

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Morgan Hills 1F-7H-A168
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

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

Site		S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)			
Site Position:		Northing:		1,265,216.88 usft	
From:		Easting:		3,126,133.02 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Lat/Long		0.00 usft		13-3/16 "	
				40.060530	
				-105.049370	
				0.29 °	

Well	Morgan Hills 1F-7H-A168					
Well Position	+N/-S	0.00 usft	Northing:	1,269,405.78 usft	Latitude:	40.071987
	+E/-W	0.00 usft	Easting:	3,129,114.36 usft	Longitude:	-105.038641
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,025.70 usft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/7/2014	8.57	66.64	52,606

<b>Design</b>	PLAN #4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	180.00

<b>Plan Sections</b>										
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	
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,093.96	6.44	299.47	1,092.60	17.79	-31.47	1.00	1.00	0.00	299.47	
6,823.29	6.44	299.47	6,785.79	333.94	-590.89	0.00	0.00	0.00	0.00	
7,987.68	89.89	179.00	7,539.18	-380.90	-651.57	8.00	7.17	-10.35	-120.33	
13,807.68	89.89	179.00	7,550.35	-6,200.00	-550.00	0.00	0.00	0.00	0.00	Morgan Hills 1F-7H T
16,807.68	89.89	179.00	7,556.11	-9,199.54	-497.64	0.00	0.00	0.00	0.00	
17,413.43	89.95	194.20	7,556.97	-9,799.51	-567.06	2.51	0.01	2.51	89.79	
17,443.72	89.95	194.20	7,557.00	-9,828.88	-574.50	0.00	0.00	0.00	0.00	MH 1F-7H-A168 PBH

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<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

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	
450.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	KOP @ 450'
500.00	0.50	299.47	500.00	0.11	-0.19	-0.11	1.00	1.00	
600.00	1.50	299.47	599.98	0.97	-1.71	-0.97	1.00	1.00	
700.00	2.50	299.47	699.92	2.68	-4.75	-2.68	1.00	1.00	
800.00	3.50	299.47	799.78	5.26	-9.30	-5.26	1.00	1.00	
900.00	4.50	299.47	899.54	8.69	-15.38	-8.69	1.00	1.00	
999.54	5.50	299.47	998.70	12.96	-22.93	-12.96	1.00	1.00	Fox Hills - BASE
1,000.00	5.50	299.47	999.16	12.98	-22.96	-12.98	1.00	1.00	
1,093.96	6.44	299.47	1,092.60	17.79	-31.47	-17.79	1.00	1.00	EOB; INC=6.44°
1,100.00	6.44	299.47	1,098.61	18.12	-32.06	-18.12	0.00	0.00	
1,200.00	6.44	299.47	1,197.98	23.64	-41.83	-23.64	0.00	0.00	
1,300.00	6.44	299.47	1,297.35	29.16	-51.59	-29.16	0.00	0.00	
1,400.00	6.44	299.47	1,396.71	34.67	-61.35	-34.67	0.00	0.00	
1,500.00	6.44	299.47	1,496.08	40.19	-71.12	-40.19	0.00	0.00	
1,600.00	6.44	299.47	1,595.45	45.71	-80.88	-45.71	0.00	0.00	
1,700.00	6.44	299.47	1,694.82	51.23	-90.65	-51.23	0.00	0.00	
1,800.00	6.44	299.47	1,794.19	56.75	-100.41	-56.75	0.00	0.00	
1,900.00	6.44	299.47	1,893.56	62.26	-110.17	-62.26	0.00	0.00	
2,000.00	6.44	299.47	1,992.93	67.78	-119.94	-67.78	0.00	0.00	
2,100.00	6.44	299.47	2,092.30	73.30	-129.70	-73.30	0.00	0.00	
2,200.00	6.44	299.47	2,191.67	78.82	-139.47	-78.82	0.00	0.00	
2,300.00	6.44	299.47	2,291.04	84.34	-149.23	-84.34	0.00	0.00	
2,400.00	6.44	299.47	2,390.40	89.86	-159.00	-89.86	0.00	0.00	
2,500.00	6.44	299.47	2,489.77	95.37	-168.76	-95.37	0.00	0.00	
2,600.00	6.44	299.47	2,589.14	100.89	-178.52	-100.89	0.00	0.00	
2,700.00	6.44	299.47	2,688.51	106.41	-188.29	-106.41	0.00	0.00	
2,800.00	6.44	299.47	2,787.88	111.93	-198.05	-111.93	0.00	0.00	
2,900.00	6.44	299.47	2,887.25	117.45	-207.82	-117.45	0.00	0.00	
3,000.00	6.44	299.47	2,986.62	122.96	-217.58	-122.96	0.00	0.00	
3,100.00	6.44	299.47	3,085.99	128.48	-227.34	-128.48	0.00	0.00	
3,200.00	6.44	299.47	3,185.36	134.00	-237.11	-134.00	0.00	0.00	
3,300.00	6.44	299.47	3,284.73	139.52	-246.87	-139.52	0.00	0.00	
3,400.00	6.44	299.47	3,384.10	145.04	-256.64	-145.04	0.00	0.00	
3,500.00	6.44	299.47	3,483.46	150.55	-266.40	-150.55	0.00	0.00	
3,600.00	6.44	299.47	3,582.83	156.07	-276.17	-156.07	0.00	0.00	
3,700.00	6.44	299.47	3,682.20	161.59	-285.93	-161.59	0.00	0.00	
3,800.00	6.44	299.47	3,781.57	167.11	-295.69	-167.11	0.00	0.00	
3,900.00	6.44	299.47	3,880.94	172.63	-305.46	-172.63	0.00	0.00	
4,000.00	6.44	299.47	3,980.31	178.15	-315.22	-178.15	0.00	0.00	
4,100.00	6.44	299.47	4,079.68	183.66	-324.99	-183.66	0.00	0.00	
4,200.00	6.44	299.47	4,179.05	189.18	-334.75	-189.18	0.00	0.00	
4,300.00	6.44	299.47	4,278.42	194.70	-344.51	-194.70	0.00	0.00	
4,400.00	6.44	299.47	4,377.79	200.22	-354.28	-200.22	0.00	0.00	
4,500.00	6.44	299.47	4,477.16	205.74	-364.04	-205.74	0.00	0.00	
4,508.60	6.44	299.47	4,485.70	206.21	-364.88	-206.21	0.00	0.00	Sussex
4,600.00	6.44	299.47	4,576.52	211.25	-373.81	-211.25	0.00	0.00	
4,700.00	6.44	299.47	4,675.89	216.77	-383.57	-216.77	0.00	0.00	

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<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,800.00	6.44	299.47	4,775.26	222.29	-393.34	-222.29	0.00	0.00	
4,900.00	6.44	299.47	4,874.63	227.81	-403.10	-227.81	0.00	0.00	
5,000.00	6.44	299.47	4,974.00	233.33	-412.86	-233.33	0.00	0.00	
5,079.20	6.44	299.47	5,052.70	237.70	-420.60	-237.70	0.00	0.00	Shannon
5,100.00	6.44	299.47	5,073.37	238.84	-422.63	-238.84	0.00	0.00	
5,200.00	6.44	299.47	5,172.74	244.36	-432.39	-244.36	0.00	0.00	
5,300.00	6.44	299.47	5,272.11	249.88	-442.16	-249.88	0.00	0.00	
5,400.00	6.44	299.47	5,371.48	255.40	-451.92	-255.40	0.00	0.00	
5,500.00	6.44	299.47	5,470.85	260.92	-461.68	-260.92	0.00	0.00	
5,600.00	6.44	299.47	5,570.21	266.44	-471.45	-266.44	0.00	0.00	
5,700.00	6.44	299.47	5,669.58	271.95	-481.21	-271.95	0.00	0.00	
5,800.00	6.44	299.47	5,768.95	277.47	-490.98	-277.47	0.00	0.00	
5,900.00	6.44	299.47	5,868.32	282.99	-500.74	-282.99	0.00	0.00	
6,000.00	6.44	299.47	5,967.69	288.51	-510.51	-288.51	0.00	0.00	
6,100.00	6.44	299.47	6,067.06	294.03	-520.27	-294.03	0.00	0.00	
6,200.00	6.44	299.47	6,166.43	299.54	-530.03	-299.54	0.00	0.00	
6,300.00	6.44	299.47	6,265.80	305.06	-539.80	-305.06	0.00	0.00	
6,400.00	6.44	299.47	6,365.17	310.58	-549.56	-310.58	0.00	0.00	
6,500.00	6.44	299.47	6,464.54	316.10	-559.33	-316.10	0.00	0.00	
6,599.79	6.44	299.47	6,563.70	321.61	-569.07	-321.61	0.00	0.00	Teepee Buttes (*if present)
6,600.00	6.44	299.47	6,563.91	321.62	-569.09	-321.62	0.00	0.00	
6,700.00	6.44	299.47	6,663.27	327.14	-578.85	-327.14	0.00	0.00	
6,800.00	6.44	299.47	6,762.64	332.65	-588.62	-332.65	0.00	0.00	
6,823.29	6.44	299.47	6,785.79	333.94	-590.89	-333.94	0.00	0.00	START BUILD/TURN
6,900.00	6.25	241.57	6,862.10	334.07	-598.32	-334.07	8.00	-0.24	
7,000.00	12.20	205.73	6,960.83	321.94	-607.71	-321.94	8.00	5.94	
7,100.00	19.65	194.80	7,056.95	296.13	-616.60	-296.13	8.00	7.45	
7,200.00	27.40	189.80	7,148.58	257.13	-624.83	-257.13	8.00	7.75	
7,300.00	35.26	186.90	7,233.94	205.72	-632.23	-205.72	8.00	7.86	
7,400.00	43.16	184.94	7,311.36	142.89	-638.65	-142.89	8.00	7.90	
7,461.99	48.08	184.00	7,354.70	98.73	-642.09	-98.73	8.00	7.93	Sharon Springs
7,500.00	51.09	183.49	7,379.34	69.85	-643.98	-69.85	8.00	7.94	
7,555.85	55.53	182.82	7,412.70	25.15	-646.43	-25.15	8.00	7.94	Niobrara
7,600.00	59.04	182.33	7,436.56	-11.95	-648.10	11.95	8.00	7.95	
7,700.00	66.99	181.36	7,481.90	-100.95	-650.94	100.95	8.00	7.95	
7,711.75	67.92	181.25	7,486.41	-111.80	-651.19	111.80	8.00	7.96	TPZ
7,800.00	74.95	180.49	7,514.48	-195.39	-652.44	195.39	8.00	7.96	
7,839.54	78.10	180.16	7,523.70	-233.84	-652.66	233.84	8.00	7.96	B Chalk
7,900.00	82.91	179.68	7,533.67	-293.45	-652.58	293.45	8.00	7.96	
7,987.68	89.89	179.00	7,539.18	-380.90	-651.57	380.90	8.00	7.96	LP @ 7539' TVD; 89.9°
8,000.00	89.89	179.00	7,539.20	-393.22	-651.36	393.22	0.00	0.00	
8,100.00	89.89	179.00	7,539.39	-493.20	-649.61	493.20	0.00	0.00	
8,200.00	89.89	179.00	7,539.58	-593.19	-647.87	593.19	0.00	0.00	
8,300.00	89.89	179.00	7,539.78	-693.17	-646.12	693.17	0.00	0.00	
8,400.00	89.89	179.00	7,539.97	-793.15	-644.38	793.15	0.00	0.00	
8,500.00	89.89	179.00	7,540.16	-893.14	-642.63	893.14	0.00	0.00	
8,600.00	89.89	179.00	7,540.35	-993.12	-640.89	993.12	0.00	0.00	
8,700.00	89.89	179.00	7,540.54	-1,093.11	-639.14	1,093.11	0.00	0.00	
8,800.00	89.89	179.00	7,540.74	-1,193.09	-637.40	1,193.09	0.00	0.00	
8,900.00	89.89	179.00	7,540.93	-1,293.08	-635.65	1,293.08	0.00	0.00	
9,000.00	89.89	179.00	7,541.12	-1,393.06	-633.91	1,393.06	0.00	0.00	
9,100.00	89.89	179.00	7,541.31	-1,493.05	-632.16	1,493.05	0.00	0.00	

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<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

### 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
9,200.00	89.89	179.00	7,541.50	-1,593.03	-630.41	1,593.03	0.00	0.00	
9,300.00	89.89	179.00	7,541.70	-1,693.02	-628.67	1,693.02	0.00	0.00	
9,400.00	89.89	179.00	7,541.89	-1,793.00	-626.92	1,793.00	0.00	0.00	
9,500.00	89.89	179.00	7,542.08	-1,892.99	-625.18	1,892.99	0.00	0.00	
9,600.00	89.89	179.00	7,542.27	-1,992.97	-623.43	1,992.97	0.00	0.00	
9,700.00	89.89	179.00	7,542.46	-2,092.95	-621.69	2,092.95	0.00	0.00	
9,800.00	89.89	179.00	7,542.66	-2,192.94	-619.94	2,192.94	0.00	0.00	
9,900.00	89.89	179.00	7,542.85	-2,292.92	-618.20	2,292.92	0.00	0.00	
10,000.00	89.89	179.00	7,543.04	-2,392.91	-616.45	2,392.91	0.00	0.00	
10,100.00	89.89	179.00	7,543.23	-2,492.89	-614.71	2,492.89	0.00	0.00	
10,200.00	89.89	179.00	7,543.42	-2,592.88	-612.96	2,592.88	0.00	0.00	
10,300.00	89.89	179.00	7,543.62	-2,692.86	-611.22	2,692.86	0.00	0.00	
10,400.00	89.89	179.00	7,543.81	-2,792.85	-609.47	2,792.85	0.00	0.00	
10,500.00	89.89	179.00	7,544.00	-2,892.83	-607.73	2,892.83	0.00	0.00	
10,600.00	89.89	179.00	7,544.19	-2,992.82	-605.98	2,992.82	0.00	0.00	
10,700.00	89.89	179.00	7,544.38	-3,092.80	-604.24	3,092.80	0.00	0.00	
10,800.00	89.89	179.00	7,544.58	-3,192.79	-602.49	3,192.79	0.00	0.00	
10,900.00	89.89	179.00	7,544.77	-3,292.77	-600.75	3,292.77	0.00	0.00	
11,000.00	89.89	179.00	7,544.96	-3,392.75	-599.00	3,392.75	0.00	0.00	
11,100.00	89.89	179.00	7,545.15	-3,492.74	-597.26	3,492.74	0.00	0.00	
11,200.00	89.89	179.00	7,545.34	-3,592.72	-595.51	3,592.72	0.00	0.00	
11,300.00	89.89	179.00	7,545.54	-3,692.71	-593.76	3,692.71	0.00	0.00	
11,400.00	89.89	179.00	7,545.73	-3,792.69	-592.02	3,792.69	0.00	0.00	
11,500.00	89.89	179.00	7,545.92	-3,892.68	-590.27	3,892.68	0.00	0.00	
11,600.00	89.89	179.00	7,546.11	-3,992.66	-588.53	3,992.66	0.00	0.00	
11,700.00	89.89	179.00	7,546.30	-4,092.65	-586.78	4,092.65	0.00	0.00	
11,800.00	89.89	179.00	7,546.50	-4,192.63	-585.04	4,192.63	0.00	0.00	
11,900.00	89.89	179.00	7,546.69	-4,292.62	-583.29	4,292.62	0.00	0.00	
12,000.00	89.89	179.00	7,546.88	-4,392.60	-581.55	4,392.60	0.00	0.00	
12,100.00	89.89	179.00	7,547.07	-4,492.58	-579.80	4,492.58	0.00	0.00	
12,200.00	89.89	179.00	7,547.26	-4,592.57	-578.06	4,592.57	0.00	0.00	
12,300.00	89.89	179.00	7,547.46	-4,692.55	-576.31	4,692.55	0.00	0.00	
12,400.00	89.89	179.00	7,547.65	-4,792.54	-574.57	4,792.54	0.00	0.00	
12,500.00	89.89	179.00	7,547.84	-4,892.52	-572.82	4,892.52	0.00	0.00	
12,600.00	89.89	179.00	7,548.03	-4,992.51	-571.08	4,992.51	0.00	0.00	
12,700.00	89.89	179.00	7,548.22	-5,092.49	-569.33	5,092.49	0.00	0.00	
12,800.00	89.89	179.00	7,548.42	-5,192.48	-567.59	5,192.48	0.00	0.00	
12,900.00	89.89	179.00	7,548.61	-5,292.46	-565.84	5,292.46	0.00	0.00	
13,000.00	89.89	179.00	7,548.80	-5,392.45	-564.10	5,392.45	0.00	0.00	
13,100.00	89.89	179.00	7,548.99	-5,492.43	-562.35	5,492.43	0.00	0.00	
13,200.00	89.89	179.00	7,549.18	-5,592.42	-560.61	5,592.42	0.00	0.00	
13,300.00	89.89	179.00	7,549.38	-5,692.40	-558.86	5,692.40	0.00	0.00	
13,400.00	89.89	179.00	7,549.57	-5,792.38	-557.11	5,792.38	0.00	0.00	
13,469.27	89.89	179.00	7,549.70	-5,861.65	-555.91	5,861.65	0.00	0.00	B Marl
13,500.00	89.89	179.00	7,549.76	-5,892.37	-555.37	5,892.37	0.00	0.00	
13,600.00	89.89	179.00	7,549.95	-5,992.35	-553.62	5,992.35	0.00	0.00	
13,700.00	89.89	179.00	7,550.14	-6,092.34	-551.88	6,092.34	0.00	0.00	
13,800.00	89.89	179.00	7,550.33	-6,192.32	-550.13	6,192.32	0.00	0.00	
13,807.68	89.89	179.00	7,550.35	-6,200.00	-550.00	6,200.00	0.00	0.00	
13,900.00	89.89	179.00	7,550.53	-6,292.31	-548.39	6,292.31	0.00	0.00	
14,000.00	89.89	179.00	7,550.72	-6,392.29	-546.64	6,392.29	0.00	0.00	
14,100.00	89.89	179.00	7,550.91	-6,492.28	-544.90	6,492.28	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Morgan Hills 1F-7H-A168
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

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
14,200.00	89.89	179.00	7,551.10	-6,592.26	-543.15	6,592.26	0.00	0.00	
14,300.00	89.89	179.00	7,551.29	-6,692.25	-541.41	6,692.25	0.00	0.00	
14,400.00	89.89	179.00	7,551.49	-6,792.23	-539.66	6,792.23	0.00	0.00	
14,500.00	89.89	179.00	7,551.68	-6,892.21	-537.92	6,892.21	0.00	0.00	
14,600.00	89.89	179.00	7,551.87	-6,992.20	-536.17	6,992.20	0.00	0.00	
14,700.00	89.89	179.00	7,552.06	-7,092.18	-534.43	7,092.18	0.00	0.00	
14,800.00	89.89	179.00	7,552.25	-7,192.17	-532.68	7,192.17	0.00	0.00	
14,900.00	89.89	179.00	7,552.45	-7,292.15	-530.94	7,292.15	0.00	0.00	
15,000.00	89.89	179.00	7,552.64	-7,392.14	-529.19	7,392.14	0.00	0.00	
15,100.00	89.89	179.00	7,552.83	-7,492.12	-527.45	7,492.12	0.00	0.00	
15,200.00	89.89	179.00	7,553.02	-7,592.11	-525.70	7,592.11	0.00	0.00	
15,300.00	89.89	179.00	7,553.21	-7,692.09	-523.96	7,692.09	0.00	0.00	
15,400.00	89.89	179.00	7,553.41	-7,792.08	-522.21	7,792.08	0.00	0.00	
15,500.00	89.89	179.00	7,553.60	-7,892.06	-520.46	7,892.06	0.00	0.00	
15,600.00	89.89	179.00	7,553.79	-7,992.05	-518.72	7,992.05	0.00	0.00	
15,700.00	89.89	179.00	7,553.98	-8,092.03	-516.97	8,092.03	0.00	0.00	
15,800.00	89.89	179.00	7,554.17	-8,192.01	-515.23	8,192.01	0.00	0.00	
15,900.00	89.89	179.00	7,554.37	-8,292.00	-513.48	8,292.00	0.00	0.00	
16,000.00	89.89	179.00	7,554.56	-8,391.98	-511.74	8,391.98	0.00	0.00	
16,100.00	89.89	179.00	7,554.75	-8,491.97	-509.99	8,491.97	0.00	0.00	
16,200.00	89.89	179.00	7,554.94	-8,591.95	-508.25	8,591.95	0.00	0.00	
16,300.00	89.89	179.00	7,555.13	-8,691.94	-506.50	8,691.94	0.00	0.00	
16,400.00	89.89	179.00	7,555.33	-8,791.92	-504.76	8,791.92	0.00	0.00	
16,500.00	89.89	179.00	7,555.52	-8,891.91	-503.01	8,891.91	0.00	0.00	
16,600.00	89.89	179.00	7,555.71	-8,991.89	-501.27	8,991.89	0.00	0.00	
16,700.00	89.89	179.00	7,555.90	-9,091.88	-499.52	9,091.88	0.00	0.00	
16,800.00	89.89	179.00	7,556.09	-9,191.86	-497.78	9,191.86	0.00	0.00	
16,807.68	89.89	179.00	7,556.11	-9,199.54	-497.64	9,199.54	0.00	0.00	START TURN
16,900.00	89.90	181.32	7,556.28	-9,291.85	-497.90	9,291.85	2.51	0.01	
17,000.00	89.91	183.83	7,556.45	-9,391.74	-502.38	9,391.74	2.51	0.01	
17,100.00	89.92	186.34	7,556.60	-9,491.34	-511.24	9,491.34	2.51	0.01	
17,200.00	89.93	188.84	7,556.74	-9,590.46	-524.45	9,590.46	2.51	0.01	
17,300.00	89.94	191.35	7,556.86	-9,688.90	-541.98	9,688.90	2.51	0.01	
17,400.00	89.95	193.86	7,556.96	-9,786.48	-563.81	9,786.48	2.51	0.01	
17,413.43	89.95	194.20	7,556.97	-9,799.51	-567.07	9,799.51	2.51	0.01	END OF TURN
17,443.72	89.95	194.20	7,557.00	-9,828.87	-574.50	9,828.87	0.00	0.00	TD at 17443.72

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Morgan Hills 1F-7H-A168
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5048.70usft (ENS 140)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Morgan Hills 1F-7H-A168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	PLAN #4		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
MH 1F-7H-A168 PBHL	0.00	0.00	7,557.00	-9,828.88	-574.50	1,259,574.04	3,128,591.01	40.045005	-105.040693
- plan hits target center									
- Point									
Morgan Hills 1F-7H TGT	0.00	0.00	7,550.35	-6,200.00	-550.00	1,263,203.00	3,128,596.63	40.054967	-105.040606
- plan hits target center									
- Point									
Interp @ 7555.76 (Morg;	0.00	0.00	7,555.76	-9,150.00	-576.87	1,260,252.90	3,128,585.11	40.046869	-105.040702
- plan misses target center by 78.35usft at 16756.77usft MD (7556.01 TVD, -9148.63 N, -498.53 E)									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
999.54	998.70	Fox Hills - BASE				
4,508.60	4,485.70	Sussex				
5,079.20	5,052.70	Shannon				
6,599.79	6,563.70	Teepee Buttes (*if present)				
7,461.99	7,354.70	Sharon Springs				
7,555.85	7,412.70	Niobrara				
7,839.54	7,523.70	B Chalk				
13,469.27	7,549.70	B Marl				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
450.00	450.00	0.00	0.00	KOP @ 450'	
1,093.96	1,092.60	17.79	-31.47	EOB; INC=6.44°	
6,823.29	6,785.79	333.94	-590.89	START BUILD/TURN	
7,711.75	7,486.41	-9,828.88	-574.50	TPZ	
7,987.68	7,539.18	-380.90	-651.57	LP @ 7539' TVD; 89.9°	
16,807.68	7,556.11	-6,200.00	-550.00	START TURN	
17,413.43	7,556.97	-9,199.54	-497.64	END OF TURN	
17,443.72	7,557.00	-9,799.51	-567.06	TD at 17443.72	