



CRESTONE PEAK
RESOURCES

Project: DJ BASIN
Site: S25-T1N-R66W (SAM)
Well: SAM 3D-25H-M166
Wellbore: OH
Design: PLAN #1

SECTION DETAILS

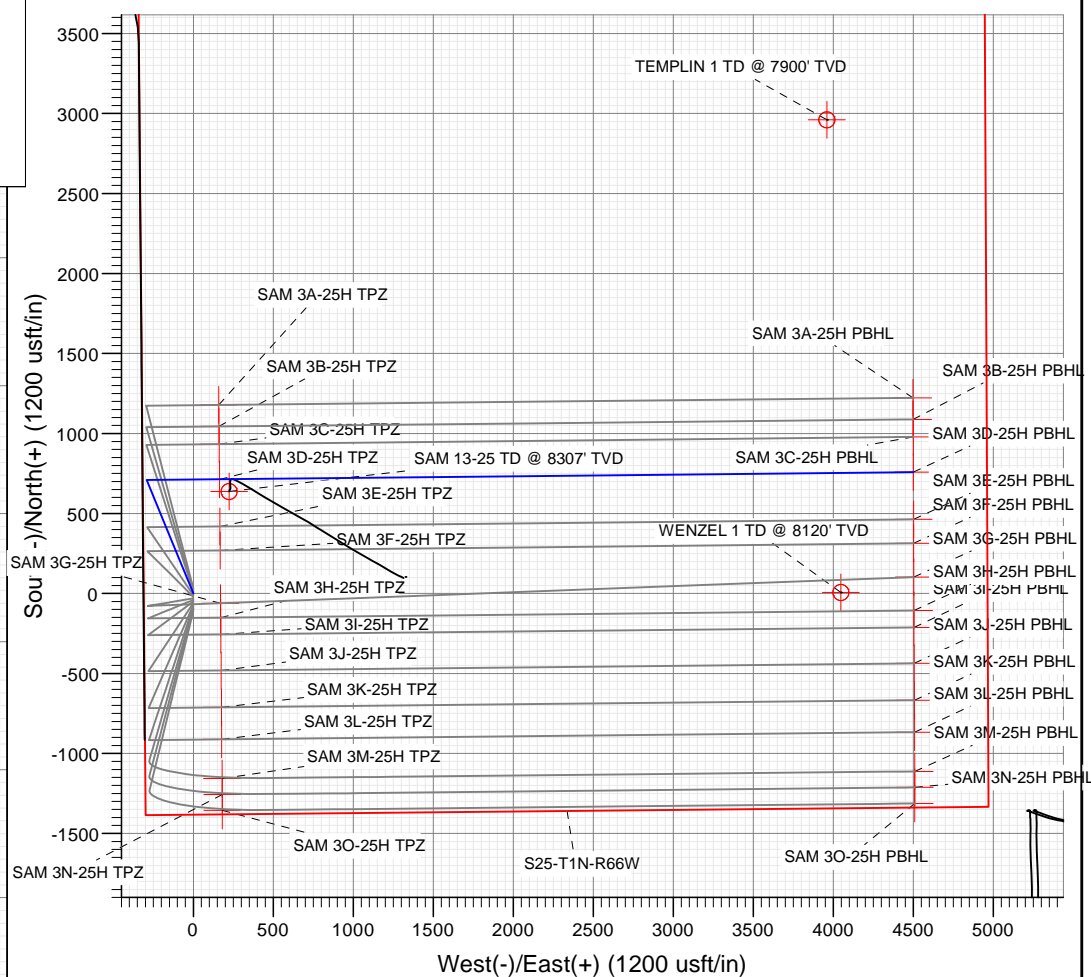
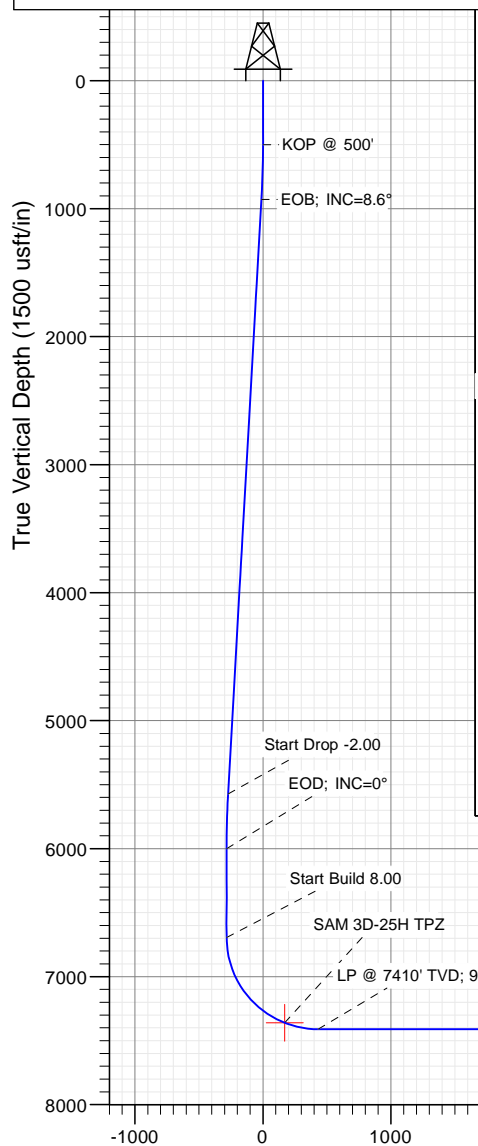
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	929.94	8.60	337.65	928.33	29.78	-12.25	2.00	337.65	-11.94	
4	5626.07	8.60	337.65	5571.67	679.16	-279.28	0.00	0.00	-272.27	
5	6056.01	0.00	0.00	6000.00	708.94	-291.53	2.00	180.00	-284.21	
6	6749.81	0.00	0.00	6693.80	708.94	-291.53	0.00	0.00	-284.21	
7	7874.81	90.00	89.41	7410.00	716.28	424.63	8.00	89.41	431.98	
8	11950.31	90.00	89.41	7410.00	758.03	4499.92	0.00	0.00	4507.48	SAM 3D-25H PBHL

PLAN #1
SAM 3D-25H-M166
16XXX LR
23 KB @ 5100.00usft
Ground Level @ 5086.00
North American Datum 1983
Well SAM 3D-25H-M166, Grid North

Name	Type	Target	No Target (Freehand)	Azimuth	Origin	Type	N/S	E/W	From	TVD
SAM 3D-25H TPZ				89.41	7360.61		+N/-S	+E/-W	Latitude	Longitude
SAM 3D-25H PBHL					7410.00		713.60	163.28	40.020767	-104.733248
							758.03	4499.92	40.020785	-104.717763

FORMATION TOP DETAILS

No formation data is available



Azimuths to Grid North
True North: -0.49°
Magnetic North: 7.82°

Magnetic Field
Strength: 52247.5nT
Dip Angle: 66.47°
Date: 11/17/2016
Model: HDGM

Vertical Section at 89.41° (1500 usft/in)

WELL DETAILS: SAM 3D-25H-M166

+N/-S	+E/-W	Northing	Ground Level: Easting	5086.00	Latitude	Longitude
0.00	0.00	1250626.53	3214576.96		40.018812	-104.733853

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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 3D-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,626.53 usft	Latitude:	40.018812
	+E/-W	0.00 usft	Easting:	3,214,576.96 usft	Longitude:	-104.733853
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	
929.94	8.60	337.65	928.33	29.78	-12.25	2.00	2.00	0.00	337.65	
5,626.07	8.60	337.65	5,571.67	679.16	-279.28	0.00	0.00	0.00	0.00	
6,056.01	0.00	0.00	6,000.00	708.94	-291.53	2.00	-2.00	0.00	180.00	
6,749.81	0.00	0.00	6,693.80	708.94	-291.53	0.00	0.00	0.00	0.00	
7,874.81	90.00	89.41	7,410.00	716.28	424.63	8.00	8.00	0.00	89.41	
11,950.31	90.00	89.41	7,410.00	758.03	4,499.92	0.00	0.00	0.00	0.00	SAM 3D-25H PBHL

Cathedral Energy Services

Planning Report

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Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3D-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	337.65	599.98	1.61	-0.66	-0.65	2.00	2.00	
700.00	4.00	337.65	699.84	6.45	-2.65	-2.59	2.00	2.00	
800.00	6.00	337.65	799.45	14.51	-5.97	-5.82	2.00	2.00	
900.00	8.00	337.65	898.70	25.78	-10.60	-10.34	2.00	2.00	
929.94	8.60	337.65	928.33	29.78	-12.25	-11.94	2.00	2.00	EOB; INC=8.6°
1,000.00	8.60	337.65	997.60	39.47	-16.23	-15.82	0.00	0.00	
1,100.00	8.60	337.65	1,096.48	53.30	-21.92	-21.37	0.00	0.00	
1,200.00	8.60	337.65	1,195.35	67.13	-27.60	-26.91	0.00	0.00	
1,300.00	8.60	337.65	1,294.23	80.95	-33.29	-32.45	0.00	0.00	
1,400.00	8.60	337.65	1,393.10	94.78	-38.98	-38.00	0.00	0.00	
1,500.00	8.60	337.65	1,491.98	108.61	-44.66	-43.54	0.00	0.00	
1,600.00	8.60	337.65	1,590.86	122.44	-50.35	-49.09	0.00	0.00	
1,700.00	8.60	337.65	1,689.73	136.26	-56.03	-54.63	0.00	0.00	
1,800.00	8.60	337.65	1,788.61	150.09	-61.72	-60.17	0.00	0.00	
1,900.00	8.60	337.65	1,887.48	163.92	-67.41	-65.72	0.00	0.00	
2,000.00	8.60	337.65	1,986.36	177.75	-73.09	-71.26	0.00	0.00	
2,100.00	8.60	337.65	2,085.24	191.58	-78.78	-76.80	0.00	0.00	
2,200.00	8.60	337.65	2,184.11	205.40	-84.47	-82.35	0.00	0.00	
2,300.00	8.60	337.65	2,282.99	219.23	-90.15	-87.89	0.00	0.00	
2,400.00	8.60	337.65	2,381.86	233.06	-95.84	-93.43	0.00	0.00	
2,500.00	8.60	337.65	2,480.74	246.89	-101.53	-98.98	0.00	0.00	
2,600.00	8.60	337.65	2,579.62	260.72	-107.21	-104.52	0.00	0.00	
2,700.00	8.60	337.65	2,678.49	274.54	-112.90	-110.06	0.00	0.00	
2,800.00	8.60	337.65	2,777.37	288.37	-118.58	-115.61	0.00	0.00	
2,900.00	8.60	337.65	2,876.24	302.20	-124.27	-121.15	0.00	0.00	
3,000.00	8.60	337.65	2,975.12	316.03	-129.96	-126.70	0.00	0.00	
3,100.00	8.60	337.65	3,074.00	329.86	-135.64	-132.24	0.00	0.00	
3,200.00	8.60	337.65	3,172.87	343.68	-141.33	-137.78	0.00	0.00	
3,300.00	8.60	337.65	3,271.75	357.51	-147.02	-143.33	0.00	0.00	
3,400.00	8.60	337.65	3,370.62	371.34	-152.70	-148.87	0.00	0.00	
3,500.00	8.60	337.65	3,469.50	385.17	-158.39	-154.41	0.00	0.00	
3,600.00	8.60	337.65	3,568.38	399.00	-164.07	-159.96	0.00	0.00	
3,700.00	8.60	337.65	3,667.25	412.82	-169.76	-165.50	0.00	0.00	
3,800.00	8.60	337.65	3,766.13	426.65	-175.45	-171.04	0.00	0.00	
3,900.00	8.60	337.65	3,865.00	440.48	-181.13	-176.59	0.00	0.00	
4,000.00	8.60	337.65	3,963.88	454.31	-186.82	-182.13	0.00	0.00	
4,100.00	8.60	337.65	4,062.76	468.13	-192.51	-187.68	0.00	0.00	
4,200.00	8.60	337.65	4,161.63	481.96	-198.19	-193.22	0.00	0.00	
4,300.00	8.60	337.65	4,260.51	495.79	-203.88	-198.76	0.00	0.00	
4,400.00	8.60	337.65	4,359.38	509.62	-209.57	-204.31	0.00	0.00	
4,500.00	8.60	337.65	4,458.26	523.45	-215.25	-209.85	0.00	0.00	
4,600.00	8.60	337.65	4,557.13	537.27	-220.94	-215.39	0.00	0.00	
4,700.00	8.60	337.65	4,656.01	551.10	-226.62	-220.94	0.00	0.00	
4,800.00	8.60	337.65	4,754.89	564.93	-232.31	-226.48	0.00	0.00	
4,900.00	8.60	337.65	4,853.76	578.76	-238.00	-232.02	0.00	0.00	
5,000.00	8.60	337.65	4,952.64	592.59	-243.68	-237.57	0.00	0.00	

Cathedral Energy Services

Planning Report

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Project:	DJ BASIN	MD Reference:	23' KB @ 5109.00usft
Site:	S25-T1N-R66W (SAM)	North Reference:	Grid
Well:	SAM 3D-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	8.60	337.65	5,051.51	606.41	-249.37	-243.11	0.00	0.00	
5,200.00	8.60	337.65	5,150.39	620.24	-255.06	-248.66	0.00	0.00	
5,300.00	8.60	337.65	5,249.27	634.07	-260.74	-254.20	0.00	0.00	
5,400.00	8.60	337.65	5,348.14	647.90	-266.43	-259.74	0.00	0.00	
5,500.00	8.60	337.65	5,447.02	661.73	-272.11	-265.29	0.00	0.00	
5,600.00	8.60	337.65	5,545.89	675.55	-277.80	-270.83	0.00	0.00	
5,626.07	8.60	337.65	5,571.67	679.16	-279.28	-272.27	0.00	0.00	Start Drop -2.00
5,700.00	7.12	337.65	5,644.90	688.51	-283.13	-276.02	2.00	-2.00	
5,800.00	5.12	337.65	5,744.33	698.37	-287.18	-279.98	2.00	-2.00	
5,900.00	3.12	337.65	5,844.07	705.01	-289.91	-282.64	2.00	-2.00	
6,000.00	1.12	337.65	5,943.99	708.43	-291.32	-284.01	2.00	-2.00	
6,056.01	0.00	0.00	6,000.00	708.94	-291.53	-284.21	2.00	-2.00	EOD; INC=0°
6,100.00	0.00	0.00	6,043.99	708.94	-291.53	-284.21	0.00	0.00	
6,200.00	0.00	0.00	6,143.99	708.94	-291.53	-284.21	0.00	0.00	
6,300.00	0.00	0.00	6,243.99	708.94	-291.53	-284.21	0.00	0.00	
6,400.00	0.00	0.00	6,343.99	708.94	-291.53	-284.21	0.00	0.00	
6,500.00	0.00	0.00	6,443.99	708.94	-291.53	-284.21	0.00	0.00	
6,600.00	0.00	0.00	6,543.99	708.94	-291.53	-284.21	0.00	0.00	
6,700.00	0.00	0.00	6,643.99	708.94	-291.53	-284.21	0.00	0.00	
6,749.81	0.00	0.00	6,693.80	708.94	-291.53	-284.21	0.00	0.00	Start Build 8.00
6,800.00	4.01	89.41	6,743.95	708.96	-289.77	-282.46	8.00	8.00	
6,900.00	12.01	89.41	6,842.89	709.10	-275.84	-268.52	8.00	8.00	
7,000.00	20.01	89.41	6,938.93	709.38	-248.28	-240.96	8.00	8.00	
7,100.00	28.01	89.41	7,030.20	709.80	-207.61	-200.29	8.00	8.00	
7,200.00	36.01	89.41	7,114.92	710.34	-154.65	-147.32	8.00	8.00	
7,300.00	44.01	89.41	7,191.45	711.00	-90.40	-83.08	8.00	8.00	
7,400.00	52.01	89.41	7,258.29	711.76	-16.14	-8.81	8.00	8.00	
7,500.00	60.01	89.41	7,314.14	712.61	66.71	74.05	8.00	8.00	
7,600.00	68.01	89.41	7,357.92	713.53	156.52	163.86	8.00	8.00	
7,700.00	76.01	89.41	7,388.77	714.50	251.56	258.90	8.00	8.00	
7,800.00	84.01	89.41	7,406.10	715.51	349.96	357.31	8.00	8.00	
7,874.81	90.00	89.41	7,410.00	716.28	424.63	431.98	8.00	8.00	LP @ 7410' TVD; 90°
7,900.00	90.00	89.41	7,410.00	716.54	449.81	457.17	0.00	0.00	
8,000.00	90.00	89.41	7,410.00	717.56	549.81	557.17	0.00	0.00	
8,100.00	90.00	89.41	7,410.00	718.59	649.80	657.17	0.00	0.00	
8,200.00	90.00	89.41	7,410.00	719.61	749.80	757.17	0.00	0.00	
8,300.00	90.00	89.41	7,410.00	720.63	849.79	857.17	0.00	0.00	
8,400.00	90.00	89.41	7,410.00	721.66	949.79	957.17	0.00	0.00	
8,500.00	90.00	89.41	7,410.00	722.68	1,049.78	1,057.17	0.00	0.00	
8,600.00	90.00	89.41	7,410.00	723.71	1,149.78	1,157.17	0.00	0.00	
8,700.00	90.00	89.41	7,410.00	724.73	1,249.77	1,257.17	0.00	0.00	
8,800.00	90.00	89.41	7,410.00	725.76	1,349.77	1,357.17	0.00	0.00	
8,900.00	90.00	89.41	7,410.00	726.78	1,449.76	1,457.17	0.00	0.00	
9,000.00	90.00	89.41	7,410.00	727.81	1,549.76	1,557.17	0.00	0.00	
9,100.00	90.00	89.41	7,410.00	728.83	1,649.75	1,657.17	0.00	0.00	
9,200.00	90.00	89.41	7,410.00	729.86	1,749.75	1,757.17	0.00	0.00	
9,300.00	90.00	89.41	7,410.00	730.88	1,849.74	1,857.17	0.00	0.00	
9,400.00	90.00	89.41	7,410.00	731.90	1,949.74	1,957.17	0.00	0.00	
9,500.00	90.00	89.41	7,410.00	732.93	2,049.73	2,057.17	0.00	0.00	
9,600.00	90.00	89.41	7,410.00	733.95	2,149.73	2,157.17	0.00	0.00	
9,700.00	90.00	89.41	7,410.00	734.98	2,249.72	2,257.17	0.00	0.00	
9,800.00	90.00	89.41	7,410.00	736.00	2,349.72	2,357.17	0.00	0.00	

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Planning Report

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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	7,410.00	737.03	2,449.71	2,457.17	0.00	0.00	
10,000.00	90.00	89.41	7,410.00	738.05	2,549.70	2,557.17	0.00	0.00	
10,100.00	90.00	89.41	7,410.00	739.08	2,649.70	2,657.17	0.00	0.00	
10,200.00	90.00	89.41	7,410.00	740.10	2,749.69	2,757.17	0.00	0.00	
10,300.00	90.00	89.41	7,410.00	741.13	2,849.69	2,857.17	0.00	0.00	
10,400.00	90.00	89.41	7,410.00	742.15	2,949.68	2,957.17	0.00	0.00	
10,500.00	90.00	89.41	7,410.00	743.17	3,049.68	3,057.17	0.00	0.00	
10,600.00	90.00	89.41	7,410.00	744.20	3,149.67	3,157.17	0.00	0.00	
10,700.00	90.00	89.41	7,410.00	745.22	3,249.67	3,257.17	0.00	0.00	
10,800.00	90.00	89.41	7,410.00	746.25	3,349.66	3,357.17	0.00	0.00	
10,900.00	90.00	89.41	7,410.00	747.27	3,449.66	3,457.17	0.00	0.00	
11,000.00	90.00	89.41	7,410.00	748.30	3,549.65	3,557.17	0.00	0.00	
11,100.00	90.00	89.41	7,410.00	749.32	3,649.65	3,657.17	0.00	0.00	
11,200.00	90.00	89.41	7,410.00	750.35	3,749.64	3,757.17	0.00	0.00	
11,300.00	90.00	89.41	7,410.00	751.37	3,849.64	3,857.17	0.00	0.00	
11,400.00	90.00	89.41	7,410.00	752.40	3,949.63	3,957.17	0.00	0.00	
11,500.00	90.00	89.41	7,410.00	753.42	4,049.63	4,057.17	0.00	0.00	
11,600.00	90.00	89.41	7,410.00	754.44	4,149.62	4,157.17	0.00	0.00	
11,700.00	90.00	89.41	7,410.00	755.47	4,249.62	4,257.17	0.00	0.00	
11,800.00	90.00	89.41	7,410.00	756.49	4,349.61	4,357.17	0.00	0.00	
11,900.00	90.00	89.41	7,410.00	757.52	4,449.60	4,457.17	0.00	0.00	
11,950.31	90.00	89.41	7,410.00	758.03	4,499.92	4,507.48	0.00	0.00	TD at 11950.31

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SAM 3D-25H PBHL	0.00	0.00	7,410.00	758.03	4,499.92	1,251,384.56	3,219,076.87	40.020785	-104.717763
- plan hits target center									
- Point									
SAM 3D-25H TPZ	0.00	0.00	7,360.61	713.60	163.28	1,251,340.13	3,214,740.24	40.020767	-104.733248
- plan misses target center by 0.01usft at 7607.26usft MD (7360.60 TVD, 713.60 N, 163.27 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'
929.94	928.33	29.78	-12.25	EOB; INC=8.6°
5,626.07	5,571.67	679.16	-279.28	Start Drop -2.00
6,056.01	6,000.00	708.94	-291.53	EOD; INC=0°
6,749.81	6,693.80	708.94	-291.53	Start Build 8.00
7,874.81	7,410.00	716.28	424.63	LP @ 7410' TVD; 90°
11,950.31	7,410.00	758.03	4,499.92	TD at 11950.31

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (SAM)

SAM 3D-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 3D-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 3D-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	11,950.31	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Cathedral Energy Services

Anticollision Report

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

Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
S25-T1N-R66W (SAM)						
Bare Spaces 11-36 (EXISTING) - CPR WELL - NO SURV						Out of range
Beierle 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	5,096.51	5,139.25	696.30	657.61	17.998	CC
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	5,100.00	5,142.44	696.30	657.58	17.985	ES
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,800.00	6,896.95	721.57	674.11	15.204	SF
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,330.40	10,930.66	361.79	294.73	5.395	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,350.00	10,930.63	362.59	293.13	5.220	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,450.00	10,930.49	390.35	311.54	4.953	SF
Gilmore 1-30 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lehl 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 21-31 (EXISTING) - CPR WELL - GYRO						Out of range
Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2C-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2D-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2F-31H-D165 (PLAN) - CPR WELL - PLAN ON						Out of range
Lochbuie 2G-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2H-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lutz 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	500.00	461.00	1,329.84	1,327.77	639.783	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,100.00	500.00	1,459.34	1,454.04	275.275	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	7,678.37	7,553.88	52.98	-0.50	0.991	Level 1, CC, ES, SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	30.23	29.24	30.446	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	11,950.31	12,017.13	464.81	162.45	1.537	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	20.02	18.31	11.710	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	11,950.31	12,168.52	370.91	102.09	1.380	Level 3, SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	10.20	7.77	4.201	CC
SAM 3C-25H-M166 - OH - PLAN #1	11,950.31	11,912.09	230.89	-59.42	0.795	Level 1, ES, SF
SAM 3E-25H-M166 - OH - PLAN #1	500.00	500.00	9.84	6.69	3.129	CC, ES
SAM 3E-25H-M166 - OH - PLAN #1	11,950.31	11,848.32	303.25	9.69	1.033	Level 2, SF
SAM 3F-25H-M166 - OH - PLAN #1	500.00	500.00	20.04	16.90	6.375	CC, ES
SAM 3F-25H-M166 - OH - PLAN #1	11,950.31	11,909.47	445.15	143.14	1.474	Level 3, SF
SAM 3G-25H-M166 - OH - PLAN #1	500.00	500.00	29.87	26.73	9.502	CC, ES
SAM 3G-25H-M166 - OH - PLAN #1	11,950.31	11,825.78	659.06	359.73	2.202	SF
SAM 3H-25H-M166 - OH - PLAN #1	500.00	500.00	40.07	36.93	12.746	CC, ES
SAM 3H-25H-M166 - OH - PLAN #1	11,950.31	12,070.04	881.70	584.72	2.969	SF
SAM 3I-25H-M166 - OH - PLAN #1	500.00	500.00	49.91	46.76	15.875	CC, ES
SAM 3I-25H-M166 - OH - PLAN #1	11,950.31	11,906.06	970.07	669.61	3.229	SF
SAM 3J-25H-M166 - OH - PLAN #1	500.00	500.00	59.75	56.60	19.005	CC, ES
SAM 3J-25H-M166 - OH - PLAN #1	11,950.31	11,845.06	1,197.24	896.72	3.984	SF
SAM 3K-25H-M166 - OH - PLAN #1	500.00	500.00	69.94	66.80	22.248	CC, ES
SAM 3K-25H-M166 - OH - PLAN #1	11,950.31	11,936.55	1,425.05	1,123.88	4.732	SF
SAM 3L-25H-M166 - OH - PLAN #1	500.00	500.00	79.79	76.65	25.380	CC, ES
SAM 3L-25H-M166 - OH - PLAN #1	700.00	694.04	92.67	88.10	20.289	SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	89.98	87.55	37.077	CC, ES
SAM 3M-25H-M166 - OH - PLAN #1	700.00	689.52	111.02	106.42	24.135	SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	99.81	98.10	58.374	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	700.00	683.77	132.27	127.60	28.343	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	110.02	109.03	110.800	CC, ES
SAM 3O-25H-M166 - OH - PLAN #1	700.00	676.50	157.12	152.36	32.953	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 3D-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 3D-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)						
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	11,489.73	7,331.00	747.07	602.24	5.158	CC
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,500.00	7,331.00	747.14	602.03	5.149	ES, SF

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1357-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
1,900.00	1,887.48	2,036.60	2,033.99	7.00	3.26	1.22	1,535.41	-598.48	1,478.30	1,468.66	9.63	153.433		
2,000.00	1,986.36	2,128.29	2,125.02	7.41	3.47	0.98	1,524.68	-600.95	1,453.59	1,443.43	10.16	143.057		
2,100.00	2,085.24	2,218.00	2,213.90	7.82	3.67	0.63	1,513.64	-605.95	1,429.36	1,418.68	10.69	133.742		
2,200.00	2,184.11	2,358.09	2,352.05	8.23	4.04	-0.10	1,493.02	-616.47	1,403.64	1,392.32	11.32	123.969		
2,300.00	2,282.99	2,473.11	2,464.52	8.64	4.39	-0.93	1,472.17	-628.49	1,376.12	1,364.17	11.95	115.153		
2,400.00	2,381.86	2,629.02	2,616.02	9.05	4.96	-2.21	1,439.44	-645.19	1,346.62	1,333.92	12.70	106.074		
2,500.00	2,480.74	2,800.23	2,780.47	9.46	5.74	-3.77	1,394.21	-659.87	1,311.38	1,297.88	13.50	97.112		
2,600.00	2,579.62	2,919.48	2,892.92	9.87	6.38	-5.15	1,356.28	-671.48	1,272.29	1,258.01	14.28	89.115		
2,700.00	2,678.49	2,987.68	2,957.34	10.28	6.72	-5.98	1,334.95	-678.20	1,234.29	1,219.33	14.96	82.525		
2,800.00	2,777.37	3,073.84	3,039.06	10.70	7.12	-7.06	1,308.93	-686.58	1,197.59	1,181.93	15.66	76.467		
2,900.00	2,876.24	3,144.09	3,105.76	11.11	7.46	-8.00	1,288.20	-693.95	1,162.23	1,145.86	16.38	70.970		
3,000.00	2,975.12	3,222.73	3,180.47	11.52	7.87	-9.14	1,265.63	-703.64	1,128.83	1,111.68	17.16	65.801		
3,100.00	3,074.00	3,311.85	3,264.70	11.93	8.36	-10.61	1,239.52	-716.54	1,096.56	1,078.54	18.02	60.847		
3,200.00	3,172.87	3,405.60	3,353.11	12.34	8.89	-12.26	1,211.61	-730.43	1,064.85	1,045.91	18.94	56.216		
3,300.00	3,271.75	3,498.28	3,440.65	12.76	9.40	-13.96	1,184.13	-743.48	1,033.74	1,013.88	19.86	52.054		
3,400.00	3,370.62	3,591.28	3,528.96	13.17	9.89	-15.65	1,157.33	-754.98	1,003.27	982.49	20.78	48.283		
3,500.00	3,469.50	3,685.33	3,618.17	13.58	10.43	-17.48	1,129.90	-766.68	973.47	951.72	21.75	44.764		
3,600.00	3,568.38	3,781.10	3,708.84	13.99	10.99	-19.46	1,101.41	-778.44	944.15	921.38	22.76	41.476		
3,700.00	3,667.25	3,871.86	3,794.60	14.41	11.53	-21.47	1,073.94	-789.65	915.60	891.81	23.79	38.479		
3,800.00	3,766.13	3,960.31	3,878.35	14.82	12.03	-23.52	1,047.57	-800.40	888.48	863.65	24.83	35.787		
3,900.00	3,865.00	4,054.78	3,967.74	15.23	12.58	-25.82	1,019.18	-811.72	862.39	836.49	25.91	33.289		
4,000.00	3,963.88	4,143.03	4,051.02	15.65	13.12	-28.13	992.11	-822.64	837.63	810.61	27.02	30.999		
4,100.00	4,062.76	4,224.50	4,127.92	16.06	13.60	-30.37	967.36	-833.22	815.10	786.99	28.11	28.995		
4,200.00	4,161.63	4,318.71	4,216.94	16.47	14.14	-33.06	939.09	-845.51	794.60	765.35	29.25	27.166		
4,300.00	4,260.51	4,414.64	4,307.72	16.89	14.70	-35.88	910.35	-857.22	775.39	744.99	30.40	25.507		
4,400.00	4,359.38	4,505.17	4,393.39	17.30	15.23	-38.66	883.10	-867.85	757.76	726.22	31.54	24.026		
4,500.00	4,458.26	4,609.16	4,491.38	17.71	15.88	-42.05	850.45	-879.82	741.54	708.77	32.77	22.627		
4,600.00	4,557.13	4,701.92	4,578.45	18.13	16.49	-45.26	820.03	-889.75	726.53	692.57	33.96	21.393		
4,700.00	4,656.01	4,782.67	4,654.33	18.54	16.98	-48.12	793.85	-898.53	714.41	679.39	35.03	20.395		
4,800.00	4,754.89	4,865.97	4,733.04	18.96	17.46	-51.03	768.31	-908.06	705.95	669.93	36.02	19.600		
4,900.00	4,853.76	4,956.45	4,818.92	19.37	17.96	-54.16	741.83	-918.58	700.57	663.59	36.98	18.947		
5,000.00	4,952.64	5,050.17	4,908.18	19.78	18.46	-57.36	715.21	-928.93	697.37	659.48	37.89	18.406		
5,096.51	5,048.06	5,139.25	4,993.49	20.18	18.92	-60.30	691.33	-938.28	696.30	657.61	38.69	17.998 CC		
5,100.00	5,051.51	5,142.44	4,996.55	20.20	18.94	-60.41	690.51	-938.61	696.30	657.58	38.72	17.985 ES		
5,200.00	5,150.39	5,232.92	5,083.72	20.61	19.38	-63.25	668.15	-948.02	697.53	658.08	39.45	17.681		
5,300.00	5,249.27	5,328.33	5,176.22	21.03	19.82	-66.03	647.07	-958.04	700.93	660.79	40.14	17.461		
5,400.00	5,348.14	5,434.89	5,280.38	21.44	20.25	-68.83	626.97	-968.11	704.98	664.15	40.83	17.264		
5,500.00	5,447.02	5,544.15	5,388.03	21.85	20.64	-71.37	610.33	-976.47	708.45	666.98	41.46	17.086		
5,600.00	5,545.89	5,648.05	5,490.96	22.27	20.96	-73.50	597.84	-983.14	711.51	669.50	42.01	16.938		
5,626.07	5,571.67	5,674.36	5,517.08	22.37	21.03	-74.01	595.13	-984.74	712.32	670.18	42.14	16.904		
5,700.00	5,644.90	5,746.35	5,588.61	22.67	21.22	-75.31	588.33	-989.17	715.11	672.62	42.49	16.830		
5,800.00	5,744.33	5,866.49	5,708.27	23.06	21.49	-76.98	579.69	-995.33	718.79	675.78	43.00	16.715		
5,900.00	5,844.07	5,980.94	5,822.57	23.42	21.69	-77.96	575.23	-998.99	721.10	677.65	43.45	16.596		
6,000.00	5,943.99	6,097.97	5,939.59	23.76	21.84	-78.40	573.93	-999.79	721.12	677.25	43.87	16.439		
6,024.34	5,968.33	6,122.12	5,963.73	23.84	21.87	-78.44	573.75	-999.80	721.10	677.12	43.97	16.399		
6,056.01	6,000.00	6,153.72	5,995.33	23.94	21.91	-100.83	573.49	-999.83	721.14	677.03	44.11	16.349		
6,100.00	6,043.99	6,198.41	6,040.02	24.08	21.96	-100.86	573.08	-999.83	721.22	676.91	44.30	16.280		
6,200.00	6,143.99	6,300.04	6,141.64	24.39	22.09	-100.95	571.99	-999.65	721.24	676.50	44.74	16.121		
6,300.00	6,243.99	6,401.52	6,243.12	24.71	22.21	-101.05	570.68	-999.19	721.04	675.86	45.18	15.960		
6,400.00	6,343.99	6,502.51	6,344.09	25.03	22.34	-101.17	569.38	-998.55	720.67	675.04	45.63	15.795		
6,500.00	6,443.99	6,603.29	6,444.86	25.35	22.48	-101.29	567.95	-997.77	720.19	674.11	46.07	15.631		
6,600.00	6,543.99	6,701.48	6,543.04	25.67	22.61	-101.43	566.36	-997.00	719.73	673.20	46.53	15.467		

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

Offset Design S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1357-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
6,678.99	6,622.98	6,778.44	6,619.98	25.92	22.72	-101.55	564.86	-996.58	719.62	672.72	46.90	15.344		
6,700.00	6,643.99	6,798.91	6,640.44	25.99	22.75	-101.58	564.43	-996.50	719.63	672.63	47.00	15.313		
6,749.81	6,693.80	6,847.69	6,689.21	26.15	22.82	-101.67	563.32	-996.35	719.71	672.48	47.23	15.239		
6,800.00	6,743.95	6,896.95	6,738.46	26.31	22.89	168.82	562.14	-996.25	721.57	674.11	47.46	15.204 SF		
6,850.00	6,793.66	6,945.78	6,787.28	26.45	22.96	168.72	560.90	-996.19	726.91	679.23	47.69	15.244		
6,900.00	6,842.89	6,994.12	6,835.60	26.59	23.04	168.61	559.60	-996.18	735.70	687.79	47.91	15.355		
6,950.00	6,891.39	7,042.08	6,883.54	26.72	23.11	168.48	558.24	-996.20	747.88	699.74	48.14	15.535		
7,000.00	6,938.93	7,089.23	6,930.66	26.85	23.19	168.34	556.80	-996.23	763.38	715.01	48.37	15.783		
7,050.00	6,985.28	7,135.18	6,976.59	26.97	23.27	168.18	555.31	-996.26	782.11	733.52	48.59	16.098		
7,100.00	7,030.20	7,179.71	7,021.09	27.08	23.34	167.98	553.76	-996.29	803.99	755.19	48.80	16.476		
7,150.00	7,073.49	7,222.25	7,063.61	27.18	23.41	167.73	552.21	-996.32	828.91	779.91	49.00	16.915		
7,200.00	7,114.92	7,262.60	7,103.93	27.27	23.49	167.43	550.67	-996.39	856.79	807.59	49.20	17.413		
7,250.00	7,154.31	7,300.89	7,142.18	27.36	23.55	167.06	549.16	-996.49	887.50	838.10	49.39	17.968		
7,300.00	7,191.45	7,336.92	7,178.19	27.45	23.62	166.59	547.69	-996.61	920.87	871.30	49.57	18.578		
7,350.00	7,226.17	7,370.52	7,211.76	27.53	23.68	165.99	546.28	-996.76	956.74	907.01	49.73	19.238		
7,400.00	7,258.29	7,402.69	7,243.90	27.61	23.74	165.25	544.90	-996.91	994.94	945.06	49.88	19.946		
7,450.00	7,287.66	7,435.00	7,276.18	27.72	23.79	164.35	543.52	-997.00	1,035.18	985.17	50.02	20.697		
7,500.00	7,314.14	7,464.37	7,305.52	27.89	23.85	163.19	542.29	-997.00	1,077.28	1,027.14	50.14	21.487		
7,550.00	7,337.60	7,490.62	7,331.75	28.20	23.89	161.64	541.22	-996.94	1,121.04	1,070.80	50.24	22.313		
7,600.00	7,357.92	7,513.60	7,354.71	28.65	23.93	159.52	540.29	-996.83	1,166.29	1,115.95	50.34	23.170		
7,650.00	7,375.00	7,533.16	7,374.26	29.21	23.97	156.51	539.51	-996.70	1,212.82	1,162.40	50.42	24.057		
7,700.00	7,388.77	7,549.16	7,390.24	29.86	24.00	152.01	538.88	-996.56	1,260.42	1,209.94	50.48	24.968		
7,750.00	7,399.15	7,561.48	7,402.55	30.57	24.02	144.80	538.40	-996.44	1,308.88	1,258.35	50.54	25.900		
7,800.00	7,406.10	7,569.99	7,411.05	31.36	24.03	132.22	538.07	-996.35	1,357.97	1,307.40	50.58	26.849		
7,850.00	7,409.57	7,574.60	7,415.66	32.19	24.04	109.34	537.89	-996.30	1,407.47	1,356.86	50.61	27.811		
7,874.81	7,410.00	7,575.41	7,416.47	32.63	24.04	93.31	537.86	-996.29	1,432.11	1,381.49	50.62	28.291		
7,900.00	7,410.00	7,575.73	7,416.79	33.08	24.04	93.42	537.85	-996.29	1,457.13	1,406.50	50.63	28.779		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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		
6,056.01	6,000.00	10,931.08	7,499.06	23.94	63.85	-90.48	708.72	-318.09	1,475.30	1,442.50	32.80	44.978		
6,100.00	6,043.99	10,931.08	7,499.06	24.08	63.85	-90.48	708.72	-318.09	1,431.32	1,398.49	32.83	43.598		
6,200.00	6,143.99	10,931.08	7,499.06	24.39	63.85	-90.48	708.72	-318.09	1,331.33	1,298.43	32.90	40.464		
6,300.00	6,243.99	10,931.08	7,499.06	24.71	63.85	-90.48	708.72	-318.09	1,231.36	1,198.37	32.98	37.333		
6,400.00	6,343.99	10,931.08	7,499.06	25.03	63.85	-90.48	708.72	-318.09	1,131.38	1,098.31	33.08	34.207		
6,500.00	6,443.99	10,931.08	7,499.06	25.35	63.85	-90.48	708.72	-318.09	1,031.41	998.23	33.18	31.087		
6,600.00	6,543.99	10,931.08	7,499.06	25.67	63.85	-90.48	708.72	-318.09	931.45	898.15	33.29	27.976		
6,700.00	6,643.99	10,931.08	7,499.06	25.99	63.85	-90.48	708.72	-318.09	831.49	798.07	33.43	24.874		
6,749.81	6,693.80	10,931.08	7,499.06	26.15	63.85	-90.48	708.72	-318.09	781.71	748.20	33.50	23.333		
6,800.00	6,743.95	10,931.07	7,499.06	26.31	63.85	-179.96	708.72	-318.09	731.66	698.04	33.62	21.765		
6,850.00	6,793.66	10,931.06	7,499.06	26.45	63.85	-179.97	708.73	-318.09	682.22	648.39	33.83	20.166		
6,900.00	6,842.89	10,931.05	7,499.06	26.59	63.85	-179.97	708.75	-318.09	633.58	599.37	34.21	18.519		
6,950.00	6,891.39	10,931.02	7,499.06	26.72	63.85	-179.97	708.77	-318.09	586.19	551.30	34.89	16.802		
7,000.00	6,938.93	10,931.00	7,499.06	26.85	63.85	-179.97	708.80	-318.09	540.65	504.60	36.05	14.996		
7,050.00	6,985.28	10,930.96	7,499.06	26.97	63.85	-179.97	708.83	-318.10	497.72	459.77	37.95	13.115		
7,100.00	7,030.20	10,930.92	7,499.06	27.08	63.85	-179.96	708.87	-318.10	458.37	417.54	40.83	11.226		
7,150.00	7,073.49	10,930.87	7,499.06	27.18	63.84	-179.96	708.92	-318.10	423.81	378.92	44.89	9.441		
7,200.00	7,114.92	10,930.82	7,499.06	27.27	63.84	-179.95	708.97	-318.10	395.49	345.34	50.16	7.885		
7,250.00	7,154.31	10,930.76	7,499.06	27.36	63.84	-179.94	709.03	-318.10	374.98	318.57	56.41	6.647		
7,300.00	7,191.45	10,930.70	7,499.06	27.45	63.84	-179.93	709.09	-318.10	363.71	300.61	63.10	5.764		
7,330.40	7,212.86	10,930.66	7,499.06	27.50	63.84	-179.93	709.13	-318.10	361.79	294.73	67.06	5.395 CC		
7,350.00	7,226.17	10,930.63	7,499.06	27.53	63.84	-179.92	709.16	-318.10	362.59	293.13	69.46	5.220 ES		
7,400.00	7,258.29	10,930.56	7,499.06	27.61	63.84	-179.91	709.23	-318.10	371.72	296.92	74.81	4.969		
7,450.00	7,287.66	10,930.49	7,499.06	27.72	63.84	-179.89	709.31	-318.10	390.35	311.54	78.81	4.953 SF		
7,500.00	7,314.14	10,930.41	7,499.06	27.89	63.84	-179.88	709.39	-318.10	417.11	335.61	81.51	5.117		
7,550.00	7,337.60	10,930.32	7,499.06	28.20	63.84	-179.85	709.47	-318.10	450.46	367.27	83.18	5.415		
7,600.00	7,357.92	10,930.24	7,499.06	28.65	63.83	-179.82	709.55	-318.10	488.88	404.73	84.15	5.810		
7,650.00	7,375.00	10,930.15	7,499.06	29.21	63.83	-179.78	709.64	-318.10	531.13	446.46	84.67	6.273		
7,700.00	7,388.77	10,930.06	7,499.06	29.86	63.83	-179.72	709.73	-318.10	576.18	491.25	84.93	6.784		
7,750.00	7,399.15	10,929.97	7,499.06	30.57	63.83	-179.64	709.82	-318.10	623.22	538.17	85.05	7.328		
7,800.00	7,406.10	10,929.88	7,499.06	31.36	63.83	-179.48	709.92	-318.10	671.63	586.54	85.09	7.893		
7,850.00	7,409.57	10,929.78	7,499.06	32.19	63.83	-179.15	710.01	-318.11	720.93	635.83	85.11	8.471		
7,874.81	7,410.00	10,929.74	7,499.06	32.63	63.83	-178.78	710.06	-318.11	745.61	660.49	85.11	8.760		
7,900.00	7,410.00	10,929.69	7,499.06	33.08	63.83	-178.74	710.10	-318.11	770.70	685.59	85.11	9.055		
8,000.00	7,410.00	10,929.50	7,499.06	35.00	63.82	-178.57	710.29	-318.11	870.38	785.27	85.11	10.227		
8,100.00	7,410.00	10,929.32	7,499.06	37.10	63.82	-178.41	710.48	-318.11	970.13	885.03	85.10	11.400		
8,200.00	7,410.00	10,929.13	7,499.06	39.35	63.82	-178.24	710.66	-318.11	1,069.93	984.83	85.10	12.573		
8,300.00	7,410.00	10,928.94	7,499.06	41.73	63.81	-178.08	710.85	-318.11	1,169.76	1,084.67	85.09	13.747		
8,400.00	7,410.00	10,928.76	7,499.06	44.21	63.81	-177.91	711.04	-318.11	1,269.61	1,184.53	85.09	14.921		
8,500.00	7,410.00	10,928.57	7,499.06	46.77	63.81	-177.75	711.22	-318.12	1,369.49	1,284.41	85.09	16.095		
8,600.00	7,410.00	10,928.38	7,499.06	49.42	63.81	-177.59	711.41	-318.12	1,469.39	1,384.30	85.09	17.270		

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 3D-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 3D-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	85.54	103.42	1,325.82	1,330.42				
100.00	100.00	61.00	61.00	0.14	0.07	85.54	103.42	1,325.82	1,329.84	1,329.64	0.21	6,485.236	
200.00	200.00	161.00	161.00	0.50	0.18	85.54	103.42	1,325.82	1,329.84	1,329.17	0.67	1,974.705	
300.00	300.00	261.00	261.00	0.85	0.29	85.54	103.42	1,325.82	1,329.84	1,328.70	1.14	1,164.669	
400.00	400.00	361.00	361.00	1.21	0.40	85.54	103.42	1,325.82	1,329.84	1,328.23	1.61	825.886	
500.00	500.00	461.00	461.00	1.57	0.51	85.54	103.42	1,325.82	1,329.84	1,327.77	2.08	639.783 CC, ES	
600.00	599.98	500.00	500.00	1.93	0.55	107.87	103.42	1,325.82	1,331.78	1,329.27	2.51	530.078	
700.00	699.84	500.00	500.00	2.29	0.55	107.68	103.42	1,325.82	1,341.68	1,338.65	3.03	442.646	
800.00	799.45	500.00	500.00	2.65	0.55	107.32	103.42	1,325.82	1,359.92	1,356.31	3.61	376.449	
900.00	898.70	500.00	500.00	3.02	0.55	106.80	103.42	1,325.82	1,386.16	1,381.95	4.20	329.806	
929.94	928.33	500.00	500.00	3.14	0.55	106.61	103.42	1,325.82	1,395.50	1,391.12	4.38	318.720	
1,000.00	997.60	500.00	500.00	3.40	0.55	106.61	103.42	1,325.82	1,419.68	1,414.91	4.77	297.480	
1,100.00	1,096.48	500.00	500.00	3.79	0.55	106.61	103.42	1,325.82	1,459.34	1,454.04	5.30	275.275 SF	

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1386-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	85.80	96.39	1,312.99	1,316.64					
100.00	100.00	83.00	83.00	0.14	0.09	85.80	96.39	1,312.99	1,316.53	1,316.30	0.23	5,718.739		
200.00	200.00	183.00	183.00	0.50	0.20	85.80	96.39	1,312.99	1,316.53	1,315.83	0.70	1,881.371		
300.00	300.00	283.00	283.00	0.85	0.31	85.80	96.39	1,312.99	1,316.53	1,315.36	1.17	1,125.884		
400.00	400.00	383.00	383.00	1.21	0.43	85.80	96.39	1,312.99	1,316.53	1,314.89	1.64	803.307		
500.00	500.00	483.00	483.00	1.57	0.54	85.80	96.39	1,312.99	1,316.53	1,314.42	2.11	624.408		
600.00	599.98	582.98	582.98	1.93	0.65	108.22	96.39	1,312.99	1,317.07	1,314.49	2.58	511.112		
700.00	699.84	682.84	682.84	2.29	0.76	108.40	96.39	1,312.99	1,318.72	1,315.67	3.05	433.035		
800.00	799.45	782.45	782.45	2.65	0.87	108.71	96.39	1,312.99	1,321.50	1,317.98	3.52	375.753		
900.00	898.70	881.70	881.70	3.02	0.98	109.13	96.39	1,312.99	1,325.48	1,321.48	4.00	331.762		
929.94	928.33	911.33	911.33	3.14	1.01	109.27	96.39	1,312.99	1,326.91	1,322.77	4.14	320.458		
1,000.00	997.60	980.60	980.60	3.40	1.09	109.70	96.39	1,312.99	1,330.44	1,325.96	4.48	296.800		
1,100.00	1,096.48	1,079.48	1,079.48	3.79	1.20	110.29	96.39	1,312.99	1,335.61	1,330.63	4.98	268.434		
1,200.00	1,195.35	1,178.35	1,178.35	4.18	1.31	110.89	96.39	1,312.99	1,340.92	1,335.44	5.47	245.016		
1,300.00	1,294.23	1,277.23	1,277.23	4.58	1.42	111.47	96.39	1,312.99	1,346.37	1,340.40	5.97	225.408		
1,400.00	1,393.10	1,376.10	1,376.10	4.98	1.53	112.06	96.39	1,312.99	1,351.97	1,345.50	6.48	208.784		
1,500.00	1,491.98	1,466.06	1,466.06	5.38	1.71	112.58	96.51	1,313.26	1,358.00	1,350.95	7.05	192.539		
1,600.00	1,590.86	1,629.48	1,629.44	5.78	2.06	113.45	98.42	1,311.13	1,362.83	1,355.00	7.83	174.127		
1,700.00	1,689.73	1,840.07	1,839.17	6.19	2.54	114.36	106.19	1,294.59	1,361.17	1,352.44	8.73	155.856		
1,800.00	1,788.61	2,020.07	2,016.61	6.60	3.05	114.90	118.74	1,267.40	1,351.88	1,342.31	9.58	141.179		
1,900.00	1,887.48	2,193.11	2,184.74	7.00	3.71	115.10	138.85	1,231.89	1,337.00	1,326.55	10.44	128.010		
2,000.00	1,986.36	2,341.63	2,326.88	7.41	4.42	115.07	160.90	1,194.99	1,317.62	1,306.33	11.29	116.709		
2,100.00	2,085.24	2,470.25	2,448.62	7.82	5.12	115.00	181.02	1,158.68	1,294.64	1,282.54	12.10	106.963		
2,200.00	2,184.11	2,561.09	2,534.33	8.23	5.62	114.91	196.09	1,132.67	1,271.36	1,258.53	12.83	99.118		
2,300.00	2,282.99	2,652.65	2,620.96	8.64	6.10	114.84	210.80	1,106.91	1,248.62	1,235.06	13.55	92.136		
2,400.00	2,381.86	2,740.59	2,704.25	9.05	6.58	114.76	224.97	1,082.50	1,226.27	1,211.99	14.27	85.905		
2,500.00	2,480.74	2,830.90	2,790.20	9.46	7.07	114.71	238.86	1,058.53	1,205.14	1,190.13	15.01	80.289		
2,600.00	2,579.62	2,945.31	2,898.61	9.87	7.73	114.62	257.13	1,026.85	1,182.79	1,166.97	15.82	74.760		
2,700.00	2,678.49	3,042.29	2,990.51	10.28	8.30	114.56	272.15	999.76	1,160.28	1,143.69	16.59	69.919		
2,800.00	2,777.37	3,148.41	3,090.78	10.70	8.96	114.43	289.77	969.83	1,137.47	1,120.05	17.42	65.313		
2,900.00	2,876.24	3,257.49	3,193.34	11.11	9.69	114.22	309.02	938.06	1,113.64	1,095.37	18.28	60.937		
3,000.00	2,975.12	3,348.42	3,278.57	11.52	10.28	114.00	325.95	911.29	1,089.49	1,070.38	19.11	57.026		
3,100.00	3,074.00	3,444.19	3,368.53	11.93	10.88	113.76	343.60	883.57	1,065.85	1,045.91	19.94	53.458		
3,200.00	3,172.87	3,537.49	3,456.31	12.34	11.47	113.56	360.18	856.65	1,042.35	1,021.59	20.77	50.192		
3,300.00	3,271.75	3,635.18	3,548.24	12.76	12.09	113.32	377.80	828.71	1,019.11	997.49	21.62	47.147		
3,400.00	3,370.62	3,727.44	3,635.20	13.17	12.66	113.11	393.90	802.41	996.01	973.56	22.44	44.376		
3,500.00	3,469.50	3,820.29	3,722.87	13.58	13.24	112.90	410.03	776.41	973.43	950.15	23.29	41.805		
3,600.00	3,568.38	3,912.63	3,810.12	13.99	13.81	112.66	426.39	750.99	951.34	927.20	24.13	39.418		
3,700.00	3,667.25	4,013.11	3,905.29	14.41	14.42	112.45	443.25	723.51	929.46	904.48	24.98	37.207		
3,800.00	3,766.13	4,112.89	3,999.82	14.82	15.03	112.29	459.15	695.83	907.20	881.39	25.81	35.143		
3,900.00	3,865.00	4,204.92	4,087.02	15.23	15.60	112.12	473.97	670.43	885.11	858.45	26.66	33.206		
4,000.00	3,963.88	4,316.00	4,192.16	15.65	16.29	111.90	491.96	639.42	862.71	835.19	27.51	31.358		
4,100.00	4,062.76	4,411.48	4,282.52	16.06	16.89	111.79	506.15	612.06	839.54	811.20	28.34	29.626		
4,200.00	4,161.63	4,508.86	4,374.64	16.47	17.50	111.62	521.18	584.28	816.53	787.34	29.18	27.979		
4,300.00	4,260.51	4,616.07	4,475.54	16.89	18.21	111.31	539.33	552.96	792.80	762.73	30.07	26.362		
4,400.00	4,359.38	4,713.37	4,566.74	17.30	18.88	110.94	556.57	523.73	768.29	737.29	31.00	24.784		
4,500.00	4,458.26	4,799.23	4,647.57	17.71	19.44	110.64	571.29	498.82	744.82	712.89	31.92	23.330		
4,600.00	4,557.13	4,894.84	4,737.99	18.13	20.03	110.37	586.71	471.81	722.15	689.33	32.81	22.007		
4,700.00	4,656.01	4,993.93	4,831.60	18.54	20.67	110.03	603.20	443.81	699.49	665.77	33.72	20.742		
4,800.00	4,754.89	5,091.03	4,923.14	18.96	21.30	109.63	619.80	416.01	676.50	641.83	34.66	19.515		
4,900.00	4,853.76	5,178.52	5,005.91	19.37	21.85	109.28	634.52	391.83	654.52	618.90	35.62	18.375		
5,000.00	4,952.64	5,267.16	5,090.19	19.78	22.37	108.95	648.97	368.46	633.86	597.31	36.56	17.340		

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

Offset Design S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 1386-ISCWSA MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,051.51	5,350.00	5,169.64	20.20	22.83	108.75	661.37	348.55	615.45	578.00	37.45	16.432	
5,200.00	5,150.39	5,430.61	5,247.69	20.61	23.22	108.71	671.90	331.40	599.72	561.45	38.27	15.671	
5,300.00	5,249.27	5,515.83	5,330.86	21.03	23.59	108.86	681.30	315.40	586.42	547.44	38.99	15.042	
5,400.00	5,348.14	5,601.47	5,415.00	21.44	23.92	109.21	689.00	301.39	575.44	535.84	39.61	14.529	
5,500.00	5,447.02	5,689.96	5,502.37	21.85	24.22	109.76	695.40	288.96	566.72	526.58	40.14	14.119	
5,600.00	5,545.89	5,782.04	5,593.55	22.27	24.50	110.43	701.27	277.53	559.68	519.06	40.62	13.779	
5,626.07	5,571.67	5,806.39	5,617.69	22.37	24.57	110.63	702.65	274.69	558.04	517.31	40.74	13.699	
5,700.00	5,644.90	5,872.80	5,683.62	22.67	24.75	111.06	706.02	267.44	553.66	512.60	41.05	13.486	
5,800.00	5,744.33	5,963.14	5,773.49	23.06	24.98	111.49	709.72	259.06	548.30	506.81	41.49	13.215	
5,900.00	5,844.07	6,056.08	5,866.10	23.42	25.18	111.71	712.84	251.81	543.18	501.24	41.94	12.950	
6,000.00	5,943.99	6,145.86	5,955.67	23.76	25.35	111.79	714.22	245.96	538.08	495.70	42.38	12.695	
6,056.01	6,000.00	6,194.04	6,003.80	23.94	25.43	89.39	714.67	243.76	535.72	493.09	42.63	12.567	
6,100.00	6,043.99	6,236.11	6,045.84	24.08	25.49	89.36	714.94	242.20	534.09	491.26	42.84	12.469	
6,200.00	6,143.99	6,331.75	6,141.44	24.39	25.62	89.34	715.06	239.21	530.97	487.68	43.28	12.267	
6,300.00	6,243.99	6,428.25	6,237.90	24.71	25.73	89.41	714.38	236.94	528.61	484.91	43.70	12.095	
6,400.00	6,343.99	6,525.76	6,335.38	25.03	25.84	89.53	713.23	235.19	526.80	482.69	44.11	11.943	
6,500.00	6,443.99	6,624.72	6,434.33	25.35	25.94	89.71	711.56	233.72	525.31	480.80	44.50	11.804	
6,600.00	6,543.99	6,723.68	6,533.25	25.67	26.04	89.95	709.36	232.44	524.01	479.13	44.89	11.674	
6,700.00	6,643.99	6,821.70	6,631.23	25.99	26.12	90.26	706.54	231.45	523.00	477.76	45.24	11.562	
6,749.81	6,693.80	6,870.48	6,679.97	26.15	26.16	90.45	704.82	231.09	522.65	477.24	45.40	11.511	
6,800.00	6,743.95	6,921.00	6,730.45	26.31	26.21	1.27	702.83	230.82	520.64	475.08	45.56	11.427	
6,850.00	6,793.66	6,969.11	6,778.51	26.45	26.24	1.53	700.70	230.61	515.21	469.52	45.70	11.274	
6,900.00	6,842.89	7,018.16	6,827.50	26.59	26.28	1.86	698.26	230.40	506.36	460.54	45.82	11.050	
6,950.00	6,891.39	7,066.23	6,875.50	26.72	26.31	2.25	695.63	230.20	494.12	448.19	45.93	10.758	
7,000.00	6,938.93	7,113.00	6,922.19	26.85	26.34	2.72	692.95	230.05	478.61	432.59	46.02	10.400	
7,050.00	6,985.28	7,158.43	6,967.54	26.97	26.37	3.27	690.27	229.96	459.91	413.82	46.09	9.979	
7,100.00	7,030.20	7,202.23	7,011.27	27.08	26.40	3.94	687.61	229.97	438.15	392.01	46.14	9.496	
7,150.00	7,073.49	7,244.53	7,053.48	27.18	26.42	4.77	684.99	230.07	413.45	367.29	46.16	8.956	
7,200.00	7,114.92	7,285.13	7,094.00	27.27	26.45	5.81	682.41	230.25	385.93	339.77	46.16	8.360	
7,250.00	7,154.31	7,323.84	7,132.63	27.36	26.47	7.15	679.89	230.51	355.73	309.61	46.12	7.713	
7,300.00	7,191.45	7,360.77	7,169.48	27.45	26.49	8.95	677.40	230.80	322.99	276.95	46.04	7.016	
7,350.00	7,226.17	7,395.40	7,204.01	27.53	26.51	11.45	674.88	231.08	287.89	242.00	45.89	6.273	
7,400.00	7,258.29	7,427.46	7,235.98	27.61	26.52	15.01	672.39	231.36	250.66	205.00	45.66	5.489	
7,450.00	7,287.66	7,456.82	7,265.23	27.72	26.54	20.24	669.99	231.62	211.62	166.30	45.32	4.669	
7,500.00	7,314.14	7,483.34	7,291.65	27.89	26.55	28.14	667.73	231.86	171.23	126.39	44.84	3.819	
7,550.00	7,337.60	7,506.90	7,315.12	28.20	26.56	40.08	665.64	232.09	130.30	86.09	44.21	2.947	
7,600.00	7,357.92	7,527.69	7,335.83	28.65	26.57	56.95	663.75	232.29	90.80	46.86	43.94	2.066	
7,650.00	7,375.00	7,545.48	7,353.55	29.21	26.58	76.00	662.21	232.39	59.48	11.49	47.99	1.239 Level 2	
7,678.37	7,383.23	7,553.88	7,361.91	29.58	26.58	85.15	661.51	232.40	52.98	-0.50	53.48	0.991 Level 1, CC, ES, SF	
7,700.00	7,388.77	7,559.45	7,367.47	29.86	26.59	90.64	661.06	232.40	56.93	1.24	55.69	1.022 Level 2	
7,750.00	7,399.15	7,569.67	7,377.66	30.57	26.59	97.88	660.27	232.37	87.48	33.52	53.95	1.621	
7,800.00	7,406.10	7,576.24	7,384.21	31.36	26.60	97.79	659.77	232.33	130.25	78.59	51.66	2.521	
7,850.00	7,409.57	7,579.26	7,387.22	32.19	26.60	90.50	659.55	232.31	176.85	126.54	50.31	3.515	
7,874.81	7,410.00	7,579.48	7,387.45	32.63	26.60	84.21	659.53	232.31	200.59	150.74	49.85	4.024	
7,900.00	7,410.00	7,579.29	7,387.26	33.08	26.60	84.01	659.55	232.31	224.92	175.43	49.48	4.545	
8,000.00	7,410.00	7,578.56	7,386.53	35.00	26.60	83.25	659.60	232.32	322.80	274.23	48.57	6.646	
8,100.00	7,410.00	7,577.87	7,385.83	37.10	26.60	82.53	659.65	232.32	421.68	373.59	48.09	8.768	
8,200.00	7,410.00	7,577.21	7,385.18	39.35	26.60	81.85	659.70	232.33	520.99	473.19	47.80	10.899	
8,300.00	7,410.00	7,576.59	7,384.56	41.73	26.60	81.20	659.75	232.33	620.51	572.91	47.61	13.034	
8,400.00	7,410.00	7,575.99	7,383.96	44.21	26.60	80.59	659.79	232.34	720.17	672.70	47.47	15.170	
8,500.00	7,410.00	7,575.43	7,383.40	46.77	26.60	80.00	659.83	232.34	819.91	772.54	47.37	17.307	
8,600.00	7,410.00	7,574.89	7,382.86	49.42	26.60	79.45	659.87	232.34	919.71	872.41	47.30	19.444	

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

Offset Design S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1386-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,410.00	7,574.37	7,382.35	52.12	26.60	78.92	659.91	232.35	1,019.55	972.30	47.25	21.580		
8,800.00	7,410.00	7,573.88	7,381.86	54.88	26.60	78.41	659.95	232.35	1,119.41	1,072.21	47.20	23.715		
8,900.00	7,410.00	7,573.41	7,381.39	57.68	26.59	77.93	659.98	232.35	1,219.30	1,172.13	47.17	25.848		
9,000.00	7,410.00	7,572.96	7,380.94	60.53	26.59	77.47	660.02	232.35	1,319.20	1,272.05	47.15	27.981		
9,100.00	7,410.00	7,572.52	7,380.50	63.41	26.59	77.03	660.05	232.36	1,419.12	1,371.99	47.13	30.111		

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.04	30.23	0.02	30.23					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	30.23	0.02	30.23	29.96	0.28	109.526		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	30.23	0.02	30.23	29.24	0.99	30.446 CC, ES		
300.00	300.00	298.95	298.93	0.85	0.85	-0.73	31.89	-0.41	31.91	30.16	1.75	18.247		
400.00	400.00	397.66	397.51	1.21	1.21	-2.62	36.83	-1.69	36.95	34.42	2.53	14.591		
500.00	500.00	495.91	495.38	1.57	1.57	-4.83	45.01	-3.80	45.41	42.09	3.32	13.684		
600.00	599.98	593.67	592.44	1.93	1.94	15.96	56.38	-6.74	55.61	51.52	4.09	13.585		
700.00	699.84	691.10	688.70	2.29	2.32	15.27	70.89	-10.49	65.86	61.00	4.86	13.551		
800.00	799.45	788.19	784.06	2.65	2.72	15.12	88.49	-15.04	76.10	70.48	5.62	13.536		
900.00	898.70	886.89	880.50	3.02	3.15	15.38	108.83	-20.30	85.57	79.24	6.32	13.532		
929.94	928.33	916.75	909.66	3.14	3.28	15.56	115.03	-21.90	87.80	81.27	6.53	13.442		
1,000.00	997.60	986.63	977.92	3.40	3.59	16.04	129.55	-25.66	92.69	85.66	7.03	13.193		
1,100.00	1,096.48	1,086.38	1,075.35	3.79	4.04	16.64	150.27	-31.01	99.67	91.92	7.74	12.874		
1,200.00	1,195.35	1,186.13	1,172.78	4.18	4.49	17.16	171.00	-36.37	106.66	98.19	8.47	12.595		
1,300.00	1,294.23	1,285.88	1,270.20	4.58	4.94	17.62	191.72	-41.73	113.65	104.45	9.20	12.351		
1,400.00	1,393.10	1,385.64	1,367.63	4.98	5.40	18.03	212.44	-47.08	120.66	110.72	9.94	12.136		
1,500.00	1,491.98	1,485.39	1,465.06	5.38	5.86	18.39	233.16	-52.44	127.67	116.98	10.69	11.946		
1,600.00	1,590.86	1,585.14	1,562.49	5.78	6.32	18.71	253.89	-57.80	134.68	123.24	11.44	11.776		
1,700.00	1,689.73	1,684.89	1,659.92	6.19	6.78	19.00	274.61	-63.15	141.70	129.51	12.19	11.625		
1,800.00	1,788.61	1,784.64	1,757.34	6.60	7.24	19.27	295.33	-68.51	148.72	135.78	12.95	11.489		
1,900.00	1,887.48	1,884.39	1,854.77	7.00	7.71	19.51	316.05	-73.87	155.74	142.04	13.70	11.366		
2,000.00	1,986.36	1,984.14	1,952.20	7.41	8.17	19.73	336.78	-79.22	162.77	148.31	14.46	11.254		
2,100.00	2,085.24	2,083.89	2,049.63	7.82	8.63	19.93	357.50	-84.58	169.80	154.58	15.22	11.153		
2,200.00	2,184.11	2,183.64	2,147.05	8.23	9.10	20.12	378.22	-89.94	176.83	160.84	15.99	11.060		
2,300.00	2,282.99	2,283.39	2,244.48	8.64	9.56	20.29	398.94	-95.30	183.86	167.11	16.75	10.975		
2,400.00	2,381.86	2,383.15	2,341.91	9.05	10.03	20.45	419.67	-100.65	190.90	173.38	17.52	10.897		
2,500.00	2,480.74	2,482.90	2,439.34	9.46	10.49	20.59	440.39	-106.01	197.93	179.65	18.28	10.825		
2,600.00	2,579.62	2,582.65	2,536.76	9.87	10.96	20.73	461.11	-111.37	204.97	185.92	19.05	10.758		
2,700.00	2,678.49	2,682.40	2,634.19	10.28	11.42	20.86	481.83	-116.72	212.01	192.19	19.82	10.696		
2,800.00	2,777.37	2,782.15	2,731.62	10.70	11.89	20.98	502.56	-122.08	219.04	198.45	20.59	10.639		
2,900.00	2,876.24	2,881.90	2,829.05	11.11	12.36	21.09	523.28	-127.44	226.08	204.72	21.36	10.585		
3,000.00	2,975.12	2,981.65	2,926.47	11.52	12.82	21.20	544.00	-132.79	233.12	210.99	22.13	10.534		
3,100.00	3,074.00	3,081.40	3,023.90	11.93	13.29	21.30	564.73	-138.15	240.17	217.26	22.90	10.487		
3,200.00	3,172.87	3,181.15	3,121.33	12.34	13.76	21.39	585.45	-143.51	247.21	223.54	23.67	10.443		
3,300.00	3,271.75	3,280.90	3,218.76	12.76	14.22	21.48	606.17	-148.86	254.25	229.81	24.44	10.402		
3,400.00	3,370.62	3,380.66	3,316.18	13.17	14.69	21.56	626.89	-154.22	261.29	236.08	25.22	10.362		
3,500.00	3,469.50	3,480.41	3,413.61	13.58	15.16	21.64	647.62	-159.58	268.34	242.35	25.99	10.325		
3,600.00	3,568.38	3,580.16	3,511.04	13.99	15.62	21.72	668.34	-164.94	275.38	248.62	26.76	10.290		
3,700.00	3,667.25	3,679.91	3,608.47	14.41	16.09	21.79	689.06	-170.29	282.42	254.89	27.53	10.257		
3,800.00	3,766.13	3,779.66	3,705.89	14.82	16.56	21.86	709.78	-175.65	289.47	261.16	28.31	10.226		
3,900.00	3,865.00	3,879.41	3,803.32	15.23	17.02	21.92	730.51	-181.01	296.51	267.43	29.08	10.196		
4,000.00	3,963.88	3,979.16	3,900.75	15.65	17.49	21.98	751.23	-186.36	303.56	273.70	29.85	10.168		
4,100.00	4,062.76	4,078.91	3,998.18	16.06	17.96	22.04	771.95	-191.72	310.60	279.98	30.63	10.141		
4,200.00	4,161.63	4,178.66	4,095.60	16.47	18.43	22.10	792.67	-197.08	317.65	286.25	31.40	10.115		
4,300.00	4,260.51	4,278.41	4,193.03	16.89	18.89	22.15	813.40	-202.43	324.70	292.52	32.18	10.091		
4,400.00	4,359.38	4,378.17	4,290.46	17.30	19.36	22.20	834.12	-207.79	331.74	298.79	32.95	10.068		
4,500.00	4,458.26	4,477.92	4,387.89	17.71	19.83	22.25	854.84	-213.15	338.79	305.06	33.73	10.045		
4,600.00	4,557.13	4,577.67	4,485.32	18.13	20.29	22.30	875.56	-218.50	345.84	311.34	34.50	10.024		
4,700.00	4,656.01	4,677.42	4,582.74	18.54	20.76	22.35	896.29	-223.86	352.89	317.61	35.28	10.003		
4,800.00	4,754.89	4,777.17	4,680.17	18.96	21.23	22.39	917.01	-229.22	359.93	323.88	36.05	9.984		
4,900.00	4,853.76	4,876.92	4,777.60	19.37	21.70	22.43	937.73	-234.58	366.98	330.15	36.83	9.965		
5,000.00	4,952.64	4,976.67	4,875.03	19.78	22.16	22.47	958.45	-239.93	374.03	336.43	37.60	9.947		

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

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,051.51	5,076.42	4,972.45	20.20	22.63	22.51	979.18	-245.29	381.08	342.70	38.38	9.929	
5,200.00	5,150.39	5,176.17	5,069.88	20.61	23.10	22.55	999.90	-250.65	388.13	348.97	39.15	9.913	
5,300.00	5,249.27	5,275.92	5,167.31	21.03	23.57	22.59	1,020.62	-256.00	395.17	355.24	39.93	9.897	
5,400.00	5,348.14	5,375.67	5,264.74	21.44	24.03	22.62	1,041.34	-261.36	402.22	361.52	40.71	9.881	
5,500.00	5,447.02	5,475.43	5,362.16	21.85	24.50	22.65	1,062.07	-266.72	409.27	367.79	41.48	9.866	
5,600.00	5,545.89	5,575.18	5,459.59	22.27	24.97	22.69	1,082.79	-272.07	416.32	374.06	42.26	9.852	
5,626.07	5,571.67	5,601.18	5,484.99	22.37	25.09	22.70	1,088.19	-273.47	418.16	375.70	42.46	9.848	
5,700.00	5,644.90	5,674.86	5,556.95	22.67	25.44	22.72	1,103.50	-277.43	424.25	381.22	43.03	9.860	
5,800.00	5,744.33	5,786.33	5,666.07	23.06	25.95	22.62	1,125.53	-283.12	434.29	390.43	43.87	9.900	
5,900.00	5,844.07	5,903.19	5,781.30	23.42	26.44	22.46	1,144.35	-287.99	443.80	399.13	44.67	9.936	
6,000.00	5,943.99	6,020.57	5,897.73	23.76	26.90	22.27	1,158.65	-291.68	452.58	407.21	45.37	9.975	
6,056.01	6,000.00	6,086.53	5,963.40	23.94	27.14	-0.21	1,164.65	-293.24	457.18	411.46	45.73	9.999	
6,100.00	6,043.99	6,138.47	6,015.19	24.08	27.31	-0.33	1,168.35	-294.19	460.32	414.34	45.98	10.011	
6,200.00	6,143.99	6,256.93	6,133.53	24.39	27.68	-0.49	1,173.38	-295.49	464.58	418.06	46.52	9.987	
6,300.00	6,243.99	6,367.39	6,243.99	24.71	28.00	-0.51	1,174.13	-295.69	465.21	418.13	47.08	9.882	
6,400.00	6,343.99	6,467.39	6,343.99	25.03	28.28	-0.51	1,174.13	-295.69	465.21	417.46	47.74	9.744	
6,500.00	6,443.99	6,567.39	6,443.99	25.35	28.56	-0.51	1,174.13	-295.69	465.21	416.80	48.41	9.609	
6,600.00	6,543.99	6,667.39	6,543.99	25.67	28.84	-0.51	1,174.13	-295.69	465.21	416.13	49.08	9.478	
6,700.00	6,643.99	6,767.39	6,643.99	25.99	29.13	-0.51	1,174.13	-295.69	465.21	415.45	49.75	9.350	
6,749.81	6,693.80	6,817.20	6,693.80	26.15	29.27	-0.51	1,174.13	-295.69	465.21	415.12	50.09	9.288	
6,753.38	6,697.37	6,820.77	6,697.37	26.16	29.28	-89.92	1,174.13	-295.68	465.21	415.10	50.11	9.284	
6,800.00	6,743.95	6,867.35	6,743.91	26.31	29.41	-89.92	1,174.15	-293.93	465.21	414.80	50.41	9.229	
6,850.00	6,793.66	6,917.31	6,793.58	26.45	29.54	-89.93	1,174.20	-288.70	465.21	414.50	50.71	9.174	
6,900.00	6,842.89	6,967.27	6,842.77	26.59	29.66	-89.93	1,174.29	-280.02	465.21	414.20	51.01	9.121	
6,950.00	6,891.39	7,017.23	6,891.24	26.72	29.78	-89.93	1,174.41	-267.93	465.21	413.91	51.29	9.070	
7,000.00	6,938.93	7,067.19	6,938.75	26.85	29.89	-89.93	1,174.57	-252.50	465.20	413.63	51.58	9.020	
7,050.00	6,985.28	7,117.16	6,985.06	26.97	30.00	-89.93	1,174.76	-233.79	465.20	413.35	51.86	8.971	
7,100.00	7,030.20	7,167.12	7,029.96	27.08	30.09	-89.93	1,174.98	-211.90	465.20	413.06	52.14	8.921	
7,150.00	7,073.49	7,217.09	7,073.23	27.18	30.18	-89.94	1,175.23	-186.93	465.20	412.75	52.44	8.870	
7,200.00	7,114.92	7,267.05	7,114.65	27.27	30.27	-89.94	1,175.52	-159.00	465.20	412.43	52.77	8.816	
7,250.00	7,154.31	7,317.02	7,154.03	27.36	30.34	-89.94	1,175.83	-128.25	465.19	412.07	53.13	8.756	
7,300.00	7,191.45	7,366.99	7,191.16	27.45	30.41	-89.95	1,176.17	-94.83	465.19	411.66	53.53	8.690	
7,350.00	7,226.17	7,416.97	7,225.88	27.53	30.46	-89.95	1,176.54	-58.91	465.19	411.18	54.01	8.613	
7,400.00	7,258.29	7,466.94	7,258.01	27.61	30.52	-89.95	1,176.92	-20.65	465.19	410.62	54.56	8.526	
7,450.00	7,287.66	7,516.92	7,287.40	27.72	30.56	-89.96	1,177.34	19.76	465.18	409.97	55.21	8.425	
7,500.00	7,314.14	7,566.89	7,313.89	27.89	30.59	-89.96	1,177.77	62.13	465.18	409.20	55.98	8.310	
7,550.00	7,337.60	7,616.88	7,337.37	28.20	30.62	-89.97	1,178.21	106.24	465.17	408.31	56.87	8.180	
7,600.00	7,357.92	7,666.86	7,357.72	28.65	30.65	-89.97	1,178.68	151.88	465.17	407.28	57.89	8.035	
7,650.00	7,375.00	7,716.85	7,374.84	29.21	30.68	-89.98	1,179.16	198.83	465.17	406.12	59.05	7.877	
7,700.00	7,388.77	7,766.84	7,388.64	29.86	30.76	-89.98	1,179.64	246.86	465.16	404.81	60.35	7.708	
7,750.00	7,399.15	7,816.83	7,399.05	30.57	31.23	-89.99	1,180.14	295.74	465.16	403.38	61.78	7.529	
7,800.00	7,406.10	7,866.82	7,406.04	31.36	31.97	-89.99	1,180.64	345.24	465.15	401.82	63.33	7.345	
7,850.00	7,409.57	7,916.82	7,409.55	32.19	32.80	-90.00	1,181.15	395.10	465.15	400.16	64.99	7.158	
7,874.81	7,410.00	7,941.63	7,410.00	32.63	33.22	-90.00	1,181.40	419.90	465.15	399.31	65.84	7.065	
7,900.00	7,410.00	7,966.82	7,410.00	33.08	33.67	-90.00	1,181.66	445.09	465.15	398.40	66.75	6.969	
8,000.00	7,410.00	8,066.82	7,410.00	35.00	35.59	-90.00	1,182.67	545.08	465.14	394.57	70.56	6.592	
8,100.00	7,410.00	8,166.82	7,410.00	37.10	37.66	-90.00	1,183.69	645.08	465.13	390.40	74.73	6.224	
8,200.00	7,410.00	8,266.82	7,410.00	39.35	39.89	-90.00	1,184.71	745.07	465.12	385.93	79.19	5.874	
8,300.00	7,410.00	8,366.82	7,410.00	41.73	42.24	-90.00	1,185.72	845.07	465.11	381.21	83.90	5.543	
8,400.00	7,410.00	8,466.82	7,410.00	44.21	44.70	-90.00	1,186.74	945.06	465.10	376.27	88.83	5.236	
8,500.00	7,410.00	8,566.82	7,410.00	46.77	47.24	-90.00	1,187.75	1,045.06	465.10	371.15	93.94	4.951	
8,600.00	7,410.00	8,666.82	7,410.00	49.42	49.86	-90.00	1,188.77	1,145.05	465.09	365.89	99.20	4.688	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Total Uncertainty Axis	Separation Factor
8,700.00	7,410.00	8,766.82	7,410.00	52.12	52.55	-90.00	1,189.79	1,245.05	465.08	360.49		104.59	4.447
8,800.00	7,410.00	8,866.82	7,410.00	54.88	55.29	-90.00	1,190.80	1,345.04	465.07	354.98		110.09	4.224
8,900.00	7,410.00	8,966.82	7,410.00	57.68	58.08	-90.00	1,191.82	1,445.04	465.06	349.38		115.68	4.020
9,000.00	7,410.00	9,066.82	7,410.00	60.53	60.91	-90.00	1,192.84	1,545.03	465.05	343.70		121.36	3.832
9,100.00	7,410.00	9,166.82	7,410.00	63.41	63.77	-90.00	1,193.85	1,645.03	465.05	337.94		127.10	3.659
9,200.00	7,410.00	9,266.82	7,410.00	66.32	66.67	-90.00	1,194.87	1,745.02	465.04	332.13		132.91	3.499
9,300.00	7,410.00	9,366.82	7,410.00	69.25	69.59	-90.00	1,195.88	1,845.02	465.03	326.26		138.77	3.351
9,400.00	7,410.00	9,466.82	7,410.00	72.21	72.54	-90.00	1,196.90	1,945.01	465.02	320.35		144.67	3.214
9,500.00	7,410.00	9,566.82	7,410.00	75.19	75.51	-90.00	1,197.92	2,045.01	465.01	314.39		150.62	3.087
9,600.00	7,410.00	9,666.82	7,410.00	78.19	78.49	-90.00	1,198.93	2,145.00	465.00	308.40		156.60	2.969
9,700.00	7,410.00	9,766.82	7,410.00	81.20	81.50	-90.00	1,199.95	2,245.00	465.00	302.37		162.62	2.859
9,800.00	7,410.00	9,866.82	7,410.00	84.23	84.52	-90.00	1,200.97	2,344.99	464.99	296.32		168.67	2.757
9,900.00	7,410.00	9,966.82	7,410.00	87.27	87.55	-90.00	1,201.98	2,444.98	464.98	290.24		174.74	2.661
10,000.00	7,410.00	10,066.82	7,410.00	90.32	90.59	-90.00	1,203.00	2,544.98	464.97	284.13		180.84	2.571
10,100.00	7,410.00	10,166.82	7,410.00	93.38	93.64	-90.00	1,204.01	2,644.97	464.96	278.01		186.95	2.487
10,200.00	7,410.00	10,266.82	7,410.00	96.45	96.71	-90.00	1,205.03	2,744.97	464.95	271.86		193.09	2.408
10,300.00	7,410.00	10,366.82	7,410.00	99.53	99.78	-90.00	1,206.05	2,844.96	464.95	265.70		199.24	2.334
10,400.00	7,410.00	10,466.82	7,410.00	102.62	102.86	-90.00	1,207.06	2,944.96	464.94	259.52		205.41	2.263
10,500.00	7,410.00	10,566.82	7,410.00	105.71	105.95	-90.00	1,208.08	3,044.95	464.93	253.33		211.60	2.197
10,600.00	7,410.00	10,666.82	7,410.00	108.81	109.05	-90.00	1,209.10	3,144.95	464.92	247.13		217.79	2.135
10,700.00	7,410.00	10,766.82	7,410.00	111.92	112.15	-90.00	1,210.11	3,244.94	464.91	240.91		224.00	2.075
10,800.00	7,410.00	10,866.82	7,410.00	115.03	115.26	-90.00	1,211.13	3,344.94	464.90	234.68		230.22	2.019
10,900.00	7,410.00	10,966.82	7,410.00	118.15	118.37	-90.00	1,212.14	3,444.93	464.90	228.44		236.45	1.966
11,000.00	7,410.00	11,066.82	7,410.00	121.27	121.49	-90.00	1,213.16	3,544.93	464.89	222.19		242.69	1.916
11,100.00	7,410.00	11,166.82	7,410.00	124.40	124.61	-90.00	1,214.18	3,644.92	464.88	215.93		248.94	1.867
11,200.00	7,410.00	11,266.82	7,410.00	127.53	127.73	-90.00	1,215.19	3,744.92	464.87	209.67		255.20	1.822
11,300.00	7,410.00	11,366.82	7,410.00	130.66	130.86	-90.00	1,216.21	3,844.91	464.86	203.40		261.47	1.778
11,400.00	7,410.00	11,466.82	7,410.00	133.80	134.00	-90.00	1,217.22	3,944.91	464.85	197.12		267.74	1.736
11,500.00	7,410.00	11,566.82	7,410.00	136.94	137.13	-90.00	1,218.24	4,044.90	464.84	190.83		274.02	1.696
11,600.00	7,410.00	11,666.82	7,410.00	140.08	140.27	-90.00	1,219.26	4,144.90	464.84	184.54		280.30	1.658
11,700.00	7,410.00	11,766.82	7,410.00	143.23	143.42	-90.00	1,220.27	4,244.89	464.83	178.24		286.59	1.622
11,800.00	7,410.00	11,866.82	7,410.00	146.38	146.56	-90.00	1,221.29	4,344.89	464.82	171.93		292.88	1.587
11,900.00	7,410.00	11,966.82	7,410.00	149.53	149.71	-90.00	1,222.31	4,444.88	464.81	165.63		299.19	1.554
11,950.31	7,410.00	12,017.13	7,410.00	151.11	151.29	-90.00	1,222.82	4,495.19	464.81	162.45		302.36	1.537 SF

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-0.50	20.02	-0.17	20.02				
100.00	100.00	100.00	100.00	0.14	0.14	-0.50	20.02	-0.17	20.02	19.75	0.28	72.539	
200.00	200.00	200.00	200.00	0.50	0.50	-0.50	20.02	-0.17	20.02	19.03	0.99	20.164	
300.00	300.00	300.00	300.00	0.85	0.85	-0.50	20.02	-0.17	20.02	18.31	1.71	11.710 CC, ES	
400.00	400.00	399.29	399.27	1.21	1.21	-1.72	21.67	-0.65	21.70	19.24	2.45	8.847	
500.00	500.00	498.35	498.19	1.57	1.57	-4.46	26.62	-2.08	26.76	23.54	3.22	8.307	
600.00	599.98	597.08	596.55	1.93	1.93	15.81	34.81	-4.44	33.58	29.59	3.99	8.415	
700.00	699.84	695.59	694.33	2.29	2.30	14.96	46.22	-7.74	40.47	35.71	4.76	8.507	
800.00	799.45	793.86	791.42	2.65	2.68	14.81	60.82	-11.95	47.38	41.85	5.52	8.582	
900.00	898.70	892.01	887.81	3.02	3.08	15.08	78.58	-17.08	54.29	48.01	6.28	8.649	
929.94	928.33	921.89	917.06	3.14	3.20	15.25	84.41	-18.76	56.15	49.67	6.48	8.665	
1,000.00	997.60	991.83	985.55	3.40	3.50	15.74	98.06	-22.70	60.17	53.19	6.97	8.627	
1,100.00	1,096.48	1,091.67	1,083.30	3.79	3.93	16.34	117.55	-28.33	65.90	58.20	7.69	8.567	
1,200.00	1,195.35	1,191.50	1,181.05	4.18	4.36	16.84	137.03	-33.95	71.63	63.22	8.42	8.510	
1,300.00	1,294.23	1,291.33	1,278.80	4.58	4.80	17.26	156.52	-39.58	77.38	68.23	9.15	8.456	
1,400.00	1,393.10	1,391.17	1,376.56	4.98	5.25	17.63	176.00	-45.20	83.12	73.23	9.89	8.405	
1,500.00	1,491.98	1,491.00	1,474.31	5.38	5.69	17.95	195.49	-50.83	88.87	78.24	10.63	8.358	
1,600.00	1,590.86	1,590.83	1,572.06	5.78	6.14	18.23	214.97	-56.45	94.62	83.24	11.38	8.314	
1,700.00	1,689.73	1,690.67	1,669.81	6.19	6.59	18.47	234.46	-62.08	100.37	88.24	12.13	8.274	
1,800.00	1,788.61	1,790.50	1,767.56	6.60	7.04	18.70	253.94	-67.70	106.13	93.24	12.88	8.237	
1,900.00	1,887.48	1,890.34	1,865.32	7.00	7.49	18.89	273.43	-73.33	111.88	98.24	13.64	8.203	
2,000.00	1,986.36	1,990.17	1,963.07	7.41	7.94	19.07	292.91	-78.95	117.64	103.24	14.40	8.171	
2,100.00	2,085.24	2,090.00	2,060.82	7.82	8.39	19.24	312.40	-84.58	123.40	108.24	15.16	8.142	
2,200.00	2,184.11	2,189.84	2,158.57	8.23	8.85	19.38	331.88	-90.21	129.16	113.24	15.92	8.115	
2,300.00	2,282.99	2,289.67	2,258.32	8.64	9.30	19.52	351.37	-95.83	134.92	118.24	16.68	8.090	
2,400.00	2,381.86	2,389.50	2,354.07	9.05	9.76	19.64	370.85	-101.46	140.68	123.24	17.44	8.066	
2,500.00	2,480.74	2,489.34	2,451.83	9.46	10.21	19.76	390.34	-107.08	146.44	128.24	18.20	8.044	
2,600.00	2,579.62	2,589.17	2,549.58	9.87	10.66	19.86	409.82	-112.71	152.20	133.23	18.97	8.024	
2,700.00	2,678.49	2,689.00	2,647.33	10.28	11.12	19.96	429.31	-118.33	157.96	138.23	19.73	8.005	
2,800.00	2,777.37	2,788.84	2,745.08	10.70	11.57	20.05	448.79	-123.96	163.73	143.23	20.50	7.987	
2,900.00	2,876.24	2,888.67	2,842.83	11.11	12.03	20.14	468.28	-129.58	169.49	148.22	21.27	7.970	
3,000.00	2,975.12	2,988.50	2,940.58	11.52	12.49	20.22	487.76	-135.21	175.25	153.22	22.03	7.955	
3,100.00	3,074.00	3,088.34	3,038.34	11.93	12.94	20.29	507.25	-140.83	181.02	158.22	22.80	7.940	
3,200.00	3,172.87	3,188.17	3,136.09	12.34	13.40	20.36	526.73	-146.46	186.78	163.21	23.57	7.926	
3,300.00	3,271.75	3,288.00	3,233.84	12.76	13.85	20.43	546.22	-152.08	192.54	168.21	24.33	7.912	
3,400.00	3,370.62	3,387.84	3,331.59	13.17	14.31	20.49	565.70	-157.71	198.31	173.21	25.10	7.900	
3,500.00	3,469.50	3,487.67	3,429.34	13.58	14.77	20.54	585.19	-163.33	204.07	178.20	25.87	7.888	
3,600.00	3,568.38	3,587.50	3,527.10	13.99	15.22	20.60	604.67	-168.96	209.84	183.20	26.64	7.877	
3,700.00	3,667.25	3,687.34	3,624.85	14.41	15.68	20.65	624.16	-174.58	215.60	188.19	27.41	7.866	
3,800.00	3,766.13	3,787.17	3,722.60	14.82	16.14	20.70	643.64	-180.21	221.37	193.19	28.18	7.856	
3,900.00	3,865.00	3,887.01	3,820.35	15.23	16.59	20.75	663.13	-185.83	227.13	198.18	28.95	7.846	
4,000.00	3,963.88	3,986.84	3,918.10	15.65	17.05	20.79	682.62	-191.46	232.90	203.18	29.72	7.837	
4,100.00	4,062.76	4,086.67	4,015.85	16.06	17.51	20.84	702.10	-197.08	238.66	208.18	30.49	7.828	
4,200.00	4,161.63	4,186.51	4,113.61	16.47	17.96	20.88	721.59	-202.71	244.43	213.17	31.26	7.820	
4,300.00	4,260.51	4,286.34	4,211.36	16.89	18.42	20.91	741.07	-208.34	250.20	218.17	32.03	7.812	
4,400.00	4,359.38	4,386.17	4,309.11	17.30	18.88	20.95	760.56	-213.96	255.96	223.16	32.80	7.804	
4,500.00	4,458.26	4,486.01	4,406.86	17.71	19.33	20.99	780.04	-219.59	261.73	228.16	33.57	7.797	
4,600.00	4,557.13	4,585.84	4,504.61	18.13	19.79	21.02	799.53	-225.21	267.49	233.15	34.34	7.789	
4,700.00	4,656.01	4,685.67	4,602.37	18.54	20.25	21.05	819.01	-230.84	273.26	238.15	35.11	7.783	
4,800.00	4,754.89	4,785.51	4,700.12	18.96	20.71	21.08	838.50	-236.46	279.03	243.14	35.88	7.776	
4,900.00	4,853.76	4,885.34	4,797.87	19.37	21.16	21.11	857.98	-242.09	284.79	248.14	36.65	7.770	
5,000.00	4,952.64	4,985.17	4,895.62	19.78	21.62	21.14	877.47	-247.71	290.56	253.13	37.42	7.764	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,051.51	5,085.01	4,993.37	20.20	22.08	21.17	896.95	-253.34	296.33	258.13	38.20	7.758	
5,200.00	5,150.39	5,184.84	5,091.12	20.61	22.54	21.19	916.44	-258.96	302.09	263.12	38.97	7.752	
5,300.00	5,249.27	5,284.67	5,188.88	21.03	22.99	21.22	935.92	-264.59	307.86	268.12	39.74	7.747	
5,400.00	5,348.14	5,384.51	5,286.63	21.44	23.45	21.24	955.41	-270.21	313.63	273.11	40.51	7.742	
5,500.00	5,447.02	5,484.34	5,384.38	21.85	23.91	21.27	974.89	-275.84	319.39	278.11	41.28	7.737	
5,600.00	5,545.89	5,592.21	5,490.19	22.27	24.39	21.34	995.06	-281.66	324.35	282.23	42.12	7.701	
5,626.07	5,571.67	5,621.48	5,519.01	22.37	24.52	21.38	999.92	-283.06	325.08	282.74	42.34	7.678	
5,700.00	5,644.90	5,704.49	5,601.04	22.67	24.86	21.54	1,012.17	-286.60	326.64	283.70	42.94	7.608	
5,800.00	5,744.33	5,816.86	5,712.59	23.06	25.30	21.70	1,025.10	-290.33	328.29	284.62	43.67	7.517	
5,900.00	5,844.07	5,929.29	5,824.64	23.42	25.69	21.80	1,033.83	-292.85	329.40	285.09	44.32	7.433	
6,000.00	5,943.99	6,041.76	5,937.00	23.76	26.05	21.86	1,038.33	-294.15	329.98	285.10	44.88	7.352	
6,056.01	6,000.00	6,104.76	6,000.00	23.94	26.24	-0.49	1,038.99	-294.34	330.06	284.91	45.16	7.309	
6,100.00	6,043.99	6,148.75	6,043.99	24.08	26.37	-0.49	1,038.99	-294.34	330.06	284.61	45.45	7.262	
6,200.00	6,143.99	6,248.75	6,143.99	24.39	26.65	-0.49	1,038.99	-294.34	330.06	283.94	46.12	7.157	
6,300.00	6,243.99	6,348.75	6,243.99	24.71	26.94	-0.49	1,038.99	-294.34	330.06	283.27	46.79	7.054	
6,400.00	6,343.99	6,448.75	6,343.99	25.03	27.23	-0.49	1,038.99	-294.34	330.06	282.60	47.46	6.954	
6,500.00	6,443.99	6,548.75	6,443.99	25.35	27.52	-0.49	1,038.99	-294.34	330.06	281.93	48.14	6.857	
6,600.00	6,543.99	6,648.75	6,543.99	25.67	27.82	-0.49	1,038.99	-294.34	330.06	281.25	48.81	6.762	
6,700.00	6,643.99	6,748.75	6,643.99	25.99	28.11	-0.49	1,038.99	-294.34	330.06	280.58	49.49	6.670	
6,749.81	6,693.80	6,798.56	6,693.80	26.15	28.26	-0.49	1,038.99	-294.34	330.06	280.24	49.82	6.625	
6,778.36	6,722.34	6,827.10	6,722.34	26.24	28.35	-90.00	1,038.99	-294.34	330.06	280.06	50.01	6.600	
6,800.00	6,743.95	6,848.71	6,743.95	26.31	28.41	-90.21	1,038.99	-294.34	330.07	279.93	50.14	6.583	
6,850.00	6,793.66	6,898.42	6,793.66	26.45	28.56	-91.10	1,038.99	-294.34	330.13	279.72	50.41	6.549	
6,900.00	6,842.89	6,947.65	6,842.89	26.59	28.70	-92.57	1,038.99	-294.34	330.41	279.77	50.64	6.525	
6,950.00	6,891.39	6,997.23	6,892.46	26.72	28.85	-94.49	1,039.00	-293.77	331.14	280.31	50.83	6.514	
7,000.00	6,938.93	7,048.13	6,943.20	26.85	28.99	-96.47	1,039.04	-289.93	332.30	281.32	50.99	6.518	
7,050.00	6,985.28	7,099.94	6,994.45	26.97	29.13	-98.42	1,039.11	-282.33	333.87	282.75	51.11	6.532	
7,100.00	7,030.20	7,152.71	7,045.93	27.08	29.26	-100.33	1,039.23	-270.80	335.80	284.60	51.21	6.558	
7,150.00	7,073.49	7,206.48	7,097.37	27.18	29.39	-102.20	1,039.39	-255.19	338.08	286.82	51.26	6.596	
7,200.00	7,114.92	7,261.27	7,148.43	27.27	29.51	-103.99	1,039.59	-235.36	340.65	289.38	51.27	6.645	
7,250.00	7,154.31	7,317.10	7,198.75	27.36	29.63	-105.72	1,039.84	-211.20	343.46	292.23	51.22	6.705	
7,300.00	7,191.45	7,373.99	7,247.93	27.45	29.73	-107.35	1,040.13	-182.63	346.44	295.31	51.13	6.776	
7,350.00	7,226.17	7,431.95	7,295.53	27.53	29.83	-108.89	1,040.46	-149.60	349.53	298.54	50.99	6.855	
7,400.00	7,258.29	7,490.96	7,341.10	27.61	29.92	-110.33	1,040.84	-112.13	352.66	301.83	50.82	6.939	
7,450.00	7,287.66	7,551.01	7,384.14	27.72	30.00	-111.65	1,041.27	-70.28	355.75	305.09	50.66	7.023	
7,500.00	7,314.14	7,612.05	7,424.15	27.89	30.07	-112.84	1,041.74	-24.20	358.73	308.20	50.53	7.099	
7,550.00	7,337.60	7,674.04	7,460.60	28.20	30.13	-113.91	1,042.25	25.90	361.54	311.04	50.50	7.160	
7,600.00	7,357.92	7,736.89	7,493.01	28.65	30.19	-114.84	1,042.79	79.72	364.09	313.49	50.59	7.196	
7,650.00	7,375.00	7,800.51	7,520.88	29.21	30.25	-115.62	1,043.37	136.89	366.33	315.44	50.89	7.199	
7,700.00	7,388.77	7,864.80	7,543.78	29.86	30.40	-116.26	1,043.98	196.94	368.19	316.75	51.45	7.157	
7,750.00	7,399.15	7,929.63	7,561.32	30.57	31.00	-116.74	1,044.62	259.32	369.64	317.35	52.29	7.068	
7,800.00	7,406.10	7,994.85	7,573.21	31.36	31.91	-117.06	1,045.27	323.42	370.63	317.18	53.46	6.933	
7,850.00	7,409.57	8,060.32	7,579.23	32.19	32.95	-117.23	1,045.93	388.59	371.15	316.19	54.95	6.754	
7,874.81	7,410.00	8,092.85	7,580.00	32.63	33.50	-117.26	1,046.26	421.11	371.22	315.41	55.81	6.652	
7,900.00	7,410.00	8,118.21	7,580.00	33.08	33.96	-117.26	1,046.52	446.46	371.22	314.58	56.63	6.555	
8,000.00	7,410.00	8,218.21	7,580.00	35.00	35.84	-117.26	1,047.54	546.46	371.21	311.12	60.09	6.178	
8,100.00	7,410.00	8,318.21	7,580.00	37.10	37.90	-117.26	1,048.55	646.45	371.20	307.33	63.87	5.811	
8,200.00	7,410.00	8,418.21	7,580.00	39.35	40.11	-117.26	1,049.57	746.45	371.19	303.26	67.93	5.464	
8,300.00	7,410.00	8,518.21	7,580.00	41.73	42.45	-117.26	1,050.58	846.44	371.19	298.96	72.22	5.139	
8,400.00	7,410.00	8,618.21	7,580.00	44.21	44.89	-117.26	1,051.60	946.44	371.18	294.48	76.70	4.839	
8,500.00	7,410.00	8,718.21	7,580.00	46.77	47.43	-117.26	1,052.62	1,046.43	371.17	289.83	81.34	4.563	
8,600.00	7,410.00	8,818.21	7,580.00	49.42	50.04	-117.26	1,053.63	1,146.43	371.16	285.05	86.11	4.310	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Total Uncertainty Axis	Separation Factor
8,700.00	7,410.00	8,918.21	7,580.00	52.12	52.72	-117.26	1,054.65	1,246.42	371.16	280.16		90.99	4.079
8,800.00	7,410.00	9,018.21	7,580.00	54.88	55.45	-117.26	1,055.67	1,346.41	371.15	275.18		95.97	3.867
8,900.00	7,410.00	9,118.21	7,580.00	57.68	58.23	-117.26	1,056.68	1,446.41	371.14	270.11		101.03	3.674
9,000.00	7,410.00	9,218.21	7,580.00	60.53	61.05	-117.26	1,057.70	1,546.40	371.13	264.98		106.16	3.496
9,100.00	7,410.00	9,318.21	7,580.00	63.41	63.91	-117.26	1,058.71	1,646.40	371.13	259.78		111.35	3.333
9,200.00	7,410.00	9,418.21	7,580.00	66.32	66.80	-117.26	1,059.73	1,746.39	371.12	254.53		116.59	3.183
9,300.00	7,410.00	9,518.21	7,580.00	69.25	69.72	-117.26	1,060.75	1,846.39	371.11	249.24		121.87	3.045
9,400.00	7,410.00	9,618.21	7,580.00	72.21	72.66	-117.26	1,061.76	1,946.38	371.10	243.91		127.20	2.918
9,500.00	7,410.00	9,718.21	7,580.00	75.19	75.62	-117.26	1,062.78	2,046.38	371.10	238.54		132.55	2.800
9,600.00	7,410.00	9,818.21	7,580.00	78.19	78.61	-117.27	1,063.80	2,146.37	371.09	233.14		137.94	2.690
9,700.00	7,410.00	9,918.21	7,580.00	81.20	81.60	-117.27	1,064.81	2,246.37	371.08	227.72		143.36	2.588
9,800.00	7,410.00	10,018.21	7,580.00	84.23	84.62	-117.27	1,065.83	2,346.36	371.07	222.27		148.80	2.494
9,900.00	7,410.00	10,118.21	7,580.00	87.27	87.65	-117.27	1,066.84	2,446.36	371.07	216.80		154.27	2.405
10,000.00	7,410.00	10,218.21	7,580.00	90.32	90.69	-117.27	1,067.86	2,546.35	371.06	211.31		159.75	2.323
10,100.00	7,410.00	10,318.21	7,580.00	93.38	93.74	-117.27	1,068.88	2,646.35	371.05	205.80		165.25	2.245
10,200.00	7,410.00	10,418.21	7,580.00	96.45	96.80	-117.27	1,069.89	2,746.34	371.04	200.28		170.76	2.173
10,300.00	7,410.00	10,518.21	7,580.00	99.53	99.87	-117.27	1,070.91	2,846.34	371.04	194.74		176.29	2.105
10,400.00	7,410.00	10,618.21	7,580.00	102.62	102.95	-117.27	1,071.92	2,946.33	371.03	189.19		181.84	2.040
10,500.00	7,410.00	10,718.21	7,580.00	105.71	106.03	-117.27	1,072.94	3,046.33	371.02	183.63		187.39	1.980
10,600.00	7,410.00	10,818.21	7,580.00	108.81	109.13	-117.27	1,073.96	3,146.32	371.01	178.06		192.96	1.923
10,700.00	7,410.00	10,918.21	7,580.00	111.92	112.23	-117.27	1,074.97	3,246.32	371.01	172.48		198.53	1.869
10,800.00	7,410.00	11,018.21	7,580.00	115.03	115.33	-117.27	1,075.99	3,346.31	371.00	166.88		204.11	1.818
10,900.00	7,410.00	11,118.21	7,580.00	118.15	118.44	-117.27	1,077.01	3,446.31	370.99	161.28		209.71	1.769
11,000.00	7,410.00	11,218.21	7,580.00	121.27	121.56	-117.27	1,078.02	3,546.30	370.98	155.68		215.31	1.723
11,100.00	7,410.00	11,318.21	7,580.00	124.40	124.68	-117.27	1,079.04	3,646.30	370.98	150.06		220.92	1.679
11,200.00	7,410.00	11,418.21	7,580.00	127.53	127.80	-117.27	1,080.05	3,746.29	370.97	144.44		226.53	1.638
11,300.00	7,410.00	11,518.21	7,580.00	130.66	130.93	-117.28	1,081.07	3,846.29	370.96	138.81		232.15	1.598
11,400.00	7,410.00	11,618.21	7,580.00	133.80	134.06	-117.28	1,082.09	3,946.28	370.95	133.18		237.78	1.560
11,500.00	7,410.00	11,718.21	7,580.00	136.94	137.20	-117.28	1,083.10	4,046.28	370.95	127.54		243.41	1.524
11,600.00	7,410.00	11,818.21	7,580.00	140.08	140.34	-117.28	1,084.12	4,146.27	370.94	121.90		249.04	1.489 Level 3
11,700.00	7,410.00	11,918.21	7,580.00	143.23	143.48	-117.28	1,085.14	4,246.27	370.93	116.25		254.68	1.456 Level 3
11,800.00	7,410.00	12,018.21	7,580.00	146.38	146.62	-117.28	1,086.15	4,346.26	370.93	110.60		260.33	1.425 Level 3
11,900.00	7,410.00	12,118.21	7,580.00	149.53	149.77	-117.28	1,087.17	4,446.25	370.92	104.94		265.98	1.395 Level 3
11,950.31	7,410.00	12,168.52	7,580.00	151.11	151.35	-117.28	1,087.68	4,496.57	370.91	102.09		268.82	1.380 Level 3, SF

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.50	10.20	-0.09	10.20				
100.00	100.00	100.00	100.00	0.14	0.14	-0.50	10.20	-0.09	10.20	9.92	0.28	36.937	
200.00	200.00	200.00	200.00	0.50	0.50	-0.50	10.20	-0.09	10.20	9.20	0.99	10.268	
300.00	300.00	300.00	300.00	0.85	0.85	-0.50	10.20	-0.09	10.20	8.49	1.71	5.963	
400.00	400.00	400.00	400.00	1.21	1.21	-0.50	10.20	-0.09	10.20	7.77	2.43	4.201 CC	
500.00	500.00	499.62	499.60	1.57	1.57	-2.97	11.84	-0.62	11.87	8.70	3.16	3.752	
600.00	599.98	599.10	598.94	1.93	1.93	16.57	16.78	-2.19	15.28	11.36	3.92	3.900	
700.00	699.84	698.46	697.92	2.29	2.29	15.63	24.99	-4.82	18.76	14.08	4.68	4.011	
800.00	799.45	797.70	796.43	2.65	2.66	15.69	36.45	-8.48	22.28	16.84	5.44	4.097	
900.00	898.70	896.82	894.34	3.02	3.04	16.34	51.13	-13.17	25.84	19.64	6.20	4.168	
929.94	928.33	926.47	923.52	3.14	3.16	16.62	56.15	-14.77	26.92	20.49	6.43	4.188	
1,000.00	997.60	996.36	992.17	3.40	3.44	17.13	68.59	-18.74	29.72	22.80	6.93	4.290	
1,100.00	1,096.48	1,096.27	1,090.32	3.79	3.85	17.70	86.41	-24.44	33.78	26.13	7.65	4.417	
1,200.00	1,195.35	1,196.19	1,188.47	4.18	4.27	18.15	104.24	-30.14	37.83	29.46	8.37	4.518	
1,300.00	1,294.23	1,296.11	1,286.61	4.58	4.69	18.51	122.06	-35.83	41.89	32.78	9.11	4.600	
1,400.00	1,393.10	1,396.03	1,384.76	4.98	5.12	18.80	139.89	-41.53	45.94	36.10	9.85	4.667	
1,500.00	1,491.98	1,495.94	1,482.91	5.38	5.54	19.05	157.72	-47.22	50.00	39.41	10.59	4.722	
1,600.00	1,590.86	1,595.86	1,581.06	5.78	5.98	19.26	175.54	-52.92	54.06	42.73	11.34	4.769	
1,700.00	1,689.73	1,695.78	1,679.21	6.19	6.41	19.44	193.37	-58.61	58.12	46.04	12.08	4.809	
1,800.00	1,788.61	1,795.70	1,777.36	6.60	6.84	19.60	211.19	-64.31	62.18	49.34	12.84	4.844	
1,900.00	1,887.48	1,895.61	1,875.51	7.00	7.28	19.74	229.02	-70.01	66.24	52.65	13.59	4.874	
2,000.00	1,986.36	1,995.53	1,973.66	7.41	7.72	19.86	246.85	-75.70	70.30	55.96	14.35	4.900	
2,100.00	2,085.24	2,095.45	2,071.81	7.82	8.15	19.97	264.67	-81.40	74.36	59.26	15.10	4.924	
2,200.00	2,184.11	2,195.36	2,169.96	8.23	8.59	20.07	282.50	-87.09	78.43	62.56	15.86	4.945	
2,300.00	2,282.99	2,295.28	2,268.11	8.64	9.03	20.16	300.32	-92.79	82.49	65.87	16.62	4.963	
2,400.00	2,381.86	2,395.20	2,366.26	9.05	9.47	20.24	318.15	-98.48	86.55	69.17	17.38	4.980	
2,500.00	2,480.74	2,495.12	2,464.41	9.46	9.91	20.31	335.98	-104.18	90.61	72.47	18.14	4.995	
2,600.00	2,579.62	2,595.03	2,562.55	9.87	10.35	20.38	353.80	-109.88	94.67	75.77	18.90	5.008	
2,700.00	2,678.49	2,694.95	2,660.70	10.28	10.79	20.44	371.63	-115.57	98.74	79.07	19.66	5.021	
2,800.00	2,777.37	2,794.87	2,758.85	10.70	11.23	20.49	389.45	-121.27	102.80	82.37	20.43	5.032	
2,900.00	2,876.24	2,894.79	2,857.00	11.11	11.67	20.55	407.28	-126.96	106.86	85.67	21.19	5.043	
3,000.00	2,975.12	2,994.70	2,955.15	11.52	12.12	20.59	425.11	-132.66	110.92	88.97	21.95	5.052	
3,100.00	3,074.00	3,094.62	3,053.30	11.93	12.56	20.64	442.93	-138.35	114.99	92.27	22.72	5.061	
3,200.00	3,172.87	3,194.54	3,151.45	12.34	13.00	20.68	460.76	-144.05	119.05	95.57	23.48	5.070	
3,300.00	3,271.75	3,294.46	3,249.60	12.76	13.44	20.72	478.58	-149.75	123.11	98.86	24.25	5.077	
3,400.00	3,370.62	3,394.37	3,347.75	13.17	13.88	20.76	496.41	-155.44	127.17	102.16	25.01	5.084	
3,500.00	3,469.50	3,494.29	3,445.90	13.58	14.33	20.79	514.24	-161.14	131.24	105.46	25.78	5.091	
3,600.00	3,568.38	3,594.21	3,544.05	13.99	14.77	20.82	532.06	-166.83	135.30	108.76	26.54	5.097	
3,700.00	3,667.25	3,694.13	3,642.20	14.41	15.21	20.85	549.89	-172.53	139.36	112.05	27.31	5.103	
3,800.00	3,766.13	3,794.04	3,740.35	14.82	15.65	20.88	567.71	-178.23	143.43	115.35	28.08	5.109	
3,900.00	3,865.00	3,893.96	3,838.50	15.23	16.10	20.91	585.54	-183.92	147.49	118.65	28.84	5.114	
4,000.00	3,963.88	3,993.88	3,936.64	15.65	16.54	20.93	603.37	-189.62	151.55	121.94	29.61	5.119	
4,100.00	4,062.76	4,093.80	4,034.79	16.06	16.98	20.96	621.19	-195.31	155.62	125.24	30.37	5.123	
4,200.00	4,161.63	4,193.71	4,132.94	16.47	17.43	20.98	639.02	-201.01	159.68	128.54	31.14	5.128	
4,300.00	4,260.51	4,293.63	4,231.09	16.89	17.87	21.00	656.84	-206.70	163.74	131.83	31.91	5.132	
4,400.00	4,359.38	4,393.55	4,329.24	17.30	18.31	21.02	674.67	-212.40	167.80	135.13	32.67	5.136	
4,500.00	4,458.26	4,493.46	4,427.39	17.71	18.75	21.04	692.50	-218.10	171.87	138.43	33.44	5.139	
4,600.00	4,557.13	4,593.38	4,525.54	18.13	19.20	21.06	710.32	-223.79	175.93	141.72	34.21	5.143	
4,700.00	4,656.01	4,693.30	4,623.69	18.54	19.64	21.08	728.15	-229.49	179.99	145.02	34.98	5.146	
4,800.00	4,754.89	4,793.22	4,721.84	18.96	20.08	21.10	745.97	-235.18	184.06	148.31	35.74	5.149	
4,900.00	4,853.76	4,893.13	4,819.99	19.37	20.53	21.11	763.80	-240.88	188.12	151.61	36.51	5.152	
5,000.00	4,952.64	4,993.05	4,918.14	19.78	20.97	21.13	781.63	-246.57	192.18	154.91	37.28	5.155	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,051.51	5,092.97	5,016.29	20.20	21.42	21.14	799.45	-252.27	196.25	158.20	38.05	5.158	
5,200.00	5,150.39	5,192.89	5,114.44	20.61	21.86	21.16	817.28	-257.97	200.31	161.50	38.81	5.161	
5,300.00	5,249.27	5,292.80	5,212.59	21.03	22.30	21.17	835.10	-263.66	204.37	164.79	39.58	5.163	
5,400.00	5,348.14	5,392.72	5,310.73	21.44	22.75	21.19	852.93	-269.36	208.44	168.09	40.35	5.166	
5,500.00	5,447.02	5,492.64	5,408.88	21.85	23.19	21.20	870.76	-275.05	212.50	171.38	41.12	5.168	
5,600.00	5,545.89	5,596.02	5,510.50	22.27	23.65	21.24	888.82	-280.83	216.21	174.29	41.92	5.158	
5,626.07	5,571.67	5,624.12	5,538.21	22.37	23.76	21.29	893.27	-282.25	216.73	174.60	42.13	5.144	
5,700.00	5,644.90	5,703.82	5,617.05	22.67	24.09	21.45	904.46	-285.82	217.76	175.04	42.72	5.097	
5,800.00	5,744.33	5,811.68	5,724.18	23.06	24.51	21.62	916.28	-289.60	218.85	175.41	43.45	5.037	
5,900.00	5,844.07	5,919.57	5,831.74	23.42	24.89	21.74	924.24	-292.14	219.59	175.49	44.10	4.980	
6,000.00	5,943.99	6,027.48	5,939.56	23.76	25.24	21.79	928.35	-293.45	219.97	175.30	44.66	4.925	
6,056.01	6,000.00	6,087.93	6,000.00	23.94	25.43	-0.55	928.96	-293.65	220.03	175.08	44.95	4.895	
6,100.00	6,043.99	6,131.91	6,043.99	24.08	25.56	-0.55	928.96	-293.65	220.03	174.78	45.24	4.863	
6,200.00	6,143.99	6,231.91	6,143.99	24.39	25.85	-0.55	928.96	-293.65	220.03	174.11	45.92	4.792	
6,300.00	6,243.99	6,331.91	6,243.99	24.71	26.15	-0.55	928.96	-293.65	220.03	173.43	46.59	4.722	
6,400.00	6,343.99	6,431.91	6,343.99	25.03	26.45	-0.55	928.96	-293.65	220.03	172.76	47.27	4.655	
6,500.00	6,443.99	6,531.91	6,443.99	25.35	26.75	-0.55	928.96	-293.65	220.03	172.08	47.94	4.589	
6,600.00	6,543.99	6,631.91	6,543.99	25.67	27.06	-0.55	928.96	-293.65	220.03	171.40	48.62	4.525	
6,611.53	6,555.52	6,643.44	6,555.52	25.71	27.09	-0.55	928.96	-293.65	220.03	171.33	48.70	4.518	
6,700.00	6,643.99	6,731.91	6,643.98	25.99	27.36	-0.48	928.96	-293.36	220.03	170.72	49.30	4.463	
6,749.81	6,693.80	6,781.49	6,693.46	26.15	27.50	0.33	928.99	-290.25	220.05	170.37	49.68	4.429	
6,800.00	6,743.95	6,831.03	6,742.55	26.31	27.63	-87.82	929.06	-283.74	220.19	170.09	50.09	4.395	
6,850.00	6,793.66	6,880.06	6,790.59	26.45	27.76	-86.58	929.16	-273.96	220.42	169.92	50.50	4.365	
6,900.00	6,842.89	6,928.78	6,837.55	26.59	27.88	-85.37	929.29	-261.01	220.75	169.85	50.90	4.337	
6,950.00	6,891.39	6,977.20	6,883.24	26.72	27.99	-84.18	929.45	-245.01	221.17	169.88	51.29	4.312	
7,000.00	6,938.93	7,025.34	6,927.48	26.85	28.10	-83.03	929.65	-226.08	221.68	170.00	51.67	4.290	
7,050.00	6,985.28	7,073.20	6,970.12	26.97	28.20	-81.92	929.87	-204.36	222.25	170.21	52.04	4.271	
7,100.00	7,030.20	7,120.80	7,010.99	27.08	28.29	-80.86	930.12	-179.97	222.88	170.49	52.38	4.255	
7,150.00	7,073.49	7,168.15	7,049.95	27.18	28.37	-79.84	930.40	-153.08	223.55	170.83	52.72	4.240	
7,200.00	7,114.92	7,215.28	7,086.88	27.27	28.44	-78.88	930.70	-123.81	224.26	171.20	53.06	4.226	
7,250.00	7,154.31	7,262.18	7,121.64	27.36	28.51	-77.97	931.02	-92.33	224.99	171.58	53.41	4.213	
7,300.00	7,191.45	7,308.89	7,154.14	27.45	28.57	-77.13	931.36	-58.80	225.72	171.94	53.78	4.197	
7,350.00	7,226.17	7,355.42	7,184.27	27.53	28.63	-76.35	931.72	-23.36	226.45	172.26	54.18	4.179	
7,400.00	7,258.29	7,400.00	7,210.92	27.61	28.68	-75.65	932.09	12.37	227.16	172.56	54.60	4.161	
7,450.00	7,287.66	7,447.97	7,237.06	27.72	28.73	-74.98	932.50	52.59	227.82	172.65	55.18	4.129	
7,500.00	7,314.14	7,494.04	7,259.56	27.89	28.79	-74.40	932.91	92.76	228.45	172.65	55.81	4.094	
7,550.00	7,337.60	7,539.98	7,279.40	28.20	28.89	-73.89	933.34	134.20	229.03	172.48	56.54	4.050	
7,600.00	7,357.92	7,585.82	7,296.50	28.65	29.12	-73.46	933.77	176.71	229.54	172.14	57.40	3.999	
7,650.00	7,375.00	7,631.57	7,310.81	29.21	29.57	-73.09	934.22	220.15	229.98	171.59	58.38	3.939	
7,700.00	7,388.77	7,677.24	7,322.32	29.86	30.15	-72.80	934.67	264.35	230.33	170.83	59.50	3.871	
7,750.00	7,399.15	7,722.86	7,330.97	30.57	30.81	-72.58	935.13	309.13	230.61	169.86	60.75	3.796	
7,800.00	7,406.10	7,768.44	7,336.75	31.36	31.53	-72.43	935.59	354.33	230.79	168.66	62.13	3.714	
7,850.00	7,409.57	7,814.00	7,339.64	32.19	32.30	-72.36	936.06	399.79	230.88	167.25	63.63	3.628	
7,874.81	7,410.00	7,836.73	7,340.00	32.63	32.69	-72.35	936.29	422.51	230.89	166.47	64.42	3.584	
7,883.28	7,410.00	7,845.06	7,340.00	32.78	32.84	-72.35	936.38	430.84	230.89	166.18	64.71	3.568	
7,900.00	7,410.00	7,861.78	7,340.00	33.08	33.15	-72.35	936.55	447.56	230.89	165.60	65.29	3.537	
8,000.00	7,410.00	7,961.78	7,340.00	35.00	35.09	-72.35	937.57	547.56	230.89	161.94	68.95	3.349	
8,100.00	7,410.00	8,061.78	7,340.00	37.10	37.19	-72.35	938.60	647.55	230.89	157.96	72.93	3.166	
8,200.00	7,410.00	8,161.78	7,340.00	39.35	39.43	-72.35	939.62	747.55	230.89	153.69	77.20	2.991	
8,300.00	7,410.00	8,261.78	7,340.00	41.73	41.81	-72.35	940.65	847.54	230.89	149.19	81.70	2.826	
8,400.00	7,410.00	8,361.78	7,340.00	44.21	44.29	-72.35	941.67	947.53	230.89	144.49	86.40	2.672	
8,500.00	7,410.00	8,461.78	7,340.00	46.77	46.85	-72.35	942.70	1,047.53	230.89	139.61	91.28	2.530	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: O-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,600.00	7,410.00	8,561.78	7,340.00	49.42	49.49	-72.35	943.72	1,147.52	230.89	134.59	96.30	2.398		
8,700.00	7,410.00	8,661.78	7,340.00	52.12	52.20	-72.35	944.74	1,247.52	230.89	129.45	101.44	2.276		
8,800.00	7,410.00	8,761.78	7,340.00	54.88	54.95	-72.35	945.77	1,347.51	230.89	124.21	106.68	2.164		
8,900.00	7,410.00	8,861.78	7,340.00	57.68	57.76	-72.35	946.79	1,447.51	230.89	118.87	112.02	2.061		
9,000.00	7,410.00	8,961.78	7,340.00	60.53	60.60	-72.35	947.82	1,547.50	230.89	113.46	117.43	1.966		
9,100.00	7,410.00	9,061.78	7,340.00	63.41	63.48	-72.35	948.84	1,647.50	230.89	107.98	122.91	1.878		
9,200.00	7,410.00	9,161.78	7,340.00	66.32	66.39	-72.35	949.87	1,747.49	230.89	102.44	128.45	1.797		
9,300.00	7,410.00	9,261.78	7,340.00	69.25	69.32	-72.35	950.89	1,847.49	230.89	96.85	134.04	1.722		
9,400.00	7,410.00	9,361.78	7,340.00	72.21	72.28	-72.35	951.92	1,947.48	230.89	91.21	139.68	1.653		
9,500.00	7,410.00	9,461.78	7,340.00	75.19	75.26	-72.35	952.94	2,047.48	230.89	85.53	145.36	1.588		
9,600.00	7,410.00	9,561.78	7,340.00	78.19	78.25	-72.35	953.96	2,147.47	230.89	79.82	151.07	1.528		
9,700.00	7,410.00	9,661.78	7,340.00	81.20	81.27	-72.35	954.99	2,247.47	230.89	74.07	156.82	1.472 Level 3		
9,800.00	7,410.00	9,761.78	7,340.00	84.23	84.29	-72.35	956.01	2,347.46	230.89	68.30	162.59	1.420 Level 3		
9,900.00	7,410.00	9,861.78	7,340.00	87.27	87.33	-72.35	957.04	2,447.46	230.89	62.50	168.39	1.371 Level 3		
10,000.00	7,410.00	9,961.78	7,340.00	90.32	90.38	-72.35	958.06	2,547.45	230.89	56.68	174.21	1.325 Level 3		
10,100.00	7,410.00	10,061.78	7,340.00	93.38	93.44	-72.35	959.09	2,647.45	230.89	50.84	180.05	1.282 Level 3		
10,200.00	7,410.00	10,161.78	7,340.00	96.45	96.51	-72.35	960.11	2,747.44	230.89	44.98	185.91	1.242 Level 2		
10,300.00	7,410.00	10,261.78	7,340.00	99.53	99.59	-72.35	961.14	2,847.43	230.89	39.10	191.79	1.204 Level 2		
10,400.00	7,410.00	10,361.78	7,340.00	102.62	102.68	-72.35	962.16	2,947.43	230.89	33.21	197.68	1.168 Level 2		
10,500.00	7,410.00	10,461.78	7,340.00	105.71	105.77	-72.35	963.18	3,047.42	230.89	27.30	203.59	1.134 Level 2		
10,600.00	7,410.00	10,561.78	7,340.00	108.81	108.87	-72.35	964.21	3,147.42	230.89	21.38	209.51	1.102 Level 2		
10,700.00	7,410.00	10,661.78	7,340.00	111.92	111.98	-72.35	965.23	3,247.41	230.89	15.45	215.44	1.072 Level 2		
10,800.00	7,410.00	10,761.78	7,340.00	115.03	115.09	-72.35	966.26	3,347.41	230.89	9.51	221.38	1.043 Level 2		
10,900.00	7,410.00	10,861.78	7,340.00	118.15	118.21	-72.35	967.28	3,447.40	230.89	3.55	227.34	1.016 Level 2		
11,000.00	7,410.00	10,961.78	7,340.00	121.27	121.33	-72.35	968.31	3,547.40	230.89	-2.41	233.30	0.990 Level 1		
11,100.00	7,410.00	11,061.78	7,340.00	124.40	124.45	-72.35	969.33	3,647.39	230.89	-8.38	239.27	0.965 Level 1		
11,200.00	7,410.00	11,161.78	7,340.00	127.53	127.58	-72.35	970.36	3,747.39	230.89	-14.36	245.25	0.941 Level 1		
11,300.00	7,410.00	11,261.78	7,340.00	130.66	130.72	-72.35	971.38	3,847.38	230.89	-20.35	251.23	0.919 Level 1		
11,400.00	7,410.00	11,361.78	7,340.00	133.80	133.85	-72.35	972.40	3,947.38	230.89	-26.34	257.23	0.898 Level 1		
11,500.00	7,410.00	11,461.78	7,340.00	136.94	136.99	-72.35	973.43	4,047.37	230.89	-32.34	263.23	0.877 Level 1		
11,600.00	7,410.00	11,561.78	7,340.00	140.08	140.14	-72.35	974.45	4,147.37	230.89	-38.34	269.23	0.858 Level 1		
11,700.00	7,410.00	11,661.78	7,340.00	143.23	143.28	-72.35	975.48	4,247.36	230.89	-44.36	275.24	0.839 Level 1		
11,800.00	7,410.00	11,761.78	7,340.00	146.38	146.43	-72.35	976.50	4,347.36	230.89	-50.37	281.26	0.821 Level 1		
11,900.00	7,410.00	11,861.78	7,340.00	149.53	149.58	-72.35	977.53	4,447.35	230.89	-56.39	287.28	0.804 Level 1		
11,950.31	7,410.00	11,912.09	7,340.00	151.11	151.17	-72.35	978.04	4,497.66	230.89	-59.42	290.31	0.795 Level 1, ES, SF		

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.50	-9.84	0.08	9.84				
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-9.84	0.08	9.84	9.56	0.28	35.633	
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-9.84	0.08	9.84	8.84	0.99	9.905	
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-9.84	0.08	9.84	8.13	1.71	5.752	
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-9.84	0.08	9.84	7.41	2.43	4.053	
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-9.84	0.08	9.84	6.69	3.14	3.129 CC, ES	
600.00	599.98	599.98	599.98	1.93	1.93	-161.38	-9.84	0.08	11.47	7.61	3.86	2.972	
700.00	699.84	700.32	700.30	2.29	2.29	-164.37	-8.38	-0.90	14.95	10.36	4.59	3.258	
800.00	799.45	800.77	800.61	2.65	2.65	-164.11	-4.02	-3.87	18.69	13.36	5.33	3.508	
900.00	898.70	901.23	900.68	3.02	3.02	-162.26	3.21	-8.80	22.73	16.66	6.07	3.745	
929.94	928.33	931.13	930.43	3.14	3.12	-161.87	5.68	-10.48	24.26	17.97	6.29	3.858	
1,000.00	997.60	1,001.08	1,000.03	3.40	3.38	-161.39	11.45	-14.42	28.18	21.39	6.79	4.149	
1,100.00	1,096.48	1,100.92	1,099.37	3.79	3.75	-160.90	19.69	-20.03	33.78	26.26	7.52	4.493	
1,200.00	1,195.35	1,200.76	1,198.71	4.18	4.12	-160.55	27.93	-25.64	39.39	31.14	8.25	4.774	
1,300.00	1,294.23	1,300.61	1,298.06	4.58	4.49	-160.29	36.17	-31.26	44.99	36.01	8.99	5.007	
1,400.00	1,393.10	1,400.45	1,397.40	4.98	4.87	-160.08	44.41	-36.87	50.60	40.87	9.72	5.204	
1,500.00	1,491.98	1,500.29	1,496.74	5.38	5.24	-159.92	52.65	-42.49	56.20	45.74	10.46	5.372	
1,600.00	1,590.86	1,600.13	1,596.09	5.78	5.62	-159.78	60.89	-48.10	61.81	50.60	11.20	5.517	
1,700.00	1,689.73	1,699.98	1,695.43	6.19	6.00	-159.67	69.13	-53.71	67.41	55.47	11.95	5.643	
1,800.00	1,788.61	1,799.82	1,794.78	6.60	6.38	-159.58	77.37	-59.33	73.02	60.33	12.69	5.755	
1,900.00	1,887.48	1,899.66	1,894.12	7.00	6.75	-159.49	85.61	-64.94	78.63	65.19	13.43	5.853	
2,000.00	1,986.36	1,999.50	1,993.46	7.41	7.13	-159.42	93.85	-70.55	84.23	70.05	14.18	5.941	
2,100.00	2,085.24	2,099.35	2,092.81	7.82	7.51	-159.36	102.10	-76.17	89.84	74.91	14.92	6.020	
2,200.00	2,184.11	2,199.19	2,192.15	8.23	7.89	-159.31	110.34	-81.78	95.45	79.77	15.67	6.091	
2,300.00	2,282.99	2,299.03	2,291.49	8.64	8.28	-159.26	118.58	-87.40	101.05	84.63	16.42	6.155	
2,400.00	2,381.86	2,398.87	2,390.84	9.05	8.66	-159.22	126.82	-93.01	106.66	89.49	17.17	6.214	
2,500.00	2,480.74	2,498.72	2,490.18	9.46	9.04	-159.18	135.06	-98.62	112.27	94.35	17.91	6.267	
2,600.00	2,579.62	2,598.56	2,589.52	9.87	9.42	-159.14	143.30	-104.24	117.87	99.21	18.66	6.316	
2,700.00	2,678.49	2,698.40	2,688.87	10.28	9.80	-159.11	151.54	-109.85	123.48	104.07	19.41	6.362	
2,800.00	2,777.37	2,798.24	2,788.21	10.70	10.18	-159.08	159.78	-115.46	129.09	108.93	20.16	6.404	
2,900.00	2,876.24	2,898.09	2,887.55	11.11	10.56	-159.05	168.02	-121.08	134.70	113.79	20.91	6.442	
3,000.00	2,975.12	2,997.93	2,986.90	11.52	10.94	-159.03	176.26	-126.69	140.30	118.65	21.66	6.478	
3,100.00	3,074.00	3,097.77	3,086.24	11.93	11.33	-159.00	184.50	-132.31	145.91	123.50	22.41	6.512	
3,200.00	3,172.87	3,197.62	3,185.58	12.34	11.71	-158.98	192.74	-137.92	151.52	128.36	23.16	6.543	
3,300.00	3,271.75	3,297.46	3,284.93	12.76	12.09	-158.96	200.98	-143.53	157.12	133.22	23.91	6.573	
3,400.00	3,370.62	3,397.30	3,384.27	13.17	12.47	-158.95	209.22	-149.15	162.73	138.08	24.66	6.600	
3,500.00	3,469.50	3,497.14	3,483.62	13.58	12.85	-158.93	217.46	-154.76	168.34	142.93	25.41	6.626	
3,600.00	3,568.38	3,596.99	3,582.96	13.99	13.24	-158.91	225.70	-160.37	173.95	147.79	26.16	6.650	
3,700.00	3,667.25	3,696.83	3,682.30	14.41	13.62	-158.90	233.94	-165.99	179.55	152.65	26.91	6.673	
3,800.00	3,766.13	3,796.67	3,781.65	14.82	14.00	-158.88	242.18	-171.60	185.16	157.50	27.66	6.695	
3,900.00	3,865.00	3,896.51	3,880.99	15.23	14.38	-158.87	250.42	-177.22	190.77	162.36	28.41	6.716	
4,000.00	3,963.88	3,996.36	3,980.33	15.65	14.77	-158.86	258.66	-182.83	196.38	167.22	29.16	6.735	
4,100.00	4,062.76	4,096.20	4,079.68	16.06	15.15	-158.85	266.90	-188.44	201.98	172.08	29.91	6.754	
4,200.00	4,161.63	4,196.04	4,179.02	16.47	15.53	-158.84	275.14	-194.06	207.59	176.93	30.66	6.771	
4,300.00	4,260.51	4,295.88	4,278.36	16.89	15.91	-158.82	283.38	-199.67	213.20	181.79	31.41	6.788	
4,400.00	4,359.38	4,395.73	4,377.71	17.30	16.30	-158.81	291.62	-205.28	218.81	186.65	32.16	6.804	
4,500.00	4,458.26	4,495.57	4,477.05	17.71	16.68	-158.81	299.86	-210.90	224.41	191.50	32.91	6.819	
4,600.00	4,557.13	4,595.41	4,576.39	18.13	17.06	-158.80	308.10	-216.51	230.02	196.36	33.66	6.833	
4,700.00	4,656.01	4,695.26	4,675.74	18.54	17.44	-158.79	316.34	-222.13	235.63	201.22	34.41	6.847	
4,800.00	4,754.89	4,795.10	4,775.08	18.96	17.83	-158.78	324.59	-227.74	241.23	206.07	35.16	6.860	
4,900.00	4,853.76	4,894.94	4,874.42	19.37	18.21	-158.77	332.83	-233.35	246.84	210.93	35.91	6.873	
5,000.00	4,952.64	4,994.78	4,973.77	19.78	18.59	-158.76	341.07	-238.97	252.45	215.78	36.66	6.885	

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 3D-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 3D-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		
5,100.00	5,051.51	5,094.63	5,073.11	20.20	18.98	-158.76	349.31	-244.58	258.06	220.64	37.42	6.897		
5,200.00	5,150.39	5,194.47	5,172.46	20.61	19.36	-158.75	357.55	-250.20	263.66	225.50	38.17	6.908		
5,300.00	5,249.27	5,294.31	5,271.80	21.03	19.74	-158.74	365.79	-255.81	269.27	230.35	38.92	6.919		
5,400.00	5,348.14	5,394.15	5,371.14	21.44	20.12	-158.74	374.03	-261.42	274.88	235.21	39.67	6.929		
5,500.00	5,447.02	5,494.00	5,470.49	21.85	20.51	-158.73	382.27	-267.04	280.49	240.07	40.42	6.939		
5,600.00	5,545.89	5,593.84	5,569.83	22.27	20.89	-158.72	390.51	-272.65	286.09	244.92	41.17	6.949		
5,626.07	5,571.67	5,619.87	5,595.73	22.37	20.99	-158.72	392.66	-274.11	287.56	246.19	41.37	6.951		
5,700.00	5,644.90	5,693.72	5,669.21	22.67	21.27	-158.67	398.75	-278.27	290.81	248.89	41.92	6.937		
5,800.00	5,744.33	5,789.37	5,764.42	23.06	21.64	-158.44	406.28	-283.39	292.81	250.16	42.64	6.866		
5,900.00	5,844.07	5,881.49	5,856.34	23.42	21.98	-158.27	411.32	-286.83	293.97	250.67	43.30	6.790		
6,000.00	5,943.99	5,973.61	5,948.40	23.76	22.30	-158.18	413.91	-288.59	294.57	250.67	43.90	6.710		
6,056.01	6,000.00	6,025.21	6,000.00	23.94	22.48	179.48	414.29	-288.86	294.66	250.44	44.22	6.664		
6,100.00	6,043.99	6,069.20	6,043.99	24.08	22.63	179.48	414.29	-288.86	294.66	250.14	44.52	6.619		
6,200.00	6,143.99	6,169.20	6,143.99	24.39	22.96	179.48	414.29	-288.86	294.66	249.45	45.20	6.518		
6,300.00	6,243.99	6,269.20	6,243.99	24.71	23.30	179.48	414.29	-288.86	294.66	248.77	45.89	6.421		
6,400.00	6,343.99	6,369.20	6,343.99	25.03	23.64	179.48	414.29	-288.86	294.66	248.08	46.58	6.326		
6,500.00	6,443.99	6,469.20	6,443.99	25.35	23.98	179.48	414.29	-288.86	294.66	247.39	47.27	6.234		
6,600.00	6,543.99	6,569.20	6,543.99	25.67	24.32	179.48	414.29	-288.86	294.66	246.70	47.96	6.144		
6,700.00	6,643.99	6,669.20	6,643.99	25.99	24.65	179.42	414.30	-288.57	294.66	246.02	48.64	6.058		
6,702.10	6,646.09	6,671.30	6,646.09	26.00	24.66	179.41	414.30	-288.51	294.66	246.00	48.66	6.056		
6,749.81	6,693.80	6,718.82	6,693.50	26.15	24.81	178.82	414.33	-285.46	294.67	245.73	48.95	6.020		
6,800.00	6,743.95	6,768.39	6,742.63	26.31	24.96	88.46	414.40	-278.93	294.76	245.55	49.21	5.990		
6,850.00	6,793.66	6,817.45	6,790.69	26.45	25.10	87.54	414.50	-269.14	294.93	245.48	49.46	5.963		
6,900.00	6,842.89	6,866.20	6,837.67	26.59	25.23	86.63	414.63	-256.18	295.18	245.49	49.69	5.941		
6,950.00	6,891.39	6,914.65	6,883.39	26.72	25.36	85.74	414.79	-240.16	295.49	245.59	49.90	5.922		
7,000.00	6,938.93	6,962.81	6,927.65	26.85	25.48	84.87	414.98	-221.21	295.86	245.76	50.10	5.905		
7,050.00	6,985.28	7,010.69	6,970.30	26.97	25.59	84.03	415.20	-199.46	296.28	245.99	50.29	5.891		
7,100.00	7,030.20	7,058.32	7,011.19	27.08	25.71	83.22	415.45	-175.05	296.75	246.27	50.48	5.879		
7,150.00	7,073.49	7,105.69	7,050.16	27.18	25.82	82.45	415.72	-148.13	297.26	246.59	50.67	5.867		
7,200.00	7,114.92	7,152.84	7,087.09	27.27	25.93	81.72	416.02	-118.84	297.79	246.92	50.87	5.853		
7,250.00	7,154.31	7,200.00	7,122.02	27.36	26.06	81.02	416.34	-87.17	298.34	247.23	51.11	5.837		
7,300.00	7,191.45	7,246.49	7,154.35	27.45	26.22	80.38	416.68	-53.77	298.90	247.52	51.38	5.818		
7,350.00	7,226.17	7,293.03	7,184.47	27.53	26.43	79.78	417.04	-18.30	299.45	247.74	51.71	5.791		
7,400.00	7,258.29	7,339.40	7,212.13	27.61	26.70	79.22	417.42	18.90	299.99	247.88	52.11	5.756		
7,450.00	7,287.66	7,385.62	7,237.24	27.72	27.02	78.72	417.82	57.69	300.51	247.89	52.61	5.712		
7,500.00	7,314.14	7,431.69	7,259.74	27.89	27.41	78.27	418.22	97.89	300.99	247.77	53.22	5.656		
7,550.00	7,337.60	7,477.65	7,279.55	28.20	27.86	77.87	418.65	139.34	301.43	247.49	53.94	5.588		
7,600.00	7,357.92	7,523.49	7,296.63	28.65	28.37	77.53	419.08	181.88	301.83	247.03	54.80	5.508		
7,650.00	7,375.00	7,569.25	7,310.93	29.21	28.94	77.24	419.52	225.33	302.17	246.37	55.80	5.415		
7,700.00	7,388.77	7,614.93	7,322.41	29.86	29.56	77.00	419.97	269.54	302.45	245.51	56.95	5.311		
7,750.00	7,399.15	7,660.56	7,331.03	30.57	30.25	76.83	420.42	314.33	302.67	244.44	58.23	5.198		
7,800.00	7,406.10	7,706.14	7,336.79	31.36	30.98	76.71	420.88	359.54	302.82	243.18	59.65	5.077		
7,850.00	7,409.57	7,751.70	7,339.65	32.19	31.75	76.65	421.35	405.00	302.90	241.72	61.19	4.951		
7,874.81	7,410.00	7,774.33	7,340.00	32.63	32.15	76.64	421.58	427.62	302.92	240.92	61.99	4.886		
7,900.00	7,410.00	7,799.52	7,340.00	33.08	32.61	76.64	421.83	452.81	302.92	240.04	62.88	4.817		
8,000.00	7,410.00	7,899.52	7,340.00	35.00	34.55	76.64	422.85	552.80	302.93	236.27	66.66	4.545		
8,100.00	7,410.00	7,999.52	7,340.00	37.10	36.67	76.64	423.86	652.80	302.93	232.15	70.78	4.280		
8,200.00	7,410.00	8,099.52	7,340.00	39.35	38.94	76.64	424.88	752.79	302.94	227.74	75.20	4.028		
8,300.00	7,410.00	8,199.52	7,340.00	41.73	41.33	76.64	425.90	852.79	302.95	223.09	79.87	3.793		
8,400.00	7,410.00	8,299.52	7,340.00	44.21	43.83	76.64	426.91	952.78	302.96	218.23	84.73	3.575		
8,500.00	7,410.00	8,399.52	7,340.00	46.77	46.41	76.64	427.93	1,052.78	302.97	213.20	89.77	3.375		
8,600.00	7,410.00	8,499.52	7,340.00	49.42	49.07	76.64	428.94	1,152.77	302.98	208.02	94.96	3.191		

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 3D-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 3D-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
8,700.00	7,410.00	8,599.52	7,340.00	52.12	51.79	76.64	429.96	1,252.77	302.98	202.72	100.26	3.022	
8,800.00	7,410.00	8,699.52	7,340.00	54.88	54.56	76.64	430.98	1,352.76	302.99	197.32	105.67	2.867	
8,900.00	7,410.00	8,799.52	7,340.00	57.68	57.38	76.64	431.99	1,452.76	303.00	191.84	111.16	2.726	
9,000.00	7,410.00	8,899.52	7,340.00	60.53	60.23	76.64	433.01	1,552.75	303.01	186.27	116.73	2.596	
9,100.00	7,410.00	8,999.52	7,340.00	63.41	63.12	76.64	434.03	1,652.75	303.02	180.65	122.37	2.476	
9,200.00	7,410.00	9,099.52	7,340.00	66.32	66.04	76.64	435.04	1,752.74	303.02	174.96	128.06	2.366	
9,300.00	7,410.00	9,199.52	7,340.00	69.25	68.99	76.64	436.06	1,852.74	303.03	169.23	133.81	2.265	
9,400.00	7,410.00	9,299.52	7,340.00	72.21	71.95	76.64	437.07	1,952.73	303.04	163.45	139.59	2.171	
9,500.00	7,410.00	9,399.52	7,340.00	75.19	74.94	76.64	438.09	2,052.73	303.05	157.63	145.42	2.084	
9,600.00	7,410.00	9,499.52	7,340.00	78.19	77.94	76.65	439.11	2,152.72	303.06	151.78	151.28	2.003	
9,700.00	7,410.00	9,599.52	7,340.00	81.20	80.96	76.65	440.12	2,252.72	303.07	145.90	157.17	1.928	
9,800.00	7,410.00	9,699.52	7,340.00	84.23	84.00	76.65	441.14	2,352.71	303.07	139.99	163.08	1.858	
9,900.00	7,410.00	9,799.52	7,340.00	87.27	87.04	76.65	442.15	2,452.71	303.08	134.06	169.02	1.793	
10,000.00	7,410.00	9,899.52	7,340.00	90.32	90.10	76.65	443.17	2,552.70	303.09	128.11	174.98	1.732	
10,100.00	7,410.00	9,999.52	7,340.00	93.38	93.17	76.65	444.19	2,652.70	303.10	122.14	180.96	1.675	
10,200.00	7,410.00	10,099.52	7,340.00	96.45	96.24	76.65	445.20	2,752.69	303.11	116.15	186.96	1.621	
10,300.00	7,410.00	10,199.52	7,340.00	99.53	99.33	76.65	446.22	2,852.69	303.12	110.14	192.97	1.571	
10,400.00	7,410.00	10,299.52	7,340.00	102.62	102.42	76.65	447.24	2,952.68	303.12	104.12	199.00	1.523	
10,500.00	7,410.00	10,399.52	7,340.00	105.71	105.52	76.65	448.25	3,052.68	303.13	98.09	205.04	1.478 Level 3	
10,600.00	7,410.00	10,499.52	7,340.00	108.81	108.62	76.65	449.27	3,152.67	303.14	92.05	211.09	1.436 Level 3	
10,700.00	7,410.00	10,599.52	7,340.00	111.92	111.73	76.65	450.28	3,252.67	303.15	85.99	217.16	1.396 Level 3	
10,800.00	7,410.00	10,699.52	7,340.00	115.03	114.85	76.65	451.30	3,352.66	303.16	79.92	223.23	1.358 Level 3	
10,900.00	7,410.00	10,799.52	7,340.00	118.15	117.97	76.65	452.32	3,452.65	303.16	73.85	229.32	1.322 Level 3	
11,000.00	7,410.00	10,899.52	7,340.00	121.27	121.09	76.65	453.33	3,552.65	303.17	67.76	235.41	1.288 Level 3	
11,100.00	7,410.00	10,999.52	7,340.00	124.40	124.22	76.65	454.35	3,652.64	303.18	61.67	241.51	1.255 Level 3	
11,200.00	7,410.00	11,099.52	7,340.00	127.53	127.36	76.65	455.36	3,752.64	303.19	55.57	247.62	1.224 Level 2	
11,300.00	7,410.00	11,199.52	7,340.00	130.66	130.49	76.65	456.38	3,852.63	303.20	49.47	253.73	1.195 Level 2	
11,400.00	7,410.00	11,299.52	7,340.00	133.80	133.63	76.65	457.40	3,952.63	303.21	43.35	259.85	1.167 Level 2	
11,500.00	7,410.00	11,399.52	7,340.00	136.94	136.78	76.65	458.41	4,052.62	303.21	37.23	265.98	1.140 Level 2	
11,600.00	7,410.00	11,499.52	7,340.00	140.08	139.92	76.65	459.43	4,152.62	303.22	31.11	272.11	1.114 Level 2	
11,700.00	7,410.00	11,599.52	7,340.00	143.23	143.07	76.65	460.44	4,252.61	303.23	24.98	278.25	1.090 Level 2	
11,800.00	7,410.00	11,699.52	7,340.00	146.38	146.22	76.65	461.46	4,352.61	303.24	18.85	284.39	1.066 Level 2	
11,900.00	7,410.00	11,799.52	7,340.00	149.53	149.38	76.65	462.48	4,452.60	303.25	12.71	290.54	1.044 Level 2	
11,904.63	7,410.00	11,804.15	7,340.00	149.67	149.52	76.65	462.52	4,457.23	303.25	12.42	290.82	1.043 Level 2	
11,950.31	7,410.00	11,848.32	7,340.00	151.11	150.91	76.65	462.97	4,501.40	303.25	9.69	293.57	1.033 Level 2, SF	

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-179.69	-20.04	-0.11	20.04					
100.00	100.00	100.00	100.00	0.14	0.14	-179.69	-20.04	-0.11	20.04	19.77	0.28	72.607		
200.00	200.00	200.00	200.00	0.50	0.50	-179.69	-20.04	-0.11	20.04	19.05	0.99	20.183		
300.00	300.00	300.00	300.00	0.85	0.85	-179.69	-20.04	-0.11	20.04	18.33	1.71	11.721		
400.00	400.00	400.00	400.00	1.21	1.21	-179.69	-20.04	-0.11	20.04	17.61	2.43	8.258		
500.00	500.00	500.00	500.00	1.57	1.57	-179.69	-20.04	-0.11	20.04	16.90	3.14	6.375 CC, ES		
600.00	599.98	599.98	599.98	1.93	1.93	-159.11	-20.04	-0.11	21.66	17.80	3.86	5.611		
700.00	699.84	699.84	699.84	2.29	2.29	-163.10	-20.04	-0.11	26.62	22.04	4.58	5.812		
800.00	799.45	799.45	799.45	2.65	2.65	-167.21	-20.04	-0.11	35.05	29.75	5.30	6.613		
900.00	898.70	898.70	898.70	3.02	3.00	-170.46	-20.04	-0.11	47.01	40.99	6.02	7.809		
929.94	928.33	928.33	928.33	3.14	3.11	-171.24	-20.04	-0.11	51.28	45.04	6.24	8.219		
1,000.00	997.60	997.60	997.60	3.40	3.36	-172.73	-20.04	-0.11	61.66	54.92	6.74	9.149		
1,100.00	1,096.48	1,098.75	1,098.73	3.79	3.72	-173.54	-18.84	-1.32	75.06	67.60	7.46	10.056		
1,200.00	1,195.35	1,200.70	1,200.53	4.18	4.08	-172.94	-15.10	-5.10	85.41	77.21	8.20	10.415		
1,300.00	1,294.23	1,301.47	1,300.97	4.58	4.44	-171.54	-9.32	-10.95	93.24	84.31	8.93	10.440		
1,400.00	1,393.10	1,401.16	1,400.30	4.98	4.80	-170.29	-3.38	-16.96	100.86	91.20	9.66	10.444		
1,500.00	1,491.98	1,500.85	1,499.63	5.38	5.16	-169.21	2.55	-22.96	108.52	98.14	10.39	10.449		
1,600.00	1,590.86	1,600.53	1,598.96	5.78	5.53	-168.27	8.49	-28.96	116.22	105.10	11.12	10.454		
1,700.00	1,689.73	1,700.22	1,698.29	6.19	5.89	-167.45	14.42	-34.96	123.94	112.09	11.85	10.458		
1,800.00	1,788.61	1,799.91	1,797.61	6.60	6.26	-166.73	20.36	-40.97	131.69	119.10	12.59	10.462		
1,900.00	1,887.48	1,899.59	1,896.94	7.00	6.63	-166.08	26.30	-46.97	139.46	126.13	13.33	10.465		
2,000.00	1,986.36	1,999.28	1,996.27	7.41	6.99	-165.51	32.23	-52.97	147.24	133.17	14.06	10.469		
2,100.00	2,085.24	2,098.97	2,095.60	7.82	7.36	-164.99	38.17	-58.98	155.03	140.22	14.80	10.472		
2,200.00	2,184.11	2,198.65	2,194.93	8.23	7.73	-164.52	44.10	-64.98	162.83	147.29	15.55	10.474		
2,300.00	2,282.99	2,298.34	2,294.26	8.64	8.10	-164.10	50.04	-70.98	170.65	154.36	16.29	10.477		
2,400.00	2,381.86	2,398.03	2,393.59	9.05	8.47	-163.71	55.97	-76.99	178.47	161.44	17.03	10.479		
2,500.00	2,480.74	2,497.71	2,492.91	9.46	8.85	-163.35	61.91	-82.99	186.30	168.53	17.78	10.481		
2,600.00	2,579.62	2,597.40	2,592.24	9.87	9.22	-163.03	67.84	-88.99	194.14	175.62	18.52	10.483		
2,700.00	2,678.49	2,697.09	2,691.57	10.28	9.59	-162.73	73.78	-94.99	201.98	182.72	19.26	10.485		
2,800.00	2,777.37	2,796.77	2,790.90	10.70	9.96	-162.45	79.72	-101.00	209.83	189.82	20.01	10.486		
2,900.00	2,876.24	2,896.46	2,890.23	11.11	10.34	-162.19	85.65	-107.00	217.69	196.93	20.76	10.488		
3,000.00	2,975.12	2,996.14	2,989.56	11.52	10.71	-161.95	91.59	-113.00	225.54	204.04	21.50	10.489		
3,100.00	3,074.00	3,095.83	3,088.88	11.93	11.08	-161.72	97.52	-119.01	233.40	211.15	22.25	10.490		
3,200.00	3,172.87	3,195.52	3,188.21	12.34	11.45	-161.51	103.46	-125.01	241.27	218.27	23.00	10.491		
3,300.00	3,271.75	3,295.20	3,287.54	12.76	11.83	-161.32	109.39	-131.01	249.13	225.39	23.74	10.492		
3,400.00	3,370.62	3,394.89	3,386.87	13.17	12.20	-161.13	115.33	-137.01	257.00	232.51	24.49	10.493		
3,500.00	3,469.50	3,494.58	3,486.20	13.58	12.58	-160.96	121.26	-143.02	264.88	239.64	25.24	10.494		
3,600.00	3,568.38	3,594.26	3,585.53	13.99	12.95	-160.79	127.20	-149.02	272.75	246.76	25.99	10.495		
3,700.00	3,667.25	3,693.95	3,684.86	14.41	13.32	-160.64	133.14	-155.02	280.63	253.89	26.74	10.496		
3,800.00	3,766.13	3,793.64	3,784.18	14.82	13.70	-160.49	139.07	-161.03	288.51	261.02	27.49	10.496		
3,900.00	3,865.00	3,893.32	3,883.51	15.23	14.07	-160.36	145.01	-167.03	296.39	268.15	28.24	10.497		
4,000.00	3,963.88	3,993.01	3,982.84	15.65	14.45	-160.22	150.94	-173.03	304.27	275.28	28.98	10.498		
4,100.00	4,062.76	4,092.70	4,082.17	16.06	14.82	-160.10	156.88	-179.04	312.15	282.42	29.73	10.498		
4,200.00	4,161.63	4,192.38	4,181.50	16.47	15.19	-159.98	162.81	-185.04	320.04	289.55	30.48	10.499		
4,300.00	4,260.51	4,292.07	4,280.83	16.89	15.57	-159.87	168.75	-191.04	327.92	296.69	31.23	10.499		
4,400.00	4,359.38	4,391.76	4,380.15	17.30	15.94	-159.76	174.68	-197.04	335.81	303.83	31.98	10.500		
4,500.00	4,458.26	4,491.44	4,479.48	17.71	16.32	-159.66	180.62	-203.05	343.70	310.97	32.73	10.500		
4,600.00	4,557.13	4,591.13	4,578.81	18.13	16.69	-159.56	186.56	-209.05	351.59	318.11	33.48	10.501		
4,700.00	4,656.01	4,690.82	4,678.14	18.54	17.07	-159.47	192.49	-215.05	359.48	325.25	34.23	10.501		
4,800.00	4,754.89	4,790.50	4,777.47	18.96	17.44	-159.38	198.43	-221.06	367.37	332.39	34.98	10.502		
4,900.00	4,853.76	4,890.19	4,876.80	19.37	17.82	-159.29	204.36	-227.06	375.26	339.53	35.73	10.502		
5,000.00	4,952.64	4,989.88	4,976.12	19.78	18.19	-159.21	210.30	-233.06	383.16	346.67	36.48	10.502		

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 3D-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 3D-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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,051.51	5,089.56	5,075.45	20.20	18.57	-159.13	216.23	-239.07	391.05	353.82	37.23	10.503	
5,200.00	5,150.39	5,189.25	5,174.78	20.61	18.94	-159.06	222.17	-245.07	398.94	360.96	37.98	10.503	
5,300.00	5,249.27	5,288.94	5,274.11	21.03	19.32	-158.98	228.10	-251.07	406.84	368.11	38.73	10.503	
5,400.00	5,348.14	5,388.62	5,373.44	21.44	19.69	-158.91	234.04	-257.07	414.74	375.25	39.49	10.503	
5,500.00	5,447.02	5,488.31	5,472.77	21.85	20.07	-158.85	239.97	-263.08	422.63	382.40	40.24	10.504	
5,600.00	5,545.89	5,587.99	5,572.10	22.27	20.44	-158.78	245.91	-269.08	430.53	389.54	40.99	10.504	
5,626.07	5,571.67	5,613.99	5,597.99	22.37	20.54	-158.76	247.46	-270.65	432.59	391.41	41.18	10.504	
5,700.00	5,644.90	5,687.74	5,671.48	22.67	20.82	-158.71	251.85	-275.09	437.54	395.80	41.74	10.483	
5,800.00	5,744.33	5,786.29	5,769.68	23.06	21.19	-158.48	257.70	-281.00	441.44	398.96	42.48	10.393	
5,900.00	5,844.07	5,876.33	5,859.53	23.42	21.52	-158.27	261.80	-285.15	443.51	400.38	43.13	10.282	
6,000.00	5,943.99	5,966.40	5,949.55	23.76	21.84	-158.17	263.91	-287.28	444.58	400.83	43.75	10.161	
6,056.01	6,000.00	6,016.86	6,000.00	23.94	22.02	179.49	264.22	-287.60	444.74	400.66	44.08	10.089	
6,100.00	6,043.99	6,060.85	6,043.99	24.08	22.17	179.49	264.22	-287.60	444.74	400.35	44.38	10.020	
6,200.00	6,143.99	6,160.85	6,143.99	24.39	22.51	179.49	264.22	-287.60	444.74	399.67	45.07	9.868	
6,300.00	6,243.99	6,260.85	6,243.99	24.71	22.86	179.49	264.22	-287.60	444.74	398.98	45.76	9.719	
6,400.00	6,343.99	6,360.85	6,343.99	25.03	23.20	179.49	264.22	-287.60	444.74	398.29	46.45	9.575	
6,500.00	6,443.99	6,460.85	6,443.99	25.35	23.54	179.49	264.22	-287.60	444.74	397.60	47.14	9.435	
6,600.00	6,543.99	6,560.85	6,543.99	25.67	23.89	179.49	264.22	-287.60	444.74	396.91	47.83	9.299	
6,700.00	6,643.99	6,660.85	6,643.99	25.99	24.23	179.49	264.22	-287.60	444.74	396.22	48.52	9.166	
6,749.81	6,693.80	6,710.66	6,693.80	26.15	24.41	179.49	264.22	-287.60	444.74	395.87	48.86	9.102	
6,800.00	6,743.95	6,760.89	6,743.99	26.31	24.57	90.08	264.24	-285.84	444.74	395.54	49.19	9.041	
6,850.00	6,793.66	6,810.93	6,793.74	26.45	24.73	90.08	264.29	-280.59	444.74	395.23	49.50	8.984	
6,900.00	6,842.89	6,860.97	6,843.01	26.59	24.87	90.08	264.38	-271.88	444.74	394.93	49.81	8.929	
6,950.00	6,891.39	6,911.01	6,891.55	26.72	25.02	90.08	264.50	-259.76	444.74	394.64	50.10	8.877	
7,000.00	6,938.93	6,961.05	6,939.12	26.85	25.16	90.08	264.66	-244.27	444.74	394.35	50.39	8.826	
7,050.00	6,985.28	7,011.09	6,985.49	26.97	25.29	90.07	264.85	-225.51	444.74	394.06	50.68	8.775	
7,100.00	7,030.20	7,061.12	7,030.44	27.08	25.42	90.07	265.07	-203.55	444.75	393.77	50.97	8.725	
7,150.00	7,073.49	7,111.16	7,073.75	27.18	25.56	90.07	265.33	-178.51	444.75	393.47	51.28	8.673	
7,200.00	7,114.92	7,161.19	7,115.20	27.27	25.70	90.06	265.61	-150.51	444.75	393.14	51.61	8.617	
7,250.00	7,154.31	7,211.22	7,154.60	27.36	25.86	90.06	265.93	-119.68	444.75	392.77	51.98	8.557	
7,300.00	7,191.45	7,261.26	7,191.74	27.45	26.04	90.06	266.27	-86.19	444.76	392.36	52.39	8.489	
7,350.00	7,226.17	7,311.28	7,226.46	27.53	26.26	90.05	266.63	-50.18	444.76	391.88	52.87	8.412	
7,400.00	7,258.29	7,361.31	7,258.57	27.61	26.53	90.05	267.02	-11.84	444.76	391.32	53.44	8.323	
7,450.00	7,287.66	7,411.33	7,287.93	27.72	26.86	90.04	267.43	28.65	444.76	390.66	54.10	8.221	
7,500.00	7,314.14	7,461.36	7,314.39	27.89	27.24	90.04	267.86	71.08	444.77	389.89	54.88	8.104	
7,550.00	7,337.60	7,511.37	7,337.83	28.20	27.69	90.04	268.31	115.26	444.77	388.99	55.78	7.973	
7,600.00	7,357.92	7,561.39	7,358.12	28.65	28.21	90.03	268.78	160.96	444.78	387.95	56.82	7.827	
7,650.00	7,375.00	7,611.41	7,375.18	29.21	28.81	90.02	269.25	207.97	444.78	386.78	58.00	7.668	
7,700.00	7,388.77	7,661.42	7,388.91	29.86	29.47	90.02	269.74	256.04	444.78	385.46	59.32	7.498	
7,750.00	7,399.15	7,711.43	7,399.25	30.57	30.20	90.01	270.24	304.96	444.79	384.02	60.77	7.319	
7,800.00	7,406.10	7,761.43	7,406.16	31.36	30.99	90.01	270.74	354.47	444.79	382.45	62.35	7.134	
7,850.00	7,409.57	7,811.43	7,409.59	32.19	31.83	90.00	271.25	404.34	444.80	380.77	64.02	6.947	
7,874.81	7,410.00	7,836.25	7,410.00	32.63	32.27	90.00	271.50	429.15	444.80	379.91	64.89	6.854	
7,900.00	7,410.00	7,861.43	7,410.00	33.08	32.73	90.00	271.76	454.33	444.80	378.99	65.81	6.759	
8,000.00	7,410.00	7,961.43	7,410.00	35.00	34.68	90.00	272.77	554.33	444.81	375.14	69.67	6.384	
8,100.00	7,410.00	8,061.43	7,410.00	37.10	36.79	90.00	273.79	654.32	444.82	370.94	73.88	6.021	
8,200.00	7,410.00	8,161.43	7,410.00	39.35	39.05	90.00	274.81	754.32	444.83	366.44	78.38	5.675	
8,300.00	7,410.00	8,261.43	7,410.00	41.73	41.43	90.00	275.82	854.31	444.83	361.69	83.14	5.350	
8,400.00	7,410.00	8,361.43	7,410.00	44.21	43.92	90.00	276.84	954.31	444.84	356.74	88.11	5.049	
8,500.00	7,410.00	8,461.43	7,410.00	46.77	46.50	90.00	277.86	1,054.30	444.85	351.60	93.25	4.770	
8,600.00	7,410.00	8,561.43	7,410.00	49.42	49.15	90.00	278.87	1,154.30	444.86	346.32	98.54	4.514	
8,700.00	7,410.00	8,661.43	7,410.00	52.12	51.87	90.00	279.89	1,254.29	444.87	340.90	103.96	4.279	

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 3D-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 3D-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	7,410.00	8,761.43	7,410.00	54.88	54.64	90.00	280.90	1,354.29	444.88	335.39	109.49	4.063		
8,900.00	7,410.00	8,861.43	7,410.00	57.68	57.45	90.00	281.92	1,454.28	444.88	329.78	115.11	3.865		
9,000.00	7,410.00	8,961.43	7,410.00	60.53	60.30	90.00	282.94	1,554.28	444.89	324.09	120.81	3.683		
9,100.00	7,410.00	9,061.43	7,410.00	63.41	63.19	90.00	283.95	1,654.27	444.90	318.33	126.57	3.515		
9,200.00	7,410.00	9,161.43	7,410.00	66.32	66.11	90.00	284.97	1,754.27	444.91	312.51	132.40	3.360		
9,300.00	7,410.00	9,261.43	7,410.00	69.25	69.05	90.00	285.98	1,854.26	444.92	306.64	138.28	3.218		
9,400.00	7,410.00	9,361.43	7,410.00	72.21	72.01	90.00	287.00	1,954.26	444.93	300.73	144.20	3.085		
9,500.00	7,410.00	9,461.43	7,410.00	75.19	75.00	90.00	288.02	2,054.25	444.93	294.77	150.16	2.963		
9,600.00	7,410.00	9,561.43	7,410.00	78.19	78.00	90.00	289.03	2,154.25	444.94	288.78	156.16	2.849		
9,700.00	7,410.00	9,661.43	7,410.00	81.20	81.02	90.00	290.05	2,254.24	444.95	282.76	162.19	2.743		
9,800.00	7,410.00	9,761.43	7,410.00	84.23	84.05	90.00	291.07	2,354.24	444.96	276.71	168.25	2.645		
9,900.00	7,410.00	9,861.43	7,410.00	87.27	87.10	90.00	292.08	2,454.23	444.97	270.63	174.34	2.552		
10,000.00	7,410.00	9,961.43	7,410.00	90.32	90.15	90.00	293.10	2,554.23	444.98	264.53	180.44	2.466		
10,100.00	7,410.00	10,061.43	7,410.00	93.38	93.22	90.00	294.11	2,654.22	444.99	258.41	186.57	2.385		
10,200.00	7,410.00	10,161.43	7,410.00	96.45	96.29	90.00	295.13	2,754.22	444.99	252.28	192.72	2.309		
10,300.00	7,410.00	10,261.43	7,410.00	99.53	99.38	90.00	296.15	2,854.21	445.00	246.12	198.88	2.238		
10,400.00	7,410.00	10,361.43	7,410.00	102.62	102.47	90.00	297.16	2,954.21	445.01	239.95	205.06	2.170		
10,500.00	7,410.00	10,461.43	7,410.00	105.71	105.56	90.00	298.18	3,054.20	445.02	233.77	211.25	2.107		
10,600.00	7,410.00	10,561.43	7,410.00	108.81	108.67	90.00	299.19	3,154.20	445.03	227.57	217.46	2.047		
10,700.00	7,410.00	10,661.43	7,410.00	111.92	111.78	90.00	300.21	3,254.19	445.04	221.36	223.67	1.990		
10,800.00	7,410.00	10,761.43	7,410.00	115.03	114.89	90.00	301.23	3,354.18	445.04	215.14	229.90	1.936		
10,900.00	7,410.00	10,861.43	7,410.00	118.15	118.01	90.00	302.24	3,454.18	445.05	208.91	236.14	1.885		
11,000.00	7,410.00	10,961.43	7,410.00	121.27	121.14	90.00	303.26	3,554.17	445.06	202.67	242.39	1.836		
11,100.00	7,410.00	11,061.43	7,410.00	124.40	124.27	90.00	304.28	3,654.17	445.07	196.43	248.64	1.790		
11,200.00	7,410.00	11,161.43	7,410.00	127.53	127.40	90.00	305.29	3,754.16	445.08	190.17	254.90	1.746		
11,300.00	7,410.00	11,261.43	7,410.00	130.66	130.53	90.00	306.31	3,854.16	445.09	183.91	261.17	1.704		
11,400.00	7,410.00	11,361.43	7,410.00	133.80	133.67	90.00	307.32	3,954.15	445.09	177.64	267.45	1.664		
11,500.00	7,410.00	11,461.43	7,410.00	136.94	136.82	90.00	308.34	4,054.15	445.10	171.37	273.73	1.626		
11,600.00	7,410.00	11,561.43	7,410.00	140.08	139.96	90.00	309.36	4,154.14	445.11	165.09	280.02	1.590		
11,700.00	7,410.00	11,661.43	7,410.00	143.23	143.11	90.00	310.37	4,254.14	445.12	158.80	286.32	1.555		
11,800.00	7,410.00	11,761.43	7,410.00	146.38	146.26	90.00	311.39	4,354.13	445.13	152.51	292.62	1.521		
11,900.00	7,410.00	11,861.43	7,410.00	149.53	149.41	90.00	312.40	4,454.13	445.14	146.21	298.92	1.489 Level 3		
11,904.35	7,410.00	11,865.78	7,410.00	149.66	149.55	90.00	312.45	4,458.47	445.14	145.94	299.20	1.488 Level 3		
11,950.31	7,410.00	11,909.47	7,410.00	151.11	150.93	90.00	312.89	4,502.16	445.15	143.14	302.01	1.474 Level 3, SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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	-179.96	-29.87	-0.02	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-29.87	-0.02	29.87	29.60	0.28	108.222		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-29.87	-0.02	29.87	28.88	0.99	30.083		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-29.87	-0.02	29.87	28.16	1.71	17.470		
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-29.87	-0.02	29.87	27.44	2.43	12.309		
500.00	500.00	500.00	500.00	1.57	1.57	-179.96	-29.87	-0.02	29.87	26.73	3.14	9.502 CC, ES		
600.00	599.98	599.98	599.98	1.93	1.93	-158.80	-29.87	-0.02	31.49	27.63	3.86	8.157		
700.00	699.84	699.84	699.84	2.29	2.29	-161.75	-29.87	-0.02	36.42	31.84	4.58	7.952		
800.00	799.45	799.45	799.45	2.65	2.65	-165.20	-29.87	-0.02	44.78	39.48	5.30	8.449		
900.00	898.70	898.72	898.71	3.02	2.99	-166.56	-30.14	-1.70	56.63	50.61	6.01	9.419		
929.94	928.33	928.37	928.32	3.14	3.09	-166.37	-30.32	-2.86	60.83	54.60	6.23	9.770		
1,000.00	997.60	997.68	997.55	3.40	3.33	-165.60	-30.85	-6.21	71.03	64.31	6.72	10.572		
1,100.00	1,096.48	1,096.60	1,096.36	3.79	3.68	-164.78	-31.60	-11.04	85.60	78.17	7.42	11.529		
1,200.00	1,195.35	1,195.53	1,195.16	4.18	4.02	-164.20	-32.36	-15.86	100.18	92.04	8.14	12.312		
1,300.00	1,294.23	1,294.46	1,293.97	4.58	4.37	-163.77	-33.12	-20.68	114.77	105.92	8.85	12.964		
1,400.00	1,393.10	1,393.38	1,392.77	4.98	4.73	-163.44	-33.88	-25.51	129.37	119.79	9.57	13.514		
1,500.00	1,491.98	1,492.31	1,491.58	5.38	5.08	-163.17	-34.64	-30.33	143.96	133.67	10.30	13.984		
1,600.00	1,590.86	1,591.24	1,590.39	5.78	5.43	-162.96	-35.40	-35.16	158.57	147.55	11.02	14.390		
1,700.00	1,689.73	1,690.16	1,689.19	6.19	5.79	-162.78	-36.16	-39.98	173.17	161.42	11.75	14.744		
1,800.00	1,788.61	1,789.09	1,788.00	6.60	6.15	-162.62	-36.92	-44.80	187.77	175.30	12.47	15.055		
1,900.00	1,887.48	1,888.02	1,886.80	7.00	6.50	-162.49	-37.68	-49.63	202.38	189.18	13.20	15.331		
2,000.00	1,986.36	1,986.94	1,985.61	7.41	6.86	-162.38	-38.43	-54.45	216.99	203.06	13.93	15.577		
2,100.00	2,085.24	2,085.87	2,084.42	7.82	7.22	-162.28	-39.19	-59.28	231.59	216.93	14.66	15.797		
2,200.00	2,184.11	2,184.79	2,183.22	8.23	7.58	-162.19	-39.95	-64.10	246.20	230.81	15.39	15.996		
2,300.00	2,282.99	2,283.72	2,282.03	8.64	7.93	-162.12	-40.71	-68.92	260.81	244.69	16.12	16.177		
2,400.00	2,381.86	2,382.65	2,380.83	9.05	8.29	-162.05	-41.47	-73.75	275.42	258.57	16.85	16.341		
2,500.00	2,480.74	2,481.57	2,479.64	9.46	8.65	-161.99	-42.23	-78.57	290.03	272.44	17.59	16.491		
2,600.00	2,579.62	2,580.50	2,578.45	9.87	9.01	-161.93	-42.99	-83.40	304.64	286.32	18.32	16.628		
2,700.00	2,678.49	2,679.43	2,677.25	10.28	9.37	-161.88	-43.75	-88.22	319.25	300.20	19.05	16.755		
2,800.00	2,777.37	2,778.35	2,776.06	10.70	9.73	-161.83	-44.51	-93.04	333.86	314.07	19.79	16.872		
2,900.00	2,876.24	2,877.28	2,874.86	11.11	10.09	-161.79	-45.27	-97.87	348.47	327.95	20.52	16.981		
3,000.00	2,975.12	2,976.21	2,973.67	11.52	10.45	-161.75	-46.02	-102.69	363.08	341.82	21.26	17.082		
3,100.00	3,074.00	3,075.13	3,072.48	11.93	10.81	-161.71	-46.78	-107.52	377.69	355.70	21.99	17.176		
3,200.00	3,172.87	3,174.06	3,171.28	12.34	11.17	-161.68	-47.54	-112.34	392.30	369.58	22.72	17.263		
3,300.00	3,271.75	3,272.99	3,270.09	12.76	11.53	-161.65	-48.30	-117.16	406.91	383.45	23.46	17.345		
3,400.00	3,370.62	3,371.91	3,368.89	13.17	11.90	-161.62	-49.06	-121.99	421.52	397.33	24.19	17.422		
3,500.00	3,469.50	3,470.84	3,467.70	13.58	12.26	-161.59	-49.82	-126.81	436.13	411.20	24.93	17.495		
3,600.00	3,568.38	3,569.77	3,566.51	13.99	12.62	-161.57	-50.58	-131.64	450.75	425.08	25.66	17.563		
3,700.00	3,667.25	3,668.69	3,665.31	14.41	12.98	-161.55	-51.34	-136.46	465.36	438.96	26.40	17.627		
3,800.00	3,766.13	3,767.62	3,764.12	14.82	13.34	-161.52	-52.10	-141.28	479.97	452.83	27.14	17.688		
3,900.00	3,865.00	3,866.55	3,862.92	15.23	13.70	-161.50	-52.85	-146.11	494.58	466.71	27.87	17.745		
4,000.00	3,963.88	3,965.47	3,961.73	15.65	14.06	-161.48	-53.61	-150.93	509.19	480.58	28.61	17.799		
4,100.00	4,062.76	4,064.40	4,060.54	16.06	14.42	-161.46	-54.37	-155.75	523.80	494.46	29.34	17.851		
4,200.00	4,161.63	4,163.33	4,159.34	16.47	14.78	-161.45	-55.13	-160.58	538.41	508.33	30.08	17.900		
4,300.00	4,260.51	4,262.25	4,258.15	16.89	15.15	-161.43	-55.89	-165.40	553.03	522.21	30.82	17.947		
4,400.00	4,359.38	4,361.18	4,356.95	17.30	15.51	-161.41	-56.65	-170.23	567.64	536.09	31.55	17.991		
4,500.00	4,458.26	4,460.11	4,455.76	17.71	15.87	-161.40	-57.41	-175.05	582.25	549.96	32.29	18.033		
4,600.00	4,557.13	4,559.03	4,554.57	18.13	16.23	-161.38	-58.17	-179.87	596.86	563.84	33.02	18.074		
4,700.00	4,656.01	4,657.96	4,653.37	18.54	16.59	-161.37	-58.93	-184.70	611.47	577.71	33.76	18.112		
4,800.00	4,754.89	4,756.89	4,752.18	18.96	16.95	-161.36	-59.68	-189.52	626.08	591.59	34.50	18.149		
4,900.00	4,853.76	4,855.81	4,850.98	19.37	17.31	-161.35	-60.44	-194.35	640.70	605.46	35.23	18.184		
5,000.00	4,952.64	4,954.74	4,949.79	19.78	17.68	-161.33	-61.20	-199.17	655.31	619.34	35.97	18.218		

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 3D-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 3D-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	5,051.51	5,053.67	5,048.60	20.20	18.04	-161.32	-61.96	-203.99	669.92	633.21	36.71	18.251		
5,200.00	5,150.39	5,152.59	5,147.40	20.61	18.40	-161.31	-62.72	-208.82	684.53	647.09	37.44	18.282		
5,300.00	5,249.27	5,251.52	5,246.21	21.03	18.76	-161.30	-63.48	-213.64	699.14	660.96	38.18	18.312		
5,400.00	5,348.14	5,350.45	5,345.01	21.44	19.12	-161.29	-64.24	-218.47	713.76	674.84	38.92	18.341		
5,500.00	5,447.02	5,449.37	5,443.82	21.85	19.49	-161.28	-65.00	-223.29	728.37	688.71	39.65	18.368		
5,600.00	5,545.89	5,548.30	5,542.63	22.27	19.85	-161.27	-65.76	-228.11	742.98	702.59	40.39	18.395		
5,626.07	5,571.67	5,574.09	5,568.39	22.37	19.94	-161.27	-65.95	-229.37	746.79	706.21	40.58	18.402		
5,700.00	5,644.90	5,647.35	5,641.56	22.67	20.21	-161.30	-66.52	-232.94	756.70	715.57	41.13	18.400		
5,800.00	5,744.33	5,746.78	5,740.86	23.06	20.57	-161.26	-67.28	-237.79	767.24	725.39	41.86	18.330		
5,900.00	5,844.07	5,846.47	5,840.44	23.42	20.94	-161.11	-68.04	-242.65	774.51	731.92	42.58	18.188		
6,000.00	5,943.99	5,946.32	5,940.16	23.76	21.30	-160.87	-68.81	-247.52	778.49	735.18	43.30	17.977		
6,056.01	6,000.00	6,002.27	5,996.04	23.94	21.51	176.96	-69.24	-250.25	779.28	735.58	43.70	17.831		
6,100.00	6,043.99	6,046.20	6,039.92	24.08	21.67	177.12	-69.58	-252.39	779.51	735.49	44.02	17.709		
6,200.00	6,143.99	6,146.08	6,139.68	24.39	22.03	177.48	-70.34	-257.26	780.05	735.32	44.73	17.439		
6,300.00	6,243.99	6,245.96	6,239.43	24.71	22.40	177.84	-71.11	-262.13	780.61	735.17	45.44	17.178		
6,400.00	6,343.99	6,345.84	6,339.19	25.03	22.76	178.20	-71.87	-267.00	781.21	735.06	46.16	16.925		
6,500.00	6,443.99	6,445.71	6,438.95	25.35	23.13	178.56	-72.64	-271.87	781.84	734.97	46.87	16.681		
6,600.00	6,543.99	6,545.59	6,538.70	25.67	23.50	178.92	-73.41	-276.74	782.50	734.92	47.58	16.445		
6,700.00	6,643.99	6,646.79	6,639.83	25.99	23.85	179.15	-74.11	-279.86	783.15	734.86	48.29	16.216		
6,749.81	6,693.80	6,697.70	6,690.64	26.15	24.01	178.93	-74.30	-276.90	783.38	734.76	48.62	16.112		
6,800.00	6,743.95	6,748.57	6,741.07	26.31	24.17	89.15	-74.35	-270.36	783.55	734.61	48.93	16.012		
6,850.00	6,793.66	6,798.91	6,790.40	26.45	24.31	88.80	-74.26	-260.37	783.65	734.42	49.23	15.919		
6,900.00	6,842.89	6,848.91	6,838.58	26.59	24.46	88.45	-74.03	-247.05	783.67	734.16	49.51	15.829		
6,950.00	6,891.39	6,898.58	6,885.42	26.72	24.60	88.11	-73.68	-230.53	783.63	733.85	49.78	15.741		
7,000.00	6,938.93	6,947.93	6,930.70	26.85	24.74	87.78	-73.20	-210.94	783.52	733.47	50.05	15.654		
7,050.00	6,985.28	6,996.97	6,974.25	26.97	24.88	87.46	-72.61	-188.43	783.34	733.02	50.32	15.567		
7,100.00	7,030.20	7,045.71	7,015.91	27.08	25.02	87.15	-71.89	-163.17	783.09	732.49	50.60	15.477		
7,150.00	7,073.49	7,094.15	7,055.52	27.18	25.18	86.86	-71.07	-135.31	782.76	731.88	50.89	15.382		
7,200.00	7,114.92	7,142.32	7,092.95	27.27	25.35	86.59	-70.14	-105.02	782.37	731.16	51.21	15.278		
7,250.00	7,154.31	7,190.21	7,128.06	27.36	25.55	86.33	-69.12	-72.47	781.91	730.34	51.57	15.163		
7,300.00	7,191.45	7,237.86	7,160.75	27.45	25.78	86.08	-68.00	-37.84	781.37	729.39	51.98	15.032		
7,350.00	7,226.17	7,285.26	7,190.92	27.53	26.04	85.86	-66.79	-1.31	780.77	728.31	52.46	14.883		
7,400.00	7,258.29	7,332.44	7,218.49	27.61	26.35	85.65	-65.51	36.95	780.10	727.07	53.03	14.712		
7,450.00	7,287.66	7,379.41	7,243.36	27.72	26.72	85.47	-64.15	76.75	779.35	725.66	53.69	14.516		
7,500.00	7,314.14	7,426.18	7,265.49	27.89	27.13	85.30	-62.72	117.93	778.54	724.08	54.46	14.296		
7,550.00	7,337.60	7,472.77	7,284.81	28.20	27.61	85.16	-61.23	160.29	777.66	722.31	55.35	14.049		
7,600.00	7,357.92	7,519.20	7,301.28	28.65	28.14	85.04	-59.68	203.66	776.72	720.35	56.37	13.778		
7,650.00	7,375.00	7,565.47	7,314.86	29.21	28.74	84.94	-58.09	247.86	775.71	718.19	57.52	13.486		
7,700.00	7,388.77	7,611.61	7,325.54	29.86	29.39	84.86	-56.46	292.71	774.64	715.85	58.80	13.174		
7,750.00	7,399.15	7,657.64	7,333.29	30.57	30.09	84.81	-54.79	338.04	773.52	713.32	60.20	12.849		
7,800.00	7,406.10	7,703.56	7,338.10	31.36	30.84	84.77	-53.09	383.67	772.34	710.63	61.71	12.516		
7,850.00	7,409.57	7,750.00	7,339.98	32.19	31.65	84.77	-51.35	430.03	771.11	707.78	63.33	12.176		
7,874.81	7,410.00	7,773.62	7,340.00	32.63	32.08	84.79	-50.46	453.63	770.47	706.28	64.19	12.003		
7,900.00	7,410.00	7,798.80	7,340.00	33.08	32.54	84.78	-49.50	478.79	769.78	704.68	65.10	11.825		
8,000.00	7,410.00	7,898.76	7,340.00	35.00	34.52	84.76	-45.73	578.68	767.03	698.05	68.98	11.119		
8,100.00	7,410.00	7,998.72	7,340.00	37.10	36.67	84.74	-41.95	678.57	764.29	691.07	73.22	10.439		
8,200.00	7,410.00	8,098.68	7,340.00	39.35	38.96	84.72	-38.17	778.46	761.54	683.80	77.74	9.796		
8,300.00	7,410.00	8,198.64	7,340.00	41.73	41.37	84.70	-34.39	878.35	758.80	676.29	82.51	9.197		
8,400.00	7,410.00	8,298.61	7,340.00	44.21	43.88	84.69	-30.61	978.24	756.06	668.58	87.48	8.643		
8,500.00	7,410.00	8,398.57	7,340.00	46.77	46.48	84.67	-26.83	1,078.13	753.31	660.69	92.62	8.133		
8,600.00	7,410.00	8,498.53	7,340.00	49.42	49.14	84.65	-23.06	1,178.02	750.57	652.66	97.91	7.666		
8,700.00	7,410.00	8,598.49	7,340.00	52.12	51.87	84.63	-19.28	1,277.91	747.83	644.50	103.32	7.238		

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

Offset Design S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,800.00	7,410.00	8,698.45	7,340.00	54.88	54.65	84.61	-15.50	1,377.80	745.08	636.25	108.83	6.846	
8,900.00	7,410.00	8,798.42	7,340.00	57.68	57.47	84.59	-11.72	1,477.70	742.34	627.90	114.43	6.487	
9,000.00	7,410.00	8,898.38	7,340.00	60.53	60.33	84.57	-7.94	1,577.59	739.59	619.48	120.11	6.158	
9,100.00	7,410.00	8,998.34	7,340.00	63.41	63.21	84.55	-4.16	1,677.48	736.85	611.00	125.86	5.855	
9,200.00	7,410.00	9,098.30	7,340.00	66.32	66.13	84.53	-0.39	1,777.37	734.11	602.45	131.66	5.576	
9,300.00	7,410.00	9,198.26	7,340.00	69.25	69.07	84.51	3.39	1,877.26	731.37	593.86	137.50	5.319	
9,400.00	7,410.00	9,298.23	7,340.00	72.21	72.04	84.48	7.17	1,977.15	728.62	585.22	143.40	5.081	
9,500.00	7,410.00	9,398.19	7,340.00	75.19	75.02	84.46	10.95	2,077.04	725.88	576.55	149.33	4.861	
9,600.00	7,410.00	9,498.15	7,340.00	78.19	78.02	84.44	14.73	2,176.93	723.14	567.84	155.30	4.657	
9,700.00	7,410.00	9,598.11	7,340.00	81.20	81.04	84.42	18.51	2,276.82	720.39	559.10	161.29	4.466	
9,800.00	7,410.00	9,698.07	7,340.00	84.23	84.06	84.40	22.28	2,376.71	717.65	550.34	167.31	4.289	
9,900.00	7,410.00	9,798.04	7,340.00	87.27	87.10	84.38	26.06	2,476.60	714.91	541.55	173.36	4.124	
10,000.00	7,410.00	9,898.00	7,340.00	90.32	90.15	84.36	29.84	2,576.49	712.17	532.74	179.43	3.969	
10,100.00	7,410.00	9,997.96	7,340.00	93.38	93.21	84.34	33.62	2,676.38	709.42	523.91	185.51	3.824	
10,200.00	7,410.00	10,097.92	7,340.00	96.45	96.28	84.31	37.40	2,776.27	706.68	515.06	191.62	3.688	
10,300.00	7,410.00	10,197.88	7,340.00	99.53	99.36	84.29	41.17	2,876.16	703.94	506.20	197.74	3.560	
10,400.00	7,410.00	10,297.85	7,340.00	102.62	102.44	84.27	44.95	2,976.05	701.20	497.32	203.87	3.439	
10,500.00	7,410.00	10,397.81	7,340.00	105.71	105.53	84.25	48.73	3,075.95	698.46	488.43	210.02	3.326	
10,600.00	7,410.00	10,497.77	7,340.00	108.81	108.63	84.22	52.51	3,175.84	695.71	479.53	216.18	3.218	
10,700.00	7,410.00	10,597.73	7,340.00	111.92	111.73	84.20	56.29	3,275.73	692.97	470.62	222.35	3.117	
10,800.00	7,410.00	10,697.69	7,340.00	115.03	114.84	84.18	60.07	3,375.62	690.23	461.70	228.53	3.020	
10,900.00	7,410.00	10,797.66	7,340.00	118.15	117.95	84.15	63.84	3,475.51	687.49	452.77	234.72	2.929	
11,000.00	7,410.00	10,897.62	7,340.00	121.27	121.06	84.13	67.62	3,575.40	684.75	443.83	240.91	2.842	
11,100.00	7,410.00	10,997.58	7,340.00	124.40	124.18	84.11	71.40	3,675.29	682.01	434.89	247.12	2.760	
11,200.00	7,410.00	11,097.54	7,340.00	127.53	127.31	84.08	75.18	3,775.18	679.27	425.94	253.33	2.681	
11,300.00	7,410.00	11,197.50	7,340.00	130.66	130.44	84.06	78.96	3,875.07	676.53	416.98	259.55	2.607	
11,400.00	7,410.00	11,297.47	7,340.00	133.80	133.57	84.03	82.74	3,974.96	673.78	408.01	265.77	2.535	
11,500.00	7,410.00	11,397.43	7,340.00	136.94	136.70	84.01	86.51	4,074.85	671.04	399.04	272.00	2.467	
11,600.00	7,410.00	11,497.39	7,340.00	140.08	139.83	83.99	90.29	4,174.74	668.30	390.07	278.23	2.402	
11,700.00	7,410.00	11,597.35	7,340.00	143.23	142.97	83.96	94.07	4,274.63	665.56	381.09	284.47	2.340	
11,800.00	7,410.00	11,697.31	7,340.00	146.38	146.11	83.94	97.85	4,374.52	662.82	372.11	290.72	2.280	
11,900.00	7,410.00	11,797.28	7,340.00	149.53	149.26	83.91	101.63	4,474.41	660.08	363.12	296.96	2.223	
11,946.58	7,410.00	11,825.78	7,340.00	151.00	150.15	83.90	102.70	4,502.90	659.05	359.80	299.26	2.202	
11,950.31	7,410.00	11,825.78	7,340.00	151.11	150.15	83.90	102.70	4,502.90	659.06	359.73	299.33	2.202 SF	

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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	179.91	-40.07	0.07	40.07					
100.00	100.00	100.00	100.00	0.14	0.14	179.91	-40.07	0.07	40.07	39.80	0.28	145.173		
200.00	200.00	200.00	200.00	0.50	0.50	179.91	-40.07	0.07	40.07	39.08	0.99	40.355		
300.00	300.00	300.00	300.00	0.85	0.85	179.91	-40.07	0.07	40.07	38.36	1.71	23.435		
400.00	400.00	400.00	400.00	1.21	1.21	179.91	-40.07	0.07	40.07	37.64	2.43	16.512		
500.00	500.00	500.00	500.00	1.57	1.57	179.91	-40.07	0.07	40.07	36.93	3.14	12.746	CC, ES	
600.00	599.98	599.98	599.98	1.93	1.93	-158.64	-40.07	0.07	41.69	37.83	3.86	10.799		
700.00	699.84	699.84	699.84	2.29	2.29	-160.95	-40.07	0.07	46.60	42.02	4.58	10.176		
800.00	799.45	799.45	799.45	2.65	2.65	-163.87	-40.07	0.07	54.92	49.62	5.30	10.361		
900.00	898.70	898.70	898.70	3.02	3.00	-166.72	-40.07	0.07	66.71	60.69	6.02	11.080		
929.94	928.33	928.18	928.18	3.14	3.10	-167.39	-40.12	-0.06	70.96	64.72	6.24	11.379		
1,000.00	997.60	997.06	997.04	3.40	3.34	-167.95	-40.69	-1.46	81.51	74.79	6.73	12.116		
1,100.00	1,096.48	1,095.29	1,095.14	3.79	3.68	-166.88	-42.56	-6.05	97.17	89.75	7.42	13.091		
1,200.00	1,195.35	1,193.97	1,193.63	4.18	4.02	-165.52	-44.88	-11.73	113.14	105.01	8.13	13.921		
1,300.00	1,294.23	1,292.66	1,292.13	4.58	4.36	-164.51	-47.19	-17.41	129.14	120.31	8.84	14.614		
1,400.00	1,393.10	1,391.35	1,390.63	4.98	4.71	-163.71	-49.51	-23.09	145.18	135.63	9.55	15.200		
1,500.00	1,491.98	1,490.04	1,489.12	5.38	5.06	-163.08	-51.83	-28.78	161.24	150.97	10.27	15.700		
1,600.00	1,590.86	1,588.72	1,587.62	5.78	5.41	-162.56	-54.14	-34.46	177.32	166.33	10.99	16.133		
1,700.00	1,689.73	1,687.41	1,686.12	6.19	5.77	-162.12	-56.46	-40.14	193.41	181.70	11.71	16.510		
1,800.00	1,788.61	1,786.10	1,784.61	6.60	6.12	-161.76	-58.77	-45.82	209.51	197.07	12.44	16.841		
1,900.00	1,887.48	1,884.79	1,883.11	7.00	6.48	-161.44	-61.09	-51.50	225.61	212.45	13.17	17.134		
2,000.00	1,986.36	1,983.47	1,981.61	7.41	6.84	-161.17	-63.40	-57.19	241.72	227.83	13.90	17.395		
2,100.00	2,085.24	2,082.16	2,080.10	7.82	7.20	-160.93	-65.72	-62.87	257.84	243.21	14.63	17.628		
2,200.00	2,184.11	2,180.85	2,178.60	8.23	7.56	-160.72	-68.04	-68.55	273.96	258.60	15.36	17.839		
2,300.00	2,282.99	2,279.54	2,277.10	8.64	7.92	-160.53	-70.35	-74.23	290.08	273.99	16.09	18.030		
2,400.00	2,381.86	2,378.22	2,375.59	9.05	8.28	-160.37	-72.67	-79.91	306.21	289.38	16.82	18.203		
2,500.00	2,480.74	2,476.91	2,474.09	9.46	8.64	-160.21	-74.98	-85.60	322.33	304.78	17.55	18.362		
2,600.00	2,579.62	2,575.60	2,572.59	9.87	9.00	-160.08	-77.30	-91.28	338.46	320.17	18.29	18.507		
2,700.00	2,678.49	2,674.29	2,671.08	10.28	9.36	-159.95	-79.61	-96.96	354.59	335.57	19.02	18.640		
2,800.00	2,777.37	2,772.98	2,769.58	10.70	9.72	-159.84	-81.93	-102.64	370.73	350.97	19.76	18.764		
2,900.00	2,876.24	2,871.66	2,868.08	11.11	10.08	-159.74	-84.25	-108.32	386.86	366.37	20.49	18.878		
3,000.00	2,975.12	2,970.35	2,966.57	11.52	10.45	-159.64	-86.56	-114.01	402.99	381.77	21.23	18.984		
3,100.00	3,074.00	3,069.04	3,065.07	11.93	10.81	-159.55	-88.88	-119.69	419.13	397.17	21.96	19.082		
3,200.00	3,172.87	3,167.73	3,163.57	12.34	11.17	-159.47	-91.19	-125.37	435.27	412.57	22.70	19.174		
3,300.00	3,271.75	3,266.41	3,262.06	12.76	11.54	-159.40	-93.51	-131.05	451.41	427.97	23.44	19.260		
3,400.00	3,370.62	3,365.10	3,360.56	13.17	11.90	-159.33	-95.82	-136.73	467.54	443.37	24.17	19.341		
3,500.00	3,469.50	3,463.79	3,459.06	13.58	12.26	-159.26	-98.14	-142.42	483.68	458.77	24.91	19.416		
3,600.00	3,568.38	3,562.48	3,557.55	13.99	12.63	-159.20	-100.45	-148.10	499.82	474.17	25.65	19.487		
3,700.00	3,667.25	3,661.16	3,656.05	14.41	12.99	-159.14	-102.77	-153.78	515.96	489.58	26.39	19.554		
3,800.00	3,766.13	3,759.85	3,754.55	14.82	13.36	-159.09	-105.09	-159.46	532.10	504.98	27.12	19.618		
3,900.00	3,865.00	3,858.54	3,853.04	15.23	13.72	-159.04	-107.40	-165.14	548.24	520.38	27.86	19.678		
4,000.00	3,963.88	3,957.23	3,951.54	15.65	14.08	-158.99	-109.72	-170.83	564.39	535.79	28.60	19.734		
4,100.00	4,062.76	4,055.91	4,050.04	16.06	14.45	-158.94	-112.03	-176.51	580.53	551.19	29.34	19.788		
4,200.00	4,161.63	4,154.60	4,148.53	16.47	14.81	-158.90	-114.35	-182.19	596.67	566.59	30.08	19.839		
4,300.00	4,260.51	4,253.29	4,247.03	16.89	15.18	-158.86	-116.66	-187.87	612.81	582.00	30.81	19.888		
4,400.00	4,359.38	4,351.98	4,345.53	17.30	15.54	-158.82	-118.98	-193.55	628.95	597.40	31.55	19.934		
4,500.00	4,458.26	4,450.66	4,444.02	17.71	15.91	-158.78	-121.30	-199.24	645.10	612.81	32.29	19.978		
4,600.00	4,557.13	4,549.35	4,542.52	18.13	16.27	-158.75	-123.61	-204.92	661.24	628.21	33.03	20.020		
4,700.00	4,656.01	4,648.04	4,641.02	18.54	16.64	-158.72	-125.93	-210.60	677.38	643.62	33.77	20.060		
4,800.00	4,754.89	4,746.73	4,739.51	18.96	17.00	-158.68	-128.24	-216.28	693.53	659.02	34.51	20.098		
4,900.00	4,853.76	4,845.41	4,838.01	19.37	17.37	-158.65	-130.56	-221.96	709.67	674.43	35.25	20.135		
5,000.00	4,952.64	4,944.10	4,936.51	19.78	17.73	-158.62	-132.87	-227.65	725.82	689.83	35.98	20.170		

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 3D-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 3D-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		
5,100.00	5,051.51	5,042.79	5,035.00	20.20	18.10	-158.60	-135.19	-233.33	741.96	705.24	36.72	20.204		
5,200.00	5,150.39	5,141.48	5,133.50	20.61	18.46	-158.57	-137.51	-239.01	758.10	720.64	37.46	20.236		
5,300.00	5,249.27	5,240.16	5,232.00	21.03	18.83	-158.55	-139.82	-244.69	774.25	736.05	38.20	20.267		
5,400.00	5,348.14	5,338.85	5,330.49	21.44	19.19	-158.52	-142.14	-250.37	790.39	751.45	38.94	20.297		
5,500.00	5,447.02	5,437.54	5,428.99	21.85	19.56	-158.50	-144.45	-256.06	806.54	766.86	39.68	20.326		
5,600.00	5,545.89	5,536.23	5,527.49	22.27	19.92	-158.47	-146.77	-261.74	822.68	782.26	40.42	20.353		
5,626.07	5,571.67	5,561.96	5,553.17	22.37	20.02	-158.47	-147.37	-263.22	826.89	786.28	40.61	20.360		
5,700.00	5,644.90	5,635.05	5,626.12	22.67	20.29	-158.51	-149.09	-267.43	837.95	796.79	41.16	20.359		
5,800.00	5,744.33	5,734.28	5,725.16	23.06	20.66	-158.47	-151.42	-273.14	850.12	808.22	41.89	20.293		
5,900.00	5,844.07	5,834.15	5,824.84	23.42	21.03	-158.33	-153.76	-278.89	859.06	816.43	42.62	20.155		
6,000.00	5,943.99	5,946.40	5,936.98	23.76	21.43	-158.18	-155.52	-283.21	864.02	820.60	43.42	19.900		
6,056.01	6,000.00	6,009.43	6,000.00	23.94	21.65	179.49	-155.78	-283.85	864.76	820.91	43.85	19.722		
6,100.00	6,043.99	6,053.41	6,043.99	24.08	21.79	179.49	-155.78	-283.85	864.76	820.61	44.14	19.589		
6,200.00	6,143.99	6,153.41	6,143.99	24.39	22.13	179.49	-155.78	-283.85	864.76	819.94	44.82	19.294		
6,300.00	6,243.99	6,253.41	6,243.99	24.71	22.46	179.49	-155.78	-283.85	864.76	819.26	45.50	19.007		
6,400.00	6,343.99	6,353.41	6,343.99	25.03	22.80	179.49	-155.78	-283.85	864.76	818.58	46.17	18.728		
6,500.00	6,443.99	6,453.41	6,443.99	25.35	23.13	179.49	-155.78	-283.85	864.76	817.90	46.85	18.457		
6,600.00	6,543.99	6,553.41	6,543.99	25.67	23.47	179.49	-155.78	-283.85	864.76	817.22	47.53	18.193		
6,700.00	6,643.99	6,653.41	6,643.99	25.99	23.80	179.49	-155.78	-283.85	864.76	816.54	48.21	17.936		
6,749.81	6,693.80	6,703.23	6,693.80	26.15	23.97	179.49	-155.78	-283.85	864.76	816.20	48.55	17.811		
6,800.00	6,743.95	6,753.37	6,743.95	26.31	24.14	90.19	-155.78	-283.85	864.76	815.87	48.89	17.688		
6,850.00	6,793.66	6,803.09	6,793.66	26.45	24.31	90.54	-155.78	-283.85	864.79	815.57	49.22	17.571		
6,900.00	6,842.89	6,852.32	6,842.89	26.59	24.48	91.09	-155.78	-283.85	864.92	815.37	49.55	17.457		
6,950.00	6,891.39	6,901.96	6,892.53	26.72	24.64	91.83	-155.78	-283.28	865.22	815.35	49.87	17.348		
7,000.00	6,938.93	6,952.99	6,943.40	26.85	24.80	92.59	-155.74	-279.42	865.69	815.49	50.20	17.246		
7,050.00	6,985.28	7,004.93	6,994.77	26.97	24.96	93.34	-155.66	-271.78	866.32	815.80	50.52	17.148		
7,100.00	7,030.20	7,057.84	7,046.38	27.08	25.11	94.09	-155.54	-260.19	867.09	816.25	50.84	17.055		
7,150.00	7,073.49	7,111.75	7,097.94	27.18	25.27	94.82	-155.38	-244.50	867.99	816.83	51.16	16.965		
7,200.00	7,114.92	7,166.68	7,149.11	27.27	25.42	95.54	-155.18	-224.57	869.01	817.52	51.49	16.877		
7,250.00	7,154.31	7,222.66	7,199.54	27.36	25.58	96.23	-154.93	-200.29	870.13	818.30	51.83	16.787		
7,300.00	7,191.45	7,279.70	7,248.80	27.45	25.75	96.90	-154.64	-171.58	871.33	819.13	52.20	16.693		
7,350.00	7,226.17	7,337.81	7,296.48	27.53	25.93	97.53	-154.30	-138.39	872.57	819.97	52.60	16.589		
7,400.00	7,258.29	7,396.97	7,342.09	27.61	26.13	98.13	-153.92	-100.75	873.83	820.78	53.05	16.471		
7,450.00	7,287.66	7,457.16	7,385.15	27.72	26.39	98.69	-153.49	-58.72	875.09	821.50	53.59	16.330		
7,500.00	7,314.14	7,518.34	7,425.15	27.89	26.71	99.21	-153.02	-12.45	876.30	822.07	54.23	16.159		
7,550.00	7,337.60	7,580.44	7,461.56	28.20	27.11	99.67	-152.51	37.84	877.45	822.45	55.00	15.954		
7,600.00	7,357.92	7,643.41	7,493.89	28.65	27.60	100.07	-151.96	91.84	878.49	822.57	55.92	15.710		
7,650.00	7,375.00	7,707.13	7,521.65	29.21	28.21	100.42	-151.38	149.18	879.41	822.38	57.03	15.421		
7,700.00	7,388.77	7,771.51	7,544.41	29.86	28.94	100.70	-150.77	209.36	880.17	821.84	58.33	15.090		
7,750.00	7,399.15	7,836.40	7,561.79	30.57	29.80	100.91	-150.13	271.86	880.76	820.93	59.82	14.723		
7,800.00	7,406.10	7,901.66	7,573.50	31.36	30.77	101.05	-149.48	336.04	881.15	819.64	61.51	14.326		
7,850.00	7,409.57	7,967.15	7,579.33	32.19	31.85	101.12	-148.82	401.24	881.35	817.97	63.38	13.906		
7,874.81	7,410.00	7,999.34	7,580.00	32.63	32.40	101.12	-148.49	433.42	881.36	817.02	64.35	13.697		
7,900.00	7,410.00	8,024.53	7,580.00	33.08	32.88	101.12	-148.23	458.60	881.37	816.11	65.25	13.507		
8,000.00	7,410.00	8,124.53	7,580.00	35.00	34.80	101.12	-147.22	558.60	881.37	812.35	69.02	12.769		
8,100.00	7,410.00	8,224.53	7,580.00	37.10	36.90	101.12	-146.20	658.59	881.38	808.24	73.14	12.050		
8,200.00	7,410.00	8,324.53	7,580.00	39.35	39.15	101.12	-145.19	758.59	881.39	803.84	77.55	11.365		
8,300.00	7,410.00	8,424.53	7,580.00	41.73	41.52	101.12	-144.17	858.58	881.40	799.18	82.21	10.721		
8,400.00	7,410.00	8,524.53	7,580.00	44.21	44.01	101.12	-143.15	958.58	881.41	794.33	87.08	10.122		
8,500.00	7,410.00	8,624.53	7,580.00	46.77	46.58	101.12	-142.14	1,058.57	881.41	789.29	92.12	9.568		
8,600.00	7,410.00	8,724.53	7,580.00	49.42	49.22	101.12	-141.12	1,158.57	881.42	784.11	97.31	9.058		
8,700.00	7,410.00	8,824.53	7,580.00	52.12	51.93	101.12	-140.10	1,258.56	881.43	778.81	102.62	8.589		

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

Offset Design S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,410.00	8,924.53	7,580.00	54.88	54.69	101.12	-139.09	1,358.56	881.44	773.40	108.04	8.158		
8,900.00	7,410.00	9,024.53	7,580.00	57.68	57.50	101.12	-138.07	1,458.55	881.45	767.90	113.55	7.763		
9,000.00	7,410.00	9,124.53	7,580.00	60.53	60.35	101.12	-137.05	1,558.55	881.45	762.32	119.14	7.399		
9,100.00	7,410.00	9,224.53	7,580.00	63.41	63.23	101.12	-136.04	1,658.54	881.46	756.67	124.80	7.063		
9,200.00	7,410.00	9,324.53	7,580.00	66.32	66.15	101.12	-135.02	1,758.54	881.47	750.96	130.51	6.754		
9,300.00	7,410.00	9,424.53	7,580.00	69.25	69.09	101.12	-134.01	1,858.53	881.48	745.20	136.28	6.468		
9,400.00	7,410.00	9,524.53	7,580.00	72.21	72.05	101.12	-132.99	1,958.53	881.49	739.39	142.09	6.204		
9,500.00	7,410.00	9,624.53	7,580.00	75.19	75.03	101.12	-131.97	2,058.52	881.49	733.55	147.94	5.958		
9,600.00	7,410.00	9,724.53	7,580.00	78.19	78.03	101.12	-130.96	2,158.52	881.50	727.67	153.83	5.730		
9,700.00	7,410.00	9,824.53	7,580.00	81.20	81.04	101.12	-129.94	2,258.51	881.51	721.76	159.75	5.518		
9,800.00	7,410.00	9,924.53	7,580.00	84.23	84.07	101.12	-128.92	2,358.51	881.52	715.82	165.70	5.320		
9,900.00	7,410.00	10,024.53	7,580.00	87.27	87.12	101.12	-127.91	2,458.50	881.53	709.85	171.67	5.135		
10,000.00	7,410.00	10,124.53	7,580.00	90.32	90.17	101.12	-126.89	2,558.50	881.53	703.86	177.67	4.962		
10,100.00	7,410.00	10,224.53	7,580.00	93.38	93.23	101.12	-125.87	2,658.49	881.54	697.86	183.69	4.799		
10,200.00	7,410.00	10,324.53	7,580.00	96.45	96.31	101.12	-124.86	2,758.49	881.55	691.83	189.72	4.647		
10,300.00	7,410.00	10,424.53	7,580.00	99.53	99.39	101.12	-123.84	2,858.48	881.56	685.78	195.77	4.503		
10,400.00	7,410.00	10,524.53	7,580.00	102.62	102.48	101.12	-122.83	2,958.48	881.57	679.73	201.84	4.368		
10,500.00	7,410.00	10,624.53	7,580.00	105.71	105.57	101.12	-121.81	3,058.47	881.57	673.65	207.92	4.240		
10,600.00	7,410.00	10,724.53	7,580.00	108.81	108.68	101.12	-120.79	3,158.47	881.58	667.57	214.02	4.119		
10,700.00	7,410.00	10,824.53	7,580.00	111.92	111.78	101.12	-119.78	3,258.46	881.59	661.47	220.12	4.005		
10,800.00	7,410.00	10,924.53	7,580.00	115.03	114.90	101.12	-118.76	3,358.45	881.60	655.36	226.24	3.897		
10,900.00	7,410.00	11,024.53	7,580.00	118.15	118.02	101.12	-117.74	3,458.45	881.61	649.24	232.36	3.794		
11,000.00	7,410.00	11,124.53	7,580.00	121.27	121.14	101.12	-116.73	3,558.44	881.61	643.12	238.50	3.697		
11,100.00	7,410.00	11,224.53	7,580.00	124.40	124.27	101.12	-115.71	3,658.44	881.62	636.98	244.64	3.604		
11,200.00	7,410.00	11,324.53	7,580.00	127.53	127.40	101.12	-114.69	3,758.43	881.63	630.84	250.79	3.515		
11,300.00	7,410.00	11,424.53	7,580.00	130.66	130.53	101.12	-113.68	3,858.43	881.64	624.69	256.95	3.431		
11,400.00	7,410.00	11,524.53	7,580.00	133.80	133.67	101.12	-112.66	3,958.42	881.65	618.53	263.12	3.351		
11,500.00	7,410.00	11,624.53	7,580.00	136.94	136.82	101.12	-111.64	4,058.42	881.65	612.36	269.29	3.274		
11,600.00	7,410.00	11,724.53	7,580.00	140.08	139.96	101.12	-110.63	4,158.41	881.66	606.19	275.47	3.201		
11,700.00	7,410.00	11,824.53	7,580.00	143.23	143.11	101.12	-109.61	4,258.41	881.67	600.02	281.65	3.130		
11,800.00	7,410.00	11,924.53	7,580.00	146.38	146.26	101.12	-108.60	4,358.40	881.68	593.84	287.84	3.063		
11,900.00	7,410.00	12,024.53	7,580.00	149.53	149.41	101.12	-107.58	4,458.40	881.69	587.65	294.03	2.999		
11,903.38	7,410.00	12,027.91	7,580.00	149.63	149.52	101.12	-107.55	4,461.78	881.69	587.44	294.24	2.996		
11,950.31	7,410.00	12,070.04	7,580.00	151.11	150.84	101.12	-107.12	4,503.91	881.70	584.72	296.99	2.969 SF		

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.83	-49.91	0.15	49.91				
100.00	100.00	100.00	100.00	0.14	0.14	179.83	-49.91	0.15	49.91	49.63	0.28	180.805	
200.00	200.00	200.00	200.00	0.50	0.50	179.83	-49.91	0.15	49.91	48.91	0.99	50.260	
300.00	300.00	300.00	300.00	0.85	0.85	179.83	-49.91	0.15	49.91	48.20	1.71	29.187	
400.00	400.00	400.00	400.00	1.21	1.21	179.83	-49.91	0.15	49.91	47.48	2.43	20.564	
500.00	500.00	500.00	500.00	1.57	1.57	179.83	-49.91	0.15	49.91	46.76	3.14	15.875 CC, ES	
600.00	599.98	599.98	599.98	1.93	1.93	-158.54	-49.91	0.15	51.53	47.67	3.86	13.346	
700.00	699.84	699.84	699.84	2.29	2.29	-160.45	-49.91	0.15	56.43	51.85	4.58	12.321	
800.00	799.45	799.45	799.45	2.65	2.65	-162.99	-49.91	0.15	64.71	59.41	5.30	12.209	
900.00	898.70	897.42	897.40	3.02	2.98	-164.47	-50.89	-1.18	77.27	71.26	6.01	12.864	
929.94	928.33	926.58	926.54	3.14	3.08	-164.55	-51.57	-2.09	82.01	75.79	6.22	13.187	
1,000.00	997.60	994.57	994.42	3.40	3.31	-164.17	-53.85	-5.15	94.02	87.32	6.70	14.028	
1,100.00	1,096.48	1,091.72	1,091.24	3.79	3.65	-162.62	-58.63	-11.58	112.52	105.12	7.40	15.210	
1,200.00	1,195.35	1,189.87	1,189.00	4.18	3.99	-161.24	-63.85	-18.61	131.44	123.34	8.10	16.222	
1,300.00	1,294.23	1,288.03	1,286.76	4.58	4.34	-160.21	-69.08	-25.64	150.41	141.60	8.81	17.067	
1,400.00	1,393.10	1,386.18	1,384.52	4.98	4.69	-159.42	-74.30	-32.67	169.42	159.89	9.53	17.780	
1,500.00	1,491.98	1,484.33	1,482.28	5.38	5.05	-158.78	-79.53	-39.71	188.45	178.20	10.25	18.388	
1,600.00	1,590.86	1,582.48	1,580.04	5.78	5.41	-158.26	-84.75	-46.74	207.50	196.53	10.97	18.913	
1,700.00	1,689.73	1,680.64	1,677.80	6.19	5.77	-157.82	-89.98	-53.77	226.57	214.87	11.70	19.369	
1,800.00	1,788.61	1,778.79	1,775.56	6.60	6.14	-157.46	-95.20	-60.80	245.64	233.22	12.43	19.770	
1,900.00	1,887.48	1,876.94	1,873.33	7.00	6.50	-157.15	-100.42	-67.83	264.72	251.57	13.15	20.124	
2,000.00	1,986.36	1,975.09	1,971.09	7.41	6.87	-156.88	-105.65	-74.86	283.82	269.93	13.89	20.439	
2,100.00	2,085.24	2,073.25	2,068.85	7.82	7.24	-156.64	-110.87	-81.89	302.91	288.29	14.62	20.720	
2,200.00	2,184.11	2,171.40	2,166.61	8.23	7.61	-156.43	-116.10	-88.92	322.01	306.66	15.35	20.974	
2,300.00	2,282.99	2,269.55	2,264.37	8.64	7.98	-156.24	-121.32	-95.95	341.11	325.03	16.09	21.204	
2,400.00	2,381.86	2,367.71	2,362.13	9.05	8.35	-156.08	-126.55	-102.98	360.22	343.40	16.82	21.412	
2,500.00	2,480.74	2,465.86	2,459.89	9.46	8.72	-155.93	-131.77	-110.01	379.33	361.77	17.56	21.603	
2,600.00	2,579.62	2,564.01	2,557.65	9.87	9.09	-155.79	-137.00	-117.04	398.44	380.15	18.30	21.777	
2,700.00	2,678.49	2,662.16	2,655.41	10.28	9.46	-155.67	-142.22	-124.07	417.56	398.52	19.03	21.937	
2,800.00	2,777.37	2,760.32	2,753.17	10.70	9.83	-155.56	-147.45	-131.10	436.67	416.90	19.77	22.085	
2,900.00	2,876.24	2,858.47	2,850.94	11.11	10.20	-155.46	-152.67	-138.14	455.79	435.28	20.51	22.222	
3,000.00	2,975.12	2,956.62	2,948.70	11.52	10.58	-155.36	-157.90	-145.17	474.91	453.66	21.25	22.349	
3,100.00	3,074.00	3,054.77	3,046.46	11.93	10.95	-155.28	-163.12	-152.20	494.03	472.04	21.99	22.467	
3,200.00	3,172.87	3,152.93	3,144.22	12.34	11.32	-155.20	-168.35	-159.23	513.15	490.42	22.73	22.577	
3,300.00	3,271.75	3,251.08	3,241.98	12.76	11.70	-155.12	-173.57	-166.26	532.27	508.80	23.47	22.679	
3,400.00	3,370.62	3,349.23	3,339.74	13.17	12.07	-155.05	-178.80	-173.29	551.39	527.18	24.21	22.776	
3,500.00	3,469.50	3,447.38	3,437.50	13.58	12.44	-154.99	-184.02	-180.32	570.51	545.56	24.95	22.866	
3,600.00	3,568.38	3,545.54	3,535.26	13.99	12.82	-154.93	-189.25	-187.35	589.63	563.94	25.69	22.951	
3,700.00	3,667.25	3,643.69	3,633.02	14.41	13.19	-154.87	-194.47	-194.38	608.76	582.33	26.43	23.031	
3,800.00	3,766.13	3,741.84	3,730.78	14.82	13.57	-154.82	-199.70	-201.41	627.88	600.71	27.17	23.107	
3,900.00	3,865.00	3,839.99	3,828.55	15.23	13.94	-154.77	-204.92	-208.44	647.01	619.09	27.91	23.178	
4,000.00	3,963.88	3,938.15	3,926.31	15.65	14.32	-154.72	-210.15	-215.47	666.13	637.48	28.66	23.246	
4,100.00	4,062.76	4,036.30	4,024.07	16.06	14.69	-154.68	-215.37	-222.50	685.26	655.86	29.40	23.310	
4,200.00	4,161.63	4,134.45	4,121.83	16.47	15.06	-154.63	-220.60	-229.53	704.38	674.24	30.14	23.371	
4,300.00	4,260.51	4,232.61	4,219.59	16.89	15.44	-154.59	-225.82	-236.57	723.51	692.63	30.88	23.429	
4,400.00	4,359.38	4,330.76	4,317.35	17.30	15.81	-154.56	-231.05	-243.60	742.64	711.01	31.62	23.484	
4,500.00	4,458.26	4,428.91	4,415.11	17.71	16.19	-154.52	-236.27	-250.63	761.76	729.40	32.37	23.536	
4,600.00	4,557.13	4,527.06	4,512.87	18.13	16.56	-154.49	-241.50	-257.66	780.89	747.78	33.11	23.586	
4,700.00	4,656.01	4,625.22	4,610.63	18.54	16.94	-154.45	-246.72	-264.69	800.02	766.17	33.85	23.634	
4,800.00	4,754.89	4,723.37	4,708.39	18.96	17.32	-154.42	-251.95	-271.72	819.15	784.55	34.59	23.679	
4,900.00	4,853.76	4,835.71	4,820.36	19.37	17.74	-154.44	-257.32	-278.95	837.75	802.31	35.44	23.642	
5,000.00	4,952.64	4,937.08	4,941.63	19.78	18.18	-154.71	-260.33	-283.00	853.89	817.59	36.31	23.519	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.00	5,051.51	5,066.97	5,051.51	20.20	18.55	-155.15	-260.69	-283.48	867.77	830.70	37.07	23.407	
5,200.00	5,150.39	5,165.85	5,150.39	20.61	18.87	-155.56	-260.69	-283.48	881.39	843.61	37.77	23.334	
5,300.00	5,249.27	5,264.73	5,249.27	21.03	19.19	-155.95	-260.69	-283.48	895.04	856.57	38.47	23.265	
5,400.00	5,348.14	5,363.60	5,348.14	21.44	19.51	-156.33	-260.69	-283.48	908.74	869.57	39.17	23.199	
5,500.00	5,447.02	5,462.48	5,447.02	21.85	19.83	-156.71	-260.69	-283.48	922.48	882.61	39.87	23.135	
5,600.00	5,545.89	5,561.35	5,545.89	22.27	20.15	-157.07	-260.69	-283.48	936.26	895.68	40.57	23.075	
5,626.07	5,571.67	5,587.13	5,571.67	22.37	20.24	-157.16	-260.69	-283.48	939.85	899.10	40.76	23.060	
5,700.00	5,644.90	5,660.36	5,644.90	22.67	20.48	-157.47	-260.69	-283.48	949.19	907.92	41.27	22.997	
5,800.00	5,744.33	5,759.79	5,744.33	23.06	20.81	-157.79	-260.69	-283.48	959.06	917.09	41.97	22.851	
5,900.00	5,844.07	5,859.53	5,844.07	23.42	21.14	-158.00	-260.69	-283.48	965.72	923.06	42.66	22.637	
6,000.00	5,943.99	5,959.45	5,943.99	23.76	21.47	-158.11	-260.69	-283.48	969.15	925.81	43.34	22.359	
6,056.01	6,000.00	6,015.46	6,000.00	23.94	21.65	179.52	-260.69	-283.48	969.66	925.94	43.72	22.177	
6,100.00	6,043.99	6,059.45	6,043.99	24.08	21.80	179.52	-260.69	-283.48	969.66	925.64	44.02	22.027	
6,200.00	6,143.99	6,159.45	6,143.99	24.39	22.13	179.52	-260.69	-283.48	969.66	924.96	44.70	21.693	
6,300.00	6,243.99	6,259.45	6,243.99	24.71	22.47	179.52	-260.69	-283.48	969.66	924.28	45.38	21.369	
6,400.00	6,343.99	6,359.45	6,343.99	25.03	22.80	179.52	-260.69	-283.48	969.66	923.60	46.06	21.053	
6,500.00	6,443.99	6,459.45	6,443.99	25.35	23.14	179.52	-260.69	-283.48	969.66	922.92	46.74	20.747	
6,600.00	6,543.99	6,559.45	6,543.99	25.67	23.47	179.52	-260.69	-283.48	969.66	922.24	47.42	20.449	
6,700.00	6,643.99	6,659.45	6,643.99	25.99	23.81	179.52	-260.69	-283.48	969.66	921.56	48.10	20.158	
6,749.81	6,693.80	6,709.26	6,693.80	26.15	23.98	179.52	-260.69	-283.48	969.66	921.22	48.44	20.017	
6,800.00	6,743.95	6,759.57	6,744.07	26.31	24.14	90.11	-260.67	-281.71	969.66	920.89	48.77	19.881	
6,850.00	6,793.66	6,809.70	6,793.91	26.45	24.30	90.11	-260.61	-276.45	969.66	920.58	49.08	19.755	
6,900.00	6,842.89	6,859.82	6,843.26	26.59	24.45	90.11	-260.53	-267.71	969.66	920.28	49.38	19.635	
6,950.00	6,891.39	6,909.95	6,891.87	26.72	24.59	90.11	-260.40	-255.55	969.66	919.98	49.68	19.519	
7,000.00	6,938.93	6,960.07	6,939.51	26.85	24.74	90.10	-260.24	-240.01	969.66	919.70	49.97	19.406	
7,050.00	6,985.28	7,010.18	6,985.95	26.97	24.87	90.10	-260.05	-221.19	969.66	919.41	50.25	19.296	
7,100.00	7,030.20	7,060.30	7,030.95	27.08	25.01	90.10	-259.83	-199.16	969.67	919.12	50.54	19.185	
7,150.00	7,073.49	7,110.41	7,074.30	27.18	25.15	90.09	-259.57	-174.05	969.67	918.82	50.85	19.070	
7,200.00	7,114.92	7,160.51	7,115.78	27.27	25.29	90.09	-259.29	-145.97	969.67	918.50	51.17	18.948	
7,250.00	7,154.31	7,210.61	7,155.20	27.36	25.45	90.09	-258.97	-115.06	969.67	918.14	51.54	18.815	
7,300.00	7,191.45	7,260.70	7,192.35	27.45	25.63	90.08	-258.63	-81.48	969.68	917.73	51.95	18.666	
7,350.00	7,226.17	7,310.79	7,227.06	27.53	25.85	90.07	-258.27	-45.39	969.68	917.25	52.43	18.495	
7,400.00	7,258.29	7,360.87	7,259.16	27.61	26.11	90.07	-257.88	-6.96	969.68	916.69	52.99	18.298	
7,450.00	7,287.66	7,410.95	7,288.50	27.72	26.43	90.06	-257.46	33.61	969.68	916.03	53.66	18.071	
7,500.00	7,314.14	7,461.01	7,314.92	27.89	26.82	90.06	-257.03	76.12	969.69	915.25	54.44	17.812	
7,550.00	7,337.60	7,511.07	7,338.31	28.20	27.27	90.05	-256.58	120.36	969.69	914.34	55.35	17.520	
7,600.00	7,357.92	7,561.12	7,358.54	28.65	27.79	90.04	-256.12	166.13	969.70	913.30	56.39	17.196	
7,650.00	7,375.00	7,611.16	7,375.53	29.21	28.39	90.03	-255.64	213.19	969.70	912.12	57.58	16.841	
7,700.00	7,388.77	7,661.20	7,389.19	29.86	29.06	90.03	-255.15	261.31	969.70	910.80	58.91	16.462	
7,750.00	7,399.15	7,711.22	7,399.46	30.57	29.80	90.02	-254.65	310.25	969.71	909.34	60.37	16.063	
7,800.00	7,406.10	7,761.24	7,406.28	31.36	30.60	90.01	-254.15	359.79	969.71	907.76	61.95	15.652	
7,850.00	7,409.57	7,811.25	7,409.63	32.19	31.45	90.00	-253.64	409.68	969.72	906.07	63.65	15.236	
7,874.81	7,410.00	7,836.06	7,410.00	32.63	31.90	90.00	-253.39	434.48	969.72	905.20	64.52	15.029	
7,900.00	7,410.00	7,861.25	7,410.00	33.08	32.37	90.00	-253.13	459.67	969.72	904.28	65.44	14.818	
8,000.00	7,410.00	7,961.25	7,410.00	35.00	34.34	90.00	-252.12	559.66	969.73	900.40	69.33	13.987	
8,100.00	7,410.00	8,061.25	7,410.00	37.10	36.47	90.00	-251.10	659.66	969.74	896.17	73.56	13.182	
8,200.00	7,410.00	8,161.25	7,410.00	39.35	38.76	90.00	-250.08	759.65	969.74	891.65	78.09	12.418	
8,300.00	7,410.00	8,261.25	7,410.00	41.73	41.16	90.00	-249.07	859.65	969.75	886.88	82.87	11.702	
8,400.00	7,410.00	8,361.25	7,410.00	44.21	43.67	90.00	-248.05	959.64	969.76	881.90	87.86	11.038	
8,500.00	7,410.00	8,461.25	7,410.00	46.77	46.27	90.00	-247.04	1,059.64	969.77	876.75	93.02	10.426	
8,600.00	7,410.00	8,561.25	7,410.00	49.42	48.94	90.00	-246.02	1,159.63	969.78	871.45	98.33	9.863	
8,700.00	7,410.00	8,661.25	7,410.00	52.12	51.67	90.00	-245.00	1,259.63	969.79	866.02	103.76	9.346	

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

Offset Design S25-T1N-R66W (SAM) - SAM 3I-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,410.00	8,761.25	7,410.00	54.88	54.45	90.00	-243.99	1,359.62	969.79	860.49	109.30	8.873		
8,900.00	7,410.00	8,861.25	7,410.00	57.68	57.27	90.00	-242.97	1,459.62	969.80	854.87	114.93	8.438		
9,000.00	7,410.00	8,961.25	7,410.00	60.53	60.14	90.00	-241.96	1,559.61	969.81	849.17	120.64	8.039		
9,100.00	7,410.00	9,061.25	7,410.00	63.41	63.04	90.00	-240.94	1,659.61	969.82	843.40	126.42	7.671		
9,200.00	7,410.00	9,161.25	7,410.00	66.32	65.96	90.00	-239.92	1,759.60	969.83	837.57	132.25	7.333		
9,300.00	7,410.00	9,261.25	7,410.00	69.25	68.91	90.00	-238.91	1,859.60	969.84	831.70	138.14	7.021		
9,400.00	7,410.00	9,361.25	7,410.00	72.21	71.89	90.00	-237.89	1,959.59	969.84	825.77	144.07	6.732		
9,500.00	7,410.00	9,461.25	7,410.00	75.19	74.88	90.00	-236.87	2,059.59	969.85	819.81	150.04	6.464		
9,600.00	7,410.00	9,561.25	7,410.00	78.19	77.89	90.00	-235.86	2,159.58	969.86	813.81	156.05	6.215		
9,700.00	7,410.00	9,661.25	7,410.00	81.20	80.91	90.00	-234.84	2,259.58	969.87	807.78	162.09	5.984		
9,800.00	7,410.00	9,761.25	7,410.00	84.23	83.95	90.00	-233.83	2,359.57	969.88	801.73	168.15	5.768		
9,900.00	7,410.00	9,861.25	7,410.00	87.27	87.00	90.00	-232.81	2,459.57	969.89	795.64	174.24	5.566		
10,000.00	7,410.00	9,961.25	7,410.00	90.32	90.06	90.00	-231.79	2,559.56	969.89	789.54	180.36	5.378		
10,100.00	7,410.00	10,061.25	7,410.00	93.38	93.13	90.00	-230.78	2,659.56	969.90	783.41	186.49	5.201		
10,200.00	7,410.00	10,161.25	7,410.00	96.45	96.21	90.00	-229.76	2,759.55	969.91	777.27	192.64	5.035		
10,300.00	7,410.00	10,261.25	7,410.00	99.53	99.30	90.00	-228.74	2,859.55	969.92	771.11	198.81	4.879		
10,400.00	7,410.00	10,361.25	7,410.00	102.62	102.39	90.00	-227.73	2,959.54	969.93	764.94	204.99	4.732		
10,500.00	7,410.00	10,461.25	7,410.00	105.71	105.49	90.00	-226.71	3,059.54	969.94	758.75	211.18	4.593		
10,600.00	7,410.00	10,561.25	7,410.00	108.81	108.60	90.00	-225.70	3,159.53	969.94	752.55	217.39	4.462		
10,700.00	7,410.00	10,661.25	7,410.00	111.92	111.72	90.00	-224.68	3,259.52	969.95	746.34	223.61	4.338		
10,800.00	7,410.00	10,761.25	7,410.00	115.03	114.83	90.00	-223.66	3,359.52	969.96	740.12	229.84	4.220		
10,900.00	7,410.00	10,861.25	7,410.00	118.15	117.96	90.00	-222.65	3,459.51	969.97	733.88	236.09	4.109		
11,000.00	7,410.00	10,961.25	7,410.00	121.27	121.08	90.00	-221.63	3,559.51	969.98	727.64	242.34	4.003		
11,100.00	7,410.00	11,061.25	7,410.00	124.40	124.22	90.00	-220.61	3,659.50	969.99	721.39	248.59	3.902		
11,200.00	7,410.00	11,161.25	7,410.00	127.53	127.35	90.00	-219.60	3,759.50	969.99	715.14	254.86	3.806		
11,300.00	7,410.00	11,261.25	7,410.00	130.66	130.49	90.00	-218.58	3,859.49	970.00	708.87	261.13	3.715		
11,400.00	7,410.00	11,361.25	7,410.00	133.80	133.63	90.00	-217.57	3,959.49	970.01	702.60	267.41	3.627		
11,500.00	7,410.00	11,461.25	7,410.00	136.94	136.78	90.00	-216.55	4,059.48	970.02	696.32	273.70	3.544		
11,600.00	7,410.00	11,561.25	7,410.00	140.08	139.92	90.00	-215.53	4,159.48	970.03	690.04	279.99	3.465		
11,700.00	7,410.00	11,661.25	7,410.00	143.23	143.07	90.00	-214.52	4,259.47	970.04	683.75	286.28	3.388		
11,800.00	7,410.00	11,761.25	7,410.00	146.38	146.23	90.00	-213.50	4,359.47	970.04	677.46	292.59	3.315		
11,900.00	7,410.00	11,861.25	7,410.00	149.53	148.56	90.00	-212.48	4,459.46	970.05	671.98	298.08	3.254		
11,903.08	7,410.00	11,864.33	7,410.00	149.62	148.62	90.00	-212.45	4,462.55	970.05	671.82	298.23	3.253		
11,950.31	7,410.00	11,906.06	7,410.00	151.11	149.38	90.00	-212.03	4,504.27	970.07	669.61	300.46	3.229 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-59.75	-0.04	59.75					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-59.75	-0.04	59.75	59.47	0.28	216.459		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-59.75	-0.04	59.75	58.75	0.99	60.171		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-59.75	-0.04	59.75	58.04	1.71	34.942		
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-59.75	-0.04	59.75	57.32	2.43	24.619		
500.00	500.00	500.00	500.00	1.57	1.57	-179.96	-59.75	-0.04	59.75	56.60	3.14	19.005 CC, ES		
600.00	599.98	599.98	599.98	1.93	1.93	-158.21	-59.75	-0.04	61.36	57.50	3.86	15.895		
700.00	699.84	699.84	699.84	2.29	2.29	-159.86	-59.75	-0.04	66.25	61.67	4.58	14.466		
800.00	799.45	797.42	797.40	2.65	2.62	-161.29	-61.13	-0.96	75.84	70.55	5.29	14.348		
900.00	898.70	893.96	893.81	3.02	2.95	-161.71	-65.23	-3.66	91.41	85.42	5.99	15.270		
929.94	928.33	922.58	922.36	3.14	3.04	-161.69	-66.96	-4.81	97.21	91.01	6.20	15.679		
1,000.00	997.60	989.13	988.64	3.40	3.27	-161.42	-71.91	-8.08	112.04	105.35	6.69	16.757		
1,100.00	1,096.48	1,086.59	1,085.60	3.79	3.61	-160.82	-80.16	-13.52	134.16	126.79	7.37	18.192		
1,200.00	1,195.35	1,184.10	1,182.61	4.18	3.96	-160.38	-88.41	-18.97	156.30	148.23	8.07	19.365		
1,300.00	1,294.23	1,281.62	1,279.62	4.58	4.32	-160.06	-96.66	-24.42	178.44	169.66	8.77	20.336		
1,400.00	1,393.10	1,379.13	1,376.63	4.98	4.68	-159.81	-104.92	-29.87	200.58	191.10	9.48	21.153		
1,500.00	1,491.98	1,476.64	1,473.64	5.38	5.04	-159.60	-113.17	-35.31	222.73	212.54	10.19	21.848		
1,600.00	1,590.86	1,574.16	1,570.65	5.78	5.40	-159.44	-121.42	-40.76	244.88	233.97	10.91	22.447		
1,700.00	1,689.73	1,671.67	1,667.66	6.19	5.77	-159.30	-129.67	-46.21	267.03	255.40	11.63	22.966		
1,800.00	1,788.61	1,769.19	1,764.67	6.60	6.14	-159.18	-137.92	-51.66	289.18	276.84	12.35	23.421		
1,900.00	1,887.48	1,866.70	1,861.69	7.00	6.51	-159.08	-146.18	-57.11	311.34	298.27	13.07	23.823		
2,000.00	1,986.36	1,964.21	1,958.70	7.41	6.88	-158.99	-154.43	-62.55	333.49	319.70	13.79	24.180		
2,100.00	2,085.24	2,061.73	2,055.71	7.82	7.25	-158.92	-162.68	-68.00	355.65	341.13	14.52	24.500		
2,200.00	2,184.11	2,159.24	2,152.72	8.23	7.63	-158.85	-170.93	-73.45	377.80	362.56	15.24	24.787		
2,300.00	2,282.99	2,256.75	2,249.73	8.64	8.00	-158.79	-179.18	-78.90	399.96	383.99	15.97	25.047		
2,400.00	2,381.86	2,354.27	2,346.74	9.05	8.38	-158.73	-187.43	-84.35	422.12	405.42	16.70	25.283		
2,500.00	2,480.74	2,451.78	2,443.75	9.46	8.75	-158.69	-195.69	-89.79	444.27	426.85	17.42	25.498		
2,600.00	2,579.62	2,549.30	2,540.76	9.87	9.13	-158.64	-203.94	-95.24	466.43	448.28	18.15	25.695		
2,700.00	2,678.49	2,646.81	2,637.78	10.28	9.50	-158.60	-212.19	-100.69	488.59	469.71	18.88	25.876		
2,800.00	2,777.37	2,744.32	2,734.79	10.70	9.88	-158.57	-220.44	-106.14	510.74	491.13	19.61	26.043		
2,900.00	2,876.24	2,841.84	2,831.80	11.11	10.26	-158.53	-228.69	-111.59	532.90	512.56	20.34	26.198		
3,000.00	2,975.12	2,939.35	2,928.81	11.52	10.64	-158.50	-236.95	-117.03	555.06	533.99	21.07	26.341		
3,100.00	3,074.00	3,036.87	3,025.82	11.93	11.01	-158.47	-245.20	-122.48	577.22	555.41	21.80	26.474		
3,200.00	3,172.87	3,134.38	3,122.83	12.34	11.39	-158.45	-253.45	-127.93	599.38	576.84	22.53	26.598		
3,300.00	3,271.75	3,231.89	3,219.84	12.76	11.77	-158.42	-261.70	-133.38	621.53	598.27	23.27	26.714		
3,400.00	3,370.62	3,329.41	3,316.85	13.17	12.15	-158.40	-269.95	-138.83	643.69	619.69	24.00	26.823		
3,500.00	3,469.50	3,426.92	3,413.86	13.58	12.53	-158.38	-278.21	-144.28	665.85	641.12	24.73	26.925		
3,600.00	3,568.38	3,524.43	3,510.88	13.99	12.90	-158.36	-286.46	-149.72	688.01	662.55	25.46	27.021		
3,700.00	3,667.25	3,621.95	3,607.89	14.41	13.28	-158.34	-294.71	-155.17	710.17	683.97	26.19	27.111		
3,800.00	3,766.13	3,719.46	3,704.90	14.82	13.66	-158.32	-302.96	-160.62	732.33	705.40	26.93	27.196		
3,900.00	3,865.00	3,816.98	3,801.91	15.23	14.04	-158.31	-311.21	-166.07	754.49	726.82	27.66	27.277		
4,000.00	3,963.88	3,914.49	3,898.92	15.65	14.42	-158.29	-319.46	-171.52	776.64	748.25	28.39	27.353		
4,100.00	4,062.76	4,012.00	3,995.93	16.06	14.80	-158.28	-327.72	-176.96	798.80	769.68	29.13	27.425		
4,200.00	4,161.63	4,109.52	4,092.94	16.47	15.18	-158.26	-335.97	-182.41	820.96	791.10	29.86	27.494		
4,300.00	4,260.51	4,207.03	4,189.95	16.89	15.56	-158.25	-344.22	-187.86	843.12	812.53	30.59	27.559		
4,400.00	4,359.38	4,304.55	4,286.97	17.30	15.94	-158.24	-352.47	-193.31	865.28	833.95	31.33	27.621		
4,500.00	4,458.26	4,402.06	4,383.98	17.71	16.32	-158.23	-360.72	-198.76	887.44	855.38	32.06	27.680		
4,600.00	4,557.13	4,499.57	4,480.99	18.13	16.70	-158.21	-368.98	-204.20	909.60	876.80	32.79	27.736		
4,700.00	4,656.01	4,597.09	4,578.00	18.54	17.08	-158.20	-377.23	-209.65	931.76	898.23	33.53	27.790		
4,800.00	4,754.89	4,694.60	4,675.01	18.96	17.46	-158.19	-385.48	-215.10	953.92	919.65	34.26	27.841		
4,900.00	4,853.76	4,792.11	4,772.02	19.37	17.84	-158.18	-393.73	-220.55	976.07	941.08	35.00	27.890		
5,000.00	4,952.64	4,889.63	4,869.03	19.78	18.22	-158.17	-401.98	-226.00	998.23	962.50	35.73	27.937		

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 3D-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 3D-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		
5,100.00	5,051.51	4,987.14	4,966.04	20.20	18.60	-158.17	-410.24	-231.45	1,020.39	983.93	36.47	27.982		
5,200.00	5,150.39	5,084.66	5,063.06	20.61	18.98	-158.16	-418.49	-236.89	1,042.55	1,005.35	37.20	28.026		
5,300.00	5,249.27	5,182.17	5,160.07	21.03	19.36	-158.15	-426.74	-242.34	1,064.71	1,026.78	37.93	28.067		
5,400.00	5,348.14	5,279.68	5,257.08	21.44	19.74	-158.14	-434.99	-247.79	1,086.87	1,048.20	38.67	28.107		
5,500.00	5,447.02	5,377.20	5,354.09	21.85	20.12	-158.13	-443.24	-253.24	1,109.03	1,069.63	39.40	28.145		
5,600.00	5,545.89	5,474.71	5,451.10	22.27	20.50	-158.13	-451.49	-258.69	1,131.19	1,091.05	40.14	28.182		
5,626.07	5,571.67	5,500.14	5,476.39	22.37	20.60	-158.12	-453.65	-260.11	1,136.97	1,096.64	40.33	28.192		
5,700.00	5,644.90	5,572.41	5,548.30	22.67	20.88	-158.22	-459.76	-264.14	1,152.48	1,111.61	40.87	28.198		
5,800.00	5,744.33	5,670.72	5,646.10	23.06	21.26	-158.27	-468.08	-269.64	1,170.71	1,129.11	41.60	28.142		
5,900.00	5,844.07	5,787.84	5,762.67	23.42	21.72	-158.22	-477.58	-275.91	1,185.47	1,143.01	42.46	27.921		
6,000.00	5,943.99	5,939.84	5,914.41	23.76	22.27	-158.15	-484.73	-280.63	1,193.58	1,150.09	43.49	27.444		
6,056.01	6,000.00	6,025.45	6,000.00	23.94	22.57	179.51	-485.80	-281.33	1,194.78	1,150.76	44.02	27.141		
6,100.00	6,043.99	6,069.44	6,043.99	24.08	22.70	179.51	-485.80	-281.33	1,194.78	1,150.47	44.31	26.963		
6,200.00	6,143.99	6,169.44	6,143.99	24.39	23.01	179.51	-485.80	-281.33	1,194.78	1,149.81	44.97	26.566		
6,300.00	6,243.99	6,269.44	6,243.99	24.71	23.32	179.51	-485.80	-281.33	1,194.78	1,149.14	45.64	26.179		
6,400.00	6,343.99	6,369.44	6,343.99	25.03	23.64	179.51	-485.80	-281.33	1,194.78	1,148.48	46.30	25.803		
6,500.00	6,443.99	6,469.44	6,443.99	25.35	23.95	179.51	-485.80	-281.33	1,194.78	1,147.81	46.97	25.436		
6,600.00	6,543.99	6,569.44	6,543.99	25.67	24.26	179.51	-485.80	-281.33	1,194.78	1,147.14	47.64	25.079		
6,700.00	6,643.99	6,669.49	6,644.04	25.99	24.58	179.50	-485.79	-281.05	1,194.78	1,146.47	48.31	24.732		
6,732.58	6,676.57	6,702.07	6,676.57	26.10	24.68	179.42	-485.78	-279.39	1,194.78	1,146.26	48.52	24.622		
6,749.81	6,693.80	6,719.22	6,693.66	26.15	24.73	179.35	-485.76	-277.92	1,194.78	1,146.15	48.64	24.566		
6,800.00	6,743.95	6,768.90	6,742.89	26.31	24.88	89.70	-485.70	-271.36	1,194.80	1,145.85	48.95	24.410		
6,850.00	6,793.66	6,818.06	6,791.05	26.45	25.02	89.47	-485.60	-261.53	1,194.83	1,145.59	49.24	24.265		
6,900.00	6,842.89	6,866.91	6,838.13	26.59	25.15	89.24	-485.46	-248.51	1,194.89	1,145.36	49.52	24.128		
6,950.00	6,891.39	6,915.46	6,883.92	26.72	25.27	89.02	-485.30	-232.43	1,194.96	1,145.16	49.80	23.997		
7,000.00	6,938.93	6,963.71	6,928.26	26.85	25.39	88.81	-485.11	-213.40	1,195.05	1,144.98	50.06	23.870		
7,050.00	6,985.28	7,011.69	6,970.96	26.97	25.50	88.59	-484.89	-191.57	1,195.15	1,144.82	50.33	23.745		
7,100.00	7,030.20	7,059.40	7,011.89	27.08	25.61	88.39	-484.64	-167.08	1,195.26	1,144.66	50.61	23.618		
7,150.00	7,073.49	7,106.85	7,050.90	27.18	25.71	88.19	-484.36	-140.06	1,195.39	1,144.49	50.90	23.486		
7,200.00	7,114.92	7,154.07	7,087.85	27.27	25.80	88.01	-484.06	-110.67	1,195.52	1,144.31	51.21	23.344		
7,250.00	7,154.31	7,200.00	7,121.85	27.36	25.90	87.83	-483.75	-79.82	1,195.66	1,144.10	51.56	23.190		
7,300.00	7,191.45	7,247.86	7,155.11	27.45	26.01	87.66	-483.40	-45.41	1,195.80	1,143.83	51.97	23.008		
7,350.00	7,226.17	7,294.46	7,185.21	27.53	26.15	87.50	-483.04	-9.85	1,195.94	1,143.49	52.45	22.802		
7,400.00	7,258.29	7,340.88	7,212.84	27.61	26.34	87.36	-482.66	27.44	1,196.08	1,143.07	53.01	22.564		
7,450.00	7,287.66	7,387.15	7,237.91	27.72	26.61	87.23	-482.26	66.31	1,196.21	1,142.55	53.67	22.290		
7,500.00	7,314.14	7,433.26	7,260.35	27.89	26.96	87.11	-481.86	106.59	1,196.34	1,141.91	54.43	21.978		
7,550.00	7,337.60	7,479.26	7,280.10	28.20	27.39	87.00	-481.43	148.11	1,196.46	1,141.14	55.32	21.627		
7,600.00	7,357.92	7,525.14	7,297.11	28.65	27.88	86.90	-481.00	190.71	1,196.57	1,140.23	56.34	21.239		
7,650.00	7,375.00	7,570.92	7,311.33	29.21	28.45	86.83	-480.56	234.22	1,196.66	1,139.18	57.48	20.818		
7,700.00	7,388.77	7,616.62	7,322.72	29.86	29.07	86.76	-480.11	278.47	1,196.74	1,137.98	58.76	20.367		
7,750.00	7,399.15	7,662.26	7,331.26	30.57	29.75	86.71	-479.65	323.30	1,196.80	1,136.65	60.16	19.895		
7,800.00	7,406.10	7,707.86	7,336.92	31.36	30.49	86.67	-479.19	368.53	1,196.85	1,135.18	61.67	19.408		
7,850.00	7,409.57	7,753.42	7,339.70	32.19	31.27	86.65	-478.73	414.00	1,196.88	1,133.60	63.28	18.914		
7,874.81	7,410.00	7,776.20	7,340.00	32.63	31.68	86.65	-478.50	436.77	1,196.89	1,132.77	64.12	18.667		
7,900.00	7,410.00	7,801.39	7,340.00	33.08	32.14	86.65	-478.24	461.96	1,196.89	1,131.86	65.03	18.405		
8,000.00	7,410.00	7,901.39	7,340.00	35.00	34.10	86.65	-477.23	561.95	1,196.90	1,128.00	68.90	17.371		
8,100.00	7,410.00	8,001.39	7,340.00	37.10	36.24	86.65	-476.21	661.95	1,196.91	1,123.78	73.13	16.367		
8,200.00	7,410.00	8,101.39	7,340.00	39.35	38.53	86.65	-475.19	761.94	1,196.91	1,119.26	77.66	15.413		
8,300.00	7,410.00	8,201.39	7,340.00	41.73	40.94	86.65	-474.18	861.94	1,196.92	1,114.49	82.43	14.520		
8,400.00	7,410.00	8,301.39	7,340.00	44.21	43.45	86.65	-473.16	961.93	1,196.93	1,109.51	87.42	13.692		
8,500.00	7,410.00	8,401.39	7,340.00	46.77	46.05	86.65	-472.15	1,061.93	1,196.94	1,104.36	92.58	12.929		
8,600.00	7,410.00	8,501.39	7,340.00	49.42	48.73	86.65	-471.13	1,161.92	1,196.95	1,099.07	97.88	12.229		

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

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,410.00	8,601.39	7,340.00	52.12	51.46	86.65	-470.11	1,261.92	1,196.96	1,093.65	103.31	11.586		
8,800.00	7,410.00	8,701.39	7,340.00	54.88	54.25	86.65	-469.10	1,361.91	1,196.96	1,088.12	108.85	10.997		
8,900.00	7,410.00	8,801.39	7,340.00	57.68	57.08	86.65	-468.08	1,461.91	1,196.97	1,082.50	114.47	10.456		
9,000.00	7,410.00	8,901.39	7,340.00	60.53	59.94	86.65	-467.06	1,561.90	1,196.98	1,076.81	120.18	9.960		
9,100.00	7,410.00	9,001.39	7,340.00	63.41	62.84	86.65	-466.05	1,661.90	1,196.99	1,071.04	125.95	9.504		
9,200.00	7,410.00	9,101.39	7,340.00	66.32	65.77	86.65	-465.03	1,761.89	1,197.00	1,065.22	131.77	9.084		
9,300.00	7,410.00	9,201.39	7,340.00	69.25	68.72	86.65	-464.02	1,861.89	1,197.01	1,059.35	137.65	8.696		
9,400.00	7,410.00	9,301.39	7,340.00	72.21	71.70	86.65	-463.00	1,961.88	1,197.01	1,053.43	143.58	8.337		
9,500.00	7,410.00	9,401.39	7,340.00	75.19	74.69	86.65	-461.98	2,061.88	1,197.02	1,047.48	149.54	8.005		
9,600.00	7,410.00	9,501.39	7,340.00	78.19	77.70	86.65	-460.97	2,161.87	1,197.03	1,041.49	155.54	7.696		
9,700.00	7,410.00	9,601.39	7,340.00	81.20	80.73	86.65	-459.95	2,261.86	1,197.04	1,035.47	161.57	7.409		
9,800.00	7,410.00	9,701.39	7,340.00	84.23	83.77	86.65	-458.93	2,361.86	1,197.05	1,029.42	167.63	7.141		
9,900.00	7,410.00	9,801.39	7,340.00	87.27	86.82	86.65	-457.92	2,461.85	1,197.06	1,023.34	173.71	6.891		
10,000.00	7,410.00	9,901.39	7,340.00	90.32	89.88	86.65	-456.90	2,561.85	1,197.06	1,017.25	179.81	6.657		
10,100.00	7,410.00	10,001.39	7,340.00	93.38	92.96	86.65	-455.89	2,661.84	1,197.07	1,011.13	185.94	6.438		
10,200.00	7,410.00	10,101.39	7,340.00	96.45	96.04	86.65	-454.87	2,761.84	1,197.08	1,005.00	192.08	6.232		
10,300.00	7,410.00	10,201.39	7,340.00	99.53	99.12	86.65	-453.85	2,861.83	1,197.09	998.85	198.24	6.039		
10,400.00	7,410.00	10,301.39	7,340.00	102.62	102.22	86.65	-452.84	2,961.83	1,197.10	992.68	204.41	5.856		
10,500.00	7,410.00	10,401.39	7,340.00	105.71	105.32	86.65	-451.82	3,061.82	1,197.11	986.50	210.60	5.684		
10,600.00	7,410.00	10,501.39	7,340.00	108.81	108.43	86.65	-450.80	3,161.82	1,197.11	980.31	216.80	5.522		
10,700.00	7,410.00	10,601.39	7,340.00	111.92	111.55	86.65	-449.79	3,261.81	1,197.12	974.11	223.01	5.368		
10,800.00	7,410.00	10,701.39	7,340.00	115.03	114.67	86.65	-448.77	3,361.81	1,197.13	967.90	229.23	5.222		
10,900.00	7,410.00	10,801.39	7,340.00	118.15	117.79	86.65	-447.76	3,461.80	1,197.14	961.67	235.46	5.084		
11,000.00	7,410.00	10,901.39	7,340.00	121.27	120.92	86.65	-446.74	3,561.80	1,197.15	955.44	241.71	4.953		
11,100.00	7,410.00	11,001.39	7,340.00	124.40	124.05	86.65	-445.72	3,661.79	1,197.15	949.20	247.95	4.828		
11,200.00	7,410.00	11,101.39	7,340.00	127.53	127.19	86.65	-444.71	3,761.79	1,197.16	942.95	254.21	4.709		
11,300.00	7,410.00	11,201.39	7,340.00	130.66	130.32	86.65	-443.69	3,861.78	1,197.17	936.70	260.47	4.596		
11,400.00	7,410.00	11,301.39	7,340.00	133.80	133.47	86.65	-442.67	3,961.78	1,197.18	930.44	266.74	4.488		
11,500.00	7,410.00	11,401.39	7,340.00	136.94	136.61	86.65	-441.66	4,061.77	1,197.19	924.17	273.02	4.385		
11,600.00	7,410.00	11,501.39	7,340.00	140.08	139.76	86.65	-440.64	4,161.77	1,197.20	917.90	279.30	4.286		
11,700.00	7,410.00	11,601.39	7,340.00	143.23	142.91	86.65	-439.63	4,261.76	1,197.20	911.62	285.59	4.192		
11,800.00	7,410.00	11,701.39	7,340.00	146.38	146.06	86.65	-438.61	4,361.76	1,197.21	905.33	291.88	4.102		
11,900.00	7,410.00	11,801.39	7,340.00	149.53	149.20	86.65	-437.59	4,461.75	1,197.22	899.06	298.16	4.015		
11,902.56	7,410.00	11,803.95	7,340.00	149.61	149.25	86.65	-437.57	4,464.31	1,197.22	898.94	298.28	4.014		
11,950.31	7,410.00	11,845.06	7,340.00	151.11	150.00	86.65	-437.15	4,505.42	1,197.24	896.72	300.53	3.984 SF		

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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
0.00	0.00	0.00	0.00	0.00	0.00	179.96	-69.94	0.04	69.94				
100.00	100.00	100.00	100.00	0.14	0.14	179.96	-69.94	0.04	69.94	69.67	0.28	253.395	
200.00	200.00	200.00	200.00	0.50	0.50	179.96	-69.94	0.04	69.94	68.95	0.99	70.438	
300.00	300.00	300.00	300.00	0.85	0.85	179.96	-69.94	0.04	69.94	68.23	1.71	40.904	
400.00	400.00	400.00	400.00	1.21	1.21	179.96	-69.94	0.04	69.94	67.52	2.43	28.820	
500.00	500.00	500.00	500.00	1.57	1.57	179.96	-69.94	0.04	69.94	66.80	3.14	22.248	CC, ES
600.00	599.98	599.98	599.98	1.93	1.93	-158.20	-69.94	0.04	71.56	67.70	3.86	18.535	
700.00	699.84	697.45	697.43	2.29	2.26	-159.06	-71.46	-0.61	77.98	73.41	4.57	17.073	
800.00	799.45	794.06	793.91	2.65	2.59	-159.57	-75.97	-2.56	90.72	85.45	5.28	17.197	
900.00	898.70	889.24	888.75	3.02	2.91	-159.76	-83.33	-5.75	109.68	103.69	5.99	18.320	
929.94	928.33	917.38	916.73	3.14	3.01	-159.77	-86.06	-6.93	116.55	110.34	6.20	18.786	
1,000.00	997.60	982.68	981.54	3.40	3.24	-159.73	-93.37	-10.08	133.95	127.25	6.69	20.016	
1,100.00	1,096.48	1,078.39	1,076.32	3.79	3.60	-159.42	-105.56	-15.36	160.26	152.89	7.37	21.732	
1,200.00	1,195.35	1,174.84	1,171.84	4.18	3.96	-159.18	-117.90	-20.69	186.64	178.58	8.06	23.157	
1,300.00	1,294.23	1,271.30	1,267.35	4.58	4.33	-159.01	-130.24	-26.03	213.02	204.26	8.76	24.327	
1,400.00	1,393.10	1,367.76	1,362.87	4.98	4.71	-158.87	-142.57	-31.36	239.39	229.94	9.46	25.312	
1,500.00	1,491.98	1,464.21	1,458.39	5.38	5.09	-158.76	-154.91	-36.69	265.77	255.61	10.16	26.149	
1,600.00	1,590.86	1,560.67	1,553.90	5.78	5.47	-158.68	-167.25	-42.03	292.15	281.28	10.87	26.869	
1,700.00	1,689.73	1,657.13	1,649.42	6.19	5.85	-158.60	-179.59	-47.36	318.53	306.95	11.59	27.493	
1,800.00	1,788.61	1,753.58	1,744.93	6.60	6.24	-158.54	-191.92	-52.70	344.91	332.61	12.30	28.039	
1,900.00	1,887.48	1,850.04	1,840.45	7.00	6.63	-158.48	-204.26	-58.03	371.29	358.27	13.02	28.521	
2,000.00	1,986.36	1,946.50	1,935.96	7.41	7.02	-158.44	-216.60	-63.37	397.67	383.94	13.74	28.948	
2,100.00	2,085.24	2,042.96	2,031.48	7.82	7.41	-158.39	-228.94	-68.70	424.06	409.60	14.46	29.330	
2,200.00	2,184.11	2,139.41	2,127.00	8.23	7.81	-158.36	-241.28	-74.04	450.44	435.26	15.18	29.673	
2,300.00	2,282.99	2,235.87	2,222.51	8.64	8.20	-158.33	-253.61	-79.37	476.82	460.92	15.90	29.983	
2,400.00	2,381.86	2,332.33	2,318.03	9.05	8.60	-158.30	-265.95	-84.71	503.20	486.57	16.63	30.264	
2,500.00	2,480.74	2,428.78	2,413.54	9.46	8.99	-158.27	-278.29	-90.04	529.58	512.23	17.35	30.520	
2,600.00	2,579.62	2,525.24	2,509.06	9.87	9.39	-158.25	-290.63	-95.38	555.97	537.89	18.08	30.754	
2,700.00	2,678.49	2,621.70	2,604.58	10.28	9.78	-158.23	-302.96	-100.71	582.35	563.54	18.80	30.969	
2,800.00	2,777.37	2,718.15	2,700.09	10.70	10.18	-158.21	-315.30	-106.05	608.73	589.20	19.53	31.168	
2,900.00	2,876.24	2,814.61	2,795.61	11.11	10.58	-158.19	-327.64	-111.38	635.11	614.85	20.26	31.351	
3,000.00	2,975.12	2,911.07	2,891.12	11.52	10.97	-158.17	-339.98	-116.71	661.49	640.51	20.99	31.521	
3,100.00	3,074.00	3,007.53	2,986.64	11.93	11.37	-158.16	-352.32	-122.05	687.88	666.16	21.71	31.678	
3,200.00	3,172.87	3,103.98	3,082.15	12.34	11.77	-158.14	-364.65	-127.38	714.26	691.82	22.44	31.825	
3,300.00	3,271.75	3,200.44	3,177.67	12.76	12.17	-158.13	-376.99	-132.72	740.64	717.47	23.17	31.963	
3,400.00	3,370.62	3,296.90	3,273.19	13.17	12.57	-158.12	-389.33	-138.05	767.02	743.12	23.90	32.091	
3,500.00	3,469.50	3,393.35	3,368.70	13.58	12.96	-158.11	-401.67	-143.39	793.41	768.78	24.63	32.212	
3,600.00	3,568.38	3,489.81	3,464.22	13.99	13.36	-158.10	-414.00	-148.72	819.79	794.43	25.36	32.325	
3,700.00	3,667.25	3,586.27	3,559.73	14.41	13.76	-158.09	-426.34	-154.06	846.17	820.08	26.09	32.431	
3,800.00	3,766.13	3,682.72	3,655.25	14.82	14.16	-158.08	-438.68	-159.39	872.55	845.73	26.82	32.532	
3,900.00	3,865.00	3,779.18	3,750.76	15.23	14.56	-158.07	-451.02	-164.73	898.94	871.38	27.55	32.627	
4,000.00	3,963.88	3,875.64	3,846.28	15.65	14.96	-158.06	-463.36	-170.06	925.32	897.04	28.28	32.717	
4,100.00	4,062.76	3,972.09	3,941.80	16.06	15.36	-158.05	-475.69	-175.40	951.70	922.69	29.01	32.802	
4,200.00	4,161.63	4,068.55	4,037.31	16.47	15.76	-158.04	-488.03	-180.73	978.08	948.34	29.75	32.882	
4,300.00	4,260.51	4,165.01	4,132.83	16.89	16.16	-158.04	-500.37	-186.07	1,004.47	973.99	30.48	32.959	
4,400.00	4,359.38	4,261.47	4,228.34	17.30	16.56	-158.03	-512.71	-191.40	1,030.85	999.64	31.21	33.032	
4,500.00	4,458.26	4,357.92	4,323.86	17.71	16.96	-158.02	-525.05	-196.73	1,057.23	1,025.29	31.94	33.101	
4,600.00	4,557.13	4,454.38	4,419.37	18.13	17.36	-158.02	-537.38	-202.07	1,083.62	1,050.94	32.67	33.167	
4,700.00	4,656.01	4,550.84	4,514.89	18.54	17.76	-158.01	-549.72	-207.40	1,110.00	1,076.59	33.40	33.230	
4,800.00	4,754.89	4,647.29	4,610.41	18.96	18.16	-158.01	-562.06	-212.74	1,136.38	1,102.25	34.13	33.291	
4,900.00	4,853.76	4,743.75	4,705.92	19.37	18.56	-158.00	-574.40	-218.07	1,162.76	1,127.90	34.87	33.348	
5,000.00	4,952.64	4,840.21	4,801.44	19.78	18.96	-158.00	-586.73	-223.41	1,189.15	1,153.55	35.60	33.404	

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 3D-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 3D-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	5,051.51	4,936.66	4,896.95	20.20	19.36	-157.99	-599.07	-228.74	1,215.53	1,179.20	36.33	33.456		
5,200.00	5,150.39	5,033.12	4,992.47	20.61	19.76	-157.99	-611.41	-234.08	1,241.91	1,204.85	37.06	33.507		
5,300.00	5,249.27	5,129.58	5,087.99	21.03	20.16	-157.98	-623.75	-239.41	1,268.29	1,230.50	37.80	33.556		
5,400.00	5,348.14	5,226.03	5,183.50	21.44	20.56	-157.98	-636.09	-244.75	1,294.68	1,256.15	38.53	33.602		
5,500.00	5,447.02	5,322.49	5,279.02	21.85	20.96	-157.97	-648.42	-250.08	1,321.06	1,281.80	39.26	33.647		
5,600.00	5,545.89	5,418.95	5,374.53	22.27	21.36	-157.97	-660.76	-255.42	1,347.44	1,307.45	39.99	33.690		
5,626.07	5,571.67	5,444.10	5,399.44	22.37	21.47	-157.97	-663.98	-256.81	1,354.32	1,314.14	40.19	33.701		
5,700.00	5,644.90	5,515.63	5,470.27	22.67	21.77	-158.09	-673.13	-260.76	1,372.97	1,332.24	40.73	33.712		
5,800.00	5,744.33	5,613.05	5,566.74	23.06	22.17	-158.19	-685.59	-266.15	1,395.46	1,354.01	41.45	33.663		
5,900.00	5,844.07	5,763.46	5,715.98	23.42	22.78	-158.18	-702.69	-273.54	1,413.61	1,371.06	42.55	33.223		
6,000.00	5,943.99	5,845.31	5,897.38	23.76	23.44	-158.15	-713.96	-278.42	1,423.21	1,379.49	43.72	32.553		
6,056.01	6,000.00	6,047.95	6,000.00	23.94	23.78	179.50	-715.64	-279.15	1,424.64	1,380.34	44.29	32.164		
6,100.00	6,043.99	6,091.94	6,043.99	24.08	23.91	179.50	-715.64	-279.15	1,424.64	1,380.06	44.58	31.956		
6,200.00	6,143.99	6,191.94	6,143.99	24.39	24.20	179.50	-715.64	-279.15	1,424.64	1,379.40	45.24	31.493		
6,300.00	6,243.99	6,291.94	6,243.99	24.71	24.49	179.50	-715.64	-279.15	1,424.64	1,378.74	45.89	31.042		
6,400.00	6,343.99	6,391.94	6,343.99	25.03	24.79	179.50	-715.64	-279.15	1,424.64	1,378.08	46.55	30.602		
6,500.00	6,443.99	6,491.94	6,443.99	25.35	25.08	179.50	-715.64	-279.15	1,424.64	1,377.42	47.21	30.174		
6,600.00	6,543.99	6,591.94	6,543.99	25.67	25.38	179.50	-715.64	-279.15	1,424.64	1,376.76	47.88	29.757		
6,700.00	6,643.99	6,691.94	6,643.99	25.99	25.68	179.50	-715.64	-279.15	1,424.64	1,376.10	48.54	29.350		
6,749.81	6,693.80	6,741.75	6,693.80	26.15	25.83	179.50	-715.64	-279.15	1,424.64	1,375.77	48.87	29.151		
6,800.00	6,743.95	6,792.09	6,744.09	26.31	25.98	90.09	-715.62	-277.38	1,424.64	1,375.44	49.20	28.959		
6,850.00	6,793.66	6,842.23	6,793.95	26.45	26.12	90.09	-715.57	-272.11	1,424.64	1,375.14	49.50	28.780		
6,900.00	6,842.89	6,892.38	6,843.32	26.59	26.26	90.09	-715.48	-263.37	1,424.64	1,374.84	49.80	28.609		
6,950.00	6,891.39	6,942.52	6,891.95	26.72	26.39	90.09	-715.36	-251.19	1,424.64	1,374.56	50.08	28.446		
7,000.00	6,938.93	6,992.66	6,939.61	26.85	26.52	90.08	-715.20	-235.65	1,424.64	1,374.28	50.36	28.289		
7,050.00	6,985.28	7,042.79	6,986.06	26.97	26.63	90.08	-715.01	-216.81	1,424.64	1,374.01	50.63	28.136		
7,100.00	7,030.20	7,092.92	7,031.07	27.08	26.74	90.08	-714.79	-194.77	1,424.64	1,373.73	50.91	27.983		
7,150.00	7,073.49	7,143.05	7,074.43	27.18	26.84	90.08	-714.53	-169.63	1,424.65	1,373.45	51.20	27.825		
7,200.00	7,114.92	7,193.17	7,115.92	27.27	26.93	90.07	-714.24	-141.54	1,424.65	1,373.14	51.51	27.658		
7,250.00	7,154.31	7,243.29	7,155.34	27.36	27.02	90.07	-713.93	-110.61	1,424.65	1,372.80	51.85	27.475		
7,300.00	7,191.45	7,293.40	7,192.50	27.45	27.09	90.06	-713.59	-77.00	1,424.65	1,372.41	52.25	27.268		
7,350.00	7,226.17	7,343.50	7,227.21	27.53	27.17	90.06	-713.22	-40.89	1,424.66	1,371.95	52.70	27.031		
7,400.00	7,258.29	7,393.59	7,259.30	27.61	27.24	90.05	-712.83	-2.45	1,424.66	1,371.41	53.25	26.756		
7,450.00	7,287.66	7,443.68	7,288.63	27.72	27.31	90.05	-712.42	38.14	1,424.66	1,370.77	53.89	26.437		
7,500.00	7,314.14	7,493.75	7,315.05	27.89	27.41	90.04	-711.99	80.67	1,424.67	1,370.02	54.65	26.071		
7,550.00	7,337.60	7,543.82	7,338.42	28.20	27.61	90.04	-711.54	124.93	1,424.67	1,369.14	55.53	25.655		
7,600.00	7,357.92	7,593.88	7,358.64	28.65	28.00	90.03	-711.07	170.71	1,424.67	1,368.12	56.56	25.191		
7,650.00	7,375.00	7,643.93	7,375.62	29.21	28.54	90.03	-710.59	217.78	1,424.68	1,366.95	57.72	24.682		
7,700.00	7,388.77	7,693.97	7,389.26	29.86	29.18	90.02	-710.10	265.91	1,424.68	1,365.65	59.03	24.135		
7,750.00	7,399.15	7,744.00	7,399.51	30.57	29.90	90.02	-709.61	314.87	1,424.68	1,364.21	60.48	23.558		
7,800.00	7,406.10	7,794.02	7,406.31	31.36	30.69	90.01	-709.10	364.41	1,424.69	1,362.64	62.05	22.962		
7,850.00	7,409.57	7,844.03	7,409.64	32.19	31.54	90.00	-708.60	414.30	1,424.69	1,360.97	63.73	22.356		
7,874.81	7,410.00	7,868.85	7,410.00	32.63	31.97	90.00	-708.34	439.11	1,424.69	1,360.10	64.59	22.056		
7,900.00	7,410.00	7,894.03	7,410.00	33.08	32.43	90.00	-708.09	464.29	1,424.70	1,359.19	65.50	21.750		
8,000.00	7,410.00	7,994.03	7,410.00	35.00	34.38	90.00	-707.07	564.29	1,424.71	1,355.34	69.36	20.540		
8,100.00	7,410.00	8,094.03	7,410.00	37.10	36.50	90.00	-706.05	664.28	1,424.71	1,351.14	73.58	19.364		
8,200.00	7,410.00	8,194.03	7,410.00	39.35	38.77	90.00	-705.04	764.28	1,424.72	1,346.63	78.09	18.245		
8,300.00	7,410.00	8,294.03	7,410.00	41.73	41.17	90.00	-704.02	864.27	1,424.73	1,341.88	82.85	17.196		
8,400.00	7,410.00	8,394.03	7,410.00	44.21	43.67	90.00	-703.01	964.27	1,424.74	1,336.91	87.83	16.222		
8,500.00	7,410.00	8,494.03	7,410.00	46.77	46.25	90.00	-701.99	1,064.26	1,424.75	1,331.77	92.98	15.324		
8,600.00	7,410.00	8,594.03	7,410.00	49.42	48.91	90.00	-700.97	1,164.26	1,424.75	1,326.48	98.28	14.497		
8,700.00	7,410.00	8,694.03	7,410.00	52.12	51.63	90.00	-699.96	1,264.25	1,424.76	1,321.06	103.70	13.739		

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 3D-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 3D-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					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
8,800.00	7,410.00	8,794.03	7,410.00	54.88	54.41	90.00	-698.94	1,364.25	1,424.77	1,315.54	109.23	13.043	
8,900.00	7,410.00	8,894.03	7,410.00	57.68	57.23	90.00	-697.92	1,464.24	1,424.78	1,309.92	114.86	12.405	
9,000.00	7,410.00	8,994.03	7,410.00	60.53	60.08	90.00	-696.91	1,564.24	1,424.79	1,304.23	120.56	11.818	
9,100.00	7,410.00	9,094.03	7,410.00	63.41	62.98	90.00	-695.89	1,664.23	1,424.80	1,298.46	126.33	11.278	
9,200.00	7,410.00	9,194.03	7,410.00	66.32	65.90	90.00	-694.88	1,764.23	1,424.80	1,292.64	132.16	10.781	
9,300.00	7,410.00	9,294.03	7,410.00	69.25	68.84	90.00	-693.86	1,864.22	1,424.81	1,286.77	138.04	10.321	
9,400.00	7,410.00	9,394.03	7,410.00	72.21	71.81	90.00	-692.84	1,964.22	1,424.82	1,280.85	143.97	9.897	
9,500.00	7,410.00	9,494.03	7,410.00	75.19	74.80	90.00	-691.83	2,064.21	1,424.83	1,274.89	149.94	9.503	
9,600.00	7,410.00	9,594.03	7,410.00	78.19	77.80	90.00	-690.81	2,164.21	1,424.84	1,268.90	155.94	9.137	
9,700.00	7,410.00	9,694.03	7,410.00	81.20	80.82	90.00	-689.79	2,264.20	1,424.85	1,262.87	161.97	8.797	
9,800.00	7,410.00	9,794.03	7,410.00	84.23	83.86	90.00	-688.78	2,364.20	1,424.85	1,256.82	168.04	8.479	
9,900.00	7,410.00	9,894.03	7,410.00	87.27	86.90	90.00	-687.76	2,464.19	1,424.86	1,250.74	174.12	8.183	
10,000.00	7,410.00	9,994.03	7,410.00	90.32	89.96	90.00	-686.75	2,564.19	1,424.87	1,244.64	180.23	7.906	
10,100.00	7,410.00	10,094.03	7,410.00	93.38	93.03	90.00	-685.73	2,664.18	1,424.88	1,238.52	186.36	7.646	
10,200.00	7,410.00	10,194.03	7,410.00	96.45	96.11	90.00	-684.71	2,764.17	1,424.89	1,232.38	192.51	7.402	
10,300.00	7,410.00	10,294.03	7,410.00	99.53	99.19	90.00	-683.70	2,864.17	1,424.90	1,226.22	198.68	7.172	
10,400.00	7,410.00	10,394.03	7,410.00	102.62	102.28	90.00	-682.68	2,964.16	1,424.90	1,220.05	204.86	6.956	
10,500.00	7,410.00	10,494.03	7,410.00	105.71	105.38	90.00	-681.66	3,064.16	1,424.91	1,213.86	211.05	6.752	
10,600.00	7,410.00	10,594.03	7,410.00	108.81	108.49	90.00	-680.65	3,164.15	1,424.92	1,207.66	217.26	6.559	
10,700.00	7,410.00	10,694.03	7,410.00	111.92	111.60	90.00	-679.63	3,264.15	1,424.93	1,201.45	223.48	6.376	
10,800.00	7,410.00	10,794.03	7,410.00	115.03	114.71	90.00	-678.62	3,364.14	1,424.94	1,195.23	229.71	6.203	
10,900.00	7,410.00	10,894.03	7,410.00	118.15	117.84	90.00	-677.60	3,464.14	1,424.95	1,189.00	235.94	6.039	
11,000.00	7,410.00	10,994.03	7,410.00	121.27	120.96	90.00	-676.58	3,564.13	1,424.95	1,182.76	242.19	5.884	
11,100.00	7,410.00	11,094.03	7,410.00	124.40	124.09	90.00	-675.57	3,664.13	1,424.96	1,176.51	248.45	5.735	
11,200.00	7,410.00	11,194.03	7,410.00	127.53	127.22	90.00	-674.55	3,764.12	1,424.97	1,170.26	254.71	5.594	
11,300.00	7,410.00	11,294.03	7,410.00	130.66	130.36	90.00	-673.53	3,864.12	1,424.98	1,163.99	260.98	5.460	
11,400.00	7,410.00	11,394.03	7,410.00	133.80	133.50	90.00	-672.52	3,964.11	1,424.99	1,157.72	267.26	5.332	
11,500.00	7,410.00	11,494.03	7,410.00	136.94	136.64	90.00	-671.50	4,064.11	1,425.00	1,151.45	273.55	5.209	
11,600.00	7,410.00	11,594.03	7,410.00	140.08	139.79	90.00	-670.49	4,164.10	1,425.00	1,145.17	279.84	5.092	
11,700.00	7,410.00	11,694.03	7,410.00	143.23	142.94	90.00	-669.47	4,264.10	1,425.01	1,138.88	286.13	4.980	
11,800.00	7,410.00	11,794.03	7,410.00	146.38	146.09	90.00	-668.45	4,364.09	1,425.02	1,132.59	292.43	4.873	
11,900.00	7,410.00	11,894.03	7,410.00	149.53	149.25	90.00	-667.44	4,464.09	1,425.03	1,126.29	298.74	4.770	
11,902.01	7,410.00	11,896.04	7,410.00	149.59	149.31	90.00	-667.42	4,466.10	1,425.03	1,126.16	298.87	4.768	
11,950.31	7,410.00	11,936.55	7,410.00	151.11	150.10	90.00	-667.00	4,506.61	1,425.05	1,123.88	301.17	4.732 SF	

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-179.89	-79.79	-0.15	79.79					
100.00	100.00	100.00	100.00	0.14	0.14	-179.89	-79.79	-0.15	79.79	79.51	0.28	289.066		
200.00	200.00	200.00	200.00	0.50	0.50	-179.89	-79.79	-0.15	79.79	78.80	0.99	80.354		
300.00	300.00	300.00	300.00	0.85	0.85	-179.89	-79.79	-0.15	79.79	78.08	1.71	46.663		
400.00	400.00	400.00	400.00	1.21	1.21	-179.89	-79.79	-0.15	79.79	77.36	2.43	32.878		
500.00	500.00	500.00	500.00	1.57	1.57	-179.89	-79.79	-0.15	79.79	76.65	3.14	25.380	CC, ES	
600.00	599.98	597.32	597.30	1.93	1.91	-157.60	-81.36	-0.67	83.01	79.16	3.85	21.559		
700.00	699.84	694.04	693.89	2.29	2.23	-157.77	-86.02	-2.22	92.67	88.10	4.57	20.289	SF	
800.00	799.45	789.57	789.08	2.65	2.56	-157.96	-93.67	-4.75	108.69	103.39	5.29	20.539		
900.00	898.70	883.35	882.21	3.02	2.89	-158.13	-104.10	-8.21	130.95	124.94	6.01	21.783		
929.94	928.33	911.01	909.60	3.14	3.00	-158.17	-107.73	-9.42	138.81	132.58	6.23	22.282		
1,000.00	997.60	975.88	973.70	3.40	3.24	-158.29	-117.18	-12.55	158.50	151.79	6.71	23.609		
1,100.00	1,096.48	1,071.67	1,068.26	3.79	3.61	-158.35	-131.72	-17.37	187.21	179.82	7.38	25.351		
1,200.00	1,195.35	1,167.46	1,162.82	4.18	3.99	-158.40	-146.25	-22.20	215.91	207.84	8.07	26.756		
1,300.00	1,294.23	1,263.26	1,257.38	4.58	4.38	-158.43	-160.79	-27.02	244.62	235.86	8.76	27.920		
1,400.00	1,393.10	1,359.05	1,351.94	4.98	4.77	-158.46	-175.33	-31.84	273.32	263.87	9.46	28.895		
1,500.00	1,491.98	1,454.84	1,446.50	5.38	5.17	-158.48	-189.87	-36.66	302.03	291.87	10.16	29.722		
1,600.00	1,590.86	1,550.63	1,541.06	5.78	5.56	-158.50	-204.41	-41.48	330.74	319.87	10.87	30.432		
1,700.00	1,689.73	1,646.42	1,635.61	6.19	5.96	-158.52	-218.95	-46.30	359.44	347.86	11.58	31.046		
1,800.00	1,788.61	1,742.21	1,730.17	6.60	6.36	-158.53	-233.48	-51.13	388.15	375.86	12.29	31.582		
1,900.00	1,887.48	1,838.00	1,824.73	7.00	6.77	-158.54	-248.02	-55.95	416.85	403.85	13.00	32.054		
2,000.00	1,986.36	1,933.79	1,919.29	7.41	7.17	-158.55	-262.56	-60.77	445.56	431.84	13.72	32.472		
2,100.00	2,085.24	2,029.59	2,013.85	7.82	7.58	-158.56	-277.10	-65.59	474.27	459.83	14.44	32.846		
2,200.00	2,184.11	2,125.38	2,108.41	8.23	7.98	-158.57	-291.64	-70.41	502.97	487.81	15.16	33.181		
2,300.00	2,282.99	2,221.17	2,202.97	8.64	8.39	-158.58	-306.18	-75.24	531.68	515.80	15.88	33.483		
2,400.00	2,381.86	2,316.96	2,297.53	9.05	8.80	-158.58	-320.72	-80.06	560.38	543.78	16.60	33.757		
2,500.00	2,480.74	2,412.75	2,392.08	9.46	9.21	-158.59	-335.25	-84.88	589.09	571.77	17.32	34.006		
2,600.00	2,579.62	2,508.54	2,486.64	9.87	9.62	-158.59	-349.79	-89.70	617.80	599.75	18.05	34.234		
2,700.00	2,678.49	2,604.33	2,581.20	10.28	10.03	-158.60	-364.33	-94.52	646.50	627.73	18.77	34.443		
2,800.00	2,777.37	2,700.12	2,675.76	10.70	10.44	-158.60	-378.87	-99.34	675.21	655.71	19.50	34.635		
2,900.00	2,876.24	2,795.92	2,770.32	11.11	10.85	-158.61	-393.41	-104.17	703.91	683.69	20.22	34.812		
3,000.00	2,975.12	2,891.71	2,864.88	11.52	11.26	-158.61	-407.95	-108.99	732.62	711.67	20.95	34.977		
3,100.00	3,074.00	2,987.50	2,959.44	11.93	11.67	-158.61	-422.48	-113.81	761.33	739.65	21.67	35.130		
3,200.00	3,172.87	3,083.29	3,054.00	12.34	12.08	-158.62	-437.02	-118.63	790.03	767.63	22.40	35.272		
3,300.00	3,271.75	3,179.08	3,148.55	12.76	12.49	-158.62	-451.56	-123.45	818.74	795.61	23.13	35.405		
3,400.00	3,370.62	3,274.87	3,243.11	13.17	12.90	-158.62	-466.10	-128.28	847.44	823.59	23.85	35.529		
3,500.00	3,469.50	3,370.66	3,337.67	13.58	13.31	-158.62	-480.64	-133.10	876.15	851.57	24.58	35.645		
3,600.00	3,568.38	3,466.45	3,432.23	13.99	13.73	-158.63	-495.18	-137.92	904.86	879.55	25.31	35.754		
3,700.00	3,667.25	3,562.25	3,526.79	14.41	14.14	-158.63	-509.72	-142.74	933.56	907.53	26.04	35.857		
3,800.00	3,766.13	3,658.04	3,621.35	14.82	14.55	-158.63	-524.25	-147.56	962.27	935.50	26.76	35.954		
3,900.00	3,865.00	3,753.83	3,715.91	15.23	14.96	-158.63	-538.79	-152.39	990.97	963.48	27.49	36.045		
4,000.00	3,963.88	3,849.62	3,810.46	15.65	15.37	-158.64	-553.33	-157.21	1,019.68	991.46	28.22	36.132		
4,100.00	4,062.76	3,945.41	3,905.02	16.06	15.79	-158.64	-567.87	-162.03	1,048.39	1,019.44	28.95	36.214		
4,200.00	4,161.63	4,041.20	3,999.58	16.47	16.20	-158.64	-582.41	-166.85	1,077.09	1,047.41	29.68	36.291		
4,300.00	4,260.51	4,136.99	4,094.14	16.89	16.61	-158.64	-596.95	-171.67	1,105.80	1,075.39	30.41	36.365		
4,400.00	4,359.38	4,232.78	4,188.70	17.30	17.03	-158.64	-611.48	-176.49	1,134.50	1,103.37	31.14	36.435		
4,500.00	4,458.26	4,328.58	4,283.26	17.71	17.44	-158.64	-626.02	-181.32	1,163.21	1,131.34	31.87	36.502		
4,600.00	4,557.13	4,424.37	4,377.82	18.13	17.85	-158.64	-640.56	-186.14	1,191.92	1,159.32	32.60	36.565		
4,700.00	4,656.01	4,520.16	4,472.38	18.54	18.26	-158.65	-655.10	-190.96	1,220.62	1,187.29	33.33	36.626		
4,800.00	4,754.89	4,615.95	4,566.93	18.96	18.68	-158.65	-669.64	-195.78	1,249.33	1,215.27	34.06	36.684		
4,900.00	4,853.76	4,711.74	4,661.49	19.37	19.09	-158.65	-684.18	-200.60	1,278.03	1,243.25	34.79	36.739		
5,000.00	4,952.64	4,807.53	4,756.05	19.78	19.50	-158.65	-698.71	-205.43	1,306.74	1,271.22	35.52	36.792		

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

Offset Design S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.00	5,051.51	4,903.32	4,850.61	20.20	19.92	-158.65	-713.25	-210.25	1,335.44	1,299.20	36.25	36.843		
5,200.00	5,150.39	4,999.11	4,945.17	20.61	20.33	-158.65	-727.79	-215.07	1,364.15	1,327.17	36.98	36.891		
5,300.00	5,249.27	5,094.91	5,039.73	21.03	20.74	-158.65	-742.33	-219.89	1,392.86	1,355.15	37.71	36.938		
5,400.00	5,348.14	5,190.70	5,134.29	21.44	21.16	-158.65	-756.87	-224.71	1,421.56	1,383.12	38.44	36.982		
5,500.00	5,447.02	5,286.49	5,228.85	21.85	21.57	-158.65	-771.41	-229.54	1,450.27	1,411.10	39.17	37.025		
5,600.00	5,545.89	5,382.28	5,323.40	22.27	21.98	-158.66	-785.95	-234.36	1,478.97	1,439.07	39.90	37.067		
5,626.07	5,571.67	5,407.25	5,348.06	22.37	22.09	-158.66	-789.74	-235.61	1,486.46	1,446.37	40.09	37.077		

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-89.98	-0.06	89.98					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-89.98	-0.06	89.98	89.70	0.28	325.986		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-89.98	-0.06	89.98	88.99	0.99	90.617		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-89.98	-0.06	89.98	88.27	1.71	52.623		
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-89.98	-0.06	89.98	87.55	2.43	37.077 CC, ES		
500.00	500.00	497.03	497.01	1.57	1.55	-179.68	-91.56	-0.52	91.61	88.47	3.14	29.203		
600.00	599.98	593.73	593.59	1.93	1.87	-156.87	-96.27	-1.87	98.10	94.24	3.86	25.403		
700.00	699.84	689.52	689.03	2.29	2.21	-156.69	-104.03	-4.11	111.02	106.42	4.60	24.135 SF		
800.00	799.45	783.82	782.68	2.65	2.55	-156.69	-114.65	-7.17	130.26	124.92	5.34	24.414		
900.00	898.70	876.57	874.38	3.02	2.90	-156.80	-127.97	-11.00	155.67	149.61	6.05	25.713		
929.94	928.33	905.25	902.68	3.14	3.01	-156.87	-132.44	-12.29	164.24	157.98	6.26	26.227		
1,000.00	997.60	972.28	968.81	3.40	3.28	-157.18	-142.90	-15.30	184.63	177.90	6.73	27.438		
1,100.00	1,096.48	1,067.94	1,063.21	3.79	3.67	-157.53	-157.82	-19.60	213.73	206.33	7.41	28.861		
1,200.00	1,195.35	1,163.60	1,157.60	4.18	4.06	-157.80	-172.74	-23.89	242.85	234.76	8.09	30.011		
1,300.00	1,294.23	1,259.27	1,252.00	4.58	4.45	-158.01	-187.66	-28.19	271.96	263.18	8.79	30.956		
1,400.00	1,393.10	1,354.93	1,346.39	4.98	4.85	-158.17	-202.58	-32.49	301.08	291.60	9.48	31.745		
1,500.00	1,491.98	1,450.59	1,440.79	5.38	5.26	-158.31	-217.51	-36.78	330.20	320.02	10.19	32.412		
1,600.00	1,590.86	1,546.26	1,535.18	5.78	5.66	-158.43	-232.43	-41.08	359.33	348.43	10.89	32.981		
1,700.00	1,689.73	1,641.92	1,629.58	6.19	6.07	-158.53	-247.35	-45.38	388.45	376.84	11.60	33.473		
1,800.00	1,788.61	1,737.58	1,723.97	6.60	6.47	-158.61	-262.27	-49.67	417.57	405.26	12.32	33.901		
1,900.00	1,887.48	1,833.24	1,818.36	7.00	6.88	-158.68	-277.19	-53.97	446.70	433.67	13.03	34.277		
2,000.00	1,986.36	1,928.91	1,912.76	7.41	7.29	-158.75	-292.12	-58.27	475.82	462.08	13.75	34.610		
2,100.00	2,085.24	2,024.57	2,007.15	7.82	7.70	-158.81	-307.04	-62.56	504.95	490.48	14.47	34.906		
2,200.00	2,184.11	2,120.23	2,101.55	8.23	8.11	-158.86	-321.96	-66.86	534.08	518.89	15.18	35.172		
2,300.00	2,282.99	2,215.90	2,195.94	8.64	8.52	-158.90	-336.88	-71.16	563.20	547.30	15.90	35.411		
2,400.00	2,381.86	2,311.56	2,290.34	9.05	8.93	-158.94	-351.80	-75.45	592.33	575.71	16.63	35.627		
2,500.00	2,480.74	2,407.22	2,384.73	9.46	9.34	-158.98	-366.72	-79.75	621.46	604.11	17.35	35.824		
2,600.00	2,579.62	2,502.89	2,479.13	9.87	9.76	-159.02	-381.65	-84.05	650.59	632.52	18.07	36.003		
2,700.00	2,678.49	2,598.55	2,573.52	10.28	10.17	-159.05	-396.57	-88.34	679.71	660.92	18.79	36.168		
2,800.00	2,777.37	2,694.21	2,667.92	10.70	10.58	-159.08	-411.49	-92.64	708.84	689.33	19.52	36.319		
2,900.00	2,876.24	2,789.88	2,762.31	11.11	10.99	-159.10	-426.41	-96.94	737.97	717.73	20.24	36.459		
3,000.00	2,975.12	2,885.54	2,856.70	11.52	11.41	-159.13	-441.33	-101.23	767.10	746.13	20.97	36.588		
3,100.00	3,074.00	2,981.20	2,951.10	11.93	11.82	-159.15	-456.25	-105.53	796.23	774.54	21.69	36.708		
3,200.00	3,172.87	3,076.87	3,045.49	12.34	12.23	-159.17	-471.18	-109.83	825.36	802.94	22.42	36.819		
3,300.00	3,271.75	3,172.53	3,139.89	12.76	12.65	-159.19	-486.10	-114.12	854.49	831.34	23.14	36.923		
3,400.00	3,370.62	3,268.19	3,234.28	13.17	13.06	-159.21	-501.02	-118.42	883.61	859.75	23.87	37.021		
3,500.00	3,469.50	3,363.86	3,328.68	13.58	13.47	-159.22	-515.94	-122.72	912.74	888.15	24.59	37.112		
3,600.00	3,568.38	3,459.52	3,423.07	13.99	13.89	-159.24	-530.86	-127.01	941.87	916.55	25.32	37.197		
3,700.00	3,667.25	3,555.18	3,517.47	14.41	14.30	-159.26	-545.79	-131.31	971.00	944.95	26.05	37.277		
3,800.00	3,766.13	3,650.84	3,611.86	14.82	14.72	-159.27	-560.71	-135.61	1,000.13	973.36	26.78	37.353		
3,900.00	3,865.00	3,746.51	3,706.25	15.23	15.13	-159.28	-575.63	-139.90	1,029.26	1,001.76	27.50	37.424		
4,000.00	3,963.88	3,842.17	3,800.65	15.65	15.54	-159.30	-590.55	-144.20	1,058.39	1,030.16	28.23	37.492		
4,100.00	4,062.76	3,937.83	3,895.04	16.06	15.96	-159.31	-605.47	-148.50	1,087.52	1,058.56	28.96	37.556		
4,200.00	4,161.63	4,033.50	3,989.44	16.47	16.37	-159.32	-620.39	-152.79	1,116.65	1,086.96	29.69	37.616		
4,300.00	4,260.51	4,129.16	4,083.83	16.89	16.79	-159.33	-635.32	-157.09	1,145.78	1,115.36	30.41	37.673		
4,400.00	4,359.38	4,224.82	4,178.23	17.30	17.20	-159.34	-650.24	-161.39	1,174.91	1,143.76	31.14	37.728		
4,500.00	4,458.26	4,320.49	4,272.62	17.71	17.62	-159.35	-665.16	-165.68	1,204.04	1,172.17	31.87	37.780		
4,600.00	4,557.13	4,416.15	4,367.02	18.13	18.03	-159.36	-680.08	-169.98	1,233.16	1,200.57	32.60	37.829		
4,700.00	4,656.01	4,511.81	4,461.41	18.54	18.45	-159.37	-695.00	-174.28	1,262.29	1,228.97	33.33	37.876		
4,800.00	4,754.89	4,607.48	4,555.81	18.96	18.86	-159.38	-709.92	-178.57	1,291.42	1,257.37	34.06	37.921		
4,900.00	4,853.76	4,703.14	4,650.20	19.37	19.28	-159.38	-724.85	-182.87	1,320.55	1,285.77	34.78	37.964		
5,000.00	4,952.64	4,798.80	4,744.59	19.78	19.69	-159.39	-739.77	-187.17	1,349.68	1,314.17	35.51	38.005		

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 3D-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 3D-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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor				
5,100.00	5,051.51	4,894.47	4,838.99	20.20	20.10	-159.40	-754.69	-191.46	1,378.81	1,342.57	36.24	38.044				
5,200.00	5,150.39	4,990.13	4,933.38	20.61	20.52	-159.41	-769.61	-195.76	1,407.94	1,370.97	36.97	38.082				
5,300.00	5,249.27	5,085.79	5,027.78	21.03	20.93	-159.41	-784.53	-200.06	1,437.07	1,399.37	37.70	38.118				
5,400.00	5,348.14	5,181.46	5,122.17	21.44	21.35	-159.42	-799.46	-204.35	1,466.20	1,427.77	38.43	38.153				
5,500.00	5,447.02	5,277.12	5,216.57	21.85	21.76	-159.43	-814.38	-208.65	1,495.33	1,456.17	39.16	38.186				

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	179.99	-99.81	0.02	99.81					
100.00	100.00	100.00	100.00	0.14	0.14	179.99	-99.81	0.02	99.81	99.54	0.28	361.617		
200.00	200.00	200.00	200.00	0.50	0.50	179.99	-99.81	0.02	99.81	98.82	0.99	100.522		
300.00	300.00	300.00	300.00	0.85	0.85	179.99	-99.81	0.02	99.81	98.10	1.71	58.374 CC, ES		
400.00	400.00	396.70	396.69	1.21	1.19	-179.78	-101.39	-0.39	101.45	99.02	2.43	41.796		
500.00	500.00	493.19	493.04	1.57	1.52	-179.11	-106.11	-1.64	106.35	103.19	3.16	33.610		
600.00	599.98	589.08	588.59	1.93	1.86	-156.05	-113.90	-3.70	116.12	112.20	3.91	29.665		
700.00	699.84	683.77	682.62	2.29	2.20	-155.68	-124.63	-6.53	132.27	127.60	4.67	28.343 SF		
800.00	799.45	776.70	774.50	2.65	2.57	-155.58	-138.07	-10.08	154.67	149.26	5.41	28.605		
900.00	898.70	872.49	868.93	3.02	2.95	-155.75	-153.65	-14.20	181.92	175.84	6.09	29.893		
929.94	928.33	901.11	897.14	3.14	3.07	-155.86	-158.30	-15.43	190.68	184.39	6.29	30.305		
1,000.00	997.60	967.99	963.07	3.40	3.35	-156.27	-169.19	-18.30	211.50	204.74	6.76	31.282		
1,100.00	1,096.48	1,063.45	1,057.17	3.79	3.75	-156.74	-184.72	-22.40	241.24	233.80	7.44	32.424		
1,200.00	1,195.35	1,158.92	1,151.27	4.18	4.15	-157.10	-200.25	-26.51	270.99	262.86	8.13	33.341		
1,300.00	1,294.23	1,254.38	1,245.37	4.58	4.56	-157.39	-215.78	-30.61	300.74	291.92	8.82	34.090		
1,400.00	1,393.10	1,349.84	1,339.47	4.98	4.97	-157.63	-231.31	-34.71	330.50	320.98	9.52	34.710		
1,500.00	1,491.98	1,445.30	1,433.57	5.38	5.38	-157.83	-246.84	-38.81	360.27	350.04	10.23	35.231		
1,600.00	1,590.86	1,540.76	1,527.67	5.78	5.79	-158.00	-262.37	-42.91	390.03	379.10	10.93	35.674		
1,700.00	1,689.73	1,636.22	1,621.77	6.19	6.20	-158.15	-277.90	-47.02	419.81	408.16	11.64	36.054		
1,800.00	1,788.61	1,731.68	1,715.87	6.60	6.61	-158.27	-293.44	-51.12	449.58	437.22	12.36	36.384		
1,900.00	1,887.48	1,827.14	1,809.96	7.00	7.03	-158.38	-308.97	-55.22	479.35	466.28	13.07	36.673		
2,000.00	1,986.36	1,922.60	1,904.06	7.41	7.44	-158.48	-324.50	-59.32	509.13	495.34	13.79	36.927		
2,100.00	2,085.24	2,018.06	1,998.16	7.82	7.86	-158.57	-340.03	-63.43	538.91	524.40	14.50	37.153		
2,200.00	2,184.11	2,113.52	2,092.26	8.23	8.28	-158.65	-355.56	-67.53	568.69	553.46	15.22	37.355		
2,300.00	2,282.99	2,208.98	2,186.36	8.64	8.69	-158.72	-371.09	-71.63	598.47	582.52	15.94	37.536		
2,400.00	2,381.86	2,304.44	2,280.46	9.05	9.11	-158.78	-386.62	-75.73	628.25	611.58	16.66	37.699		
2,500.00	2,480.74	2,399.90	2,374.56	9.46	9.53	-158.84	-402.15	-79.84	658.03	640.64	17.39	37.848		
2,600.00	2,579.62	2,495.36	2,468.66	9.87	9.94	-158.89	-417.68	-83.94	687.81	669.70	18.11	37.983		
2,700.00	2,678.49	2,590.82	2,562.76	10.28	10.36	-158.94	-433.22	-88.04	717.59	698.76	18.83	38.106		
2,800.00	2,777.37	2,686.28	2,656.86	10.70	10.78	-158.98	-448.75	-92.14	747.37	727.82	19.55	38.219		
2,900.00	2,876.24	2,781.75	2,750.96	11.11	11.19	-159.02	-464.28	-96.24	777.16	756.88	20.28	38.324		
3,000.00	2,975.12	2,877.21	2,845.06	11.52	11.61	-159.06	-479.81	-100.35	806.94	785.94	21.00	38.420		
3,100.00	3,074.00	2,972.67	2,939.16	11.93	12.03	-159.10	-495.34	-104.45	836.72	814.99	21.73	38.509		
3,200.00	3,172.87	3,068.13	3,033.26	12.34	12.45	-159.13	-510.87	-108.55	866.51	844.05	22.45	38.592		
3,300.00	3,271.75	3,163.59	3,127.35	12.76	12.87	-159.16	-526.40	-112.65	896.29	873.11	23.18	38.669		
3,400.00	3,370.62	3,259.05	3,221.45	13.17	13.28	-159.19	-541.93	-116.76	926.07	902.17	23.90	38.741		
3,500.00	3,469.50	3,354.51	3,315.55	13.58	13.70	-159.22	-557.47	-120.86	955.86	931.23	24.63	38.809		
3,600.00	3,568.38	3,449.97	3,409.65	13.99	14.12	-159.24	-573.00	-124.96	985.64	960.29	25.36	38.872		
3,700.00	3,667.25	3,545.43	3,503.75	14.41	14.54	-159.26	-588.53	-129.06	1,015.43	989.34	26.08	38.931		
3,800.00	3,766.13	3,640.89	3,597.85	14.82	14.96	-159.29	-604.06	-133.17	1,045.21	1,018.40	26.81	38.987		
3,900.00	3,865.00	3,736.35	3,691.95	15.23	15.38	-159.31	-619.59	-137.27	1,075.00	1,047.46	27.54	39.039		
4,000.00	3,963.88	3,831.81	3,786.05	15.65	15.79	-159.33	-635.12	-141.37	1,104.78	1,076.52	28.26	39.089		
4,100.00	4,062.76	3,927.27	3,880.15	16.06	16.21	-159.35	-650.65	-145.47	1,134.57	1,105.58	28.99	39.136		
4,200.00	4,161.63	4,022.73	3,974.25	16.47	16.63	-159.37	-666.18	-149.57	1,164.35	1,134.63	29.72	39.180		
4,300.00	4,260.51	4,118.19	4,068.35	16.89	17.05	-159.38	-681.71	-153.68	1,194.14	1,163.69	30.45	39.222		
4,400.00	4,359.38	4,213.65	4,162.45	17.30	17.47	-159.40	-697.25	-157.78	1,223.92	1,192.75	31.17	39.262		
4,500.00	4,458.26	4,309.11	4,256.55	17.71	17.89	-159.41	-712.78	-161.88	1,253.71	1,221.81	31.90	39.300		
4,600.00	4,557.13	4,404.57	4,350.65	18.13	18.31	-159.43	-728.31	-165.98	1,283.49	1,250.86	32.63	39.336		
4,700.00	4,656.01	4,500.04	4,444.74	18.54	18.73	-159.44	-743.84	-170.09	1,313.28	1,279.92	33.36	39.370		
4,800.00	4,754.89	4,595.50	4,538.84	18.96	19.15	-159.46	-759.37	-174.19	1,343.07	1,308.98	34.09	39.403		
4,900.00	4,853.76	4,690.96	4,632.94	19.37	19.56	-159.47	-774.90	-178.29	1,372.85	1,338.04	34.81	39.434		
5,000.00	4,952.64	4,786.42	4,727.04	19.78	19.98	-159.48	-790.43	-182.39	1,402.64	1,367.09	35.54	39.464		

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 3D-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 3D-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						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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	5,051.51	4,881.88	4,821.14	20.20	20.40	-159.49	-805.96	-186.50	1,432.42	1,396.15	36.27	39.493	
5,200.00	5,150.39	4,977.34	4,915.24	20.61	20.82	-159.51	-821.50	-190.60	1,462.21	1,425.21	37.00	39.520	
5,300.00	5,249.27	5,072.80	5,009.34	21.03	21.24	-159.52	-837.03	-194.70	1,491.99	1,454.27	37.73	39.546	

Cathedral Energy Services

Anticollision Report

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

Offset Design S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-179.91	-110.02	-0.17	110.02				
100.00	100.00	100.00	100.00	0.14	0.14	-179.91	-110.02	-0.17	110.02	109.74	0.28	398.592	
200.00	200.00	200.00	200.00	0.50	0.50	-179.91	-110.02	-0.17	110.02	109.03	0.99	110.800 CC, ES	
300.00	300.00	296.37	296.35	0.85	0.83	-179.72	-111.60	-0.55	111.66	109.93	1.72	64.763	
400.00	400.00	392.51	392.37	1.21	1.17	-179.16	-116.30	-1.70	116.56	114.08	2.48	46.987	
500.00	500.00	488.23	487.74	1.57	1.51	-178.33	-124.09	-3.61	124.75	121.51	3.24	38.444	
600.00	599.98	583.11	581.97	1.93	1.86	-155.18	-134.87	-6.24	137.78	133.77	4.01	34.362	
700.00	699.84	676.50	674.30	2.29	2.24	-154.76	-148.43	-9.55	157.12	152.36	4.77	32.953 SF	
800.00	799.45	770.20	766.50	2.65	2.63	-154.64	-164.70	-13.53	182.38	176.90	5.48	33.285	
900.00	898.70	865.94	860.60	3.02	3.04	-154.85	-181.83	-17.71	211.20	205.06	6.14	34.394	
929.94	928.33	894.42	888.59	3.14	3.16	-154.96	-186.92	-18.96	220.42	214.07	6.35	34.701	
1,000.00	997.60	960.95	953.98	3.40	3.45	-155.39	-198.82	-21.87	242.32	235.50	6.82	35.527	
1,100.00	1,096.48	1,055.91	1,047.32	3.79	3.87	-155.89	-215.81	-26.02	273.59	266.10	7.50	36.497	
1,200.00	1,195.35	1,150.87	1,140.65	4.18	4.29	-156.29	-232.80	-30.17	304.88	296.70	8.18	37.266	
1,300.00	1,294.23	1,245.83	1,233.99	4.58	4.71	-156.61	-249.79	-34.32	336.18	327.31	8.87	37.886	
1,400.00	1,393.10	1,340.79	1,327.32	4.98	5.13	-156.88	-266.77	-38.47	367.49	357.92	9.57	38.394	
1,500.00	1,491.98	1,435.75	1,420.66	5.38	5.55	-157.11	-283.76	-42.62	398.80	388.53	10.27	38.816	
1,600.00	1,590.86	1,530.71	1,514.00	5.78	5.98	-157.30	-300.75	-46.77	430.12	419.14	10.98	39.172	
1,700.00	1,689.73	1,625.67	1,607.33	6.19	6.40	-157.47	-317.73	-50.92	461.44	449.76	11.69	39.475	
1,800.00	1,788.61	1,720.63	1,700.67	6.60	6.83	-157.61	-334.72	-55.07	492.77	480.37	12.40	39.736	
1,900.00	1,887.48	1,815.59	1,794.00	7.00	7.26	-157.74	-351.71	-59.22	524.10	510.98	13.11	39.962	
2,000.00	1,986.36	1,910.55	1,887.34	7.41	7.68	-157.85	-368.70	-63.37	555.43	541.60	13.83	40.160	
2,100.00	2,085.24	2,005.51	1,980.68	7.82	8.11	-157.96	-385.68	-67.52	586.76	572.21	14.55	40.334	
2,200.00	2,184.11	2,100.47	2,074.01	8.23	8.54	-158.05	-402.67	-71.67	618.09	602.83	15.27	40.489	
2,300.00	2,282.99	2,195.43	2,167.35	8.64	8.97	-158.13	-419.66	-75.82	649.43	633.44	15.99	40.627	
2,400.00	2,381.86	2,290.39	2,260.68	9.05	9.40	-158.21	-436.64	-79.97	680.77	664.06	16.71	40.751	
2,500.00	2,480.74	2,385.35	2,354.02	9.46	9.83	-158.27	-453.63	-84.12	712.10	694.68	17.43	40.863	
2,600.00	2,579.62	2,480.31	2,447.35	9.87	10.25	-158.34	-470.62	-88.27	743.44	725.29	18.15	40.965	
2,700.00	2,678.49	2,575.27	2,540.69	10.28	10.68	-158.39	-487.61	-92.42	774.78	755.91	18.87	41.057	
2,800.00	2,777.37	2,670.23	2,634.03	10.70	11.11	-158.45	-504.59	-96.57	806.12	786.52	19.59	41.141	
2,900.00	2,876.24	2,765.19	2,727.36	11.11	11.54	-158.50	-521.58	-100.72	837.46	817.14	20.32	41.218	
3,000.00	2,975.12	2,860.15	2,820.70	11.52	11.97	-158.54	-538.57	-104.87	868.80	847.76	21.04	41.290	
3,100.00	3,074.00	2,955.11	2,914.03	11.93	12.40	-158.58	-555.55	-109.02	900.14	878.37	21.77	41.355	
3,200.00	3,172.87	3,050.07	3,007.37	12.34	12.83	-158.62	-572.54	-113.17	931.48	908.99	22.49	41.416	
3,300.00	3,271.75	3,145.03	3,100.71	12.76	13.26	-158.66	-589.53	-117.32	962.82	939.60	23.22	41.472	
3,400.00	3,370.62	3,239.99	3,194.04	13.17	13.69	-158.69	-606.52	-121.48	994.16	970.22	23.94	41.524	
3,500.00	3,469.50	3,334.95	3,287.38	13.58	14.12	-158.73	-623.50	-125.63	1,025.50	1,000.84	24.67	41.573	
3,600.00	3,568.38	3,429.91	3,380.71	13.99	14.55	-158.76	-640.49	-129.78	1,056.85	1,031.45	25.39	41.619	
3,700.00	3,667.25	3,524.86	3,474.05	14.41	14.98	-158.79	-657.48	-133.93	1,088.19	1,062.07	26.12	41.661	
3,800.00	3,766.13	3,619.82	3,567.39	14.82	15.41	-158.81	-674.46	-138.08	1,119.53	1,092.69	26.85	41.701	
3,900.00	3,865.00	3,714.78	3,660.72	15.23	15.84	-158.84	-691.45	-142.23	1,150.87	1,123.30	27.57	41.739	
4,000.00	3,963.88	3,809.74	3,754.06	15.65	16.27	-158.86	-708.44	-146.38	1,182.22	1,153.92	28.30	41.774	
4,100.00	4,062.76	3,904.70	3,847.39	16.06	16.70	-158.89	-725.43	-150.53	1,213.56	1,184.53	29.03	41.808	
4,200.00	4,161.63	3,999.66	3,940.73	16.47	17.13	-158.91	-742.41	-154.68	1,244.90	1,215.15	29.75	41.839	
4,300.00	4,260.51	4,094.62	4,034.07	16.89	17.56	-158.93	-759.40	-158.83	1,276.25	1,245.77	30.48	41.869	
4,400.00	4,359.38	4,189.58	4,127.40	17.30	17.99	-158.95	-776.39	-162.98	1,307.59	1,276.38	31.21	41.897	
4,500.00	4,458.26	4,284.54	4,220.74	17.71	18.41	-158.97	-793.37	-167.13	1,338.94	1,307.00	31.94	41.924	
4,600.00	4,557.13	4,379.50	4,314.07	18.13	18.84	-158.99	-810.36	-171.28	1,370.28	1,337.62	32.67	41.949	
4,700.00	4,656.01	4,474.46	4,407.41	18.54	19.27	-159.00	-827.35	-175.43	1,401.62	1,368.23	33.39	41.973	
4,800.00	4,754.89	4,569.42	4,500.74	18.96	19.70	-159.02	-844.34	-179.58	1,432.97	1,398.85	34.12	41.996	
4,900.00	4,853.76	4,664.38	4,594.08	19.37	20.13	-159.04	-861.32	-183.73	1,464.31	1,429.46	34.85	42.018	
5,000.00	4,952.64	4,759.34	4,687.42	19.78	20.57	-159.05	-878.31	-187.88	1,495.66	1,460.08	35.58	42.039	

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

Cathedral Energy Services

Anticollision Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well SAM 3D-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 3D-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 3D-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 3D-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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,200.00	7,410.00	7,331.00	7,331.00	96.45	8.23	90.00	6.28	4,047.01	1,490.47	1,426.72	63.75	23.380	
10,300.00	7,410.00	7,331.00	7,331.00	99.53	8.23	90.00	6.28	4,047.01	1,404.84	1,337.14	67.69	20.753	
10,400.00	7,410.00	7,331.00	7,331.00	102.62	8.23	90.00	6.28	4,047.01	1,321.22	1,249.07	72.15	18.311	
10,500.00	7,410.00	7,331.00	7,331.00	105.71	8.23	90.00	6.28	4,047.01	1,240.03	1,162.84	77.19	16.065	
10,600.00	7,410.00	7,331.00	7,331.00	108.81	8.23	90.00	6.28	4,047.01	1,161.78	1,078.93	82.85	14.022	
10,700.00	7,410.00	7,331.00	7,331.00	111.92	8.23	90.00	6.28	4,047.01	1,087.10	997.92	89.18	12.190	
10,800.00	7,410.00	7,331.00	7,331.00	115.03	8.23	90.00	6.28	4,047.01	1,016.78	920.60	96.18	10.572	
10,900.00	7,410.00	7,331.00	7,331.00	118.15	8.23	90.00	6.28	4,047.01	951.78	847.99	103.80	9.170	
11,000.00	7,410.00	7,331.00	7,331.00	121.27	8.23	90.00	6.28	4,047.01	893.28	781.38	111.90	7.983	
11,100.00	7,410.00	7,331.00	7,331.00	124.40	8.23	90.00	6.28	4,047.01	842.62	722.41	120.20	7.010	
11,200.00	7,410.00	7,331.00	7,331.00	127.53	8.23	90.00	6.28	4,047.01	801.28	673.00	128.28	6.246	
11,300.00	7,410.00	7,331.00	7,331.00	130.66	8.23	90.00	6.28	4,047.01	770.79	635.24	135.55	5.687	
11,400.00	7,410.00	7,331.00	7,331.00	133.80	8.23	90.00	6.28	4,047.01	752.44	611.10	141.34	5.324	
11,489.73	7,410.00	7,331.00	7,331.00	136.62	8.23	90.00	6.28	4,047.01	747.07	602.24	144.83	5.158 CC	
11,500.00	7,410.00	7,331.00	7,331.00	136.94	8.23	90.00	6.28	4,047.01	747.14	602.03	145.11	5.149 ES, SF	
11,600.00	7,410.00	7,331.00	7,331.00	140.08	8.23	90.00	6.28	4,047.01	755.16	608.61	146.55	5.153	
11,700.00	7,410.00	7,331.00	7,331.00	143.23	8.23	90.00	6.28	4,047.01	776.10	630.36	145.74	5.325	
11,800.00	7,410.00	7,331.00	7,331.00	146.38	8.23	90.00	6.28	4,047.01	808.94	665.90	143.04	5.655	
11,900.00	7,410.00	7,331.00	7,331.00	149.53	8.23	90.00	6.28	4,047.01	852.31	713.32	138.99	6.132	
11,950.31	7,410.00	7,331.00	7,331.00	151.11	8.23	90.00	6.28	4,047.01	877.64	741.02	136.62	6.424	

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

Cathedral Energy Services

Anticollision Report

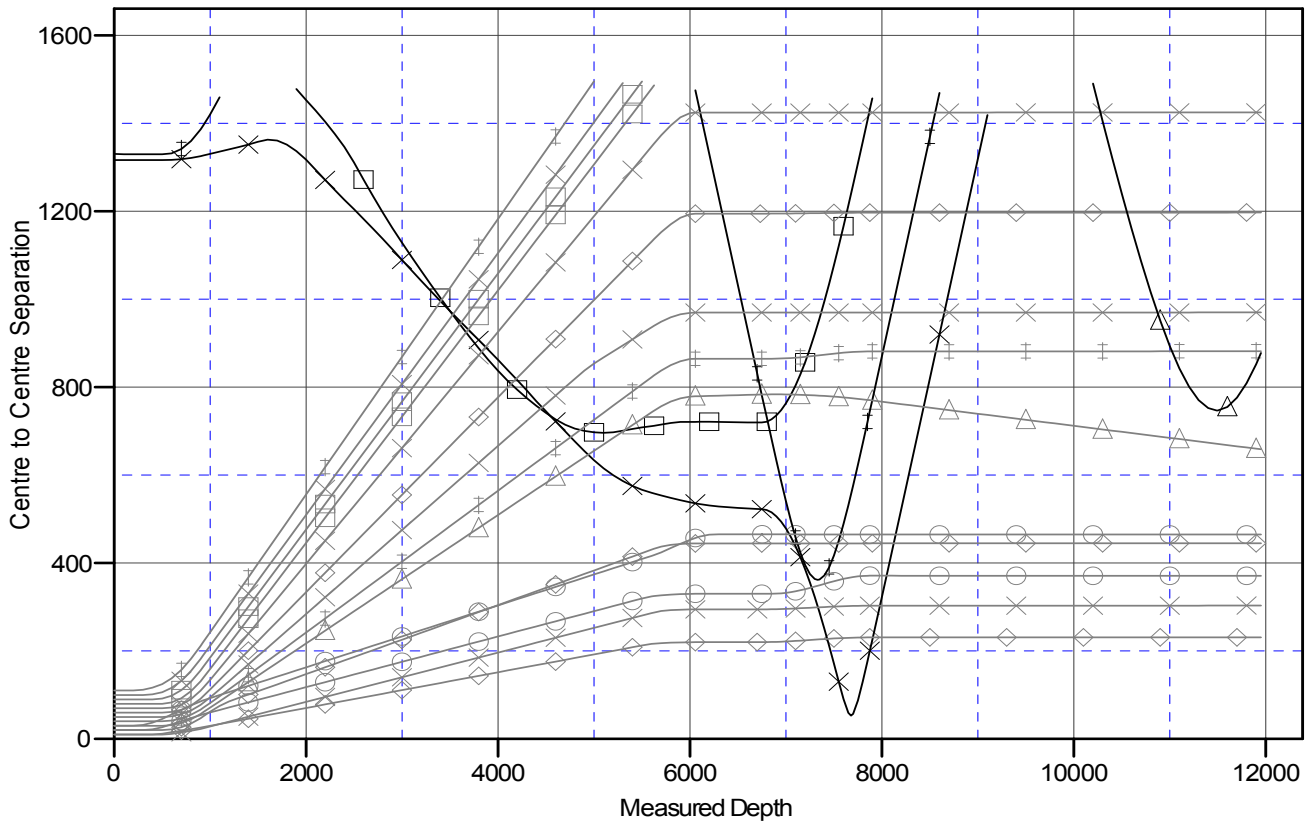
Company: Crestone Peak Resources
Project: DJ BASIN
Reference Site: S25-T1N-R66W (SAM)
Site Error: 0.00usft
Reference Well: SAM 3D-25H-M166
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well SAM 3D-25H-M166
TVD Reference: 23' KB @ 5109.00usft
MD Reference: 23' KB @ 5109.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
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 3D-25H-M166
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.50°

Ladder Plot



LEGEND

ere 2 (EXISTING), CPR WELL, SURVEYS V0	✕ SAM3E-25H-M166, OH, PLAN#1 V0	◻ SAM3L-25H-M166, OH, PLAN#1 V0
ere KE 26-361HN, GWOG WELL, GWOG WELL V0	◊ SAM3F-25H-M166, OH, PLAN#1 V0	◻ SAM3M-25H-M166, OH, PLAN#1 V0
nn (EXISTING), CPR WELL, NO SURVEYS V0	△ SAM3G-25H-M166, OH, PLAN#1 V0	✕ SAM3N-25H-M166, OH, PLAN#1 V0
nn 13-25 (EXISTING), CPR WELL, SURVEYS V0	✕ SAM3H-25H-M166, OH, PLAN#1 V0	✕ SAM3O-25H-M166, OH, PLAN#1 V0
M3A-25H-M166, OH, PLAN#1 V0	✕ SAM3I-25H-M166, OH, PLAN#1 V0	▲ Wenzel 1 (EXISTING), CPR WELL, NO SURV
M3B-25H-M166, OH, PLAN#1 V0	◊ SAM3J-25H-M166, OH, PLAN#1 V0	
M3C-25H-M166, OH, PLAN#1 V0	✕ SAM3K-25H-M166, OH, PLAN#1 V0	