

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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 3F-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,606.49 usft	Latitude:	40.018757
	+E/-W	0.00 usft	Easting:	3,214,576.85 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	89.42

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,242.90	4.86	314.68	1,242.60	7.24	-7.32	2.00	2.00	0.00	314.68	
5,773.96	4.86	314.68	5,757.40	277.02	-280.17	0.00	0.00	0.00	0.00	
6,016.86	0.00	0.00	6,000.00	284.26	-287.49	2.00	-2.00	0.00	180.00	
6,710.66	0.00	0.00	6,693.80	284.26	-287.49	0.00	0.00	0.00	0.00	
7,835.66	90.00	89.42	7,410.00	291.54	428.67	8.00	8.00	0.00	89.42	
11,909.47	90.00	89.42	7,410.00	332.93	4,502.27	0.00	0.00	0.00	0.00	SAM 3F-25H PBHL

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Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	KOP @ 1000'
1,100.00	2.00	314.68	1,099.98	1.23	-1.24	-1.23	2.00	2.00	
1,200.00	4.00	314.68	1,199.84	4.91	-4.96	-4.91	2.00	2.00	
1,242.90	4.86	314.68	1,242.60	7.24	-7.32	-7.24	2.00	2.00	EOB; INC=4.86°
1,300.00	4.86	314.68	1,299.50	10.64	-10.76	-10.65	0.00	0.00	
1,400.00	4.86	314.68	1,399.14	16.59	-16.78	-16.61	0.00	0.00	
1,500.00	4.86	314.68	1,498.79	22.54	-22.80	-22.57	0.00	0.00	
1,600.00	4.86	314.68	1,598.43	28.50	-28.82	-28.53	0.00	0.00	
1,700.00	4.86	314.68	1,698.07	34.45	-34.84	-34.49	0.00	0.00	
1,800.00	4.86	314.68	1,797.71	40.41	-40.87	-40.45	0.00	0.00	
1,900.00	4.86	314.68	1,897.35	46.36	-46.89	-46.42	0.00	0.00	
2,000.00	4.86	314.68	1,996.99	52.32	-52.91	-52.38	0.00	0.00	
2,100.00	4.86	314.68	2,096.63	58.27	-58.93	-58.34	0.00	0.00	
2,200.00	4.86	314.68	2,196.27	64.22	-64.95	-64.30	0.00	0.00	
2,300.00	4.86	314.68	2,295.91	70.18	-70.98	-70.26	0.00	0.00	
2,400.00	4.86	314.68	2,395.55	76.13	-77.00	-76.22	0.00	0.00	
2,500.00	4.86	314.68	2,495.19	82.09	-83.02	-82.18	0.00	0.00	
2,600.00	4.86	314.68	2,594.83	88.04	-89.04	-88.14	0.00	0.00	
2,700.00	4.86	314.68	2,694.47	93.99	-95.06	-94.11	0.00	0.00	
2,800.00	4.86	314.68	2,794.12	99.95	-101.08	-100.07	0.00	0.00	
2,900.00	4.86	314.68	2,893.76	105.90	-107.11	-106.03	0.00	0.00	
3,000.00	4.86	314.68	2,993.40	111.86	-113.13	-111.99	0.00	0.00	
3,100.00	4.86	314.68	3,093.04	117.81	-119.15	-117.95	0.00	0.00	
3,200.00	4.86	314.68	3,192.68	123.77	-125.17	-123.91	0.00	0.00	
3,300.00	4.86	314.68	3,292.32	129.72	-131.19	-129.87	0.00	0.00	
3,400.00	4.86	314.68	3,391.96	135.67	-137.22	-135.84	0.00	0.00	
3,500.00	4.86	314.68	3,491.60	141.63	-143.24	-141.80	0.00	0.00	
3,600.00	4.86	314.68	3,591.24	147.58	-149.26	-147.76	0.00	0.00	
3,700.00	4.86	314.68	3,690.88	153.54	-155.28	-153.72	0.00	0.00	
3,800.00	4.86	314.68	3,790.52	159.49	-161.30	-159.68	0.00	0.00	
3,900.00	4.86	314.68	3,890.16	165.44	-167.32	-165.64	0.00	0.00	
4,000.00	4.86	314.68	3,989.80	171.40	-173.35	-171.60	0.00	0.00	
4,100.00	4.86	314.68	4,089.45	177.35	-179.37	-177.56	0.00	0.00	
4,200.00	4.86	314.68	4,189.09	183.31	-185.39	-183.53	0.00	0.00	
4,300.00	4.86	314.68	4,288.73	189.26	-191.41	-189.49	0.00	0.00	
4,400.00	4.86	314.68	4,388.37	195.22	-197.43	-195.45	0.00	0.00	
4,500.00	4.86	314.68	4,488.01	201.17	-203.46	-201.41	0.00	0.00	
4,600.00	4.86	314.68	4,587.65	207.12	-209.48	-207.37	0.00	0.00	
4,700.00	4.86	314.68	4,687.29	213.08	-215.50	-213.33	0.00	0.00	
4,800.00	4.86	314.68	4,786.93	219.03	-221.52	-219.29	0.00	0.00	
4,900.00	4.86	314.68	4,886.57	224.99	-227.54	-225.25	0.00	0.00	
5,000.00	4.86	314.68	4,986.21	230.94	-233.57	-231.22	0.00	0.00	

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Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3F-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
5,100.00	4.86	314.68	5,085.85	236.90	-239.59	-237.18	0.00	0.00	
5,200.00	4.86	314.68	5,185.49	242.85	-245.61	-243.14	0.00	0.00	
5,300.00	4.86	314.68	5,285.14	248.80	-251.63	-249.10	0.00	0.00	
5,400.00	4.86	314.68	5,384.78	254.76	-257.65	-255.06	0.00	0.00	
5,500.00	4.86	314.68	5,484.42	260.71	-263.67	-261.02	0.00	0.00	
5,600.00	4.86	314.68	5,584.06	266.67	-269.70	-266.98	0.00	0.00	
5,700.00	4.86	314.68	5,683.70	272.62	-275.72	-272.94	0.00	0.00	
5,773.96	4.86	314.68	5,757.40	277.02	-280.17	-277.35	0.00	0.00	Start Drop -2.00
5,800.00	4.34	314.68	5,783.35	278.49	-281.66	-278.82	2.00	-2.00	
5,900.00	2.34	314.68	5,883.17	282.58	-285.80	-282.92	2.00	-2.00	
6,000.00	0.34	314.68	5,983.14	284.23	-287.45	-284.56	2.00	-2.00	
6,016.86	0.00	0.00	6,000.00	284.26	-287.49	-284.60	2.00	-2.00	EOD; INC=0°
6,100.00	0.00	0.00	6,083.14	284.26	-287.49	-284.60	0.00	0.00	
6,200.00	0.00	0.00	6,183.14	284.26	-287.49	-284.60	0.00	0.00	
6,300.00	0.00	0.00	6,283.14	284.26	-287.49	-284.60	0.00	0.00	
6,400.00	0.00	0.00	6,383.14	284.26	-287.49	-284.60	0.00	0.00	
6,500.00	0.00	0.00	6,483.14	284.26	-287.49	-284.60	0.00	0.00	
6,600.00	0.00	0.00	6,583.14	284.26	-287.49	-284.60	0.00	0.00	
6,700.00	0.00	0.00	6,683.14	284.26	-287.49	-284.60	0.00	0.00	
6,710.66	0.00	0.00	6,693.80	284.26	-287.49	-284.60	0.00	0.00	Start Build 8.00
6,800.00	7.15	89.42	6,782.91	284.32	-281.93	-279.03	8.00	8.00	
6,900.00	15.15	89.42	6,880.94	284.51	-262.61	-259.72	8.00	8.00	
7,000.00	23.15	89.42	6,975.33	284.85	-229.84	-226.94	8.00	8.00	
7,100.00	31.15	89.42	7,064.25	285.31	-184.25	-181.35	8.00	8.00	
7,200.00	39.15	89.42	7,145.95	285.89	-126.73	-123.83	8.00	8.00	
7,300.00	47.15	89.42	7,218.85	286.59	-58.40	-55.50	8.00	8.00	
7,400.00	55.15	89.42	7,281.53	287.38	19.41	22.31	8.00	8.00	
7,500.00	63.15	89.42	7,332.77	288.25	105.18	108.09	8.00	8.00	
7,600.00	71.15	89.42	7,371.58	289.19	197.25	200.17	8.00	8.00	
7,700.00	79.15	89.42	7,397.19	290.17	293.83	296.75	8.00	8.00	
7,800.00	87.15	89.42	7,409.11	291.18	393.03	395.95	8.00	8.00	
7,835.66	90.00	89.42	7,410.00	291.54	428.67	431.60	8.00	8.00	LP @ 7410' TVD; 90°
7,900.00	90.00	89.42	7,410.00	292.19	493.01	495.94	0.00	0.00	
8,000.00	90.00	89.42	7,410.00	293.21	593.00	595.94	0.00	0.00	
8,100.00	90.00	89.42	7,410.00	294.22	693.00	695.94	0.00	0.00	
8,200.00	90.00	89.42	7,410.00	295.24	792.99	795.94	0.00	0.00	
8,300.00	90.00	89.42	7,410.00	296.26	892.99	895.94	0.00	0.00	
8,400.00	90.00	89.42	7,410.00	297.27	992.98	995.94	0.00	0.00	
8,500.00	90.00	89.42	7,410.00	298.29	1,092.97	1,095.94	0.00	0.00	
8,600.00	90.00	89.42	7,410.00	299.30	1,192.97	1,195.94	0.00	0.00	
8,700.00	90.00	89.42	7,410.00	300.32	1,292.96	1,295.94	0.00	0.00	
8,800.00	90.00	89.42	7,410.00	301.34	1,392.96	1,395.94	0.00	0.00	
8,900.00	90.00	89.42	7,410.00	302.35	1,492.95	1,495.94	0.00	0.00	
9,000.00	90.00	89.42	7,410.00	303.37	1,592.95	1,595.94	0.00	0.00	
9,100.00	90.00	89.42	7,410.00	304.39	1,692.94	1,695.94	0.00	0.00	
9,200.00	90.00	89.42	7,410.00	305.40	1,792.94	1,795.94	0.00	0.00	
9,300.00	90.00	89.42	7,410.00	306.42	1,892.93	1,895.94	0.00	0.00	
9,400.00	90.00	89.42	7,410.00	307.43	1,992.93	1,995.94	0.00	0.00	
9,500.00	90.00	89.42	7,410.00	308.45	2,092.92	2,095.94	0.00	0.00	
9,600.00	90.00	89.42	7,410.00	309.47	2,192.92	2,195.94	0.00	0.00	
9,700.00	90.00	89.42	7,410.00	310.48	2,292.91	2,295.94	0.00	0.00	
9,800.00	90.00	89.42	7,410.00	311.50	2,392.91	2,395.94	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 3F-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	89.42	7,410.00	312.51	2,492.90	2,495.94	0.00	0.00	
10,000.00	90.00	89.42	7,410.00	313.53	2,592.90	2,595.94	0.00	0.00	
10,100.00	90.00	89.42	7,410.00	314.55	2,692.89	2,695.94	0.00	0.00	
10,200.00	90.00	89.42	7,410.00	315.56	2,792.89	2,795.94	0.00	0.00	
10,300.00	90.00	89.42	7,410.00	316.58	2,892.88	2,895.94	0.00	0.00	
10,400.00	90.00	89.42	7,410.00	317.60	2,992.88	2,995.94	0.00	0.00	
10,500.00	90.00	89.42	7,410.00	318.61	3,092.87	3,095.94	0.00	0.00	
10,600.00	90.00	89.42	7,410.00	319.63	3,192.87	3,195.94	0.00	0.00	
10,700.00	90.00	89.42	7,410.00	320.64	3,292.86	3,295.94	0.00	0.00	
10,800.00	90.00	89.42	7,410.00	321.66	3,392.86	3,395.94	0.00	0.00	
10,900.00	90.00	89.42	7,410.00	322.68	3,492.85	3,495.94	0.00	0.00	
11,000.00	90.00	89.42	7,410.00	323.69	3,592.85	3,595.94	0.00	0.00	
11,100.00	90.00	89.42	7,410.00	324.71	3,692.84	3,695.94	0.00	0.00	
11,200.00	90.00	89.42	7,410.00	325.72	3,792.84	3,795.94	0.00	0.00	
11,300.00	90.00	89.42	7,410.00	326.74	3,892.83	3,895.94	0.00	0.00	
11,400.00	90.00	89.42	7,410.00	327.76	3,992.83	3,995.94	0.00	0.00	
11,500.00	90.00	89.42	7,410.00	328.77	4,092.82	4,095.94	0.00	0.00	
11,600.00	90.00	89.42	7,410.00	329.79	4,192.81	4,195.94	0.00	0.00	
11,700.00	90.00	89.42	7,410.00	330.81	4,292.81	4,295.94	0.00	0.00	
11,800.00	90.00	89.42	7,410.00	331.82	4,392.80	4,395.94	0.00	0.00	
11,900.00	90.00	89.42	7,410.00	332.84	4,492.80	4,495.94	0.00	0.00	
11,909.47	90.00	89.42	7,410.00	332.93	4,502.27	4,505.41	0.00	0.00	TD at 11909.47

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 3F-25H TPZ	0.00	0.00	7,360.54	288.88	167.23	1,250,895.36	3,214,744.08	40.019546	-104.733248
- plan misses target center by 0.03usft at 7568.03usft MD (7360.57 TVD, 288.88 N, 167.23 E)									
- Point									
SAM 3F-25H PBHL	0.00	0.00	7,410.00	332.93	4,502.27	1,250,939.42	3,219,079.12	40.019563	-104.717769
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
1,000.00	1,000.00	0.00	0.00	KOP @ 1000'
1,242.90	1,242.60	7.24	-7.32	EOB; INC=4.86°
5,773.96	5,757.40	277.02	-280.17	Start Drop -2.00
6,016.86	6,000.00	284.26	-287.49	EOD; INC=0°
6,710.66	6,693.80	284.26	-287.49	Start Build 8.00
7,835.66	7,410.00	291.54	428.67	LP @ 7410' TVD; 90°
11,909.47	7,410.00	332.93	4,502.27	TD at 11909.47

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (SAM)

SAM 3F-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 3F-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 3F-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	11,909.47	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
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	6,719.48	6,866.80	769.16	722.10	16.343	CC, ES
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,800.00	6,946.65	773.34	725.89	16.296	SF
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,291.15	11,375.42	361.93	290.25	5.049	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,300.00	11,375.41	362.10	289.22	4.969	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,400.00	11,375.27	385.74	302.14	4.614	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	1,331.66	1,329.56	634.216	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,200.00	500.00	1,490.64	1,484.87	258.329	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	7,648.50	7,588.19	390.42	335.57	7.119	CC, ES, SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	50.27	49.28	50.629	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	11,909.47	12,014.85	909.95	607.84	3.012	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	40.06	38.35	23.430	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	11,909.47	12,166.24	793.23	498.45	2.691	SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	30.24	27.81	12.459	CC, ES
SAM 3C-25H-M166 - OH - PLAN #1	11,909.47	11,909.78	668.83	368.03	2.223	SF
SAM 3D-25H-M166 - OH - PLAN #1	500.00	500.00	20.04	16.90	6.375	CC, ES
SAM 3D-25H-M166 - OH - PLAN #1	11,909.47	11,948.00	445.14	143.19	1.474	Level 3, SF
SAM 3E-25H-M166 - OH - PLAN #1	600.00	600.00	10.21	6.35	2.644	CC
SAM 3E-25H-M166 - OH - PLAN #1	11,909.47	11,847.56	165.60	-110.64	0.599	Level 1, ES, SF
SAM 3G-25H-M166 - OH - PLAN #1	800.00	800.00	9.83	4.54	1.857	CC
SAM 3G-25H-M166 - OH - PLAN #1	11,909.47	11,825.78	221.54	-64.63	0.774	Level 1, ES, SF
SAM 3H-25H-M166 - OH - PLAN #1	900.00	900.00	20.03	14.02	3.332	CC, ES
SAM 3H-25H-M166 - OH - PLAN #1	11,909.47	12,070.04	453.11	171.70	1.610	SF
SAM 3I-25H-M166 - OH - PLAN #1	800.00	800.00	29.87	24.57	5.641	CC, ES
SAM 3I-25H-M166 - OH - PLAN #1	11,909.47	11,906.06	524.93	224.63	1.748	SF
SAM 3J-25H-M166 - OH - PLAN #1	700.00	700.00	39.71	35.13	8.674	CC, ES
SAM 3J-25H-M166 - OH - PLAN #1	11,909.47	11,845.06	753.31	453.63	2.514	SF
SAM 3K-25H-M166 - OH - PLAN #1	600.00	600.00	49.90	46.04	12.926	CC, ES
SAM 3K-25H-M166 - OH - PLAN #1	11,909.47	11,936.55	979.91	678.90	3.255	SF
SAM 3L-25H-M166 - OH - PLAN #1	500.00	500.00	59.75	56.60	19.005	CC, ES
SAM 3L-25H-M166 - OH - PLAN #1	11,909.47	11,886.52	1,181.97	881.00	3.927	SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	69.94	67.51	28.819	CC, ES
SAM 3M-25H-M166 - OH - PLAN #1	11,909.47	11,975.04	1,425.06	1,123.42	4.724	SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	79.77	78.06	46.654	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	800.00	782.29	121.03	115.62	22.347	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	89.98	88.99	90.617	CC, ES
SAM 3O-25H-M166 - OH - PLAN #1	1,000.00	973.25	185.48	178.64	27.121	SF
State 7-36 CG (EXISTING) - CPR WELL - NO SURVEYS						Out of range

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S25-T1N-R66W (SAM)						
Templin 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,451.22	7,331.00	301.97	157.25	2.087	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
2,500.00	2,495.19	2,907.03	2,881.21	8.85	6.31	21.55	1,380.37	-670.12	1,477.02	1,463.17	13.85	106.640	
2,600.00	2,594.83	2,982.00	2,951.96	9.23	6.70	20.95	1,356.72	-677.54	1,444.15	1,429.64	14.51	99.550	
2,700.00	2,694.47	3,058.17	3,024.18	9.60	7.05	20.35	1,333.69	-684.94	1,412.62	1,397.46	15.16	93.208	
2,800.00	2,794.12	3,131.94	3,094.22	9.97	7.40	19.74	1,311.77	-692.48	1,382.07	1,366.25	15.82	87.340	
2,900.00	2,893.76	3,209.71	3,168.12	10.35	7.80	19.04	1,289.43	-701.81	1,353.27	1,336.73	16.54	81.826	
3,000.00	2,993.40	3,302.28	3,255.66	10.72	8.30	18.08	1,262.39	-715.01	1,325.28	1,307.93	17.35	76.393	
3,100.00	3,093.04	3,400.22	3,348.04	11.10	8.86	16.98	1,233.25	-729.54	1,297.44	1,279.22	18.21	71.239	
3,200.00	3,192.68	3,494.81	3,437.37	11.47	9.38	15.91	1,205.18	-742.91	1,269.81	1,250.75	19.06	66.628	
3,300.00	3,292.32	3,589.58	3,527.34	11.85	9.89	14.87	1,177.86	-754.67	1,242.57	1,222.67	19.90	62.447	
3,400.00	3,391.96	3,689.03	3,621.66	12.22	10.45	13.73	1,148.85	-767.03	1,215.46	1,194.68	20.79	58.478	
3,500.00	3,491.60	3,789.72	3,716.99	12.60	11.04	12.51	1,118.86	-779.39	1,188.21	1,166.50	21.71	54.736	
3,600.00	3,591.24	3,882.83	3,804.98	12.97	11.59	11.31	1,090.67	-790.90	1,161.07	1,138.45	22.62	51.327	
3,700.00	3,690.88	3,974.87	3,892.14	13.35	12.12	10.10	1,063.28	-802.05	1,134.75	1,111.22	23.53	48.221	
3,800.00	3,790.52	4,073.85	3,985.75	13.72	12.70	8.74	1,033.41	-813.93	1,108.58	1,084.09	24.49	45.263	
3,900.00	3,890.16	4,163.34	4,070.18	14.10	13.24	7.41	1,005.91	-825.13	1,082.86	1,057.40	25.46	42.535	
4,000.00	3,989.80	4,248.47	4,150.57	14.47	13.74	6.09	980.23	-836.29	1,058.55	1,032.13	26.41	40.075	
4,100.00	4,089.45	4,347.33	4,243.99	14.85	14.31	4.50	950.52	-849.02	1,034.91	1,007.49	27.42	37.747	
4,200.00	4,189.09	4,444.93	4,336.40	15.22	14.88	2.92	921.36	-860.62	1,011.56	983.13	28.43	35.586	
4,300.00	4,288.73	4,547.79	4,433.61	15.60	15.50	1.14	890.01	-872.82	988.55	959.07	29.48	33.530	
4,400.00	4,388.37	4,658.26	4,537.49	15.97	16.20	-0.90	854.47	-884.99	964.62	934.02	30.60	31.525	
4,500.00	4,488.01	4,745.93	4,619.75	16.35	16.76	-2.61	825.62	-894.36	940.98	909.32	31.66	29.721	
4,600.00	4,587.65	4,823.93	4,693.27	16.73	17.22	-4.16	801.08	-903.10	919.62	886.94	32.68	28.141	
4,700.00	4,687.29	4,906.74	4,771.70	17.10	17.68	-5.81	776.32	-912.73	900.56	866.88	33.68	26.739	
4,800.00	4,786.93	5,000.90	4,861.20	17.48	18.20	-7.70	749.09	-923.46	882.98	848.27	34.71	25.441	
4,900.00	4,886.57	5,090.00	4,946.26	17.85	18.67	-9.47	724.38	-933.04	866.63	830.93	35.70	24.276	
5,000.00	4,986.21	5,176.72	5,029.52	18.23	19.11	-11.16	701.84	-942.06	851.97	815.32	36.65	23.245	
5,100.00	5,085.85	5,259.59	5,109.51	18.61	19.51	-12.71	682.03	-950.72	839.38	801.83	37.55	22.352	
5,200.00	5,185.49	5,348.36	5,195.74	18.98	19.90	-14.28	663.05	-959.95	828.87	790.44	38.43	21.569	
5,300.00	5,285.14	5,443.21	5,288.55	19.36	20.29	-15.78	645.61	-968.71	819.57	780.31	39.26	20.874	
5,400.00	5,384.78	5,539.37	5,383.31	19.73	20.62	-17.09	631.02	-976.04	810.96	770.92	40.03	20.258	
5,500.00	5,484.42	5,633.34	5,476.37	20.11	20.91	-18.19	619.48	-982.13	803.06	762.32	40.74	19.713	
5,600.00	5,584.06	5,725.62	5,568.00	20.49	21.16	-19.14	610.24	-987.78	796.15	754.75	41.40	19.231	
5,700.00	5,683.70	5,827.29	5,669.18	20.86	21.41	-20.07	602.07	-993.61	789.96	747.92	42.04	18.792	
5,773.96	5,757.40	5,902.26	5,743.97	21.14	21.56	-20.59	597.97	-996.51	785.02	742.55	42.47	18.484	
5,800.00	5,783.35	5,927.56	5,769.24	21.24	21.60	-20.72	596.92	-997.36	783.43	740.81	42.62	18.383	
5,900.00	5,883.17	6,038.27	5,879.88	21.61	21.77	-21.10	594.34	-999.63	778.94	735.81	43.13	18.060	
6,000.00	5,983.14	6,140.55	5,982.17	21.96	21.89	-21.20	593.64	-999.71	776.56	732.96	43.60	17.809	
6,016.86	6,000.00	6,157.73	5,999.34	22.02	21.91	-66.53	593.49	-999.72	776.47	732.79	43.68	17.775	
6,100.00	6,083.14	6,242.88	6,084.49	22.30	22.01	-66.58	592.67	-999.68	776.11	732.04	44.07	17.610	
6,200.00	6,183.14	6,345.80	6,187.40	22.65	22.14	-66.66	591.45	-999.36	775.36	730.81	44.54	17.406	
6,300.00	6,283.14	6,446.91	6,288.50	22.99	22.27	-66.73	590.15	-998.81	774.35	729.33	45.02	17.200	
6,400.00	6,383.14	6,548.30	6,389.88	23.33	22.40	-66.80	588.79	-998.11	773.18	727.68	45.50	16.994	
6,500.00	6,483.14	6,649.15	6,490.72	23.68	22.54	-66.88	587.30	-997.27	771.84	725.86	45.98	16.787	
6,600.00	6,583.14	6,748.23	6,589.78	24.02	22.67	-66.98	585.52	-996.62	770.53	724.06	46.47	16.581	
6,700.00	6,683.14	6,847.42	6,688.95	24.37	22.82	-67.12	583.37	-996.24	769.33	722.37	46.97	16.380	
6,710.66	6,693.80	6,858.03	6,699.55	24.41	22.83	-67.14	583.12	-996.22	769.21	722.19	47.02	16.359	
6,719.48	6,702.62	6,866.80	6,708.32	24.44	22.85	-156.57	582.91	-996.20	769.16	722.10	47.06	16.343 CC, ES	
6,750.00	6,733.12	6,897.13	6,738.64	24.54	22.89	-156.63	582.18	-996.14	769.76	722.55	47.21	16.303	
6,800.00	6,782.91	6,946.65	6,788.14	24.69	22.97	-156.73	580.92	-996.08	773.34	725.89	47.46	16.296 SF	
6,850.00	6,832.26	6,995.72	6,837.19	24.84	23.04	-156.83	579.60	-996.07	780.15	732.45	47.70	16.357	
6,900.00	6,880.94	7,044.75	6,886.21	24.99	23.12	-156.94	578.20	-996.10	790.14	742.21	47.93	16.484	
6,950.00	6,928.71	7,093.10	6,934.53	25.13	23.20	-157.03	576.72	-996.13	803.28	755.11	48.17	16.677	

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 3F-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 3F-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		
7,000.00	6,975.33	7,140.27	6,981.68	25.26	23.28	-157.10	575.17	-996.16	819.53	771.13	48.39	16.934		
7,050.00	7,020.59	7,186.04	7,027.42	25.39	23.35	-157.12	573.58	-996.19	838.83	790.22	48.61	17.256		
7,100.00	7,064.25	7,229.58	7,070.93	25.53	23.43	-157.08	571.97	-996.23	861.15	812.32	48.82	17.638		
7,150.00	7,106.10	7,270.96	7,112.28	25.67	23.50	-156.95	570.39	-996.30	886.43	837.41	49.03	18.080		
7,200.00	7,145.95	7,310.29	7,151.58	25.82	23.57	-156.71	568.82	-996.41	914.59	865.37	49.22	18.582		
7,250.00	7,183.59	7,347.37	7,188.62	26.00	23.64	-156.33	567.30	-996.55	945.49	896.09	49.39	19.142		
7,300.00	7,218.85	7,382.01	7,223.24	26.21	23.70	-155.77	565.83	-996.71	979.00	929.44	49.56	19.755		
7,350.00	7,251.55	7,416.23	7,257.43	26.46	23.76	-155.05	564.36	-996.86	1,014.94	965.24	49.70	20.420		
7,400.00	7,281.53	7,448.83	7,290.00	26.77	23.82	-154.09	562.98	-996.91	1,053.08	1,003.25	49.83	21.132		
7,450.00	7,308.65	7,478.56	7,319.70	27.14	23.87	-152.77	561.75	-996.87	1,093.24	1,043.29	49.95	21.887		
7,500.00	7,332.77	7,505.25	7,346.37	27.58	23.92	-150.98	560.66	-996.77	1,135.24	1,085.19	50.05	22.681		
7,550.00	7,353.78	7,528.75	7,369.84	28.08	23.96	-148.54	559.73	-996.62	1,178.89	1,128.75	50.14	23.511		
7,600.00	7,371.58	7,548.89	7,389.97	28.66	24.00	-145.17	558.93	-996.46	1,223.99	1,173.77	50.22	24.372		
7,650.00	7,386.07	7,565.56	7,406.63	29.31	24.02	-140.43	558.28	-996.29	1,270.33	1,220.04	50.29	25.261		
7,700.00	7,397.19	7,578.61	7,419.67	30.02	24.05	-133.61	557.78	-996.15	1,317.69	1,267.34	50.34	26.175		
7,750.00	7,404.88	7,587.91	7,428.95	30.80	24.06	-123.61	557.42	-996.03	1,365.83	1,315.44	50.39	27.107		
7,800.00	7,409.11	7,593.34	7,434.39	31.63	24.07	-109.14	557.21	-995.97	1,414.52	1,364.10	50.42	28.054		
7,835.66	7,410.00	7,594.85	7,435.89	32.26	24.08	-95.89	557.15	-995.95	1,449.45	1,399.01	50.44	28.735		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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-ISWWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,000.00	5,983.14	11,375.85	7,499.06	21.96	71.09	-61.96	284.00	-314.26	1,492.16	1,457.03	35.13	42.479		
6,016.86	6,000.00	11,375.81	7,499.06	22.02	71.09	-90.48	284.04	-314.26	1,475.30	1,440.16	35.14	41.984		
6,100.00	6,083.14	11,375.81	7,499.06	22.30	71.09	-90.48	284.04	-314.26	1,392.17	1,356.97	35.21	39.542		
6,200.00	6,183.14	11,375.81	7,499.06	22.65	71.09	-90.48	284.04	-314.26	1,292.19	1,256.90	35.30	36.607		
6,300.00	6,283.14	11,375.81	7,499.06	22.99	71.09	-90.48	284.04	-314.26	1,192.22	1,156.82	35.40	33.678		
6,400.00	6,383.14	11,375.81	7,499.06	23.33	71.09	-90.48	284.04	-314.26	1,092.25	1,056.73	35.51	30.756		
6,500.00	6,483.14	11,375.81	7,499.06	23.68	71.09	-90.48	284.04	-314.26	992.28	956.64	35.64	27.842		
6,600.00	6,583.14	11,375.81	7,499.06	24.02	71.09	-90.48	284.04	-314.26	892.32	856.54	35.78	24.939		
6,700.00	6,683.14	11,375.81	7,499.06	24.37	71.09	-90.48	284.04	-314.26	792.37	756.43	35.94	22.046		
6,710.66	6,693.80	11,375.81	7,499.06	24.41	71.09	-90.48	284.04	-314.26	781.71	745.75	35.96	21.738		
6,750.00	6,733.12	11,375.81	7,499.06	24.54	71.09	-179.96	284.04	-314.26	742.46	706.41	36.05	20.596		
6,800.00	6,782.91	11,375.80	7,499.06	24.69	71.09	-179.97	284.05	-314.26	692.90	656.66	36.24	19.117		
6,850.00	6,832.26	11,375.79	7,499.06	24.84	71.09	-179.97	284.06	-314.26	644.06	607.46	36.59	17.600		
6,900.00	6,880.94	11,375.77	7,499.06	24.99	71.09	-179.97	284.08	-314.26	596.36	559.14	37.22	16.023		
6,950.00	6,928.71	11,375.74	7,499.06	25.13	71.09	-179.97	284.11	-314.26	550.37	512.06	38.31	14.366		
7,000.00	6,975.33	11,375.71	7,499.06	25.26	71.09	-179.97	284.14	-314.26	506.81	466.68	40.12	12.631		
7,050.00	7,020.59	11,375.67	7,499.06	25.39	71.09	-179.96	284.18	-314.26	466.60	423.67	42.93	10.869		
7,100.00	7,064.25	11,375.63	7,499.06	25.53	71.09	-179.96	284.22	-314.26	430.90	383.95	46.95	9.178		
7,150.00	7,106.10	11,375.58	7,499.06	25.67	71.08	-179.95	284.27	-314.26	401.11	348.83	52.27	7.673		
7,200.00	7,145.95	11,375.53	7,499.06	25.82	71.08	-179.95	284.32	-314.26	378.79	320.04	58.76	6.447		
7,250.00	7,183.59	11,375.47	7,499.06	26.00	71.08	-179.94	284.38	-314.26	365.44	299.55	65.89	5.547		
7,291.15	7,212.79	11,375.42	7,499.06	26.17	71.08	-179.93	284.43	-314.26	361.93	290.25	71.68	5.049 CC		
7,300.00	7,218.85	11,375.41	7,499.06	26.21	71.08	-179.93	284.44	-314.26	362.10	289.22	72.87	4.969 ES		
7,350.00	7,251.55	11,375.34	7,499.06	26.46	71.08	-179.92	284.51	-314.27	369.06	290.13	78.93	4.676		
7,400.00	7,281.53	11,375.27	7,499.06	26.77	71.08	-179.90	284.58	-314.27	385.74	302.14	83.60	4.614 SF		
7,450.00	7,308.65	11,375.19	7,499.06	27.14	71.08	-179.89	284.66	-314.27	410.88	324.05	86.84	4.732		
7,500.00	7,332.77	11,375.11	7,499.06	27.58	71.08	-179.86	284.74	-314.27	442.94	354.04	88.90	4.983		
7,550.00	7,353.78	11,375.03	7,499.06	28.08	71.08	-179.84	284.82	-314.27	480.38	390.26	90.12	5.331		
7,600.00	7,371.58	11,374.95	7,499.06	28.66	71.07	-179.80	284.90	-314.27	521.90	431.10	90.80	5.748		
7,650.00	7,386.07	11,374.86	7,499.06	29.31	71.07	-179.75	284.99	-314.27	566.41	475.26	91.15	6.214		
7,700.00	7,397.19	11,374.78	7,499.06	30.02	71.07	-179.67	285.07	-314.27	613.08	521.76	91.32	6.713		
7,750.00	7,404.88	11,374.69	7,499.06	30.80	71.07	-179.55	285.16	-314.27	661.25	569.85	91.40	7.235		
7,800.00	7,409.11	11,374.60	7,499.06	31.63	71.07	-179.28	285.25	-314.27	710.39	618.96	91.43	7.770		
7,835.66	7,410.00	11,374.54	7,499.06	32.26	71.07	-178.83	285.31	-314.27	745.81	654.37	91.44	8.157		
7,900.00	7,410.00	11,374.42	7,499.06	33.45	71.07	-178.73	285.43	-314.27	809.92	718.48	91.44	8.857		
8,000.00	7,410.00	11,374.24	7,499.06	35.45	71.06	-178.57	285.61	-314.27	909.64	818.19	91.44	9.948		
8,100.00	7,410.00	11,374.07	7,499.06	37.63	71.06	-178.42	285.79	-314.28	1,009.41	917.96	91.44	11.039		
8,200.00	7,410.00	11,373.89	7,499.06	39.94	71.06	-178.26	285.96	-314.28	1,109.22	1,017.78	91.44	12.130		
8,300.00	7,410.00	11,373.71	7,499.06	42.37	71.05	-178.10	286.14	-314.28	1,209.06	1,117.62	91.44	13.223		
8,400.00	7,410.00	11,373.53	7,499.06	44.90	71.05	-177.95	286.32	-314.28	1,308.92	1,217.49	91.44	14.315		
8,500.00	7,410.00	11,373.35	7,499.06	47.51	71.05	-177.79	286.50	-314.28	1,408.81	1,317.37	91.44	15.407		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	84.68	123.46	1,325.92	1,332.23				
100.00	100.00	61.00	61.00	0.14	0.07	84.68	123.46	1,325.92	1,331.66	1,331.45	0.21	6,494.087	
200.00	200.00	161.00	161.00	0.50	0.18	84.68	123.46	1,325.92	1,331.66	1,330.99	0.67	1,977.400	
300.00	300.00	261.00	261.00	0.85	0.29	84.68	123.46	1,325.92	1,331.66	1,330.52	1.14	1,166.259	
400.00	400.00	361.00	361.00	1.21	0.40	84.68	123.46	1,325.92	1,331.66	1,330.05	1.61	827.013	
500.00	500.00	461.00	461.00	1.57	0.51	84.68	123.46	1,325.92	1,331.66	1,329.58	2.08	640.656	
504.51	504.51	465.51	465.51	1.59	0.51	84.68	123.46	1,325.92	1,331.66	1,329.56	2.10	634.216	CC, ES
600.00	600.00	500.00	500.00	1.93	0.55	84.68	123.46	1,325.92	1,333.06	1,330.54	2.51	530.473	
700.00	700.00	500.00	500.00	2.29	0.55	84.68	123.46	1,325.92	1,341.36	1,338.33	3.03	442.599	
800.00	800.00	500.00	500.00	2.65	0.55	84.68	123.46	1,325.92	1,357.00	1,353.39	3.61	375.854	
900.00	900.00	500.00	500.00	3.01	0.55	84.68	123.46	1,325.92	1,379.72	1,375.53	4.20	328.636	
1,000.00	1,000.00	500.00	500.00	3.36	0.55	84.68	123.46	1,325.92	1,409.20	1,404.43	4.76	295.801	
1,100.00	1,099.98	500.00	500.00	3.72	0.55	129.39	123.46	1,325.92	1,446.03	1,440.74	5.29	273.278	
1,200.00	1,199.84	500.00	500.00	4.08	0.55	128.62	123.46	1,325.92	1,490.64	1,484.87	5.77	258.329	SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	84.93	116.43	1,313.10	1,318.36					
100.00	100.00	83.00	83.00	0.14	0.09	84.93	116.43	1,313.10	1,318.25	1,318.02	0.23	5,726.233		
200.00	200.00	183.00	183.00	0.50	0.20	84.93	116.43	1,313.10	1,318.25	1,317.55	0.70	1,883.837		
300.00	300.00	283.00	283.00	0.85	0.31	84.93	116.43	1,313.10	1,318.25	1,317.08	1.17	1,127.360		
400.00	400.00	383.00	383.00	1.21	0.43	84.93	116.43	1,313.10	1,318.25	1,316.61	1.64	804.360		
500.00	500.00	483.00	483.00	1.57	0.54	84.93	116.43	1,313.10	1,318.25	1,316.14	2.11	625.226		
600.00	600.00	583.00	583.00	1.93	0.65	84.93	116.43	1,313.10	1,318.25	1,315.67	2.58	511.347		
700.00	700.00	683.00	683.00	2.29	0.76	84.93	116.43	1,313.10	1,318.25	1,315.20	3.05	432.561		
800.00	800.00	783.00	783.00	2.65	0.87	84.93	116.43	1,313.10	1,318.25	1,314.74	3.52	374.811		
900.00	900.00	883.00	883.00	3.01	0.98	84.93	116.43	1,313.10	1,318.25	1,314.27	3.99	330.665		
1,000.00	1,000.00	983.00	983.00	3.36	1.09	84.93	116.43	1,313.10	1,318.25	1,313.80	4.46	295.822		
1,100.00	1,099.98	1,082.98	1,082.98	3.72	1.20	130.30	116.43	1,313.10	1,319.38	1,314.46	4.92	268.008		
1,200.00	1,199.84	1,182.84	1,182.84	4.08	1.31	130.42	116.43	1,313.10	1,322.77	1,317.38	5.39	245.511		
1,242.90	1,242.60	1,225.60	1,225.60	4.23	1.36	130.49	116.43	1,313.10	1,324.93	1,319.34	5.59	237.100		
1,300.00	1,299.50	1,282.50	1,282.50	4.44	1.42	130.65	116.43	1,313.10	1,328.08	1,322.22	5.85	226.863		
1,400.00	1,399.14	1,382.14	1,382.14	4.80	1.54	130.93	116.43	1,313.10	1,333.62	1,327.30	6.32	210.980		
1,500.00	1,498.79	1,472.01	1,472.01	5.16	1.73	131.17	116.57	1,313.41	1,339.55	1,332.68	6.87	194.997		
1,600.00	1,598.43	1,638.01	1,637.96	5.52	2.07	131.53	118.63	1,310.88	1,343.92	1,336.31	7.61	176.635		
1,700.00	1,698.07	1,839.74	1,838.84	5.89	2.54	131.70	126.22	1,294.74	1,342.05	1,333.60	8.45	158.749		
1,800.00	1,797.71	2,008.52	2,005.29	6.26	3.02	131.60	137.70	1,269.55	1,333.08	1,323.84	9.24	144.300		
1,900.00	1,897.35	2,171.88	2,164.26	6.63	3.62	131.15	156.02	1,236.83	1,319.31	1,309.24	10.06	131.084		
2,000.00	1,996.99	2,315.53	2,302.01	7.00	4.28	130.49	176.99	1,201.95	1,301.51	1,290.61	10.90	119.426		
2,100.00	2,096.63	2,451.76	2,431.17	7.37	5.02	129.77	198.07	1,164.13	1,280.24	1,268.48	11.76	108.894		
2,200.00	2,196.27	2,541.90	2,516.22	7.74	5.52	129.22	212.96	1,138.23	1,258.29	1,245.80	12.49	100.723		
2,300.00	2,295.91	2,633.13	2,602.49	8.11	6.00	128.67	227.72	1,112.48	1,236.97	1,223.73	13.23	93.466		
2,400.00	2,395.55	2,724.10	2,688.61	8.48	6.49	128.10	242.38	1,087.12	1,216.12	1,202.13	13.99	86.933		
2,500.00	2,495.19	2,804.42	2,764.98	8.85	6.92	127.62	254.86	1,065.61	1,196.43	1,181.72	14.72	81.291		
2,600.00	2,594.83	2,924.65	2,879.05	9.23	7.61	126.85	273.89	1,032.75	1,176.30	1,160.69	15.61	75.375		
2,700.00	2,694.47	3,020.60	2,969.97	9.60	8.17	126.22	288.77	1,005.93	1,155.71	1,139.28	16.43	70.336		
2,800.00	2,794.12	3,120.86	3,064.80	9.97	8.78	125.50	305.14	977.79	1,135.27	1,117.97	17.30	65.622		
2,900.00	2,893.76	3,226.90	3,164.64	10.35	9.48	124.63	323.52	947.18	1,114.34	1,096.10	18.24	61.089		
3,000.00	2,993.40	3,321.41	3,253.24	10.72	10.11	123.78	340.92	919.27	1,093.15	1,073.97	19.17	57.019		
3,100.00	3,093.04	3,414.96	3,341.05	11.10	10.70	122.89	358.39	892.14	1,072.76	1,052.66	20.10	53.361		
3,200.00	3,192.68	3,509.98	3,430.43	11.47	11.30	122.00	375.27	864.65	1,052.57	1,031.52	21.04	50.016		
3,300.00	3,292.32	3,605.06	3,519.89	11.85	11.90	121.07	392.46	837.45	1,033.01	1,011.00	22.01	46.941		
3,400.00	3,391.96	3,700.66	3,609.93	12.22	12.49	120.12	409.32	810.10	1,013.65	990.68	22.98	44.118		
3,500.00	3,491.60	3,791.97	3,696.13	12.60	13.06	119.22	425.06	784.41	994.95	971.01	23.94	41.560		
3,600.00	3,591.24	3,884.16	3,783.18	12.97	13.63	118.24	441.47	758.89	977.12	952.19	24.93	39.197		
3,700.00	3,690.88	3,983.69	3,877.42	13.35	14.24	117.21	458.45	731.71	959.77	933.83	25.94	36.996		
3,800.00	3,790.52	4,086.34	3,974.66	13.72	14.87	116.15	475.03	703.32	942.12	915.16	26.97	34.938		
3,900.00	3,890.16	4,178.39	4,061.88	14.10	15.43	115.18	489.60	677.80	924.62	896.65	27.97	33.055		
4,000.00	3,989.80	4,285.02	4,162.86	14.47	16.10	113.97	507.21	648.38	907.82	878.77	29.05	31.250		
4,100.00	4,089.45	4,387.76	4,260.05	14.85	16.74	112.82	522.73	618.95	889.83	859.71	30.11	29.550		
4,200.00	4,189.09	4,480.29	4,347.64	15.22	17.32	111.75	536.65	592.53	872.26	841.09	31.17	27.986		
4,300.00	4,288.73	4,580.11	4,441.78	15.60	17.97	110.45	553.12	563.72	855.30	823.00	32.30	26.478		
4,400.00	4,388.37	4,680.28	4,535.74	15.97	18.65	109.00	570.72	533.80	838.29	804.79	33.50	25.023		
4,500.00	4,488.01	4,768.42	4,618.50	16.35	19.24	107.68	586.15	507.71	822.02	787.36	34.66	23.715		
4,600.00	4,587.65	4,865.04	4,709.79	16.73	19.85	106.29	602.04	480.31	806.92	771.10	35.82	22.528		
4,700.00	4,687.29	4,958.84	4,798.48	17.10	20.44	104.92	617.26	453.86	792.36	755.38	36.98	21.426		
4,800.00	4,786.93	5,058.26	4,892.25	17.48	21.09	103.34	634.25	425.51	778.47	740.26	38.21	20.376		
4,900.00	4,886.57	5,147.16	4,976.19	17.85	21.66	101.91	649.33	400.45	765.38	725.99	39.39	19.432		
5,000.00	4,986.21	5,238.71	5,063.10	18.23	22.21	100.47	664.44	375.94	753.81	713.27	40.55	18.592		

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 3F-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 3F-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,085.85	5,325.92	5,146.46	18.61	22.70	99.19	677.96	354.18	743.72	702.09	41.63	17.865	
5,200.00	5,185.49	5,416.03	5,233.53	18.98	23.15	98.09	690.16	334.46	735.39	692.75	42.64	17.248	
5,300.00	5,285.14	5,509.18	5,324.35	19.36	23.56	97.18	700.67	316.68	728.23	684.68	43.56	16.720	
5,400.00	5,384.78	5,603.19	5,416.68	19.73	23.92	96.52	709.18	301.24	721.97	677.59	44.39	16.266	
5,500.00	5,484.42	5,696.72	5,509.05	20.11	24.24	96.07	715.90	288.18	716.58	671.43	45.14	15.874	
5,600.00	5,584.06	5,793.83	5,605.24	20.49	24.54	95.74	721.99	276.26	711.93	666.07	45.85	15.526	
5,700.00	5,683.70	5,889.58	5,700.30	20.86	24.80	95.55	726.81	265.87	707.63	661.11	46.51	15.213	
5,773.96	5,757.40	5,959.07	5,769.44	21.14	24.97	95.52	729.60	259.51	704.93	657.96	46.97	15.008	
5,800.00	5,783.35	5,983.43	5,793.70	21.24	25.02	95.50	730.52	257.47	704.09	656.96	47.13	14.940	
5,900.00	5,883.17	6,085.42	5,895.36	21.61	25.24	95.33	733.49	249.85	700.77	653.06	47.71	14.688	
6,000.00	5,983.14	6,175.63	5,985.41	21.96	25.40	95.09	734.55	244.62	697.33	649.08	48.25	14.451	
6,016.86	6,000.00	6,190.00	5,999.76	22.02	25.42	49.72	734.68	244.02	696.89	648.55	48.34	14.415	
6,100.00	6,083.14	6,272.44	6,082.14	22.30	25.54	49.54	735.12	241.08	694.92	646.15	48.77	14.250	
6,200.00	6,183.14	6,372.07	6,181.74	22.65	25.67	49.40	734.90	238.29	692.65	643.40	49.25	14.065	
6,300.00	6,283.14	6,471.28	6,280.92	22.99	25.78	49.35	733.97	236.21	690.45	640.74	49.71	13.891	
6,400.00	6,383.14	6,571.77	6,381.39	23.33	25.88	49.35	732.56	234.59	688.31	638.16	50.15	13.725	
6,500.00	6,483.14	6,673.16	6,482.75	23.68	25.99	49.40	730.59	233.18	685.99	635.41	50.58	13.562	
6,600.00	6,583.14	6,774.72	6,584.27	24.02	26.08	49.49	728.04	231.98	683.46	632.46	51.00	13.402	
6,700.00	6,683.14	6,876.49	6,685.98	24.37	26.17	49.67	724.64	231.16	680.68	629.28	51.40	13.243	
6,710.66	6,693.80	6,887.33	6,696.81	24.41	26.18	49.69	724.22	231.10	680.37	628.93	51.44	13.226	
6,750.00	6,733.12	6,927.53	6,736.97	24.54	26.21	-39.80	722.59	230.90	678.36	626.76	51.59	13.148	
6,800.00	6,782.91	6,979.75	6,789.14	24.69	26.25	-40.18	720.23	230.67	673.29	621.50	51.78	13.002	
6,850.00	6,832.26	7,031.46	6,840.79	24.84	26.29	-40.89	717.59	230.45	665.40	613.42	51.98	12.800	
6,900.00	6,880.94	7,080.91	6,890.16	24.99	26.32	-41.95	714.84	230.25	654.81	602.61	52.20	12.544	
6,950.00	6,928.71	7,128.72	6,937.89	25.13	26.35	-43.39	712.07	230.12	641.75	589.31	52.43	12.239	
7,000.00	6,975.33	7,174.98	6,984.07	25.26	26.38	-45.21	709.31	230.06	626.37	573.69	52.68	11.891	
7,050.00	7,020.59	7,219.79	7,028.79	25.39	26.41	-47.46	706.57	230.11	608.91	555.97	52.93	11.503	
7,100.00	7,064.25	7,263.12	7,072.04	25.53	26.44	-50.17	703.85	230.25	589.58	536.38	53.20	11.082	
7,150.00	7,106.10	7,304.77	7,113.60	25.67	26.46	-53.36	701.18	230.48	568.68	515.19	53.48	10.633	
7,200.00	7,145.95	7,345.44	7,154.18	25.82	26.48	-57.10	698.50	230.78	546.53	492.77	53.77	10.165	
7,250.00	7,183.59	7,385.55	7,194.18	26.00	26.50	-61.42	695.66	231.11	523.44	469.40	54.04	9.686	
7,300.00	7,218.85	7,423.13	7,231.66	26.21	26.52	-66.17	692.78	231.43	499.88	445.57	54.31	9.204	
7,350.00	7,251.55	7,457.71	7,266.12	26.46	26.54	-71.21	689.96	231.73	476.51	421.93	54.58	8.731	
7,400.00	7,281.53	7,489.45	7,297.74	26.77	26.55	-76.35	687.24	232.03	454.09	399.27	54.83	8.282	
7,450.00	7,308.65	7,518.23	7,326.40	27.14	26.56	-81.38	684.66	232.31	433.49	378.46	55.03	7.878	
7,500.00	7,332.77	7,541.01	7,349.09	27.58	26.57	-85.70	682.63	232.48	415.75	360.54	55.21	7.531	
7,550.00	7,353.78	7,560.16	7,368.18	28.08	26.59	-89.35	681.05	232.50	402.04	346.76	55.28	7.273	
7,600.00	7,371.58	7,575.99	7,383.96	28.66	26.60	-92.22	679.83	232.44	393.33	338.16	55.17	7.130	
7,648.50	7,385.68	7,588.19	7,396.12	29.29	26.60	-94.17	678.95	232.35	390.42	335.57	54.84	7.119 CC, ES, SF	
7,650.00	7,386.07	7,588.51	7,396.45	29.31	26.60	-94.22	678.92	232.34	390.42	335.59	54.83	7.121	
7,700.00	7,397.19	7,597.78	7,405.70	30.02	26.61	-95.28	678.28	232.24	393.80	339.54	54.25	7.258	
7,750.00	7,404.88	7,603.86	7,411.76	30.80	26.61	-95.37	677.88	232.16	403.53	350.06	53.47	7.546	
7,800.00	7,409.11	7,606.83	7,414.72	31.63	26.62	-94.48	677.69	232.11	419.28	366.72	52.56	7.978	
7,835.66	7,410.00	7,607.10	7,414.99	32.26	26.62	-93.24	677.67	232.11	433.84	381.97	51.87	8.364	
7,900.00	7,410.00	7,606.25	7,414.14	33.45	26.62	-93.12	677.72	232.12	465.98	415.31	50.68	9.195	
8,000.00	7,410.00	7,604.97	7,412.87	35.45	26.61	-92.93	677.81	232.14	527.76	478.61	49.15	10.737	
8,100.00	7,410.00	7,603.75	7,411.65	37.63	26.61	-92.75	677.89	232.16	599.93	551.71	48.22	12.442	
8,200.00	7,410.00	7,602.59	7,410.49	39.94	26.61	-92.58	677.96	232.18	679.19	631.47	47.72	14.232	
8,300.00	7,410.00	7,601.48	7,409.39	42.37	26.61	-92.42	678.04	232.19	763.33	715.89	47.44	16.089	
8,400.00	7,410.00	7,600.42	7,408.33	44.90	26.61	-92.26	678.11	232.21	850.91	803.61	47.30	17.989	
8,500.00	7,410.00	7,599.40	7,407.31	47.51	26.61	-92.11	678.17	232.22	940.97	893.73	47.24	19.919	
8,600.00	7,410.00	7,598.42	7,406.34	50.19	26.61	-91.97	678.24	232.23	1,032.85	985.63	47.23	21.870	

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 3F-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 3F-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		
8,700.00	7,410.00	7,597.49	7,405.40	52.93	26.61	-91.83	678.30	232.24	1,126.12	1,078.88	47.24	23.837		
8,800.00	7,410.00	7,596.59	7,404.51	55.71	26.61	-91.69	678.36	232.25	1,220.46	1,173.18	47.28	25.816		
8,900.00	7,410.00	7,595.72	7,403.64	58.54	26.61	-91.57	678.42	232.26	1,315.63	1,268.31	47.32	27.805		
9,000.00	7,410.00	7,594.89	7,402.81	61.41	26.61	-91.45	678.48	232.27	1,411.47	1,364.10	47.36	29.801		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	0.14	50.27	0.13	50.27					
100.00	100.00	100.00	100.00	0.14	0.14	0.14	50.27	0.13	50.27	50.00	0.28	182.133		
200.00	200.00	200.00	200.00	0.50	0.50	0.14	50.27	0.13	50.27	49.28	0.99	50.629 CC, ES		
300.00	300.00	298.29	298.27	0.85	0.85	-0.33	51.91	-0.30	51.93	50.19	1.75	29.752		
400.00	400.00	396.35	396.20	1.21	1.21	-1.57	56.79	-1.56	56.93	54.41	2.53	22.540		
500.00	500.00	493.96	493.44	1.57	1.57	-3.22	64.86	-3.65	65.29	61.99	3.31	19.739		
600.00	600.00	590.88	589.67	1.93	1.93	-4.91	76.05	-6.54	77.03	72.94	4.08	18.861		
700.00	700.00	686.91	684.57	2.29	2.30	-6.45	90.24	-10.21	92.12	87.27	4.85	18.993		
800.00	800.00	781.85	777.86	2.65	2.69	-7.76	107.28	-14.61	110.52	104.91	5.60	19.723		
900.00	900.00	878.08	871.89	3.01	3.11	-8.82	127.04	-19.72	131.60	125.31	6.29	20.918		
1,000.00	1,000.00	975.75	967.29	3.36	3.54	-9.62	147.33	-24.96	152.97	146.00	6.97	21.953		
1,100.00	1,099.98	1,073.72	1,062.98	3.72	3.98	35.21	167.68	-30.23	172.96	165.32	7.65	22.614		
1,200.00	1,199.84	1,172.22	1,159.18	4.08	4.42	35.42	188.15	-35.52	190.16	181.83	8.34	22.806		
1,242.90	1,242.60	1,214.60	1,200.58	4.23	4.62	35.68	196.95	-37.79	196.69	188.05	8.64	22.771		
1,300.00	1,299.50	1,271.06	1,255.73	4.44	4.88	36.16	208.68	-40.82	205.04	196.00	9.04	22.674		
1,400.00	1,399.14	1,369.94	1,352.30	4.80	5.33	36.93	229.22	-46.13	219.70	209.94	9.76	22.510		
1,500.00	1,498.79	1,468.82	1,448.88	5.16	5.78	37.59	249.76	-51.44	234.39	223.91	10.48	22.360		
1,600.00	1,598.43	1,567.70	1,545.46	5.52	6.24	38.18	270.31	-56.75	249.11	237.90	11.21	22.222		
1,700.00	1,698.07	1,666.58	1,642.04	5.89	6.70	38.70	290.85	-62.06	263.85	251.91	11.94	22.095		
1,800.00	1,797.71	1,765.46	1,738.61	6.26	7.15	39.17	311.39	-67.37	278.61	265.94	12.68	21.979		
1,900.00	1,897.35	1,864.34	1,835.19	6.63	7.61	39.59	331.93	-72.68	293.39	279.98	13.41	21.872		
2,000.00	1,996.99	1,963.22	1,931.77	7.00	8.07	39.97	352.47	-77.99	308.18	294.03	14.15	21.774		
2,100.00	2,096.63	2,062.10	2,028.34	7.37	8.53	40.32	373.01	-83.30	322.99	308.09	14.90	21.683		
2,200.00	2,196.27	2,160.98	2,124.92	7.74	8.99	40.63	393.56	-88.61	337.80	322.16	15.64	21.599		
2,300.00	2,295.91	2,259.86	2,221.50	8.11	9.45	40.92	414.10	-93.92	352.63	336.24	16.39	21.521		
2,400.00	2,395.55	2,358.75	2,318.08	8.48	9.91	41.19	434.64	-99.24	367.46	350.32	17.13	21.448		
2,500.00	2,495.19	2,457.63	2,414.65	8.85	10.37	41.43	455.18	-104.55	382.30	364.41	17.88	21.381		
2,600.00	2,594.83	2,556.51	2,511.23	9.23	10.84	41.66	475.72	-109.86	397.14	378.51	18.63	21.318		
2,700.00	2,694.47	2,655.39	2,607.81	9.60	11.30	41.87	496.26	-115.17	411.99	392.61	19.38	21.259		
2,800.00	2,794.12	2,754.27	2,704.39	9.97	11.76	42.06	516.81	-120.48	426.85	406.72	20.13	21.204		
2,900.00	2,893.76	2,853.15	2,800.96	10.35	12.22	42.25	537.35	-125.79	441.71	420.82	20.88	21.153		
3,000.00	2,993.40	2,952.03	2,897.54	10.72	12.68	42.42	557.89	-131.10	456.57	434.94	21.63	21.104		
3,100.00	3,093.04	3,050.91	2,994.12	11.10	13.15	42.58	578.43	-136.41	471.44	449.05	22.39	21.059		
3,200.00	3,192.68	3,149.79	3,090.69	11.47	13.61	42.73	598.97	-141.72	486.31	463.17	23.14	21.016		
3,300.00	3,292.32	3,248.67	3,187.27	11.85	14.07	42.87	619.51	-147.03	501.18	477.29	23.89	20.975		
3,400.00	3,391.96	3,347.55	3,283.85	12.22	14.53	43.00	640.06	-152.34	516.06	491.41	24.65	20.937		
3,500.00	3,491.60	3,446.43	3,380.43	12.60	15.00	43.12	660.60	-157.65	530.94	505.54	25.40	20.900		
3,600.00	3,591.24	3,545.31	3,477.00	12.97	15.46	43.24	681.14	-162.96	545.82	519.66	26.16	20.866		
3,700.00	3,690.88	3,644.19	3,573.58	13.35	15.92	43.36	701.68	-168.27	560.71	533.79	26.91	20.833		
3,800.00	3,790.52	3,743.07	3,670.16	13.72	16.39	43.46	722.22	-173.58	575.59	547.92	27.67	20.802		
3,900.00	3,890.16	3,841.95	3,766.73	14.10	16.85	43.56	742.76	-178.89	590.48	562.05	28.43	20.772		
4,000.00	3,989.80	3,940.83	3,863.31	14.47	17.31	43.66	763.31	-184.20	605.37	576.19	29.18	20.744		
4,100.00	4,089.45	4,039.71	3,959.89	14.85	17.77	43.75	783.85	-189.51	620.26	590.32	29.94	20.717		
4,200.00	4,189.09	4,138.59	4,056.47	15.22	18.24	43.84	804.39	-194.82	635.15	604.46	30.70	20.691		
4,300.00	4,288.73	4,237.47	4,153.04	15.60	18.70	43.92	824.93	-200.13	650.05	618.59	31.45	20.666		
4,400.00	4,388.37	4,336.35	4,249.62	15.97	19.16	44.00	845.47	-205.44	664.94	632.73	32.21	20.643		
4,500.00	4,488.01	4,435.23	4,346.20	16.35	19.63	44.08	866.01	-210.75	679.84	646.87	32.97	20.620		
4,600.00	4,587.65	4,534.11	4,442.77	16.73	20.09	44.15	886.56	-216.06	694.74	661.01	33.73	20.599		
4,700.00	4,687.29	4,632.99	4,539.35	17.10	20.55	44.22	907.10	-221.37	709.64	675.15	34.49	20.578		
4,800.00	4,786.93	4,731.87	4,635.93	17.48	21.02	44.29	927.64	-226.68	724.54	689.29	35.24	20.558		
4,900.00	4,886.57	4,830.75	4,732.51	17.85	21.48	44.35	948.18	-231.99	739.44	703.43	36.00	20.539		
5,000.00	4,986.21	4,929.63	4,829.08	18.23	21.94	44.41	968.72	-237.30	754.34	717.58	36.76	20.520		

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 3F-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 3F-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
5,100.00	5,085.85	5,028.51	4,925.66	18.61	22.41	44.47	989.27	-242.61	769.24	731.72	37.52	20.503	
5,200.00	5,185.49	5,127.39	5,022.24	18.98	22.87	44.53	1,009.81	-247.92	784.14	745.87	38.28	20.486	
5,300.00	5,285.14	5,226.27	5,118.81	19.36	23.33	44.58	1,030.35	-253.23	799.05	760.01	39.04	20.469	
5,400.00	5,384.78	5,325.15	5,215.39	19.73	23.80	44.64	1,050.89	-258.54	813.95	774.16	39.80	20.453	
5,500.00	5,484.42	5,424.03	5,311.97	20.11	24.26	44.69	1,071.43	-263.85	828.86	788.30	40.56	20.438	
5,600.00	5,584.06	5,522.91	5,408.55	20.49	24.72	44.74	1,091.97	-269.16	843.76	802.45	41.31	20.423	
5,700.00	5,683.70	5,621.79	5,505.12	20.86	25.19	44.78	1,112.52	-274.47	858.67	816.60	42.07	20.409	
5,773.96	5,757.40	5,694.93	5,576.55	21.14	25.53	44.82	1,127.71	-278.40	869.70	827.06	42.64	20.398	
5,800.00	5,783.35	5,727.70	5,608.59	21.24	25.68	44.88	1,134.42	-280.13	873.59	830.70	42.89	20.369	
5,900.00	5,883.17	5,868.80	5,747.30	21.61	26.30	45.04	1,159.32	-286.57	887.20	843.30	43.90	20.208	
6,000.00	5,983.14	6,011.16	5,888.38	21.96	26.86	45.05	1,177.71	-291.32	898.51	853.71	44.79	20.058	
6,016.86	6,000.00	6,035.27	5,912.35	22.02	26.95	-0.29	1,180.15	-291.95	900.18	855.25	44.93	20.035	
6,100.00	6,083.14	6,154.67	6,031.37	22.30	27.36	-0.43	1,189.36	-294.34	906.61	861.05	45.56	19.901	
6,200.00	6,183.14	6,299.03	6,175.63	22.65	27.81	-0.51	1,194.07	-295.55	909.88	863.68	46.20	19.694	
6,300.00	6,283.14	6,406.54	6,283.14	22.99	28.11	-0.51	1,194.17	-295.58	909.95	863.09	46.86	19.420	
6,400.00	6,383.14	6,506.54	6,383.14	23.33	28.39	-0.51	1,194.17	-295.58	909.95	862.42	47.53	19.145	
6,500.00	6,483.14	6,606.54	6,483.14	23.68	28.67	-0.51	1,194.17	-295.58	909.95	861.74	48.21	18.876	
6,600.00	6,583.14	6,706.54	6,583.14	24.02	28.95	-0.51	1,194.17	-295.58	909.95	861.06	48.88	18.615	
6,700.00	6,683.14	6,806.54	6,683.14	24.37	29.24	-0.51	1,194.17	-295.58	909.95	860.39	49.56	18.360	
6,710.66	6,693.80	6,817.20	6,693.80	24.41	29.27	-0.51	1,194.17	-295.58	909.95	860.31	49.63	18.334	
6,711.41	6,694.56	6,817.96	6,694.55	24.41	29.27	-89.93	1,194.17	-295.58	909.95	860.31	49.64	18.332	
6,750.00	6,733.12	6,856.48	6,733.06	24.54	29.38	-89.93	1,194.18	-294.50	909.95	860.06	49.89	18.240	
6,800.00	6,782.91	6,906.40	6,782.77	24.69	29.51	-89.93	1,194.23	-290.03	909.95	859.75	50.19	18.129	
6,850.00	6,832.26	6,956.32	6,832.04	24.84	29.64	-89.93	1,194.31	-282.11	909.95	859.45	50.49	18.022	
6,900.00	6,880.94	7,006.24	6,880.65	24.99	29.76	-89.93	1,194.42	-270.78	909.95	859.16	50.78	17.918	
6,950.00	6,928.71	7,056.16	6,928.35	25.13	29.87	-89.93	1,194.57	-256.08	909.95	858.88	51.07	17.818	
7,000.00	6,975.33	7,106.09	6,974.92	25.26	29.98	-89.93	1,194.75	-238.11	909.95	858.59	51.35	17.720	
7,050.00	7,020.59	7,156.01	7,020.12	25.39	30.07	-89.94	1,194.97	-216.93	909.95	858.31	51.64	17.621	
7,100.00	7,064.25	7,205.94	7,063.73	25.53	30.17	-89.94	1,195.22	-192.65	909.95	858.01	51.94	17.520	
7,150.00	7,106.10	7,255.88	7,105.56	25.67	30.25	-89.94	1,195.49	-165.39	909.95	857.69	52.26	17.413	
7,200.00	7,145.95	7,305.81	7,145.38	25.82	30.32	-89.94	1,195.80	-135.28	909.95	857.34	52.61	17.297	
7,250.00	7,183.59	7,355.75	7,183.01	26.00	30.39	-89.95	1,196.13	-102.47	909.95	856.94	53.01	17.167	
7,300.00	7,218.85	7,405.69	7,218.27	26.21	30.45	-89.95	1,196.49	-67.11	909.95	856.48	53.46	17.019	
7,350.00	7,251.55	7,455.64	7,250.98	26.46	30.50	-89.95	1,196.88	-29.38	909.95	855.94	54.00	16.850	
7,400.00	7,281.53	7,505.59	7,280.99	26.77	30.55	-89.96	1,197.28	10.54	909.95	855.31	54.63	16.655	
7,450.00	7,308.65	7,555.55	7,308.14	27.14	30.59	-89.96	1,197.71	52.46	909.95	854.57	55.38	16.432	
7,500.00	7,332.77	7,605.51	7,332.30	27.58	30.62	-89.97	1,198.15	96.17	909.95	853.71	56.24	16.180	
7,550.00	7,353.78	7,655.48	7,353.37	28.08	30.65	-89.97	1,198.61	141.47	909.95	852.71	57.24	15.898	
7,600.00	7,371.58	7,705.45	7,371.22	28.66	30.67	-89.98	1,199.09	188.13	909.95	851.57	58.37	15.589	
7,650.00	7,386.07	7,755.42	7,385.78	29.31	30.73	-89.98	1,199.57	235.92	909.95	850.30	59.65	15.256	
7,674.78	7,392.01	7,780.20	7,391.75	29.66	30.83	-89.98	1,199.82	259.96	909.95	849.61	60.34	15.080	
7,700.00	7,397.19	7,805.40	7,396.97	30.02	31.08	-89.99	1,200.07	284.62	909.95	848.89	61.05	14.904	
7,750.00	7,404.88	7,855.39	7,404.75	30.80	31.79	-89.99	1,200.57	333.99	909.95	847.36	62.59	14.539	
7,800.00	7,409.11	7,905.39	7,409.05	31.63	32.60	-90.00	1,201.07	383.78	909.95	845.71	64.23	14.166	
7,835.66	7,410.00	7,941.05	7,410.00	32.26	33.21	-90.00	1,201.44	419.42	909.95	844.48	65.46	13.900	
7,900.00	7,410.00	8,005.38	7,410.00	33.45	34.38	-90.00	1,202.09	483.76	909.95	842.13	67.82	13.418	
8,000.00	7,410.00	8,105.38	7,410.00	35.45	36.36	-90.00	1,203.11	583.75	909.95	838.16	71.78	12.676	
8,100.00	7,410.00	8,205.38	7,410.00	37.63	38.49	-90.00	1,204.12	683.75	909.95	833.86	76.09	11.959	
8,200.00	7,410.00	8,305.38	7,410.00	39.94	40.77	-90.00	1,205.14	783.74	909.95	829.28	80.67	11.280	
8,300.00	7,410.00	8,405.38	7,410.00	42.37	43.17	-90.00	1,206.16	883.74	909.95	824.46	85.49	10.644	
8,400.00	7,410.00	8,505.38	7,410.00	44.90	45.66	-90.00	1,207.17	983.73	909.95	819.44	90.51	10.054	
8,500.00	7,410.00	8,605.38	7,410.00	47.51	48.24	-90.00	1,208.19	1,083.73	909.95	814.26	95.69	9.509	

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 3F-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 3F-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
8,600.00	7,410.00	8,705.38	7,410.00	50.19	50.89	-90.00	1,209.20	1,183.72	909.95	808.93		101.02	9.008
8,700.00	7,410.00	8,805.38	7,410.00	52.93	53.60	-90.00	1,210.22	1,283.72	909.95	803.49		106.46	8.547
8,800.00	7,410.00	8,905.38	7,410.00	55.71	56.36	-90.00	1,211.24	1,383.71	909.95	797.94		112.01	8.124
8,900.00	7,410.00	9,005.38	7,410.00	58.54	59.16	-90.00	1,212.25	1,483.71	909.95	792.30		117.64	7.735
9,000.00	7,410.00	9,105.38	7,410.00	61.41	62.01	-90.00	1,213.27	1,583.70	909.95	786.59		123.36	7.377
9,100.00	7,410.00	9,205.38	7,410.00	64.31	64.89	-90.00	1,214.29	1,683.70	909.95	780.81		129.13	7.047
9,200.00	7,410.00	9,305.38	7,410.00	67.24	67.79	-90.00	1,215.30	1,783.69	909.95	774.98		134.97	6.742
9,300.00	7,410.00	9,405.38	7,410.00	70.19	70.73	-90.00	1,216.32	1,883.69	909.95	769.09		140.85	6.460
9,400.00	7,410.00	9,505.38	7,410.00	73.16	73.68	-90.00	1,217.33	1,983.68	909.95	763.17		146.78	6.199
9,500.00	7,410.00	9,605.38	7,410.00	76.15	76.66	-90.00	1,218.35	2,083.68	909.95	757.20		152.75	5.957
9,600.00	7,410.00	9,705.38	7,410.00	79.16	79.65	-90.00	1,219.37	2,183.67	909.95	751.19		158.75	5.732
9,700.00	7,410.00	9,805.38	7,410.00	82.19	82.66	-90.00	1,220.38	2,283.67	909.95	745.16		164.79	5.522
9,800.00	7,410.00	9,905.38	7,410.00	85.22	85.68	-90.00	1,221.40	2,383.66	909.95	739.10		170.85	5.326
9,900.00	7,410.00	10,005.38	7,410.00	88.27	88.72	-90.00	1,222.41	2,483.66	909.95	733.01		176.93	5.143
10,000.00	7,410.00	10,105.38	7,410.00	91.33	91.77	-90.00	1,223.43	2,583.65	909.95	726.90		183.04	4.971
10,100.00	7,410.00	10,205.38	7,410.00	94.40	94.82	-90.00	1,224.45	2,683.65	909.95	720.78		189.17	4.810
10,200.00	7,410.00	10,305.38	7,410.00	97.48	97.89	-90.00	1,225.46	2,783.64	909.95	714.63		195.32	4.659
10,300.00	7,410.00	10,405.38	7,410.00	100.57	100.97	-90.00	1,226.48	2,883.63	909.95	708.47		201.48	4.516
10,400.00	7,410.00	10,505.38	7,410.00	103.66	104.05	-90.00	1,227.50	2,983.63	909.95	702.29		207.66	4.382
10,500.00	7,410.00	10,605.38	7,410.00	106.76	107.14	-90.00	1,228.51	3,083.62	909.95	696.09		213.85	4.255
10,600.00	7,410.00	10,705.38	7,410.00	109.87	110.24	-90.00	1,229.53	3,183.62	909.95	689.89		220.06	4.135
10,700.00	7,410.00	10,805.38	7,410.00	112.98	113.35	-90.00	1,230.54	3,283.61	909.95	683.67		226.27	4.021
10,800.00	7,410.00	10,905.38	7,410.00	116.09	116.45	-90.00	1,231.56	3,383.61	909.95	677.45		232.50	3.914
10,900.00	7,410.00	11,005.38	7,410.00	119.22	119.57	-90.00	1,232.58	3,483.60	909.95	671.21		238.74	3.811
11,000.00	7,410.00	11,105.38	7,410.00	122.34	122.69	-90.00	1,233.59	3,583.60	909.95	664.96		244.99	3.714
11,100.00	7,410.00	11,205.38	7,410.00	125.47	125.81	-90.00	1,234.61	3,683.59	909.95	658.71		251.24	3.622
11,200.00	7,410.00	11,305.38	7,410.00	128.61	128.94	-90.00	1,235.63	3,783.59	909.95	652.45		257.50	3.534
11,300.00	7,410.00	11,405.38	7,410.00	131.74	132.07	-90.00	1,236.64	3,883.58	909.95	646.18		263.77	3.450
11,400.00	7,410.00	11,505.38	7,410.00	134.88	135.21	-90.00	1,237.66	3,983.58	909.95	639.90		270.05	3.370
11,500.00	7,410.00	11,605.38	7,410.00	138.03	138.34	-90.00	1,238.67	4,083.57	909.95	633.62		276.33	3.293
11,600.00	7,410.00	11,705.38	7,410.00	141.18	141.48	-90.00	1,239.69	4,183.57	909.95	627.33		282.62	3.220
11,700.00	7,410.00	11,805.38	7,410.00	144.32	144.63	-90.00	1,240.71	4,283.56	909.95	621.04		288.91	3.150
11,800.00	7,410.00	11,905.38	7,410.00	147.48	147.78	-90.00	1,241.72	4,383.56	909.95	614.74		295.21	3.082
11,909.47	7,410.00	12,014.85	7,410.00	150.93	151.22	-90.00	1,242.83	4,493.02	909.95	607.84		302.11	3.012 SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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						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	40.06	-0.07	40.06					
100.00	100.00	100.00	100.00	0.14	0.14	-0.09	40.06	-0.07	40.06	39.79	0.28	145.143		
200.00	200.00	200.00	200.00	0.50	0.50	-0.09	40.06	-0.07	40.06	39.07	0.99	40.347		
300.00	300.00	300.00	300.00	0.85	0.85	-0.09	40.06	-0.07	40.06	38.35	1.71	23.430 CC, ES		
400.00	400.00	398.63	398.62	1.21	1.21	-0.74	41.69	-0.54	41.72	39.27	2.45	17.032		
500.00	500.00	497.04	496.88	1.57	1.57	-2.39	46.57	-1.94	46.72	43.50	3.21	14.533		
600.00	600.00	594.97	594.45	1.93	1.93	-4.47	54.64	-4.27	55.09	51.10	3.98	13.828		
700.00	700.00	692.23	691.00	2.29	2.28	-6.50	65.82	-7.50	66.85	62.10	4.75	14.078		
800.00	800.00	788.58	786.21	2.65	2.66	-8.25	79.99	-11.59	82.00	76.49	5.50	14.896		
900.00	900.00	883.82	879.79	3.01	3.04	-9.66	97.02	-16.51	100.47	94.22	6.25	16.082		
1,000.00	1,000.00	981.66	975.59	3.36	3.46	-10.74	116.12	-22.02	120.68	113.76	6.92	17.442		
1,100.00	1,099.98	1,079.86	1,071.74	3.72	3.88	34.00	135.28	-27.56	139.50	131.90	7.60	18.346		
1,200.00	1,199.84	1,178.57	1,168.39	4.08	4.31	34.27	154.55	-33.12	155.48	147.18	8.29	18.744		
1,242.90	1,242.60	1,221.03	1,209.97	4.23	4.49	34.58	162.83	-35.51	161.47	152.87	8.59	18.788		
1,300.00	1,299.50	1,277.60	1,265.36	4.44	4.74	35.13	173.88	-38.70	169.10	160.10	9.00	18.790		
1,400.00	1,399.14	1,376.67	1,362.36	4.80	5.18	35.98	193.21	-44.28	182.50	172.78	9.72	18.783		
1,500.00	1,498.79	1,475.73	1,459.35	5.16	5.62	36.72	212.55	-49.86	195.93	185.49	10.44	18.770		
1,600.00	1,598.43	1,574.79	1,556.35	5.52	6.07	37.36	231.88	-55.44	209.39	198.22	11.16	18.754		
1,700.00	1,698.07	1,673.86	1,653.35	5.89	6.51	37.93	251.22	-61.02	222.87	210.98	11.90	18.736		
1,800.00	1,797.71	1,772.92	1,750.35	6.26	6.96	38.42	270.55	-66.61	236.37	223.74	12.63	18.716		
1,900.00	1,897.35	1,871.99	1,847.35	6.63	7.41	38.87	289.89	-72.19	249.89	236.52	13.37	18.696		
2,000.00	1,996.99	1,971.05	1,944.35	7.00	7.86	39.27	309.22	-77.77	263.42	249.31	14.10	18.676		
2,100.00	2,096.63	2,070.12	2,041.35	7.37	8.30	39.63	328.56	-83.35	276.96	262.12	14.85	18.656		
2,200.00	2,196.27	2,169.18	2,138.35	7.74	8.75	39.96	347.89	-88.93	290.51	274.92	15.59	18.636		
2,300.00	2,295.91	2,268.25	2,235.35	8.11	9.20	40.26	367.23	-94.52	304.07	287.74	16.33	18.618		
2,400.00	2,395.55	2,367.31	2,332.34	8.48	9.65	40.53	386.56	-100.10	317.64	300.56	17.08	18.599		
2,500.00	2,495.19	2,466.37	2,429.34	8.85	10.11	40.78	405.90	-105.68	331.21	313.39	17.82	18.582		
2,600.00	2,594.83	2,565.44	2,526.34	9.23	10.56	41.01	425.23	-111.26	344.79	326.22	18.57	18.565		
2,700.00	2,694.47	2,664.50	2,623.34	9.60	11.01	41.22	444.57	-116.84	358.38	339.06	19.32	18.549		
2,800.00	2,794.12	2,763.57	2,720.34	9.97	11.46	41.42	463.90	-122.43	371.97	351.90	20.07	18.533		
2,900.00	2,893.76	2,862.63	2,817.34	10.35	11.91	41.60	483.24	-128.01	385.56	364.74	20.82	18.518		
3,000.00	2,993.40	2,961.70	2,914.34	10.72	12.36	41.77	502.57	-133.59	399.16	377.59	21.57	18.504		
3,100.00	3,093.04	3,060.76	3,011.34	11.10	12.82	41.93	521.91	-139.17	412.76	390.44	22.32	18.491		
3,200.00	3,192.68	3,159.83	3,108.33	11.47	13.27	42.08	541.24	-144.75	426.36	403.29	23.07	18.478		
3,300.00	3,292.32	3,258.89	3,205.33	11.85	13.72	42.22	560.58	-150.34	439.97	416.14	23.83	18.465		
3,400.00	3,391.96	3,357.96	3,302.33	12.22	14.17	42.36	579.91	-155.92	453.58	429.00	24.58	18.453		
3,500.00	3,491.60	3,457.02	3,399.33	12.60	14.63	42.48	599.25	-161.50	467.19	441.85	25.33	18.442		
3,600.00	3,591.24	3,556.08	3,496.33	12.97	15.08	42.60	618.58	-167.08	480.80	454.71	26.09	18.431		
3,700.00	3,690.88	3,655.15	3,593.33	13.35	15.53	42.71	637.92	-172.66	494.41	467.57	26.84	18.420		
3,800.00	3,790.52	3,754.21	3,690.33	13.72	15.99	42.81	657.25	-178.24	508.03	480.43	27.59	18.410		
3,900.00	3,890.16	3,853.28	3,787.33	14.10	16.44	42.91	676.59	-183.83	521.65	493.30	28.35	18.401		
4,000.00	3,989.80	3,952.34	3,884.33	14.47	16.89	43.01	695.92	-189.41	535.27	506.16	29.10	18.391		
4,100.00	4,089.45	4,051.41	3,981.32	14.85	17.35	43.10	715.26	-194.99	548.89	519.03	29.86	18.383		
4,200.00	4,189.09	4,150.47	4,078.32	15.22	17.80	43.18	734.59	-200.57	562.51	531.89	30.61	18.374		
4,300.00	4,288.73	4,249.54	4,175.32	15.60	18.25	43.26	753.93	-206.15	576.13	544.76	31.37	18.366		
4,400.00	4,388.37	4,348.60	4,272.32	15.97	18.71	43.34	773.26	-211.74	589.75	557.63	32.13	18.358		
4,500.00	4,488.01	4,447.67	4,369.32	16.35	19.16	43.41	792.60	-217.32	603.38	570.50	32.88	18.350		
4,600.00	4,587.65	4,546.73	4,466.32	16.73	19.61	43.48	811.93	-222.90	617.01	583.37	33.64	18.343		
4,700.00	4,687.29	4,645.79	4,563.32	17.10	20.07	43.55	831.27	-228.48	630.63	596.24	34.39	18.336		
4,800.00	4,786.93	4,744.86	4,660.32	17.48	20.52	43.62	850.60	-234.06	644.26	609.11	35.15	18.329		
4,900.00	4,886.57	4,843.92	4,757.32	17.85	20.97	43.68	869.94	-239.65	657.89	621.98	35.91	18.322		
5,000.00	4,986.21	4,942.99	4,854.31	18.23	21.43	43.74	889.27	-245.23	671.52	634.85	36.66	18.316		

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 3F-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 3F-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
5,100.00	5,085.85	5,042.05	4,951.31	18.61	21.88	43.80	908.61	-250.81	685.15	647.73	37.42	18.310	
5,200.00	5,185.49	5,141.12	5,048.31	18.98	22.34	43.85	927.94	-256.39	698.78	660.60	38.18	18.304	
5,300.00	5,285.14	5,240.18	5,145.31	19.36	22.79	43.90	947.28	-261.97	712.41	673.47	38.93	18.298	
5,400.00	5,384.78	5,339.25	5,242.31	19.73	23.24	43.95	966.61	-267.56	726.04	686.35	39.69	18.292	
5,500.00	5,484.42	5,438.31	5,339.31	20.11	23.70	44.00	985.95	-273.14	739.67	699.22	40.45	18.287	
5,600.00	5,584.06	5,543.73	5,442.55	20.49	24.18	44.06	1,006.42	-279.05	753.23	711.97	41.26	18.257	
5,700.00	5,683.70	5,677.30	5,574.13	20.86	24.75	44.20	1,028.45	-285.41	763.79	721.56	42.24	18.084	
5,773.96	5,757.40	5,776.74	5,672.70	21.14	25.15	44.39	1,041.01	-289.03	768.72	725.82	42.90	17.918	
5,800.00	5,783.35	5,811.82	5,707.58	21.24	25.28	44.47	1,044.66	-290.09	769.95	726.83	43.12	17.855	
5,900.00	5,883.17	5,946.79	5,842.11	21.61	25.75	44.72	1,054.85	-293.03	773.39	729.49	43.90	17.618	
6,000.00	5,983.14	6,081.96	5,977.20	21.96	26.17	44.82	1,058.95	-294.21	774.77	730.22	44.55	17.389	
6,016.86	6,000.00	6,104.76	6,000.00	22.02	26.24	-0.50	1,059.03	-294.24	774.80	730.15	44.65	17.351	
6,100.00	6,083.14	6,187.90	6,083.14	22.30	26.48	-0.50	1,059.03	-294.24	774.80	729.59	45.22	17.136	
6,200.00	6,183.14	6,287.90	6,183.14	22.65	26.77	-0.50	1,059.03	-294.24	774.80	728.91	45.89	16.883	
6,300.00	6,283.14	6,387.90	6,283.14	22.99	27.05	-0.50	1,059.03	-294.24	774.80	728.23	46.57	16.637	
6,400.00	6,383.14	6,487.90	6,383.14	23.33	27.35	-0.50	1,059.03	-294.24	774.80	727.55	47.25	16.398	
6,500.00	6,483.14	6,587.90	6,483.14	23.68	27.64	-0.50	1,059.03	-294.24	774.80	726.87	47.93	16.165	
6,600.00	6,583.14	6,687.90	6,583.14	24.02	27.93	-0.50	1,059.03	-294.24	774.80	726.19	48.61	15.938	
6,700.00	6,683.14	6,787.90	6,683.14	24.37	28.23	-0.50	1,059.03	-294.24	774.80	725.51	49.29	15.718	
6,710.66	6,693.80	6,798.56	6,693.80	24.41	28.26	-0.50	1,059.03	-294.24	774.80	725.43	49.37	15.695	
6,750.00	6,733.12	6,837.88	6,733.12	24.54	28.38	-90.00	1,059.03	-294.24	774.80	725.17	49.63	15.613	
6,750.85	6,733.97	6,838.73	6,733.97	24.54	28.38	-90.00	1,059.03	-294.24	774.80	725.17	49.63	15.611	
6,800.00	6,782.91	6,887.67	6,782.91	24.69	28.53	-90.33	1,059.03	-294.24	774.81	724.88	49.94	15.516	
6,850.00	6,832.26	6,937.02	6,832.26	24.84	28.67	-90.90	1,059.03	-294.24	774.90	724.67	50.23	15.428	
6,900.00	6,880.94	6,986.29	6,881.53	24.99	28.82	-91.69	1,059.03	-294.02	775.16	724.66	50.50	15.349	
6,950.00	6,928.71	7,036.95	6,932.09	25.13	28.96	-92.54	1,059.07	-290.97	775.61	724.85	50.76	15.281	
7,000.00	6,975.33	7,088.52	6,983.20	25.26	29.10	-93.39	1,059.13	-284.21	776.24	725.24	51.00	15.222	
7,050.00	7,020.59	7,141.03	7,034.61	25.39	29.23	-94.22	1,059.24	-273.57	777.03	725.80	51.23	15.168	
7,100.00	7,064.25	7,194.53	7,086.04	25.53	29.36	-95.05	1,059.39	-258.89	777.98	726.53	51.45	15.120	
7,150.00	7,106.10	7,249.04	7,137.17	25.67	29.49	-95.85	1,059.58	-240.02	779.06	727.39	51.68	15.076	
7,200.00	7,145.95	7,304.59	7,187.64	25.82	29.60	-96.63	1,059.82	-216.84	780.27	728.36	51.90	15.033	
7,250.00	7,183.59	7,361.20	7,237.07	26.00	29.71	-97.39	1,060.10	-189.28	781.57	729.42	52.15	14.987	
7,300.00	7,218.85	7,418.88	7,285.03	26.21	29.81	-98.11	1,060.42	-157.28	782.93	730.51	52.42	14.935	
7,350.00	7,251.55	7,477.61	7,331.06	26.46	29.90	-98.79	1,060.79	-120.83	784.33	731.59	52.74	14.871	
7,400.00	7,281.53	7,537.38	7,374.68	26.77	29.98	-99.43	1,061.21	-79.99	785.73	732.60	53.13	14.789	
7,450.00	7,308.65	7,598.17	7,415.39	27.14	30.06	-100.03	1,061.67	-34.88	787.10	733.49	53.61	14.682	
7,500.00	7,332.77	7,659.91	7,452.68	27.58	30.12	-100.56	1,062.17	14.31	788.41	734.19	54.22	14.541	
7,550.00	7,353.78	7,722.54	7,486.03	28.08	30.18	-101.04	1,062.71	67.29	789.61	734.63	54.98	14.361	
7,600.00	7,371.58	7,785.96	7,514.96	28.66	30.23	-101.45	1,063.28	123.71	790.69	734.77	55.92	14.139	
7,650.00	7,386.07	7,850.09	7,539.01	29.31	30.35	-101.79	1,063.88	183.13	791.60	734.55	57.05	13.875	
7,700.00	7,397.19	7,914.78	7,557.80	30.02	30.82	-102.05	1,064.51	245.01	792.33	733.92	58.41	13.564	
7,750.00	7,404.88	7,979.92	7,571.00	30.80	31.69	-102.24	1,065.16	308.76	792.86	732.88	59.98	13.219	
7,800.00	7,409.11	8,045.34	7,578.38	31.63	32.70	-102.35	1,065.82	373.74	793.16	731.42	61.73	12.848	
7,835.66	7,410.00	8,092.08	7,580.00	32.26	33.49	-102.38	1,066.30	420.45	793.23	730.13	63.10	12.571	
7,900.00	7,410.00	8,156.77	7,580.00	33.45	34.67	-102.38	1,066.95	485.13	793.23	727.81	65.42	12.124	
8,000.00	7,410.00	8,256.77	7,580.00	35.45	36.62	-102.38	1,067.97	585.13	793.23	723.92	69.31	11.445	
8,100.00	7,410.00	8,356.77	7,580.00	37.63	38.75	-102.38	1,068.99	685.12	793.23	719.71	73.52	10.789	
8,200.00	7,410.00	8,456.77	7,580.00	39.94	41.01	-102.38	1,070.00	785.12	793.23	715.22	78.01	10.168	
8,300.00	7,410.00	8,556.77	7,580.00	42.37	43.39	-102.38	1,071.02	885.11	793.23	710.50	82.73	9.588	
8,400.00	7,410.00	8,656.77	7,580.00	44.90	45.87	-102.38	1,072.03	985.11	793.23	705.58	87.65	9.050	
8,500.00	7,410.00	8,756.77	7,580.00	47.51	48.43	-102.38	1,073.05	1,085.10	793.23	700.50	92.73	8.554	
8,600.00	7,410.00	8,856.77	7,580.00	50.19	51.07	-102.38	1,074.07	1,185.10	793.23	695.28	97.95	8.098	

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 3F-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 3F-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							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	7,410.00	8,956.77	7,580.00	52.93	53.77	-102.38	1,075.08	1,285.09	793.23	689.95	103.29	7.680		
8,800.00	7,410.00	9,056.77	7,580.00	55.71	56.52	-102.38	1,076.10	1,385.09	793.23	684.51	108.72	7.296		
8,900.00	7,410.00	9,156.77	7,580.00	58.54	59.32	-102.38	1,077.11	1,485.08	793.23	678.99	114.24	6.943		
9,000.00	7,410.00	9,256.77	7,580.00	61.41	62.15	-102.38	1,078.13	1,585.08	793.23	673.39	119.84	6.619		
9,100.00	7,410.00	9,356.77	7,580.00	64.31	65.02	-102.38	1,079.15	1,685.07	793.23	667.74	125.50	6.321		
9,200.00	7,410.00	9,456.77	7,580.00	67.24	67.92	-102.38	1,080.16	1,785.07	793.23	662.02	131.21	6.045		
9,300.00	7,410.00	9,556.77	7,580.00	70.19	70.85	-102.38	1,081.18	1,885.06	793.23	656.26	136.98	5.791		
9,400.00	7,410.00	9,656.77	7,580.00	73.16	73.80	-102.38	1,082.20	1,985.05	793.23	650.45	142.78	5.556		
9,500.00	7,410.00	9,756.77	7,580.00	76.15	76.77	-102.38	1,083.21	2,085.05	793.23	644.61	148.63	5.337		
9,600.00	7,410.00	9,856.77	7,580.00	79.16	79.76	-102.38	1,084.23	2,185.04	793.23	638.73	154.50	5.134		
9,700.00	7,410.00	9,956.77	7,580.00	82.19	82.77	-102.38	1,085.24	2,285.04	793.23	632.82	160.41	4.945		
9,800.00	7,410.00	10,056.77	7,580.00	85.22	85.79	-102.38	1,086.26	2,385.03	793.23	626.89	166.34	4.769		
9,900.00	7,410.00	10,156.77	7,580.00	88.27	88.82	-102.38	1,087.28	2,485.03	793.23	620.93	172.30	4.604		
10,000.00	7,410.00	10,256.77	7,580.00	91.33	91.86	-102.38	1,088.29	2,585.02	793.23	614.95	178.28	4.449		
10,100.00	7,410.00	10,356.77	7,580.00	94.40	94.92	-102.38	1,089.31	2,685.02	793.23	608.95	184.28	4.304		
10,200.00	7,410.00	10,456.77	7,580.00	97.48	97.98	-102.38	1,090.33	2,785.01	793.23	602.94	190.30	4.168		
10,300.00	7,410.00	10,556.77	7,580.00	100.57	101.06	-102.38	1,091.34	2,885.01	793.23	596.90	196.33	4.040		
10,400.00	7,410.00	10,656.77	7,580.00	103.66	104.14	-102.38	1,092.36	2,985.00	793.23	590.86	202.38	3.920		
10,500.00	7,410.00	10,756.77	7,580.00	106.76	107.23	-102.38	1,093.37	3,085.00	793.23	584.80	208.44	3.806		
10,600.00	7,410.00	10,856.77	7,580.00	109.87	110.32	-102.38	1,094.39	3,184.99	793.23	578.73	214.51	3.698		
10,700.00	7,410.00	10,956.77	7,580.00	112.98	113.42	-102.38	1,095.41	3,284.99	793.23	572.64	220.59	3.596		
10,800.00	7,410.00	11,056.77	7,580.00	116.09	116.53	-102.38	1,096.42	3,384.98	793.23	566.55	226.68	3.499		
10,900.00	7,410.00	11,156.77	7,580.00	119.22	119.64	-102.38	1,097.44	3,484.98	793.23	560.45	232.79	3.408		
11,000.00	7,410.00	11,256.77	7,580.00	122.34	122.76	-102.38	1,098.45	3,584.97	793.23	554.33	238.90	3.320		
11,100.00	7,410.00	11,356.77	7,580.00	125.47	125.88	-102.38	1,099.47	3,684.97	793.23	548.22	245.02	3.237		
11,200.00	7,410.00	11,456.77	7,580.00	128.61	129.01	-102.38	1,100.49	3,784.96	793.23	542.09	251.15	3.158		
11,300.00	7,410.00	11,556.77	7,580.00	131.74	132.14	-102.38	1,101.50	3,884.96	793.23	535.95	257.28	3.083		
11,400.00	7,410.00	11,656.77	7,580.00	134.88	135.27	-102.38	1,102.52	3,984.95	793.23	529.81	263.42	3.011		
11,500.00	7,410.00	11,756.77	7,580.00	138.03	138.41	-102.38	1,103.54	4,084.95	793.23	523.67	269.57	2.943		
11,600.00	7,410.00	11,856.77	7,580.00	141.18	141.55	-102.38	1,104.55	4,184.94	793.23	517.52	275.72	2.877		
11,700.00	7,410.00	11,956.77	7,580.00	144.32	144.69	-102.38	1,105.57	4,284.94	793.23	511.36	281.88	2.814		
11,800.00	7,410.00	12,056.77	7,580.00	147.48	147.84	-102.38	1,106.58	4,384.93	793.23	505.20	288.04	2.754		
11,909.47	7,410.00	12,166.24	7,580.00	150.93	151.28	-102.38	1,107.70	4,494.40	793.23	498.45	294.79	2.691 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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							
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	30.24	0.02	30.24					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	30.24	0.02	30.24	29.96	0.28	109.542		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	30.24	0.02	30.24	29.24	0.99	30.450		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	30.24	0.02	30.24	28.53	1.71	17.683		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	30.24	0.02	30.24	27.81	2.43	12.459 CC, ES		
500.00	500.00	498.97	498.95	1.57	1.57	-0.90	31.86	-0.50	31.89	28.73	3.16	10.091		
600.00	600.00	597.70	597.54	1.93	1.93	-3.20	36.73	-2.06	36.87	32.96	3.91	9.422		
700.00	700.00	695.96	695.43	2.29	2.28	-5.90	44.79	-4.63	45.26	40.58	4.67	9.687		
800.00	800.00	793.53	792.29	2.65	2.64	-8.33	55.94	-8.19	57.06	51.64	5.43	10.515		
900.00	900.00	890.18	887.80	3.01	3.01	-10.28	70.09	-12.71	72.27	66.10	6.17	11.709		
1,000.00	1,000.00	987.18	983.15	3.36	3.40	-11.76	86.99	-18.11	90.44	83.56	6.88	13.145		
1,100.00	1,099.98	1,085.68	1,079.91	3.72	3.80	32.86	104.56	-23.73	107.64	100.08	7.56	14.230		
1,200.00	1,199.84	1,184.64	1,177.12	4.08	4.22	33.22	122.22	-29.37	121.96	113.70	8.26	14.770		
1,242.90	1,242.60	1,227.20	1,218.92	4.23	4.40	33.62	129.81	-31.80	127.22	118.66	8.56	14.867		
1,300.00	1,299.50	1,283.89	1,274.61	4.44	4.64	34.27	139.92	-35.03	133.88	124.92	8.96	14.938		
1,400.00	1,399.14	1,383.17	1,372.14	4.80	5.06	35.27	157.64	-40.69	145.59	135.91	9.68	15.041		
1,500.00	1,498.79	1,482.46	1,469.67	5.16	5.49	36.12	175.35	-46.35	157.33	146.93	10.40	15.126		
1,600.00	1,598.43	1,581.74	1,567.19	5.52	5.91	36.86	193.06	-52.01	169.10	157.97	11.13	15.197		
1,700.00	1,698.07	1,681.02	1,664.72	5.89	6.35	37.49	210.78	-57.67	180.90	169.04	11.86	15.256		
1,800.00	1,797.71	1,780.31	1,762.24	6.26	6.78	38.05	228.49	-63.33	192.71	180.12	12.59	15.306		
1,900.00	1,897.35	1,879.59	1,859.77	6.63	7.21	38.55	246.20	-68.99	204.54	191.21	13.33	15.349		
2,000.00	1,996.99	1,978.87	1,957.30	7.00	7.64	38.99	263.91	-74.65	216.38	202.32	14.06	15.386		
2,100.00	2,096.63	2,078.16	2,054.82	7.37	8.08	39.38	281.63	-80.31	228.24	213.44	14.80	15.418		
2,200.00	2,196.27	2,177.44	2,152.35	7.74	8.51	39.74	299.34	-85.96	240.11	224.56	15.54	15.446		
2,300.00	2,295.91	2,276.72	2,249.88	8.11	8.95	40.06	317.05	-91.62	251.98	235.69	16.29	15.471		
2,400.00	2,395.55	2,376.01	2,347.40	8.48	9.39	40.36	334.77	-97.28	263.86	246.83	17.03	15.493		
2,500.00	2,495.19	2,475.29	2,444.93	8.85	9.82	40.62	352.48	-102.94	275.75	257.97	17.78	15.512		
2,600.00	2,594.83	2,574.57	2,542.45	9.23	10.26	40.87	370.19	-108.60	287.64	269.12	18.52	15.529		
2,700.00	2,694.47	2,673.85	2,639.98	9.60	10.70	41.10	387.90	-114.26	299.54	280.27	19.27	15.545		
2,800.00	2,794.12	2,773.14	2,737.51	9.97	11.14	41.31	405.62	-119.92	311.44	291.42	20.02	15.559		
2,900.00	2,893.76	2,872.42	2,835.03	10.35	11.58	41.50	423.33	-125.58	323.34	302.58	20.76	15.572		
3,000.00	2,993.40	2,971.70	2,932.56	10.72	12.01	41.68	441.04	-131.24	335.25	313.74	21.51	15.583		
3,100.00	3,093.04	3,070.99	3,030.09	11.10	12.45	41.85	458.76	-136.90	347.16	324.90	22.26	15.593		
3,200.00	3,192.68	3,170.27	3,127.61	11.47	12.89	42.00	476.47	-142.56	359.08	336.06	23.01	15.603		
3,300.00	3,292.32	3,269.55	3,225.14	11.85	13.33	42.15	494.18	-148.22	370.99	347.23	23.76	15.612		
3,400.00	3,391.96	3,368.84	3,322.66	12.22	13.77	42.29	511.89	-153.88	382.91	358.40	24.51	15.620		
3,500.00	3,491.60	3,468.12	3,420.19	12.60	14.21	42.42	529.61	-159.54	394.83	369.57	25.27	15.627		
3,600.00	3,591.24	3,567.40	3,517.72	12.97	14.65	42.54	547.32	-165.20	406.76	380.74	26.02	15.634		
3,700.00	3,690.88	3,666.69	3,615.24	13.35	15.09	42.65	565.03	-170.86	418.68	391.91	26.77	15.640		
3,800.00	3,790.52	3,765.97	3,712.77	13.72	15.53	42.76	582.75	-176.52	430.61	403.08	27.52	15.646		
3,900.00	3,890.16	3,865.25	3,810.29	14.10	15.97	42.86	600.46	-182.18	442.53	414.26	28.27	15.651		
4,000.00	3,989.80	3,964.53	3,907.82	14.47	16.41	42.96	618.17	-187.84	454.46	425.44	29.03	15.656		
4,100.00	4,089.45	4,063.82	4,005.35	14.85	16.85	43.05	635.88	-193.50	466.39	436.61	29.78	15.661		
4,200.00	4,189.09	4,163.10	4,102.87	15.22	17.29	43.14	653.60	-199.16	478.32	447.79	30.53	15.666		
4,300.00	4,288.73	4,262.38	4,200.40	15.60	17.73	43.22	671.31	-204.82	490.26	458.97	31.29	15.670		
4,400.00	4,388.37	4,361.67	4,297.93	15.97	18.17	43.30	689.02	-210.48	502.19	470.15	32.04	15.674		
4,500.00	4,488.01	4,460.95	4,395.45	16.35	18.61	43.38	706.74	-216.13	514.12	481.33	32.79	15.677		
4,600.00	4,587.65	4,560.23	4,492.98	16.73	19.05	43.45	724.45	-221.79	526.06	492.51	33.55	15.681		
4,700.00	4,687.29	4,659.52	4,590.50	17.10	19.49	43.52	742.16	-227.45	538.00	503.69	34.30	15.684		
4,800.00	4,786.93	4,758.80	4,688.03	17.48	19.93	43.59	759.87	-233.11	549.93	514.88	35.06	15.687		
4,900.00	4,886.57	4,858.08	4,785.56	17.85	20.37	43.65	777.59	-238.77	561.87	526.06	35.81	15.690		
5,000.00	4,986.21	4,957.37	4,883.08	18.23	20.81	43.71	795.30	-244.43	573.81	537.24	36.57	15.693		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,085.85	5,056.65	4,980.61	18.61	21.25	43.77	813.01	-250.09	585.75	548.43	37.32	15.695	
5,200.00	5,185.49	5,155.93	5,078.13	18.98	21.69	43.82	830.73	-255.75	597.68	559.61	38.07	15.698	
5,300.00	5,285.14	5,255.21	5,175.66	19.36	22.14	43.88	848.44	-261.41	609.62	570.79	38.83	15.700	
5,400.00	5,384.78	5,354.50	5,273.19	19.73	22.58	43.93	866.15	-267.07	621.56	581.98	39.58	15.702	
5,500.00	5,484.42	5,453.78	5,370.71	20.11	23.02	43.98	883.86	-272.73	633.51	593.17	40.34	15.704	
5,600.00	5,584.06	5,554.41	5,469.56	20.49	23.46	44.03	901.81	-278.46	645.44	604.33	41.11	15.702	
5,700.00	5,683.70	5,681.60	5,595.03	20.86	24.00	44.16	921.59	-284.79	655.06	613.01	42.05	15.577	
5,773.96	5,757.40	5,776.18	5,688.87	21.14	24.37	44.35	932.86	-288.38	659.45	616.75	42.70	15.443	
5,800.00	5,783.35	5,809.54	5,722.05	21.24	24.50	44.45	936.12	-289.43	660.53	617.61	42.92	15.390	
5,900.00	5,883.17	5,937.82	5,849.97	21.61	24.95	44.70	945.25	-292.34	663.53	619.84	43.69	15.188	
6,000.00	5,983.14	6,066.27	5,978.34	21.96	25.36	44.80	948.92	-293.52	664.74	620.39	44.35	14.989	
6,016.86	6,000.00	6,087.93	6,000.00	22.02	25.43	-0.52	949.00	-293.54	664.76	620.32	44.45	14.956	
6,100.00	6,083.14	6,171.07	6,083.14	22.30	25.67	-0.52	949.00	-293.54	664.76	619.75	45.01	14.768	
6,200.00	6,183.14	6,271.07	6,183.14	22.65	25.97	-0.52	949.00	-293.54	664.76	619.07	45.69	14.548	
6,300.00	6,283.14	6,371.07	6,283.14	22.99	26.27	-0.52	949.00	-293.54	664.76	618.39	46.38	14.334	
6,400.00	6,383.14	6,471.07	6,383.14	23.33	26.57	-0.52	949.00	-293.54	664.76	617.71	47.06	14.126	
6,500.00	6,483.14	6,571.07	6,483.14	23.68	26.87	-0.52	949.00	-293.54	664.76	617.02	47.74	13.924	
6,600.00	6,583.14	6,671.07	6,583.14	24.02	27.17	-0.52	949.00	-293.54	664.76	616.34	48.43	13.727	
6,607.30	6,590.44	6,678.37	6,590.44	24.05	27.20	-0.52	949.00	-293.54	664.76	616.29	48.48	13.713	
6,700.00	6,683.14	6,770.87	6,682.88	24.37	27.47	-0.31	949.02	-291.10	664.77	615.66	49.11	13.536	
6,710.66	6,693.80	6,781.43	6,693.40	24.41	27.50	-0.23	949.03	-290.15	664.78	615.59	49.18	13.516	
6,750.00	6,733.12	6,820.26	6,731.92	24.54	27.60	-89.32	949.08	-285.33	664.81	615.36	49.45	13.444	
6,800.00	6,782.91	6,869.32	6,780.12	24.69	27.73	-88.91	949.17	-276.27	664.89	615.11	49.78	13.357	
6,850.00	6,832.26	6,918.06	6,827.30	24.84	27.86	-88.50	949.30	-264.03	664.99	614.90	50.10	13.274	
6,900.00	6,880.94	6,966.51	6,873.25	24.99	27.97	-88.11	949.46	-248.70	665.13	614.72	50.41	13.194	
6,950.00	6,928.71	7,014.67	6,917.79	25.13	28.08	-87.72	949.64	-230.42	665.30	614.58	50.72	13.117	
7,000.00	6,975.33	7,062.55	6,960.77	25.26	28.18	-87.35	949.86	-209.32	665.49	614.46	51.03	13.041	
7,050.00	7,020.59	7,110.18	7,002.01	25.39	28.27	-86.99	950.10	-185.54	665.70	614.35	51.35	12.965	
7,100.00	7,064.25	7,157.55	7,041.39	25.53	28.35	-86.64	950.37	-159.21	665.93	614.25	51.67	12.887	
7,150.00	7,106.10	7,204.70	7,078.76	25.67	28.43	-86.31	950.67	-130.48	666.17	614.14	52.02	12.805	
7,200.00	7,145.95	7,251.62	7,114.00	25.82	28.50	-86.00	950.98	-99.51	666.41	614.01	52.40	12.717	
7,250.00	7,183.59	7,298.35	7,147.00	26.00	28.56	-85.70	951.32	-66.44	666.66	613.83	52.83	12.618	
7,300.00	7,218.85	7,344.89	7,177.65	26.21	28.62	-85.43	951.68	-31.44	666.91	613.59	53.32	12.507	
7,350.00	7,251.55	7,391.26	7,205.87	26.46	28.67	-85.18	952.06	5.34	667.16	613.27	53.89	12.381	
7,400.00	7,281.53	7,437.47	7,231.57	26.77	28.72	-84.95	952.45	43.74	667.39	612.85	54.54	12.236	
7,450.00	7,308.65	7,483.55	7,254.67	27.14	28.78	-84.74	952.86	83.60	667.61	612.31	55.30	12.073	
7,500.00	7,332.77	7,529.50	7,275.11	27.58	28.86	-84.56	953.28	124.74	667.81	611.64	56.17	11.889	
7,550.00	7,353.78	7,575.35	7,292.83	28.08	29.05	-84.40	953.71	167.01	667.99	610.83	57.16	11.686	
7,600.00	7,371.58	7,621.10	7,307.79	28.66	29.45	-84.27	954.16	210.25	668.15	609.87	58.28	11.465	
7,650.00	7,386.07	7,666.79	7,319.93	29.31	30.01	-84.16	954.61	254.27	668.28	608.76	59.52	11.228	
7,700.00	7,397.19	7,712.41	7,329.24	30.02	30.65	-84.08	955.07	298.93	668.38	607.50	60.88	10.978	
7,750.00	7,404.88	7,757.99	7,335.68	30.80	31.36	-84.02	955.53	344.05	668.45	606.09	62.36	10.719	
7,800.00	7,409.11	7,803.55	7,339.23	31.63	32.11	-83.99	955.99	389.45	668.49	604.55	63.94	10.455	
7,835.66	7,410.00	7,836.73	7,340.00	32.26	32.69	-83.99	956.33	422.62	668.50	603.37	65.13	10.264	
7,836.37	7,410.00	7,836.73	7,340.00	32.27	32.69	-83.99	956.33	422.62	668.50	603.35	65.14	10.262	
7,900.00	7,410.00	7,900.31	7,340.00	33.45	33.86	-83.99	956.98	486.19	668.50	601.03	67.47	9.908	
8,000.00	7,410.00	8,000.31	7,340.00	35.45	35.86	-83.99	958.01	586.19	668.51	597.07	71.44	9.357	
8,100.00	7,410.00	8,100.31	7,340.00	37.63	38.02	-83.99	959.03	686.18	668.52	592.78	75.74	8.826	
8,200.00	7,410.00	8,200.31	7,340.00	39.94	40.32	-83.99	960.06	786.18	668.53	588.21	80.32	8.323	
8,300.00	7,410.00	8,300.31	7,340.00	42.37	42.74	-83.99	961.08	886.17	668.54	583.40	85.13	7.853	
8,400.00	7,410.00	8,400.31	7,340.00	44.90	45.26	-83.99	962.11	986.17	668.54	578.41	90.14	7.417	
8,500.00	7,410.00	8,500.31	7,340.00	47.51	47.85	-83.99	963.13	1,086.16	668.55	573.25	95.31	7.015	

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 3F-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 3F-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
8,600.00	7,410.00	8,600.31	7,340.00	50.19	50.52	-83.99	964.16	1,186.16	668.56	567.94		100.62	6.645
8,700.00	7,410.00	8,700.31	7,340.00	52.93	53.25	-83.99	965.18	1,286.15	668.57	562.53		106.04	6.305
8,800.00	7,410.00	8,800.31	7,340.00	55.71	56.02	-83.99	966.20	1,386.15	668.58	557.01		111.57	5.992
8,900.00	7,410.00	8,900.31	7,340.00	58.54	58.85	-83.99	967.23	1,486.14	668.59	551.40		117.19	5.705
9,000.00	7,410.00	9,000.31	7,340.00	61.41	61.70	-83.99	968.25	1,586.14	668.59	545.72		122.88	5.441
9,100.00	7,410.00	9,100.31	7,340.00	64.31	64.59	-83.99	969.28	1,686.13	668.60	539.97		128.63	5.198
9,200.00	7,410.00	9,200.31	7,340.00	67.24	67.51	-83.99	970.30	1,786.13	668.61	534.17		134.44	4.973
9,300.00	7,410.00	9,300.31	7,340.00	70.19	70.46	-83.99	971.33	1,886.12	668.62	528.32		140.30	4.766
9,400.00	7,410.00	9,400.31	7,340.00	73.16	73.42	-83.99	972.35	1,986.12	668.63	522.42		146.21	4.573
9,500.00	7,410.00	9,500.31	7,340.00	76.15	76.41	-83.99	973.38	2,086.11	668.64	516.49		152.15	4.395
9,600.00	7,410.00	9,600.31	7,340.00	79.16	79.41	-83.99	974.40	2,186.11	668.64	510.52		158.13	4.229
9,700.00	7,410.00	9,700.31	7,340.00	82.19	82.43	-83.99	975.42	2,286.10	668.65	504.52		164.13	4.074
9,800.00	7,410.00	9,800.31	7,340.00	85.22	85.46	-83.99	976.45	2,386.10	668.66	498.49		170.17	3.929
9,900.00	7,410.00	9,900.31	7,340.00	88.27	88.50	-83.99	977.47	2,486.09	668.67	492.44		176.23	3.794
10,000.00	7,410.00	10,000.31	7,340.00	91.33	91.56	-83.99	978.50	2,586.08	668.68	486.37		182.31	3.668
10,100.00	7,410.00	10,100.31	7,340.00	94.40	94.62	-83.99	979.52	2,686.08	668.68	480.28		188.41	3.549
10,200.00	7,410.00	10,200.31	7,340.00	97.48	97.70	-83.99	980.55	2,786.07	668.69	474.17		194.53	3.438
10,300.00	7,410.00	10,300.31	7,340.00	100.57	100.78	-83.99	981.57	2,886.07	668.70	468.04		200.66	3.333
10,400.00	7,410.00	10,400.31	7,340.00	103.66	103.87	-83.99	982.60	2,986.06	668.71	461.90		206.81	3.233
10,500.00	7,410.00	10,500.31	7,340.00	106.76	106.96	-83.99	983.62	3,086.06	668.72	455.74		212.97	3.140
10,600.00	7,410.00	10,600.31	7,340.00	109.87	110.07	-83.99	984.64	3,186.05	668.73	449.58		219.15	3.051
10,700.00	7,410.00	10,700.31	7,340.00	112.98	113.18	-83.99	985.67	3,286.05	668.73	443.40		225.34	2.968
10,800.00	7,410.00	10,800.31	7,340.00	116.09	116.29	-83.99	986.69	3,386.04	668.74	437.21		231.53	2.888
10,900.00	7,410.00	10,900.31	7,340.00	119.22	119.41	-83.99	987.72	3,486.04	668.75	431.01		237.74	2.813
11,000.00	7,410.00	11,000.31	7,340.00	122.34	122.53	-83.99	988.74	3,586.03	668.76	424.80		243.96	2.741
11,100.00	7,410.00	11,100.31	7,340.00	125.47	125.66	-83.99	989.77	3,686.03	668.77	418.59		250.18	2.673
11,200.00	7,410.00	11,200.31	7,340.00	128.61	128.79	-83.99	990.79	3,786.02	668.78	412.36		256.41	2.608
11,300.00	7,410.00	11,300.31	7,340.00	131.74	131.92	-83.99	991.82	3,886.02	668.78	406.13		262.65	2.546
11,400.00	7,410.00	11,400.31	7,340.00	134.88	135.06	-83.99	992.84	3,986.01	668.79	399.89		268.90	2.487
11,500.00	7,410.00	11,500.31	7,340.00	138.03	138.20	-83.99	993.86	4,086.01	668.80	393.65		275.15	2.431
11,600.00	7,410.00	11,600.31	7,340.00	141.18	141.35	-83.99	994.89	4,186.00	668.81	387.40		281.41	2.377
11,700.00	7,410.00	11,700.31	7,340.00	144.32	144.50	-83.99	995.91	4,286.00	668.82	381.14		287.67	2.325
11,800.00	7,410.00	11,800.31	7,340.00	147.48	147.64	-83.99	996.94	4,385.99	668.82	374.88		293.94	2.275
11,909.47	7,410.00	11,909.78	7,340.00	150.93	151.10	-83.99	998.06	4,495.46	668.83	368.03		300.81	2.223 SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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						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	19.77	0.28	72.607		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	20.04	0.11	20.04	19.05	0.99	20.183		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	20.04	0.11	20.04	18.33	1.71	11.721		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	20.04	0.11	20.04	17.61	2.43	8.258		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	20.04	0.11	20.04	16.90	3.14	6.375 CC, ES		
600.00	600.00	599.32	599.30	1.93	1.93	-1.45	21.63	-0.55	21.65	17.78	3.87	5.592		
700.00	700.00	698.40	698.24	2.29	2.29	-5.42	26.39	-2.50	26.57	21.95	4.62	5.755		
800.00	800.00	797.01	796.48	2.65	2.64	-9.51	34.27	-5.74	34.92	29.56	5.37	6.508		
900.00	900.00	894.91	893.66	3.01	3.00	-12.76	45.18	-10.23	46.75	40.64	6.11	7.649		
1,000.00	1,000.00	993.23	990.90	3.36	3.37	-15.04	58.57	-15.74	61.33	54.51	6.82	8.990		
1,100.00	1,099.98	1,092.32	1,088.89	3.72	3.76	29.37	72.28	-21.37	74.68	67.16	7.51	9.938		
1,200.00	1,199.84	1,191.78	1,187.22	4.08	4.15	29.87	86.03	-27.03	85.01	76.80	8.22	10.348		
1,242.90	1,242.60	1,234.52	1,229.48	4.23	4.32	30.40	91.94	-29.46	88.53	80.01	8.52	10.393		
1,300.00	1,299.50	1,291.45	1,285.77	4.44	4.54	31.22	99.81	-32.70	92.86	83.93	8.93	10.404		
1,400.00	1,399.14	1,391.13	1,384.34	4.80	4.94	32.48	113.60	-38.36	100.48	90.83	9.64	10.419		
1,500.00	1,498.79	1,490.82	1,482.90	5.16	5.34	33.57	127.38	-44.03	108.14	97.77	10.37	10.432		
1,600.00	1,598.43	1,590.51	1,581.47	5.52	5.75	34.51	141.17	-49.70	115.83	104.74	11.09	10.443		
1,700.00	1,698.07	1,690.19	1,680.03	5.89	6.15	35.34	154.95	-55.37	123.56	111.73	11.82	10.452		
1,800.00	1,797.71	1,789.88	1,778.60	6.26	6.55	36.07	168.73	-61.04	131.30	118.75	12.55	10.460		
1,900.00	1,897.35	1,889.57	1,877.17	6.63	6.96	36.71	182.52	-66.71	139.07	125.78	13.29	10.467		
2,000.00	1,996.99	1,989.25	1,975.73	7.00	7.37	37.29	196.30	-72.38	146.84	132.82	14.02	10.472		
2,100.00	2,096.63	2,088.94	2,074.30	7.37	7.78	37.81	210.09	-78.04	154.64	139.88	14.76	10.477		
2,200.00	2,196.27	2,188.63	2,172.87	7.74	8.18	38.28	223.87	-83.71	162.44	146.94	15.50	10.482		
2,300.00	2,295.91	2,288.31	2,271.43	8.11	8.59	38.71	237.66	-89.38	170.26	154.02	16.24	10.485		
2,400.00	2,395.55	2,388.00	2,370.00	8.48	9.00	39.10	251.44	-95.05	178.08	161.10	16.98	10.489		
2,500.00	2,495.19	2,487.68	2,468.56	8.85	9.41	39.46	265.23	-100.72	185.91	168.19	17.72	10.492		
2,600.00	2,594.83	2,587.37	2,567.13	9.23	9.82	39.79	279.01	-106.39	193.75	175.29	18.46	10.494		
2,700.00	2,694.47	2,687.06	2,665.70	9.60	10.23	40.09	292.80	-112.06	201.59	182.38	19.21	10.496		
2,800.00	2,794.12	2,786.74	2,764.26	9.97	10.64	40.37	306.58	-117.72	209.44	189.49	19.95	10.498		
2,900.00	2,893.76	2,886.43	2,862.83	10.35	11.05	40.63	320.36	-123.39	217.29	196.60	20.69	10.500		
3,000.00	2,993.40	2,986.12	2,961.39	10.72	11.46	40.87	334.15	-129.06	225.15	203.71	21.44	10.502		
3,100.00	3,093.04	3,085.80	3,059.96	11.10	11.87	41.09	347.93	-134.73	233.01	210.82	22.19	10.503		
3,200.00	3,192.68	3,185.49	3,158.53	11.47	12.28	41.31	361.72	-140.40	240.87	217.94	22.93	10.504		
3,300.00	3,292.32	3,285.18	3,257.09	11.85	12.70	41.50	375.50	-146.07	248.74	225.06	23.68	10.505		
3,400.00	3,391.96	3,384.86	3,355.66	12.22	13.11	41.69	389.29	-151.73	256.61	232.19	24.42	10.506		
3,500.00	3,491.60	3,484.55	3,454.22	12.60	13.52	41.86	403.07	-157.40	264.48	239.31	25.17	10.507		
3,600.00	3,591.24	3,584.24	3,552.79	12.97	13.93	42.03	416.86	-163.07	272.36	246.44	25.92	10.508		
3,700.00	3,690.88	3,683.92	3,651.36	13.35	14.34	42.18	430.64	-168.74	280.23	253.57	26.67	10.509		
3,800.00	3,790.52	3,783.61	3,749.92	13.72	14.75	42.33	444.43	-174.41	288.11	260.70	27.41	10.510		
3,900.00	3,890.16	3,883.30	3,848.49	14.10	15.17	42.47	458.21	-180.08	295.99	267.83	28.16	10.510		
4,000.00	3,989.80	3,982.98	3,947.05	14.47	15.58	42.60	471.99	-185.75	303.87	274.96	28.91	10.511		
4,100.00	4,089.45	4,082.67	4,045.62	14.85	15.99	42.72	485.78	-191.41	311.76	282.10	29.66	10.511		
4,200.00	4,189.09	4,182.36	4,144.19	15.22	16.40	42.84	499.56	-197.08	319.64	289.23	30.41	10.512		
4,300.00	4,288.73	4,282.04	4,242.75	15.60	16.81	42.95	513.35	-202.75	327.53	296.37	31.16	10.512		
4,400.00	4,388.37	4,381.73	4,341.32	15.97	17.23	43.06	527.13	-208.42	335.42	303.51	31.91	10.513		
4,500.00	4,488.01	4,481.42	4,439.88	16.35	17.64	43.16	540.92	-214.09	343.30	310.65	32.66	10.513		
4,600.00	4,587.65	4,581.10	4,538.45	16.73	18.05	43.26	554.70	-219.76	351.19	317.79	33.40	10.513		
4,700.00	4,687.29	4,680.79	4,637.02	17.10	18.46	43.36	568.49	-225.42	359.08	324.93	34.15	10.514		
4,800.00	4,786.93	4,780.48	4,735.58	17.48	18.88	43.44	582.27	-231.09	366.97	332.07	34.90	10.514		
4,900.00	4,886.57	4,880.16	4,834.15	17.85	19.29	43.53	596.06	-236.76	374.87	339.21	35.65	10.514		
5,000.00	4,986.21	4,979.85	4,932.71	18.23	19.70	43.61	609.84	-242.43	382.76	346.36	36.40	10.514		

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 3F-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 3F-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	
5,100.00	5,085.85	5,079.53	5,031.28	18.61	20.11	43.69	623.62	-248.10	390.65	353.50	37.15	10.514		
5,200.00	5,185.49	5,179.22	5,129.85	18.98	20.53	43.77	637.41	-253.77	398.55	360.64	37.90	10.515		
5,300.00	5,285.14	5,278.91	5,228.41	19.36	20.94	43.84	651.19	-259.44	406.44	367.79	38.65	10.515		
5,400.00	5,384.78	5,378.59	5,326.98	19.73	21.35	43.91	664.98	-265.10	414.34	374.93	39.40	10.515		
5,500.00	5,484.42	5,478.28	5,425.54	20.11	21.76	43.98	678.76	-270.77	422.24	382.08	40.15	10.515		
5,600.00	5,584.06	5,577.97	5,524.11	20.49	22.18	44.04	692.55	-276.44	430.13	389.23	40.91	10.515		
5,700.00	5,683.70	5,686.21	5,631.23	20.86	22.62	44.14	706.94	-282.36	437.53	395.80	41.72	10.487		
5,773.96	5,757.40	5,772.39	5,716.85	21.14	22.95	44.34	716.01	-286.09	440.89	398.55	42.34	10.412		
5,800.00	5,783.35	5,802.77	5,747.08	21.24	23.07	44.44	718.64	-287.17	441.67	399.11	42.55	10.379		
5,900.00	5,883.17	5,919.50	5,863.54	21.61	23.49	44.71	725.97	-290.19	443.85	400.54	43.31	10.248		
6,000.00	5,983.14	6,036.31	5,980.30	21.96	23.88	44.81	728.92	-291.40	444.72	400.74	43.98	10.112		
6,016.86	6,000.00	6,056.01	6,000.00	22.02	23.94	-0.51	728.98	-291.42	444.74	400.66	44.08	10.089		
6,100.00	6,083.14	6,139.15	6,083.14	22.30	24.20	-0.51	728.98	-291.42	444.74	400.09	44.65	9.960		
6,200.00	6,183.14	6,239.15	6,183.14	22.65	24.52	-0.51	728.98	-291.42	444.74	399.40	45.34	9.809		
6,300.00	6,283.14	6,339.15	6,283.14	22.99	24.84	-0.51	728.98	-291.42	444.74	398.71	46.03	9.662		
6,400.00	6,383.14	6,439.15	6,383.14	23.33	25.15	-0.51	728.98	-291.42	444.74	398.02	46.72	9.520		
6,500.00	6,483.14	6,539.15	6,483.14	23.68	25.47	-0.51	728.98	-291.42	444.74	397.33	47.41	9.381		
6,600.00	6,583.14	6,639.15	6,583.14	24.02	25.79	-0.51	728.98	-291.42	444.74	396.64	48.10	9.246		
6,700.00	6,683.14	6,739.15	6,683.14	24.37	26.12	-0.51	728.98	-291.42	444.74	395.95	48.79	9.115		
6,710.66	6,693.80	6,749.81	6,693.80	24.41	26.15	-0.51	728.98	-291.42	444.74	395.87	48.86	9.102		
6,750.00	6,733.12	6,789.12	6,733.09	24.54	26.27	-89.92	728.99	-290.34	444.74	395.61	49.12	9.053		
6,800.00	6,782.91	6,839.07	6,782.83	24.69	26.42	-89.93	729.04	-285.87	444.74	395.30	49.44	8.996		
6,850.00	6,832.26	6,889.03	6,832.15	24.84	26.56	-89.93	729.12	-277.94	444.74	395.00	49.74	8.941		
6,900.00	6,880.94	6,938.99	6,880.79	24.99	26.69	-89.93	729.24	-266.58	444.74	394.70	50.04	8.888		
6,950.00	6,928.71	6,988.95	6,928.52	25.13	26.82	-89.93	729.39	-251.87	444.74	394.41	50.33	8.837		
7,000.00	6,975.33	7,038.91	6,975.11	25.26	26.94	-89.93	729.57	-233.87	444.74	394.13	50.62	8.787		
7,050.00	7,020.59	7,088.87	7,020.33	25.39	27.05	-89.93	729.79	-212.66	444.74	393.84	50.91	8.736		
7,100.00	7,064.25	7,138.83	7,063.97	25.53	27.16	-89.94	730.04	-188.35	444.75	393.54	51.21	8.685		
7,150.00	7,106.10	7,188.79	7,105.81	25.67	27.25	-89.94	730.32	-161.06	444.75	393.21	51.53	8.630		
7,200.00	7,145.95	7,238.76	7,145.64	25.82	27.34	-89.94	730.63	-130.91	444.75	392.86	51.89	8.571		
7,250.00	7,183.59	7,288.73	7,183.28	26.00	27.43	-89.94	730.96	-98.07	444.75	392.46	52.29	8.505		
7,300.00	7,218.85	7,338.70	7,218.54	26.21	27.51	-89.95	731.32	-62.67	444.76	392.00	52.76	8.430		
7,350.00	7,251.55	7,388.67	7,251.24	26.46	27.59	-89.95	731.71	-24.90	444.76	391.46	53.30	8.344		
7,400.00	7,281.53	7,438.64	7,281.24	26.77	27.69	-89.96	732.12	15.05	444.76	390.82	53.94	8.245		
7,450.00	7,308.65	7,488.62	7,308.37	27.14	27.85	-89.96	732.55	57.01	444.77	390.08	54.69	8.132		
7,500.00	7,332.77	7,538.60	7,332.52	27.58	28.12	-89.97	733.00	100.75	444.77	389.20	55.57	8.004		
7,550.00	7,353.78	7,588.58	7,353.56	28.08	28.55	-89.97	733.46	146.07	444.77	388.20	56.57	7.862		
7,600.00	7,371.58	7,638.56	7,371.39	28.66	29.08	-89.98	733.94	192.76	444.78	387.06	57.72	7.706		
7,650.00	7,386.07	7,688.55	7,385.92	29.31	29.71	-89.98	734.43	240.58	444.78	385.78	59.01	7.538		
7,700.00	7,397.19	7,738.54	7,397.07	30.02	30.41	-89.99	734.93	289.29	444.79	384.36	60.43	7.361		
7,750.00	7,404.88	7,788.53	7,404.81	30.80	31.18	-89.99	735.44	338.67	444.79	382.82	61.97	7.177		
7,800.00	7,409.11	7,838.53	7,409.08	31.63	32.00	-90.00	735.95	388.47	444.80	381.16	63.63	6.990		
7,835.66	7,410.00	7,874.19	7,410.00	32.26	32.62	-90.00	736.31	424.11	444.80	379.93	64.87	6.857		
7,900.00	7,410.00	7,938.53	7,410.00	33.45	33.82	-90.00	736.97	488.45	444.80	377.54	67.26	6.613		
8,000.00	7,410.00	8,038.53	7,410.00	35.45	35.81	-90.00	738.00	588.44	444.81	373.56	71.25	6.243		
8,100.00	7,410.00	8,138.53	7,410.00	37.63	37.97	-90.00	739.02	688.44	444.82	369.24	75.58	5.885		
8,200.00	7,410.00	8,238.53	7,410.00	39.94	40.27	-90.00	740.05	788.43	444.83	364.64	80.19	5.547		
8,300.00	7,410.00	8,338.53	7,410.00	42.37	42.68	-90.00	741.07	888.43	444.84	359.81	85.03	5.231		
8,400.00	7,410.00	8,438.53	7,410.00	44.90	45.19	-90.00	742.09	988.42	444.85	354.78	90.07	4.939		
8,500.00	7,410.00	8,538.53	7,410.00	47.51	47.79	-90.00	743.12	1,088.42	444.85	349.58	95.27	4.669		
8,600.00	7,410.00	8,638.53	7,410.00	50.19	50.46	-90.00	744.14	1,188.41	444.86	344.24	100.62	4.421		
8,700.00	7,410.00	8,738.53	7,410.00	52.93	53.18	-90.00	745.17	1,288.41	444.87	338.79	106.08	4.194		

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 3F-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 3F-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				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.00	7,410.00	8,838.53	7,410.00	55.71	55.96	-90.00	746.19	1,388.40	444.88	333.23	111.65	3.985	
8,900.00	7,410.00	8,938.53	7,410.00	58.54	58.78	-90.00	747.22	1,488.40	444.89	327.59	117.30	3.793	
9,000.00	7,410.00	9,038.53	7,410.00	61.41	61.64	-90.00	748.24	1,588.39	444.90	321.87	123.02	3.616	
9,100.00	7,410.00	9,138.53	7,410.00	64.31	64.53	-90.00	749.27	1,688.39	444.90	316.09	128.81	3.454	
9,200.00	7,410.00	9,238.53	7,410.00	67.24	67.45	-90.00	750.29	1,788.38	444.91	310.25	134.66	3.304	
9,300.00	7,410.00	9,338.53	7,410.00	70.19	70.39	-90.00	751.32	1,888.37	444.92	304.37	140.55	3.165	
9,400.00	7,410.00	9,438.53	7,410.00	73.16	73.36	-90.00	752.34	1,988.37	444.93	298.44	146.49	3.037	
9,500.00	7,410.00	9,538.53	7,410.00	76.15	76.35	-90.00	753.36	2,088.36	444.94	292.47	152.47	2.918	
9,600.00	7,410.00	9,638.53	7,410.00	79.16	79.35	-90.00	754.39	2,188.36	444.95	286.46	158.48	2.808	
9,700.00	7,410.00	9,738.53	7,410.00	82.19	82.37	-90.00	755.41	2,288.35	444.95	280.43	164.53	2.704	
9,800.00	7,410.00	9,838.53	7,410.00	85.22	85.40	-90.00	756.44	2,388.35	444.96	274.37	170.60	2.608	
9,900.00	7,410.00	9,938.53	7,410.00	88.27	88.44	-90.00	757.46	2,488.34	444.97	268.28	176.69	2.518	
10,000.00	7,410.00	10,038.53	7,410.00	91.33	91.50	-90.00	758.49	2,588.34	444.98	262.18	182.80	2.434	
10,100.00	7,410.00	10,138.53	7,410.00	94.40	94.56	-90.00	759.51	2,688.33	444.99	256.05	188.94	2.355	
10,200.00	7,410.00	10,238.53	7,410.00	97.48	97.64	-90.00	760.54	2,788.33	445.00	249.90	195.09	2.281	
10,300.00	7,410.00	10,338.53	7,410.00	100.57	100.72	-90.00	761.56	2,888.32	445.01	243.74	201.26	2.211	
10,400.00	7,410.00	10,438.53	7,410.00	103.66	103.81	-90.00	762.59	2,988.32	445.01	237.57	207.45	2.145	
10,500.00	7,410.00	10,538.53	7,410.00	106.76	106.91	-90.00	763.61	3,088.31	445.02	231.38	213.64	2.083	
10,600.00	7,410.00	10,638.53	7,410.00	109.87	110.01	-90.00	764.63	3,188.31	445.03	225.18	219.85	2.024	
10,700.00	7,410.00	10,738.53	7,410.00	112.98	113.12	-90.00	765.66	3,288.30	445.04	218.97	226.07	1.969	
10,800.00	7,410.00	10,838.53	7,410.00	116.09	116.23	-90.00	766.68	3,388.30	445.05	212.74	232.31	1.916	
10,900.00	7,410.00	10,938.53	7,410.00	119.22	119.35	-90.00	767.71	3,488.29	445.06	206.51	238.55	1.866	
11,000.00	7,410.00	11,038.53	7,410.00	122.34	122.47	-90.00	768.73	3,588.29	445.06	200.27	244.80	1.818	
11,100.00	7,410.00	11,138.53	7,410.00	125.47	125.60	-90.00	769.76	3,688.28	445.07	194.02	251.05	1.773	
11,200.00	7,410.00	11,238.53	7,410.00	128.61	128.73	-90.00	770.78	3,788.28	445.08	187.76	257.32	1.730	
11,300.00	7,410.00	11,338.53	7,410.00	131.74	131.87	-90.00	771.81	3,888.27	445.09	181.50	263.59	1.689	
11,400.00	7,410.00	11,438.53	7,410.00	134.88	135.01	-90.00	772.83	3,988.26	445.10	175.22	269.87	1.649	
11,500.00	7,410.00	11,538.53	7,410.00	138.03	138.15	-90.00	773.86	4,088.26	445.11	168.95	276.16	1.612	
11,600.00	7,410.00	11,638.53	7,410.00	141.18	141.29	-90.00	774.88	4,188.25	445.11	162.66	282.45	1.576	
11,700.00	7,410.00	11,738.53	7,410.00	144.32	144.44	-90.00	775.90	4,288.25	445.12	156.38	288.75	1.542	
11,800.00	7,410.00	11,838.53	7,410.00	147.48	147.59	-90.00	776.93	4,388.24	445.13	150.08	295.05	1.509	
11,909.47	7,410.00	11,948.00	7,410.00	150.93	151.04	-90.00	778.05	4,497.71	445.14	143.19	301.95	1.474	Level 3, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	1.08	10.21	0.19	10.21					
100.00	100.00	100.00	100.00	0.14	0.14	1.08	10.21	0.19	10.21	9.93	0.28	36.981		
200.00	200.00	200.00	200.00	0.50	0.50	1.08	10.21	0.19	10.21	9.21	0.99	10.280		
300.00	300.00	300.00	300.00	0.85	0.85	1.08	10.21	0.19	10.21	8.50	1.71	5.970		
400.00	400.00	400.00	400.00	1.21	1.21	1.08	10.21	0.19	10.21	7.78	2.43	4.206		
500.00	500.00	500.00	500.00	1.57	1.57	1.08	10.21	0.19	10.21	7.06	3.14	3.247		
600.00	600.00	600.00	600.00	1.93	1.93	1.08	10.21	0.19	10.21	6.35	3.86	2.644 CC		
700.00	700.00	699.67	699.65	2.29	2.29	-3.85	11.64	-0.78	11.67	7.09	4.58	2.546		
800.00	800.00	799.10	798.94	2.65	2.64	-13.09	15.92	-3.70	16.38	11.06	5.32	3.078		
900.00	900.00	898.15	897.61	3.01	3.00	-20.33	23.00	-8.52	24.64	18.58	6.06	4.066		
1,000.00	1,000.00	997.65	996.61	3.36	3.36	-24.34	31.21	-14.12	34.42	27.65	6.77	5.088		
1,100.00	1,099.98	1,097.30	1,095.77	3.72	3.73	19.46	39.43	-19.72	42.65	35.18	7.47	5.710		
1,200.00	1,199.84	1,197.17	1,195.14	4.08	4.10	19.76	47.68	-25.33	47.61	39.43	8.18	5.822		
1,242.90	1,242.60	1,240.05	1,237.80	4.23	4.26	20.31	51.22	-27.75	48.73	40.25	8.48	5.745		
1,300.00	1,299.50	1,297.14	1,294.61	4.44	4.48	21.18	55.93	-30.96	49.83	40.94	8.89	5.605		
1,400.00	1,399.14	1,397.11	1,394.08	4.80	4.85	22.62	64.18	-36.58	51.79	42.18	9.61	5.390		
1,500.00	1,498.79	1,497.08	1,493.55	5.16	5.23	23.96	72.43	-42.20	53.78	43.45	10.33	5.207		
1,600.00	1,598.43	1,597.05	1,593.02	5.52	5.61	25.20	80.68	-47.82	55.79	44.74	11.05	5.048		
1,700.00	1,698.07	1,697.03	1,692.50	5.89	5.99	26.35	88.93	-53.44	57.83	46.06	11.78	4.910		
1,800.00	1,797.71	1,797.00	1,791.97	6.26	6.36	27.42	97.18	-59.06	59.90	47.39	12.51	4.789		
1,900.00	1,897.35	1,896.97	1,891.44	6.63	6.74	28.42	105.43	-64.68	61.98	48.74	13.24	4.683		
2,000.00	1,996.99	1,996.94	1,990.92	7.00	7.12	29.36	113.68	-70.30	64.08	50.11	13.97	4.588		
2,100.00	2,096.63	2,096.92	2,090.39	7.37	7.51	30.24	121.94	-75.92	66.19	51.49	14.70	4.503		
2,200.00	2,196.27	2,196.89	2,189.86	7.74	7.89	31.06	130.19	-81.55	68.32	52.89	15.43	4.427		
2,300.00	2,295.91	2,296.86	2,289.33	8.11	8.27	31.83	138.44	-87.17	70.46	54.30	16.17	4.359		
2,400.00	2,395.55	2,396.84	2,388.81	8.48	8.65	32.56	146.69	-92.79	72.62	55.71	16.90	4.296		
2,500.00	2,495.19	2,496.81	2,488.28	8.85	9.03	33.24	154.94	-98.41	74.78	57.14	17.64	4.240		
2,600.00	2,594.83	2,596.78	2,587.75	9.23	9.41	33.89	163.19	-104.03	76.96	58.58	18.38	4.188		
2,700.00	2,694.47	2,696.75	2,687.23	9.60	9.79	34.50	171.44	-109.65	79.14	60.03	19.11	4.141		
2,800.00	2,794.12	2,796.73	2,786.70	9.97	10.18	35.08	179.69	-115.27	81.34	61.48	19.85	4.097		
2,900.00	2,893.76	2,896.70	2,886.17	10.35	10.56	35.62	187.94	-120.89	83.54	62.95	20.59	4.057		
3,000.00	2,993.40	2,996.67	2,985.65	10.72	10.94	36.14	196.20	-126.51	85.75	64.41	21.33	4.020		
3,100.00	3,093.04	3,096.64	3,085.12	11.10	11.32	36.64	204.45	-132.14	87.96	65.89	22.07	3.985		
3,200.00	3,192.68	3,196.62	3,184.59	11.47	11.70	37.10	212.70	-137.76	90.18	67.37	22.81	3.953		
3,300.00	3,292.32	3,296.59	3,284.06	11.85	12.09	37.55	220.95	-143.38	92.41	68.85	23.55	3.923		
3,400.00	3,391.96	3,396.56	3,383.54	12.22	12.47	37.98	229.20	-149.00	94.64	70.34	24.30	3.895		
3,500.00	3,491.60	3,496.53	3,483.01	12.60	12.85	38.38	237.45	-154.62	96.88	71.84	25.04	3.869		
3,600.00	3,591.24	3,596.51	3,582.48	12.97	13.24	38.77	245.70	-160.24	99.12	73.34	25.78	3.845		
3,700.00	3,690.88	3,696.48	3,681.96	13.35	13.62	39.14	253.95	-165.86	101.37	74.84	26.52	3.822		
3,800.00	3,790.52	3,796.45	3,781.43	13.72	14.00	39.49	262.20	-171.48	103.62	76.35	27.27	3.800		
3,900.00	3,890.16	3,896.43	3,880.90	14.10	14.38	39.83	270.46	-177.10	105.87	77.86	28.01	3.780		
4,000.00	3,989.80	3,996.40	3,980.37	14.47	14.77	40.16	278.71	-182.73	108.13	79.37	28.75	3.760		
4,100.00	4,089.45	4,096.37	4,079.85	14.85	15.15	40.47	286.96	-188.35	110.39	80.89	29.50	3.742		
4,200.00	4,189.09	4,196.34	4,179.32	15.22	15.53	40.77	295.21	-193.97	112.65	82.41	30.24	3.725		
4,300.00	4,288.73	4,296.32	4,278.79	15.60	15.92	41.05	303.46	-199.59	114.92	83.93	30.99	3.709		
4,400.00	4,388.37	4,396.29	4,378.27	15.97	16.30	41.33	311.71	-205.21	117.19	85.46	31.73	3.693		
4,500.00	4,488.01	4,496.26	4,477.74	16.35	16.68	41.60	319.96	-210.83	119.46	86.99	32.48	3.678		
4,600.00	4,587.65	4,596.23	4,577.21	16.73	17.07	41.85	328.21	-216.45	121.74	88.52	33.22	3.664		
4,700.00	4,687.29	4,696.21	4,676.68	17.10	17.45	42.10	336.46	-222.07	124.02	90.05	33.97	3.651		
4,800.00	4,786.93	4,796.18	4,776.16	17.48	17.83	42.33	344.72	-227.69	126.29	91.58	34.71	3.638		
4,900.00	4,886.57	4,896.15	4,875.63	17.85	18.21	42.56	352.97	-233.32	128.58	93.12	35.46	3.626		
5,000.00	4,986.21	4,996.12	4,975.10	18.23	18.60	42.78	361.22	-238.94	130.86	94.66	36.20	3.614		

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 3F-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 3F-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,085.85	5,096.10	5,074.58	18.61	18.98	43.00	369.47	-244.56	133.15	96.19	36.95	3.603	
5,200.00	5,185.49	5,196.07	5,174.05	18.98	19.36	43.20	377.72	-250.18	135.43	97.74	37.70	3.593	
5,300.00	5,285.14	5,296.04	5,273.52	19.36	19.75	43.40	385.97	-255.80	137.72	99.28	38.44	3.583	
5,400.00	5,384.78	5,396.02	5,372.99	19.73	20.13	43.60	394.22	-261.42	140.01	100.82	39.19	3.573	
5,500.00	5,484.42	5,495.99	5,472.47	20.11	20.51	43.78	402.47	-267.04	142.30	102.37	39.94	3.563	
5,600.00	5,584.06	5,595.96	5,571.94	20.49	20.90	43.96	410.72	-272.66	144.60	103.92	40.68	3.554	
5,700.00	5,683.70	5,695.93	5,671.41	20.86	21.28	44.14	418.98	-278.28	146.89	105.46	41.43	3.546	
5,773.96	5,757.40	5,771.29	5,746.41	21.14	21.57	44.31	425.04	-282.42	148.44	106.45	41.99	3.535	
5,800.00	5,783.35	5,798.50	5,773.53	21.24	21.67	44.42	426.93	-283.70	148.77	106.58	42.20	3.526	
5,900.00	5,883.17	5,903.04	5,877.86	21.61	22.05	44.72	432.18	-287.28	149.70	106.77	42.93	3.487	
6,000.00	5,983.14	6,007.59	5,982.37	21.96	22.42	44.84	434.29	-288.72	150.07	106.46	43.61	3.441	
6,016.86	6,000.00	6,025.21	6,000.00	22.02	22.48	-0.48	434.34	-288.75	150.08	106.37	43.72	3.433	
6,100.00	6,083.14	6,108.35	6,083.14	22.30	22.76	-0.48	434.34	-288.75	150.08	105.79	44.29	3.388	
6,200.00	6,183.14	6,208.35	6,183.14	22.65	23.09	-0.48	434.34	-288.75	150.08	105.10	44.99	3.336	
6,300.00	6,283.14	6,308.35	6,283.14	22.99	23.43	-0.48	434.34	-288.75	150.08	104.40	45.68	3.286	
6,400.00	6,383.14	6,408.35	6,383.14	23.33	23.77	-0.48	434.34	-288.75	150.08	103.71	46.37	3.236	
6,500.00	6,483.14	6,508.35	6,483.14	23.68	24.11	-0.48	434.34	-288.75	150.08	103.01	47.07	3.188	
6,600.00	6,583.14	6,608.35	6,583.14	24.02	24.45	-0.48	434.34	-288.75	150.08	102.32	47.77	3.142	
6,600.52	6,583.66	6,608.87	6,583.66	24.03	24.45	-0.48	434.34	-288.75	150.08	102.31	47.77	3.142	
6,700.00	6,683.14	6,708.20	6,682.92	24.37	24.78	0.45	434.36	-286.30	150.11	101.63	48.48	3.096	
6,710.66	6,693.80	6,718.77	6,693.45	24.41	24.81	0.82	434.37	-285.35	150.13	101.57	48.56	3.092	
6,750.00	6,733.12	6,757.62	6,731.99	24.54	24.93	-87.16	434.42	-280.53	150.27	101.42	48.85	3.076	
6,800.00	6,782.91	6,806.71	6,780.23	24.69	25.07	-85.34	434.51	-271.46	150.58	101.37	49.21	3.060	
6,850.00	6,832.26	6,855.49	6,827.43	24.84	25.20	-83.56	434.64	-259.19	151.04	101.48	49.56	3.048	
6,900.00	6,880.94	6,903.96	6,873.40	24.99	25.33	-81.83	434.79	-243.85	151.63	101.75	49.88	3.040	
6,950.00	6,928.71	6,952.15	6,917.97	25.13	25.45	-80.15	434.98	-225.55	152.34	102.17	50.17	3.037	
7,000.00	6,975.33	7,000.00	6,960.91	25.26	25.57	-78.54	435.19	-204.46	153.16	102.73	50.43	3.037	
7,050.00	7,020.59	7,047.71	7,002.22	25.39	25.68	-77.00	435.43	-180.62	154.05	103.40	50.65	3.042	
7,100.00	7,064.25	7,095.11	7,041.61	25.53	25.79	-75.55	435.70	-154.26	155.02	104.18	50.84	3.049	
7,150.00	7,106.10	7,142.28	7,078.99	25.67	25.91	-74.17	435.99	-125.50	156.03	105.02	51.00	3.059	
7,200.00	7,145.95	7,189.23	7,114.23	25.82	26.03	-72.89	436.31	-94.50	157.07	105.91	51.16	3.070	
7,250.00	7,183.59	7,235.97	7,147.23	26.00	26.19	-71.70	436.65	-61.40	158.11	106.81	51.31	3.082	
7,300.00	7,218.85	7,282.53	7,177.88	26.21	26.38	-70.60	437.00	-26.37	159.15	107.67	51.48	3.091	
7,350.00	7,251.55	7,328.91	7,206.09	26.46	26.63	-69.60	437.38	10.44	160.16	108.46	51.70	3.098	
7,400.00	7,281.53	7,375.14	7,231.77	26.77	26.95	-68.69	437.77	48.86	161.12	109.14	51.98	3.100	
7,450.00	7,308.65	7,421.23	7,254.86	27.14	27.32	-67.89	438.17	88.74	162.02	109.67	52.35	3.095	
7,500.00	7,332.77	7,467.20	7,275.28	27.58	27.75	-67.18	438.59	129.91	162.85	110.02	52.83	3.083	
7,550.00	7,353.78	7,513.05	7,292.98	28.08	28.25	-66.57	439.02	172.20	163.58	110.15	53.43	3.062	
7,600.00	7,371.58	7,558.82	7,307.91	28.66	28.80	-66.06	439.46	215.45	164.21	110.04	54.18	3.031	
7,650.00	7,386.07	7,604.51	7,320.03	29.31	29.41	-65.65	439.91	259.49	164.74	109.65	55.08	2.991	
7,700.00	7,397.19	7,650.00	7,329.29	30.02	30.08	-65.34	440.36	304.02	165.14	109.00	56.14	2.941	
7,750.00	7,404.88	7,695.72	7,335.73	30.80	30.80	-65.13	440.82	349.28	165.42	108.04	57.38	2.883	
7,800.00	7,409.11	7,741.28	7,339.25	31.63	31.57	-65.02	441.28	394.70	165.57	106.81	58.77	2.818	
7,835.66	7,410.00	7,774.01	7,340.00	32.26	32.14	-64.99	441.61	427.41	165.60	105.76	59.84	2.767	
7,857.20	7,410.00	7,795.29	7,340.00	32.65	32.53	-64.99	441.83	448.68	165.60	105.04	60.56	2.735	
7,900.00	7,410.00	7,838.09	7,340.00	33.45	33.36	-64.99	442.26	491.48	165.60	103.57	62.03	2.670	
8,000.00	7,410.00	7,938.09	7,340.00	35.45	35.37	-64.99	443.28	591.48	165.60	99.91	65.69	2.521	
8,100.00	7,410.00	8,038.09	7,340.00	37.63	37.54	-64.99	444.30	691.47	165.60	95.95	69.65	2.378	
8,200.00	7,410.00	8,138.09	7,340.00	39.94	39.86	-64.99	445.31	791.47	165.60	91.74	73.87	2.242	
8,300.00	7,410.00	8,238.09	7,340.00	42.37	42.29	-64.99	446.33	891.46	165.60	87.31	78.29	2.115	
8,400.00	7,410.00	8,338.09	7,340.00	44.90	44.82	-64.99	447.35	991.45	165.60	82.71	82.89	1.998	
8,500.00	7,410.00	8,438.09	7,340.00	47.51	47.43	-64.99	448.36	1,091.45	165.60	77.96	87.64	1.889	

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 3F-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 3F-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		
8,600.00	7,410.00	8,538.09	7,340.00	50.19	50.12	-64.99	449.38	1,191.44	165.60	73.08	92.52	1.790		
8,700.00	7,410.00	8,638.09	7,340.00	52.93	52.86	-64.99	450.39	1,291.44	165.60	68.09	97.51	1.698		
8,800.00	7,410.00	8,738.09	7,340.00	55.71	55.64	-64.99	451.41	1,391.43	165.60	63.02	102.59	1.614		
8,900.00	7,410.00	8,838.09	7,340.00	58.54	58.48	-64.99	452.43	1,491.43	165.60	57.86	107.74	1.537		
9,000.00	7,410.00	8,938.09	7,340.00	61.41	61.35	-64.99	453.44	1,591.42	165.60	52.64	112.97	1.466 Level 3		
9,100.00	7,410.00	9,038.09	7,340.00	64.31	64.25	-64.99	454.46	1,691.42	165.60	47.35	118.25	1.400 Level 3		
9,200.00	7,410.00	9,138.09	7,340.00	67.24	67.18	-64.99	455.47	1,791.41	165.60	42.02	123.58	1.340 Level 3		
9,300.00	7,410.00	9,238.09	7,340.00	70.19	70.13	-64.99	456.49	1,891.41	165.60	36.64	128.96	1.284 Level 3		
9,400.00	7,410.00	9,338.09	7,340.00	73.16	73.10	-64.99	457.51	1,991.40	165.60	31.22	134.38	1.232 Level 2		
9,500.00	7,410.00	9,438.09	7,340.00	76.15	76.10	-64.99	458.52	2,091.40	165.60	25.77	139.84	1.184 Level 2		
9,600.00	7,410.00	9,538.09	7,340.00	79.16	79.11	-64.99	459.54	2,191.39	165.60	20.28	145.32	1.140 Level 2		
9,700.00	7,410.00	9,638.09	7,340.00	82.19	82.13	-64.99	460.55	2,291.39	165.60	14.77	150.84	1.098 Level 2		
9,800.00	7,410.00	9,738.09	7,340.00	85.22	85.17	-64.99	461.57	2,391.38	165.60	9.23	156.37	1.059 Level 2		
9,900.00	7,410.00	9,838.09	7,340.00	88.27	88.22	-64.99	462.59	2,491.38	165.60	3.67	161.93	1.023 Level 2		
10,000.00	7,410.00	9,938.09	7,340.00	91.33	91.28	-64.99	463.60	2,591.37	165.60	-1.91	167.51	0.989 Level 1		
10,100.00	7,410.00	10,038.09	7,340.00	94.40	94.35	-64.99	464.62	2,691.37	165.60	-7.51	173.11	0.957 Level 1		
10,200.00	7,410.00	10,138.09	7,340.00	97.48	97.43	-64.99	465.64	2,791.36	165.60	-13.12	178.73	0.927 Level 1		
10,300.00	7,410.00	10,238.09	7,340.00	100.57	100.52	-64.99	466.65	2,891.36	165.60	-18.75	184.35	0.898 Level 1		
10,400.00	7,410.00	10,338.09	7,340.00	103.66	103.61	-64.99	467.67	2,991.35	165.60	-24.40	190.00	0.872 Level 1		
10,500.00	7,410.00	10,438.09	7,340.00	106.76	106.71	-64.99	468.68	3,091.35	165.60	-30.05	195.65	0.846 Level 1		
10,600.00	7,410.00	10,538.09	7,340.00	109.87	109.82	-64.99	469.70	3,191.34	165.60	-35.72	201.32	0.823 Level 1		
10,700.00	7,410.00	10,638.09	7,340.00	112.98	112.93	-64.99	470.72	3,291.34	165.60	-41.39	207.00	0.800 Level 1		
10,800.00	7,410.00	10,738.09	7,340.00	116.09	116.05	-64.99	471.73	3,391.33	165.60	-47.08	212.68	0.779 Level 1		
10,900.00	7,410.00	10,838.09	7,340.00	119.22	119.17	-64.99	472.75	3,491.33	165.60	-52.78	218.38	0.758 Level 1		
11,000.00	7,410.00	10,938.09	7,340.00	122.34	122.30	-64.99	473.76	3,591.32	165.60	-58.48	224.08	0.739 Level 1		
11,100.00	7,410.00	11,038.09	7,340.00	125.47	125.43	-64.99	474.78	3,691.32	165.60	-64.19	229.79	0.721 Level 1		
11,200.00	7,410.00	11,138.09	7,340.00	128.61	128.57	-64.99	475.80	3,791.31	165.60	-69.91	235.51	0.703 Level 1		
11,300.00	7,410.00	11,238.09	7,340.00	131.74	131.70	-64.99	476.81	3,891.31	165.60	-75.63	241.24	0.686 Level 1		
11,400.00	7,410.00	11,338.09	7,340.00	134.88	134.84	-64.99	477.83	3,991.30	165.60	-81.36	246.97	0.671 Level 1		
11,500.00	7,410.00	11,438.09	7,340.00	138.03	137.99	-64.99	478.85	4,091.29	165.60	-87.10	252.70	0.655 Level 1		
11,600.00	7,410.00	11,538.09	7,340.00	141.18	141.14	-64.99	479.86	4,191.29	165.60	-92.84	258.44	0.641 Level 1		
11,700.00	7,410.00	11,638.09	7,340.00	144.32	144.29	-64.99	480.88	4,291.28	165.60	-98.59	264.19	0.627 Level 1		
11,800.00	7,410.00	11,738.09	7,340.00	147.48	147.44	-64.99	481.89	4,391.28	165.60	-104.34	269.94	0.613 Level 1		
11,909.47	7,410.00	11,847.56	7,340.00	150.93	150.89	-64.99	483.01	4,500.74	165.60	-110.64	276.24	0.599 Level 1, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	179.50	-9.83	0.08	9.83					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-9.83	0.08	9.83	9.56	0.28	35.617		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-9.83	0.08	9.83	8.84	0.99	9.901		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-9.83	0.08	9.83	8.12	1.71	5.750		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-9.83	0.08	9.83	7.40	2.43	4.051		
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-9.83	0.08	9.83	6.69	3.14	3.127		
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-9.83	0.08	9.83	5.97	3.86	2.546		
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-9.83	0.08	9.83	5.25	4.58	2.148		
800.00	800.00	800.00	800.00	2.65	2.65	179.50	-9.83	0.08	9.83	4.54	5.29	1.857 CC		
900.00	900.00	899.91	899.89	3.01	3.00	-170.80	-10.10	-1.64	10.23	4.23	6.00	1.705		
1,000.00	1,000.00	999.74	999.61	3.36	3.34	-150.16	-10.82	-6.21	12.48	5.77	6.71	1.861		
1,100.00	1,099.98	1,099.65	1,099.40	3.72	3.69	-97.09	-11.59	-11.08	16.17	8.76	7.41	2.182		
1,200.00	1,199.84	1,199.54	1,199.17	4.08	4.04	-102.04	-12.35	-15.95	20.47	12.36	8.11	2.523		
1,242.90	1,242.60	1,242.35	1,241.93	4.23	4.19	-106.19	-12.68	-18.04	22.63	14.21	8.42	2.689		
1,300.00	1,299.50	1,299.32	1,298.83	4.44	4.39	-111.54	-13.12	-20.81	25.81	16.98	8.82	2.925		
1,400.00	1,399.14	1,399.09	1,398.48	4.80	4.75	-118.22	-13.88	-25.68	31.75	22.22	9.54	3.329		
1,500.00	1,498.79	1,498.86	1,498.12	5.16	5.10	-122.75	-14.65	-30.54	38.00	27.74	10.26	3.705		
1,600.00	1,598.43	1,598.63	1,597.77	5.52	5.46	-125.99	-15.41	-35.41	44.41	33.43	10.98	4.046		
1,700.00	1,698.07	1,698.39	1,697.41	5.89	5.82	-128.41	-16.18	-40.27	50.93	39.23	11.70	4.354		
1,800.00	1,797.71	1,798.16	1,797.06	6.26	6.18	-130.27	-16.95	-45.14	57.52	45.09	12.42	4.630		
1,900.00	1,897.35	1,897.93	1,896.70	6.63	6.54	-131.75	-17.71	-50.00	64.15	51.01	13.15	4.880		
2,000.00	1,996.99	1,997.70	1,996.35	7.00	6.90	-132.96	-18.48	-54.87	70.82	56.95	13.87	5.106		
2,100.00	2,096.63	2,097.46	2,096.00	7.37	7.26	-133.95	-19.24	-59.73	77.52	62.92	14.60	5.310		
2,200.00	2,196.27	2,197.23	2,195.64	7.74	7.62	-134.79	-20.01	-64.60	84.23	68.91	15.32	5.497		
2,300.00	2,295.91	2,297.00	2,295.29	8.11	7.98	-135.50	-20.77	-69.46	90.96	74.91	16.05	5.667		
2,400.00	2,395.55	2,396.76	2,394.93	8.48	8.34	-136.12	-21.54	-74.33	97.71	80.93	16.78	5.823		
2,500.00	2,495.19	2,496.53	2,494.58	8.85	8.71	-136.65	-22.30	-79.19	104.46	86.95	17.51	5.966		
2,600.00	2,594.83	2,596.30	2,594.22	9.23	9.07	-137.12	-23.07	-84.06	111.22	92.98	18.24	6.098		
2,700.00	2,694.47	2,696.07	2,693.87	9.60	9.43	-137.54	-23.83	-88.92	117.99	99.02	18.97	6.221		
2,800.00	2,794.12	2,795.83	2,793.52	9.97	9.80	-137.91	-24.60	-93.79	124.76	105.07	19.70	6.334		
2,900.00	2,893.76	2,895.60	2,893.16	10.35	10.16	-138.24	-25.36	-98.65	131.54	111.11	20.43	6.440		
3,000.00	2,993.40	2,995.37	2,992.81	10.72	10.52	-138.54	-26.13	-103.52	138.32	117.17	21.16	6.538		
3,100.00	3,093.04	3,095.14	3,092.45	11.10	10.89	-138.82	-26.90	-108.38	145.11	123.22	21.89	6.630		
3,200.00	3,192.68	3,194.90	3,192.10	11.47	11.25	-139.06	-27.66	-113.25	151.90	129.28	22.62	6.715		
3,300.00	3,292.32	3,294.67	3,291.74	11.85	11.61	-139.29	-28.43	-118.11	158.69	135.34	23.35	6.796		
3,400.00	3,391.96	3,394.44	3,391.39	12.22	11.98	-139.50	-29.19	-122.98	165.48	141.40	24.08	6.872		
3,500.00	3,491.60	3,494.20	3,491.03	12.60	12.34	-139.69	-29.96	-127.84	172.27	147.46	24.81	6.943		
3,600.00	3,591.24	3,593.97	3,590.68	12.97	12.71	-139.87	-30.72	-132.71	179.07	153.53	25.54	7.010		
3,700.00	3,690.88	3,693.74	3,690.33	13.35	13.07	-140.03	-31.49	-137.57	185.87	159.59	26.28	7.074		
3,800.00	3,790.52	3,793.51	3,789.97	13.72	13.43	-140.18	-32.25	-142.44	192.67	165.66	27.01	7.134		
3,900.00	3,890.16	3,893.27	3,889.62	14.10	13.80	-140.33	-33.02	-147.30	199.47	171.73	27.74	7.191		
4,000.00	3,989.80	3,993.04	3,989.26	14.47	14.16	-140.46	-33.78	-152.17	206.27	177.80	28.47	7.245		
4,100.00	4,089.45	4,092.81	4,088.91	14.85	14.53	-140.58	-34.55	-157.03	213.08	183.87	29.20	7.296		
4,200.00	4,189.09	4,192.58	4,188.55	15.22	14.89	-140.70	-35.31	-161.90	219.88	189.95	29.94	7.345		
4,300.00	4,288.73	4,292.34	4,288.20	15.60	15.26	-140.81	-36.08	-166.76	226.69	196.02	30.67	7.392		
4,400.00	4,388.37	4,392.11	4,387.85	15.97	15.62	-140.91	-36.84	-171.63	233.49	202.09	31.40	7.436		
4,500.00	4,488.01	4,491.88	4,487.49	16.35	15.98	-141.01	-37.61	-176.49	240.30	208.17	32.13	7.478		
4,600.00	4,587.65	4,591.64	4,587.14	16.73	16.35	-141.10	-38.38	-181.36	247.11	214.24	32.87	7.519		
4,700.00	4,687.29	4,691.41	4,686.78	17.10	16.71	-141.19	-39.14	-186.22	253.91	220.32	33.60	7.557		
4,800.00	4,786.93	4,791.18	4,786.43	17.48	17.08	-141.27	-39.91	-191.09	260.72	226.39	34.33	7.595		
4,900.00	4,886.57	4,890.95	4,886.07	17.85	17.44	-141.35	-40.67	-195.95	267.53	232.47	35.06	7.630		
5,000.00	4,986.21	4,990.71	4,985.72	18.23	17.81	-141.43	-41.44	-200.82	274.34	238.54	35.80	7.664		

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 3F-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 3F-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	
5,100.00	5,085.85	5,090.48	5,085.37	18.61	18.17	-141.50	-42.20	-205.68	281.15	244.62	36.53	7.697		
5,200.00	5,185.49	5,190.25	5,185.01	18.98	18.54	-141.56	-42.97	-210.55	287.96	250.70	37.26	7.728		
5,300.00	5,285.14	5,290.02	5,284.66	19.36	18.90	-141.63	-43.73	-215.41	294.77	256.78	37.99	7.758		
5,400.00	5,384.78	5,389.78	5,384.30	19.73	19.27	-141.69	-44.50	-220.28	301.58	262.85	38.73	7.787		
5,500.00	5,484.42	5,489.55	5,483.95	20.11	19.63	-141.75	-45.26	-225.14	308.39	268.93	39.46	7.815		
5,600.00	5,584.06	5,589.32	5,583.59	20.49	20.00	-141.81	-46.03	-230.01	315.20	275.01	40.19	7.842		
5,700.00	5,683.70	5,689.08	5,683.24	20.86	20.36	-141.86	-46.79	-234.87	322.02	281.09	40.93	7.868		
5,773.96	5,757.40	5,762.88	5,756.94	21.14	20.63	-141.90	-47.36	-238.47	327.05	285.59	41.47	7.887		
5,800.00	5,783.35	5,788.86	5,782.89	21.24	20.73	-141.92	-47.56	-239.74	328.74	287.08	41.66	7.891		
5,900.00	5,883.17	5,888.73	5,882.64	21.61	21.09	-141.75	-48.33	-244.61	333.46	291.08	42.39	7.867		
6,000.00	5,983.14	5,988.65	5,982.44	21.96	21.46	-141.18	-49.09	-249.48	335.47	292.36	43.11	7.781		
6,016.86	6,000.00	6,005.49	5,999.25	22.02	21.52	173.64	-49.22	-250.30	335.55	292.31	43.24	7.761		
6,100.00	6,083.14	6,088.53	6,082.19	22.30	21.82	174.34	-49.86	-254.35	335.76	291.93	43.83	7.660		
6,200.00	6,183.14	6,188.40	6,181.95	22.65	22.19	175.17	-50.63	-259.22	336.08	291.53	44.55	7.543		
6,300.00	6,283.14	6,288.28	6,281.71	22.99	22.55	176.01	-51.39	-264.09	336.47	291.20	45.27	7.432		
6,400.00	6,383.14	6,388.16	6,381.46	23.33	22.92	176.85	-52.16	-268.96	336.93	290.94	45.99	7.326		
6,500.00	6,483.14	6,488.04	6,481.22	23.68	23.28	177.68	-52.92	-273.83	337.47	290.76	46.71	7.225		
6,600.00	6,583.14	6,587.92	6,580.97	24.02	23.65	178.51	-53.69	-278.70	338.07	290.64	47.43	7.128		
6,700.00	6,683.14	6,688.43	6,681.40	24.37	23.98	178.33	-54.23	-277.60	338.64	290.53	48.11	7.039		
6,710.66	6,693.80	6,699.09	6,692.02	24.41	24.02	178.17	-54.26	-276.66	338.70	290.52	48.18	7.030		
6,750.00	6,733.12	6,738.25	6,730.88	24.54	24.14	88.10	-54.31	-271.87	338.90	290.47	48.42	6.999		
6,800.00	6,782.91	6,787.74	6,779.52	24.69	24.28	87.29	-54.25	-262.78	339.12	290.40	48.72	6.961		
6,850.00	6,832.26	6,836.92	6,827.11	24.84	24.42	86.50	-54.06	-250.45	339.31	290.31	49.00	6.925		
6,900.00	6,880.94	6,885.78	6,873.46	24.99	24.56	85.73	-53.74	-234.99	339.46	290.20	49.27	6.890		
6,950.00	6,928.71	6,934.35	6,918.37	25.13	24.70	84.97	-53.31	-216.53	339.58	290.05	49.53	6.856		
7,000.00	6,975.33	6,982.63	6,961.68	25.26	24.83	84.25	-52.75	-195.21	339.64	289.87	49.78	6.823		
7,050.00	7,020.59	7,030.64	7,003.22	25.39	24.98	83.55	-52.09	-171.17	339.66	289.63	50.03	6.789		
7,100.00	7,064.25	7,078.39	7,042.84	25.53	25.13	82.88	-51.31	-144.56	339.63	289.34	50.29	6.754		
7,150.00	7,106.10	7,125.89	7,080.41	25.67	25.29	82.24	-50.43	-115.52	339.53	288.97	50.56	6.716		
7,200.00	7,145.95	7,173.16	7,115.81	25.82	25.48	81.64	-49.45	-84.22	339.37	288.52	50.86	6.673		
7,250.00	7,183.59	7,220.21	7,148.91	26.00	25.69	81.07	-48.38	-50.82	339.14	287.95	51.19	6.625		
7,300.00	7,218.85	7,267.06	7,179.62	26.21	25.94	80.55	-47.23	-15.47	338.84	287.26	51.58	6.569		
7,350.00	7,251.55	7,313.71	7,207.85	26.46	26.22	80.06	-45.99	21.65	338.46	286.42	52.04	6.503		
7,400.00	7,281.53	7,360.20	7,233.50	26.77	26.56	79.62	-44.67	60.39	338.00	285.41	52.59	6.427		
7,450.00	7,308.65	7,406.53	7,256.52	27.14	26.95	79.22	-43.29	100.56	337.45	284.21	53.24	6.339		
7,500.00	7,332.77	7,452.71	7,276.83	27.58	27.39	78.87	-41.84	142.01	336.81	282.81	54.00	6.237		
7,550.00	7,353.78	7,500.00	7,294.81	28.08	27.91	78.55	-40.29	185.70	336.09	281.18	54.91	6.121		
7,600.00	7,371.58	7,544.73	7,309.13	28.66	28.46	78.30	-38.77	228.04	335.27	279.36	55.91	5.997		
7,650.00	7,386.07	7,590.58	7,321.03	29.31	29.08	78.09	-37.17	272.29	334.35	277.29	57.07	5.859		
7,700.00	7,397.19	7,636.36	7,330.07	30.02	29.76	77.93	-35.52	317.13	333.35	275.00	58.35	5.713		
7,750.00	7,404.88	7,682.08	7,336.21	30.80	30.49	77.82	-33.85	362.39	332.26	272.49	59.77	5.559		
7,800.00	7,409.11	7,727.75	7,339.45	31.63	31.26	77.76	-32.14	407.91	331.07	269.78	61.30	5.401		
7,835.66	7,410.00	7,760.74	7,340.00	32.26	31.84	77.76	-30.90	440.87	330.18	267.72	62.45	5.287		
7,900.00	7,410.00	7,825.05	7,340.00	33.45	33.06	77.69	-28.47	505.13	328.44	263.64	64.79	5.069		
8,000.00	7,410.00	7,925.01	7,340.00	35.45	35.08	77.59	-24.69	605.02	325.74	257.02	68.71	4.741		
8,100.00	7,410.00	8,024.98	7,340.00	37.63	37.27	77.48	-20.91	704.92	323.04	250.09	72.95	4.428		
8,200.00	7,410.00	8,124.94	7,340.00	39.94	39.59	77.37	-17.14	804.81	320.34	242.88	77.46	4.136		
8,300.00	7,410.00	8,224.90	7,340.00	42.37	42.03	77.26	-13.36	904.70	317.64	235.46	82.18	3.865		
8,400.00	7,410.00	8,324.86	7,340.00	44.90	44.56	77.15	-9.58	1,004.59	314.95	227.85	87.09	3.616		
8,500.00	7,410.00	8,424.82	7,340.00	47.51	47.18	77.04	-5.80	1,104.48	312.25	220.10	92.16	3.388		
8,600.00	7,410.00	8,524.79	7,340.00	50.19	49.86	76.93	-2.02	1,204.37	309.56	212.21	97.35	3.180		
8,700.00	7,410.00	8,624.75	7,340.00	52.93	52.60	76.81	1.76	1,304.26	306.87	204.22	102.65	2.990		

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 3F-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 3F-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		
8,800.00	7,410.00	8,724.71	7,340.00	55.71	55.39	76.69	5.53	1,404.15	304.18	196.14	108.04	2.816		
8,900.00	7,410.00	8,824.67	7,340.00	58.54	58.22	76.57	9.31	1,504.04	301.49	187.99	113.50	2.656		
9,000.00	7,410.00	8,924.63	7,340.00	61.41	61.08	76.45	13.09	1,603.93	298.80	179.77	119.03	2.510		
9,100.00	7,410.00	9,024.59	7,340.00	64.31	63.98	76.32	16.87	1,703.82	296.11	171.50	124.61	2.376		
9,200.00	7,410.00	9,124.56	7,340.00	67.24	66.91	76.19	20.65	1,803.71	293.43	163.19	130.24	2.253		
9,300.00	7,410.00	9,224.52	7,340.00	70.19	69.85	76.06	24.43	1,903.60	290.75	154.84	135.91	2.139		
9,400.00	7,410.00	9,324.48	7,340.00	73.16	72.82	75.93	28.20	2,003.49	288.06	146.46	141.61	2.034		
9,500.00	7,410.00	9,424.44	7,340.00	76.15	75.81	75.80	31.98	2,103.38	285.38	138.05	147.33	1.937		
9,600.00	7,410.00	9,524.40	7,340.00	79.16	78.81	75.66	35.76	2,203.27	282.70	129.62	153.08	1.847		
9,700.00	7,410.00	9,624.36	7,340.00	82.19	81.83	75.52	39.54	2,303.16	280.03	121.18	158.85	1.763		
9,800.00	7,410.00	9,724.33	7,340.00	85.22	84.86	75.38	43.32	2,403.05	277.35	112.72	164.64	1.685		
9,900.00	7,410.00	9,824.29	7,340.00	88.27	87.90	75.23	47.09	2,502.94	274.68	104.25	170.43	1.612		
10,000.00	7,410.00	9,924.25	7,340.00	91.33	90.96	75.08	50.87	2,602.83	272.01	95.77	176.24	1.543		
10,100.00	7,410.00	10,024.21	7,340.00	94.40	94.02	74.93	54.65	2,702.72	269.34	87.28	182.05	1.479	Level 3	
10,200.00	7,410.00	10,124.17	7,340.00	97.48	97.09	74.78	58.43	2,802.61	266.67	78.80	187.87	1.419	Level 3	
10,300.00	7,410.00	10,224.14	7,340.00	100.57	100.17	74.62	62.21	2,902.50	264.00	70.31	193.69	1.363	Level 3	
10,400.00	7,410.00	10,324.10	7,340.00	103.66	103.25	74.46	65.99	3,002.39	261.34	61.82	199.51	1.310	Level 3	
10,500.00	7,410.00	10,424.06	7,340.00	106.76	106.34	74.29	69.76	3,102.28	258.68	53.34	205.34	1.260	Level 3	
10,600.00	7,410.00	10,524.02	7,340.00	109.87	109.44	74.13	73.54	3,202.17	256.02	44.86	211.15	1.212	Level 2	
10,700.00	7,410.00	10,623.98	7,340.00	112.98	112.55	73.96	77.32	3,302.06	253.36	36.39	216.97	1.168	Level 2	
10,800.00	7,410.00	10,723.94	7,340.00	116.09	115.65	73.78	81.10	3,401.95	250.70	27.92	222.78	1.125	Level 2	
10,900.00	7,410.00	10,823.91	7,340.00	119.22	118.77	73.60	84.88	3,501.85	248.05	19.47	228.58	1.085	Level 2	
11,000.00	7,410.00	10,923.87	7,340.00	122.34	121.88	73.42	88.66	3,601.74	245.40	11.03	234.37	1.047	Level 2	
11,100.00	7,410.00	11,023.83	7,340.00	125.47	125.00	73.23	92.43	3,701.63	242.75	2.59	240.16	1.011	Level 2	
11,200.00	7,410.00	11,123.79	7,340.00	128.61	128.13	73.04	96.21	3,801.52	240.11	-5.82	245.93	0.976	Level 1	
11,300.00	7,410.00	11,223.75	7,340.00	131.74	131.26	72.85	99.99	3,901.41	237.46	-14.22	251.69	0.943	Level 1	
11,400.00	7,410.00	11,323.72	7,340.00	134.88	134.39	72.65	103.77	4,001.30	234.82	-22.61	257.43	0.912	Level 1	
11,500.00	7,410.00	11,423.68	7,340.00	138.03	137.52	72.45	107.55	4,101.19	232.19	-30.98	263.16	0.882	Level 1	
11,600.00	7,410.00	11,523.64	7,340.00	141.18	140.66	72.24	111.33	4,201.08	229.55	-39.32	268.87	0.854	Level 1	
11,700.00	7,410.00	11,623.60	7,340.00	144.32	143.80	72.03	115.10	4,300.97	226.92	-47.65	274.57	0.826	Level 1	
11,800.00	7,410.00	11,723.56	7,340.00	147.48	146.94	71.81	118.88	4,400.86	224.29	-55.95	280.24	0.800	Level 1	
11,908.07	7,410.00	11,825.78	7,340.00	150.88	150.15	71.58	122.75	4,503.00	221.53	-64.63	286.17	0.774	Level 1	
11,909.47	7,410.00	11,825.78	7,340.00	150.93	150.15	71.58	122.75	4,503.00	221.54	-64.63	286.17	0.774	Level 1, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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		
0.00	0.00	0.00	0.00	0.00	0.00	179.50	-20.03	0.17	20.03					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-20.03	0.17	20.03	19.75	0.28	72.570		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-20.03	0.17	20.03	19.04	0.99	20.173		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-20.03	0.17	20.03	18.32	1.71	11.715		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-20.03	0.17	20.03	17.60	2.43	8.254		
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-20.03	0.17	20.03	16.89	3.14	6.372		
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-20.03	0.17	20.03	16.17	3.86	5.188		
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-20.03	0.17	20.03	15.45	4.58	4.376		
800.00	800.00	800.00	800.00	2.65	2.65	179.50	-20.03	0.17	20.03	14.74	5.29	3.783		
900.00	900.00	900.00	900.00	3.01	3.01	179.50	-20.03	0.17	20.03	14.02	6.01	3.332 CC, ES		
1,000.00	1,000.00	999.70	999.68	3.36	3.35	-176.04	-20.68	-1.43	20.74	14.02	6.72	3.087		
1,100.00	1,099.98	1,099.29	1,099.13	3.72	3.69	-122.92	-22.62	-6.17	24.36	16.95	7.41	3.286		
1,200.00	1,199.84	1,199.08	1,198.73	4.08	4.03	-121.38	-24.96	-11.92	30.68	22.57	8.11	3.782		
1,242.90	1,242.60	1,241.85	1,241.42	4.23	4.18	-122.43	-25.96	-14.38	33.96	25.54	8.42	4.035		
1,300.00	1,299.50	1,298.76	1,298.21	4.44	4.38	-124.14	-27.30	-17.66	38.58	29.76	8.82	4.374		
1,400.00	1,399.14	1,398.41	1,397.68	4.80	4.73	-126.31	-29.63	-23.39	46.72	37.19	9.53	4.904		
1,500.00	1,498.79	1,498.07	1,497.14	5.16	5.09	-127.84	-31.97	-29.13	54.91	44.67	10.24	5.362		
1,600.00	1,598.43	1,597.72	1,596.60	5.52	5.45	-128.97	-34.31	-34.87	63.13	52.17	10.96	5.761		
1,700.00	1,698.07	1,697.38	1,696.06	5.89	5.80	-129.84	-36.65	-40.61	71.36	59.69	11.68	6.112		
1,800.00	1,797.71	1,797.03	1,795.53	6.26	6.16	-130.53	-38.99	-46.34	79.61	67.22	12.40	6.422		
1,900.00	1,897.35	1,896.69	1,894.99	6.63	6.52	-131.09	-41.33	-52.08	87.87	74.75	13.12	6.697		
2,000.00	1,996.99	1,996.34	1,994.45	7.00	6.88	-131.55	-43.66	-57.82	96.14	82.29	13.85	6.944		
2,100.00	2,096.63	2,096.00	2,093.91	7.37	7.25	-131.94	-46.00	-63.56	104.41	89.84	14.57	7.165		
2,200.00	2,196.27	2,195.65	2,193.37	7.74	7.61	-132.27	-48.34	-69.30	112.69	97.39	15.30	7.365		
2,300.00	2,295.91	2,295.31	2,292.84	8.11	7.97	-132.56	-50.68	-75.03	120.97	104.94	16.03	7.547		
2,400.00	2,395.55	2,394.96	2,392.30	8.48	8.34	-132.81	-53.02	-80.77	129.25	112.49	16.76	7.713		
2,500.00	2,495.19	2,494.62	2,491.76	8.85	8.70	-133.03	-55.36	-86.51	137.53	120.04	17.49	7.865		
2,600.00	2,594.83	2,594.27	2,591.22	9.23	9.07	-133.23	-57.70	-92.25	145.82	127.60	18.22	8.004		
2,700.00	2,694.47	2,693.93	2,690.69	9.60	9.43	-133.40	-60.03	-97.98	154.10	135.15	18.95	8.133		
2,800.00	2,794.12	2,793.58	2,790.15	9.97	9.80	-133.56	-62.37	-103.72	162.39	142.71	19.68	8.252		
2,900.00	2,893.76	2,893.24	2,889.61	10.35	10.16	-133.70	-64.71	-109.46	170.68	150.27	20.41	8.362		
3,000.00	2,993.40	2,992.89	2,989.07	10.72	10.53	-133.83	-67.05	-115.20	178.97	157.83	21.14	8.464		
3,100.00	3,093.04	3,092.55	3,088.53	11.10	10.90	-133.94	-69.39	-120.93	187.26	165.38	21.88	8.559		
3,200.00	3,192.68	3,192.20	3,188.00	11.47	11.26	-134.05	-71.73	-126.67	195.55	172.94	22.61	8.649		
3,300.00	3,292.32	3,291.86	3,287.46	11.85	11.63	-134.15	-74.06	-132.41	203.85	180.50	23.34	8.732		
3,400.00	3,391.96	3,391.51	3,386.92	12.22	12.00	-134.24	-76.40	-138.15	212.14	188.06	24.08	8.810		
3,500.00	3,491.60	3,491.17	3,486.38	12.60	12.37	-134.32	-78.74	-143.89	220.43	195.62	24.81	8.884		
3,600.00	3,591.24	3,590.82	3,585.85	12.97	12.73	-134.40	-81.08	-149.62	228.73	203.18	25.55	8.953		
3,700.00	3,690.88	3,690.48	3,685.31	13.35	13.10	-134.47	-83.42	-155.36	237.02	210.74	26.28	9.019		
3,800.00	3,790.52	3,790.13	3,784.77	13.72	13.47	-134.54	-85.76	-161.10	245.31	218.30	27.02	9.080		
3,900.00	3,890.16	3,889.79	3,884.23	14.10	13.84	-134.60	-88.09	-166.84	253.61	225.86	27.75	9.139		
4,000.00	3,989.80	3,989.44	3,983.69	14.47	14.20	-134.66	-90.43	-172.57	261.90	233.42	28.49	9.194		
4,100.00	4,089.45	4,089.10	4,083.16	14.85	14.57	-134.72	-92.77	-178.31	270.20	240.98	29.22	9.247		
4,200.00	4,189.09	4,188.75	4,182.62	15.22	14.94	-134.77	-95.11	-184.05	278.49	248.54	29.96	9.297		
4,300.00	4,288.73	4,288.41	4,282.08	15.60	15.31	-134.82	-97.45	-189.79	286.79	256.10	30.69	9.344		
4,400.00	4,388.37	4,388.06	4,381.54	15.97	15.68	-134.86	-99.79	-195.53	295.09	263.66	31.43	9.390		
4,500.00	4,488.01	4,487.72	4,481.00	16.35	16.04	-134.91	-102.12	-201.26	303.38	271.22	32.16	9.433		
4,600.00	4,587.65	4,587.37	4,580.47	16.73	16.41	-134.95	-104.46	-207.00	311.68	278.78	32.90	9.474		
4,700.00	4,687.29	4,687.03	4,679.93	17.10	16.78	-134.99	-106.80	-212.74	319.98	286.34	33.63	9.513		
4,800.00	4,786.93	4,786.68	4,779.39	17.48	17.15	-135.03	-109.14	-218.48	328.27	293.90	34.37	9.551		
4,900.00	4,886.57	4,886.34	4,878.85	17.85	17.52	-135.06	-111.48	-224.21	336.57	301.46	35.11	9.587		
5,000.00	4,986.21	4,985.99	4,978.32	18.23	17.89	-135.10	-113.82	-229.95	344.87	309.02	35.84	9.622		

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 3F-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 3F-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,085.85	5,085.65	5,077.78	18.61	18.26	-135.13	-116.15	-235.69	353.16	316.58	36.58	9.655	
5,200.00	5,185.49	5,185.30	5,177.24	18.98	18.62	-135.16	-118.49	-241.43	361.46	324.15	37.32	9.687	
5,300.00	5,285.14	5,284.96	5,276.70	19.36	18.99	-135.19	-120.83	-247.16	369.76	331.71	38.05	9.717	
5,400.00	5,384.78	5,384.61	5,376.16	19.73	19.36	-135.22	-123.17	-252.90	378.06	339.27	38.79	9.747	
5,500.00	5,484.42	5,484.27	5,475.63	20.11	19.73	-135.24	-125.51	-258.64	386.35	346.83	39.52	9.775	
5,600.00	5,584.06	5,583.92	5,575.09	20.49	20.10	-135.27	-127.85	-264.38	394.65	354.39	40.26	9.802	
5,700.00	5,683.70	5,683.58	5,674.55	20.86	20.47	-135.29	-130.18	-270.12	402.95	361.95	41.00	9.829	
5,773.96	5,757.40	5,757.28	5,748.12	21.14	20.74	-135.31	-131.91	-274.36	409.09	367.54	41.54	9.847	
5,800.00	5,783.35	5,783.24	5,774.02	21.24	20.84	-135.33	-132.52	-275.85	411.16	369.43	41.73	9.852	
5,900.00	5,883.17	5,885.95	5,876.56	21.61	21.22	-135.25	-134.74	-281.28	417.40	374.91	42.48	9.825	
6,000.00	5,983.14	5,991.60	5,982.18	21.96	21.58	-135.19	-135.72	-283.70	419.96	376.74	43.22	9.716	
6,016.86	6,000.00	6,009.43	6,000.00	22.02	21.65	179.49	-135.74	-283.75	420.02	376.67	43.35	9.690	
6,100.00	6,083.14	6,092.57	6,083.14	22.30	21.92	179.49	-135.74	-283.75	420.02	376.10	43.91	9.565	
6,200.00	6,183.14	6,192.57	6,183.14	22.65	22.26	179.49	-135.74	-283.75	420.02	375.42	44.59	9.418	
6,300.00	6,283.14	6,292.57	6,283.14	22.99	22.59	179.49	-135.74	-283.75	420.02	374.74	45.28	9.276	
6,400.00	6,383.14	6,392.57	6,383.14	23.33	22.93	179.49	-135.74	-283.75	420.02	374.05	45.96	9.138	
6,500.00	6,483.14	6,492.57	6,483.14	23.68	23.26	179.49	-135.74	-283.75	420.02	373.37	46.65	9.004	
6,600.00	6,583.14	6,592.57	6,583.14	24.02	23.60	179.49	-135.74	-283.75	420.02	372.68	47.34	8.873	
6,700.00	6,683.14	6,692.57	6,683.14	24.37	23.94	179.49	-135.74	-283.75	420.02	371.99	48.02	8.746	
6,710.66	6,693.80	6,703.23	6,693.80	24.41	23.97	179.49	-135.74	-283.75	420.02	371.92	48.10	8.733	
6,710.79	6,693.93	6,703.36	6,693.93	24.41	23.97	179.49	-135.74	-283.75	420.02	371.92	48.10	8.733	
6,750.00	6,733.12	6,742.55	6,733.12	24.54	24.10	90.22	-135.74	-283.75	420.02	371.66	48.36	8.685	
6,800.00	6,782.91	6,792.34	6,782.91	24.69	24.27	90.82	-135.74	-283.75	420.06	371.37	48.69	8.627	
6,850.00	6,832.26	6,841.69	6,832.26	24.84	24.44	91.88	-135.74	-283.75	420.25	371.24	49.01	8.574	
6,900.00	6,880.94	6,891.00	6,881.57	24.99	24.61	93.33	-135.74	-283.53	420.77	371.44	49.33	8.529	
6,950.00	6,928.71	6,941.78	6,932.25	25.13	24.77	94.90	-135.71	-280.47	421.65	372.00	49.64	8.493	
7,000.00	6,975.33	6,993.48	6,983.49	25.26	24.92	96.44	-135.64	-273.68	422.84	372.89	49.95	8.466	
7,050.00	7,020.59	7,046.13	7,035.03	25.39	25.08	97.97	-135.53	-262.98	424.34	374.10	50.24	8.447	
7,100.00	7,064.25	7,099.77	7,086.58	25.53	25.24	99.46	-135.38	-248.22	426.11	375.60	50.51	8.437	
7,150.00	7,106.10	7,154.42	7,137.83	25.67	25.39	100.90	-135.19	-229.25	428.12	377.36	50.76	8.435	
7,200.00	7,145.95	7,210.12	7,188.41	25.82	25.55	102.30	-134.95	-205.97	430.34	379.35	50.99	8.439	
7,250.00	7,183.59	7,266.88	7,237.93	26.00	25.71	103.63	-134.67	-178.27	432.71	381.50	51.21	8.450	
7,300.00	7,218.85	7,324.70	7,285.96	26.21	25.88	104.90	-134.34	-146.11	435.18	383.76	51.42	8.463	
7,350.00	7,251.55	7,383.58	7,332.05	26.46	26.09	106.09	-133.97	-109.49	437.69	386.05	51.64	8.476	
7,400.00	7,281.53	7,443.50	7,375.69	26.77	26.33	107.19	-133.55	-68.46	440.19	388.30	51.89	8.482	
7,450.00	7,308.65	7,504.42	7,416.40	27.14	26.63	108.20	-133.09	-23.17	442.62	390.41	52.21	8.477	
7,500.00	7,332.77	7,566.29	7,453.65	27.58	27.01	109.10	-132.59	26.21	444.92	392.29	52.63	8.453	
7,550.00	7,353.78	7,629.03	7,486.93	28.08	27.48	109.89	-132.05	79.37	447.03	393.84	53.19	8.405	
7,600.00	7,371.58	7,692.56	7,515.76	28.66	28.06	110.57	-131.47	135.96	448.89	394.97	53.91	8.326	
7,650.00	7,386.07	7,756.77	7,539.68	29.31	28.76	111.13	-130.87	195.52	450.45	395.60	54.85	8.212	
7,700.00	7,397.19	7,821.54	7,558.32	30.02	29.59	111.55	-130.24	257.52	451.69	395.66	56.03	8.062	
7,750.00	7,404.88	7,886.72	7,571.34	30.80	30.54	111.85	-129.59	321.36	452.55	395.11	57.44	7.878	
7,800.00	7,409.11	7,952.17	7,578.52	31.63	31.59	112.01	-128.93	386.38	453.02	393.93	59.09	7.666	
7,835.66	7,410.00	7,998.75	7,580.00	32.26	32.39	112.04	-128.46	432.94	453.11	392.71	60.41	7.501	
7,900.00	7,410.00	8,063.09	7,580.00	33.45	33.60	112.04	-127.80	497.27	453.11	390.47	62.64	7.233	
8,000.00	7,410.00	8,163.09	7,580.00	35.45	35.59	112.04	-126.79	597.27	453.11	386.74	66.37	6.827	
8,100.00	7,410.00	8,263.09	7,580.00	37.63	37.75	112.04	-125.77	697.26	453.11	382.70	70.42	6.435	
8,200.00	7,410.00	8,363.09	7,580.00	39.94	40.05	112.04	-124.75	797.26	453.11	378.39	74.72	6.064	
8,300.00	7,410.00	8,463.09	7,580.00	42.37	42.47	112.04	-123.74	897.25	453.11	373.87	79.24	5.718	
8,400.00	7,410.00	8,563.09	7,580.00	44.90	44.99	112.04	-122.72	997.25	453.11	369.17	83.94	5.398	
8,500.00	7,410.00	8,663.09	7,580.00	47.51	47.59	112.04	-121.70	1,097.24	453.11	364.31	88.80	5.103	
8,600.00	7,410.00	8,763.09	7,580.00	50.19	50.26	112.04	-120.69	1,197.24	453.11	359.33	93.79	4.831	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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)			
8,700.00	7,410.00	8,863.09	7,580.00	52.93	52.99	112.04	-119.67	1,297.23	453.11	354.23	98.88	4.582	
8,800.00	7,410.00	8,963.09	7,580.00	55.71	55.77	112.04	-118.65	1,397.23	453.11	349.04	104.07	4.354	
8,900.00	7,410.00	9,063.09	7,580.00	58.54	58.60	112.04	-117.64	1,497.22	453.11	343.77	109.34	4.144	
9,000.00	7,410.00	9,163.09	7,580.00	61.41	61.46	112.04	-116.62	1,597.22	453.11	338.43	114.68	3.951	
9,100.00	7,410.00	9,263.09	7,580.00	64.31	64.36	112.04	-115.61	1,697.21	453.11	333.03	120.08	3.773	
9,200.00	7,410.00	9,363.09	7,580.00	67.24	67.28	112.04	-114.59	1,797.21	453.11	327.58	125.54	3.609	
9,300.00	7,410.00	9,463.09	7,580.00	70.19	70.23	112.04	-113.57	1,897.20	453.11	322.08	131.03	3.458	
9,400.00	7,410.00	9,563.09	7,580.00	73.16	73.20	112.04	-112.56	1,997.20	453.11	316.54	136.57	3.318	
9,500.00	7,410.00	9,663.09	7,580.00	76.15	76.18	112.04	-111.54	2,097.19	453.11	310.97	142.15	3.188	
9,600.00	7,410.00	9,763.09	7,580.00	79.16	79.19	112.04	-110.52	2,197.19	453.11	305.36	147.75	3.067	
9,700.00	7,410.00	9,863.09	7,580.00	82.19	82.21	112.04	-109.51	2,297.18	453.11	299.73	153.38	2.954	
9,800.00	7,410.00	9,963.09	7,580.00	85.22	85.25	112.04	-108.49	2,397.18	453.11	294.07	159.04	2.849	
9,900.00	7,410.00	10,063.09	7,580.00	88.27	88.29	112.04	-107.47	2,497.17	453.11	288.39	164.72	2.751	
10,000.00	7,410.00	10,163.09	7,580.00	91.33	91.35	112.04	-106.46	2,597.17	453.11	282.68	170.43	2.659	
10,100.00	7,410.00	10,263.09	7,580.00	94.40	94.42	112.04	-105.44	2,697.16	453.11	276.96	176.15	2.572	
10,200.00	7,410.00	10,363.09	7,580.00	97.48	97.49	112.04	-104.42	2,797.16	453.11	271.23	181.88	2.491	
10,300.00	7,410.00	10,463.09	7,580.00	100.57	100.58	112.04	-103.41	2,897.15	453.11	265.48	187.63	2.415	
10,400.00	7,410.00	10,563.09	7,580.00	103.66	103.67	112.04	-102.39	2,997.15	453.11	259.71	193.40	2.343	
10,500.00	7,410.00	10,663.09	7,580.00	106.76	106.77	112.04	-101.38	3,097.14	453.11	253.93	199.17	2.275	
10,600.00	7,410.00	10,763.09	7,580.00	109.87	109.87	112.04	-100.36	3,197.14	453.11	248.15	204.96	2.211	
10,700.00	7,410.00	10,863.09	7,580.00	112.98	112.98	112.04	-99.34	3,297.13	453.11	242.35	210.76	2.150	
10,800.00	7,410.00	10,963.09	7,580.00	116.09	116.10	112.04	-98.33	3,397.12	453.11	236.54	216.57	2.092	
10,900.00	7,410.00	11,063.09	7,580.00	119.22	119.22	112.04	-97.31	3,497.12	453.11	230.72	222.39	2.037	
11,000.00	7,410.00	11,163.09	7,580.00	122.34	122.35	112.04	-96.29	3,597.11	453.11	224.89	228.22	1.985	
11,100.00	7,410.00	11,263.09	7,580.00	125.47	125.48	112.04	-95.28	3,697.11	453.11	219.06	234.05	1.936	
11,200.00	7,410.00	11,363.09	7,580.00	128.61	128.61	112.04	-94.26	3,797.10	453.11	213.22	239.89	1.889	
11,300.00	7,410.00	11,463.09	7,580.00	131.74	131.75	112.04	-93.24	3,897.10	453.11	207.37	245.74	1.844	
11,400.00	7,410.00	11,563.09	7,580.00	134.88	134.88	112.04	-92.23	3,997.09	453.11	201.52	251.59	1.801	
11,500.00	7,410.00	11,663.09	7,580.00	138.03	138.03	112.04	-91.21	4,097.09	453.11	195.66	257.45	1.760	
11,600.00	7,410.00	11,763.09	7,580.00	141.18	141.17	112.04	-90.20	4,197.08	453.11	189.79	263.31	1.721	
11,700.00	7,410.00	11,863.09	7,580.00	144.32	144.32	112.04	-89.18	4,297.08	453.11	183.92	269.18	1.683	
11,800.00	7,410.00	11,963.09	7,580.00	147.48	147.47	112.04	-88.16	4,397.07	453.11	178.05	275.06	1.647	
11,905.42	7,410.00	12,068.52	7,580.00	150.80	150.80	112.04	-87.09	4,502.49	453.11	171.85	281.25	1.611	
11,909.47	7,410.00	12,070.04	7,580.00	150.93	150.84	112.04	-87.08	4,504.01	453.11	171.70	281.41	1.610 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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							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	-29.87	0.26	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-29.87	0.26	29.87	29.59	0.28	108.202		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-29.87	0.26	29.87	28.87	0.99	30.078		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-29.87	0.26	29.87	28.16	1.71	17.467		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-29.87	0.26	29.87	27.44	2.43	12.307		
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-29.87	0.26	29.87	26.72	3.14	9.500		
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-29.87	0.26	29.87	26.01	3.86	7.736		
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-29.87	0.26	29.87	25.29	4.58	6.524		
800.00	800.00	800.00	800.00	2.65	2.65	179.50	-29.87	0.26	29.87	24.57	5.29	5.641	CC, ES	
900.00	900.00	899.35	899.33	3.01	2.99	-177.92	-30.89	-1.12	30.92	24.92	6.00	5.155		
1,000.00	1,000.00	998.46	998.30	3.36	3.32	-171.20	-33.96	-5.26	34.41	27.71	6.70	5.137		
1,100.00	1,099.98	1,097.58	1,097.07	3.72	3.67	-119.67	-38.90	-11.89	41.62	34.22	7.40	5.624		
1,200.00	1,199.84	1,197.11	1,196.20	4.08	4.02	-118.39	-44.19	-19.02	51.20	43.11	8.10	6.323		
1,242.90	1,242.60	1,239.75	1,238.67	4.23	4.17	-118.92	-46.46	-22.08	55.83	47.43	8.40	6.647		
1,300.00	1,299.50	1,296.48	1,295.18	4.44	4.37	-119.94	-49.48	-26.14	62.21	53.41	8.80	7.068		
1,400.00	1,399.14	1,395.84	1,394.15	4.80	4.73	-121.30	-54.77	-33.26	73.41	63.90	9.51	7.719		
1,500.00	1,498.79	1,495.20	1,493.11	5.16	5.09	-122.29	-60.06	-40.38	84.65	74.42	10.22	8.280		
1,600.00	1,598.43	1,594.56	1,592.07	5.52	5.46	-123.06	-65.35	-47.49	95.90	84.96	10.94	8.765		
1,700.00	1,698.07	1,693.91	1,691.03	5.89	5.82	-123.66	-70.64	-54.61	107.17	95.51	11.66	9.190		
1,800.00	1,797.71	1,793.27	1,789.99	6.26	6.19	-124.15	-75.93	-61.73	118.44	106.06	12.38	9.564		
1,900.00	1,897.35	1,892.63	1,888.95	6.63	6.56	-124.55	-81.22	-68.84	129.73	116.62	13.11	9.896		
2,000.00	1,996.99	1,991.99	1,987.91	7.00	6.93	-124.89	-86.51	-75.96	141.02	127.18	13.84	10.191		
2,100.00	2,096.63	2,091.35	2,086.87	7.37	7.31	-125.18	-91.80	-83.08	152.31	137.74	14.57	10.457		
2,200.00	2,196.27	2,190.70	2,185.83	7.74	7.68	-125.43	-97.09	-90.20	163.61	148.31	15.30	10.696		
2,300.00	2,295.91	2,290.06	2,284.80	8.11	8.05	-125.65	-102.38	-97.31	174.90	158.88	16.03	10.914		
2,400.00	2,395.55	2,389.42	2,383.76	8.48	8.43	-125.84	-107.66	-104.43	186.21	169.45	16.76	11.111		
2,500.00	2,495.19	2,488.78	2,482.72	8.85	8.80	-126.01	-112.95	-111.55	197.51	180.02	17.49	11.292		
2,600.00	2,594.83	2,588.13	2,581.68	9.23	9.18	-126.16	-118.24	-118.66	208.81	190.59	18.23	11.457		
2,700.00	2,694.47	2,687.49	2,680.64	9.60	9.56	-126.29	-123.53	-125.78	220.12	201.16	18.96	11.610		
2,800.00	2,794.12	2,786.85	2,779.60	9.97	9.93	-126.41	-128.82	-132.90	231.43	211.73	19.69	11.751		
2,900.00	2,893.76	2,886.21	2,878.56	10.35	10.31	-126.53	-134.11	-140.02	242.73	222.30	20.43	11.881		
3,000.00	2,993.40	2,985.56	2,977.52	10.72	10.69	-126.63	-139.40	-147.13	254.04	232.88	21.17	12.003		
3,100.00	3,093.04	3,084.92	3,076.48	11.10	11.06	-126.72	-144.69	-154.25	265.35	243.45	21.90	12.115		
3,200.00	3,192.68	3,184.28	3,175.45	11.47	11.44	-126.80	-149.98	-161.37	276.66	254.02	22.64	12.221		
3,300.00	3,292.32	3,283.64	3,274.41	11.85	11.82	-126.88	-155.27	-168.48	287.97	264.60	23.38	12.319		
3,400.00	3,391.96	3,382.99	3,373.37	12.22	12.20	-126.95	-160.55	-175.60	299.28	275.17	24.11	12.411		
3,500.00	3,491.60	3,482.35	3,472.33	12.60	12.58	-127.02	-165.84	-182.72	310.59	285.74	24.85	12.498		
3,600.00	3,591.24	3,581.71	3,571.29	12.97	12.96	-127.08	-171.13	-189.83	321.91	296.32	25.59	12.580		
3,700.00	3,690.88	3,681.07	3,670.25	13.35	13.33	-127.14	-176.42	-196.95	333.22	306.89	26.33	12.657		
3,800.00	3,790.52	3,780.42	3,769.21	13.72	13.71	-127.19	-181.71	-204.07	344.53	317.47	27.07	12.729		
3,900.00	3,890.16	3,879.78	3,868.17	14.10	14.09	-127.24	-187.00	-211.19	355.84	328.04	27.80	12.798		
4,000.00	3,989.80	3,979.14	3,967.13	14.47	14.47	-127.29	-192.29	-218.30	367.16	338.61	28.54	12.863		
4,100.00	4,089.45	4,078.50	4,066.10	14.85	14.85	-127.34	-197.58	-225.42	378.47	349.19	29.28	12.925		
4,200.00	4,189.09	4,177.85	4,165.06	15.22	15.23	-127.38	-202.87	-232.54	389.78	359.76	30.02	12.984		
4,300.00	4,288.73	4,277.21	4,264.02	15.60	15.61	-127.42	-208.16	-239.65	401.10	370.34	30.76	13.039		
4,400.00	4,388.37	4,376.57	4,362.98	15.97	15.99	-127.45	-213.44	-246.77	412.41	380.91	31.50	13.092		
4,500.00	4,488.01	4,475.93	4,461.94	16.35	16.37	-127.49	-218.73	-253.89	423.72	391.48	32.24	13.143		
4,600.00	4,587.65	4,575.28	4,560.90	16.73	16.75	-127.52	-224.02	-261.00	435.04	402.06	32.98	13.191		
4,700.00	4,687.29	4,674.64	4,659.86	17.10	17.13	-127.56	-229.31	-268.12	446.35	412.63	33.72	13.237		
4,800.00	4,786.93	4,775.80	4,760.62	17.48	17.52	-127.59	-234.67	-275.33	457.64	423.17	34.47	13.275		
4,900.00	4,886.57	4,887.72	4,872.31	17.85	17.93	-127.88	-238.95	-281.09	467.23	431.94	35.29	13.240		
5,000.00	4,986.21	4,999.93	4,984.47	18.23	18.33	-128.54	-240.62	-283.34	474.18	438.11	36.07	13.145		

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 3F-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 3F-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
5,100.00	5,085.85	5,101.31	5,085.85	18.61	18.66	-129.34	-240.65	-283.37	479.54	442.76	36.78	13.037	
5,200.00	5,185.49	5,200.95	5,185.49	18.98	18.98	-130.11	-240.65	-283.37	484.97	447.48	37.49	12.936	
5,300.00	5,285.14	5,300.59	5,285.14	19.36	19.30	-130.86	-240.65	-283.37	490.48	452.28	38.19	12.842	
5,400.00	5,384.78	5,400.23	5,384.78	19.73	19.63	-131.60	-240.65	-283.37	496.07	457.17	38.90	12.754	
5,500.00	5,484.42	5,499.88	5,484.42	20.11	19.95	-132.32	-240.65	-283.37	501.74	462.14	39.60	12.670	
5,600.00	5,584.06	5,599.52	5,584.06	20.49	20.28	-133.03	-240.65	-283.37	507.50	467.19	40.31	12.591	
5,700.00	5,683.70	5,699.16	5,683.70	20.86	20.61	-133.72	-240.65	-283.37	513.32	472.31	41.01	12.517	
5,773.96	5,757.40	5,772.85	5,757.40	21.14	20.85	-134.22	-240.65	-283.37	517.68	476.15	41.53	12.465	
5,800.00	5,783.35	5,798.81	5,783.35	21.24	20.94	-134.40	-240.65	-283.37	519.14	477.42	41.72	12.445	
5,900.00	5,883.17	5,898.63	5,883.17	21.61	21.27	-134.92	-240.65	-283.37	523.24	480.82	42.41	12.336	
6,000.00	5,983.14	5,998.60	5,983.14	21.96	21.60	-135.12	-240.65	-283.37	524.89	481.78	43.11	12.177	
6,016.86	6,000.00	6,015.46	6,000.00	22.02	21.65	179.55	-240.65	-283.37	524.92	481.70	43.22	12.145	
6,100.00	6,083.14	6,098.60	6,083.14	22.30	21.93	179.55	-240.65	-283.37	524.92	481.13	43.79	11.987	
6,200.00	6,183.14	6,198.60	6,183.14	22.65	22.26	179.55	-240.65	-283.37	524.92	480.45	44.47	11.803	
6,300.00	6,283.14	6,298.60	6,283.14	22.99	22.60	179.55	-240.65	-283.37	524.92	479.76	45.16	11.623	
6,400.00	6,383.14	6,398.60	6,383.14	23.33	22.93	179.55	-240.65	-283.37	524.92	479.07	45.85	11.449	
6,500.00	6,483.14	6,498.60	6,483.14	23.68	23.27	179.55	-240.65	-283.37	524.92	478.39	46.54	11.280	
6,600.00	6,583.14	6,598.60	6,583.14	24.02	23.61	179.55	-240.65	-283.37	524.92	477.70	47.22	11.116	
6,700.00	6,683.14	6,698.60	6,683.14	24.37	23.94	179.55	-240.65	-283.37	524.92	477.01	47.91	10.956	
6,710.66	6,693.80	6,709.26	6,693.80	24.41	23.98	179.55	-240.65	-283.37	524.92	476.93	47.99	10.939	
6,750.00	6,733.12	6,748.67	6,733.12	24.54	24.11	90.13	-240.63	-282.29	524.92	476.67	48.25	10.880	
6,800.00	6,782.91	6,798.75	6,783.06	24.69	24.26	90.13	-240.59	-277.79	524.92	476.36	48.56	10.809	
6,850.00	6,832.26	6,848.84	6,832.50	24.84	24.42	90.13	-240.51	-269.82	524.92	476.05	48.87	10.741	
6,900.00	6,880.94	6,898.92	6,881.25	24.99	24.56	90.13	-240.39	-258.41	524.92	475.76	49.17	10.677	
6,950.00	6,928.71	6,949.00	6,929.09	25.13	24.70	90.13	-240.24	-243.62	524.92	475.46	49.46	10.614	
7,000.00	6,975.33	6,999.08	6,975.78	25.26	24.84	90.12	-240.06	-225.53	524.92	475.18	49.75	10.552	
7,050.00	7,020.59	7,049.16	7,021.08	25.39	24.98	90.12	-239.84	-204.22	524.92	474.88	50.04	10.491	
7,100.00	7,064.25	7,099.23	7,064.79	25.53	25.11	90.11	-239.59	-179.81	524.92	474.58	50.34	10.428	
7,150.00	7,106.10	7,149.30	7,106.67	25.67	25.26	90.11	-239.31	-152.40	524.92	474.26	50.66	10.362	
7,200.00	7,145.95	7,199.37	7,146.54	25.82	25.41	90.10	-239.01	-122.13	524.92	473.90	51.02	10.289	
7,250.00	7,183.59	7,249.43	7,184.20	26.00	25.58	90.10	-238.67	-89.15	524.92	473.50	51.42	10.209	
7,300.00	7,218.85	7,299.49	7,219.46	26.21	25.79	90.09	-238.31	-53.63	524.92	473.04	51.88	10.117	
7,350.00	7,251.55	7,349.55	7,252.14	26.46	26.04	90.08	-237.93	-15.74	524.92	472.49	52.43	10.012	
7,400.00	7,281.53	7,399.60	7,282.10	26.77	26.35	90.08	-237.52	24.34	524.92	471.85	53.07	9.890	
7,450.00	7,308.65	7,449.65	7,309.18	27.14	26.72	90.07	-237.09	66.41	524.92	471.09	53.83	9.752	
7,500.00	7,332.77	7,499.69	7,333.26	27.58	27.15	90.06	-236.64	110.27	524.92	470.21	54.71	9.594	
7,550.00	7,353.78	7,549.72	7,354.22	28.08	27.66	90.05	-236.18	155.69	524.92	469.19	55.73	9.419	
7,600.00	7,371.58	7,599.75	7,371.95	28.66	28.24	90.04	-235.71	202.46	524.92	468.03	56.89	9.227	
7,650.00	7,386.07	7,649.78	7,386.37	29.31	28.90	90.03	-235.22	250.35	524.92	466.72	58.20	9.020	
7,700.00	7,397.19	7,699.80	7,397.41	30.02	29.62	90.02	-234.73	299.12	524.92	465.28	59.64	8.802	
7,750.00	7,404.88	7,749.81	7,405.03	30.80	30.41	90.02	-234.22	348.54	524.92	463.72	61.20	8.577	
7,800.00	7,409.11	7,799.82	7,409.17	31.63	31.25	90.01	-233.72	398.36	524.92	462.04	62.88	8.348	
7,835.66	7,410.00	7,835.48	7,410.00	32.26	31.89	90.00	-233.35	434.00	524.92	460.78	64.14	8.184	
7,900.00	7,410.00	7,899.82	7,410.00	33.45	33.09	90.00	-232.70	498.34	524.92	458.38	66.53	7.889	
8,000.00	7,410.00	7,999.82	7,410.00	35.45	35.12	90.00	-231.68	598.33	524.92	454.34	70.57	7.438	
8,100.00	7,410.00	8,099.82	7,410.00	37.63	37.32	90.00	-230.67	698.33	524.92	449.97	74.95	7.004	
8,200.00	7,410.00	8,199.82	7,410.00	39.94	39.66	90.00	-229.65	798.32	524.92	445.32	79.59	6.595	
8,300.00	7,410.00	8,299.82	7,410.00	42.37	42.11	90.00	-228.64	898.32	524.92	440.44	84.48	6.214	
8,400.00	7,410.00	8,399.82	7,410.00	44.90	44.65	90.00	-227.62	998.31	524.92	435.37	89.55	5.862	
8,500.00	7,410.00	8,499.82	7,410.00	47.51	47.28	90.00	-226.60	1,098.31	524.92	430.13	94.78	5.538	
8,600.00	7,410.00	8,599.82	7,410.00	50.19	49.97	90.00	-225.59	1,198.30	524.92	424.76	100.16	5.241	
8,700.00	7,410.00	8,699.82	7,410.00	52.93	52.73	90.00	-224.57	1,298.30	524.92	419.27	105.65	4.969	

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 3F-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 3F-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
8,800.00	7,410.00	8,799.82	7,410.00	55.71	55.53	90.00	-223.55	1,398.29	524.92	413.68	111.23	4.719	
8,900.00	7,410.00	8,899.82	7,410.00	58.54	58.37	90.00	-222.54	1,498.29	524.92	408.01	116.91	4.490	
9,000.00	7,410.00	8,999.82	7,410.00	61.41	61.25	90.00	-221.52	1,598.28	524.92	402.27	122.65	4.280	
9,100.00	7,410.00	9,099.82	7,410.00	64.31	64.16	90.00	-220.51	1,698.28	524.92	396.46	128.46	4.086	
9,200.00	7,410.00	9,199.82	7,410.00	67.24	67.09	90.00	-219.49	1,798.27	524.92	390.59	134.32	3.908	
9,300.00	7,410.00	9,299.82	7,410.00	70.19	70.05	90.00	-218.47	1,898.27	524.92	384.68	140.24	3.743	
9,400.00	7,410.00	9,399.82	7,410.00	73.16	73.03	90.00	-217.46	1,998.26	524.92	378.73	146.19	3.591	
9,500.00	7,410.00	9,499.82	7,410.00	76.15	76.03	90.00	-216.44	2,098.26	524.92	372.74	152.18	3.449	
9,600.00	7,410.00	9,599.82	7,410.00	79.16	79.05	90.00	-215.42	2,198.25	524.92	366.71	158.21	3.318	
9,700.00	7,410.00	9,699.82	7,410.00	82.19	82.08	90.00	-214.41	2,298.25	524.92	360.66	164.26	3.196	
9,800.00	7,410.00	9,799.82	7,410.00	85.22	85.12	90.00	-213.39	2,398.24	524.92	354.58	170.34	3.082	
9,900.00	7,410.00	9,899.82	7,410.00	88.27	88.18	90.00	-212.38	2,498.24	524.92	348.47	176.44	2.975	
10,000.00	7,410.00	9,999.82	7,410.00	91.33	91.24	90.00	-211.36	2,598.23	524.92	342.35	182.57	2.875	
10,100.00	7,410.00	10,099.82	7,410.00	94.40	94.32	90.00	-210.34	2,698.23	524.92	336.21	188.71	2.782	
10,200.00	7,410.00	10,199.82	7,410.00	97.48	97.40	90.00	-209.33	2,798.22	524.92	330.04	194.87	2.694	
10,300.00	7,410.00	10,299.82	7,410.00	100.57	100.49	90.00	-208.31	2,898.22	524.92	323.87	201.05	2.611	
10,400.00	7,410.00	10,399.82	7,410.00	103.66	103.59	90.00	-207.29	2,998.21	524.92	317.68	207.24	2.533	
10,500.00	7,410.00	10,499.82	7,410.00	106.76	106.69	90.00	-206.28	3,098.21	524.92	311.47	213.45	2.459	
10,600.00	7,410.00	10,599.82	7,410.00	109.87	109.80	90.00	-205.26	3,198.20	524.92	305.25	219.66	2.390	
10,700.00	7,410.00	10,699.82	7,410.00	112.98	112.92	90.00	-204.25	3,298.20	524.92	299.03	225.89	2.324	
10,800.00	7,410.00	10,799.82	7,410.00	116.09	116.04	90.00	-203.23	3,398.19	524.92	292.79	232.13	2.261	
10,900.00	7,410.00	10,899.82	7,410.00	119.22	119.16	90.00	-202.21	3,498.19	524.92	286.54	238.37	2.202	
11,000.00	7,410.00	10,999.82	7,410.00	122.34	122.29	90.00	-201.20	3,598.18	524.92	280.29	244.63	2.146	
11,100.00	7,410.00	11,099.82	7,410.00	125.47	125.42	90.00	-200.18	3,698.17	524.92	274.02	250.89	2.092	
11,200.00	7,410.00	11,199.82	7,410.00	128.61	128.56	90.00	-199.16	3,798.17	524.92	267.75	257.16	2.041	
11,300.00	7,410.00	11,299.82	7,410.00	131.74	131.70	90.00	-198.15	3,898.16	524.92	261.48	263.44	1.993	
11,400.00	7,410.00	11,399.82	7,410.00	134.88	134.84	90.00	-197.13	3,998.16	524.92	255.19	269.72	1.946	
11,500.00	7,410.00	11,499.82	7,410.00	138.03	137.99	90.00	-196.12	4,098.15	524.92	248.90	276.01	1.902	
11,600.00	7,410.00	11,599.82	7,410.00	141.18	141.14	90.00	-195.10	4,198.15	524.92	242.61	282.31	1.859	
11,700.00	7,410.00	11,699.82	7,410.00	144.32	144.29	90.00	-194.08	4,298.14	524.92	236.31	288.61	1.819	
11,800.00	7,410.00	11,799.82	7,410.00	147.48	147.44	90.00	-193.07	4,398.14	524.92	230.00	294.92	1.780	
11,905.16	7,410.00	11,904.98	7,410.00	150.79	149.36	90.00	-192.00	4,503.30	524.92	224.77	300.15	1.749	
11,909.47	7,410.00	11,906.06	7,410.00	150.93	149.38	90.00	-191.99	4,504.38	524.93	224.63	300.30	1.748 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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							
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	179.91	-39.71	0.06	39.71				
100.00	100.00	100.00	100.00	0.14	0.14	179.91	-39.71	0.06	39.71	39.43	0.28	143.853	
200.00	200.00	200.00	200.00	0.50	0.50	179.91	-39.71	0.06	39.71	38.71	0.99	39.988	
300.00	300.00	300.00	300.00	0.85	0.85	179.91	-39.71	0.06	39.71	38.00	1.71	23.222	
400.00	400.00	400.00	400.00	1.21	1.21	179.91	-39.71	0.06	39.71	37.28	2.43	16.361	
500.00	500.00	500.00	500.00	1.57	1.57	179.91	-39.71	0.06	39.71	36.56	3.14	12.630	
600.00	600.00	600.00	600.00	1.93	1.93	179.91	-39.71	0.06	39.71	35.85	3.86	10.285	
700.00	700.00	700.00	700.00	2.29	2.29	179.91	-39.71	0.06	39.71	35.13	4.58	8.674 CC, ES	
800.00	800.00	798.82	798.80	2.65	2.63	-178.78	-41.13	-0.88	41.16	35.87	5.28	7.792	
900.00	900.00	897.40	897.25	3.01	2.96	-175.36	-45.38	-3.68	45.61	39.63	5.98	7.622	
1,000.00	1,000.00	995.60	995.07	3.36	3.29	-170.97	-52.42	-8.33	53.31	46.61	6.69	7.964	
1,100.00	1,099.98	1,095.03	1,093.99	3.72	3.64	-122.99	-60.83	-13.89	63.62	56.23	7.39	8.614	
1,200.00	1,199.84	1,194.27	1,192.72	4.08	4.00	-123.25	-69.23	-19.43	75.87	67.79	8.08	9.390	
1,242.90	1,242.60	1,236.75	1,234.98	4.23	4.15	-123.95	-72.83	-21.80	81.72	73.34	8.38	9.750	
1,300.00	1,299.50	1,293.26	1,291.20	4.44	4.36	-125.07	-77.61	-24.96	89.76	80.98	8.78	10.222	
1,400.00	1,399.14	1,392.22	1,389.65	4.80	4.72	-126.61	-85.98	-30.49	103.92	94.43	9.49	10.955	
1,500.00	1,498.79	1,491.18	1,488.10	5.16	5.09	-127.78	-94.36	-36.02	118.13	107.93	10.20	11.587	
1,600.00	1,598.43	1,590.14	1,586.55	5.52	5.46	-128.70	-102.73	-41.55	132.38	121.47	10.91	12.136	
1,700.00	1,698.07	1,689.10	1,685.00	5.89	5.84	-129.44	-111.11	-47.08	146.65	135.03	11.62	12.616	
1,800.00	1,797.71	1,788.06	1,783.45	6.26	6.21	-130.04	-119.48	-52.60	160.95	148.61	12.34	13.040	
1,900.00	1,897.35	1,887.02	1,881.90	6.63	6.59	-130.55	-127.85	-58.13	175.26	162.20	13.06	13.415	
2,000.00	1,996.99	1,985.98	1,980.35	7.00	6.96	-130.99	-136.23	-63.66	189.58	175.79	13.79	13.751	
2,100.00	2,096.63	2,084.94	2,078.80	7.37	7.34	-131.36	-144.60	-69.19	203.91	189.40	14.51	14.052	
2,200.00	2,196.27	2,183.90	2,177.25	7.74	7.72	-131.68	-152.98	-74.72	218.25	203.01	15.24	14.324	
2,300.00	2,295.91	2,282.86	2,275.70	8.11	8.10	-131.96	-161.35	-80.25	232.59	216.63	15.96	14.571	
2,400.00	2,395.55	2,381.82	2,374.15	8.48	8.48	-132.21	-169.72	-85.78	246.94	230.25	16.69	14.796	
2,500.00	2,495.19	2,480.78	2,472.60	8.85	8.86	-132.44	-178.10	-91.31	261.30	243.88	17.42	15.001	
2,600.00	2,594.83	2,579.74	2,571.05	9.23	9.25	-132.64	-186.47	-96.84	275.65	257.50	18.15	15.189	
2,700.00	2,694.47	2,678.69	2,669.50	9.60	9.63	-132.82	-194.85	-102.37	290.01	271.13	18.88	15.363	
2,800.00	2,794.12	2,777.65	2,767.95	9.97	10.01	-132.98	-203.22	-107.89	304.37	284.77	19.61	15.523	
2,900.00	2,893.76	2,876.61	2,866.39	10.35	10.39	-133.13	-211.60	-113.42	318.74	298.40	20.34	15.671	
3,000.00	2,993.40	2,975.57	2,964.84	10.72	10.78	-133.26	-219.97	-118.95	333.10	312.03	21.07	15.809	
3,100.00	3,093.04	3,074.53	3,063.29	11.10	11.16	-133.39	-228.34	-124.48	347.47	325.67	21.80	15.938	
3,200.00	3,192.68	3,173.49	3,161.74	11.47	11.54	-133.50	-236.72	-130.01	361.84	339.31	22.53	16.058	
3,300.00	3,292.32	3,272.45	3,260.19	11.85	11.93	-133.61	-245.09	-135.54	376.21	352.95	23.27	16.170	
3,400.00	3,391.96	3,371.41	3,358.64	12.22	12.31	-133.71	-253.47	-141.07	390.58	366.58	24.00	16.275	
3,500.00	3,491.60	3,470.37	3,457.09	12.60	12.69	-133.80	-261.84	-146.60	404.96	380.22	24.73	16.374	
3,600.00	3,591.24	3,569.33	3,555.54	12.97	13.08	-133.88	-270.22	-152.13	419.33	393.86	25.47	16.466	
3,700.00	3,690.88	3,668.29	3,653.99	13.35	13.46	-133.96	-278.59	-157.65	433.70	407.51	26.20	16.554	
3,800.00	3,790.52	3,767.25	3,752.44	13.72	13.85	-134.03	-286.96	-163.18	448.08	421.15	26.93	16.637	
3,900.00	3,890.16	3,866.21	3,850.89	14.10	14.23	-134.10	-295.34	-168.71	462.46	434.79	27.67	16.715	
4,000.00	3,989.80	3,965.17	3,949.34	14.47	14.62	-134.17	-303.71	-174.24	476.83	448.43	28.40	16.789	
4,100.00	4,089.45	4,064.13	4,047.79	14.85	15.00	-134.23	-312.09	-179.77	491.21	462.07	29.14	16.860	
4,200.00	4,189.09	4,163.09	4,146.24	15.22	15.39	-134.29	-320.46	-185.30	505.59	475.72	29.87	16.926	
4,300.00	4,288.73	4,262.05	4,244.69	15.60	15.77	-134.34	-328.84	-190.83	519.97	489.36	30.60	16.990	
4,400.00	4,388.37	4,361.01	4,343.14	15.97	16.16	-134.39	-337.21	-196.36	534.34	503.00	31.34	17.050	
4,500.00	4,488.01	4,459.97	4,441.59	16.35	16.54	-134.44	-345.58	-201.89	548.72	516.65	32.07	17.108	
4,600.00	4,587.65	4,558.93	4,540.04	16.73	16.93	-134.49	-353.96	-207.41	563.10	530.29	32.81	17.163	
4,700.00	4,687.29	4,657.89	4,638.49	17.10	17.32	-134.53	-362.33	-212.94	577.48	543.94	33.54	17.216	
4,800.00	4,786.93	4,756.85	4,736.94	17.48	17.70	-134.58	-370.71	-218.47	591.86	557.58	34.28	17.266	
4,900.00	4,886.57	4,855.81	4,835.39	17.85	18.09	-134.62	-379.08	-224.00	606.24	571.23	35.01	17.314	
5,000.00	4,986.21	4,954.77	4,933.84	18.23	18.47	-134.65	-387.45	-229.53	620.62	584.87	35.75	17.360	

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 3F-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 3F-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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,085.85	5,053.73	5,032.29	18.61	18.86	-134.69	-395.83	-235.06	635.00	598.52	36.49	17.404	
5,200.00	5,185.49	5,152.69	5,130.74	18.98	19.24	-134.73	-404.20	-240.59	649.39	612.16	37.22	17.447	
5,300.00	5,285.14	5,251.65	5,229.19	19.36	19.63	-134.76	-412.58	-246.12	663.77	625.81	37.96	17.487	
5,400.00	5,384.78	5,350.61	5,327.64	19.73	20.02	-134.79	-420.95	-251.65	678.15	639.46	38.69	17.526	
5,500.00	5,484.42	5,449.57	5,426.09	20.11	20.40	-134.82	-429.33	-257.17	692.53	653.10	39.43	17.564	
5,600.00	5,584.06	5,548.53	5,524.54	20.49	20.79	-134.85	-437.70	-262.70	706.91	666.75	40.16	17.600	
5,700.00	5,683.70	5,647.49	5,622.99	20.86	21.17	-134.88	-446.07	-268.23	721.29	680.39	40.90	17.635	
5,773.96	5,757.40	5,720.68	5,695.80	21.14	21.46	-134.90	-452.27	-272.32	731.93	690.49	41.44	17.660	
5,800.00	5,783.35	5,749.71	5,724.69	21.24	21.57	-134.95	-454.69	-273.92	735.57	693.91	41.66	17.656	
5,900.00	5,883.17	5,876.36	5,850.98	21.61	22.05	-135.10	-462.52	-279.09	745.83	703.27	42.56	17.524	
6,000.00	5,983.14	6,003.91	5,978.46	21.96	22.50	-135.15	-465.69	-281.18	749.96	706.57	43.39	17.285	
6,016.86	6,000.00	6,025.45	6,000.00	22.02	22.57	179.52	-465.76	-281.23	750.04	706.53	43.52	17.235	
6,100.00	6,083.14	6,108.59	6,083.14	22.30	22.82	179.52	-465.76	-281.23	750.04	705.97	44.07	17.018	
6,200.00	6,183.14	6,208.59	6,183.14	22.65	23.13	179.52	-465.76	-281.23	750.04	705.30	44.74	16.763	
6,300.00	6,283.14	6,308.59	6,283.14	22.99	23.45	179.52	-465.76	-281.23	750.04	704.63	45.42	16.515	
6,400.00	6,383.14	6,408.59	6,383.14	23.33	23.76	179.52	-465.76	-281.23	750.04	703.95	46.09	16.274	
6,500.00	6,483.14	6,508.59	6,483.14	23.68	24.07	179.52	-465.76	-281.23	750.04	703.28	46.76	16.039	
6,600.00	6,583.14	6,608.59	6,583.14	24.02	24.39	179.52	-465.76	-281.23	750.04	702.60	47.44	15.810	
6,684.77	6,667.91	6,693.39	6,667.91	24.32	24.65	179.42	-465.74	-279.87	750.04	702.03	48.01	15.622	
6,700.00	6,683.14	6,708.57	6,683.05	24.37	24.70	179.33	-465.73	-278.77	750.04	701.93	48.11	15.589	
6,710.66	6,693.80	6,719.16	6,693.60	24.41	24.73	179.26	-465.72	-277.82	750.04	701.86	48.18	15.567	
6,750.00	6,733.12	6,758.10	6,732.23	24.54	24.85	89.55	-465.67	-272.97	750.06	701.63	48.44	15.486	
6,800.00	6,782.91	6,807.30	6,780.57	24.69	24.99	89.19	-465.58	-263.86	750.12	701.38	48.74	15.391	
6,850.00	6,832.26	6,856.18	6,827.86	24.84	25.12	88.82	-465.46	-251.54	750.20	701.17	49.03	15.300	
6,900.00	6,880.94	6,904.75	6,873.92	24.99	25.25	88.47	-465.30	-236.14	750.31	701.00	49.32	15.214	
6,950.00	6,928.71	6,953.04	6,918.56	25.13	25.37	88.12	-465.11	-217.76	750.45	700.85	49.59	15.132	
7,000.00	6,975.33	7,001.04	6,961.61	25.26	25.48	87.79	-464.90	-196.56	750.61	700.74	49.87	15.052	
7,050.00	7,020.59	7,048.77	7,002.92	25.39	25.58	87.46	-464.65	-172.66	750.78	700.64	50.15	14.972	
7,100.00	7,064.25	7,096.25	7,042.34	25.53	25.68	87.15	-464.38	-146.21	750.98	700.54	50.44	14.890	
7,150.00	7,106.10	7,143.49	7,079.74	25.67	25.78	86.85	-464.09	-117.36	751.18	700.43	50.75	14.802	
7,200.00	7,145.95	7,190.51	7,114.99	25.82	25.88	86.57	-463.78	-86.26	751.40	700.30	51.10	14.705	
7,250.00	7,183.59	7,237.32	7,147.99	26.00	25.99	86.30	-463.44	-53.07	751.62	700.13	51.49	14.597	
7,300.00	7,218.85	7,283.94	7,178.62	26.21	26.12	86.05	-463.08	-17.94	751.84	699.89	51.95	14.472	
7,350.00	7,251.55	7,330.38	7,206.80	26.46	26.29	85.82	-462.71	18.96	752.05	699.57	52.49	14.328	
7,400.00	7,281.53	7,376.66	7,232.44	26.77	26.54	85.60	-462.31	57.47	752.26	699.14	53.12	14.162	
7,450.00	7,308.65	7,422.79	7,255.48	27.14	26.88	85.41	-461.91	97.43	752.46	698.61	53.85	13.972	
7,500.00	7,332.77	7,468.80	7,275.84	27.58	27.28	85.24	-461.49	138.67	752.64	697.93	54.71	13.757	
7,550.00	7,353.78	7,514.69	7,293.48	28.08	27.76	85.09	-461.06	181.03	752.81	697.12	55.69	13.518	
7,600.00	7,371.58	7,560.48	7,308.33	28.66	28.31	84.96	-460.62	224.33	752.95	696.15	56.80	13.256	
7,650.00	7,386.07	7,606.19	7,320.37	29.31	28.92	84.86	-460.17	268.42	753.08	695.03	58.04	12.974	
7,700.00	7,397.19	7,650.00	7,329.25	30.02	29.56	84.78	-459.73	311.31	753.18	693.79	59.38	12.684	
7,750.00	7,404.88	7,697.44	7,335.88	30.80	30.31	84.71	-459.26	358.27	753.24	692.34	60.90	12.368	
7,800.00	7,409.11	7,743.00	7,339.32	31.63	31.09	84.68	-458.80	403.70	753.29	690.79	62.50	12.053	
7,835.66	7,410.00	7,775.61	7,340.00	32.26	31.66	84.67	-458.46	436.29	753.30	689.61	63.69	11.827	
7,900.00	7,410.00	7,839.95	7,340.00	33.45	32.89	84.67	-457.81	500.63	753.30	687.20	66.10	11.396	
8,000.00	7,410.00	7,939.95	7,340.00	35.45	34.92	84.67	-456.79	600.62	753.30	683.18	70.12	10.743	
8,100.00	7,410.00	8,039.95	7,340.00	37.63	37.12	84.67	-455.78	700.62	753.30	678.83	74.47	10.116	
8,200.00	7,410.00	8,139.95	7,340.00	39.94	39.46	84.67	-454.76	800.61	753.30	674.20	79.10	9.524	
8,300.00	7,410.00	8,239.95	7,340.00	42.37	41.91	84.67	-453.75	900.61	753.30	669.34	83.96	8.973	
8,400.00	7,410.00	8,339.95	7,340.00	44.90	44.46	84.67	-452.73	1,000.60	753.30	664.29	89.01	8.463	
8,500.00	7,410.00	8,439.95	7,340.00	47.51	47.09	84.67	-451.71	1,100.60	753.30	659.08	94.22	7.995	
8,600.00	7,410.00	8,539.95	7,340.00	50.19	49.78	84.67	-450.70	1,200.59	753.30	653.73	99.57	7.565	

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 3F-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 3F-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						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	7,410.00	8,639.95	7,340.00	52.93	52.53	84.67	-449.68	1,300.59	753.30	648.26	105.04	7.172		
8,800.00	7,410.00	8,739.95	7,340.00	55.71	55.34	84.67	-448.66	1,400.58	753.30	642.69	110.61	6.811		
8,900.00	7,410.00	8,839.95	7,340.00	58.54	58.18	84.67	-447.65	1,500.58	753.30	637.04	116.26	6.480		
9,000.00	7,410.00	8,939.95	7,340.00	61.41	61.06	84.67	-446.63	1,600.57	753.30	631.32	121.98	6.176		
9,100.00	7,410.00	9,039.95	7,340.00	64.31	63.97	84.67	-445.62	1,700.57	753.30	625.54	127.76	5.896		
9,200.00	7,410.00	9,139.95	7,340.00	67.24	66.91	84.67	-444.60	1,800.56	753.30	619.69	133.60	5.638		
9,300.00	7,410.00	9,239.95	7,340.00	70.19	69.87	84.67	-443.58	1,900.56	753.30	613.81	139.49	5.400		
9,400.00	7,410.00	9,339.95	7,340.00	73.16	72.85	84.67	-442.57	2,000.55	753.30	607.88	145.42	5.180		
9,500.00	7,410.00	9,439.95	7,340.00	76.15	75.85	84.67	-441.55	2,100.55	753.30	601.91	151.39	4.976		
9,600.00	7,410.00	9,539.95	7,340.00	79.16	78.87	84.67	-440.53	2,200.54	753.30	595.91	157.39	4.786		
9,700.00	7,410.00	9,639.95	7,340.00	82.19	81.90	84.67	-439.52	2,300.54	753.30	589.88	163.42	4.610		
9,800.00	7,410.00	9,739.95	7,340.00	85.22	84.95	84.67	-438.50	2,400.53	753.30	583.82	169.47	4.445		
9,900.00	7,410.00	9,839.95	7,340.00	88.27	88.00	84.67	-437.49	2,500.52	753.30	577.74	175.55	4.291		
10,000.00	7,410.00	9,939.95	7,340.00	91.33	91.07	84.67	-436.47	2,600.52	753.30	571.64	181.65	4.147		
10,100.00	7,410.00	10,039.95	7,340.00	94.40	94.14	84.67	-435.45	2,700.51	753.30	565.53	187.77	4.012		
10,200.00	7,410.00	10,139.95	7,340.00	97.48	97.23	84.67	-434.44	2,800.51	753.30	559.39	193.91	3.885		
10,300.00	7,410.00	10,239.95	7,340.00	100.57	100.32	84.67	-433.42	2,900.50	753.30	553.24	200.06	3.765		
10,400.00	7,410.00	10,339.95	7,340.00	103.66	103.42	84.67	-432.40	3,000.50	753.30	547.07	206.23	3.653		
10,500.00	7,410.00	10,439.95	7,340.00	106.76	106.52	84.67	-431.39	3,100.49	753.30	540.89	212.41	3.547		
10,600.00	7,410.00	10,539.95	7,340.00	109.87	109.63	84.67	-430.37	3,200.49	753.30	534.70	218.60	3.446		
10,700.00	7,410.00	10,639.95	7,340.00	112.98	112.75	84.67	-429.36	3,300.48	753.30	528.50	224.80	3.351		
10,800.00	7,410.00	10,739.95	7,340.00	116.09	115.87	84.67	-428.34	3,400.48	753.30	522.29	231.01	3.261		
10,900.00	7,410.00	10,839.95	7,340.00	119.22	119.00	84.67	-427.32	3,500.47	753.30	516.07	237.23	3.175		
11,000.00	7,410.00	10,939.95	7,340.00	122.34	122.13	84.67	-426.31	3,600.47	753.30	509.84	243.46	3.094		
11,100.00	7,410.00	11,039.95	7,340.00	125.47	125.26	84.67	-425.29	3,700.46	753.30	503.60	249.70	3.017		
11,200.00	7,410.00	11,139.95	7,340.00	128.61	128.40	84.67	-424.27	3,800.46	753.30	497.35	255.94	2.943		
11,300.00	7,410.00	11,239.95	7,340.00	131.74	131.54	84.67	-423.26	3,900.45	753.30	491.10	262.19	2.873		
11,400.00	7,410.00	11,339.95	7,340.00	134.88	134.68	84.67	-422.24	4,000.45	753.30	484.84	268.45	2.806		
11,500.00	7,410.00	11,439.95	7,340.00	138.03	137.83	84.67	-421.23	4,100.44	753.30	478.58	274.72	2.742		
11,600.00	7,410.00	11,539.95	7,340.00	141.18	140.98	84.67	-420.21	4,200.44	753.30	472.31	280.99	2.681		
11,700.00	7,410.00	11,639.95	7,340.00	144.32	144.13	84.67	-419.19	4,300.43	753.30	466.04	287.26	2.622		
11,800.00	7,410.00	11,739.95	7,340.00	147.48	147.28	84.67	-418.18	4,400.43	753.30	459.76	293.54	2.566		
11,904.76	7,410.00	11,844.71	7,340.00	150.78	149.99	84.67	-417.11	4,505.18	753.30	453.77	299.53	2.515		
11,909.47	7,410.00	11,845.06	7,340.00	150.93	150.00	84.67	-417.11	4,505.52	753.31	453.63	299.68	2.514 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	179.83	-49.90	0.15	49.90					
100.00	100.00	100.00	100.00	0.14	0.14	179.83	-49.90	0.15	49.90	49.63	0.28	180.790		
200.00	200.00	200.00	200.00	0.50	0.50	179.83	-49.90	0.15	49.90	48.91	0.99	50.256		
300.00	300.00	300.00	300.00	0.85	0.85	179.83	-49.90	0.15	49.90	48.19	1.71	29.184		
400.00	400.00	400.00	400.00	1.21	1.21	179.83	-49.90	0.15	49.90	47.48	2.43	20.563		
500.00	500.00	500.00	500.00	1.57	1.57	179.83	-49.90	0.15	49.90	46.76	3.14	15.873		
600.00	600.00	600.00	600.00	1.93	1.93	179.83	-49.90	0.15	49.90	46.04	3.86	12.926 CC, ES		
700.00	700.00	698.39	698.37	2.29	2.27	-179.42	-51.45	-0.52	51.48	46.91	4.57	11.274		
800.00	800.00	796.55	796.39	2.65	2.60	-177.42	-56.09	-2.52	56.26	50.99	5.27	10.667		
900.00	900.00	894.25	893.73	3.01	2.93	-174.77	-63.76	-5.84	64.33	58.34	5.99	10.738		
1,000.00	1,000.00	991.26	990.05	3.36	3.27	-172.01	-74.39	-10.44	75.77	69.06	6.71	11.295		
1,100.00	1,099.98	1,089.94	1,087.77	3.72	3.64	-125.01	-87.00	-15.89	90.26	82.86	7.40	12.200		
1,200.00	1,199.84	1,188.56	1,185.42	4.08	4.01	-125.26	-99.61	-21.34	106.77	98.68	8.09	13.201		
1,242.90	1,242.60	1,230.74	1,227.19	4.23	4.17	-125.75	-105.01	-23.68	114.47	106.08	8.39	13.646		
1,300.00	1,299.50	1,286.84	1,282.74	4.44	4.39	-126.62	-112.18	-26.78	124.99	116.20	8.79	14.225		
1,400.00	1,399.14	1,385.08	1,380.03	4.80	4.77	-127.83	-124.75	-32.21	143.46	133.97	9.49	15.123		
1,500.00	1,498.79	1,483.32	1,477.31	5.16	5.16	-128.76	-137.31	-37.64	161.98	151.78	10.19	15.893		
1,600.00	1,598.43	1,581.56	1,574.59	5.52	5.55	-129.51	-149.88	-43.08	180.53	169.63	10.90	16.559		
1,700.00	1,698.07	1,679.80	1,671.87	5.89	5.95	-130.11	-162.45	-48.51	199.10	187.49	11.62	17.141		
1,800.00	1,797.71	1,778.04	1,769.15	6.26	6.34	-130.61	-175.01	-53.94	217.70	205.36	12.33	17.653		
1,900.00	1,897.35	1,876.28	1,866.43	6.63	6.74	-131.03	-187.58	-59.38	236.30	223.25	13.05	18.106		
2,000.00	1,996.99	1,974.52	1,963.71	7.00	7.14	-131.39	-200.14	-64.81	254.92	241.15	13.77	18.509		
2,100.00	2,096.63	2,072.76	2,061.00	7.37	7.54	-131.71	-212.71	-70.24	273.55	259.05	14.50	18.871		
2,200.00	2,196.27	2,171.00	2,158.28	7.74	7.94	-131.98	-225.28	-75.68	292.18	276.96	15.22	19.197		
2,300.00	2,295.91	2,269.24	2,255.56	8.11	8.34	-132.22	-237.84	-81.11	310.82	294.87	15.95	19.492		
2,400.00	2,395.55	2,367.48	2,352.84	8.48	8.74	-132.43	-250.41	-86.54	329.46	312.79	16.67	19.761		
2,500.00	2,495.19	2,465.72	2,450.12	8.85	9.14	-132.62	-262.97	-91.98	348.11	330.70	17.40	20.006		
2,600.00	2,594.83	2,563.96	2,547.40	9.23	9.55	-132.79	-275.54	-97.41	366.76	348.63	18.13	20.230		
2,700.00	2,694.47	2,662.20	2,644.68	9.60	9.95	-132.94	-288.10	-102.84	385.41	366.55	18.86	20.437		
2,800.00	2,794.12	2,760.44	2,741.97	9.97	10.35	-133.08	-300.67	-108.28	404.06	384.47	19.59	20.627		
2,900.00	2,893.76	2,858.68	2,839.25	10.35	10.76	-133.21	-313.24	-113.71	422.72	402.40	20.32	20.804		
3,000.00	2,993.40	2,956.92	2,936.53	10.72	11.16	-133.33	-325.80	-119.14	441.38	420.33	21.05	20.967		
3,100.00	3,093.04	3,055.16	3,033.81	11.10	11.57	-133.43	-338.37	-124.58	460.04	438.26	21.78	21.120		
3,200.00	3,192.68	3,153.40	3,131.09	11.47	11.97	-133.53	-350.93	-130.01	478.70	456.19	22.51	21.262		
3,300.00	3,292.32	3,251.64	3,228.37	11.85	12.38	-133.62	-363.50	-135.44	497.37	474.12	23.25	21.394		
3,400.00	3,391.96	3,349.88	3,325.65	12.22	12.78	-133.71	-376.07	-140.88	516.03	492.05	23.98	21.519		
3,500.00	3,491.60	3,448.12	3,422.94	12.60	13.19	-133.79	-388.63	-146.31	534.70	509.98	24.71	21.636		
3,600.00	3,591.24	3,546.36	3,520.22	12.97	13.60	-133.86	-401.20	-151.74	553.36	527.92	25.45	21.745		
3,700.00	3,690.88	3,644.60	3,617.50	13.35	14.00	-133.93	-413.76	-157.18	572.03	545.85	26.18	21.849		
3,800.00	3,790.52	3,742.84	3,714.78	13.72	14.41	-133.99	-426.33	-162.61	590.70	563.78	26.92	21.946		
3,900.00	3,890.16	3,841.08	3,812.06	14.10	14.82	-134.05	-438.90	-168.04	609.37	581.72	27.65	22.039		
4,000.00	3,989.80	3,939.32	3,909.34	14.47	15.22	-134.11	-451.46	-173.48	628.04	599.65	28.38	22.126		
4,100.00	4,089.45	4,037.56	4,006.62	14.85	15.63	-134.16	-464.03	-178.91	646.71	617.59	29.12	22.209		
4,200.00	4,189.09	4,135.80	4,103.91	15.22	16.04	-134.21	-476.59	-184.34	665.38	635.52	29.85	22.288		
4,300.00	4,288.73	4,234.04	4,201.19	15.60	16.45	-134.26	-489.16	-189.78	684.05	653.46	30.59	22.362		
4,400.00	4,388.37	4,332.28	4,298.47	15.97	16.85	-134.31	-501.72	-195.21	702.72	671.39	31.32	22.433		
4,500.00	4,488.01	4,430.52	4,395.75	16.35	17.26	-134.35	-514.29	-200.64	721.39	689.33	32.06	22.501		
4,600.00	4,587.65	4,528.76	4,493.03	16.73	17.67	-134.39	-526.86	-206.08	740.06	707.27	32.80	22.566		
4,700.00	4,687.29	4,627.00	4,590.31	17.10	18.08	-134.43	-539.42	-211.51	758.73	725.20	33.53	22.628		
4,800.00	4,786.93	4,725.24	4,687.59	17.48	18.48	-134.47	-551.99	-216.94	777.41	743.14	34.27	22.687		
4,900.00	4,886.57	4,823.48	4,784.88	17.85	18.89	-134.50	-564.55	-222.38	796.08	761.08	35.00	22.743		
5,000.00	4,986.21	4,921.72	4,882.16	18.23	19.30	-134.54	-577.12	-227.81	814.75	779.01	35.74	22.797		

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 3F-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 3F-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
5,100.00	5,085.85	5,019.96	4,979.44	18.61	19.71	-134.57	-589.69	-233.24	833.43	796.95	36.48	22.849	
5,200.00	5,185.49	5,118.20	5,076.72	18.98	20.12	-134.60	-602.25	-238.68	852.10	814.89	37.21	22.899	
5,300.00	5,285.14	5,216.44	5,174.00	19.36	20.52	-134.63	-614.82	-244.11	870.77	832.83	37.95	22.946	
5,400.00	5,384.78	5,314.68	5,271.28	19.73	20.93	-134.66	-627.38	-249.54	889.45	850.76	38.68	22.992	
5,500.00	5,484.42	5,412.92	5,368.56	20.11	21.34	-134.68	-639.95	-254.98	908.12	868.70	39.42	23.036	
5,600.00	5,584.06	5,511.16	5,465.85	20.49	21.75	-134.71	-652.52	-260.41	926.80	886.64	40.16	23.079	
5,700.00	5,683.70	5,609.40	5,563.13	20.86	22.16	-134.73	-665.08	-265.84	945.47	904.58	40.90	23.119	
5,773.96	5,757.40	5,697.36	5,650.28	21.14	22.52	-134.76	-675.94	-270.54	959.01	917.45	41.55	23.078	
5,800.00	5,783.35	5,734.43	5,687.10	21.24	22.66	-134.85	-679.87	-272.24	963.23	921.41	41.82	23.031	
5,900.00	5,883.17	5,878.23	5,830.38	21.61	23.21	-135.08	-690.99	-277.04	975.04	932.25	42.80	22.783	
6,000.00	5,983.14	6,023.42	5,975.47	21.96	23.71	-135.17	-695.51	-279.00	979.80	936.14	43.66	22.442	
6,016.86	6,000.00	6,047.95	6,000.00	22.02	23.78	179.51	-695.60	-279.04	979.90	936.11	43.79	22.377	
6,100.00	6,083.14	6,131.09	6,083.14	22.30	24.02	179.51	-695.60	-279.04	979.90	935.56	44.34	22.099	
6,200.00	6,183.14	6,231.09	6,183.14	22.65	24.31	179.51	-695.60	-279.04	979.90	934.89	45.00	21.773	
6,300.00	6,283.14	6,331.09	6,283.14	22.99	24.61	179.51	-695.60	-279.04	979.90	934.23	45.67	21.456	
6,400.00	6,383.14	6,431.09	6,383.14	23.33	24.90	179.51	-695.60	-279.04	979.90	933.56	46.34	21.148	
6,500.00	6,483.14	6,531.09	6,483.14	23.68	25.20	179.51	-695.60	-279.04	979.90	932.89	47.00	20.847	
6,600.00	6,583.14	6,631.09	6,583.14	24.02	25.50	179.51	-695.60	-279.04	979.90	932.22	47.67	20.554	
6,700.00	6,683.14	6,731.09	6,683.14	24.37	25.80	179.51	-695.60	-279.04	979.90	931.55	48.34	20.269	
6,710.66	6,693.80	6,741.75	6,693.80	24.41	25.83	179.51	-695.60	-279.04	979.90	931.48	48.42	20.239	
6,750.00	6,733.12	6,781.17	6,733.20	24.54	25.95	90.09	-695.59	-277.95	979.90	931.23	48.67	20.133	
6,800.00	6,782.91	6,831.28	6,783.10	24.69	26.09	90.09	-695.55	-273.45	979.90	930.92	48.98	20.005	
6,850.00	6,832.26	6,881.38	6,832.55	24.84	26.23	90.09	-695.46	-265.47	979.90	930.62	49.28	19.884	
6,900.00	6,880.94	6,931.49	6,881.32	24.99	26.36	90.09	-695.35	-254.05	979.90	930.33	49.57	19.767	
6,950.00	6,928.71	6,981.59	6,929.18	25.13	26.49	90.08	-695.20	-239.26	979.90	930.05	49.85	19.656	
7,000.00	6,975.33	7,031.68	6,975.88	25.26	26.61	90.08	-695.01	-221.15	979.90	929.77	50.13	19.547	
7,050.00	7,020.59	7,081.78	7,021.20	25.39	26.72	90.08	-694.80	-199.83	979.90	929.49	50.41	19.439	
7,100.00	7,064.25	7,131.87	7,064.91	25.53	26.82	90.08	-694.55	-175.39	979.90	929.20	50.70	19.329	
7,150.00	7,106.10	7,181.96	7,106.81	25.67	26.91	90.07	-694.27	-147.97	979.90	928.90	51.00	19.213	
7,200.00	7,145.95	7,232.04	7,146.69	25.82	27.00	90.07	-693.96	-117.68	979.90	928.56	51.34	19.087	
7,250.00	7,183.59	7,282.12	7,184.34	26.00	27.08	90.06	-693.63	-84.68	979.90	928.17	51.72	18.945	
7,300.00	7,218.85	7,332.20	7,219.60	26.21	27.15	90.06	-693.27	-49.14	979.90	927.73	52.17	18.783	
7,350.00	7,251.55	7,382.27	7,252.28	26.46	27.22	90.06	-692.88	-11.23	979.90	927.20	52.69	18.596	
7,400.00	7,281.53	7,432.33	7,282.24	26.77	27.29	90.05	-692.47	28.87	979.90	926.58	53.32	18.379	
7,450.00	7,308.65	7,482.39	7,309.31	27.14	27.38	90.05	-692.04	70.96	979.90	925.85	54.05	18.129	
7,500.00	7,332.77	7,532.44	7,333.38	27.58	27.55	90.04	-691.60	114.83	979.90	924.98	54.91	17.845	
7,550.00	7,353.78	7,582.48	7,354.32	28.08	27.90	90.03	-691.14	160.27	979.90	923.99	55.91	17.526	
7,600.00	7,371.58	7,632.52	7,372.04	28.66	28.42	90.03	-690.66	207.05	979.90	922.85	57.05	17.176	
7,650.00	7,386.07	7,682.55	7,386.44	29.31	29.04	90.02	-690.17	254.95	979.90	921.56	58.33	16.798	
7,700.00	7,397.19	7,732.57	7,397.47	30.02	29.74	90.02	-689.68	303.73	979.90	920.14	59.76	16.398	
7,750.00	7,404.88	7,782.59	7,405.06	30.80	30.51	90.01	-689.18	353.15	979.90	918.59	61.31	15.984	
7,800.00	7,409.11	7,832.60	7,409.19	31.63	31.34	90.00	-688.67	402.98	979.90	916.93	62.97	15.561	
7,835.66	7,410.00	7,868.26	7,410.00	32.26	31.96	90.00	-688.31	438.63	979.90	915.68	64.21	15.260	
7,900.00	7,410.00	7,932.60	7,410.00	33.45	33.18	90.00	-687.65	502.96	979.90	913.28	66.61	14.710	
8,000.00	7,410.00	8,032.60	7,410.00	35.45	35.19	90.00	-686.64	602.96	979.90	909.27	70.63	13.874	
8,100.00	7,410.00	8,132.60	7,410.00	37.63	37.37	90.00	-685.62	702.95	979.90	904.92	74.98	13.069	
8,200.00	7,410.00	8,232.60	7,410.00	39.94	39.69	90.00	-684.61	802.95	979.90	900.29	79.61	12.309	
8,300.00	7,410.00	8,332.60	7,410.00	42.37	42.13	90.00	-683.59	902.94	979.90	895.42	84.47	11.600	
8,400.00	7,410.00	8,432.60	7,410.00	44.90	44.66	90.00	-682.57	1,002.94	979.90	890.37	89.53	10.945	
8,500.00	7,410.00	8,532.60	7,410.00	47.51	47.28	90.00	-681.56	1,102.93	979.90	885.14	94.75	10.342	
8,600.00	7,410.00	8,632.60	7,410.00	50.19	49.96	90.00	-680.54	1,202.93	979.90	879.78	100.11	9.788	
8,700.00	7,410.00	8,732.60	7,410.00	52.93	52.70	90.00	-679.52	1,302.92	979.90	874.30	105.59	9.280	

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 3F-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 3F-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							
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
8,800.00	7,410.00	8,832.60	7,410.00	55.71	55.49	90.00	-678.51	1,402.92	979.90	868.72	111.17	8.814	
8,900.00	7,410.00	8,932.60	7,410.00	58.54	58.33	90.00	-677.49	1,502.91	979.90	863.06	116.84	8.387	
9,000.00	7,410.00	9,032.60	7,410.00	61.41	61.20	90.00	-676.48	1,602.91	979.90	857.32	122.57	7.994	
9,100.00	7,410.00	9,132.60	7,410.00	64.31	64.10	90.00	-675.46	1,702.90	979.90	851.52	128.38	7.633	
9,200.00	7,410.00	9,232.60	7,410.00	67.24	67.03	90.00	-674.44	1,802.90	979.89	845.66	134.23	7.300	
9,300.00	7,410.00	9,332.60	7,410.00	70.19	69.99	90.00	-673.43	1,902.89	979.89	839.75	140.14	6.992	
9,400.00	7,410.00	9,432.60	7,410.00	73.16	72.96	90.00	-672.41	2,002.89	979.89	833.80	146.09	6.707	
9,500.00	7,410.00	9,532.60	7,410.00	76.15	75.96	90.00	-671.39	2,102.88	979.89	827.82	152.08	6.443	
9,600.00	7,410.00	9,632.60	7,410.00	79.16	78.97	90.00	-670.38	2,202.88	979.89	821.80	158.10	6.198	
9,700.00	7,410.00	9,732.60	7,410.00	82.19	81.99	90.00	-669.36	2,302.87	979.89	815.75	164.15	5.970	
9,800.00	7,410.00	9,832.60	7,410.00	85.22	85.03	90.00	-668.35	2,402.87	979.89	809.67	170.22	5.756	
9,900.00	7,410.00	9,932.60	7,410.00	88.27	88.08	90.00	-667.33	2,502.86	979.89	803.57	176.32	5.557	
10,000.00	7,410.00	10,032.60	7,410.00	91.33	91.14	90.00	-666.31	2,602.86	979.89	797.45	182.45	5.371	
10,100.00	7,410.00	10,132.60	7,410.00	94.40	94.21	90.00	-665.30	2,702.85	979.89	791.31	188.59	5.196	
10,200.00	7,410.00	10,232.60	7,410.00	97.48	97.29	90.00	-664.28	2,802.85	979.89	785.15	194.75	5.032	
10,300.00	7,410.00	10,332.60	7,410.00	100.57	100.38	90.00	-663.26	2,902.84	979.89	778.97	200.92	4.877	
10,400.00	7,410.00	10,432.60	7,410.00	103.66	103.48	90.00	-662.25	3,002.83	979.89	772.78	207.11	4.731	
10,500.00	7,410.00	10,532.60	7,410.00	106.76	106.58	90.00	-661.23	3,102.83	979.89	766.58	213.31	4.594	
10,600.00	7,410.00	10,632.60	7,410.00	109.87	109.69	90.00	-660.22	3,202.82	979.89	760.37	219.53	4.464	
10,700.00	7,410.00	10,732.60	7,410.00	112.98	112.80	90.00	-659.20	3,302.82	979.89	754.14	225.75	4.341	
10,800.00	7,410.00	10,832.60	7,410.00	116.09	115.92	90.00	-658.18	3,402.81	979.89	747.91	231.99	4.224	
10,900.00	7,410.00	10,932.60	7,410.00	119.22	119.04	90.00	-657.17	3,502.81	979.89	741.66	238.23	4.113	
11,000.00	7,410.00	11,032.60	7,410.00	122.34	122.17	90.00	-656.15	3,602.80	979.89	735.41	244.49	4.008	
11,100.00	7,410.00	11,132.60	7,410.00	125.47	125.30	90.00	-655.13	3,702.80	979.89	729.14	250.75	3.908	
11,200.00	7,410.00	11,232.60	7,410.00	128.61	128.43	90.00	-654.12	3,802.79	979.89	722.88	257.02	3.813	
11,300.00	7,410.00	11,332.60	7,410.00	131.74	131.57	90.00	-653.10	3,902.79	979.89	716.60	263.29	3.722	
11,400.00	7,410.00	11,432.60	7,410.00	134.88	134.71	90.00	-652.09	4,002.78	979.89	710.32	269.58	3.635	
11,500.00	7,410.00	11,532.60	7,410.00	138.03	137.86	90.00	-651.07	4,102.78	979.89	704.03	275.87	3.552	
11,600.00	7,410.00	11,632.60	7,410.00	141.18	141.01	90.00	-650.05	4,202.77	979.89	697.73	282.16	3.473	
11,700.00	7,410.00	11,732.60	7,410.00	144.32	144.16	90.00	-649.04	4,302.77	979.89	691.43	288.46	3.397	
11,800.00	7,410.00	11,832.60	7,410.00	147.48	147.31	90.00	-648.02	4,402.76	979.89	685.13	294.76	3.324	
11,903.94	7,410.00	11,936.54	7,410.00	150.75	150.10	90.00	-646.96	4,506.70	979.89	679.06	300.83	3.257	
11,909.47	7,410.00	11,936.55	7,410.00	150.93	150.10	90.00	-646.96	4,506.71	979.91	678.90	301.01	3.255 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-59.75	-0.04	59.75				
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-59.75	-0.04	59.75	59.47	0.28	216.459	
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-59.75	-0.04	59.75	58.75	0.99	60.171	
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-59.75	-0.04	59.75	58.04	1.71	34.942	
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-59.75	-0.04	59.75	57.32	2.43	24.619	
500.00	500.00	500.00	500.00	1.57	1.57	-179.96	-59.75	-0.04	59.75	56.60	3.14	19.005 CC, ES	
600.00	600.00	598.02	598.00	1.93	1.91	-179.47	-61.34	-0.57	61.37	57.52	3.85	15.933	
700.00	700.00	695.81	695.66	2.29	2.24	-178.14	-66.10	-2.15	66.27	61.71	4.57	14.509	
800.00	800.00	793.15	792.64	2.65	2.57	-176.32	-73.97	-4.76	74.49	69.20	5.29	14.071	
900.00	900.00	889.81	888.61	3.01	2.92	-174.36	-84.88	-8.38	86.05	80.03	6.02	14.292	
1,000.00	1,000.00	986.47	984.16	3.36	3.28	-172.51	-98.74	-12.98	100.85	94.11	6.73	14.980	
1,100.00	1,099.98	1,085.04	1,081.46	3.72	3.67	-126.14	-113.70	-17.94	117.61	110.19	7.42	15.859	
1,200.00	1,199.84	1,183.24	1,178.40	4.08	4.06	-126.45	-128.61	-22.88	136.41	128.30	8.11	16.825	
1,242.90	1,242.60	1,225.22	1,219.84	4.23	4.23	-126.87	-134.98	-25.00	145.11	136.70	8.41	17.260	
1,300.00	1,299.50	1,281.05	1,274.94	4.44	4.45	-127.65	-143.45	-27.81	156.96	148.16	8.80	17.828	
1,400.00	1,399.14	1,378.81	1,371.44	4.80	4.85	-128.77	-158.29	-32.73	177.78	168.27	9.50	18.708	
1,500.00	1,498.79	1,476.56	1,467.94	5.16	5.26	-129.65	-173.13	-37.65	198.64	188.43	10.21	19.462	
1,600.00	1,598.43	1,574.32	1,564.44	5.52	5.66	-130.36	-187.96	-42.57	219.54	208.63	10.92	20.113	
1,700.00	1,698.07	1,672.08	1,660.94	5.89	6.07	-130.95	-202.80	-47.49	240.47	228.84	11.63	20.680	
1,800.00	1,797.71	1,769.84	1,757.44	6.26	6.48	-131.44	-217.64	-52.41	261.42	249.08	12.34	21.178	
1,900.00	1,897.35	1,867.60	1,853.95	6.63	6.89	-131.87	-232.47	-57.33	282.39	269.32	13.06	21.619	
2,000.00	1,996.99	1,965.36	1,950.45	7.00	7.31	-132.23	-247.31	-62.25	303.36	289.58	13.78	22.011	
2,100.00	2,096.63	2,063.11	2,046.95	7.37	7.72	-132.55	-262.15	-67.17	324.35	309.85	14.50	22.361	
2,200.00	2,196.27	2,160.87	2,143.45	7.74	8.14	-132.82	-276.98	-72.09	345.35	330.12	15.23	22.677	
2,300.00	2,295.91	2,258.63	2,239.95	8.11	8.55	-133.07	-291.82	-77.01	366.35	350.40	15.95	22.963	
2,400.00	2,395.55	2,356.39	2,336.45	8.48	8.97	-133.29	-306.66	-81.94	387.36	370.68	16.68	23.223	
2,500.00	2,495.19	2,454.15	2,432.95	8.85	9.39	-133.48	-321.50	-86.86	408.37	390.96	17.41	23.459	
2,600.00	2,594.83	2,551.90	2,529.45	9.23	9.80	-133.66	-336.33	-91.78	429.39	411.25	18.14	23.676	
2,700.00	2,694.47	2,649.66	2,625.95	9.60	10.22	-133.82	-351.17	-96.70	450.41	431.55	18.87	23.875	
2,800.00	2,794.12	2,747.42	2,722.45	9.97	10.64	-133.97	-366.01	-101.62	471.43	451.84	19.59	24.059	
2,900.00	2,893.76	2,845.18	2,818.95	10.35	11.06	-134.10	-380.84	-106.54	492.46	472.14	20.33	24.229	
3,000.00	2,993.40	2,942.94	2,915.45	10.72	11.48	-134.23	-395.68	-111.46	513.49	492.43	21.06	24.387	
3,100.00	3,093.04	3,040.70	3,011.95	11.10	11.90	-134.34	-410.52	-116.38	534.52	512.73	21.79	24.533	
3,200.00	3,192.68	3,138.45	3,108.45	11.47	12.32	-134.44	-425.35	-121.30	555.56	533.04	22.52	24.670	
3,300.00	3,292.32	3,236.21	3,204.95	11.85	12.74	-134.54	-440.19	-126.22	576.59	553.34	23.25	24.798	
3,400.00	3,391.96	3,333.97	3,301.45	12.22	13.16	-134.63	-455.03	-131.14	597.63	573.64	23.98	24.917	
3,500.00	3,491.60	3,431.73	3,397.95	12.60	13.58	-134.72	-469.87	-136.06	618.66	593.95	24.72	25.029	
3,600.00	3,591.24	3,529.49	3,494.45	12.97	14.00	-134.79	-484.70	-140.99	639.70	614.25	25.45	25.135	
3,700.00	3,690.88	3,627.24	3,590.95	13.35	14.42	-134.87	-499.54	-145.91	660.74	634.56	26.18	25.234	
3,800.00	3,790.52	3,725.00	3,687.45	13.72	14.84	-134.94	-514.38	-150.83	681.78	654.87	26.92	25.328	
3,900.00	3,890.16	3,822.76	3,783.95	14.10	15.26	-135.00	-529.21	-155.75	702.83	675.17	27.65	25.416	
4,000.00	3,989.80	3,920.52	3,880.45	14.47	15.68	-135.06	-544.05	-160.67	723.87	695.48	28.39	25.500	
4,100.00	4,089.45	4,018.28	3,976.95	14.85	16.10	-135.12	-558.89	-165.59	744.91	715.79	29.12	25.579	
4,200.00	4,189.09	4,116.03	4,073.45	15.22	16.52	-135.18	-573.72	-170.51	765.96	736.10	29.86	25.654	
4,300.00	4,288.73	4,213.79	4,169.95	15.60	16.94	-135.23	-588.56	-175.43	787.00	756.41	30.59	25.726	
4,400.00	4,388.37	4,311.55	4,266.45	15.97	17.36	-135.28	-603.40	-180.35	808.05	776.72	31.33	25.794	
4,500.00	4,488.01	4,409.31	4,362.95	16.35	17.79	-135.32	-618.23	-185.27	829.09	797.03	32.06	25.859	
4,600.00	4,587.65	4,507.07	4,459.45	16.73	18.21	-135.37	-633.07	-190.19	850.14	817.34	32.80	25.921	
4,700.00	4,687.29	4,604.83	4,555.95	17.10	18.63	-135.41	-647.91	-195.12	871.19	837.65	33.53	25.980	
4,800.00	4,786.93	4,702.58	4,652.45	17.48	19.05	-135.45	-662.75	-200.04	892.23	857.96	34.27	26.036	
4,900.00	4,886.57	4,800.34	4,748.95	17.85	19.47	-135.49	-677.58	-204.96	913.28	878.28	35.00	26.090	
5,000.00	4,986.21	4,898.10	4,845.45	18.23	19.89	-135.52	-692.42	-209.88	934.33	898.59	35.74	26.142	

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 3F-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 3F-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		
5,100.00	5,085.85	4,995.86	4,941.95	18.61	20.32	-135.56	-707.26	-214.80	955.38	918.90	36.48	26.191		
5,200.00	5,185.49	5,093.62	5,038.45	18.98	20.74	-135.59	-722.09	-219.72	976.42	939.21	37.21	26.239		
5,300.00	5,285.14	5,191.37	5,134.95	19.36	21.16	-135.62	-736.93	-224.64	997.47	959.52	37.95	26.284		
5,400.00	5,384.78	5,289.13	5,231.45	19.73	21.58	-135.65	-751.77	-229.56	1,018.52	979.84	38.69	26.328		
5,500.00	5,484.42	5,386.89	5,327.96	20.11	22.00	-135.68	-766.60	-234.48	1,039.57	1,000.15	39.42	26.370		
5,600.00	5,584.06	5,484.65	5,424.46	20.49	22.42	-135.71	-781.44	-239.40	1,060.62	1,020.46	40.16	26.410		
5,700.00	5,683.70	5,582.41	5,520.96	20.86	22.85	-135.74	-796.28	-244.32	1,081.67	1,040.78	40.90	26.449		
5,773.96	5,757.40	5,654.71	5,592.33	21.14	23.16	-135.76	-807.25	-247.96	1,097.24	1,055.80	41.44	26.477		
5,800.00	5,783.35	5,680.18	5,617.47	21.24	23.27	-135.84	-811.12	-249.25	1,102.64	1,061.01	41.63	26.485		
5,900.00	5,883.17	5,778.31	5,714.34	21.61	23.69	-136.04	-826.01	-254.19	1,121.82	1,079.46	42.36	26.481		
6,000.00	5,983.14	5,876.83	5,811.59	21.96	24.12	-136.08	-840.96	-259.14	1,138.54	1,095.46	43.08	26.426		
6,016.86	6,000.00	5,893.46	5,828.01	22.02	24.19	178.60	-843.49	-259.98	1,141.12	1,097.91	43.20	26.412		
6,100.00	6,083.14	5,975.54	5,909.03	22.30	24.54	178.83	-855.94	-264.11	1,153.66	1,109.86	43.80	26.340		
6,200.00	6,183.14	6,115.26	6,047.24	22.65	25.13	179.16	-875.29	-270.53	1,167.61	1,122.81	44.80	26.061		
6,300.00	6,283.14	6,277.65	6,208.88	22.99	25.75	179.41	-889.93	-275.38	1,176.60	1,130.75	45.85	25.663		
6,400.00	6,383.14	6,441.28	6,372.37	23.33	26.30	179.51	-895.86	-277.35	1,180.21	1,133.47	46.74	25.251		
6,500.00	6,483.14	6,552.05	6,483.14	23.68	26.61	179.51	-895.99	-277.39	1,180.29	1,132.87	47.42	24.890		
6,600.00	6,583.14	6,652.05	6,583.14	24.02	26.89	179.51	-895.99	-277.39	1,180.29	1,132.21	48.08	24.549		
6,694.14	6,677.28	6,746.24	6,677.28	24.35	27.16	179.41	-895.97	-275.39	1,180.29	1,131.59	48.70	24.235		
6,700.00	6,683.14	6,752.08	6,683.10	24.37	27.17	179.39	-895.96	-274.93	1,180.29	1,131.55	48.74	24.215		
6,710.66	6,693.80	6,762.69	6,693.66	24.41	27.20	179.34	-895.95	-273.98	1,180.29	1,131.48	48.81	24.181		
6,750.00	6,733.12	6,801.66	6,732.33	24.54	27.31	89.74	-895.90	-269.12	1,180.30	1,131.24	49.06	24.058		
6,800.00	6,782.91	6,850.90	6,780.70	24.69	27.44	89.51	-895.81	-260.00	1,180.33	1,130.97	49.36	23.911		
6,850.00	6,832.26	6,900.00	6,828.21	24.84	27.56	89.28	-895.68	-247.61	1,180.38	1,130.73	49.65	23.772		
6,900.00	6,880.94	6,948.43	6,874.12	24.99	27.67	89.05	-895.52	-232.23	1,180.45	1,130.51	49.94	23.639		
6,950.00	6,928.71	6,996.75	6,918.79	25.13	27.77	88.83	-895.34	-213.83	1,180.53	1,130.32	50.21	23.512		
7,000.00	6,975.33	7,044.79	6,961.87	25.26	27.87	88.62	-895.12	-192.59	1,180.63	1,130.15	50.48	23.387		
7,050.00	7,020.59	7,092.56	7,003.19	25.39	27.96	88.41	-894.87	-168.66	1,180.74	1,129.98	50.76	23.261		
7,100.00	7,064.25	7,140.07	7,042.63	25.53	28.04	88.21	-894.60	-142.17	1,180.86	1,129.81	51.05	23.132		
7,150.00	7,106.10	7,187.34	7,080.04	25.67	28.11	88.02	-894.31	-113.28	1,180.99	1,129.63	51.36	22.994		
7,200.00	7,145.95	7,234.39	7,115.29	25.82	28.17	87.83	-893.99	-82.15	1,181.12	1,129.41	51.71	22.843		
7,250.00	7,183.59	7,281.22	7,148.28	26.00	28.23	87.66	-893.65	-48.92	1,181.26	1,129.16	52.10	22.673		
7,300.00	7,218.85	7,327.87	7,178.91	26.21	28.28	87.50	-893.29	-13.75	1,181.39	1,128.84	52.56	22.478		
7,350.00	7,251.55	7,374.33	7,207.08	26.46	28.32	87.35	-892.91	23.18	1,181.53	1,128.43	53.09	22.254		
7,400.00	7,281.53	7,420.63	7,232.71	26.77	28.35	87.22	-892.51	61.73	1,181.66	1,127.94	53.72	21.995		
7,450.00	7,308.65	7,466.78	7,255.73	27.14	28.39	87.09	-892.10	101.72	1,181.78	1,127.32	54.46	21.700		
7,500.00	7,332.77	7,512.80	7,276.06	27.58	28.42	86.98	-891.68	142.99	1,181.90	1,126.58	55.31	21.368		
7,550.00	7,353.78	7,558.70	7,293.67	28.08	28.46	86.88	-891.25	185.37	1,182.00	1,125.71	56.29	20.998		
7,600.00	7,371.58	7,604.50	7,308.50	28.66	28.73	86.80	-890.80	228.70	1,182.09	1,124.69	57.40	20.594		
7,650.00	7,386.07	7,650.00	7,320.45	29.31	29.30	86.73	-890.35	272.59	1,182.17	1,123.53	58.64	20.161		
7,700.00	7,397.19	7,695.88	7,329.66	30.02	29.96	86.68	-889.89	317.52	1,182.23	1,122.22	60.01	19.701		
7,750.00	7,404.88	7,741.48	7,335.95	30.80	30.68	86.64	-889.43	362.68	1,182.27	1,120.77	61.50	19.225		
7,800.00	7,409.11	7,787.05	7,339.34	31.63	31.45	86.61	-888.96	408.11	1,182.29	1,119.21	63.09	18.741		
7,835.66	7,410.00	7,819.72	7,340.00	32.26	32.02	86.61	-888.63	440.76	1,182.30	1,118.03	64.27	18.395		
7,900.00	7,410.00	7,884.05	7,340.00	33.45	33.22	86.61	-887.97	505.10	1,182.30	1,115.64	66.65	17.738		
8,000.00	7,410.00	7,984.05	7,340.00	35.45	35.24	86.61	-886.94	605.10	1,182.29	1,111.63	70.66	16.733		
8,100.00	7,410.00	8,084.05	7,340.00	37.63	37.42	86.61	-885.92	705.09	1,182.28	1,107.29	74.99	15.765		
8,200.00	7,410.00	8,184.05	7,340.00	39.94	39.73	86.61	-884.89	805.08	1,182.27	1,102.66	79.61	14.851		
8,300.00	7,410.00	8,284.05	7,340.00	42.37	42.17	86.61	-883.87	905.08	1,182.26	1,097.81	84.45	13.999		
8,400.00	7,410.00	8,384.05	7,340.00	44.90	44.70	86.61	-882.84	1,005.07	1,182.25	1,092.76	89.50	13.210		
8,500.00	7,410.00	8,484.05	7,340.00	47.51	47.31	86.61	-881.82	1,105.07	1,182.24	1,087.54	94.71	12.483		
8,600.00	7,410.00	8,584.05	7,340.00	50.19	49.99	86.61	-880.80	1,205.06	1,182.24	1,082.18	100.05	11.816		

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 3F-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 3F-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	7,410.00	8,684.05	7,340.00	52.93	52.73	86.61	-879.77	1,305.06	1,182.23	1,076.71	105.52	11.204		
8,800.00	7,410.00	8,784.05	7,340.00	55.71	55.52	86.61	-878.75	1,405.05	1,182.22	1,071.14	111.08	10.643		
8,900.00	7,410.00	8,884.05	7,340.00	58.54	58.35	86.61	-877.72	1,505.05	1,182.21	1,065.48	116.73	10.128		
9,000.00	7,410.00	8,984.05	7,340.00	61.41	61.21	86.61	-876.70	1,605.04	1,182.20	1,059.75	122.45	9.654		
9,100.00	7,410.00	9,084.05	7,340.00	64.31	64.11	86.61	-875.67	1,705.04	1,182.19	1,053.95	128.24	9.218		
9,200.00	7,410.00	9,184.05	7,340.00	67.24	67.04	86.61	-874.65	1,805.03	1,182.18	1,048.10	134.09	8.817		
9,300.00	7,410.00	9,284.05	7,340.00	70.19	69.99	86.61	-873.62	1,905.03	1,182.18	1,042.20	139.98	8.445		
9,400.00	7,410.00	9,384.05	7,340.00	73.16	72.97	86.61	-872.60	2,005.02	1,182.17	1,036.25	145.92	8.102		
9,500.00	7,410.00	9,484.05	7,340.00	76.15	75.96	86.61	-871.57	2,105.02	1,182.16	1,030.27	151.89	7.783		
9,600.00	7,410.00	9,584.05	7,340.00	79.16	78.97	86.61	-870.55	2,205.01	1,182.15	1,024.25	157.90	7.487		
9,700.00	7,410.00	9,684.05	7,340.00	82.19	81.99	86.61	-869.52	2,305.01	1,182.14	1,018.21	163.93	7.211		
9,800.00	7,410.00	9,784.05	7,340.00	85.22	85.03	86.61	-868.50	2,405.00	1,182.13	1,012.14	170.00	6.954		
9,900.00	7,410.00	9,884.05	7,340.00	88.27	88.08	86.61	-867.47	2,505.00	1,182.12	1,006.04	176.08	6.713		
10,000.00	7,410.00	9,984.05	7,340.00	91.33	91.14	86.61	-866.45	2,604.99	1,182.12	999.92	182.19	6.488		
10,100.00	7,410.00	10,084.05	7,340.00	94.40	94.21	86.61	-865.42	2,704.98	1,182.11	993.78	188.32	6.277		
10,200.00	7,410.00	10,184.05	7,340.00	97.48	97.29	86.61	-864.40	2,804.98	1,182.10	987.63	194.47	6.079		
10,300.00	7,410.00	10,284.05	7,340.00	100.57	100.37	86.61	-863.37	2,904.97	1,182.09	981.46	200.63	5.892		
10,400.00	7,410.00	10,384.05	7,340.00	103.66	103.47	86.61	-862.35	3,004.97	1,182.08	975.27	206.81	5.716		
10,500.00	7,410.00	10,484.05	7,340.00	106.76	106.57	86.61	-861.32	3,104.96	1,182.07	969.07	213.00	5.550		
10,600.00	7,410.00	10,584.05	7,340.00	109.87	109.67	86.61	-860.30	3,204.96	1,182.06	962.86	219.20	5.393		
10,700.00	7,410.00	10,684.05	7,340.00	112.98	112.79	86.61	-859.28	3,304.95	1,182.06	956.64	225.41	5.244		
10,800.00	7,410.00	10,784.05	7,340.00	116.09	115.90	86.60	-858.25	3,404.95	1,182.05	950.41	231.64	5.103		
10,900.00	7,410.00	10,884.05	7,340.00	119.22	119.02	86.60	-857.23	3,504.94	1,182.04	944.17	237.87	4.969		
11,000.00	7,410.00	10,984.05	7,340.00	122.34	122.15	86.60	-856.20	3,604.94	1,182.03	937.92	244.11	4.842		
11,100.00	7,410.00	11,084.05	7,340.00	125.47	125.28	86.60	-855.18	3,704.93	1,182.02	931.66	250.36	4.721		
11,200.00	7,410.00	11,184.05	7,340.00	128.61	128.41	86.60	-854.15	3,804.93	1,182.01	925.39	256.62	4.606		
11,300.00	7,410.00	11,284.05	7,340.00	131.74	131.55	86.60	-853.13	3,904.92	1,182.00	919.12	262.88	4.496		
11,400.00	7,410.00	11,384.05	7,340.00	134.88	134.69	86.60	-852.10	4,004.92	1,181.99	912.84	269.15	4.392		
11,500.00	7,410.00	11,484.05	7,340.00	138.03	137.84	86.60	-851.08	4,104.91	1,181.99	906.56	275.43	4.291		
11,600.00	7,410.00	11,584.05	7,340.00	141.18	140.98	86.60	-850.05	4,204.91	1,181.98	900.27	281.71	4.196		
11,700.00	7,410.00	11,684.05	7,340.00	144.32	144.13	86.60	-849.03	4,304.90	1,181.97	893.97	288.00	4.104		
11,800.00	7,410.00	11,784.05	7,340.00	147.48	147.28	86.60	-848.00	4,404.90	1,181.96	887.67	294.29	4.016		
11,898.77	7,410.00	11,882.82	7,340.00	150.59	150.40	86.60	-846.99	4,503.66	1,181.95	881.44	300.51	3.933		
11,909.47	7,410.00	11,886.52	7,340.00	150.93	150.52	86.60	-846.95	4,507.36	1,181.97	881.00	300.97	3.927 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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	-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	69.66	0.28	253.380					
200.00	200.00	200.00	200.00	0.50	0.50	179.96	-69.94	0.04	69.94	68.95	0.99	70.434					
300.00	300.00	300.00	300.00	0.85	0.85	179.96	-69.94	0.04	69.94	68.23	1.71	40.902					
400.00	400.00	400.00	400.00	1.21	1.21	179.96	-69.94	0.04	69.94	67.51	2.43	28.819	CC, ES				
500.00	500.00	497.67	497.65	1.57	1.55	-179.67	-71.54	-0.42	71.58	68.44	3.14	22.800					
600.00	600.00	595.11	594.96	1.93	1.88	-178.65	-76.32	-1.79	76.51	72.64	3.87	19.794					
700.00	700.00	692.11	691.60	2.29	2.22	-177.23	-84.24	-4.07	84.75	80.15	4.60	18.415					
800.00	800.00	788.43	787.25	2.65	2.57	-175.66	-95.21	-7.23	96.33	90.99	5.34	18.036					
900.00	900.00	884.53	882.23	3.01	2.93	-174.12	-109.17	-11.25	111.18	105.11	6.06	18.334					
1,000.00	1,000.00	983.20	979.60	3.36	3.32	-172.82	-124.56	-15.68	127.19	120.45	6.75	18.856					
1,100.00	1,099.98	1,081.72	1,076.81	3.72	3.72	-126.79	-139.93	-20.11	144.28	136.85	7.44	19.405					
1,200.00	1,199.84	1,179.85	1,173.63	4.08	4.13	-127.13	-155.23	-24.52	163.44	155.31	8.13	20.104					
1,242.90	1,242.60	1,221.79	1,215.02	4.23	4.30	-127.51	-161.78	-26.40	172.31	163.88	8.43	20.437					
1,300.00	1,299.50	1,277.56	1,270.05	4.44	4.53	-128.24	-170.48	-28.90	184.39	175.56	8.83	20.883					
1,400.00	1,399.14	1,375.22	1,366.41	4.80	4.94	-129.30	-185.71	-33.29	205.59	196.06	9.53	21.573					
1,500.00	1,498.79	1,472.88	1,462.78	5.16	5.35	-130.17	-200.94	-37.68	226.86	216.62	10.24	22.162					
1,600.00	1,598.43	1,570.54	1,559.15	5.52	5.76	-130.89	-216.18	-42.06	248.16	237.21	10.95	22.671					
1,700.00	1,698.07	1,668.20	1,655.51	5.89	6.18	-131.49	-231.41	-46.45	269.50	257.84	11.66	23.113					
1,800.00	1,797.71	1,765.86	1,751.88	6.26	6.59	-132.01	-246.64	-50.84	290.86	278.48	12.38	23.501					
1,900.00	1,897.35	1,863.52	1,848.24	6.63	7.01	-132.45	-261.88	-55.22	312.23	299.14	13.10	23.843					
2,000.00	1,996.99	1,961.19	1,944.61	7.00	7.43	-132.84	-277.11	-59.61	333.63	319.81	13.82	24.147					
2,100.00	2,096.63	2,058.85	2,040.98	7.37	7.85	-133.18	-292.34	-64.00	355.04	340.50	14.54	24.420					
2,200.00	2,196.27	2,156.51	2,137.34	7.74	8.27	-133.49	-307.58	-68.38	376.46	361.19	15.26	24.665					
2,300.00	2,295.91	2,254.17	2,233.71	8.11	8.68	-133.76	-322.81	-72.77	397.88	381.90	15.99	24.886					
2,400.00	2,395.55	2,351.83	2,330.07	8.48	9.10	-134.00	-338.04	-77.16	419.32	402.60	16.71	25.087					
2,500.00	2,495.19	2,449.49	2,426.44	8.85	9.53	-134.22	-353.28	-81.54	440.76	423.32	17.44	25.270					
2,600.00	2,594.83	2,547.15	2,522.80	9.23	9.95	-134.42	-368.51	-85.93	462.21	444.04	18.17	25.437					
2,700.00	2,694.47	2,644.81	2,619.17	9.60	10.37	-134.60	-383.74	-90.31	483.66	464.76	18.90	25.591					
2,800.00	2,794.12	2,742.47	2,715.54	9.97	10.79	-134.76	-398.98	-94.70	505.12	485.49	19.63	25.733					
2,900.00	2,893.76	2,840.14	2,811.90	10.35	11.21	-134.91	-414.21	-99.09	526.58	506.22	20.36	25.864					
3,000.00	2,993.40	2,937.80	2,908.27	10.72	11.63	-135.06	-429.44	-103.47	548.04	526.95	21.09	25.986					
3,100.00	3,093.04	3,035.46	3,004.63	11.10	12.05	-135.18	-444.68	-107.86	569.50	547.68	21.82	26.099					
3,200.00	3,192.68	3,133.12	3,101.00	11.47	12.48	-135.31	-459.91	-112.25	590.97	568.42	22.55	26.204					
3,300.00	3,292.32	3,230.78	3,197.37	11.85	12.90	-135.42	-475.14	-116.63	612.44	589.16	23.28	26.303					
3,400.00	3,391.96	3,328.44	3,293.73	12.22	13.32	-135.52	-490.38	-121.02	633.92	609.90	24.02	26.395					
3,500.00	3,491.60	3,426.10	3,390.10	12.60	13.74	-135.62	-505.61	-125.41	655.39	630.64	24.75	26.481					
3,600.00	3,591.24	3,523.76	3,486.46	12.97	14.17	-135.71	-520.84	-129.79	676.87	651.39	25.48	26.562					
3,700.00	3,690.88	3,621.42	3,582.83	13.35	14.59	-135.80	-536.08	-134.18	698.35	672.13	26.22	26.639					
3,800.00	3,790.52	3,719.09	3,679.20	13.72	15.01	-135.88	-551.31	-138.56	719.83	692.88	26.95	26.711					
3,900.00	3,890.16	3,816.75	3,775.56	14.10	15.43	-135.95	-566.54	-142.95	741.31	713.62	27.68	26.779					
4,000.00	3,989.80	3,914.41	3,871.93	14.47	15.86	-136.02	-581.78	-147.34	762.79	734.37	28.42	26.843					
4,100.00	4,089.45	4,012.07	3,968.29	14.85	16.28	-136.09	-597.01	-151.72	784.27	755.12	29.15	26.904					
4,200.00	4,189.09	4,109.73	4,064.66	15.22	16.70	-136.15	-612.24	-156.11	805.76	775.87	29.88	26.962					
4,300.00	4,288.73	4,207.39	4,161.03	15.60	17.13	-136.22	-627.48	-160.50	827.24	796.62	30.62	27.017					
4,400.00	4,388.37	4,305.05	4,257.39	15.97	17.55	-136.27	-642.71	-164.88	848.73	817.37	31.35	27.070					
4,500.00	4,488.01	4,402.71	4,353.76	16.35	17.97	-136.33	-657.94	-169.27	870.21	838.12	32.09	27.119					
4,600.00	4,587.65	4,500.37	4,450.12	16.73	18.40	-136.38	-673.18	-173.66	891.70	858.88	32.82	27.167					
4,700.00	4,687.29	4,598.04	4,546.49	17.10	18.82	-136.43	-688.41	-178.04	913.19	879.63	33.56	27.212					
4,800.00	4,786.93	4,695.70	4,642.86	17.48	19.24	-136.48	-703.64	-182.43	934.68	900.38	34.29	27.255					
4,900.00	4,886.57	4,793.36	4,739.22	17.85	19.67	-136.52	-718.88	-186.81	956.17	921.14	35.03	27.297					
5,000.00	4,986.21	4,891.02	4,835.59	18.23	20.09	-136.57	-734.11	-191.20	977.65	941.89	35.76	27.336					

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 3F-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 3F-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		
5,100.00	5,085.85	4,988.68	4,931.95	18.61	20.51	-136.61	-749.34	-195.59	999.14	962.65	36.50	27.374		
5,200.00	5,185.49	5,086.34	5,028.32	18.98	20.94	-136.65	-764.58	-199.97	1,020.64	983.40	37.23	27.411		
5,300.00	5,285.14	5,184.00	5,124.68	19.36	21.36	-136.69	-779.81	-204.36	1,042.13	1,004.16	37.97	27.446		
5,400.00	5,384.78	5,281.66	5,221.05	19.73	21.78	-136.72	-795.04	-208.75	1,063.62	1,024.91	38.71	27.479		
5,500.00	5,484.42	5,379.32	5,317.42	20.11	22.21	-136.76	-810.28	-213.13	1,085.11	1,045.67	39.44	27.512		
5,600.00	5,584.06	5,476.98	5,413.78	20.49	22.63	-136.79	-825.51	-217.52	1,106.60	1,066.42	40.18	27.542		
5,700.00	5,683.70	5,574.65	5,510.15	20.86	23.06	-136.82	-840.74	-221.91	1,128.09	1,087.18	40.91	27.572		
5,773.96	5,757.40	5,646.88	5,581.42	21.14	23.37	-136.85	-852.01	-225.15	1,143.99	1,102.53	41.46	27.594		
5,800.00	5,783.35	5,672.33	5,606.53	21.24	23.48	-136.93	-855.98	-226.29	1,149.50	1,107.85	41.65	27.599		
5,900.00	5,883.17	5,770.37	5,703.28	21.61	23.90	-137.14	-871.28	-230.70	1,169.10	1,126.72	42.38	27.586		
6,000.00	5,983.14	5,868.84	5,800.44	21.96	24.33	-137.20	-886.63	-235.12	1,186.18	1,143.08	43.10	27.521		
6,016.86	6,000.00	5,885.47	5,816.85	22.02	24.40	177.48	-889.23	-235.87	1,188.82	1,145.59	43.22	27.505		
6,100.00	6,083.14	5,967.50	5,897.80	22.30	24.76	177.69	-902.02	-239.55	1,201.63	1,157.82	43.82	27.425		
6,200.00	6,183.14	6,066.18	5,995.16	22.65	25.19	177.93	-917.42	-243.98	1,217.07	1,172.54	44.53	27.331		
6,300.00	6,283.14	6,164.85	6,092.53	22.99	25.62	178.16	-932.81	-248.41	1,232.52	1,187.28	45.25	27.240		
6,400.00	6,383.14	6,263.53	6,189.89	23.33	26.05	178.39	-948.20	-252.85	1,248.00	1,202.04	45.96	27.153		
6,500.00	6,483.14	6,362.20	6,287.26	23.68	26.47	178.61	-963.59	-257.28	1,263.49	1,216.81	46.68	27.068		
6,600.00	6,583.14	6,460.87	6,384.62	24.02	26.90	178.83	-978.98	-261.71	1,279.00	1,231.61	47.39	26.987		
6,700.00	6,683.14	6,559.55	6,481.99	24.37	27.33	179.04	-994.37	-266.14	1,294.53	1,246.42	48.11	26.908		
6,710.66	6,693.80	6,570.07	6,492.37	24.41	27.38	179.07	-996.01	-266.61	1,296.19	1,248.00	48.19	26.900		
6,750.00	6,733.12	6,608.82	6,530.60	24.54	27.54	89.28	-1,002.06	-268.35	1,302.30	1,253.84	48.46	26.873		
6,800.00	6,782.91	6,657.73	6,578.87	24.69	27.76	88.95	-1,009.69	-270.55	1,310.04	1,261.25	48.79	26.848		
6,850.00	6,832.26	6,706.06	6,626.56	24.84	27.97	88.77	-1,017.23	-272.72	1,317.78	1,268.66	49.12	26.828		
6,900.00	6,880.94	6,753.71	6,673.58	24.99	28.17	88.71	-1,024.66	-274.85	1,325.55	1,276.12	49.43	26.815		
6,950.00	6,928.71	6,803.09	6,722.35	25.13	28.38	88.72	-1,032.35	-275.09	1,333.36	1,283.60	49.76	26.798		
7,000.00	6,975.33	6,853.60	6,772.13	25.26	28.58	88.75	-1,040.16	-271.82	1,341.16	1,291.08	50.08	26.780		
7,050.00	7,020.59	6,905.33	6,822.75	25.39	28.77	88.79	-1,048.07	-264.80	1,348.90	1,298.49	50.41	26.760		
7,100.00	7,064.25	6,958.35	6,873.99	25.53	28.95	88.84	-1,056.03	-253.78	1,356.55	1,305.81	50.74	26.734		
7,150.00	7,106.10	7,012.77	6,925.59	25.67	29.12	88.90	-1,064.01	-238.52	1,364.06	1,312.97	51.09	26.700		
7,200.00	7,145.95	7,068.65	6,977.24	25.82	29.28	88.97	-1,071.95	-218.77	1,371.38	1,319.92	51.45	26.653		
7,250.00	7,183.59	7,126.06	7,028.57	26.00	29.44	89.05	-1,079.79	-194.30	1,378.45	1,326.61	51.85	26.588		
7,300.00	7,218.85	7,185.08	7,079.15	26.21	29.58	89.14	-1,087.47	-164.89	1,385.24	1,332.96	52.28	26.498		
7,350.00	7,251.55	7,245.75	7,128.47	26.46	29.71	89.25	-1,094.89	-130.38	1,391.67	1,338.91	52.76	26.376		
7,400.00	7,281.53	7,308.08	7,175.96	26.77	29.82	89.35	-1,101.97	-90.66	1,397.69	1,344.37	53.32	26.212		
7,450.00	7,308.65	7,372.09	7,220.99	27.14	29.93	89.46	-1,108.61	-45.70	1,403.26	1,349.27	53.99	25.993		
7,500.00	7,332.77	7,437.71	7,262.86	27.58	30.02	89.57	-1,114.70	4.44	1,408.30	1,353.53	54.77	25.713		
7,550.00	7,353.78	7,504.89	7,300.85	28.08	30.11	89.68	-1,120.13	59.54	1,412.77	1,357.05	55.71	25.358		
7,600.00	7,371.58	7,573.50	7,334.21	28.66	30.20	89.78	-1,124.78	119.28	1,416.61	1,359.77	56.84	24.923		
7,650.00	7,386.07	7,643.37	7,362.24	29.31	30.31	89.86	-1,128.55	183.14	1,419.77	1,361.60	58.17	24.408		
7,700.00	7,397.19	7,714.28	7,384.27	30.02	30.57	89.93	-1,131.33	250.46	1,422.22	1,362.51	59.72	23.817		
7,750.00	7,404.88	7,785.99	7,399.75	30.80	31.21	89.97	-1,133.06	320.43	1,423.93	1,362.45	61.47	23.164		
7,800.00	7,409.11	7,858.22	7,408.29	31.63	32.22	90.00	-1,133.68	392.11	1,424.86	1,361.44	63.41	22.470		
7,835.66	7,410.00	7,909.30	7,410.00	32.26	33.05	90.00	-1,133.43	443.15	1,425.04	1,360.16	64.88	21.963		
7,900.00	7,410.00	7,973.64	7,410.00	33.45	34.21	90.00	-1,132.78	507.49	1,425.04	1,357.78	67.26	21.187		
8,000.00	7,410.00	8,073.64	7,410.00	35.45	36.17	90.00	-1,131.76	607.48	1,425.04	1,353.79	71.25	20.001		
8,100.00	7,410.00	8,173.64	7,410.00	37.63	38.30	90.00	-1,130.75	707.48	1,425.04	1,349.47	75.57	18.858		
8,200.00	7,410.00	8,273.64	7,410.00	39.94	40.57	90.00	-1,129.73	807.47	1,425.04	1,344.87	80.17	17.776		
8,300.00	7,410.00	8,373.64	7,410.00	42.37	42.97	90.00	-1,128.71	907.47	1,425.04	1,340.04	85.00	16.764		
8,400.00	7,410.00	8,473.64	7,410.00	44.90	45.46	90.00	-1,127.70	1,007.46	1,425.04	1,335.00	90.04	15.827		
8,500.00	7,410.00	8,573.64	7,410.00	47.51	48.04	90.00	-1,126.68	1,107.46	1,425.04	1,329.80	95.24	14.963		
8,600.00	7,410.00	8,673.64	7,410.00	50.19	50.69	90.00	-1,125.66	1,207.45	1,425.04	1,324.46	100.58	14.169		
8,700.00	7,410.00	8,773.64	7,410.00	52.93	53.40	90.00	-1,124.65	1,307.45	1,425.04	1,319.00	106.04	13.439		

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 3F-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 3F-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: O-MWD+HDGM										Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
8,800.00	7,410.00	8,873.64	7,410.00	55.71	56.16	90.00	-1,123.63	1,407.44	1,425.04	1,313.44	111.60	12.770	
8,900.00	7,410.00	8,973.64	7,410.00	58.54	58.97	90.00	-1,122.61	1,507.44	1,425.04	1,307.80	117.24	12.154	
9,000.00	7,410.00	9,073.64	7,410.00	61.41	61.82	90.00	-1,121.60	1,607.43	1,425.04	1,302.07	122.97	11.589	
9,100.00	7,410.00	9,173.64	7,410.00	64.31	64.70	90.00	-1,120.58	1,707.43	1,425.04	1,296.29	128.75	11.068	
9,200.00	7,410.00	9,273.64	7,410.00	67.24	67.60	90.00	-1,119.56	1,807.42	1,425.04	1,290.44	134.60	10.587	
9,300.00	7,410.00	9,373.64	7,410.00	70.19	70.54	90.00	-1,118.55	1,907.42	1,425.04	1,284.55	140.49	10.143	
9,400.00	7,410.00	9,473.64	7,410.00	73.16	73.50	90.00	-1,117.53	2,007.41	1,425.04	1,278.61	146.43	9.732	
9,500.00	7,410.00	9,573.64	7,410.00	76.15	76.47	90.00	-1,116.52	2,107.41	1,425.04	1,272.63	152.41	9.350	
9,600.00	7,410.00	9,673.64	7,410.00	79.16	79.47	90.00	-1,115.50	2,207.40	1,425.04	1,266.62	158.42	8.995	
9,700.00	7,410.00	9,773.64	7,410.00	82.19	82.48	90.00	-1,114.48	2,307.40	1,425.04	1,260.58	164.46	8.665	
9,800.00	7,410.00	9,873.64	7,410.00	85.22	85.50	90.00	-1,113.47	2,407.39	1,425.04	1,254.51	170.53	8.357	
9,900.00	7,410.00	9,973.64	7,410.00	88.27	88.54	90.00	-1,112.45	2,507.39	1,425.04	1,248.42	176.62	8.068	
10,000.00	7,410.00	10,073.64	7,410.00	91.33	91.59	90.00	-1,111.43	2,607.38	1,425.04	1,242.31	182.73	7.799	
10,100.00	7,410.00	10,173.64	7,410.00	94.40	94.65	90.00	-1,110.42	2,707.38	1,425.04	1,236.17	188.87	7.545	
10,200.00	7,410.00	10,273.64	7,410.00	97.48	97.72	90.00	-1,109.40	2,807.37	1,425.04	1,230.02	195.02	7.307	
10,300.00	7,410.00	10,373.64	7,410.00	100.57	100.80	90.00	-1,108.38	2,907.37	1,425.04	1,223.85	201.19	7.083	
10,400.00	7,410.00	10,473.64	7,410.00	103.66	103.88	90.00	-1,107.37	3,007.36	1,425.04	1,217.67	207.37	6.872	
10,500.00	7,410.00	10,573.64	7,410.00	106.76	106.97	90.00	-1,106.35	3,107.36	1,425.04	1,211.47	213.57	6.673	
10,600.00	7,410.00	10,673.64	7,410.00	109.87	110.07	90.00	-1,105.33	3,207.35	1,425.04	1,205.26	219.78	6.484	
10,700.00	7,410.00	10,773.64	7,410.00	112.98	113.18	90.00	-1,104.32	3,307.35	1,425.04	1,199.04	226.00	6.306	
10,800.00	7,410.00	10,873.64	7,410.00	116.09	116.29	90.00	-1,103.30	3,407.34	1,425.04	1,192.81	232.23	6.136	
10,900.00	7,410.00	10,973.64	7,410.00	119.22	119.40	90.00	-1,102.29	3,507.34	1,425.04	1,186.57	238.47	5.976	
11,000.00	7,410.00	11,073.64	7,410.00	122.34	122.52	90.00	-1,101.27	3,607.33	1,425.03	1,180.32	244.72	5.823	
11,100.00	7,410.00	11,173.64	7,410.00	125.47	125.65	90.00	-1,100.25	3,707.32	1,425.03	1,174.06	250.97	5.678	
11,200.00	7,410.00	11,273.64	7,410.00	128.61	128.77	90.00	-1,099.24	3,807.32	1,425.03	1,167.79	257.24	5.540	
11,300.00	7,410.00	11,373.64	7,410.00	131.74	131.91	90.00	-1,098.22	3,907.31	1,425.03	1,161.52	263.51	5.408	
11,400.00	7,410.00	11,473.64	7,410.00	134.88	135.04	90.00	-1,097.20	4,007.31	1,425.03	1,155.24	269.79	5.282	
11,500.00	7,410.00	11,573.64	7,410.00	138.03	138.18	90.00	-1,096.19	4,107.30	1,425.03	1,148.96	276.08	5.162	
11,600.00	7,410.00	11,673.64	7,410.00	141.18	141.32	90.00	-1,095.17	4,207.30	1,425.03	1,142.67	282.37	5.047	
11,700.00	7,410.00	11,773.64	7,410.00	144.32	144.47	90.00	-1,094.15	4,307.29	1,425.03	1,136.37	288.66	4.937	
11,800.00	7,410.00	11,873.64	7,410.00	147.48	147.61	90.00	-1,093.14	4,407.29	1,425.03	1,130.07	294.97	4.831	
11,897.51	7,410.00	11,971.15	7,410.00	150.55	150.68	90.00	-1,092.15	4,504.80	1,425.03	1,123.92	301.11	4.733	
11,909.47	7,410.00	11,975.04	7,410.00	150.93	150.81	90.00	-1,092.11	4,508.68	1,425.06	1,123.42	301.64	4.724 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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		
0.00	0.00	0.00	0.00	0.00	0.00	179.91	-79.77	0.13	79.77					
100.00	100.00	100.00	100.00	0.14	0.14	179.91	-79.77	0.13	79.77	79.50	0.28	289.011		
200.00	200.00	200.00	200.00	0.50	0.50	179.91	-79.77	0.13	79.77	78.78	0.99	80.339		
300.00	300.00	300.00	300.00	0.85	0.85	179.91	-79.77	0.13	79.77	78.06	1.71	46.654	CC, ES	
400.00	400.00	397.34	397.32	1.21	1.19	-179.79	-81.37	-0.29	81.42	78.99	2.43	33.509		
500.00	500.00	494.46	494.31	1.57	1.52	-178.97	-86.15	-1.56	86.35	83.18	3.17	27.245		
600.00	600.00	591.13	590.63	1.93	1.86	-177.78	-94.06	-3.65	94.60	90.68	3.92	24.129		
700.00	700.00	687.14	685.97	2.29	2.22	-176.44	-105.03	-6.54	106.16	101.49	4.67	22.724		
800.00	800.00	782.29	780.01	2.65	2.59	-175.09	-118.93	-10.21	121.03	115.62	5.42	22.347	SF	
900.00	900.00	880.78	877.10	3.01	2.99	-173.89	-134.95	-14.45	137.64	131.55	6.09	22.588		
1,000.00	1,000.00	979.35	974.26	3.36	3.39	-172.95	-150.99	-18.68	154.30	147.53	6.78	22.767		
1,100.00	1,099.98	1,077.76	1,071.27	3.72	3.81	-127.05	-167.00	-22.91	172.03	164.56	7.47	23.029		
1,200.00	1,199.84	1,175.75	1,167.87	4.08	4.22	-127.34	-182.95	-27.12	191.84	183.67	8.17	23.489		
1,242.90	1,242.60	1,217.63	1,209.15	4.23	4.40	-127.67	-189.76	-28.92	200.98	192.51	8.47	23.732		
1,300.00	1,299.50	1,273.31	1,264.04	4.44	4.64	-128.33	-198.82	-31.31	213.43	204.56	8.87	24.067		
1,400.00	1,399.14	1,370.82	1,360.16	4.80	5.06	-129.31	-214.68	-35.51	235.28	225.71	9.57	24.585		
1,500.00	1,498.79	1,468.33	1,456.28	5.16	5.48	-130.13	-230.55	-39.70	257.19	246.92	10.28	25.025		
1,600.00	1,598.43	1,565.84	1,552.40	5.52	5.90	-130.82	-246.41	-43.89	279.15	268.16	10.99	25.403		
1,700.00	1,698.07	1,663.35	1,648.51	5.89	6.32	-131.41	-262.28	-48.08	301.13	289.43	11.70	25.731		
1,800.00	1,797.71	1,760.86	1,744.63	6.26	6.74	-131.92	-278.14	-52.27	323.14	310.72	12.42	26.017		
1,900.00	1,897.35	1,858.37	1,840.75	6.63	7.17	-132.37	-294.01	-56.46	345.17	332.03	13.14	26.269		
2,000.00	1,996.99	1,955.88	1,936.87	7.00	7.59	-132.76	-309.87	-60.65	367.22	353.36	13.86	26.492		
2,100.00	2,096.63	2,053.39	2,032.99	7.37	8.01	-133.10	-325.74	-64.84	389.29	374.70	14.58	26.692		
2,200.00	2,196.27	2,150.90	2,129.11	7.74	8.44	-133.41	-341.60	-69.03	411.36	396.06	15.31	26.871		
2,300.00	2,295.91	2,248.41	2,225.23	8.11	8.86	-133.69	-357.47	-73.22	433.45	417.42	16.03	27.032		
2,400.00	2,395.55	2,345.92	2,321.35	8.48	9.29	-133.94	-373.33	-77.41	455.55	438.78	16.76	27.178		
2,500.00	2,495.19	2,443.43	2,417.47	8.85	9.72	-134.17	-389.19	-81.60	477.65	460.16	17.49	27.311		
2,600.00	2,594.83	2,540.94	2,513.59	9.23	10.14	-134.38	-405.06	-85.79	499.76	481.54	18.22	27.432		
2,700.00	2,694.47	2,638.45	2,609.71	9.60	10.57	-134.57	-420.92	-89.98	521.87	502.93	18.95	27.544		
2,800.00	2,794.12	2,735.96	2,705.83	9.97	10.99	-134.74	-436.79	-94.17	543.99	524.32	19.68	27.646		
2,900.00	2,893.76	2,833.47	2,801.95	10.35	11.42	-134.90	-452.65	-98.36	566.12	545.71	20.41	27.741		
3,000.00	2,993.40	2,930.98	2,898.07	10.72	11.85	-135.05	-468.52	-102.55	588.25	567.11	21.14	27.829		
3,100.00	3,093.04	3,028.49	2,994.19	11.10	12.27	-135.19	-484.38	-106.74	610.38	588.51	21.87	27.910		
3,200.00	3,192.68	3,126.00	3,090.31	11.47	12.70	-135.32	-500.25	-110.93	632.51	609.91	22.60	27.986		
3,300.00	3,292.32	3,223.51	3,186.43	11.85	13.13	-135.44	-516.11	-115.12	654.65	631.32	23.33	28.056		
3,400.00	3,391.96	3,321.02	3,282.54	12.22	13.56	-135.55	-531.98	-119.31	676.79	652.73	24.07	28.122		
3,500.00	3,491.60	3,418.53	3,378.66	12.60	13.98	-135.66	-547.84	-123.50	698.94	674.14	24.80	28.184		
3,600.00	3,591.24	3,516.04	3,474.78	12.97	14.41	-135.75	-563.71	-127.69	721.08	695.55	25.53	28.242		
3,700.00	3,690.88	3,613.55	3,570.90	13.35	14.84	-135.85	-579.57	-131.88	743.23	716.96	26.27	28.297		
3,800.00	3,790.52	3,711.06	3,667.02	13.72	15.27	-135.93	-595.43	-136.07	765.38	738.38	27.00	28.349		
3,900.00	3,890.16	3,808.57	3,763.14	14.10	15.69	-136.02	-611.30	-140.26	787.53	759.79	27.73	28.397		
4,000.00	3,989.80	3,906.08	3,859.26	14.47	16.12	-136.09	-627.16	-144.46	809.68	781.21	28.47	28.443		
4,100.00	4,089.45	4,003.59	3,955.38	14.85	16.55	-136.17	-643.03	-148.65	831.83	802.63	29.20	28.487		
4,200.00	4,189.09	4,101.10	4,051.50	15.22	16.98	-136.24	-658.89	-152.84	853.99	824.05	29.93	28.528		
4,300.00	4,288.73	4,198.61	4,147.62	15.60	17.40	-136.30	-674.76	-157.03	876.14	845.47	30.67	28.567		
4,400.00	4,388.37	4,296.12	4,243.74	15.97	17.83	-136.37	-690.62	-161.22	898.30	866.89	31.40	28.604		
4,500.00	4,488.01	4,393.63	4,339.86	16.35	18.26	-136.43	-706.49	-165.41	920.45	888.32	32.14	28.640		
4,600.00	4,587.65	4,491.14	4,435.98	16.73	18.69	-136.48	-722.35	-169.60	942.61	909.74	32.87	28.674		
4,700.00	4,687.29	4,588.65	4,532.10	17.10	19.11	-136.54	-738.22	-173.79	964.77	931.16	33.61	28.706		
4,800.00	4,786.93	4,686.16	4,628.22	17.48	19.54	-136.59	-754.08	-177.98	986.93	952.59	34.34	28.737		
4,900.00	4,886.57	4,783.67	4,724.34	17.85	19.97	-136.64	-769.95	-182.17	1,009.09	974.01	35.08	28.766		
5,000.00	4,986.21	4,881.18	4,820.46	18.23	20.40	-136.69	-785.81	-186.36	1,031.25	995.44	35.81	28.794		

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 3F-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 3F-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		
5,100.00	5,085.85	4,978.69	4,916.57	18.61	20.83	-136.73	-801.67	-190.55	1,053.42	1,016.87	36.55	28.821		
5,200.00	5,185.49	5,076.20	5,012.69	18.98	21.25	-136.78	-817.54	-194.74	1,075.58	1,038.29	37.29	28.847		
5,300.00	5,285.14	5,173.71	5,108.81	19.36	21.68	-136.82	-833.40	-198.93	1,097.74	1,059.72	38.02	28.871		
5,400.00	5,384.78	5,271.22	5,204.93	19.73	22.11	-136.86	-849.27	-203.12	1,119.91	1,081.15	38.76	28.895		
5,500.00	5,484.42	5,368.73	5,301.05	20.11	22.54	-136.90	-865.13	-207.31	1,142.07	1,102.58	39.49	28.918		
5,600.00	5,584.06	5,466.24	5,397.17	20.49	22.97	-136.94	-881.00	-211.50	1,164.24	1,124.01	40.23	28.940		
5,700.00	5,683.70	5,563.75	5,493.29	20.86	23.40	-136.97	-896.86	-215.69	1,186.40	1,145.44	40.97	28.961		
5,773.96	5,757.40	5,635.87	5,564.38	21.14	23.71	-137.00	-908.60	-218.79	1,202.80	1,161.29	41.51	28.976		
5,800.00	5,783.35	5,661.28	5,589.43	21.24	23.82	-137.08	-912.73	-219.88	1,208.48	1,166.78	41.70	28.979		
5,900.00	5,883.17	5,759.19	5,685.95	21.61	24.25	-137.31	-928.66	-224.09	1,228.75	1,186.32	42.43	28.958		
6,000.00	5,983.14	5,857.54	5,782.89	21.96	24.69	-137.39	-944.66	-228.32	1,246.50	1,203.34	43.15	28.885		
6,016.86	6,000.00	5,874.15	5,799.27	22.02	24.76	177.28	-947.36	-229.03	1,249.24	1,205.97	43.27	28.868		
6,100.00	6,083.14	5,956.11	5,880.06	22.30	25.12	177.47	-960.70	-232.55	1,262.61	1,218.74	43.87	28.781		
6,200.00	6,183.14	6,054.68	5,977.22	22.65	25.55	177.70	-976.74	-236.79	1,278.70	1,234.12	44.58	28.680		
6,300.00	6,283.14	6,153.26	6,074.39	22.99	25.98	177.92	-992.77	-241.02	1,294.82	1,249.52	45.30	28.583		
6,400.00	6,383.14	6,251.83	6,171.56	23.33	26.42	178.13	-1,008.81	-245.26	1,310.95	1,264.93	46.02	28.489		
6,500.00	6,483.14	6,350.41	6,268.73	23.68	26.85	178.34	-1,024.85	-249.50	1,327.10	1,280.36	46.73	28.398		
6,600.00	6,583.14	6,448.98	6,365.90	24.02	27.28	178.54	-1,040.89	-253.73	1,343.26	1,295.81	47.45	28.309		
6,700.00	6,683.14	6,547.55	6,463.06	24.37	27.72	178.74	-1,056.92	-257.97	1,359.44	1,311.27	48.17	28.224		
6,710.66	6,693.80	6,558.06	6,473.42	24.41	27.76	178.76	-1,058.63	-258.42	1,361.17	1,312.92	48.24	28.215		
6,750.00	6,733.12	6,596.77	6,511.58	24.54	27.93	88.95	-1,064.93	-260.08	1,367.52	1,319.01	48.52	28.186		
6,800.00	6,782.91	6,645.65	6,559.76	24.69	28.15	88.58	-1,072.88	-262.18	1,375.56	1,326.71	48.85	28.158		
6,850.00	6,832.26	6,693.95	6,607.37	24.84	28.36	88.35	-1,080.74	-264.26	1,383.57	1,334.40	49.18	28.135		
6,900.00	6,880.94	6,741.42	6,654.17	24.99	28.57	88.24	-1,088.47	-266.30	1,391.59	1,342.10	49.49	28.118		
6,950.00	6,928.71	6,787.85	6,699.94	25.13	28.77	88.24	-1,096.02	-268.30	1,399.66	1,349.86	49.79	28.109		
7,000.00	6,975.33	6,833.01	6,744.45	25.26	28.97	88.32	-1,103.37	-270.24	1,407.86	1,357.77	50.09	28.107		
7,050.00	7,020.59	6,876.67	6,787.48	25.39	29.16	88.47	-1,110.47	-272.11	1,416.29	1,365.91	50.38	28.113		
7,100.00	7,064.25	6,918.62	6,828.84	25.53	29.35	88.66	-1,117.29	-273.92	1,425.05	1,374.38	50.66	28.127		
7,150.00	7,106.10	6,964.79	6,874.37	25.67	29.55	88.98	-1,124.80	-275.14	1,434.18	1,383.18	51.00	28.123		
7,200.00	7,145.95	7,015.64	6,924.51	25.82	29.75	89.39	-1,133.04	-273.17	1,443.55	1,392.17	51.38	28.097		
7,250.00	7,183.59	7,069.37	6,977.18	26.00	29.96	89.84	-1,141.64	-267.19	1,453.09	1,401.30	51.80	28.054		
7,300.00	7,218.85	7,126.43	7,032.49	26.21	30.16	90.32	-1,150.64	-256.47	1,462.73	1,410.48	52.25	27.993		
7,350.00	7,251.55	7,187.39	7,090.45	26.46	30.36	90.85	-1,160.01	-240.13	1,472.38	1,419.63	52.75	27.910		
7,400.00	7,281.53	7,252.90	7,150.97	26.77	30.56	91.44	-1,169.74	-217.08	1,481.94	1,428.64	53.30	27.803		
7,450.00	7,308.65	7,323.66	7,213.71	27.14	30.74	92.07	-1,179.75	-186.01	1,491.28	1,437.38	53.90	27.668		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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 30-25H-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	-89.98	-0.06	89.98					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-89.98	-0.06	89.98	89.70	0.28	325.986		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-89.98	-0.06	89.98	88.99	0.99	90.617	CC, ES	
300.00	300.00	297.00	296.98	0.85	0.83	-179.72	-91.57	-0.45	91.63	89.90	1.73	53.064		
400.00	400.00	393.78	393.63	1.21	1.17	-179.04	-96.34	-1.62	96.57	94.08	2.49	38.839		
500.00	500.00	490.12	489.62	1.57	1.52	-178.05	-104.24	-3.55	104.81	101.56	3.25	32.213		
600.00	600.00	585.81	584.64	1.93	1.88	-176.91	-115.18	-6.22	116.36	112.35	4.02	28.955		
700.00	700.00	680.63	678.38	2.29	2.25	-175.74	-129.05	-9.61	131.20	126.43	4.78	27.472		
800.00	800.00	776.67	772.85	2.65	2.65	-174.63	-145.82	-13.71	148.96	143.47	5.48	27.158		
900.00	900.00	874.96	869.46	3.01	3.08	-173.71	-163.40	-18.00	167.20	161.05	6.15	27.183		
1,000.00	1,000.00	973.25	966.07	3.36	3.50	-172.98	-180.98	-22.30	185.48	178.64	6.84	27.121	SF	
1,100.00	1,099.98	1,071.35	1,062.50	3.72	3.93	-127.13	-198.53	-26.58	204.82	197.29	7.53	27.199		
1,200.00	1,199.84	1,169.01	1,158.48	4.08	4.37	-127.33	-216.00	-30.85	226.23	218.01	8.23	27.501		
1,242.90	1,242.60	1,210.73	1,199.49	4.23	4.55	-127.59	-223.47	-32.68	236.06	227.53	8.53	27.680		
1,300.00	1,299.50	1,266.20	1,254.01	4.44	4.80	-128.17	-233.39	-35.10	249.42	240.49	8.93	27.940		
1,400.00	1,399.14	1,363.33	1,349.48	4.80	5.23	-129.05	-250.76	-39.35	272.86	263.23	9.63	28.340		
1,500.00	1,498.79	1,460.47	1,444.96	5.16	5.66	-129.79	-268.14	-43.59	296.36	286.02	10.33	28.675		
1,600.00	1,598.43	1,557.60	1,540.43	5.52	6.10	-130.43	-285.52	-47.84	319.89	308.85	11.05	28.961		
1,700.00	1,698.07	1,654.74	1,635.90	5.89	6.53	-130.97	-302.89	-52.08	343.46	331.70	11.76	29.206		
1,800.00	1,797.71	1,751.87	1,731.38	6.26	6.97	-131.45	-320.27	-56.33	367.05	354.57	12.48	29.418		
1,900.00	1,897.35	1,849.01	1,826.85	6.63	7.41	-131.87	-337.65	-60.57	390.66	377.47	13.20	29.603		
2,000.00	1,996.99	1,946.14	1,922.32	7.00	7.85	-132.24	-355.02	-64.82	414.29	400.38	13.92	29.766		
2,100.00	2,096.63	2,043.28	2,017.80	7.37	8.28	-132.57	-372.40	-69.06	437.94	423.30	14.64	29.910		
2,200.00	2,196.27	2,140.41	2,113.27	7.74	8.72	-132.87	-389.77	-73.31	461.60	446.23	15.37	30.039		
2,300.00	2,295.91	2,237.55	2,208.75	8.11	9.16	-133.14	-407.15	-77.56	485.27	469.17	16.09	30.155		
2,400.00	2,395.55	2,334.68	2,304.22	8.48	9.60	-133.38	-424.53	-81.80	508.94	492.12	16.82	30.258		
2,500.00	2,495.19	2,431.81	2,399.69	8.85	10.03	-133.60	-441.90	-86.05	532.63	515.08	17.55	30.353		
2,600.00	2,594.83	2,528.95	2,495.17	9.23	10.47	-133.80	-459.28	-90.29	556.32	538.05	18.28	30.438		
2,700.00	2,694.47	2,626.08	2,590.64	9.60	10.91	-133.99	-476.66	-94.54	580.02	561.01	19.01	30.516		
2,800.00	2,794.12	2,723.22	2,686.11	9.97	11.35	-134.16	-494.03	-98.78	603.72	583.99	19.74	30.588		
2,900.00	2,893.76	2,820.35	2,781.59	10.35	11.79	-134.32	-511.41	-103.03	627.43	606.96	20.47	30.654		
3,000.00	2,993.40	2,917.49	2,877.06	10.72	12.23	-134.47	-528.78	-107.27	651.15	629.95	21.20	30.715		
3,100.00	3,093.04	3,014.62	2,972.53	11.10	12.67	-134.60	-546.16	-111.52	674.86	652.93	21.93	30.771		
3,200.00	3,192.68	3,111.76	3,068.01	11.47	13.11	-134.73	-563.54	-115.76	698.58	675.92	22.66	30.823		
3,300.00	3,292.32	3,208.89	3,163.48	11.85	13.55	-134.85	-580.91	-120.01	722.30	698.91	23.40	30.871		
3,400.00	3,391.96	3,306.03	3,258.96	12.22	13.99	-134.96	-598.29	-124.25	746.03	721.90	24.13	30.917		
3,500.00	3,491.60	3,403.16	3,354.43	12.60	14.43	-135.07	-615.67	-128.50	769.76	744.89	24.86	30.959		
3,600.00	3,591.24	3,500.30	3,449.90	12.97	14.87	-135.16	-633.04	-132.75	793.49	767.89	25.60	30.998		
3,700.00	3,690.88	3,597.43	3,545.38	13.35	15.30	-135.26	-650.42	-136.99	817.22	790.89	26.33	31.035		
3,800.00	3,790.52	3,694.57	3,640.85	13.72	15.74	-135.34	-667.79	-141.24	840.96	813.89	27.07	31.070		
3,900.00	3,890.16	3,791.70	3,736.32	14.10	16.18	-135.43	-685.17	-145.48	864.69	836.89	27.80	31.103		
4,000.00	3,989.80	3,888.84	3,831.80	14.47	16.62	-135.51	-702.55	-149.73	888.43	859.89	28.54	31.134		
4,100.00	4,089.45	3,985.97	3,927.27	14.85	17.06	-135.58	-719.92	-153.97	912.17	882.90	29.27	31.163		
4,200.00	4,189.09	4,083.11	4,022.74	15.22	17.50	-135.65	-737.30	-158.22	935.91	905.90	30.01	31.191		
4,300.00	4,288.73	4,180.24	4,118.22	15.60	17.94	-135.72	-754.68	-162.46	959.65	928.91	30.74	31.217		
4,400.00	4,388.37	4,277.38	4,213.69	15.97	18.38	-135.78	-772.05	-166.71	983.39	951.92	31.48	31.242		
4,500.00	4,488.01	4,374.51	4,309.16	16.35	18.82	-135.84	-789.43	-170.95	1,007.14	974.92	32.21	31.265		
4,600.00	4,587.65	4,471.65	4,404.64	16.73	19.26	-135.90	-806.80	-175.20	1,030.88	997.93	32.95	31.288		
4,700.00	4,687.29	4,568.78	4,500.11	17.10	19.70	-135.95	-824.18	-179.45	1,054.63	1,020.94	33.68	31.309		
4,800.00	4,786.93	4,665.92	4,595.59	17.48	20.14	-136.01	-841.56	-183.69	1,078.38	1,043.96	34.42	31.329		
4,900.00	4,886.57	4,763.05	4,691.06	17.85	20.58	-136.06	-858.93	-187.94	1,102.12	1,066.97	35.16	31.349		
5,000.00	4,986.21	4,860.18	4,786.53	18.23	21.02	-136.11	-876.31	-192.18	1,125.87	1,089.98	35.89	31.367		

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 3F-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 3F-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							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.00	5,085.85	4,957.32	4,882.01	18.61	21.46	-136.15	-893.69	-196.43	1,149.62	1,112.99	36.63	31.385		
5,200.00	5,185.49	5,054.45	4,977.48	18.98	21.90	-136.20	-911.06	-200.67	1,173.37	1,136.00	37.37	31.402		
5,300.00	5,285.14	5,151.59	5,072.95	19.36	22.34	-136.24	-928.44	-204.92	1,197.12	1,159.02	38.10	31.418		
5,400.00	5,384.78	5,248.72	5,168.43	19.73	22.78	-136.28	-945.81	-209.16	1,220.87	1,182.03	38.84	31.434		
5,500.00	5,484.42	5,345.86	5,263.90	20.11	23.22	-136.32	-963.19	-213.41	1,244.62	1,205.05	39.58	31.449		
5,600.00	5,584.06	5,442.99	5,359.37	20.49	23.66	-136.36	-980.57	-217.65	1,268.38	1,228.06	40.31	31.463		
5,700.00	5,683.70	5,540.13	5,454.85	20.86	24.10	-136.40	-997.94	-221.90	1,292.13	1,251.08	41.05	31.476		
5,773.96	5,757.40	5,611.97	5,525.46	21.14	24.43	-136.42	-1,010.79	-225.04	1,309.70	1,268.10	41.60	31.486		
5,800.00	5,783.35	5,637.28	5,550.34	21.24	24.54	-136.51	-1,015.32	-226.15	1,315.80	1,274.01	41.79	31.488		
5,900.00	5,883.17	5,734.85	5,646.24	21.61	24.98	-136.78	-1,032.78	-230.41	1,337.68	1,295.16	42.52	31.461		
6,000.00	5,983.14	5,832.89	5,742.60	21.96	25.43	-136.90	-1,050.31	-234.70	1,357.07	1,313.83	43.24	31.383		
6,016.86	6,000.00	5,849.45	5,758.88	22.02	25.50	177.77	-1,053.28	-235.42	1,360.09	1,316.73	43.36	31.366		
6,100.00	6,083.14	5,931.17	5,839.21	22.30	25.87	177.95	-1,067.90	-238.99	1,374.84	1,330.88	43.96	31.276		
6,200.00	6,183.14	6,029.46	5,935.81	22.65	26.32	178.15	-1,085.48	-243.29	1,392.59	1,347.92	44.67	31.172		
6,300.00	6,283.14	6,127.75	6,032.42	22.99	26.76	178.35	-1,103.06	-247.58	1,410.36	1,364.97	45.39	31.071		
6,400.00	6,383.14	6,226.04	6,129.03	23.33	27.21	178.55	-1,120.64	-251.88	1,428.14	1,382.04	46.11	30.973		
6,500.00	6,483.14	6,324.33	6,225.64	23.68	27.65	178.74	-1,138.23	-256.17	1,445.95	1,399.12	46.83	30.879		
6,600.00	6,583.14	6,422.62	6,322.25	24.02	28.10	178.93	-1,155.81	-260.47	1,463.76	1,416.22	47.54	30.787		
6,700.00	6,683.14	6,520.91	6,418.86	24.37	28.55	179.11	-1,173.39	-264.77	1,481.59	1,433.33	48.26	30.698		
6,710.66	6,693.80	6,531.39	6,429.16	24.41	28.59	179.13	-1,175.27	-265.22	1,483.49	1,435.15	48.34	30.689		
6,750.00	6,733.12	6,569.99	6,467.10	24.54	28.77	89.25	-1,182.17	-266.91	1,490.51	1,441.89	48.61	30.660		
6,800.00	6,782.91	6,618.72	6,514.99	24.69	28.99	88.79	-1,190.89	-269.04	1,499.39	1,450.44	48.95	30.631		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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		
10,000.00	7,410.00	7,331.00	7,331.00	91.33	8.23	90.00	26.33	4,047.12	1,482.31	1,441.87	40.44	36.654		
10,100.00	7,410.00	7,331.00	7,331.00	94.40	8.23	90.00	26.33	4,047.12	1,384.55	1,342.92	41.63	33.258		
10,200.00	7,410.00	7,331.00	7,331.00	97.48	8.23	90.00	26.33	4,047.12	1,287.15	1,244.07	43.08	29.877		
10,300.00	7,410.00	7,331.00	7,331.00	100.57	8.23	90.00	26.33	4,047.12	1,190.17	1,145.31	44.86	26.530		
10,400.00	7,410.00	7,331.00	7,331.00	103.66	8.23	90.00	26.33	4,047.12	1,093.74	1,046.67	47.06	23.241		
10,500.00	7,410.00	7,331.00	7,331.00	106.76	8.23	90.00	26.33	4,047.12	998.00	948.20	49.81	20.037		
10,600.00	7,410.00	7,331.00	7,331.00	109.87	8.23	90.00	26.33	4,047.12	903.20	849.93	53.27	16.956		
10,700.00	7,410.00	7,331.00	7,331.00	112.98	8.23	90.00	26.33	4,047.12	809.64	751.97	57.67	14.038		
10,800.00	7,410.00	7,331.00	7,331.00	116.09	8.23	90.00	26.33	4,047.12	717.83	654.48	63.35	11.331		
10,900.00	7,410.00	7,331.00	7,331.00	119.22	8.23	90.00	26.33	4,047.12	628.52	557.78	70.74	8.885		
11,000.00	7,410.00	7,331.00	7,331.00	122.34	8.23	90.00	26.33	4,047.12	542.94	462.51	80.43	6.750		
11,100.00	7,410.00	7,331.00	7,331.00	125.47	8.23	90.00	26.33	4,047.12	463.19	370.08	93.10	4.975		
11,200.00	7,410.00	7,331.00	7,331.00	128.61	8.23	90.00	26.33	4,047.12	392.81	283.72	109.09	3.601		
11,300.00	7,410.00	7,331.00	7,331.00	131.74	8.23	90.00	26.33	4,047.12	337.72	210.71	127.01	2.659		
11,400.00	7,410.00	7,331.00	7,331.00	134.88	8.23	90.00	26.33	4,047.12	306.28	164.85	141.43	2.166		
11,451.22	7,410.00	7,331.00	7,331.00	136.50	8.23	90.00	26.33	4,047.12	301.97	157.25	144.72	2.087 CC, ES, SF		
11,500.00	7,410.00	7,331.00	7,331.00	138.03	8.23	90.00	26.33	4,047.12	305.88	161.46	144.42	2.118		
11,600.00	7,410.00	7,331.00	7,331.00	141.18	8.23	90.00	26.33	4,047.12	336.63	201.59	135.04	2.493		
11,700.00	7,410.00	7,331.00	7,331.00	144.32	8.23	90.00	26.33	4,047.12	391.25	270.87	120.38	3.250		
11,800.00	7,410.00	7,331.00	7,331.00	147.48	8.23	90.00	26.33	4,047.12	461.33	355.10	106.24	4.343		
11,909.47	7,410.00	7,331.00	7,331.00	150.93	8.23	90.00	26.33	4,047.12	548.79	455.23	93.57	5.865		

Cathedral Energy Services

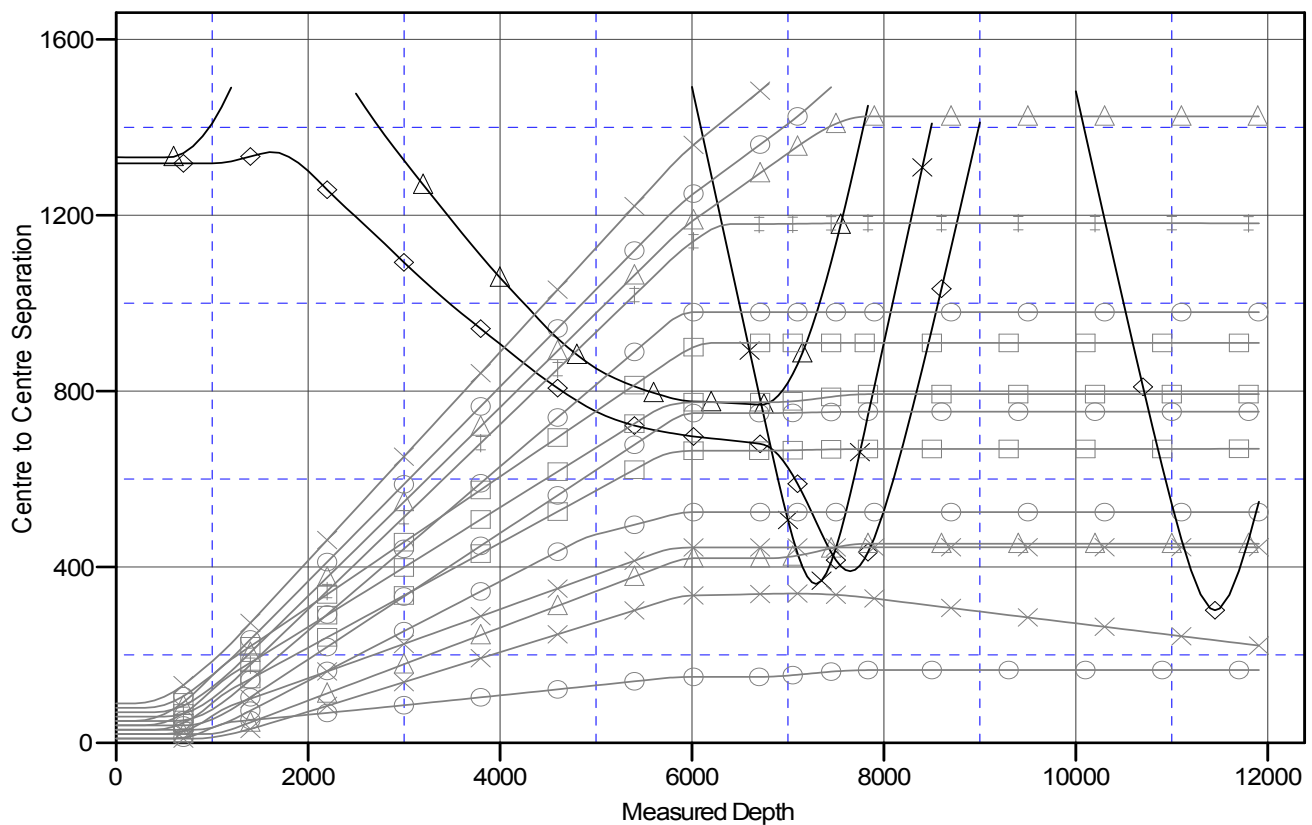
Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3F-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 3F-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 3F-25H-M166
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°

Ladder Plot



LEGEND

ere 2 (EXISTING), CPR WELL, SURVEYS V0	✕ SAM3D-25H-M166, OH, PLAN#1 V0	✕ SAM3L-25H-M166, OH, PLAN#1 V0
ere KE 26-361HN, GWOG WELL, GWOG WELL V0	○ SAM3E-25H-M166, OH, PLAN#1 V0	△ SAM3M-25H-M166, OH, PLAN#1 V0
n1 (EXISTING), CPR WELL, NO SURVEYS V0	✕ SAM3G-25H-M166, OH, PLAN#1 V0	○ SAM3N-25H-M166, OH, PLAN#1 V0
n13-25 (EXISTING), CPR WELL, SURVEYS V0	△ SAM3H-25H-M166, OH, PLAN#1 V0	✕ SAM3O-25H-M166, OH, PLAN#1 V0
M3A-25H-M166, OH, PLAN#1 V0	○ SAM3I-25H-M166, OH, PLAN#1 V0	◆ Wenzel 1 (EXISTING), CPR WELL, NO SURV
M3B-25H-M166, OH, PLAN#1 V0	○ SAM3J-25H-M166, OH, PLAN#1 V0	
M3C-25H-M166, OH, PLAN#1 V0	○ SAM3K-25H-M166, OH, PLAN#1 V0	