

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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 3L-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,546.74 usft	Latitude:	40.018593
	+E/-W	0.00 usft	Easting:	3,214,576.81 usft	Longitude:	-104.733856
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	89.41

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
960.06	9.20	198.35	958.08	-34.99	-11.60	2.00	2.00	0.00	198.35	
6,008.85	9.20	198.35	5,941.92	-801.25	-265.75	0.00	0.00	0.00	0.00	
6,468.91	0.00	0.00	6,400.00	-836.24	-277.35	2.00	-2.00	0.00	180.00	
6,692.72	0.00	0.00	6,623.80	-836.24	-277.35	0.00	0.00	0.00	0.00	
7,817.72	90.00	89.41	7,340.00	-828.90	438.81	8.00	8.00	0.00	89.41	
11,886.52	90.00	89.41	7,340.00	-787.20	4,507.40	0.00	0.00	0.00	0.00	SAM 3L-25H PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	KOP @ 500'
600.00	2.00	198.35	599.98	-1.66	-0.55	-0.57	2.00	2.00	
700.00	4.00	198.35	699.84	-6.62	-2.20	-2.26	2.00	2.00	
800.00	6.00	198.35	799.45	-14.90	-4.94	-5.09	2.00	2.00	
900.00	8.00	198.35	898.70	-26.46	-8.78	-9.05	2.00	2.00	
960.06	9.20	198.35	958.08	-34.99	-11.60	-11.96	2.00	2.00	EOB; INC=9.2°
1,000.00	9.20	198.35	997.51	-41.05	-13.61	-14.04	0.00	0.00	
1,100.00	9.20	198.35	1,096.22	-56.23	-18.65	-19.23	0.00	0.00	
1,200.00	9.20	198.35	1,194.94	-71.40	-23.68	-24.42	0.00	0.00	
1,300.00	9.20	198.35	1,293.65	-86.58	-28.72	-29.61	0.00	0.00	
1,400.00	9.20	198.35	1,392.36	-101.76	-33.75	-34.80	0.00	0.00	
1,500.00	9.20	198.35	1,491.08	-116.94	-38.78	-39.99	0.00	0.00	
1,600.00	9.20	198.35	1,589.79	-132.11	-43.82	-45.17	0.00	0.00	
1,700.00	9.20	198.35	1,688.50	-147.29	-48.85	-50.36	0.00	0.00	
1,800.00	9.20	198.35	1,787.22	-162.47	-53.88	-55.55	0.00	0.00	
1,900.00	9.20	198.35	1,885.93	-177.64	-58.92	-60.74	0.00	0.00	
2,000.00	9.20	198.35	1,984.64	-192.82	-63.95	-65.93	0.00	0.00	
2,100.00	9.20	198.35	2,083.36	-208.00	-68.99	-71.12	0.00	0.00	
2,200.00	9.20	198.35	2,182.07	-223.18	-74.02	-76.31	0.00	0.00	
2,300.00	9.20	198.35	2,280.78	-238.35	-79.05	-81.50	0.00	0.00	
2,400.00	9.20	198.35	2,379.50	-253.53	-84.09	-86.69	0.00	0.00	
2,500.00	9.20	198.35	2,478.21	-268.71	-89.12	-91.88	0.00	0.00	
2,600.00	9.20	198.35	2,576.92	-283.88	-94.15	-97.07	0.00	0.00	
2,700.00	9.20	198.35	2,675.64	-299.06	-99.19	-102.26	0.00	0.00	
2,800.00	9.20	198.35	2,774.35	-314.24	-104.22	-107.45	0.00	0.00	
2,900.00	9.20	198.35	2,873.06	-329.42	-109.26	-112.64	0.00	0.00	
3,000.00	9.20	198.35	2,971.78	-344.59	-114.29	-117.83	0.00	0.00	
3,100.00	9.20	198.35	3,070.49	-359.77	-119.32	-123.02	0.00	0.00	
3,200.00	9.20	198.35	3,169.20	-374.95	-124.36	-128.21	0.00	0.00	
3,300.00	9.20	198.35	3,267.92	-390.12	-129.39	-133.40	0.00	0.00	
3,400.00	9.20	198.35	3,366.63	-405.30	-134.42	-138.59	0.00	0.00	
3,500.00	9.20	198.35	3,465.34	-420.48	-139.46	-143.78	0.00	0.00	
3,600.00	9.20	198.35	3,564.06	-435.66	-144.49	-148.97	0.00	0.00	
3,700.00	9.20	198.35	3,662.77	-450.83	-149.52	-154.16	0.00	0.00	
3,800.00	9.20	198.35	3,761.48	-466.01	-154.56	-159.35	0.00	0.00	
3,900.00	9.20	198.35	3,860.20	-481.19	-159.59	-164.54	0.00	0.00	
4,000.00	9.20	198.35	3,958.91	-496.37	-164.63	-169.73	0.00	0.00	
4,100.00	9.20	198.35	4,057.62	-511.54	-169.66	-174.92	0.00	0.00	
4,200.00	9.20	198.35	4,156.34	-526.72	-174.69	-180.11	0.00	0.00	
4,300.00	9.20	198.35	4,255.05	-541.90	-179.73	-185.30	0.00	0.00	
4,400.00	9.20	198.35	4,353.76	-557.07	-184.76	-190.49	0.00	0.00	
4,500.00	9.20	198.35	4,452.48	-572.25	-189.79	-195.68	0.00	0.00	
4,600.00	9.20	198.35	4,551.19	-587.43	-194.83	-200.87	0.00	0.00	
4,700.00	9.20	198.35	4,649.90	-602.61	-199.86	-206.06	0.00	0.00	
4,800.00	9.20	198.35	4,748.62	-617.78	-204.90	-211.25	0.00	0.00	
4,900.00	9.20	198.35	4,847.33	-632.96	-209.93	-216.44	0.00	0.00	
5,000.00	9.20	198.35	4,946.04	-648.14	-214.96	-221.63	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	9.20	198.35	5,044.76	-663.31	-220.00	-226.82	0.00	0.00	
5,200.00	9.20	198.35	5,143.47	-678.49	-225.03	-232.01	0.00	0.00	
5,300.00	9.20	198.35	5,242.18	-693.67	-230.06	-237.20	0.00	0.00	
5,400.00	9.20	198.35	5,340.90	-708.85	-235.10	-242.38	0.00	0.00	
5,500.00	9.20	198.35	5,439.61	-724.02	-240.13	-247.57	0.00	0.00	
5,600.00	9.20	198.35	5,538.32	-739.20	-245.17	-252.76	0.00	0.00	
5,700.00	9.20	198.35	5,637.04	-754.38	-250.20	-257.95	0.00	0.00	
5,800.00	9.20	198.35	5,735.75	-769.55	-255.23	-263.14	0.00	0.00	
5,900.00	9.20	198.35	5,834.46	-784.73	-260.27	-268.33	0.00	0.00	
6,000.00	9.20	198.35	5,933.18	-799.91	-265.30	-273.52	0.00	0.00	
6,008.85	9.20	198.35	5,941.92	-801.25	-265.75	-273.98	0.00	0.00	Start Drop -2.00
6,100.00	7.38	198.35	6,032.11	-813.73	-269.88	-278.25	2.00	-2.00	
6,200.00	5.38	198.35	6,131.48	-824.27	-273.38	-281.85	2.00	-2.00	
6,300.00	3.38	198.35	6,231.18	-831.51	-275.78	-284.33	2.00	-2.00	
6,400.00	1.38	198.35	6,331.09	-835.45	-277.09	-285.68	2.00	-2.00	
6,468.91	0.00	0.00	6,400.00	-836.24	-277.35	-285.95	2.00	-2.00	EOD; INC=0°
6,500.00	0.00	0.00	6,431.09	-836.24	-277.35	-285.95	0.00	0.00	
6,600.00	0.00	0.00	6,531.09	-836.24	-277.35	-285.95	0.00	0.00	
6,692.72	0.00	0.00	6,623.80	-836.24	-277.35	-285.95	0.00	0.00	Start Build 8.00
6,700.00	0.58	89.41	6,631.09	-836.24	-277.31	-285.91	8.00	8.00	
6,800.00	8.58	89.41	6,730.69	-836.16	-269.33	-277.93	8.00	8.00	
6,900.00	16.58	89.41	6,828.21	-835.93	-247.56	-256.16	8.00	8.00	
7,000.00	24.58	89.41	6,921.75	-835.57	-212.44	-221.03	8.00	8.00	
7,100.00	32.58	89.41	7,009.49	-835.08	-164.64	-173.23	8.00	8.00	
7,200.00	40.58	89.41	7,089.72	-834.47	-105.09	-113.68	8.00	8.00	
7,300.00	48.58	89.41	7,160.89	-833.76	-34.96	-43.54	8.00	8.00	
7,400.00	56.58	89.41	7,221.60	-832.94	44.40	35.82	8.00	8.00	
7,500.00	64.58	89.41	7,270.68	-832.05	131.43	122.85	8.00	8.00	
7,600.00	72.58	89.41	7,307.16	-831.10	224.44	215.87	8.00	8.00	
7,700.00	80.58	89.41	7,330.35	-830.10	321.63	313.06	8.00	8.00	
7,800.00	88.58	89.41	7,339.78	-829.08	421.10	412.54	8.00	8.00	
7,817.72	90.00	89.41	7,340.00	-828.90	438.81	430.25	8.00	8.00	LP @ 7340' TVD; 90°
7,900.00	90.00	89.41	7,340.00	-828.06	521.09	512.54	0.00	0.00	
8,000.00	90.00	89.41	7,340.00	-827.03	621.08	612.54	0.00	0.00	
8,100.00	90.00	89.41	7,340.00	-826.01	721.08	712.54	0.00	0.00	
8,200.00	90.00	89.41	7,340.00	-824.98	821.07	812.54	0.00	0.00	
8,300.00	90.00	89.41	7,340.00	-823.96	921.07	912.54	0.00	0.00	
8,400.00	90.00	89.41	7,340.00	-822.93	1,021.06	1,012.54	0.00	0.00	
8,500.00	90.00	89.41	7,340.00	-821.91	1,121.06	1,112.54	0.00	0.00	
8,600.00	90.00	89.41	7,340.00	-820.88	1,221.05	1,212.54	0.00	0.00	
8,700.00	90.00	89.41	7,340.00	-819.86	1,321.05	1,312.54	0.00	0.00	
8,800.00	90.00	89.41	7,340.00	-818.83	1,421.04	1,412.54	0.00	0.00	
8,900.00	90.00	89.41	7,340.00	-817.81	1,521.04	1,512.54	0.00	0.00	
9,000.00	90.00	89.41	7,340.00	-816.78	1,621.03	1,612.54	0.00	0.00	
9,100.00	90.00	89.41	7,340.00	-815.76	1,721.03	1,712.54	0.00	0.00	
9,200.00	90.00	89.41	7,340.00	-814.74	1,821.02	1,812.54	0.00	0.00	
9,300.00	90.00	89.41	7,340.00	-813.71	1,921.02	1,912.54	0.00	0.00	
9,400.00	90.00	89.41	7,340.00	-812.69	2,021.01	2,012.54	0.00	0.00	
9,500.00	90.00	89.41	7,340.00	-811.66	2,121.01	2,112.54	0.00	0.00	
9,600.00	90.00	89.41	7,340.00	-810.64	2,221.00	2,212.54	0.00	0.00	
9,700.00	90.00	89.41	7,340.00	-809.61	2,321.00	2,312.54	0.00	0.00	
9,800.00	90.00	89.41	7,340.00	-808.59	2,420.99	2,412.54	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	89.41	7,340.00	-807.56	2,520.98	2,512.54	0.00	0.00	
10,000.00	90.00	89.41	7,340.00	-806.54	2,620.98	2,612.54	0.00	0.00	
10,100.00	90.00	89.41	7,340.00	-805.51	2,720.97	2,712.54	0.00	0.00	
10,200.00	90.00	89.41	7,340.00	-804.49	2,820.97	2,812.54	0.00	0.00	
10,300.00	90.00	89.41	7,340.00	-803.46	2,920.96	2,912.54	0.00	0.00	
10,400.00	90.00	89.41	7,340.00	-802.44	3,020.96	3,012.54	0.00	0.00	
10,500.00	90.00	89.41	7,340.00	-801.41	3,120.95	3,112.54	0.00	0.00	
10,600.00	90.00	89.41	7,340.00	-800.39	3,220.95	3,212.54	0.00	0.00	
10,700.00	90.00	89.41	7,340.00	-799.36	3,320.94	3,312.54	0.00	0.00	
10,800.00	90.00	89.41	7,340.00	-798.34	3,420.94	3,412.54	0.00	0.00	
10,900.00	90.00	89.41	7,340.00	-797.31	3,520.93	3,512.54	0.00	0.00	
11,000.00	90.00	89.41	7,340.00	-796.29	3,620.93	3,612.54	0.00	0.00	
11,100.00	90.00	89.41	7,340.00	-795.26	3,720.92	3,712.54	0.00	0.00	
11,200.00	90.00	89.41	7,340.00	-794.24	3,820.92	3,812.54	0.00	0.00	
11,300.00	90.00	89.41	7,340.00	-793.22	3,920.91	3,912.54	0.00	0.00	
11,400.00	90.00	89.41	7,340.00	-792.19	4,020.91	4,012.54	0.00	0.00	
11,500.00	90.00	89.41	7,340.00	-791.17	4,120.90	4,112.54	0.00	0.00	
11,600.00	90.00	89.41	7,340.00	-790.14	4,220.90	4,212.54	0.00	0.00	
11,700.00	90.00	89.41	7,340.00	-789.12	4,320.89	4,312.54	0.00	0.00	
11,800.00	90.00	89.41	7,340.00	-788.09	4,420.88	4,412.54	0.00	0.00	
11,886.52	90.00	89.41	7,340.00	-787.20	4,507.40	4,499.05	0.00	0.00	TD at 11886.52

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 3L-25H PBHL	0.00	0.00	7,340.00	-787.20	4,507.40	1,249,759.53	3,219,084.21	40.016324	-104.717788
- plan hits target center									
- Point									
SAM 3L-25H TPZ	0.00	0.00	7,290.61	-831.58	177.48	1,249,715.16	3,214,754.29	40.016306	-104.733248
- plan misses target center by 0.01usft at 7550.20usft MD (7290.62 TVD, -831.58 N, 177.48 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
500.00	500.00	0.00	0.00	KOP @ 500'
960.06	958.08	-34.99	-11.60	EOB; INC=9.2°
6,008.85	5,941.92	-801.25	-265.75	Start Drop -2.00
6,468.91	6,400.00	-836.24	-277.35	EOD; INC=0°
6,692.72	6,623.80	-836.24	-277.35	Start Build 8.00
7,817.72	7,340.00	-828.90	438.81	LP @ 7340' TVD; 90°
11,886.52	7,340.00	-787.20	4,507.40	TD at 11886.52

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (SAM)

SAM 3L-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 3L-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 3L-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	11,886.52	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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)						
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						Out of range
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,303.69	12,555.47	413.82	326.87	4.759	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,350.00	12,555.47	417.89	324.02	4.452	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,400.00	12,555.47	431.12	330.94	4.303	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	11,886.52	7,078.87	957.98	852.38	9.072	CC, ES, SF
Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SUR	11,886.52	7,174.77	1,197.10	1,111.77	14.028	CC, ES, SF
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	11,886.52	7,064.00	982.58	880.12	9.590	CC, ES, SF
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	500.00	461.00	1,338.56	1,336.49	643.979	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,100.00	500.00	1,475.07	1,469.84	282.270	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	3,134.23	3,326.61	1,302.33	1,280.46	59.545	CC
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	3,200.00	3,383.70	1,302.75	1,280.20	57.790	ES
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	5,000.00	5,047.28	1,487.55	1,446.94	36.632	SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	110.02	109.03	110.800	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	700.00	676.53	157.19	152.42	32.921	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	99.81	98.10	58.372	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	700.00	683.82	132.31	127.63	28.263	SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	89.98	87.56	37.078	CC, ES
SAM 3C-25H-M166 - OH - PLAN #1	700.00	689.58	111.08	106.47	24.085	SF
SAM 3D-25H-M166 - OH - PLAN #1	500.00	500.00	79.79	76.65	25.380	CC, ES
SAM 3D-25H-M166 - OH - PLAN #1	700.00	694.18	92.68	88.11	20.301	SF
SAM 3E-25H-M166 - OH - PLAN #1	500.00	500.00	69.95	66.81	22.252	CC, ES
SAM 3E-25H-M166 - OH - PLAN #1	11,886.52	11,840.65	1,329.96	1,028.81	4.416	SF
SAM 3F-25H-M166 - OH - PLAN #1	500.00	500.00	59.75	56.60	19.005	CC, ES
SAM 3F-25H-M166 - OH - PLAN #1	11,886.52	11,902.57	1,181.95	881.20	3.930	SF
SAM 3G-25H-M166 - OH - PLAN #1	500.00	500.00	49.92	46.77	15.878	CC, ES
SAM 3G-25H-M166 - OH - PLAN #1	11,886.52	11,793.48	969.17	669.69	3.236	SF
SAM 3H-25H-M166 - OH - PLAN #1	500.00	500.00	39.72	36.57	12.634	CC, ES
SAM 3H-25H-M166 - OH - PLAN #1	11,886.52	12,065.66	796.87	508.22	2.761	SF
SAM 3I-25H-M166 - OH - PLAN #1	500.00	500.00	29.88	26.74	9.506	CC, ES
SAM 3I-25H-M166 - OH - PLAN #1	11,886.52	11,902.38	658.69	360.26	2.207	SF
SAM 3J-25H-M166 - OH - PLAN #1	500.00	500.00	20.04	16.90	6.375	CC, ES
SAM 3J-25H-M166 - OH - PLAN #1	11,886.52	11,842.52	429.84	129.42	1.431	Level 3, SF
SAM 3K-25H-M166 - OH - PLAN #1	500.00	500.00	9.85	6.70	3.132	CC
SAM 3K-25H-M166 - OH - PLAN #1	11,886.52	11,935.16	211.88	-73.93	0.741	Level 1, ES, SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	10.19	7.76	4.199	CC
SAM 3M-25H-M166 - OH - PLAN #1	11,886.52	11,975.04	254.96	-34.25	0.882	Level 1, ES, SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	20.03	18.32	11.712	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	11,886.52	12,155.71	420.24	171.65	1.691	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	30.23	29.24	30.446	CC, ES
SAM 3O-25H-M166 - OH - PLAN #1	11,886.52	11,932.12	445.15	143.94	1.478	Level 3, SF

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	Offset	Distance		Separation	Warning
	Measured	Measured	Between	Between		
Offset Well - Wellbore - Design	Depth	Depth	Centres	Ellipses	Factor	
(usft) (usft) (usft) (usft)						
S25-T1N-R66W (SAM)						
State 7-36 CG (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Templin 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,435.25	7,261.00	877.95	733.53	6.079	CC, ES
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,500.00	7,261.00	880.33	734.47	6.035	SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Beierle KE 26-361HN - GWOG WELL - GWOG WELL											Offset Site Error:		0.00 usft
Survey Program: 16-ISCWSA MWD											Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
6,100.00	6,032.11	12,533.65	7,499.06	25.07	91.03	169.34	-814.02	-304.52	1,443.37	1,398.52	44.84	32.186	
6,200.00	6,131.48	12,544.17	7,499.06	25.47	91.21	165.78	-824.53	-304.43	1,343.94	1,298.94	45.00	29.866	
6,300.00	6,231.18	12,551.39	7,499.06	25.83	91.34	157.11	-831.75	-304.37	1,244.20	1,199.07	45.13	27.568	
6,400.00	6,331.09	12,555.32	7,499.06	26.18	91.41	125.98	-835.68	-304.34	1,144.29	1,099.04	45.25	25.289	
6,468.91	6,400.00	12,555.47	7,499.06	26.38	91.41	-89.13	-835.83	-304.34	1,075.40	1,030.07	45.33	23.726	
6,500.00	6,431.09	12,555.47	7,499.06	26.47	91.41	-89.13	-835.83	-304.34	1,044.32	998.96	45.36	23.024	
6,600.00	6,531.09	12,555.47	7,499.06	26.75	91.41	-89.13	-835.83	-304.34	944.36	898.88	45.47	20.767	
6,692.72	6,623.80	12,555.47	7,499.06	27.01	91.41	-89.13	-835.83	-304.34	851.68	806.09	45.60	18.679	
6,700.00	6,631.09	12,555.47	7,499.06	27.03	91.41	-178.90	-835.83	-304.34	844.40	798.80	45.61	18.515	
6,750.00	6,681.03	12,555.47	7,499.06	27.17	91.41	-179.58	-835.83	-304.34	794.57	748.85	45.72	17.377	
6,800.00	6,730.69	12,555.47	7,499.06	27.30	91.41	-179.73	-835.83	-304.34	745.20	699.25	45.95	16.219	
6,850.00	6,779.83	12,555.47	7,499.06	27.43	91.41	-179.80	-835.83	-304.34	696.64	650.29	46.35	15.030	
6,900.00	6,828.21	12,555.47	7,499.06	27.56	91.41	-179.84	-835.83	-304.34	649.34	602.28	47.06	13.799	
6,950.00	6,875.59	12,555.47	7,499.06	27.67	91.41	-179.86	-835.83	-304.34	603.86	555.59	48.27	12.510	
7,000.00	6,921.75	12,555.47	7,499.06	27.78	91.41	-179.87	-835.83	-304.34	560.89	510.64	50.25	11.162	
7,050.00	6,966.45	12,555.47	7,499.06	27.88	91.41	-179.89	-835.83	-304.34	521.29	468.01	53.28	9.784	
7,100.00	7,009.49	12,555.47	7,499.06	27.97	91.41	-179.89	-835.83	-304.34	486.08	428.48	57.60	8.439	
7,150.00	7,050.64	12,555.47	7,499.06	28.05	91.41	-179.90	-835.83	-304.34	456.48	393.15	63.33	7.208	
7,200.00	7,089.72	12,555.47	7,499.06	28.13	91.41	-179.90	-835.83	-304.34	433.80	363.44	70.36	6.165	
7,250.00	7,126.53	12,555.47	7,499.06	28.19	91.41	-179.90	-835.83	-304.34	419.28	341.00	78.28	5.356	
7,300.00	7,160.89	12,555.47	7,499.06	28.25	91.41	-179.90	-835.83	-304.34	413.85	327.47	86.38	4.791	
7,303.69	7,163.32	12,555.47	7,499.06	28.25	91.41	-179.90	-835.83	-304.34	413.82	326.87	86.96	4.759 CC	
7,350.00	7,192.63	12,555.47	7,499.06	28.30	91.41	-179.90	-835.83	-304.34	417.89	324.02	93.87	4.452 ES	
7,400.00	7,221.60	12,555.47	7,499.06	28.34	91.41	-179.90	-835.83	-304.34	431.12	330.94	100.18	4.303 SF	
7,450.00	7,247.66	12,555.42	7,499.06	28.38	91.41	-179.89	-835.78	-304.34	452.67	347.61	105.06	4.309	
7,500.00	7,270.68	12,555.34	7,499.06	28.41	91.41	-179.87	-835.70	-304.34	481.33	372.75	108.58	4.433	
7,550.00	7,290.54	12,555.26	7,499.06	28.45	91.41	-179.85	-835.62	-304.34	515.79	404.80	110.98	4.647	
7,600.00	7,307.16	12,555.17	7,499.06	28.69	91.41	-179.82	-835.53	-304.34	554.81	442.24	112.57	4.928	
7,650.00	7,320.45	12,555.08	7,499.06	29.30	91.40	-179.78	-835.44	-304.34	597.34	483.75	113.59	5.259	
7,700.00	7,330.35	12,554.99	7,499.06	30.02	91.40	-179.73	-835.35	-304.34	642.50	528.27	114.23	5.625	
7,750.00	7,336.80	12,554.89	7,499.06	30.82	91.40	-179.64	-835.25	-304.34	689.56	574.94	114.62	6.016	
7,800.00	7,339.78	12,554.80	7,499.06	31.67	91.40	-179.49	-835.16	-304.34	737.97	623.11	114.86	6.425	
7,817.72	7,340.00	12,554.77	7,499.06	31.98	91.40	-179.41	-835.13	-304.34	755.35	640.43	114.92	6.573	
7,900.00	7,340.00	12,554.61	7,499.06	33.52	91.40	-179.35	-834.97	-304.34	836.44	721.33	115.11	7.267	
8,000.00	7,340.00	12,554.43	7,499.06	35.56	91.39	-179.27	-834.79	-304.34	935.26	819.99	115.27	8.114	
8,100.00	7,340.00	12,554.24	7,499.06	37.77	91.39	-179.19	-834.60	-304.35	1,034.32	918.94	115.38	8.964	
8,200.00	7,340.00	12,554.05	7,499.06	40.11	91.39	-179.11	-834.41	-304.35	1,133.54	1,018.08	115.46	9.818	
8,300.00	7,340.00	12,553.86	7,499.06	42.56	91.38	-179.03	-834.22	-304.35	1,232.88	1,117.37	115.51	10.673	
8,400.00	7,340.00	12,553.68	7,499.06	45.10	91.38	-178.95	-834.04	-304.35	1,332.32	1,216.77	115.56	11.529	
8,500.00	7,340.00	12,553.49	7,499.06	47.73	91.38	-178.87	-833.85	-304.35	1,431.84	1,316.25	115.59	12.387	

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 3L-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 3L-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) - Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 164-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
11,300.00	7,340.00	7,077.13	6,976.20	132.05	21.53	62.49	-1,341.97	5,231.44	1,450.64	1,379.53	71.11	20.400	
11,400.00	7,340.00	7,077.42	6,976.46	135.19	21.53	62.51	-1,342.10	5,231.44	1,361.39	1,286.23	75.16	18.113	
11,500.00	7,340.00	7,077.72	6,976.73	138.34	21.53	62.54	-1,342.23	5,231.45	1,273.74	1,193.91	79.83	15.955	
11,600.00	7,340.00	7,078.01	6,976.99	141.49	21.53	62.57	-1,342.37	5,231.45	1,188.04	1,102.82	85.22	13.940	
11,700.00	7,340.00	7,078.31	6,977.26	144.63	21.53	62.59	-1,342.50	5,231.45	1,104.75	1,013.32	91.44	12.082	
11,800.00	7,340.00	7,078.61	6,977.53	147.79	21.53	62.62	-1,342.64	5,231.46	1,024.45	925.87	98.59	10.392	
11,886.52	7,340.00	7,078.87	6,977.76	150.52	21.53	62.65	-1,342.76	5,231.46	957.98	852.38	105.60	9.072 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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												Offset Site Error:	0.00 usft
S25-T1N-R66W (SAM) - Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SURVEYS												Offset Well Error:	0.00 usft
Survey Program: 133-ISCWSA MWD													
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
11,600.00	7,340.00	7,180.99	7,147.20	141.49	18.04	77.33	-1,313.42	5,575.88	1,457.53	1,385.55	71.98	20.250	
11,700.00	7,340.00	7,178.81	7,145.14	144.63	18.04	77.10	-1,312.72	5,575.96	1,365.45	1,289.44	76.02	17.963	
11,800.00	7,340.00	7,176.64	7,143.08	147.79	18.04	76.87	-1,312.03	5,576.05	1,274.57	1,193.88	80.69	15.796	
11,886.52	7,340.00	7,174.77	7,141.30	150.52	18.04	76.68	-1,311.45	5,576.13	1,197.10	1,111.77	85.34	14.028	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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) - Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 164-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
11,300.00	7,340.00	7,064.00	6,964.42	132.05	21.55	62.75	-1,335.84	5,270.52	1,482.57	1,412.81	69.75	21.254	
11,400.00	7,340.00	7,064.00	6,964.42	135.19	21.55	62.75	-1,335.84	5,270.52	1,392.55	1,318.97	73.59	18.924	
11,500.00	7,340.00	7,064.00	6,964.42	138.34	21.55	62.75	-1,335.84	5,270.52	1,304.00	1,226.00	78.00	16.717	
11,600.00	7,340.00	7,064.00	6,964.42	141.49	21.55	62.75	-1,335.84	5,270.52	1,217.22	1,134.12	83.10	14.648	
11,700.00	7,340.00	7,064.00	6,964.42	144.63	21.55	62.75	-1,335.84	5,270.52	1,132.62	1,043.63	88.99	12.728	
11,800.00	7,340.00	7,064.00	6,964.42	147.79	21.55	62.75	-1,335.84	5,270.52	1,050.73	954.95	95.78	10.971	
11,886.52	7,340.00	7,064.00	6,964.42	150.52	21.55	62.75	-1,335.84	5,270.52	982.58	880.12	102.46	9.590 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	82.13	183.21	1,325.97	1,339.13				
100.00	100.00	61.00	61.00	0.14	0.07	82.13	183.21	1,325.97	1,338.56	1,338.36	0.21	6,527.763	
200.00	200.00	161.00	161.00	0.50	0.18	82.13	183.21	1,325.97	1,338.56	1,337.89	0.67	1,987.655	
300.00	300.00	261.00	261.00	0.85	0.29	82.13	183.21	1,325.97	1,338.56	1,337.42	1.14	1,172.307	
400.00	400.00	361.00	361.00	1.21	0.40	82.13	183.21	1,325.97	1,338.56	1,336.95	1.61	831.302	
500.00	500.00	461.00	461.00	1.57	0.51	82.13	183.21	1,325.97	1,338.56	1,336.49	2.08	643.979 CC, ES	
600.00	599.98	500.00	500.00	1.91	0.55	-116.19	183.21	1,325.97	1,340.72	1,338.23	2.50	537.014	
700.00	699.84	500.00	500.00	2.25	0.55	-116.00	183.21	1,325.97	1,351.27	1,348.28	2.99	451.537	
800.00	799.45	500.00	500.00	2.60	0.55	-115.64	183.21	1,325.97	1,370.55	1,366.99	3.56	385.034	
900.00	898.70	500.00	500.00	2.95	0.55	-115.12	183.21	1,325.97	1,398.17	1,394.03	4.14	337.708	
960.06	958.08	500.00	500.00	3.18	0.55	-114.73	183.21	1,325.97	1,418.57	1,414.09	4.48	316.410	
1,000.00	997.51	500.00	500.00	3.33	0.55	-114.73	183.21	1,325.97	1,433.53	1,428.82	4.70	304.735	
1,100.00	1,096.22	500.00	500.00	3.72	0.55	-114.73	183.21	1,325.97	1,475.07	1,469.84	5.23	282.270 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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
0.00	0.00	0.00	0.00	0.00	0.00	82.36	176.18	1,313.14	1,325.02				
100.00	100.00	83.00	83.00	0.14	0.09	82.36	176.18	1,313.14	1,324.91	1,324.68	0.23	5,755.154	
200.00	200.00	183.00	183.00	0.50	0.20	82.36	176.18	1,313.14	1,324.91	1,324.21	0.70	1,893.351	
300.00	300.00	283.00	283.00	0.85	0.31	82.36	176.18	1,313.14	1,324.91	1,323.74	1.17	1,133.054	
400.00	400.00	383.00	383.00	1.21	0.43	82.36	176.18	1,313.14	1,324.91	1,323.27	1.64	808.422	
500.00	500.00	483.00	483.00	1.57	0.54	82.36	176.18	1,313.14	1,324.91	1,322.80	2.11	628.384	
600.00	599.98	582.98	582.98	1.91	0.65	-116.04	176.18	1,313.14	1,325.68	1,323.11	2.56	517.612	
700.00	699.84	682.84	682.84	2.25	0.76	-116.21	176.18	1,313.14	1,327.98	1,324.98	3.01	441.732	
800.00	799.45	782.45	782.45	2.60	0.87	-116.47	176.18	1,313.14	1,331.86	1,328.40	3.46	384.632	
900.00	898.70	881.70	881.70	2.95	0.98	-116.84	176.18	1,313.14	1,337.36	1,333.43	3.93	340.167	
960.06	958.08	941.08	941.08	3.18	1.05	-117.10	176.18	1,313.14	1,341.47	1,337.25	4.22	317.866	
1,000.00	997.51	980.51	980.51	3.33	1.09	-117.34	176.18	1,313.14	1,344.42	1,340.01	4.41	304.546	
1,100.00	1,096.22	1,079.22	1,079.22	3.72	1.20	-117.94	176.18	1,313.14	1,351.92	1,347.01	4.91	275.575	
1,200.00	1,194.94	1,177.94	1,177.94	4.12	1.31	-118.53	176.18	1,313.14	1,359.56	1,354.16	5.40	251.589	
1,300.00	1,293.65	1,276.65	1,276.65	4.53	1.42	-119.11	176.18	1,313.14	1,367.34	1,361.44	5.91	231.491	
1,400.00	1,392.36	1,375.36	1,375.36	4.94	1.53	-119.69	176.18	1,313.14	1,375.27	1,368.86	6.41	214.457	
1,500.00	1,491.08	1,464.45	1,464.45	5.35	1.71	-120.21	176.30	1,313.40	1,383.64	1,376.65	6.99	197.886	
1,600.00	1,589.79	1,614.15	1,614.12	5.77	2.02	-121.14	177.90	1,311.86	1,391.29	1,383.55	7.74	179.861	
1,700.00	1,688.50	1,790.30	1,789.75	6.19	2.42	-122.46	183.61	1,300.21	1,394.07	1,385.51	8.56	162.788	
1,800.00	1,787.22	1,960.90	1,958.53	6.61	2.86	-124.01	193.38	1,277.57	1,391.00	1,381.59	9.40	147.907	
1,900.00	1,885.93	2,105.22	2,099.70	7.03	3.35	-125.65	207.49	1,251.24	1,384.96	1,374.72	10.24	135.249	
2,000.00	1,984.64	2,236.63	2,226.56	7.45	3.90	-127.39	224.88	1,221.78	1,376.45	1,365.34	11.11	123.887	
2,100.00	2,083.36	2,373.54	2,357.21	7.88	4.59	-129.40	245.57	1,186.49	1,366.22	1,354.11	12.10	112.893	
2,200.00	2,182.07	2,478.95	2,456.82	8.30	5.17	-131.05	262.22	1,156.32	1,354.42	1,341.41	13.01	104.088	
2,300.00	2,280.78	2,564.76	2,537.80	8.73	5.64	-132.43	276.48	1,131.78	1,343.97	1,330.11	13.86	96.980	
2,400.00	2,379.50	2,653.75	2,622.00	9.15	6.11	-133.86	290.77	1,106.75	1,334.81	1,320.08	14.72	90.650	
2,500.00	2,478.21	2,738.43	2,702.20	9.58	6.56	-135.23	304.42	1,083.24	1,327.02	1,311.43	15.58	85.147	
2,600.00	2,576.92	2,825.14	2,784.72	10.01	7.04	-136.60	317.76	1,060.21	1,321.01	1,304.54	16.47	80.222	
2,700.00	2,675.64	2,932.82	2,886.78	10.44	7.65	-138.36	334.94	1,030.50	1,315.37	1,297.88	17.49	75.211	
2,800.00	2,774.35	3,025.43	2,974.54	10.86	8.20	-139.88	349.28	1,004.62	1,310.33	1,291.87	18.46	70.999	
2,900.00	2,873.06	3,114.89	3,059.16	11.29	8.75	-141.38	363.88	979.53	1,306.66	1,287.23	19.43	67.247	
3,000.00	2,971.78	3,210.66	3,149.38	11.72	9.37	-143.04	380.37	951.98	1,303.98	1,283.49	20.49	63.631	
3,100.00	3,070.49	3,298.99	3,232.23	12.15	9.96	-144.62	396.49	925.91	1,302.45	1,280.92	21.53	60.485	
3,134.23	3,104.28	3,326.61	3,258.12	12.30	10.14	-145.12	401.65	917.80	1,302.33	1,280.46	21.87	59.545 CC	
3,200.00	3,169.20	3,383.70	3,311.69	12.58	10.51	-146.15	412.38	901.23	1,302.75	1,280.20	22.54	57.790 ES	
3,300.00	3,267.92	3,482.55	3,404.62	13.01	11.12	-147.90	430.14	872.60	1,304.01	1,280.39	23.63	55.194	
3,400.00	3,366.63	3,566.53	3,483.64	13.44	11.65	-149.38	445.25	848.51	1,306.73	1,282.12	24.62	53.086	
3,500.00	3,465.34	3,663.98	3,575.36	13.87	12.27	-151.08	462.67	820.60	1,310.65	1,284.95	25.70	51.005	
3,600.00	3,564.06	3,754.25	3,660.51	14.30	12.82	-152.62	478.27	795.01	1,315.59	1,288.89	26.71	49.256	
3,700.00	3,662.77	3,839.00	3,740.52	14.73	13.35	-154.06	493.18	771.38	1,322.20	1,294.51	27.68	47.761	
3,800.00	3,761.48	3,930.64	3,827.17	15.16	13.92	-155.58	509.27	746.24	1,330.21	1,301.51	28.70	46.353	
3,900.00	3,860.20	4,037.16	3,928.06	15.59	14.57	-157.30	526.94	717.01	1,338.64	1,308.84	29.80	44.921	
4,000.00	3,958.91	4,134.57	4,020.36	16.02	15.16	-158.85	542.31	689.94	1,347.33	1,316.49	30.84	43.694	
4,100.00	4,057.62	4,217.00	4,098.47	16.45	15.67	-160.14	555.81	667.30	1,357.60	1,325.84	31.76	42.747	
4,200.00	4,156.34	4,334.34	4,209.50	16.88	16.40	-161.98	574.52	634.31	1,368.26	1,335.31	32.95	41.531	
4,300.00	4,255.05	4,427.47	4,297.66	17.31	16.99	-163.40	588.30	607.65	1,378.72	1,344.77	33.94	40.618	
4,400.00	4,353.76	4,505.28	4,371.26	17.75	17.48	-164.58	600.39	585.46	1,390.74	1,355.92	34.82	39.939	
4,500.00	4,452.48	4,591.74	4,452.71	18.18	18.05	-165.91	614.88	560.33	1,404.37	1,368.59	35.78	39.246	
4,600.00	4,551.19	4,681.52	4,536.90	18.61	18.66	-167.32	630.69	533.47	1,419.24	1,382.45	36.79	38.576	
4,700.00	4,649.90	4,773.19	4,623.00	19.04	19.27	-168.71	646.71	506.39	1,435.16	1,397.38	37.78	37.987	
4,800.00	4,748.62	4,877.20	4,721.29	19.47	19.92	-170.20	663.71	476.93	1,451.62	1,412.79	38.83	37.387	
4,900.00	4,847.33	4,955.97	4,795.77	19.90	20.42	-171.30	676.53	454.72	1,468.91	1,429.25	39.66	37.036	

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 3L-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 3L-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	
5,000.00	4,946.04	5,047.28	4,881.90	20.33	21.02	-172.56	692.11	428.71	1,487.55	1,446.94	40.61	36.632 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	
0.00	0.00	0.00	0.00	0.00	0.00	0.09	110.02	0.17	110.02				
100.00	100.00	100.00	100.00	0.14	0.14	0.09	110.02	0.17	110.02	109.74	0.28	398.592	
200.00	200.00	200.00	200.00	0.50	0.50	0.09	110.02	0.17	110.02	109.03	0.99	110.800 CC, ES	
300.00	300.00	296.38	296.36	0.85	0.84	-0.12	111.59	-0.24	111.65	109.91	1.74	64.265	
400.00	400.00	392.54	392.40	1.21	1.19	-0.71	116.28	-1.45	116.54	114.03	2.51	46.465	
500.00	500.00	488.27	487.79	1.57	1.55	-1.60	124.05	-3.46	124.70	121.42	3.28	38.017	
600.00	599.98	583.15	582.01	1.91	1.90	159.16	134.79	-6.23	137.74	133.71	4.03	34.138	
700.00	699.84	676.53	674.34	2.25	2.26	158.58	148.30	-9.73	157.19	152.42	4.77	32.921 SF	
800.00	799.45	767.86	764.15	2.60	2.64	158.25	164.33	-13.87	182.89	177.39	5.50	33.230	
900.00	898.70	859.37	853.63	2.95	3.03	158.11	182.90	-18.67	214.39	208.21	6.18	34.683	
960.06	958.08	915.75	908.69	3.18	3.27	158.14	194.61	-21.70	235.07	228.49	6.58	35.728	
1,000.00	997.51	953.11	945.18	3.33	3.44	158.29	202.38	-23.70	249.19	242.35	6.84	36.434	
1,100.00	1,096.22	1,046.64	1,036.53	3.72	3.86	158.61	221.81	-28.73	284.55	277.06	7.49	37.985	
1,200.00	1,194.94	1,140.17	1,127.89	4.12	4.28	158.85	241.24	-33.75	319.91	311.75	8.16	39.227	
1,300.00	1,293.65	1,233.70	1,219.24	4.53	4.70	159.04	260.67	-38.77	355.27	346.44	8.83	40.235	
1,400.00	1,392.36	1,327.24	1,310.59	4.94	5.13	159.20	280.10	-43.80	390.64	381.13	9.51	41.065	
1,500.00	1,491.08	1,420.77	1,401.95	5.35	5.56	159.33	299.53	-48.82	426.01	415.81	10.20	41.758	
1,600.00	1,589.79	1,514.30	1,493.30	5.77	5.99	159.45	318.96	-53.84	461.39	450.49	10.90	42.342	
1,700.00	1,688.50	1,607.83	1,584.65	6.19	6.42	159.54	338.39	-58.86	496.76	485.16	11.60	42.841	
1,800.00	1,787.22	1,701.36	1,676.00	6.61	6.86	159.63	357.82	-63.89	532.13	519.84	12.30	43.271	
1,900.00	1,885.93	1,794.89	1,767.36	7.03	7.29	159.70	377.25	-68.91	567.51	554.51	13.00	43.644	
2,000.00	1,984.64	1,888.42	1,858.71	7.45	7.72	159.76	396.68	-73.93	602.89	589.17	13.71	43.971	
2,100.00	2,083.36	1,981.96	1,950.06	7.88	8.16	159.82	416.11	-78.96	638.26	623.84	14.42	44.259	
2,200.00	2,182.07	2,075.49	2,041.42	8.30	8.59	159.87	435.54	-83.98	673.64	658.51	15.13	44.515	
2,300.00	2,280.78	2,169.02	2,132.77	8.73	9.03	159.92	454.97	-89.00	709.02	693.17	15.85	44.743	
2,400.00	2,379.50	2,262.55	2,224.12	9.15	9.46	159.96	474.40	-94.03	744.40	727.84	16.56	44.948	
2,500.00	2,478.21	2,356.08	2,315.47	9.58	9.90	160.00	493.83	-99.05	779.78	762.50	17.28	45.133	
2,600.00	2,576.92	2,449.61	2,406.83	10.01	10.34	160.03	513.26	-104.07	815.15	797.16	17.99	45.301	
2,700.00	2,675.64	2,543.14	2,498.18	10.44	10.77	160.06	532.69	-109.09	850.53	831.82	18.71	45.453	
2,800.00	2,774.35	2,636.68	2,589.53	10.86	11.21	160.09	552.12	-114.12	885.91	866.48	19.43	45.592	
2,900.00	2,873.06	2,730.21	2,680.89	11.29	11.65	160.12	571.56	-119.14	921.29	901.14	20.15	45.720	
3,000.00	2,971.78	2,823.74	2,772.24	11.72	12.08	160.15	590.99	-124.16	956.67	935.80	20.87	45.837	
3,100.00	3,070.49	2,917.27	2,863.59	12.15	12.52	160.17	610.42	-129.19	992.05	970.46	21.59	45.945	
3,200.00	3,169.20	3,010.80	2,954.94	12.58	12.96	160.19	629.85	-134.21	1,027.43	1,005.12	22.31	46.045	
3,300.00	3,267.92	3,104.33	3,046.30	13.01	13.40	160.21	649.28	-139.23	1,062.81	1,039.78	23.04	46.138	
3,400.00	3,366.63	3,197.86	3,137.65	13.44	13.83	160.23	668.71	-144.25	1,098.19	1,074.43	23.76	46.224	
3,500.00	3,465.34	3,291.40	3,229.00	13.87	14.27	160.25	688.14	-149.28	1,133.57	1,109.09	24.48	46.305	
3,600.00	3,564.06	3,384.93	3,320.36	14.30	14.71	160.26	707.57	-154.30	1,168.95	1,143.75	25.20	46.380	
3,700.00	3,662.77	3,478.46	3,411.71	14.73	15.15	160.28	727.00	-159.32	1,204.33	1,178.41	25.93	46.450	
3,800.00	3,761.48	3,571.99	3,503.06	15.16	15.58	160.29	746.43	-164.35	1,239.71	1,213.06	26.65	46.516	
3,900.00	3,860.20	3,665.52	3,594.42	15.59	16.02	160.31	765.86	-169.37	1,275.09	1,247.72	27.38	46.578	
4,000.00	3,958.91	3,759.05	3,685.77	16.02	16.46	160.32	785.29	-174.39	1,310.48	1,282.38	28.10	46.636	
4,100.00	4,057.62	3,852.58	3,777.12	16.45	16.90	160.33	804.72	-179.41	1,345.86	1,317.03	28.82	46.691	
4,200.00	4,156.34	3,946.12	3,868.47	16.88	17.34	160.35	824.15	-184.44	1,381.24	1,351.69	29.55	46.743	
4,300.00	4,255.05	4,039.65	3,959.83	17.31	17.77	160.36	843.58	-189.46	1,416.62	1,386.34	30.27	46.792	
4,400.00	4,353.76	4,133.18	4,051.18	17.75	18.21	160.37	863.01	-194.48	1,452.00	1,421.00	31.00	46.838	
4,500.00	4,452.48	4,226.71	4,142.53	18.18	18.65	160.38	882.44	-199.51	1,487.38	1,455.65	31.73	46.882	

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.01	99.81	-0.02	99.81				
100.00	100.00	100.00	100.00	0.14	0.14	-0.01	99.81	-0.02	99.81	99.53	0.28	361.602	
200.00	200.00	200.00	200.00	0.50	0.50	-0.01	99.81	-0.02	99.81	98.82	0.99	100.518	
300.00	300.00	300.00	300.00	0.85	0.85	-0.01	99.81	-0.02	99.81	98.10	1.71	58.372 CC, ES	
400.00	400.00	396.72	396.71	1.21	1.20	-0.27	101.38	-0.47	101.43	98.99	2.44	41.542	
500.00	500.00	493.23	493.08	1.57	1.55	-0.99	106.07	-1.83	106.31	103.11	3.20	33.251	
600.00	599.98	589.14	588.65	1.91	1.90	159.83	113.82	-4.07	116.08	112.14	3.94	29.434	
700.00	699.84	683.82	682.68	2.25	2.25	159.26	124.48	-7.14	132.31	127.63	4.68	28.263 SF	
800.00	799.45	776.72	774.52	2.60	2.61	158.92	137.83	-11.00	154.87	149.45	5.41	28.614	
900.00	898.70	867.31	863.61	2.95	2.97	158.74	153.60	-15.55	183.58	177.45	6.13	29.954	
960.06	958.08	922.78	917.94	3.18	3.21	158.70	164.37	-18.66	203.48	196.95	6.53	31.153	
1,000.00	997.51	960.32	954.69	3.33	3.36	158.81	171.70	-20.78	217.13	210.34	6.79	31.978	
1,100.00	1,096.22	1,054.30	1,046.71	3.72	3.77	159.02	190.04	-26.07	251.30	243.85	7.45	33.730	
1,200.00	1,194.94	1,148.27	1,138.73	4.12	4.18	159.18	208.38	-31.37	285.48	277.36	8.12	35.166	
1,300.00	1,293.65	1,242.25	1,230.74	4.53	4.59	159.30	226.72	-36.66	319.66	310.86	8.80	36.342	
1,400.00	1,392.36	1,336.22	1,322.76	4.94	5.00	159.40	245.07	-41.96	353.83	344.35	9.48	37.320	
1,500.00	1,491.08	1,430.20	1,414.78	5.35	5.42	159.49	263.41	-47.25	388.01	377.84	10.17	38.142	
1,600.00	1,589.79	1,524.18	1,506.79	5.77	5.84	159.56	281.75	-52.55	422.19	411.32	10.87	38.841	
1,700.00	1,688.50	1,618.15	1,598.81	6.19	6.26	159.62	300.09	-57.84	456.37	444.80	11.57	39.442	
1,800.00	1,787.22	1,712.13	1,690.83	6.61	6.69	159.67	318.43	-63.14	490.55	478.28	12.27	39.964	
1,900.00	1,885.93	1,806.11	1,782.84	7.03	7.11	159.71	336.78	-68.43	524.73	511.75	12.98	40.419	
2,000.00	1,984.64	1,900.08	1,874.86	7.45	7.53	159.75	355.12	-73.73	558.91	545.22	13.69	40.821	
2,100.00	2,083.36	1,994.06	1,966.88	7.88	7.96	159.79	373.46	-79.02	593.10	578.69	14.40	41.177	
2,200.00	2,182.07	2,088.04	2,058.89	8.30	8.39	159.82	391.80	-84.32	627.28	612.16	15.12	41.494	
2,300.00	2,280.78	2,182.01	2,150.91	8.73	8.81	159.85	410.14	-89.61	661.46	645.63	15.83	41.779	
2,400.00	2,379.50	2,275.99	2,242.93	9.15	9.24	159.87	428.49	-94.91	695.64	679.09	16.55	42.036	
2,500.00	2,478.21	2,369.96	2,334.94	9.58	9.67	159.89	446.83	-100.20	729.82	712.55	17.27	42.269	
2,600.00	2,576.92	2,463.94	2,426.96	10.01	10.09	159.91	465.17	-105.50	764.00	746.02	17.98	42.481	
2,700.00	2,675.64	2,557.92	2,518.98	10.44	10.52	159.93	483.51	-110.79	798.18	779.48	18.70	42.674	
2,800.00	2,774.35	2,651.89	2,610.99	10.86	10.95	159.95	501.85	-116.09	832.37	812.94	19.42	42.851	
2,900.00	2,873.06	2,745.87	2,703.01	11.29	11.38	159.97	520.20	-121.38	866.55	846.40	20.15	43.015	
3,000.00	2,971.78	2,839.85	2,795.03	11.72	11.81	159.98	538.54	-126.68	900.73	879.86	20.87	43.165	
3,100.00	3,070.49	2,933.82	2,887.04	12.15	12.24	159.99	556.88	-131.97	934.91	913.32	21.59	43.304	
3,200.00	3,169.20	3,027.80	2,979.06	12.58	12.67	160.01	575.22	-137.27	969.09	946.78	22.31	43.434	
3,300.00	3,267.92	3,121.78	3,071.08	13.01	13.09	160.02	593.56	-142.57	1,003.28	980.24	23.04	43.554	
3,400.00	3,366.63	3,215.75	3,163.09	13.44	13.52	160.03	611.91	-147.86	1,037.46	1,013.70	23.76	43.666	
3,500.00	3,465.34	3,309.73	3,255.11	13.87	13.95	160.04	630.25	-153.16	1,071.64	1,047.16	24.48	43.771	
3,600.00	3,564.06	3,403.70	3,347.13	14.30	14.38	160.05	648.59	-158.45	1,105.82	1,080.61	25.21	43.869	
3,700.00	3,662.77	3,497.68	3,439.14	14.73	14.81	160.06	666.93	-163.75	1,140.00	1,114.07	25.93	43.961	
3,800.00	3,761.48	3,591.66	3,531.16	15.16	15.24	160.07	685.27	-169.04	1,174.19	1,147.53	26.66	44.047	
3,900.00	3,860.20	3,685.63	3,623.18	15.59	15.67	160.08	703.62	-174.34	1,208.37	1,180.99	27.38	44.129	
4,000.00	3,958.91	3,779.61	3,715.19	16.02	16.10	160.08	721.96	-179.63	1,242.55	1,214.44	28.11	44.206	
4,100.00	4,057.62	3,873.59	3,807.21	16.45	16.53	160.09	740.30	-184.93	1,276.73	1,247.90	28.83	44.278	
4,200.00	4,156.34	3,967.56	3,899.23	16.88	16.96	160.10	758.64	-190.22	1,310.92	1,281.35	29.56	44.347	
4,300.00	4,255.05	4,061.54	3,991.24	17.31	17.39	160.10	776.98	-195.52	1,345.10	1,314.81	30.29	44.412	
4,400.00	4,353.76	4,155.51	4,083.26	17.75	17.82	160.11	795.33	-200.81	1,379.28	1,348.27	31.01	44.474	
4,500.00	4,452.48	4,249.49	4,175.28	18.18	18.25	160.12	813.67	-206.11	1,413.46	1,381.72	31.74	44.532	
4,600.00	4,551.19	4,343.47	4,267.29	18.61	18.68	160.12	832.01	-211.40	1,447.64	1,415.18	32.47	44.588	
4,700.00	4,649.90	4,437.44	4,359.31	19.04	19.11	160.13	850.35	-216.70	1,481.83	1,448.63	33.19	44.641	

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 3L-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 3L-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	
0.00	0.00	0.00	0.00	0.00	0.00	0.04	89.98	0.06	89.98					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	89.98	0.06	89.98	89.71	0.28	326.001		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	89.98	0.06	89.98	88.99	0.99	90.621		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	89.98	0.06	89.98	88.27	1.71	52.625		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	89.98	0.06	89.98	87.56	2.43	37.078 CC, ES		
500.00	500.00	497.06	497.04	1.57	1.56	-0.27	91.55	-0.44	91.60	88.45	3.15	29.060		
600.00	599.98	593.78	593.63	1.91	1.91	160.79	96.22	-1.93	98.10	94.21	3.88	25.266		
700.00	699.84	689.58	689.09	2.25	2.26	160.34	103.91	-4.39	111.08	106.47	4.61	24.085 SF		
800.00	799.45	783.88	782.73	2.60	2.61	160.04	114.45	-7.75	130.45	125.11	5.34	24.422		
900.00	898.70	876.11	873.93	2.95	2.96	159.85	127.58	-11.95	156.06	150.00	6.06	25.746		
960.06	958.08	930.32	927.29	3.18	3.17	159.76	136.61	-14.83	174.36	167.88	6.49	26.873		
1,000.00	997.51	967.53	963.85	3.33	3.32	159.80	143.23	-16.95	187.36	180.60	6.76	27.727		
1,100.00	1,096.22	1,062.07	1,056.72	3.72	3.71	159.86	160.10	-22.34	219.93	212.52	7.42	29.660		
1,200.00	1,194.94	1,156.62	1,149.59	4.12	4.10	159.90	176.97	-27.73	252.51	244.42	8.09	31.219		
1,300.00	1,293.65	1,251.16	1,242.47	4.53	4.50	159.94	193.83	-33.12	285.08	276.31	8.77	32.507		
1,400.00	1,392.36	1,345.71	1,335.34	4.94	4.90	159.97	210.70	-38.51	317.66	308.20	9.46	33.582		
1,500.00	1,491.08	1,440.26	1,428.21	5.35	5.30	159.99	227.57	-43.90	350.23	340.08	10.15	34.492		
1,600.00	1,589.79	1,534.80	1,521.08	5.77	5.71	160.01	244.44	-49.29	382.81	371.95	10.85	35.270		
1,700.00	1,688.50	1,629.35	1,613.96	6.19	6.12	160.03	261.30	-54.68	415.38	403.82	11.56	35.942		
1,800.00	1,787.22	1,723.89	1,706.83	6.61	6.53	160.04	278.17	-60.07	447.95	435.69	12.26	36.527		
1,900.00	1,885.93	1,818.44	1,799.70	7.03	6.94	160.05	295.04	-65.46	480.53	467.56	12.97	37.040		
2,000.00	1,984.64	1,912.98	1,892.57	7.45	7.36	160.06	311.91	-70.85	513.10	499.42	13.68	37.495		
2,100.00	2,083.36	2,007.53	1,985.45	7.88	7.77	160.07	328.78	-76.24	545.68	531.28	14.40	37.899		
2,200.00	2,182.07	2,102.08	2,078.32	8.30	8.18	160.08	345.64	-81.62	578.25	563.14	15.11	38.260		
2,300.00	2,280.78	2,196.62	2,171.19	8.73	8.60	160.09	362.51	-87.01	610.83	595.00	15.83	38.586		
2,400.00	2,379.50	2,291.17	2,264.06	9.15	9.01	160.09	379.38	-92.40	643.40	626.85	16.55	38.880		
2,500.00	2,478.21	2,385.71	2,356.94	9.58	9.43	160.10	396.25	-97.79	675.98	658.71	17.27	39.148		
2,600.00	2,576.92	2,480.26	2,449.81	10.01	9.85	160.10	413.11	-103.18	708.55	690.56	17.99	39.392		
2,700.00	2,675.64	2,574.80	2,542.68	10.44	10.26	160.11	429.98	-108.57	741.13	722.42	18.71	39.615		
2,800.00	2,774.35	2,669.35	2,635.56	10.86	10.68	160.11	446.85	-113.96	773.70	754.27	19.43	39.821		
2,900.00	2,873.06	2,763.90	2,728.43	11.29	11.10	160.12	463.72	-119.35	806.28	786.12	20.15	40.010		
3,000.00	2,971.78	2,858.44	2,821.30	11.72	11.51	160.12	480.58	-124.74	838.85	817.98	20.87	40.185		
3,100.00	3,070.49	2,952.99	2,914.17	12.15	11.93	160.12	497.45	-130.13	871.42	849.83	21.60	40.347		
3,200.00	3,169.20	3,047.53	3,007.05	12.58	12.35	160.13	514.32	-135.52	904.00	881.68	22.32	40.498		
3,300.00	3,267.92	3,142.08	3,099.92	13.01	12.77	160.13	531.19	-140.91	936.57	913.53	23.05	40.639		
3,400.00	3,366.63	3,236.62	3,192.79	13.44	13.19	160.13	548.05	-146.30	969.15	945.38	23.77	40.770		
3,500.00	3,465.34	3,331.17	3,285.66	13.87	13.60	160.14	564.92	-151.69	1,001.72	977.23	24.50	40.893		
3,600.00	3,564.06	3,425.72	3,378.54	14.30	14.02	160.14	581.79	-157.08	1,034.30	1,009.08	25.22	41.008		
3,700.00	3,662.77	3,520.26	3,471.41	14.73	14.44	160.14	598.66	-162.47	1,066.87	1,040.93	25.95	41.117		
3,800.00	3,761.48	3,614.81	3,564.28	15.16	14.86	160.14	615.53	-167.86	1,099.45	1,072.77	26.67	41.219		
3,900.00	3,860.20	3,709.35	3,657.15	15.59	15.28	160.14	632.39	-173.25	1,132.02	1,104.62	27.40	41.315		
4,000.00	3,958.91	3,803.90	3,750.03	16.02	15.70	160.15	649.26	-178.64	1,164.60	1,136.47	28.13	41.406		
4,100.00	4,057.62	3,898.44	3,842.90	16.45	16.12	160.15	666.13	-184.03	1,197.17	1,168.32	28.85	41.492		
4,200.00	4,156.34	3,992.99	3,935.77	16.88	16.54	160.15	683.00	-189.41	1,229.75	1,200.17	29.58	41.573		
4,300.00	4,255.05	4,087.54	4,028.64	17.31	16.95	160.15	699.86	-194.80	1,262.32	1,232.01	30.31	41.650		
4,400.00	4,353.76	4,182.08	4,121.52	17.75	17.37	160.15	716.73	-200.19	1,294.90	1,263.86	31.04	41.724		
4,500.00	4,452.48	4,276.63	4,214.39	18.18	17.79	160.15	733.60	-205.58	1,327.47	1,295.71	31.76	41.793		
4,600.00	4,551.19	4,371.17	4,307.26	18.61	18.21	160.16	750.47	-210.97	1,360.05	1,327.55	32.49	41.860		
4,700.00	4,649.90	4,465.72	4,400.14	19.04	18.63	160.16	767.33	-216.36	1,392.62	1,359.40	33.22	41.923		
4,800.00	4,748.62	4,560.26	4,493.01	19.47	19.05	160.16	784.20	-221.75	1,425.19	1,391.25	33.95	41.983		
4,900.00	4,847.33	4,654.81	4,585.88	19.90	19.47	160.16	801.07	-227.14	1,457.77	1,423.09	34.68	42.041		
5,000.00	4,946.04	4,749.36	4,678.75	20.33	19.89	160.16	817.94	-232.53	1,490.34	1,454.94	35.40	42.096		

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 3L-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 3L-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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.11	79.79	0.15	79.79					
100.00	100.00	100.00	100.00	0.14	0.14	0.11	79.79	0.15	79.79	79.51	0.28	289.066		
200.00	200.00	200.00	200.00	0.50	0.50	0.11	79.79	0.15	79.79	78.80	0.99	80.354		
300.00	300.00	300.00	300.00	0.85	0.85	0.11	79.79	0.15	79.79	78.08	1.71	46.663		
400.00	400.00	400.00	400.00	1.21	1.21	0.11	79.79	0.15	79.79	77.36	2.43	32.878		
500.00	500.00	500.00	500.00	1.57	1.57	0.11	79.79	0.15	79.79	76.65	3.14	25.380	CC, ES	
600.00	599.98	597.39	597.37	1.91	1.92	161.67	81.32	-0.48	83.02	79.17	3.85	21.564		
700.00	699.84	694.18	694.03	2.25	2.27	161.43	85.87	-2.35	92.68	88.11	4.57	20.301	SF	
800.00	799.45	789.77	789.27	2.60	2.62	161.12	93.33	-5.42	108.71	103.42	5.29	20.554		
900.00	898.70	883.61	882.47	2.95	2.96	160.79	103.51	-9.60	130.98	124.97	6.01	21.798		
960.06	958.08	939.35	937.63	3.18	3.17	160.59	110.87	-12.63	147.29	140.85	6.44	22.883		
1,000.00	997.51	977.60	975.46	3.33	3.32	160.56	116.16	-14.81	158.75	152.05	6.71	23.667		
1,100.00	1,096.22	1,073.40	1,070.17	3.72	3.68	160.49	129.41	-20.25	187.46	180.08	7.38	25.399		
1,200.00	1,194.94	1,169.19	1,164.89	4.12	4.06	160.45	142.65	-25.70	216.17	208.10	8.07	26.790		
1,300.00	1,293.65	1,264.98	1,259.60	4.53	4.44	160.41	155.90	-31.15	244.87	236.11	8.76	27.946		
1,400.00	1,392.36	1,360.77	1,354.31	4.94	4.82	160.38	169.15	-36.59	273.58	264.12	9.46	28.914		
1,500.00	1,491.08	1,456.56	1,449.03	5.35	5.21	160.36	182.39	-42.04	302.28	292.12	10.17	29.736		
1,600.00	1,589.79	1,552.35	1,543.74	5.77	5.59	160.34	195.64	-47.49	330.99	320.12	10.87	30.440		
1,700.00	1,688.50	1,648.14	1,638.46	6.19	5.98	160.33	208.88	-52.94	359.69	348.11	11.58	31.051		
1,800.00	1,787.22	1,743.93	1,733.17	6.61	6.37	160.31	222.13	-58.38	388.40	376.10	12.30	31.584		
1,900.00	1,885.93	1,839.73	1,827.89	7.03	6.76	160.30	235.37	-63.83	417.11	404.09	13.01	32.054		
2,000.00	1,984.64	1,935.52	1,922.60	7.45	7.15	160.29	248.62	-69.28	445.81	432.08	13.73	32.470		
2,100.00	2,083.36	2,031.31	2,017.32	7.88	7.54	160.28	261.87	-74.72	474.52	460.07	14.45	32.842		
2,200.00	2,182.07	2,127.10	2,112.03	8.30	7.93	160.27	275.11	-80.17	503.22	488.06	15.17	33.175		
2,300.00	2,280.78	2,222.89	2,206.75	8.73	8.32	160.27	288.36	-85.62	531.93	516.04	15.89	33.476		
2,400.00	2,379.50	2,318.68	2,301.46	9.15	8.72	160.26	301.60	-91.06	560.64	544.02	16.61	33.749		
2,500.00	2,478.21	2,414.47	2,396.17	9.58	9.11	160.26	314.85	-96.51	589.34	572.01	17.33	33.998		
2,600.00	2,576.92	2,510.26	2,490.89	10.01	9.50	160.25	328.10	-101.96	618.05	599.99	18.06	34.225		
2,700.00	2,675.64	2,606.06	2,585.60	10.44	9.90	160.25	341.34	-107.41	646.75	627.97	18.78	34.433		
2,800.00	2,774.35	2,701.85	2,680.32	10.86	10.29	160.24	354.59	-112.85	675.46	655.95	19.51	34.625		
2,900.00	2,873.06	2,797.64	2,775.03	11.29	10.69	160.24	367.83	-118.30	704.17	683.93	20.23	34.802		
3,000.00	2,971.78	2,893.43	2,869.75	11.72	11.08	160.23	381.08	-123.75	732.87	711.91	20.96	34.967		
3,100.00	3,070.49	2,989.22	2,964.46	12.15	11.47	160.23	394.33	-129.19	761.58	739.89	21.69	35.119		
3,200.00	3,169.20	3,085.01	3,059.18	12.58	11.87	160.23	407.57	-134.64	790.28	767.87	22.41	35.261		
3,300.00	3,267.92	3,180.80	3,153.89	13.01	12.26	160.22	420.82	-140.09	818.99	795.85	23.14	35.394		
3,400.00	3,366.63	3,276.59	3,248.61	13.44	12.66	160.22	434.06	-145.53	847.70	823.83	23.87	35.518		
3,500.00	3,465.34	3,372.39	3,343.32	13.87	13.06	160.22	447.31	-150.98	876.40	851.81	24.59	35.634		
3,600.00	3,564.06	3,468.18	3,438.03	14.30	13.45	160.22	460.56	-156.43	905.11	879.79	25.32	35.743		
3,700.00	3,662.77	3,563.97	3,532.75	14.73	13.85	160.21	473.80	-161.87	933.81	907.76	26.05	35.846		
3,800.00	3,761.48	3,659.76	3,627.46	15.16	14.24	160.21	487.05	-167.32	962.52	935.74	26.78	35.943		
3,900.00	3,860.20	3,755.55	3,722.18	15.59	14.64	160.21	500.29	-172.77	991.23	963.72	27.51	36.034		
4,000.00	3,958.91	3,851.34	3,816.89	16.02	15.03	160.21	513.54	-178.22	1,019.93	991.69	28.24	36.121		
4,100.00	4,057.62	3,947.13	3,911.61	16.45	15.43	160.21	526.79	-183.66	1,048.64	1,019.67	28.97	36.203		
4,200.00	4,156.34	4,042.92	4,006.32	16.88	15.82	160.20	540.03	-189.11	1,077.34	1,047.65	29.69	36.280		
4,300.00	4,255.05	4,138.72	4,101.04	17.31	16.22	160.20	553.28	-194.56	1,106.05	1,075.63	30.42	36.354		
4,400.00	4,353.76	4,234.51	4,195.75	17.75	16.62	160.20	566.52	-200.00	1,134.76	1,103.60	31.15	36.424		
4,500.00	4,452.48	4,330.30	4,290.46	18.18	17.01	160.20	579.77	-205.45	1,163.46	1,131.58	31.88	36.491		
4,600.00	4,551.19	4,426.09	4,385.18	18.61	17.41	160.20	593.01	-210.90	1,192.17	1,159.55	32.61	36.555		
4,700.00	4,649.90	4,521.88	4,479.89	19.04	17.81	160.20	606.26	-216.34	1,220.87	1,187.53	33.34	36.615		
4,800.00	4,748.62	4,617.67	4,574.61	19.47	18.20	160.20	619.51	-221.79	1,249.58	1,215.51	34.07	36.673		
4,900.00	4,847.33	4,713.46	4,669.32	19.90	18.60	160.20	632.75	-227.24	1,278.29	1,243.48	34.80	36.729		
5,000.00	4,946.04	4,809.25	4,764.04	20.33	18.99	160.19	646.00	-232.69	1,306.99	1,271.46	35.53	36.782		

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design													S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1		Offset Site Error:		0.00 usft
Survey Program:													0-MWD+HDGM		Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
5,100.00	5,044.76	4,905.05	4,858.75	20.76	19.39	160.19	659.24	-238.13	1,335.70	1,299.43	36.26	36.832					
5,200.00	5,143.47	5,000.84	4,953.47	21.20	19.79	160.19	672.49	-243.58	1,364.40	1,327.41	36.99	36.881					
5,300.00	5,242.18	5,096.63	5,048.18	21.63	20.18	160.19	685.74	-249.03	1,393.11	1,355.38	37.73	36.928					
5,400.00	5,340.90	5,192.42	5,142.90	22.06	20.58	160.19	698.98	-254.47	1,421.82	1,383.36	38.46	36.972					
5,500.00	5,439.61	5,288.21	5,237.61	22.49	20.98	160.19	712.23	-259.92	1,450.52	1,411.33	39.19	37.015					
5,600.00	5,538.32	5,384.00	5,332.32	22.92	21.37	160.19	725.47	-265.37	1,479.23	1,439.31	39.92	37.057					

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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					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	0.19	69.95	0.24	69.95					
100.00	100.00	100.00	100.00	0.14	0.14	0.19	69.95	0.24	69.95	69.68	0.28	253.436		
200.00	200.00	200.00	200.00	0.50	0.50	0.19	69.95	0.24	69.95	68.96	0.99	70.450		
300.00	300.00	300.00	300.00	0.85	0.85	0.19	69.95	0.24	69.95	68.24	1.71	40.911		
400.00	400.00	400.00	400.00	1.21	1.21	0.19	69.95	0.24	69.95	67.53	2.43	28.825		
500.00	500.00	500.00	500.00	1.57	1.57	0.19	69.95	0.24	69.95	66.81	3.14	22.252	CC, ES	
600.00	599.98	599.98	599.98	1.91	1.93	162.27	69.95	0.24	71.61	67.77	3.84	18.626		
700.00	699.84	697.69	697.67	2.25	2.28	162.68	71.33	-0.70	78.00	73.46	4.54	17.176		
800.00	799.45	794.58	794.43	2.60	2.63	162.38	75.41	-3.48	90.46	85.21	5.25	17.223		
900.00	898.70	890.24	889.74	2.95	2.97	161.67	82.09	-8.03	108.93	102.96	5.97	18.255		
960.06	958.08	948.78	947.99	3.18	3.19	161.31	86.92	-11.32	122.33	115.94	6.39	19.146		
1,000.00	997.51	987.62	986.64	3.33	3.33	161.23	90.13	-13.51	131.63	124.96	6.67	19.742		
1,100.00	1,096.22	1,084.87	1,083.40	3.72	3.69	161.06	98.16	-18.98	154.91	147.55	7.36	21.043		
1,200.00	1,194.94	1,182.12	1,180.16	4.12	4.05	160.93	106.18	-24.44	178.20	170.14	8.06	22.099		
1,300.00	1,293.65	1,279.37	1,276.93	4.53	4.41	160.83	114.21	-29.91	201.49	192.72	8.77	22.971		
1,400.00	1,392.36	1,376.62	1,373.69	4.94	4.78	160.75	122.23	-35.38	224.78	215.29	9.48	23.703		
1,500.00	1,491.08	1,473.87	1,470.46	5.35	5.14	160.69	130.26	-40.85	248.06	237.87	10.20	24.325		
1,600.00	1,589.79	1,571.12	1,567.22	5.77	5.51	160.64	138.29	-46.32	271.35	260.44	10.92	24.860		
1,700.00	1,688.50	1,668.37	1,663.98	6.19	5.88	160.59	146.31	-51.78	294.64	283.01	11.64	25.324		
1,800.00	1,787.22	1,765.62	1,760.75	6.61	6.25	160.56	154.34	-57.25	317.93	305.57	12.36	25.729		
1,900.00	1,885.93	1,862.87	1,857.51	7.03	6.62	160.52	162.37	-62.72	341.22	328.14	13.08	26.088		
2,000.00	1,984.64	1,960.12	1,954.28	7.45	6.98	160.49	170.39	-68.19	364.51	350.70	13.80	26.406		
2,100.00	2,083.36	2,057.37	2,051.04	7.88	7.35	160.47	178.42	-73.66	387.80	373.27	14.53	26.690		
2,200.00	2,182.07	2,154.62	2,147.80	8.30	7.72	160.45	186.45	-79.13	411.08	395.83	15.26	26.946		
2,300.00	2,280.78	2,251.87	2,244.57	8.73	8.10	160.43	194.47	-84.59	434.37	418.39	15.98	27.178		
2,400.00	2,379.50	2,349.12	2,341.33	9.15	8.47	160.41	202.50	-90.06	457.66	440.95	16.71	27.388		
2,500.00	2,478.21	2,446.37	2,438.10	9.58	8.84	160.39	210.53	-95.53	480.95	463.51	17.44	27.579		
2,600.00	2,576.92	2,543.62	2,534.86	10.01	9.21	160.38	218.55	-101.00	504.24	486.07	18.17	27.755		
2,700.00	2,675.64	2,640.87	2,631.63	10.44	9.58	160.37	226.58	-106.47	527.53	508.63	18.90	27.916		
2,800.00	2,774.35	2,738.12	2,728.39	10.86	9.95	160.35	234.60	-111.93	550.82	531.19	19.63	28.064		
2,900.00	2,873.06	2,835.37	2,825.15	11.29	10.32	160.34	242.63	-117.40	574.11	553.75	20.36	28.202		
3,000.00	2,971.78	2,932.62	2,921.92	11.72	10.69	160.33	250.66	-122.87	597.40	576.31	21.09	28.329		
3,100.00	3,070.49	3,029.87	3,018.68	12.15	11.07	160.32	258.68	-128.34	620.69	598.87	21.82	28.448		
3,200.00	3,169.20	3,127.12	3,115.45	12.58	11.44	160.31	266.71	-133.81	643.98	621.43	22.55	28.558		
3,300.00	3,267.92	3,224.37	3,212.21	13.01	11.81	160.31	274.74	-139.27	667.26	643.98	23.28	28.662		
3,400.00	3,366.63	3,321.62	3,308.97	13.44	12.18	160.30	282.76	-144.74	690.55	666.54	24.01	28.758		
3,500.00	3,465.34	3,418.87	3,405.74	13.87	12.56	160.29	290.79	-150.21	713.84	689.10	24.74	28.849		
3,600.00	3,564.06	3,516.12	3,502.50	14.30	12.93	160.28	298.82	-155.68	737.13	711.66	25.48	28.934		
3,700.00	3,662.77	3,613.37	3,599.27	14.73	13.30	160.28	306.84	-161.15	760.42	734.21	26.21	29.015		
3,800.00	3,761.48	3,710.63	3,696.03	15.16	13.67	160.27	314.87	-166.61	783.71	756.77	26.94	29.091		
3,900.00	3,860.20	3,807.88	3,792.79	15.59	14.04	160.27	322.90	-172.08	807.00	779.33	27.67	29.162		
4,000.00	3,958.91	3,905.13	3,889.56	16.02	14.42	160.26	330.92	-177.55	830.29	801.88	28.41	29.230		
4,100.00	4,057.62	4,002.38	3,986.32	16.45	14.79	160.26	338.95	-183.02	853.58	824.44	29.14	29.294		
4,200.00	4,156.34	4,099.63	4,083.09	16.88	15.16	160.25	346.97	-188.49	876.87	847.00	29.87	29.355		
4,300.00	4,255.05	4,196.88	4,179.85	17.31	15.53	160.25	355.00	-193.95	900.16	869.55	30.60	29.413		
4,400.00	4,353.76	4,294.13	4,276.61	17.75	15.91	160.24	363.03	-199.42	923.45	892.11	31.34	29.468		
4,500.00	4,452.48	4,391.38	4,373.38	18.18	16.28	160.24	371.05	-204.89	946.74	914.67	32.07	29.521		
4,600.00	4,551.19	4,488.63	4,470.14	18.61	16.65	160.24	379.08	-210.36	970.02	937.22	32.80	29.571		
4,700.00	4,649.90	4,585.88	4,566.91	19.04	17.03	160.23	387.11	-215.83	993.31	959.78	33.54	29.619		
4,800.00	4,748.62	4,683.13	4,663.67	19.47	17.40	160.23	395.13	-221.29	1,016.60	982.33	34.27	29.665		
4,900.00	4,847.33	4,780.38	4,760.43	19.90	17.77	160.23	403.16	-226.76	1,039.89	1,004.89	35.00	29.708		
5,000.00	4,946.04	4,877.63	4,857.20	20.33	18.14	160.22	411.19	-232.23	1,063.18	1,027.45	35.74	29.750		

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis		Distance						
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	5,044.76	4,974.88	4,953.96	20.76	18.52	160.22	419.21	-237.70	1,086.47	1,050.00	36.47	29.790		
5,200.00	5,143.47	5,072.13	5,050.73	21.20	18.89	160.22	427.24	-243.17	1,109.76	1,072.56	37.20	29.829		
5,300.00	5,242.18	5,169.38	5,147.49	21.63	19.26	160.21	435.26	-248.63	1,133.05	1,095.11	37.94	29.866		
5,400.00	5,340.90	5,266.63	5,244.25	22.06	19.64	160.21	443.29	-254.10	1,156.34	1,117.67	38.67	29.901		
5,500.00	5,439.61	5,363.88	5,341.02	22.49	20.01	160.21	451.32	-259.57	1,179.63	1,140.22	39.41	29.935		
5,600.00	5,538.32	5,461.13	5,437.78	22.92	20.38	160.21	459.34	-265.04	1,202.92	1,162.78	40.14	29.968		
5,700.00	5,637.04	5,558.38	5,534.55	23.35	20.75	160.20	467.37	-270.51	1,226.21	1,185.33	40.87	30.000		
5,800.00	5,735.75	5,655.63	5,631.31	23.79	21.13	160.20	475.40	-275.97	1,249.50	1,207.89	41.61	30.030		
5,900.00	5,834.46	5,761.31	5,736.47	24.22	21.53	160.20	484.05	-281.87	1,272.74	1,230.33	42.40	30.014		
6,008.85	5,941.92	5,931.83	5,906.64	24.69	22.15	160.35	492.83	-287.85	1,294.75	1,251.14	43.61	29.691		
6,100.00	6,032.11	6,057.32	6,032.11	25.07	22.59	160.68	494.08	-288.70	1,307.94	1,263.51	44.44	29.434		
6,200.00	6,131.48	6,156.69	6,131.48	25.47	22.92	160.91	494.08	-288.70	1,318.44	1,273.30	45.14	29.205		
6,300.00	6,231.18	6,256.40	6,231.18	25.83	23.26	161.06	494.08	-288.70	1,325.66	1,279.82	45.85	28.916		
6,400.00	6,331.09	6,356.30	6,331.09	26.18	23.59	161.15	494.08	-288.70	1,329.59	1,283.05	46.54	28.569		
6,468.91	6,400.00	6,425.21	6,400.00	26.38	23.83	-0.49	494.08	-288.70	1,330.37	1,283.37	47.00	28.304		
6,500.00	6,431.09	6,456.30	6,431.09	26.47	23.93	-0.49	494.08	-288.70	1,330.37	1,283.16	47.21	28.181		
6,600.00	6,531.09	6,556.30	6,531.09	26.75	24.27	-0.49	494.08	-288.70	1,330.37	1,282.51	47.87	27.794		
6,692.72	6,623.80	6,649.01	6,623.80	27.01	24.59	-0.49	494.08	-288.70	1,330.37	1,281.90	48.48	27.443		
6,700.00	6,631.09	6,656.28	6,631.06	27.03	24.61	-89.90	494.08	-288.67	1,330.37	1,281.85	48.52	27.417		
6,750.00	6,681.03	6,706.13	6,680.85	27.17	24.77	-89.90	494.11	-286.43	1,330.37	1,281.53	48.84	27.238		
6,800.00	6,730.69	6,755.98	6,730.37	27.30	24.92	-89.90	494.16	-280.73	1,330.37	1,281.23	49.14	27.071		
6,850.00	6,779.83	6,805.83	6,779.37	27.43	25.07	-89.90	494.26	-271.61	1,330.37	1,280.94	49.43	26.912		
6,900.00	6,828.21	6,855.68	6,827.61	27.56	25.20	-89.91	494.38	-259.09	1,330.37	1,280.66	49.71	26.761		
6,950.00	6,875.59	6,905.54	6,874.88	27.67	25.33	-89.91	494.55	-243.25	1,330.37	1,280.38	49.99	26.615		
7,000.00	6,921.75	6,955.40	6,920.93	27.78	25.46	-89.91	494.74	-224.17	1,330.37	1,280.11	50.26	26.472		
7,050.00	6,966.45	7,005.27	6,965.54	27.88	25.58	-89.91	494.97	-201.92	1,330.36	1,279.84	50.53	26.329		
7,100.00	7,009.49	7,055.14	7,008.51	27.97	25.70	-89.92	495.22	-176.62	1,330.36	1,279.55	50.81	26.182		
7,150.00	7,050.64	7,105.01	7,049.61	28.05	25.81	-89.92	495.51	-148.38	1,330.36	1,279.24	51.12	26.025		
7,200.00	7,089.72	7,154.89	7,088.65	28.13	25.94	-89.93	495.83	-117.36	1,330.36	1,278.90	51.46	25.852		
7,250.00	7,126.53	7,204.78	7,125.45	28.19	26.08	-89.93	496.17	-83.68	1,330.35	1,278.50	51.85	25.656		
7,300.00	7,160.89	7,254.68	7,159.81	28.25	26.26	-89.93	496.53	-47.52	1,330.35	1,278.04	52.31	25.431		
7,350.00	7,192.63	7,304.58	7,191.59	28.30	26.49	-89.94	496.93	-9.06	1,330.35	1,277.49	52.86	25.168		
7,400.00	7,221.60	7,354.49	7,220.60	28.34	26.80	-89.95	497.34	31.54	1,330.34	1,276.84	53.51	24.864		
7,450.00	7,247.66	7,404.42	7,246.73	28.38	27.17	-89.95	497.77	74.06	1,330.34	1,276.07	54.27	24.513		
7,500.00	7,270.68	7,454.35	7,269.84	28.41	27.62	-89.96	498.22	118.31	1,330.34	1,275.17	55.17	24.115		
7,550.00	7,290.54	7,504.29	7,289.81	28.45	28.14	-89.96	498.68	164.07	1,330.33	1,274.13	56.20	23.670		
7,600.00	7,307.16	7,554.24	7,306.54	28.69	28.74	-89.97	499.16	211.12	1,330.33	1,272.95	57.38	23.184		
7,650.00	7,320.45	7,604.19	7,319.96	29.30	29.41	-89.98	499.65	259.23	1,330.32	1,271.62	58.70	22.661		
7,700.00	7,330.35	7,654.16	7,330.00	30.02	30.14	-89.98	500.15	308.17	1,330.32	1,270.15	60.16	22.111		
7,750.00	7,336.80	7,704.14	7,336.59	30.82	30.94	-89.99	500.65	357.70	1,330.31	1,268.56	61.75	21.543		
7,800.00	7,339.78	7,754.13	7,339.72	31.67	31.79	-90.00	501.16	407.58	1,330.31	1,266.87	63.45	20.968		
7,817.72	7,340.00	7,771.85	7,340.00	31.98	32.11	-90.00	501.34	425.29	1,330.31	1,266.24	64.07	20.764		
7,900.00	7,340.00	7,854.13	7,340.00	33.52	33.67	-90.00	502.18	507.57	1,330.30	1,263.14	67.16	19.809		
8,000.00	7,340.00	7,954.13	7,340.00	35.56	35.71	-90.00	503.19	607.57	1,330.29	1,259.07	71.23	18.677		
8,100.00	7,340.00	8,054.13	7,340.00	37.77	37.91	-90.00	504.21	707.56	1,330.28	1,254.66	75.62	17.591		
8,200.00	7,340.00	8,154.13	7,340.00	40.11	40.24	-90.00	505.22	807.56	1,330.28	1,249.98	80.29	16.568		
8,300.00	7,340.00	8,254.13	7,340.00	42.56	42.69	-90.00	506.24	907.55	1,330.27	1,245.08	85.19	15.616		
8,400.00	7,340.00	8,354.13	7,340.00	45.10	45.24	-90.00	507.26	1,007.55	1,330.26	1,239.99	90.27	14.736		
8,500.00	7,340.00	8,454.13	7,340.00	47.73	47.86	-90.00	508.27	1,107.54	1,330.25	1,234.73	95.52	13.927		
8,600.00	7,340.00	8,554.13	7,340.00	50.42	50.55	-90.00	509.29	1,207.54	1,330.24	1,229.34	100.90	13.184		
8,700.00	7,340.00	8,654.13	7,340.00	53.17	53.30	-90.00	510.30	1,307.53	1,330.23	1,223.84	106.40	12.503		
8,800.00	7,340.00	8,754.13	7,340.00	55.96	56.10	-90.00	511.32	1,407.53	1,330.22	1,218.24	111.99	11.878		

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,900.00	7,340.00	8,854.13	7,340.00	58.80	58.94	-90.00	512.34	1,507.52	1,330.22	1,212.55	117.67	11.305		
9,000.00	7,340.00	8,954.13	7,340.00	61.67	61.81	-90.00	513.35	1,607.52	1,330.21	1,206.79	123.41	10.778		
9,100.00	7,340.00	9,054.13	7,340.00	64.58	64.72	-90.00	514.37	1,707.51	1,330.20	1,200.97	129.23	10.294		
9,200.00	7,340.00	9,154.13	7,340.00	67.51	67.65	-90.00	515.39	1,807.50	1,330.19	1,195.10	135.09	9.847		
9,300.00	7,340.00	9,254.13	7,340.00	70.47	70.61	-90.00	516.40	1,907.50	1,330.18	1,189.17	141.01	9.434		
9,400.00	7,340.00	9,354.13	7,340.00	73.44	73.58	-90.00	517.42	2,007.49	1,330.17	1,183.21	146.96	9.051		
9,500.00	7,340.00	9,454.13	7,340.00	76.44	76.58	-90.00	518.43	2,107.49	1,330.16	1,177.21	152.95	8.696		
9,600.00	7,340.00	9,554.13	7,340.00	79.45	79.59	-90.00	519.45	2,207.48	1,330.15	1,171.18	158.98	8.367		
9,700.00	7,340.00	9,654.13	7,340.00	82.48	82.62	-90.00	520.47	2,307.48	1,330.15	1,165.11	165.03	8.060		
9,800.00	7,340.00	9,754.13	7,340.00	85.51	85.66	-90.00	521.48	2,407.47	1,330.14	1,159.02	171.11	7.773		
9,900.00	7,340.00	9,854.13	7,340.00	88.57	88.71	-90.00	522.50	2,507.47	1,330.13	1,152.91	177.22	7.506		
10,000.00	7,340.00	9,954.13	7,340.00	91.63	91.77	-90.00	523.51	2,607.46	1,330.12	1,146.78	183.34	7.255		
10,100.00	7,340.00	10,054.13	7,340.00	94.70	94.85	-90.00	524.53	2,707.46	1,330.11	1,140.62	189.49	7.019		
10,200.00	7,340.00	10,154.13	7,340.00	97.78	97.93	-90.00	525.55	2,807.45	1,330.10	1,134.45	195.65	6.798		
10,300.00	7,340.00	10,254.13	7,340.00	100.87	101.01	-90.00	526.56	2,907.45	1,330.09	1,128.27	201.83	6.590		
10,400.00	7,340.00	10,354.13	7,340.00	103.96	104.11	-90.00	527.58	3,007.44	1,330.09	1,122.07	208.02	6.394		
10,500.00	7,340.00	10,454.13	7,340.00	107.06	107.21	-90.00	528.59	3,107.44	1,330.08	1,115.85	214.22	6.209		
10,600.00	7,340.00	10,554.13	7,340.00	110.17	110.32	-90.00	529.61	3,207.43	1,330.07	1,109.63	220.44	6.034		
10,700.00	7,340.00	10,654.13	7,340.00	113.28	113.43	-90.00	530.63	3,307.43	1,330.06	1,103.39	226.67	5.868		
10,800.00	7,340.00	10,754.13	7,340.00	116.40	116.55	-90.00	531.64	3,407.42	1,330.05	1,097.15	232.90	5.711		
10,900.00	7,340.00	10,854.13	7,340.00	119.52	119.68	-90.00	532.66	3,507.42	1,330.04	1,090.89	239.15	5.562		
11,000.00	7,340.00	10,954.13	7,340.00	122.65	122.80	-90.00	533.68	3,607.41	1,330.03	1,084.63	245.41	5.420		
11,100.00	7,340.00	11,054.13	7,340.00	125.78	125.93	-90.00	534.69	3,707.41	1,330.03	1,078.36	251.67	5.285		
11,200.00	7,340.00	11,154.13	7,340.00	128.91	129.07	-90.00	535.71	3,807.40	1,330.02	1,072.08	257.94	5.156		
11,300.00	7,340.00	11,254.13	7,340.00	132.05	132.21	-90.00	536.72	3,907.40	1,330.01	1,065.79	264.22	5.034		
11,400.00	7,340.00	11,354.13	7,340.00	135.19	135.35	-90.00	537.74	4,007.39	1,330.00	1,059.50	270.50	4.917		
11,500.00	7,340.00	11,454.13	7,340.00	138.34	138.49	-90.00	538.76	4,107.39	1,329.99	1,053.20	276.79	4.805		
11,600.00	7,340.00	11,554.13	7,340.00	141.49	141.64	-90.00	539.77	4,207.38	1,329.98	1,046.90	283.09	4.698		
11,700.00	7,340.00	11,654.13	7,340.00	144.63	144.79	-90.00	540.79	4,307.38	1,329.97	1,040.59	289.39	4.596		
11,800.00	7,340.00	11,754.13	7,340.00	147.79	147.94	-90.00	541.80	4,407.37	1,329.96	1,034.27	295.69	4.498		
11,886.52	7,340.00	11,840.65	7,340.00	150.52	150.67	-90.00	542.68	4,493.89	1,329.96	1,028.81	301.15	4.416 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					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	0.04	59.75	0.04	59.75					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	59.75	0.04	59.75	59.47	0.28	216.459		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	59.75	0.04	59.75	58.75	0.99	60.171		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	59.75	0.04	59.75	58.04	1.71	34.942		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	59.75	0.04	59.75	57.32	2.43	24.619		
500.00	500.00	500.00	500.00	1.57	1.57	0.04	59.75	0.04	59.75	56.60	3.14	19.005 CC, ES		
600.00	599.98	599.98	599.98	1.91	1.93	162.19	59.75	0.04	61.41	57.56	3.84	15.971		
700.00	699.84	699.84	699.84	2.25	2.29	163.55	59.75	0.04	66.41	61.87	4.54	14.629		
800.00	799.45	799.45	799.45	2.60	2.65	165.39	59.75	0.04	74.81	69.57	5.24	14.271		
900.00	898.70	898.70	898.70	2.95	3.00	167.37	59.75	0.04	86.66	80.71	5.95	14.567		
960.06	958.08	958.08	958.08	3.18	3.21	168.52	59.75	0.04	95.45	89.07	6.38	14.967		
1,000.00	997.51	997.51	997.51	3.33	3.36	169.23	59.75	0.04	101.72	95.06	6.66	15.272		
1,100.00	1,096.22	1,093.95	1,093.93	3.72	3.70	170.04	60.83	-1.05	118.39	111.04	7.36	16.095		
1,200.00	1,194.94	1,189.66	1,189.53	4.12	4.04	169.54	64.16	-4.42	137.03	128.98	8.05	17.023		
1,300.00	1,293.65	1,285.91	1,285.46	4.53	4.38	168.29	69.54	-9.86	157.47	148.72	8.75	18.000		
1,400.00	1,392.36	1,383.66	1,382.87	4.94	4.74	167.19	75.37	-15.75	178.29	168.83	9.46	18.852		
1,500.00	1,491.08	1,481.42	1,480.27	5.35	5.09	166.31	81.19	-21.64	199.15	188.98	10.17	19.581		
1,600.00	1,589.79	1,579.18	1,577.68	5.77	5.45	165.60	87.01	-27.52	220.06	209.17	10.89	20.212		
1,700.00	1,688.50	1,676.94	1,675.09	6.19	5.81	165.01	92.83	-33.41	240.99	229.38	11.61	20.763		
1,800.00	1,787.22	1,774.70	1,772.50	6.61	6.16	164.52	98.65	-39.30	261.94	249.61	12.33	21.247		
1,900.00	1,885.93	1,872.46	1,869.90	7.03	6.53	164.10	104.47	-45.19	282.90	269.85	13.05	21.675		
2,000.00	1,984.64	1,970.21	1,967.31	7.45	6.89	163.74	110.29	-51.07	303.88	290.10	13.78	22.057		
2,100.00	2,083.36	2,067.97	2,064.72	7.88	7.25	163.42	116.11	-56.96	324.87	310.36	14.50	22.400		
2,200.00	2,182.07	2,165.73	2,162.12	8.30	7.61	163.15	121.93	-62.85	345.86	330.63	15.23	22.708		
2,300.00	2,280.78	2,263.49	2,259.53	8.73	7.97	162.90	127.75	-68.73	366.87	350.91	15.96	22.988		
2,400.00	2,379.50	2,361.25	2,356.94	9.15	8.34	162.68	133.57	-74.62	387.87	371.19	16.69	23.242		
2,500.00	2,478.21	2,459.00	2,454.34	9.58	8.70	162.49	139.39	-80.51	408.89	391.47	17.42	23.474		
2,600.00	2,576.92	2,556.76	2,551.75	10.01	9.07	162.31	145.21	-86.39	429.91	411.76	18.15	23.687		
2,700.00	2,675.64	2,654.52	2,649.16	10.44	9.43	162.15	151.03	-92.28	450.93	432.05	18.88	23.883		
2,800.00	2,774.35	2,752.28	2,746.57	10.86	9.80	162.00	156.86	-98.17	471.95	452.34	19.61	24.063		
2,900.00	2,873.06	2,850.04	2,843.97	11.29	10.16	161.87	162.68	-104.05	492.98	472.63	20.35	24.231		
3,000.00	2,971.78	2,947.79	2,941.38	11.72	10.53	161.75	168.50	-109.94	514.01	492.93	21.08	24.386		
3,100.00	3,070.49	3,045.55	3,038.79	12.15	10.89	161.63	174.32	-115.83	535.04	513.23	21.81	24.531		
3,200.00	3,169.20	3,143.31	3,136.19	12.58	11.26	161.53	180.14	-121.71	556.07	533.53	22.54	24.665		
3,300.00	3,267.92	3,241.07	3,233.60	13.01	11.63	161.43	185.96	-127.60	577.11	553.83	23.28	24.791		
3,400.00	3,366.63	3,338.83	3,331.01	13.44	11.99	161.34	191.78	-133.49	598.14	574.13	24.01	24.910		
3,500.00	3,465.34	3,436.59	3,428.41	13.87	12.36	161.26	197.60	-139.37	619.18	594.43	24.75	25.021		
3,600.00	3,564.06	3,534.34	3,525.82	14.30	12.72	161.18	203.42	-145.26	640.22	614.74	25.48	25.125		
3,700.00	3,662.77	3,632.10	3,623.23	14.73	13.09	161.11	209.24	-151.15	661.26	635.04	26.22	25.223		
3,800.00	3,761.48	3,729.86	3,720.64	15.16	13.46	161.04	215.06	-157.04	682.30	655.35	26.95	25.316		
3,900.00	3,860.20	3,827.62	3,818.04	15.59	13.82	160.97	220.88	-162.92	703.34	675.66	27.69	25.404		
4,000.00	3,958.91	3,925.38	3,915.45	16.02	14.19	160.91	226.70	-168.81	724.39	695.96	28.42	25.487		
4,100.00	4,057.62	4,023.13	4,012.86	16.45	14.56	160.85	232.52	-174.70	745.43	716.27	29.16	25.566		
4,200.00	4,156.34	4,120.89	4,110.26	16.88	14.93	160.80	238.35	-180.58	766.47	736.58	29.89	25.640		
4,300.00	4,255.05	4,218.65	4,207.67	17.31	15.29	160.75	244.17	-186.47	787.52	756.89	30.63	25.712		
4,400.00	4,353.76	4,316.41	4,305.08	17.75	15.66	160.70	249.99	-192.36	808.56	777.20	31.36	25.779		
4,500.00	4,452.48	4,414.17	4,402.48	18.18	16.03	160.65	255.81	-198.24	829.61	797.51	32.10	25.844		
4,600.00	4,551.19	4,511.92	4,499.89	18.61	16.40	160.61	261.63	-204.13	850.66	817.82	32.84	25.905		
4,700.00	4,649.90	4,609.68	4,597.30	19.04	16.76	160.57	267.45	-210.02	871.70	838.13	33.57	25.964		
4,800.00	4,748.62	4,707.44	4,694.70	19.47	17.13	160.53	273.27	-215.90	892.75	858.44	34.31	26.020		
4,900.00	4,847.33	4,805.20	4,792.11	19.90	17.50	160.49	279.09	-221.79	913.80	878.75	35.05	26.074		
5,000.00	4,946.04	4,902.96	4,889.52	20.33	17.87	160.45	284.91	-227.68	934.84	899.06	35.78	26.125		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	5,044.76	5,000.72	4,986.93	20.76	18.23	160.42	290.73	-233.56	955.89	919.37	36.52	26.175		
5,200.00	5,143.47	5,098.47	5,084.33	21.20	18.60	160.38	296.55	-239.45	976.94	939.69	37.26	26.222		
5,300.00	5,242.18	5,196.23	5,181.74	21.63	18.97	160.35	302.37	-245.34	997.99	960.00	37.99	26.268		
5,400.00	5,340.90	5,293.99	5,279.15	22.06	19.34	160.32	308.19	-251.22	1,019.04	980.31	38.73	26.311		
5,500.00	5,439.61	5,391.75	5,376.55	22.49	19.70	160.29	314.01	-257.11	1,040.09	1,000.62	39.47	26.353		
5,600.00	5,538.32	5,489.51	5,473.96	22.92	20.07	160.26	319.84	-263.00	1,061.14	1,020.93	40.20	26.394		
5,700.00	5,637.04	5,587.26	5,571.37	23.35	20.44	160.24	325.66	-268.89	1,082.19	1,041.25	40.94	26.433		
5,800.00	5,735.75	5,685.02	5,668.77	23.79	20.81	160.21	331.48	-274.77	1,103.24	1,061.56	41.68	26.470		
5,900.00	5,834.46	5,786.23	5,769.62	24.22	21.19	160.19	337.48	-280.85	1,124.28	1,081.83	42.44	26.490		
6,008.85	5,941.92	5,935.48	5,918.63	24.69	21.73	160.31	343.20	-286.62	1,144.88	1,101.35	43.52	26.306		
6,100.00	6,032.11	6,048.96	6,032.11	25.07	22.13	160.63	344.01	-287.45	1,157.87	1,113.56	44.30	26.135		
6,200.00	6,131.48	6,148.34	6,131.48	25.47	22.47	160.88	344.01	-287.45	1,168.36	1,123.35	45.01	25.957		
6,300.00	6,231.18	6,248.04	6,231.18	25.83	22.81	161.05	344.01	-287.45	1,175.58	1,129.87	45.71	25.717		
6,400.00	6,331.09	6,347.95	6,331.09	26.18	23.16	161.14	344.01	-287.45	1,179.51	1,133.10	46.41	25.416		
6,468.91	6,400.00	6,416.86	6,400.00	26.38	23.39	-0.49	344.01	-287.45	1,180.29	1,133.42	46.87	25.181		
6,500.00	6,431.09	6,447.95	6,431.09	26.47	23.50	-0.49	344.01	-287.45	1,180.29	1,133.21	47.08	25.072		
6,600.00	6,531.09	6,547.95	6,531.09	26.75	23.84	-0.49	344.01	-287.45	1,180.29	1,132.56	47.74	24.726		
6,692.72	6,623.80	6,640.66	6,623.80	27.01	24.16	-0.49	344.01	-287.45	1,180.29	1,131.94	48.35	24.412		
6,700.00	6,631.09	6,647.95	6,631.09	27.03	24.19	-89.90	344.01	-287.45	1,180.29	1,131.89	48.40	24.388		
6,746.24	6,677.28	6,694.14	6,677.28	27.16	24.35	-90.00	344.01	-287.45	1,180.29	1,131.59	48.70	24.235		
6,750.00	6,681.03	6,697.88	6,681.03	27.17	24.36	-90.01	344.01	-287.45	1,180.29	1,131.56	48.73	24.222		
6,800.00	6,730.69	6,747.83	6,730.95	27.30	24.53	-90.24	344.02	-286.48	1,180.30	1,131.25	49.05	24.064		
6,850.00	6,779.83	6,798.13	6,781.05	27.43	24.69	-90.48	344.06	-282.11	1,180.33	1,130.98	49.35	23.916		
6,900.00	6,828.21	6,848.77	6,831.06	27.56	24.84	-90.71	344.14	-274.17	1,180.38	1,130.73	49.65	23.774		
6,950.00	6,875.59	6,899.77	6,880.73	27.67	24.99	-90.95	344.26	-262.62	1,180.45	1,130.51	49.94	23.639		
7,000.00	6,921.75	6,951.13	6,929.78	27.78	25.13	-91.17	344.41	-247.46	1,180.54	1,130.32	50.22	23.507		
7,050.00	6,966.45	7,002.85	6,977.95	27.88	25.27	-91.40	344.61	-228.67	1,180.64	1,130.13	50.50	23.377		
7,100.00	7,009.49	7,054.92	7,024.96	27.97	25.41	-91.61	344.83	-206.29	1,180.75	1,129.96	50.79	23.246		
7,150.00	7,050.64	7,107.34	7,070.51	28.05	25.55	-91.82	345.10	-180.38	1,180.88	1,129.78	51.10	23.109		
7,200.00	7,089.72	7,160.11	7,114.32	28.13	25.70	-92.02	345.39	-151.00	1,181.02	1,129.58	51.44	22.961		
7,250.00	7,126.53	7,213.20	7,156.11	28.19	25.86	-92.21	345.73	-118.26	1,181.16	1,129.34	51.82	22.795		
7,300.00	7,160.89	7,266.63	7,195.59	28.25	26.07	-92.39	346.09	-82.29	1,181.31	1,129.05	52.26	22.605		
7,350.00	7,192.63	7,320.35	7,232.48	28.30	26.31	-92.56	346.49	-43.25	1,181.45	1,128.67	52.78	22.383		
7,400.00	7,221.60	7,374.37	7,266.51	28.34	26.62	-92.72	346.92	-1.32	1,181.60	1,128.19	53.41	22.124		
7,450.00	7,247.66	7,428.65	7,297.43	28.38	26.99	-92.86	347.37	43.28	1,181.73	1,127.58	54.15	21.821		
7,500.00	7,270.68	7,483.18	7,325.00	28.41	27.43	-92.98	347.85	90.31	1,181.86	1,126.83	55.04	21.474		
7,550.00	7,290.54	7,537.93	7,349.00	28.45	27.96	-93.09	348.35	139.50	1,181.98	1,125.91	56.07	21.080		
7,600.00	7,307.16	7,592.87	7,369.24	28.69	28.58	-93.19	348.87	190.56	1,182.08	1,124.82	57.26	20.644		
7,650.00	7,320.45	7,647.98	7,385.55	29.30	29.28	-93.27	349.40	243.18	1,182.16	1,123.55	58.61	20.170		
7,700.00	7,330.35	7,703.21	7,397.79	30.02	30.07	-93.33	349.95	297.02	1,182.23	1,122.11	60.12	19.665		
7,750.00	7,336.80	7,758.54	7,405.85	30.82	30.94	-93.37	350.50	351.74	1,182.28	1,120.50	61.77	19.139		
7,800.00	7,339.78	7,813.92	7,409.67	31.67	31.88	-93.39	351.06	406.98	1,182.30	1,118.75	63.55	18.605		
7,817.72	7,340.00	7,833.56	7,410.00	31.98	32.22	-93.39	351.26	426.61	1,182.30	1,118.10	64.20	18.416		
7,900.00	7,340.00	7,916.05	7,410.00	33.52	33.77	-93.39	352.10	509.10	1,182.29	1,115.02	67.27	17.575		
8,000.00	7,340.00	8,016.05	7,410.00	35.56	35.80	-93.39	353.12	609.09	1,182.29	1,110.96	71.33	16.575		
8,100.00	7,340.00	8,116.05	7,410.00	37.77	38.00	-93.39	354.13	709.09	1,182.28	1,106.57	75.71	15.615		
8,200.00	7,340.00	8,216.05	7,410.00	40.11	40.33	-93.39	355.15	809.08	1,182.27	1,101.90	80.37	14.711		
8,300.00	7,340.00	8,316.05	7,410.00	42.56	42.78	-93.39	356.17	909.08	1,182.26	1,097.01	85.25	13.868		
8,400.00	7,340.00	8,416.05	7,410.00	45.10	45.32	-93.39	357.18	1,009.07	1,182.25	1,091.93	90.32	13.090		
8,500.00	7,340.00	8,516.05	7,410.00	47.73	47.94	-93.39	358.20	1,109.07	1,182.24	1,086.69	95.55	12.373		
8,600.00	7,340.00	8,616.05	7,410.00	50.42	50.63	-93.39	359.22	1,209.06	1,182.23	1,081.32	100.92	11.715		
8,700.00	7,340.00	8,716.05	7,410.00	53.17	53.37	-93.39	360.23	1,309.06	1,182.23	1,075.83	106.40	11.111		

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 3L-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 3L-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		
8,800.00	7,340.00	8,816.05	7,410.00	55.96	56.17	-93.39	361.25	1,409.05	1,182.22	1,070.24	111.98	10.558		
8,900.00	7,340.00	8,916.05	7,410.00	58.80	59.00	-93.39	362.26	1,509.05	1,182.21	1,064.57	117.64	10.049		
9,000.00	7,340.00	9,016.05	7,410.00	61.67	61.88	-93.39	363.28	1,609.04	1,182.20	1,058.82	123.38	9.582		
9,100.00	7,340.00	9,116.05	7,410.00	64.58	64.78	-93.39	364.30	1,709.03	1,182.19	1,053.02	129.17	9.152		
9,200.00	7,340.00	9,216.05	7,410.00	67.51	67.71	-93.39	365.31	1,809.03	1,182.18	1,047.16	135.03	8.755		
9,300.00	7,340.00	9,316.05	7,410.00	70.47	70.67	-93.39	366.33	1,909.02	1,182.17	1,041.25	140.93	8.389		
9,400.00	7,340.00	9,416.05	7,410.00	73.44	73.64	-93.39	367.34	2,009.02	1,182.17	1,035.30	146.87	8.049		
9,500.00	7,340.00	9,516.05	7,410.00	76.44	76.64	-93.39	368.36	2,109.01	1,182.16	1,029.31	152.85	7.734		
9,600.00	7,340.00	9,616.05	7,410.00	79.45	79.65	-93.39	369.38	2,209.01	1,182.15	1,023.29	158.86	7.441		
9,700.00	7,340.00	9,716.05	7,410.00	82.48	82.67	-93.39	370.39	2,309.00	1,182.14	1,017.24	164.90	7.169		
9,800.00	7,340.00	9,816.05	7,410.00	85.51	85.71	-93.39	371.41	2,409.00	1,182.13	1,011.16	170.97	6.914		
9,900.00	7,340.00	9,916.05	7,410.00	88.57	88.76	-93.39	372.43	2,508.99	1,182.12	1,005.06	177.06	6.676		
10,000.00	7,340.00	10,016.05	7,410.00	91.63	91.82	-93.39	373.44	2,608.99	1,182.11	998.94	183.17	6.454		
10,100.00	7,340.00	10,116.05	7,410.00	94.70	94.89	-93.39	374.46	2,708.98	1,182.11	992.80	189.30	6.244		
10,200.00	7,340.00	10,216.05	7,410.00	97.78	97.97	-93.39	375.47	2,808.98	1,182.10	986.64	195.45	6.048		
10,300.00	7,340.00	10,316.05	7,410.00	100.87	101.06	-93.39	376.49	2,908.97	1,182.09	980.47	201.62	5.863		
10,400.00	7,340.00	10,416.05	7,410.00	103.96	104.16	-93.39	377.51	3,008.97	1,182.08	974.28	207.80	5.689		
10,500.00	7,340.00	10,516.05	7,410.00	107.06	107.26	-93.39	378.52	3,108.96	1,182.07	968.08	213.99	5.524		
10,600.00	7,340.00	10,616.05	7,410.00	110.17	110.36	-93.39	379.54	3,208.96	1,182.06	961.87	220.19	5.368		
10,700.00	7,340.00	10,716.05	7,410.00	113.28	113.48	-93.39	380.55	3,308.95	1,182.05	955.65	226.41	5.221		
10,800.00	7,340.00	10,816.05	7,410.00	116.40	116.60	-93.40	381.57	3,408.95	1,182.05	949.41	232.63	5.081		
10,900.00	7,340.00	10,916.05	7,410.00	119.52	119.72	-93.40	382.59	3,508.94	1,182.04	943.17	238.87	4.948		
11,000.00	7,340.00	11,016.05	7,410.00	122.65	122.84	-93.40	383.60	3,608.94	1,182.03	936.92	245.11	4.822		
11,100.00	7,340.00	11,116.05	7,410.00	125.78	125.98	-93.40	384.62	3,708.93	1,182.02	930.66	251.36	4.702		
11,200.00	7,340.00	11,216.05	7,410.00	128.91	129.11	-93.40	385.64	3,808.93	1,182.01	924.39	257.62	4.588		
11,300.00	7,340.00	11,316.05	7,410.00	132.05	132.25	-93.40	386.65	3,908.92	1,182.00	918.12	263.89	4.479		
11,400.00	7,340.00	11,416.05	7,410.00	135.19	135.39	-93.40	387.67	4,008.92	1,181.99	911.84	270.16	4.375		
11,500.00	7,340.00	11,516.05	7,410.00	138.34	138.53	-93.40	388.68	4,108.91	1,181.98	905.55	276.44	4.276		
11,600.00	7,340.00	11,616.05	7,410.00	141.49	141.68	-93.40	389.70	4,208.91	1,181.98	899.26	282.72	4.181		
11,700.00	7,340.00	11,716.05	7,410.00	144.63	144.83	-93.40	390.72	4,308.90	1,181.97	892.96	289.01	4.090		
11,800.00	7,340.00	11,816.05	7,410.00	147.79	147.98	-93.40	391.73	4,408.90	1,181.96	886.66	295.30	4.003		
11,886.52	7,340.00	11,902.57	7,410.00	150.52	150.71	-93.40	392.61	4,495.41	1,181.95	881.20	300.75	3.930 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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					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	0.15	49.92	0.13	49.92					
100.00	100.00	100.00	100.00	0.14	0.14	0.15	49.92	0.13	49.92	49.64	0.28	180.844		
200.00	200.00	200.00	200.00	0.50	0.50	0.15	49.92	0.13	49.92	48.92	0.99	50.271		
300.00	300.00	300.00	300.00	0.85	0.85	0.15	49.92	0.13	49.92	48.21	1.71	29.193		
400.00	400.00	400.00	400.00	1.21	1.21	0.15	49.92	0.13	49.92	47.49	2.43	20.569		
500.00	500.00	500.00	500.00	1.57	1.57	0.15	49.92	0.13	49.92	46.77	3.14	15.878	CC, ES	
600.00	599.98	599.98	599.98	1.91	1.93	162.39	49.92	0.13	51.58	47.73	3.84	13.415		
700.00	699.84	699.84	699.84	2.25	2.29	163.97	49.92	0.13	56.59	52.05	4.54	12.465		
800.00	799.45	799.45	799.45	2.60	2.65	166.05	49.92	0.13	65.01	59.77	5.24	12.402		
900.00	898.70	899.38	899.36	2.95	2.99	166.95	49.65	-1.57	76.45	70.51	5.94	12.866		
960.06	958.08	959.17	959.09	3.18	3.20	166.54	49.24	-4.18	84.56	78.20	6.36	13.289		
1,000.00	997.51	998.70	998.57	3.33	3.34	166.27	48.94	-6.11	90.30	83.66	6.64	13.596		
1,100.00	1,096.22	1,097.65	1,097.40	3.72	3.68	165.72	48.18	-10.94	104.69	97.35	7.34	14.263		
1,200.00	1,194.94	1,196.61	1,196.24	4.12	4.03	165.31	47.42	-15.76	119.09	111.05	8.05	14.801		
1,300.00	1,293.65	1,295.56	1,295.07	4.53	4.38	164.98	46.66	-20.59	133.49	124.74	8.76	15.244		
1,400.00	1,392.36	1,394.52	1,393.91	4.94	4.73	164.72	45.90	-25.41	147.90	138.43	9.47	15.613		
1,500.00	1,491.08	1,493.47	1,492.74	5.35	5.08	164.50	45.14	-30.24	162.31	152.12	10.19	15.925		
1,600.00	1,589.79	1,592.42	1,591.57	5.77	5.44	164.32	44.38	-35.06	176.72	165.81	10.91	16.193		
1,700.00	1,688.50	1,691.38	1,690.41	6.19	5.79	164.17	43.62	-39.89	191.13	179.49	11.64	16.424		
1,800.00	1,787.22	1,790.33	1,789.24	6.61	6.15	164.04	42.86	-44.71	205.54	193.18	12.36	16.625		
1,900.00	1,885.93	1,889.29	1,888.08	7.03	6.51	163.92	42.10	-49.54	219.96	206.87	13.09	16.803		
2,000.00	1,984.64	1,988.24	1,986.91	7.45	6.86	163.82	41.34	-54.36	234.37	220.55	13.82	16.960		
2,100.00	2,083.36	2,087.20	2,085.74	7.88	7.22	163.73	40.58	-59.19	248.79	234.24	14.55	17.100		
2,200.00	2,182.07	2,186.15	2,184.58	8.30	7.58	163.65	39.83	-64.02	263.20	247.92	15.28	17.226		
2,300.00	2,280.78	2,285.11	2,283.41	8.73	7.94	163.58	39.07	-68.84	277.62	261.61	16.01	17.340		
2,400.00	2,379.50	2,384.06	2,382.25	9.15	8.30	163.52	38.31	-73.67	292.04	275.29	16.74	17.443		
2,500.00	2,478.21	2,483.02	2,481.08	9.58	8.66	163.46	37.55	-78.49	306.45	288.98	17.48	17.536		
2,600.00	2,576.92	2,581.97	2,579.92	10.01	9.02	163.41	36.79	-83.32	320.87	302.66	18.21	17.622		
2,700.00	2,675.64	2,680.93	2,678.75	10.44	9.38	163.36	36.03	-88.14	335.29	316.35	18.94	17.701		
2,800.00	2,774.35	2,779.88	2,777.58	10.86	9.74	163.32	35.27	-92.97	349.71	330.03	19.68	17.773		
2,900.00	2,873.06	2,878.84	2,876.42	11.29	10.10	163.28	34.51	-97.79	364.12	343.71	20.41	17.840		
3,000.00	2,971.78	2,977.79	2,975.25	11.72	10.46	163.24	33.75	-102.62	378.54	357.40	21.15	17.902		
3,100.00	3,070.49	3,076.75	3,074.09	12.15	10.82	163.20	32.99	-107.44	392.96	371.08	21.88	17.959		
3,200.00	3,169.20	3,175.70	3,172.92	12.58	11.18	163.17	32.23	-112.27	407.38	384.76	22.62	18.013		
3,300.00	3,267.92	3,274.66	3,271.76	13.01	11.54	163.14	31.48	-117.09	421.80	398.44	23.35	18.063		
3,400.00	3,366.63	3,373.61	3,370.59	13.44	11.90	163.11	30.72	-121.92	436.22	412.13	24.09	18.109		
3,500.00	3,465.34	3,472.57	3,469.42	13.87	12.26	163.09	29.96	-126.74	450.63	425.81	24.82	18.153		
3,600.00	3,564.06	3,571.52	3,568.26	14.30	12.62	163.06	29.20	-131.57	465.05	439.49	25.56	18.194		
3,700.00	3,662.77	3,670.48	3,667.09	14.73	12.98	163.04	28.44	-136.40	479.47	453.17	26.30	18.233		
3,800.00	3,761.48	3,769.43	3,765.93	15.16	13.35	163.02	27.68	-141.22	493.89	466.86	27.03	18.270		
3,900.00	3,860.20	3,868.39	3,864.76	15.59	13.71	163.00	26.92	-146.05	508.31	480.54	27.77	18.304		
4,000.00	3,958.91	3,967.34	3,963.59	16.02	14.07	162.98	26.16	-150.87	522.73	494.22	28.51	18.337		
4,100.00	4,057.62	4,066.30	4,062.43	16.45	14.43	162.96	25.40	-155.70	537.15	507.90	29.24	18.368		
4,200.00	4,156.34	4,165.25	4,161.26	16.88	14.79	162.94	24.64	-160.52	551.57	521.59	29.98	18.397		
4,300.00	4,255.05	4,264.21	4,260.10	17.31	15.15	162.92	23.88	-165.35	565.99	535.27	30.72	18.425		
4,400.00	4,353.76	4,363.16	4,358.93	17.75	15.51	162.91	23.12	-170.17	580.41	548.95	31.46	18.451		
4,500.00	4,452.48	4,462.12	4,457.77	18.18	15.88	162.89	22.37	-175.00	594.82	562.63	32.19	18.477		
4,600.00	4,551.19	4,561.07	4,556.60	18.61	16.24	162.88	21.61	-179.82	609.24	576.31	32.93	18.501		
4,700.00	4,649.90	4,660.03	4,655.43	19.04	16.60	162.87	20.85	-184.65	623.66	589.99	33.67	18.523		
4,800.00	4,748.62	4,758.98	4,754.27	19.47	16.96	162.85	20.09	-189.47	638.08	603.68	34.41	18.545		
4,900.00	4,847.33	4,857.93	4,853.10	19.90	17.32	162.84	19.33	-194.30	652.50	617.36	35.14	18.566		
5,000.00	4,946.04	4,956.89	4,951.94	20.33	17.68	162.83	18.57	-199.12	666.92	631.04	35.88	18.586		

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 3L-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 3L-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: 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	5,044.76	5,055.84	5,050.77	20.76	18.05	162.82	17.81	-203.95	681.34	644.72	36.62	18.606		
5,200.00	5,143.47	5,154.80	5,149.61	21.20	18.41	162.81	17.05	-208.77	695.76	658.40	37.36	18.624		
5,300.00	5,242.18	5,253.75	5,248.44	21.63	18.77	162.80	16.29	-213.60	710.18	672.08	38.10	18.642		
5,400.00	5,340.90	5,352.71	5,347.27	22.06	19.13	162.78	15.53	-218.43	724.60	685.76	38.83	18.659		
5,500.00	5,439.61	5,451.66	5,446.11	22.49	19.49	162.78	14.77	-223.25	739.02	699.45	39.57	18.675		
5,600.00	5,538.32	5,550.62	5,544.94	22.92	19.86	162.77	14.02	-228.08	753.44	713.13	40.31	18.691		
5,700.00	5,637.04	5,649.57	5,643.78	23.35	20.22	162.76	13.26	-232.90	767.86	726.81	41.05	18.706		
5,800.00	5,735.75	5,748.53	5,742.61	23.79	20.58	162.75	12.50	-237.73	782.28	740.49	41.79	18.720		
5,900.00	5,834.46	5,847.48	5,841.44	24.22	20.94	162.74	11.74	-242.55	796.70	754.17	42.53	18.734		
6,008.85	5,941.92	5,955.20	5,949.03	24.69	21.34	162.73	10.91	-247.80	812.39	769.06	43.33	18.749		
6,100.00	6,032.11	6,045.58	6,039.30	25.07	21.67	162.76	10.22	-252.21	824.16	780.16	44.00	18.730		
6,200.00	6,131.48	6,145.08	6,138.68	25.47	22.03	162.71	9.46	-257.06	833.92	789.18	44.73	18.642		
6,300.00	6,231.18	6,244.84	6,238.31	25.83	22.39	162.58	8.69	-261.93	840.35	794.89	45.46	18.485		
6,400.00	6,331.09	6,344.72	6,338.07	26.18	22.76	162.35	7.92	-266.80	843.47	797.28	46.18	18.263		
6,468.91	6,400.00	6,413.56	6,406.83	26.38	23.01	0.49	7.40	-270.16	843.69	797.03	46.67	18.079		
6,500.00	6,431.09	6,444.61	6,437.84	26.47	23.13	0.39	7.16	-271.67	843.44	796.56	46.88	17.991		
6,600.00	6,531.09	6,544.49	6,537.60	26.75	23.49	0.06	6.39	-276.54	842.66	795.09	47.57	17.715		
6,692.72	6,623.80	6,635.48	6,628.52	27.01	23.81	-0.17	5.73	-279.87	841.99	793.81	48.18	17.476		
6,700.00	6,631.09	6,642.48	6,635.51	27.03	23.84	-89.58	5.70	-279.79	841.95	793.73	48.23	17.458		
6,750.00	6,681.03	6,690.50	6,683.47	27.17	23.99	-89.59	5.51	-277.39	841.73	793.21	48.53	17.346		
6,800.00	6,730.69	6,738.51	6,731.14	27.30	24.14	-89.59	5.44	-271.78	841.60	792.79	48.81	17.242		
6,843.58	6,773.56	6,780.36	6,772.31	27.42	24.26	-89.59	5.48	-264.30	841.57	792.52	49.05	17.157		
6,850.00	6,779.83	6,786.52	6,778.33	27.43	24.28	-89.59	5.50	-263.00	841.57	792.48	49.09	17.145		
6,900.00	6,828.21	6,834.54	6,824.83	27.56	24.42	-89.60	5.68	-251.07	841.63	792.28	49.35	17.054		
6,950.00	6,875.59	6,882.57	6,870.45	27.67	24.55	-89.61	5.98	-236.06	841.78	792.17	49.61	16.968		
7,000.00	6,921.75	6,930.62	6,914.97	27.78	24.69	-89.62	6.40	-218.01	842.02	792.16	49.87	16.886		
7,050.00	6,966.45	6,978.71	6,958.21	27.88	24.82	-89.63	6.95	-197.01	842.36	792.24	50.12	16.805		
7,100.00	7,009.49	7,026.83	6,999.98	27.97	24.96	-89.64	7.60	-173.14	842.79	792.39	50.39	16.724		
7,150.00	7,050.64	7,075.00	7,040.09	28.05	25.11	-89.66	8.38	-146.49	843.30	792.62	50.68	16.638		
7,200.00	7,089.72	7,123.23	7,078.36	28.13	25.28	-89.68	9.26	-117.17	843.90	792.89	51.01	16.545		
7,250.00	7,126.53	7,171.52	7,114.62	28.19	25.47	-89.69	10.26	-85.30	844.59	793.21	51.38	16.438		
7,300.00	7,160.89	7,219.88	7,148.69	28.25	25.69	-89.71	11.36	-51.01	845.35	793.54	51.82	16.314		
7,350.00	7,192.63	7,268.32	7,180.42	28.30	25.94	-89.73	12.55	-14.45	846.20	793.86	52.33	16.169		
7,400.00	7,221.60	7,316.84	7,209.65	28.34	26.25	-89.75	13.85	24.25	847.11	794.16	52.95	15.998		
7,450.00	7,247.66	7,365.46	7,236.25	28.38	26.60	-89.77	15.23	64.91	848.10	794.42	53.68	15.800		
7,500.00	7,270.68	7,414.17	7,260.07	28.41	27.02	-89.80	16.70	107.37	849.16	794.62	54.53	15.571		
7,550.00	7,290.54	7,462.99	7,280.98	28.45	27.50	-89.82	18.24	151.45	850.27	794.74	55.53	15.313		
7,600.00	7,307.16	7,511.93	7,298.89	28.69	28.05	-89.85	19.86	196.95	851.44	794.78	56.66	15.026		
7,650.00	7,320.45	7,560.98	7,313.67	29.30	28.67	-89.87	21.54	243.68	852.66	794.72	57.94	14.716		
7,700.00	7,330.35	7,610.15	7,325.25	30.02	29.37	-89.90	23.28	291.43	853.93	794.57	59.36	14.386		
7,750.00	7,336.80	7,659.46	7,333.53	30.82	30.12	-89.92	25.07	339.99	855.24	794.33	60.91	14.042		
7,800.00	7,339.78	7,708.89	7,338.47	31.67	30.94	-89.95	26.90	389.13	856.58	794.01	62.57	13.690		
7,817.72	7,340.00	7,726.44	7,339.40	31.98	31.24	-89.96	27.55	406.64	857.06	793.87	63.19	13.564		
7,900.00	7,340.00	7,808.47	7,340.00	33.52	32.73	-90.00	30.65	488.61	859.32	793.12	66.20	12.981		
8,000.00	7,340.00	7,908.43	7,340.00	35.56	34.72	-90.00	34.43	588.50	862.08	791.86	70.22	12.277		
8,100.00	7,340.00	8,008.40	7,340.00	37.77	36.89	-90.00	38.21	688.39	864.83	790.27	74.57	11.598		
8,200.00	7,340.00	8,108.36	7,340.00	40.11	39.19	-90.00	41.99	788.28	867.59	788.39	79.20	10.955		
8,300.00	7,340.00	8,208.32	7,340.00	42.56	41.61	-90.00	45.76	888.17	870.34	786.28	84.06	10.354		
8,400.00	7,340.00	8,308.28	7,340.00	45.10	44.13	-90.00	49.54	988.06	873.10	783.98	89.12	9.797		
8,500.00	7,340.00	8,408.24	7,340.00	47.73	46.74	-90.00	53.32	1,087.95	875.86	781.52	94.34	9.284		
8,600.00	7,340.00	8,508.21	7,340.00	50.42	49.41	-90.00	57.10	1,187.84	878.61	778.92	99.70	8.813		
8,700.00	7,340.00	8,608.17	7,340.00	53.17	52.14	-90.00	60.88	1,287.73	881.37	776.20	105.17	8.380		

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 3L-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 3L-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: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,340.00	8,708.13	7,340.00	55.96	54.92	-90.00	64.66	1,387.63	884.12	773.38	110.74	7.984		
8,900.00	7,340.00	8,808.09	7,340.00	58.80	57.74	-90.00	68.43	1,487.52	886.88	770.48	116.40	7.619		
9,000.00	7,340.00	8,908.05	7,340.00	61.67	60.60	-90.00	72.21	1,587.41	889.63	767.50	122.13	7.284		
9,100.00	7,340.00	9,008.02	7,340.00	64.58	63.50	-90.00	75.99	1,687.30	892.39	764.46	127.93	6.976		
9,200.00	7,340.00	9,107.98	7,340.00	67.51	66.42	-90.00	79.77	1,787.19	895.14	761.36	133.78	6.691		
9,300.00	7,340.00	9,207.94	7,340.00	70.47	69.36	-90.00	83.55	1,887.08	897.90	758.22	139.68	6.428		
9,400.00	7,340.00	9,307.90	7,340.00	73.44	72.33	-90.00	87.32	1,986.97	900.65	755.04	145.62	6.185		
9,500.00	7,340.00	9,407.86	7,340.00	76.44	75.31	-90.00	91.10	2,086.86	903.41	751.81	151.60	5.959		
9,600.00	7,340.00	9,507.83	7,340.00	79.45	78.31	-90.00	94.88	2,186.75	906.17	748.56	157.61	5.749		
9,700.00	7,340.00	9,607.79	7,340.00	82.48	81.33	-90.00	98.66	2,286.64	908.92	745.27	163.65	5.554		
9,800.00	7,340.00	9,707.75	7,340.00	85.51	84.36	-90.00	102.44	2,386.53	911.68	741.96	169.72	5.372		
9,900.00	7,340.00	9,807.71	7,340.00	88.57	87.40	-90.00	106.22	2,486.42	914.43	738.63	175.81	5.201		
10,000.00	7,340.00	9,907.67	7,340.00	91.63	90.45	-90.00	109.99	2,586.31	917.19	735.27	181.92	5.042		
10,100.00	7,340.00	10,007.64	7,340.00	94.70	93.51	-90.00	113.77	2,686.20	919.94	731.89	188.05	4.892		
10,200.00	7,340.00	10,107.60	7,340.00	97.78	96.58	-90.00	117.55	2,786.09	922.70	728.50	194.20	4.751		
10,300.00	7,340.00	10,207.56	7,340.00	100.87	99.66	-90.00	121.33	2,885.98	925.45	725.09	200.36	4.619		
10,400.00	7,340.00	10,307.52	7,340.00	103.96	102.74	-90.00	125.11	2,985.87	928.21	721.67	206.54	4.494		
10,500.00	7,340.00	10,407.48	7,340.00	107.06	105.83	-90.00	128.89	3,085.77	930.96	718.23	212.73	4.376		
10,600.00	7,340.00	10,507.45	7,340.00	110.17	108.93	-90.00	132.66	3,185.66	933.72	714.79	218.93	4.265		
10,700.00	7,340.00	10,607.41	7,340.00	113.28	112.03	-90.00	136.44	3,285.55	936.48	711.33	225.15	4.159		
10,800.00	7,340.00	10,707.37	7,340.00	116.40	115.14	-90.00	140.22	3,385.44	939.23	707.86	231.37	4.059		
10,900.00	7,340.00	10,807.33	7,340.00	119.52	118.25	-90.00	144.00	3,485.33	941.99	704.38	237.61	3.964		
11,000.00	7,340.00	10,907.29	7,340.00	122.65	121.37	-90.00	147.78	3,585.22	944.74	700.89	243.85	3.874		
11,100.00	7,340.00	11,007.26	7,340.00	125.78	124.49	-90.00	151.56	3,685.11	947.50	697.40	250.10	3.788		
11,200.00	7,340.00	11,107.22	7,340.00	128.91	127.61	-90.00	155.33	3,785.00	950.25	693.90	256.36	3.707		
11,300.00	7,340.00	11,207.18	7,340.00	132.05	130.74	-90.00	159.11	3,884.89	953.01	690.39	262.62	3.629		
11,400.00	7,340.00	11,307.14	7,340.00	135.19	133.87	-90.00	162.89	3,984.78	955.76	686.87	268.89	3.554		
11,500.00	7,340.00	11,407.11	7,340.00	138.34	137.00	-90.00	166.67	4,084.67	958.52	683.35	275.17	3.483		
11,600.00	7,340.00	11,507.07	7,340.00	141.49	140.14	-90.00	170.45	4,184.56	961.27	679.82	281.45	3.415		
11,700.00	7,340.00	11,607.03	7,340.00	144.63	143.28	-90.00	174.23	4,284.45	964.03	676.29	287.74	3.350		
11,800.00	7,340.00	11,706.99	7,340.00	147.79	146.42	-90.00	178.00	4,384.34	966.79	672.75	294.03	3.288		
11,886.52	7,340.00	11,793.48	7,340.00	150.52	149.14	-90.00	181.27	4,470.77	969.17	669.69	299.48	3.236 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	
0.00	0.00	0.00	0.00	0.00	0.00	0.31	39.72	0.22	39.72					
100.00	100.00	100.00	100.00	0.14	0.14	0.31	39.72	0.22	39.72	39.44	0.28	143.895		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	39.72	0.22	39.72	38.73	0.99	40.000		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	39.72	0.22	39.72	38.01	1.71	23.228		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	39.72	0.22	39.72	37.29	2.43	16.366		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	39.72	0.22	39.72	36.57	3.14	12.634 CC, ES		
600.00	599.98	599.98	599.98	1.91	1.93	162.70	39.72	0.22	41.38	37.54	3.84	10.763		
700.00	699.84	699.84	699.84	2.25	2.29	164.60	39.72	0.22	46.40	41.86	4.54	10.222		
800.00	799.45	799.45	799.45	2.60	2.65	166.98	39.72	0.22	54.86	49.61	5.24	10.465		
900.00	898.70	898.70	898.70	2.95	3.00	169.29	39.72	0.22	66.79	60.84	5.95	11.227		
960.06	958.08	958.88	958.88	3.18	3.21	170.14	39.49	-0.34	75.33	68.95	6.37	11.820		
1,000.00	997.51	998.97	998.95	3.33	3.35	170.25	39.07	-1.37	81.07	74.41	6.65	12.182		
1,100.00	1,096.22	1,099.30	1,099.14	3.72	3.69	169.21	37.13	-6.13	94.24	86.89	7.35	12.818		
1,200.00	1,194.94	1,198.47	1,198.12	4.12	4.03	167.92	34.80	-11.84	106.91	98.86	8.05	13.277		
1,300.00	1,293.65	1,297.63	1,297.09	4.53	4.38	166.91	32.48	-17.55	119.63	110.87	8.76	13.655		
1,400.00	1,392.36	1,396.80	1,396.07	4.94	4.73	166.09	30.15	-23.26	132.38	122.90	9.47	13.972		
1,500.00	1,491.08	1,495.97	1,495.05	5.35	5.08	165.41	27.82	-28.97	145.15	134.95	10.19	14.240		
1,600.00	1,589.79	1,595.14	1,594.02	5.77	5.44	164.85	25.50	-34.68	157.93	147.02	10.91	14.470		
1,700.00	1,688.50	1,694.31	1,693.00	6.19	5.79	164.37	23.17	-40.39	170.73	159.09	11.64	14.668		
1,800.00	1,787.22	1,793.48	1,791.98	6.61	6.15	163.95	20.84	-46.10	183.54	171.17	12.37	14.841		
1,900.00	1,885.93	1,892.64	1,890.95	7.03	6.51	163.59	18.52	-51.81	196.35	183.26	13.10	14.993		
2,000.00	1,984.64	1,991.81	1,989.93	7.45	6.87	163.28	16.19	-57.52	209.18	195.35	13.83	15.127		
2,100.00	2,083.36	2,090.98	2,088.91	7.88	7.23	163.00	13.86	-63.23	222.00	207.44	14.56	15.246		
2,200.00	2,182.07	2,190.15	2,187.88	8.30	7.59	162.75	11.54	-68.93	234.84	219.54	15.30	15.353		
2,300.00	2,280.78	2,289.32	2,286.86	8.73	7.95	162.53	9.21	-74.64	247.67	231.64	16.03	15.450		
2,400.00	2,379.50	2,388.48	2,385.83	9.15	8.31	162.33	6.88	-80.35	260.52	243.75	16.77	15.537		
2,500.00	2,478.21	2,487.65	2,484.81	9.58	8.68	162.14	4.55	-86.06	273.36	255.85	17.50	15.616		
2,600.00	2,576.92	2,586.82	2,583.79	10.01	9.04	161.98	2.23	-91.77	286.20	267.96	18.24	15.689		
2,700.00	2,675.64	2,685.99	2,682.76	10.44	9.40	161.83	-0.10	-97.48	299.05	280.07	18.98	15.755		
2,800.00	2,774.35	2,785.16	2,781.74	10.86	9.77	161.69	-2.43	-103.19	311.90	292.18	19.72	15.816		
2,900.00	2,873.06	2,884.33	2,880.72	11.29	10.13	161.56	-4.75	-108.90	324.75	304.29	20.46	15.872		
3,000.00	2,971.78	2,983.49	2,979.69	11.72	10.50	161.44	-7.08	-114.61	337.61	316.40	21.20	15.924		
3,100.00	3,070.49	3,082.66	3,078.67	12.15	10.86	161.33	-9.41	-120.32	350.46	328.52	21.94	15.972		
3,200.00	3,169.20	3,181.83	3,177.65	12.58	11.23	161.23	-11.73	-126.03	363.32	340.63	22.68	16.017		
3,300.00	3,267.92	3,281.00	3,276.62	13.01	11.59	161.14	-14.06	-131.74	376.17	352.75	23.43	16.058		
3,400.00	3,366.63	3,380.17	3,375.60	13.44	11.96	161.05	-16.39	-137.45	389.03	364.86	24.17	16.098		
3,500.00	3,465.34	3,479.34	3,474.58	13.87	12.32	160.96	-18.72	-143.16	401.89	376.98	24.91	16.134		
3,600.00	3,564.06	3,578.50	3,573.55	14.30	12.69	160.89	-21.04	-148.87	414.75	389.09	25.65	16.168		
3,700.00	3,662.77	3,677.67	3,672.53	14.73	13.05	160.81	-23.37	-154.58	427.61	401.21	26.39	16.201		
3,800.00	3,761.48	3,776.84	3,771.50	15.16	13.42	160.74	-25.70	-160.29	440.47	413.33	27.14	16.231		
3,900.00	3,860.20	3,876.01	3,870.48	15.59	13.78	160.68	-28.02	-166.00	453.33	425.45	27.88	16.260		
4,000.00	3,958.91	3,975.18	3,969.46	16.02	14.15	160.62	-30.35	-171.71	466.19	437.56	28.62	16.287		
4,100.00	4,057.62	4,074.35	4,068.43	16.45	14.52	160.56	-32.68	-177.42	479.05	449.68	29.37	16.312		
4,200.00	4,156.34	4,173.51	4,167.41	16.88	14.88	160.51	-35.00	-183.13	491.91	461.80	30.11	16.336		
4,300.00	4,255.05	4,272.68	4,266.39	17.31	15.25	160.45	-37.33	-188.84	504.78	473.92	30.86	16.360		
4,400.00	4,353.76	4,371.85	4,365.36	17.75	15.62	160.40	-39.66	-194.55	517.64	486.04	31.60	16.381		
4,500.00	4,452.48	4,471.02	4,464.34	18.18	15.98	160.36	-41.98	-200.26	530.50	498.16	32.34	16.402		
4,600.00	4,551.19	4,570.19	4,563.32	18.61	16.35	160.31	-44.31	-205.97	543.37	510.28	33.09	16.422		
4,700.00	4,649.90	4,669.35	4,662.29	19.04	16.72	160.27	-46.64	-211.68	556.23	522.40	33.83	16.441		
4,800.00	4,748.62	4,768.52	4,761.27	19.47	17.08	160.23	-48.97	-217.39	569.10	534.52	34.58	16.459		
4,900.00	4,847.33	4,867.69	4,860.25	19.90	17.45	160.19	-51.29	-223.10	581.96	546.64	35.32	16.476		
5,000.00	4,946.04	4,966.86	4,959.22	20.33	17.82	160.15	-53.62	-228.81	594.82	558.76	36.07	16.493		

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 3L-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 3L-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	5,044.76	5,066.03	5,058.20	20.76	18.18	160.11	-55.95	-234.52	607.69	570.88	36.81	16.508	
5,200.00	5,143.47	5,165.20	5,157.17	21.20	18.55	160.08	-58.27	-240.23	620.56	583.00	37.56	16.524	
5,300.00	5,242.18	5,264.36	5,256.15	21.63	18.92	160.05	-60.60	-245.93	633.42	595.12	38.30	16.538	
5,400.00	5,340.90	5,363.53	5,355.13	22.06	19.28	160.02	-62.93	-251.64	646.29	607.24	39.05	16.552	
5,500.00	5,439.61	5,462.70	5,454.10	22.49	19.65	159.99	-65.25	-257.35	659.15	619.36	39.79	16.565	
5,600.00	5,538.32	5,561.87	5,553.08	22.92	20.02	159.96	-67.58	-263.06	672.02	631.48	40.54	16.578	
5,700.00	5,637.04	5,661.04	5,652.06	23.35	20.38	159.93	-69.91	-268.77	684.89	643.60	41.28	16.591	
5,800.00	5,735.75	5,760.21	5,751.03	23.79	20.75	159.90	-72.23	-274.48	697.75	655.73	42.03	16.603	
5,900.00	5,834.46	5,857.11	5,847.76	24.22	21.11	159.88	-74.46	-279.95	710.66	667.91	42.76	16.622	
6,008.85	5,941.92	5,956.13	5,946.71	24.69	21.46	160.05	-75.81	-283.24	725.67	682.20	43.48	16.690	
6,100.00	6,032.11	6,041.53	6,032.11	25.07	21.75	160.43	-75.99	-283.70	737.86	693.78	44.08	16.739	
6,200.00	6,131.48	6,140.91	6,131.48	25.47	22.08	160.78	-75.99	-283.70	748.35	703.58	44.77	16.716	
6,300.00	6,231.18	6,240.61	6,231.18	25.83	22.42	161.02	-75.99	-283.70	755.56	710.11	45.45	16.623	
6,400.00	6,331.09	6,340.52	6,331.09	26.18	22.75	161.15	-75.99	-283.70	759.49	713.36	46.13	16.462	
6,468.91	6,400.00	6,409.43	6,400.00	26.38	22.98	-0.48	-75.99	-283.70	760.27	713.68	46.59	16.318	
6,500.00	6,431.09	6,440.51	6,431.09	26.67	23.09	-0.48	-75.99	-283.70	760.27	713.48	46.79	16.248	
6,600.00	6,531.09	6,540.51	6,531.09	26.75	23.42	-0.48	-75.99	-283.70	760.27	712.83	47.44	16.026	
6,692.72	6,623.80	6,633.23	6,623.80	27.01	23.74	-0.48	-75.99	-283.70	760.27	712.23	48.04	15.825	
6,700.00	6,631.09	6,640.51	6,631.09	27.03	23.76	-89.89	-75.99	-283.70	760.27	712.18	48.09	15.809	
6,738.11	6,669.16	6,678.59	6,669.16	27.13	23.89	-90.00	-75.99	-283.70	760.27	711.93	48.34	15.727	
6,750.00	6,681.03	6,690.45	6,681.03	27.17	23.93	-90.06	-75.99	-283.70	760.27	711.85	48.42	15.701	
6,800.00	6,730.69	6,740.11	6,730.69	27.30	24.10	-90.49	-75.99	-283.70	760.30	711.55	48.75	15.595	
6,850.00	6,779.83	6,789.25	6,779.83	27.43	24.26	-91.16	-75.99	-283.70	760.44	711.35	49.08	15.492	
6,900.00	6,828.21	6,837.63	6,828.21	27.56	24.43	-92.05	-75.99	-283.70	760.80	711.38	49.42	15.395	
6,950.00	6,875.59	6,885.79	6,876.36	27.67	24.59	-93.13	-75.99	-283.59	761.56	711.80	49.75	15.306	
7,000.00	6,921.75	6,936.65	6,927.14	27.78	24.75	-94.32	-75.96	-280.90	762.71	712.60	50.10	15.222	
7,050.00	6,966.45	6,988.85	6,978.93	27.88	24.91	-95.50	-75.90	-274.39	764.22	713.76	50.45	15.147	
7,100.00	7,009.49	7,042.51	7,031.51	27.97	25.07	-96.67	-75.79	-263.79	766.06	715.26	50.80	15.079	
7,150.00	7,050.64	7,097.70	7,084.62	28.05	25.23	-97.82	-75.64	-248.81	768.21	717.06	51.15	15.019	
7,200.00	7,089.72	7,154.53	7,137.93	28.13	25.39	-98.95	-75.44	-229.17	770.62	719.12	51.50	14.965	
7,250.00	7,126.53	7,213.08	7,191.04	28.19	25.55	-100.05	-75.19	-204.58	773.25	721.41	51.84	14.915	
7,300.00	7,160.89	7,273.41	7,243.48	28.25	25.73	-101.11	-74.89	-174.78	776.05	723.86	52.20	14.868	
7,350.00	7,192.63	7,335.59	7,294.71	28.30	25.92	-102.13	-74.53	-139.58	778.95	726.38	52.57	14.817	
7,400.00	7,221.60	7,399.64	7,344.08	28.34	26.14	-103.09	-74.11	-98.81	781.88	728.90	52.98	14.758	
7,450.00	7,247.66	7,465.55	7,390.87	28.38	26.43	-103.99	-73.64	-52.42	784.75	731.29	53.47	14.678	
7,500.00	7,270.68	7,533.30	7,434.32	28.41	26.79	-104.81	-73.11	-0.48	787.50	733.46	54.05	14.570	
7,550.00	7,290.54	7,602.78	7,473.57	28.45	27.26	-105.55	-72.53	56.82	790.05	735.27	54.77	14.424	
7,600.00	7,307.16	7,673.87	7,507.80	28.69	27.88	-106.18	-71.90	119.09	792.30	736.60	55.70	14.225	
7,650.00	7,320.45	7,746.35	7,536.16	29.30	28.64	-106.71	-71.22	185.76	794.19	737.36	56.84	13.973	
7,700.00	7,330.35	7,820.00	7,557.94	30.02	29.57	-107.11	-70.51	256.07	795.66	737.42	58.25	13.660	
7,750.00	7,336.80	7,894.50	7,572.50	30.82	30.66	-107.38	-69.76	329.10	796.66	736.75	59.91	13.297	
7,800.00	7,339.78	7,969.52	7,579.42	31.67	31.89	-107.51	-69.00	403.76	797.15	735.31	61.84	12.891	
7,817.72	7,340.00	7,996.16	7,580.00	31.98	32.35	-107.52	-68.73	430.39	797.20	734.63	62.57	12.741	
7,900.00	7,340.00	8,079.14	7,580.00	33.52	33.90	-107.52	-67.89	513.36	797.19	731.68	65.51	12.169	
8,000.00	7,340.00	8,179.14	7,580.00	35.56	35.92	-107.52	-66.87	613.36	797.18	727.80	69.38	11.490	
8,100.00	7,340.00	8,279.14	7,580.00	37.77	38.11	-107.52	-65.86	713.35	797.17	723.62	73.55	10.838	
8,200.00	7,340.00	8,379.14	7,580.00	40.11	40.43	-107.52	-64.84	813.35	797.17	719.18	77.99	10.222	
8,300.00	7,340.00	8,479.14	7,580.00	42.56	42.87	-107.52	-63.83	913.34	797.16	714.52	82.64	9.646	
8,400.00	7,340.00	8,579.14	7,580.00	45.10	45.40	-107.52	-62.81	1,013.34	797.15	709.68	87.47	9.113	
8,500.00	7,340.00	8,679.14	7,580.00	47.73	48.01	-107.52	-61.79	1,113.33	797.14	704.68	92.46	8.621	
8,600.00	7,340.00	8,779.14	7,580.00	50.42	50.69	-107.52	-60.78	1,213.33	797.13	699.55	97.58	8.169	
8,700.00	7,340.00	8,879.14	7,580.00	53.17	53.43	-107.52	-59.76	1,313.32	797.13	694.32	102.81	7.753	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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		
8,800.00	7,340.00	8,979.14	7,580.00	55.96	56.22	-107.52	-58.74	1,413.32	797.12	688.98	108.14	7.371		
8,900.00	7,340.00	9,079.14	7,580.00	58.80	59.05	-107.52	-57.73	1,513.31	797.11	683.57	113.54	7.020		
9,000.00	7,340.00	9,179.14	7,580.00	61.67	61.92	-107.52	-56.71	1,613.31	797.10	678.09	119.02	6.697		
9,100.00	7,340.00	9,279.14	7,580.00	64.58	64.82	-107.52	-55.69	1,713.30	797.09	672.54	124.55	6.400		
9,200.00	7,340.00	9,379.14	7,580.00	67.51	67.75	-107.52	-54.68	1,813.30	797.09	666.94	130.14	6.125		
9,300.00	7,340.00	9,479.14	7,580.00	70.47	70.70	-107.52	-53.66	1,913.29	797.08	661.30	135.78	5.870		
9,400.00	7,340.00	9,579.14	7,580.00	73.44	73.67	-107.52	-52.65	2,013.29	797.07	655.61	141.46	5.635		
9,500.00	7,340.00	9,679.14	7,580.00	76.44	76.66	-107.52	-51.63	2,113.28	797.06	649.89	147.17	5.416		
9,600.00	7,340.00	9,779.14	7,580.00	79.45	79.67	-107.52	-50.61	2,213.28	797.05	644.14	152.92	5.212		
9,700.00	7,340.00	9,879.14	7,580.00	82.48	82.70	-107.52	-49.60	2,313.27	797.05	638.35	158.69	5.023		
9,800.00	7,340.00	9,979.14	7,580.00	85.51	85.73	-107.52	-48.58	2,413.26	797.04	632.54	164.50	4.845		
9,900.00	7,340.00	10,079.14	7,580.00	88.57	88.78	-107.52	-47.56	2,513.26	797.03	626.71	170.32	4.680		
10,000.00	7,340.00	10,179.14	7,580.00	91.63	91.84	-107.52	-46.55	2,613.25	797.02	620.86	176.16	4.524		
10,100.00	7,340.00	10,279.14	7,580.00	94.70	94.91	-107.53	-45.53	2,713.25	797.01	614.99	182.03	4.379		
10,200.00	7,340.00	10,379.14	7,580.00	97.78	97.99	-107.53	-44.51	2,813.24	797.01	609.10	187.91	4.241		
10,300.00	7,340.00	10,479.14	7,580.00	100.87	101.07	-107.53	-43.50	2,913.24	797.00	603.19	193.80	4.112		
10,400.00	7,340.00	10,579.14	7,580.00	103.96	104.17	-107.53	-42.48	3,013.23	796.99	597.28	199.71	3.991		
10,500.00	7,340.00	10,679.14	7,580.00	107.06	107.27	-107.53	-41.46	3,113.23	796.98	591.34	205.64	3.876		
10,600.00	7,340.00	10,779.14	7,580.00	110.17	110.37	-107.53	-40.45	3,213.22	796.97	585.40	211.57	3.767		
10,700.00	7,340.00	10,879.14	7,580.00	113.28	113.48	-107.53	-39.43	3,313.22	796.97	579.45	217.52	3.664		
10,800.00	7,340.00	10,979.14	7,580.00	116.40	116.60	-107.53	-38.42	3,413.21	796.96	573.48	223.47	3.566		
10,900.00	7,340.00	11,079.14	7,580.00	119.52	119.72	-107.53	-37.40	3,513.21	796.95	567.51	229.44	3.473		
11,000.00	7,340.00	11,179.14	7,580.00	122.65	122.85	-107.53	-36.38	3,613.20	796.94	561.53	235.41	3.385		
11,100.00	7,340.00	11,279.14	7,580.00	125.78	125.98	-107.53	-35.37	3,713.20	796.93	555.54	241.39	3.301		
11,200.00	7,340.00	11,379.14	7,580.00	128.91	129.11	-107.53	-34.35	3,813.19	796.93	549.54	247.38	3.221		
11,300.00	7,340.00	11,479.14	7,580.00	132.05	132.25	-107.53	-33.33	3,913.19	796.92	543.54	253.38	3.145		
11,400.00	7,340.00	11,579.14	7,580.00	135.19	135.39	-107.53	-32.32	4,013.18	796.91	537.53	259.38	3.072		
11,500.00	7,340.00	11,679.14	7,580.00	138.34	138.53	-107.53	-31.30	4,113.18	796.90	531.52	265.39	3.003		
11,600.00	7,340.00	11,779.14	7,580.00	141.49	141.68	-107.53	-30.28	4,213.17	796.89	525.50	271.40	2.936		
11,700.00	7,340.00	11,879.14	7,580.00	144.63	144.83	-107.53	-29.27	4,313.17	796.89	519.47	277.42	2.873		
11,800.00	7,340.00	11,979.14	7,580.00	147.79	147.98	-107.53	-28.25	4,413.16	796.88	513.44	283.44	2.811		
11,886.52	7,340.00	12,065.66	7,580.00	150.52	150.71	-107.53	-27.37	4,499.68	796.87	508.22	288.65	2.761 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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					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	0.58	29.88	0.30	29.88					
100.00	100.00	100.00	100.00	0.14	0.14	0.58	29.88	0.30	29.88	29.61	0.28	108.267		
200.00	200.00	200.00	200.00	0.50	0.50	0.58	29.88	0.30	29.88	28.89	0.99	30.096		
300.00	300.00	300.00	300.00	0.85	0.85	0.58	29.88	0.30	29.88	28.17	1.71	17.477		
400.00	400.00	400.00	400.00	1.21	1.21	0.58	29.88	0.30	29.88	27.46	2.43	12.314		
500.00	500.00	500.00	500.00	1.57	1.57	0.58	29.88	0.30	29.88	26.74	3.14	9.506 CC, ES		
600.00	599.98	599.98	599.98	1.91	1.93	163.19	29.88	0.30	31.55	27.71	3.84	8.206		
700.00	699.84	699.84	699.84	2.25	2.29	165.53	29.88	0.30	36.59	32.05	4.54	8.060		
800.00	799.45	799.45	799.45	2.60	2.65	168.27	29.88	0.30	45.08	39.84	5.24	8.601		
900.00	898.70	900.09	900.07	2.95	2.99	169.49	28.84	-1.10	55.85	49.91	5.94	9.399		
960.06	958.08	960.62	960.54	3.18	3.20	169.18	27.20	-3.31	62.78	56.42	6.36	9.864		
1,000.00	997.51	1,000.94	1,000.77	3.33	3.33	168.65	25.68	-5.35	67.32	60.67	6.65	10.129		
1,100.00	1,096.22	1,101.32	1,100.80	3.72	3.68	166.46	20.65	-12.12	77.29	69.94	7.35	10.514		
1,200.00	1,194.94	1,200.81	1,199.89	4.12	4.03	164.53	15.36	-19.25	87.01	78.96	8.06	10.798		
1,300.00	1,293.65	1,300.30	1,298.98	4.53	4.38	162.98	10.06	-26.37	96.82	88.04	8.78	11.033		
1,400.00	1,392.36	1,399.79	1,398.08	4.94	4.74	161.72	4.76	-33.50	106.68	97.18	9.50	11.230		
1,500.00	1,491.08	1,499.28	1,497.17	5.35	5.11	160.67	-0.53	-40.62	116.58	106.35	10.23	11.397		
1,600.00	1,589.79	1,598.76	1,596.26	5.77	5.47	159.79	-5.83	-47.75	126.51	115.55	10.96	11.540		
1,700.00	1,688.50	1,698.25	1,695.35	6.19	5.84	159.04	-11.12	-54.88	136.47	124.77	11.70	11.663		
1,800.00	1,787.22	1,797.74	1,794.44	6.61	6.21	158.38	-16.42	-62.00	146.45	134.01	12.44	11.770		
1,900.00	1,885.93	1,897.23	1,893.53	7.03	6.58	157.81	-21.72	-69.13	156.45	143.26	13.19	11.863		
2,000.00	1,984.64	1,996.72	1,992.62	7.45	6.95	157.31	-27.01	-76.26	166.46	152.52	13.93	11.946		
2,100.00	2,083.36	2,096.20	2,091.71	7.88	7.32	156.87	-32.31	-83.38	176.48	161.79	14.68	12.019		
2,200.00	2,182.07	2,195.69	2,190.80	8.30	7.70	156.47	-37.60	-90.51	186.51	171.07	15.43	12.085		
2,300.00	2,280.78	2,295.18	2,289.89	8.73	8.07	156.12	-42.90	-97.64	196.55	180.36	16.19	12.144		
2,400.00	2,379.50	2,394.67	2,388.98	9.15	8.45	155.80	-48.20	-104.76	206.59	189.65	16.94	12.197		
2,500.00	2,478.21	2,494.15	2,488.08	9.58	8.82	155.51	-53.49	-111.89	216.64	198.95	17.69	12.245		
2,600.00	2,576.92	2,593.64	2,587.17	10.01	9.20	155.24	-58.79	-119.01	226.70	208.25	18.45	12.289		
2,700.00	2,675.64	2,693.13	2,686.26	10.44	9.58	155.00	-64.08	-126.14	236.76	217.55	19.20	12.329		
2,800.00	2,774.35	2,792.62	2,785.35	10.86	9.95	154.78	-69.38	-133.27	246.82	226.86	19.96	12.365		
2,900.00	2,873.06	2,892.11	2,884.44	11.29	10.33	154.57	-74.68	-140.39	256.89	236.17	20.72	12.399		
3,000.00	2,971.78	2,991.59	2,983.53	11.72	10.71	154.38	-79.97	-147.52	266.96	245.48	21.48	12.430		
3,100.00	3,070.49	3,091.08	3,082.62	12.15	11.09	154.20	-85.27	-154.65	277.03	254.80	22.23	12.459		
3,200.00	3,169.20	3,190.57	3,181.71	12.58	11.47	154.04	-90.56	-161.77	287.11	264.11	22.99	12.486		
3,300.00	3,267.92	3,290.06	3,280.80	13.01	11.84	153.89	-95.86	-168.90	297.19	273.43	23.75	12.511		
3,400.00	3,366.63	3,389.55	3,379.89	13.44	12.22	153.74	-101.16	-176.03	307.26	282.75	24.51	12.534		
3,500.00	3,465.34	3,489.03	3,478.98	13.87	12.60	153.61	-106.45	-183.15	317.35	292.07	25.27	12.556		
3,600.00	3,564.06	3,588.52	3,578.08	14.30	12.98	153.49	-111.75	-190.28	327.43	301.39	26.04	12.576		
3,700.00	3,662.77	3,688.01	3,677.17	14.73	13.36	153.37	-117.04	-197.40	337.51	310.72	26.80	12.595		
3,800.00	3,761.48	3,787.50	3,776.26	15.16	13.74	153.26	-122.34	-204.53	347.60	320.04	27.56	12.613		
3,900.00	3,860.20	3,886.99	3,875.35	15.59	14.12	153.15	-127.64	-211.66	357.69	329.37	28.32	12.630		
4,000.00	3,958.91	3,986.47	3,974.44	16.02	14.50	153.05	-132.93	-218.78	367.77	338.69	29.08	12.646		
4,100.00	4,057.62	4,085.96	4,073.53	16.45	14.88	152.96	-138.23	-225.91	377.86	348.02	29.84	12.661		
4,200.00	4,156.34	4,185.45	4,172.62	16.88	15.26	152.87	-143.52	-233.04	387.95	357.35	30.61	12.676		
4,300.00	4,255.05	4,284.94	4,271.71	17.31	15.64	152.79	-148.82	-240.16	398.05	366.68	31.37	12.689		
4,400.00	4,353.76	4,384.42	4,370.80	17.75	16.02	152.71	-154.12	-247.29	408.14	376.01	32.13	12.702		
4,500.00	4,452.48	4,483.91	4,469.89	18.18	16.40	152.63	-159.41	-254.42	418.23	385.34	32.89	12.714		
4,600.00	4,551.19	4,583.40	4,568.98	18.61	16.78	152.56	-164.71	-261.54	428.32	394.67	33.66	12.726		
4,700.00	4,649.90	4,682.89	4,668.08	19.04	17.16	152.49	-170.00	-268.67	438.42	404.00	34.42	12.737		
4,800.00	4,748.62	4,780.82	4,765.63	19.47	17.53	152.43	-175.17	-275.62	448.55	413.38	35.17	12.753		
4,900.00	4,847.33	4,879.37	4,863.97	19.90	17.88	152.61	-178.80	-280.50	459.74	423.87	35.86	12.819		
5,000.00	4,946.04	4,965.42	4,949.96	20.33	18.21	153.11	-180.64	-282.98	472.44	435.92	36.52	12.936		

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 3L-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 3L-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
5,100.00	5,044.76	5,060.22	5,044.76	20.76	18.52	153.88	-180.90	-283.33	486.56	449.39	37.17	13.091	
5,200.00	5,143.47	5,158.93	5,143.47	21.20	18.84	154.68	-180.90	-283.33	501.00	463.16	37.84	13.241	
5,300.00	5,242.18	5,257.64	5,242.18	21.63	19.16	155.44	-180.90	-283.33	515.53	477.02	38.51	13.387	
5,400.00	5,340.90	5,356.36	5,340.90	22.06	19.48	156.16	-180.90	-283.33	530.15	490.96	39.18	13.530	
5,500.00	5,439.61	5,455.07	5,439.61	22.49	19.81	156.84	-180.90	-283.33	544.84	504.98	39.86	13.668	
5,600.00	5,538.32	5,553.78	5,538.32	22.92	20.13	157.48	-180.90	-283.33	559.61	519.07	40.54	13.804	
5,700.00	5,637.04	5,652.49	5,637.04	23.35	20.45	158.09	-180.90	-283.33	574.44	533.21	41.22	13.935	
5,800.00	5,735.75	5,751.21	5,735.75	23.79	20.78	158.67	-180.90	-283.33	589.33	547.42	41.91	14.063	
5,900.00	5,834.46	5,849.92	5,834.46	24.22	21.11	159.22	-180.90	-283.33	604.27	561.68	42.59	14.188	
6,008.85	5,941.92	5,957.37	5,941.92	24.69	21.46	159.79	-180.90	-283.33	620.60	577.27	43.34	14.320	
6,100.00	6,032.11	6,047.56	6,032.11	25.07	21.76	160.28	-180.90	-283.33	632.97	589.01	43.97	14.397	
6,200.00	6,131.48	6,146.94	6,131.48	25.47	22.09	160.69	-180.90	-283.33	643.45	598.80	44.65	14.410	
6,300.00	6,231.18	6,246.64	6,231.18	25.83	22.43	160.96	-180.90	-283.33	650.66	605.32	45.34	14.352	
6,400.00	6,331.09	6,346.55	6,331.09	26.18	22.76	161.10	-180.90	-283.33	654.59	608.57	46.02	14.224	
6,468.91	6,400.00	6,415.46	6,400.00	26.38	22.99	-0.52	-180.90	-283.33	655.37	608.89	46.48	14.101	
6,500.00	6,431.09	6,446.55	6,431.09	26.47	23.09	-0.52	-180.90	-283.33	655.37	608.69	46.68	14.040	
6,600.00	6,531.09	6,546.55	6,531.09	26.75	23.43	-0.52	-180.90	-283.33	655.37	608.04	47.33	13.847	
6,692.72	6,623.80	6,639.26	6,623.80	27.01	23.74	-0.52	-180.90	-283.33	655.37	607.44	47.93	13.672	
6,700.00	6,631.09	6,646.55	6,631.09	27.03	23.77	-89.94	-180.90	-283.33	655.37	607.39	47.98	13.659	
6,725.23	6,656.31	6,671.77	6,656.31	27.10	23.85	-90.00	-180.90	-283.33	655.37	607.22	48.15	13.612	
6,750.00	6,681.03	6,696.48	6,681.03	27.17	23.94	-90.14	-180.90	-283.33	655.37	607.06	48.31	13.565	
6,800.00	6,730.69	6,746.49	6,730.69	27.30	24.10	-90.55	-180.89	-282.36	655.40	606.75	48.65	13.473	
6,850.00	6,779.83	6,796.88	6,779.83	27.43	24.26	-90.97	-180.84	-277.98	655.46	606.50	48.97	13.386	
6,900.00	6,828.21	6,847.61	6,831.29	27.56	24.41	-91.39	-180.76	-270.01	655.56	606.28	49.28	13.303	
6,950.00	6,875.59	6,898.70	6,881.04	27.67	24.56	-91.81	-180.64	-258.42	655.70	606.11	49.59	13.223	
7,000.00	6,921.75	6,950.15	6,930.17	27.78	24.71	-92.22	-180.49	-243.20	655.86	605.98	49.89	13.147	
7,050.00	6,966.45	7,001.95	6,978.41	27.88	24.85	-92.61	-180.30	-224.35	656.05	605.87	50.18	13.073	
7,100.00	7,009.49	7,054.11	7,025.48	27.97	24.99	-93.00	-180.07	-201.90	656.27	605.78	50.49	12.999	
7,150.00	7,050.64	7,106.62	7,071.08	28.05	25.14	-93.37	-179.81	-175.90	656.51	605.70	50.80	12.922	
7,200.00	7,089.72	7,159.46	7,114.94	28.13	25.29	-93.73	-179.51	-146.43	656.76	605.61	51.15	12.840	
7,250.00	7,126.53	7,212.64	7,156.75	28.19	25.45	-94.07	-179.17	-113.60	657.02	605.48	51.53	12.749	
7,300.00	7,160.89	7,266.14	7,196.24	28.25	25.65	-94.38	-178.81	-77.53	657.28	605.31	51.98	12.645	
7,350.00	7,192.63	7,319.94	7,233.13	28.30	25.89	-94.68	-178.41	-38.38	657.55	605.05	52.50	12.524	
7,400.00	7,221.60	7,374.02	7,267.14	28.34	26.19	-94.95	-177.98	3.65	657.81	604.68	53.12	12.383	
7,450.00	7,247.66	7,428.37	7,298.03	28.38	26.56	-95.20	-177.53	48.34	658.05	604.19	53.87	12.217	
7,500.00	7,270.68	7,482.96	7,325.55	28.41	27.01	-95.41	-177.05	95.46	658.28	603.54	54.74	12.025	
7,550.00	7,290.54	7,537.75	7,349.49	28.45	27.54	-95.61	-176.55	144.74	658.49	602.72	55.77	11.807	
7,600.00	7,307.16	7,592.74	7,369.66	28.69	28.16	-95.77	-176.03	195.87	658.66	601.71	56.96	11.564	
7,650.00	7,320.45	7,647.87	7,385.88	29.30	28.87	-95.90	-175.49	248.55	658.81	600.51	58.30	11.300	
7,700.00	7,330.35	7,703.13	7,398.03	30.02	29.67	-95.99	-174.94	302.44	658.92	599.11	59.81	11.017	
7,750.00	7,336.80	7,758.47	7,405.99	30.82	30.55	-96.06	-174.39	357.19	659.00	597.53	61.47	10.721	
7,800.00	7,339.78	7,813.87	7,409.71	31.67	31.50	-96.09	-173.83	412.45	659.03	595.79	63.25	10.420	
7,817.72	7,340.00	7,833.51	7,410.00	31.98	31.85	-96.10	-173.63	432.08	659.04	595.13	63.90	10.313	
7,900.00	7,340.00	7,915.86	7,410.00	33.52	33.42	-96.10	-172.79	514.43	659.03	592.05	66.98	9.840	
8,000.00	7,340.00	8,015.86	7,410.00	35.56	35.48	-96.10	-171.77	614.43	659.02	587.98	71.04	9.276	
8,100.00	7,340.00	8,115.86	7,410.00	37.77	37.70	-96.10	-170.76	714.42	659.01	583.58	75.43	8.737	
8,200.00	7,340.00	8,215.86	7,410.00	40.11	40.05	-96.10	-169.74	814.41	659.00	578.92	80.08	8.229	
8,300.00	7,340.00	8,315.86	7,410.00	42.56	42.52	-96.10	-168.72	914.41	659.00	574.04	84.96	7.757	
8,400.00	7,340.00	8,415.86	7,410.00	45.10	45.07	-96.10	-167.71	1,014.40	658.99	568.96	90.03	7.320	
8,500.00	7,340.00	8,515.86	7,410.00	47.73	47.71	-96.10	-166.69	1,114.40	658.98	563.73	95.25	6.918	
8,600.00	7,340.00	8,615.86	7,410.00	50.42	50.42	-96.10	-165.68	1,214.39	658.97	558.36	100.61	6.550	
8,700.00	7,340.00	8,715.86	7,410.00	53.17	53.18	-96.10	-164.66	1,314.39	658.96	552.89	106.08	6.212	

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 3L-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 3L-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	7,340.00	8,815.86	7,410.00	55.96	55.98	-96.10	-163.64	1,414.38	658.95	547.31	111.64	5.902	
8,900.00	7,340.00	8,915.86	7,410.00	58.80	58.83	-96.10	-162.63	1,514.38	658.94	541.65	117.29	5.618	
9,000.00	7,340.00	9,015.86	7,410.00	61.67	61.71	-96.10	-161.61	1,614.37	658.94	535.92	123.01	5.357	
9,100.00	7,340.00	9,115.86	7,410.00	64.58	64.63	-96.10	-160.59	1,714.37	658.93	530.13	128.79	5.116	
9,200.00	7,340.00	9,215.86	7,410.00	67.51	67.57	-96.10	-159.58	1,814.36	658.92	524.29	134.63	4.894	
9,300.00	7,340.00	9,315.86	7,410.00	70.47	70.53	-96.10	-158.56	1,914.36	658.91	518.40	140.51	4.689	
9,400.00	7,340.00	9,415.86	7,410.00	73.44	73.52	-96.10	-157.55	2,014.35	658.90	512.47	146.44	4.500	
9,500.00	7,340.00	9,515.86	7,410.00	76.44	76.52	-96.10	-156.53	2,114.35	658.89	506.50	152.40	4.324	
9,600.00	7,340.00	9,615.86	7,410.00	79.45	79.54	-96.10	-155.51	2,214.34	658.89	500.49	158.39	4.160	
9,700.00	7,340.00	9,715.86	7,410.00	82.48	82.57	-96.10	-154.50	2,314.34	658.88	494.46	164.41	4.007	
9,800.00	7,340.00	9,815.86	7,410.00	85.51	85.61	-96.10	-153.48	2,414.33	658.87	488.41	170.46	3.865	
9,900.00	7,340.00	9,915.86	7,410.00	88.57	88.67	-96.10	-152.47	2,514.33	658.86	482.33	176.53	3.732	
10,000.00	7,340.00	10,015.86	7,410.00	91.63	91.74	-96.10	-151.45	2,614.32	658.85	476.23	182.63	3.608	
10,100.00	7,340.00	10,115.86	7,410.00	94.70	94.81	-96.10	-150.43	2,714.32	658.84	470.11	188.74	3.491	
10,200.00	7,340.00	10,215.86	7,410.00	97.78	97.90	-96.10	-149.42	2,814.31	658.83	463.97	194.86	3.381	
10,300.00	7,340.00	10,315.86	7,410.00	100.87	100.99	-96.10	-148.40	2,914.31	658.83	457.82	201.01	3.278	
10,400.00	7,340.00	10,415.86	7,410.00	103.96	104.09	-96.10	-147.38	3,014.30	658.82	451.65	207.17	3.180	
10,500.00	7,340.00	10,515.86	7,410.00	107.06	107.19	-96.10	-146.37	3,114.30	658.81	445.47	213.34	3.088	
10,600.00	7,340.00	10,615.86	7,410.00	110.17	110.30	-96.10	-145.35	3,214.29	658.80	439.28	219.52	3.001	
10,700.00	7,340.00	10,715.86	7,410.00	113.28	113.42	-96.10	-144.34	3,314.29	658.79	433.08	225.71	2.919	
10,800.00	7,340.00	10,815.86	7,410.00	116.40	116.54	-96.10	-143.32	3,414.28	658.78	426.87	231.92	2.841	
10,900.00	7,340.00	10,915.86	7,410.00	119.52	119.66	-96.10	-142.30	3,514.28	658.77	420.65	238.13	2.766	
11,000.00	7,340.00	11,015.86	7,410.00	122.65	122.79	-96.10	-141.29	3,614.27	658.77	414.42	244.35	2.696	
11,100.00	7,340.00	11,115.86	7,410.00	125.78	125.93	-96.10	-140.27	3,714.26	658.76	408.18	250.58	2.629	
11,200.00	7,340.00	11,215.86	7,410.00	128.91	129.06	-96.10	-139.25	3,814.26	658.75	401.93	256.82	2.565	
11,300.00	7,340.00	11,315.86	7,410.00	132.05	132.20	-96.10	-138.24	3,914.25	658.74	395.68	263.06	2.504	
11,400.00	7,340.00	11,415.86	7,410.00	135.19	135.35	-96.10	-137.22	4,014.25	658.73	389.42	269.31	2.446	
11,500.00	7,340.00	11,515.86	7,410.00	138.34	138.49	-96.10	-136.21	4,114.24	658.72	383.16	275.56	2.390	
11,600.00	7,340.00	11,615.86	7,410.00	141.49	141.64	-96.10	-135.19	4,214.24	658.72	376.89	281.82	2.337	
11,700.00	7,340.00	11,715.86	7,410.00	144.63	144.80	-96.10	-134.17	4,314.23	658.71	370.62	288.09	2.286	
11,800.00	7,340.00	11,815.86	7,410.00	147.79	147.74	-96.10	-133.16	4,414.23	658.70	364.55	294.15	2.239	
11,886.52	7,340.00	11,902.38	7,410.00	150.52	149.31	-96.10	-132.28	4,500.74	658.69	360.26	298.43	2.207 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	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	599.98	599.98	599.98	1.91	1.93	163.37	20.04	0.11	21.71	17.86	3.84	5.646		
700.00	699.84	699.84	699.84	2.25	2.29	166.56	20.04	0.11	26.76	22.22	4.54	5.896		
800.00	799.45	800.53	800.51	2.60	2.63	168.57	18.57	-0.86	33.73	28.49	5.24	6.443		
900.00	898.70	901.45	901.28	2.95	2.97	168.64	14.13	-3.79	40.98	35.04	5.94	6.902		
960.06	958.08	962.16	961.79	3.18	3.18	168.13	10.04	-6.50	45.47	39.10	6.37	7.138		
1,000.00	997.51	1,002.41	1,001.86	3.33	3.32	167.58	6.75	-8.67	48.25	41.60	6.65	7.252		
1,100.00	1,096.22	1,102.18	1,101.11	3.72	3.67	166.30	-1.69	-14.24	54.93	47.58	7.35	7.472		
1,200.00	1,194.94	1,201.95	1,200.37	4.12	4.03	165.29	-10.13	-19.82	61.63	53.57	8.06	7.647		
1,300.00	1,293.65	1,301.72	1,299.62	4.53	4.39	164.48	-18.58	-25.39	68.35	59.57	8.78	7.788		
1,400.00	1,392.36	1,401.49	1,398.88	4.94	4.76	163.81	-27.02	-30.96	75.07	65.58	9.50	7.904		
1,500.00	1,491.08	1,501.26	1,498.13	5.35	5.13	163.25	-35.46	-36.54	81.81	71.58	10.22	8.001		
1,600.00	1,589.79	1,601.03	1,597.39	5.77	5.50	162.78	-43.91	-42.11	88.55	77.59	10.96	8.082		
1,700.00	1,688.50	1,700.80	1,696.65	6.19	5.88	162.38	-52.35	-47.69	95.30	83.61	11.69	8.152		
1,800.00	1,787.22	1,800.57	1,795.90	6.61	6.26	162.03	-60.79	-53.26	102.05	89.62	12.43	8.212		
1,900.00	1,885.93	1,900.34	1,895.16	7.03	6.64	161.72	-69.23	-58.83	108.80	95.64	13.17	8.263		
2,000.00	1,984.64	2,000.11	1,994.41	7.45	7.02	161.45	-77.68	-64.41	115.56	101.65	13.91	8.309		
2,100.00	2,083.36	2,099.88	2,093.67	7.88	7.40	161.21	-86.12	-69.98	122.32	107.67	14.65	8.349		
2,200.00	2,182.07	2,199.65	2,192.92	8.30	7.78	160.99	-94.56	-75.56	129.08	113.68	15.40	8.384		
2,300.00	2,280.78	2,299.42	2,292.18	8.73	8.17	160.80	-103.00	-81.13	135.84	119.70	16.14	8.416		
2,400.00	2,379.50	2,399.19	2,391.44	9.15	8.55	160.62	-111.45	-86.71	142.61	125.72	16.89	8.445		
2,500.00	2,478.21	2,498.96	2,490.69	9.58	8.93	160.46	-119.89	-92.28	149.37	131.74	17.63	8.470		
2,600.00	2,576.92	2,598.73	2,589.95	10.01	9.32	160.31	-128.33	-97.85	156.14	137.76	18.38	8.494		
2,700.00	2,675.64	2,698.50	2,689.20	10.44	9.70	160.18	-136.78	-103.43	162.91	143.77	19.13	8.515		
2,800.00	2,774.35	2,798.27	2,788.46	10.86	10.09	160.06	-145.22	-109.00	169.68	149.79	19.88	8.534		
2,900.00	2,873.06	2,898.04	2,887.71	11.29	10.48	159.94	-153.66	-114.58	176.44	155.81	20.63	8.552		
3,000.00	2,971.78	2,997.81	2,986.97	11.72	10.86	159.84	-162.10	-120.15	183.21	161.83	21.38	8.568		
3,100.00	3,070.49	3,097.58	3,086.23	12.15	11.25	159.74	-170.55	-125.72	189.98	167.85	22.13	8.583		
3,200.00	3,169.20	3,197.35	3,185.48	12.58	11.64	159.65	-178.99	-131.30	196.76	173.87	22.89	8.597		
3,300.00	3,267.92	3,297.13	3,284.74	13.01	12.02	159.56	-187.43	-136.87	203.53	179.89	23.64	8.610		
3,400.00	3,366.63	3,396.90	3,383.99	13.44	12.41	159.48	-195.88	-142.45	210.30	185.91	24.39	8.622		
3,500.00	3,465.34	3,496.67	3,483.25	13.87	12.80	159.41	-204.32	-148.02	217.07	191.93	25.14	8.634		
3,600.00	3,564.06	3,596.44	3,582.51	14.30	13.18	159.34	-212.76	-153.60	223.84	197.95	25.90	8.644		
3,700.00	3,662.77	3,696.21	3,681.76	14.73	13.57	159.27	-221.20	-159.17	230.62	203.97	26.65	8.654		
3,800.00	3,761.48	3,795.98	3,781.02	15.16	13.96	159.21	-229.65	-164.74	237.39	209.99	27.40	8.663		
3,900.00	3,860.20	3,895.75	3,880.27	15.59	14.35	159.15	-238.09	-170.32	244.16	216.01	28.16	8.672		
4,000.00	3,958.91	3,995.52	3,979.53	16.02	14.74	159.09	-246.53	-175.89	250.94	222.03	28.91	8.680		
4,100.00	4,057.62	4,095.29	4,078.78	16.45	15.12	159.04	-254.98	-181.47	257.71	228.05	29.66	8.688		
4,200.00	4,156.34	4,195.06	4,178.04	16.88	15.51	158.99	-263.42	-187.04	264.48	234.07	30.42	8.695		
4,300.00	4,255.05	4,294.83	4,277.30	17.31	15.90	158.94	-271.86	-192.61	271.26	240.08	31.17	8.702		
4,400.00	4,353.76	4,394.60	4,376.55	17.75	16.29	158.90	-280.30	-198.19	278.03	246.10	31.93	8.708		
4,500.00	4,452.48	4,494.37	4,475.81	18.18	16.68	158.85	-288.75	-203.76	284.81	252.12	32.68	8.715		
4,600.00	4,551.19	4,594.14	4,575.06	18.61	17.07	158.81	-297.19	-209.34	291.58	258.14	33.44	8.721		
4,700.00	4,649.90	4,693.91	4,674.32	19.04	17.46	158.77	-305.63	-214.91	298.36	264.16	34.19	8.726		
4,800.00	4,748.62	4,793.68	4,773.57	19.47	17.84	158.74	-314.07	-220.49	305.13	270.18	34.95	8.731		
4,900.00	4,847.33	4,893.45	4,872.83	19.90	18.23	158.70	-322.52	-226.06	311.91	276.20	35.70	8.737		
5,000.00	4,946.04	4,993.22	4,972.09	20.33	18.62	158.67	-330.96	-231.63	318.68	282.22	36.46	8.741		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,044.76	5,092.99	5,071.34	20.76	19.01	158.63	-339.40	-237.21	325.46	288.24	37.21	8.746	
5,200.00	5,143.47	5,192.76	5,170.60	21.20	19.40	158.60	-347.85	-242.78	332.23	294.26	37.97	8.750	
5,300.00	5,242.18	5,292.53	5,269.85	21.63	19.79	158.57	-356.29	-248.36	339.01	300.28	38.72	8.755	
5,400.00	5,340.90	5,392.30	5,369.11	22.06	20.18	158.54	-364.73	-253.93	345.78	306.30	39.48	8.759	
5,500.00	5,439.61	5,492.07	5,468.36	22.49	20.57	158.51	-373.17	-259.50	352.56	312.32	40.23	8.763	
5,600.00	5,538.32	5,591.84	5,567.62	22.92	20.96	158.49	-381.62	-265.08	359.33	318.34	40.99	8.766	
5,700.00	5,637.04	5,691.61	5,666.88	23.35	21.35	158.46	-390.06	-270.65	366.11	324.36	41.75	8.770	
5,800.00	5,735.75	5,785.98	5,760.81	23.79	21.71	158.48	-397.66	-275.67	373.30	330.84	42.46	8.792	
5,900.00	5,834.46	5,875.95	5,850.57	24.22	22.05	158.73	-402.75	-279.03	382.78	339.67	43.11	8.880	
6,008.85	5,941.92	5,973.23	5,947.78	24.69	22.39	159.26	-405.61	-280.92	395.98	352.22	43.75	9.051	
6,100.00	6,032.11	6,057.56	6,032.11	25.07	22.67	159.91	-406.01	-281.18	407.87	363.59	44.28	9.210	
6,200.00	6,131.48	6,156.93	6,131.48	25.47	22.97	160.50	-406.01	-281.18	418.33	373.39	44.94	9.308	
6,300.00	6,231.18	6,256.64	6,231.18	25.83	23.28	160.89	-406.01	-281.18	425.54	379.93	45.61	9.331	
6,400.00	6,331.09	6,356.54	6,331.09	26.18	23.60	161.10	-406.01	-281.18	429.46	383.19	46.27	9.282	
6,468.91	6,400.00	6,425.45	6,400.00	26.38	23.81	-0.51	-406.01	-281.18	430.25	383.53	46.72	9.210	
6,500.00	6,431.09	6,456.54	6,431.09	26.47	23.91	-0.51	-406.01	-281.18	430.25	383.33	46.91	9.171	
6,600.00	6,531.09	6,556.54	6,531.09	26.75	24.22	-0.51	-406.01	-281.18	430.25	382.70	47.55	9.048	
6,692.72	6,623.80	6,649.25	6,623.80	27.01	24.52	-0.51	-406.01	-281.18	430.25	382.10	48.14	8.937	
6,700.00	6,631.09	6,656.53	6,631.08	27.03	24.54	-89.92	-406.01	-281.15	430.25	382.06	48.19	8.928	
6,708.54	6,639.62	6,665.06	6,639.61	27.05	24.57	-89.92	-406.01	-281.01	430.25	382.00	48.24	8.918	
6,750.00	6,681.03	6,706.49	6,680.98	27.17	24.69	-89.92	-405.99	-278.90	430.25	381.74	48.50	8.870	
6,800.00	6,730.69	6,756.46	6,730.61	27.30	24.84	-89.92	-405.93	-273.18	430.25	381.44	48.80	8.816	
6,850.00	6,779.83	6,806.42	6,779.71	27.43	24.98	-89.93	-405.83	-264.01	430.25	381.16	49.09	8.765	
6,900.00	6,828.21	6,856.38	6,828.06	27.56	25.12	-89.93	-405.71	-251.44	430.25	380.88	49.36	8.716	
6,950.00	6,875.59	6,906.35	6,875.41	27.67	25.25	-89.93	-405.55	-235.53	430.24	380.62	49.63	8.670	
7,000.00	6,921.75	6,956.31	6,921.54	27.78	25.37	-89.93	-405.35	-216.36	430.24	380.36	49.89	8.625	
7,050.00	6,966.45	7,006.28	6,966.22	27.88	25.49	-89.93	-405.12	-194.03	430.24	380.09	50.15	8.580	
7,100.00	7,009.49	7,056.25	7,009.24	27.97	25.60	-89.94	-404.87	-168.63	430.24	379.82	50.42	8.534	
7,150.00	7,050.64	7,106.22	7,050.39	28.05	25.70	-89.94	-404.58	-140.29	430.24	379.53	50.71	8.484	
7,200.00	7,089.72	7,156.19	7,089.46	28.13	25.81	-89.94	-404.26	-109.15	430.23	379.20	51.04	8.430	
7,250.00	7,126.53	7,206.16	7,126.26	28.19	25.91	-89.95	-403.92	-75.36	430.23	378.82	51.41	8.368	
7,300.00	7,160.89	7,256.13	7,160.62	28.25	26.03	-89.95	-403.55	-39.09	430.23	378.37	51.86	8.296	
7,350.00	7,192.63	7,306.11	7,192.37	28.30	26.19	-89.95	-403.16	-0.51	430.22	377.83	52.39	8.211	
7,400.00	7,221.60	7,356.09	7,221.35	28.34	26.42	-89.96	-402.74	40.19	430.22	377.19	53.03	8.113	
7,450.00	7,247.66	7,406.07	7,247.43	28.38	26.74	-89.96	-402.31	82.81	430.22	376.43	53.79	7.999	
7,500.00	7,270.68	7,456.05	7,270.47	28.41	27.16	-89.97	-401.86	127.16	430.21	375.54	54.67	7.869	
7,550.00	7,290.54	7,506.04	7,290.36	28.45	27.66	-89.97	-401.39	173.00	430.21	374.50	55.71	7.723	
7,600.00	7,307.16	7,556.02	7,307.01	28.69	28.25	-89.98	-400.91	220.12	430.21	373.32	56.88	7.563	
7,650.00	7,320.45	7,606.01	7,320.33	29.30	28.92	-89.98	-400.42	268.29	430.20	371.99	58.21	7.391	
7,700.00	7,330.35	7,656.01	7,330.26	30.02	29.65	-89.99	-399.93	317.27	430.20	370.52	59.67	7.209	
7,750.00	7,336.80	7,706.00	7,336.75	30.82	30.46	-89.99	-399.42	366.83	430.19	368.93	61.26	7.022	
7,800.00	7,339.78	7,756.00	7,339.77	31.67	31.31	-90.00	-398.92	416.73	430.19	367.22	62.97	6.832	
7,817.72	7,340.00	7,773.71	7,340.00	31.98	31.63	-90.00	-398.74	434.44	430.19	366.59	63.59	6.765	
7,900.00	7,340.00	7,856.00	7,340.00	33.52	33.21	-90.00	-397.90	516.72	430.18	363.48	66.70	6.450	
8,000.00	7,340.00	7,956.00	7,340.00	35.56	35.27	-90.00	-396.88	616.71	430.17	359.38	70.79	6.077	
8,100.00	7,340.00	8,056.00	7,340.00	37.77	37.49	-90.00	-395.87	716.71	430.16	354.96	75.21	5.720	
8,200.00	7,340.00	8,156.00	7,340.00	40.11	39.84	-90.00	-394.85	816.70	430.15	350.26	79.89	5.384	
8,300.00	7,340.00	8,256.00	7,340.00	42.56	42.31	-90.00	-393.83	916.70	430.15	345.34	84.81	5.072	
8,400.00	7,340.00	8,356.00	7,340.00	45.10	44.87	-90.00	-392.82	1,016.69	430.14	340.23	89.91	4.784	
8,500.00	7,340.00	8,456.00	7,340.00	47.73	47.51	-90.00	-391.80	1,116.69	430.13	334.96	95.17	4.519	
8,600.00	7,340.00	8,556.00	7,340.00	50.42	50.22	-90.00	-390.79	1,216.68	430.12	329.55	100.57	4.277	
8,700.00	7,340.00	8,656.00	7,340.00	53.17	52.98	-90.00	-389.77	1,316.68	430.11	324.04	106.08	4.055	

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,340.00	8,756.00	7,340.00	55.96	55.79	-90.00	-388.75	1,416.67	430.10	318.42	111.68	3.851		
8,900.00	7,340.00	8,856.00	7,340.00	58.80	58.64	-90.00	-387.74	1,516.67	430.09	312.72	117.37	3.664		
9,000.00	7,340.00	8,956.00	7,340.00	61.67	61.53	-90.00	-386.72	1,616.66	430.09	306.96	123.13	3.493		
9,100.00	7,340.00	9,056.00	7,340.00	64.58	64.44	-90.00	-385.70	1,716.66	430.08	301.13	128.95	3.335		
9,200.00	7,340.00	9,156.00	7,340.00	67.51	67.38	-90.00	-384.69	1,816.65	430.07	295.24	134.83	3.190		
9,300.00	7,340.00	9,256.00	7,340.00	70.47	70.35	-90.00	-383.67	1,916.65	430.06	289.31	140.75	3.056		
9,400.00	7,340.00	9,356.00	7,340.00	73.44	73.33	-90.00	-382.66	2,016.64	430.05	283.34	146.71	2.931		
9,500.00	7,340.00	9,456.00	7,340.00	76.44	76.34	-90.00	-381.64	2,116.64	430.04	277.33	152.71	2.816		
9,600.00	7,340.00	9,556.00	7,340.00	79.45	79.36	-90.00	-380.62	2,216.63	430.04	271.29	158.74	2.709		
9,700.00	7,340.00	9,656.00	7,340.00	82.48	82.39	-90.00	-379.61	2,316.62	430.03	265.22	164.80	2.609		
9,800.00	7,340.00	9,756.00	7,340.00	85.51	85.44	-90.00	-378.59	2,416.62	430.02	259.13	170.89	2.516		
9,900.00	7,340.00	9,856.00	7,340.00	88.57	88.49	-90.00	-377.57	2,516.61	430.01	253.01	177.00	2.429		
10,000.00	7,340.00	9,956.00	7,340.00	91.63	91.56	-90.00	-376.56	2,616.61	430.00	246.87	183.13	2.348		
10,100.00	7,340.00	10,056.00	7,340.00	94.70	94.64	-90.00	-375.54	2,716.60	429.99	240.71	189.28	2.272		
10,200.00	7,340.00	10,156.00	7,340.00	97.78	97.72	-90.00	-374.53	2,816.60	429.98	234.54	195.45	2.200		
10,300.00	7,340.00	10,256.00	7,340.00	100.87	100.82	-90.00	-373.51	2,916.59	429.98	228.35	201.63	2.133		
10,400.00	7,340.00	10,356.00	7,340.00	103.96	103.92	-90.00	-372.49	3,016.59	429.97	222.14	207.82	2.069		
10,500.00	7,340.00	10,456.00	7,340.00	107.06	107.02	-90.00	-371.48	3,116.58	429.96	215.93	214.03	2.009		
10,600.00	7,340.00	10,556.00	7,340.00	110.17	110.13	-90.00	-370.46	3,216.58	429.95	209.70	220.25	1.952		
10,700.00	7,340.00	10,656.00	7,340.00	113.28	113.25	-90.00	-369.44	3,316.57	429.94	203.46	226.48	1.898		
10,800.00	7,340.00	10,756.00	7,340.00	116.40	116.37	-90.00	-368.43	3,416.57	429.93	197.21	232.72	1.847		
10,900.00	7,340.00	10,856.00	7,340.00	119.52	119.50	-90.00	-367.41	3,516.56	429.92	190.95	238.97	1.799		
11,000.00	7,340.00	10,956.00	7,340.00	122.65	122.63	-90.00	-366.40	3,616.56	429.92	184.69	245.23	1.753		
11,100.00	7,340.00	11,056.00	7,340.00	125.78	125.76	-90.00	-365.38	3,716.55	429.91	178.41	251.50	1.709		
11,200.00	7,340.00	11,156.00	7,340.00	128.91	128.90	-90.00	-364.36	3,816.55	429.90	172.13	257.77	1.668		
11,300.00	7,340.00	11,256.00	7,340.00	132.05	132.04	-90.00	-363.35	3,916.54	429.89	165.84	264.05	1.628		
11,400.00	7,340.00	11,356.00	7,340.00	135.19	135.18	-90.00	-362.33	4,016.54	429.88	159.55	270.33	1.590		
11,500.00	7,340.00	11,456.00	7,340.00	138.34	138.33	-90.00	-361.31	4,116.53	429.87	153.25	276.63	1.554		
11,600.00	7,340.00	11,556.00	7,340.00	141.49	141.48	-90.00	-360.30	4,216.53	429.87	146.94	282.92	1.519		
11,700.00	7,340.00	11,656.00	7,340.00	144.63	144.63	-90.00	-359.28	4,316.52	429.86	140.63	289.23	1.486 Level 3		
11,800.00	7,340.00	11,756.00	7,340.00	147.79	147.79	-90.00	-358.27	4,416.52	429.85	134.31	295.53	1.454 Level 3		
11,886.52	7,340.00	11,842.52	7,340.00	150.52	149.95	-90.00	-357.39	4,503.03	429.84	129.42	300.42	1.431 Level 3, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	1.13	9.85	0.20	9.85					
100.00	100.00	100.00	100.00	0.14	0.14	1.13	9.85	0.20	9.85	9.57	0.28	35.678		
200.00	200.00	200.00	200.00	0.50	0.50	1.13	9.85	0.20	9.85	8.85	0.99	9.918		
300.00	300.00	300.00	300.00	0.85	0.85	1.13	9.85	0.20	9.85	8.14	1.71	5.759		
400.00	400.00	400.00	400.00	1.21	1.21	1.13	9.85	0.20	9.85	7.42	2.43	4.058		
500.00	500.00	500.00	500.00	1.57	1.57	1.13	9.85	0.20	9.85	6.70	3.14	3.132 CC		
600.00	599.98	599.98	599.98	1.91	1.93	165.35	9.85	0.20	11.53	7.68	3.84	2.998		
700.00	699.84	700.36	700.34	2.25	2.27	168.16	8.23	-0.50	14.96	10.43	4.53	3.300		
800.00	799.45	800.86	800.70	2.60	2.61	168.97	3.39	-2.60	18.47	13.24	5.24	3.528		
900.00	898.70	901.48	900.92	2.95	2.96	168.73	-4.70	-6.09	22.04	16.08	5.96	3.701		
960.06	958.08	961.97	961.01	3.18	3.17	168.27	-11.12	-8.87	24.20	17.81	6.40	3.785		
1,000.00	997.51	1,002.21	1,000.89	3.33	3.31	167.74	-16.03	-10.99	25.39	18.70	6.69	3.797		
1,100.00	1,096.22	1,102.18	1,099.88	3.72	3.68	166.21	-28.81	-16.52	27.74	20.35	7.38	3.756		
1,200.00	1,194.94	1,202.15	1,198.88	4.12	4.06	164.92	-41.60	-22.05	30.11	22.01	8.10	3.719		
1,300.00	1,293.65	1,302.12	1,297.87	4.53	4.45	163.81	-54.39	-27.58	32.49	23.67	8.82	3.685		
1,400.00	1,392.36	1,402.09	1,396.87	4.94	4.84	162.86	-67.18	-33.11	34.88	25.34	9.54	3.655		
1,500.00	1,491.08	1,502.06	1,495.86	5.35	5.24	162.03	-79.96	-38.64	37.28	27.00	10.28	3.628		
1,600.00	1,589.79	1,602.03	1,594.86	5.77	5.63	161.30	-92.75	-44.17	39.69	28.67	11.02	3.603		
1,700.00	1,688.50	1,702.00	1,693.85	6.19	6.03	160.65	-105.54	-49.69	42.10	30.34	11.76	3.580		
1,800.00	1,787.22	1,801.97	1,792.84	6.61	6.44	160.08	-118.32	-55.22	44.52	32.01	12.51	3.560		
1,900.00	1,885.93	1,901.94	1,891.84	7.03	6.84	159.56	-131.11	-60.75	46.94	33.69	13.26	3.541		
2,000.00	1,984.64	2,001.91	1,990.83	7.45	7.25	159.09	-143.90	-66.28	49.37	35.36	14.01	3.524		
2,100.00	2,083.36	2,101.88	2,089.83	7.88	7.65	158.67	-156.69	-71.81	51.80	37.03	14.76	3.508		
2,200.00	2,182.07	2,201.85	2,188.82	8.30	8.06	158.29	-169.47	-77.34	54.23	38.71	15.52	3.494		
2,300.00	2,280.78	2,301.82	2,287.82	8.73	8.47	157.93	-182.26	-82.87	56.66	40.38	16.28	3.481		
2,400.00	2,379.50	2,401.79	2,386.81	9.15	8.88	157.61	-195.05	-88.40	59.10	42.06	17.04	3.469		
2,500.00	2,478.21	2,501.76	2,485.81	9.58	9.29	157.31	-207.83	-93.93	61.53	43.73	17.80	3.457		
2,600.00	2,576.92	2,601.73	2,584.80	10.01	9.70	157.04	-220.62	-99.46	63.97	45.41	18.56	3.447		
2,700.00	2,675.64	2,701.70	2,683.79	10.44	10.11	156.79	-233.41	-104.98	66.41	47.09	19.32	3.437		
2,800.00	2,774.35	2,801.67	2,782.79	10.86	10.52	156.55	-246.20	-110.51	68.85	48.76	20.09	3.427		
2,900.00	2,873.06	2,901.64	2,881.78	11.29	10.93	156.33	-258.98	-116.04	71.29	50.44	20.85	3.419		
3,000.00	2,971.78	3,001.61	2,980.78	11.72	11.35	156.12	-271.77	-121.57	73.74	52.12	21.62	3.411		
3,100.00	3,070.49	3,101.58	3,079.77	12.15	11.76	155.93	-284.56	-127.10	76.18	53.80	22.39	3.403		
3,200.00	3,169.20	3,201.55	3,178.77	12.58	12.17	155.75	-297.34	-132.63	78.63	55.47	23.15	3.396		
3,300.00	3,267.92	3,301.52	3,277.76	13.01	12.58	155.58	-310.13	-138.16	81.07	57.15	23.92	3.389		
3,400.00	3,366.63	3,401.49	3,376.75	13.44	13.00	155.42	-322.92	-143.69	83.52	58.83	24.69	3.383		
3,500.00	3,465.34	3,501.46	3,475.75	13.87	13.41	155.27	-335.71	-149.22	85.97	60.51	25.46	3.377		
3,600.00	3,564.06	3,601.42	3,574.74	14.30	13.83	155.13	-348.49	-154.74	88.41	62.19	26.23	3.371		
3,700.00	3,662.77	3,701.39	3,673.74	14.73	14.24	155.00	-361.28	-160.27	90.86	63.86	27.00	3.366		
3,800.00	3,761.48	3,801.36	3,772.73	15.16	14.65	154.87	-374.07	-165.80	93.31	65.54	27.77	3.361		
3,900.00	3,860.20	3,901.33	3,871.73	15.59	15.07	154.75	-386.85	-171.33	95.76	67.22	28.54	3.356		
4,000.00	3,958.91	4,001.30	3,970.72	16.02	15.48	154.63	-399.64	-176.86	98.21	68.90	29.31	3.351		
4,100.00	4,057.62	4,101.27	4,069.71	16.45	15.90	154.52	-412.43	-182.39	100.66	70.58	30.08	3.347		
4,200.00	4,156.34	4,201.24	4,168.71	16.88	16.31	154.42	-425.22	-187.92	103.11	72.26	30.85	3.342		
4,300.00	4,255.05	4,301.21	4,267.70	17.31	16.72	154.32	-438.00	-193.45	105.56	73.94	31.62	3.338		
4,400.00	4,353.76	4,401.18	4,366.70	17.75	17.14	154.23	-450.79	-198.98	108.01	75.62	32.39	3.334		
4,500.00	4,452.48	4,501.15	4,465.69	18.18	17.55	154.13	-463.58	-204.51	110.46	77.30	33.16	3.331		
4,600.00	4,551.19	4,601.12	4,564.69	18.61	17.97	154.05	-476.36	-210.03	112.91	78.97	33.94	3.327		
4,700.00	4,649.90	4,701.09	4,663.68	19.04	18.38	153.97	-489.15	-215.56	115.36	80.65	34.71	3.324		
4,800.00	4,748.62	4,801.06	4,762.68	19.47	18.80	153.89	-501.94	-221.09	117.81	82.33	35.48	3.321		
4,900.00	4,847.33	4,901.03	4,861.67	19.90	19.21	153.81	-514.73	-226.62	120.26	84.01	36.25	3.317		
5,000.00	4,946.04	5,001.00	4,960.66	20.33	19.63	153.74	-527.51	-232.15	122.72	85.69	37.02	3.314		

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 3L-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 3L-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	5,044.76	5,100.97	5,059.66	20.76	20.04	153.67	-540.30	-237.68	125.17	87.37	37.80	3.312	
5,200.00	5,143.47	5,200.94	5,158.65	21.20	20.46	153.60	-553.09	-243.21	127.62	89.05	38.57	3.309	
5,300.00	5,242.18	5,300.91	5,257.65	21.63	20.87	153.53	-565.87	-248.74	130.07	90.73	39.34	3.306	
5,400.00	5,340.90	5,400.88	5,356.64	22.06	21.29	153.47	-578.66	-254.27	132.53	92.41	40.12	3.304	
5,500.00	5,439.61	5,500.85	5,455.64	22.49	21.70	153.41	-591.45	-259.79	134.98	94.09	40.89	3.301	
5,600.00	5,538.32	5,600.82	5,554.63	22.92	22.12	153.35	-604.24	-265.32	137.43	95.77	41.66	3.299	
5,700.00	5,637.04	5,698.66	5,651.57	23.35	22.52	153.40	-616.33	-270.55	140.29	97.87	42.42	3.307	
5,800.00	5,735.75	5,794.41	5,746.80	23.79	22.90	154.03	-625.56	-274.55	145.70	102.62	43.09	3.382	
5,900.00	5,834.46	5,889.72	5,841.85	24.22	23.25	155.21	-631.84	-277.26	154.01	110.34	43.67	3.527	
6,008.85	5,941.92	5,992.70	5,944.75	24.69	23.61	156.95	-635.37	-278.78	166.42	122.22	44.21	3.765	
6,100.00	6,032.11	6,080.06	6,032.11	25.07	23.88	158.56	-635.85	-278.99	178.10	133.45	44.65	3.989	
6,200.00	6,131.48	6,179.43	6,131.48	25.47	24.16	159.86	-635.85	-278.99	188.50	143.25	45.25	4.166	
6,300.00	6,231.18	6,279.13	6,231.18	25.83	24.45	160.68	-635.85	-278.99	195.69	149.81	45.88	4.266	
6,400.00	6,331.09	6,379.04	6,331.09	26.18	24.75	161.10	-635.85	-278.99	199.61	153.09	46.52	4.291	
6,468.91	6,400.00	6,447.95	6,400.00	26.38	24.95	-0.47	-635.85	-278.99	200.39	153.43	46.96	4.267	
6,500.00	6,431.09	6,479.04	6,431.09	26.47	25.04	-0.47	-635.85	-278.99	200.39	153.24	47.16	4.250	
6,600.00	6,531.09	6,579.04	6,531.09	26.75	25.34	-0.47	-635.85	-278.99	200.39	152.61	47.79	4.194	
6,692.72	6,623.80	6,671.75	6,623.80	27.01	25.62	-0.47	-635.85	-278.99	200.39	152.02	48.37	4.143	
6,700.00	6,631.09	6,679.04	6,631.09	27.03	25.64	-89.89	-635.85	-278.99	200.39	151.97	48.42	4.139	
6,716.39	6,647.47	6,695.42	6,647.47	27.07	25.69	-90.00	-635.85	-278.99	200.39	151.86	48.53	4.129	
6,750.00	6,681.03	6,728.98	6,681.03	27.17	25.79	-90.54	-635.85	-278.99	200.40	151.63	48.77	4.109	
6,800.00	6,730.69	6,779.00	6,730.69	27.30	25.94	-91.89	-635.84	-278.03	200.50	151.33	49.17	4.078	
6,850.00	6,779.83	6,829.40	6,779.83	27.43	26.09	-93.28	-635.80	-273.64	200.72	151.15	49.57	4.049	
6,900.00	6,828.21	6,880.16	6,831.35	27.56	26.23	-94.64	-635.72	-265.66	201.06	151.09	49.97	4.024	
6,950.00	6,875.59	6,931.27	6,881.12	27.67	26.36	-95.99	-635.60	-254.07	201.50	151.14	50.36	4.001	
7,000.00	6,921.75	6,982.74	6,930.27	27.78	26.49	-97.30	-635.45	-238.83	202.04	151.31	50.73	3.982	
7,050.00	6,966.45	7,034.56	6,978.52	27.88	26.61	-98.58	-635.25	-219.97	202.67	151.59	51.09	3.967	
7,100.00	7,009.49	7,086.74	7,025.60	27.97	26.73	-99.81	-635.03	-197.50	203.38	151.96	51.42	3.955	
7,150.00	7,050.64	7,139.27	7,071.22	28.05	26.83	-100.99	-634.76	-171.49	204.15	152.42	51.73	3.946	
7,200.00	7,089.72	7,192.14	7,115.08	28.13	26.93	-102.10	-634.46	-141.99	204.96	152.93	52.04	3.939	
7,250.00	7,126.53	7,245.34	7,156.90	28.19	27.02	-103.16	-634.13	-109.14	205.81	153.47	52.34	3.932	
7,300.00	7,160.89	7,298.85	7,196.40	28.25	27.10	-104.14	-633.76	-73.04	206.66	154.01	52.65	3.925	
7,350.00	7,192.63	7,352.67	7,233.28	28.30	27.18	-105.04	-633.36	-33.87	207.51	154.50	53.01	3.915	
7,400.00	7,221.60	7,406.77	7,267.29	28.34	27.25	-105.87	-632.94	8.18	208.33	154.90	53.43	3.899	
7,450.00	7,247.66	7,461.13	7,298.17	28.38	27.34	-106.61	-632.48	52.90	209.11	155.17	53.94	3.877	
7,500.00	7,270.68	7,515.73	7,325.69	28.41	27.48	-107.27	-632.00	100.04	209.83	155.27	54.57	3.846	
7,550.00	7,290.54	7,570.54	7,349.61	28.45	27.80	-107.83	-631.50	149.34	210.48	155.15	55.33	3.804	
7,600.00	7,307.16	7,625.53	7,369.76	28.69	28.34	-108.31	-630.98	200.49	211.04	154.78	56.27	3.751	
7,650.00	7,320.45	7,680.67	7,385.96	29.30	29.01	-108.69	-630.45	253.18	211.50	154.13	57.37	3.686	
7,700.00	7,330.35	7,735.94	7,398.09	30.02	29.79	-108.97	-629.90	307.08	211.85	153.19	58.67	3.611	
7,750.00	7,336.80	7,791.28	7,406.03	30.82	30.65	-109.16	-629.34	361.84	212.09	151.95	60.14	3.527	
7,800.00	7,339.78	7,846.68	7,409.72	31.67	31.58	-109.25	-628.78	417.10	212.20	150.42	61.78	3.435	
7,817.72	7,340.00	7,866.32	7,410.00	31.98	31.93	-109.26	-628.58	436.73	212.21	149.81	62.40	3.401	
7,900.00	7,340.00	7,948.64	7,410.00	33.52	33.49	-109.26	-627.74	519.05	212.20	146.88	65.32	3.249	
8,000.00	7,340.00	8,048.64	7,410.00	35.56	35.53	-109.26	-626.73	619.05	212.19	143.04	69.15	3.069	
8,100.00	7,340.00	8,148.64	7,410.00	37.77	37.74	-109.26	-625.71	719.04	212.19	138.90	73.29	2.895	
8,200.00	7,340.00	8,248.64	7,410.00	40.11	40.08	-109.26	-624.69	819.04	212.18	134.50	77.68	2.731	
8,300.00	7,340.00	8,348.64	7,410.00	42.56	42.53	-109.26	-623.68	919.03	212.17	129.88	82.29	2.578	
8,400.00	7,340.00	8,448.64	7,410.00	45.10	45.08	-109.26	-622.66	1,019.03	212.16	125.09	87.07	2.437	
8,500.00	7,340.00	8,548.64	7,410.00	47.73	47.70	-109.27	-621.65	1,119.02	212.15	120.14	92.01	2.306	
8,600.00	7,340.00	8,648.64	7,410.00	50.42	50.40	-109.27	-620.63	1,219.02	212.15	115.07	97.08	2.185	
8,700.00	7,340.00	8,748.64	7,410.00	53.17	53.15	-109.27	-619.61	1,319.01	212.14	109.88	102.26	2.075	

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Separation Factor		
8,800.00	7,340.00	8,848.64	7,410.00	55.96	55.95	-109.27	-618.60	1,419.01	212.13	104.60	107.53	1.973		
8,900.00	7,340.00	8,948.64	7,410.00	58.80	58.79	-109.27	-617.58	1,519.00	212.12	99.24	112.88	1.879		
9,000.00	7,340.00	9,048.64	7,410.00	61.67	61.66	-109.27	-616.56	1,619.00	212.11	93.81	118.30	1.793		
9,100.00	7,340.00	9,148.64	7,410.00	64.58	64.57	-109.27	-615.55	1,718.99	212.11	88.32	123.78	1.714		
9,200.00	7,340.00	9,248.64	7,410.00	67.51	67.50	-109.27	-614.53	1,818.99	212.10	82.78	129.32	1.640		
9,300.00	7,340.00	9,348.64	7,410.00	70.47	70.46	-109.27	-613.52	1,918.98	212.09	77.19	134.90	1.572		
9,400.00	7,340.00	9,448.64	7,410.00	73.44	73.44	-109.27	-612.50	2,018.98	212.08	71.56	140.52	1.509		
9,500.00	7,340.00	9,548.64	7,410.00	76.44	76.44	-109.27	-611.48	2,118.97	212.07	65.90	146.17	1.451 Level 3		
9,600.00	7,340.00	9,648.64	7,410.00	79.45	79.45	-109.27	-610.47	2,218.97	212.07	60.20	151.86	1.396 Level 3		
9,700.00	7,340.00	9,748.64	7,410.00	82.48	82.48	-109.27	-609.45	2,318.96	212.06	54.48	157.58	1.346 Level 3		
9,800.00	7,340.00	9,848.64	7,410.00	85.51	85.52	-109.28	-608.43	2,418.96	212.05	48.73	163.32	1.298 Level 3		
9,900.00	7,340.00	9,948.64	7,410.00	88.57	88.57	-109.28	-607.42	2,518.95	212.04	42.95	169.09	1.254 Level 3		
10,000.00	7,340.00	10,048.64	7,410.00	91.63	91.64	-109.28	-606.40	2,618.95	212.03	37.16	174.88	1.212 Level 2		
10,100.00	7,340.00	10,148.64	7,410.00	94.70	94.71	-109.28	-605.39	2,718.94	212.03	31.34	180.68	1.173 Level 2		
10,200.00	7,340.00	10,248.64	7,410.00	97.78	97.79	-109.28	-604.37	2,818.94	212.02	25.51	186.50	1.137 Level 2		
10,300.00	7,340.00	10,348.64	7,410.00	100.87	100.88	-109.28	-603.35	2,918.93	212.01	19.67	192.34	1.102 Level 2		
10,400.00	7,340.00	10,448.64	7,410.00	103.96	103.97	-109.28	-602.34	3,018.92	212.00	13.81	198.19	1.070 Level 2		
10,500.00	7,340.00	10,548.64	7,410.00	107.06	107.08	-109.28	-601.32	3,118.92	211.99	7.93	204.06	1.039 Level 2		
10,600.00	7,340.00	10,648.64	7,410.00	110.17	110.19	-109.28	-600.30	3,218.91	211.99	2.05	209.93	1.010 Level 2		
10,700.00	7,340.00	10,748.64	7,410.00	113.28	113.30	-109.28	-599.29	3,318.91	211.98	-3.84	215.82	0.982 Level 1		
10,800.00	7,340.00	10,848.64	7,410.00	116.40	116.42	-109.28	-598.27	3,418.90	211.97	-9.75	221.72	0.956 Level 1		
10,900.00	7,340.00	10,948.64	7,410.00	119.52	119.54	-109.28	-597.26	3,518.90	211.96	-15.66	227.62	0.931 Level 1		
11,000.00	7,340.00	11,048.64	7,410.00	122.65	122.67	-109.28	-596.24	3,618.89	211.95	-21.59	233.54	0.908 Level 1		
11,100.00	7,340.00	11,148.64	7,410.00	125.78	125.80	-109.29	-595.22	3,718.89	211.95	-27.52	239.46	0.885 Level 1		
11,200.00	7,340.00	11,248.64	7,410.00	128.91	128.94	-109.29	-594.21	3,818.88	211.94	-33.45	245.39	0.864 Level 1		
11,300.00	7,340.00	11,348.64	7,410.00	132.05	132.08	-109.29	-593.19	3,918.88	211.93	-39.40	251.33	0.843 Level 1		
11,400.00	7,340.00	11,448.64	7,410.00	135.19	135.22	-109.29	-592.17	4,018.87	211.92	-45.35	257.27	0.824 Level 1		
11,500.00	7,340.00	11,548.64	7,410.00	138.34	138.36	-109.29	-591.16	4,118.87	211.91	-51.30	263.22	0.805 Level 1		
11,600.00	7,340.00	11,648.64	7,410.00	141.49	141.51	-109.29	-590.14	4,218.86	211.91	-57.27	269.17	0.787 Level 1		
11,700.00	7,340.00	11,748.64	7,410.00	144.63	144.66	-109.29	-589.13	4,318.86	211.90	-63.23	275.13	0.770 Level 1		
11,800.00	7,340.00	11,848.64	7,410.00	147.79	147.81	-109.29	-588.11	4,418.85	211.89	-69.20	281.09	0.754 Level 1		
11,886.52	7,340.00	11,935.16	7,410.00	150.52	150.07	-109.29	-587.23	4,505.37	211.88	-73.93	285.81	0.741 Level 1, ES, SF		

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	179.50	-10.19	0.09	10.19					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-10.19	0.09	10.19	9.92	0.28	36.922		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-10.19	0.09	10.19	9.20	0.99	10.263		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-10.19	0.09	10.19	8.48	1.71	5.960		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-10.19	0.09	10.19	7.76	2.43	4.199 CC		
500.00	500.00	499.62	499.60	1.57	1.55	-178.11	-11.86	-0.39	11.87	8.72	3.15	3.771		
600.00	599.98	599.10	598.94	1.91	1.89	-13.52	-16.84	-1.83	15.27	11.40	3.86	3.951		
700.00	699.84	698.46	697.92	2.25	2.24	-12.08	-25.12	-4.21	18.70	14.12	4.59	4.078		
800.00	799.45	797.70	796.43	2.60	2.60	-11.44	-36.68	-7.54	22.14	16.82	5.32	4.162		
900.00	898.70	897.09	894.63	2.95	2.98	-11.35	-51.38	-11.77	25.43	19.38	6.04	4.208		
960.06	958.08	957.14	953.88	3.18	3.22	-11.84	-60.75	-14.47	26.26	19.80	6.46	4.068		
1,000.00	997.51	997.08	993.29	3.33	3.38	-12.35	-66.98	-16.26	26.40	19.67	6.73	3.922		
1,100.00	1,096.22	1,097.08	1,091.96	3.72	3.78	-13.60	-82.58	-20.75	26.77	19.34	7.44	3.599		
1,200.00	1,194.94	1,197.08	1,190.63	4.12	4.20	-14.81	-98.17	-25.25	27.16	19.00	8.16	3.330		
1,300.00	1,293.65	1,297.08	1,289.31	4.53	4.61	-15.99	-113.77	-29.74	27.55	18.67	8.88	3.102		
1,400.00	1,392.36	1,397.07	1,387.98	4.94	5.03	-17.13	-129.37	-34.23	27.96	18.35	9.62	2.908		
1,500.00	1,491.08	1,497.07	1,486.65	5.35	5.45	-18.24	-144.97	-38.72	28.38	18.02	10.36	2.740		
1,600.00	1,589.79	1,597.07	1,585.32	5.77	5.88	-19.32	-160.57	-43.21	28.81	17.71	11.10	2.595		
1,700.00	1,688.50	1,697.07	1,683.99	6.19	6.30	-20.37	-176.16	-47.70	29.25	17.39	11.85	2.467		
1,800.00	1,787.22	1,797.06	1,782.66	6.61	6.73	-21.38	-191.76	-52.19	29.69	17.08	12.61	2.354		
1,900.00	1,885.93	1,897.06	1,881.34	7.03	7.15	-22.37	-207.36	-56.69	30.15	16.78	13.37	2.255		
2,000.00	1,984.64	1,997.06	1,980.01	7.45	7.58	-23.32	-222.96	-61.18	30.62	16.48	14.14	2.165		
2,100.00	2,083.36	2,097.06	2,078.68	7.88	8.01	-24.25	-238.55	-65.67	31.09	16.18	14.91	2.085		
2,200.00	2,182.07	2,197.05	2,177.35	8.30	8.44	-25.15	-254.15	-70.16	31.57	15.89	15.68	2.013		
2,300.00	2,280.78	2,297.05	2,276.02	8.73	8.87	-26.02	-269.75	-74.65	32.06	15.60	16.46	1.948		
2,400.00	2,379.50	2,397.05	2,374.69	9.15	9.30	-26.86	-285.35	-79.14	32.56	15.31	17.24	1.888		
2,500.00	2,478.21	2,497.05	2,473.36	9.58	9.73	-27.68	-300.95	-83.63	33.06	15.03	18.03	1.834		
2,600.00	2,576.92	2,597.04	2,572.04	10.01	10.16	-28.47	-316.54	-88.12	33.57	14.75	18.81	1.784		
2,700.00	2,675.64	2,697.04	2,670.71	10.44	10.59	-29.24	-332.14	-92.62	34.09	14.48	19.61	1.739		
2,800.00	2,774.35	2,797.04	2,769.38	10.86	11.02	-29.99	-347.74	-97.11	34.61	14.21	20.40	1.697		
2,900.00	2,873.06	2,897.04	2,868.05	11.29	11.46	-30.72	-363.34	-101.60	35.13	13.94	21.19	1.658		
3,000.00	2,971.78	2,997.04	2,966.72	11.72	11.89	-31.42	-378.94	-106.09	35.67	13.67	21.99	1.622		
3,100.00	3,070.49	3,097.03	3,065.39	12.15	12.32	-32.10	-394.53	-110.58	36.21	13.41	22.79	1.588		
3,200.00	3,169.20	3,197.03	3,164.06	12.58	12.75	-32.76	-410.13	-115.07	36.75	13.15	23.60	1.557		
3,300.00	3,267.92	3,297.03	3,262.74	13.01	13.18	-33.41	-425.73	-119.56	37.30	12.89	24.40	1.528		
3,400.00	3,366.63	3,397.03	3,361.41	13.44	13.62	-34.03	-441.33	-124.06	37.85	12.64	25.21	1.501		
3,500.00	3,465.34	3,497.02	3,460.08	13.87	14.05	-34.64	-456.92	-128.55	38.41	12.38	26.02	1.476 Level 3		
3,600.00	3,564.06	3,597.02	3,558.75	14.30	14.48	-35.23	-472.52	-133.04	38.97	12.13	26.83	1.452 Level 3		
3,700.00	3,662.77	3,697.02	3,657.42	14.73	14.92	-35.80	-488.12	-137.53	39.53	11.89	27.65	1.430 Level 3		
3,800.00	3,761.48	3,797.02	3,756.09	15.16	15.35	-36.35	-503.72	-142.02	40.10	11.64	28.46	1.409 Level 3		
3,900.00	3,860.20	3,897.01	3,854.76	15.59	15.78	-36.89	-519.32	-146.51	40.67	11.39	29.28	1.389 Level 3		
4,000.00	3,958.91	3,997.01	3,953.44	16.02	16.21	-37.42	-534.91	-151.00	41.25	11.15	30.10	1.371 Level 3		
4,100.00	4,057.62	4,097.01	4,052.11	16.45	16.65	-37.93	-550.51	-155.49	41.83	10.91	30.92	1.353 Level 3		
4,200.00	4,156.34	4,197.01	4,150.78	16.88	17.08	-38.43	-566.11	-159.99	42.41	10.67	31.74	1.336 Level 3		
4,300.00	4,255.05	4,297.00	4,249.45	17.31	17.51	-38.91	-581.71	-164.48	43.00	10.44	32.56	1.320 Level 3		
4,400.00	4,353.76	4,397.00	4,348.12	17.75	17.95	-39.38	-597.31	-168.97	43.59	10.20	33.39	1.306 Level 3		
4,500.00	4,452.48	4,497.00	4,446.79	18.18	18.38	-39.84	-612.90	-173.46	44.18	9.97	34.21	1.291 Level 3		
4,600.00	4,551.19	4,597.00	4,545.47	18.61	18.81	-40.28	-628.50	-177.95	44.77	9.73	35.04	1.278 Level 3		
4,700.00	4,649.90	4,696.99	4,644.14	19.04	19.25	-40.72	-644.10	-182.44	45.37	9.50	35.87	1.265 Level 3		
4,800.00	4,748.62	4,796.99	4,742.81	19.47	19.68	-41.14	-659.70	-186.93	45.97	9.27	36.69	1.253 Level 3		
4,900.00	4,847.33	4,896.99	4,841.48	19.90	20.12	-41.55	-675.29	-191.43	46.57	9.05	37.52	1.241 Level 2		
5,000.00	4,946.04	4,996.99	4,940.15	20.33	20.55	-41.95	-690.89	-195.92	47.18	8.82	38.35	1.230 Level 2		

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 3L-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 3L-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									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning			
5,100.00	5,044.76	5,096.99	5,038.82	20.76	20.98	-42.34	-706.49	-200.41	47.78	8.60	39.19	1.219	Level 2			
5,200.00	5,143.47	5,196.98	5,137.49	21.20	21.42	-42.73	-722.09	-204.90	48.39	8.37	40.02	1.209	Level 2			
5,300.00	5,242.18	5,296.98	5,236.17	21.63	21.85	-43.10	-737.69	-209.39	49.00	8.15	40.85	1.199	Level 2			
5,400.00	5,340.90	5,396.98	5,334.84	22.06	22.28	-43.46	-753.28	-213.88	49.61	7.93	41.69	1.190	Level 2			
5,500.00	5,439.61	5,496.98	5,433.51	22.49	22.72	-43.81	-768.88	-218.37	50.23	7.71	42.52	1.181	Level 2			
5,600.00	5,538.32	5,596.97	5,532.18	22.92	23.15	-44.16	-784.48	-222.86	50.85	7.49	43.36	1.173	Level 2			
5,700.00	5,637.04	5,696.97	5,630.85	23.35	23.59	-44.50	-800.08	-227.36	51.46	7.27	44.19	1.165	Level 2			
5,800.00	5,735.75	5,796.97	5,729.52	23.79	24.02	-44.82	-815.68	-231.85	52.08	7.05	45.03	1.157	Level 2			
5,900.00	5,834.46	5,896.97	5,828.19	24.22	24.45	-45.15	-831.27	-236.34	52.71	6.84	45.87	1.149	Level 2			
6,008.85	5,941.92	6,005.82	5,935.60	24.69	24.93	-45.49	-848.25	-241.23	53.39	6.61	46.78	1.141	Level 2			
6,100.00	6,032.11	6,096.94	6,025.52	25.07	25.32	-44.71	-862.47	-245.32	54.98	7.55	47.43	1.159	Level 2			
6,200.00	6,131.48	6,196.80	6,124.05	25.47	25.76	-41.69	-878.04	-249.81	59.18	11.28	47.90	1.235	Level 2			
6,300.00	6,231.18	6,296.42	6,222.35	25.83	26.19	-37.23	-893.58	-254.28	66.28	18.07	48.21	1.375	Level 3			
6,400.00	6,331.09	6,395.68	6,320.29	26.18	26.62	-32.25	-909.06	-258.74	76.63	28.17	48.45	1.581				
6,468.91	6,400.00	6,463.81	6,387.52	26.38	26.91	169.44	-919.69	-261.80	85.80	37.17	48.63	1.764				
6,500.00	6,431.09	6,494.48	6,417.78	26.47	27.05	170.87	-924.47	-263.18	90.35	41.63	48.73	1.854				
6,600.00	6,531.09	6,593.15	6,515.15	26.75	27.48	174.63	-939.87	-267.61	105.30	56.18	49.11	2.144				
6,692.72	6,623.80	6,684.64	6,605.42	27.01	27.87	177.26	-954.14	-271.72	119.45	69.89	49.56	2.410				
6,700.00	6,631.09	6,691.83	6,612.51	27.03	27.90	87.96	-955.26	-272.04	120.57	70.98	49.60	2.431				
6,750.00	6,681.03	6,741.00	6,661.03	27.17	28.12	89.50	-962.93	-274.25	128.28	78.48	49.80	2.576				
6,800.00	6,730.69	6,790.17	6,709.58	27.30	28.33	91.76	-970.59	-275.31	136.21	86.24	49.97	2.726				
6,850.00	6,779.83	6,839.83	6,758.58	27.43	28.53	93.77	-978.29	-273.02	144.38	94.20	50.18	2.877				
6,900.00	6,828.21	6,890.01	6,807.81	27.56	28.72	95.52	-985.99	-267.22	152.71	102.30	50.41	3.030				
6,950.00	6,875.59	6,940.72	6,857.05	27.67	28.89	97.06	-993.66	-257.83	161.11	110.47	50.64	3.181				
7,000.00	6,921.75	6,991.99	6,906.03	27.78	29.06	98.40	-1,001.24	-244.77	169.52	118.65	50.87	3.332				
7,050.00	6,966.45	7,043.84	6,954.50	27.88	29.21	99.56	-1,008.71	-228.00	177.87	126.79	51.08	3.482				
7,100.00	7,009.49	7,096.27	7,002.18	27.97	29.36	100.58	-1,016.02	-207.47	186.08	134.81	51.27	3.630				
7,150.00	7,050.64	7,149.31	7,048.78	28.05	29.49	101.47	-1,023.12	-183.18	194.09	142.66	51.42	3.774				
7,200.00	7,089.72	7,202.95	7,093.97	28.13	29.62	102.24	-1,029.95	-155.12	201.83	150.27	51.56	3.915				
7,250.00	7,126.53	7,257.20	7,137.45	28.19	29.73	102.91	-1,036.48	-123.36	209.24	157.56	51.68	4.049				
7,300.00	7,160.89	7,312.05	7,178.86	28.25	29.83	103.48	-1,042.65	-87.95	216.26	164.46	51.80	4.175				
7,350.00	7,192.63	7,367.48	7,217.88	28.30	29.92	103.98	-1,048.41	-49.02	222.84	170.88	51.96	4.289				
7,400.00	7,221.60	7,423.48	7,254.16	28.34	30.00	104.41	-1,053.69	-6.72	228.92	176.74	52.18	4.387				
7,450.00	7,247.66	7,480.00	7,287.37	28.38	30.08	104.77	-1,058.47	38.76	234.45	181.97	52.49	4.467				
7,500.00	7,270.68	7,537.03	7,317.18	28.41	30.15	105.08	-1,062.67	87.17	239.39	186.48	52.92	4.524				
7,550.00	7,290.54	7,594.50	7,343.28	28.45	30.23	105.33	-1,066.27	138.23	243.69	190.19	53.50	4.555				
7,600.00	7,307.16	7,652.37	7,365.40	28.69	30.34	105.54	-1,069.21	191.60	247.32	193.04	54.28	4.556				
7,650.00	7,320.45	7,710.57	7,383.28	29.30	30.55	105.71	-1,071.47	246.92	250.25	194.98	55.27	4.528				
7,700.00	7,330.35	7,769.03	7,396.72	30.02	31.02	105.83	-1,073.01	303.78	252.44	195.97	56.47	4.470				
7,750.00	7,336.80	7,827.68	7,405.55	30.82	31.77	105.91	-1,073.81	361.75	253.89	196.01	57.88	4.387				
7,800.00	7,339.78	7,886.45	7,409.68	31.67	32.67	105.95	-1,073.87	420.35	254.57	195.09	59.48	4.280				
7,817.72	7,340.00	7,907.29	7,410.00	31.98	33.02	105.96	-1,073.70	441.19	254.63	194.54	60.09	4.237				
7,900.00	7,340.00	7,989.68	7,410.00	33.52	34.51	105.96	-1,072.87	523.58	254.63	191.58	63.05	4.038				
8,000.00	7,340.00	8,089.68	7,410.00	35.56	36.49	105.96	-1,071.85	623.57	254.64	187.65	66.99	3.801				
8,100.00	7,340.00	8,189.68	7,410.00	37.77	38.65	105.96	-1,070.83	723.57	254.65	183.40	71.25	3.574				
8,200.00	7,340.00	8,289.68	7,410.00	40.11	40.95	105.95	-1,069.82	823.56	254.66	178.89	75.77	3.361				
8,300.00	7,340.00	8,389.68	7,410.00	42.56	43.36	105.95	-1,068.80	923.56	254.67	174.15	80.51	3.163				
8,400.00	7,340.00	8,489.68	7,410.00	45.10	45.87	105.95	-1,067.78	1,023.55	254.67	169.23	85.44	2.981				
8,500.00	7,340.00	8,589.68	7,410.00	47.73	48.46	105.95	-1,066.77	1,123.55	254.68	164.16	90.52	2.813				
8,600.00	7,340.00	8,689.68	7,410.00	50.42	51.12	105.95	-1,065.75	1,223.54	254.69	158.95	95.74	2.660				
8,700.00	7,340.00	8,789.68	7,410.00	53.17	53.84	105.95	-1,064.74	1,323.54	254.70	153.64	101.06	2.520				
8,800.00	7,340.00	8,889.68	7,410.00	55.96	56.61	105.95	-1,063.72	1,423.53	254.71	148.23	106.47	2.392				

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,900.00	7,340.00	8,989.68	7,410.00	58.80	59.42	105.95	-1,062.70	1,523.53	254.71	142.75	111.97	2.275		
9,000.00	7,340.00	9,089.68	7,410.00	61.67	62.27	105.95	-1,061.69	1,623.52	254.72	137.19	117.53	2.167		
9,100.00	7,340.00	9,189.68	7,410.00	64.58	65.16	105.95	-1,060.67	1,723.52	254.73	131.58	123.15	2.068		
9,200.00	7,340.00	9,289.68	7,410.00	67.51	68.07	105.95	-1,059.65	1,823.51	254.74	125.91	128.83	1.977		
9,300.00	7,340.00	9,389.68	7,410.00	70.47	71.01	105.95	-1,058.64	1,923.51	254.75	120.20	134.55	1.893		
9,400.00	7,340.00	9,489.68	7,410.00	73.44	73.97	105.95	-1,057.62	2,023.50	254.75	114.45	140.30	1.816		
9,500.00	7,340.00	9,589.68	7,410.00	76.44	76.95	105.95	-1,056.60	2,123.50	254.76	108.66	146.10	1.744		
9,600.00	7,340.00	9,689.68	7,410.00	79.45	79.95	105.95	-1,055.59	2,223.49	254.77	102.85	151.92	1.677		
9,700.00	7,340.00	9,789.68	7,410.00	82.48	82.96	105.95	-1,054.57	2,323.49	254.78	97.00	157.77	1.615		
9,800.00	7,340.00	9,889.68	7,410.00	85.51	85.99	105.95	-1,053.56	2,423.48	254.79	91.14	163.65	1.557		
9,900.00	7,340.00	9,989.68	7,410.00	88.57	89.03	105.95	-1,052.54	2,523.47	254.79	85.25	169.55	1.503		
10,000.00	7,340.00	10,089.68	7,410.00	91.63	92.08	105.95	-1,051.52	2,623.47	254.80	79.34	175.47	1.452 Level 3		
10,100.00	7,340.00	10,189.68	7,410.00	94.70	95.14	105.95	-1,050.51	2,723.46	254.81	73.41	181.40	1.405 Level 3		
10,200.00	7,340.00	10,289.68	7,410.00	97.78	98.21	105.94	-1,049.49	2,823.46	254.82	67.47	187.35	1.360 Level 3		
10,300.00	7,340.00	10,389.68	7,410.00	100.87	101.29	105.94	-1,048.47	2,923.45	254.83	61.51	193.32	1.318 Level 3		
10,400.00	7,340.00	10,489.68	7,410.00	103.96	104.38	105.94	-1,047.46	3,023.45	254.83	55.54	199.30	1.279 Level 3		
10,500.00	7,340.00	10,589.68	7,410.00	107.06	107.47	105.94	-1,046.44	3,123.44	254.84	49.55	205.29	1.241 Level 2		
10,600.00	7,340.00	10,689.68	7,410.00	110.17	110.57	105.94	-1,045.42	3,223.44	254.85	43.56	211.29	1.206 Level 2		
10,700.00	7,340.00	10,789.68	7,410.00	113.28	113.67	105.94	-1,044.41	3,323.43	254.86	37.55	217.31	1.173 Level 2		
10,800.00	7,340.00	10,889.68	7,410.00	116.40	116.79	105.94	-1,043.39	3,423.43	254.87	31.54	223.33	1.141 Level 2		
10,900.00	7,340.00	10,989.68	7,410.00	119.52	119.90	105.94	-1,042.37	3,523.42	254.87	25.52	229.36	1.111 Level 2		
11,000.00	7,340.00	11,089.68	7,410.00	122.65	123.02	105.94	-1,041.36	3,623.42	254.88	19.48	235.40	1.083 Level 2		
11,100.00	7,340.00	11,189.68	7,410.00	125.78	126.15	105.94	-1,040.34	3,723.41	254.89	13.45	241.44	1.056 Level 2		
11,200.00	7,340.00	11,289.68	7,410.00	128.91	129.28	105.94	-1,039.33	3,823.41	254.90	7.40	247.50	1.030 Level 2		
11,300.00	7,340.00	11,389.68	7,410.00	132.05	132.41	105.94	-1,038.31	3,923.40	254.91	1.35	253.56	1.005 Level 2		
11,400.00	7,340.00	11,489.68	7,410.00	135.19	135.54	105.94	-1,037.29	4,023.40	254.91	-4.71	259.62	0.982 Level 1		
11,500.00	7,340.00	11,589.68	7,410.00	138.34	138.68	105.94	-1,036.28	4,123.39	254.92	-10.77	265.69	0.959 Level 1		
11,600.00	7,340.00	11,689.68	7,410.00	141.49	141.83	105.94	-1,035.26	4,223.39	254.93	-16.84	271.77	0.938 Level 1		
11,700.00	7,340.00	11,789.68	7,410.00	144.63	144.97	105.94	-1,034.24	4,323.38	254.94	-22.91	277.85	0.918 Level 1		
11,800.00	7,340.00	11,889.68	7,410.00	147.79	148.12	105.94	-1,033.23	4,423.38	254.95	-28.99	283.94	0.898 Level 1		
11,808.43	7,340.00	11,898.12	7,410.00	148.05	148.38	105.94	-1,033.14	4,431.81	254.95	-29.50	284.45	0.896 Level 1		
11,886.52	7,340.00	11,975.04	7,410.00	150.52	150.81	105.94	-1,032.36	4,508.72	254.96	-34.25	289.21	0.882 Level 1, ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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	179.50	-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	72.554		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-20.03	0.17	20.03	19.03	0.99	20.169		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-20.03	0.17	20.03	18.32	1.71	11.712	CC, ES	
400.00	400.00	399.29	399.27	1.21	1.20	-179.30	-21.69	-0.27	21.70	19.27	2.44	8.904		
500.00	500.00	498.34	498.18	1.57	1.54	-176.61	-26.66	-1.58	26.77	23.58	3.19	8.400		
600.00	599.98	597.08	596.55	1.91	1.89	-12.80	-34.91	-3.76	33.58	29.65	3.93	8.545		
700.00	699.84	695.59	694.33	2.25	2.25	-11.68	-46.39	-6.79	40.41	35.74	4.67	8.662		
800.00	799.45	794.02	791.58	2.60	2.63	-11.14	-61.09	-10.67	47.21	41.81	5.40	8.745		
900.00	898.70	893.90	890.03	2.95	3.04	-11.26	-77.34	-14.97	51.98	45.91	6.07	8.559		
960.06	958.08	953.95	949.22	3.18	3.29	-11.68	-87.11	-17.55	53.20	46.72	6.49	8.202		
1,000.00	997.51	993.88	988.59	3.33	3.46	-12.04	-93.61	-19.26	53.61	46.84	6.77	7.921		
1,100.00	1,096.22	1,093.87	1,087.16	3.72	3.88	-12.93	-109.88	-23.56	54.63	47.16	7.48	7.307		
1,200.00	1,194.94	1,193.86	1,185.72	4.12	4.30	-13.79	-126.15	-27.86	55.67	47.47	8.20	6.792		
1,300.00	1,293.65	1,293.86	1,284.29	4.53	4.73	-14.62	-142.41	-32.15	56.72	47.79	8.92	6.356		
1,400.00	1,392.36	1,393.85	1,382.85	4.94	5.16	-15.41	-158.68	-36.45	57.78	48.12	9.66	5.983		
1,500.00	1,491.08	1,493.84	1,481.42	5.35	5.59	-16.18	-174.95	-40.75	58.85	48.45	10.40	5.660		
1,600.00	1,589.79	1,593.83	1,579.98	5.77	6.02	-16.92	-191.22	-45.04	59.93	48.79	11.14	5.379		
1,700.00	1,688.50	1,693.82	1,678.55	6.19	6.45	-17.63	-207.49	-49.34	61.02	49.13	11.89	5.132		
1,800.00	1,787.22	1,793.81	1,777.11	6.61	6.88	-18.32	-223.76	-53.64	62.12	49.47	12.64	4.914		
1,900.00	1,885.93	1,893.80	1,875.68	7.03	7.32	-18.99	-240.02	-57.94	63.22	49.83	13.40	4.719		
2,000.00	1,984.64	1,993.79	1,974.24	7.45	7.75	-19.63	-256.29	-62.23	64.34	50.18	14.16	4.545		
2,100.00	2,083.36	2,093.79	2,072.81	7.88	8.19	-20.25	-272.56	-66.53	65.46	50.55	14.92	4.388		
2,200.00	2,182.07	2,193.78	2,171.37	8.30	8.63	-20.85	-288.83	-70.83	66.60	50.91	15.68	4.247		
2,300.00	2,280.78	2,293.77	2,269.94	8.73	9.06	-21.43	-305.10	-75.12	67.73	51.28	16.45	4.118		
2,400.00	2,379.50	2,393.76	2,368.50	9.15	9.50	-21.98	-321.37	-79.42	68.88	51.66	17.22	4.000		
2,500.00	2,478.21	2,493.75	2,467.07	9.58	9.94	-22.53	-337.63	-83.72	70.03	52.04	17.99	3.893		
2,600.00	2,576.92	2,593.74	2,565.64	10.01	10.37	-23.05	-353.90	-88.01	71.19	52.42	18.76	3.794		
2,700.00	2,675.64	2,693.73	2,664.20	10.44	10.81	-23.56	-370.17	-92.31	72.35	52.81	19.54	3.703		
2,800.00	2,774.35	2,793.72	2,762.77	10.86	11.25	-24.05	-386.44	-96.61	73.52	53.20	20.31	3.619		
2,900.00	2,873.06	2,893.72	2,861.33	11.29	11.68	-24.52	-402.71	-100.91	74.69	53.60	21.09	3.541		
3,000.00	2,971.78	2,993.71	2,959.90	11.72	12.12	-24.98	-418.97	-105.20	75.87	54.00	21.87	3.469		
3,100.00	3,070.49	3,093.70	3,058.46	12.15	12.56	-25.43	-435.24	-109.50	77.05	54.40	22.65	3.401		
3,200.00	3,169.20	3,193.69	3,157.03	12.58	13.00	-25.86	-451.51	-113.80	78.24	54.80	23.44	3.338		
3,300.00	3,267.92	3,293.68	3,255.59	13.01	13.44	-26.28	-467.78	-118.09	79.43	55.21	24.22	3.279		
3,400.00	3,366.63	3,393.67	3,354.16	13.44	13.87	-26.69	-484.05	-122.39	80.63	55.62	25.01	3.224		
3,500.00	3,465.34	3,493.66	3,452.72	13.87	14.31	-27.08	-500.32	-126.69	81.83	56.04	25.79	3.172		
3,600.00	3,564.06	3,593.65	3,551.29	14.30	14.75	-27.47	-516.58	-130.98	83.04	56.45	26.58	3.124		
3,700.00	3,662.77	3,693.65	3,649.85	14.73	15.19	-27.84	-532.85	-135.28	84.24	56.87	27.37	3.078		
3,800.00	3,761.48	3,793.64	3,748.42	15.16	15.63	-28.20	-549.12	-139.58	85.45	57.29	28.16	3.034		
3,900.00	3,860.20	3,893.63	3,846.98	15.59	16.07	-28.55	-565.39	-143.88	86.67	57.71	28.96	2.993		
4,000.00	3,958.91	3,993.62	3,945.55	16.02	16.50	-28.90	-581.66	-148.17	87.89	58.14	29.75	2.954		
4,100.00	4,057.62	4,093.61	4,044.11	16.45	16.94	-29.23	-597.93	-152.47	89.11	58.57	30.54	2.918		
4,200.00	4,156.34	4,193.60	4,142.68	16.88	17.38	-29.55	-614.19	-156.77	90.33	58.99	31.34	2.883		
4,300.00	4,255.05	4,293.59	4,241.25	17.31	17.82	-29.87	-630.46	-161.06	91.56	59.43	32.13	2.849		
4,400.00	4,353.76	4,393.58	4,339.81	17.75	18.26	-30.18	-646.73	-165.36	92.79	59.86	32.93	2.818		
4,500.00	4,452.48	4,493.57	4,438.38	18.18	18.70	-30.48	-663.00	-169.66	94.02	60.29	33.73	2.788		
4,600.00	4,551.19	4,593.57	4,536.94	18.61	19.14	-30.77	-679.27	-173.95	95.25	60.73	34.52	2.759		
4,700.00	4,649.90	4,693.56	4,635.51	19.04	19.58	-31.05	-695.54	-178.25	96.49	61.17	35.32	2.732		
4,800.00	4,748.62	4,793.55	4,734.07	19.47	20.01	-31.33	-711.80	-182.55	97.73	61.61	36.12	2.706		
4,900.00	4,847.33	4,893.54	4,832.64	19.90	20.45	-31.60	-728.07	-186.85	98.97	62.05	36.92	2.681		
5,000.00	4,946.04	4,993.53	4,931.20	20.33	20.89	-31.86	-744.34	-191.14	100.21	62.49	37.72	2.657		

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 3L-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 3L-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							
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	5,044.76	5,093.52	5,029.77	20.76	21.33	-32.12	-760.61	-195.44	101.46	62.93	38.52	2.634	
5,200.00	5,143.47	5,193.51	5,128.33	21.20	21.77	-32.37	-776.88	-199.74	102.71	63.38	39.33	2.612	
5,300.00	5,242.18	5,293.50	5,226.90	21.63	22.21	-32.61	-793.15	-204.03	103.96	63.83	40.13	2.590	
5,400.00	5,340.90	5,393.50	5,325.46	22.06	22.65	-32.85	-809.41	-208.33	105.21	64.27	40.93	2.570	
5,500.00	5,439.61	5,493.49	5,424.03	22.49	23.09	-33.08	-825.68	-212.63	106.46	64.72	41.74	2.551	
5,600.00	5,538.32	5,593.48	5,522.59	22.92	23.53	-33.31	-841.95	-216.93	107.72	65.17	42.54	2.532	
5,700.00	5,637.04	5,693.47	5,621.16	23.35	23.96	-33.53	-858.22	-221.22	108.97	65.62	43.35	2.514	
5,800.00	5,735.75	5,793.46	5,719.73	23.79	24.40	-33.75	-874.49	-225.52	110.23	66.08	44.15	2.497	
5,900.00	5,834.46	5,893.45	5,818.29	24.22	24.84	-33.96	-890.76	-229.82	111.49	66.53	44.96	2.480	
6,008.85	5,941.92	6,002.30	5,925.58	24.69	25.32	-34.19	-908.46	-234.49	112.86	67.03	45.84	2.462	
6,100.00	6,032.11	6,093.41	6,015.39	25.07	25.72	-33.99	-923.29	-238.41	115.21	68.68	46.53	2.476	
6,200.00	6,131.48	6,193.23	6,113.80	25.47	26.16	-32.94	-939.53	-242.70	120.58	73.39	47.19	2.555	
6,300.00	6,231.18	6,292.80	6,211.94	25.83	26.60	-31.19	-955.73	-246.98	128.95	81.19	47.76	2.700	
6,400.00	6,331.09	6,391.98	6,309.71	26.18	27.03	-28.98	-971.86	-251.24	140.48	92.19	48.29	2.909	
6,468.91	6,400.00	6,460.04	6,376.80	26.38	27.33	171.02	-982.94	-254.16	150.32	101.70	48.62	3.092	
6,500.00	6,431.09	6,490.68	6,407.00	26.47	27.47	171.80	-987.92	-255.48	155.13	106.37	48.77	3.181	
6,600.00	6,531.09	6,589.26	6,504.17	26.75	27.90	174.00	-1,003.96	-259.72	170.78	121.51	49.27	3.466	
6,692.72	6,623.80	6,680.65	6,594.26	27.01	28.30	175.71	-1,018.83	-263.64	185.47	135.69	49.78	3.726	
6,700.00	6,631.09	6,687.83	6,601.34	27.03	28.33	86.34	-1,020.00	-263.95	186.63	136.81	49.82	3.746	
6,750.00	6,681.03	6,736.96	6,649.77	27.17	28.55	87.16	-1,027.99	-266.06	194.51	144.46	50.06	3.886	
6,800.00	6,730.69	6,785.65	6,697.77	27.30	28.76	88.84	-1,035.91	-268.16	202.45	152.22	50.24	4.030	
6,850.00	6,779.83	6,833.68	6,745.11	27.43	28.97	91.20	-1,043.73	-270.22	210.79	160.40	50.39	4.183	
6,900.00	6,828.21	6,880.81	6,791.57	27.56	29.18	94.07	-1,051.40	-272.25	219.94	169.40	50.54	4.352	
6,950.00	6,875.59	6,926.81	6,836.91	27.67	29.38	97.27	-1,058.88	-274.22	230.41	179.67	50.74	4.541	
7,000.00	6,921.75	6,975.43	6,884.87	27.78	29.59	100.73	-1,066.78	-274.98	242.34	191.30	51.03	4.748	
7,050.00	6,966.45	7,025.93	6,934.63	27.88	29.80	103.91	-1,074.94	-272.29	255.31	203.92	51.39	4.968	
7,100.00	7,009.49	7,078.14	6,985.74	27.97	29.99	106.79	-1,083.29	-265.78	269.07	217.33	51.74	5.200	
7,150.00	7,050.64	7,132.22	7,038.05	28.05	30.18	109.39	-1,091.79	-255.09	283.42	231.38	52.04	5.446	
7,200.00	7,089.72	7,188.35	7,091.35	28.13	30.37	111.73	-1,100.41	-239.79	298.11	245.88	52.22	5.708	
7,250.00	7,126.53	7,246.72	7,145.35	28.19	30.54	113.83	-1,109.09	-219.45	312.91	260.67	52.25	5.989	
7,300.00	7,160.89	7,307.50	7,199.65	28.25	30.70	115.71	-1,117.76	-193.61	327.62	275.54	52.08	6.290	
7,350.00	7,192.63	7,370.86	7,253.76	28.30	30.86	117.39	-1,126.34	-161.82	341.99	290.28	51.71	6.613	
7,400.00	7,221.60	7,436.94	7,307.01	28.34	31.00	118.89	-1,134.72	-123.63	355.81	304.67	51.14	6.958	
7,450.00	7,247.66	7,505.86	7,358.61	28.38	31.13	120.21	-1,142.75	-78.70	368.84	318.45	50.39	7.320	
7,500.00	7,270.68	7,577.65	7,407.59	28.41	31.25	121.36	-1,150.28	-26.79	380.85	331.33	49.52	7.690	
7,550.00	7,290.54	7,652.28	7,452.80	28.45	31.35	122.35	-1,157.12	32.15	391.63	343.00	48.63	8.053	
7,600.00	7,307.16	7,729.62	7,493.02	28.69	31.45	123.18	-1,163.06	97.89	400.95	353.11	47.83	8.382	
7,650.00	7,320.45	7,809.39	7,526.93	29.30	31.57	123.85	-1,167.91	169.89	408.61	361.26	47.35	8.629	
7,700.00	7,330.35	7,891.22	7,553.30	30.02	31.78	124.34	-1,171.46	247.22	414.45	367.16	47.29	8.764	
7,750.00	7,336.80	7,974.60	7,571.05	30.82	32.33	124.67	-1,173.54	328.61	418.31	370.50	47.81	8.749	
7,800.00	7,339.78	8,058.90	7,579.39	31.67	33.38	124.82	-1,174.06	412.45	420.11	371.12	48.99	8.575	
7,817.72	7,340.00	8,088.80	7,580.00	31.98	33.84	124.83	-1,173.85	442.35	420.24	370.68	49.56	8.479	
7,900.00	7,340.00	8,171.09	7,580.00	33.52	35.26	124.83	-1,173.01	524.63	420.24	368.07	52.17	8.055	
8,000.00	7,340.00	8,271.09	7,580.00	35.56	37.19	124.83	-1,171.98	624.62	420.24	364.63	55.62	7.556	
8,100.00	7,340.00	8,371.09	7,580.00	37.77	39.30	124.83	-1,170.96	724.61	420.24	360.90	59.34	7.082	
8,200.00	7,340.00	8,471.09	7,580.00	40.11	41.55	124.83	-1,169.93	824.61	420.24	356.94	63.30	6.638	
8,300.00	7,340.00	8,571.09	7,580.00	42.56	43.93	124.83	-1,168.91	924.60	420.24	352.79	67.46	6.230	
8,400.00	7,340.00	8,671.09	7,580.00	45.10	46.41	124.83	-1,167.88	1,024.60	420.24	348.48	71.77	5.856	
8,500.00	7,340.00	8,771.09	7,580.00	47.73	48.97	124.83	-1,166.86	1,124.59	420.24	344.03	76.21	5.514	
8,600.00	7,340.00	8,871.09	7,580.00	50.42	51.60	124.83	-1,165.83	1,224.59	420.24	339.48	80.76	5.204	
8,700.00	7,340.00	8,971.09	7,580.00	53.17	54.30	124.83	-1,164.81	1,324.58	420.24	334.84	85.40	4.921	
8,800.00	7,340.00	9,071.09	7,580.00	55.96	57.04	124.83	-1,163.78	1,424.58	420.24	330.12	90.12	4.663	

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 3L-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 3L-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							
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
8,900.00	7,340.00	9,171.09	7,580.00	58.80	59.84	124.83	-1,162.76	1,524.57	420.24	325.33	94.91	4.428	
9,000.00	7,340.00	9,271.09	7,580.00	61.67	62.67	124.83	-1,161.73	1,624.57	420.24	320.49	99.76	4.213	
9,100.00	7,340.00	9,371.09	7,580.00	64.58	65.54	124.83	-1,160.71	1,724.56	420.24	315.59	104.65	4.016	
9,200.00	7,340.00	9,471.09	7,580.00	67.51	68.44	124.83	-1,159.68	1,824.56	420.24	310.66	109.58	3.835	
9,300.00	7,340.00	9,571.09	7,580.00	70.47	71.36	124.83	-1,158.66	1,924.55	420.24	305.69	114.56	3.668	
9,400.00	7,340.00	9,671.09	7,580.00	73.44	74.31	124.83	-1,157.64	2,024.55	420.24	300.68	119.56	3.515	
9,500.00	7,340.00	9,771.09	7,580.00	76.44	77.27	124.83	-1,156.61	2,124.54	420.24	295.65	124.59	3.373	
9,600.00	7,340.00	9,871.09	7,580.00	79.45	80.26	124.83	-1,155.59	2,224.54	420.24	290.59	129.65	3.241	
9,700.00	7,340.00	9,971.09	7,580.00	82.48	83.26	124.83	-1,154.56	2,324.53	420.24	285.51	134.73	3.119	
9,800.00	7,340.00	10,071.09	7,580.00	85.51	86.28	124.83	-1,153.54	2,424.53	420.24	280.41	139.83	3.005	
9,900.00	7,340.00	10,171.09	7,580.00	88.57	89.31	124.83	-1,152.51	2,524.52	420.24	275.29	144.95	2.899	
10,000.00	7,340.00	10,271.09	7,580.00	91.63	92.35	124.83	-1,151.49	2,624.51	420.24	270.16	150.08	2.800	
10,100.00	7,340.00	10,371.09	7,580.00	94.70	95.40	124.83	-1,150.46	2,724.51	420.24	265.01	155.23	2.707	
10,200.00	7,340.00	10,471.09	7,580.00	97.78	98.46	124.83	-1,149.44	2,824.50	420.24	259.85	160.39	2.620	
10,300.00	7,340.00	10,571.09	7,580.00	100.87	101.53	124.83	-1,148.41	2,924.50	420.24	254.68	165.56	2.538	
10,400.00	7,340.00	10,671.09	7,580.00	103.96	104.61	124.83	-1,147.39	3,024.49	420.24	249.50	170.74	2.461	
10,500.00	7,340.00	10,771.09	7,580.00	107.06	107.70	124.83	-1,146.36	3,124.49	420.24	244.30	175.94	2.389	
10,600.00	7,340.00	10,871.09	7,580.00	110.17	110.79	124.83	-1,145.34	3,224.48	420.24	239.10	181.14	2.320	
10,700.00	7,340.00	10,971.09	7,580.00	113.28	113.89	124.83	-1,144.31	3,324.48	420.24	233.89	186.35	2.255	
10,800.00	7,340.00	11,071.09	7,580.00	116.40	117.00	124.83	-1,143.29	3,424.47	420.24	228.68	191.56	2.194	
10,900.00	7,340.00	11,171.09	7,580.00	119.52	120.11	124.83	-1,142.26	3,524.47	420.24	223.45	196.79	2.135	
11,000.00	7,340.00	11,271.09	7,580.00	122.65	123.22	124.83	-1,141.24	3,624.46	420.24	218.22	202.02	2.080	
11,100.00	7,340.00	11,371.09	7,580.00	125.78	126.34	124.83	-1,140.21	3,724.46	420.24	212.99	207.25	2.028	
11,200.00	7,340.00	11,471.09	7,580.00	128.91	129.47	124.83	-1,139.19	3,824.45	420.24	207.74	212.50	1.978	
11,300.00	7,340.00	11,571.09	7,580.00	132.05	132.60	124.83	-1,138.16	3,924.45	420.24	202.50	217.74	1.930	
11,400.00	7,340.00	11,671.09	7,580.00	135.19	135.73	124.83	-1,137.14	4,024.44	420.24	197.25	222.99	1.885	
11,500.00	7,340.00	11,771.09	7,580.00	138.34	138.86	124.83	-1,136.11	4,124.44	420.24	191.99	228.25	1.841	
11,600.00	7,340.00	11,871.09	7,580.00	141.49	142.00	124.83	-1,135.09	4,224.43	420.24	186.73	233.51	1.800	
11,700.00	7,340.00	11,971.09	7,580.00	144.63	145.14	124.83	-1,134.06	4,324.43	420.24	181.47	238.77	1.760	
11,800.00	7,340.00	12,071.09	7,580.00	147.79	148.29	124.83	-1,133.04	4,424.42	420.24	176.20	244.04	1.722	
11,883.34	7,340.00	12,154.43	7,580.00	150.42	150.91	124.83	-1,132.18	4,507.76	420.24	171.81	248.43	1.692	
11,886.52	7,340.00	12,155.71	7,580.00	150.52	150.95	124.83	-1,132.17	4,509.04	420.24	171.65	248.59	1.691 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-30.23	-0.02	30.23					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-30.23	-0.02	30.23	29.96	0.28	109.526		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-30.23	-0.02	30.23	29.24	0.99	30.446	CC, ES	
300.00	300.00	298.95	298.93	0.85	0.84	-179.24	-31.89	-0.42	31.91	30.18	1.73	18.394		
400.00	400.00	397.66	397.50	1.21	1.18	-177.46	-36.85	-1.64	36.97	34.47	2.50	14.763		
500.00	500.00	495.90	495.37	1.57	1.54	-175.38	-45.06	-3.64	45.45	42.16	3.28	13.845		
600.00	599.98	593.66	592.42	1.91	1.91	-12.18	-56.46	-6.43	55.64	51.60	4.04	13.777		
700.00	699.84	691.09	688.69	2.25	2.29	-11.35	-71.02	-9.98	65.82	61.04	4.78	13.772		
800.00	799.45	789.70	785.66	2.60	2.71	-10.99	-88.40	-14.23	75.36	69.89	5.47	13.781		
900.00	898.70	889.49	883.74	2.95	3.14	-11.15	-106.25	-18.59	81.77	75.63	6.14	13.321		
960.06	958.08	949.51	942.73	3.18	3.40	-11.47	-116.99	-21.22	83.98	77.42	6.56	12.811		
1,000.00	997.51	989.43	981.97	3.33	3.57	-11.73	-124.13	-22.96	85.04	78.20	6.84	12.441		
1,100.00	1,096.22	1,089.39	1,080.23	3.72	4.01	-12.36	-142.01	-27.33	87.70	80.15	7.55	11.622		
1,200.00	1,194.94	1,189.35	1,178.48	4.12	4.46	-12.95	-159.89	-31.70	90.36	82.10	8.27	10.932		
1,300.00	1,293.65	1,289.31	1,276.73	4.53	4.90	-13.51	-177.78	-36.07	93.04	84.05	8.99	10.345		
1,400.00	1,392.36	1,389.27	1,374.98	4.94	5.35	-14.04	-195.66	-40.44	95.73	86.00	9.73	9.840		
1,500.00	1,491.08	1,489.23	1,473.23	5.35	5.79	-14.54	-213.54	-44.81	98.42	87.96	10.47	9.403		
1,600.00	1,589.79	1,589.19	1,571.48	5.77	6.24	-15.01	-231.42	-49.17	101.12	89.91	11.21	9.020		
1,700.00	1,688.50	1,689.15	1,669.73	6.19	6.69	-15.46	-249.30	-53.54	103.83	91.87	11.96	8.683		
1,800.00	1,787.22	1,789.11	1,767.98	6.61	7.14	-15.88	-267.18	-57.91	106.55	93.84	12.71	8.383		
1,900.00	1,885.93	1,889.07	1,866.23	7.03	7.59	-16.28	-285.07	-62.28	109.26	95.80	13.46	8.116		
2,000.00	1,984.64	1,989.03	1,964.48	7.45	8.04	-16.67	-302.95	-66.65	111.99	97.77	14.22	7.877		
2,100.00	2,083.36	2,088.99	2,062.73	7.88	8.49	-17.03	-320.83	-71.02	114.72	99.74	14.98	7.661		
2,200.00	2,182.07	2,188.95	2,160.98	8.30	8.94	-17.38	-338.71	-75.39	117.45	101.72	15.73	7.465		
2,300.00	2,280.78	2,288.91	2,259.23	8.73	9.39	-17.71	-356.59	-79.76	120.19	103.69	16.50	7.286		
2,400.00	2,379.50	2,388.87	2,357.48	9.15	9.84	-18.03	-374.47	-84.13	122.93	105.67	17.26	7.123		
2,500.00	2,478.21	2,488.83	2,455.73	9.58	10.29	-18.33	-392.36	-88.49	125.68	107.65	18.02	6.973		
2,600.00	2,576.92	2,588.79	2,553.99	10.01	10.74	-18.63	-410.24	-92.86	128.42	109.64	18.79	6.836		
2,700.00	2,675.64	2,688.75	2,652.24	10.44	11.20	-18.90	-428.12	-97.23	131.18	111.62	19.55	6.708		
2,800.00	2,774.35	2,788.71	2,750.49	10.86	11.65	-19.17	-446.00	-101.60	133.93	113.61	20.32	6.591		
2,900.00	2,873.06	2,888.67	2,848.74	11.29	12.10	-19.43	-463.88	-105.97	136.69	115.60	21.09	6.481		
3,000.00	2,971.78	2,988.63	2,946.99	11.72	12.55	-19.67	-481.76	-110.34	139.45	117.59	21.86	6.379		
3,100.00	3,070.49	3,088.59	3,045.24	12.15	13.00	-19.91	-499.65	-114.71	142.21	119.58	22.63	6.284		
3,200.00	3,169.20	3,188.55	3,143.49	12.58	13.45	-20.14	-517.53	-119.08	144.98	121.58	23.40	6.195		
3,300.00	3,267.92	3,288.51	3,241.74	13.01	13.91	-20.36	-535.41	-123.45	147.74	123.57	24.17	6.112		
3,400.00	3,366.63	3,388.47	3,339.99	13.44	14.36	-20.57	-553.29	-127.81	150.51	125.57	24.94	6.034		
3,500.00	3,465.34	3,488.43	3,438.24	13.87	14.81	-20.77	-571.17	-132.18	153.28	127.57	25.72	5.960		
3,600.00	3,564.06	3,588.39	3,536.49	14.30	15.26	-20.97	-589.05	-136.55	156.06	129.56	26.49	5.891		
3,700.00	3,662.77	3,688.35	3,634.74	14.73	15.72	-21.16	-606.93	-140.92	158.83	131.57	27.27	5.825		
3,800.00	3,761.48	3,788.31	3,732.99	15.16	16.17	-21.34	-624.82	-145.29	161.61	133.57	28.04	5.763		
3,900.00	3,860.20	3,888.27	3,831.24	15.59	16.62	-21.52	-642.70	-149.66	164.39	135.57	28.82	5.705		
4,000.00	3,958.91	3,988.23	3,929.49	16.02	17.07	-21.69	-660.58	-154.03	167.16	137.57	29.59	5.649		
4,100.00	4,057.62	4,088.19	4,027.74	16.45	17.53	-21.85	-678.46	-158.40	169.95	139.58	30.37	5.596		
4,200.00	4,156.34	4,188.15	4,126.00	16.88	17.98	-22.01	-696.34	-162.77	172.73	141.58	31.14	5.546		
4,300.00	4,255.05	4,288.11	4,224.25	17.31	18.43	-22.17	-714.22	-167.13	175.51	143.59	31.92	5.498		
4,400.00	4,353.76	4,388.07	4,322.50	17.75	18.88	-22.32	-732.11	-171.50	178.30	145.60	32.70	5.453		
4,500.00	4,452.48	4,488.03	4,420.75	18.18	19.34	-22.46	-749.99	-175.87	181.08	147.61	33.48	5.409		
4,600.00	4,551.19	4,587.99	4,519.00	18.61	19.79	-22.61	-767.87	-180.24	183.87	149.62	34.25	5.368		
4,700.00	4,649.90	4,687.95	4,617.25	19.04	20.24	-22.74	-785.75	-184.61	186.66	151.63	35.03	5.328		
4,800.00	4,748.62	4,787.92	4,715.50	19.47	20.69	-22.87	-803.63	-188.98	189.45	153.64	35.81	5.290		
4,900.00	4,847.33	4,887.88	4,813.75	19.90	21.15	-23.00	-821.51	-193.35	192.24	155.65	36.59	5.254		
5,000.00	4,946.04	4,987.84	4,912.00	20.33	21.60	-23.13	-839.40	-197.72	195.03	157.66	37.37	5.219		

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 3L-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 3L-25H-M166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 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	5,044.76	5,087.80	5,010.25	20.76	22.05	-23.25	-857.28	-202.09	197.82	159.67	38.15	5.185	
5,200.00	5,143.47	5,187.76	5,108.50	21.20	22.51	-23.37	-875.16	-206.45	200.61	161.69	38.93	5.153	
5,300.00	5,242.18	5,287.72	5,206.75	21.63	22.96	-23.48	-893.04	-210.82	203.41	163.70	39.71	5.122	
5,400.00	5,340.90	5,387.68	5,305.00	22.06	23.41	-23.60	-910.92	-215.19	206.20	165.71	40.49	5.093	
5,500.00	5,439.61	5,487.64	5,403.25	22.49	23.86	-23.70	-928.80	-219.56	209.00	167.73	41.27	5.064	
5,600.00	5,538.32	5,587.60	5,501.50	22.92	24.32	-23.81	-946.69	-223.93	211.79	169.74	42.05	5.037	
5,700.00	5,637.04	5,687.56	5,599.76	23.35	24.77	-23.91	-964.57	-228.30	214.59	171.76	42.83	5.010	
5,800.00	5,735.75	5,787.52	5,698.01	23.79	25.22	-24.01	-982.45	-232.67	217.39	173.78	43.61	4.984	
5,900.00	5,834.46	5,887.48	5,796.26	24.22	25.68	-24.11	-1,000.33	-237.04	220.19	175.79	44.40	4.960	
6,008.85	5,941.92	5,996.29	5,903.21	24.69	26.17	-24.22	-1,019.80	-241.79	223.23	177.99	45.25	4.934	
6,100.00	6,032.11	6,087.35	5,992.71	25.07	26.58	-24.18	-1,036.09	-245.77	227.11	181.16	45.94	4.943	
6,200.00	6,131.48	6,187.06	6,090.72	25.47	27.03	-23.84	-1,053.92	-250.13	234.40	187.73	46.67	5.023	
6,300.00	6,231.18	6,286.46	6,188.42	25.83	27.48	-23.22	-1,071.70	-254.48	244.90	197.54	47.36	5.171	
6,400.00	6,331.09	6,385.42	6,285.69	26.18	27.93	-22.38	-1,089.41	-258.80	258.63	210.62	48.01	5.387	
6,468.91	6,400.00	6,453.30	6,352.41	26.38	28.24	176.64	-1,101.55	-261.77	270.00	221.56	48.44	5.574	
6,500.00	6,431.09	6,483.86	6,382.44	26.47	28.38	176.99	-1,107.02	-263.10	275.48	226.85	48.63	5.665	
6,600.00	6,531.09	6,582.15	6,479.05	26.75	28.82	178.02	-1,124.60	-267.40	293.19	243.95	49.24	5.955	
6,692.72	6,623.80	6,673.28	6,568.62	27.01	29.24	178.88	-1,140.90	-271.38	309.68	259.86	49.81	6.217	
6,700.00	6,631.09	6,680.44	6,575.66	27.03	29.27	89.43	-1,142.18	-271.69	310.97	261.12	49.86	6.237	
6,750.00	6,681.03	6,729.47	6,623.86	27.17	29.49	89.48	-1,150.95	-273.53	319.89	269.74	50.15	6.379	
6,800.00	6,730.69	6,778.72	6,672.30	27.30	29.70	89.60	-1,159.74	-272.55	328.82	278.40	50.42	6.521	
6,850.00	6,779.83	6,828.32	6,720.91	27.43	29.90	89.71	-1,168.52	-268.15	337.73	287.03	50.70	6.662	
6,900.00	6,828.21	6,878.28	6,769.46	27.56	30.09	89.79	-1,177.25	-260.26	346.57	295.60	50.96	6.800	
6,950.00	6,875.59	6,928.64	6,817.72	27.67	30.27	89.86	-1,185.90	-248.86	355.29	304.07	51.23	6.936	
7,000.00	6,921.75	6,979.40	6,865.47	27.78	30.44	89.91	-1,194.41	-233.91	363.86	312.37	51.49	7.067	
7,050.00	6,966.45	7,030.58	6,912.43	27.88	30.59	89.95	-1,202.75	-215.39	372.22	320.47	51.75	7.193	
7,100.00	7,009.49	7,082.19	6,958.36	27.97	30.74	89.98	-1,210.87	-193.32	380.33	328.31	52.02	7.311	
7,150.00	7,050.64	7,134.24	7,002.99	28.05	30.87	90.00	-1,218.71	-167.72	388.14	335.83	52.30	7.421	
7,200.00	7,089.72	7,186.74	7,046.02	28.13	30.99	90.01	-1,226.22	-138.64	395.60	342.99	52.61	7.519	
7,250.00	7,126.53	7,239.67	7,087.19	28.19	31.11	90.02	-1,233.37	-106.15	402.69	349.73	52.96	7.604	
7,300.00	7,160.89	7,293.05	7,126.20	28.25	31.21	90.02	-1,240.09	-70.36	409.34	355.98	53.36	7.671	
7,350.00	7,192.63	7,346.85	7,162.76	28.30	31.30	90.02	-1,246.33	-31.40	415.53	361.69	53.83	7.719	
7,400.00	7,221.60	7,401.06	7,196.59	28.34	31.39	90.02	-1,252.04	10.56	421.21	366.80	54.40	7.743	
7,450.00	7,247.66	7,455.66	7,227.41	28.38	31.47	90.01	-1,257.18	55.32	426.34	371.25	55.09	7.739	
7,500.00	7,270.68	7,510.62	7,254.96	28.41	31.54	90.01	-1,261.70	102.64	430.90	375.00	55.91	7.708	
7,550.00	7,290.54	7,565.90	7,278.99	28.45	31.63	90.00	-1,265.56	152.25	434.86	377.98	56.87	7.646	
7,600.00	7,307.16	7,621.46	7,299.28	28.69	31.74	90.00	-1,268.72	203.87	438.18	380.18	58.00	7.555	
7,650.00	7,320.45	7,677.27	7,315.64	29.30	31.90	90.00	-1,271.15	257.15	440.84	381.56	59.29	7.436	
7,700.00	7,330.35	7,733.26	7,327.91	30.02	32.17	89.99	-1,272.82	311.74	442.84	382.11	60.73	7.292	
7,750.00	7,336.80	7,789.39	7,335.96	30.82	32.64	90.00	-1,273.72	367.27	444.14	381.82	62.32	7.126	
7,800.00	7,339.78	7,845.60	7,339.71	31.67	33.32	90.00	-1,273.83	423.34	444.75	380.71	64.05	6.944	
7,817.72	7,340.00	7,865.53	7,340.00	31.98	33.61	90.00	-1,273.68	443.27	444.80	380.12	64.68	6.877	
7,900.00	7,340.00	7,947.88	7,340.00	33.52	34.97	90.00	-1,272.84	525.61	444.81	377.07	67.74	6.566	
8,000.00	7,340.00	8,047.88	7,340.00	35.56	36.88	90.00	-1,271.83	625.61	444.82	373.04	71.77	6.198	
8,100.00	7,340.00	8,147.88	7,340.00	37.77	38.99	90.00	-1,270.81	725.60	444.83	368.69	76.13	5.843	
8,200.00	7,340.00	8,247.88	7,340.00	40.11	41.25	90.00	-1,269.79	825.60	444.83	364.07	80.77	5.508	
8,300.00	7,340.00	8,347.88	7,340.00	42.56	43.64	90.00	-1,268.78	925.59	444.84	359.21	85.63	5.195	
8,400.00	7,340.00	8,447.88	7,340.00	45.10	46.12	90.00	-1,267.76	1,025.58	444.85	354.16	90.69	4.905	
8,500.00	7,340.00	8,547.88	7,340.00	47.73	48.70	90.00	-1,266.74	1,125.58	444.86	348.95	95.91	4.638	
8,600.00	7,340.00	8,647.88	7,340.00	50.42	51.34	90.00	-1,265.73	1,225.57	444.87	343.60	101.26	4.393	
8,700.00	7,340.00	8,747.88	7,340.00	53.17	54.05	90.00	-1,264.71	1,325.57	444.88	338.14	106.74	4.168	
8,800.00	7,340.00	8,847.88	7,340.00	55.96	56.81	90.00	-1,263.70	1,425.56	444.88	332.58	112.31	3.961	

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 3L-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 3L-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		
8,900.00	7,340.00	8,947.88	7,340.00	58.80	59.61	90.00	-1,262.68	1,525.56	444.89	326.93	117.97	3.771		
9,000.00	7,340.00	9,047.88	7,340.00	61.67	62.45	90.00	-1,261.66	1,625.55	444.90	321.20	123.70	3.597		
9,100.00	7,340.00	9,147.88	7,340.00	64.58	65.33	90.00	-1,260.65	1,725.55	444.91	315.41	129.49	3.436		
9,200.00	7,340.00	9,247.88	7,340.00	67.51	68.24	90.00	-1,259.63	1,825.54	444.92	309.57	135.35	3.287		
9,300.00	7,340.00	9,347.88	7,340.00	70.47	71.17	90.00	-1,258.61	1,925.54	444.93	303.68	141.25	3.150		
9,400.00	7,340.00	9,447.88	7,340.00	73.44	74.12	90.00	-1,257.60	2,025.53	444.93	297.74	147.19	3.023		
9,500.00	7,340.00	9,547.88	7,340.00	76.44	77.09	90.00	-1,256.58	2,125.53	444.94	291.77	153.17	2.905		
9,600.00	7,340.00	9,647.88	7,340.00	79.45	80.09	90.00	-1,255.56	2,225.52	444.95	285.77	159.18	2.795		
9,700.00	7,340.00	9,747.88	7,340.00	82.48	83.09	90.00	-1,254.55	2,325.52	444.96	279.73	165.23	2.693		
9,800.00	7,340.00	9,847.88	7,340.00	85.51	86.12	90.00	-1,253.53	2,425.51	444.97	273.67	171.30	2.598		
9,900.00	7,340.00	9,947.88	7,340.00	88.57	89.15	90.00	-1,252.51	2,525.51	444.98	267.58	177.40	2.508		
10,000.00	7,340.00	10,047.88	7,340.00	91.63	92.20	90.00	-1,251.50	2,625.50	444.98	261.47	183.51	2.425		
10,100.00	7,340.00	10,147.88	7,340.00	94.70	95.25	90.00	-1,250.48	2,725.50	444.99	255.34	189.65	2.346		
10,200.00	7,340.00	10,247.88	7,340.00	97.78	98.32	90.00	-1,249.46	2,825.49	445.00	249.20	195.80	2.273		
10,300.00	7,340.00	10,347.88	7,340.00	100.87	101.40	90.00	-1,248.45	2,925.49	445.01	243.03	201.97	2.203		
10,400.00	7,340.00	10,447.88	7,340.00	103.96	104.48	90.00	-1,247.43	3,025.48	445.02	236.86	208.16	2.138		
10,500.00	7,340.00	10,547.88	7,340.00	107.06	107.57	90.00	-1,246.42	3,125.48	445.03	230.67	214.36	2.076		
10,600.00	7,340.00	10,647.88	7,340.00	110.17	110.67	90.00	-1,245.40	3,225.47	445.03	224.46	220.57	2.018		
10,700.00	7,340.00	10,747.88	7,340.00	113.28	113.77	90.00	-1,244.38	3,325.47	445.04	218.25	226.79	1.962		
10,800.00	7,340.00	10,847.88	7,340.00	116.40	116.88	90.00	-1,243.37	3,425.46	445.05	212.03	233.02	1.910		
10,900.00	7,340.00	10,947.88	7,340.00	119.52	119.99	90.00	-1,242.35	3,525.46	445.06	205.79	239.26	1.860		
11,000.00	7,340.00	11,047.88	7,340.00	122.65	123.11	90.00	-1,241.33	3,625.45	445.07	199.55	245.52	1.813		
11,100.00	7,340.00	11,147.88	7,340.00	125.78	126.23	90.00	-1,240.32	3,725.45	445.08	193.30	251.77	1.768		
11,200.00	7,340.00	11,247.88	7,340.00	128.91	129.36	90.00	-1,239.30	3,825.44	445.08	187.04	258.04	1.725		
11,300.00	7,340.00	11,347.88	7,340.00	132.05	132.49	90.00	-1,238.28	3,925.44	445.09	180.78	264.31	1.684		
11,400.00	7,340.00	11,447.88	7,340.00	135.19	135.62	90.00	-1,237.27	4,025.43	445.10	174.51	270.59	1.645		
11,500.00	7,340.00	11,547.88	7,340.00	138.34	138.76	90.00	-1,236.25	4,125.42	445.11	168.23	276.88	1.608		
11,600.00	7,340.00	11,647.88	7,340.00	141.49	141.90	90.00	-1,235.23	4,225.42	445.12	161.95	283.17	1.572		
11,700.00	7,340.00	11,747.88	7,340.00	144.63	145.04	90.00	-1,234.22	4,325.41	445.13	155.66	289.47	1.538		
11,800.00	7,340.00	11,847.88	7,340.00	147.79	148.19	90.00	-1,233.20	4,425.41	445.13	149.36	295.77	1.505		
11,808.09	7,340.00	11,855.97	7,340.00	148.04	148.44	90.00	-1,233.12	4,433.50	445.13	148.85	296.28	1.502		
11,886.52	7,340.00	11,932.12	7,340.00	150.52	150.84	90.00	-1,232.35	4,509.65	445.15	143.94	301.20	1.478	Level 3, SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3L-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 3L-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		
10,300.00	7,340.00	7,261.00	7,261.00	100.87	8.15	-90.00	86.07	4,047.16	1,435.13	1,359.10	76.02	18.877		
10,400.00	7,340.00	7,261.00	7,261.00	103.96	8.15	-90.00	86.07	4,047.16	1,357.40	1,276.45	80.96	16.767		
10,500.00	7,340.00	7,261.00	7,261.00	107.06	8.15	-90.00	86.07	4,047.16	1,282.77	1,196.37	86.39	14.848		
10,600.00	7,340.00	7,261.00	7,261.00	110.17	8.15	-90.00	86.07	4,047.16	1,211.79	1,119.45	92.34	13.123		
10,700.00	7,340.00	7,261.00	7,261.00	113.28	8.15	-90.00	86.07	4,047.16	1,145.16	1,046.38	98.78	11.593		
10,800.00	7,340.00	7,261.00	7,261.00	116.40	8.15	-90.00	86.07	4,047.16	1,083.67	978.02	105.65	10.257		
10,900.00	7,340.00	7,261.00	7,261.00	119.52	8.15	-90.00	86.07	4,047.16	1,028.24	915.43	112.81	9.114		
11,000.00	7,340.00	7,261.00	7,261.00	122.65	8.15	-90.00	86.07	4,047.16	979.92	859.84	120.08	8.161		
11,100.00	7,340.00	7,261.00	7,261.00	125.78	8.15	-90.00	86.07	4,047.16	939.78	812.63	127.15	7.391		
11,200.00	7,340.00	7,261.00	7,261.00	128.91	8.15	-90.00	86.07	4,047.16	908.92	775.27	133.65	6.801		
11,300.00	7,340.00	7,261.00	7,261.00	132.05	8.15	-90.00	86.07	4,047.16	888.31	749.14	139.17	6.383		
11,400.00	7,340.00	7,261.00	7,261.00	135.19	8.15	-90.00	86.07	4,047.16	878.66	735.33	143.33	6.130		
11,435.25	7,340.00	7,261.00	7,261.00	136.30	8.15	-90.00	86.07	4,047.16	877.95	733.53	144.41	6.079 CC, ES		
11,500.00	7,340.00	7,261.00	7,261.00	138.34	8.15	-90.00	86.07	4,047.16	880.33	734.47	145.87	6.035 SF		
11,600.00	7,340.00	7,261.00	7,261.00	141.49	8.15	-90.00	86.07	4,047.16	893.27	746.57	146.71	6.089		
11,700.00	7,340.00	7,261.00	7,261.00	144.63	8.15	-90.00	86.07	4,047.16	917.00	771.05	145.95	6.283		
11,800.00	7,340.00	7,261.00	7,261.00	147.79	8.15	-90.00	86.07	4,047.16	950.70	806.84	143.86	6.608		
11,886.52	7,340.00	7,261.00	7,261.00	150.52	8.15	-90.00	86.07	4,047.16	987.14	845.90	141.23	6.990		

Cathedral Energy Services

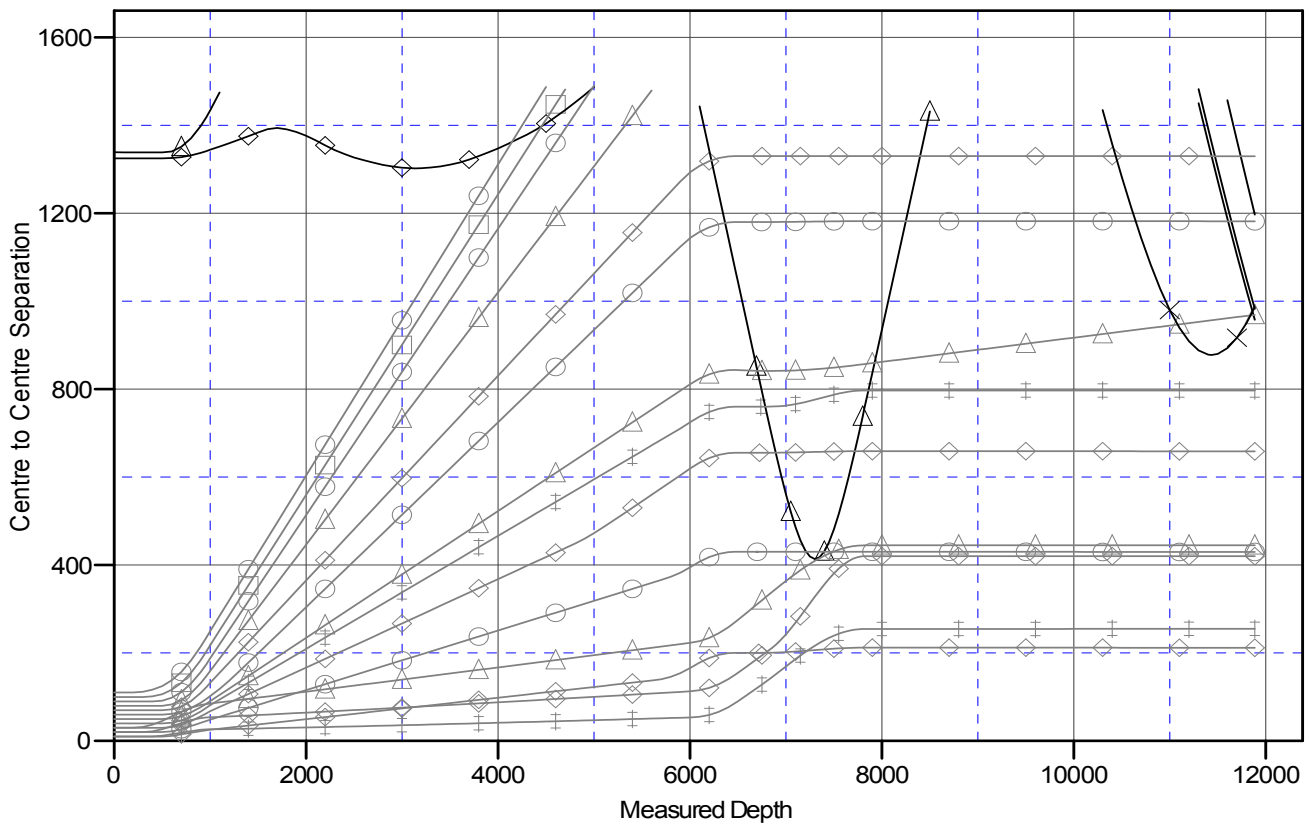
Anticollision Report

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

Ladder Plot



LEGEND

HN, GWOG WELL, GWOG WELL V0	SAM3B-25H-M166, OH, PLAN#1 V0	SAM3I-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPR WELL, SURVEYS V0	SAM3C-25H-M166, OH, PLAN#1 V0	SAM3J-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPR WELL, SURVEYS V0	SAM3D-25H-M166, OH, PLAN#1 V0	SAM3K-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPR WELL, SURVEYS V0	SAM3E-25H-M166, OH, PLAN#1 V0	SAM3M-25H-M166, OH, PLAN#1 V0
3), CPR WELL, NO SURVEYS V0	SAM3F-25H-M166, OH, PLAN#1 V0	SAM3N-25H-M166, OH, PLAN#1 V0
TING), CPR WELL, SURVEYS V0	SAM3G-25H-M166, OH, PLAN#1 V0	SAM3O-25H-M166, OH, PLAN#1 V0
36, OH, PLAN#1 V0	SAM3H-25H-M166, OH, PLAN#1 V0	Wenzel 1 (EXISTING), CPR WELL, NO S