

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S25-T1N-R66W (SAM)			
Site Position:		Northing:	1,250,656.77 usft	Latitude:	40.018895
From:	Lat/Long	Easting:	3,214,576.98 usft	Longitude:	-104.733852
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	SAM 3G-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,596.66 usft	Latitude:	40.018730
	+E/-W	0.00 usft	Easting:	3,214,576.93 usft	Longitude:	-104.733854
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,086.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	11/17/2016	8.32	66.47	52,248

Design	PLAN #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	87.83	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,081.60	5.63	260.30	1,081.14	-2.33	-13.63	2.00	2.00	0.00	260.30	
3,732.10	5.63	260.30	3,718.86	-46.14	-270.03	0.00	0.00	0.00	0.00	
4,013.70	0.00	0.00	4,000.00	-48.47	-283.66	2.00	-2.00	0.00	180.00	
6,637.50	0.00	0.00	6,623.80	-48.47	-283.66	0.00	0.00	0.00	0.00	
7,762.50	90.00	87.83	7,340.00	-21.40	432.03	8.00	8.00	0.00	87.83	
11,836.31	90.00	87.83	7,340.00	132.58	4,502.92	0.00	0.00	0.00	0.00	SAM 3G-25H PBHL

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Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	KOP @ 800'
900.00	2.00	260.30	899.98	-0.29	-1.72	-1.73	2.00	2.00	
1,000.00	4.00	260.30	999.84	-1.18	-6.88	-6.92	2.00	2.00	
1,081.60	5.63	260.30	1,081.14	-2.33	-13.63	-13.71	2.00	2.00	EOB; INC=5.63°
1,100.00	5.63	260.30	1,099.46	-2.63	-15.41	-15.50	0.00	0.00	
1,200.00	5.63	260.30	1,198.98	-4.29	-25.08	-25.23	0.00	0.00	
1,300.00	5.63	260.30	1,298.49	-5.94	-34.76	-34.96	0.00	0.00	
1,400.00	5.63	260.30	1,398.01	-7.59	-44.43	-44.69	0.00	0.00	
1,500.00	5.63	260.30	1,497.53	-9.25	-54.11	-54.42	0.00	0.00	
1,600.00	5.63	260.30	1,597.04	-10.90	-63.78	-64.15	0.00	0.00	
1,700.00	5.63	260.30	1,696.56	-12.55	-73.45	-73.88	0.00	0.00	
1,800.00	5.63	260.30	1,796.08	-14.20	-83.13	-83.60	0.00	0.00	
1,900.00	5.63	260.30	1,895.60	-15.86	-92.80	-93.33	0.00	0.00	
2,000.00	5.63	260.30	1,995.11	-17.51	-102.47	-103.06	0.00	0.00	
2,100.00	5.63	260.30	2,094.63	-19.16	-112.15	-112.79	0.00	0.00	
2,200.00	5.63	260.30	2,194.15	-20.82	-121.82	-122.52	0.00	0.00	
2,300.00	5.63	260.30	2,293.67	-22.47	-131.49	-132.25	0.00	0.00	
2,400.00	5.63	260.30	2,393.18	-24.12	-141.17	-141.98	0.00	0.00	
2,500.00	5.63	260.30	2,492.70	-25.77	-150.84	-151.71	0.00	0.00	
2,600.00	5.63	260.30	2,592.22	-27.43	-160.51	-161.44	0.00	0.00	
2,700.00	5.63	260.30	2,691.73	-29.08	-170.19	-171.17	0.00	0.00	
2,800.00	5.63	260.30	2,791.25	-30.73	-179.86	-180.90	0.00	0.00	
2,900.00	5.63	260.30	2,890.77	-32.39	-189.53	-190.63	0.00	0.00	
3,000.00	5.63	260.30	2,990.29	-34.04	-199.21	-200.35	0.00	0.00	
3,100.00	5.63	260.30	3,089.80	-35.69	-208.88	-210.08	0.00	0.00	
3,200.00	5.63	260.30	3,189.32	-37.35	-218.56	-219.81	0.00	0.00	
3,300.00	5.63	260.30	3,288.84	-39.00	-228.23	-229.54	0.00	0.00	
3,400.00	5.63	260.30	3,388.36	-40.65	-237.90	-239.27	0.00	0.00	
3,500.00	5.63	260.30	3,487.87	-42.30	-247.58	-249.00	0.00	0.00	
3,600.00	5.63	260.30	3,587.39	-43.96	-257.25	-258.73	0.00	0.00	
3,700.00	5.63	260.30	3,686.91	-45.61	-266.92	-268.46	0.00	0.00	
3,732.10	5.63	260.30	3,718.86	-46.14	-270.03	-271.58	0.00	0.00	Start Drop -2.00
3,800.00	4.27	260.30	3,786.50	-47.13	-275.81	-277.39	2.00	-2.00	
3,900.00	2.27	260.30	3,886.33	-48.09	-281.44	-283.06	2.00	-2.00	
4,000.00	0.27	260.30	3,986.30	-48.46	-283.63	-285.26	2.00	-2.00	
4,013.70	0.00	0.00	4,000.00	-48.47	-283.66	-285.29	2.00	-2.00	EOD; INC=0°
4,100.00	0.00	0.00	4,086.30	-48.47	-283.66	-285.29	0.00	0.00	
4,200.00	0.00	0.00	4,186.30	-48.47	-283.66	-285.29	0.00	0.00	
4,300.00	0.00	0.00	4,286.30	-48.47	-283.66	-285.29	0.00	0.00	
4,400.00	0.00	0.00	4,386.30	-48.47	-283.66	-285.29	0.00	0.00	
4,500.00	0.00	0.00	4,486.30	-48.47	-283.66	-285.29	0.00	0.00	
4,600.00	0.00	0.00	4,586.30	-48.47	-283.66	-285.29	0.00	0.00	
4,700.00	0.00	0.00	4,686.30	-48.47	-283.66	-285.29	0.00	0.00	
4,800.00	0.00	0.00	4,786.30	-48.47	-283.66	-285.29	0.00	0.00	

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Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,900.00	0.00	0.00	4,886.30	-48.47	-283.66	-285.29	0.00	0.00	
5,000.00	0.00	0.00	4,986.30	-48.47	-283.66	-285.29	0.00	0.00	
5,100.00	0.00	0.00	5,086.30	-48.47	-283.66	-285.29	0.00	0.00	
5,200.00	0.00	0.00	5,186.30	-48.47	-283.66	-285.29	0.00	0.00	
5,300.00	0.00	0.00	5,286.30	-48.47	-283.66	-285.29	0.00	0.00	
5,400.00	0.00	0.00	5,386.30	-48.47	-283.66	-285.29	0.00	0.00	
5,500.00	0.00	0.00	5,486.30	-48.47	-283.66	-285.29	0.00	0.00	
5,600.00	0.00	0.00	5,586.30	-48.47	-283.66	-285.29	0.00	0.00	
5,700.00	0.00	0.00	5,686.30	-48.47	-283.66	-285.29	0.00	0.00	
5,800.00	0.00	0.00	5,786.30	-48.47	-283.66	-285.29	0.00	0.00	
5,900.00	0.00	0.00	5,886.30	-48.47	-283.66	-285.29	0.00	0.00	
6,000.00	0.00	0.00	5,986.30	-48.47	-283.66	-285.29	0.00	0.00	
6,100.00	0.00	0.00	6,086.30	-48.47	-283.66	-285.29	0.00	0.00	
6,200.00	0.00	0.00	6,186.30	-48.47	-283.66	-285.29	0.00	0.00	
6,300.00	0.00	0.00	6,286.30	-48.47	-283.66	-285.29	0.00	0.00	
6,400.00	0.00	0.00	6,386.30	-48.47	-283.66	-285.29	0.00	0.00	
6,500.00	0.00	0.00	6,486.30	-48.47	-283.66	-285.29	0.00	0.00	
6,600.00	0.00	0.00	6,586.30	-48.47	-283.66	-285.29	0.00	0.00	
6,637.50	0.00	0.00	6,623.80	-48.47	-283.66	-285.29	0.00	0.00	Start Build 8.00
6,700.00	5.00	87.83	6,686.22	-48.37	-280.94	-282.57	8.00	8.00	
6,800.00	13.00	87.83	6,784.91	-47.78	-265.32	-266.94	8.00	8.00	
6,900.00	21.00	87.83	6,880.46	-46.67	-236.13	-237.72	8.00	8.00	
7,000.00	29.00	87.83	6,971.02	-45.08	-193.93	-195.50	8.00	8.00	
7,100.00	37.00	87.83	7,054.82	-43.02	-139.55	-141.08	8.00	8.00	
7,200.00	45.00	87.83	7,130.23	-40.54	-74.04	-75.53	8.00	8.00	
7,300.00	53.00	87.83	7,195.78	-37.69	1.31	-0.12	8.00	8.00	
7,400.00	61.00	87.83	7,250.20	-34.52	85.05	83.68	8.00	8.00	
7,500.00	69.00	87.83	7,292.43	-31.10	175.54	174.24	8.00	8.00	
7,600.00	77.00	87.83	7,321.64	-27.49	271.03	269.79	8.00	8.00	
7,700.00	85.00	87.83	7,337.27	-23.76	369.65	368.48	8.00	8.00	
7,762.50	90.00	87.83	7,340.00	-21.40	432.03	430.91	8.00	8.00	LP @ 7340' TVD; 90°
7,800.00	90.00	87.83	7,340.00	-19.98	469.50	468.40	0.00	0.00	
7,900.00	90.00	87.83	7,340.00	-16.20	569.42	568.40	0.00	0.00	
8,000.00	90.00	87.83	7,340.00	-12.42	669.35	668.40	0.00	0.00	
8,100.00	90.00	87.83	7,340.00	-8.64	769.28	768.40	0.00	0.00	
8,200.00	90.00	87.83	7,340.00	-4.86	869.21	868.40	0.00	0.00	
8,300.00	90.00	87.83	7,340.00	-1.08	969.14	968.40	0.00	0.00	
8,400.00	90.00	87.83	7,340.00	2.70	1,069.07	1,068.40	0.00	0.00	
8,500.00	90.00	87.83	7,340.00	6.47	1,168.99	1,168.40	0.00	0.00	
8,600.00	90.00	87.83	7,340.00	10.25	1,268.92	1,268.40	0.00	0.00	
8,700.00	90.00	87.83	7,340.00	14.03	1,368.85	1,368.40	0.00	0.00	
8,800.00	90.00	87.83	7,340.00	17.81	1,468.78	1,468.40	0.00	0.00	
8,900.00	90.00	87.83	7,340.00	21.59	1,568.71	1,568.40	0.00	0.00	
9,000.00	90.00	87.83	7,340.00	25.37	1,668.64	1,668.40	0.00	0.00	
9,100.00	90.00	87.83	7,340.00	29.15	1,768.57	1,768.40	0.00	0.00	
9,200.00	90.00	87.83	7,340.00	32.93	1,868.49	1,868.40	0.00	0.00	
9,300.00	90.00	87.83	7,340.00	36.71	1,968.42	1,968.40	0.00	0.00	
9,400.00	90.00	87.83	7,340.00	40.49	2,068.35	2,068.40	0.00	0.00	
9,500.00	90.00	87.83	7,340.00	44.27	2,168.28	2,168.40	0.00	0.00	
9,600.00	90.00	87.83	7,340.00	48.05	2,268.21	2,268.40	0.00	0.00	
9,700.00	90.00	87.83	7,340.00	51.83	2,368.14	2,368.40	0.00	0.00	
9,800.00	90.00	87.83	7,340.00	55.61	2,468.07	2,468.40	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5109.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,900.00	90.00	87.83	7,340.00	59.39	2,567.99	2,568.40	0.00	0.00	
10,000.00	90.00	87.83	7,340.00	63.17	2,667.92	2,668.40	0.00	0.00	
10,100.00	90.00	87.83	7,340.00	66.95	2,767.85	2,768.40	0.00	0.00	
10,200.00	90.00	87.83	7,340.00	70.73	2,867.78	2,868.40	0.00	0.00	
10,300.00	90.00	87.83	7,340.00	74.51	2,967.71	2,968.40	0.00	0.00	
10,400.00	90.00	87.83	7,340.00	78.29	3,067.64	3,068.40	0.00	0.00	
10,500.00	90.00	87.83	7,340.00	82.07	3,167.57	3,168.40	0.00	0.00	
10,600.00	90.00	87.83	7,340.00	85.85	3,267.49	3,268.40	0.00	0.00	
10,700.00	90.00	87.83	7,340.00	89.63	3,367.42	3,368.40	0.00	0.00	
10,800.00	90.00	87.83	7,340.00	93.41	3,467.35	3,468.40	0.00	0.00	
10,900.00	90.00	87.83	7,340.00	97.19	3,567.28	3,568.40	0.00	0.00	
11,000.00	90.00	87.83	7,340.00	100.97	3,667.21	3,668.40	0.00	0.00	
11,100.00	90.00	87.83	7,340.00	104.75	3,767.14	3,768.40	0.00	0.00	
11,200.00	90.00	87.83	7,340.00	108.53	3,867.07	3,868.40	0.00	0.00	
11,300.00	90.00	87.83	7,340.00	112.31	3,966.99	3,968.40	0.00	0.00	
11,400.00	90.00	87.83	7,340.00	116.09	4,066.92	4,068.40	0.00	0.00	
11,500.00	90.00	87.83	7,340.00	119.87	4,166.85	4,168.40	0.00	0.00	
11,600.00	90.00	87.83	7,340.00	123.64	4,266.78	4,268.40	0.00	0.00	
11,700.00	90.00	87.83	7,340.00	127.42	4,366.71	4,368.40	0.00	0.00	
11,800.00	90.00	87.83	7,340.00	131.20	4,466.64	4,468.40	0.00	0.00	
11,836.31	90.00	87.83	7,340.00	132.58	4,502.92	4,504.71	0.00	0.00	TD at 11836.31

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SAM 3G-25H TPZ	0.00	0.00	7,290.27	-31.31	170.00	1,250,565.34	3,214,746.94	40.018640	-104.733248
- plan misses target center by 0.01usft at 7494.06usft MD (7290.28 TVD, -31.31 N, 170.01 E)									
- Point									
SAM 3G-25H PBHL	0.00	0.00	7,340.00	132.58	4,502.92	1,250,729.23	3,219,079.85	40.018986	-104.717773
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
800.00	800.00	0.00	0.00	KOP @ 800'
1,081.60	1,081.14	-2.33	-13.63	EOB; INC=5.63°
3,732.10	3,718.86	-46.14	-270.03	Start Drop -2.00
4,013.70	4,000.00	-48.47	-283.66	EOD; INC=0°
6,637.50	6,623.80	-48.47	-283.66	Start Build 8.00
7,762.50	7,340.00	-21.40	432.03	LP @ 7340' TVD; 90°
11,836.31	7,340.00	132.58	4,502.92	TD at 11836.31

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (SAM)

SAM 3G-25H-M166

OH

PLAN #1

Anticollision Report

18 November, 2016

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 1,500.00usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/18/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,836.31	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
S25-T1N-R66W (SAM)						
Bare Spaces 11-36 (EXISTING) - CPR WELL - NO SURV						Out of range
Beierle 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,654.85	6,813.29	959.87	914.23	21.034	CC, ES
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,750.00	6,908.38	964.40	918.29	20.912	SF
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,248.18	11,711.19	414.31	340.79	5.635	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,300.00	11,710.01	419.38	339.54	5.252	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,350.00	11,708.80	433.56	348.68	5.107	SF
Gilmore 1-30 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lehl 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 21-31 (EXISTING) - CPR WELL - GYRO						Out of range
Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2C-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2D-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2F-31H-D165 (PLAN) - CPR WELL - PLAN ON						Out of range
Lochbuie 2G-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2H-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lutz 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	504.51	465.51	1,332.52	1,330.42	634.627	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,100.00	500.00	1,459.98	1,454.71	277.189	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	7,601.95	7,555.42	722.18	667.65	13.245	CC, ES, SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	60.10	59.11	60.529	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	11,836.31	12,013.45	1,122.32	821.42	3.730	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	49.89	48.18	29.179	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	11,836.31	12,164.84	1,013.81	720.83	3.460	SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	40.07	37.64	16.510	CC, ES
SAM 3C-25H-M166 - OH - PLAN #1	11,836.31	11,908.36	875.35	573.81	2.903	SF
SAM 3D-25H-M166 - OH - PLAN #1	500.00	500.00	29.87	26.73	9.502	CC, ES
SAM 3D-25H-M166 - OH - PLAN #1	11,836.31	11,946.58	659.05	359.40	2.199	SF
SAM 3E-25H-M166 - OH - PLAN #1	600.00	600.00	20.04	16.18	5.190	CC, ES
SAM 3E-25H-M166 - OH - PLAN #1	11,836.31	11,846.15	360.26	58.92	1.196	Level 2, SF
SAM 3F-25H-M166 - OH - PLAN #1	800.00	800.00	9.83	4.54	1.857	CC
SAM 3F-25H-M166 - OH - PLAN #1	11,836.31	11,908.07	221.53	-65.01	0.773	Level 1, ES, SF
SAM 3H-25H-M166 - OH - PLAN #1	896.67	896.66	10.07	4.09	1.684	CC
SAM 3H-25H-M166 - OH - PLAN #1	900.00	899.98	10.07	4.07	1.678	ES
SAM 3H-25H-M166 - OH - PLAN #1	11,836.31	12,070.04	318.79	112.82	1.548	SF
SAM 3I-25H-M166 - OH - PLAN #1	800.00	800.00	20.04	14.74	3.784	CC, ES
SAM 3I-25H-M166 - OH - PLAN #1	11,836.31	11,906.06	322.43	29.32	1.100	Level 2, SF
SAM 3J-25H-M166 - OH - PLAN #1	700.00	700.00	29.88	25.30	6.526	CC, ES
SAM 3J-25H-M166 - OH - PLAN #1	11,836.31	11,845.06	539.86	239.38	1.797	SF
SAM 3K-25H-M166 - OH - PLAN #1	600.00	600.00	40.07	36.21	10.379	CC, ES
SAM 3K-25H-M166 - OH - PLAN #1	11,836.31	11,936.55	772.89	473.59	2.582	SF
SAM 3L-25H-M166 - OH - PLAN #1	500.00	500.00	49.92	46.77	15.878	CC, ES
SAM 3L-25H-M166 - OH - PLAN #1	11,836.31	11,886.52	969.71	668.73	3.222	SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	60.11	57.68	24.768	CC, ES
SAM 3M-25H-M166 - OH - PLAN #1	11,836.31	11,975.04	1,216.88	916.28	4.048	SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	69.94	68.23	40.904	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	11,836.31	12,155.71	1,336.41	1,040.12	4.511	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	80.15	79.16	80.717	CC, ES
SAM 3O-25H-M166 - OH - PLAN #1	11,836.31	11,932.12	1,414.85	1,113.66	4.698	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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)		Separation Factor	Warning
Offset Well - Wellbore - Design						
S25-T1N-R66W (SAM)						
State 7-36 CG (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Templin 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,377.10	7,261.00	79.12	-65.16	0.548	Level 1, CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1357-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		
2,800.00	2,791.25	3,174.00	3,134.20	10.09	7.61	79.97	1,309.48	-697.42	1,477.74	1,461.63	16.11	91.703		
2,900.00	2,890.77	3,259.94	3,215.69	10.47	8.06	79.51	1,284.67	-708.83	1,453.22	1,436.35	16.86	86.176		
3,000.00	2,990.29	3,362.42	3,312.40	10.85	8.65	78.88	1,254.36	-724.04	1,428.68	1,410.97	17.71	80.685		
3,100.00	3,089.80	3,459.92	3,404.38	11.24	9.20	78.27	1,225.31	-738.20	1,403.98	1,385.45	18.54	75.747		
3,200.00	3,189.32	3,551.38	3,491.04	11.62	9.68	77.73	1,198.63	-750.17	1,379.53	1,360.21	19.32	71.387		
3,300.00	3,288.84	3,653.68	3,588.17	12.01	10.24	77.15	1,169.08	-762.68	1,355.17	1,335.01	20.16	67.209		
3,400.00	3,388.36	3,759.45	3,688.35	12.39	10.86	76.51	1,137.77	-775.77	1,330.33	1,309.29	21.04	63.224		
3,500.00	3,487.87	3,859.53	3,782.96	12.78	11.46	75.87	1,107.54	-788.11	1,305.06	1,283.14	21.92	59.547		
3,600.00	3,587.39	3,948.15	3,866.83	13.16	11.96	75.29	1,081.05	-798.92	1,280.16	1,257.41	22.76	56.255		
3,700.00	3,686.91	4,053.67	3,966.68	13.55	12.57	74.58	1,049.39	-811.57	1,255.24	1,231.59	23.65	53.075		
3,732.10	3,718.86	4,085.65	3,996.90	13.67	12.77	74.35	1,039.63	-815.46	1,247.15	1,223.21	23.94	52.087		
3,800.00	3,786.50	4,149.66	4,057.27	13.93	13.16	73.51	1,019.94	-823.46	1,230.25	1,205.69	24.56	50.101		
3,900.00	3,886.33	4,232.64	4,135.61	14.30	13.65	72.24	994.80	-834.28	1,207.02	1,181.59	25.43	47.465		
4,000.00	3,986.30	4,333.26	4,230.69	14.65	14.23	70.66	964.58	-847.34	1,185.43	1,159.07	26.35	44.985		
4,013.70	4,000.00	4,346.49	4,243.20	14.69	14.30	-29.26	960.60	-849.00	1,182.56	1,156.08	26.48	44.666		
4,100.00	4,086.30	4,430.50	4,322.74	14.98	14.79	-30.32	935.50	-859.03	1,164.72	1,137.46	27.26	42.725		
4,200.00	4,186.30	4,536.00	4,422.49	15.31	15.42	-31.70	903.51	-871.52	1,144.14	1,115.92	28.22	40.546		
4,300.00	4,286.30	4,654.54	4,534.00	15.64	16.18	-33.33	865.52	-884.68	1,122.26	1,093.02	29.24	38.386		
4,400.00	4,386.30	4,743.60	4,617.56	15.98	16.74	-34.61	836.21	-894.20	1,100.13	1,069.92	30.21	36.418		
4,500.00	4,486.30	4,818.98	4,688.60	16.31	17.20	-35.72	812.43	-902.62	1,080.00	1,048.85	31.15	34.669		
4,600.00	4,586.30	4,898.00	4,763.41	16.65	17.63	-36.88	788.71	-911.79	1,062.01	1,029.92	32.09	33.098		
4,700.00	4,686.30	4,991.88	4,852.62	16.99	18.15	-38.27	761.50	-922.54	1,045.42	1,012.36	33.05	31.628		
4,800.00	4,786.30	5,078.24	4,935.01	17.33	18.61	-39.52	737.39	-931.89	1,029.95	995.95	34.00	30.296		
4,900.00	4,886.30	5,160.81	5,014.21	17.66	19.03	-40.68	715.68	-940.50	1,016.12	981.21	34.91	29.104		
5,000.00	4,986.30	5,239.79	5,090.35	18.00	19.41	-41.76	696.41	-948.72	1,004.30	968.50	35.80	28.052		
5,100.00	5,086.30	5,320.19	5,168.30	18.34	19.78	-42.81	678.63	-957.19	994.76	958.10	36.66	27.133		
5,200.00	5,186.30	5,405.04	5,251.11	18.69	20.14	-43.82	662.09	-965.46	987.09	949.59	37.49	26.327		
5,300.00	5,286.30	5,492.54	5,337.09	19.03	20.47	-44.71	647.59	-972.72	980.92	942.64	38.27	25.628		
5,400.00	5,386.30	5,580.18	5,423.68	19.37	20.76	-45.46	635.54	-978.84	976.10	937.10	39.00	25.028		
5,500.00	5,486.30	5,666.00	5,508.78	19.71	21.01	-46.09	625.84	-984.21	972.69	933.01	39.68	24.516		
5,600.00	5,586.30	5,754.73	5,596.94	20.06	21.24	-46.67	617.47	-989.68	970.63	930.31	40.32	24.070		
5,700.00	5,686.30	5,851.51	5,693.33	20.40	21.46	-47.18	610.40	-994.74	969.46	928.51	40.95	23.675		
5,800.00	5,786.30	5,941.79	5,783.45	20.74	21.63	-47.49	606.24	-997.90	968.91	927.41	41.50	23.346		
5,900.00	5,886.30	6,044.52	5,886.13	21.09	21.78	-47.66	604.13	-999.73	968.84	926.82	42.01	23.060		
6,000.00	5,986.30	6,146.75	5,988.36	21.43	21.90	-47.69	603.42	-999.80	968.42	925.94	42.49	22.794		
6,100.00	6,086.30	6,249.88	6,091.49	21.78	22.02	-47.73	602.43	-999.75	967.74	924.78	42.96	22.525		
6,200.00	6,186.30	6,353.57	6,195.17	22.13	22.15	-47.77	601.18	-999.41	966.68	923.24	43.44	22.253		
6,300.00	6,286.30	6,454.59	6,296.19	22.47	22.28	-47.81	599.88	-998.85	965.41	921.49	43.92	21.983		
6,400.00	6,386.30	6,556.46	6,398.04	22.82	22.41	-47.84	598.50	-998.13	963.98	919.58	44.40	21.714		
6,500.00	6,486.30	6,657.86	6,499.42	23.17	22.55	-47.87	596.99	-997.29	962.36	917.48	44.88	21.445		
6,600.00	6,586.30	6,758.24	6,599.78	23.52	22.69	-47.93	595.15	-996.65	960.67	915.30	45.37	21.176		
6,637.50	6,623.80	6,795.88	6,637.42	23.65	22.74	-47.96	594.36	-996.49	960.02	914.47	45.55	21.076		
6,650.00	6,636.30	6,808.42	6,649.96	23.69	22.76	-135.81	594.09	-996.44	959.88	914.27	45.61	21.045		
6,654.85	6,641.15	6,813.29	6,654.83	23.70	22.77	-135.82	593.98	-996.43	959.87	914.23	45.63	21.034 CC, ES		
6,700.00	6,686.22	6,858.56	6,700.08	23.85	22.83	-135.91	592.94	-996.30	960.89	915.03	45.86	20.953		
6,750.00	6,735.84	6,908.38	6,749.89	24.01	22.91	-136.02	591.73	-996.21	964.40	918.29	46.12	20.912 SF		
6,800.00	6,784.91	6,957.64	6,799.13	24.16	22.98	-136.12	590.46	-996.16	970.45	924.07	46.38	20.924		
6,850.00	6,833.20	7,006.09	6,847.56	24.31	23.06	-136.21	589.14	-996.16	979.05	932.41	46.65	20.989		
6,900.00	6,880.46	7,054.61	6,896.06	24.46	23.13	-136.30	587.74	-996.19	990.21	943.29	46.92	21.103		
6,950.00	6,926.48	7,101.90	6,943.32	24.61	23.21	-136.34	586.27	-996.22	1,003.93	956.73	47.20	21.271		
7,000.00	6,971.02	7,147.65	6,989.05	24.76	23.29	-136.31	584.75	-996.25	1,020.22	972.75	47.47	21.491		
7,050.00	7,013.87	7,191.65	7,033.02	24.92	23.36	-136.19	583.21	-996.28	1,039.09	991.35	47.74	21.765		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1357-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		
7,100.00	7,054.82	7,232.83	7,074.18	25.10	23.43	-135.93	581.68	-996.32	1,060.57	1,012.55	48.01	22.089		
7,150.00	7,093.67	7,271.60	7,112.92	25.29	23.50	-135.50	580.19	-996.39	1,084.64	1,036.36	48.28	22.466		
7,200.00	7,130.23	7,308.01	7,149.30	25.52	23.57	-134.87	578.75	-996.49	1,111.27	1,062.73	48.54	22.894		
7,250.00	7,164.32	7,341.87	7,183.13	25.78	23.63	-134.00	577.36	-996.61	1,140.37	1,091.58	48.79	23.372		
7,300.00	7,195.78	7,373.03	7,214.27	26.09	23.68	-132.83	576.05	-996.75	1,171.86	1,122.83	49.04	23.898		
7,350.00	7,224.45	7,402.08	7,243.28	26.44	23.74	-131.32	574.80	-996.89	1,205.61	1,156.34	49.27	24.469		
7,400.00	7,250.20	7,429.83	7,271.01	26.86	23.78	-129.46	573.61	-996.97	1,241.44	1,191.95	49.49	25.084		
7,450.00	7,272.90	7,454.49	7,295.65	27.35	23.83	-127.08	572.58	-996.99	1,279.18	1,229.48	49.70	25.736		
7,500.00	7,292.43	7,475.90	7,317.04	27.90	23.87	-124.08	571.69	-996.96	1,318.67	1,268.76	49.90	26.424		
7,550.00	7,308.70	7,493.92	7,335.05	28.53	23.90	-120.32	570.95	-996.90	1,359.71	1,309.61	50.09	27.144		
7,600.00	7,321.64	7,508.42	7,349.53	29.22	23.92	-115.66	570.37	-996.83	1,402.09	1,351.82	50.27	27.892		
7,650.00	7,331.18	7,519.27	7,360.37	29.99	23.94	-109.95	569.93	-996.77	1,445.61	1,395.18	50.43	28.665		
7,700.00	7,337.27	7,526.37	7,367.47	30.81	23.96	-103.11	569.65	-996.72	1,490.03	1,439.45	50.58	29.459		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Beierle KE 26-361HN - GWOG WELL - GWOG WELL											Offset Site Error: 0.00 usft		
Survey Program: 16-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	
6,000.00	5,986.30	11,718.40	7,499.06	21.43	76.86	-90.48	-48.70	-311.48	1,489.02	1,451.57	37.45	39.764	
6,100.00	6,086.30	11,718.40	7,499.06	21.78	76.86	-90.48	-48.70	-311.48	1,389.04	1,351.51	37.53	37.008	
6,200.00	6,186.30	11,718.40	7,499.06	22.13	76.86	-90.48	-48.70	-311.48	1,289.06	1,251.43	37.63	34.256	
6,300.00	6,286.30	11,718.40	7,499.06	22.47	76.86	-90.48	-48.70	-311.48	1,189.09	1,151.35	37.74	31.509	
6,400.00	6,386.30	11,718.40	7,499.06	22.82	76.86	-90.48	-48.70	-311.48	1,089.11	1,051.26	37.86	28.768	
6,500.00	6,486.30	11,718.40	7,499.06	23.17	76.86	-90.48	-48.70	-311.48	989.15	951.16	37.99	26.036	
6,600.00	6,586.30	11,718.40	7,499.06	23.52	76.86	-90.48	-48.70	-311.48	889.19	851.05	38.14	23.313	
6,637.50	6,623.80	11,718.40	7,499.06	23.65	76.86	-90.48	-48.70	-311.48	851.71	813.51	38.20	22.294	
6,650.00	6,636.30	11,718.39	7,499.06	23.69	76.86	-178.89	-48.70	-311.48	839.23	801.00	38.22	21.955	
6,700.00	6,686.22	11,718.32	7,499.06	23.85	76.85	-179.48	-48.62	-311.48	789.43	751.07	38.36	20.582	
6,750.00	6,735.84	11,718.14	7,499.06	24.01	76.85	-179.59	-48.44	-311.48	740.13	701.55	38.58	19.184	
6,800.00	6,784.91	11,717.86	7,499.06	24.16	76.85	-179.61	-48.16	-311.48	691.69	652.72	38.97	17.748	
6,850.00	6,833.20	11,717.48	7,499.06	24.31	76.84	-179.59	-47.78	-311.48	644.58	604.92	39.66	16.253	
6,900.00	6,880.46	11,717.00	7,499.06	24.46	76.83	-179.55	-47.30	-311.49	599.35	558.53	40.82	14.681	
6,950.00	6,926.48	11,716.42	7,499.06	24.61	76.82	-179.50	-46.73	-311.49	556.73	514.04	42.69	13.042	
7,000.00	6,971.02	11,715.75	7,499.06	24.76	76.81	-179.43	-46.06	-311.50	517.57	472.10	45.47	11.382	
7,050.00	7,013.87	11,715.00	7,499.06	24.92	76.80	-179.35	-45.30	-311.50	482.94	433.60	49.35	9.787	
7,100.00	7,054.82	11,714.15	7,499.06	25.10	76.78	-179.26	-44.46	-311.51	454.07	399.70	54.37	8.352	
7,150.00	7,093.67	11,713.23	7,499.06	25.29	76.77	-179.15	-43.53	-311.52	432.25	371.84	60.40	7.156	
7,200.00	7,130.23	11,712.22	7,499.06	25.52	76.75	-179.03	-42.53	-311.53	418.70	351.64	67.06	6.243	
7,248.18	7,163.13	11,711.19	7,499.06	25.77	76.73	-178.89	-41.50	-311.54	414.31	340.79	73.52	5.635 CC	
7,250.00	7,164.32	11,711.15	7,499.06	25.78	76.73	-178.88	-41.46	-311.54	414.31	340.56	73.75	5.618	
7,300.00	7,195.78	11,710.01	7,499.06	26.09	76.71	-178.72	-40.31	-311.55	419.38	339.54	79.84	5.252 ES	
7,350.00	7,224.45	11,708.80	7,499.06	26.44	76.69	-178.52	-39.11	-311.56	433.56	348.68	84.89	5.107 SF	
7,400.00	7,250.20	11,707.54	7,499.06	26.86	76.67	-178.28	-37.85	-311.57	455.94	367.21	88.73	5.138	
7,450.00	7,272.90	11,706.23	7,499.06	27.35	76.65	-177.99	-36.54	-311.58	485.27	393.81	91.46	5.306	
7,500.00	7,292.43	11,704.88	7,499.06	27.90	76.63	-177.62	-35.18	-311.59	520.26	426.96	93.30	5.576	
7,550.00	7,308.70	11,703.48	7,499.06	28.53	76.60	-177.14	-33.79	-311.60	559.69	465.20	94.49	5.923	
7,600.00	7,321.64	11,702.06	7,499.06	29.22	76.58	-176.50	-32.37	-311.61	602.52	507.29	95.23	6.327	
7,650.00	7,331.18	11,700.62	7,499.06	29.99	76.55	-175.59	-30.93	-311.63	647.89	552.21	95.68	6.771	
7,700.00	7,337.27	11,699.16	7,499.06	30.81	76.53	-174.18	-29.47	-311.64	695.10	599.16	95.94	7.245	
7,750.00	7,339.89	11,697.69	7,499.06	31.68	76.50	-171.72	-28.00	-311.65	743.60	647.51	96.09	7.739	
7,762.50	7,340.00	11,697.32	7,499.06	31.90	76.50	-170.80	-27.63	-311.65	755.87	659.76	96.11	7.865	
7,800.00	7,340.00	11,696.22	7,499.06	32.60	76.48	-170.34	-26.53	-311.66	792.77	696.61	96.16	8.244	
7,900.00	7,340.00	11,693.28	7,499.06	34.58	76.43	-169.13	-23.58	-311.69	891.43	795.18	96.25	9.261	
8,000.00	7,340.00	11,690.34	7,499.06	36.74	76.38	-167.94	-20.64	-311.71	990.35	894.05	96.30	10.284	
8,100.00	7,340.00	11,687.39	7,499.06	39.04	76.33	-166.75	-17.70	-311.74	1,089.46	993.14	96.31	11.312	
8,200.00	7,340.00	11,684.45	7,499.06	41.45	76.28	-165.57	-14.76	-311.76	1,188.71	1,092.40	96.31	12.342	
8,300.00	7,340.00	11,681.51	7,499.06	43.97	76.23	-164.41	-11.82	-311.79	1,288.07	1,191.77	96.30	13.376	
8,400.00	7,340.00	11,678.57	7,499.06	46.57	76.18	-163.26	-8.87	-311.81	1,387.51	1,291.24	96.28	14.412	
8,500.00	7,340.00	11,675.62	7,499.06	49.24	76.13	-162.12	-5.93	-311.83	1,487.03	1,390.78	96.25	15.450	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Sam 1 (EXISTING) - CPR WELL - NO SURVEYS										Offset Site Error:		0.00 usft	
Survey Program: 500-ISCWSA MWD										Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	84.26	133.29	1,325.84	1,333.09				
100.00	100.00	61.00	61.00	0.14	0.07	84.26	133.29	1,325.84	1,332.52	1,332.32	0.21	6,498.295	
200.00	200.00	161.00	161.00	0.50	0.18	84.26	133.29	1,325.84	1,332.52	1,331.85	0.67	1,978.682	
300.00	300.00	261.00	261.00	0.85	0.29	84.26	133.29	1,325.84	1,332.52	1,331.38	1.14	1,167.014	
400.00	400.00	361.00	361.00	1.21	0.40	84.26	133.29	1,325.84	1,332.52	1,330.91	1.61	827.549	
500.00	500.00	461.00	461.00	1.57	0.51	84.26	133.29	1,325.84	1,332.52	1,330.44	2.08	641.071	
504.51	504.51	465.51	465.51	1.59	0.51	84.26	133.29	1,325.84	1,332.52	1,330.42	2.10	634.627	CC, ES
600.00	600.00	500.00	500.00	1.93	0.55	84.26	133.29	1,325.84	1,333.92	1,331.40	2.51	530.825	
700.00	700.00	500.00	500.00	2.29	0.55	84.26	133.29	1,325.84	1,342.21	1,339.18	3.03	442.916	
800.00	800.00	500.00	500.00	2.65	0.55	84.26	133.29	1,325.84	1,357.84	1,354.23	3.61	376.136	
900.00	899.98	500.00	500.00	3.00	0.55	-176.01	133.29	1,325.84	1,382.23	1,378.04	4.19	329.667	
1,000.00	999.84	500.00	500.00	3.34	0.55	-175.96	133.29	1,325.84	1,416.54	1,411.79	4.75	298.264	
1,081.60	1,081.14	500.00	500.00	3.63	0.55	-175.90	133.29	1,325.84	1,451.38	1,446.20	5.17	280.601	
1,100.00	1,099.46	500.00	500.00	3.69	0.55	-175.90	133.29	1,325.84	1,459.98	1,454.71	5.27	277.189	SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1386-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	84.51	126.26	1,313.02	1,319.18					
100.00	100.00	83.00	83.00	0.14	0.09	84.51	126.26	1,313.02	1,319.07	1,318.84	0.23	5,729.796		
200.00	200.00	183.00	183.00	0.50	0.20	84.51	126.26	1,313.02	1,319.07	1,318.37	0.70	1,885.008		
300.00	300.00	283.00	283.00	0.85	0.31	84.51	126.26	1,313.02	1,319.07	1,317.90	1.17	1,128.061		
400.00	400.00	383.00	383.00	1.21	0.43	84.51	126.26	1,313.02	1,319.07	1,317.43	1.64	804.860		
500.00	500.00	483.00	483.00	1.57	0.54	84.51	126.26	1,313.02	1,319.07	1,316.96	2.11	625.615		
600.00	600.00	583.00	583.00	1.93	0.65	84.51	126.26	1,313.02	1,319.07	1,316.49	2.58	511.665		
700.00	700.00	683.00	683.00	2.29	0.76	84.51	126.26	1,313.02	1,319.07	1,316.02	3.05	432.830		
800.00	800.00	783.00	783.00	2.65	0.87	84.51	126.26	1,313.02	1,319.07	1,315.56	3.52	375.044		
900.00	899.98	882.98	882.98	3.00	0.98	-175.80	126.26	1,313.02	1,320.81	1,316.84	3.98	332.132		
1,000.00	999.84	982.84	982.84	3.34	1.09	-175.81	126.26	1,313.02	1,326.03	1,321.60	4.43	299.253		
1,081.60	1,081.14	1,064.14	1,064.14	3.63	1.18	-175.82	126.26	1,313.02	1,332.86	1,328.06	4.81	277.382		
1,100.00	1,099.46	1,082.46	1,082.46	3.69	1.20	-175.83	126.26	1,313.02	1,334.67	1,329.77	4.89	272.893		
1,200.00	1,198.98	1,181.98	1,181.98	4.05	1.31	-175.86	126.26	1,313.02	1,344.45	1,339.11	5.35	251.427		
1,300.00	1,298.49	1,281.49	1,281.49	4.41	1.42	-175.89	126.26	1,313.02	1,354.24	1,348.44	5.81	233.219		
1,400.00	1,398.01	1,381.01	1,381.01	4.78	1.53	-175.92	126.26	1,313.02	1,364.03	1,357.76	6.27	217.603		
1,500.00	1,497.53	1,470.56	1,470.56	5.15	1.72	-175.95	126.40	1,313.31	1,374.16	1,367.35	6.81	201.810		
1,600.00	1,597.04	1,636.24	1,636.18	5.52	2.07	-176.09	128.43	1,310.87	1,382.83	1,375.29	7.55	183.223		
1,700.00	1,696.56	1,840.92	1,840.01	5.90	2.54	-176.53	136.10	1,294.51	1,385.34	1,376.93	8.41	164.778		
1,800.00	1,796.08	2,008.31	2,005.08	6.28	3.02	-177.15	147.52	1,269.50	1,380.88	1,371.68	9.20	150.127		
1,900.00	1,895.60	2,170.49	2,162.92	6.65	3.61	-178.11	165.66	1,237.06	1,371.97	1,361.93	10.04	136.641		
2,000.00	1,995.11	2,314.10	2,300.65	7.03	4.28	-179.21	186.60	1,202.24	1,359.40	1,348.50	10.90	124.685		
2,100.00	2,094.63	2,451.32	2,430.75	7.41	5.02	-179.62	207.83	1,164.17	1,343.58	1,331.78	11.80	113.817		
2,200.00	2,194.15	2,540.39	2,514.79	7.79	5.51	-178.79	222.54	1,138.57	1,327.33	1,314.77	12.56	105.665		
2,300.00	2,293.67	2,631.65	2,601.08	8.17	5.99	-177.95	237.32	1,112.81	1,311.88	1,298.55	13.33	98.410		
2,400.00	2,393.18	2,722.24	2,686.84	8.55	6.48	-177.09	251.91	1,087.55	1,297.09	1,282.98	14.11	91.902		
2,500.00	2,492.70	2,803.00	2,763.63	8.94	6.91	-176.34	264.48	1,065.90	1,283.59	1,268.72	14.87	86.328		
2,600.00	2,592.22	2,922.14	2,876.68	9.32	7.59	-175.20	283.32	1,033.37	1,269.96	1,254.15	15.81	80.324		
2,700.00	2,691.73	3,018.28	2,967.76	9.70	8.16	-174.26	298.24	1,006.49	1,256.02	1,239.34	16.68	75.292		
2,800.00	2,791.25	3,116.36	3,060.55	10.09	8.76	-173.24	314.21	978.99	1,242.53	1,224.94	17.59	70.626		
2,900.00	2,890.77	3,221.33	3,159.41	10.47	9.44	-172.08	332.35	948.72	1,228.93	1,210.33	18.59	66.096		
3,000.00	2,990.29	3,315.29	3,247.51	10.85	10.07	-170.95	349.61	920.98	1,215.41	1,195.83	19.58	62.087		
3,100.00	3,089.80	3,407.70	3,334.23	11.24	10.66	-169.82	366.90	894.16	1,202.96	1,182.40	20.56	58.520		
3,200.00	3,189.32	3,503.63	3,424.46	11.62	11.26	-168.66	383.97	866.39	1,190.88	1,169.32	21.56	55.248		
3,300.00	3,288.84	3,597.15	3,512.45	12.01	11.85	-167.50	400.87	839.62	1,179.70	1,157.14	22.56	52.287		
3,400.00	3,388.36	3,693.86	3,603.52	12.39	12.45	-166.30	417.97	811.94	1,168.94	1,145.35	23.59	49.550		
3,500.00	3,487.87	3,784.29	3,688.88	12.78	13.01	-165.19	433.55	786.47	1,158.97	1,134.37	24.59	47.125		
3,600.00	3,587.39	3,874.85	3,774.38	13.16	13.57	-164.05	449.67	761.36	1,150.15	1,124.53	25.61	44.905		
3,700.00	3,686.91	3,974.99	3,869.18	13.55	14.19	-162.80	466.84	734.02	1,142.01	1,115.33	26.68	42.801		
3,732.10	3,718.86	4,009.57	3,901.93	13.67	14.40	-162.38	472.54	724.51	1,139.37	1,112.34	27.04	42.144		
3,800.00	3,786.50	4,079.84	3,968.50	13.93	14.83	-161.46	483.83	705.04	1,132.95	1,105.18	27.77	40.796		
3,900.00	3,886.33	4,170.64	4,054.54	14.30	15.39	-160.20	498.17	679.84	1,121.05	1,092.25	28.80	38.922		
4,000.00	3,986.30	4,273.69	4,152.14	14.65	16.03	-158.63	515.24	651.50	1,107.09	1,077.18	29.92	37.006		
4,013.70	4,000.00	4,291.43	4,168.92	14.69	16.14	-158.66	518.05	646.48	1,104.84	1,074.75	30.09	36.720		
4,100.00	4,086.30	4,379.82	4,252.54	14.98	16.69	-157.35	531.39	621.14	1,090.17	1,059.13	31.04	35.125		
4,200.00	4,186.30	4,468.72	4,336.70	15.31	17.24	-156.00	544.67	595.75	1,073.87	1,041.79	32.08	33.472		
4,300.00	4,286.30	4,561.86	4,424.61	15.64	17.85	-154.49	559.84	568.99	1,058.86	1,025.66	33.19	31.900		
4,400.00	4,386.30	4,658.53	4,515.36	15.98	18.51	-152.81	576.68	540.27	1,044.52	1,010.14	34.37	30.387		
4,500.00	4,486.30	4,747.64	4,598.94	16.31	19.10	-151.21	592.42	513.64	1,031.14	995.62	35.51	29.034		
4,600.00	4,586.30	4,841.39	4,687.41	16.65	19.70	-149.57	608.08	486.90	1,019.20	982.55	36.65	27.812		
4,700.00	4,686.30	4,933.37	4,774.42	16.99	20.28	-147.96	622.84	460.97	1,008.06	970.30	37.76	26.697		
4,800.00	4,786.30	5,026.82	4,862.61	17.33	20.89	-146.26	638.70	434.45	998.29	959.39	38.90	25.662		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1386-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	4,886.30	5,117.59	4,948.22	17.66	21.47	44.57	654.18	408.55	989.49	949.47	40.02	24.724		
5,000.00	4,986.30	5,206.32	5,032.31	18.00	22.02	42.96	668.98	384.41	982.36	941.27	41.09	23.908		
5,100.00	5,086.30	5,296.08	5,117.83	18.34	22.53	41.39	683.34	361.24	976.63	934.52	42.11	23.194		
5,200.00	5,186.30	5,387.51	5,205.87	18.69	23.01	39.96	696.34	340.34	972.35	929.29	43.06	22.583		
5,300.00	5,286.30	5,484.55	5,300.27	19.03	23.46	38.64	707.93	321.06	968.90	924.96	43.95	22.048		
5,400.00	5,386.30	5,583.56	5,397.35	19.37	23.85	37.51	717.41	304.17	965.86	921.11	44.76	21.580		
5,500.00	5,486.30	5,680.40	5,492.92	19.71	24.19	36.59	724.62	290.25	963.12	917.63	45.49	21.172		
5,600.00	5,586.30	5,778.78	5,590.31	20.06	24.49	35.77	730.95	277.94	960.90	914.72	46.18	20.807		
5,700.00	5,686.30	5,878.59	5,689.38	20.40	24.77	35.06	736.15	266.88	958.71	911.88	46.84	20.470		
5,800.00	5,786.30	5,974.51	5,784.81	20.74	25.00	34.49	740.02	258.12	956.81	909.37	47.44	20.169		
5,900.00	5,886.30	6,082.05	5,891.99	21.09	25.23	33.98	743.26	249.99	955.06	907.03	48.03	19.886		
6,000.00	5,986.30	6,175.52	5,985.30	21.43	25.40	33.67	744.38	244.54	952.82	904.26	48.56	19.623		
6,100.00	6,086.30	6,274.69	6,084.39	21.78	25.54	33.47	744.95	240.92	951.28	902.22	49.05	19.392		
6,200.00	6,186.30	6,377.68	6,187.34	22.13	25.67	33.34	744.69	238.07	949.54	900.01	49.53	19.170		
6,300.00	6,286.30	6,478.40	6,288.04	22.47	25.79	33.26	743.71	236.00	947.60	897.61	49.99	18.954		
6,400.00	6,386.30	6,580.87	6,390.49	22.82	25.89	33.23	742.24	234.37	945.53	895.08	50.45	18.743		
6,500.00	6,486.30	6,684.21	6,493.80	23.17	26.00	33.23	740.18	232.95	943.11	892.21	50.89	18.531		
6,600.00	6,586.30	6,788.43	6,597.97	23.52	26.09	33.26	737.46	231.77	940.30	888.98	51.33	18.320		
6,637.50	6,623.80	6,827.79	6,637.31	23.65	26.13	33.28	736.20	231.42	939.12	887.64	51.49	18.240		
6,650.00	6,636.30	6,840.91	6,650.42	23.69	26.14	-54.58	735.76	231.32	938.65	887.11	51.54	18.213		
6,700.00	6,686.22	6,893.27	6,702.74	23.85	26.18	-54.88	733.82	230.98	935.41	883.67	51.74	18.079		
6,750.00	6,735.84	6,946.30	6,755.73	24.01	26.23	-55.50	731.61	230.73	930.04	878.11	51.93	17.908		
6,800.00	6,784.91	6,999.84	6,809.21	24.16	26.27	-56.46	729.07	230.50	922.51	870.40	52.12	17.700		
6,850.00	6,833.20	7,052.16	6,861.46	24.31	26.30	-57.76	726.29	230.27	912.92	860.63	52.30	17.456		
6,900.00	6,880.46	7,100.08	6,909.30	24.46	26.34	-59.35	723.57	230.11	901.52	849.04	52.48	17.178		
6,950.00	6,926.48	7,146.68	6,955.82	24.61	26.37	-61.25	720.84	230.00	888.56	835.91	52.66	16.874		
7,000.00	6,971.02	7,191.28	7,000.33	24.76	26.39	-63.44	718.15	229.98	874.28	821.45	52.83	16.550		
7,050.00	7,013.87	7,234.27	7,043.24	24.92	26.42	-65.91	715.50	230.06	858.93	805.94	52.99	16.208		
7,100.00	7,054.82	7,275.46	7,084.35	25.10	26.44	-68.64	712.90	230.23	842.80	789.65	53.15	15.856		
7,150.00	7,093.67	7,314.66	7,123.47	25.29	26.47	-71.58	710.37	230.46	826.21	772.90	53.31	15.499		
7,200.00	7,130.23	7,353.94	7,162.66	25.52	26.49	-74.77	707.75	230.77	809.50	756.05	53.45	15.146		
7,250.00	7,164.32	7,392.26	7,200.88	25.78	26.51	-78.13	704.99	231.08	792.95	739.38	53.57	14.802		
7,300.00	7,195.78	7,427.60	7,236.12	26.09	26.52	-81.48	702.26	231.38	777.01	723.31	53.69	14.471		
7,350.00	7,224.45	7,459.33	7,267.73	26.44	26.54	-84.69	699.66	231.66	762.18	708.36	53.82	14.161		
7,400.00	7,250.20	7,487.86	7,296.16	26.86	26.55	-87.67	697.21	231.93	748.98	695.02	53.95	13.882		
7,450.00	7,272.90	7,513.06	7,321.26	27.35	26.56	-90.34	694.96	232.17	737.90	683.82	54.08	13.644		
7,500.00	7,292.43	7,531.33	7,339.45	27.90	26.57	-92.35	693.30	232.34	729.44	675.20	54.24	13.449		
7,550.00	7,308.70	7,544.68	7,352.75	28.53	26.58	-93.78	692.15	232.41	724.10	669.71	54.40	13.312		
7,600.00	7,321.64	7,555.07	7,363.10	29.22	26.58	-94.73	691.29	232.42	722.18	667.66	54.52	13.246		
7,601.95	7,322.08	7,555.42	7,363.45	29.25	26.58	-94.76	691.26	232.42	722.18	667.65	54.53	13.245 CC, ES, SF		
7,650.00	7,331.18	7,562.53	7,370.54	29.99	26.59	-95.18	690.69	232.41	723.87	669.27	54.60	13.257		
7,700.00	7,337.27	7,567.12	7,375.12	30.81	26.59	-95.11	690.33	232.40	729.23	674.60	54.62	13.350		
7,750.00	7,339.89	7,568.91	7,376.90	31.68	26.59	-94.52	690.20	232.39	738.23	683.64	54.58	13.524		
7,762.50	7,340.00	7,568.93	7,376.92	31.90	26.59	-94.29	690.20	232.39	741.03	686.47	54.57	13.581		
7,800.00	7,340.00	7,568.72	7,376.71	32.60	26.59	-94.27	690.21	232.40	750.65	696.16	54.49	13.776		
7,900.00	7,340.00	7,568.20	7,376.19	34.58	26.59	-94.23	690.25	232.40	784.53	730.33	54.20	14.475		
8,000.00	7,340.00	7,567.70	7,375.70	36.74	26.59	-94.19	690.29	232.40	829.16	775.33	53.83	15.403		
8,100.00	7,340.00	7,567.22	7,375.22	39.04	26.59	-94.16	690.33	232.40	882.91	829.46	53.45	16.520		
8,200.00	7,340.00	7,566.76	7,374.76	41.45	26.59	-94.12	690.36	232.40	944.22	891.13	53.08	17.787		
8,300.00	7,340.00	7,566.32	7,374.32	43.97	26.59	-94.08	690.40	232.40	1,011.71	958.88	52.83	19.152		
8,400.00	7,340.00	7,565.89	7,373.89	46.57	26.59	-94.05	690.43	232.41	1,084.24	1,031.54	52.70	20.573		
8,500.00	7,340.00	7,565.48	7,373.48	49.24	26.59	-94.02	690.46	232.41	1,160.86	1,108.24	52.62	22.062		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1386-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	7,340.00	7,565.09	7,373.09	51.97	26.59	-93.99	690.49	232.41	1,240.81	1,188.24	52.57	23.605		
8,700.00	7,340.00	7,564.71	7,372.71	54.75	26.59	-93.96	690.52	232.41	1,323.48	1,270.94	52.54	25.189		
8,800.00	7,340.00	7,564.34	7,372.35	57.58	26.59	-93.93	690.55	232.41	1,408.41	1,355.87	52.54	26.808		
8,900.00	7,340.00	7,563.99	7,371.99	60.44	26.59	-93.90	690.58	232.41	1,495.20	1,442.65	52.55	28.454		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - 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	0.00	0.00	0.00	0.00	0.04	60.10	0.04	60.10				
100.00	100.00	100.00	100.00	0.14	0.14	0.04	60.10	0.04	60.10	59.83	0.28	217.749	
200.00	200.00	200.00	200.00	0.50	0.50	0.04	60.10	0.04	60.10	59.11	0.99	60.529 CC, ES	
300.00	300.00	297.97	297.95	0.85	0.85	-0.35	61.73	-0.38	61.76	60.02	1.74	35.408	
400.00	400.00	395.71	395.56	1.21	1.21	-1.40	66.57	-1.63	66.74	64.22	2.52	26.454	
500.00	500.00	493.00	492.49	1.57	1.56	-2.84	74.60	-3.71	75.07	71.76	3.30	22.726	
600.00	600.00	589.62	588.42	1.93	1.92	-4.39	85.72	-6.58	86.74	82.67	4.08	21.274	
700.00	700.00	685.35	683.03	2.29	2.30	-5.85	99.81	-10.22	101.76	96.92	4.84	21.016	
800.00	800.00	780.00	776.05	2.65	2.69	-7.13	116.75	-14.60	120.08	114.48	5.59	21.464	
900.00	899.98	876.04	869.91	3.00	3.10	91.77	136.45	-19.69	141.16	134.88	6.27	22.497	
1,000.00	999.84	973.67	965.26	3.34	3.53	92.30	156.73	-24.94	162.65	155.71	6.94	23.440	
1,081.60	1,081.14	1,053.20	1,042.94	3.63	3.89	93.39	173.25	-29.21	180.36	172.87	7.49	24.073	
1,100.00	1,099.46	1,071.12	1,060.44	3.69	3.97	93.76	176.97	-30.17	184.39	176.77	7.62	24.201	
1,200.00	1,198.98	1,168.50	1,155.55	4.05	4.41	95.53	197.20	-35.40	206.37	198.06	8.31	24.823	
1,300.00	1,298.49	1,265.87	1,250.66	4.41	4.85	96.96	217.43	-40.63	228.51	219.49	9.02	25.331	
1,400.00	1,398.01	1,363.25	1,345.77	4.78	5.30	98.13	237.66	-45.86	250.76	241.02	9.74	25.751	
1,500.00	1,497.53	1,460.62	1,440.87	5.15	5.74	99.12	257.89	-51.09	273.09	262.63	10.46	26.102	
1,600.00	1,597.04	1,558.00	1,535.98	5.52	6.19	99.95	278.12	-56.32	295.49	284.30	11.19	26.398	
1,700.00	1,696.56	1,655.37	1,631.09	5.90	6.64	100.67	298.35	-61.55	317.94	306.01	11.93	26.651	
1,800.00	1,796.08	1,752.75	1,726.20	6.28	7.09	101.29	318.58	-66.78	340.43	327.76	12.67	26.869	
1,900.00	1,895.60	1,850.13	1,821.30	6.65	7.55	101.84	338.81	-72.01	362.96	349.54	13.41	27.059	
2,000.00	1,995.11	1,947.50	1,916.41	7.03	8.00	102.32	359.04	-77.23	385.51	371.35	14.16	27.224	
2,100.00	2,094.63	2,044.88	2,011.52	7.41	8.45	102.75	379.27	-82.46	408.09	393.18	14.91	27.371	
2,200.00	2,194.15	2,142.25	2,106.63	7.79	8.90	103.14	399.49	-87.69	430.68	415.02	15.66	27.500	
2,300.00	2,293.67	2,239.63	2,201.73	8.17	9.36	103.48	419.72	-92.92	453.29	436.88	16.41	27.616	
2,400.00	2,393.18	2,337.00	2,296.84	8.55	9.81	103.79	439.95	-98.15	475.92	458.75	17.17	27.720	
2,500.00	2,492.70	2,434.38	2,391.95	8.94	10.27	104.08	460.18	-103.38	498.56	480.63	17.92	27.813	
2,600.00	2,592.22	2,531.75	2,487.06	9.32	10.72	104.34	480.41	-108.61	521.20	502.52	18.68	27.898	
2,700.00	2,691.73	2,629.13	2,582.16	9.70	11.18	104.58	500.64	-113.84	543.86	524.42	19.44	27.975	
2,800.00	2,791.25	2,726.50	2,677.27	10.09	11.63	104.80	520.87	-119.07	566.53	546.33	20.20	28.046	
2,900.00	2,890.77	2,823.88	2,772.38	10.47	12.08	105.00	541.10	-124.30	589.20	568.24	20.96	28.111	
3,000.00	2,990.29	2,921.26	2,867.48	10.85	12.54	105.19	561.33	-129.53	611.88	590.16	21.72	28.170	
3,100.00	3,089.80	3,018.63	2,962.59	11.24	13.00	105.36	581.56	-134.76	634.57	612.08	22.48	28.225	
3,200.00	3,189.32	3,116.01	3,057.70	11.62	13.45	105.52	601.79	-139.99	657.26	634.01	23.24	28.276	
3,300.00	3,288.84	3,213.38	3,152.81	12.01	13.91	105.67	622.01	-145.22	679.95	655.94	24.01	28.323	
3,400.00	3,388.36	3,310.76	3,247.91	12.39	14.36	105.81	642.24	-150.45	702.65	677.88	24.77	28.366	
3,500.00	3,487.87	3,408.13	3,343.02	12.78	14.82	105.95	662.47	-155.68	725.35	699.82	25.53	28.407	
3,600.00	3,587.39	3,505.51	3,438.13	13.16	15.27	106.07	682.70	-160.90	748.06	721.76	26.30	28.445	
3,700.00	3,686.91	3,602.88	3,533.24	13.55	15.73	106.19	702.93	-166.13	770.77	743.71	27.06	28.481	
3,732.10	3,718.86	3,634.15	3,563.77	13.67	15.88	106.22	709.43	-167.81	778.06	750.75	27.31	28.492	
3,800.00	3,786.50	3,700.32	3,628.40	13.93	16.18	106.54	723.17	-171.37	793.26	765.44	27.82	28.511	
3,900.00	3,886.33	3,797.92	3,723.73	14.30	16.64	106.78	743.45	-176.61	814.84	786.27	28.57	28.526	
4,000.00	3,986.30	3,895.61	3,819.14	14.65	17.10	106.79	763.74	-181.85	835.45	806.16	29.29	28.525	
4,013.70	4,000.00	3,908.99	3,832.21	14.69	17.16	7.07	766.52	-182.57	838.20	808.82	29.38	28.525	
4,100.00	4,086.30	3,993.28	3,914.54	14.98	17.56	6.62	784.03	-187.10	855.50	825.51	29.99	28.525	
4,200.00	4,186.30	4,090.95	4,009.93	15.31	18.01	6.11	804.32	-192.34	875.61	844.92	30.70	28.526	
4,300.00	4,286.30	4,188.62	4,105.33	15.64	18.47	5.63	824.61	-197.59	895.79	864.39	31.40	28.529	
4,400.00	4,386.30	4,286.29	4,200.72	15.98	18.93	5.17	844.90	-202.83	916.02	883.91	32.11	28.532	
4,500.00	4,486.30	4,383.96	4,296.12	16.31	19.39	4.73	865.19	-208.08	936.30	903.49	32.81	28.536	
4,600.00	4,586.30	4,481.63	4,391.52	16.65	19.84	4.31	885.49	-213.32	956.64	923.12	33.52	28.541	
4,700.00	4,686.30	4,579.30	4,486.91	16.99	20.30	3.90	905.78	-218.57	977.02	942.80	34.23	28.546	
4,800.00	4,786.30	4,676.97	4,582.31	17.33	20.76	3.51	926.07	-223.82	997.45	962.52	34.93	28.552	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,886.30	4,774.64	4,677.70	17.66	21.22	3.14	946.36	-229.06	1,017.93	982.28	35.64	28.558	
5,000.00	4,986.30	4,872.31	4,773.10	18.00	21.68	2.78	966.65	-234.31	1,038.44	1,002.08	36.35	28.565	
5,100.00	5,086.30	4,969.99	4,868.50	18.34	22.13	2.44	986.94	-239.55	1,058.99	1,021.92	37.06	28.571	
5,200.00	5,186.30	5,067.66	4,963.89	18.69	22.59	2.11	1,007.23	-244.80	1,079.57	1,041.79	37.78	28.578	
5,300.00	5,286.30	5,165.33	5,059.29	19.03	23.05	1.79	1,027.52	-250.04	1,100.19	1,061.70	38.49	28.585	
5,400.00	5,386.30	5,263.00	5,154.68	19.37	23.51	1.48	1,047.81	-255.29	1,120.84	1,081.64	39.20	28.592	
5,500.00	5,486.30	5,360.67	5,250.08	19.71	23.96	1.19	1,068.10	-260.53	1,141.52	1,101.60	39.91	28.600	
5,600.00	5,586.30	5,458.34	5,345.48	20.06	24.42	0.90	1,088.39	-265.78	1,162.22	1,121.60	40.63	28.607	
5,700.00	5,686.30	5,556.01	5,440.87	20.40	24.88	0.63	1,108.68	-271.02	1,182.96	1,141.62	41.34	28.614	
5,800.00	5,786.30	5,653.68	5,536.27	20.74	25.34	0.36	1,128.97	-276.27	1,203.72	1,161.66	42.06	28.622	
5,900.00	5,886.30	5,754.90	5,664.67	21.09	25.94	0.03	1,155.15	-283.03	1,223.85	1,180.83	43.02	28.651	
6,000.00	5,986.30	5,954.24	5,831.86	21.43	26.64	-0.28	1,181.00	-289.72	1,239.15	1,195.02	44.13	28.079	
6,100.00	6,086.30	6,126.20	6,002.96	21.78	27.27	-0.47	1,197.43	-293.97	1,248.73	1,203.64	45.09	27.694	
6,200.00	6,186.30	6,299.60	6,176.20	22.13	27.81	-0.55	1,203.91	-295.64	1,252.47	1,206.60	45.87	27.302	
6,300.00	6,286.30	6,409.70	6,286.30	22.47	28.12	-0.55	1,204.00	-295.66	1,252.53	1,205.98	46.55	26.908	
6,400.00	6,386.30	6,509.70	6,386.30	22.82	28.40	-0.55	1,204.00	-295.66	1,252.53	1,205.31	47.22	26.524	
6,500.00	6,486.30	6,609.70	6,486.30	23.17	28.68	-0.55	1,204.00	-295.66	1,252.53	1,204.63	47.90	26.150	
6,600.00	6,586.30	6,709.70	6,586.30	23.52	28.96	-0.55	1,204.00	-295.66	1,252.53	1,203.96	48.57	25.786	
6,637.50	6,623.80	6,747.20	6,623.80	23.65	29.07	-0.55	1,204.00	-295.66	1,252.53	1,203.70	48.83	25.652	
6,650.00	6,636.30	6,759.70	6,636.30	23.69	29.11	-88.39	1,204.00	-295.66	1,252.53	1,203.62	48.91	25.609	
6,700.00	6,686.22	6,809.62	6,686.22	23.85	29.25	-88.51	1,204.00	-295.66	1,252.46	1,203.22	49.23	25.440	
6,750.00	6,735.84	6,859.67	6,736.24	24.01	29.39	-88.75	1,204.01	-294.40	1,252.30	1,202.77	49.54	25.280	
6,800.00	6,784.91	6,910.08	6,786.42	24.16	29.52	-88.99	1,204.06	-289.65	1,252.08	1,202.25	49.83	25.127	
6,850.00	6,833.20	6,960.85	6,836.49	24.31	29.65	-89.24	1,204.15	-281.31	1,251.77	1,201.66	50.11	24.978	
6,900.00	6,880.46	7,011.97	6,886.18	24.46	29.77	-89.49	1,204.27	-269.34	1,251.40	1,201.00	50.39	24.832	
6,950.00	6,926.48	7,063.45	6,935.23	24.61	29.88	-89.75	1,204.43	-253.75	1,250.94	1,200.27	50.67	24.688	
7,000.00	6,971.02	7,115.28	6,983.35	24.76	29.99	-90.01	1,204.62	-234.53	1,250.42	1,199.47	50.95	24.541	
7,050.00	7,013.87	7,167.47	7,030.27	24.92	30.10	-90.27	1,204.85	-211.71	1,249.82	1,198.58	51.24	24.390	
7,100.00	7,054.82	7,220.00	7,075.70	25.10	30.19	-90.53	1,205.12	-185.36	1,249.16	1,197.60	51.56	24.229	
7,150.00	7,093.67	7,272.87	7,119.34	25.29	30.28	-90.78	1,205.43	-155.54	1,248.42	1,196.52	51.90	24.053	
7,200.00	7,130.23	7,326.06	7,160.92	25.52	30.35	-91.04	1,205.76	-122.38	1,247.62	1,195.32	52.30	23.855	
7,250.00	7,164.32	7,379.57	7,200.14	25.78	30.42	-91.28	1,206.13	-86.00	1,246.75	1,193.99	52.76	23.630	
7,300.00	7,195.78	7,433.38	7,236.73	26.09	30.48	-91.53	1,206.53	-46.56	1,245.82	1,192.51	53.31	23.370	
7,350.00	7,224.45	7,487.47	7,270.43	26.44	30.53	-91.76	1,206.96	-4.27	1,244.82	1,190.87	53.96	23.070	
7,400.00	7,250.20	7,541.82	7,300.97	26.86	30.58	-91.99	1,207.42	40.67	1,243.77	1,189.04	54.73	22.725	
7,450.00	7,272.90	7,596.41	7,328.13	27.35	30.61	-92.20	1,207.90	88.00	1,242.67	1,187.02	55.64	22.333	
7,500.00	7,292.43	7,651.20	7,351.69	27.90	30.64	-92.41	1,208.40	137.45	1,241.50	1,184.80	56.70	21.895	
7,550.00	7,308.70	7,706.17	7,371.46	28.53	30.67	-92.60	1,208.92	188.73	1,240.30	1,182.37	57.92	21.412	
7,600.00	7,321.64	7,761.30	7,387.27	29.22	30.74	-92.78	1,209.46	241.52	1,239.04	1,179.74	59.30	20.894	
7,650.00	7,331.18	7,816.54	7,399.00	29.99	31.23	-92.94	1,210.01	295.48	1,237.75	1,176.92	60.83	20.348	
7,700.00	7,337.27	7,871.87	7,406.55	30.81	32.06	-93.09	1,210.57	350.28	1,236.42	1,173.93	62.49	19.784	
7,750.00	7,339.89	7,927.24	7,409.84	31.68	32.97	-93.22	1,211.13	405.54	1,235.06	1,170.79	64.27	19.215	
7,762.50	7,340.00	7,941.10	7,410.00	31.90	33.21	-93.25	1,211.27	419.39	1,234.72	1,169.98	64.73	19.074	
7,800.00	7,340.00	7,978.69	7,410.00	32.60	33.89	-93.25	1,211.65	456.98	1,233.68	1,167.58	66.10	18.664	
7,900.00	7,340.00	8,078.65	7,410.00	34.58	35.82	-93.26	1,212.67	556.94	1,230.92	1,160.93	70.00	17.585	
8,000.00	7,340.00	8,178.61	7,410.00	36.74	37.92	-93.27	1,213.68	656.89	1,228.17	1,153.93	74.24	16.544	
8,100.00	7,340.00	8,278.57	7,410.00	39.04	40.16	-93.28	1,214.70	756.85	1,225.41	1,146.64	78.76	15.558	
8,200.00	7,340.00	8,378.53	7,410.00	41.45	42.52	-93.28	1,215.71	856.81	1,222.65	1,139.11	83.53	14.637	
8,300.00	7,340.00	8,478.50	7,410.00	43.97	44.99	-93.29	1,216.73	956.76	1,219.89	1,131.38	88.51	13.783	
8,400.00	7,340.00	8,578.46	7,410.00	46.57	47.54	-93.30	1,217.75	1,056.72	1,217.13	1,123.47	93.65	12.996	
8,500.00	7,340.00	8,678.42	7,410.00	49.24	50.17	-93.31	1,218.76	1,156.68	1,214.37	1,115.42	98.94	12.273	
8,600.00	7,340.00	8,778.38	7,410.00	51.97	52.86	-93.31	1,219.78	1,256.63	1,211.61	1,107.25	104.36	11.610	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - 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		
8,700.00	7,340.00	8,878.34	7,410.00	54.75	55.61	-93.32	1,220.79	1,356.59	1,208.85	1,098.97	109.88	11.002		
8,800.00	7,340.00	8,978.31	7,410.00	57.58	58.40	-93.33	1,221.81	1,456.54	1,206.09	1,090.60	115.48	10.444		
8,900.00	7,340.00	9,078.27	7,410.00	60.44	61.24	-93.34	1,222.82	1,556.50	1,203.33	1,082.16	121.17	9.931		
9,000.00	7,340.00	9,178.23	7,410.00	63.33	64.10	-93.34	1,223.84	1,656.46	1,200.57	1,073.65	126.92	9.459		
9,100.00	7,340.00	9,278.19	7,410.00	66.25	67.00	-93.35	1,224.86	1,756.41	1,197.81	1,065.08	132.73	9.024		
9,200.00	7,340.00	9,378.15	7,410.00	69.19	69.93	-93.36	1,225.87	1,856.37	1,195.05	1,056.46	138.59	8.623		
9,300.00	7,340.00	9,478.11	7,410.00	72.16	72.87	-93.37	1,226.89	1,956.33	1,192.29	1,047.79	144.50	8.251		
9,400.00	7,340.00	9,578.08	7,410.00	75.14	75.84	-93.37	1,227.90	2,056.28	1,189.53	1,039.09	150.44	7.907		
9,500.00	7,340.00	9,678.04	7,410.00	78.15	78.83	-93.38	1,228.92	2,156.24	1,186.77	1,030.35	156.42	7.587		
9,600.00	7,340.00	9,778.00	7,410.00	81.16	81.83	-93.39	1,229.93	2,256.20	1,184.02	1,021.58	162.43	7.289		
9,700.00	7,340.00	9,877.96	7,410.00	84.19	84.85	-93.40	1,230.95	2,356.15	1,181.26	1,012.79	168.47	7.012		
9,800.00	7,340.00	9,977.92	7,410.00	87.23	87.88	-93.41	1,231.97	2,456.11	1,178.50	1,003.96	174.53	6.752		
9,900.00	7,340.00	10,077.88	7,410.00	90.28	90.93	-93.41	1,232.98	2,556.07	1,175.74	995.12	180.62	6.510		
10,000.00	7,340.00	10,177.85	7,410.00	93.35	93.98	-93.42	1,234.00	2,656.02	1,172.98	986.26	186.72	6.282		
10,100.00	7,340.00	10,277.81	7,410.00	96.42	97.05	-93.43	1,235.01	2,755.98	1,170.22	977.37	192.85	6.068		
10,200.00	7,340.00	10,377.77	7,410.00	99.49	100.12	-93.44	1,236.03	2,855.94	1,167.46	968.47	198.99	5.867		
10,300.00	7,340.00	10,477.73	7,410.00	102.58	103.20	-93.45	1,237.05	2,955.89	1,164.70	959.56	205.14	5.678		
10,400.00	7,340.00	10,577.69	7,410.00	105.67	106.29	-93.46	1,238.06	3,055.85	1,161.94	950.63	211.31	5.499		
10,500.00	7,340.00	10,677.66	7,410.00	108.77	109.38	-93.46	1,239.08	3,155.81	1,159.18	941.69	217.49	5.330		
10,600.00	7,340.00	10,777.62	7,410.00	111.87	112.48	-93.47	1,240.09	3,255.76	1,156.43	932.74	223.68	5.170		
10,700.00	7,340.00	10,877.58	7,410.00	114.98	115.59	-93.48	1,241.11	3,355.72	1,153.67	923.78	229.88	5.018		
10,800.00	7,340.00	10,977.54	7,410.00	118.10	118.70	-93.49	1,242.12	3,455.68	1,150.91	914.81	236.10	4.875		
10,900.00	7,340.00	11,077.50	7,410.00	121.21	121.82	-93.50	1,243.14	3,555.63	1,148.15	905.83	242.32	4.738		
11,000.00	7,340.00	11,177.46	7,410.00	124.33	124.94	-93.51	1,244.16	3,655.59	1,145.39	896.84	248.55	4.608		
11,100.00	7,340.00	11,277.43	7,410.00	127.46	128.06	-93.51	1,245.17	3,755.55	1,142.63	887.85	254.78	4.485		
11,200.00	7,340.00	11,377.39	7,410.00	130.59	131.19	-93.52	1,246.19	3,855.50	1,139.87	878.84	261.03	4.367		
11,300.00	7,340.00	11,477.35	7,410.00	133.72	134.33	-93.53	1,247.20	3,955.46	1,137.11	869.84	267.28	4.254		
11,400.00	7,340.00	11,577.31	7,410.00	136.85	137.46	-93.54	1,248.22	4,055.42	1,134.35	860.82	273.53	4.147		
11,500.00	7,340.00	11,677.27	7,410.00	139.99	140.60	-93.55	1,249.24	4,155.37	1,131.60	851.80	279.80	4.044		
11,600.00	7,340.00	11,777.24	7,410.00	143.13	143.74	-93.56	1,250.25	4,255.33	1,128.84	842.77	286.06	3.946		
11,700.00	7,340.00	11,877.20	7,410.00	146.27	146.89	-93.57	1,251.27	4,355.29	1,126.08	833.74	292.34	3.852		
11,800.00	7,340.00	11,977.16	7,410.00	149.42	150.04	-93.57	1,252.28	4,455.24	1,123.32	824.71	298.61	3.762		
11,836.31	7,340.00	12,013.45	7,410.00	150.56	151.18	-93.58	1,252.65	4,491.54	1,122.32	821.42	300.89	3.730 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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - 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	0.00	0.00	0.00	0.00	-0.17	49.89	-0.15	49.89				
100.00	100.00	100.00	100.00	0.14	0.14	-0.17	49.89	-0.15	49.89	49.62	0.28	180.759	
200.00	200.00	200.00	200.00	0.50	0.50	-0.17	49.89	-0.15	49.89	48.90	0.99	50.247	
300.00	300.00	300.00	300.00	0.85	0.85	-0.17	49.89	-0.15	49.89	48.18	1.71	29.179 CC, ES	
400.00	400.00	398.31	398.29	1.21	1.21	-0.69	51.51	-0.62	51.55	49.10	2.45	21.054	
500.00	500.00	496.40	496.24	1.57	1.57	-2.05	56.36	-2.02	56.52	53.31	3.21	17.600	
600.00	600.00	594.02	593.51	1.93	1.92	-3.85	64.38	-4.33	64.85	60.87	3.98	16.298	
700.00	700.00	690.97	689.75	2.29	2.28	-5.70	75.49	-7.54	76.55	71.81	4.74	16.141	
800.00	800.00	787.02	784.68	2.65	2.65	-7.38	89.57	-11.61	91.61	86.11	5.50	16.665	
900.00	899.98	882.00	878.00	3.00	3.03	91.41	106.50	-16.49	110.02	103.80	6.23	17.662	
1,000.00	999.84	979.74	973.70	3.34	3.45	92.07	125.57	-22.00	130.29	123.40	6.89	18.913	
1,081.60	1,081.14	1,059.50	1,051.80	3.63	3.79	93.41	141.14	-26.49	147.00	139.55	7.45	19.740	
1,100.00	1,099.46	1,077.47	1,069.40	3.69	3.87	93.84	144.65	-27.51	150.80	143.23	7.57	19.911	
1,200.00	1,198.98	1,175.14	1,165.03	4.05	4.29	95.83	163.71	-33.01	171.57	163.30	8.27	20.746	
1,300.00	1,298.49	1,272.80	1,260.66	4.41	4.72	97.40	182.77	-38.51	192.50	183.52	8.98	21.441	
1,400.00	1,398.01	1,370.47	1,356.29	4.78	5.16	98.66	201.83	-44.01	213.54	203.84	9.70	22.023	
1,500.00	1,497.53	1,468.13	1,451.92	5.15	5.59	99.69	220.89	-49.52	234.66	224.24	10.42	22.517	
1,600.00	1,597.04	1,565.80	1,547.54	5.52	6.03	100.55	239.96	-55.02	255.84	244.69	11.15	22.939	
1,700.00	1,696.56	1,663.46	1,643.17	5.90	6.47	101.28	259.02	-60.52	277.07	265.18	11.89	23.303	
1,800.00	1,796.08	1,761.13	1,738.80	6.28	6.91	101.91	278.08	-66.03	298.33	285.70	12.63	23.620	
1,900.00	1,895.60	1,858.79	1,834.43	6.65	7.35	102.45	297.14	-71.53	319.63	306.25	13.37	23.899	
2,000.00	1,995.11	1,956.46	1,930.06	7.03	7.79	102.93	316.20	-77.03	340.95	326.82	14.12	24.144	
2,100.00	2,094.63	2,054.12	2,025.69	7.41	8.23	103.34	335.27	-82.54	362.28	347.41	14.87	24.362	
2,200.00	2,194.15	2,151.79	2,121.31	7.79	8.68	103.72	354.33	-88.04	383.64	368.02	15.62	24.558	
2,300.00	2,293.67	2,249.45	2,216.94	8.17	9.12	104.05	373.39	-93.54	405.01	388.63	16.38	24.733	
2,400.00	2,393.18	2,347.11	2,312.57	8.55	9.56	104.35	392.45	-99.05	426.39	409.26	17.13	24.892	
2,500.00	2,492.70	2,444.78	2,408.20	8.94	10.01	104.62	411.51	-104.55	447.78	429.89	17.89	25.035	
2,600.00	2,592.22	2,542.44	2,503.83	9.32	10.45	104.87	430.57	-110.05	469.18	450.53	18.64	25.167	
2,700.00	2,691.73	2,640.11	2,599.45	9.70	10.90	105.09	449.64	-115.55	490.58	471.18	19.40	25.286	
2,800.00	2,791.25	2,737.77	2,695.08	10.09	11.34	105.30	468.70	-121.06	511.99	491.83	20.16	25.397	
2,900.00	2,890.77	2,835.44	2,790.71	10.47	11.79	105.49	487.76	-126.56	533.41	512.49	20.92	25.498	
3,000.00	2,990.29	2,933.10	2,886.34	10.85	12.23	105.66	506.82	-132.06	554.84	533.16	21.68	25.592	
3,100.00	3,089.80	3,030.77	2,981.97	11.24	12.68	105.83	525.88	-137.57	576.27	553.82	22.44	25.678	
3,200.00	3,189.32	3,128.43	3,077.59	11.62	13.12	105.98	544.95	-143.07	597.70	574.50	23.20	25.759	
3,300.00	3,288.84	3,226.10	3,173.22	12.01	13.57	106.12	564.01	-148.57	619.14	595.17	23.97	25.834	
3,400.00	3,388.36	3,323.76	3,268.85	12.39	14.02	106.25	583.07	-154.08	640.57	615.85	24.73	25.904	
3,500.00	3,487.87	3,421.43	3,364.48	12.78	14.46	106.37	602.13	-159.58	662.02	636.53	25.49	25.970	
3,600.00	3,587.39	3,519.09	3,460.11	13.16	14.91	106.48	621.19	-165.08	683.46	657.21	26.26	26.031	
3,700.00	3,686.91	3,616.75	3,555.74	13.55	15.36	106.59	640.26	-170.58	704.91	677.89	27.02	26.089	
3,732.10	3,718.86	3,648.11	3,586.44	13.67	15.50	106.62	646.37	-172.35	711.80	684.53	27.26	26.107	
3,800.00	3,786.50	3,714.47	3,651.42	13.93	15.80	106.91	659.33	-176.09	726.13	698.35	27.78	26.139	
3,900.00	3,886.33	3,812.35	3,747.25	14.30	16.25	107.10	678.43	-181.61	746.42	717.90	28.52	26.171	
4,000.00	3,986.30	3,910.29	3,843.15	14.65	16.70	107.02	697.55	-187.12	765.73	736.48	29.24	26.184	
4,013.70	4,000.00	3,923.70	3,856.28	14.69	16.76	7.29	700.16	-187.88	768.30	738.96	29.34	26.186	
4,100.00	4,086.30	4,008.20	3,939.02	14.98	17.15	6.78	716.66	-192.64	784.47	754.52	29.95	26.196	
4,200.00	4,186.30	4,106.12	4,034.89	15.31	17.60	6.22	735.77	-198.16	803.28	772.63	30.65	26.209	
4,300.00	4,286.30	4,204.03	4,130.77	15.64	18.04	5.69	754.88	-203.68	822.17	790.81	31.35	26.223	
4,400.00	4,386.30	4,301.95	4,226.64	15.98	18.49	5.17	773.99	-209.19	841.12	809.06	32.06	26.238	
4,500.00	4,486.30	4,399.86	4,322.51	16.31	18.94	4.68	793.10	-214.71	860.13	827.36	32.76	26.253	
4,600.00	4,586.30	4,497.78	4,418.39	16.65	19.39	4.22	812.21	-220.23	879.20	845.73	33.47	26.269	
4,700.00	4,686.30	4,595.69	4,514.26	16.99	19.84	3.77	831.32	-225.74	898.32	864.15	34.18	26.286	
4,800.00	4,786.30	4,693.61	4,610.13	17.33	20.29	3.34	850.43	-231.26	917.50	882.62	34.88	26.302	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,791.52	4,706.01	17.66	20.73	2.92	869.54	-236.78	936.72	901.13	35.59	26.319		
5,000.00	4,986.30	4,889.44	4,801.88	18.00	21.18	2.53	888.65	-242.30	955.99	919.69	36.30	26.336		
5,100.00	5,086.30	4,987.35	4,897.75	18.34	21.63	2.15	907.76	-247.81	975.30	938.29	37.01	26.353		
5,200.00	5,186.30	5,085.27	4,993.63	18.69	22.08	1.78	926.87	-253.33	994.66	956.94	37.72	26.370		
5,300.00	5,286.30	5,183.18	5,089.50	19.03	22.53	1.43	945.99	-258.85	1,014.04	975.61	38.43	26.387		
5,400.00	5,386.30	5,281.10	5,185.37	19.37	22.98	1.09	965.10	-264.36	1,033.47	994.33	39.14	26.403		
5,500.00	5,486.30	5,379.01	5,281.25	19.71	23.43	0.76	984.21	-269.88	1,052.93	1,013.07	39.85	26.420		
5,600.00	5,586.30	5,476.93	5,377.12	20.06	23.87	0.45	1,003.32	-275.40	1,072.42	1,031.85	40.57	26.437		
5,700.00	5,686.30	5,607.29	5,505.03	20.40	24.46	0.07	1,027.47	-282.37	1,091.10	1,049.59	41.52	26.281		
5,800.00	5,786.30	5,764.04	5,660.08	20.74	25.10	-0.26	1,049.42	-288.71	1,105.13	1,062.58	42.55	25.970		
5,900.00	5,886.30	5,922.86	5,818.23	21.09	25.67	-0.47	1,063.32	-292.72	1,113.91	1,070.44	43.46	25.628		
6,000.00	5,986.30	6,082.81	5,978.05	21.43	26.17	-0.55	1,068.78	-294.30	1,117.33	1,073.10	44.23	25.261		
6,100.00	6,086.30	6,191.06	6,086.30	21.78	26.49	-0.55	1,068.86	-294.32	1,117.38	1,072.47	44.91	24.881		
6,200.00	6,186.30	6,291.06	6,186.30	22.13	26.77	-0.55	1,068.86	-294.32	1,117.38	1,071.80	45.59	24.512		
6,300.00	6,286.30	6,391.06	6,286.30	22.47	27.06	-0.55	1,068.86	-294.32	1,117.38	1,071.12	46.26	24.153		
6,400.00	6,386.30	6,491.06	6,386.30	22.82	27.36	-0.55	1,068.86	-294.32	1,117.38	1,070.44	46.94	23.803		
6,500.00	6,486.30	6,591.06	6,486.30	23.17	27.65	-0.55	1,068.86	-294.32	1,117.38	1,069.76	47.62	23.464		
6,600.00	6,586.30	6,691.06	6,586.30	23.52	27.94	-0.55	1,068.86	-294.32	1,117.38	1,069.08	48.30	23.133		
6,637.50	6,623.80	6,728.56	6,623.80	23.65	28.05	-0.55	1,068.86	-294.32	1,117.38	1,068.83	48.56	23.011		
6,650.00	6,636.30	6,741.06	6,636.30	23.69	28.09	-88.39	1,068.86	-294.32	1,117.38	1,068.74	48.64	22.971		
6,700.00	6,686.22	6,790.98	6,686.22	23.85	28.24	-88.53	1,068.86	-294.32	1,117.31	1,068.34	48.97	22.818		
6,750.00	6,735.84	6,840.59	6,735.84	24.01	28.39	-88.85	1,068.86	-294.32	1,117.17	1,067.89	49.28	22.670		
6,800.00	6,784.91	6,889.67	6,784.91	24.16	28.53	-89.34	1,068.86	-294.32	1,117.02	1,067.44	49.58	22.529		
6,850.00	6,833.20	6,937.95	6,833.20	24.31	28.68	-89.99	1,068.86	-294.32	1,116.94	1,067.06	49.87	22.396		
6,850.97	6,834.12	6,938.88	6,834.12	24.31	28.68	-90.00	1,068.86	-294.32	1,116.94	1,067.06	49.88	22.393		
6,900.00	6,880.46	6,986.38	6,881.62	24.46	28.82	-90.78	1,068.87	-294.10	1,117.04	1,066.89	50.15	22.272		
6,950.00	6,926.48	7,037.42	6,932.56	24.61	28.96	-91.63	1,068.90	-291.01	1,117.33	1,066.90	50.42	22.159		
7,000.00	6,971.02	7,089.83	6,984.50	24.76	29.10	-92.49	1,068.97	-284.08	1,117.77	1,067.08	50.69	22.053		
7,050.00	7,013.87	7,143.70	7,037.20	24.92	29.24	-93.35	1,069.08	-273.01	1,118.35	1,067.40	50.95	21.950		
7,100.00	7,054.82	7,199.12	7,090.40	25.10	29.37	-94.20	1,069.24	-257.53	1,119.06	1,067.85	51.22	21.850		
7,150.00	7,093.67	7,256.18	7,143.75	25.29	29.50	-95.05	1,069.44	-237.34	1,119.88	1,068.39	51.49	21.749		
7,200.00	7,130.23	7,314.96	7,196.86	25.52	29.62	-95.89	1,069.70	-212.17	1,120.78	1,069.00	51.79	21.643		
7,250.00	7,164.32	7,375.54	7,249.23	25.78	29.74	-96.72	1,070.01	-181.77	1,121.73	1,069.62	52.11	21.526		
7,300.00	7,195.78	7,437.97	7,300.32	26.09	29.84	-97.52	1,070.37	-145.93	1,122.68	1,070.20	52.48	21.393		
7,350.00	7,224.45	7,502.26	7,349.46	26.44	29.94	-98.29	1,070.79	-104.51	1,123.60	1,070.68	52.92	21.233		
7,400.00	7,250.20	7,568.41	7,395.94	26.86	30.02	-99.02	1,071.27	-57.47	1,124.43	1,070.97	53.45	21.035		
7,450.00	7,272.90	7,636.38	7,438.97	27.35	30.10	-99.70	1,071.80	-4.89	1,125.12	1,071.00	54.12	20.790		
7,500.00	7,292.43	7,706.07	7,477.71	27.90	30.16	-100.33	1,072.39	53.00	1,125.63	1,070.69	54.95	20.486		
7,550.00	7,308.70	7,777.33	7,511.31	28.53	30.23	-100.90	1,073.03	115.80	1,125.90	1,069.92	55.98	20.111		
7,600.00	7,321.64	7,849.96	7,538.97	29.22	30.35	-101.38	1,073.71	182.93	1,125.90	1,068.66	57.24	19.670		
7,650.00	7,331.18	7,923.71	7,559.95	29.99	30.93	-101.78	1,074.43	253.59	1,125.57	1,066.81	58.76	19.155		
7,700.00	7,337.27	7,998.27	7,573.67	30.81	31.96	-102.09	1,075.18	326.84	1,124.89	1,064.37	60.52	18.588		
7,750.00	7,339.89	8,073.31	7,579.71	31.68	33.17	-102.30	1,075.94	401.59	1,123.84	1,061.33	62.51	17.979		
7,762.50	7,340.00	8,092.11	7,580.00	31.90	33.49	-102.34	1,076.13	420.38	1,123.52	1,060.49	63.03	17.824		
7,800.00	7,340.00	8,130.07	7,580.00	32.60	34.18	-102.35	1,076.51	458.35	1,122.51	1,058.12	64.39	17.434		
7,900.00	7,340.00	8,230.04	7,580.00	34.58	36.08	-102.38	1,077.53	558.31	1,119.81	1,051.63	68.18	16.423		
8,000.00	7,340.00	8,330.00	7,580.00	36.74	38.16	-102.41	1,078.54	658.27	1,117.11	1,044.79	72.32	15.446		
8,100.00	7,340.00	8,429.96	7,580.00	39.04	40.39	-102.44	1,079.56	758.22	1,114.41	1,037.66	76.75	14.521		
8,200.00	7,340.00	8,529.92	7,580.00	41.45	42.73	-102.47	1,080.58	858.18	1,111.71	1,030.30	81.41	13.656		
8,300.00	7,340.00	8,629.88	7,580.00	43.97	45.19	-102.50	1,081.59	958.14	1,109.01	1,022.74	86.27	12.855		
8,400.00	7,340.00	8,729.85	7,580.00	46.57	47.73	-102.53	1,082.61	1,058.09	1,106.31	1,015.01	91.30	12.117		
8,500.00	7,340.00	8,829.81	7,580.00	49.24	50.35	-102.56	1,083.62	1,158.05	1,103.62	1,007.15	96.47	11.440		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - 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		
8,600.00	7,340.00	8,929.77	7,580.00	51.97	53.03	-102.60	1,084.64	1,258.01	1,100.92	999.16	101.76	10.819		
8,700.00	7,340.00	9,029.73	7,580.00	54.75	55.77	-102.63	1,085.65	1,357.96	1,098.22	991.07	107.15	10.249		
8,800.00	7,340.00	9,129.69	7,580.00	57.58	58.55	-102.66	1,086.67	1,457.92	1,095.52	982.89	112.63	9.727		
8,900.00	7,340.00	9,229.65	7,580.00	60.44	61.38	-102.69	1,087.69	1,557.88	1,092.83	974.65	118.18	9.247		
9,000.00	7,340.00	9,329.62	7,580.00	63.33	64.24	-102.72	1,088.70	1,657.83	1,090.13	966.33	123.80	8.806		
9,100.00	7,340.00	9,429.58	7,580.00	66.25	67.13	-102.76	1,089.72	1,757.79	1,087.43	957.97	129.47	8.399		
9,200.00	7,340.00	9,529.54	7,580.00	69.19	70.05	-102.79	1,090.73	1,857.74	1,084.74	949.55	135.19	8.024		
9,300.00	7,340.00	9,629.50	7,580.00	72.16	72.99	-102.82	1,091.75	1,957.70	1,082.04	941.09	140.95	7.677		
9,400.00	7,340.00	9,729.46	7,580.00	75.14	75.96	-102.85	1,092.77	2,057.66	1,079.35	932.60	146.75	7.355		
9,500.00	7,340.00	9,829.43	7,580.00	78.15	78.94	-102.88	1,093.78	2,157.61	1,076.65	924.07	152.58	7.056		
9,600.00	7,340.00	9,929.39	7,580.00	81.16	81.94	-102.92	1,094.80	2,257.57	1,073.96	915.52	158.44	6.778		
9,700.00	7,340.00	10,029.35	7,580.00	84.19	84.96	-102.95	1,095.81	2,357.53	1,071.27	906.94	164.32	6.519		
9,800.00	7,340.00	10,129.31	7,580.00	87.23	87.98	-102.98	1,096.83	2,457.48	1,068.57	898.34	170.23	6.277		
9,900.00	7,340.00	10,229.27	7,580.00	90.28	91.02	-103.02	1,097.84	2,557.44	1,065.88	889.72	176.16	6.051		
10,000.00	7,340.00	10,329.23	7,580.00	93.35	94.08	-103.05	1,098.86	2,657.40	1,063.19	881.08	182.10	5.838		
10,100.00	7,340.00	10,429.20	7,580.00	96.42	97.14	-103.08	1,099.88	2,757.35	1,060.49	872.43	188.07	5.639		
10,200.00	7,340.00	10,529.16	7,580.00	99.49	100.21	-103.12	1,100.89	2,857.31	1,057.80	863.76	194.04	5.451		
10,300.00	7,340.00	10,629.12	7,580.00	102.58	103.28	-103.15	1,101.91	2,957.27	1,055.11	855.08	200.03	5.275		
10,400.00	7,340.00	10,729.08	7,580.00	105.67	106.37	-103.19	1,102.92	3,057.22	1,052.42	846.39	206.03	5.108		
10,500.00	7,340.00	10,829.04	7,580.00	108.77	109.46	-103.22	1,103.94	3,157.18	1,049.73	837.69	212.04	4.951		
10,600.00	7,340.00	10,929.01	7,580.00	111.87	112.56	-103.26	1,104.95	3,257.14	1,047.04	828.98	218.06	4.802		
10,700.00	7,340.00	11,028.97	7,580.00	114.98	115.67	-103.29	1,105.97	3,357.09	1,044.35	820.26	224.09	4.660		
10,800.00	7,340.00	11,128.93	7,580.00	118.10	118.78	-103.33	1,106.99	3,457.05	1,041.66	811.53	230.13	4.526		
10,900.00	7,340.00	11,228.89	7,580.00	121.21	121.89	-103.36	1,108.00	3,557.01	1,038.97	802.80	236.17	4.399		
11,000.00	7,340.00	11,328.85	7,580.00	124.33	125.01	-103.40	1,109.02	3,656.96	1,036.28	794.06	242.22	4.278		
11,100.00	7,340.00	11,428.81	7,580.00	127.46	128.13	-103.43	1,110.03	3,756.92	1,033.59	785.32	248.27	4.163		
11,200.00	7,340.00	11,528.78	7,580.00	130.59	131.26	-103.47	1,111.05	3,856.88	1,030.90	776.57	254.33	4.053		
11,300.00	7,340.00	11,628.74	7,580.00	133.72	134.39	-103.50	1,112.07	3,956.83	1,028.21	767.82	260.40	3.949		
11,400.00	7,340.00	11,728.70	7,580.00	136.85	137.53	-103.54	1,113.08	4,056.79	1,025.53	759.06	266.46	3.849		
11,500.00	7,340.00	11,828.66	7,580.00	139.99	140.66	-103.58	1,114.10	4,156.75	1,022.84	750.30	272.54	3.753		
11,600.00	7,340.00	11,928.62	7,580.00	143.13	143.80	-103.61	1,115.11	4,256.70	1,020.15	741.54	278.61	3.662		
11,700.00	7,340.00	12,028.58	7,580.00	146.27	146.95	-103.65	1,116.13	4,356.66	1,017.47	732.78	284.69	3.574		
11,800.00	7,340.00	12,128.55	7,580.00	149.42	150.09	-103.69	1,117.14	4,456.62	1,014.78	724.01	290.77	3.490		
11,836.31	7,340.00	12,164.84	7,580.00	150.56	151.24	-103.70	1,117.51	4,492.91	1,013.81	720.83	292.98	3.460 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - 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	0.00	0.00	0.00	0.00	-0.09	40.07	-0.07	40.07				
100.00	100.00	100.00	100.00	0.14	0.14	-0.09	40.07	-0.07	40.07	39.79	0.28	145.158	
200.00	200.00	200.00	200.00	0.50	0.50	-0.09	40.07	-0.07	40.07	39.07	0.99	40.351	
300.00	300.00	300.00	300.00	0.85	0.85	-0.09	40.07	-0.07	40.07	38.36	1.71	23.432	
400.00	400.00	400.00	400.00	1.21	1.21	-0.09	40.07	-0.07	40.07	37.64	2.43	16.510 CC, ES	
500.00	500.00	498.65	498.63	1.57	1.57	-0.80	41.68	-0.58	41.71	38.55	3.16	13.206	
600.00	600.00	597.06	596.90	1.93	1.92	-2.62	46.52	-2.13	46.67	42.76	3.91	11.936	
700.00	700.00	695.01	694.49	2.29	2.28	-4.91	54.52	-4.69	55.00	50.33	4.67	11.785	
800.00	800.00	792.27	791.04	2.65	2.64	-7.15	65.61	-8.23	66.73	61.31	5.42	12.310	
900.00	899.98	888.65	886.28	3.00	3.01	91.52	79.67	-12.72	81.87	75.71	6.16	13.300	
1,000.00	999.84	985.44	981.44	3.34	3.39	92.39	96.51	-18.10	100.03	93.18	6.85	14.604	
1,081.60	1,081.14	1,065.49	1,060.07	3.63	3.72	94.07	110.79	-22.66	115.42	108.01	7.41	15.585	
1,100.00	1,099.46	1,083.52	1,077.79	3.69	3.80	94.57	114.01	-23.69	118.93	111.39	7.53	15.787	
1,200.00	1,198.98	1,181.54	1,174.07	4.05	4.20	96.87	131.49	-29.28	138.11	129.88	8.23	16.778	
1,300.00	1,298.49	1,279.55	1,270.35	4.41	4.62	98.60	148.98	-34.87	157.46	148.51	8.94	17.609	
1,400.00	1,398.01	1,377.56	1,366.63	4.78	5.04	99.96	166.47	-40.45	176.91	167.25	9.66	18.312	
1,500.00	1,497.53	1,475.58	1,462.91	5.15	5.46	101.04	183.95	-46.04	196.44	186.05	10.39	18.912	
1,600.00	1,597.04	1,573.59	1,559.18	5.52	5.88	101.93	201.44	-51.63	216.03	204.91	11.12	19.428	
1,700.00	1,696.56	1,671.60	1,655.46	5.90	6.30	102.67	218.93	-57.21	235.66	223.80	11.86	19.876	
1,800.00	1,796.08	1,769.61	1,751.74	6.28	6.73	103.30	236.41	-62.80	255.32	242.72	12.60	20.268	
1,900.00	1,895.60	1,867.63	1,848.02	6.65	7.16	103.84	253.90	-68.39	275.00	261.66	13.34	20.613	
2,000.00	1,995.11	1,965.64	1,944.30	7.03	7.59	104.31	271.38	-73.98	294.71	280.62	14.09	20.919	
2,100.00	2,094.63	2,063.65	2,040.58	7.41	8.01	104.71	288.87	-79.56	314.43	299.60	14.84	21.192	
2,200.00	2,194.15	2,161.67	2,136.85	7.79	8.44	105.07	306.36	-85.15	334.17	318.58	15.59	21.438	
2,300.00	2,293.67	2,259.68	2,233.13	8.17	8.88	105.39	323.84	-90.74	353.92	337.58	16.34	21.659	
2,400.00	2,393.18	2,357.69	2,329.41	8.55	9.31	105.68	341.33	-96.32	373.67	356.58	17.09	21.859	
2,500.00	2,492.70	2,455.70	2,425.69	8.94	9.74	105.93	358.82	-101.91	393.44	375.59	17.85	22.042	
2,600.00	2,592.22	2,553.72	2,521.97	9.32	10.17	106.17	376.30	-107.50	413.21	394.60	18.61	22.208	
2,700.00	2,691.73	2,651.73	2,618.25	9.70	10.60	106.38	393.79	-113.09	432.99	413.63	19.36	22.361	
2,800.00	2,791.25	2,749.74	2,714.52	10.09	11.03	106.57	411.27	-118.67	452.77	432.65	20.12	22.502	
2,900.00	2,890.77	2,847.75	2,810.80	10.47	11.47	106.75	428.76	-124.26	472.56	451.68	20.88	22.632	
3,000.00	2,990.29	2,945.77	2,907.08	10.85	11.90	106.91	446.25	-129.85	492.35	470.71	21.64	22.752	
3,100.00	3,089.80	3,043.78	3,003.36	11.24	12.33	107.06	463.73	-135.43	512.15	489.75	22.40	22.864	
3,200.00	3,189.32	3,141.79	3,099.64	11.62	12.77	107.20	481.22	-141.02	531.94	508.78	23.16	22.967	
3,300.00	3,288.84	3,239.81	3,195.92	12.01	13.20	107.33	498.71	-146.61	551.74	527.82	23.92	23.064	
3,400.00	3,388.36	3,337.82	3,292.19	12.39	13.63	107.45	516.19	-152.20	571.55	546.86	24.68	23.155	
3,500.00	3,487.87	3,435.83	3,388.47	12.78	14.07	107.56	533.68	-157.78	591.35	565.91	25.45	23.240	
3,600.00	3,587.39	3,533.84	3,484.75	13.16	14.50	107.66	551.16	-163.37	611.16	584.95	26.21	23.320	
3,700.00	3,686.91	3,631.86	3,581.03	13.55	14.93	107.76	568.65	-168.96	630.97	604.00	26.97	23.395	
3,732.10	3,718.86	3,663.32	3,611.94	13.67	15.07	107.79	574.26	-170.75	637.33	610.11	27.22	23.418	
3,800.00	3,786.50	3,729.92	3,677.36	13.93	15.37	108.04	586.15	-174.55	650.54	622.81	27.73	23.460	
3,900.00	3,886.33	3,828.13	3,773.83	14.30	15.80	108.15	603.67	-180.15	669.11	640.64	28.47	23.502	
4,000.00	3,986.30	3,926.39	3,870.35	14.65	16.24	107.97	621.20	-185.75	686.64	657.45	29.19	23.521	
4,013.70	4,000.00	3,939.85	3,883.58	14.69	16.30	8.22	623.60	-186.51	688.96	659.67	29.29	23.523	
4,100.00	4,086.30	4,024.62	3,966.85	14.98	16.68	7.65	638.72	-191.35	703.58	673.69	29.89	23.535	
4,200.00	4,186.30	4,122.86	4,063.34	15.31	17.11	7.01	656.25	-196.95	720.60	690.00	30.60	23.551	
4,300.00	4,286.30	4,221.09	4,159.83	15.64	17.55	6.41	673.77	-202.55	737.70	706.40	31.30	23.569	
4,400.00	4,386.30	4,319.32	4,256.32	15.98	17.98	5.83	691.30	-208.15	754.89	722.88	32.00	23.587	
4,500.00	4,486.30	4,417.55	4,352.82	16.31	18.42	5.27	708.82	-213.75	772.14	739.43	32.71	23.607	
4,600.00	4,586.30	4,515.78	4,449.31	16.65	18.85	4.75	726.35	-219.34	789.46	756.05	33.41	23.627	
4,700.00	4,686.30	4,614.01	4,545.80	16.99	19.29	4.24	743.87	-224.94	806.84	772.72	34.12	23.648	
4,800.00	4,786.30	4,712.24	4,642.29	17.33	19.73	3.75	761.40	-230.54	824.28	789.46	34.83	23.669	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,810.47	4,738.78	17.66	20.16	3.29	778.92	-236.14	841.78	806.25	35.53	23.691		
5,000.00	4,986.30	4,908.70	4,835.28	18.00	20.60	2.84	796.45	-241.74	859.33	823.09	36.24	23.712		
5,100.00	5,086.30	5,006.93	4,931.77	18.34	21.03	2.41	813.97	-247.34	876.93	839.98	36.95	23.734		
5,200.00	5,186.30	5,105.16	5,028.26	18.69	21.47	2.00	831.50	-252.94	894.57	856.92	37.66	23.756		
5,300.00	5,286.30	5,203.39	5,124.75	19.03	21.91	1.60	849.02	-258.54	912.26	873.90	38.37	23.778		
5,400.00	5,386.30	5,301.62	5,221.24	19.37	22.34	1.22	866.55	-264.14	929.99	890.91	39.08	23.800		
5,500.00	5,486.30	5,399.85	5,317.74	19.71	22.78	0.86	884.07	-269.74	947.76	907.97	39.79	23.821		
5,600.00	5,586.30	5,498.08	5,414.23	20.06	23.21	0.50	901.60	-275.34	965.56	925.06	40.50	23.843		
5,700.00	5,686.30	5,619.71	5,533.86	20.40	23.74	0.10	922.46	-282.01	982.83	941.44	41.38	23.750		
5,800.00	5,786.30	5,767.44	5,680.18	20.74	24.34	-0.26	941.77	-288.18	995.92	953.54	42.38	23.501		
5,900.00	5,886.30	5,916.90	5,829.07	21.09	24.88	-0.48	953.97	-292.07	1,004.10	960.84	43.26	23.209		
6,000.00	5,986.30	6,067.29	5,979.37	21.43	25.36	-0.57	958.76	-293.60	1,007.30	963.27	44.03	22.879		
6,100.00	6,086.30	6,174.22	6,086.30	21.78	25.68	-0.57	958.83	-293.63	1,007.35	962.64	44.71	22.532		
6,200.00	6,186.30	6,274.22	6,186.30	22.13	25.98	-0.57	958.83	-293.63	1,007.35	961.96	45.39	22.194		
6,300.00	6,286.30	6,374.22	6,286.30	22.47	26.28	-0.57	958.83	-293.63	1,007.35	961.28	46.07	21.866		
6,400.00	6,386.30	6,474.22	6,386.30	22.82	26.58	-0.57	958.83	-293.63	1,007.35	960.60	46.75	21.547		
6,500.00	6,486.30	6,574.22	6,486.30	23.17	26.88	-0.57	958.83	-293.63	1,007.35	959.91	47.43	21.237		
6,600.00	6,586.30	6,674.22	6,586.30	23.52	27.18	-0.57	958.83	-293.63	1,007.35	959.23	48.12	20.935		
6,637.50	6,623.80	6,711.73	6,623.80	23.65	27.30	-0.57	958.83	-293.63	1,007.35	958.97	48.38	20.824		
6,650.00	6,636.30	6,724.22	6,636.29	23.69	27.34	-88.40	958.83	-293.52	1,007.34	958.89	48.46	20.788		
6,700.00	6,686.22	6,774.19	6,686.19	23.85	27.48	-88.41	958.85	-290.90	1,007.27	958.49	48.78	20.651		
6,750.00	6,735.84	6,824.17	6,735.78	24.01	27.62	-88.42	958.92	-284.82	1,007.10	958.02	49.08	20.518		
6,800.00	6,784.91	6,874.14	6,784.83	24.16	27.75	-88.44	959.01	-275.29	1,006.84	957.46	49.38	20.388		
6,850.00	6,833.20	6,924.12	6,833.09	24.31	27.87	-88.47	959.15	-262.37	1,006.48	956.81	49.68	20.261		
6,900.00	6,880.46	6,974.09	6,880.34	24.46	27.99	-88.51	959.31	-246.11	1,006.04	956.07	49.97	20.134		
6,950.00	6,926.48	7,024.06	6,926.33	24.61	28.10	-88.55	959.51	-226.60	1,005.50	955.24	50.26	20.006		
7,000.00	6,971.02	7,074.04	6,970.85	24.76	28.20	-88.60	959.75	-203.93	1,004.87	954.31	50.56	19.876		
7,050.00	7,013.87	7,124.01	7,013.69	24.92	28.29	-88.66	960.01	-178.21	1,004.16	953.29	50.87	19.738		
7,100.00	7,054.82	7,173.98	7,054.62	25.10	28.38	-88.72	960.30	-149.57	1,003.37	952.16	51.22	19.591		
7,150.00	7,093.67	7,223.95	7,093.46	25.29	28.46	-88.79	960.62	-118.14	1,002.51	950.90	51.60	19.428		
7,200.00	7,130.23	7,273.92	7,130.01	25.52	28.53	-88.87	960.97	-84.09	1,001.57	949.53	52.04	19.246		
7,250.00	7,164.32	7,323.89	7,164.10	25.78	28.59	-88.95	961.35	-47.57	1,000.56	948.01	52.55	19.040		
7,300.00	7,195.78	7,373.86	7,195.56	26.09	28.65	-89.03	961.75	-8.76	999.49	946.34	53.15	18.806		
7,350.00	7,224.45	7,423.82	7,224.24	26.44	28.70	-89.12	962.16	32.15	998.36	944.51	53.85	18.540		
7,400.00	7,250.20	7,473.79	7,249.99	26.86	28.76	-89.22	962.60	74.95	997.18	942.51	54.67	18.240		
7,450.00	7,272.90	7,523.76	7,272.70	27.35	28.85	-89.32	963.06	119.45	995.95	940.33	55.62	17.906		
7,500.00	7,292.43	7,573.73	7,292.25	27.90	29.04	-89.42	963.53	165.42	994.68	937.97	56.71	17.540		
7,550.00	7,308.70	7,623.70	7,308.55	28.53	29.48	-89.53	964.01	212.65	993.38	935.44	57.94	17.146		
7,600.00	7,321.64	7,673.67	7,321.52	29.22	30.10	-89.64	964.51	260.89	992.05	932.75	59.30	16.728		
7,650.00	7,331.18	7,723.65	7,331.09	29.99	30.82	-89.75	965.01	309.93	990.70	929.90	60.80	16.294		
7,700.00	7,337.27	7,773.63	7,337.22	30.81	31.62	-89.86	965.52	359.52	989.33	926.91	62.42	15.850		
7,750.00	7,339.89	7,823.60	7,339.88	31.68	32.46	-89.97	966.03	409.41	987.95	923.82	64.13	15.405		
7,762.50	7,340.00	7,836.10	7,340.00	31.90	32.68	-90.00	966.16	421.91	987.61	923.03	64.58	15.294		
7,800.00	7,340.00	7,873.58	7,340.00	32.60	33.37	-90.00	966.54	459.39	986.58	920.62	65.95	14.958		
7,900.00	7,340.00	7,973.55	7,340.00	34.58	35.32	-90.00	967.57	559.34	983.82	913.94	69.89	14.078		
8,000.00	7,340.00	8,073.51	7,340.00	36.74	37.44	-90.00	968.59	659.30	981.06	906.91	74.15	13.230		
8,100.00	7,340.00	8,173.47	7,340.00	39.04	39.70	-90.00	969.61	759.26	978.31	899.60	78.71	12.430		
8,200.00	7,340.00	8,273.43	7,340.00	41.45	42.09	-90.00	970.64	859.22	975.55	892.05	83.51	11.682		
8,300.00	7,340.00	8,373.40	7,340.00	43.97	44.58	-90.00	971.66	959.17	972.80	884.29	88.51	10.991		
8,400.00	7,340.00	8,473.36	7,340.00	46.57	47.15	-90.00	972.69	1,059.13	970.04	876.36	93.68	10.355		
8,500.00	7,340.00	8,573.32	7,340.00	49.24	49.80	-90.00	973.71	1,159.09	967.29	868.29	98.99	9.771		
8,600.00	7,340.00	8,673.28	7,340.00	51.97	52.51	-90.00	974.73	1,259.04	964.53	860.10	104.43	9.236		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,700.00	7,340.00	8,773.24	7,340.00	54.75	55.27	-90.00	975.76	1,359.00	961.77	851.80	109.97	8.746	
8,800.00	7,340.00	8,873.21	7,340.00	57.58	58.08	-90.00	976.78	1,458.96	959.02	843.42	115.60	8.296	
8,900.00	7,340.00	8,973.17	7,340.00	60.44	60.93	-90.00	977.81	1,558.91	956.26	834.95	121.31	7.883	
9,000.00	7,340.00	9,073.13	7,340.00	63.33	63.81	-90.00	978.83	1,658.87	953.51	826.43	127.08	7.503	
9,100.00	7,340.00	9,173.09	7,340.00	66.25	66.72	-90.00	979.85	1,758.83	950.75	817.84	132.91	7.153	
9,200.00	7,340.00	9,273.05	7,340.00	69.19	69.65	-90.00	980.88	1,858.78	948.00	809.21	138.79	6.830	
9,300.00	7,340.00	9,373.02	7,340.00	72.16	72.61	-90.00	981.90	1,958.74	945.24	800.53	144.71	6.532	
9,400.00	7,340.00	9,472.98	7,340.00	75.14	75.59	-90.00	982.93	2,058.70	942.48	791.81	150.68	6.255	
9,500.00	7,340.00	9,572.94	7,340.00	78.15	78.59	-90.00	983.95	2,158.65	939.73	783.05	156.67	5.998	
9,600.00	7,340.00	9,672.90	7,340.00	81.16	81.60	-90.00	984.97	2,258.61	936.97	774.27	162.70	5.759	
9,700.00	7,340.00	9,772.86	7,340.00	84.19	84.63	-90.00	986.00	2,358.57	934.22	765.46	168.76	5.536	
9,800.00	7,340.00	9,872.83	7,340.00	87.23	87.67	-90.00	987.02	2,458.52	931.46	756.62	174.84	5.328	
9,900.00	7,340.00	9,972.79	7,340.00	90.28	90.72	-90.00	988.05	2,558.48	928.71	747.77	180.94	5.133	
10,000.00	7,340.00	10,072.75	7,340.00	93.35	93.78	-90.00	989.07	2,658.44	925.95	738.89	187.06	4.950	
10,100.00	7,340.00	10,172.71	7,340.00	96.42	96.85	-90.00	990.09	2,758.39	923.19	729.99	193.20	4.778	
10,200.00	7,340.00	10,272.67	7,340.00	99.49	99.93	-90.00	991.12	2,858.35	920.44	721.08	199.36	4.617	
10,300.00	7,340.00	10,372.64	7,340.00	102.58	103.01	-90.00	992.14	2,958.31	917.68	712.15	205.53	4.465	
10,400.00	7,340.00	10,472.60	7,340.00	105.67	106.11	-90.00	993.17	3,058.26	914.93	703.21	211.71	4.322	
10,500.00	7,340.00	10,572.56	7,340.00	108.77	109.21	-90.00	994.19	3,158.22	912.17	694.26	217.91	4.186	
10,600.00	7,340.00	10,672.52	7,340.00	111.87	112.31	-90.00	995.22	3,258.18	909.42	685.30	224.12	4.058	
10,700.00	7,340.00	10,772.48	7,340.00	114.98	115.42	-90.00	996.24	3,358.13	906.66	676.32	230.34	3.936	
10,800.00	7,340.00	10,872.45	7,340.00	118.10	118.54	-90.00	997.26	3,458.09	903.90	667.34	236.57	3.821	
10,900.00	7,340.00	10,972.41	7,340.00	121.21	121.66	-90.00	998.29	3,558.05	901.15	658.34	242.80	3.711	
11,000.00	7,340.00	11,072.37	7,340.00	124.33	124.78	-90.00	999.31	3,658.00	898.39	649.34	249.05	3.607	
11,100.00	7,340.00	11,172.33	7,340.00	127.46	127.91	-90.00	1,000.34	3,757.96	895.64	640.33	255.30	3.508	
11,200.00	7,340.00	11,272.29	7,340.00	130.59	131.05	-90.00	1,001.36	3,857.92	892.88	631.32	261.56	3.414	
11,300.00	7,340.00	11,372.26	7,340.00	133.72	134.18	-90.00	1,002.38	3,957.88	890.12	622.30	267.83	3.323	
11,400.00	7,340.00	11,472.22	7,340.00	136.85	137.32	-90.00	1,003.41	4,057.83	887.37	613.27	274.10	3.237	
11,500.00	7,340.00	11,572.18	7,340.00	139.99	140.46	-90.00	1,004.43	4,157.79	884.61	604.23	280.38	3.155	
11,600.00	7,340.00	11,672.14	7,340.00	143.13	143.61	-90.00	1,005.46	4,257.75	881.86	595.19	286.67	3.076	
11,700.00	7,340.00	11,772.10	7,340.00	146.27	146.76	-90.00	1,006.48	4,357.70	879.10	586.15	292.95	3.001	
11,800.00	7,340.00	11,872.07	7,340.00	149.42	149.91	-90.00	1,007.50	4,457.66	876.35	577.10	299.25	2.928	
11,836.31	7,340.00	11,908.36	7,340.00	150.56	151.05	-90.00	1,007.88	4,493.95	875.35	573.81	301.53	2.903 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - 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	0.00	0.00	0.00	0.00	0.04	29.87	0.02	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	29.87	0.02	29.87	29.60	0.28	108.222		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	29.87	0.02	29.87	28.88	0.99	30.083		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	29.87	0.02	29.87	28.16	1.71	17.470		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	29.87	0.02	29.87	27.44	2.43	12.309		
500.00	500.00	500.00	500.00	1.57	1.57	0.04	29.87	0.02	29.87	26.73	3.14	9.502 CC, ES		
600.00	600.00	599.01	598.99	1.93	1.93	-1.14	31.45	-0.63	31.48	27.61	3.87	8.132		
700.00	700.00	697.78	697.62	2.29	2.28	-4.07	36.18	-2.57	36.35	31.74	4.61	7.879		
800.00	800.00	796.08	795.55	2.65	2.64	-7.50	44.01	-5.79	44.61	39.25	5.36	8.321		
900.00	899.98	893.72	892.48	3.00	3.00	90.63	54.85	-10.25	56.31	50.21	6.10	9.237		
1,000.00	999.84	991.93	989.62	3.34	3.37	91.82	68.23	-15.75	70.71	63.92	6.79	10.411		
1,081.60	1,081.14	1,072.55	1,069.33	3.63	3.68	94.17	79.37	-20.33	82.82	75.47	7.35	11.264		
1,100.00	1,099.46	1,090.71	1,087.30	3.69	3.75	94.83	81.89	-21.37	85.60	78.11	7.48	11.439		
1,200.00	1,198.98	1,189.43	1,184.91	4.05	4.14	97.78	95.54	-26.98	100.83	92.64	8.19	12.310		
1,300.00	1,298.49	1,288.16	1,282.52	4.41	4.53	99.95	109.19	-32.59	116.25	107.34	8.91	13.052		
1,400.00	1,398.01	1,386.88	1,380.13	4.78	4.93	101.62	122.84	-38.21	131.80	122.17	9.63	13.685		
1,500.00	1,497.53	1,485.60	1,477.74	5.15	5.32	102.93	136.49	-43.82	147.43	137.07	10.36	14.230		
1,600.00	1,597.04	1,584.32	1,575.35	5.52	5.72	103.99	150.14	-49.43	163.13	152.03	11.10	14.702		
1,700.00	1,696.56	1,683.04	1,672.96	5.90	6.12	104.86	163.79	-55.05	178.86	167.03	11.83	15.114		
1,800.00	1,796.08	1,781.76	1,770.57	6.28	6.52	105.59	177.44	-60.66	194.64	182.06	12.58	15.477		
1,900.00	1,895.60	1,880.48	1,868.18	6.65	6.92	106.21	191.09	-66.28	210.44	197.12	13.32	15.798		
2,000.00	1,995.11	1,979.20	1,965.79	7.03	7.33	106.75	204.74	-71.89	226.26	212.19	14.07	16.084		
2,100.00	2,094.63	2,077.92	2,063.40	7.41	7.73	107.21	218.39	-77.50	242.09	227.28	14.82	16.341		
2,200.00	2,194.15	2,176.64	2,161.01	7.79	8.13	107.62	232.05	-83.12	257.94	242.38	15.57	16.572		
2,300.00	2,293.67	2,275.36	2,258.62	8.17	8.54	107.98	245.70	-88.73	273.81	257.49	16.32	16.781		
2,400.00	2,393.18	2,374.08	2,356.23	8.55	8.94	108.30	259.35	-94.34	289.68	272.61	17.07	16.971		
2,500.00	2,492.70	2,472.80	2,453.84	8.94	9.35	108.59	273.00	-99.96	305.56	287.73	17.82	17.145		
2,600.00	2,592.22	2,571.52	2,551.45	9.32	9.76	108.85	286.65	-105.57	321.44	302.87	18.58	17.304		
2,700.00	2,691.73	2,670.24	2,649.06	9.70	10.16	109.09	300.30	-111.18	337.33	318.00	19.33	17.450		
2,800.00	2,791.25	2,768.96	2,746.67	10.09	10.57	109.30	313.95	-116.80	353.23	333.14	20.09	17.585		
2,900.00	2,890.77	2,867.68	2,844.28	10.47	10.97	109.50	327.60	-122.41	369.13	348.29	20.84	17.710		
3,000.00	2,990.29	2,966.40	2,941.90	10.85	11.38	109.68	341.25	-128.02	385.04	363.44	21.60	17.826		
3,100.00	3,089.80	3,065.12	3,039.51	11.24	11.79	109.84	354.90	-133.64	400.95	378.59	22.36	17.934		
3,200.00	3,189.32	3,163.84	3,137.12	11.62	12.19	109.99	368.55	-139.25	416.86	393.74	23.11	18.034		
3,300.00	3,288.84	3,262.56	3,234.73	12.01	12.60	110.13	382.21	-144.86	432.77	408.90	23.87	18.128		
3,400.00	3,388.36	3,361.28	3,332.34	12.39	13.01	110.27	395.86	-150.48	448.69	424.06	24.63	18.216		
3,500.00	3,487.87	3,460.00	3,429.95	12.78	13.42	110.39	409.51	-156.09	464.61	439.22	25.39	18.299		
3,600.00	3,587.39	3,558.72	3,527.56	13.16	13.82	110.50	423.16	-161.71	480.53	454.38	26.15	18.377		
3,700.00	3,686.91	3,657.44	3,625.17	13.55	14.23	110.61	436.81	-167.32	496.45	469.54	26.91	18.450		
3,732.10	3,718.86	3,689.13	3,656.51	13.67	14.36	110.64	441.19	-169.12	501.56	474.41	27.15	18.473		
3,800.00	3,786.50	3,756.20	3,722.82	13.93	14.64	110.82	450.47	-172.93	512.09	484.43	27.66	18.512		
3,900.00	3,886.33	3,855.10	3,820.61	14.30	15.05	110.77	464.14	-178.56	526.58	498.18	28.40	18.540		
4,000.00	3,986.30	3,954.02	3,918.42	14.65	15.46	110.36	477.82	-184.18	539.88	510.76	29.12	18.537		
4,013.70	4,000.00	3,967.57	3,931.81	14.69	15.51	10.59	479.69	-184.95	541.62	512.40	29.22	18.535		
4,100.00	4,086.30	4,052.90	4,016.18	14.98	15.87	9.86	491.49	-189.81	552.53	522.70	29.83	18.524		
4,200.00	4,186.30	4,151.77	4,113.95	15.31	16.27	9.05	505.17	-195.43	565.27	534.74	30.53	18.516		
4,300.00	4,286.30	4,250.65	4,211.71	15.64	16.68	8.28	518.84	-201.05	578.12	546.89	31.23	18.511		
4,400.00	4,386.30	4,349.53	4,309.48	15.98	17.09	7.55	532.51	-206.67	591.07	559.14	31.93	18.509		
4,500.00	4,486.30	4,448.40	4,407.24	16.31	17.50	6.84	546.18	-212.30	604.12	571.48	32.64	18.510		
4,600.00	4,586.30	4,547.28	4,505.01	16.65	17.91	6.17	559.86	-217.92	617.24	583.90	33.34	18.513		
4,700.00	4,686.30	4,646.15	4,602.77	16.99	18.32	5.52	573.53	-223.54	630.45	596.41	34.05	18.518		
4,800.00	4,786.30	4,745.03	4,700.53	17.33	18.73	4.90	587.20	-229.16	643.74	608.99	34.75	18.525		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,843.91	4,798.30	17.66	19.14	4.30	600.87	-234.78	657.10	621.64	35.46	18.533		
5,000.00	4,986.30	4,942.78	4,896.06	18.00	19.55	3.73	614.55	-240.41	670.52	634.36	36.16	18.543		
5,100.00	5,086.30	5,041.66	4,993.83	18.34	19.96	3.18	628.22	-246.03	684.01	647.15	36.87	18.554		
5,200.00	5,186.30	5,140.53	5,091.59	18.69	20.37	2.65	641.89	-251.65	697.56	659.99	37.57	18.565		
5,300.00	5,286.30	5,239.41	5,189.36	19.03	20.77	2.15	655.56	-257.27	711.17	672.89	38.28	18.578		
5,400.00	5,386.30	5,338.29	5,287.12	19.37	21.18	1.66	669.24	-262.90	724.82	685.84	38.99	18.591		
5,500.00	5,486.30	5,437.16	5,384.89	19.71	21.59	1.19	682.91	-268.52	738.53	698.84	39.69	18.605		
5,600.00	5,586.30	5,536.04	5,482.65	20.06	22.00	0.73	696.58	-274.14	752.29	711.88	40.40	18.620		
5,700.00	5,686.30	5,637.82	5,583.29	20.40	22.42	0.28	710.63	-279.92	766.07	724.93	41.13	18.624		
5,800.00	5,786.30	5,770.04	5,714.50	20.74	22.94	-0.18	725.62	-286.08	777.42	735.36	42.06	18.484		
5,900.00	5,886.30	5,903.49	5,847.56	21.09	23.43	-0.46	735.06	-289.96	784.51	741.61	42.90	18.285		
6,000.00	5,986.30	6,037.62	5,981.60	21.43	23.88	-0.57	738.76	-291.49	787.28	743.62	43.66	18.033		
6,100.00	6,086.30	6,142.31	6,086.30	21.78	24.21	-0.57	738.81	-291.51	787.32	742.97	44.35	17.754		
6,200.00	6,186.30	6,242.31	6,186.30	22.13	24.53	-0.57	738.81	-291.51	787.32	742.29	45.03	17.483		
6,300.00	6,286.30	6,342.31	6,286.30	22.47	24.85	-0.57	738.81	-291.51	787.32	741.60	45.72	17.220		
6,400.00	6,386.30	6,442.31	6,386.30	22.82	25.16	-0.57	738.81	-291.51	787.32	740.91	46.41	16.964		
6,500.00	6,486.30	6,542.31	6,486.30	23.17	25.48	-0.57	738.81	-291.51	787.32	740.22	47.10	16.716		
6,600.00	6,586.30	6,642.31	6,586.30	23.52	25.80	-0.57	738.81	-291.51	787.32	739.53	47.79	16.475		
6,637.50	6,623.80	6,679.81	6,623.80	23.65	25.93	-0.57	738.81	-291.51	787.32	739.27	48.05	16.386		
6,650.00	6,636.30	6,692.31	6,636.30	23.69	25.97	-88.41	738.81	-291.51	787.32	739.18	48.13	16.357		
6,700.00	6,686.22	6,742.23	6,686.22	23.85	26.13	-88.61	738.81	-291.51	787.25	738.79	48.46	16.245		
6,750.00	6,735.84	6,792.31	6,736.27	24.01	26.28	-88.97	738.82	-290.25	787.11	738.34	48.78	16.137		
6,800.00	6,784.91	6,842.76	6,786.49	24.16	26.43	-89.35	738.87	-285.49	786.91	737.84	49.07	16.035		
6,850.00	6,833.20	6,893.56	6,836.59	24.31	26.57	-89.72	738.96	-277.13	786.64	737.28	49.37	15.935		
6,900.00	6,880.46	6,944.72	6,886.31	24.46	26.71	-90.11	739.08	-265.15	786.31	736.66	49.65	15.837		
6,950.00	6,926.48	6,996.24	6,935.39	24.61	26.84	-90.49	739.24	-249.53	785.92	735.98	49.93	15.740		
7,000.00	6,971.02	7,048.11	6,983.55	24.76	26.96	-90.87	739.44	-230.29	785.46	735.24	50.22	15.642		
7,050.00	7,013.87	7,100.33	7,030.49	24.92	27.08	-91.25	739.67	-207.44	784.93	734.42	50.51	15.540		
7,100.00	7,054.82	7,152.89	7,075.94	25.10	27.18	-91.62	739.94	-181.05	784.35	733.52	50.82	15.433		
7,150.00	7,093.67	7,205.80	7,119.60	25.29	27.28	-91.99	740.25	-151.20	783.69	732.52	51.17	15.315		
7,200.00	7,130.23	7,259.03	7,161.18	25.52	27.38	-92.35	740.59	-117.99	782.98	731.41	51.56	15.184		
7,250.00	7,164.32	7,312.57	7,200.41	25.78	27.47	-92.70	740.96	-81.57	782.20	730.17	52.02	15.035		
7,300.00	7,195.78	7,366.41	7,237.00	26.09	27.56	-93.03	741.37	-42.09	781.35	728.79	52.57	14.864		
7,350.00	7,224.45	7,420.53	7,270.69	26.44	27.65	-93.35	741.80	0.24	780.45	727.23	53.22	14.666		
7,400.00	7,250.20	7,474.90	7,301.22	26.86	27.80	-93.66	742.26	45.22	779.48	725.49	53.99	14.438		
7,450.00	7,272.90	7,529.51	7,328.36	27.35	28.06	-93.94	742.75	92.59	778.45	723.55	54.89	14.181		
7,500.00	7,292.43	7,584.32	7,351.89	27.90	28.51	-94.21	743.25	142.07	777.36	721.40	55.95	13.893		
7,550.00	7,308.70	7,639.31	7,371.63	28.53	29.09	-94.45	743.78	193.38	776.21	719.04	57.17	13.577		
7,600.00	7,321.64	7,694.45	7,387.41	29.22	29.78	-94.67	744.32	246.20	775.01	716.46	58.54	13.238		
7,650.00	7,331.18	7,749.70	7,399.10	29.99	30.57	-94.87	744.87	300.18	773.75	713.68	60.07	12.881		
7,700.00	7,337.27	7,805.04	7,406.60	30.81	31.44	-95.04	745.44	354.99	772.45	710.71	61.74	12.511		
7,750.00	7,339.89	7,860.42	7,409.86	31.68	32.38	-95.18	746.00	410.26	771.11	707.58	63.53	12.138		
7,762.50	7,340.00	7,874.27	7,410.00	31.90	32.62	-95.21	746.14	424.11	770.77	706.78	63.99	12.045		
7,800.00	7,340.00	7,911.81	7,410.00	32.60	33.31	-95.22	746.53	461.64	769.74	704.37	65.37	11.776		
7,900.00	7,340.00	8,011.77	7,410.00	34.58	35.25	-95.24	747.55	561.60	767.00	697.72	69.28	11.072		
8,000.00	7,340.00	8,111.73	7,410.00	36.74	37.37	-95.26	748.58	661.55	764.25	690.73	73.53	10.394		
8,100.00	7,340.00	8,211.69	7,410.00	39.04	39.63	-95.28	749.60	761.51	761.51	683.44	78.07	9.754		
8,200.00	7,340.00	8,311.65	7,410.00	41.45	42.02	-95.30	750.63	861.47	758.77	675.91	82.85	9.158		
8,300.00	7,340.00	8,411.62	7,410.00	43.97	44.50	-95.31	751.65	961.43	756.02	668.19	87.83	8.607		
8,400.00	7,340.00	8,511.58	7,410.00	46.57	47.08	-95.33	752.67	1,061.38	753.28	660.29	92.99	8.101		
8,500.00	7,340.00	8,611.54	7,410.00	49.24	49.73	-95.35	753.70	1,161.34	750.53	652.25	98.28	7.636		
8,600.00	7,340.00	8,711.50	7,410.00	51.97	52.44	-95.37	754.72	1,261.30	747.79	644.09	103.70	7.211		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - 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	7,340.00	8,811.46	7,410.00	54.75	55.20	-95.39	755.75	1,361.25	745.05	635.83	109.22	6.822		
8,800.00	7,340.00	8,911.43	7,410.00	57.58	58.01	-95.41	756.77	1,461.21	742.30	627.48	114.82	6.465		
8,900.00	7,340.00	9,011.39	7,410.00	60.44	60.86	-95.43	757.79	1,561.17	739.56	619.05	120.51	6.137		
9,000.00	7,340.00	9,111.35	7,410.00	63.33	63.74	-95.45	758.82	1,661.12	736.82	610.56	126.25	5.836		
9,100.00	7,340.00	9,211.31	7,410.00	66.25	66.65	-95.47	759.84	1,761.08	734.07	602.02	132.06	5.559		
9,200.00	7,340.00	9,311.27	7,410.00	69.19	69.59	-95.49	760.87	1,861.04	731.33	593.42	137.91	5.303		
9,300.00	7,340.00	9,411.24	7,410.00	72.16	72.55	-95.52	761.89	1,960.99	728.59	584.78	143.80	5.067		
9,400.00	7,340.00	9,511.20	7,410.00	75.14	75.53	-95.54	762.92	2,060.95	725.84	576.11	149.74	4.847		
9,500.00	7,340.00	9,611.16	7,410.00	78.15	78.52	-95.56	763.94	2,160.91	723.10	567.40	155.71	4.644		
9,600.00	7,340.00	9,711.12	7,410.00	81.16	81.54	-95.58	764.96	2,260.86	720.36	558.66	161.70	4.455		
9,700.00	7,340.00	9,811.08	7,410.00	84.19	84.56	-95.60	765.99	2,360.82	717.62	549.89	167.73	4.278		
9,800.00	7,340.00	9,911.05	7,410.00	87.23	87.60	-95.62	767.01	2,460.78	714.87	541.10	173.77	4.114		
9,900.00	7,340.00	10,011.01	7,410.00	90.28	90.65	-95.64	768.04	2,560.73	712.13	532.29	179.84	3.960		
10,000.00	7,340.00	10,110.97	7,410.00	93.35	93.72	-95.67	769.06	2,660.69	709.39	523.46	185.93	3.815		
10,100.00	7,340.00	10,210.93	7,410.00	96.42	96.79	-95.69	770.08	2,760.65	706.65	514.61	192.04	3.680		
10,200.00	7,340.00	10,310.89	7,410.00	99.49	99.87	-95.71	771.11	2,860.60	703.91	505.75	198.16	3.552		
10,300.00	7,340.00	10,410.86	7,410.00	102.58	102.95	-95.73	772.13	2,960.56	701.16	496.87	204.29	3.432		
10,400.00	7,340.00	10,510.82	7,410.00	105.67	106.05	-95.75	773.16	3,060.52	698.42	487.98	210.44	3.319		
10,500.00	7,340.00	10,610.78	7,410.00	108.77	109.15	-95.78	774.18	3,160.47	695.68	479.08	216.60	3.212		
10,600.00	7,340.00	10,710.74	7,410.00	111.87	112.25	-95.80	775.21	3,260.43	692.94	470.17	222.77	3.111		
10,700.00	7,340.00	10,810.70	7,410.00	114.98	115.36	-95.82	776.23	3,360.39	690.20	461.24	228.95	3.015		
10,800.00	7,340.00	10,910.67	7,410.00	118.10	118.48	-95.85	777.25	3,460.34	687.46	452.31	235.14	2.924		
10,900.00	7,340.00	11,010.63	7,410.00	121.21	121.60	-95.87	778.28	3,560.30	684.71	443.38	241.34	2.837		
11,000.00	7,340.00	11,110.59	7,410.00	124.33	124.73	-95.89	779.30	3,660.26	681.97	434.43	247.54	2.755		
11,100.00	7,340.00	11,210.55	7,410.00	127.46	127.86	-95.92	780.33	3,760.22	679.23	425.48	253.75	2.677		
11,200.00	7,340.00	11,310.51	7,410.00	130.59	130.99	-95.94	781.35	3,860.17	676.49	416.52	259.97	2.602		
11,300.00	7,340.00	11,410.48	7,410.00	133.72	134.13	-95.97	782.37	3,960.13	673.75	407.55	266.20	2.531		
11,400.00	7,340.00	11,510.44	7,410.00	136.85	137.27	-95.99	783.40	4,060.09	671.01	398.58	272.43	2.463		
11,500.00	7,340.00	11,610.40	7,410.00	139.99	140.41	-96.01	784.42	4,160.04	668.27	389.61	278.66	2.398		
11,600.00	7,340.00	11,710.36	7,410.00	143.13	143.55	-96.04	785.45	4,260.00	665.53	380.63	284.90	2.336		
11,700.00	7,340.00	11,810.32	7,410.00	146.27	146.70	-96.06	786.47	4,359.96	662.79	371.65	291.14	2.277		
11,800.00	7,340.00	11,910.29	7,410.00	149.42	149.85	-96.09	787.50	4,459.91	660.05	362.66	297.39	2.219		
11,836.31	7,340.00	11,946.58	7,410.00	150.56	151.00	-96.10	787.87	4,496.20	659.05	359.40	299.66	2.199 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - 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	0.00	0.00	0.00	0.00	0.31	20.04	0.11	20.04					
100.00	100.00	100.00	100.00	0.14	0.14	0.31	20.04	0.11	20.04	19.76	0.28	72.592		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	20.04	0.11	20.04	19.04	0.99	20.179		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	20.04	0.11	20.04	18.33	1.71	11.718		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	20.04	0.11	20.04	17.61	2.43	8.256		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	20.04	0.11	20.04	16.89	3.14	6.374		
600.00	600.00	600.00	600.00	1.93	1.93	0.31	20.04	0.11	20.04	16.18	3.86	5.190 CC, ES		
700.00	700.00	699.39	699.37	2.29	2.29	-2.30	21.46	-0.86	21.49	16.90	4.58	4.688		
800.00	800.00	798.54	798.38	2.65	2.64	-8.33	25.72	-3.76	26.04	20.73	5.32	4.898		
900.00	899.98	897.38	896.85	3.00	3.00	87.82	32.76	-8.56	33.90	27.86	6.04	5.610		
1,000.00	999.84	996.96	995.93	3.34	3.36	89.53	40.98	-14.16	42.96	36.23	6.74	6.378		
1,081.60	1,081.14	1,078.14	1,076.71	3.63	3.66	93.36	47.68	-18.73	50.47	43.16	7.31	6.905		
1,100.00	1,099.46	1,096.44	1,094.91	3.69	3.73	94.39	49.19	-19.76	52.21	44.77	7.44	7.018		
1,200.00	1,198.98	1,195.87	1,193.84	4.05	4.10	98.95	57.40	-25.35	61.90	53.75	8.15	7.591		
1,300.00	1,298.49	1,295.29	1,292.77	4.41	4.47	102.26	65.61	-30.94	71.88	63.00	8.88	8.097		
1,400.00	1,398.01	1,394.72	1,391.70	4.78	4.84	104.75	73.81	-36.53	82.03	72.42	9.61	8.540		
1,500.00	1,497.53	1,494.15	1,490.63	5.15	5.22	106.70	82.02	-42.12	92.30	81.97	10.34	8.929		
1,600.00	1,597.04	1,593.58	1,589.56	5.52	5.59	108.25	90.22	-47.71	102.66	91.59	11.07	9.271		
1,700.00	1,696.56	1,693.00	1,688.49	5.90	5.97	109.52	98.43	-53.30	113.08	101.27	11.81	9.573		
1,800.00	1,796.08	1,792.43	1,787.43	6.28	6.35	110.58	106.64	-58.89	123.55	111.00	12.55	9.842		
1,900.00	1,895.60	1,891.86	1,886.36	6.65	6.73	111.46	114.84	-64.48	134.05	120.76	13.30	10.083		
2,000.00	1,995.11	1,991.29	1,985.29	7.03	7.10	112.22	123.05	-70.07	144.58	130.54	14.04	10.298		
2,100.00	2,094.63	2,090.71	2,084.22	7.41	7.48	112.88	131.25	-75.66	155.13	140.35	14.78	10.493		
2,200.00	2,194.15	2,190.14	2,183.15	7.79	7.86	113.46	139.46	-81.25	165.70	150.17	15.53	10.669		
2,300.00	2,293.67	2,289.57	2,282.08	8.17	8.24	113.96	147.67	-86.84	176.28	160.00	16.28	10.830		
2,400.00	2,393.18	2,388.99	2,381.01	8.55	8.62	114.41	155.87	-92.43	186.87	169.85	17.03	10.976		
2,500.00	2,492.70	2,488.42	2,479.94	8.94	9.00	114.81	164.08	-98.02	197.48	179.70	17.77	11.111		
2,600.00	2,592.22	2,587.85	2,578.87	9.32	9.38	115.16	172.29	-103.61	208.09	189.57	18.52	11.234		
2,700.00	2,691.73	2,687.28	2,677.80	9.70	9.76	115.49	180.49	-109.20	218.71	199.44	19.27	11.349		
2,800.00	2,791.25	2,786.70	2,776.73	10.09	10.14	115.78	188.70	-114.79	229.34	209.31	20.02	11.454		
2,900.00	2,890.77	2,886.13	2,875.66	10.47	10.52	116.05	196.90	-120.38	239.97	219.19	20.77	11.552		
3,000.00	2,990.29	2,985.56	2,974.59	10.85	10.90	116.29	205.11	-125.97	250.60	229.08	21.52	11.644		
3,100.00	3,089.80	3,084.99	3,073.52	11.24	11.28	116.52	213.32	-131.56	261.24	238.97	22.27	11.729		
3,200.00	3,189.32	3,184.41	3,172.45	11.62	11.66	116.73	221.52	-137.16	271.89	248.86	23.03	11.808		
3,300.00	3,288.84	3,283.84	3,271.38	12.01	12.04	116.92	229.73	-142.75	282.53	258.76	23.78	11.883		
3,400.00	3,388.36	3,383.27	3,370.31	12.39	12.42	117.10	237.93	-148.34	293.19	268.66	24.53	11.953		
3,500.00	3,487.87	3,482.69	3,469.24	12.78	12.80	117.26	246.14	-153.93	303.84	278.56	25.28	12.019		
3,600.00	3,587.39	3,582.12	3,568.17	13.16	13.18	117.42	254.35	-159.52	314.49	288.46	26.03	12.081		
3,700.00	3,686.91	3,681.55	3,667.10	13.55	13.56	117.56	262.55	-165.11	325.15	298.37	26.78	12.139		
3,732.10	3,718.86	3,713.47	3,698.86	13.67	13.68	117.61	265.19	-166.90	328.57	301.55	27.03	12.158		
3,800.00	3,786.50	3,781.02	3,766.07	13.93	13.94	117.70	270.76	-170.70	335.44	307.90	27.53	12.183		
3,900.00	3,886.33	3,880.59	3,865.14	14.30	14.32	117.37	278.98	-176.30	344.21	315.93	28.27	12.174		
4,000.00	3,986.30	3,980.15	3,964.21	14.65	14.70	116.54	287.20	-181.90	351.43	322.44	29.00	12.119		
4,013.70	4,000.00	3,993.78	3,977.77	14.69	14.76	16.69	288.32	-182.66	352.31	323.22	29.10	12.109		
4,100.00	4,086.30	4,079.65	4,063.21	14.98	15.09	15.62	295.41	-187.49	357.82	328.11	29.71	12.045		
4,200.00	4,186.30	4,179.15	4,162.21	15.31	15.47	14.43	303.62	-193.09	364.35	333.94	30.41	11.979		
4,300.00	4,286.30	4,278.65	4,261.21	15.64	15.85	13.27	311.83	-198.68	371.04	339.92	31.12	11.922		
4,400.00	4,386.30	4,378.15	4,360.22	15.98	16.23	12.16	320.04	-204.27	377.87	346.04	31.83	11.872		
4,500.00	4,486.30	4,477.65	4,459.22	16.31	16.61	11.08	328.26	-209.87	384.84	352.30	32.54	11.828		
4,600.00	4,586.30	4,577.15	4,558.22	16.65	16.99	10.05	336.47	-215.46	391.94	358.70	33.24	11.790		
4,700.00	4,686.30	4,676.65	4,657.23	16.99	17.37	9.05	344.68	-221.06	399.16	365.22	33.95	11.758		
4,800.00	4,786.30	4,776.15	4,756.23	17.33	17.75	8.08	352.89	-226.65	406.51	371.85	34.66	11.730		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,875.65	4,855.23	17.66	18.14	7.15	361.11	-232.25	413.96	378.60	35.36	11.706		
5,000.00	4,986.30	4,975.15	4,954.23	18.00	18.52	6.26	369.32	-237.84	421.51	385.45	36.07	11.687		
5,100.00	5,086.30	5,074.65	5,053.24	18.34	18.90	5.39	377.53	-243.44	429.17	392.40	36.77	11.670		
5,200.00	5,186.30	5,174.15	5,152.24	18.69	19.28	4.56	385.74	-249.03	436.92	399.44	37.48	11.657		
5,300.00	5,286.30	5,273.65	5,251.24	19.03	19.66	3.75	393.95	-254.63	444.76	406.57	38.19	11.647		
5,400.00	5,386.30	5,373.15	5,350.24	19.37	20.04	2.98	402.17	-260.22	452.68	413.79	38.89	11.639		
5,500.00	5,486.30	5,472.65	5,449.25	19.71	20.43	2.23	410.38	-265.81	460.69	421.09	39.60	11.634		
5,600.00	5,586.30	5,572.15	5,548.25	20.06	20.81	1.50	418.59	-271.41	468.77	428.46	40.31	11.630		
5,700.00	5,686.30	5,671.65	5,647.25	20.40	21.19	0.80	426.80	-277.00	476.92	435.91	41.01	11.628		
5,800.00	5,786.30	5,776.44	5,751.54	20.74	21.59	0.11	435.25	-282.76	484.96	443.20	41.76	11.613		
5,900.00	5,886.30	5,892.61	5,867.45	21.09	22.02	-0.40	441.63	-287.11	490.48	447.92	42.55	11.526		
6,000.00	5,986.30	6,009.22	5,984.01	21.43	22.42	-0.60	444.13	-288.81	492.63	449.34	43.29	11.379		
6,100.00	6,086.30	6,111.51	6,086.30	21.78	22.77	-0.60	444.17	-288.83	492.66	448.68	43.99	11.200		
6,200.00	6,186.30	6,211.51	6,186.30	22.13	23.10	-0.60	444.17	-288.83	492.66	447.98	44.68	11.027		
6,300.00	6,286.30	6,311.51	6,286.30	22.47	23.44	-0.60	444.17	-288.83	492.66	447.29	45.37	10.858		
6,400.00	6,386.30	6,411.51	6,386.30	22.82	23.78	-0.60	444.17	-288.83	492.66	446.60	46.07	10.695		
6,500.00	6,486.30	6,511.51	6,486.30	23.17	24.12	-0.60	444.17	-288.83	492.66	445.90	46.76	10.536		
6,600.00	6,586.30	6,611.51	6,586.30	23.52	24.46	-0.60	444.17	-288.83	492.66	445.21	47.46	10.381		
6,637.50	6,623.80	6,649.01	6,623.80	23.65	24.59	-0.60	444.17	-288.83	492.66	444.95	47.72	10.324		
6,650.00	6,636.30	6,661.51	6,636.30	23.69	24.63	-88.44	444.17	-288.72	492.66	444.86	47.80	10.306		
6,700.00	6,686.22	6,711.52	6,686.23	23.85	24.79	-88.44	444.19	-286.11	492.59	444.46	48.13	10.235		
6,750.00	6,735.84	6,761.54	6,735.86	24.01	24.94	-88.45	444.26	-280.01	492.42	443.98	48.44	10.166		
6,800.00	6,784.91	6,811.55	6,784.94	24.16	25.08	-88.47	444.35	-270.47	492.16	443.41	48.74	10.097		
6,850.00	6,833.20	6,861.56	6,833.24	24.31	25.22	-88.50	444.48	-257.53	491.80	442.76	49.04	10.029		
6,900.00	6,880.46	6,911.56	6,880.51	24.46	25.35	-88.54	444.65	-241.25	491.35	442.02	49.33	9.960		
6,950.00	6,926.48	6,961.57	6,926.53	24.61	25.48	-88.58	444.85	-221.71	490.81	441.18	49.63	9.890		
7,000.00	6,971.02	7,011.57	6,971.08	24.76	25.60	-88.63	445.08	-199.01	490.18	440.25	49.93	9.817		
7,050.00	7,013.87	7,061.58	7,013.92	24.92	25.71	-88.68	445.34	-173.26	489.47	439.22	50.25	9.741		
7,100.00	7,054.82	7,111.58	7,054.87	25.10	25.83	-88.75	445.63	-144.59	488.68	438.08	50.59	9.659		
7,150.00	7,093.67	7,161.58	7,093.72	25.29	25.96	-88.81	445.95	-113.13	487.81	436.83	50.98	9.569		
7,200.00	7,130.23	7,211.57	7,130.27	25.52	26.10	-88.89	446.30	-79.03	486.87	435.44	51.42	9.468		
7,250.00	7,164.32	7,261.57	7,164.36	25.78	26.29	-88.97	446.67	-42.48	485.86	433.92	51.93	9.355		
7,300.00	7,195.78	7,311.56	7,195.81	26.09	26.53	-89.05	447.06	-3.63	484.78	432.25	52.54	9.228		
7,350.00	7,224.45	7,361.55	7,224.47	26.44	26.85	-89.14	447.48	37.31	483.65	430.41	53.24	9.084		
7,400.00	7,250.20	7,411.53	7,250.21	26.86	27.23	-89.23	447.92	80.14	482.47	428.40	54.07	8.923		
7,450.00	7,272.90	7,461.52	7,272.90	27.35	27.69	-89.33	448.37	124.67	481.23	426.21	55.02	8.746		
7,500.00	7,292.43	7,511.50	7,292.43	27.90	28.23	-89.43	448.84	170.67	479.96	423.84	56.12	8.552		
7,550.00	7,308.70	7,561.48	7,308.70	28.53	28.84	-89.54	449.32	217.91	478.66	421.30	57.36	8.345		
7,600.00	7,321.64	7,611.47	7,321.63	29.22	29.51	-89.64	449.81	266.18	477.32	418.59	58.73	8.127		
7,650.00	7,331.18	7,661.45	7,331.17	29.99	30.26	-89.75	450.31	315.23	475.96	415.73	60.24	7.901		
7,700.00	7,337.27	7,711.43	7,337.27	30.81	31.07	-89.86	450.81	364.82	474.59	412.73	61.87	7.671		
7,750.00	7,339.89	7,761.41	7,339.89	31.68	31.92	-89.97	451.32	414.72	473.21	409.62	63.59	7.441		
7,762.50	7,340.00	7,773.91	7,340.00	31.90	32.14	-90.00	451.44	427.22	472.87	408.83	64.04	7.384		
7,800.00	7,340.00	7,811.39	7,340.00	32.60	32.84	-90.00	451.82	464.70	471.83	406.41	65.43	7.212		
7,900.00	7,340.00	7,911.35	7,340.00	34.58	34.80	-90.00	452.84	564.66	469.07	399.70	69.37	6.762		
8,000.00	7,340.00	8,011.31	7,340.00	36.74	36.94	-90.00	453.86	664.61	466.30	392.64	73.66	6.331		
8,100.00	7,340.00	8,111.27	7,340.00	39.04	39.22	-90.00	454.87	764.57	463.54	385.30	78.24	5.925		
8,200.00	7,340.00	8,211.24	7,340.00	41.45	41.62	-90.00	455.89	864.53	460.78	377.72	83.06	5.548		
8,300.00	7,340.00	8,311.20	7,340.00	43.97	44.13	-90.00	456.90	964.48	458.01	369.93	88.08	5.200		
8,400.00	7,340.00	8,411.16	7,340.00	46.57	46.72	-90.00	457.92	1,064.44	455.25	361.98	93.27	4.881		
8,500.00	7,340.00	8,511.12	7,340.00	49.24	49.38	-90.00	458.93	1,164.40	452.48	353.88	98.60	4.589		
8,600.00	7,340.00	8,611.08	7,340.00	51.97	52.11	-90.00	459.95	1,264.35	449.72	345.66	104.05	4.322		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - 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	7,340.00	8,711.05	7,340.00	54.75	54.88	-90.00	460.97	1,364.31	446.95	337.35	109.61	4.078		
8,800.00	7,340.00	8,811.01	7,340.00	57.58	57.70	-90.00	461.98	1,464.27	444.19	328.94	115.25	3.854		
8,900.00	7,340.00	8,910.97	7,340.00	60.44	60.56	-90.00	463.00	1,564.22	441.43	320.46	120.97	3.649		
9,000.00	7,340.00	9,010.93	7,340.00	63.33	63.45	-90.00	464.01	1,664.18	438.66	311.91	126.75	3.461		
9,100.00	7,340.00	9,110.89	7,340.00	66.25	66.38	-90.00	465.03	1,764.14	435.90	303.30	132.59	3.287		
9,200.00	7,340.00	9,210.85	7,340.00	69.19	69.32	-90.00	466.04	1,864.09	433.13	294.65	138.48	3.128		
9,300.00	7,340.00	9,310.82	7,340.00	72.16	72.29	-90.00	467.06	1,964.05	430.37	285.95	144.42	2.980		
9,400.00	7,340.00	9,410.78	7,340.00	75.14	75.28	-90.00	468.08	2,064.01	427.61	277.22	150.39	2.843		
9,500.00	7,340.00	9,510.74	7,340.00	78.15	78.28	-90.00	469.09	2,163.96	424.84	268.45	156.39	2.717		
9,600.00	7,340.00	9,610.70	7,340.00	81.16	81.30	-90.00	470.11	2,263.92	422.08	259.65	162.43	2.599		
9,700.00	7,340.00	9,710.66	7,340.00	84.19	84.34	-90.00	471.12	2,363.88	419.31	250.82	168.49	2.489		
9,800.00	7,340.00	9,810.63	7,340.00	87.23	87.38	-90.00	472.14	2,463.83	416.55	241.97	174.58	2.386		
9,900.00	7,340.00	9,910.59	7,340.00	90.28	90.44	-90.00	473.15	2,563.79	413.79	233.10	180.68	2.290		
10,000.00	7,340.00	10,010.55	7,340.00	93.35	93.50	-90.00	474.17	2,663.75	411.02	224.21	186.81	2.200		
10,100.00	7,340.00	10,110.51	7,340.00	96.42	96.58	-90.00	475.19	2,763.70	408.26	215.30	192.96	2.116		
10,200.00	7,340.00	10,210.47	7,340.00	99.49	99.66	-90.00	476.20	2,863.66	405.49	206.38	199.12	2.036		
10,300.00	7,340.00	10,310.43	7,340.00	102.58	102.76	-90.00	477.22	2,963.62	402.73	197.44	205.29	1.962		
10,400.00	7,340.00	10,410.40	7,340.00	105.67	105.85	-90.00	478.23	3,063.57	399.97	188.48	211.48	1.891		
10,500.00	7,340.00	10,510.36	7,340.00	108.77	108.96	-90.00	479.25	3,163.53	397.20	179.52	217.68	1.825		
10,600.00	7,340.00	10,610.32	7,340.00	111.87	112.07	-90.00	480.26	3,263.49	394.44	170.54	223.90	1.762		
10,700.00	7,340.00	10,710.28	7,340.00	114.98	115.18	-90.00	481.28	3,363.44	391.67	161.55	230.12	1.702		
10,800.00	7,340.00	10,810.24	7,340.00	118.10	118.30	-90.00	482.30	3,463.40	388.91	152.56	236.35	1.645		
10,900.00	7,340.00	10,910.20	7,340.00	121.21	121.43	-90.00	483.31	3,563.36	386.15	143.55	242.59	1.592		
11,000.00	7,340.00	11,010.17	7,340.00	124.33	124.56	-90.00	484.33	3,663.31	383.38	134.54	248.84	1.541		
11,100.00	7,340.00	11,110.13	7,340.00	127.46	127.69	-90.00	485.34	3,763.27	380.62	125.52	255.10	1.492 Level 3		
11,200.00	7,340.00	11,210.09	7,340.00	130.59	130.82	-90.00	486.36	3,863.23	377.85	116.49	261.36	1.446 Level 3		
11,300.00	7,340.00	11,310.05	7,340.00	133.72	133.96	-90.00	487.38	3,963.18	375.09	107.46	267.63	1.402 Level 3		
11,400.00	7,340.00	11,410.01	7,340.00	136.85	137.11	-90.00	488.39	4,063.14	372.32	98.42	273.91	1.359 Level 3		
11,500.00	7,340.00	11,509.98	7,340.00	139.99	140.25	-90.00	489.41	4,163.10	369.56	89.37	280.19	1.319 Level 3		
11,600.00	7,340.00	11,609.94	7,340.00	143.13	143.40	-90.00	490.42	4,263.05	366.80	80.32	286.47	1.280 Level 3		
11,700.00	7,340.00	11,709.90	7,340.00	146.27	146.55	-90.00	491.44	4,363.01	364.03	71.27	292.76	1.243 Level 2		
11,800.00	7,340.00	11,809.86	7,340.00	149.42	149.70	-90.00	492.45	4,462.97	361.27	62.21	299.06	1.208 Level 2		
11,836.31	7,340.00	11,846.15	7,340.00	150.56	150.85	-90.00	492.82	4,499.26	360.26	58.92	301.35	1.196 Level 2, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - 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	0.00	0.00	0.00	0.00	-0.50	9.83	-0.08	9.83				
100.00	100.00	100.00	100.00	0.14	0.14	-0.50	9.83	-0.08	9.83	9.56	0.28	35.617	
200.00	200.00	200.00	200.00	0.50	0.50	-0.50	9.83	-0.08	9.83	8.84	0.99	9.901	
300.00	300.00	300.00	300.00	0.85	0.85	-0.50	9.83	-0.08	9.83	8.12	1.71	5.750	
400.00	400.00	400.00	400.00	1.21	1.21	-0.50	9.83	-0.08	9.83	7.40	2.43	4.051	
500.00	500.00	500.00	500.00	1.57	1.57	-0.50	9.83	-0.08	9.83	6.69	3.14	3.127	
600.00	600.00	600.00	600.00	1.93	1.93	-0.50	9.83	-0.08	9.83	5.97	3.86	2.546	
700.00	700.00	700.00	700.00	2.29	2.29	-0.50	9.83	-0.08	9.83	5.25	4.58	2.148	
800.00	800.00	800.00	800.00	2.65	2.65	-0.50	9.83	-0.08	9.83	4.54	5.29	1.857 CC	
900.00	899.98	899.98	899.98	3.00	3.01	108.86	9.83	-0.08	10.26	4.25	6.00	1.709	
1,000.00	999.84	999.84	999.84	3.34	3.36	131.31	9.83	-0.08	12.93	6.23	6.70	1.929	
1,081.60	1,081.14	1,081.15	1,081.14	3.63	3.65	144.03	10.64	-0.90	18.17	10.89	7.28	2.497	
1,100.00	1,099.46	1,099.49	1,099.47	3.69	3.72	145.43	11.05	-1.31	19.64	12.24	7.41	2.652	
1,200.00	1,198.98	1,199.20	1,199.04	4.05	4.07	146.18	14.70	-5.01	27.63	19.52	8.11	3.407	
1,300.00	1,298.49	1,298.86	1,298.37	4.41	4.43	141.87	20.40	-10.77	35.62	26.80	8.82	4.038	
1,400.00	1,398.01	1,398.50	1,397.65	4.78	4.79	138.72	26.33	-16.77	43.77	34.23	9.54	4.587	
1,500.00	1,497.53	1,498.15	1,496.94	5.15	5.15	136.56	32.26	-22.77	52.01	41.75	10.27	5.067	
1,600.00	1,597.04	1,597.79	1,596.23	5.52	5.52	134.99	38.20	-28.77	60.30	49.31	10.99	5.486	
1,700.00	1,696.56	1,697.44	1,695.51	5.90	5.88	133.80	44.13	-34.77	68.63	56.91	11.72	5.854	
1,800.00	1,796.08	1,797.08	1,794.80	6.28	6.25	132.87	50.06	-40.77	76.98	64.52	12.46	6.180	
1,900.00	1,895.60	1,896.72	1,894.08	6.65	6.61	132.13	56.00	-46.78	85.34	72.15	13.19	6.469	
2,000.00	1,995.11	1,996.37	1,993.37	7.03	6.98	131.51	61.93	-52.78	93.72	79.79	13.93	6.728	
2,100.00	2,094.63	2,096.01	2,092.66	7.41	7.35	131.00	67.86	-58.78	102.11	87.44	14.67	6.961	
2,200.00	2,194.15	2,195.66	2,191.94	7.79	7.72	130.56	73.80	-64.78	110.50	95.09	15.41	7.171	
2,300.00	2,293.67	2,295.30	2,291.23	8.17	8.09	130.19	79.73	-70.78	118.90	102.75	16.15	7.362	
2,400.00	2,393.18	2,394.94	2,390.51	8.55	8.46	129.86	85.66	-76.78	127.30	110.41	16.89	7.536	
2,500.00	2,492.70	2,494.59	2,489.80	8.94	8.83	129.58	91.59	-82.78	135.71	118.07	17.63	7.695	
2,600.00	2,592.22	2,594.23	2,589.09	9.32	9.21	129.33	97.53	-88.78	144.12	125.74	18.38	7.842	
2,700.00	2,691.73	2,693.87	2,688.37	9.70	9.58	129.10	103.46	-94.78	152.53	133.41	19.12	7.976	
2,800.00	2,791.25	2,793.52	2,787.66	10.09	9.95	128.90	109.39	-100.78	160.94	141.07	19.87	8.100	
2,900.00	2,890.77	2,893.16	2,886.94	10.47	10.32	128.72	115.33	-106.78	169.36	148.74	20.61	8.216	
3,000.00	2,990.29	2,992.81	2,986.23	10.85	10.70	128.56	121.26	-112.78	177.78	156.42	21.36	8.323	
3,100.00	3,089.80	3,092.45	3,085.52	11.24	11.07	128.41	127.19	-118.78	186.19	164.09	22.11	8.423	
3,200.00	3,189.32	3,192.09	3,184.80	11.62	11.44	128.27	133.13	-124.78	194.61	171.76	22.85	8.516	
3,300.00	3,288.84	3,291.74	3,284.09	12.01	11.81	128.15	139.06	-130.78	203.03	179.43	23.60	8.603	
3,400.00	3,388.36	3,391.38	3,383.37	12.39	12.19	128.03	144.99	-136.78	211.46	187.11	24.35	8.685	
3,500.00	3,487.87	3,491.03	3,482.66	12.78	12.56	127.93	150.92	-142.78	219.88	194.78	25.10	8.761	
3,600.00	3,587.39	3,590.67	3,581.95	13.16	12.94	127.83	156.86	-148.78	228.30	202.46	25.84	8.834	
3,700.00	3,686.91	3,690.31	3,681.23	13.55	13.31	127.74	162.79	-154.78	236.72	210.13	26.59	8.902	
3,732.10	3,718.86	3,722.30	3,713.11	13.67	13.43	127.71	164.70	-156.71	239.43	212.60	26.83	8.923	
3,800.00	3,786.50	3,789.99	3,780.55	13.93	13.68	127.59	168.73	-160.79	244.66	217.32	27.34	8.949	
3,900.00	3,886.33	3,889.75	3,879.95	14.30	14.06	126.86	174.67	-166.79	250.61	222.53	28.08	8.924	
4,000.00	3,986.30	3,989.47	3,979.31	14.65	14.43	125.51	180.60	-172.80	254.57	225.75	28.82	8.834	
4,013.70	4,000.00	4,003.12	3,992.91	14.69	14.48	25.58	181.42	-173.62	254.96	226.05	28.92	8.817	
4,100.00	4,086.30	4,089.11	4,078.59	14.98	14.81	24.05	186.54	-178.80	257.46	227.92	29.54	8.716	
4,200.00	4,186.30	4,188.75	4,177.88	15.31	15.18	22.31	192.47	-184.80	260.57	230.31	30.26	8.612	
4,300.00	4,286.30	4,288.39	4,277.16	15.64	15.56	20.61	198.40	-190.80	263.92	232.94	30.98	8.520	
4,400.00	4,386.30	4,388.03	4,376.44	15.98	15.93	18.96	204.33	-196.80	267.49	235.80	31.69	8.440	
4,500.00	4,486.30	4,487.67	4,475.72	16.31	16.30	17.36	210.27	-202.80	271.28	238.87	32.41	8.370	
4,600.00	4,586.30	4,587.31	4,575.01	16.65	16.68	15.79	216.20	-208.80	275.28	242.16	33.13	8.310	
4,700.00	4,686.30	4,686.95	4,674.29	16.99	17.05	14.28	222.13	-214.80	279.48	245.64	33.84	8.259	
4,800.00	4,786.30	4,786.59	4,773.57	17.33	17.43	12.81	228.07	-220.80	283.88	249.32	34.56	8.215	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
4,900.00	4,886.30	4,886.23	4,872.86	17.66	17.80	11.38	234.00	-226.80	288.45	253.18	35.27	8.179		
5,000.00	4,986.30	4,985.88	4,972.14	18.00	18.18	10.00	239.93	-232.80	293.19	257.21	35.98	8.149		
5,100.00	5,086.30	5,085.52	5,071.42	18.34	18.55	8.67	245.86	-238.80	298.10	261.41	36.69	8.124		
5,200.00	5,186.30	5,185.16	5,170.70	18.69	18.93	7.37	251.80	-244.80	303.17	265.77	37.40	8.105		
5,300.00	5,286.30	5,284.80	5,269.99	19.03	19.30	6.13	257.73	-250.80	308.39	270.28	38.11	8.091		
5,400.00	5,386.30	5,384.44	5,369.27	19.37	19.68	4.92	263.66	-256.80	313.75	274.92	38.82	8.081		
5,500.00	5,486.30	5,484.08	5,468.55	19.71	20.05	3.75	269.60	-262.80	319.24	279.71	39.53	8.075		
5,600.00	5,586.30	5,583.72	5,567.84	20.06	20.43	2.63	275.53	-268.80	324.86	284.62	40.24	8.073		
5,700.00	5,686.30	5,683.36	5,667.12	20.40	20.80	1.54	281.46	-274.80	330.61	289.66	40.95	8.073		
5,800.00	5,786.30	5,783.81	5,767.21	20.74	21.18	0.48	287.43	-280.84	336.45	294.79	41.67	8.075		
5,900.00	5,886.30	5,892.67	5,875.85	21.09	21.58	0.34	292.20	-285.66	340.83	298.41	42.43	8.033		
6,000.00	5,986.30	6,001.88	5,985.03	21.43	21.97	-0.65	294.06	-287.55	342.56	299.40	43.16	7.938		
6,100.00	6,086.30	6,103.16	6,086.30	21.78	22.31	-0.65	294.09	-287.57	342.58	298.73	43.85	7.812		
6,200.00	6,186.30	6,203.16	6,186.30	22.13	22.66	-0.65	294.09	-287.57	342.58	298.04	44.55	7.691		
6,300.00	6,286.30	6,303.16	6,286.30	22.47	23.00	-0.65	294.09	-287.57	342.58	297.34	45.24	7.573		
6,400.00	6,386.30	6,403.16	6,386.30	22.82	23.35	-0.65	294.09	-287.57	342.58	296.65	45.94	7.458		
6,500.00	6,486.30	6,503.16	6,486.30	23.17	23.69	-0.65	294.09	-287.57	342.58	295.95	46.63	7.347		
6,600.00	6,586.30	6,603.16	6,586.30	23.52	24.04	-0.65	294.09	-287.57	342.58	295.26	47.33	7.239		
6,637.50	6,623.80	6,640.66	6,623.80	23.65	24.16	-0.65	294.09	-287.57	342.58	294.99	47.59	7.199		
6,650.00	6,636.30	6,653.16	6,636.30	23.69	24.21	-88.51	294.09	-287.57	342.58	294.91	47.67	7.186		
6,700.00	6,686.22	6,703.08	6,686.22	23.85	24.38	-88.95	294.09	-287.57	342.52	294.51	48.01	7.135		
6,750.00	6,735.84	6,753.20	6,736.31	24.01	24.55	-89.77	294.10	-286.31	342.43	294.11	48.33	7.086		
6,800.00	6,784.91	6,803.69	6,786.57	24.16	24.70	-90.60	294.15	-281.54	342.32	293.69	48.63	7.039		
6,850.00	6,833.20	6,854.54	6,836.72	24.31	24.86	-91.43	294.24	-273.17	342.17	293.25	48.92	6.994		
6,900.00	6,880.46	6,905.75	6,886.49	24.46	25.00	-92.26	294.36	-261.17	342.00	292.80	49.21	6.951		
6,950.00	6,926.48	6,957.31	6,935.61	24.61	25.15	-93.08	294.52	-245.52	341.80	292.32	49.48	6.907		
7,000.00	6,971.02	7,009.23	6,983.80	24.76	25.29	-93.90	294.71	-226.24	341.56	291.81	49.76	6.865		
7,050.00	7,013.87	7,061.50	7,030.77	24.92	25.42	-94.69	294.95	-203.35	341.29	291.25	50.03	6.821		
7,100.00	7,054.82	7,114.11	7,076.25	25.10	25.57	-95.47	295.22	-176.92	340.97	290.65	50.32	6.776		
7,150.00	7,093.67	7,167.06	7,119.93	25.29	25.72	-96.23	295.52	-147.02	340.60	289.97	50.63	6.728		
7,200.00	7,130.23	7,220.33	7,161.53	25.52	25.89	-96.96	295.86	-113.76	340.18	289.21	50.97	6.674		
7,250.00	7,164.32	7,273.91	7,200.76	25.78	26.10	-97.66	296.23	-77.28	339.70	288.33	51.37	6.613		
7,300.00	7,195.78	7,327.79	7,237.35	26.09	26.35	-98.32	296.63	-37.75	339.15	287.32	51.84	6.543		
7,350.00	7,224.45	7,381.95	7,271.03	26.44	26.66	-98.95	297.06	4.64	338.54	286.14	52.40	6.461		
7,400.00	7,250.20	7,436.35	7,301.54	26.86	27.04	-99.54	297.52	49.66	337.85	284.77	53.08	6.365		
7,450.00	7,272.90	7,490.99	7,328.65	27.35	27.50	-100.08	298.00	97.08	337.07	283.18	53.89	6.255		
7,500.00	7,292.43	7,545.83	7,352.15	27.90	28.04	-100.57	298.50	146.61	336.22	281.37	54.85	6.130		
7,550.00	7,308.70	7,600.84	7,371.85	28.53	28.67	-101.01	299.02	197.96	335.28	279.31	55.97	5.990		
7,600.00	7,321.64	7,655.99	7,387.58	29.22	29.39	-101.39	299.56	250.81	334.24	276.99	57.26	5.837		
7,650.00	7,331.18	7,711.26	7,399.22	29.99	30.20	-101.72	300.11	304.81	333.13	274.41	58.71	5.674		
7,700.00	7,337.27	7,766.60	7,406.67	30.81	31.08	-101.99	300.67	359.64	331.92	271.60	60.31	5.503		
7,750.00	7,339.89	7,821.99	7,409.87	31.68	32.02	-102.20	301.23	414.91	330.63	268.57	62.05	5.328		
7,762.50	7,340.00	7,835.82	7,410.00	31.90	32.26	-102.24	301.37	428.75	330.29	267.79	62.50	5.284		
7,800.00	7,340.00	7,873.30	7,410.00	32.60	32.95	-102.28	301.75	466.23	329.28	265.43	63.85	5.157		
7,900.00	7,340.00	7,973.27	7,410.00	34.58	34.92	-102.38	302.77	566.18	326.58	258.89	67.69	4.825		
8,000.00	7,340.00	8,073.23	7,410.00	36.74	37.05	-102.49	303.78	666.14	323.88	252.02	71.86	4.507		
8,100.00	7,340.00	8,173.19	7,410.00	39.04	39.32	-102.59	304.80	766.10	321.18	244.88	76.30	4.209		
8,200.00	7,340.00	8,273.15	7,410.00	41.45	41.72	-102.70	305.81	866.05	318.48	237.51	80.98	3.933		
8,300.00	7,340.00	8,373.11	7,410.00	43.97	44.22	-102.81	306.83	966.01	315.79	229.94	85.84	3.679		
8,400.00	7,340.00	8,473.07	7,410.00	46.57	46.81	-102.92	307.85	1,065.97	313.09	222.22	90.87	3.445		
8,500.00	7,340.00	8,573.04	7,410.00	49.24	49.47	-103.04	308.86	1,165.92	310.40	214.36	96.04	3.232		
8,600.00	7,340.00	8,673.00	7,410.00	51.97	52.19	-103.15	309.88	1,265.88	307.71	206.40	101.31	3.037		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - 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	
8,700.00	7,340.00	8,772.96	7,410.00	54.75	54.96	-103.27	310.89	1,365.84	305.01	198.34	106.68	2.859		
8,800.00	7,340.00	8,872.92	7,410.00	57.58	57.78	-103.39	311.91	1,465.79	302.33	190.20	112.12	2.696		
8,900.00	7,340.00	8,972.88	7,410.00	60.44	60.63	-103.52	312.92	1,565.75	299.64	182.00	117.64	2.547		
9,000.00	7,340.00	9,072.84	7,410.00	63.33	63.52	-103.64	313.94	1,665.71	296.95	173.74	123.21	2.410		
9,100.00	7,340.00	9,172.81	7,410.00	66.25	66.44	-103.77	314.96	1,765.66	294.26	165.44	128.83	2.284		
9,200.00	7,340.00	9,272.77	7,410.00	69.19	69.38	-103.90	315.97	1,865.62	291.58	157.10	134.48	2.168		
9,300.00	7,340.00	9,372.73	7,410.00	72.16	72.35	-104.03	316.99	1,965.58	288.90	148.72	140.18	2.061		
9,400.00	7,340.00	9,472.69	7,410.00	75.14	75.34	-104.16	318.00	2,065.53	286.22	140.32	145.90	1.962		
9,500.00	7,340.00	9,572.65	7,410.00	78.15	78.34	-104.30	319.02	2,165.49	283.54	131.90	151.64	1.870		
9,600.00	7,340.00	9,672.62	7,410.00	81.16	81.36	-104.44	320.03	2,265.45	280.86	123.45	157.41	1.784		
9,700.00	7,340.00	9,772.58	7,410.00	84.19	84.39	-104.58	321.05	2,365.40	278.18	115.00	163.19	1.705		
9,800.00	7,340.00	9,872.54	7,410.00	87.23	87.43	-104.72	322.07	2,465.36	275.51	106.53	168.98	1.630		
9,900.00	7,340.00	9,972.50	7,410.00	90.28	90.49	-104.87	323.08	2,565.31	272.84	98.05	174.79	1.561		
10,000.00	7,340.00	10,072.46	7,410.00	93.35	93.56	-105.02	324.10	2,665.27	270.17	89.57	180.60	1.496 Level 3		
10,100.00	7,340.00	10,172.42	7,410.00	96.42	96.63	-105.18	325.11	2,765.23	267.50	81.08	186.42	1.435 Level 3		
10,200.00	7,340.00	10,272.39	7,410.00	99.49	99.71	-105.33	326.13	2,865.18	264.83	72.59	192.24	1.378 Level 3		
10,300.00	7,340.00	10,372.35	7,410.00	102.58	102.80	-105.49	327.15	2,965.14	262.17	64.10	198.06	1.324 Level 3		
10,400.00	7,340.00	10,472.31	7,410.00	105.67	105.90	-105.65	328.16	3,065.10	259.50	55.62	203.89	1.273 Level 3		
10,500.00	7,340.00	10,572.27	7,410.00	108.77	109.00	-105.82	329.18	3,165.05	256.84	47.14	209.71	1.225 Level 2		
10,600.00	7,340.00	10,672.23	7,410.00	111.87	112.11	-105.99	330.19	3,265.01	254.19	38.66	215.52	1.179 Level 2		
10,700.00	7,340.00	10,772.20	7,410.00	114.98	115.23	-106.16	331.21	3,364.97	251.53	30.19	221.33	1.136 Level 2		
10,800.00	7,340.00	10,872.16	7,410.00	118.10	118.35	-106.34	332.22	3,464.92	248.88	21.74	227.14	1.096 Level 2		
10,900.00	7,340.00	10,972.12	7,410.00	121.21	121.47	-106.52	333.24	3,564.88	246.22	13.29	232.94	1.057 Level 2		
11,000.00	7,340.00	11,072.08	7,410.00	124.33	124.60	-106.71	334.26	3,664.84	243.58	4.85	238.72	1.020 Level 2		
11,100.00	7,340.00	11,172.04	7,410.00	127.46	127.73	-106.90	335.27	3,764.79	240.93	-3.57	244.50	0.985 Level 1		
11,200.00	7,340.00	11,272.00	7,410.00	130.59	130.87	-107.09	336.29	3,864.75	238.29	-11.98	250.26	0.952 Level 1		
11,300.00	7,340.00	11,371.97	7,410.00	133.72	134.00	-107.29	337.30	3,964.71	235.65	-20.37	256.01	0.920 Level 1		
11,400.00	7,340.00	11,471.93	7,410.00	136.85	137.15	-107.49	338.32	4,064.66	233.01	-28.74	261.75	0.890 Level 1		
11,500.00	7,340.00	11,571.89	7,410.00	139.99	140.29	-107.70	339.33	4,164.62	230.37	-37.09	267.46	0.861 Level 1		
11,600.00	7,340.00	11,671.85	7,410.00	143.13	143.44	-107.91	340.35	4,264.58	227.74	-45.42	273.16	0.834 Level 1		
11,700.00	7,340.00	11,771.81	7,410.00	146.27	146.59	-108.12	341.37	4,364.53	225.11	-53.73	278.84	0.807 Level 1		
11,800.00	7,340.00	11,871.78	7,410.00	149.42	149.74	-108.34	342.38	4,464.49	222.49	-62.01	284.50	0.782 Level 1		
11,836.31	7,340.00	11,908.07	7,410.00	150.56	150.88	-108.43	342.75	4,500.78	221.53	-65.01	286.55	0.773 Level 1, 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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - 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	0.00	0.00	0.00	0.00	179.50	-10.20	0.09	10.20					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-10.20	0.09	10.20	9.92	0.28	36.952		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-10.20	0.09	10.20	9.21	0.99	10.272		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-10.20	0.09	10.20	8.49	1.71	5.965		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-10.20	0.09	10.20	7.77	2.43	4.203		
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-10.20	0.09	10.20	7.06	3.14	3.244		
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-10.20	0.09	10.20	6.34	3.86	2.642		
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-10.20	0.09	10.20	5.62	4.58	2.228		
800.00	800.00	800.00	800.00	2.65	2.65	179.50	-10.20	0.09	10.20	4.91	5.29	1.926		
896.67	896.66	896.66	896.66	2.98	2.99	-90.00	-10.20	0.09	10.07	4.09	5.98	1.684 CC		
900.00	899.98	899.98	899.98	3.00	3.01	-90.65	-10.20	0.09	10.07	4.07	6.00	1.678 ES		
1,000.00	999.84	999.90	999.88	3.34	3.35	-109.22	-10.86	-1.52	11.06	4.37	6.69	1.653		
1,081.60	1,081.14	1,081.51	1,081.39	3.63	3.63	-120.19	-12.37	-5.23	13.09	5.84	7.25	1.804		
1,100.00	1,099.46	1,099.90	1,099.74	3.69	3.69	-122.17	-12.80	-6.29	13.66	6.28	7.38	1.850		
1,200.00	1,198.98	1,199.82	1,199.47	4.05	4.04	-130.51	-15.14	-12.05	16.98	8.90	8.08	2.101		
1,300.00	1,298.49	1,299.74	1,299.20	4.41	4.39	-136.05	-17.49	-17.80	20.53	11.75	8.78	2.338		
1,400.00	1,398.01	1,399.66	1,398.93	4.78	4.74	-139.92	-19.83	-23.55	24.22	14.73	9.49	2.552		
1,500.00	1,497.53	1,499.58	1,498.65	5.15	5.09	-142.77	-22.18	-29.30	27.99	17.79	10.20	2.744		
1,600.00	1,597.04	1,599.50	1,598.38	5.52	5.45	-144.93	-24.52	-35.06	31.82	20.90	10.91	2.915		
1,700.00	1,696.56	1,699.42	1,698.11	5.90	5.81	-146.63	-26.87	-40.81	35.68	24.05	11.63	3.068		
1,800.00	1,796.08	1,799.35	1,797.84	6.28	6.17	-148.00	-29.21	-46.56	39.56	27.21	12.35	3.204		
1,900.00	1,895.60	1,899.27	1,897.56	6.65	6.53	-149.12	-31.56	-52.32	43.47	30.40	13.07	3.326		
2,000.00	1,995.11	1,999.19	1,997.29	7.03	6.89	-150.05	-33.90	-58.07	47.38	33.59	13.79	3.436		
2,100.00	2,094.63	2,099.11	2,097.02	7.41	7.26	-150.84	-36.25	-63.82	51.31	36.80	14.51	3.536		
2,200.00	2,194.15	2,199.03	2,196.74	7.79	7.62	-151.52	-38.59	-69.58	55.25	40.01	15.23	3.626		
2,300.00	2,293.67	2,298.95	2,296.47	8.17	7.99	-152.11	-40.93	-75.33	59.19	43.23	15.96	3.709		
2,400.00	2,393.18	2,398.87	2,396.20	8.55	8.35	-152.63	-43.28	-81.08	63.14	46.46	16.68	3.785		
2,500.00	2,492.70	2,498.79	2,495.93	8.94	8.72	-153.08	-45.62	-86.83	67.09	49.68	17.41	3.854		
2,600.00	2,592.22	2,598.71	2,595.65	9.32	9.08	-153.49	-47.97	-92.59	71.05	52.91	18.14	3.918		
2,700.00	2,691.73	2,698.63	2,695.38	9.70	9.45	-153.85	-50.31	-98.34	75.01	56.15	18.86	3.977		
2,800.00	2,791.25	2,798.55	2,795.11	10.09	9.82	-154.18	-52.66	-104.09	78.97	59.38	19.59	4.031		
2,900.00	2,890.77	2,898.47	2,894.83	10.47	10.18	-154.47	-55.00	-109.85	82.94	62.62	20.32	4.082		
3,000.00	2,990.29	2,998.39	2,994.56	10.85	10.55	-154.74	-57.35	-115.60	86.90	65.86	21.05	4.129		
3,100.00	3,089.80	3,098.31	3,094.29	11.24	10.92	-154.98	-59.69	-121.35	90.87	69.10	21.77	4.173		
3,200.00	3,189.32	3,198.23	3,194.02	11.62	11.29	-155.21	-62.04	-127.10	94.84	72.34	22.50	4.215		
3,300.00	3,288.84	3,298.15	3,293.74	12.01	11.65	-155.41	-64.38	-132.86	98.81	75.58	23.23	4.253		
3,400.00	3,388.36	3,398.07	3,393.47	12.39	12.02	-155.60	-66.73	-138.61	102.79	78.82	23.96	4.290		
3,500.00	3,487.87	3,497.99	3,493.20	12.78	12.39	-155.78	-69.07	-144.36	106.76	82.07	24.69	4.324		
3,600.00	3,587.39	3,597.91	3,592.92	13.16	12.76	-155.94	-71.41	-150.12	110.73	85.31	25.42	4.356		
3,700.00	3,686.91	3,697.83	3,692.65	13.55	13.13	-156.09	-73.76	-155.87	114.71	88.56	26.15	4.386		
3,732.10	3,718.86	3,729.91	3,724.67	13.67	13.25	-156.14	-74.51	-157.72	115.99	89.60	26.39	4.396		
3,800.00	3,786.50	3,797.78	3,792.40	13.93	13.50	-156.09	-76.10	-161.62	117.95	91.07	26.88	4.388		
3,900.00	3,886.33	3,897.76	3,892.19	14.30	13.87	-155.43	-78.45	-167.38	118.17	90.56	27.61	4.279		
4,000.00	3,986.30	3,997.68	3,991.91	14.65	14.23	-154.00	-80.79	-173.13	115.26	86.91	28.35	4.066		
4,013.70	4,000.00	4,011.35	4,005.56	14.69	14.28	106.57	-81.12	-173.92	114.63	86.18	28.45	4.029		
4,100.00	4,086.30	4,097.48	4,091.53	14.98	14.60	108.31	-83.14	-178.88	110.49	81.41	29.08	3.800		
4,200.00	4,186.30	4,197.29	4,191.14	15.31	14.97	110.49	-85.48	-184.63	105.83	76.03	29.81	3.551		
4,300.00	4,286.30	4,297.10	4,290.76	15.64	15.34	112.87	-87.82	-190.37	101.35	70.80	30.54	3.318		
4,400.00	4,386.30	4,396.90	4,390.37	15.98	15.71	115.47	-90.16	-196.12	97.05	65.77	31.28	3.103		
4,500.00	4,486.30	4,496.71	4,489.98	16.31	16.08	118.30	-92.50	-201.87	92.97	60.94	32.02	2.903		
4,600.00	4,586.30	4,596.52	4,589.60	16.65	16.45	121.38	-94.85	-207.61	89.13	56.37	32.77	2.720		
4,700.00	4,686.30	4,696.32	4,689.21	16.99	16.82	124.72	-97.19	-213.36	85.58	52.06	33.52	2.553		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
4,800.00	4,786.30	4,796.13	4,788.82	17.33	17.18	128.34	-99.53	-219.10	82.35	48.07	34.27	2.403	
4,900.00	4,886.30	4,895.94	4,888.44	17.66	17.55	132.24	-101.87	-224.85	79.47	44.44	35.03	2.269	
5,000.00	4,986.30	4,995.74	4,988.05	18.00	17.92	136.41	-104.21	-230.60	76.98	41.20	35.78	2.151	
5,100.00	5,086.30	5,095.55	5,087.66	18.34	18.29	140.83	-106.56	-236.34	74.93	38.40	36.53	2.051	
5,200.00	5,186.30	5,195.36	5,187.28	18.69	18.66	145.48	-108.90	-242.09	73.35	36.07	37.28	1.968	
5,300.00	5,286.30	5,295.16	5,286.89	19.03	19.03	150.29	-111.24	-247.84	72.28	34.26	38.02	1.901	
5,400.00	5,386.30	5,394.97	5,386.50	19.37	19.40	155.21	-113.58	-253.58	71.72	32.97	38.75	1.851	
5,452.84	5,439.14	5,447.71	5,439.14	19.55	19.60	157.83	-114.82	-256.62	71.65	32.52	39.13	1.831	
5,500.00	5,486.30	5,494.78	5,486.12	19.71	19.77	160.17	-115.92	-259.33	71.71	32.24	39.47	1.817	
5,600.00	5,586.30	5,594.58	5,585.73	20.06	20.14	165.09	-118.27	-265.08	72.23	32.06	40.17	1.798	
5,700.00	5,686.30	5,694.39	5,685.34	20.40	20.51	169.91	-120.61	-270.82	73.28	32.41	40.87	1.793	
5,800.00	5,786.30	5,794.20	5,784.96	20.74	20.88	174.56	-122.95	-276.57	74.83	33.27	41.55	1.801	
5,900.00	5,886.30	5,894.61	5,885.21	21.09	21.25	178.53	-125.04	-281.70	76.60	34.37	42.24	1.814	
6,000.00	5,986.30	5,995.58	5,986.16	21.43	21.60	-179.90	-125.90	-283.80	77.43	34.51	42.92	1.804	
6,100.00	6,086.30	6,095.72	6,086.30	21.78	21.93	-179.87	-125.91	-283.83	77.44	33.84	43.60	1.776	
6,200.00	6,186.30	6,195.72	6,186.30	22.13	22.27	-179.87	-125.91	-283.83	77.44	33.16	44.28	1.749	
6,300.00	6,286.30	6,295.72	6,286.30	22.47	22.60	-179.87	-125.91	-283.83	77.44	32.47	44.97	1.722	
6,400.00	6,386.30	6,395.72	6,386.30	22.82	22.94	-179.87	-125.91	-283.83	77.44	31.79	45.65	1.696	
6,500.00	6,486.30	6,495.72	6,486.30	23.17	23.27	-179.87	-125.91	-283.83	77.44	31.10	46.34	1.671	
6,600.00	6,586.30	6,595.72	6,586.30	23.52	23.61	-179.87	-125.91	-283.83	77.44	30.42	47.02	1.647	
6,637.50	6,623.80	6,633.23	6,623.80	23.65	23.74	-179.87	-125.91	-283.83	77.44	30.16	47.28	1.638	
6,650.00	6,636.30	6,645.72	6,636.30	23.69	23.78	92.37	-125.91	-283.83	77.44	30.08	47.36	1.635	
6,700.00	6,686.22	6,695.65	6,686.22	23.85	23.95	94.29	-125.91	-283.83	77.60	29.92	47.68	1.628	
6,750.00	6,735.84	6,745.26	6,735.84	24.01	24.11	98.65	-125.91	-283.83	78.29	30.33	47.96	1.632	
6,800.00	6,784.91	6,794.33	6,784.91	24.16	24.28	105.12	-125.91	-283.83	80.30	32.10	48.20	1.666	
6,850.00	6,833.20	6,842.62	6,833.20	24.31	24.44	113.03	-125.91	-283.83	84.68	36.27	48.41	1.749	
6,900.00	6,880.46	6,891.09	6,881.67	24.46	24.61	121.56	-125.91	-283.61	92.38	43.81	48.57	1.902	
6,950.00	6,926.48	6,942.27	6,932.73	24.61	24.77	129.23	-125.88	-280.51	102.53	53.92	48.62	2.109	
7,000.00	6,971.02	6,994.81	6,984.80	24.76	24.93	135.46	-125.80	-273.54	114.21	65.72	48.49	2.355	
7,050.00	7,013.87	7,048.83	7,037.65	24.92	25.09	140.47	-125.69	-262.41	126.88	78.75	48.13	2.636	
7,100.00	7,054.82	7,104.40	7,090.99	25.10	25.25	144.49	-125.53	-246.85	140.11	92.61	47.50	2.950	
7,150.00	7,093.67	7,161.63	7,144.48	25.29	25.41	147.73	-125.33	-226.55	153.56	106.99	46.57	3.297	
7,200.00	7,130.23	7,220.59	7,197.71	25.52	25.58	150.33	-125.07	-201.24	166.96	121.62	45.34	3.682	
7,250.00	7,164.32	7,281.35	7,250.20	25.78	25.75	152.44	-124.76	-170.67	180.09	136.29	43.80	4.112	
7,300.00	7,195.78	7,343.96	7,301.37	26.09	25.95	154.13	-124.39	-134.63	192.73	150.78	41.95	4.594	
7,350.00	7,224.45	7,408.44	7,350.57	26.44	26.18	155.48	-123.97	-93.00	204.71	164.89	39.82	5.141	
7,400.00	7,250.20	7,474.78	7,397.08	26.86	26.47	156.54	-123.49	-45.72	215.85	178.40	37.45	5.764	
7,450.00	7,272.90	7,542.92	7,440.08	27.35	26.85	157.35	-122.95	7.10	225.98	191.08	34.90	6.475	
7,500.00	7,292.43	7,612.77	7,478.75	27.90	27.35	157.93	-122.36	65.23	234.98	202.68	32.30	7.276	
7,550.00	7,308.70	7,684.18	7,512.24	28.53	27.98	158.32	-121.72	128.26	242.69	212.90	29.79	8.146	
7,600.00	7,321.64	7,756.93	7,539.74	29.22	28.76	158.52	-121.04	195.58	249.01	221.39	27.62	9.016	
7,650.00	7,331.18	7,830.77	7,560.51	29.99	29.72	158.53	-120.32	266.40	253.84	227.78	26.06	9.740	
7,700.00	7,337.27	7,905.40	7,573.99	30.81	30.83	158.38	-119.57	339.76	257.12	231.69	25.43	10.112	
7,750.00	7,339.89	7,980.46	7,579.78	31.68	32.08	158.06	-118.81	414.56	258.78	232.88	25.90	9.991	
7,762.50	7,340.00	7,998.91	7,580.00	31.90	32.40	157.95	-118.62	433.01	258.95	232.75	26.19	9.886	
7,800.00	7,340.00	8,036.40	7,580.00	32.60	33.10	157.74	-118.24	470.49	259.34	232.29	27.05	9.588	
7,900.00	7,340.00	8,136.36	7,580.00	34.58	35.04	157.18	-117.23	570.45	260.40	230.94	29.45	8.841	
8,000.00	7,340.00	8,236.32	7,580.00	36.74	37.16	156.62	-116.21	670.41	261.48	229.42	32.06	8.156	
8,100.00	7,340.00	8,336.28	7,580.00	39.04	39.42	156.07	-115.19	770.36	262.59	227.74	34.85	7.535	
8,200.00	7,340.00	8,436.24	7,580.00	41.45	41.81	155.52	-114.18	870.32	263.72	225.92	37.80	6.977	
8,300.00	7,340.00	8,536.20	7,580.00	43.97	44.30	154.98	-113.16	970.28	264.88	223.98	40.90	6.476	
8,400.00	7,340.00	8,636.17	7,580.00	46.57	46.88	154.44	-112.15	1,070.23	266.06	221.92	44.14	6.027	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,500.00	7,340.00	8,736.13	7,580.00	49.24	49.53	153.90	-111.13	1,170.19	267.27	219.76	47.51	5.625	
8,600.00	7,340.00	8,836.09	7,580.00	51.97	52.25	153.37	-110.11	1,270.15	268.50	217.49	51.00	5.264	
8,700.00	7,340.00	8,936.05	7,580.00	54.75	55.02	152.85	-109.10	1,370.10	269.75	215.14	54.60	4.940	
8,800.00	7,340.00	9,036.01	7,580.00	57.58	57.83	152.33	-108.08	1,470.06	271.02	212.71	58.31	4.648	
8,900.00	7,340.00	9,135.98	7,580.00	60.44	60.68	151.81	-107.07	1,570.02	272.31	210.19	62.13	4.383	
9,000.00	7,340.00	9,235.94	7,580.00	63.33	63.57	151.30	-106.05	1,669.97	273.63	207.60	66.04	4.144	
9,100.00	7,340.00	9,335.90	7,580.00	66.25	66.48	150.80	-105.03	1,769.93	274.97	204.93	70.04	3.926	
9,200.00	7,340.00	9,435.86	7,580.00	69.19	69.42	150.30	-104.02	1,869.89	276.33	202.20	74.13	3.728	
9,300.00	7,340.00	9,535.82	7,580.00	72.16	72.38	149.80	-103.00	1,969.84	277.71	199.40	78.31	3.546	
9,400.00	7,340.00	9,635.78	7,580.00	75.14	75.37	149.31	-101.99	2,069.80	279.11	196.54	82.57	3.380	
9,500.00	7,340.00	9,735.75	7,580.00	78.15	78.37	148.83	-100.97	2,169.76	280.53	193.62	86.91	3.228	
9,600.00	7,340.00	9,835.71	7,580.00	81.16	81.38	148.35	-99.95	2,269.71	281.97	190.64	91.33	3.087	
9,700.00	7,340.00	9,935.67	7,580.00	84.19	84.41	147.87	-98.94	2,369.67	283.43	187.60	95.83	2.958	
9,800.00	7,340.00	10,035.63	7,580.00	87.23	87.45	147.40	-97.92	2,469.63	284.91	184.52	100.40	2.838	
9,900.00	7,340.00	10,135.59	7,580.00	90.28	90.51	146.94	-96.91	2,569.58	286.41	181.38	105.03	2.727	
10,000.00	7,340.00	10,235.55	7,580.00	93.35	93.57	146.47	-95.89	2,669.54	287.93	178.19	109.74	2.624	
10,100.00	7,340.00	10,335.52	7,580.00	96.42	96.64	146.02	-94.87	2,769.50	289.46	174.95	114.51	2.528	
10,200.00	7,340.00	10,435.48	7,580.00	99.49	99.73	145.57	-93.86	2,869.45	291.02	171.67	119.35	2.438	
10,300.00	7,340.00	10,535.44	7,580.00	102.58	102.81	145.12	-92.84	2,969.41	292.59	168.35	124.24	2.355	
10,400.00	7,340.00	10,635.40	7,580.00	105.67	105.91	144.68	-91.83	3,069.37	294.18	164.98	129.20	2.277	
10,500.00	7,340.00	10,735.36	7,580.00	108.77	109.01	144.24	-90.81	3,169.32	295.79	161.57	134.22	2.204	
10,600.00	7,340.00	10,835.33	7,580.00	111.87	112.12	143.81	-89.79	3,269.28	297.41	158.12	139.29	2.135	
10,700.00	7,340.00	10,935.29	7,580.00	114.98	115.23	143.38	-88.78	3,369.24	299.05	154.64	144.41	2.071	
10,800.00	7,340.00	11,035.25	7,580.00	118.10	118.35	142.96	-87.76	3,469.19	300.71	151.12	149.59	2.010	
10,900.00	7,340.00	11,135.21	7,580.00	121.21	121.47	142.54	-86.75	3,569.15	302.38	147.56	154.82	1.953	
11,000.00	7,340.00	11,235.17	7,580.00	124.33	124.60	142.13	-85.73	3,669.11	304.07	143.97	160.10	1.899	
11,100.00	7,340.00	11,335.13	7,580.00	127.46	127.73	141.72	-84.71	3,769.06	305.78	140.35	165.43	1.848	
11,200.00	7,340.00	11,435.10	7,580.00	130.59	130.87	141.32	-83.70	3,869.02	307.50	136.69	170.80	1.800	
11,300.00	7,340.00	11,535.06	7,580.00	133.72	134.00	140.92	-82.68	3,968.98	309.23	133.01	176.22	1.755	
11,400.00	7,340.00	11,635.02	7,580.00	136.85	137.15	140.52	-81.67	4,068.93	310.98	129.29	181.69	1.712	
11,500.00	7,340.00	11,734.98	7,580.00	139.99	140.29	140.13	-80.65	4,168.89	312.75	125.55	187.19	1.671	
11,600.00	7,340.00	11,834.94	7,580.00	143.13	143.44	139.74	-79.63	4,268.85	314.53	121.78	192.74	1.632	
11,700.00	7,340.00	11,934.91	7,580.00	146.27	146.58	139.36	-78.62	4,368.80	316.32	117.99	198.33	1.595	
11,800.00	7,340.00	12,034.87	7,580.00	149.42	149.74	138.99	-77.60	4,468.76	318.13	114.17	203.95	1.560	
11,836.31	7,340.00	12,070.04	7,580.00	150.56	150.84	138.85	-77.25	4,503.93	318.79	112.82	205.97	1.548 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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	0.00	0.00	0.00	0.00	179.50	-20.03	0.17	20.04				
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-20.03	0.17	20.04	19.76	0.28	72.585	
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-20.03	0.17	20.04	19.04	0.99	20.177	
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-20.03	0.17	20.04	18.33	1.71	11.717	
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-20.03	0.17	20.04	17.61	2.43	8.256	
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-20.03	0.17	20.04	16.89	3.14	6.373	
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-20.03	0.17	20.04	16.17	3.86	5.189	
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-20.03	0.17	20.04	15.46	4.58	4.377	
800.00	800.00	800.00	800.00	2.65	2.65	179.50	-20.03	0.17	20.04	14.74	5.29	3.784 CC, ES	
900.00	899.98	899.58	899.56	3.00	2.99	-81.66	-21.07	-1.22	20.78	14.79	5.99	3.470	
1,000.00	999.84	999.13	998.97	3.34	3.33	-83.90	-24.16	-5.38	23.05	16.38	6.67	3.455	
1,081.60	1,081.14	1,080.41	1,079.97	3.63	3.61	-86.43	-28.15	-10.75	26.01	18.77	7.24	3.593	
1,100.00	1,099.46	1,098.79	1,098.28	3.69	3.67	-87.26	-29.13	-12.07	26.73	19.37	7.37	3.629	
1,200.00	1,198.98	1,198.69	1,197.78	4.05	4.02	-91.08	-34.45	-19.22	30.75	22.68	8.07	3.808	
1,300.00	1,298.49	1,298.60	1,297.29	4.41	4.38	-94.00	-39.77	-26.38	34.87	26.08	8.79	3.966	
1,400.00	1,398.01	1,398.50	1,396.79	4.78	4.74	-96.30	-45.08	-33.53	39.06	29.55	9.52	4.104	
1,500.00	1,497.53	1,498.40	1,496.29	5.15	5.10	-98.16	-50.40	-40.69	43.31	33.06	10.25	4.225	
1,600.00	1,597.04	1,598.30	1,595.79	5.52	5.47	-99.68	-55.72	-47.85	47.59	36.60	10.99	4.331	
1,700.00	1,696.56	1,698.20	1,695.30	5.90	5.84	-100.95	-61.04	-55.00	51.89	40.16	11.73	4.424	
1,800.00	1,796.08	1,798.10	1,794.80	6.28	6.21	-102.02	-66.36	-62.16	56.22	43.75	12.47	4.507	
1,900.00	1,895.60	1,898.00	1,894.30	6.65	6.58	-102.94	-71.67	-69.31	60.57	47.35	13.22	4.581	
2,000.00	1,995.11	1,997.90	1,993.80	7.03	6.96	-103.74	-76.99	-76.47	64.93	50.96	13.97	4.647	
2,100.00	2,094.63	2,097.80	2,093.31	7.41	7.33	-104.44	-82.31	-83.63	69.30	54.58	14.72	4.707	
2,200.00	2,194.15	2,197.71	2,192.81	7.79	7.71	-105.05	-87.63	-90.78	73.68	58.20	15.48	4.760	
2,300.00	2,293.67	2,297.61	2,292.31	8.17	8.08	-105.60	-92.95	-97.94	78.07	61.84	16.23	4.809	
2,400.00	2,393.18	2,397.51	2,391.81	8.55	8.46	-106.08	-98.26	-105.09	82.46	65.47	16.99	4.854	
2,500.00	2,492.70	2,497.41	2,491.32	8.94	8.84	-106.52	-103.58	-112.25	86.86	69.12	17.75	4.895	
2,600.00	2,592.22	2,597.31	2,590.82	9.32	9.21	-106.92	-108.90	-119.41	91.27	72.76	18.50	4.932	
2,700.00	2,691.73	2,697.21	2,690.32	9.70	9.59	-107.28	-114.22	-126.56	95.67	76.41	19.26	4.967	
2,800.00	2,791.25	2,797.11	2,789.82	10.09	9.97	-107.60	-119.54	-133.72	100.09	80.06	20.02	4.998	
2,900.00	2,890.77	2,897.01	2,889.33	10.47	10.35	-107.90	-124.85	-140.87	104.50	83.72	20.78	5.028	
3,000.00	2,990.29	2,996.91	2,988.83	10.85	10.73	-108.18	-130.17	-148.03	108.92	87.37	21.54	5.055	
3,100.00	3,089.80	3,096.82	3,088.33	11.24	11.11	-108.43	-135.49	-155.19	113.34	91.03	22.31	5.081	
3,200.00	3,189.32	3,196.72	3,187.83	11.62	11.49	-108.67	-140.81	-162.34	117.76	94.69	23.07	5.105	
3,300.00	3,288.84	3,296.62	3,287.34	12.01	11.87	-108.89	-146.13	-169.50	122.18	98.35	23.83	5.127	
3,400.00	3,388.36	3,396.52	3,386.84	12.39	12.25	-109.09	-151.44	-176.65	126.60	102.01	24.59	5.148	
3,500.00	3,487.87	3,496.42	3,486.34	12.78	12.63	-109.28	-156.76	-183.81	131.03	105.67	25.36	5.168	
3,600.00	3,587.39	3,596.32	3,585.84	13.16	13.01	-109.45	-162.08	-190.97	135.46	109.34	26.12	5.186	
3,700.00	3,686.91	3,696.22	3,685.35	13.55	13.39	-109.62	-167.40	-198.12	139.89	113.00	26.88	5.203	
3,732.10	3,718.86	3,728.30	3,717.29	13.67	13.51	-109.67	-169.10	-200.42	141.31	114.18	27.13	5.209	
3,800.00	3,786.50	3,796.13	3,784.86	13.93	13.77	-109.52	-172.72	-205.28	144.05	116.40	27.64	5.211	
3,900.00	3,886.33	3,896.02	3,884.35	14.30	14.15	-108.23	-178.03	-212.43	147.14	118.75	28.39	5.182	
4,000.00	3,986.30	3,995.77	3,983.70	14.65	14.54	-105.70	-183.34	-219.58	149.34	120.21	29.12	5.127	
4,013.70	4,000.00	4,009.42	3,997.29	14.69	14.59	155.04	-184.07	-220.56	149.59	120.37	29.22	5.119	
4,100.00	4,086.30	4,095.37	4,082.90	14.98	14.92	157.89	-188.65	-226.71	151.34	121.51	29.83	5.073	
4,200.00	4,186.30	4,194.97	4,182.11	15.31	15.30	161.10	-193.95	-233.85	153.83	123.30	30.53	5.039	
4,300.00	4,286.30	4,294.57	4,281.31	15.64	15.68	164.20	-199.25	-240.98	156.78	125.56	31.22	5.022	
4,400.00	4,386.30	4,394.17	4,380.51	15.98	16.06	167.17	-204.55	-248.12	160.18	128.27	31.91	5.020	
4,500.00	4,486.30	4,493.78	4,479.72	16.31	16.44	170.02	-209.85	-255.25	164.00	131.40	32.59	5.031	
4,600.00	4,586.30	4,593.38	4,578.92	16.65	16.82	172.73	-215.16	-262.39	168.20	134.92	33.28	5.055	
4,700.00	4,686.30	4,692.98	4,678.12	16.99	17.20	175.30	-220.46	-269.52	172.76	138.80	33.96	5.088	
4,800.00	4,786.30	4,793.78	4,778.54	17.33	17.58	177.71	-225.70	-276.58	177.54	142.90	34.64	5.125	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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
4,900.00	4,886.30	4,897.34	4,881.92	17.66	17.97	179.32	-229.36	-281.50	180.96	145.61	35.35	5.120	
5,000.00	4,986.30	5,001.22	4,985.76	18.00	18.33	179.93	-230.79	-283.43	182.32	146.29	36.04	5.060	
5,100.00	5,086.30	5,101.76	5,086.30	18.34	18.66	179.94	-230.81	-283.46	182.34	145.64	36.71	4.968	
5,200.00	5,186.30	5,201.76	5,186.30	18.69	18.98	179.94	-230.81	-283.46	182.34	144.97	37.38	4.879	
5,300.00	5,286.30	5,301.76	5,286.30	19.03	19.31	179.94	-230.81	-283.46	182.34	144.30	38.05	4.792	
5,400.00	5,386.30	5,401.76	5,386.30	19.37	19.63	179.94	-230.81	-283.46	182.34	143.62	38.72	4.709	
5,500.00	5,486.30	5,501.76	5,486.30	19.71	19.96	179.94	-230.81	-283.46	182.34	142.95	39.40	4.628	
5,600.00	5,586.30	5,601.76	5,586.30	20.06	20.29	179.94	-230.81	-283.46	182.34	142.27	40.08	4.550	
5,700.00	5,686.30	5,701.76	5,686.30	20.40	20.62	179.94	-230.81	-283.46	182.34	141.59	40.75	4.474	
5,800.00	5,786.30	5,801.76	5,786.30	20.74	20.95	179.94	-230.81	-283.46	182.34	140.91	41.43	4.401	
5,900.00	5,886.30	5,901.76	5,886.30	21.09	21.28	179.94	-230.81	-283.46	182.34	140.23	42.11	4.330	
6,000.00	5,986.30	6,001.76	5,986.30	21.43	21.61	179.94	-230.81	-283.46	182.34	139.55	42.80	4.261	
6,100.00	6,086.30	6,101.76	6,086.30	21.78	21.94	179.94	-230.81	-283.46	182.34	138.86	43.48	4.194	
6,200.00	6,186.30	6,201.76	6,186.30	22.13	22.28	179.94	-230.81	-283.46	182.34	138.18	44.16	4.129	
6,300.00	6,286.30	6,301.76	6,286.30	22.47	22.61	179.94	-230.81	-283.46	182.34	137.49	44.85	4.066	
6,400.00	6,386.30	6,401.76	6,386.30	22.82	22.94	179.94	-230.81	-283.46	182.34	136.81	45.54	4.004	
6,500.00	6,486.30	6,501.76	6,486.30	23.17	23.28	179.94	-230.81	-283.46	182.34	136.12	46.22	3.945	
6,600.00	6,586.30	6,601.76	6,586.30	23.52	23.62	179.94	-230.81	-283.46	182.34	135.43	46.91	3.887	
6,637.50	6,623.80	6,639.26	6,623.80	23.65	23.74	179.94	-230.81	-283.46	182.34	135.18	47.17	3.866	
6,650.00	6,636.30	6,651.76	6,636.30	23.69	23.78	92.14	-230.81	-283.46	182.35	135.09	47.25	3.859	
6,700.00	6,686.22	6,701.68	6,686.22	23.85	23.95	92.95	-230.81	-283.46	182.46	134.89	47.58	3.835	
6,750.00	6,735.84	6,751.87	6,736.38	24.01	24.12	94.44	-230.80	-282.19	182.81	134.94	47.88	3.818	
6,800.00	6,784.91	6,802.45	6,786.73	24.16	24.28	95.92	-230.75	-277.40	183.38	135.22	48.16	3.808	
6,850.00	6,833.20	6,853.39	6,836.96	24.31	24.43	97.37	-230.67	-269.00	184.17	135.74	48.43	3.803	
6,900.00	6,880.46	6,904.69	6,886.81	24.46	24.58	98.76	-230.55	-256.96	185.16	136.48	48.68	3.803	
6,950.00	6,926.48	6,956.34	6,936.01	24.61	24.73	100.10	-230.39	-241.26	186.34	137.42	48.91	3.810	
7,000.00	6,971.02	7,008.35	6,984.27	24.76	24.87	101.38	-230.19	-221.91	187.68	138.56	49.12	3.821	
7,050.00	7,013.87	7,060.70	7,031.31	24.92	25.01	102.57	-229.96	-198.95	189.18	139.87	49.32	3.836	
7,100.00	7,054.82	7,113.40	7,076.83	25.10	25.15	103.69	-229.69	-172.43	190.82	141.32	49.50	3.855	
7,150.00	7,093.67	7,166.43	7,120.55	25.29	25.31	104.71	-229.38	-142.44	192.55	142.87	49.68	3.876	
7,200.00	7,130.23	7,219.78	7,162.18	25.52	25.48	105.65	-229.04	-109.09	194.37	144.50	49.88	3.897	
7,250.00	7,164.32	7,273.44	7,201.42	25.78	25.68	106.48	-228.67	-72.51	196.25	146.14	50.11	3.916	
7,300.00	7,195.78	7,327.39	7,238.00	26.09	25.93	107.22	-228.27	-32.88	198.17	147.76	50.41	3.931	
7,350.00	7,224.45	7,381.61	7,271.66	26.44	26.24	107.85	-227.84	9.62	200.09	149.30	50.79	3.940	
7,400.00	7,250.20	7,436.08	7,302.13	26.86	26.62	108.38	-227.38	54.74	202.01	150.72	51.29	3.939	
7,450.00	7,272.90	7,490.77	7,329.20	27.35	27.08	108.80	-226.89	102.25	203.89	151.96	51.93	3.926	
7,500.00	7,292.43	7,545.66	7,352.63	27.90	27.62	109.12	-226.39	151.86	205.73	152.98	52.74	3.901	
7,550.00	7,308.70	7,600.71	7,372.26	28.53	28.25	109.33	-225.87	203.28	207.49	153.75	53.74	3.861	
7,600.00	7,321.64	7,655.90	7,387.90	29.22	28.98	109.44	-225.33	256.19	209.17	154.23	54.94	3.807	
7,650.00	7,331.18	7,711.19	7,399.45	29.99	29.80	109.45	-224.78	310.24	210.75	154.42	56.33	3.741	
7,700.00	7,337.27	7,766.54	7,406.80	30.81	30.69	109.36	-224.22	365.09	212.23	154.31	57.92	3.664	
7,750.00	7,339.89	7,821.93	7,409.89	31.68	31.64	109.17	-223.66	420.38	213.59	153.92	59.67	3.579	
7,762.50	7,340.00	7,835.64	7,410.00	31.90	31.89	109.11	-223.52	434.08	213.91	153.78	60.13	3.557	
7,800.00	7,340.00	7,873.12	7,410.00	32.60	32.59	109.02	-223.14	471.56	214.89	153.40	61.49	3.495	
7,900.00	7,340.00	7,973.08	7,410.00	34.58	34.58	108.78	-222.13	571.52	217.50	152.14	65.37	3.327	
8,000.00	7,340.00	8,073.04	7,410.00	36.74	36.73	108.55	-221.11	671.47	220.12	150.56	69.56	3.164	
8,100.00	7,340.00	8,173.01	7,410.00	39.04	39.03	108.32	-220.09	771.43	222.75	148.70	74.04	3.008	
8,200.00	7,340.00	8,272.97	7,410.00	41.45	41.45	108.10	-219.08	871.39	225.37	146.61	78.76	2.862	
8,300.00	7,340.00	8,372.93	7,410.00	43.97	43.97	107.89	-218.06	971.34	228.00	144.33	83.67	2.725	
8,400.00	7,340.00	8,472.89	7,410.00	46.57	46.57	107.68	-217.05	1,071.30	230.63	141.88	88.75	2.599	
8,500.00	7,340.00	8,572.85	7,410.00	49.24	49.25	107.47	-216.03	1,171.26	233.27	139.29	93.97	2.482	
8,600.00	7,340.00	8,672.81	7,410.00	51.97	51.98	107.27	-215.01	1,271.21	235.91	136.59	99.31	2.375	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - 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				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		
8,700.00	7,340.00	8,772.78	7,410.00	54.75	54.77	107.07	-214.00	1,371.17	238.55	133.79	104.76	2.277		
8,800.00	7,340.00	8,872.74	7,410.00	57.58	57.60	106.88	-212.98	1,471.13	241.19	130.89	110.30	2.187		
8,900.00	7,340.00	8,972.70	7,410.00	60.44	60.47	106.69	-211.97	1,571.08	243.84	127.93	115.91	2.104		
9,000.00	7,340.00	9,072.66	7,410.00	63.33	63.37	106.50	-210.95	1,671.04	246.49	124.89	121.59	2.027		
9,100.00	7,340.00	9,172.62	7,410.00	66.25	66.30	106.32	-209.94	1,771.00	249.14	121.80	127.33	1.957		
9,200.00	7,340.00	9,272.59	7,410.00	69.19	69.25	106.15	-208.92	1,870.95	251.79	118.66	133.13	1.891		
9,300.00	7,340.00	9,372.55	7,410.00	72.16	72.22	105.97	-207.90	1,970.91	254.45	115.48	138.97	1.831		
9,400.00	7,340.00	9,472.51	7,410.00	75.14	75.22	105.80	-206.89	2,070.87	257.10	112.26	144.85	1.775		
9,500.00	7,340.00	9,572.47	7,410.00	78.15	78.23	105.64	-205.87	2,170.82	259.77	109.00	150.77	1.723		
9,600.00	7,340.00	9,672.43	7,410.00	81.16	81.25	105.48	-204.86	2,270.78	262.43	105.71	156.72	1.674		
9,700.00	7,340.00	9,772.39	7,410.00	84.19	84.29	105.32	-203.84	2,370.74	265.09	102.39	162.71	1.629		
9,800.00	7,340.00	9,872.36	7,410.00	87.23	87.34	105.16	-202.82	2,470.69	267.76	99.04	168.72	1.587		
9,900.00	7,340.00	9,972.32	7,410.00	90.28	90.40	105.01	-201.81	2,570.65	270.43	95.68	174.75	1.547		
10,000.00	7,340.00	10,072.28	7,410.00	93.35	93.47	104.86	-200.79	2,670.61	273.10	92.29	180.81	1.510		
10,100.00	7,340.00	10,172.24	7,410.00	96.42	96.55	104.71	-199.78	2,770.56	275.77	88.88	186.89	1.476 Level 3		
10,200.00	7,340.00	10,272.20	7,410.00	99.49	99.64	104.57	-198.76	2,870.52	278.45	85.46	192.99	1.443 Level 3		
10,300.00	7,340.00	10,372.17	7,410.00	102.58	102.73	104.42	-197.75	2,970.48	281.12	82.02	199.11	1.412 Level 3		
10,400.00	7,340.00	10,472.13	7,410.00	105.67	105.83	104.28	-196.73	3,070.43	283.80	78.56	205.24	1.383 Level 3		
10,500.00	7,340.00	10,572.09	7,410.00	108.77	108.94	104.15	-195.71	3,170.39	286.48	75.09	211.39	1.355 Level 3		
10,600.00	7,340.00	10,672.05	7,410.00	111.87	112.05	104.01	-194.70	3,270.35	289.16	71.61	217.55	1.329 Level 3		
10,700.00	7,340.00	10,772.01	7,410.00	114.98	115.17	103.88	-193.68	3,370.30	291.84	68.12	223.73	1.304 Level 3		
10,800.00	7,340.00	10,871.97	7,410.00	118.10	118.29	103.75	-192.67	3,470.26	294.53	64.62	229.91	1.281 Level 3		
10,900.00	7,340.00	10,971.94	7,410.00	121.21	121.42	103.63	-191.65	3,570.22	297.21	61.10	236.11	1.259 Level 3		
11,000.00	7,340.00	11,071.90	7,410.00	124.33	124.55	103.50	-190.63	3,670.17	299.90	57.58	242.32	1.238 Level 2		
11,100.00	7,340.00	11,171.86	7,410.00	127.46	127.68	103.38	-189.62	3,770.13	302.59	54.05	248.54	1.217 Level 2		
11,200.00	7,340.00	11,271.82	7,410.00	130.59	130.82	103.26	-188.60	3,870.09	305.28	50.51	254.76	1.198 Level 2		
11,300.00	7,340.00	11,371.78	7,410.00	133.72	133.96	103.14	-187.59	3,970.04	307.97	46.97	261.00	1.180 Level 2		
11,400.00	7,340.00	11,471.74	7,410.00	136.85	137.11	103.03	-186.57	4,070.00	310.66	43.42	267.25	1.162 Level 2		
11,500.00	7,340.00	11,571.71	7,410.00	139.99	140.25	102.91	-185.55	4,169.96	313.35	39.86	273.50	1.146 Level 2		
11,600.00	7,340.00	11,671.67	7,410.00	143.13	143.40	102.80	-184.54	4,269.91	316.05	36.29	279.76	1.130 Level 2		
11,700.00	7,340.00	11,771.63	7,410.00	146.27	146.55	102.69	-183.52	4,369.87	318.74	32.72	286.02	1.114 Level 2		
11,800.00	7,340.00	11,871.59	7,410.00	149.42	149.75	102.58	-182.51	4,469.83	321.44	30.08	291.36	1.103 Level 2		
11,836.31	7,340.00	11,906.06	7,410.00	150.56	149.38	102.55	-182.16	4,504.29	322.43	29.32	293.11	1.100 Level 2, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - 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	0.00	0.00	0.00	0.00	-179.96	-29.88	-0.02	29.88				
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-29.88	-0.02	29.88	29.60	0.28	108.237	
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-29.88	-0.02	29.88	28.88	0.99	30.088	
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-29.88	-0.02	29.88	28.17	1.71	17.472	
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-29.88	-0.02	29.88	27.45	2.43	12.311	
500.00	500.00	500.00	500.00	1.57	1.57	-179.96	-29.88	-0.02	29.88	26.73	3.14	9.503	
600.00	600.00	600.00	600.00	1.93	1.93	-179.96	-29.88	-0.02	29.88	26.02	3.86	7.738	
700.00	700.00	700.00	700.00	2.29	2.29	-179.96	-29.88	-0.02	29.88	25.30	4.58	6.526	CC, ES
800.00	800.00	799.10	799.08	2.65	2.63	-178.23	-31.31	-0.97	31.33	26.05	5.28	5.932	
900.00	899.98	898.02	897.86	3.00	2.96	-76.84	-35.59	-3.79	35.42	29.44	5.98	5.926	
1,000.00	999.84	996.75	996.22	3.34	3.30	-77.78	-42.69	-8.48	41.70	35.03	6.67	6.253	
1,081.60	1,081.14	1,078.11	1,077.16	3.63	3.58	-80.61	-49.57	-13.02	47.41	40.18	7.23	6.559	
1,100.00	1,099.46	1,096.45	1,095.41	3.69	3.65	-81.49	-51.12	-14.05	48.68	41.32	7.36	6.617	
1,200.00	1,198.98	1,196.14	1,194.58	4.05	4.01	-85.53	-59.56	-19.62	55.72	47.66	8.06	6.913	
1,300.00	1,298.49	1,295.82	1,293.75	4.41	4.37	-88.65	-67.99	-25.19	62.97	54.19	8.77	7.177	
1,400.00	1,398.01	1,395.51	1,392.92	4.78	4.74	-91.12	-76.43	-30.76	70.37	60.87	9.50	7.409	
1,500.00	1,497.53	1,495.19	1,492.09	5.15	5.11	-93.12	-84.87	-36.33	77.87	67.64	10.23	7.613	
1,600.00	1,597.04	1,594.88	1,591.26	5.52	5.48	-94.77	-93.30	-41.90	85.45	74.49	10.97	7.793	
1,700.00	1,696.56	1,694.56	1,690.43	5.90	5.86	-96.15	-101.74	-47.47	93.10	81.39	11.71	7.953	
1,800.00	1,796.08	1,794.25	1,789.61	6.28	6.23	-97.32	-110.17	-53.04	100.78	88.33	12.45	8.095	
1,900.00	1,895.60	1,893.93	1,888.78	6.65	6.61	-98.32	-118.61	-58.61	108.51	95.31	13.20	8.221	
2,000.00	1,995.11	1,993.62	1,987.95	7.03	6.99	-99.19	-127.04	-64.17	116.26	102.31	13.95	8.335	
2,100.00	2,094.63	2,093.30	2,087.12	7.41	7.37	-99.95	-135.48	-69.74	124.03	109.33	14.70	8.437	
2,200.00	2,194.15	2,192.98	2,186.29	7.79	7.76	-100.62	-143.91	-75.31	131.83	116.37	15.45	8.530	
2,300.00	2,293.67	2,292.67	2,285.46	8.17	8.14	-101.21	-152.35	-80.88	139.64	123.43	16.21	8.614	
2,400.00	2,393.18	2,392.35	2,384.63	8.55	8.52	-101.75	-160.79	-86.45	147.46	130.49	16.97	8.691	
2,500.00	2,492.70	2,492.04	2,483.80	8.94	8.91	-102.22	-169.22	-92.02	155.29	137.57	17.72	8.762	
2,600.00	2,592.22	2,591.72	2,582.97	9.32	9.29	-102.66	-177.66	-97.59	163.14	144.65	18.48	8.826	
2,700.00	2,691.73	2,691.41	2,682.14	9.70	9.68	-103.05	-186.09	-103.16	170.99	151.75	19.24	8.886	
2,800.00	2,791.25	2,791.09	2,781.31	10.09	10.06	-103.41	-194.53	-108.73	178.85	158.85	20.00	8.941	
2,900.00	2,890.77	2,890.78	2,880.48	10.47	10.45	-103.74	-202.96	-114.30	186.72	165.95	20.76	8.992	
3,000.00	2,990.29	2,990.46	2,979.66	10.85	10.83	-104.04	-211.40	-119.87	194.59	173.06	21.53	9.040	
3,100.00	3,089.80	3,090.15	3,078.83	11.24	11.22	-104.32	-219.83	-125.44	202.46	180.18	22.29	9.084	
3,200.00	3,189.32	3,189.83	3,178.00	11.62	11.61	-104.57	-228.27	-131.01	210.35	187.29	23.05	9.125	
3,300.00	3,288.84	3,289.52	3,277.17	12.01	11.99	-104.81	-236.71	-136.58	218.23	194.42	23.81	9.164	
3,400.00	3,388.36	3,389.20	3,376.34	12.39	12.38	-105.04	-245.14	-142.15	226.12	201.54	24.58	9.200	
3,500.00	3,487.87	3,488.89	3,475.51	12.78	12.77	-105.24	-253.58	-147.72	234.01	208.67	25.34	9.234	
3,600.00	3,587.39	3,588.57	3,574.68	13.16	13.15	-105.44	-262.01	-153.28	241.91	215.80	26.11	9.266	
3,700.00	3,686.91	3,688.25	3,673.85	13.55	13.54	-105.62	-270.45	-158.85	249.80	222.93	26.87	9.296	
3,732.10	3,718.86	3,720.26	3,705.69	13.67	13.67	-105.67	-273.16	-160.64	252.34	225.22	27.12	9.306	
3,800.00	3,786.50	3,787.96	3,773.04	13.93	13.93	-105.71	-278.89	-164.42	257.48	229.85	27.63	9.319	
3,900.00	3,886.33	3,887.67	3,872.24	14.30	14.32	-105.15	-287.32	-170.00	264.29	235.92	28.37	9.315	
4,000.00	3,986.30	3,987.28	3,971.33	14.65	14.70	-103.89	-295.75	-175.56	270.28	241.19	29.09	9.290	
4,013.70	4,000.00	4,000.91	3,984.90	14.69	14.76	156.63	-296.91	-176.32	271.05	241.86	29.19	9.286	
4,100.00	4,086.30	4,086.76	4,070.31	14.98	15.09	158.15	-304.17	-181.12	275.96	246.17	29.79	9.264	
4,200.00	4,186.30	4,186.25	4,169.28	15.31	15.48	159.84	-312.59	-186.68	281.88	251.40	30.48	9.248	
4,300.00	4,286.30	4,285.73	4,268.25	15.64	15.87	161.46	-321.01	-192.24	288.03	256.86	31.17	9.240	
4,400.00	4,386.30	4,385.22	4,367.22	15.98	16.25	163.01	-329.43	-197.79	294.40	262.54	31.87	9.239	
4,500.00	4,486.30	4,484.70	4,466.19	16.31	16.64	164.49	-337.85	-203.35	300.98	268.43	32.56	9.245	
4,600.00	4,586.30	4,584.19	4,565.17	16.65	17.03	165.91	-346.26	-208.91	307.76	274.51	33.25	9.256	
4,700.00	4,686.30	4,683.67	4,664.14	16.99	17.42	167.27	-354.68	-214.47	314.71	280.77	33.94	9.272	
4,800.00	4,786.30	4,783.16	4,763.11	17.33	17.80	168.57	-363.10	-220.03	321.84	287.21	34.63	9.293	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,886.30	4,882.64	4,862.08	17.66	18.19	169.81	-371.52	-225.58	329.12	293.80	35.32	9.317	
5,000.00	4,986.30	4,982.13	4,961.05	18.00	18.58	171.00	-379.94	-231.14	336.55	300.53	36.02	9.344	
5,100.00	5,086.30	5,081.61	5,060.03	18.34	18.97	172.13	-388.36	-236.70	344.12	307.41	36.71	9.374	
5,200.00	5,186.30	5,181.09	5,159.00	18.69	19.35	173.22	-396.78	-242.26	351.82	314.42	37.40	9.406	
5,300.00	5,286.30	5,280.58	5,257.97	19.03	19.74	174.26	-405.19	-247.82	359.64	321.54	38.10	9.440	
5,400.00	5,386.30	5,380.06	5,356.94	19.37	20.13	175.26	-413.61	-253.38	367.57	328.78	38.79	9.475	
5,500.00	5,486.30	5,479.55	5,455.91	19.71	20.52	176.21	-422.03	-258.93	375.61	336.12	39.49	9.512	
5,600.00	5,586.30	5,579.03	5,554.88	20.06	20.91	177.13	-430.45	-264.49	383.75	343.57	40.18	9.550	
5,700.00	5,686.30	5,678.52	5,653.86	20.40	21.30	178.00	-438.87	-270.05	391.98	351.10	40.88	9.589	
5,800.00	5,786.30	5,783.67	5,758.51	20.74	21.70	178.86	-447.42	-275.69	399.99	358.38	41.62	9.611	
5,900.00	5,886.30	5,886.59	5,871.18	21.09	22.12	179.44	-453.51	-279.72	405.34	362.96	42.38	9.564	
6,000.00	5,986.30	6,009.91	5,984.46	21.43	22.52	179.67	-455.89	-281.29	407.43	364.34	43.10	9.454	
6,100.00	6,086.30	6,111.75	6,086.30	21.78	22.83	179.67	-455.93	-281.31	407.46	363.70	43.77	9.310	
6,200.00	6,186.30	6,211.75	6,186.30	22.13	23.14	179.67	-455.93	-281.31	407.46	363.03	44.44	9.170	
6,300.00	6,286.30	6,311.75	6,286.30	22.47	23.46	179.67	-455.93	-281.31	407.46	362.36	45.11	9.033	
6,400.00	6,386.30	6,411.75	6,386.30	22.82	23.77	179.67	-455.93	-281.31	407.46	361.68	45.78	8.900	
6,500.00	6,486.30	6,511.75	6,486.30	23.17	24.08	179.67	-455.93	-281.31	407.46	361.01	46.45	8.771	
6,600.00	6,586.30	6,611.75	6,586.30	23.52	24.40	179.67	-455.93	-281.31	407.46	360.33	47.13	8.646	
6,637.50	6,623.80	6,649.25	6,623.80	23.65	24.52	179.67	-455.93	-281.31	407.46	360.08	47.38	8.599	
6,650.00	6,636.30	6,661.78	6,636.33	23.69	24.55	91.84	-455.92	-281.20	407.47	360.00	47.46	8.585	
6,700.00	6,686.22	6,711.91	6,686.38	23.85	24.71	91.83	-455.90	-278.57	407.54	359.75	47.78	8.529	
6,750.00	6,735.84	6,762.03	6,736.11	24.01	24.86	91.81	-455.84	-272.45	407.71	359.61	48.09	8.477	
6,800.00	6,784.91	6,812.15	6,785.30	24.16	25.00	91.79	-455.74	-262.87	407.97	359.58	48.39	8.430	
6,850.00	6,833.20	6,862.27	6,833.69	24.31	25.14	91.75	-455.61	-249.87	408.33	359.64	48.68	8.387	
6,900.00	6,880.46	6,912.39	6,881.06	24.46	25.27	91.71	-455.44	-233.52	408.78	359.81	48.97	8.348	
6,950.00	6,926.48	6,962.50	6,927.16	24.61	25.39	91.66	-455.24	-213.90	409.32	360.06	49.25	8.311	
7,000.00	6,971.02	7,012.60	6,971.77	24.76	25.50	91.60	-455.01	-191.11	409.94	360.40	49.54	8.275	
7,050.00	7,013.87	7,062.70	7,014.67	24.92	25.61	91.53	-454.75	-165.26	410.65	360.81	49.85	8.238	
7,100.00	7,054.82	7,112.80	7,055.65	25.10	25.72	91.46	-454.45	-136.47	411.45	361.27	50.18	8.199	
7,150.00	7,093.67	7,162.88	7,094.52	25.29	25.82	91.38	-454.13	-104.90	412.32	361.77	50.55	8.156	
7,200.00	7,130.23	7,212.96	7,131.09	25.52	25.93	91.29	-453.79	-70.70	413.26	362.28	50.98	8.107	
7,250.00	7,164.32	7,263.03	7,165.16	25.78	26.05	91.19	-453.41	-34.03	414.27	362.79	51.48	8.048	
7,300.00	7,195.78	7,313.10	7,196.59	26.09	26.22	91.09	-453.02	4.93	415.34	363.28	52.07	7.977	
7,350.00	7,224.45	7,363.15	7,225.22	26.44	26.46	90.99	-452.60	45.97	416.47	363.71	52.76	7.893	
7,400.00	7,250.20	7,413.20	7,250.90	26.86	26.80	90.88	-452.16	88.91	417.66	364.08	53.58	7.795	
7,450.00	7,272.90	7,463.23	7,273.52	27.35	27.23	90.76	-451.71	133.53	418.89	364.36	54.53	7.682	
7,500.00	7,292.43	7,513.26	7,292.97	27.90	27.75	90.65	-451.24	179.61	420.16	364.54	55.62	7.554	
7,550.00	7,308.70	7,563.28	7,309.15	28.53	28.35	90.53	-450.76	226.92	421.47	364.61	56.86	7.413	
7,600.00	7,321.64	7,613.29	7,321.99	29.22	29.02	90.40	-450.27	275.25	422.80	364.57	58.23	7.260	
7,650.00	7,331.18	7,663.29	7,331.42	29.99	29.77	90.28	-449.77	324.34	424.16	364.41	59.75	7.099	
7,700.00	7,337.27	7,713.29	7,337.41	30.81	30.58	90.16	-449.27	373.96	425.53	364.15	61.38	6.933	
7,750.00	7,339.89	7,763.27	7,339.92	31.68	31.44	90.03	-448.76	423.87	426.91	363.79	63.12	6.764	
7,762.50	7,340.00	7,775.77	7,340.00	31.90	31.67	90.00	-448.63	436.37	427.25	363.69	63.56	6.722	
7,800.00	7,340.00	7,813.25	7,340.00	32.60	32.37	90.00	-448.25	473.85	428.29	363.33	64.96	6.593	
7,900.00	7,340.00	7,913.22	7,340.00	34.58	34.35	90.00	-447.24	573.80	431.05	362.13	68.92	6.254	
8,000.00	7,340.00	8,013.18	7,340.00	36.74	36.51	90.00	-446.22	673.76	433.82	360.58	73.23	5.924	
8,100.00	7,340.00	8,113.14	7,340.00	39.04	38.81	90.00	-445.20	773.72	436.58	358.75	77.83	5.609	
8,200.00	7,340.00	8,213.10	7,340.00	41.45	41.23	90.00	-444.19	873.67	439.35	356.68	82.67	5.314	
8,300.00	7,340.00	8,313.06	7,340.00	43.97	43.76	90.00	-443.17	973.63	442.11	354.40	87.71	5.041	
8,400.00	7,340.00	8,413.03	7,340.00	46.57	46.37	90.00	-442.16	1,073.59	444.87	351.96	92.92	4.788	
8,500.00	7,340.00	8,512.99	7,340.00	49.24	49.04	90.00	-441.14	1,173.54	447.64	349.37	98.26	4.555	
8,600.00	7,340.00	8,612.95	7,340.00	51.97	51.78	90.00	-440.12	1,273.50	450.40	346.67	103.73	4.342	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - 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		
8,700.00	7,340.00	8,712.91	7,340.00	54.75	54.57	90.00	-439.11	1,373.46	453.17	343.87	109.30	4.146		
8,800.00	7,340.00	8,812.87	7,340.00	57.58	57.40	90.00	-438.09	1,473.41	455.93	340.98	114.95	3.966		
8,900.00	7,340.00	8,912.83	7,340.00	60.44	60.27	90.00	-437.08	1,573.37	458.69	338.01	120.68	3.801		
9,000.00	7,340.00	9,012.80	7,340.00	63.33	63.18	90.00	-436.06	1,673.33	461.46	334.98	126.48	3.649		
9,100.00	7,340.00	9,112.76	7,340.00	66.25	66.11	90.00	-435.04	1,773.28	464.22	331.90	132.32	3.508		
9,200.00	7,340.00	9,212.72	7,340.00	69.19	69.06	90.00	-434.03	1,873.24	466.99	328.76	138.22	3.378		
9,300.00	7,340.00	9,312.68	7,340.00	72.16	72.04	90.00	-433.01	1,973.20	469.75	325.59	144.16	3.258		
9,400.00	7,340.00	9,412.64	7,340.00	75.14	75.03	90.00	-432.00	2,073.15	472.51	322.37	150.14	3.147		
9,500.00	7,340.00	9,512.61	7,340.00	78.15	78.04	90.00	-430.98	2,173.11	475.28	319.12	156.15	3.044		
9,600.00	7,340.00	9,612.57	7,340.00	81.16	81.07	90.00	-429.97	2,273.07	478.04	315.85	162.20	2.947		
9,700.00	7,340.00	9,712.53	7,340.00	84.19	84.11	90.00	-428.95	2,373.02	480.81	312.54	168.26	2.857		
9,800.00	7,340.00	9,812.49	7,340.00	87.23	87.16	90.00	-427.93	2,472.98	483.57	309.21	174.36	2.773		
9,900.00	7,340.00	9,912.45	7,340.00	90.28	90.22	90.00	-426.92	2,572.94	486.33	305.86	180.47	2.695		
10,000.00	7,340.00	10,012.41	7,340.00	93.35	93.30	90.00	-425.90	2,672.89	489.10	302.50	186.60	2.621		
10,100.00	7,340.00	10,112.38	7,340.00	96.42	96.38	90.00	-424.89	2,772.85	491.86	299.11	192.75	2.552		
10,200.00	7,340.00	10,212.34	7,340.00	99.49	99.46	90.00	-423.87	2,872.81	494.62	295.71	198.92	2.487		
10,300.00	7,340.00	10,312.30	7,340.00	102.58	102.56	90.00	-422.85	2,972.76	497.39	292.29	205.10	2.425		
10,400.00	7,340.00	10,412.26	7,340.00	105.67	105.66	90.00	-421.84	3,072.72	500.15	288.86	211.29	2.367		
10,500.00	7,340.00	10,512.22	7,340.00	108.77	108.77	90.00	-420.82	3,172.68	502.92	285.42	217.49	2.312		
10,600.00	7,340.00	10,612.18	7,340.00	111.87	111.88	90.00	-419.81	3,272.63	505.68	281.97	223.71	2.260		
10,700.00	7,340.00	10,712.15	7,340.00	114.98	115.00	90.00	-418.79	3,372.59	508.44	278.51	229.94	2.211		
10,800.00	7,340.00	10,812.11	7,340.00	118.10	118.12	90.00	-417.77	3,472.55	511.21	275.04	236.17	2.165		
10,900.00	7,340.00	10,912.07	7,340.00	121.21	121.25	90.00	-416.76	3,572.50	513.97	271.56	242.41	2.120		
11,000.00	7,340.00	11,012.03	7,340.00	124.33	124.38	90.00	-415.74	3,672.46	516.74	268.07	248.67	2.078		
11,100.00	7,340.00	11,111.99	7,340.00	127.46	127.52	90.00	-414.73	3,772.42	519.50	264.58	254.93	2.038		
11,200.00	7,340.00	11,211.96	7,340.00	130.59	130.66	90.00	-413.71	3,872.37	522.26	261.07	261.19	2.000		
11,300.00	7,340.00	11,311.92	7,340.00	133.72	133.80	90.00	-412.70	3,972.33	525.03	257.57	267.46	1.963		
11,400.00	7,340.00	11,411.88	7,340.00	136.85	136.94	90.00	-411.68	4,072.29	527.79	254.05	273.74	1.928		
11,500.00	7,340.00	11,511.84	7,340.00	139.99	140.09	90.00	-410.66	4,172.24	530.56	250.53	280.02	1.895		
11,600.00	7,340.00	11,611.80	7,340.00	143.13	143.24	90.00	-409.65	4,272.20	533.32	247.01	286.31	1.863		
11,700.00	7,340.00	11,711.76	7,340.00	146.27	146.39	90.00	-408.63	4,372.16	536.08	243.48	292.61	1.832		
11,800.00	7,340.00	11,811.73	7,340.00	149.42	149.39	90.00	-407.62	4,472.11	538.85	240.10	298.75	1.804		
11,836.31	7,340.00	11,845.06	7,340.00	150.56	150.00	90.00	-407.28	4,505.44	539.86	239.38	300.48	1.797 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - 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	0.00	0.00	0.00	0.00	179.91	-40.07	0.07	40.07					
100.00	100.00	100.00	100.00	0.14	0.14	179.91	-40.07	0.07	40.07	39.80	0.28	145.173		
200.00	200.00	200.00	200.00	0.50	0.50	179.91	-40.07	0.07	40.07	39.08	0.99	40.355		
300.00	300.00	300.00	300.00	0.85	0.85	179.91	-40.07	0.07	40.07	38.36	1.71	23.435		
400.00	400.00	400.00	400.00	1.21	1.21	179.91	-40.07	0.07	40.07	37.64	2.43	16.512		
500.00	500.00	500.00	500.00	1.57	1.57	179.91	-40.07	0.07	40.07	36.93	3.14	12.746		
600.00	600.00	600.00	600.00	1.93	1.93	179.91	-40.07	0.07	40.07	36.21	3.86	10.379 CC, ES		
700.00	700.00	698.69	698.67	2.29	2.27	-179.16	-41.63	-0.61	41.66	37.09	4.57	9.121		
800.00	800.00	797.15	797.00	2.65	2.60	-176.75	-46.30	-2.63	46.47	41.19	5.28	8.806		
900.00	899.98	895.23	894.71	3.00	2.93	-75.60	-54.02	-5.97	54.15	48.17	5.98	9.049		
1,000.00	999.84	992.81	991.58	3.34	3.28	-76.48	-64.75	-10.61	64.22	57.53	6.69	9.604		
1,081.60	1,081.14	1,073.68	1,071.66	3.63	3.58	-78.50	-75.09	-15.07	73.39	66.14	7.25	10.128		
1,100.00	1,099.46	1,091.96	1,089.76	3.69	3.65	-79.12	-77.42	-16.08	75.42	68.05	7.37	10.232		
1,200.00	1,198.98	1,191.25	1,188.08	4.05	4.02	-81.97	-90.12	-21.58	86.60	78.53	8.07	10.731		
1,300.00	1,298.49	1,290.54	1,286.41	4.41	4.40	-84.17	-102.82	-27.07	97.94	89.16	8.78	11.151		
1,400.00	1,398.01	1,389.83	1,384.73	4.78	4.79	-85.91	-115.52	-32.56	109.39	99.89	9.51	11.508		
1,500.00	1,497.53	1,489.13	1,483.06	5.15	5.18	-87.32	-128.23	-38.05	120.93	110.69	10.24	11.814		
1,600.00	1,597.04	1,588.42	1,581.38	5.52	5.58	-88.48	-140.93	-43.54	132.52	121.55	10.97	12.077		
1,700.00	1,696.56	1,687.71	1,679.70	5.90	5.98	-89.46	-153.63	-49.03	144.16	132.45	11.71	12.306		
1,800.00	1,796.08	1,787.00	1,778.03	6.28	6.38	-90.29	-166.33	-54.52	155.84	143.38	12.46	12.506		
1,900.00	1,895.60	1,886.30	1,876.35	6.65	6.78	-91.01	-179.03	-60.02	167.54	154.33	13.21	12.683		
2,000.00	1,995.11	1,985.59	1,974.67	7.03	7.18	-91.63	-191.73	-65.51	179.27	165.30	13.96	12.839		
2,100.00	2,094.63	2,084.88	2,073.00	7.41	7.58	-92.17	-204.43	-71.00	191.01	176.29	14.72	12.979		
2,200.00	2,194.15	2,184.17	2,171.32	7.79	7.99	-92.65	-217.13	-76.49	202.77	187.29	15.47	13.104		
2,300.00	2,293.67	2,283.47	2,269.65	8.17	8.40	-93.08	-229.83	-81.98	214.54	198.31	16.23	13.217		
2,400.00	2,393.18	2,382.76	2,367.97	8.55	8.80	-93.47	-242.53	-87.47	226.32	209.33	16.99	13.319		
2,500.00	2,492.70	2,482.05	2,466.29	8.94	9.21	-93.81	-255.23	-92.97	238.11	220.36	17.75	13.412		
2,600.00	2,592.22	2,581.35	2,564.62	9.32	9.62	-94.13	-267.93	-98.46	249.91	231.39	18.52	13.496		
2,700.00	2,691.73	2,680.64	2,662.94	9.70	10.02	-94.41	-280.63	-103.95	261.72	242.43	19.28	13.574		
2,800.00	2,791.25	2,779.93	2,761.26	10.09	10.43	-94.67	-293.33	-109.44	273.53	253.48	20.05	13.645		
2,900.00	2,890.77	2,879.22	2,859.59	10.47	10.84	-94.91	-306.03	-114.93	285.34	264.53	20.81	13.711		
3,000.00	2,990.29	2,978.52	2,957.91	10.85	11.25	-95.13	-318.73	-120.42	297.16	275.59	21.58	13.772		
3,100.00	3,089.80	3,077.81	3,056.24	11.24	11.66	-95.33	-331.43	-125.91	308.99	286.64	22.34	13.829		
3,200.00	3,189.32	3,177.10	3,154.56	11.62	12.07	-95.52	-344.13	-131.41	320.82	297.71	23.11	13.882		
3,300.00	3,288.84	3,276.39	3,252.88	12.01	12.48	-95.70	-356.84	-136.90	332.65	308.77	23.88	13.931		
3,400.00	3,388.36	3,375.69	3,351.21	12.39	12.89	-95.86	-369.54	-142.39	344.48	319.83	24.65	13.976		
3,500.00	3,487.87	3,474.98	3,449.53	12.78	13.30	-96.01	-382.24	-147.88	356.32	330.90	25.42	14.019		
3,600.00	3,587.39	3,574.27	3,547.86	13.16	13.71	-96.15	-394.94	-153.37	368.16	341.97	26.19	14.060		
3,700.00	3,686.91	3,673.57	3,646.18	13.55	14.12	-96.29	-407.64	-158.86	380.00	353.04	26.95	14.098		
3,732.10	3,718.86	3,705.44	3,677.75	13.67	14.26	-96.33	-411.71	-160.63	383.80	356.60	27.20	14.109		
3,800.00	3,786.50	3,772.87	3,744.51	13.93	14.53	-96.45	-420.34	-164.36	391.75	364.03	27.72	14.133		
3,900.00	3,886.33	3,872.16	3,842.84	14.30	14.95	-96.22	-433.04	-169.85	403.15	374.69	28.46	14.166		
4,000.00	3,986.30	3,971.32	3,941.03	14.65	15.36	-95.52	-445.72	-175.33	414.24	385.06	29.17	14.199		
4,013.70	4,000.00	3,984.89	3,954.47	14.69	15.41	164.91	-447.46	-176.08	415.74	386.47	29.27	14.204		
4,100.00	4,086.30	4,070.35	4,039.09	14.98	15.77	165.91	-458.39	-180.81	425.25	395.39	29.86	14.241		
4,200.00	4,186.30	4,169.38	4,137.15	15.31	16.18	167.02	-471.06	-186.28	436.44	405.89	30.55	14.286		
4,300.00	4,286.30	4,268.40	4,235.21	15.64	16.59	168.08	-483.72	-191.76	447.77	416.53	31.24	14.334		
4,400.00	4,386.30	4,367.42	4,333.27	15.98	17.00	169.08	-496.39	-197.24	459.25	427.32	31.93	14.384		
4,500.00	4,486.30	4,466.45	4,431.33	16.31	17.41	170.03	-509.06	-202.71	470.86	438.25	32.62	14.435		
4,600.00	4,586.30	4,565.47	4,529.38	16.65	17.82	170.94	-521.72	-208.19	482.60	449.29	33.31	14.488		
4,700.00	4,686.30	4,664.50	4,627.44	16.99	18.23	171.80	-534.39	-213.67	494.45	460.45	34.00	14.542		
4,800.00	4,786.30	4,763.52	4,725.50	17.33	18.64	172.63	-547.05	-219.14	506.40	471.71	34.70	14.596		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,886.30	4,862.55	4,823.56	17.66	19.05	173.41	-559.72	-224.62	518.46	483.07	35.39	14.650	
5,000.00	4,986.30	4,961.57	4,921.62	18.00	19.46	174.16	-572.39	-230.10	530.60	494.52	36.08	14.705	
5,100.00	5,086.30	5,060.59	5,019.67	18.34	19.88	174.88	-585.05	-235.57	542.84	506.06	36.78	14.759	
5,200.00	5,186.30	5,159.62	5,117.73	18.69	20.29	175.56	-597.72	-241.05	555.15	517.67	37.48	14.813	
5,300.00	5,286.30	5,258.64	5,215.79	19.03	20.70	176.22	-610.38	-246.53	567.54	529.36	38.17	14.867	
5,400.00	5,386.30	5,357.67	5,313.85	19.37	21.11	176.85	-623.05	-252.00	580.00	541.12	38.87	14.920	
5,500.00	5,486.30	5,456.69	5,411.91	19.71	21.52	177.45	-635.72	-257.48	592.52	552.95	39.57	14.973	
5,600.00	5,586.30	5,555.72	5,509.96	20.06	21.93	178.02	-648.38	-262.96	605.10	564.83	40.27	15.025	
5,700.00	5,686.30	5,656.52	5,609.79	20.40	22.35	178.59	-661.26	-268.53	617.74	576.75	40.99	15.071	
5,800.00	5,786.30	5,780.41	5,732.85	20.74	22.84	179.13	-674.31	-274.17	628.19	586.34	41.85	15.010	
5,900.00	5,886.30	5,905.31	5,857.42	21.09	23.31	179.46	-682.51	-277.71	634.73	592.08	42.65	14.882	
6,000.00	5,986.30	6,030.75	5,982.80	21.43	23.73	179.59	-685.72	-279.10	637.28	593.91	43.37	14.694	
6,100.00	6,086.30	6,134.25	6,086.30	21.78	24.03	179.59	-685.77	-279.12	637.32	593.28	44.03	14.473	
6,200.00	6,186.30	6,234.25	6,186.30	22.13	24.32	179.59	-685.77	-279.12	637.32	592.62	44.70	14.259	
6,300.00	6,286.30	6,334.25	6,286.30	22.47	24.62	179.59	-685.77	-279.12	637.32	591.96	45.36	14.050	
6,400.00	6,386.30	6,434.25	6,386.30	22.82	24.91	179.59	-685.77	-279.12	637.32	591.29	46.03	13.847	
6,500.00	6,486.30	6,534.25	6,486.30	23.17	25.21	179.59	-685.77	-279.12	637.32	590.62	46.69	13.649	
6,600.00	6,586.30	6,634.25	6,586.30	23.52	25.51	179.59	-685.77	-279.12	637.32	589.95	47.36	13.456	
6,637.50	6,623.80	6,671.75	6,623.80	23.65	25.62	179.59	-685.77	-279.12	637.32	589.70	47.61	13.385	
6,650.00	6,636.30	6,684.25	6,636.30	23.69	25.66	91.77	-685.77	-279.12	637.32	589.62	47.70	13.362	
6,700.00	6,686.22	6,734.17	6,686.22	23.85	25.80	92.00	-685.77	-279.12	637.41	589.39	48.01	13.276	
6,750.00	6,735.84	6,784.38	6,736.40	24.01	25.95	92.41	-685.76	-277.86	637.63	589.31	48.31	13.197	
6,800.00	6,784.91	6,834.98	6,786.77	24.16	26.10	92.83	-685.71	-273.06	637.98	589.38	48.61	13.125	
6,850.00	6,833.20	6,885.94	6,837.02	24.31	26.24	93.23	-685.62	-264.66	638.47	589.58	48.89	13.060	
6,900.00	6,880.46	6,937.26	6,886.89	24.46	26.38	93.61	-685.50	-252.61	639.07	589.91	49.16	13.000	
6,950.00	6,926.48	6,988.93	6,936.11	24.61	26.51	93.97	-685.34	-236.89	639.80	590.38	49.43	12.945	
7,000.00	6,971.02	7,040.96	6,984.38	24.76	26.63	94.32	-685.15	-217.53	640.64	590.95	49.69	12.893	
7,050.00	7,013.87	7,093.34	7,031.43	24.92	26.74	94.65	-684.91	-194.55	641.59	591.63	49.96	12.841	
7,100.00	7,054.82	7,146.05	7,076.97	25.10	26.85	94.95	-684.64	-168.01	642.64	592.38	50.25	12.788	
7,150.00	7,093.67	7,199.10	7,120.70	25.29	26.94	95.22	-684.34	-138.00	643.77	593.20	50.57	12.730	
7,200.00	7,130.23	7,252.48	7,162.33	25.52	27.03	95.47	-684.00	-104.62	644.98	594.05	50.93	12.663	
7,250.00	7,164.32	7,306.16	7,201.58	25.78	27.11	95.69	-683.63	-68.02	646.26	594.90	51.36	12.582	
7,300.00	7,195.78	7,360.12	7,238.16	26.09	27.19	95.88	-683.22	-28.36	647.60	595.72	51.88	12.483	
7,350.00	7,224.45	7,414.36	7,271.81	26.44	27.26	96.04	-682.79	14.15	648.99	596.49	52.50	12.362	
7,400.00	7,250.20	7,468.84	7,302.28	26.86	27.35	96.17	-682.33	59.30	650.41	597.16	53.25	12.215	
7,450.00	7,272.90	7,523.55	7,329.33	27.35	27.51	96.27	-681.85	106.83	651.85	597.72	54.13	12.041	
7,500.00	7,292.43	7,578.44	7,352.75	27.90	27.87	96.33	-681.34	156.47	653.31	598.14	55.18	11.840	
7,550.00	7,308.70	7,633.50	7,372.35	28.53	28.43	96.35	-680.82	207.90	654.78	598.39	56.39	11.613	
7,600.00	7,321.64	7,688.70	7,387.98	29.22	29.12	96.34	-680.28	260.82	656.24	598.48	57.76	11.362	
7,650.00	7,331.18	7,743.99	7,399.51	29.99	29.90	96.30	-679.73	314.88	657.68	598.39	59.29	11.093	
7,700.00	7,337.27	7,799.35	7,406.83	30.81	30.78	96.23	-679.18	369.74	659.10	598.13	60.96	10.811	
7,750.00	7,339.89	7,854.75	7,409.90	31.68	31.72	96.12	-678.61	425.03	660.49	597.72	62.77	10.522	
7,762.50	7,340.00	7,868.42	7,410.00	31.90	31.96	96.08	-678.48	438.70	660.83	597.59	63.24	10.450	
7,800.00	7,340.00	7,905.90	7,410.00	32.60	32.65	96.07	-678.09	476.18	661.86	597.25	64.61	10.243	
7,900.00	7,340.00	8,005.86	7,410.00	34.58	34.62	96.05	-677.08	576.14	664.61	596.06	68.54	9.696	
8,000.00	7,340.00	8,105.82	7,410.00	36.74	36.76	96.02	-676.06	676.10	667.36	594.53	72.82	9.164	
8,100.00	7,340.00	8,205.79	7,410.00	39.04	39.05	96.00	-675.05	776.05	670.10	592.71	77.39	8.659	
8,200.00	7,340.00	8,305.75	7,410.00	41.45	41.46	95.97	-674.03	876.01	672.85	590.66	82.20	8.186	
8,300.00	7,340.00	8,405.71	7,410.00	43.97	43.96	95.95	-673.02	975.97	675.60	588.40	87.21	7.747	
8,400.00	7,340.00	8,505.67	7,410.00	46.57	46.56	95.93	-672.00	1,075.92	678.35	585.97	92.38	7.343	
8,500.00	7,340.00	8,605.63	7,410.00	49.24	49.22	95.90	-670.98	1,175.88	681.10	583.40	97.70	6.971	
8,600.00	7,340.00	8,705.60	7,410.00	51.97	51.95	95.88	-669.97	1,275.84	683.85	580.71	103.14	6.630	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - 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		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		
8,700.00	7,340.00	8,805.56	7,410.00	54.75	54.73	95.85	-668.95	1,375.79	686.60	577.92	108.68	6.318		
8,800.00	7,340.00	8,905.52	7,410.00	57.58	57.55	95.83	-667.94	1,475.75	689.35	575.04	114.31	6.031		
8,900.00	7,340.00	9,005.48	7,410.00	60.44	60.41	95.81	-666.92	1,575.71	692.10	572.09	120.01	5.767		
9,000.00	7,340.00	9,105.44	7,410.00	63.33	63.31	95.78	-665.90	1,675.66	694.85	569.07	125.78	5.524		
9,100.00	7,340.00	9,205.40	7,410.00	66.25	66.23	95.76	-664.89	1,775.62	697.60	565.99	131.60	5.301		
9,200.00	7,340.00	9,305.37	7,410.00	69.19	69.18	95.74	-663.87	1,875.58	700.35	562.87	137.48	5.094		
9,300.00	7,340.00	9,405.33	7,410.00	72.16	72.15	95.72	-662.86	1,975.53	703.10	559.70	143.39	4.903		
9,400.00	7,340.00	9,505.29	7,410.00	75.14	75.13	95.69	-661.84	2,075.49	705.85	556.50	149.35	4.726		
9,500.00	7,340.00	9,605.25	7,410.00	78.15	78.14	95.67	-660.83	2,175.45	708.60	553.26	155.34	4.562		
9,600.00	7,340.00	9,705.21	7,410.00	81.16	81.16	95.65	-659.81	2,275.40	711.35	549.99	161.36	4.409		
9,700.00	7,340.00	9,805.18	7,410.00	84.19	84.20	95.63	-658.79	2,375.36	714.10	546.70	167.40	4.266		
9,800.00	7,340.00	9,905.14	7,410.00	87.23	87.24	95.61	-657.78	2,475.32	716.85	543.38	173.47	4.132		
9,900.00	7,340.00	10,005.10	7,410.00	90.28	90.30	95.58	-656.76	2,575.27	719.60	540.04	179.56	4.008		
10,000.00	7,340.00	10,105.06	7,410.00	93.35	93.37	95.56	-655.75	2,675.23	722.35	536.68	185.67	3.890		
10,100.00	7,340.00	10,205.02	7,410.00	96.42	96.44	95.54	-654.73	2,775.19	725.10	533.30	191.80	3.780		
10,200.00	7,340.00	10,304.98	7,410.00	99.49	99.53	95.52	-653.71	2,875.14	727.85	529.91	197.95	3.677		
10,300.00	7,340.00	10,404.95	7,410.00	102.58	102.62	95.50	-652.70	2,975.10	730.61	526.50	204.11	3.580		
10,400.00	7,340.00	10,504.91	7,410.00	105.67	105.72	95.48	-651.68	3,075.06	733.36	523.08	210.28	3.488		
10,500.00	7,340.00	10,604.87	7,410.00	108.77	108.82	95.46	-650.67	3,175.01	736.11	519.64	216.46	3.401		
10,600.00	7,340.00	10,704.83	7,410.00	111.87	111.93	95.44	-649.65	3,274.97	738.86	516.20	222.66	3.318		
10,700.00	7,340.00	10,804.79	7,410.00	114.98	115.05	95.42	-648.63	3,374.93	741.61	512.74	228.87	3.240		
10,800.00	7,340.00	10,904.76	7,410.00	118.10	118.17	95.40	-647.62	3,474.88	744.36	509.28	235.08	3.166		
10,900.00	7,340.00	11,004.72	7,410.00	121.21	121.30	95.38	-646.60	3,574.84	747.11	505.81	241.31	3.096		
11,000.00	7,340.00	11,104.68	7,410.00	124.33	124.42	95.36	-645.59	3,674.80	749.87	502.32	247.54	3.029		
11,100.00	7,340.00	11,204.64	7,410.00	127.46	127.56	95.34	-644.57	3,774.75	752.62	498.83	253.78	2.966		
11,200.00	7,340.00	11,304.60	7,410.00	130.59	130.69	95.32	-643.56	3,874.71	755.37	495.34	260.03	2.905		
11,300.00	7,340.00	11,404.56	7,410.00	133.72	133.83	95.30	-642.54	3,974.67	758.12	491.83	266.29	2.847		
11,400.00	7,340.00	11,504.53	7,410.00	136.85	136.97	95.28	-641.52	4,074.62	760.87	488.33	272.55	2.792		
11,500.00	7,340.00	11,604.49	7,410.00	139.99	140.12	95.26	-640.51	4,174.58	763.63	484.81	278.82	2.739		
11,600.00	7,340.00	11,704.45	7,410.00	143.13	143.27	95.24	-639.49	4,274.54	766.38	481.29	285.09	2.688		
11,700.00	7,340.00	11,804.41	7,410.00	146.27	146.42	95.22	-638.48	4,374.49	769.13	477.77	291.37	2.640		
11,800.00	7,340.00	11,904.37	7,410.00	149.42	149.51	95.21	-637.46	4,474.45	771.88	474.29	297.59	2.594		
11,836.31	7,340.00	11,936.55	7,410.00	150.56	150.10	95.20	-637.13	4,506.63	772.89	473.59	299.30	2.582 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - 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	0.00	0.00	0.00	0.00	-179.85	-49.92	-0.13	49.92					
100.00	100.00	100.00	100.00	0.14	0.14	-179.85	-49.92	-0.13	49.92	49.64	0.28	180.844		
200.00	200.00	200.00	200.00	0.50	0.50	-179.85	-49.92	-0.13	49.92	48.92	0.99	50.271		
300.00	300.00	300.00	300.00	0.85	0.85	-179.85	-49.92	-0.13	49.92	48.21	1.71	29.193		
400.00	400.00	400.00	400.00	1.21	1.21	-179.85	-49.92	-0.13	49.92	47.49	2.43	20.569		
500.00	500.00	500.00	500.00	1.57	1.57	-179.85	-49.92	-0.13	49.92	46.77	3.14	15.878	CC, ES	
600.00	600.00	598.33	598.31	1.93	1.91	-179.27	-51.52	-0.66	51.55	47.70	3.85	13.378		
700.00	700.00	696.43	696.28	2.29	2.24	-177.71	-56.31	-2.25	56.47	51.90	4.57	12.357		
800.00	800.00	794.08	793.56	2.65	2.58	-175.66	-64.23	-4.88	64.74	59.44	5.30	12.220		
900.00	899.98	891.13	889.92	3.00	2.92	-74.87	-75.22	-8.52	75.90	69.89	6.02	12.618		
1,000.00	999.84	988.32	985.98	3.34	3.29	-75.65	-89.19	-13.16	89.32	82.61	6.71	13.309		
1,081.60	1,081.14	1,069.10	1,065.72	3.63	3.60	-77.43	-101.45	-17.22	100.38	93.12	7.26	13.819		
1,100.00	1,099.46	1,087.31	1,083.70	3.69	3.67	-77.97	-104.22	-18.14	102.84	95.44	7.39	13.914		
1,200.00	1,198.98	1,186.29	1,181.40	4.05	4.07	-80.48	-119.24	-23.12	116.31	108.21	8.09	14.374		
1,300.00	1,298.49	1,285.26	1,279.10	4.41	4.47	-82.46	-134.26	-28.10	129.95	121.15	8.80	14.761		
1,400.00	1,398.01	1,384.24	1,376.80	4.78	4.87	-84.07	-149.28	-33.08	143.72	134.19	9.53	15.087		
1,500.00	1,497.53	1,483.21	1,474.50	5.15	5.28	-85.40	-164.30	-38.07	157.58	147.32	10.26	15.365		
1,600.00	1,597.04	1,582.19	1,572.21	5.52	5.69	-86.51	-179.33	-43.05	171.51	160.51	10.99	15.602		
1,700.00	1,696.56	1,681.16	1,669.91	5.90	6.11	-87.46	-194.35	-48.03	185.49	173.76	11.73	15.808		
1,800.00	1,796.08	1,780.13	1,767.61	6.28	6.52	-88.27	-209.37	-53.01	199.52	187.04	12.48	15.986		
1,900.00	1,895.60	1,879.11	1,865.31	6.65	6.94	-88.97	-224.39	-58.00	213.58	200.35	13.23	16.143		
2,000.00	1,995.11	1,978.08	1,963.01	7.03	7.36	-89.59	-239.41	-62.98	227.66	213.68	13.98	16.282		
2,100.00	2,094.63	2,077.06	2,060.71	7.41	7.78	-90.14	-254.43	-67.96	241.78	227.04	14.74	16.405		
2,200.00	2,194.15	2,176.03	2,158.41	7.79	8.20	-90.63	-269.46	-72.94	255.91	240.41	15.50	16.514		
2,300.00	2,293.67	2,275.01	2,256.11	8.17	8.62	-91.06	-284.48	-77.92	270.05	253.80	16.26	16.613		
2,400.00	2,393.18	2,373.98	2,353.81	8.55	9.04	-91.45	-299.50	-82.91	284.21	267.20	17.02	16.702		
2,500.00	2,492.70	2,472.96	2,451.52	8.94	9.47	-91.81	-314.52	-87.89	298.38	280.61	17.78	16.783		
2,600.00	2,592.22	2,571.93	2,549.22	9.32	9.89	-92.13	-329.54	-92.87	312.57	294.02	18.54	16.857		
2,700.00	2,691.73	2,670.91	2,646.92	9.70	10.31	-92.42	-344.56	-97.85	326.76	307.45	19.31	16.924		
2,800.00	2,791.25	2,769.88	2,744.62	10.09	10.74	-92.69	-359.58	-102.83	340.96	320.88	20.07	16.986		
2,900.00	2,890.77	2,868.86	2,842.32	10.47	11.16	-92.94	-374.61	-107.82	355.16	334.32	20.84	17.043		
3,000.00	2,990.29	2,967.83	2,940.02	10.85	11.58	-93.17	-389.63	-112.80	369.37	347.77	21.61	17.095		
3,100.00	3,089.80	3,066.80	3,037.72	11.24	12.01	-93.38	-404.65	-117.78	383.59	361.22	22.37	17.144		
3,200.00	3,189.32	3,165.78	3,135.42	11.62	12.43	-93.58	-419.67	-122.76	397.81	374.67	23.14	17.189		
3,300.00	3,288.84	3,264.75	3,233.12	12.01	12.86	-93.76	-434.69	-127.74	412.04	388.13	23.91	17.231		
3,400.00	3,388.36	3,363.73	3,330.83	12.39	13.28	-93.94	-449.71	-132.73	426.27	401.59	24.68	17.270		
3,500.00	3,487.87	3,462.70	3,428.53	12.78	13.71	-94.10	-464.74	-137.71	440.50	415.05	25.45	17.307		
3,600.00	3,587.39	3,561.68	3,526.23	13.16	14.14	-94.25	-479.76	-142.69	454.74	428.51	26.22	17.341		
3,700.00	3,686.91	3,660.65	3,623.93	13.55	14.56	-94.39	-494.78	-147.67	468.98	441.98	26.99	17.374		
3,732.10	3,718.86	3,692.43	3,655.30	13.67	14.70	-94.43	-499.60	-149.27	473.55	446.31	27.24	17.383		
3,800.00	3,786.50	3,759.64	3,721.64	13.93	14.99	-94.62	-509.80	-152.66	483.16	455.40	27.76	17.405		
3,900.00	3,886.33	3,858.61	3,819.34	14.30	15.41	-94.55	-524.82	-157.64	497.08	468.58	28.50	17.441		
4,000.00	3,986.30	3,957.47	3,916.92	14.65	15.84	-94.10	-539.83	-162.61	510.78	481.56	29.22	17.483		
4,013.70	4,000.00	3,970.99	3,930.28	14.69	15.90	166.29	-541.88	-163.29	512.64	483.33	29.31	17.490		
4,100.00	4,086.30	4,056.18	4,014.37	14.98	16.26	167.09	-554.81	-167.58	524.43	494.52	29.91	17.536		
4,200.00	4,186.30	4,154.89	4,111.81	15.31	16.69	167.97	-569.79	-172.55	538.21	507.61	30.59	17.592		
4,300.00	4,286.30	4,253.61	4,209.25	15.64	17.11	168.81	-584.77	-177.52	552.11	520.82	31.29	17.648		
4,400.00	4,386.30	4,352.32	4,306.70	15.98	17.54	169.60	-599.75	-182.49	566.12	534.14	31.98	17.704		
4,500.00	4,486.30	4,451.03	4,404.14	16.31	17.97	170.36	-614.74	-187.46	580.23	547.56	32.67	17.760		
4,600.00	4,586.30	4,549.75	4,501.58	16.65	18.39	171.08	-629.72	-192.43	594.43	561.07	33.36	17.817		
4,700.00	4,686.30	4,648.46	4,599.03	16.99	18.82	171.77	-644.70	-197.40	608.73	574.67	34.06	17.873		
4,800.00	4,786.30	4,747.17	4,696.47	17.33	19.24	172.42	-659.68	-202.37	623.10	588.35	34.75	17.929		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,886.30	4,845.89	4,793.91	17.66	19.67	173.05	-674.66	-207.33	637.56	602.11	35.45	17.984	
5,000.00	4,986.30	4,944.60	4,891.36	18.00	20.09	173.65	-689.65	-212.30	652.08	615.93	36.15	18.039	
5,100.00	5,086.30	5,043.31	4,988.80	18.34	20.52	174.22	-704.63	-217.27	666.68	629.83	36.85	18.093	
5,200.00	5,186.30	5,142.03	5,086.24	18.69	20.95	174.77	-719.61	-222.24	681.33	643.78	37.55	18.146	
5,300.00	5,286.30	5,240.74	5,183.69	19.03	21.37	175.30	-734.59	-227.21	696.05	657.80	38.25	18.198	
5,400.00	5,386.30	5,339.45	5,281.13	19.37	21.80	175.80	-749.57	-232.18	710.81	671.87	38.95	18.250	
5,500.00	5,486.30	5,438.17	5,378.57	19.71	22.22	176.28	-764.56	-237.15	725.64	685.98	39.65	18.300	
5,600.00	5,586.30	5,536.88	5,476.02	20.06	22.65	176.75	-779.54	-242.12	740.51	700.15	40.35	18.350	
5,700.00	5,686.30	5,635.59	5,573.46	20.40	23.08	177.19	-794.52	-247.09	755.42	714.36	41.06	18.399	
5,800.00	5,786.30	5,734.31	5,670.90	20.74	23.50	177.62	-809.50	-252.06	770.38	728.62	41.76	18.447	
5,900.00	5,886.30	5,833.02	5,768.35	21.09	23.93	178.03	-824.48	-257.02	785.38	742.91	42.47	18.494	
6,000.00	5,986.30	5,931.73	5,865.79	21.43	24.36	178.43	-839.47	-261.99	800.42	757.24	43.17	18.540	
6,100.00	6,086.30	6,038.38	5,971.08	21.78	24.81	178.84	-855.51	-267.31	815.38	771.45	43.94	18.557	
6,200.00	6,186.30	6,174.44	6,106.04	22.13	25.36	179.24	-871.80	-272.72	827.31	782.43	44.88	18.436	
6,300.00	6,286.30	6,311.84	6,243.00	22.47	25.87	179.48	-882.07	-276.12	834.76	789.04	45.72	18.259	
6,400.00	6,386.30	6,449.97	6,381.05	22.82	26.33	179.58	-886.10	-277.46	837.67	791.22	46.45	18.033	
6,500.00	6,486.30	6,555.21	6,486.30	23.17	26.62	179.58	-886.16	-277.48	837.71	790.60	47.11	17.782	
6,600.00	6,586.30	6,655.21	6,586.30	23.52	26.90	179.58	-886.16	-277.48	837.71	789.94	47.77	17.537	
6,637.50	6,623.80	6,692.72	6,623.80	23.65	27.01	179.58	-886.16	-277.48	837.71	789.69	48.02	17.446	
6,650.00	6,636.30	6,705.25	6,636.34	23.69	27.04	91.74	-886.16	-277.37	837.71	789.62	48.10	17.417	
6,700.00	6,686.22	6,755.42	6,686.43	23.85	27.18	91.74	-886.13	-274.74	837.78	789.37	48.41	17.305	
6,750.00	6,735.84	6,805.59	6,736.21	24.01	27.32	91.72	-886.07	-268.60	837.95	789.24	48.72	17.201	
6,800.00	6,784.91	6,855.75	6,785.44	24.16	27.45	91.70	-885.97	-259.00	838.22	789.21	49.01	17.103	
6,850.00	6,833.20	6,905.91	6,833.87	24.31	27.57	91.67	-885.83	-245.98	838.57	789.28	49.29	17.012	
6,900.00	6,880.46	6,956.07	6,881.26	24.46	27.69	91.63	-885.67	-229.61	839.02	789.45	49.57	16.926	
6,950.00	6,926.48	7,006.22	6,927.39	24.61	27.79	91.58	-885.47	-209.96	839.56	789.71	49.84	16.844	
7,000.00	6,971.02	7,056.36	6,972.03	24.76	27.89	91.52	-885.23	-187.13	840.18	790.06	50.12	16.762	
7,050.00	7,013.87	7,106.50	7,014.95	24.92	27.98	91.46	-884.97	-161.24	840.89	790.47	50.42	16.678	
7,100.00	7,054.82	7,156.63	7,055.95	25.10	28.06	91.39	-884.67	-132.42	841.68	790.94	50.74	16.589	
7,150.00	7,093.67	7,206.75	7,094.83	25.29	28.13	91.31	-884.35	-100.80	842.55	791.45	51.10	16.490	
7,200.00	7,130.23	7,256.86	7,131.39	25.52	28.20	91.23	-884.00	-66.56	843.49	791.98	51.51	16.376	
7,250.00	7,164.32	7,306.96	7,165.47	25.78	28.25	91.14	-883.62	-29.85	844.50	792.50	51.99	16.243	
7,300.00	7,195.78	7,357.05	7,196.88	26.09	28.30	91.04	-883.22	9.15	845.57	793.00	52.56	16.087	
7,350.00	7,224.45	7,407.13	7,225.50	26.44	28.34	90.94	-882.80	50.24	846.69	793.45	53.24	15.903	
7,400.00	7,250.20	7,457.19	7,251.16	26.86	28.38	90.84	-882.36	93.21	847.87	793.83	54.04	15.690	
7,450.00	7,272.90	7,507.25	7,273.76	27.35	28.41	90.73	-881.90	137.86	849.10	794.13	54.97	15.446	
7,500.00	7,292.43	7,557.30	7,293.17	27.90	28.46	90.62	-881.43	183.97	850.37	794.32	56.04	15.173	
7,550.00	7,308.70	7,607.33	7,309.32	28.53	28.77	90.51	-880.94	231.32	851.67	794.41	57.26	14.873	
7,600.00	7,321.64	7,657.35	7,322.12	29.22	29.40	90.39	-880.45	279.66	853.00	794.38	58.62	14.551	
7,650.00	7,331.18	7,707.36	7,331.51	29.99	30.14	90.27	-879.94	328.77	854.35	794.24	60.12	14.212	
7,700.00	7,337.27	7,757.36	7,337.46	30.81	30.94	90.15	-879.44	378.40	855.72	793.99	61.73	13.862	
7,750.00	7,339.89	7,807.35	7,339.92	31.68	31.80	90.03	-878.92	428.31	857.10	793.64	63.45	13.508	
7,762.50	7,340.00	7,819.85	7,340.00	31.90	32.02	90.00	-878.80	440.81	857.44	793.54	63.90	13.419	
7,800.00	7,340.00	7,857.33	7,340.00	32.60	32.72	90.00	-878.41	478.29	858.47	793.18	65.29	13.149	
7,900.00	7,340.00	7,957.29	7,340.00	34.58	34.69	90.00	-877.39	578.25	861.23	792.00	69.23	12.440	
8,000.00	7,340.00	8,057.25	7,340.00	36.74	36.83	90.00	-876.36	678.21	863.98	790.47	73.51	11.753	
8,100.00	7,340.00	8,157.22	7,340.00	39.04	39.11	90.00	-875.34	778.16	866.74	788.66	78.08	11.100	
8,200.00	7,340.00	8,257.18	7,340.00	41.45	41.51	90.00	-874.31	878.12	869.50	786.60	82.90	10.489	
8,300.00	7,340.00	8,357.14	7,340.00	43.97	44.01	90.00	-873.29	978.08	872.25	784.34	87.91	9.922	
8,400.00	7,340.00	8,457.10	7,340.00	46.57	46.60	90.00	-872.27	1,078.03	875.01	781.91	93.10	9.398	
8,500.00	7,340.00	8,557.06	7,340.00	49.24	49.26	90.00	-871.24	1,177.99	877.76	779.33	98.43	8.918	
8,600.00	7,340.00	8,657.03	7,340.00	51.97	51.98	90.00	-870.22	1,277.95	880.52	776.64	103.88	8.476	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - 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	7,340.00	8,756.99	7,340.00	54.75	54.76	90.00	-869.19	1,377.90	883.27	773.84	109.43	8.071		
8,800.00	7,340.00	8,856.95	7,340.00	57.58	57.58	90.00	-868.17	1,477.86	886.03	770.95	115.08	7.700		
8,900.00	7,340.00	8,956.91	7,340.00	60.44	60.43	90.00	-867.14	1,577.82	888.78	767.99	120.79	7.358		
9,000.00	7,340.00	9,056.87	7,340.00	63.33	63.32	90.00	-866.12	1,677.77	891.54	764.96	126.58	7.044		
9,100.00	7,340.00	9,156.84	7,340.00	66.25	66.24	90.00	-865.09	1,777.73	894.29	761.88	132.41	6.754		
9,200.00	7,340.00	9,256.80	7,340.00	69.19	69.19	90.00	-864.07	1,877.69	897.05	758.75	138.30	6.486		
9,300.00	7,340.00	9,356.76	7,340.00	72.16	72.15	90.00	-863.05	1,977.64	899.81	755.57	144.24	6.238		
9,400.00	7,340.00	9,456.72	7,340.00	75.14	75.14	90.00	-862.02	2,077.60	902.56	752.35	150.21	6.009		
9,500.00	7,340.00	9,556.68	7,340.00	78.15	78.14	90.00	-861.00	2,177.56	905.32	749.10	156.21	5.795		
9,600.00	7,340.00	9,656.65	7,340.00	81.16	81.16	90.00	-859.97	2,277.51	908.07	745.83	162.25	5.597		
9,700.00	7,340.00	9,756.61	7,340.00	84.19	84.20	90.00	-858.95	2,377.47	910.83	742.52	168.31	5.412		
9,800.00	7,340.00	9,856.57	7,340.00	87.23	87.24	90.00	-857.92	2,477.43	913.58	739.19	174.39	5.239		
9,900.00	7,340.00	9,956.53	7,340.00	90.28	90.30	90.00	-856.90	2,577.38	916.34	735.84	180.50	5.077		
10,000.00	7,340.00	10,056.49	7,340.00	93.35	93.36	90.00	-855.88	2,677.34	919.09	732.46	186.63	4.925		
10,100.00	7,340.00	10,156.46	7,340.00	96.42	96.44	90.00	-854.85	2,777.30	921.85	729.07	192.77	4.782		
10,200.00	7,340.00	10,256.42	7,340.00	99.49	99.52	90.00	-853.83	2,877.26	924.60	725.67	198.94	4.648		
10,300.00	7,340.00	10,356.38	7,340.00	102.58	102.61	90.00	-852.80	2,977.21	927.36	722.25	205.11	4.521		
10,400.00	7,340.00	10,456.34	7,340.00	105.67	105.71	90.00	-851.78	3,077.17	930.12	718.81	211.30	4.402		
10,500.00	7,340.00	10,556.30	7,340.00	108.77	108.81	90.00	-850.75	3,177.13	932.87	715.37	217.50	4.289		
10,600.00	7,340.00	10,656.27	7,340.00	111.87	111.92	90.00	-849.73	3,277.08	935.63	711.91	223.71	4.182		
10,700.00	7,340.00	10,756.23	7,340.00	114.98	115.03	90.00	-848.70	3,377.04	938.38	708.45	229.94	4.081		
10,800.00	7,340.00	10,856.19	7,340.00	118.10	118.15	90.00	-847.68	3,477.00	941.14	704.97	236.17	3.985		
10,900.00	7,340.00	10,956.15	7,340.00	121.21	121.28	90.00	-846.66	3,576.95	943.89	701.48	242.41	3.894		
11,000.00	7,340.00	11,056.11	7,340.00	124.33	124.41	90.00	-845.63	3,676.91	946.65	697.99	248.66	3.807		
11,100.00	7,340.00	11,156.08	7,340.00	127.46	127.54	90.00	-844.61	3,776.87	949.40	694.49	254.91	3.724		
11,200.00	7,340.00	11,256.04	7,340.00	130.59	130.67	90.00	-843.58	3,876.82	952.16	690.98	261.18	3.646		
11,300.00	7,340.00	11,356.00	7,340.00	133.72	133.81	90.00	-842.56	3,976.78	954.91	687.47	267.45	3.570		
11,400.00	7,340.00	11,455.96	7,340.00	136.85	136.95	90.00	-841.53	4,076.74	957.67	683.95	273.72	3.499		
11,500.00	7,340.00	11,555.92	7,340.00	139.99	140.10	90.00	-840.51	4,176.69	960.43	680.42	280.00	3.430		
11,600.00	7,340.00	11,655.89	7,340.00	143.13	143.25	90.00	-839.49	4,276.65	963.18	676.89	286.29	3.364		
11,700.00	7,340.00	11,755.85	7,340.00	146.27	146.39	90.00	-838.46	4,376.61	965.94	673.35	292.58	3.301		
11,800.00	7,340.00	11,855.81	7,340.00	149.42	149.55	90.00	-837.44	4,476.56	968.69	669.81	298.88	3.241		
11,836.31	7,340.00	11,886.52	7,340.00	150.56	150.52	90.00	-837.12	4,507.27	969.71	668.73	300.98	3.222 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - 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	0.00	0.00	0.00	0.00	-179.96	-60.11	-0.04	60.11					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-60.11	-0.04	60.11	59.83	0.28	217.764		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-60.11	-0.04	60.11	59.11	0.99	60.534		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-60.11	-0.04	60.11	58.40	1.71	35.153		
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-60.11	-0.04	60.11	57.68	2.43	24.768	CC, ES	
500.00	500.00	497.99	497.97	1.57	1.55	-179.53	-61.72	-0.50	61.75	58.61	3.14	19.663		
600.00	600.00	595.74	595.59	1.93	1.88	-178.37	-66.53	-1.89	66.70	62.84	3.87	17.246		
700.00	700.00	693.04	692.53	2.29	2.22	-176.79	-74.50	-4.18	74.99	70.38	4.61	16.279		
800.00	800.00	789.67	788.47	2.65	2.57	-175.08	-85.54	-7.36	86.62	81.28	5.35	16.202		
900.00	899.98	886.16	883.84	3.00	2.94	-74.43	-99.59	-11.41	101.07	95.01	6.06	16.680		
1,000.00	999.84	985.06	981.43	3.34	3.33	-75.21	-115.02	-15.85	115.67	108.95	6.73	17.197		
1,081.60	1,081.14	1,065.77	1,061.07	3.63	3.66	-76.81	-127.61	-19.48	127.01	119.73	7.28	17.435		
1,100.00	1,099.46	1,083.97	1,079.03	3.69	3.73	-77.29	-130.45	-20.30	129.53	122.12	7.41	17.475		
1,200.00	1,198.98	1,182.86	1,176.61	4.05	4.14	-79.62	-145.87	-24.74	143.34	135.23	8.12	17.663		
1,300.00	1,298.49	1,281.75	1,274.19	4.41	4.55	-81.53	-161.30	-29.18	157.35	148.52	8.83	17.819		
1,400.00	1,398.01	1,380.64	1,371.77	4.78	4.96	-83.13	-176.72	-33.62	171.50	161.94	9.55	17.950		
1,500.00	1,497.53	1,479.53	1,469.34	5.15	5.38	-84.48	-192.15	-38.06	185.76	175.47	10.29	18.060		
1,600.00	1,597.04	1,578.42	1,566.92	5.52	5.80	-85.64	-207.57	-42.50	200.10	189.08	11.02	18.153		
1,700.00	1,696.56	1,677.31	1,664.50	5.90	6.22	-86.65	-223.00	-46.94	214.52	202.75	11.77	18.232		
1,800.00	1,796.08	1,776.20	1,762.08	6.28	6.64	-87.52	-238.42	-51.39	228.99	216.48	12.51	18.301		
1,900.00	1,895.60	1,875.09	1,859.66	6.65	7.06	-88.30	-253.85	-55.83	243.51	230.25	13.26	18.361		
2,000.00	1,995.11	1,973.98	1,957.24	7.03	7.48	-88.99	-269.27	-60.27	258.07	244.06	14.02	18.413		
2,100.00	2,094.63	2,072.87	2,054.81	7.41	7.91	-89.60	-284.70	-64.71	272.66	257.89	14.77	18.459		
2,200.00	2,194.15	2,171.76	2,152.39	7.79	8.33	-90.15	-300.12	-69.15	287.28	271.75	15.53	18.499		
2,300.00	2,293.67	2,270.65	2,249.97	8.17	8.76	-90.65	-315.55	-73.59	301.92	285.63	16.29	18.536		
2,400.00	2,393.18	2,369.54	2,347.55	8.55	9.18	-91.10	-330.97	-78.04	316.59	299.54	17.05	18.568		
2,500.00	2,492.70	2,468.43	2,445.13	8.94	9.61	-91.51	-346.40	-82.48	331.27	313.45	17.81	18.598		
2,600.00	2,592.22	2,567.32	2,542.71	9.32	10.03	-91.89	-361.82	-86.92	345.96	327.38	18.58	18.624		
2,700.00	2,691.73	2,666.21	2,640.28	9.70	10.46	-92.24	-377.25	-91.36	360.67	341.33	19.34	18.648		
2,800.00	2,791.25	2,765.10	2,737.86	10.09	10.89	-92.55	-392.67	-95.80	375.39	355.28	20.11	18.670		
2,900.00	2,890.77	2,863.99	2,835.44	10.47	11.31	-92.85	-408.10	-100.24	390.12	369.25	20.87	18.690		
3,000.00	2,990.29	2,962.88	2,933.02	10.85	11.74	-93.12	-423.52	-104.68	404.86	383.22	21.64	18.709		
3,100.00	3,089.80	3,061.77	3,030.60	11.24	12.17	-93.38	-438.95	-109.13	419.61	397.20	22.41	18.726		
3,200.00	3,189.32	3,160.66	3,128.18	11.62	12.59	-93.61	-454.37	-113.57	434.37	411.19	23.18	18.742		
3,300.00	3,288.84	3,259.55	3,225.75	12.01	13.02	-93.84	-469.80	-118.01	449.13	425.18	23.95	18.756		
3,400.00	3,388.36	3,358.44	3,323.33	12.39	13.45	-94.04	-485.23	-122.45	463.90	439.18	24.72	18.770		
3,500.00	3,487.87	3,457.33	3,420.91	12.78	13.88	-94.24	-500.65	-126.89	478.67	453.19	25.48	18.783		
3,600.00	3,587.39	3,556.22	3,518.49	13.16	14.31	-94.42	-516.08	-131.33	493.45	467.20	26.26	18.794		
3,700.00	3,686.91	3,655.11	3,616.07	13.55	14.73	-94.59	-531.50	-135.78	508.24	481.21	27.03	18.805		
3,732.10	3,718.86	3,686.86	3,647.40	13.67	14.87	-94.65	-536.45	-137.20	512.99	485.71	27.27	18.809		
3,800.00	3,786.50	3,754.01	3,713.66	13.93	15.16	-94.87	-546.93	-140.22	522.96	495.17	27.79	18.817		
3,900.00	3,886.33	3,852.92	3,811.26	14.30	15.59	-94.87	-562.36	-144.66	537.41	508.88	28.53	18.835		
4,000.00	3,986.30	3,951.73	3,908.75	14.65	16.02	-94.53	-577.77	-149.10	551.61	522.36	29.25	18.859		
4,013.70	4,000.00	3,965.25	3,922.09	14.69	16.08	165.85	-579.88	-149.71	553.54	524.19	29.34	18.863		
4,100.00	4,086.30	4,050.40	4,006.12	14.98	16.45	166.56	-593.16	-153.53	565.73	535.79	29.94	18.896		
4,200.00	4,186.30	4,149.08	4,103.48	15.31	16.87	167.35	-608.55	-157.96	579.96	549.32	30.63	18.934		
4,300.00	4,286.30	4,247.75	4,200.85	15.64	17.30	168.10	-623.94	-162.39	594.29	562.96	31.32	18.973		
4,400.00	4,386.30	4,346.42	4,298.21	15.98	17.73	168.81	-639.33	-166.83	608.71	576.69	32.02	19.013		
4,500.00	4,486.30	4,445.10	4,395.58	16.31	18.16	169.50	-654.72	-171.26	623.22	590.52	32.71	19.053		
4,600.00	4,586.30	4,543.77	4,492.94	16.65	18.58	170.15	-670.12	-175.69	637.82	604.42	33.40	19.094		
4,700.00	4,686.30	4,642.44	4,590.31	16.99	19.01	170.77	-685.51	-180.12	652.50	618.39	34.10	19.134		
4,800.00	4,786.30	4,741.12	4,687.68	17.33	19.44	171.36	-700.90	-184.55	667.24	632.44	34.80	19.175		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis				Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,839.79	4,785.04	17.66	19.87	171.93	-716.29	-188.99	682.06	646.56	35.50	19.215		
5,000.00	4,986.30	4,938.47	4,882.41	18.00	20.30	172.48	-731.68	-193.42	696.93	660.74	36.19	19.255		
5,100.00	5,086.30	5,037.14	4,979.77	18.34	20.72	173.00	-747.07	-197.85	711.87	674.97	36.89	19.295		
5,200.00	5,186.30	5,135.81	5,077.14	18.69	21.15	173.50	-762.46	-202.28	726.86	689.27	37.60	19.334		
5,300.00	5,286.30	5,234.49	5,174.50	19.03	21.58	173.98	-777.86	-206.71	741.90	703.61	38.30	19.372		
5,400.00	5,386.30	5,333.16	5,271.87	19.37	22.01	174.44	-793.25	-211.14	757.00	718.00	39.00	19.410		
5,500.00	5,486.30	5,431.84	5,369.23	19.71	22.44	174.88	-808.64	-215.58	772.14	732.43	39.70	19.448		
5,600.00	5,586.30	5,530.51	5,466.60	20.06	22.86	175.31	-824.03	-220.01	787.32	746.91	40.41	19.485		
5,700.00	5,686.30	5,629.18	5,563.96	20.40	23.29	175.72	-839.42	-224.44	802.54	761.43	41.11	19.521		
5,800.00	5,786.30	5,727.86	5,661.33	20.74	23.72	176.11	-854.81	-228.87	817.81	775.99	41.82	19.557		
5,900.00	5,886.30	5,826.53	5,758.69	21.09	24.15	176.49	-870.20	-233.30	833.11	790.58	42.52	19.592		
6,000.00	5,986.30	5,925.20	5,856.06	21.43	24.58	176.86	-885.60	-237.74	848.44	805.21	43.23	19.627		
6,100.00	6,086.30	6,023.88	5,953.42	21.78	25.00	177.21	-900.99	-242.17	863.81	819.87	43.94	19.661		
6,200.00	6,186.30	6,122.55	6,050.79	22.13	25.43	177.55	-916.38	-246.60	879.20	834.56	44.64	19.694		
6,300.00	6,286.30	6,221.23	6,148.15	22.47	25.86	177.88	-931.77	-251.03	894.63	849.28	45.35	19.727		
6,400.00	6,386.30	6,319.90	6,245.52	22.82	26.29	178.20	-947.16	-255.46	910.09	864.03	46.06	19.758		
6,500.00	6,486.30	6,418.57	6,342.88	23.17	26.72	178.51	-962.55	-259.89	925.57	878.80	46.77	19.790		
6,600.00	6,586.30	6,517.25	6,440.25	23.52	27.15	178.81	-977.94	-264.33	941.08	893.60	47.48	19.821		
6,637.50	6,623.80	6,554.25	6,476.76	23.65	27.31	178.92	-983.72	-265.99	946.90	899.15	47.75	19.832		
6,650.00	6,636.30	6,566.58	6,488.93	23.69	27.36	90.97	-985.64	-266.54	948.84	901.01	47.83	19.836		
6,700.00	6,686.22	6,615.70	6,537.40	23.85	27.57	90.64	-993.30	-268.75	956.66	908.49	48.17	19.860		
6,750.00	6,735.84	6,664.35	6,585.41	24.01	27.78	90.49	-1,000.89	-270.93	964.56	916.07	48.49	19.891		
6,800.00	6,784.91	6,712.29	6,632.71	24.16	27.99	90.52	-1,008.37	-273.09	972.60	923.80	48.80	19.929		
6,850.00	6,833.20	6,759.74	6,679.53	24.31	28.20	90.70	-1,015.77	-275.15	980.86	931.76	49.10	19.975		
6,900.00	6,880.46	6,809.21	6,728.39	24.46	28.41	90.95	-1,023.47	-274.97	989.32	939.91	49.42	20.019		
6,950.00	6,926.48	6,859.91	6,778.32	24.61	28.60	91.20	-1,031.30	-271.25	997.94	948.20	49.74	20.064		
7,000.00	6,971.02	6,911.92	6,829.17	24.76	28.79	91.45	-1,039.24	-263.72	1,006.65	956.59	50.06	20.107		
7,050.00	7,013.87	6,965.36	6,880.70	24.92	28.97	91.70	-1,047.24	-252.12	1,015.41	965.01	50.40	20.146		
7,100.00	7,054.82	7,020.33	6,932.67	25.10	29.14	91.94	-1,055.27	-236.17	1,024.16	973.41	50.75	20.179		
7,150.00	7,093.67	7,076.93	6,984.76	25.29	29.31	92.18	-1,063.27	-215.58	1,032.84	981.71	51.13	20.202		
7,200.00	7,130.23	7,135.24	7,036.59	25.52	29.46	92.42	-1,071.18	-190.09	1,041.37	989.84	51.53	20.210		
7,250.00	7,164.32	7,195.36	7,087.70	25.78	29.60	92.65	-1,078.93	-159.43	1,049.69	997.73	51.97	20.200		
7,300.00	7,195.78	7,257.34	7,137.55	26.09	29.73	92.87	-1,086.42	-123.40	1,057.72	1,005.26	52.46	20.163		
7,350.00	7,224.45	7,321.23	7,185.53	26.44	29.85	93.08	-1,093.56	-81.85	1,065.38	1,012.35	53.03	20.090		
7,400.00	7,250.20	7,387.03	7,230.92	26.86	29.95	93.28	-1,100.23	-34.71	1,072.59	1,018.89	53.70	19.973		
7,450.00	7,272.90	7,454.71	7,272.95	27.35	30.05	93.45	-1,106.32	17.95	1,079.27	1,024.76	54.51	19.801		
7,500.00	7,292.43	7,524.18	7,310.80	27.90	30.13	93.59	-1,111.70	75.92	1,085.33	1,029.84	55.49	19.560		
7,550.00	7,308.70	7,595.29	7,343.61	28.53	30.23	93.69	-1,116.23	138.81	1,090.71	1,034.06	56.65	19.253		
7,600.00	7,321.64	7,667.85	7,370.59	29.22	30.38	93.76	-1,119.80	206.05	1,095.33	1,037.28	58.06	18.867		
7,650.00	7,331.18	7,741.60	7,390.98	29.99	30.76	93.78	-1,122.29	276.84	1,099.14	1,039.45	59.69	18.416		
7,700.00	7,337.27	7,816.22	7,404.19	30.81	31.61	93.75	-1,123.63	350.23	1,102.08	1,040.53	61.55	17.906		
7,750.00	7,339.89	7,891.36	7,409.81	31.68	32.75	93.66	-1,123.75	425.13	1,104.11	1,040.51	63.60	17.359		
7,762.50	7,340.00	7,909.46	7,410.00	31.90	33.06	93.64	-1,123.60	443.23	1,104.48	1,040.34	64.13	17.222		
7,800.00	7,340.00	7,946.94	7,410.00	32.60	33.73	93.63	-1,123.22	480.71	1,105.51	1,039.99	65.52	16.874		
7,900.00	7,340.00	8,046.90	7,410.00	34.58	35.63	93.62	-1,122.20	580.67	1,108.27	1,038.84	69.43	15.962		
8,000.00	7,340.00	8,146.87	7,410.00	36.74	37.72	93.61	-1,121.19	680.62	1,111.03	1,037.34	73.69	15.078		
8,100.00	7,340.00	8,246.83	7,410.00	39.04	39.95	93.60	-1,120.17	780.58	1,113.79	1,035.55	78.23	14.237		
8,200.00	7,340.00	8,346.79	7,410.00	41.45	42.32	93.60	-1,119.15	880.54	1,116.54	1,033.52	83.02	13.449		
8,300.00	7,340.00	8,446.75	7,410.00	43.97	44.78	93.59	-1,118.14	980.49	1,119.30	1,031.29	88.02	12.717		
8,400.00	7,340.00	8,546.71	7,410.00	46.57	47.34	93.58	-1,117.12	1,080.45	1,122.06	1,028.88	93.18	12.042		
8,500.00	7,340.00	8,646.68	7,410.00	49.24	49.97	93.57	-1,116.11	1,180.41	1,124.82	1,026.33	98.49	11.421		
8,600.00	7,340.00	8,746.64	7,410.00	51.97	52.66	93.56	-1,115.09	1,280.36	1,127.58	1,023.66	103.92	10.851		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - 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		
8,700.00	7,340.00	8,846.60	7,410.00	54.75	55.41	93.55	-1,114.07	1,380.32	1,130.34	1,020.88	109.45	10.327		
8,800.00	7,340.00	8,946.56	7,410.00	57.58	58.21	93.54	-1,113.06	1,480.28	1,133.09	1,018.02	115.08	9.847		
8,900.00	7,340.00	9,046.52	7,410.00	60.44	61.04	93.53	-1,112.04	1,580.23	1,135.85	1,015.08	120.78	9.405		
9,000.00	7,340.00	9,146.48	7,410.00	63.33	63.91	93.53	-1,111.03	1,680.19	1,138.61	1,012.07	126.54	8.998		
9,100.00	7,340.00	9,246.45	7,410.00	66.25	66.81	93.52	-1,110.01	1,780.15	1,141.37	1,009.01	132.36	8.623		
9,200.00	7,340.00	9,346.41	7,410.00	69.19	69.74	93.51	-1,108.99	1,880.10	1,144.13	1,005.89	138.24	8.277		
9,300.00	7,340.00	9,446.37	7,410.00	72.16	72.69	93.50	-1,107.98	1,980.06	1,146.89	1,002.73	144.15	7.956		
9,400.00	7,340.00	9,546.33	7,410.00	75.14	75.66	93.49	-1,106.96	2,080.02	1,149.65	999.54	150.11	7.659		
9,500.00	7,340.00	9,646.29	7,410.00	78.15	78.65	93.48	-1,105.95	2,179.97	1,152.40	996.30	156.10	7.382		
9,600.00	7,340.00	9,746.26	7,410.00	81.16	81.65	93.48	-1,104.93	2,279.93	1,155.16	993.04	162.12	7.125		
9,700.00	7,340.00	9,846.22	7,410.00	84.19	84.67	93.47	-1,103.91	2,379.89	1,157.92	989.75	168.17	6.885		
9,800.00	7,340.00	9,946.18	7,410.00	87.23	87.71	93.46	-1,102.90	2,479.84	1,160.68	986.44	174.24	6.661		
9,900.00	7,340.00	10,046.14	7,410.00	90.28	90.75	93.45	-1,101.88	2,579.80	1,163.44	983.10	180.34	6.451		
10,000.00	7,340.00	10,146.10	7,410.00	93.35	93.81	93.44	-1,100.87	2,679.76	1,166.20	979.74	186.45	6.255		
10,100.00	7,340.00	10,246.06	7,410.00	96.42	96.87	93.43	-1,099.85	2,779.71	1,168.96	976.37	192.59	6.070		
10,200.00	7,340.00	10,346.03	7,410.00	99.49	99.94	93.43	-1,098.83	2,879.67	1,171.72	972.98	198.74	5.896		
10,300.00	7,340.00	10,445.99	7,410.00	102.58	103.03	93.42	-1,097.82	2,979.63	1,174.48	969.57	204.90	5.732		
10,400.00	7,340.00	10,545.95	7,410.00	105.67	106.12	93.41	-1,096.80	3,079.58	1,177.23	966.15	211.08	5.577		
10,500.00	7,340.00	10,645.91	7,410.00	108.77	109.21	93.40	-1,095.79	3,179.54	1,179.99	962.72	217.27	5.431		
10,600.00	7,340.00	10,745.87	7,410.00	111.87	112.31	93.39	-1,094.77	3,279.49	1,182.75	959.28	223.47	5.293		
10,700.00	7,340.00	10,845.83	7,410.00	114.98	115.42	93.39	-1,093.75	3,379.45	1,185.51	955.83	229.68	5.161		
10,800.00	7,340.00	10,945.80	7,410.00	118.10	118.53	93.38	-1,092.74	3,479.41	1,188.27	952.36	235.91	5.037		
10,900.00	7,340.00	11,045.76	7,410.00	121.21	121.65	93.37	-1,091.72	3,579.36	1,191.03	948.89	242.14	4.919		
11,000.00	7,340.00	11,145.72	7,410.00	124.33	124.77	93.36	-1,090.71	3,679.32	1,193.79	945.41	248.38	4.806		
11,100.00	7,340.00	11,245.68	7,410.00	127.46	127.90	93.36	-1,089.69	3,779.28	1,196.55	941.93	254.62	4.699		
11,200.00	7,340.00	11,345.64	7,410.00	130.59	131.03	93.35	-1,088.67	3,879.23	1,199.31	938.43	260.88	4.597		
11,300.00	7,340.00	11,445.61	7,410.00	133.72	134.16	93.34	-1,087.66	3,979.19	1,202.07	934.93	267.14	4.500		
11,400.00	7,340.00	11,545.57	7,410.00	136.85	137.30	93.33	-1,086.64	4,079.15	1,204.82	931.42	273.40	4.407		
11,500.00	7,340.00	11,645.53	7,410.00	139.99	140.44	93.32	-1,085.63	4,179.10	1,207.58	927.91	279.67	4.318		
11,600.00	7,340.00	11,745.49	7,410.00	143.13	143.58	93.32	-1,084.61	4,279.06	1,210.34	924.39	285.95	4.233		
11,700.00	7,340.00	11,845.45	7,410.00	146.27	146.73	93.31	-1,083.59	4,379.02	1,213.10	920.87	292.24	4.151		
11,800.00	7,340.00	11,945.41	7,410.00	149.42	149.87	93.30	-1,082.58	4,478.97	1,215.86	917.34	298.52	4.073		
11,836.31	7,340.00	11,975.04	7,410.00	150.56	150.81	93.30	-1,082.28	4,508.59	1,216.88	916.28	300.60	4.048 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - 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	0.00	0.00	0.00	0.00	179.96	-69.94	0.04	69.94					
100.00	100.00	100.00	100.00	0.14	0.14	179.96	-69.94	0.04	69.94	69.67	0.28	253.395		
200.00	200.00	200.00	200.00	0.50	0.50	179.96	-69.94	0.04	69.94	68.95	0.99	70.438		
300.00	300.00	300.00	300.00	0.85	0.85	179.96	-69.94	0.04	69.94	68.23	1.71	40.904	CC, ES	
400.00	400.00	397.66	397.64	1.21	1.19	-179.70	-71.55	-0.38	71.59	69.16	2.43	29.450		
500.00	500.00	495.09	494.94	1.57	1.53	-178.76	-76.36	-1.65	76.55	73.38	3.17	24.131		
600.00	600.00	592.07	591.56	1.93	1.87	-177.45	-84.32	-3.75	84.83	80.90	3.92	21.614		
700.00	700.00	688.38	687.19	2.29	2.22	-176.00	-95.36	-6.67	96.44	91.77	4.68	20.619		
800.00	800.00	784.38	782.08	2.65	2.60	-174.58	-109.44	-10.39	111.38	105.97	5.41	20.580		
900.00	899.98	882.47	878.77	3.00	2.99	-74.11	-125.40	-14.60	127.54	121.45	6.09	20.945		
1,000.00	999.84	981.27	976.16	3.34	3.40	-74.81	-141.47	-18.85	142.79	136.03	6.76	21.124		
1,081.60	1,081.14	1,061.90	1,055.63	3.63	3.74	-76.19	-154.59	-22.31	154.63	147.31	7.32	21.123		
1,100.00	1,099.46	1,080.08	1,073.55	3.69	3.82	-76.61	-157.55	-23.10	157.25	149.81	7.45	21.113		
1,200.00	1,198.98	1,178.86	1,170.93	4.05	4.24	-78.68	-173.62	-27.34	171.66	163.50	8.15	21.052		
1,300.00	1,298.49	1,277.64	1,268.30	4.41	4.66	-80.42	-189.69	-31.59	186.24	177.37	8.87	20.996		
1,400.00	1,398.01	1,376.42	1,365.68	4.78	5.08	-81.92	-205.76	-35.83	200.98	191.38	9.60	20.944		
1,500.00	1,497.53	1,475.21	1,463.05	5.15	5.51	-83.20	-221.84	-40.08	215.82	205.50	10.33	20.896		
1,600.00	1,597.04	1,573.99	1,560.42	5.52	5.93	-84.33	-237.91	-44.32	230.77	219.70	11.07	20.852		
1,700.00	1,696.56	1,672.77	1,657.80	5.90	6.36	-85.31	-253.98	-48.57	245.78	233.97	11.81	20.811		
1,800.00	1,796.08	1,771.55	1,755.17	6.28	6.79	-86.18	-270.05	-52.81	260.86	248.31	12.56	20.773		
1,900.00	1,895.60	1,870.34	1,852.55	6.65	7.22	-86.96	-286.12	-57.06	276.00	262.69	13.31	20.738		
2,000.00	1,995.11	1,969.12	1,949.92	7.03	7.65	-87.66	-302.19	-61.30	291.17	277.11	14.06	20.706		
2,100.00	2,094.63	2,067.90	2,047.30	7.41	8.08	-88.28	-318.27	-65.55	306.39	291.57	14.82	20.676		
2,200.00	2,194.15	2,166.69	2,144.67	7.79	8.51	-88.85	-334.34	-69.79	321.64	306.06	15.58	20.649		
2,300.00	2,293.67	2,265.47	2,242.04	8.17	8.94	-89.37	-350.41	-74.04	336.91	320.58	16.34	20.623		
2,400.00	2,393.18	2,364.25	2,339.42	8.55	9.37	-89.84	-366.48	-78.28	352.21	335.12	17.10	20.600		
2,500.00	2,492.70	2,463.03	2,436.79	8.94	9.80	-90.27	-382.55	-82.53	367.54	349.68	17.86	20.578		
2,600.00	2,592.22	2,561.82	2,534.17	9.32	10.23	-90.67	-398.62	-86.77	382.88	364.25	18.63	20.557		
2,700.00	2,691.73	2,660.60	2,631.54	9.70	10.66	-91.04	-414.70	-91.02	398.23	378.84	19.39	20.538		
2,800.00	2,791.25	2,759.38	2,728.91	10.09	11.10	-91.38	-430.77	-95.26	413.61	393.45	20.16	20.520		
2,900.00	2,890.77	2,858.17	2,826.29	10.47	11.53	-91.69	-446.84	-99.51	428.99	408.07	20.92	20.503		
3,000.00	2,990.29	2,956.95	2,923.66	10.85	11.96	-91.99	-462.91	-103.75	444.39	422.70	21.69	20.487		
3,100.00	3,089.80	3,055.73	3,021.04	11.24	12.39	-92.26	-478.98	-108.00	459.80	437.34	22.46	20.473		
3,200.00	3,189.32	3,154.51	3,118.41	11.62	12.83	-92.52	-495.05	-112.24	475.21	451.99	23.23	20.459		
3,300.00	3,288.84	3,253.30	3,215.78	12.01	13.26	-92.76	-511.13	-116.49	490.64	466.64	24.00	20.445		
3,400.00	3,388.36	3,352.08	3,313.16	12.39	13.69	-92.98	-527.20	-120.73	506.07	481.31	24.77	20.433		
3,500.00	3,487.87	3,450.86	3,410.53	12.78	14.12	-93.19	-543.27	-124.98	521.52	495.98	25.54	20.421		
3,600.00	3,587.39	3,549.64	3,507.91	13.16	14.56	-93.39	-559.34	-129.22	536.96	510.65	26.31	20.410		
3,700.00	3,686.91	3,648.43	3,605.28	13.55	14.99	-93.58	-575.41	-133.47	552.42	525.34	27.08	20.399		
3,732.10	3,718.86	3,680.14	3,636.54	13.67	15.13	-93.64	-580.57	-134.83	557.38	530.05	27.33	20.396		
3,800.00	3,786.50	3,747.23	3,702.67	13.93	15.42	-93.89	-591.49	-137.71	567.82	539.98	27.85	20.392		
3,900.00	3,886.33	3,846.03	3,800.07	14.30	15.86	-93.96	-607.56	-141.96	583.01	554.43	28.59	20.394		
4,000.00	3,986.30	3,944.73	3,897.36	14.65	16.29	-93.70	-623.62	-146.20	598.00	568.69	29.30	20.406		
4,013.70	4,000.00	3,958.24	3,910.68	14.69	16.35	166.66	-625.82	-146.78	600.04	570.64	29.40	20.409		
4,100.00	4,086.30	4,043.31	3,994.53	14.98	16.72	167.30	-639.66	-150.44	612.92	582.93	30.00	20.434		
4,200.00	4,186.30	4,141.88	4,091.70	15.31	17.15	168.01	-655.70	-154.67	627.94	597.25	30.69	20.463		
4,300.00	4,286.30	4,240.46	4,188.87	15.64	17.59	168.68	-671.73	-158.91	643.05	611.67	31.38	20.492		
4,400.00	4,386.30	4,339.03	4,286.04	15.98	18.02	169.32	-687.77	-163.15	658.24	626.17	32.07	20.523		
4,500.00	4,486.30	4,437.60	4,383.20	16.31	18.45	169.94	-703.81	-167.38	673.51	640.74	32.77	20.554		
4,600.00	4,586.30	4,536.18	4,480.37	16.65	18.88	170.53	-719.85	-171.62	688.86	655.39	33.46	20.584		
4,700.00	4,686.30	4,634.75	4,577.54	16.99	19.32	171.09	-735.89	-175.85	704.27	670.10	34.16	20.616		
4,800.00	4,786.30	4,733.33	4,674.71	17.33	19.75	171.62	-751.92	-180.09	719.74	684.88	34.86	20.647		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,831.90	4,771.88	17.66	20.18	172.14	-767.96	-184.33	735.27	699.71	35.56	20.677		
5,000.00	4,986.30	4,930.47	4,869.05	18.00	20.62	172.63	-784.00	-188.56	750.86	714.60	36.26	20.708		
5,100.00	5,086.30	5,029.05	4,966.21	18.34	21.05	173.11	-800.04	-192.80	766.50	729.54	36.96	20.739		
5,200.00	5,186.30	5,127.62	5,063.38	18.69	21.48	173.56	-816.07	-197.03	782.19	744.53	37.66	20.769		
5,300.00	5,286.30	5,226.20	5,160.55	19.03	21.91	174.00	-832.11	-201.27	797.93	759.57	38.36	20.799		
5,400.00	5,386.30	5,324.77	5,257.72	19.37	22.35	174.42	-848.15	-205.51	813.71	774.64	39.07	20.828		
5,500.00	5,486.30	5,423.34	5,354.89	19.71	22.78	174.82	-864.19	-209.74	829.53	789.76	39.77	20.857		
5,600.00	5,586.30	5,521.92	5,452.06	20.06	23.21	175.21	-880.23	-213.98	845.40	804.92	40.48	20.886		
5,700.00	5,686.30	5,620.49	5,549.22	20.40	23.64	175.59	-896.26	-218.21	861.29	820.11	41.18	20.914		
5,800.00	5,786.30	5,719.07	5,646.39	20.74	24.08	175.95	-912.30	-222.45	877.23	835.34	41.89	20.942		
5,900.00	5,886.30	5,817.64	5,743.56	21.09	24.51	176.30	-928.34	-226.69	893.19	850.59	42.60	20.969		
6,000.00	5,986.30	5,916.21	5,840.73	21.43	24.94	176.63	-944.38	-230.92	909.19	865.88	43.30	20.996		
6,100.00	6,086.30	6,014.79	5,937.90	21.78	25.38	176.96	-960.41	-235.16	925.21	881.20	44.01	21.022		
6,200.00	6,186.30	6,113.36	6,035.06	22.13	25.81	177.27	-976.45	-239.40	941.27	896.55	44.72	21.048		
6,300.00	6,286.30	6,211.94	6,132.23	22.47	26.24	177.57	-992.49	-243.63	957.35	911.92	45.43	21.074		
6,400.00	6,386.30	6,310.51	6,229.40	22.82	26.67	177.86	-1,008.53	-247.87	973.45	927.31	46.14	21.099		
6,500.00	6,486.30	6,409.08	6,326.57	23.17	27.11	178.15	-1,024.56	-252.10	989.58	942.73	46.85	21.123		
6,600.00	6,586.30	6,507.66	6,423.74	23.52	27.54	178.42	-1,040.60	-256.34	1,005.73	958.17	47.56	21.147		
6,637.50	6,623.80	6,544.63	6,460.18	23.65	27.70	178.52	-1,046.62	-257.93	1,011.80	963.97	47.83	21.156		
6,650.00	6,636.30	6,556.94	6,472.32	23.69	27.76	90.56	-1,048.62	-258.46	1,013.82	965.91	47.91	21.159		
6,700.00	6,686.22	6,606.02	6,520.70	23.85	27.97	90.19	-1,056.61	-260.57	1,021.94	973.69	48.25	21.180		
6,750.00	6,735.84	6,654.63	6,568.61	24.01	28.19	89.99	-1,064.51	-262.66	1,030.11	981.54	48.57	21.207		
6,800.00	6,784.91	6,702.53	6,615.83	24.16	28.40	89.95	-1,072.31	-264.71	1,038.39	989.50	48.89	21.241		
6,850.00	6,833.20	6,749.50	6,662.13	24.31	28.60	90.06	-1,079.95	-266.73	1,046.83	997.65	49.19	21.283		
6,900.00	6,880.46	6,795.29	6,707.27	24.46	28.80	90.28	-1,087.40	-268.70	1,055.54	1,006.07	49.47	21.335		
6,950.00	6,926.48	6,839.69	6,751.04	24.61	29.00	90.59	-1,094.62	-270.61	1,064.63	1,014.88	49.76	21.397		
7,000.00	6,971.02	6,882.48	6,793.22	24.76	29.19	90.94	-1,101.59	-272.45	1,074.24	1,024.21	50.03	21.471		
7,050.00	7,013.87	6,923.46	6,833.61	24.92	29.37	91.32	-1,108.25	-274.21	1,084.50	1,034.19	50.31	21.557		
7,100.00	7,054.82	6,970.33	6,879.84	25.10	29.57	91.90	-1,115.87	-275.18	1,095.46	1,044.81	50.65	21.629		
7,150.00	7,093.67	7,021.43	6,930.20	25.29	29.78	92.55	-1,124.14	-272.80	1,106.90	1,055.86	51.04	21.687		
7,200.00	7,130.23	7,075.59	6,983.26	25.52	29.98	93.23	-1,132.80	-266.32	1,118.75	1,067.28	51.47	21.737		
7,250.00	7,164.32	7,133.37	7,039.16	25.78	30.19	93.95	-1,141.89	-254.94	1,130.91	1,078.98	51.93	21.776		
7,300.00	7,195.78	7,195.42	7,097.98	26.09	30.39	94.71	-1,151.39	-237.69	1,143.25	1,090.82	52.43	21.805		
7,350.00	7,224.45	7,262.51	7,159.66	26.44	30.58	95.53	-1,161.30	-213.32	1,155.63	1,102.67	52.96	21.821		
7,400.00	7,250.20	7,335.49	7,223.90	26.86	30.77	96.40	-1,171.53	-180.29	1,167.86	1,114.34	53.51	21.825		
7,450.00	7,272.90	7,415.32	7,289.97	27.35	30.96	97.33	-1,181.96	-136.80	1,179.71	1,125.62	54.10	21.808		
7,500.00	7,292.43	7,502.91	7,356.49	27.90	31.13	98.28	-1,192.34	-80.86	1,190.93	1,136.20	54.74	21.758		
7,550.00	7,308.70	7,599.03	7,421.15	28.53	31.28	99.21	-1,202.26	-10.53	1,201.20	1,145.70	55.50	21.644		
7,600.00	7,321.64	7,704.03	7,480.49	29.22	31.42	100.07	-1,211.15	75.53	1,210.16	1,153.66	56.50	21.418		
7,650.00	7,331.18	7,817.50	7,529.93	29.99	31.59	100.77	-1,218.24	177.28	1,217.46	1,159.55	57.91	21.025		
7,700.00	7,337.27	7,937.97	7,564.40	30.81	32.03	101.21	-1,222.74	292.48	1,222.74	1,162.88	59.86	20.428		
7,750.00	7,339.89	8,062.81	7,579.54	31.68	33.44	101.32	-1,223.96	416.23	1,225.75	1,163.35	62.40	19.645		
7,762.50	7,340.00	8,090.94	7,580.00	31.90	33.87	101.29	-1,223.75	444.35	1,226.13	1,163.07	63.06	19.445		
7,800.00	7,340.00	8,128.42	7,580.00	32.60	34.51	101.28	-1,223.36	481.83	1,227.14	1,162.73	64.41	19.051		
7,900.00	7,340.00	8,228.38	7,580.00	34.58	36.34	101.26	-1,222.34	581.79	1,229.84	1,161.60	68.24	18.022		
8,000.00	7,340.00	8,328.34	7,580.00	36.74	38.38	101.23	-1,221.31	681.74	1,232.55	1,160.13	72.42	17.020		
8,100.00	7,340.00	8,428.30	7,580.00	39.04	40.57	101.21	-1,220.29	781.70	1,235.25	1,158.37	76.88	16.067		
8,200.00	7,340.00	8,528.27	7,580.00	41.45	42.90	101.18	-1,219.26	881.66	1,237.95	1,156.36	81.59	15.173		
8,300.00	7,340.00	8,628.23	7,580.00	43.97	45.33	101.16	-1,218.24	981.61	1,240.65	1,154.16	86.50	14.344		
8,400.00	7,340.00	8,728.19	7,580.00	46.57	47.86	101.13	-1,217.22	1,081.57	1,243.36	1,151.78	91.57	13.578		
8,500.00	7,340.00	8,828.15	7,580.00	49.24	50.46	101.11	-1,216.19	1,181.53	1,246.06	1,149.26	96.80	12.873		
8,600.00	7,340.00	8,928.11	7,580.00	51.97	53.13	101.08	-1,215.17	1,281.48	1,248.77	1,146.62	102.14	12.226		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - 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	7,340.00	9,028.08	7,580.00	54.75	55.86	101.06	-1,214.14	1,381.44	1,251.47	1,143.88	107.59	11.632		
8,800.00	7,340.00	9,128.04	7,580.00	57.58	58.63	101.04	-1,213.12	1,481.40	1,254.17	1,141.05	113.13	11.086		
8,900.00	7,340.00	9,228.00	7,580.00	60.44	61.45	101.01	-1,212.09	1,581.35	1,256.88	1,138.14	118.74	10.585		
9,000.00	7,340.00	9,327.96	7,580.00	63.33	64.30	100.99	-1,211.07	1,681.31	1,259.58	1,135.16	124.42	10.123		
9,100.00	7,340.00	9,427.92	7,580.00	66.25	67.18	100.96	-1,210.04	1,781.27	1,262.29	1,132.13	130.16	9.698		
9,200.00	7,340.00	9,527.89	7,580.00	69.19	70.09	100.94	-1,209.02	1,881.22	1,264.99	1,129.04	135.95	9.305		
9,300.00	7,340.00	9,627.85	7,580.00	72.16	73.03	100.92	-1,208.00	1,981.18	1,267.70	1,125.91	141.79	8.941		
9,400.00	7,340.00	9,727.81	7,580.00	75.14	75.99	100.89	-1,206.97	2,081.14	1,270.40	1,122.75	147.66	8.604		
9,500.00	7,340.00	9,827.77	7,580.00	78.15	78.96	100.87	-1,205.95	2,181.09	1,273.11	1,119.54	153.57	8.290		
9,600.00	7,340.00	9,927.73	7,580.00	81.16	81.96	100.85	-1,204.92	2,281.05	1,275.82	1,116.31	159.51	7.999		
9,700.00	7,340.00	10,027.70	7,580.00	84.19	84.97	100.82	-1,203.90	2,381.01	1,278.52	1,113.05	165.47	7.726		
9,800.00	7,340.00	10,127.66	7,580.00	87.23	87.99	100.80	-1,202.87	2,480.96	1,281.23	1,109.76	171.47	7.472		
9,900.00	7,340.00	10,227.62	7,580.00	90.28	91.02	100.78	-1,201.85	2,580.92	1,283.94	1,106.46	177.48	7.234		
10,000.00	7,340.00	10,327.58	7,580.00	93.35	94.07	100.75	-1,200.82	2,680.88	1,286.64	1,103.13	183.51	7.011		
10,100.00	7,340.00	10,427.54	7,580.00	96.42	97.13	100.73	-1,199.80	2,780.83	1,289.35	1,099.78	189.57	6.801		
10,200.00	7,340.00	10,527.51	7,580.00	99.49	100.19	100.71	-1,198.78	2,880.79	1,292.06	1,096.42	195.64	6.604		
10,300.00	7,340.00	10,627.47	7,580.00	102.58	103.27	100.69	-1,197.75	2,980.75	1,294.76	1,093.04	201.73	6.418		
10,400.00	7,340.00	10,727.43	7,580.00	105.67	106.35	100.66	-1,196.73	3,080.70	1,297.47	1,089.65	207.83	6.243		
10,500.00	7,340.00	10,827.39	7,580.00	108.77	109.44	100.64	-1,195.70	3,180.66	1,300.18	1,086.24	213.94	6.077		
10,600.00	7,340.00	10,927.35	7,580.00	111.87	112.54	100.62	-1,194.68	3,280.62	1,302.89	1,082.82	220.06	5.920		
10,700.00	7,340.00	11,027.32	7,580.00	114.98	115.64	100.60	-1,193.65	3,380.58	1,305.60	1,079.40	226.20	5.772		
10,800.00	7,340.00	11,127.28	7,580.00	118.10	118.74	100.57	-1,192.63	3,480.53	1,308.30	1,075.96	232.35	5.631		
10,900.00	7,340.00	11,227.24	7,580.00	121.21	121.86	100.55	-1,191.60	3,580.49	1,311.01	1,072.51	238.50	5.497		
11,000.00	7,340.00	11,327.20	7,580.00	124.33	124.97	100.53	-1,190.58	3,680.45	1,313.72	1,069.05	244.67	5.369		
11,100.00	7,340.00	11,427.16	7,580.00	127.46	128.09	100.51	-1,189.56	3,780.40	1,316.43	1,065.59	250.84	5.248		
11,200.00	7,340.00	11,527.13	7,580.00	130.59	131.22	100.49	-1,188.53	3,880.36	1,319.14	1,062.12	257.02	5.132		
11,300.00	7,340.00	11,627.09	7,580.00	133.72	134.35	100.46	-1,187.51	3,980.32	1,321.85	1,058.64	263.21	5.022		
11,400.00	7,340.00	11,727.05	7,580.00	136.85	137.48	100.44	-1,186.48	4,080.27	1,324.56	1,055.15	269.41	4.917		
11,500.00	7,340.00	11,827.01	7,580.00	139.99	140.62	100.42	-1,185.46	4,180.23	1,327.27	1,051.66	275.61	4.816		
11,600.00	7,340.00	11,926.97	7,580.00	143.13	143.76	100.40	-1,184.43	4,280.19	1,329.98	1,048.17	281.81	4.719		
11,700.00	7,340.00	12,026.94	7,580.00	146.27	146.90	100.38	-1,183.41	4,380.14	1,332.69	1,044.66	288.03	4.627		
11,800.00	7,340.00	12,126.90	7,580.00	149.42	150.04	100.36	-1,182.38	4,480.10	1,335.40	1,041.16	294.25	4.538		
11,836.31	7,340.00	12,155.71	7,580.00	150.56	150.95	100.35	-1,182.09	4,508.91	1,336.41	1,040.12	296.28	4.511 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - 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	0.00	0.00	0.00	0.00	-179.89	-80.15	-0.15	80.15				
100.00	100.00	100.00	100.00	0.14	0.14	-179.89	-80.15	-0.15	80.15	79.87	0.28	290.370	
200.00	200.00	200.00	200.00	0.50	0.50	-179.89	-80.15	-0.15	80.15	79.16	0.99	80.717 CC, ES	
300.00	300.00	297.32	297.30	0.85	0.83	-179.62	-81.75	-0.54	81.80	80.07	1.73	47.337	
400.00	400.00	394.41	394.26	1.21	1.17	-178.87	-86.55	-1.71	86.76	84.27	2.49	34.855	
500.00	500.00	491.05	490.55	1.57	1.52	-177.79	-94.50	-3.65	95.04	91.78	3.26	29.169	
600.00	600.00	587.04	585.86	1.93	1.88	-176.56	-105.51	-6.34	106.64	102.62	4.02	26.496	
700.00	700.00	682.16	679.89	2.29	2.26	-175.33	-119.47	-9.76	121.54	116.76	4.78	25.410	
800.00	800.00	778.42	774.58	2.65	2.66	-174.19	-136.30	-13.87	139.34	133.85	5.49	25.376	
900.00	899.98	876.82	871.29	3.00	3.08	-73.84	-153.90	-18.17	157.13	150.98	6.15	25.558	
1,000.00	999.84	975.35	968.14	3.34	3.51	-74.39	-171.53	-22.47	173.98	167.16	6.82	25.503	
1,081.60	1,081.14	1,055.77	1,047.18	3.63	3.87	-75.51	-185.91	-25.99	187.11	179.73	7.38	25.346	
1,100.00	1,099.46	1,073.90	1,065.00	3.69	3.95	-75.87	-189.16	-26.78	190.02	182.51	7.51	25.303	
1,200.00	1,198.98	1,172.44	1,161.85	4.05	4.38	-77.65	-206.79	-31.09	205.96	197.75	8.22	25.071	
1,300.00	1,298.49	1,270.97	1,258.70	4.41	4.82	-79.18	-224.41	-35.39	222.07	213.14	8.93	24.863	
1,400.00	1,398.01	1,369.51	1,355.55	4.78	5.26	-80.50	-242.04	-39.70	238.31	228.65	9.66	24.677	
1,500.00	1,497.53	1,468.04	1,452.40	5.15	5.70	-81.65	-259.66	-44.01	254.65	244.26	10.39	24.510	
1,600.00	1,597.04	1,566.57	1,549.25	5.52	6.14	-82.66	-277.29	-48.31	271.09	259.96	11.13	24.360	
1,700.00	1,696.56	1,665.11	1,646.10	5.90	6.58	-83.55	-294.92	-52.62	287.60	275.72	11.87	24.224	
1,800.00	1,796.08	1,763.64	1,742.95	6.28	7.02	-84.35	-312.54	-56.93	304.17	291.55	12.62	24.102	
1,900.00	1,895.60	1,862.18	1,839.79	6.65	7.47	-85.07	-330.17	-61.23	320.79	307.41	13.37	23.990	
2,000.00	1,995.11	1,960.71	1,936.64	7.03	7.91	-85.71	-347.80	-65.54	337.45	323.32	14.13	23.889	
2,100.00	2,094.63	2,059.24	2,033.49	7.41	8.35	-86.30	-365.42	-69.85	354.15	339.27	14.88	23.797	
2,200.00	2,194.15	2,157.78	2,130.34	7.79	8.80	-86.83	-383.05	-74.15	370.89	355.25	15.64	23.712	
2,300.00	2,293.67	2,256.31	2,227.19	8.17	9.24	-87.32	-400.68	-78.46	387.65	371.25	16.40	23.634	
2,400.00	2,393.18	2,354.84	2,324.04	8.55	9.69	-87.76	-418.30	-82.77	404.44	387.27	17.16	23.562	
2,500.00	2,492.70	2,453.38	2,420.89	8.94	10.13	-88.17	-435.93	-87.07	421.25	403.32	17.93	23.496	
2,600.00	2,592.22	2,551.91	2,517.74	9.32	10.58	-88.55	-453.56	-91.38	438.08	419.38	18.69	23.435	
2,700.00	2,691.73	2,650.45	2,614.58	9.70	11.02	-88.90	-471.18	-95.69	454.93	435.47	19.46	23.378	
2,800.00	2,791.25	2,748.98	2,711.43	10.09	11.47	-89.23	-488.81	-99.99	471.79	451.56	20.23	23.325	
2,900.00	2,890.77	2,847.51	2,808.28	10.47	11.91	-89.53	-506.44	-104.30	488.66	467.67	21.00	23.275	
3,000.00	2,990.29	2,946.05	2,905.13	10.85	12.36	-89.81	-524.06	-108.61	505.55	483.79	21.76	23.229	
3,100.00	3,089.80	3,044.58	3,001.98	11.24	12.80	-90.08	-541.69	-112.91	522.45	499.92	22.53	23.185	
3,200.00	3,189.32	3,143.12	3,098.83	11.62	13.25	-90.33	-559.32	-117.22	539.36	516.06	23.30	23.145	
3,300.00	3,288.84	3,241.65	3,195.68	12.01	13.70	-90.56	-576.94	-121.53	556.28	532.21	24.07	23.107	
3,400.00	3,388.36	3,340.18	3,292.53	12.39	14.14	-90.78	-594.57	-125.83	573.21	548.36	24.85	23.071	
3,500.00	3,487.87	3,438.72	3,389.37	12.78	14.59	-90.99	-612.19	-130.14	590.14	564.53	25.62	23.037	
3,600.00	3,587.39	3,537.25	3,486.22	13.16	15.03	-91.18	-629.82	-134.45	607.09	580.70	26.39	23.005	
3,700.00	3,686.91	3,635.78	3,583.07	13.55	15.48	-91.37	-647.45	-138.75	624.03	596.87	27.16	22.974	
3,732.10	3,718.86	3,667.42	3,614.17	13.67	15.62	-91.42	-653.11	-140.13	629.48	602.07	27.41	22.965	
3,800.00	3,786.50	3,734.33	3,679.93	13.93	15.92	-91.70	-665.08	-143.06	640.97	613.04	27.93	22.949	
3,900.00	3,886.33	3,832.87	3,776.79	14.30	16.37	-91.85	-682.70	-147.37	657.81	629.13	28.67	22.942	
4,000.00	3,986.30	3,931.30	3,873.53	14.65	16.82	-91.70	-700.31	-151.67	674.56	645.17	29.39	22.952	
4,013.70	4,000.00	3,944.77	3,886.77	14.69	16.88	168.64	-702.72	-152.26	676.85	647.37	29.49	22.955	
4,100.00	4,086.30	4,029.59	3,970.14	14.98	17.26	169.20	-717.89	-155.96	691.32	661.24	30.08	22.981	
4,200.00	4,186.30	4,127.88	4,066.75	15.31	17.71	169.82	-735.48	-160.26	708.17	677.39	30.78	23.011	
4,300.00	4,286.30	4,226.17	4,163.36	15.64	18.15	170.41	-753.06	-164.56	725.08	693.62	31.47	23.041	
4,400.00	4,386.30	4,324.46	4,259.97	15.98	18.60	170.97	-770.64	-168.85	742.07	709.91	32.16	23.071	
4,500.00	4,486.30	4,422.75	4,356.58	16.31	19.04	171.50	-788.23	-173.15	759.13	726.27	32.86	23.101	
4,600.00	4,586.30	4,521.04	4,453.19	16.65	19.49	172.02	-805.81	-177.44	776.25	742.69	33.56	23.131	
4,700.00	4,686.30	4,619.33	4,549.80	16.99	19.93	172.51	-823.39	-181.74	793.43	759.17	34.26	23.161	
4,800.00	4,786.30	4,717.62	4,646.40	17.33	20.38	172.98	-840.97	-186.04	810.66	775.70	34.96	23.190	

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,886.30	4,815.91	4,743.01	17.66	20.82	173.43	-858.56	-190.33	827.94	792.28	35.66	23.219		
5,000.00	4,986.30	4,914.20	4,839.62	18.00	21.27	173.86	-876.14	-194.63	845.27	808.91	36.36	23.248		
5,100.00	5,086.30	5,012.49	4,936.23	18.34	21.71	174.28	-893.72	-198.92	862.64	825.58	37.06	23.276		
5,200.00	5,186.30	5,110.78	5,032.84	18.69	22.16	174.67	-911.31	-203.22	880.06	842.30	37.77	23.304		
5,300.00	5,286.30	5,209.07	5,129.45	19.03	22.60	175.06	-928.89	-207.51	897.52	859.05	38.47	23.331		
5,400.00	5,386.30	5,307.36	5,226.06	19.37	23.05	175.43	-946.47	-211.81	915.01	875.84	39.17	23.357		
5,500.00	5,486.30	5,405.65	5,322.67	19.71	23.49	175.78	-964.05	-216.11	932.54	892.66	39.88	23.383		
5,600.00	5,586.30	5,503.94	5,419.28	20.06	23.94	176.12	-981.64	-220.40	950.11	909.52	40.59	23.409		
5,700.00	5,686.30	5,602.23	5,515.88	20.40	24.38	176.45	-999.22	-224.70	967.70	926.41	41.29	23.434		
5,800.00	5,786.30	5,700.52	5,612.49	20.74	24.83	176.77	-1,016.80	-228.99	985.33	943.32	42.00	23.459		
5,900.00	5,886.30	5,798.81	5,709.10	21.09	25.27	177.08	-1,034.39	-233.29	1,002.98	960.27	42.71	23.483		
6,000.00	5,986.30	5,897.10	5,805.71	21.43	25.72	177.37	-1,051.97	-237.59	1,020.66	977.24	43.42	23.506		
6,100.00	6,086.30	5,995.39	5,902.32	21.78	26.16	177.66	-1,069.55	-241.88	1,038.37	994.23	44.13	23.530		
6,200.00	6,186.30	6,093.68	5,998.93	22.13	26.61	177.93	-1,087.13	-246.18	1,056.10	1,011.25	44.84	23.552		
6,300.00	6,286.30	6,191.96	6,095.54	22.47	27.05	178.20	-1,104.72	-250.47	1,073.85	1,028.30	45.55	23.574		
6,400.00	6,386.30	6,290.25	6,192.15	22.82	27.50	178.46	-1,122.30	-254.77	1,091.62	1,045.36	46.26	23.596		
6,500.00	6,486.30	6,388.54	6,288.76	23.17	27.95	178.71	-1,139.88	-259.07	1,109.42	1,062.44	46.98	23.617		
6,600.00	6,586.30	6,486.83	6,385.36	23.52	28.39	178.95	-1,157.47	-263.36	1,127.24	1,079.55	47.69	23.638		
6,637.50	6,623.80	6,523.70	6,421.60	23.65	28.56	179.04	-1,164.06	-264.97	1,133.92	1,085.97	47.96	23.645		
6,650.00	6,636.30	6,535.97	6,433.66	23.69	28.61	91.06	-1,166.26	-265.51	1,136.15	1,088.11	48.04	23.649		
6,700.00	6,686.22	6,584.91	6,481.76	23.85	28.84	90.58	-1,175.01	-267.65	1,145.12	1,096.74	48.38	23.669		
6,750.00	6,735.84	6,633.37	6,529.39	24.01	29.05	90.26	-1,183.68	-269.77	1,154.17	1,105.46	48.71	23.696		
6,800.00	6,784.91	6,681.12	6,576.33	24.16	29.27	90.08	-1,192.22	-271.85	1,163.32	1,114.30	49.02	23.732		
6,850.00	6,833.20	6,728.87	6,623.27	24.31	29.49	90.03	-1,200.76	-273.65	1,172.61	1,123.29	49.33	23.772		
6,900.00	6,880.46	6,778.40	6,671.99	24.46	29.70	90.02	-1,209.60	-272.70	1,182.03	1,132.39	49.64	23.811		
6,950.00	6,926.48	6,829.10	6,721.67	24.61	29.91	90.02	-1,218.57	-268.18	1,191.50	1,141.54	49.96	23.847		
7,000.00	6,971.02	6,881.07	6,772.15	24.76	30.10	90.01	-1,227.65	-259.85	1,200.99	1,150.70	50.29	23.879		
7,050.00	7,013.87	6,934.40	6,823.20	24.92	30.29	90.02	-1,236.79	-247.46	1,210.43	1,159.80	50.63	23.905		
7,100.00	7,054.82	6,989.20	6,874.56	25.10	30.47	90.03	-1,245.95	-230.76	1,219.77	1,168.78	50.99	23.921		
7,150.00	7,093.67	7,045.55	6,925.92	25.29	30.64	90.05	-1,255.06	-209.47	1,228.95	1,177.58	51.37	23.922		
7,200.00	7,130.23	7,103.54	6,976.89	25.52	30.79	90.07	-1,264.04	-183.35	1,237.91	1,186.12	51.78	23.905		
7,250.00	7,164.32	7,163.25	7,027.03	25.78	30.94	90.10	-1,272.83	-152.17	1,246.57	1,194.33	52.24	23.861		
7,300.00	7,195.78	7,224.73	7,075.81	26.09	31.07	90.13	-1,281.32	-115.76	1,254.87	1,202.11	52.76	23.783		
7,350.00	7,224.45	7,288.02	7,122.64	26.44	31.20	90.17	-1,289.39	-73.98	1,262.74	1,209.37	53.36	23.663		
7,400.00	7,250.20	7,353.11	7,166.82	26.86	31.31	90.20	-1,296.93	-26.82	1,270.10	1,216.02	54.07	23.489		
7,450.00	7,272.90	7,419.97	7,207.64	27.35	31.41	90.23	-1,303.81	25.66	1,276.88	1,221.95	54.93	23.247		
7,500.00	7,292.43	7,488.52	7,244.31	27.90	31.51	90.25	-1,309.88	83.22	1,283.01	1,227.07	55.94	22.936		
7,550.00	7,308.70	7,558.61	7,276.04	28.53	31.62	90.25	-1,315.01	145.48	1,288.43	1,231.28	57.15	22.544		
7,600.00	7,321.64	7,630.06	7,302.07	29.22	31.76	90.23	-1,319.06	211.87	1,293.07	1,234.49	58.58	22.072		
7,650.00	7,331.18	7,702.63	7,321.72	29.99	32.00	90.19	-1,321.92	281.63	1,296.89	1,236.66	60.23	21.533		
7,700.00	7,337.27	7,776.01	7,334.43	30.81	32.51	90.12	-1,323.49	353.85	1,299.83	1,237.74	62.09	20.933		
7,750.00	7,339.89	7,849.88	7,339.82	31.68	33.38	90.03	-1,323.72	427.49	1,301.87	1,237.74	64.13	20.300		
7,762.50	7,340.00	7,867.65	7,340.00	31.90	33.64	90.00	-1,323.58	445.26	1,302.24	1,237.59	64.66	20.141		
7,800.00	7,340.00	7,905.13	7,340.00	32.60	34.23	90.00	-1,323.19	482.74	1,303.28	1,237.26	66.02	19.740		
7,900.00	7,340.00	8,005.10	7,340.00	34.58	36.02	90.00	-1,322.18	582.70	1,306.04	1,236.12	69.93	18.677		
8,000.00	7,340.00	8,105.06	7,340.00	36.74	38.05	90.00	-1,321.16	682.66	1,308.81	1,234.63	74.18	17.644		
8,100.00	7,340.00	8,205.02	7,340.00	39.04	40.25	90.00	-1,320.15	782.61	1,311.57	1,232.85	78.72	16.660		
8,200.00	7,340.00	8,304.98	7,340.00	41.45	42.59	90.00	-1,319.13	882.57	1,314.33	1,230.82	83.51	15.738		
8,300.00	7,340.00	8,404.94	7,340.00	43.97	45.04	90.00	-1,318.11	982.53	1,317.10	1,228.60	88.50	14.882		
8,400.00	7,340.00	8,504.91	7,340.00	46.57	47.58	90.00	-1,317.10	1,082.48	1,319.86	1,226.20	93.67	14.091		
8,500.00	7,340.00	8,604.87	7,340.00	49.24	50.19	90.00	-1,316.08	1,182.44	1,322.63	1,223.65	98.97	13.364		
8,600.00	7,340.00	8,704.83	7,340.00	51.97	52.87	90.00	-1,315.07	1,282.40	1,325.39	1,220.99	104.40	12.695		

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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - 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	7,340.00	8,804.79	7,340.00	54.75	55.61	90.00	-1,314.05	1,382.35	1,328.15	1,218.22	109.94	12.081		
8,800.00	7,340.00	8,904.75	7,340.00	57.58	58.39	90.00	-1,313.03	1,482.31	1,330.92	1,215.36	115.56	11.517		
8,900.00	7,340.00	9,004.71	7,340.00	60.44	61.22	90.00	-1,312.02	1,582.27	1,333.68	1,212.42	121.26	10.998		
9,000.00	7,340.00	9,104.68	7,340.00	63.33	64.08	90.00	-1,311.00	1,682.22	1,336.44	1,209.42	127.03	10.521		
9,100.00	7,340.00	9,204.64	7,340.00	66.25	66.97	90.00	-1,309.99	1,782.18	1,339.21	1,206.35	132.85	10.080		
9,200.00	7,340.00	9,304.60	7,340.00	69.19	69.89	90.00	-1,308.97	1,882.14	1,341.97	1,203.24	138.73	9.673		
9,300.00	7,340.00	9,404.56	7,340.00	72.16	72.84	90.00	-1,307.95	1,982.09	1,344.74	1,200.09	144.65	9.297		
9,400.00	7,340.00	9,504.52	7,340.00	75.14	75.80	90.00	-1,306.94	2,082.05	1,347.50	1,196.89	150.61	8.947		
9,500.00	7,340.00	9,604.49	7,340.00	78.15	78.78	90.00	-1,305.92	2,182.00	1,350.26	1,193.66	156.60	8.622		
9,600.00	7,340.00	9,704.45	7,340.00	81.16	81.78	90.00	-1,304.91	2,281.96	1,353.03	1,190.40	162.63	8.320		
9,700.00	7,340.00	9,804.41	7,340.00	84.19	84.80	90.00	-1,303.89	2,381.92	1,355.79	1,187.11	168.68	8.038		
9,800.00	7,340.00	9,904.37	7,340.00	87.23	87.83	90.00	-1,302.87	2,481.87	1,358.55	1,183.80	174.76	7.774		
9,900.00	7,340.00	10,004.33	7,340.00	90.28	90.87	90.00	-1,301.86	2,581.83	1,361.32	1,180.46	180.86	7.527		
10,000.00	7,340.00	10,104.29	7,340.00	93.35	93.92	90.00	-1,300.84	2,681.79	1,364.08	1,177.11	186.98	7.295		
10,100.00	7,340.00	10,204.26	7,340.00	96.42	96.98	90.00	-1,299.83	2,781.74	1,366.85	1,173.73	193.11	7.078		
10,200.00	7,340.00	10,304.22	7,340.00	99.49	100.05	90.00	-1,298.81	2,881.70	1,369.61	1,170.34	199.27	6.873		
10,300.00	7,340.00	10,404.18	7,340.00	102.58	103.13	90.00	-1,297.79	2,981.66	1,372.37	1,166.94	205.44	6.680		
10,400.00	7,340.00	10,504.14	7,340.00	105.67	106.22	90.00	-1,296.78	3,081.61	1,375.14	1,163.52	211.62	6.498		
10,500.00	7,340.00	10,604.10	7,340.00	108.77	109.31	90.00	-1,295.76	3,181.57	1,377.90	1,160.08	217.82	6.326		
10,600.00	7,340.00	10,704.06	7,340.00	111.87	112.41	90.00	-1,294.75	3,281.53	1,380.66	1,156.64	224.02	6.163		
10,700.00	7,340.00	10,804.03	7,340.00	114.98	115.51	90.00	-1,293.73	3,381.48	1,383.43	1,153.19	230.24	6.009		
10,800.00	7,340.00	10,903.99	7,340.00	118.10	118.62	90.00	-1,292.71	3,481.44	1,386.19	1,149.72	236.47	5.862		
10,900.00	7,340.00	11,003.95	7,340.00	121.21	121.74	90.00	-1,291.70	3,581.40	1,388.96	1,146.25	242.70	5.723		
11,000.00	7,340.00	11,103.91	7,340.00	124.33	124.86	90.00	-1,290.68	3,681.35	1,391.72	1,142.77	248.95	5.590		
11,100.00	7,340.00	11,203.87	7,340.00	127.46	127.98	90.00	-1,289.66	3,781.31	1,394.48	1,139.28	255.20	5.464		
11,200.00	7,340.00	11,303.84	7,340.00	130.59	131.11	90.00	-1,288.65	3,881.27	1,397.25	1,135.79	261.46	5.344		
11,300.00	7,340.00	11,403.80	7,340.00	133.72	134.24	90.00	-1,287.63	3,981.22	1,400.01	1,132.29	267.72	5.229		
11,400.00	7,340.00	11,503.76	7,340.00	136.85	137.37	90.00	-1,286.62	4,081.18	1,402.77	1,128.78	274.00	5.120		
11,500.00	7,340.00	11,603.72	7,340.00	139.99	140.51	90.00	-1,285.60	4,181.14	1,405.54	1,125.26	280.27	5.015		
11,600.00	7,340.00	11,703.68	7,340.00	143.13	143.65	90.00	-1,284.58	4,281.09	1,408.30	1,121.74	286.56	4.915		
11,700.00	7,340.00	11,803.64	7,340.00	146.27	146.80	90.00	-1,283.57	4,381.05	1,411.07	1,118.22	292.85	4.818		
11,800.00	7,340.00	11,903.61	7,340.00	149.42	149.94	90.00	-1,282.55	4,481.01	1,413.83	1,114.69	299.14	4.726		
11,836.31	7,340.00	11,932.12	7,340.00	150.56	150.84	90.00	-1,282.26	4,509.52	1,414.85	1,113.66	301.19	4.698 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 SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 S25-T1N-R66W (SAM) - Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS												Offset Site Error: 0.00 usft	
Survey Program: 8120-ISCWSA MWD												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
9,900.00	7,340.00	7,261.00	7,261.00	90.28	8.15	90.00	36.16	4,047.03	1,479.22	1,445.14	34.08	43.405	
10,000.00	7,340.00	7,261.00	7,261.00	93.35	8.15	90.00	36.16	4,047.03	1,379.37	1,345.17	34.20	40.330	
10,100.00	7,340.00	7,261.00	7,261.00	96.42	8.15	90.00	36.16	4,047.03	1,279.55	1,245.20	34.35	37.247	
10,200.00	7,340.00	7,261.00	7,261.00	99.49	8.15	90.00	36.16	4,047.03	1,179.76	1,145.22	34.54	34.155	
10,300.00	7,340.00	7,261.00	7,261.00	102.58	8.15	90.00	36.16	4,047.03	1,080.00	1,045.22	34.78	31.051	
10,400.00	7,340.00	7,261.00	7,261.00	105.67	8.15	90.00	36.16	4,047.03	980.30	945.20	35.10	27.931	
10,500.00	7,340.00	7,261.00	7,261.00	108.77	8.15	90.00	36.16	4,047.03	880.66	845.14	35.52	24.791	
10,600.00	7,340.00	7,261.00	7,261.00	111.87	8.15	90.00	36.16	4,047.03	781.12	745.00	36.12	21.627	
10,700.00	7,340.00	7,261.00	7,261.00	114.98	8.15	90.00	36.16	4,047.03	681.71	644.73	36.98	18.435	
10,800.00	7,340.00	7,261.00	7,261.00	118.10	8.15	90.00	36.16	4,047.03	582.50	544.21	38.29	15.214	
10,900.00	7,340.00	7,261.00	7,261.00	121.21	8.15	90.00	36.16	4,047.03	483.62	443.22	40.40	11.972	
11,000.00	7,340.00	7,261.00	7,261.00	124.33	8.15	90.00	36.16	4,047.03	385.31	341.26	44.05	8.747	
11,100.00	7,340.00	7,261.00	7,261.00	127.46	8.15	90.00	36.16	4,047.03	288.17	237.13	51.04	5.646	
11,200.00	7,340.00	7,261.00	7,261.00	130.59	8.15	90.00	36.16	4,047.03	193.97	127.60	66.37	2.922	
11,300.00	7,340.00	7,261.00	7,261.00	133.72	8.15	90.00	36.16	4,047.03	110.47	4.92	105.56	1.047	Level 2
11,377.10	7,340.00	7,261.00	7,261.00	136.14	8.15	90.00	36.16	4,047.03	79.12	-65.16	144.28	0.548	Level 1, CC, ES, SF
11,400.00	7,340.00	7,261.00	7,261.00	136.85	8.15	90.00	36.16	4,047.03	82.37	-57.46	139.83	0.589	Level 1
11,500.00	7,340.00	7,261.00	7,261.00	139.99	8.15	90.00	36.16	4,047.03	146.17	59.05	87.11	1.678	
11,600.00	7,340.00	7,261.00	7,261.00	143.13	8.15	90.00	36.16	4,047.03	236.53	174.46	62.06	3.811	
11,700.00	7,340.00	7,261.00	7,261.00	146.27	8.15	90.00	36.16	4,047.03	332.45	281.13	51.32	6.477	
11,800.00	7,340.00	7,261.00	7,261.00	149.42	8.15	90.00	36.16	4,047.03	430.24	384.35	45.88	9.377	
11,836.31	7,340.00	7,261.00	7,261.00	150.56	8.15	90.00	36.16	4,047.03	465.97	421.41	44.57	10.456	

Cathedral Energy Services

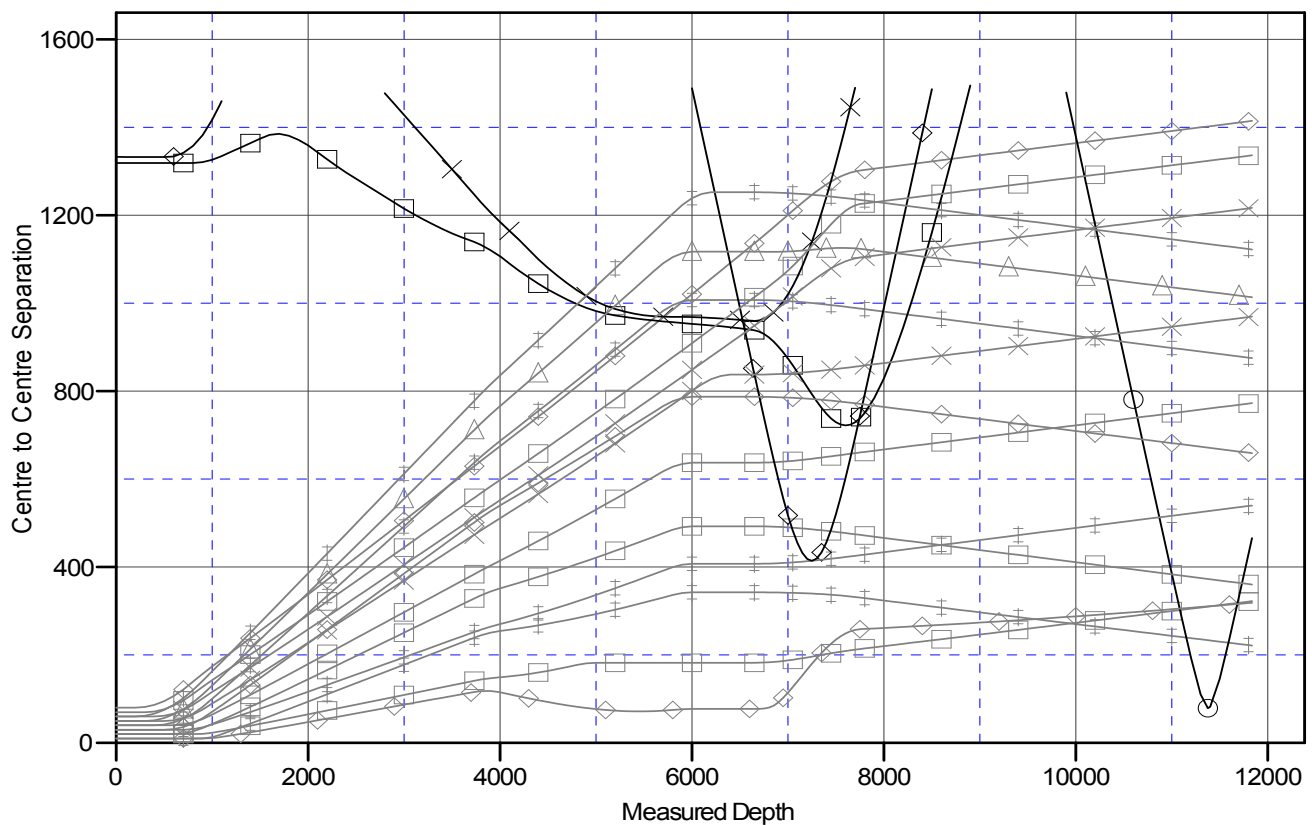
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3G-25H-M166
Project:	DJ BASIN	TVD Reference:	23' KB @ 5109.00usft
Reference Site:	S25-T1N-R66W (SAM)	MD Reference:	23' KB @ 5109.00usft
Site Error:	0.00usft	North Reference:	Grid
Reference Well:	SAM 3G-25H-M166	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 @ 5109.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: SAM 3G-25H-M166
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°

Ladder Plot



LEGEND

M3F-25H-M166, OH, PLAN#1 V0	Sam 3E-25H-M166, OH, PLAN#1 V0	Sam 3B-25H-M166, OH, PLAN#1 V0
M3I-25H-M166, OH, PLAN#1 V0	Sam 3J-25H-M166, OH, PLAN#1 V0	Sam 3A-25H-M166, OH, PLAN#1 V0
M3O-25H-M166, OH, PLAN#1 V0	Sam 3K-25H-M166, OH, PLAN#1 V0	Sam 3N-25H-M166, OH, PLAN#1 V0
Well 1 (EXISTING), CPR WELL, NO SURVEYS V0	Sam 13-25 (EXISTING), CPR WELL, SURVEYS V0	Sam 3M-25H-M166, OH, PLAN#1 V0
Well 2 (EXISTING), CPR WELL, NO SURVEYS V0	Beierle KE 26-361HN, GWOG WELL, GWOG WELL V0	Sam 3D-25H-M166, OH, PLAN#1 V0
Well 3 (EXISTING), CPR WELL, SURVEYS V0	Sam 3H-25H-M166, OH, PLAN#1 V0	
M3C-25H-M166, OH, PLAN#1 V0	Sam 3L-25H-M166, OH, PLAN#1 V0	