

CRESTONE PEAK RESOURCES

WELD COUNTY

SEC 22-T1N-R68W

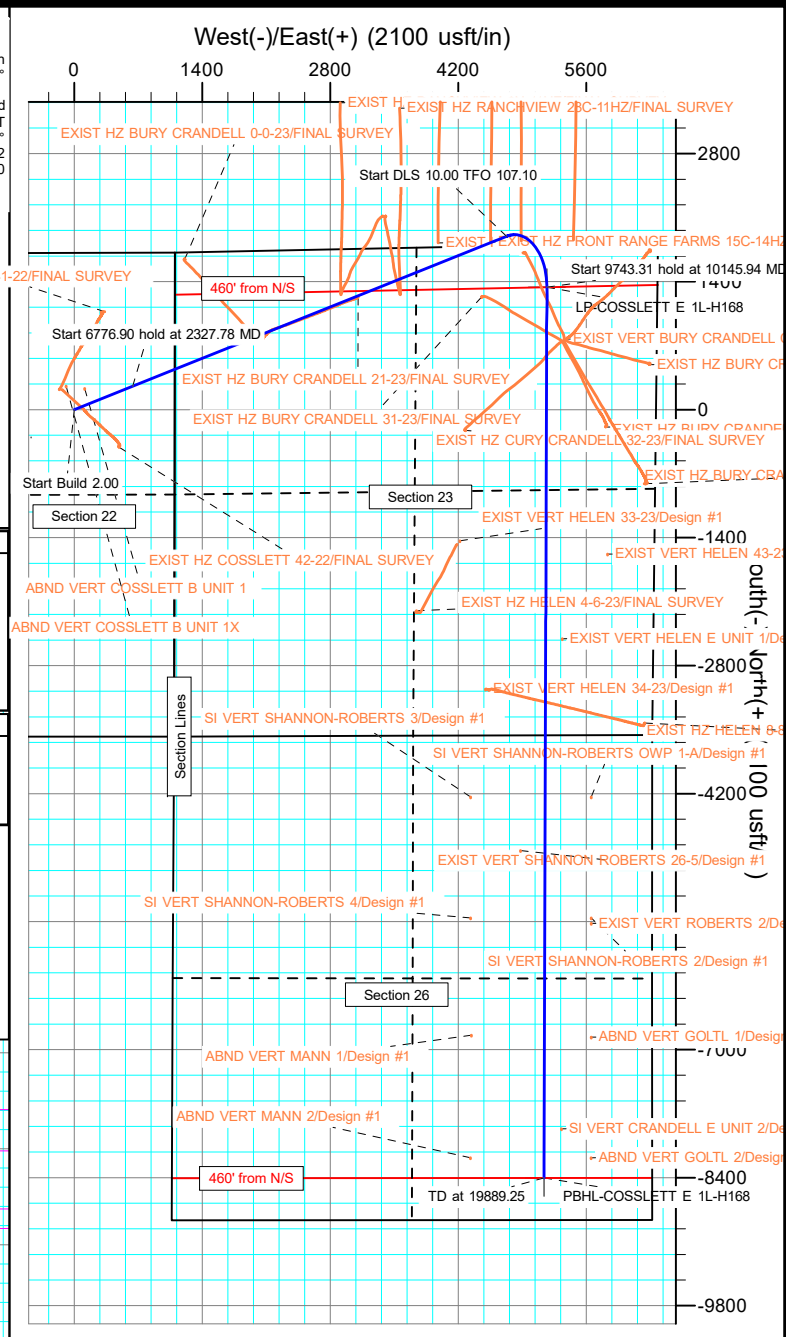
COSSLETT EAST 1L-22H-H168

OWB

Plan: PROPOSAL 1

Standard Planning Report

01 March, 2022



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1L-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 22-T1N-R68W			
Site Position:		Northing:	1,259,282.05 usft	Latitude:	40.043946°N
From:	Lat/Long	Easting:	3,145,574.24 usft	Longitude:	104.980039°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well	COSSLETT EAST 1L-22H-H168					
Well Position	+N/-S	-1,717.97 usft	Northing:	1,257,557.71 usft	Latitude:	40.039230°N
	+E/-W	-1,101.25 usft	Easting:	3,144,483.12 usft	Longitude:	104.983972°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,181.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/17/2022	7.86	66.31	51,667.45223560

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	148.57

Plan Survey Tool Program	Date	3/1/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,889.26	PROPOSAL 1 (OWB)	MWD OWSG
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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	
2,327.78	40.56	68.15	2,162.65	256.18	638.74	2.00	2.00	0.00	68.15	
9,104.68	40.56	68.15	7,311.55	1,896.42	4,728.32	0.00	0.00	0.00	0.00	
10,145.94	90.00	180.19	7,870.00	1,339.31	5,169.41	10.00	4.75	10.76	107.10	LP-COSSLETT E 1L-H
19,889.26	90.00	180.19	7,870.00	-8,403.95	5,136.71	0.00	0.00	0.00	0.00	PBHL-COSSLETT E

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Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Denver Formation									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
154.00	0.00	0.00	154.00	0.00	0.00	0.00	0.00	0.00	0.00
Laramie Formation									
200.00	0.00	0.00	200.00	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
Start Build 2.00									
400.00	2.00	68.15	399.98	0.65	1.62	0.29	2.00	2.00	0.00
500.00	4.00	68.15	499.84	2.60	6.48	1.16	2.00	2.00	0.00
600.00	6.00	68.15	599.45	5.84	14.57	2.61	2.00	2.00	0.00
631.74	6.63	68.15	631.00	7.14	17.81	3.19	2.00	2.00	0.00
Fox Hills sandstone									
700.00	8.00	68.15	698.70	10.38	25.88	4.64	2.00	2.00	0.00
800.00	10.00	68.15	797.47	16.20	40.39	7.24	2.00	2.00	0.00
805.62	10.11	68.15	803.00	16.57	41.31	7.41	2.00	2.00	0.00
Pierre Formation									
900.00	12.00	68.15	895.62	23.30	58.10	10.42	2.00	2.00	0.00
1,000.00	14.00	68.15	993.06	31.68	78.98	14.16	2.00	2.00	0.00
1,057.81	15.16	68.15	1,049.00	37.09	92.48	16.58	2.00	2.00	0.00
Upper Pierre aquifer									
1,100.00	16.00	68.15	1,089.64	41.31	103.00	18.47	2.00	2.00	0.00
1,200.00	18.00	68.15	1,185.27	52.19	130.14	23.33	2.00	2.00	0.00
1,300.00	20.00	68.15	1,279.82	64.31	160.35	28.75	2.00	2.00	0.00
1,400.00	22.00	68.15	1,373.17	77.65	193.61	34.72	2.00	2.00	0.00
1,500.00	24.00	68.15	1,465.21	92.20	229.87	41.22	2.00	2.00	0.00
1,600.00	26.00	68.15	1,555.84	107.93	269.10	48.25	2.00	2.00	0.00
1,700.00	28.00	68.15	1,644.94	124.83	311.23	55.81	2.00	2.00	0.00
1,800.00	30.00	68.15	1,732.39	142.87	356.23	63.87	2.00	2.00	0.00
1,900.00	32.00	68.15	1,818.11	162.05	404.03	72.44	2.00	2.00	0.00
2,000.00	34.00	68.15	1,901.97	182.32	454.57	81.51	2.00	2.00	0.00
2,100.00	36.00	68.15	1,983.88	203.67	507.81	91.05	2.00	2.00	0.00
2,101.38	36.03	68.15	1,985.00	203.97	508.56	91.19	2.00	2.00	0.00
Base of Upper Pierre aquifer									
2,200.00	38.00	68.15	2,063.74	226.07	563.66	101.07	2.00	2.00	0.00
2,300.00	40.00	68.15	2,141.45	249.50	622.07	111.54	2.00	2.00	0.00
2,327.78	40.56	68.15	2,162.65	256.18	638.74	114.53	2.00	2.00	0.00
Start 6776.90 hold at 2327.78 MD									
2,400.00	40.56	68.15	2,217.51	273.66	682.32	122.34	0.00	0.00	0.00
2,500.00	40.56	68.15	2,293.49	297.86	742.66	133.16	0.00	0.00	0.00
2,600.00	40.56	68.15	2,369.47	322.07	803.01	143.98	0.00	0.00	0.00
2,700.00	40.56	68.15	2,445.45	346.27	863.35	154.80	0.00	0.00	0.00
2,800.00	40.56	68.15	2,521.42	370.48	923.70	165.63	0.00	0.00	0.00
2,900.00	40.56	68.15	2,597.40	394.68	984.05	176.45	0.00	0.00	0.00
3,000.00	40.56	68.15	2,673.38	418.88	1,044.39	187.27	0.00	0.00	0.00
3,100.00	40.56	68.15	2,749.36	443.09	1,104.74	198.09	0.00	0.00	0.00
3,200.00	40.56	68.15	2,825.33	467.29	1,165.08	208.91	0.00	0.00	0.00
3,300.00	40.56	68.15	2,901.31	491.49	1,225.43	219.73	0.00	0.00	0.00
3,400.00	40.56	68.15	2,977.29	515.70	1,285.78	230.55	0.00	0.00	0.00
3,500.00	40.56	68.15	3,053.27	539.90	1,346.12	241.37	0.00	0.00	0.00
3,600.00	40.56	68.15	3,129.24	564.10	1,406.47	252.19	0.00	0.00	0.00
3,700.00	40.56	68.15	3,205.22	588.31	1,466.81	263.01	0.00	0.00	0.00
3,800.00	40.56	68.15	3,281.20	612.51	1,527.16	273.83	0.00	0.00	0.00

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Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,900.00	40.56	68.15	3,357.18	636.71	1,587.51	284.65	0.00	0.00	0.00	
4,000.00	40.56	68.15	3,433.15	660.92	1,647.85	295.47	0.00	0.00	0.00	
4,100.00	40.56	68.15	3,509.13	685.12	1,708.20	306.29	0.00	0.00	0.00	
4,200.00	40.56	68.15	3,585.11	709.32	1,768.54	317.11	0.00	0.00	0.00	
4,300.00	40.56	68.15	3,661.08	733.53	1,828.89	327.93	0.00	0.00	0.00	
4,400.00	40.56	68.15	3,737.06	757.73	1,889.24	338.75	0.00	0.00	0.00	
4,500.00	40.56	68.15	3,813.04	781.93	1,949.58	349.57	0.00	0.00	0.00	
4,600.00	40.56	68.15	3,889.02	806.14	2,009.93	360.39	0.00	0.00	0.00	
4,700.00	40.56	68.15	3,964.99	830.34	2,070.27	371.21	0.00	0.00	0.00	
4,800.00	40.56	68.15	4,040.97	854.54	2,130.62	382.03	0.00	0.00	0.00	
4,900.00	40.56	68.15	4,116.95	878.75	2,190.97	392.85	0.00	0.00	0.00	
5,000.00	40.56	68.15	4,192.93	902.95	2,251.31	403.67	0.00	0.00	0.00	
5,100.00	40.56	68.15	4,268.90	927.15	2,311.66	414.50	0.00	0.00	0.00	
5,200.00	40.56	68.15	4,344.88	951.36	2,372.00	425.32	0.00	0.00	0.00	
5,223.85	40.56	68.15	4,363.00	957.13	2,386.40	427.90	0.00	0.00	0.00	
Larimer sandstone										
5,300.00	40.56	68.15	4,420.86	975.56	2,432.35	436.14	0.00	0.00	0.00	
5,400.00	40.56	68.15	4,496.84	999.76	2,492.70	446.96	0.00	0.00	0.00	
5,500.00	40.56	68.15	4,572.81	1,023.97	2,553.04	457.78	0.00	0.00	0.00	
5,600.00	40.56	68.15	4,648.79	1,048.17	2,613.39	468.60	0.00	0.00	0.00	
5,700.00	40.56	68.15	4,724.77	1,072.37	2,673.73	479.42	0.00	0.00	0.00	
5,760.85	40.56	68.15	4,771.00	1,087.10	2,710.46	486.00	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
5,800.00	40.56	68.15	4,800.74	1,096.58	2,734.08	490.24	0.00	0.00	0.00	
5,900.00	40.56	68.15	4,876.72	1,120.78	2,794.43	501.06	0.00	0.00	0.00	
6,000.00	40.56	68.15	4,952.70	1,144.98	2,854.77	511.88	0.00	0.00	0.00	
6,100.00	40.56	68.15	5,028.68	1,169.19	2,915.12	522.70	0.00	0.00	0.00	
6,200.00	40.56	68.15	5,104.65	1,193.39	2,975.46	533.52	0.00	0.00	0.00	
6,300.00	40.56	68.15	5,180.63	1,217.59	3,035.81	544.34	0.00	0.00	0.00	
6,400.00	40.56	68.15	5,256.61	1,241.80	3,096.16	555.16	0.00	0.00	0.00	
6,500.00	40.56	68.15	5,332.59	1,266.00	3,156.50	565.98	0.00	0.00	0.00	
6,517.66	40.56	68.15	5,346.00	1,270.27	3,167.16	567.89	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
6,600.00	40.56	68.15	5,408.56	1,290.20	3,216.85	576.80	0.00	0.00	0.00	
6,700.00	40.56	68.15	5,484.54	1,314.41	3,277.19	587.62	0.00	0.00	0.00	
6,771.68	40.56	68.15	5,539.00	1,331.76	3,320.45	595.38	0.00	0.00	0.00	
Pierre shale										
6,800.00	40.56	68.15	5,560.52	1,338.61	3,337.54	598.44	0.00	0.00	0.00	
6,900.00	40.56	68.15	5,636.50	1,362.81	3,397.89	609.26	0.00	0.00	0.00	
7,000.00	40.56	68.15	5,712.47	1,387.02	3,458.23	620.08	0.00	0.00	0.00	
7,100.00	40.56	68.15	5,788.45	1,411.22	3,518.58	630.90	0.00	0.00	0.00	
7,200.00	40.56	68.15	5,864.43	1,435.42	3,578.92	641.72	0.00	0.00	0.00	
7,300.00	40.56	68.15	5,940.40	1,459.63	3,639.27	652.54	0.00	0.00	0.00	
7,400.00	40.56	68.15	6,016.38	1,483.83	3,699.62	663.36	0.00	0.00	0.00	
7,500.00	40.56	68.15	6,092.36	1,508.03	3,759.96	674.19	0.00	0.00	0.00	
7,600.00	40.56	68.15	6,168.34	1,532.24	3,820.31	685.01	0.00	0.00	0.00	
7,700.00	40.56	68.15	6,244.31	1,556.44	3,880.65	695.83	0.00	0.00	0.00	
7,800.00	40.56	68.15	6,320.29	1,580.64	3,941.00	706.65	0.00	0.00	0.00	
7,900.00	40.56	68.15	6,396.27	1,604.85	4,001.35	717.47	0.00	0.00	0.00	
8,000.00	40.56	68.15	6,472.25	1,629.05	4,061.69	728.29	0.00	0.00	0.00	
8,100.00	40.56	68.15	6,548.22	1,653.26	4,122.04	739.11	0.00	0.00	0.00	
8,200.00	40.56	68.15	6,624.20	1,677.46	4,182.38	749.93	0.00	0.00	0.00	
8,300.00	40.56	68.15	6,700.18	1,701.66	4,242.73	760.75	0.00	0.00	0.00	
8,400.00	40.56	68.15	6,776.16	1,725.87	4,303.08	771.57	0.00	0.00	0.00	

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8,500.00	40.56	68.15	6,852.13	1,750.07	4,363.42	782.39	0.00	0.00	0.00
8,600.00	40.56	68.15	6,928.11	1,774.27	4,423.77	793.21	0.00	0.00	0.00
8,700.00	40.56	68.15	7,004.09	1,798.48	4,484.11	804.03	0.00	0.00	0.00
8,800.00	40.56	68.15	7,080.06	1,822.68	4,544.46	814.85	0.00	0.00	0.00
8,900.00	40.56	68.15	7,156.04	1,846.88	4,604.81	825.67	0.00	0.00	0.00
9,000.00	40.56	68.15	7,232.02	1,871.09	4,665.15	836.49	0.00	0.00	0.00
9,104.68	40.56	68.15	7,311.55	1,896.42	4,728.32	847.82	0.00	0.00	0.00
Start DLS 10.00 TFO 107.10									
9,150.00	39.42	74.98	7,346.29	1,905.64	4,755.91	854.34	10.00	-2.51	15.07
9,200.00	38.65	82.82	7,385.15	1,911.71	4,786.75	865.25	10.00	-1.54	15.70
9,250.00	38.42	90.85	7,424.29	1,913.43	4,817.80	879.97	10.00	-0.46	16.04
9,300.00	38.74	98.85	7,463.40	1,910.80	4,848.81	898.39	10.00	0.64	16.01
9,350.00	39.59	106.66	7,502.19	1,903.82	4,879.56	920.38	10.00	1.71	15.61
9,400.00	40.95	114.11	7,540.36	1,892.55	4,909.80	945.76	10.00	2.71	14.90
9,450.00	42.75	121.10	7,577.62	1,877.08	4,939.30	974.35	10.00	3.61	13.99
9,499.02	44.91	127.46	7,613.00	1,857.96	4,967.30	1,005.27	10.00	4.39	12.98
Sharon Springs									
9,500.00	44.95	127.58	7,613.70	1,857.53	4,967.85	1,005.92	10.00	4.75	12.46
9,506.10	45.24	128.34	7,618.00	1,854.88	4,971.26	1,009.96	10.00	4.80	12.39
Niobrara									
9,550.00	47.49	133.55	7,648.30	1,834.05	4,995.22	1,040.23	10.00	5.12	11.88
9,600.00	50.31	139.03	7,681.18	1,806.81	5,021.21	1,077.03	10.00	5.65	10.96
9,650.00	53.37	144.06	7,712.08	1,776.02	5,045.61	1,116.03	10.00	6.12	10.06
9,700.00	56.63	148.70	7,740.76	1,741.91	5,068.25	1,156.93	10.00	6.51	9.27
9,750.00	60.04	152.99	7,767.01	1,704.75	5,088.95	1,199.43	10.00	6.83	8.59
9,800.00	63.59	156.99	7,790.63	1,664.82	5,107.55	1,243.21	10.00	7.09	8.00
9,850.00	67.24	160.75	7,811.44	1,622.42	5,123.91	1,287.92	10.00	7.30	7.52
9,900.00	70.97	164.31	7,829.28	1,577.87	5,137.91	1,333.23	10.00	7.46	7.12
9,950.00	74.77	167.72	7,844.01	1,531.52	5,149.44	1,378.79	10.00	7.60	6.81
10,000.00	78.61	171.00	7,855.52	1,483.71	5,158.41	1,424.26	10.00	7.69	6.57
10,050.00	82.50	174.20	7,863.72	1,434.82	5,164.75	1,469.28	10.00	7.77	6.39
10,100.00	86.40	177.33	7,868.56	1,385.20	5,168.42	1,513.53	10.00	7.81	6.28
10,145.94	90.00	180.19	7,870.00	1,339.31	5,169.41	1,553.21	10.00	7.83	6.22
Start 9743.31 hold at 10145.94 MD									
10,200.00	90.00	180.19	7,870.00	1,285.25	5,169.23	1,599.24	0.00	0.00	0.00
10,300.00	90.00	180.19	7,870.00	1,185.25	5,168.89	1,684.39	0.00	0.00	0.00
10,400.00	90.00	180.19	7,870.00	1,085.25	5,168.56	1,769.53	0.00	0.00	0.00
10,500.00	90.00	180.19	7,870.00	985.25	5,168.22	1,854.68	0.00	0.00	0.00
10,600.00	90.00	180.19	7,870.00	885.25	5,167.89	1,939.83	0.00	0.00	0.00
10,700.00	90.00	180.19	7,870.00	785.25	5,167.55	2,024.98	0.00	0.00	0.00
10,800.00	90.00	180.19	7,870.00	685.25	5,167.21	2,110.13	0.00	0.00	0.00
10,900.00	90.00	180.19	7,870.00	585.25	5,166.88	2,195.28	0.00	0.00	0.00
11,000.00	90.00	180.19	7,870.00	485.25	5,166.54	2,280.42	0.00	0.00	0.00
11,100.00	90.00	180.19	7,870.00	385.25	5,166.21	2,365.57	0.00	0.00	0.00
11,200.00	90.00	180.19	7,870.00	285.25	5,165.87	2,450.72	0.00	0.00	0.00
11,300.00	90.00	180.19	7,870.00	185.25	5,165.54	2,535.87	0.00	0.00	0.00
11,400.00	90.00	180.19	7,870.00	85.25	5,165.20	2,621.02	0.00	0.00	0.00
11,500.00	90.00	180.19	7,870.00	-14.74	5,164.86	2,706.17	0.00	0.00	0.00
11,600.00	90.00	180.19	7,870.00	-114.74	5,164.53	2,791.31	0.00	0.00	0.00
11,700.00	90.00	180.19	7,870.00	-214.74	5,164.19	2,876.46	0.00	0.00	0.00
11,800.00	90.00	180.19	7,870.00	-314.74	5,163.86	2,961.61	0.00	0.00	0.00
11,900.00	90.00	180.19	7,870.00	-414.74	5,163.52	3,046.76	0.00	0.00	0.00
12,000.00	90.00	180.19	7,870.00	-514.74	5,163.19	3,131.91	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1L-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,100.00	90.00	180.19	7,870.00	-614.74	5,162.85	3,217.06	0.00	0.00	0.00	
12,200.00	90.00	180.19	7,870.00	-714.74	5,162.52	3,302.20	0.00	0.00	0.00	
12,300.00	90.00	180.19	7,870.00	-814.74	5,162.18	3,387.35	0.00	0.00	0.00	
12,400.00	90.00	180.19	7,870.00	-914.74	5,161.84	3,472.50	0.00	0.00	0.00	
12,500.00	90.00	180.19	7,870.00	-1,014.74	5,161.51	3,557.65	0.00	0.00	0.00	
12,600.00	90.00	180.19	7,870.00	-1,114.74	5,161.17	3,642.80	0.00	0.00	0.00	
12,700.00	90.00	180.19	7,870.00	-1,214.74	5,160.84	3,727.94	0.00	0.00	0.00	
12,800.00	90.00	180.19	7,870.00	-1,314.74	5,160.50	3,813.09	0.00	0.00	0.00	
12,900.00	90.00	180.19	7,870.00	-1,414.74	5,160.17	3,898.24	0.00	0.00	0.00	
13,000.00	90.00	180.19	7,870.00	-1,514.74	5,159.83	3,983.39	0.00	0.00	0.00	
13,100.00	90.00	180.19	7,870.00	-1,614.74	5,159.49	4,068.54	0.00	0.00	0.00	
13,200.00	90.00	180.19	7,870.00	-1,714.74	5,159.16	4,153.69	0.00	0.00	0.00	
13,300.00	90.00	180.19	7,870.00	-1,814.73	5,158.82	4,238.83	0.00	0.00	0.00	
13,400.00	90.00	180.19	7,870.00	-1,914.73	5,158.49	4,323.98	0.00	0.00	0.00	
13,500.00	90.00	180.19	7,870.00	-2,014.73	5,158.15	4,409.13	0.00	0.00	0.00	
13,600.00	90.00	180.19	7,870.00	-2,114.73	5,157.82	4,494.28	0.00	0.00	0.00	
13,700.00	90.00	180.19	7,870.00	-2,214.73	5,157.48	4,579.43	0.00	0.00	0.00	
13,800.00	90.00	180.19	7,870.00	-2,314.73	5,157.14	4,664.58	0.00	0.00	0.00	
13,900.00	90.00	180.19	7,870.00	-2,414.73	5,156.81	4,749.72	0.00	0.00	0.00	
14,000.00	90.00	180.19	7,870.00	-2,514.73	5,156.47	4,834.87	0.00	0.00	0.00	
14,100.00	90.00	180.19	7,870.00	-2,614.73	5,156.14	4,920.02	0.00	0.00	0.00	
14,200.00	90.00	180.19	7,870.00	-2,714.73	5,155.80	5,005.17	0.00	0.00	0.00	
14,300.00	90.00	180.19	7,870.00	-2,814.73	5,155.47	5,090.32	0.00	0.00	0.00	
14,400.00	90.00	180.19	7,870.00	-2,914.73	5,155.13	5,175.47	0.00	0.00	0.00	
14,500.00	90.00	180.19	7,870.00	-3,014.73	5,154.80	5,260.61	0.00	0.00	0.00	
14,600.00	90.00	180.19	7,870.00	-3,114.73	5,154.46	5,345.76	0.00	0.00	0.00	
14,700.00	90.00	180.19	7,870.00	-3,214.73	5,154.12	5,430.91	0.00	0.00	0.00	
14,800.00	90.00	180.19	7,870.00	-3,314.73	5,153.79	5,516.06	0.00	0.00	0.00	
14,900.00	90.00	180.19	7,870.00	-3,414.73	5,153.45	5,601.21	0.00	0.00	0.00	
15,000.00	90.00	180.19	7,870.00	-3,514.72	5,153.12	5,686.36	0.00	0.00	0.00	
15,100.00	90.00	180.19	7,870.00	-3,614.72	5,152.78	5,771.50	0.00	0.00	0.00	
15,200.00	90.00	180.19	7,870.00	-3,714.72	5,152.45	5,856.65	0.00	0.00	0.00	
15,300.00	90.00	180.19	7,870.00	-3,814.72	5,152.11	5,941.80	0.00	0.00	0.00	
15,400.00	90.00	180.19	7,870.00	-3,914.72	5,151.77	6,026.95	0.00	0.00	0.00	
15,500.00	90.00	180.19	7,870.00	-4,014.72	5,151.44	6,112.10	0.00	0.00	0.00	
15,600.00	90.00	180.19	7,870.00	-4,114.72	5,151.10	6,197.25	0.00	0.00	0.00	
15,700.00	90.00	180.19	7,870.00	-4,214.72	5,150.77	6,282.39	0.00	0.00	0.00	
15,800.00	90.00	180.19	7,870.00	-4,314.72	5,150.43	6,367.54	0.00	0.00	0.00	
15,900.00	90.00	180.19	7,870.00	-4,414.72	5,150.10	6,452.69	0.00	0.00	0.00	
16,000.00	90.00	180.19	7,870.00	-4,514.72	5,149.76	6,537.84	0.00	0.00	0.00	
16,100.00	90.00	180.19	7,870.00	-4,614.72	5,149.42	6,622.99	0.00	0.00	0.00	
16,200.00	90.00	180.19	7,870.00	-4,714.72	5,149.09	6,708.14	0.00	0.00	0.00	
16,300.00	90.00	180.19	7,870.00	-4,814.72	5,148.75	6,793.28	0.00	0.00	0.00	
16,400.00	90.00	180.19	7,870.00	-4,914.72	5,148.42	6,878.43	0.00	0.00	0.00	
16,500.00	90.00	180.19	7,870.00	-5,014.72	5,148.08	6,963.58	0.00	0.00	0.00	
16,600.00	90.00	180.19	7,870.00	-5,114.72	5,147.75	7,048.73	0.00	0.00	0.00	
16,700.00	90.00	180.19	7,870.00	-5,214.72	5,147.41	7,133.88	0.00	0.00	0.00	
16,800.00	90.00	180.19	7,870.00	-5,314.71	5,147.08	7,219.03	0.00	0.00	0.00	
16,900.00	90.00	180.19	7,870.00	-5,414.71	5,146.74	7,304.17	0.00	0.00	0.00	
17,000.00	90.00	180.19	7,870.00	-5,514.71	5,146.40	7,389.32	0.00	0.00	0.00	
17,100.00	90.00	180.19	7,870.00	-5,614.71	5,146.07	7,474.47	0.00	0.00	0.00	
17,200.00	90.00	180.19	7,870.00	-5,714.71	5,145.73	7,559.62	0.00	0.00	0.00	
17,300.00	90.00	180.19	7,870.00	-5,814.71	5,145.40	7,644.77	0.00	0.00	0.00	
17,400.00	90.00	180.19	7,870.00	-5,914.71	5,145.06	7,729.92	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1L-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,500.00	90.00	180.19	7,870.00	-6,014.71	5,144.73	7,815.06	0.00	0.00	0.00	
17,600.00	90.00	180.19	7,870.00	-6,114.71	5,144.39	7,900.21	0.00	0.00	0.00	
17,700.00	90.00	180.19	7,870.00	-6,214.71	5,144.05	7,985.36	0.00	0.00	0.00	
17,800.00	90.00	180.19	7,870.00	-6,314.71	5,143.72	8,070.51	0.00	0.00	0.00	
17,900.00	90.00	180.19	7,870.00	-6,414.71	5,143.38	8,155.66	0.00	0.00	0.00	
18,000.00	90.00	180.19	7,870.00	-6,514.71	5,143.05	8,240.81	0.00	0.00	0.00	
18,100.00	90.00	180.19	7,870.00	-6,614.71	5,142.71	8,325.95	0.00	0.00	0.00	
18,200.00	90.00	180.19	7,870.00	-6,714.71	5,142.38	8,411.10	0.00	0.00	0.00	
18,300.00	90.00	180.19	7,870.00	-6,814.71	5,142.04	8,496.25	0.00	0.00	0.00	
18,400.00	90.00	180.19	7,870.00	-6,914.71	5,141.70	8,581.40	0.00	0.00	0.00	
18,500.00	90.00	180.19	7,870.00	-7,014.71	5,141.37	8,666.55	0.00	0.00	0.00	
18,600.00	90.00	180.19	7,870.00	-7,114.70	5,141.03	8,751.70	0.00	0.00	0.00	
18,700.00	90.00	180.19	7,870.00	-7,214.70	5,140.70	8,836.84	0.00	0.00	0.00	
18,800.00	90.00	180.19	7,870.00	-7,314.70	5,140.36	8,921.99	0.00	0.00	0.00	
18,900.00	90.00	180.19	7,870.00	-7,414.70	5,140.03	9,007.14	0.00	0.00	0.00	
19,000.00	90.00	180.19	7,870.00	-7,514.70	5,139.69	9,092.29	0.00	0.00	0.00	
19,100.00	90.00	180.19	7,870.00	-7,614.70	5,139.36	9,177.44	0.00	0.00	0.00	
19,200.00	90.00	180.19	7,870.00	-7,714.70	5,139.02	9,262.59	0.00	0.00	0.00	
19,300.00	90.00	180.19	7,870.00	-7,814.70	5,138.68	9,347.73	0.00	0.00	0.00	
19,400.00	90.00	180.19	7,870.00	-7,914.70	5,138.35	9,432.88	0.00	0.00	0.00	
19,500.00	90.00	180.19	7,870.00	-8,014.70	5,138.01	9,518.03	0.00	0.00	0.00	
19,600.00	90.00	180.19	7,870.00	-8,114.70	5,137.68	9,603.18	0.00	0.00	0.00	
19,700.00	90.00	180.19	7,870.00	-8,214.70	5,137.34	9,688.33	0.00	0.00	0.00	
19,800.00	90.00	180.19	7,870.00	-8,314.70	5,137.01	9,773.48	0.00	0.00	0.00	
19,889.26	90.00	180.19	7,870.00	-8,403.95	5,136.71	9,849.48	0.00	0.00	0.00	
TD at 19889.25										

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP-COSSLETT E 1L-H1 - plan hits target center - Point	0.00	0.00	7,870.00	1,339.31	5,169.41	1,258,927.03	3,149,644.46	40.042905°N	104.965509°W
PBHL-COSSLETT E 1L- - plan hits target center - Point	0.00	0.00	7,870.00	-8,403.95	5,136.71	1,249,184.10	3,149,668.46	40.016159°N	104.965633°W

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1L-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1L-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Denver Formation				
154.00	154.00	Laramie Formation				
631.74	631.00	Fox Hills sandstone				
805.62	803.00	Pierre Formation				
1,057.81	1,049.00	Upper Pierre aquifer				
2,101.38	1,985.00	Base of Upper Pierre aquifer				
5,223.85	4,363.00	Larimer sandstone				
5,760.85	4,771.00	Terry ("Sussex") sandstone				
6,517.66	5,346.00	Hygiene ("Shannon") sandstone				
6,771.68	5,539.00	Pierre shale				
9,499.02	7,613.00	Sharon Springs				
9,506.10	7,618.00	Niobrara				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.00	300.00	0.00	0.00	Start Build 2.00
2,327.78	2,162.65	256.18	638.74	Start 6776.90 hold at 2327.78 MD
9,104.68	7,311.55	1,896.42	4,728.32	Start DLS 10.00 TFO 107.10
10,145.94	7,870.00	1,339.31	5,169.41	Start 9743.31 hold at 10145.94 MD
19,889.26	7,870.00	-8,403.95	5,136.71	TD at 19889.25