	2.63	2.74	-135.08	-39.34	124.32	151.24	145.97	5.27	28.706		
900.00	897.47	872.55	865.35	3.02	3.18	-133.91	-54.73	137.93	178.87	172.84	6.03	29.666		
1,000.00	995.62	967.95	958.54	3.43	3.63	-133.63	-70.01	151.44	208.83	202.03	6.80	30.704		
1,100.00	1,093.06	1,062.55	1,050.96	3.87	4.07	-133.89	-85.17	164.84	241.10	233.50	7.60	31.735		
1,200.00	1,189.64	1,156.25	1,142.48	4.35	4.52	-134.49	-100.17	178.11	275.71	267.30	8.41	32.787		
1,241.53	1,229.48	1,194.86	1,180.21	4.56	4.70	-134.81	-106.36	183.58	290.79	282.03	8.75	33.217		
1,300.00	1,285.45	1,249.10	1,233.19	4.86	4.96	-135.54	-115.05	191.27	312.33	303.09	9.24	33.818		
1,400.00	1,381.16	1,341.86	1,323.81	5.39	5.41	-136.58	-129.91	204.41	349.26	339.19	10.06	34.709		
1,500.00	1,476.88	1,434.62	1,414.42	5.93	5.86	-137.43	-144.77	217.55	386.27	375.37	10.90	35.448		
1,600.00	1,572.59	1,527.39	1,505.04	6.47	6.31	-138.12	-159.63	230.69	423.34	411.60	11.74	36.070		
1,700.00	1,668.31	1,620.15	1,595.66	7.03	6.75	-138.71	-174.49	243.83	460.45	447.87	12.58	36.601		
1,800.00	1,764.03	1,712.91	1,686.27	7.59	7.20	-139.21	-189.35	256.97	497.60	484.18	13.43	37.057		
1,900.00	1,859.74	1,805.67	1,776.89	8.15	7.65	-139.63	-204.21	270.11	534.78	520.50	14.28	37.454		
2,000.00	1,955.46	1,901.56	1,867.51	8.72	8.12	-140.01	-219.07	283.25	571.98	556.84	15.15	37.767		
2,100.00	2,051.18	2,008.80	1,958.12	9.29	8.64	-140.34	-233.93	296.39	609.20	593.14	16.06	37.923		
2,200.00	2,146.89	2,083.96	2,048.74	9.86	9.01	-140.63	-248.79	309.53	646.44	629.60	16.84	38.382		
2,300.00	2,242.61	2,176.72	2,139.36	10.43	9.46	-140.88	-263.65	322.67	683.69	665.99	17.70	38.626		
2,400.00	2,338.33	2,269.49	2,229.97	11.01	9.91	-141.12	-278.51	335.81	720.95	702.39	18.56	38.846		
2,500.00	2,434.04	2,362.25	2,320.59	11.58	10.36	-141.32	-293.37	348.95	758.21	738.79	19.42	39.044		
2,600.00	2,529.76	2,455.01	2,411.21	12.16	10.82	-141.51	-308.23	362.09	795.49	775.21	20.28	39.225		
2,700.00	2,625.48	2,547.77	2,501.82	12.74	11.27	-141.69	-323.09	375.23	832.77	811.63	21.14	39.389		
2,800.00	2,721.19	2,640.54	2,592.44	13.32	11.72	-141.84	-337.95	388.37	870.06	848.05	22.00	39.540		
2,900.00	2,816.91	2,733.30	2,683.06	13.90	12.17	-141.99	-352.80	401.51	907.35	884.48	22.87	39.678		
3,000.00	2,912.63	2,826.06	2,773.67	14.48	12.63	-142.12	-367.66	414.65	944.65	920.92	23.73	39.806		
3,100.00	3,008.34	2,918.82	2,864.29	15.06	13.08	-142.24	-382.52	427.79	981.95	957.36	24.60	39.923		
3,200.00	3,104.06	3,011.59	2,954.91	15.64	13.53	-142.36	-397.38	440.93	1,019.26	993.80	25.46	40.033		
3,300.00	3,199.78	3,104.35	3,045.52	16.22	13.99	-142.46	-412.24	454.08	1,056.57	1,030.24	26.33	40.134		
3,400.00	3,295.49	3,202.89	3,136.14	16.80	14.47	-142.56	-427.10	467.22	1,093.88	1,066.66	27.22	40.190		
3,500.00	3,391.21	3,289.87	3,226.76	17.39	14.89	-142.66	-441.96	480.36	1,131.19	1,103.14	28.06	40.317		
3,600.00	3,486.92	3,382.64	3,317.37	17.97	15.35	-142.74	-456.82	493.50	1,168.51	1,139.59	28.92	40.399		
3,700.00	3,582.64	3,475.40	3,407.99	18.55	15.80	-142.82	-471.68	506.64	1,205.83	1,176.04	29.79	40.477		
3,800.00	3,678.36	3,568.16	3,498.61	19.14	16.25	-142.90	-486.54	519.78	1,243.15	1,212.49	30.66	40.549		
3,900.00	3,774.07	3,660.92	3,589.22	19.72	16.71	-142.97	-501.40	532.92	1,280.47	1,248.95	31.53	40.618		
4,000.00	3,869.79	3,753.69	3,679.84	20.31	17.16	-143.04	-516.26	546.06	1,317.80	1,285.40	32.39	40.682		
4,100.00	3,965.51	3,846.45	3,770.46	20.89	17.61	-143.10	-531.12	559.20	1,355.12	1,321.86	33.26	40.743		
4,200.00	4,061.22	3,939.21	3,861.07	21.47	18.07	-143.16	-545.98	572.34	1,392.45	1,358.32	34.13	40.800		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	81.55	13.23	89.02	90.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	13.23	89.02	90.00	89.72	0.28	317.802	
200.00	200.00	202.00	198.00	0.50	0.50	81.55	13.23	89.02	90.00	89.00	1.00	89.987	
300.00	300.00	302.00	298.00	0.85	0.86	81.55	13.23	89.02	90.00	88.28	1.72	52.414	
400.00	400.00	398.00	398.00	1.21	1.21	81.55	13.23	89.02	90.00	87.58	2.42	37.195 CC, ES	
500.00	499.98	495.95	495.94	1.56	1.55	-153.52	12.18	90.24	92.64	89.54	3.11	29.832	
600.00	599.84	593.44	593.29	1.90	1.88	-152.63	8.98	93.97	100.66	96.87	3.78	26.595	
700.00	699.45	690.06	689.57	2.26	2.22	-151.40	3.67	100.15	114.04	109.56	4.48	25.470 SF	
800.00	798.70	785.42	784.26	2.63	2.57	-150.06	-3.63	108.66	132.76	127.58	5.18	25.634	
900.00	897.47	879.13	876.90	3.02	2.93	-148.77	-12.81	119.35	156.73	150.84	5.89	26.620	
1,000.00	995.62	970.83	967.06	3.43	3.31	-147.58	-23.69	132.03	185.84	179.23	6.60	28.146	
1,100.00	1,093.06	1,060.21	1,054.38	3.87	3.69	-146.52	-36.11	146.49	219.94	212.62	7.32	30.029	
1,200.00	1,189.64	1,148.56	1,140.10	4.35	4.10	-145.57	-50.04	162.72	258.78	250.72	8.06	32.105	
1,241.53	1,229.48	1,186.39	1,176.73	4.56	4.28	-145.28	-56.20	169.89	275.92	267.53	8.39	32.901	
1,300.00	1,285.45	1,239.51	1,228.16	4.86	4.53	-145.23	-64.84	179.96	300.36	291.52	8.84	33.966	
1,400.00	1,381.16	1,330.35	1,316.12	5.39	4.98	-145.16	-79.63	197.18	342.16	332.54	9.63	35.532	
1,500.00	1,476.88	1,421.19	1,404.09	5.93	5.43	-145.11	-94.41	214.40	383.97	373.54	10.43	36.816	
1,600.00	1,572.59	1,512.03	1,492.05	6.47	5.89	-145.07	-109.19	231.61	425.77	414.53	11.24	37.883	
1,700.00	1,668.31	1,602.88	1,580.01	7.03	6.35	-145.04	-123.98	248.83	467.58	455.52	12.06	38.780	
1,800.00	1,764.03	1,706.28	1,667.97	7.59	6.88	-145.01	-138.76	266.05	509.38	496.44	12.94	39.368	
1,900.00	1,859.74	1,784.56	1,755.93	8.15	7.29	-144.99	-153.54	283.27	551.18	537.47	13.71	40.196	
2,000.00	1,955.46	1,875.40	1,843.90	8.72	7.76	-144.97	-168.32	300.49	592.99	578.44	14.55	40.763	
2,100.00	2,051.18	1,966.25	1,931.86	9.29	8.23	-144.95	-183.11	317.71	634.79	619.41	15.39	41.258	
2,200.00	2,146.89	2,057.09	2,019.82	9.86	8.71	-144.93	-197.89	334.92	676.60	660.37	16.23	41.693	
2,300.00	2,242.61	2,147.93	2,107.78	10.43	9.18	-144.92	-212.67	352.14	718.40	701.33	17.07	42.079	
2,400.00	2,338.33	2,238.77	2,195.75	11.01	9.66	-144.91	-227.46	369.36	760.21	742.29	17.92	42.423	
2,500.00	2,434.04	2,329.62	2,283.71	11.58	10.14	-144.90	-242.24	386.58	802.01	783.24	18.77	42.731	
2,600.00	2,529.76	2,420.46	2,371.67	12.16	10.62	-144.89	-257.02	403.80	843.82	824.20	19.62	43.008	
2,700.00	2,625.48	2,511.30	2,459.63	12.74	11.10	-144.88	-271.80	421.01	885.62	865.15	20.47	43.259	
2,800.00	2,721.19	2,602.14	2,547.59	13.32	11.58	-144.87	-286.59	438.23	927.43	906.10	21.33	43.487	
2,900.00	2,816.91	2,707.01	2,635.56	13.90	12.14	-144.86	-301.37	455.45	969.23	946.98	22.25	43.566	
3,000.00	2,912.63	2,783.83	2,723.52	14.48	12.55	-144.85	-316.15	472.67	1,011.03	988.00	23.04	43.885	
3,100.00	3,008.34	2,874.67	2,811.48	15.06	13.03	-144.85	-330.93	489.89	1,052.84	1,028.94	23.90	44.059	
3,200.00	3,104.06	2,965.51	2,899.44	15.64	13.51	-144.84	-345.72	507.11	1,094.64	1,069.89	24.75	44.220	
3,300.00	3,199.78	3,056.36	2,987.41	16.22	14.00	-144.84	-360.50	524.32	1,136.45	1,110.83	25.61	44.369	
3,400.00	3,295.49	3,147.20	3,075.37	16.80	14.48	-144.83	-375.28	541.54	1,178.25	1,151.78	26.47	44.506	
3,500.00	3,391.21	3,238.04	3,163.33	17.39	14.96	-144.83	-390.07	558.76	1,220.06	1,192.72	27.33	44.634	
3,600.00	3,486.92	3,328.88	3,251.29	17.97	15.45	-144.82	-404.85	575.98	1,261.86	1,233.67	28.20	44.753	
3,700.00	3,582.64	3,419.73	3,339.26	18.55	15.93	-144.82	-419.63	593.20	1,303.67	1,274.61	29.06	44.864	
3,800.00	3,678.36	3,510.57	3,427.22	19.14	16.42	-144.81	-434.41	610.42	1,345.47	1,315.55	29.92	44.968	
3,900.00	3,774.07	3,601.41	3,515.18	19.72	16.90	-144.81	-449.20	627.63	1,387.28	1,356.49	30.78	45.065	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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	2.00	-2.00	0.00	0.00	81.55	14.70	98.91	100.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	14.70	98.91	100.00	99.72	0.28	353.114	
105.96	105.96	103.96	103.96	0.16	0.15	81.55	14.70	98.91	100.00	99.69	0.31	320.955 CC	
200.00	200.00	196.75	196.75	0.50	0.48	81.69	14.50	99.24	100.30	99.32	0.98	102.645 ES	
300.00	300.00	294.04	293.98	0.85	0.82	82.85	12.79	101.99	102.87	101.19	1.68	61.258	
400.00	400.00	390.99	390.71	1.21	1.18	85.02	9.37	107.52	108.18	105.79	2.39	45.284	
500.00	499.98	487.30	486.52	1.56	1.53	-147.82	4.25	115.77	117.88	114.79	3.09	38.118	
600.00	599.84	582.48	580.84	1.90	1.91	-145.67	-2.46	126.61	133.45	129.65	3.80	35.145	
700.00	699.45	676.11	673.16	2.26	2.30	-144.01	-10.67	139.86	154.71	150.20	4.51	34.336 SF	
800.00	798.70	767.78	763.00	2.63	2.70	-142.78	-20.25	155.32	181.47	176.25	5.22	34.791	
900.00	897.47	857.12	849.96	3.02	3.13	-141.87	-31.03	172.72	213.54	207.61	5.93	36.025	
1,000.00	995.62	943.82	933.70	3.43	3.57	-141.19	-42.86	191.81	250.70	244.06	6.64	37.738	
1,100.00	1,093.06	1,027.61	1,013.95	3.87	4.02	-140.64	-55.55	212.29	292.75	285.40	7.35	39.838	
1,200.00	1,189.64	1,115.93	1,098.10	4.35	4.52	-140.30	-69.67	235.08	338.53	330.41	8.12	41.687	
1,241.53	1,229.48	1,152.46	1,132.90	4.56	4.74	-140.23	-75.51	244.51	358.25	349.80	8.45	42.386	
1,300.00	1,285.45	1,203.72	1,181.75	4.86	5.04	-140.55	-83.71	257.75	386.31	377.40	8.91	43.346	
1,400.00	1,381.16	1,308.60	1,265.28	5.39	5.66	-141.01	-97.74	280.38	434.32	424.54	9.78	44.389	
1,500.00	1,476.88	1,379.08	1,348.82	5.93	6.08	-141.37	-111.76	303.01	482.34	471.84	10.51	45.904	
1,600.00	1,572.59	1,466.76	1,432.36	6.47	6.61	-141.66	-125.78	325.64	530.38	519.06	11.32	46.855	
1,700.00	1,668.31	1,554.43	1,515.89	7.03	7.14	-141.91	-139.81	348.27	578.42	566.29	12.14	47.653	
1,800.00	1,764.03	1,642.11	1,599.43	7.59	7.67	-142.12	-153.83	370.91	626.48	613.51	12.96	48.330	
1,900.00	1,859.74	1,729.79	1,682.97	8.15	8.21	-142.30	-167.85	393.54	674.53	660.74	13.79	48.910	
2,000.00	1,955.46	1,817.46	1,766.50	8.72	8.74	-142.46	-181.88	416.17	722.60	707.97	14.62	49.411	
2,100.00	2,051.18	1,905.14	1,850.04	9.29	9.28	-142.59	-195.90	438.80	770.66	755.20	15.46	49.848	
2,200.00	2,146.89	2,007.18	1,933.58	9.86	9.91	-142.71	-209.92	461.44	818.73	802.36	16.37	50.019	
2,300.00	2,242.61	2,080.50	2,017.12	10.43	10.36	-142.82	-223.95	484.07	866.80	849.66	17.14	50.571	
2,400.00	2,338.33	2,168.17	2,100.65	11.01	10.90	-142.92	-237.97	506.70	914.87	896.89	17.98	50.873	
2,500.00	2,434.04	2,255.85	2,184.19	11.58	11.45	-143.00	-251.99	529.33	962.95	944.12	18.83	51.143	
2,600.00	2,529.76	2,343.53	2,267.73	12.16	11.99	-143.08	-266.02	551.97	1,011.02	991.35	19.68	51.386	
2,700.00	2,625.48	2,431.20	2,351.26	12.74	12.53	-143.15	-280.04	574.60	1,059.10	1,038.58	20.52	51.606	
2,800.00	2,721.19	2,518.88	2,434.80	13.32	13.07	-143.22	-294.06	597.23	1,107.18	1,085.81	21.37	51.805	
2,900.00	2,816.91	2,606.56	2,518.34	13.90	13.62	-143.28	-308.09	619.86	1,155.26	1,133.04	22.22	51.986	
3,000.00	2,912.63	2,705.77	2,601.87	14.48	14.23	-143.33	-322.11	642.50	1,203.34	1,180.21	23.13	52.025	
3,100.00	3,008.34	2,781.91	2,685.41	15.06	14.71	-143.38	-336.13	665.13	1,251.42	1,227.50	23.93	52.303	
3,200.00	3,104.06	2,869.59	2,768.95	15.64	15.25	-143.43	-350.16	687.76	1,299.50	1,274.73	24.78	52.443	
3,300.00	3,199.78	2,957.27	2,852.48	16.22	15.80	-143.47	-364.18	710.39	1,347.59	1,321.95	25.63	52.572	
3,400.00	3,295.49	3,044.94	2,936.02	16.80	16.34	-143.51	-378.20	733.03	1,395.67	1,369.18	26.49	52.691	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	81.55	16.17	108.80	110.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	16.17	108.80	110.00	109.72	0.28	388.428	
200.00	200.00	202.00	198.00	0.50	0.50	81.55	16.17	108.80	110.00	109.00	1.00	109.985	
300.00	300.00	302.00	298.00	0.85	0.86	81.55	16.17	108.80	110.00	108.28	1.72	64.062	
400.00	400.00	398.00	398.00	1.21	1.21	81.55	16.17	108.80	110.00	107.58	2.42	45.460 CC, ES	
500.00	499.98	494.97	494.95	1.56	1.54	-153.72	15.44	110.20	112.88	109.78	3.10	36.364	
600.00	599.84	591.38	591.24	1.90	1.88	-153.36	13.22	114.47	121.62	117.83	3.78	32.149	
700.00	699.45	686.81	686.33	2.26	2.21	-152.84	9.54	121.53	136.16	131.69	4.47	30.450	
800.00	798.70	780.80	779.68	2.63	2.56	-152.26	4.50	131.22	156.43	151.26	5.17	30.285 SF	
900.00	897.47	872.90	870.76	3.02	2.92	-151.65	-1.82	143.34	182.30	176.44	5.86	31.108	
1,000.00	995.62	962.73	959.12	3.43	3.28	-151.06	-9.28	157.67	213.63	207.08	6.56	32.589	
1,100.00	1,093.06	1,049.94	1,044.38	3.87	3.66	-150.49	-17.74	173.91	250.24	242.99	7.25	34.518	
1,200.00	1,189.64	1,134.21	1,126.20	4.35	4.05	-149.93	-27.06	191.79	291.94	283.99	7.94	36.765	
1,241.53	1,229.48	1,168.29	1,159.11	4.56	4.21	-149.70	-31.14	199.63	310.69	302.46	8.23	37.755	
1,300.00	1,285.45	1,215.53	1,204.56	4.86	4.45	-149.65	-37.09	211.06	338.04	329.41	8.63	39.179	
1,400.00	1,381.16	1,294.70	1,280.23	5.39	4.86	-149.40	-47.85	231.71	386.42	377.12	9.30	41.545	
1,500.00	1,476.88	1,371.81	1,353.28	5.93	5.30	-149.04	-59.25	253.60	436.79	426.82	9.97	43.790	
1,600.00	1,572.59	1,450.13	1,426.81	6.47	5.77	-148.59	-71.70	277.50	489.00	478.33	10.67	45.812	
1,700.00	1,668.31	1,535.07	1,506.38	7.03	6.31	-148.15	-85.43	303.85	541.68	530.22	11.45	47.289	
1,800.00	1,764.03	1,620.00	1,585.95	7.59	6.85	-147.80	-99.15	330.20	594.37	582.13	12.25	48.538	
1,900.00	1,859.74	1,704.94	1,665.53	8.15	7.41	-147.50	-112.88	356.55	647.08	634.03	13.05	49.603	
2,000.00	1,955.46	1,789.88	1,745.10	8.72	7.97	-147.24	-126.60	382.90	699.80	685.95	13.85	50.519	
2,100.00	2,051.18	1,874.81	1,824.67	9.29	8.54	-147.03	-140.33	409.25	752.53	737.86	14.67	51.313	
2,200.00	2,146.89	1,959.75	1,904.24	9.86	9.11	-146.84	-154.05	435.59	805.26	789.78	15.48	52.007	
2,300.00	2,242.61	2,044.69	1,983.81	10.43	9.69	-146.67	-167.78	461.94	858.00	841.70	16.31	52.618	
2,400.00	2,338.33	2,129.62	2,063.38	11.01	10.27	-146.52	-181.50	488.29	910.75	893.61	17.13	53.160	
2,500.00	2,434.04	2,214.56	2,142.95	11.58	10.86	-146.39	-195.23	514.64	963.50	945.53	17.96	53.642	
2,600.00	2,529.76	2,300.50	2,222.53	12.16	11.45	-146.28	-208.95	540.99	1,016.25	997.45	18.80	54.059	
2,700.00	2,625.48	2,384.43	2,302.10	12.74	12.03	-146.17	-222.68	567.34	1,069.00	1,049.37	19.63	54.462	
2,800.00	2,721.19	2,469.37	2,381.67	13.32	12.62	-146.07	-236.40	593.69	1,121.76	1,101.29	20.47	54.813	
2,900.00	2,816.91	2,554.31	2,461.24	13.90	13.21	-145.99	-250.13	620.04	1,174.52	1,153.21	21.30	55.131	
3,000.00	2,912.63	2,639.24	2,540.81	14.48	13.81	-145.91	-263.85	646.39	1,227.28	1,205.14	22.14	55.422	
3,100.00	3,008.34	2,724.18	2,620.38	15.06	14.40	-145.83	-277.58	672.74	1,280.04	1,257.06	22.99	55.687	
3,200.00	3,104.06	2,809.12	2,699.96	15.64	15.00	-145.77	-291.30	699.08	1,332.81	1,308.98	23.83	55.930	
3,300.00	3,199.78	2,905.94	2,779.53	16.22	15.68	-145.71	-305.03	725.43	1,385.57	1,360.84	24.74	56.015	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	81.55	17.64	118.70	120.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	17.64	118.70	120.00	119.72	0.28	423.739	
105.93	105.93	103.93	103.93	0.16	0.15	81.55	17.64	118.70	120.00	119.69	0.31	385.395 CC	
200.00	200.00	196.37	196.37	0.50	0.48	81.65	17.48	119.04	120.32	119.35	0.98	123.226 ES	
300.00	300.00	292.88	292.82	0.85	0.82	82.46	16.14	121.93	123.10	121.42	1.68	73.397	
400.00	400.00	389.06	388.79	1.21	1.17	84.00	13.43	127.73	128.77	126.39	2.38	54.017	
500.00	499.98	484.59	483.83	1.56	1.53	-149.57	9.41	136.39	138.94	135.86	3.08	45.056	
600.00	599.84	578.96	577.36	1.90	1.90	-148.05	4.12	147.76	155.07	151.29	3.78	40.987	
700.00	699.45	671.70	668.82	2.26	2.28	-146.85	-2.35	161.64	177.01	172.53	4.49	39.460	
800.00	798.70	762.39	757.74	2.63	2.68	-145.95	-9.87	177.81	204.59	199.40	5.19	39.437 SF	
900.00	897.47	850.65	843.69	3.02	3.10	-145.28	-18.33	195.99	237.60	231.72	5.89	40.353	
1,000.00	995.62	936.15	926.32	3.43	3.53	-144.75	-27.59	215.88	275.85	269.26	6.59	41.861	
1,100.00	1,093.06	1,018.60	1,005.36	3.87	3.97	-144.31	-37.49	237.17	319.11	311.84	7.28	43.857	
1,200.00	1,189.64	1,097.77	1,080.58	4.35	4.43	-143.90	-47.91	259.55	367.15	359.19	7.97	46.083	
1,241.53	1,229.48	1,129.65	1,110.66	4.56	4.63	-143.74	-52.34	269.08	388.46	380.20	8.26	47.032	
1,300.00	1,285.45	1,173.72	1,152.07	4.86	4.91	-143.89	-58.71	282.77	419.33	410.68	8.66	48.450	
1,400.00	1,381.16	1,253.56	1,220.34	5.39	5.44	-144.00	-69.89	306.79	473.70	464.35	9.35	50.662	
1,500.00	1,476.88	1,330.20	1,297.52	5.93	5.98	-144.03	-83.05	335.07	529.10	519.01	10.09	52.439	
1,600.00	1,572.59	1,413.45	1,374.71	6.47	6.57	-144.06	-96.21	363.35	584.50	573.63	10.87	53.756	
1,700.00	1,668.31	1,503.30	1,451.89	7.03	7.22	-144.08	-109.37	391.63	639.91	628.21	11.70	54.694	
1,800.00	1,764.03	1,579.95	1,529.08	7.59	7.78	-144.10	-122.53	419.91	695.31	682.84	12.47	55.770	
1,900.00	1,859.74	1,663.20	1,606.26	8.15	8.40	-144.12	-135.69	448.19	750.71	737.43	13.27	56.551	
2,000.00	1,955.46	1,746.45	1,683.45	8.72	9.01	-144.13	-148.85	476.47	806.11	792.02	14.09	57.222	
2,100.00	2,051.18	1,829.70	1,760.63	9.29	9.63	-144.14	-162.01	504.75	861.51	846.61	14.90	57.802	
2,200.00	2,146.89	1,912.95	1,837.82	9.86	10.25	-144.16	-175.17	533.03	916.92	901.19	15.73	58.307	
2,300.00	2,242.61	1,996.20	1,915.01	10.43	10.88	-144.17	-188.33	561.31	972.32	955.77	16.55	58.751	
2,400.00	2,338.33	2,079.45	1,992.19	11.01	11.50	-144.17	-201.50	589.59	1,027.72	1,010.34	17.38	59.142	
2,500.00	2,434.04	2,162.70	2,069.38	11.58	12.13	-144.18	-214.66	617.87	1,083.12	1,064.92	18.21	59.490	
2,600.00	2,529.76	2,245.95	2,146.56	12.16	12.76	-144.19	-227.82	646.15	1,138.53	1,119.49	19.04	59.801	
2,700.00	2,625.48	2,329.20	2,223.75	12.74	13.39	-144.19	-240.98	674.43	1,193.93	1,174.06	19.87	60.080	
2,800.00	2,721.19	2,412.45	2,300.93	13.32	14.02	-144.20	-254.14	702.71	1,249.33	1,228.62	20.71	60.332	
2,900.00	2,816.91	2,504.30	2,378.12	13.90	14.71	-144.21	-267.30	730.99	1,304.73	1,283.14	21.59	60.433	
3,000.00	2,912.63	2,578.95	2,455.30	14.48	15.28	-144.21	-280.46	759.27	1,360.14	1,337.75	22.38	60.766	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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: 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	81.55	19.11	128.59	130.00				
100.00	100.00	102.00	98.00	0.14	0.15	81.55	19.11	128.59	130.00	129.72	0.28	459.050	
200.00	200.00	202.00	198.00	0.50	0.50	81.55	19.11	128.59	130.00	129.00	1.00	129.982	
300.00	300.00	302.00	298.00	0.85	0.86	81.55	19.11	128.59	130.00	128.28	1.72	75.710	
400.00	400.00	398.00	398.00	1.21	1.21	81.55	19.11	128.59	130.00	127.58	2.42	53.726 CC, ES	
500.00	499.98	494.12	494.10	1.56	1.54	-153.82	18.61	130.05	132.99	129.89	3.10	42.865	
600.00	599.84	589.64	589.50	1.90	1.87	-153.75	17.07	134.52	142.08	138.30	3.78	37.585	
700.00	699.45	684.11	683.64	2.26	2.21	-153.63	14.54	141.90	157.19	152.72	4.47	35.199	
800.00	798.70	777.04	775.95	2.63	2.55	-153.48	11.06	152.02	178.23	173.08	5.15	34.583 SF	
900.00	897.47	867.98	865.90	3.02	2.90	-153.29	6.72	164.66	205.07	199.23	5.84	35.113	
1,000.00	995.62	956.50	953.01	3.43	3.26	-153.07	1.60	179.55	237.53	231.01	6.52	36.415	
1,100.00	1,093.06	1,042.24	1,036.88	3.87	3.63	-152.82	-4.18	196.39	275.43	268.23	7.20	38.252	
1,200.00	1,189.64	1,124.89	1,117.18	4.35	4.01	-152.53	-10.53	214.86	318.55	310.68	7.87	40.472	
1,241.53	1,229.48	1,158.24	1,149.42	4.56	4.17	-152.40	-13.31	222.93	337.93	329.78	8.15	41.470	
1,300.00	1,285.45	1,204.42	1,193.89	4.86	4.40	-152.47	-17.35	234.70	366.19	357.65	8.53	42.923	
1,400.00	1,381.16	1,281.72	1,267.87	5.39	4.80	-152.43	-24.63	255.90	416.17	406.99	9.17	45.360	
1,500.00	1,476.88	1,356.89	1,339.19	5.93	5.23	-152.27	-32.34	278.32	468.17	458.35	9.81	47.705	
1,600.00	1,572.59	1,429.90	1,407.86	6.47	5.66	-152.03	-40.40	301.79	522.11	511.67	10.45	49.986	
1,700.00	1,668.31	1,500.76	1,473.87	7.03	6.12	-151.73	-48.77	326.14	577.93	566.86	11.07	52.220	
1,800.00	1,764.03	1,569.48	1,537.27	7.59	6.60	-151.40	-57.38	351.22	635.55	623.86	11.68	54.391	
1,900.00	1,859.74	1,636.08	1,598.08	8.15	7.09	-151.05	-66.21	376.90	694.89	682.60	12.29	56.536	
2,000.00	1,955.46	1,700.00	1,655.84	8.72	7.58	-150.70	-75.10	402.79	755.88	743.01	12.88	58.696	
2,100.00	2,051.18	1,766.16	1,714.99	9.29	8.13	-150.32	-84.74	430.83	818.44	804.93	13.51	60.599	
2,200.00	2,146.89	1,843.63	1,783.99	9.86	8.80	-149.92	-96.17	464.11	881.51	867.24	14.27	61.764	
2,300.00	2,242.61	1,921.09	1,853.00	10.43	9.47	-149.57	-107.61	497.39	944.60	929.56	15.05	62.783	
2,400.00	2,338.33	1,998.55	1,922.01	11.01	10.16	-149.26	-119.04	530.67	1,007.72	991.89	15.83	63.678	
2,500.00	2,434.04	2,076.01	1,991.02	11.58	10.86	-148.99	-130.48	563.94	1,070.84	1,054.23	16.61	64.467	
2,600.00	2,529.76	2,153.48	2,060.03	12.16	11.56	-148.75	-141.91	597.22	1,133.98	1,116.58	17.40	65.168	
2,700.00	2,625.48	2,230.94	2,129.04	12.74	12.27	-148.54	-153.34	630.50	1,197.14	1,178.94	18.19	65.795	
2,800.00	2,721.19	2,308.40	2,198.05	13.32	12.98	-148.35	-164.78	663.78	1,260.30	1,241.30	18.99	66.359	
2,900.00	2,816.91	2,385.86	2,267.06	13.90	13.70	-148.17	-176.21	697.06	1,323.46	1,303.67	19.79	66.866	
3,000.00	2,912.63	2,463.33	2,336.07	14.48	14.42	-148.01	-187.65	730.34	1,386.64	1,366.04	20.60	67.325	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 3R-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	3.00	-3.00	0.00	0.00	81.55	20.58	138.48	140.00					
100.00	100.00	103.00	97.00	0.14	0.15	81.55	20.58	138.48	140.00	139.71	0.29	488.181		
102.53	102.53	100.47	99.53	0.15	0.14	81.55	20.58	138.48	140.00	139.71	0.29	488.181	CC	
200.00	200.00	194.66	194.66	0.50	0.47	81.65	20.40	138.97	140.47	139.50	0.97	144.702	ES	
300.00	300.00	290.44	290.37	0.85	0.81	82.32	19.18	142.17	143.61	141.94	1.67	85.944		
400.00	400.00	385.89	385.58	1.21	1.16	83.53	16.83	148.34	149.72	147.35	2.38	63.026		
500.00	499.98	480.66	479.85	1.56	1.51	-150.43	13.39	157.39	160.39	157.32	3.07	52.198		
600.00	599.84	574.22	572.56	1.90	1.89	-149.24	8.91	169.18	177.07	173.30	3.77	46.976		
700.00	699.45	666.12	663.17	2.26	2.27	-148.31	3.46	183.51	199.61	195.14	4.47	44.680		
800.00	798.70	755.91	751.18	2.63	2.67	-147.60	-2.86	200.13	227.84	222.68	5.16	44.121	SF	
900.00	897.47	843.21	836.17	3.02	3.08	-147.06	-9.94	218.75	261.57	255.71	5.86	44.659		
1,000.00	995.62	927.69	917.80	3.43	3.51	-146.63	-17.66	239.06	300.59	294.04	6.55	45.900		
1,100.00	1,093.06	1,009.04	995.78	3.87	3.95	-146.26	-25.91	260.74	344.68	337.45	7.22	47.706		
1,200.00	1,189.64	1,087.05	1,069.90	4.35	4.40	-145.90	-34.55	283.47	393.59	385.69	7.90	49.807		
1,241.53	1,229.48	1,118.42	1,099.51	4.56	4.60	-145.75	-38.23	293.14	415.27	407.08	8.19	50.719		
1,300.00	1,285.45	1,161.77	1,140.25	4.86	4.88	-145.91	-43.50	307.00	446.67	438.10	8.57	52.097		
1,400.00	1,381.16	1,234.19	1,207.78	5.39	5.36	-146.06	-52.79	331.43	501.94	492.72	9.22	54.413		
1,500.00	1,476.88	1,304.41	1,272.62	5.93	5.86	-146.09	-62.37	356.64	559.08	549.22	9.87	56.660		
1,600.00	1,572.59	1,372.47	1,334.80	6.47	6.39	-146.04	-72.20	382.48	618.02	607.51	10.51	58.824		
1,700.00	1,668.31	1,444.90	1,400.35	7.03	6.97	-145.92	-83.15	411.30	678.48	667.28	11.20	60.594		
1,800.00	1,764.03	1,524.36	1,472.14	7.59	7.62	-145.80	-95.25	443.11	739.19	727.22	11.97	61.746		
1,900.00	1,859.74	1,603.81	1,543.93	8.15	8.29	-145.70	-107.35	474.92	799.90	787.15	12.75	62.719		
2,000.00	1,955.46	1,683.26	1,615.73	8.72	8.97	-145.62	-119.44	506.74	860.62	847.07	13.54	63.545		
2,100.00	2,051.18	1,762.72	1,687.52	9.29	9.65	-145.54	-131.54	538.55	921.33	906.99	14.34	64.255		
2,200.00	2,146.89	1,842.17	1,759.32	9.86	10.33	-145.47	-143.64	570.37	982.05	966.91	15.14	64.870		
2,300.00	2,242.61	1,921.62	1,831.11	10.43	11.02	-145.42	-155.73	602.18	1,042.76	1,026.82	15.94	65.407		
2,400.00	2,338.33	2,001.08	1,902.91	11.01	11.71	-145.37	-167.83	633.99	1,103.48	1,086.73	16.75	65.878		
2,500.00	2,434.04	2,080.53	1,974.70	11.58	12.40	-145.32	-179.93	665.81	1,164.20	1,146.64	17.56	66.293		
2,600.00	2,529.76	2,159.98	2,046.50	12.16	13.10	-145.28	-192.02	697.62	1,224.92	1,206.54	18.38	66.662		
2,700.00	2,625.48	2,239.44	2,118.29	12.74	13.80	-145.24	-204.12	729.43	1,285.63	1,266.44	19.19	66.991		
2,800.00	2,721.19	2,318.89	2,190.08	13.32	14.50	-145.21	-216.22	761.25	1,346.35	1,326.34	20.01	67.287		
2,900.00	2,816.91	2,401.65	2,261.88	13.90	15.23	-145.17	-228.31	793.06	1,407.07	1,386.22	20.85	67.493		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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-VESI_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	-57.98	641.87	-1,026.40	1,210.62					
100.00	100.00	88.71	88.71	0.14	0.08	-57.99	641.73	-1,026.55	1,210.63	1,210.41	0.22	5,575.687		
200.00	200.00	187.44	187.44	0.50	0.26	-58.00	641.59	-1,026.82	1,210.79	1,210.04	0.75	1,616.954		
300.00	300.00	286.38	286.38	0.85	0.43	-58.00	641.81	-1,026.97	1,211.04	1,209.75	1.28	945.002		
400.00	400.00	383.97	383.97	1.21	0.60	-57.98	642.38	-1,027.09	1,211.45	1,209.64	1.81	668.652		
500.00	499.98	487.95	487.95	1.56	0.78	66.75	642.85	-1,027.21	1,211.09	1,208.75	2.34	517.403		
600.00	599.84	588.20	588.19	1.90	0.96	67.04	643.42	-1,027.07	1,209.22	1,206.36	2.86	423.016		
700.00	699.45	691.00	690.99	2.26	1.14	67.52	643.98	-1,026.68	1,205.82	1,202.43	3.39	355.534		
800.00	798.70	788.44	788.43	2.63	1.31	68.16	644.45	-1,026.32	1,201.15	1,197.22	3.93	305.698		
900.00	897.47	886.85	886.83	3.02	1.48	69.00	645.28	-1,025.82	1,195.41	1,190.93	4.49	266.434		
1,000.00	995.62	986.57	986.55	3.43	1.66	70.03	646.09	-1,025.25	1,188.62	1,183.55	5.07	234.485		
1,100.00	1,093.06	1,081.81	1,081.79	3.87	1.83	71.20	646.87	-1,024.73	1,181.01	1,175.34	5.67	208.243		
1,200.00	1,189.64	1,174.25	1,174.21	4.35	1.99	72.53	648.07	-1,024.16	1,172.99	1,166.69	6.30	186.113		
1,241.53	1,229.48	1,215.82	1,215.78	4.56	2.07	73.18	648.80	-1,023.81	1,169.57	1,162.99	6.58	177.696		
1,300.00	1,285.45	1,274.40	1,274.34	4.86	2.17	74.05	649.98	-1,023.03	1,164.72	1,157.74	6.98	166.799		
1,400.00	1,381.16	1,373.56	1,373.46	5.39	2.35	75.55	652.11	-1,021.20	1,156.76	1,149.08	7.68	150.617		
1,500.00	1,476.88	1,469.91	1,469.77	5.93	2.52	77.04	654.17	-1,019.11	1,149.37	1,140.99	8.39	137.043		
1,600.00	1,572.59	1,568.98	1,568.80	6.47	2.69	78.59	656.02	-1,016.90	1,142.60	1,133.49	9.11	125.435		
1,700.00	1,668.31	1,659.38	1,659.16	7.03	2.85	80.00	657.60	-1,014.92	1,136.63	1,126.81	9.83	115.679		
1,800.00	1,764.03	1,755.11	1,754.85	7.59	3.02	81.51	659.43	-1,013.02	1,131.76	1,121.20	10.56	107.196		
1,900.00	1,859.74	1,850.07	1,849.79	8.15	3.19	82.98	660.58	-1,011.70	1,127.62	1,116.33	11.29	99.850		
2,000.00	1,955.46	1,943.51	1,943.22	8.72	3.36	84.42	661.62	-1,010.63	1,124.39	1,112.36	12.03	93.470		
2,100.00	2,051.18	2,041.22	2,040.92	9.29	3.53	85.94	662.75	-1,009.55	1,122.04	1,109.27	12.77	87.834		
2,200.00	2,146.89	2,136.44	2,136.14	9.86	3.70	87.39	663.24	-1,008.86	1,120.25	1,106.73	13.52	82.880		
2,300.00	2,242.61	2,229.75	2,229.45	10.43	3.86	88.81	663.89	-1,008.30	1,119.45	1,105.19	14.26	78.529		
2,337.38	2,278.39	2,264.99	2,264.68	10.65	3.93	89.34	664.13	-1,008.14	1,119.38	1,104.85	14.53	77.029		
2,400.00	2,338.33	2,322.87	2,322.56	11.01	4.03	90.22	664.53	-1,007.99	1,119.58	1,104.59	14.99	74.673		
2,500.00	2,434.04	2,419.53	2,419.22	11.58	4.20	91.66	665.12	-1,008.13	1,120.69	1,104.95	15.74	71.219		
2,600.00	2,529.76	2,517.04	2,516.73	12.16	4.37	93.11	665.36	-1,008.15	1,122.18	1,105.70	16.48	68.102		
2,700.00	2,625.48	2,612.64	2,612.33	12.74	4.54	94.54	665.93	-1,007.98	1,124.63	1,107.42	17.21	65.340		
2,800.00	2,721.19	2,715.01	2,714.69	13.32	4.72	96.06	666.05	-1,007.54	1,127.31	1,109.35	17.95	62.794		
2,900.00	2,816.91	2,813.15	2,812.83	13.90	4.89	97.52	665.99	-1,006.86	1,130.50	1,111.82	18.68	60.521		
3,000.00	2,912.63	2,910.82	2,910.50	14.48	5.06	98.99	665.81	-1,005.67	1,134.10	1,114.70	19.40	58.459		
3,100.00	3,008.34	3,002.49	3,002.15	15.06	5.22	100.37	665.88	-1,004.39	1,138.65	1,118.55	20.10	56.640		
3,200.00	3,104.06	3,093.13	3,092.78	15.64	5.38	101.74	666.39	-1,002.82	1,144.28	1,123.48	20.80	55.020		
3,300.00	3,199.78	3,178.79	3,178.43	16.22	5.54	103.02	667.37	-1,001.67	1,151.33	1,129.86	21.47	53.614		
3,400.00	3,295.49	3,275.06	3,274.69	16.80	5.71	104.41	668.57	-1,001.08	1,159.49	1,137.32	22.17	52.305		
3,500.00	3,391.21	3,364.79	3,364.41	17.39	5.87	105.69	669.80	-1,000.73	1,168.54	1,145.70	22.84	51.163		
3,600.00	3,486.92	3,460.62	3,460.22	17.97	6.04	107.04	671.42	-1,000.26	1,178.55	1,155.03	23.52	50.113		
3,700.00	3,582.64	3,560.61	3,560.20	18.55	6.21	108.44	672.97	-999.36	1,189.02	1,164.82	24.20	49.138		
3,800.00	3,678.36	3,665.74	3,665.30	19.14	6.40	109.93	674.22	-997.42	1,199.62	1,174.74	24.88	48.218		
3,900.00	3,774.07	3,765.75	3,765.30	19.72	6.58	111.30	674.65	-995.82	1,210.27	1,184.73	25.54	47.387		
4,000.00	3,869.79	3,859.78	3,859.33	20.31	6.74	112.54	674.78	-994.95	1,221.43	1,195.25	26.18	46.653		
4,100.00	3,965.51	3,950.14	3,949.68	20.89	6.90	113.70	675.12	-994.27	1,233.47	1,206.67	26.81	46.013		
4,200.00	4,061.22	4,044.24	4,043.77	21.47	7.07	114.90	675.79	-993.59	1,246.43	1,218.99	27.43	45.432		
4,300.00	4,156.94	4,134.18	4,133.71	22.06	7.23	116.02	676.57	-992.81	1,260.09	1,232.05	28.04	44.933		
4,400.00	4,252.66	4,224.14	4,223.65	22.64	7.39	117.14	677.91	-991.74	1,274.87	1,246.23	28.64	44.507		
4,500.00	4,348.37	4,318.93	4,318.43	23.23	7.56	118.27	679.46	-991.05	1,290.38	1,261.13	29.25	44.110		
4,600.00	4,444.09	4,417.64	4,417.12	23.82	7.73	119.38	680.88	-991.38	1,306.31	1,276.44	29.87	43.729		
4,700.00	4,539.81	4,515.60	4,515.08	24.40	7.90	120.44	681.95	-992.06	1,322.39	1,291.90	30.49	43.376		
4,800.00	4,635.52	4,614.05	4,613.52	24.99	8.08	121.50	683.05	-992.44	1,338.92	1,307.83	31.10	43.058		
4,900.00	4,731.24	4,713.64	4,713.11	25.57	8.25	122.55	683.59	-992.59	1,355.32	1,323.62	31.70	42.752		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	
5,000.00	4,826.96	4,805.82	4,805.28	26.16	8.41	123.48	684.42	-992.99	1,372.48	1,340.20	32.28	42.516		
5,100.00	4,922.67	4,906.78	4,906.24	26.74	8.59	124.48	684.91	-993.60	1,389.64	1,356.75	32.88	42.259		
5,200.00	5,018.39	4,993.37	4,992.82	27.33	8.74	125.31	685.62	-994.25	1,407.50	1,374.07	33.43	42.097		
7,450.00	7,034.63	6,977.97	6,976.96	36.51	12.24	50.81	721.21	-993.91	1,386.83	1,343.03	43.81	31.656		
7,500.00	7,054.66	6,998.24	6,997.22	36.42	12.28	54.38	721.85	-993.61	1,347.77	1,303.91	43.86	30.732		
7,550.00	7,071.55	7,015.72	7,014.69	36.32	12.31	58.63	722.43	-993.38	1,307.46	1,263.57	43.90	29.786		
7,600.00	7,085.23	7,030.30	7,029.25	36.22	12.34	63.58	722.93	-993.21	1,266.14	1,222.21	43.93	28.822		
7,650.00	7,095.63	7,041.87	7,040.82	36.11	12.36	69.18	723.33	-993.07	1,224.03	1,180.07	43.96	27.845		
7,700.00	7,102.70	7,050.34	7,049.29	36.00	12.37	75.34	723.64	-992.98	1,181.34	1,137.35	43.98	26.859		
7,750.00	7,106.40	7,055.65	7,054.59	35.89	12.38	81.88	723.83	-992.93	1,138.30	1,094.30	44.00	25.868		
7,779.70	7,107.00	7,057.28	7,056.22	35.83	12.38	85.84	723.89	-992.91	1,112.67	1,068.66	44.02	25.278		
7,800.00	7,107.00	7,058.00	7,056.94	35.79	12.39	85.91	723.92	-992.91	1,095.20	1,051.17	44.02	24.877		
7,900.00	7,107.00	7,061.60	7,060.53	35.59	12.39	86.28	724.05	-992.87	1,010.66	966.58	44.08	22.930		
8,000.00	7,107.00	7,065.24	7,064.17	35.42	12.40	86.65	724.18	-992.84	929.18	885.02	44.15	21.045		
8,100.00	7,107.00	7,068.93	7,067.86	35.28	12.40	87.02	724.32	-992.80	851.63	807.37	44.27	19.238		
8,200.00	7,107.00	7,072.68	7,071.61	35.18	12.41	87.41	724.46	-992.77	779.21	734.77	44.44	17.535		
8,300.00	7,107.00	7,076.48	7,075.40	35.11	12.42	87.79	724.61	-992.73	713.46	668.78	44.68	15.970		
8,400.00	7,107.00	7,080.37	7,079.30	35.11	12.43	88.19	724.76	-992.70	656.39	611.40	44.99	14.589		
8,500.00	7,107.00	7,084.37	7,083.29	35.20	12.43	88.60	724.91	-992.67	610.45	565.06	45.39	13.448		
8,600.00	7,107.00	7,088.46	7,087.38	35.43	12.44	89.02	725.07	-992.64	578.29	532.45	45.84	12.615		
8,700.00	7,107.00	7,092.65	7,091.56	35.85	12.45	89.44	725.24	-992.61	562.27	516.00	46.28	12.151		
8,741.49	7,107.00	7,094.42	7,093.33	36.07	12.45	89.63	725.31	-992.59	560.74	514.30	46.44	12.075 CC, ES, SF		
8,800.00	7,107.00	7,096.95	7,095.86	36.44	12.45	89.88	725.41	-992.58	563.78	517.17	46.61	12.094		
8,900.00	7,107.00	7,101.36	7,100.26	37.18	12.46	90.33	725.59	-992.55	582.68	535.87	46.81	12.449		
9,000.00	7,107.00	7,105.88	7,104.78	38.02	12.47	90.79	725.78	-992.52	617.37	570.52	46.85	13.178		
9,100.00	7,107.00	7,110.52	7,109.42	38.93	12.48	91.27	725.97	-992.50	665.38	618.60	46.78	14.224		
9,200.00	7,107.00	7,115.28	7,114.17	39.90	12.49	91.75	726.17	-992.48	724.07	677.43	46.64	15.523		
9,300.00	7,107.00	7,120.17	7,119.06	40.91	12.50	92.25	726.38	-992.46	791.07	744.58	46.49	17.018		
9,400.00	7,107.00	7,125.19	7,124.07	41.96	12.50	92.76	726.60	-992.44	864.44	818.12	46.33	18.660		
9,500.00	7,107.00	7,130.35	7,129.23	43.05	12.51	93.29	726.83	-992.42	942.70	896.52	46.18	20.416		
9,600.00	7,107.00	7,135.65	7,134.53	44.16	12.52	93.83	727.06	-992.41	1,024.72	978.68	46.04	22.256		
9,700.00	7,107.00	7,141.11	7,139.98	45.31	12.53	94.38	727.31	-992.40	1,109.68	1,063.75	45.92	24.163		
9,800.00	7,107.00	7,146.72	7,145.58	46.48	12.54	94.95	727.57	-992.39	1,196.94	1,151.11	45.82	26.120		
9,900.00	7,107.00	7,152.49	7,151.35	47.67	12.55	95.53	727.84	-992.39	1,286.03	1,240.30	45.74	28.118		
10,000.00	7,107.00	7,158.44	7,157.28	48.88	12.56	96.13	728.12	-992.39	1,376.61	1,330.94	45.66	30.146		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 13-4 - 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
8,300.00	7,107.00	7,087.94	7,084.91	35.11	12.44	-81.69	1,618.71	-1,658.20	1,335.55	1,288.08	47.47	28.135	
8,400.00	7,107.00	7,088.98	7,085.95	35.11	12.45	-82.23	1,618.72	-1,658.23	1,235.93	1,188.52	47.41	26.067	
8,500.00	7,107.00	7,090.02	7,086.99	35.20	12.45	-82.76	1,618.73	-1,658.26	1,136.37	1,089.02	47.35	24.000	
8,600.00	7,107.00	7,091.04	7,088.01	35.43	12.45	-83.28	1,618.74	-1,658.29	1,036.90	989.62	47.27	21.935	
8,700.00	7,107.00	7,092.04	7,089.01	35.85	12.45	-83.80	1,618.75	-1,658.32	937.53	890.35	47.18	19.871	
8,800.00	7,107.00	7,093.03	7,090.00	36.44	12.45	-84.31	1,618.76	-1,658.34	838.32	791.24	47.07	17.809	
8,900.00	7,107.00	7,094.01	7,090.98	37.18	12.45	-84.81	1,618.77	-1,658.37	739.31	692.38	46.94	15.751	
9,000.00	7,107.00	7,094.97	7,091.94	38.02	12.46	-85.31	1,618.78	-1,658.40	640.62	593.85	46.77	13.697	
9,100.00	7,107.00	7,095.93	7,092.90	38.93	12.46	-85.80	1,618.79	-1,658.43	542.40	495.84	46.56	11.650	
9,200.00	7,107.00	7,096.87	7,093.83	39.90	12.46	-86.29	1,618.79	-1,658.46	444.97	398.68	46.29	9.613	
9,300.00	7,107.00	7,097.79	7,094.76	40.91	12.46	-86.77	1,618.80	-1,658.48	349.00	303.03	45.97	7.592	
9,400.00	7,107.00	7,098.71	7,095.68	41.96	12.46	-87.24	1,618.81	-1,658.51	256.13	210.40	45.73	5.601	
9,500.00	7,107.00	7,099.61	7,096.58	43.05	12.46	-87.71	1,618.82	-1,658.54	171.46	124.92	46.55	3.684	
9,600.00	7,107.00	7,100.51	7,097.48	44.16	12.47	-88.17	1,618.83	-1,658.56	114.88	62.11	52.77	2.177	
9,631.02	7,107.00	7,100.79	7,097.76	44.52	12.47	-88.32	1,618.83	-1,658.57	110.61	55.05	55.56	1.991	CC, ES, SF
9,700.00	7,107.00	7,101.43	7,098.39	45.31	12.47	-88.65	1,618.84	-1,658.59	130.35	72.86	57.50	2.267	
9,800.00	7,107.00	7,102.36	7,099.33	46.48	12.47	-89.13	1,618.84	-1,658.62	201.96	147.09	54.87	3.681	
9,900.00	7,107.00	7,103.32	7,100.29	47.67	12.47	-89.63	1,618.85	-1,658.64	290.82	237.95	52.88	5.500	
10,000.00	7,107.00	7,104.31	7,101.27	48.88	12.47	-90.14	1,618.86	-1,658.67	385.19	333.45	51.74	7.445	
10,100.00	7,107.00	7,105.31	7,102.28	50.11	12.47	-90.66	1,618.87	-1,658.70	481.83	430.78	51.05	9.438	
10,200.00	7,107.00	7,106.35	7,103.31	51.36	12.48	-91.20	1,618.88	-1,658.73	579.61	529.01	50.60	11.455	
10,300.00	7,107.00	7,107.41	7,104.37	52.63	12.48	-91.74	1,618.89	-1,658.76	678.03	627.75	50.28	13.484	
10,400.00	7,107.00	7,108.50	7,105.46	53.91	12.48	-92.30	1,618.90	-1,658.79	776.86	726.80	50.06	15.519	
10,500.00	7,107.00	7,109.61	7,106.57	55.20	12.48	-92.88	1,618.92	-1,658.83	875.95	826.06	49.89	17.558	
10,600.00	7,107.00	7,110.76	7,107.72	56.51	12.48	-93.47	1,618.93	-1,658.86	975.23	925.47	49.76	19.599	
10,700.00	7,107.00	7,111.94	7,108.90	57.84	12.49	-94.07	1,618.94	-1,658.89	1,074.64	1,024.98	49.66	21.641	
10,800.00	7,107.00	7,113.15	7,110.11	59.17	12.49	-94.69	1,618.95	-1,658.93	1,174.14	1,124.57	49.58	23.683	
10,900.00	7,107.00	7,114.39	7,111.35	60.52	12.49	-95.33	1,618.97	-1,658.96	1,273.73	1,224.21	49.51	25.724	
11,000.00	7,107.00	7,115.67	7,112.63	61.87	12.49	-95.98	1,618.98	-1,659.00	1,373.37	1,323.91	49.47	27.764	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 14-4 - 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
1,700.00	1,668.31	1,670.69	1,670.65	7.03	2.84	32.69	-220.15	-1,607.61	1,399.40	1,390.29	9.11	153.604	
1,800.00	1,764.03	1,765.77	1,765.72	7.59	3.01	33.37	-219.25	-1,607.44	1,374.60	1,364.87	9.73	141.313	
1,900.00	1,859.74	1,858.25	1,858.20	8.15	3.17	34.06	-218.22	-1,607.48	1,350.20	1,339.85	10.35	130.459	
2,000.00	1,955.46	1,948.54	1,948.48	8.72	3.33	34.75	-217.40	-1,607.75	1,326.26	1,315.28	10.98	120.811	
2,100.00	2,051.18	2,042.58	2,042.51	9.29	3.50	35.50	-216.16	-1,608.44	1,302.95	1,291.33	11.62	112.134	
2,200.00	2,146.89	2,141.27	2,141.19	9.86	3.67	36.32	-214.93	-1,608.92	1,279.63	1,267.36	12.27	104.257	
2,300.00	2,242.61	2,236.07	2,235.98	10.43	3.84	37.14	-213.73	-1,609.36	1,256.56	1,243.62	12.93	97.169	
2,400.00	2,338.33	2,333.46	2,333.36	11.01	4.01	38.03	-212.00	-1,609.82	1,233.76	1,220.16	13.60	90.713	
2,500.00	2,434.04	2,438.22	2,438.09	11.58	4.20	39.05	-209.74	-1,609.82	1,210.85	1,196.56	14.28	84.768	
2,600.00	2,529.76	2,541.46	2,541.29	12.16	4.38	40.12	-207.13	-1,608.84	1,187.35	1,172.37	14.97	79.294	
2,700.00	2,625.48	2,638.05	2,637.84	12.74	4.55	41.17	-204.39	-1,607.68	1,164.02	1,148.35	15.67	74.291	
2,800.00	2,721.19	2,736.21	2,735.95	13.32	4.72	42.27	-201.81	-1,606.22	1,140.78	1,124.41	16.37	69.675	
2,900.00	2,816.91	2,830.89	2,830.59	13.90	4.89	43.37	-199.50	-1,604.72	1,117.84	1,100.76	17.08	65.429	
3,000.00	2,912.63	2,923.28	2,922.97	14.48	5.05	44.44	-197.95	-1,603.47	1,095.44	1,077.64	17.80	61.527	
3,100.00	3,008.34	3,014.41	3,014.08	15.06	5.21	45.51	-196.92	-1,602.65	1,073.81	1,055.28	18.53	57.943	
3,200.00	3,104.06	3,109.91	3,109.57	15.64	5.38	46.66	-196.04	-1,601.98	1,052.74	1,033.47	19.27	54.628	
3,300.00	3,199.78	3,198.82	3,198.48	16.22	5.53	47.78	-195.09	-1,601.64	1,032.45	1,012.43	20.02	51.571	
3,400.00	3,295.49	3,290.16	3,289.81	16.80	5.69	48.97	-193.89	-1,601.70	1,013.09	992.31	20.78	48.749	
3,500.00	3,391.21	3,383.69	3,383.33	17.39	5.86	50.23	-192.76	-1,602.08	994.55	972.99	21.56	46.139	
3,600.00	3,486.92	3,478.69	3,478.33	17.97	6.03	51.52	-191.94	-1,602.69	976.65	954.31	22.34	43.719	
3,700.00	3,582.64	3,576.36	3,575.99	18.55	6.20	52.92	-190.90	-1,603.21	959.24	936.11	23.14	41.462	
3,800.00	3,678.36	3,675.05	3,674.67	19.14	6.38	54.41	-189.34	-1,603.27	942.15	918.21	23.94	39.348	
3,900.00	3,774.07	3,770.05	3,769.65	19.72	6.55	55.93	-187.40	-1,602.98	925.52	900.76	24.76	37.373	
4,000.00	3,869.79	3,870.06	3,869.63	20.31	6.72	57.61	-185.13	-1,602.49	909.53	883.93	25.60	35.532	
4,100.00	3,965.51	3,966.63	3,966.19	20.89	6.89	59.25	-183.53	-1,601.68	893.75	867.32	26.44	33.808	
4,200.00	4,061.22	4,061.95	4,061.49	21.47	7.06	60.92	-181.95	-1,600.94	878.81	851.52	27.28	32.211	
4,300.00	4,156.94	4,154.59	4,154.11	22.06	7.23	62.61	-180.24	-1,600.17	864.71	836.58	28.14	30.731	
4,400.00	4,252.66	4,248.11	4,247.59	22.64	7.39	64.41	-177.71	-1,599.41	851.90	822.90	29.00	29.373	
4,500.00	4,348.37	4,343.69	4,343.12	23.23	7.56	66.33	-174.75	-1,598.35	839.99	810.11	29.88	28.116	
4,600.00	4,444.09	4,440.84	4,440.22	23.82	7.73	68.33	-171.72	-1,597.20	829.07	798.32	30.75	26.960	
4,700.00	4,539.81	4,539.24	4,538.57	24.40	7.91	70.42	-168.91	-1,595.56	818.70	787.07	31.63	25.885	
4,800.00	4,635.52	4,631.08	4,630.35	24.99	8.07	72.41	-166.26	-1,593.96	809.41	776.91	32.50	24.906	
4,900.00	4,731.24	4,719.59	4,718.79	25.57	8.23	74.40	-162.88	-1,592.61	802.01	768.64	33.36	24.040	
5,000.00	4,826.96	4,814.38	4,813.48	26.16	8.39	76.57	-158.92	-1,591.26	796.14	761.91	34.22	23.264	
5,100.00	4,922.67	4,909.78	4,908.80	26.74	8.56	78.78	-155.05	-1,589.92	791.49	756.42	35.07	22.569	
5,200.00	5,018.39	5,003.65	5,002.60	27.33	8.73	80.93	-151.70	-1,589.11	788.16	752.26	35.90	21.954	
5,300.00	5,114.11	5,105.05	5,103.97	27.92	8.91	83.17	-149.24	-1,588.92	785.71	748.99	36.73	21.394	
5,400.00	5,209.82	5,198.33	5,197.23	28.50	9.08	85.18	-147.76	-1,589.32	784.19	746.67	37.52	20.900	
5,464.23	5,271.30	5,258.39	5,257.29	28.88	9.18	86.46	-146.83	-1,589.79	783.91	745.89	38.02	20.618	
5,500.00	5,305.54	5,291.81	5,290.70	29.09	9.24	87.18	-146.26	-1,590.05	783.99	745.70	38.30	20.472	
5,600.00	5,401.25	5,390.18	5,389.06	29.67	9.42	89.26	-144.81	-1,591.00	784.89	745.82	39.06	20.093	
5,700.00	5,496.97	5,488.45	5,487.31	30.26	9.59	91.29	-144.07	-1,592.33	786.49	746.68	39.81	19.756	
5,800.00	5,592.69	5,588.27	5,587.13	30.85	9.76	93.32	-143.78	-1,593.71	788.72	748.18	40.54	19.455	
5,900.00	5,688.40	5,683.46	5,682.30	31.43	9.93	95.23	-143.78	-1,595.05	791.72	750.48	41.24	19.197	
6,000.00	5,784.12	5,782.88	5,781.71	32.02	10.10	97.20	-143.97	-1,596.65	795.60	753.67	41.93	18.974	
6,100.00	5,879.84	5,876.44	5,875.26	32.61	10.26	99.06	-144.05	-1,597.59	800.26	757.68	42.58	18.792	
6,200.00	5,975.55	5,971.84	5,970.66	33.19	10.43	100.96	-143.81	-1,598.54	806.17	762.95	43.22	18.653	
6,300.00	6,071.27	6,059.98	6,058.80	33.78	10.58	102.70	-143.21	-1,599.19	813.33	769.52	43.81	18.564	
6,400.00	6,166.99	6,155.64	6,154.44	34.37	10.75	104.58	-141.63	-1,600.03	822.35	777.95	44.40	18.519	
6,500.00	6,262.70	6,254.26	6,253.05	34.95	10.93	106.46	-140.70	-1,600.87	831.64	786.65	44.99	18.485	
6,535.31	6,296.50	6,287.22	6,286.01	35.16	10.99	107.08	-140.37	-1,601.15	835.15	789.96	45.18	18.483	
6,550.00	6,310.58	6,300.95	6,299.73	35.25	11.01	104.01	-140.22	-1,601.26	836.51	791.24	45.27	18.480	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 14-4 - 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
6,600.00	6,358.81	6,346.40	6,345.18	35.52	11.09	91.53	-139.66	-1,601.74	839.20	793.67	45.53	18.433	
6,650.00	6,407.28	6,392.24	6,391.01	35.77	11.17	76.66	-139.00	-1,602.42	838.86	793.09	45.78	18.325	
6,700.00	6,455.79	6,440.02	6,438.77	35.99	11.26	61.47	-138.23	-1,603.27	835.42	789.40	46.02	18.153	
6,750.00	6,504.07	6,488.01	6,486.75	36.18	11.34	48.15	-137.42	-1,604.13	828.78	782.53	46.25	17.919	
6,800.00	6,551.91	6,538.45	6,537.18	36.34	11.43	37.67	-136.59	-1,605.02	818.87	772.39	46.48	17.618	
6,850.00	6,599.07	6,589.07	6,587.79	36.48	11.52	29.78	-135.94	-1,605.80	805.57	758.87	46.69	17.252	
6,900.00	6,645.31	6,636.86	6,635.57	36.59	11.61	23.85	-135.44	-1,606.47	788.96	742.07	46.89	16.826	
6,950.00	6,690.42	6,682.99	6,681.69	36.68	11.69	19.33	-135.01	-1,607.11	769.19	722.13	47.07	16.343	
7,000.00	6,734.17	6,726.91	6,725.60	36.74	11.76	15.77	-134.64	-1,607.76	746.38	699.15	47.23	15.803	
7,050.00	6,776.35	6,768.87	6,767.56	36.79	11.84	12.87	-134.28	-1,608.58	720.65	673.27	47.38	15.211	
7,100.00	6,816.75	6,809.19	6,807.86	36.81	11.91	10.40	-133.95	-1,609.57	692.12	644.61	47.52	14.566	
7,150.00	6,855.18	6,846.61	6,845.27	36.81	11.97	8.18	-133.61	-1,610.71	660.95	613.31	47.64	13.874	
7,200.00	6,891.45	6,882.31	6,880.94	36.80	12.04	6.08	-133.25	-1,611.99	627.27	579.52	47.75	13.136	
7,250.00	6,925.38	6,915.65	6,914.25	36.77	12.10	3.96	-132.88	-1,613.37	591.24	543.38	47.86	12.354	
7,300.00	6,956.82	6,946.49	6,945.05	36.73	12.15	1.66	-132.51	-1,614.92	553.03	505.07	47.95	11.533	
7,350.00	6,985.59	6,974.94	6,973.45	36.67	12.20	-0.99	-132.14	-1,616.59	512.81	464.77	48.04	10.675	
7,400.00	7,011.57	7,000.84	6,999.28	36.59	12.25	-4.27	-131.79	-1,618.31	470.77	422.65	48.12	9.784	
7,450.00	7,034.63	7,023.44	7,021.83	36.51	12.29	-8.49	-131.42	-1,619.89	427.14	378.96	48.18	8.865	
7,500.00	7,054.66	7,043.46	7,041.79	36.42	12.32	-14.20	-131.04	-1,621.30	382.17	333.92	48.24	7.922	
7,550.00	7,071.55	7,060.71	7,059.00	36.32	12.35	-22.24	-130.67	-1,622.51	336.08	287.79	48.30	6.959	
7,600.00	7,085.23	7,075.09	7,073.34	36.22	12.38	-33.57	-130.32	-1,623.52	289.20	240.86	48.34	5.982	
7,650.00	7,095.63	7,086.46	7,084.67	36.11	12.40	-48.45	-130.03	-1,624.32	241.91	193.54	48.37	5.001	
7,700.00	7,102.70	7,094.71	7,092.90	36.00	12.41	-64.69	-129.80	-1,624.90	194.80	146.44	48.36	4.028	
7,750.00	7,106.40	7,099.73	7,097.91	35.89	12.42	-78.08	-129.66	-1,625.25	148.93	100.72	48.21	3.089	
7,779.70	7,107.00	7,101.17	7,099.35	35.83	12.42	-83.48	-129.62	-1,625.35	123.15	75.23	47.92	2.570	
7,800.00	7,107.00	7,101.75	7,099.92	35.79	12.42	-83.97	-129.61	-1,625.39	106.73	59.21	47.53	2.246	
7,882.88	7,107.00	7,104.09	7,102.25	35.62	12.43	-85.96	-129.54	-1,625.56	67.29	24.77	42.52	1.582 CC, ES, SF	
7,900.00	7,107.00	7,104.57	7,102.74	35.59	12.43	-86.37	-129.52	-1,625.59	69.43	27.48	41.95	1.655	
8,000.00	7,107.00	7,107.51	7,105.67	35.42	12.43	-88.86	-129.44	-1,625.80	135.03	89.89	45.14	2.991	
8,100.00	7,107.00	7,110.53	7,108.68	35.28	12.44	-91.42	-129.35	-1,626.01	227.22	180.70	46.51	4.885	
8,200.00	7,107.00	7,112.98	7,111.12	35.18	12.44	-93.48	-129.28	-1,626.18	324.06	277.03	47.03	6.891	
8,300.00	7,107.00	7,115.77	7,113.90	35.11	12.45	-95.80	-129.21	-1,626.38	422.35	375.07	47.28	8.934	
8,400.00	7,107.00	7,118.55	7,116.67	35.11	12.45	-98.08	-129.13	-1,626.57	521.28	473.85	47.42	10.992	
8,500.00	7,107.00	7,121.31	7,119.43	35.20	12.46	-100.31	-129.05	-1,626.76	620.54	573.01	47.52	13.058	
8,600.00	7,107.00	7,124.07	7,122.18	35.43	12.46	-102.49	-128.97	-1,626.96	719.99	672.39	47.59	15.128	
8,700.00	7,107.00	7,126.83	7,124.93	35.85	12.47	-104.62	-128.89	-1,627.15	819.57	771.92	47.65	17.200	
8,800.00	7,107.00	7,129.57	7,127.66	36.44	12.47	-106.69	-128.82	-1,627.34	919.23	871.53	47.69	19.273	
8,900.00	7,107.00	7,132.30	7,130.39	37.18	12.48	-108.70	-128.74	-1,627.53	1,018.95	971.21	47.73	21.347	
9,000.00	7,107.00	7,135.03	7,133.10	38.02	12.48	-110.64	-128.66	-1,627.72	1,118.71	1,070.94	47.77	23.421	
9,100.00	7,107.00	7,137.74	7,135.81	38.93	12.49	-112.52	-128.59	-1,627.91	1,218.50	1,170.71	47.80	25.494	
9,200.00	7,107.00	7,140.45	7,138.51	39.90	12.49	-114.34	-128.51	-1,628.10	1,318.33	1,270.50	47.82	27.567	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	-116.37	-42.99	-86.71	97.20				
100.00	100.00	90.85	90.84	0.14	0.07	-116.11	-42.62	-86.98	96.86	96.65	0.21	469.310	
200.00	200.00	191.34	191.33	0.50	0.24	-115.52	-41.70	-87.36	96.80	96.07	0.73	132.347	
267.25	267.25	258.26	258.25	0.74	0.36	-115.12	-41.02	-87.51	96.65	95.56	1.09	88.743	
300.00	300.00	290.80	290.79	0.85	0.42	-114.87	-40.67	-87.72	96.69	95.42	1.26	76.534	
400.00	400.00	390.27	390.25	1.21	0.59	-114.07	-39.63	-88.74	97.19	95.40	1.80	54.125	
500.00	499.98	489.62	489.59	1.56	0.77	11.29	-39.24	-90.11	96.58	94.27	2.32	41.709	
600.00	599.84	589.60	589.55	1.90	0.94	12.42	-39.09	-91.74	92.91	90.07	2.83	32.776	
700.00	699.45	690.12	690.06	2.26	1.12	14.56	-38.30	-93.09	85.39	82.03	3.36	25.386	
800.00	798.70	789.37	789.30	2.63	1.30	17.65	-37.66	-93.77	74.12	70.22	3.90	19.022	
900.00	897.47	888.07	888.00	3.02	1.47	22.44	-37.68	-94.46	60.06	55.63	4.44	13.536	
1,000.00	995.62	986.43	986.35	3.43	1.64	30.94	-38.76	-95.03	43.63	38.63	5.00	8.732	
1,100.00	1,093.06	1,084.10	1,084.01	3.87	1.81	53.41	-40.06	-95.57	26.85	21.23	5.62	4.776	
1,170.26	1,161.01	1,152.30	1,152.21	4.21	1.93	92.01	-40.97	-95.94	20.81	14.68	6.13	3.397	CC, ES, SF
1,200.00	1,189.64	1,181.04	1,180.94	4.35	1.98	111.74	-41.37	-96.05	22.19	15.92	6.27	3.538	
1,241.53	1,229.48	1,221.00	1,220.90	4.56	2.05	133.40	-41.96	-96.17	28.18	21.75	6.43	4.382	
1,300.00	1,285.45	1,277.12	1,277.01	4.86	2.14	150.75	-42.81	-96.24	41.03	34.36	6.67	6.147	
1,400.00	1,381.16	1,373.07	1,372.95	5.39	2.31	163.46	-44.23	-96.30	66.79	59.62	7.17	9.319	
1,500.00	1,476.88	1,468.84	1,468.72	5.93	2.48	168.84	-45.40	-96.53	93.97	86.28	7.69	12.215	
1,600.00	1,572.59	1,563.43	1,563.30	6.47	2.64	171.62	-45.98	-96.57	122.11	113.89	8.22	14.851	
1,700.00	1,668.31	1,658.59	1,658.45	7.03	2.80	173.37	-45.87	-95.86	151.44	142.68	8.76	17.290	
1,800.00	1,764.03	1,753.80	1,753.66	7.59	2.97	174.76	-46.30	-94.83	180.77	171.47	9.30	19.439	
1,900.00	1,859.74	1,849.63	1,849.49	8.15	3.13	175.70	-46.37	-93.70	210.46	200.61	9.85	21.374	
2,000.00	1,955.46	1,946.74	1,946.59	8.72	3.30	176.49	-47.07	-92.89	239.55	229.15	10.40	23.024	
2,100.00	2,051.18	2,043.49	2,043.33	9.29	3.47	176.96	-47.54	-92.83	268.22	257.26	10.96	24.466	
2,200.00	2,146.89	2,139.78	2,139.63	9.86	3.64	177.32	-48.10	-93.09	296.60	285.08	11.52	25.744	
2,300.00	2,242.61	2,236.64	2,236.48	10.43	3.81	177.49	-48.13	-93.80	324.96	312.87	12.08	26.892	
2,400.00	2,338.33	2,334.68	2,334.51	11.01	3.98	177.64	-48.62	-95.04	352.62	339.97	12.65	27.866	
2,500.00	2,434.04	2,429.54	2,429.36	11.58	4.15	177.82	-49.43	-96.04	380.26	367.05	13.21	28.791	
2,600.00	2,529.76	2,523.02	2,522.85	12.16	4.32	177.94	-49.69	-96.79	408.42	394.67	13.75	29.696	
2,700.00	2,625.48	2,617.36	2,617.18	12.74	4.48	178.09	-49.97	-96.90	437.10	422.79	14.30	30.558	
2,800.00	2,721.19	2,714.07	2,713.89	13.32	4.65	178.22	-50.20	-97.12	465.72	450.86	14.87	31.322	
2,900.00	2,816.91	2,807.30	2,807.12	13.90	4.81	178.27	-49.87	-97.42	494.61	479.20	15.41	32.090	
3,000.00	2,912.63	2,907.09	2,906.91	14.48	4.99	178.33	-49.74	-97.81	523.33	507.34	16.00	32.715	
3,100.00	3,008.34	2,996.21	2,996.03	15.06	5.14	178.44	-49.91	-97.61	552.33	535.82	16.52	33.439	
3,200.00	3,104.06	3,095.55	3,095.37	15.64	5.32	178.54	-49.86	-97.27	581.57	564.48	17.10	34.015	
3,300.00	3,199.78	3,192.06	3,191.88	16.22	5.49	178.56	-49.59	-97.62	610.40	592.73	17.66	34.558	
3,400.00	3,295.49	3,286.25	3,286.06	16.80	5.65	178.56	-49.08	-98.07	639.27	621.06	18.21	35.097	
3,500.00	3,391.21	3,380.62	3,380.42	17.39	5.81	178.52	-48.06	-98.61	668.39	649.62	18.77	35.615	
3,600.00	3,486.92	3,477.95	3,477.73	17.97	5.98	178.43	-46.53	-99.50	697.51	678.18	19.34	36.071	
3,700.00	3,582.64	3,583.65	3,583.42	18.55	6.17	178.34	-45.27	-101.15	725.94	705.98	19.96	36.378	
3,800.00	3,678.36	3,673.74	3,673.48	19.14	6.33	178.27	-44.54	-102.97	753.79	733.31	20.49	36.795	
3,900.00	3,774.07	3,759.58	3,759.30	19.72	6.48	178.17	-42.88	-104.09	782.82	761.83	20.99	37.293	
4,000.00	3,869.79	3,851.14	3,850.83	20.31	6.64	178.10	-40.82	-104.27	812.88	791.35	21.53	37.761	
4,100.00	3,965.51	3,943.52	3,943.20	20.89	6.80	178.09	-39.22	-104.02	843.01	820.95	22.07	38.200	
4,200.00	4,061.22	4,033.90	4,033.55	21.47	6.96	178.03	-36.81	-103.56	873.85	851.25	22.60	38.670	
4,300.00	4,156.94	4,128.47	4,128.08	22.06	7.12	177.97	-34.14	-103.09	904.78	881.63	23.15	39.079	
4,400.00	4,252.66	4,219.51	4,219.08	22.64	7.28	177.94	-31.69	-102.10	936.06	912.38	23.69	39.519	
4,500.00	4,348.37	4,314.98	4,314.50	23.23	7.44	177.92	-29.09	-100.96	967.47	943.22	24.25	39.900	
4,600.00	4,444.09	4,409.40	4,408.88	23.82	7.61	177.85	-25.98	-100.21	998.88	974.08	24.80	40.274	
4,700.00	4,539.81	4,504.22	4,503.64	24.40	7.77	177.79	-22.81	-99.46	1,030.33	1,004.97	25.36	40.628	
4,800.00	4,635.52	4,599.86	4,599.22	24.99	7.94	177.74	-19.78	-98.62	1,061.75	1,035.82	25.92	40.957	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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				
4,900.00	4,731.24	4,709.60	4,708.92	25.57	8.13	177.67	-16.57	-98.42	1,092.49	1,065.92	26.57	41.118				
5,000.00	4,826.96	4,800.21	4,799.48	26.16	8.29	177.60	-13.72	-98.85	1,122.86	1,095.76	27.10	41.428				
5,100.00	4,922.67	4,892.36	4,891.57	26.74	8.46	177.51	-10.47	-99.24	1,153.49	1,125.85	27.65	41.721				
5,200.00	5,018.39	4,989.29	4,988.46	27.33	8.63	177.45	-7.50	-99.22	1,184.20	1,155.98	28.22	41.964				
5,300.00	5,114.11	5,081.36	5,080.50	27.92	8.79	177.44	-5.33	-98.70	1,214.91	1,186.15	28.76	42.239				
5,400.00	5,209.82	5,164.63	5,163.74	28.50	8.93	177.45	-3.40	-97.63	1,246.16	1,216.91	29.25	42.598				
5,500.00	5,305.54	5,252.94	5,252.00	29.09	9.09	177.48	-1.35	-95.44	1,278.29	1,248.52	29.77	42.933				
5,600.00	5,401.25	5,350.40	5,349.40	29.67	9.26	177.56	0.36	-92.54	1,310.50	1,280.15	30.35	43.180				
5,700.00	5,496.97	5,459.46	5,458.42	30.26	9.45	177.64	1.87	-89.77	1,342.18	1,311.18	30.99	43.306				
5,800.00	5,592.69	5,560.58	5,559.52	30.85	9.62	177.70	2.87	-88.26	1,372.80	1,341.21	31.59	43.458				
5,900.00	5,688.40	5,660.01	5,658.93	31.43	9.80	177.74	4.10	-87.05	1,403.37	1,371.20	32.18	43.616				

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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							
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	-108.39	-17.85	-53.69	57.46				
100.00	100.00	90.24	90.24	0.14	0.09	-108.67	-18.05	-53.43	56.39	56.17	0.23	247.446	
200.00	200.00	190.09	190.08	0.50	0.29	-109.60	-18.80	-52.80	56.04	55.26	0.78	71.500	
228.94	228.94	218.95	218.94	0.60	0.35	-110.19	-19.33	-52.58	56.02	55.07	0.95	58.815	
300.00	300.00	289.57	289.52	0.85	0.52	-112.73	-21.73	-51.87	56.24	54.87	1.37	40.998	
400.00	400.00	388.36	388.02	1.21	0.77	-119.77	-28.97	-50.64	58.37	56.39	1.98	29.443	
500.00	499.98	486.32	485.29	1.56	1.05	-5.07	-40.36	-48.85	61.80	59.21	2.59	23.879	
600.00	599.84	583.57	581.68	1.90	1.33	-13.32	-53.19	-50.03	66.71	63.55	3.16	21.108	
700.00	699.45	682.59	679.72	2.26	1.61	-18.41	-65.88	-55.53	71.81	68.11	3.70	19.417	
800.00	798.70	782.51	778.74	2.63	1.90	-21.23	-76.45	-63.73	73.74	69.48	4.25	17.339	
900.00	897.47	881.52	876.76	3.02	2.20	-24.33	-87.01	-72.90	73.28	68.47	4.81	15.228	
1,000.00	995.62	981.07	975.11	3.43	2.53	-28.15	-98.31	-83.35	71.13	65.73	5.40	13.173	
1,100.00	1,093.06	1,081.74	1,074.74	3.87	2.81	-34.93	-109.40	-92.53	65.59	59.57	6.02	10.887	
1,200.00	1,189.64	1,180.54	1,172.66	4.35	3.11	-45.78	-119.78	-100.64	57.91	51.16	6.75	8.581	
1,241.53	1,229.48	1,221.50	1,213.21	4.56	3.24	-51.54	-124.20	-104.35	54.95	47.84	7.11	7.727	
1,300.00	1,285.45	1,279.22	1,270.33	4.86	3.43	-60.75	-130.46	-109.74	51.64	43.94	7.69	6.711	
1,400.00	1,381.16	1,378.19	1,368.29	5.39	3.74	-78.34	-141.00	-119.14	49.36	40.54	8.81	5.601	
1,400.98	1,382.09	1,379.16	1,369.25	5.39	3.75	-78.51	-141.10	-119.24	49.35	40.53	8.82	5.594 CC, ES	
1,500.00	1,476.88	1,476.94	1,466.13	5.93	4.03	-96.56	-150.89	-128.11	51.78	41.92	9.86	5.252 SF	
1,600.00	1,572.59	1,575.66	1,564.02	6.47	4.32	-112.33	-160.39	-136.72	58.95	48.27	10.67	5.523	
1,700.00	1,668.31	1,675.46	1,662.71	7.03	4.65	-122.92	-170.91	-147.17	68.26	56.90	11.37	6.006	
1,800.00	1,764.03	1,774.20	1,760.20	7.59	4.99	-130.22	-181.77	-158.43	78.51	66.50	12.01	6.537	
1,900.00	1,859.74	1,871.81	1,856.79	8.15	5.30	-136.27	-191.88	-168.20	91.01	78.43	12.58	7.234	
2,000.00	1,955.46	1,969.53	1,953.69	8.72	5.59	-141.37	-201.13	-176.83	105.40	92.30	13.11	8.043	
2,100.00	2,051.18	2,068.44	2,051.89	9.29	5.88	-145.69	-209.63	-184.94	121.08	107.44	13.63	8.882	
2,200.00	2,146.89	2,166.22	2,148.81	9.86	6.18	-148.47	-219.27	-193.66	136.46	122.26	14.21	9.606	
2,300.00	2,242.61	2,264.22	2,246.06	10.43	6.47	-150.66	-228.88	-201.07	153.44	138.64	14.80	10.368	
2,400.00	2,338.33	2,361.03	2,342.01	11.01	6.77	-152.04	-239.43	-208.33	170.52	155.09	15.42	11.056	
2,500.00	2,434.04	2,463.23	2,443.39	11.58	7.08	-153.39	-249.97	-215.73	188.04	171.96	16.08	11.695	
2,600.00	2,529.76	2,562.46	2,541.68	12.16	7.40	-154.66	-259.91	-225.08	203.53	186.82	16.70	12.185	
2,700.00	2,625.48	2,659.24	2,637.62	12.74	7.69	-155.79	-269.27	-233.66	219.72	202.41	17.31	12.694	
2,800.00	2,721.19	2,758.02	2,735.54	13.32	8.00	-156.63	-279.36	-241.81	236.46	218.51	17.95	13.174	
2,900.00	2,816.91	2,862.81	2,839.30	13.90	8.34	-157.44	-290.15	-251.78	252.02	233.39	18.62	13.532	
3,000.00	2,912.63	2,958.24	2,933.78	14.48	8.64	-158.33	-299.03	-261.82	266.85	247.63	19.22	13.884	
3,100.00	3,008.34	3,064.82	3,039.23	15.06	8.98	-159.28	-308.88	-273.74	281.14	261.27	19.87	14.151	
3,200.00	3,104.06	3,155.43	3,128.94	15.64	9.28	-160.08	-316.79	-283.74	295.73	275.29	20.43	14.473	
3,300.00	3,199.78	3,253.53	3,226.15	16.22	9.58	-160.69	-325.97	-293.14	311.61	290.56	21.05	14.801	
3,400.00	3,295.49	3,350.93	3,322.61	16.80	9.89	-160.97	-336.45	-301.73	327.87	306.16	21.71	15.102	
3,500.00	3,391.21	3,452.26	3,422.89	17.39	10.22	-161.20	-347.67	-310.96	343.77	321.37	22.40	15.348	
3,600.00	3,486.92	3,549.64	3,519.27	17.97	10.53	-161.43	-358.27	-319.95	359.61	336.56	23.06	15.596	
3,700.00	3,582.64	3,648.17	3,616.78	18.55	10.85	-161.59	-369.28	-328.77	375.64	351.91	23.73	15.828	
3,800.00	3,678.36	3,745.26	3,712.86	19.14	11.17	-161.70	-380.35	-337.29	391.78	367.37	24.40	16.054	
3,900.00	3,774.07	3,839.99	3,806.77	19.72	11.46	-161.88	-390.28	-344.89	408.89	383.85	25.04	16.328	
4,000.00	3,869.79	3,942.12	3,908.09	20.31	11.77	-162.27	-399.57	-353.63	425.92	400.22	25.70	16.576	
4,100.00	3,965.51	4,044.16	4,009.20	20.89	12.09	-162.61	-409.34	-363.26	441.98	415.62	26.35	16.770	
4,200.00	4,061.22	4,148.20	4,112.20	21.47	12.43	-162.86	-419.90	-373.47	457.55	430.51	27.04	16.921	
4,300.00	4,156.94	4,246.66	4,209.47	22.06	12.76	-163.07	-430.49	-384.48	471.62	443.92	27.70	17.028	
4,400.00	4,252.66	4,337.87	4,299.82	22.64	13.05	-163.32	-439.28	-393.34	487.42	459.12	28.29	17.226	
4,500.00	4,348.37	4,438.35	4,399.44	23.23	13.37	-163.62	-448.43	-402.69	503.80	474.86	28.94	17.409	
4,600.00	4,444.09	4,544.14	4,504.12	23.82	13.71	-163.79	-459.52	-413.24	519.12	489.48	29.64	17.514	
4,700.00	4,539.81	4,646.40	4,605.11	24.40	14.07	-163.87	-471.17	-424.32	533.33	502.99	30.34	17.579	
4,800.00	4,635.52	4,744.82	4,702.21	24.99	14.42	-163.86	-483.25	-434.88	547.35	516.32	31.03	17.637	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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		
4,900.00	4,731.24	4,840.52	4,796.66	25.57	14.75	-163.83	-495.06	-444.77	561.73	530.02	31.71	17.713		
5,000.00	4,826.96	4,942.55	4,897.47	26.16	15.09	-163.91	-506.61	-455.44	576.33	543.93	32.40	17.786		
5,100.00	4,922.67	5,047.61	5,001.24	26.74	15.45	-164.13	-517.35	-467.85	590.01	556.93	33.08	17.835		
5,200.00	5,018.39	5,134.97	5,087.60	27.33	15.74	-164.36	-525.70	-478.09	604.02	570.36	33.66	17.947		
5,300.00	5,114.11	5,233.15	5,184.85	27.92	16.05	-164.65	-534.16	-488.51	619.37	585.09	34.27	18.072		
5,400.00	5,209.82	5,334.87	5,285.50	28.50	16.39	-164.84	-544.13	-499.28	634.36	599.42	34.94	18.158		
5,500.00	5,305.54	5,417.05	5,366.90	29.09	16.64	-164.95	-552.22	-507.16	650.31	614.82	35.48	18.326		
5,600.00	5,401.25	5,517.86	5,466.95	29.67	16.95	-165.10	-561.45	-515.39	667.81	631.66	36.14	18.476		
5,700.00	5,496.97	5,624.96	5,573.03	30.26	17.30	-165.17	-572.62	-524.94	684.15	647.29	36.87	18.557		
5,800.00	5,592.69	5,717.56	5,664.70	30.85	17.60	-165.18	-582.84	-533.20	700.30	662.80	37.51	18.670		
5,900.00	5,688.40	5,821.12	5,767.17	31.43	17.94	-165.13	-594.90	-542.02	716.60	678.37	38.24	18.741		
6,000.00	5,784.12	5,918.90	5,863.89	32.02	18.27	-165.07	-606.52	-550.58	732.61	693.68	38.93	18.820		
6,100.00	5,879.84	6,014.87	5,958.85	32.61	18.58	-165.03	-617.64	-558.81	748.88	709.29	39.60	18.913		
6,200.00	5,975.55	6,116.43	6,059.35	33.19	18.91	-165.01	-629.27	-567.75	764.99	724.69	40.30	18.983		
6,300.00	6,071.27	6,198.00	6,140.20	33.78	19.16	-165.10	-637.18	-575.04	781.66	740.82	40.84	19.140		
6,400.00	6,166.99	6,269.68	6,211.52	34.37	19.34	-165.27	-642.17	-580.08	801.10	759.73	41.37	19.362		
6,500.00	6,262.70	6,342.15	6,283.88	34.95	19.50	-165.52	-645.22	-582.86	824.23	782.34	41.89	19.677		
6,535.31	6,296.50	6,369.01	6,310.71	35.16	19.55	-165.63	-645.93	-583.55	833.01	790.95	42.06	19.805		
6,550.00	6,310.58	6,380.15	6,321.85	35.25	19.57	-169.31	-646.15	-583.79	836.71	794.58	42.13	19.859		
6,600.00	6,358.81	6,418.39	6,360.08	35.52	19.63	176.37	-646.57	-584.43	848.93	806.55	42.38	20.033		
6,650.00	6,407.28	6,456.13	6,397.82	35.77	19.69	159.99	-646.29	-584.83	860.53	817.91	42.62	20.190		
6,700.00	6,455.79	6,489.00	6,430.63	35.99	19.72	143.45	-644.48	-585.25	871.63	828.80	42.83	20.350		
6,750.00	6,504.07	6,515.00	6,456.46	36.18	19.73	128.90	-641.54	-585.53	882.54	839.54	43.00	20.526		
6,800.00	6,551.91	6,547.05	6,488.03	36.34	19.73	117.32	-636.09	-585.80	893.21	850.07	43.15	20.702		
6,850.00	6,599.07	6,588.25	6,528.07	36.48	19.70	108.53	-626.43	-586.48	903.23	859.95	43.28	20.870		
6,900.00	6,645.31	6,626.50	6,564.55	36.59	19.65	101.85	-614.99	-587.67	912.32	868.94	43.38	21.031		
6,950.00	6,690.42	6,665.32	6,600.80	36.68	19.59	96.76	-601.20	-589.10	920.66	877.20	43.46	21.184		
7,000.00	6,734.17	6,701.75	6,634.22	36.74	19.52	92.84	-586.79	-590.59	928.10	884.57	43.53	21.319		
7,050.00	6,776.35	6,737.00	6,666.09	36.79	19.45	89.83	-571.77	-591.86	934.84	891.23	43.61	21.437		
7,100.00	6,816.75	6,769.00	6,694.46	36.81	19.37	87.46	-557.01	-592.96	940.87	897.19	43.68	21.538		
7,150.00	6,855.18	6,800.00	6,721.29	36.81	19.29	85.59	-541.52	-593.77	946.46	902.70	43.76	21.629		
7,200.00	6,891.45	6,824.18	6,741.83	36.80	19.21	84.06	-528.77	-594.01	951.81	907.96	43.85	21.705		
7,250.00	6,925.38	6,854.46	6,767.20	36.77	19.12	82.97	-512.23	-593.84	956.85	912.90	43.95	21.770		
7,300.00	6,956.82	6,886.08	6,793.12	36.73	19.01	82.21	-494.14	-593.41	961.40	917.34	44.07	21.818		
7,350.00	6,985.59	6,920.67	6,820.52	36.67	18.89	81.74	-473.04	-592.78	965.45	921.26	44.18	21.852		
7,400.00	7,011.57	6,968.88	6,856.87	36.59	18.71	81.74	-441.39	-592.27	968.62	924.36	44.26	21.886		
7,450.00	7,034.63	7,022.65	6,895.28	36.51	18.52	82.07	-403.78	-592.71	970.35	926.04	44.32	21.896		
7,500.00	7,054.66	7,054.00	6,916.32	36.42	18.41	82.15	-380.55	-593.18	971.23	926.76	44.47	21.839		
7,550.00	7,071.55	7,086.00	6,936.59	36.32	18.30	82.38	-355.79	-593.43	971.78	927.14	44.64	21.770		
7,600.00	7,085.23	7,120.10	6,956.65	36.22	18.17	82.78	-328.22	-593.55	971.98	927.18	44.81	21.693		
7,650.00	7,095.63	7,159.13	6,977.48	36.11	18.04	83.39	-295.23	-593.68	971.68	926.72	44.96	21.613		
7,700.00	7,102.70	7,195.33	6,994.56	36.00	17.91	84.05	-263.31	-593.75	970.94	925.81	45.13	21.512		
7,750.00	7,106.40	7,234.21	7,010.64	35.89	17.79	84.85	-227.92	-593.75	969.76	924.45	45.31	21.403		
7,779.70	7,107.00	7,259.63	7,020.04	35.83	17.71	85.44	-204.31	-593.72	968.82	923.41	45.41	21.335		
7,800.00	7,107.00	7,278.32	7,026.35	35.79	17.66	85.81	-186.71	-593.74	968.13	922.65	45.48	21.289		
7,900.00	7,107.00	7,363.11	7,047.07	35.59	17.50	87.04	-104.58	-593.96	965.70	919.82	45.88	21.046		
8,000.00	7,107.00	7,457.22	7,057.22	35.42	17.50	87.64	-11.11	-593.62	964.94	918.54	46.40	20.797		
8,100.00	7,107.00	7,599.42	7,059.09	35.28	17.97	87.74	131.01	-597.10	961.79	914.60	47.19	20.383		
8,200.00	7,107.00	7,688.70	7,061.69	35.18	18.44	87.88	220.17	-600.80	956.96	908.93	48.03	19.922		
8,300.00	7,107.00	7,798.23	7,068.60	35.11	19.11	88.29	329.40	-605.03	952.28	903.04	49.24	19.338		
8,400.00	7,107.00	7,889.08	7,075.27	35.11	19.80	88.68	419.93	-608.63	947.54	896.95	50.58	18.732		
8,500.00	7,107.00	7,964.09	7,079.12	35.20	20.49	88.92	494.82	-610.12	944.83	892.89	51.94	18.190		

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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
8,600.00	7,107.00	8,050.87	7,080.51	35.43	21.35	89.00	581.59	-609.90	944.42	890.85	53.56	17.632	
8,634.01	7,107.00	8,086.08	7,080.75	35.55	21.71	89.01	616.80	-609.71	944.40	890.16	54.23	17.413	
8,700.00	7,107.00	8,155.98	7,080.62	35.85	22.46	89.01	686.70	-609.57	944.13	888.52	55.61	16.977	
8,800.00	7,107.00	8,258.66	7,079.57	36.44	23.68	88.94	789.37	-609.54	943.59	885.76	57.83	16.317	
8,900.00	7,107.00	8,351.46	7,078.88	37.18	24.72	88.90	882.17	-609.43	943.13	883.38	59.75	15.785	
8,951.83	7,107.00	8,403.32	7,078.76	37.60	25.29	88.89	934.02	-609.16	943.09	882.27	60.83	15.505	
9,000.00	7,107.00	8,448.04	7,078.51	38.02	25.86	88.88	978.74	-608.80	943.19	881.32	61.87	15.244	
9,100.00	7,107.00	8,565.87	7,076.21	38.93	27.47	88.74	1,096.54	-608.57	942.88	878.05	64.83	14.545	
9,200.00	7,107.00	8,662.60	7,073.94	39.90	28.80	88.60	1,193.24	-609.51	941.37	874.13	67.25	13.999	
9,300.00	7,107.00	8,763.48	7,072.08	40.91	30.20	88.48	1,294.11	-610.15	940.19	870.38	69.81	13.467	
9,400.00	7,107.00	8,867.21	7,070.05	41.96	31.69	88.35	1,397.80	-611.22	938.61	866.05	72.56	12.936	
9,500.00	7,107.00	8,984.20	7,068.78	43.05	33.43	88.27	1,514.76	-614.05	935.57	859.76	75.81	12.341	
9,600.00	7,107.00	9,083.91	7,067.89	44.16	35.02	88.21	1,614.42	-616.86	932.19	853.50	78.68	11.847	
9,700.00	7,107.00	9,175.22	7,066.64	45.31	36.45	88.13	1,705.68	-619.66	928.62	847.34	81.28	11.425	
9,800.00	7,107.00	9,267.37	7,064.74	46.48	37.91	88.00	1,797.79	-620.98	926.65	842.73	83.92	11.042	
9,900.00	7,107.00	9,368.06	7,063.50	47.67	39.41	87.92	1,898.47	-622.21	924.87	838.12	86.75	10.662	
10,000.00	7,107.00	9,487.66	7,063.54	48.88	41.27	87.92	2,018.03	-624.86	922.07	831.77	90.30	10.211	
10,100.00	7,107.00	9,601.94	7,063.07	50.11	43.14	87.87	2,132.18	-630.46	916.49	822.71	93.78	9.773	
10,200.00	7,107.00	9,678.57	7,062.70	51.36	44.37	87.84	2,208.75	-633.27	912.24	816.21	96.04	9.499	
10,300.00	7,107.00	9,780.16	7,061.60	52.63	46.06	87.77	2,310.31	-635.41	909.59	810.43	99.16	9.173	
10,400.00	7,107.00	9,888.13	7,059.81	53.91	47.84	87.64	2,418.21	-639.01	905.72	803.23	102.49	8.837	
10,500.00	7,107.00	9,977.55	7,059.42	55.20	49.24	87.61	2,507.58	-641.62	902.23	797.08	105.15	8.581	
10,600.00	7,107.00	10,057.02	7,058.24	56.51	50.58	87.53	2,587.03	-642.71	900.35	792.83	107.53	8.373	
10,623.43	7,107.00	10,074.78	7,057.80	56.82	50.88	87.50	2,604.79	-642.67	900.29	792.24	108.05	8.332	
10,700.00	7,107.00	10,149.82	7,056.23	57.84	52.09	87.40	2,679.81	-642.13	900.45	790.13	110.32	8.162	
10,800.00	7,107.00	10,264.05	7,054.73	59.17	53.94	87.31	2,794.03	-642.11	899.94	786.03	113.92	7.900	
10,900.00	7,107.00	10,374.61	7,052.74	60.52	55.83	87.18	2,904.56	-643.24	898.46	780.99	117.47	7.648	
11,000.00	7,107.00	10,481.66	7,051.75	61.87	57.65	87.10	3,011.57	-646.03	895.30	774.40	120.90	7.405	
11,100.00	7,107.00	10,575.60	7,050.47	63.24	59.23	87.01	3,105.48	-648.47	892.18	768.32	123.86	7.203	
11,200.00	7,107.00	10,668.06	7,049.70	64.61	60.77	86.95	3,197.91	-650.00	889.97	763.22	126.75	7.021	
11,300.00	7,107.00	10,766.67	7,050.04	65.99	62.39	86.97	3,296.51	-650.98	888.37	758.52	129.85	6.842	
11,400.00	7,107.00	10,864.99	7,049.53	67.39	64.09	86.93	3,394.83	-651.91	886.85	753.82	133.03	6.667	
11,500.00	7,107.00	10,968.49	7,047.92	68.78	65.87	86.82	3,498.31	-653.05	885.25	748.86	136.39	6.491	
11,600.00	7,107.00	11,076.44	7,047.05	70.19	67.71	86.75	3,606.23	-655.22	882.67	742.76	139.91	6.309	
11,700.00	7,107.00	11,165.38	7,045.47	71.60	69.23	86.64	3,695.14	-656.76	880.46	737.73	142.73	6.169	
11,800.00	7,107.00	11,257.73	7,045.57	73.02	70.75	86.65	3,787.49	-657.01	879.57	733.95	145.63	6.040	
11,900.00	7,107.00	11,352.00	7,045.96	74.45	72.35	86.67	3,881.76	-656.73	879.25	730.61	148.64	5.915	
11,948.75	7,107.00	11,406.00	7,045.92	75.14	73.29	86.67	3,935.76	-656.56	879.11	728.66	150.45	5.843	
12,000.00	7,107.00	11,465.65	7,045.77	75.88	74.32	86.66	3,995.40	-656.85	878.57	726.12	152.45	5.763	
12,100.00	7,107.00	11,570.05	7,044.59	77.31	76.14	86.57	4,099.79	-658.46	876.48	720.59	155.89	5.622	
12,122.72	7,107.00	11,590.87	7,044.37	77.64	76.49	86.55	4,120.61	-658.76	876.04	719.48	156.56	5.596	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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	-106.24	-8.38	-28.79	33.09				
100.00	100.00	86.22	86.22	0.14	0.09	-106.61	-8.48	-28.43	29.67	29.44	0.23	128.792	
200.00	200.00	186.56	186.54	0.50	0.26	-108.72	-9.12	-26.92	28.43	27.68	0.75	37.743	
300.00	300.00	286.54	286.42	0.85	0.49	-117.43	-12.13	-23.36	26.33	24.98	1.34	19.595	
368.55	368.55	354.81	354.55	1.10	0.66	-126.61	-15.35	-20.66	25.74	23.99	1.76	14.642 CC	
400.00	400.00	386.07	385.73	1.21	0.74	-131.80	-17.27	-19.31	25.90	23.95	1.95	13.272 ES	
500.00	499.98	484.94	484.13	1.56	1.01	-27.38	-25.52	-14.45	27.83	25.27	2.56	10.872	
600.00	599.84	584.01	582.44	1.90	1.29	-49.17	-36.44	-9.14	32.83	29.73	3.10	10.580 SF	
700.00	699.45	682.68	680.34	2.26	1.56	-68.10	-47.52	-3.77	40.00	36.37	3.63	11.022	
800.00	798.70	781.24	778.04	2.63	1.87	-84.32	-59.19	2.03	50.47	46.27	4.20	12.009	
900.00	897.47	879.36	875.28	3.02	2.17	-97.30	-70.93	7.76	64.03	59.19	4.84	13.222	
1,000.00	995.62	976.48	971.49	3.43	2.50	-107.49	-82.93	13.53	81.10	75.55	5.55	14.608	
1,100.00	1,093.06	1,072.27	1,066.12	3.87	2.84	-114.74	-96.56	19.39	102.41	96.11	6.30	16.251	
1,200.00	1,189.64	1,169.23	1,161.90	4.35	3.13	-120.73	-110.47	25.32	126.66	119.62	7.05	17.971	
1,241.53	1,229.48	1,208.99	1,201.21	4.56	3.24	-123.03	-115.81	27.76	137.49	130.12	7.36	18.671	
1,300.00	1,285.45	1,264.63	1,256.26	4.86	3.41	-126.13	-123.12	31.26	153.35	145.55	7.80	19.655	
1,400.00	1,381.16	1,360.52	1,351.19	5.39	3.70	-130.36	-135.25	37.33	181.15	172.60	8.55	21.194	
1,500.00	1,476.88	1,456.28	1,446.07	5.93	3.99	-133.62	-146.75	43.25	209.37	200.08	9.28	22.552	
1,600.00	1,572.59	1,553.29	1,542.31	6.47	4.28	-136.32	-157.61	48.93	237.65	227.63	10.02	23.723	
1,700.00	1,668.31	1,646.50	1,634.79	7.03	4.56	-138.45	-167.69	54.49	266.39	255.66	10.73	24.826	
1,800.00	1,764.03	1,739.75	1,727.22	7.59	4.86	-140.05	-178.39	60.72	296.13	284.68	11.45	25.857	
1,900.00	1,859.74	1,834.24	1,820.81	8.15	5.16	-141.31	-189.62	67.42	326.46	314.27	12.18	26.797	
2,000.00	1,955.46	1,930.25	1,915.90	8.72	5.46	-142.39	-200.95	74.18	356.86	343.95	12.91	27.632	
2,100.00	2,051.18	2,026.99	2,011.77	9.29	5.76	-143.34	-212.18	80.66	387.03	373.38	13.65	28.358	
2,200.00	2,146.89	2,127.37	2,111.29	9.86	6.07	-144.17	-223.87	86.55	416.48	402.08	14.40	28.921	
2,300.00	2,242.61	2,223.75	2,206.95	10.43	6.36	-144.95	-234.46	91.54	445.36	430.23	15.12	29.446	
2,400.00	2,338.33	2,309.81	2,292.47	11.01	6.60	-145.74	-242.47	96.82	475.23	459.46	15.77	30.132	
2,500.00	2,434.04	2,397.61	2,379.74	11.58	6.85	-146.61	-249.31	103.55	506.74	490.33	16.41	30.883	
2,600.00	2,529.76	2,496.51	2,478.02	12.16	7.12	-147.47	-257.08	111.53	538.74	521.63	17.11	31.489	
2,700.00	2,625.48	2,597.59	2,578.42	12.74	7.42	-148.11	-266.38	118.65	569.75	551.92	17.83	31.947	
2,800.00	2,721.19	2,698.33	2,678.51	13.32	7.71	-148.62	-276.33	124.26	599.34	580.78	18.56	32.285	
2,900.00	2,816.91	2,790.82	2,770.36	13.90	7.98	-149.03	-285.61	129.78	629.36	610.10	19.25	32.687	
3,000.00	2,912.63	2,879.18	2,857.99	14.48	8.25	-149.31	-295.26	135.71	660.03	640.10	19.94	33.106	
3,100.00	3,008.34	2,979.14	2,957.02	15.06	8.57	-149.52	-307.04	142.63	690.85	670.15	20.70	33.380	
3,200.00	3,104.06	3,071.93	3,048.93	15.64	8.87	-149.69	-318.11	148.93	721.52	700.11	21.42	33.691	
3,300.00	3,199.78	3,171.79	3,147.91	16.22	9.17	-149.90	-329.54	155.47	752.03	729.86	22.16	33.929	
3,400.00	3,295.49	3,269.41	3,244.77	16.80	9.47	-150.13	-340.24	161.27	782.01	759.12	22.89	34.158	
3,500.00	3,391.21	3,354.04	3,328.79	17.39	9.72	-150.36	-348.86	166.74	812.58	789.03	23.55	34.508	
3,600.00	3,486.92	3,453.65	3,427.63	17.97	10.02	-150.60	-359.11	173.58	843.53	819.25	24.28	34.740	
3,700.00	3,582.64	3,551.84	3,524.97	18.55	10.33	-150.75	-370.26	180.00	874.06	849.04	25.02	34.930	
3,800.00	3,678.36	3,648.80	3,621.11	19.14	10.62	-150.89	-381.28	186.06	904.33	878.57	25.76	35.110	
3,900.00	3,774.07	3,741.62	3,713.28	19.72	10.90	-151.08	-390.72	191.74	934.61	908.16	26.45	35.331	
4,000.00	3,869.79	3,827.16	3,798.26	20.31	11.14	-151.30	-398.52	197.45	965.55	938.45	27.10	35.631	
4,100.00	3,965.51	3,940.22	3,910.56	20.89	11.47	-151.54	-409.56	204.51	996.00	968.11	27.89	35.713	
4,200.00	4,061.22	4,040.78	4,010.30	21.47	11.78	-151.64	-421.22	209.93	1,025.45	996.81	28.64	35.803	
4,300.00	4,156.94	4,135.78	4,104.45	22.06	12.08	-151.69	-432.88	214.77	1,054.53	1,025.16	29.38	35.894	
4,400.00	4,252.66	4,220.71	4,188.48	22.64	12.36	-151.68	-444.07	219.89	1,084.39	1,054.32	30.08	36.055	
4,500.00	4,348.37	4,324.29	4,291.08	23.23	12.69	-151.72	-456.88	226.05	1,114.27	1,083.41	30.86	36.112	
4,600.00	4,444.09	4,423.92	4,389.96	23.82	12.99	-151.83	-467.98	231.08	1,143.45	1,111.85	31.60	36.187	
4,700.00	4,539.81	4,512.87	4,478.17	24.40	13.26	-151.89	-478.32	235.94	1,172.96	1,140.67	32.30	36.319	
4,800.00	4,635.52	4,608.55	4,573.00	24.99	13.56	-151.93	-489.88	241.38	1,202.64	1,169.61	33.03	36.406	
4,900.00	4,731.24	4,700.22	4,663.82	25.57	13.85	-151.97	-501.07	246.77	1,232.48	1,198.72	33.76	36.511	

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 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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						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	
5,000.00	4,826.96	4,790.27	4,752.91	26.16	14.14	-151.96	-512.87	252.53	1,262.70	1,228.22	34.48	36.620	
5,100.00	4,922.67	4,883.95	4,845.61	26.74	14.45	-151.96	-524.88	258.75	1,293.18	1,257.96	35.22	36.716	
5,200.00	5,018.39	4,980.39	4,941.32	27.33	14.74	-152.06	-535.03	264.79	1,323.60	1,287.65	35.94	36.826	
5,300.00	5,114.11	5,067.50	5,027.81	27.92	14.99	-152.17	-543.77	270.50	1,354.36	1,317.75	36.61	36.992	
5,400.00	5,209.82	5,171.18	5,130.73	28.50	15.30	-152.28	-554.27	277.20	1,385.02	1,347.66	37.36	37.072	

Cathedral Energy Services

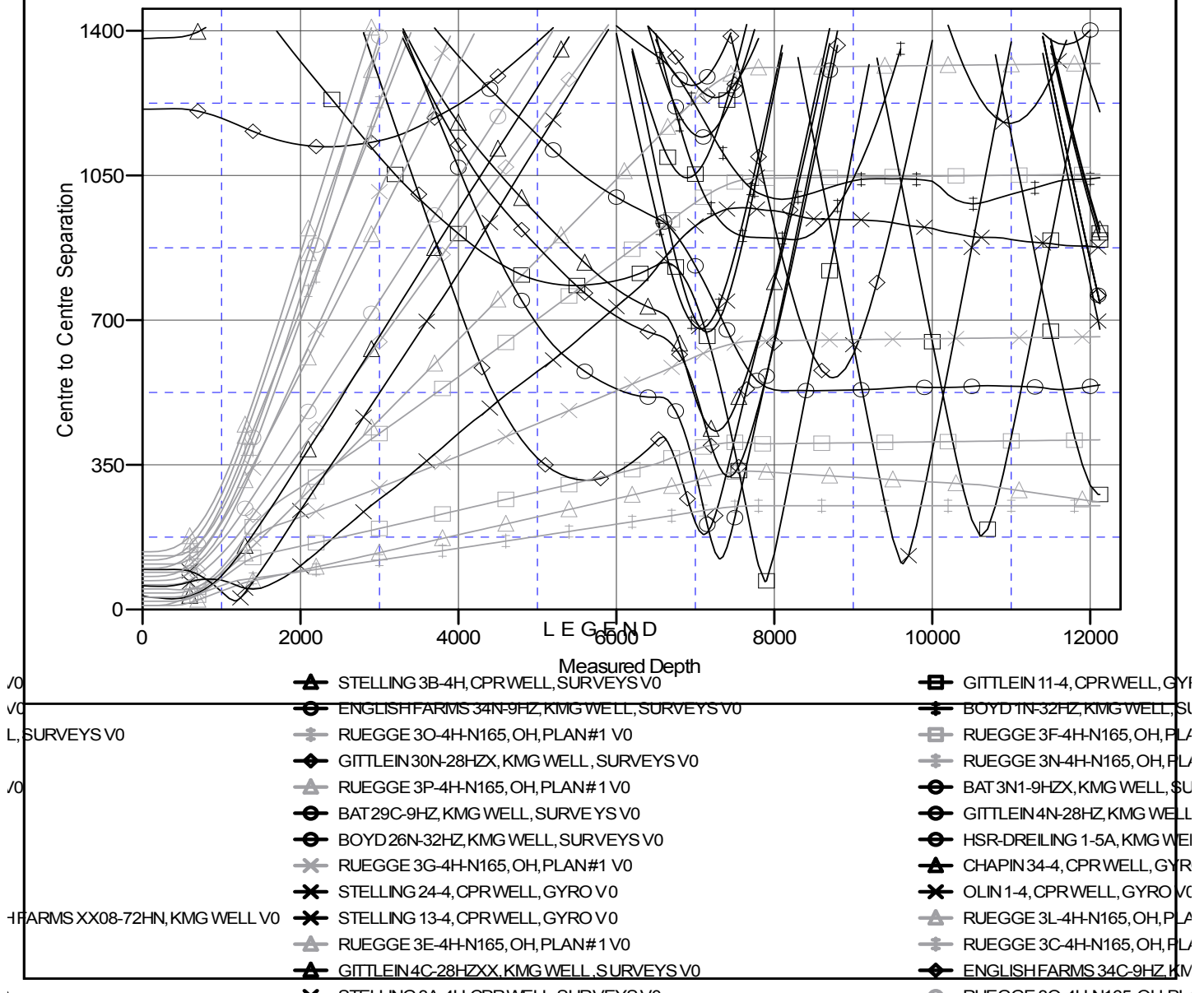
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well RUEGGE 3D-4H-N165 - Slot RUEGGE 3
Project:	DJ BASIN	TVD Reference:	23' KB @ 4940.00usft
Reference Site:	S4-T1N-R65W	MD Reference:	23' KB @ 4940.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	RUEGGE 3D-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 @ 4940.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

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

Ladder Plot



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