

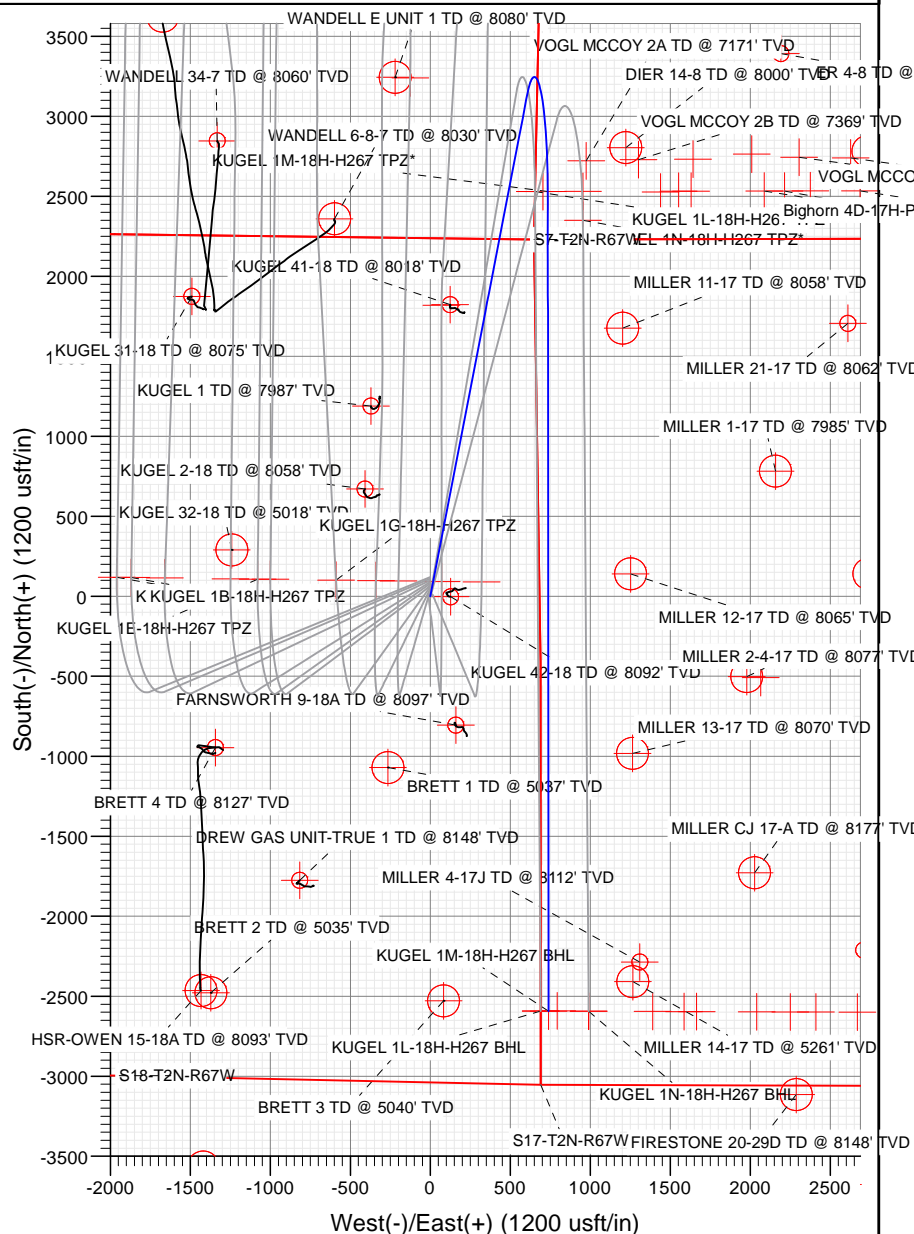
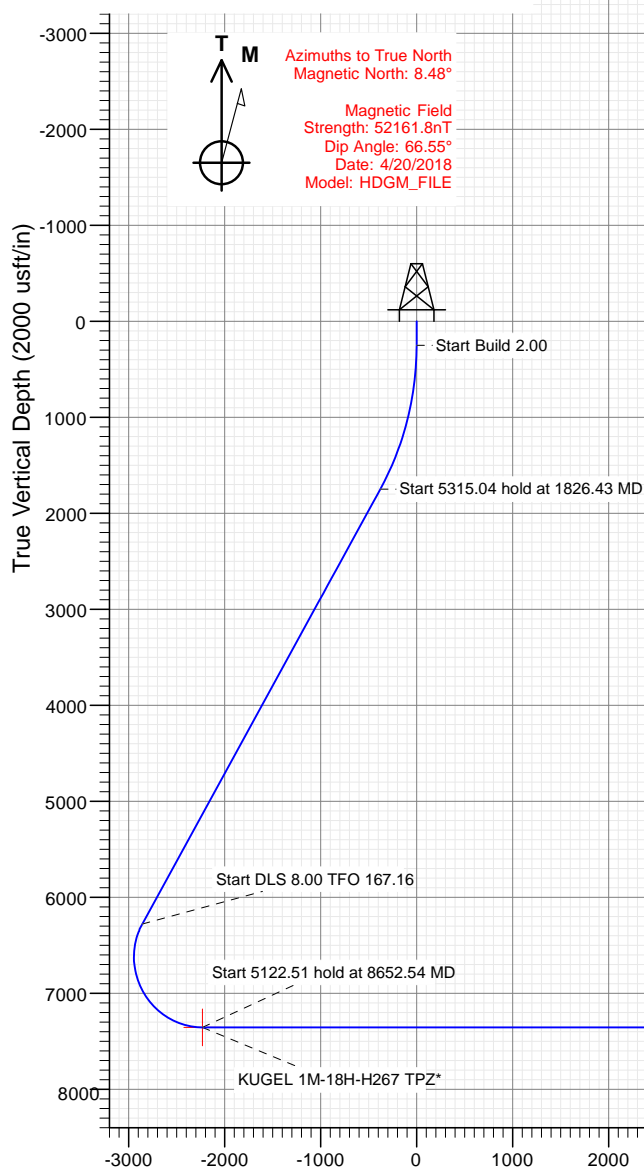


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1826.43	31.53	10.94	1748.07	415.22	80.23	2.00	10.94	-377.32	
4	7141.47	31.53	10.94	6278.50	3144.10	607.54	0.00	0.00	-2857.08	
5	8652.54	90.00	179.94	7355.00	2529.59	734.09	8.00	167.16	-2231.42	KUGEL 1M-18H-H267 TPZ*
6	13775.05	90.00	179.94	7355.00	-2592.91	739.18	0.00	0.00	2696.21	KUGEL 1M-18H-H267 BH*

Type TD	Target No Target (Freehand)	Azimuth 164.09	Origin Type Slot	N/S 0.00	E/W 0.00	From TVD 0.00
Name	TVD	+N/-S		Latitude	Longitude	
KUGEL 1M-18H-H267 BHL	7355.00	-2592.91	739.18	40.132378	-104.923813	
KUGEL 1M-18H-H267 TP2*	7355.00	2592.99	739.18	40.146440	-104.923831	

Project: DJ BASIN
Site: S18-T2N-R67W (KUGEL)
Well: KUGEL 1M-18H-H267
Wellbore: OH
Design: PLAN #2 (6.11)



Vertical Section at 164.09° (2000 usft/in)



CATHEDRAL

WELL DETAILS: KUGEL 1M-18H-H267

4953.00						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	1294180.52	3160350.45	40.139496	-104.926457	KUGEL 1M



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1M-18H-H267 - Slot KUGEL 1M
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4976.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4976.00usft
Site:	S18-T2N-R67W (KUGEL)	North Reference:	True
Well:	KUGEL 1M-18H-H267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 (6.11)		

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		S18-T2N-R67W (KUGEL)			
Site Position:		Northing:	1,294,180.28 usft	Latitude:	40.139495
From:	Lat/Long	Easting:	3,160,365.72 usft	Longitude:	-104.926402
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	KUGEL 1M-18H-H267 - Slot KUGEL 1M					
Well Position	+N/-S	0.00 usft	Northing:	1,294,180.52 usft	Latitude:	40.139496
	+E/-W	0.00 usft	Easting:	3,160,350.45 usft	Longitude:	-104.926457
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,953.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM_FILE	4/20/2018	8.48	66.55	52,161.80000000

Design	PLAN #2 (6.11)			
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	164.09

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,826.43	31.53	10.94	1,748.07	415.22	80.23	2.00	2.00	0.00	10.94	
7,141.47	31.53	10.94	6,278.50	3,144.10	607.54	0.00	0.00	0.00	0.00	
8,652.54	90.00	179.94	7,355.00	2,529.59	734.09	8.00	3.87	11.18	167.16	KUGEL 1M-18H-H267
13,775.05	90.00	179.94	7,355.00	-2,592.91	739.18	0.00	0.00	0.00	0.00	KUGEL 1M-18H-H267

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1M-18H-H267 - Slot KUGEL 1M
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4976.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4976.00usft
Site:	S18-T2N-R67W (KUGEL)	North Reference:	True
Well:	KUGEL 1M-18H-H267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 (6.11)		

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
300.00	1.00	10.94	300.00	0.43	0.08	-0.39	2.00	2.00	
400.00	3.00	10.94	399.93	3.85	0.74	-3.50	2.00	2.00	
500.00	5.00	10.94	499.68	10.70	2.07	-9.73	2.00	2.00	
600.00	7.00	10.94	599.13	20.97	4.05	-19.05	2.00	2.00	
700.00	9.00	10.94	698.15	34.63	6.69	-31.47	2.00	2.00	
800.00	11.00	10.94	796.63	51.68	9.99	-46.96	2.00	2.00	
900.00	13.00	10.94	894.44	72.09	13.93	-65.51	2.00	2.00	
1,000.00	15.00	10.94	991.46	95.84	18.52	-87.09	2.00	2.00	
1,100.00	17.00	10.94	1,087.58	122.90	23.75	-111.68	2.00	2.00	
1,200.00	19.00	10.94	1,182.68	153.24	29.61	-139.25	2.00	2.00	
1,300.00	21.00	10.94	1,276.65	186.82	36.10	-169.77	2.00	2.00	
1,400.00	23.00	10.94	1,369.36	223.60	43.21	-203.19	2.00	2.00	
1,500.00	25.00	10.94	1,460.71	263.53	50.92	-239.48	2.00	2.00	
1,600.00	27.00	10.94	1,550.59	306.57	59.24	-278.59	2.00	2.00	
1,700.00	29.00	10.94	1,638.88	352.66	68.15	-320.47	2.00	2.00	
1,800.00	31.00	10.94	1,725.48	401.75	77.63	-365.08	2.00	2.00	
1,826.43	31.53	10.94	1,748.07	415.22	80.23	-377.32	2.00	2.00	
1,900.00	31.53	10.94	1,810.78	452.99	87.53	-411.64	0.00	0.00	
2,000.00	31.53	10.94	1,896.01	504.34	97.45	-458.30	0.00	0.00	
2,100.00	31.53	10.94	1,981.25	555.68	107.37	-504.95	0.00	0.00	
2,200.00	31.53	10.94	2,066.49	607.02	117.30	-551.61	0.00	0.00	
2,300.00	31.53	10.94	2,151.73	658.36	127.22	-598.26	0.00	0.00	
2,400.00	31.53	10.94	2,236.97	709.71	137.14	-644.92	0.00	0.00	
2,500.00	31.53	10.94	2,322.20	761.05	147.06	-691.57	0.00	0.00	
2,600.00	31.53	10.94	2,407.44	812.39	156.98	-738.23	0.00	0.00	
2,700.00	31.53	10.94	2,492.68	863.74	166.90	-784.89	0.00	0.00	
2,800.00	31.53	10.94	2,577.92	915.08	176.82	-831.54	0.00	0.00	
2,900.00	31.53	10.94	2,663.16	966.42	186.74	-878.20	0.00	0.00	
3,000.00	31.53	10.94	2,748.39	1,017.76	196.66	-924.85	0.00	0.00	
3,100.00	31.53	10.94	2,833.63	1,069.11	206.58	-971.51	0.00	0.00	
3,200.00	31.53	10.94	2,918.87	1,120.45	216.50	-1,018.16	0.00	0.00	
3,300.00	31.53	10.94	3,004.11	1,171.79	226.43	-1,064.82	0.00	0.00	
3,400.00	31.53	10.94	3,089.35	1,223.13	236.35	-1,111.47	0.00	0.00	
3,500.00	31.53	10.94	3,174.58	1,274.48	246.27	-1,158.13	0.00	0.00	
3,600.00	31.53	10.94	3,259.82	1,325.82	256.19	-1,204.79	0.00	0.00	
3,700.00	31.53	10.94	3,345.06	1,377.16	266.11	-1,251.44	0.00	0.00	
3,800.00	31.53	10.94	3,430.30	1,428.50	276.03	-1,298.10	0.00	0.00	
3,900.00	31.53	10.94	3,515.54	1,479.85	285.95	-1,344.75	0.00	0.00	
4,000.00	31.53	10.94	3,600.77	1,531.19	295.87	-1,391.41	0.00	0.00	
4,100.00	31.53	10.94	3,686.01	1,582.53	305.79	-1,438.06	0.00	0.00	
4,200.00	31.53	10.94	3,771.25	1,633.87	315.71	-1,484.72	0.00	0.00	
4,300.00	31.53	10.94	3,856.49	1,685.22	325.64	-1,531.37	0.00	0.00	
4,400.00	31.53	10.94	3,941.73	1,736.56	335.56	-1,578.03	0.00	0.00	
4,500.00	31.53	10.94	4,026.96	1,787.90	345.48	-1,624.69	0.00	0.00	
4,600.00	31.53	10.94	4,112.20	1,839.25	355.40	-1,671.34	0.00	0.00	
4,700.00	31.53	10.94	4,197.44	1,890.59	365.32	-1,718.00	0.00	0.00	
4,800.00	31.53	10.94	4,282.68	1,941.93	375.24	-1,764.65	0.00	0.00	
4,900.00	31.53	10.94	4,367.92	1,993.27	385.16	-1,811.31	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1M-18H-H267 - Slot KUGEL 1M
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4976.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4976.00usft
Site:	S18-T2N-R67W (KUGEL)	North Reference:	True
Well:	KUGEL 1M-18H-H267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 (6.11)		

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
5,000.00	31.53	10.94	4,453.15	2,044.62	395.08	-1,857.96	0.00	0.00	
5,100.00	31.53	10.94	4,538.39	2,095.96	405.00	-1,904.62	0.00	0.00	
5,200.00	31.53	10.94	4,623.63	2,147.30	414.92	-1,951.27	0.00	0.00	
5,300.00	31.53	10.94	4,708.87	2,198.64	424.84	-1,997.93	0.00	0.00	
5,400.00	31.53	10.94	4,794.11	2,249.99	434.77	-2,044.59	0.00	0.00	
5,500.00	31.53	10.94	4,879.34	2,301.33	444.69	-2,091.24	0.00	0.00	
5,600.00	31.53	10.94	4,964.58	2,352.67	454.61	-2,137.90	0.00	0.00	
5,700.00	31.53	10.94	5,049.82	2,404.01	464.53	-2,184.55	0.00	0.00	
5,800.00	31.53	10.94	5,135.06	2,455.36	474.45	-2,231.21	0.00	0.00	
5,900.00	31.53	10.94	5,220.29	2,506.70	484.37	-2,277.86	0.00	0.00	
6,000.00	31.53	10.94	5,305.53	2,558.04	494.29	-2,324.52	0.00	0.00	
6,100.00	31.53	10.94	5,390.77	2,609.38	504.21	-2,371.17	0.00	0.00	
6,200.00	31.53	10.94	5,476.01	2,660.73	514.13	-2,417.83	0.00	0.00	
6,300.00	31.53	10.94	5,561.25	2,712.07	524.05	-2,464.49	0.00	0.00	
6,400.00	31.53	10.94	5,646.48	2,763.41	533.98	-2,511.14	0.00	0.00	
6,500.00	31.53	10.94	5,731.72	2,814.76	543.90	-2,557.80	0.00	0.00	
6,600.00	31.53	10.94	5,816.96	2,866.10	553.82	-2,604.45	0.00	0.00	
6,700.00	31.53	10.94	5,902.20	2,917.44	563.74	-2,651.11	0.00	0.00	
6,800.00	31.53	10.94	5,987.44	2,968.78	573.66	-2,697.76	0.00	0.00	
6,900.00	31.53	10.94	6,072.67	3,020.13	583.58	-2,744.42	0.00	0.00	
7,000.00	31.53	10.94	6,157.91	3,071.47	593.50	-2,791.07	0.00	0.00	
7,100.00	31.53	10.94	6,243.15	3,122.81	603.42	-2,837.73	0.00	0.00	
7,141.47	31.53	10.94	6,278.50	3,144.10	607.54	-2,857.08	0.00	0.00	
7,200.00	26.98	13.23	6,329.55	3,172.07	613.48	-2,882.34	8.00	-7.77	
7,300.00	19.35	19.40	6,421.43	3,209.84	624.19	-2,915.73	8.00	-7.63	
7,400.00	12.17	32.79	6,517.64	3,234.37	635.42	-2,936.24	8.00	-7.18	
7,500.00	7.03	71.62	6,616.30	3,245.18	646.96	-2,943.47	8.00	-5.15	
7,600.00	8.83	131.08	6,715.50	3,242.06	658.56	-2,937.29	8.00	1.80	
7,700.00	15.30	154.62	6,813.29	3,225.07	670.02	-2,917.81	8.00	6.47	
7,800.00	22.75	163.74	6,907.78	3,194.54	681.11	-2,885.41	8.00	7.45	
7,900.00	30.47	168.47	6,997.14	3,151.07	691.60	-2,840.73	8.00	7.72	
8,000.00	38.29	171.42	7,079.61	3,095.50	701.31	-2,784.63	8.00	7.83	
8,100.00	46.17	173.50	7,153.59	3,028.91	710.03	-2,718.20	8.00	7.88	
8,200.00	54.08	175.08	7,217.66	2,952.60	717.60	-2,642.74	8.00	7.91	
8,300.00	62.00	176.38	7,270.54	2,868.06	723.87	-2,559.72	8.00	7.92	
8,400.00	69.94	177.49	7,311.23	2,776.93	728.72	-2,470.75	8.00	7.93	
8,500.00	77.88	178.50	7,338.93	2,680.99	732.06	-2,377.57	8.00	7.94	
8,600.00	85.82	179.45	7,353.09	2,582.09	733.81	-2,281.98	8.00	7.94	
8,652.54	90.00	179.94	7,355.00	2,529.59	734.09	-2,231.42	8.00	7.95	KUGEL 1M-18H-H267 TPZ*
8,700.00	90.00	179.94	7,355.00	2,482.14	734.13	-2,185.77	0.00	0.00	
8,800.00	90.00	179.94	7,355.00	2,382.14	734.23	-2,089.57	0.00	0.00	
8,900.00	90.00	179.94	7,355.00	2,282.14	734.33	-1,993.38	0.00	0.00	
9,000.00	90.00	179.94	7,355.00	2,182.14	734.43	-1,897.18	0.00	0.00	
9,100.00	90.00	179.94	7,355.00	2,082.14	734.53	-1,800.99	0.00	0.00	
9,200.00	90.00	179.94	7,355.00	1,982.14	734.63	-1,704.79	0.00	0.00	
9,300.00	90.00	179.94	7,355.00	1,882.14	734.73	-1,608.59	0.00	0.00	
9,400.00	90.00	179.94	7,355.00	1,782.14	734.83	-1,512.40	0.00	0.00	
9,500.00	90.00	179.94	7,355.00	1,682.14	734.93	-1,416.20	0.00	0.00	
9,600.00	90.00	179.94	7,355.00	1,582.14	735.03	-1,320.01	0.00	0.00	
9,700.00	90.00	179.94	7,355.00	1,482.14	735.13	-1,223.81	0.00	0.00	
9,800.00	90.00	179.94	7,355.00	1,382.14	735.23	-1,127.62	0.00	0.00	
9,900.00	90.00	179.94	7,355.00	1,282.14	735.33	-1,031.42	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1M-18H-H267 - Slot KUGEL 1M
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4976.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4976.00usft
Site:	S18-T2N-R67W (KUGEL)	North Reference:	True
Well:	KUGEL 1M-18H-H267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 (6.11)		

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
10,000.00	90.00	179.94	7,355.00	1,182.14	735.43	-935.22	0.00	0.00	
10,100.00	90.00	179.94	7,355.00	1,082.14	735.53	-839.03	0.00	0.00	
10,200.00	90.00	179.94	7,355.00	982.14	735.63	-742.83	0.00	0.00	
10,300.00	90.00	179.94	7,355.00	882.14	735.73	-646.64	0.00	0.00	
10,400.00	90.00	179.94	7,355.00	782.14	735.83	-550.44	0.00	0.00	
10,500.00	90.00	179.94	7,355.00	682.14	735.93	-454.25	0.00	0.00	
10,600.00	90.00	179.94	7,355.00	582.14	736.02	-358.05	0.00	0.00	
10,700.00	90.00	179.94	7,355.00	482.14	736.12	-261.85	0.00	0.00	
10,800.00	90.00	179.94	7,355.00	382.14	736.22	-165.66	0.00	0.00	
10,900.00	90.00	179.94	7,355.00	282.14	736.32	-69.46	0.00	0.00	
11,000.00	90.00	179.94	7,355.00	182.14	736.42	26.73	0.00	0.00	
11,100.00	90.00	179.94	7,355.00	82.14	736.52	122.93	0.00	0.00	
11,200.00	90.00	179.94	7,355.00	-17.86	736.62	219.12	0.00	0.00	
11,300.00	90.00	179.94	7,355.00	-117.86	736.72	315.32	0.00	0.00	
11,400.00	90.00	179.94	7,355.00	-217.86	736.82	411.52	0.00	0.00	
11,500.00	90.00	179.94	7,355.00	-317.86	736.92	507.71	0.00	0.00	
11,600.00	90.00	179.94	7,355.00	-417.86	737.02	603.91	0.00	0.00	
11,700.00	90.00	179.94	7,355.00	-517.86	737.12	700.10	0.00	0.00	
11,800.00	90.00	179.94	7,355.00	-617.86	737.22	796.30	0.00	0.00	
11,900.00	90.00	179.94	7,355.00	-717.86	737.32	892.49	0.00	0.00	
12,000.00	90.00	179.94	7,355.00	-817.86	737.42	988.69	0.00	0.00	
12,100.00	90.00	179.94	7,355.00	-917.86	737.52	1,084.89	0.00	0.00	
12,200.00	90.00	179.94	7,355.00	-1,017.86	737.62	1,181.08	0.00	0.00	
12,300.00	90.00	179.94	7,355.00	-1,117.86	737.72	1,277.28	0.00	0.00	
12,400.00	90.00	179.94	7,355.00	-1,217.86	737.82	1,373.47	0.00	0.00	
12,500.00	90.00	179.94	7,355.00	-1,317.86	737.91	1,469.67	0.00	0.00	
12,600.00	90.00	179.94	7,355.00	-1,417.86	738.01	1,565.87	0.00	0.00	
12,700.00	90.00	179.94	7,355.00	-1,517.86	738.11	1,662.06	0.00	0.00	
12,800.00	90.00	179.94	7,355.00	-1,617.86	738.21	1,758.26	0.00	0.00	
12,900.00	90.00	179.94	7,355.00	-1,717.86	738.31	1,854.45	0.00	0.00	
13,000.00	90.00	179.94	7,355.00	-1,817.86	738.41	1,950.65	0.00	0.00	
13,100.00	90.00	179.94	7,355.00	-1,917.86	738.51	2,046.84	0.00	0.00	
13,200.00	90.00	179.94	7,355.00	-2,017.86	738.61	2,143.04	0.00	0.00	
13,300.00	90.00	179.94	7,355.00	-2,117.86	738.71	2,239.24	0.00	0.00	
13,400.00	90.00	179.94	7,355.00	-2,217.86	738.81	2,335.43	0.00	0.00	
13,500.00	90.00	179.94	7,355.00	-2,317.86	738.91	2,431.63	0.00	0.00	
13,600.00	90.00	179.94	7,355.00	-2,417.86	739.01	2,527.82	0.00	0.00	
13,700.00	90.00	179.94	7,355.00	-2,517.86	739.11	2,624.02	0.00	0.00	
13,775.05	90.00	179.94	7,355.00	-2,592.91	739.18	2,696.21	0.00	0.00	KUGEL 1M-18H-H267 BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1M-18H-H267 - Slot KUGEL 1M
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4976.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4976.00usft
Site:	S18-T2N-R67W (KUGEL)	North Reference:	True
Well:	KUGEL 1M-18H-H267	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 (6.11)		

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)		
KUGEL 1M-18H-H267 B	0.00	0.00	7,355.00	-2,592.91	739.18	1,291,592.45	3,161,106.39	40.132378	-104.923813
- plan hits target center									
- Point									
KUGEL 1M-18H-H267 T	0.00	0.00	7,355.00	2,529.59	734.09	1,296,714.81	3,161,068.16	40.146440	-104.923831
- plan hits target center									
- Point									