



CRESTONE PEAK
RESOURCES

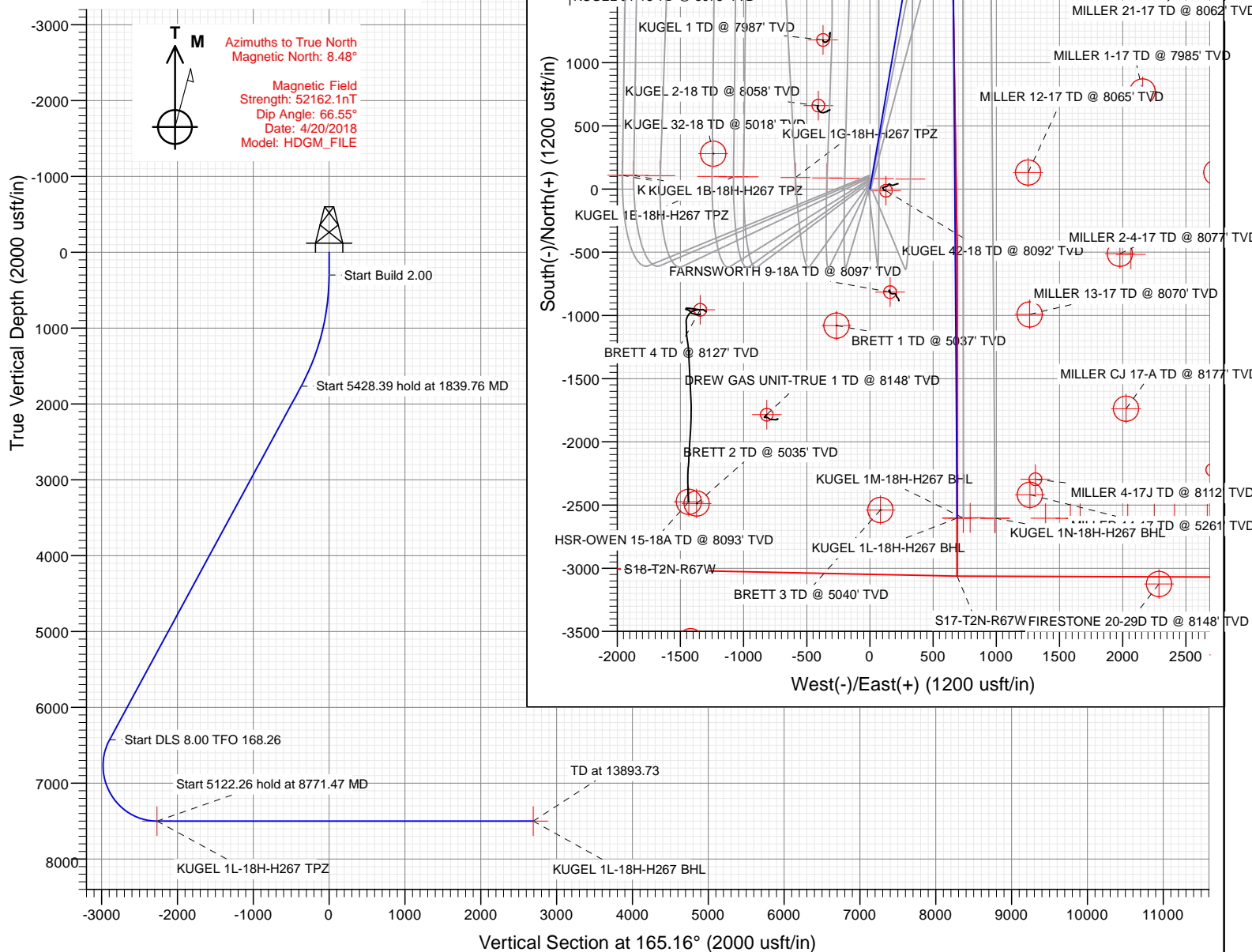
SECTION DETAILS

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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1839.76	30.80	9.72	1766.69	398.13	68.22	2.00	9.72	-367.38	
4	7268.15	30.80	9.72	6429.69	3137.38	537.61	0.00	0.00	-2895.11	
5	8771.47	90.00	179.60	7501.00	2519.59	654.06	8.00	168.26	-2268.10	KUGEL 1L-18H-H267 TPZ
6	13893.73	90.00	179.60	7501.00	-2602.55	689.43	0.00	0.00	2692.31	KUGEL 1L-18H-H267 BHL

PLAN #2 (6.11)
KUGEL 1L-18H-H267
23 KIS @ 4976.00ft
Ground Level @ 4953.00
North American Datum 1983
Well KUGEL 1L-18H-H267 - Shot KUGEL 1L, True North

Type	Target	No Target (Freehand)	TVD	+N/-S	+E/-W	Latitude	Longitude
Name	KUGEL 1L-18H-H267 BHL		7501.00	-2602.55	689.43	40.132379	-104.923991
	KUGEL 1L-18H-H267 TPZ		7501.00	2519.59	654.06	40.146440	-104.924117

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



WELL DETAILS: KUGEL 1L-18H-H267

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	KUGEL 1L
0.00	0.00	1294190.52	3160350.37	40.139523	-104.926457	

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
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 1L-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 1L-18H-H267 - Slot KUGEL 1L					
Well Position	+N/-S	0.00 usft	Northing:	1,294,190.52 usft	Latitude:	40.139523
	+E/-W	0.00 usft	Easting:	3,160,350.37 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	52,162.10000000

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	165.16

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,839.76	30.80	9.72	1,766.69	398.13	68.22	2.00	2.00	0.00	9.72	
7,268.15	30.80	9.72	6,429.69	3,137.38	537.61	0.00	0.00	0.00	0.00	
8,771.47	90.00	179.60	7,501.00	2,519.59	654.06	8.00	3.94	11.30	168.26	KUGEL 1L-18H-H267
13,893.73	90.00	179.60	7,501.00	-2,602.55	689.43	0.00	0.00	0.00	0.00	KUGEL 1L-18H-H267

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
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 1L-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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	2.00	9.72	399.98	1.72	0.29	-1.59	2.00	2.00	
500.00	4.00	9.72	499.84	6.88	1.18	-6.35	2.00	2.00	
600.00	6.00	9.72	599.45	15.47	2.65	-14.27	2.00	2.00	
700.00	8.00	9.72	698.70	27.48	4.71	-25.36	2.00	2.00	
800.00	10.00	9.72	797.47	42.90	7.35	-39.58	2.00	2.00	
900.00	12.00	9.72	895.62	61.70	10.57	-56.94	2.00	2.00	
1,000.00	14.00	9.72	993.06	83.87	14.37	-77.40	2.00	2.00	
1,100.00	16.00	9.72	1,089.64	109.38	18.74	-100.94	2.00	2.00	
1,200.00	18.00	9.72	1,185.27	138.20	23.68	-127.53	2.00	2.00	
1,300.00	20.00	9.72	1,279.82	170.29	29.18	-157.14	2.00	2.00	
1,400.00	22.00	9.72	1,373.17	205.61	35.23	-189.73	2.00	2.00	
1,500.00	24.00	9.72	1,465.21	244.12	41.83	-225.26	2.00	2.00	
1,600.00	26.00	9.72	1,555.84	285.77	48.97	-263.70	2.00	2.00	
1,700.00	28.00	9.72	1,644.94	330.51	56.64	-304.99	2.00	2.00	
1,800.00	30.00	9.72	1,732.39	378.30	64.82	-349.08	2.00	2.00	
1,839.76	30.80	9.72	1,766.69	398.13	68.22	-367.38	2.00	2.00	
1,900.00	30.80	9.72	1,818.43	428.52	73.43	-395.43	0.00	0.00	
2,000.00	30.80	9.72	1,904.34	478.98	82.08	-442.00	0.00	0.00	
2,100.00	30.80	9.72	1,990.24	529.45	90.72	-488.56	0.00	0.00	
2,200.00	30.80	9.72	2,076.14	579.91	99.37	-535.13	0.00	0.00	
2,300.00	30.80	9.72	2,162.04	630.37	108.02	-581.69	0.00	0.00	
2,400.00	30.80	9.72	2,247.94	680.83	116.66	-628.26	0.00	0.00	
2,500.00	30.80	9.72	2,333.84	731.29	125.31	-674.82	0.00	0.00	
2,600.00	30.80	9.72	2,419.74	781.75	133.96	-721.39	0.00	0.00	
2,700.00	30.80	9.72	2,505.64	832.22	142.61	-767.95	0.00	0.00	
2,800.00	30.80	9.72	2,591.54	882.68	151.25	-814.52	0.00	0.00	
2,900.00	30.80	9.72	2,677.44	933.14	159.90	-861.08	0.00	0.00	
3,000.00	30.80	9.72	2,763.34	983.60	168.55	-907.65	0.00	0.00	
3,100.00	30.80	9.72	2,849.24	1,034.06	177.19	-954.21	0.00	0.00	
3,200.00	30.80	9.72	2,935.14	1,084.52	185.84	-1,000.78	0.00	0.00	
3,300.00	30.80	9.72	3,021.04	1,134.99	194.49	-1,047.34	0.00	0.00	
3,400.00	30.80	9.72	3,106.94	1,185.45	203.13	-1,093.90	0.00	0.00	
3,500.00	30.80	9.72	3,192.84	1,235.91	211.78	-1,140.47	0.00	0.00	
3,600.00	30.80	9.72	3,278.74	1,286.37	220.43	-1,187.03	0.00	0.00	
3,700.00	30.80	9.72	3,364.64	1,336.83	229.07	-1,233.60	0.00	0.00	
3,800.00	30.80	9.72	3,450.54	1,387.29	237.72	-1,280.16	0.00	0.00	
3,900.00	30.80	9.72	3,536.44	1,437.76	246.37	-1,326.73	0.00	0.00	
4,000.00	30.80	9.72	3,622.34	1,488.22	255.02	-1,373.29	0.00	0.00	
4,100.00	30.80	9.72	3,708.24	1,538.68	263.66	-1,419.86	0.00	0.00	
4,200.00	30.80	9.72	3,794.14	1,589.14	272.31	-1,466.42	0.00	0.00	
4,300.00	30.80	9.72	3,880.04	1,639.60	280.96	-1,512.99	0.00	0.00	
4,400.00	30.80	9.72	3,965.94	1,690.06	289.60	-1,559.55	0.00	0.00	
4,500.00	30.80	9.72	4,051.84	1,740.53	298.25	-1,606.12	0.00	0.00	
4,600.00	30.80	9.72	4,137.74	1,790.99	306.90	-1,652.68	0.00	0.00	
4,700.00	30.80	9.72	4,223.64	1,841.45	315.54	-1,699.25	0.00	0.00	
4,800.00	30.80	9.72	4,309.54	1,891.91	324.19	-1,745.81	0.00	0.00	
4,900.00	30.80	9.72	4,395.44	1,942.37	332.84	-1,792.38	0.00	0.00	
5,000.00	30.80	9.72	4,481.34	1,992.83	341.48	-1,838.94	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
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 1L-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
5,100.00	30.80	9.72	4,567.24	2,043.30	350.13	-1,885.51	0.00	0.00	
5,200.00	30.80	9.72	4,653.14	2,093.76	358.78	-1,932.07	0.00	0.00	
5,300.00	30.80	9.72	4,739.04	2,144.22	367.43	-1,978.64	0.00	0.00	
5,400.00	30.80	9.72	4,824.94	2,194.68	376.07	-2,025.20	0.00	0.00	
5,500.00	30.80	9.72	4,910.84	2,245.14	384.72	-2,071.77	0.00	0.00	
5,600.00	30.80	9.72	4,996.74	2,295.60	393.37	-2,118.33	0.00	0.00	
5,700.00	30.80	9.72	5,082.64	2,346.07	402.01	-2,164.90	0.00	0.00	
5,800.00	30.80	9.72	5,168.54	2,396.53	410.66	-2,211.46	0.00	0.00	
5,900.00	30.80	9.72	5,254.44	2,446.99	419.31	-2,258.03	0.00	0.00	
6,000.00	30.80	9.72	5,340.34	2,497.45	427.95	-2,304.59	0.00	0.00	
6,100.00	30.80	9.72	5,426.24	2,547.91	436.60	-2,351.16	0.00	0.00	
6,200.00	30.80	9.72	5,512.15	2,598.37	445.25	-2,397.72	0.00	0.00	
6,300.00	30.80	9.72	5,598.05	2,648.84	453.89	-2,444.29	0.00	0.00	
6,400.00	30.80	9.72	5,683.95	2,699.30	462.54	-2,490.85	0.00	0.00	
6,500.00	30.80	9.72	5,769.85	2,749.76	471.19	-2,537.42	0.00	0.00	
6,600.00	30.80	9.72	5,855.75	2,800.22	479.84	-2,583.98	0.00	0.00	
6,700.00	30.80	9.72	5,941.65	2,850.68	488.48	-2,630.55	0.00	0.00	
6,800.00	30.80	9.72	6,027.55	2,901.14	497.13	-2,677.11	0.00	0.00	
6,900.00	30.80	9.72	6,113.45	2,951.61	505.78	-2,723.68	0.00	0.00	
7,000.00	30.80	9.72	6,199.35	3,002.07	514.42	-2,770.24	0.00	0.00	
7,100.00	30.80	9.72	6,285.25	3,052.53	523.07	-2,816.81	0.00	0.00	
7,200.00	30.80	9.72	6,371.15	3,102.99	531.72	-2,863.37	0.00	0.00	
7,268.15	30.80	9.72	6,429.69	3,137.38	537.61	-2,895.11	0.00	0.00	
7,300.00	28.31	10.82	6,457.39	3,152.84	540.40	-2,909.33	8.00	-7.82	
7,400.00	20.57	15.81	6,548.38	3,193.09	549.65	-2,945.87	8.00	-7.74	
7,500.00	13.14	26.27	6,644.04	3,220.23	559.48	-2,969.59	8.00	-7.43	
7,600.00	7.04	57.64	6,742.51	3,233.72	569.70	-2,980.01	8.00	-6.10	
7,700.00	7.35	125.32	6,841.88	3,233.30	580.11	-2,976.94	8.00	0.31	
7,800.00	13.64	154.04	6,940.22	3,218.98	590.51	-2,960.43	8.00	6.29	
7,900.00	21.11	163.87	7,035.61	3,191.03	600.69	-2,930.81	8.00	7.47	
8,000.00	28.86	168.65	7,126.20	3,150.01	610.46	-2,888.66	8.00	7.75	
8,100.00	36.70	171.53	7,210.21	3,096.70	619.63	-2,834.78	8.00	7.85	
8,200.00	44.60	173.51	7,286.02	3,032.16	628.01	-2,770.24	8.00	7.90	
8,300.00	52.52	175.00	7,352.15	2,957.62	635.45	-2,696.29	8.00	7.92	
8,400.00	60.46	176.20	7,407.32	2,874.56	641.80	-2,614.36	8.00	7.94	
8,500.00	68.41	177.23	7,450.44	2,784.57	646.94	-2,526.06	8.00	7.95	
8,600.00	76.36	178.15	7,480.68	2,689.41	650.76	-2,433.10	8.00	7.95	
8,700.00	84.31	179.01	7,497.46	2,590.94	653.20	-2,337.29	8.00	7.96	
8,771.47	90.00	179.60	7,501.00	2,519.59	654.06	-2,268.10	8.00	7.96	KUGEL 1L-18H-H267 TPZ
8,800.00	90.00	179.60	7,501.00	2,491.07	654.26	-2,240.47	0.00	0.00	
8,900.00	90.00	179.60	7,501.00	2,391.07	654.95	-2,143.63	0.00	0.00	
9,000.00	90.00	179.60	7,501.00	2,291.07	655.64	-2,046.79	0.00	0.00	
9,100.00	90.00	179.60	7,501.00	2,191.07	656.33	-1,949.95	0.00	0.00	
9,200.00	90.00	179.60	7,501.00	2,091.08	657.02	-1,853.11	0.00	0.00	
9,300.00	90.00	179.60	7,501.00	1,991.08	657.71	-1,756.27	0.00	0.00	
9,400.00	90.00	179.60	7,501.00	1,891.08	658.40	-1,659.43	0.00	0.00	
9,500.00	90.00	179.60	7,501.00	1,791.08	659.09	-1,562.59	0.00	0.00	
9,600.00	90.00	179.60	7,501.00	1,691.08	659.78	-1,465.75	0.00	0.00	
9,700.00	90.00	179.60	7,501.00	1,591.09	660.47	-1,368.91	0.00	0.00	
9,800.00	90.00	179.60	7,501.00	1,491.09	661.16	-1,272.07	0.00	0.00	
9,900.00	90.00	179.60	7,501.00	1,391.09	661.85	-1,175.23	0.00	0.00	
10,000.00	90.00	179.60	7,501.00	1,291.09	662.54	-1,078.39	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
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 1L-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
10,100.00	90.00	179.60	7,501.00	1,191.10	663.23	-981.55	0.00	0.00	
10,200.00	90.00	179.60	7,501.00	1,091.10	663.92	-884.71	0.00	0.00	
10,300.00	90.00	179.60	7,501.00	991.10	664.62	-787.87	0.00	0.00	
10,400.00	90.00	179.60	7,501.00	891.10	665.31	-691.03	0.00	0.00	
10,500.00	90.00	179.60	7,501.00	791.11	666.00	-594.19	0.00	0.00	
10,600.00	90.00	179.60	7,501.00	691.11	666.69	-497.35	0.00	0.00	
10,700.00	90.00	179.60	7,501.00	591.11	667.38	-400.51	0.00	0.00	
10,800.00	90.00	179.60	7,501.00	491.11	668.07	-303.66	0.00	0.00	
10,900.00	90.00	179.60	7,501.00	391.12	668.76	-206.82	0.00	0.00	
11,000.00	90.00	179.60	7,501.00	291.12	669.45	-109.98	0.00	0.00	
11,100.00	90.00	179.60	7,501.00	191.12	670.14	-13.14	0.00	0.00	
11,200.00	90.00	179.60	7,501.00	91.12	670.83	83.70	0.00	0.00	
11,300.00	90.00	179.60	7,501.00	-8.87	671.52	180.54	0.00	0.00	
11,400.00	90.00	179.60	7,501.00	-108.87	672.21	277.38	0.00	0.00	
11,500.00	90.00	179.60	7,501.00	-208.87	672.90	374.22	0.00	0.00	
11,600.00	90.00	179.60	7,501.00	-308.87	673.59	471.06	0.00	0.00	
11,700.00	90.00	179.60	7,501.00	-408.87	674.28	567.90	0.00	0.00	
11,800.00	90.00	179.60	7,501.00	-508.86	674.97	664.74	0.00	0.00	
11,900.00	90.00	179.60	7,501.00	-608.86	675.66	761.58	0.00	0.00	
12,000.00	90.00	179.60	7,501.00	-708.86	676.35	858.42	0.00	0.00	
12,100.00	90.00	179.60	7,501.00	-808.86	677.04	955.26	0.00	0.00	
12,200.00	90.00	179.60	7,501.00	-908.85	677.73	1,052.10	0.00	0.00	
12,300.00	90.00	179.60	7,501.00	-1,008.85	678.42	1,148.94	0.00	0.00	
12,400.00	90.00	179.60	7,501.00	-1,108.85	679.11	1,245.78	0.00	0.00	
12,500.00	90.00	179.60	7,501.00	-1,208.85	679.80	1,342.62	0.00	0.00	
12,600.00	90.00	179.60	7,501.00	-1,308.84	680.50	1,439.46	0.00	0.00	
12,700.00	90.00	179.60	7,501.00	-1,408.84	681.19	1,536.30	0.00	0.00	
12,800.00	90.00	179.60	7,501.00	-1,508.84	681.88	1,633.14	0.00	0.00	
12,900.00	90.00	179.60	7,501.00	-1,608.84	682.57	1,729.98	0.00	0.00	
13,000.00	90.00	179.60	7,501.00	-1,708.83	683.26	1,826.82	0.00	0.00	
13,100.00	90.00	179.60	7,501.00	-1,808.83	683.95	1,923.66	0.00	0.00	
13,200.00	90.00	179.60	7,501.00	-1,908.83	684.64	2,020.50	0.00	0.00	
13,300.00	90.00	179.60	7,501.00	-2,008.83	685.33	2,117.34	0.00	0.00	
13,400.00	90.00	179.60	7,501.00	-2,108.82	686.02	2,214.18	0.00	0.00	
13,500.00	90.00	179.60	7,501.00	-2,208.82	686.71	2,311.02	0.00	0.00	
13,600.00	90.00	179.60	7,501.00	-2,308.82	687.40	2,407.86	0.00	0.00	
13,700.00	90.00	179.60	7,501.00	-2,408.82	688.09	2,504.70	0.00	0.00	
13,800.00	90.00	179.60	7,501.00	-2,508.82	688.78	2,601.54	0.00	0.00	
13,893.73	90.00	179.60	7,501.00	-2,602.55	689.43	2,692.31	0.00	0.00	KUGEL 1L-18H-H267 BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well KUGEL 1L-18H-H267 - Slot KUGEL 1L
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 1L-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 1L-18H-H267 TI	0.00	0.00	7,501.00	2,519.59	654.06	1,296,714.29	3,160,988.12	40.146440	-104.924117
- plan hits target center									
- Point									
KUGEL 1L-18H-H267 BI	0.00	0.00	7,501.00	-2,602.55	689.43	1,291,592.49	3,161,056.62	40.132379	-104.923991
- plan hits target center									
- Point									