

CRESTONE PEAK RESOURCES

WELD COUNTY

SEC 22-T1N-R68W

COSSLETT EAST 1I-22H-H168

OWB

Design: FINAL SURVEY

Standard Survey Report

16 May, 2023

Project: WELD COUNTY
 Site: SEC 22-T1N-R68W
 Well: COSSLETT EAST 1I-22H-H168
 Wellbore: OWB
 Design: FINAL SURVEY

PROJECT DETAILS: WELD COUNTY

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level



Azimuths to True North
 Magnetic North: 7.73°
 Magnetic Field
 Strength: 51539.0snT
 Dip Angle: 66.26°
 Date: 5/8/2023
 Model: IGRF2020

WELL DETAILS: COSSLETT EAST 1I-22H-H168

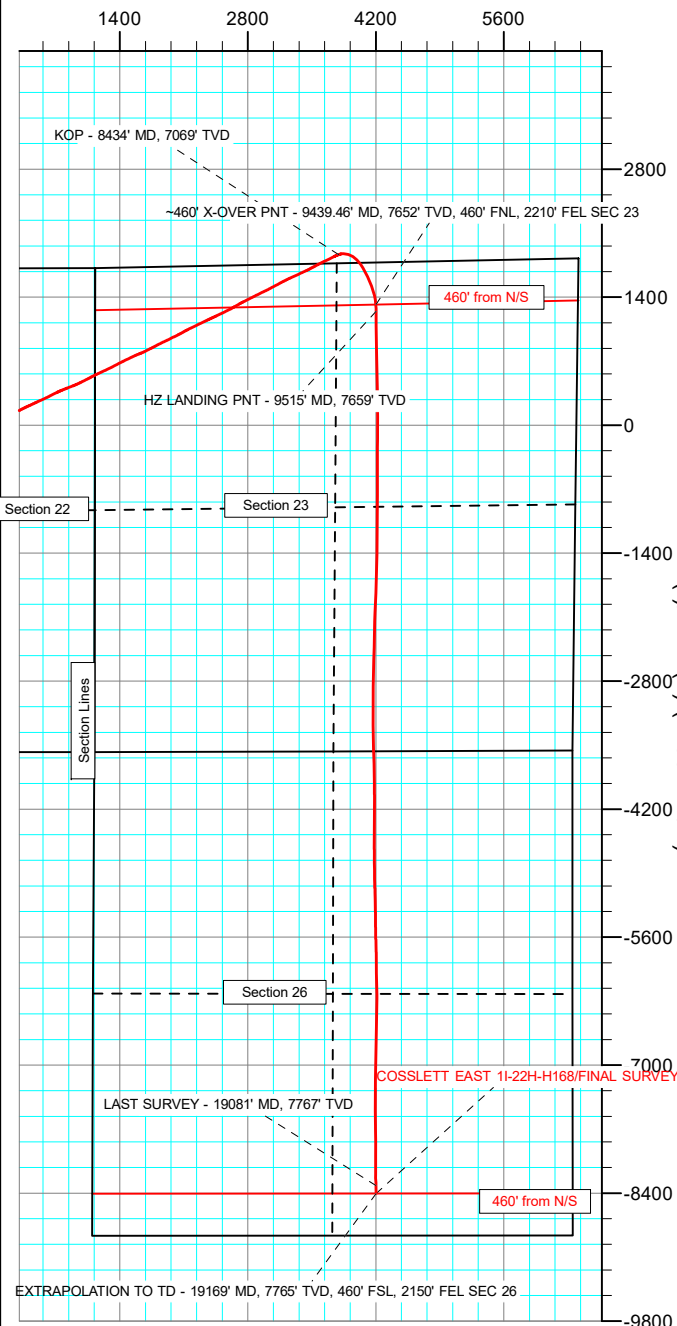
+N/-S	+E/-W	Northing	Easting	5182.00	Latitude	Longitude	Slot
0.00	0.00	1257557.54	3144452.88		40.039230°N	104.984080°W	

ANNOTATIONS

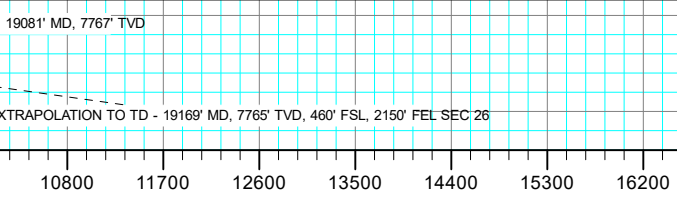
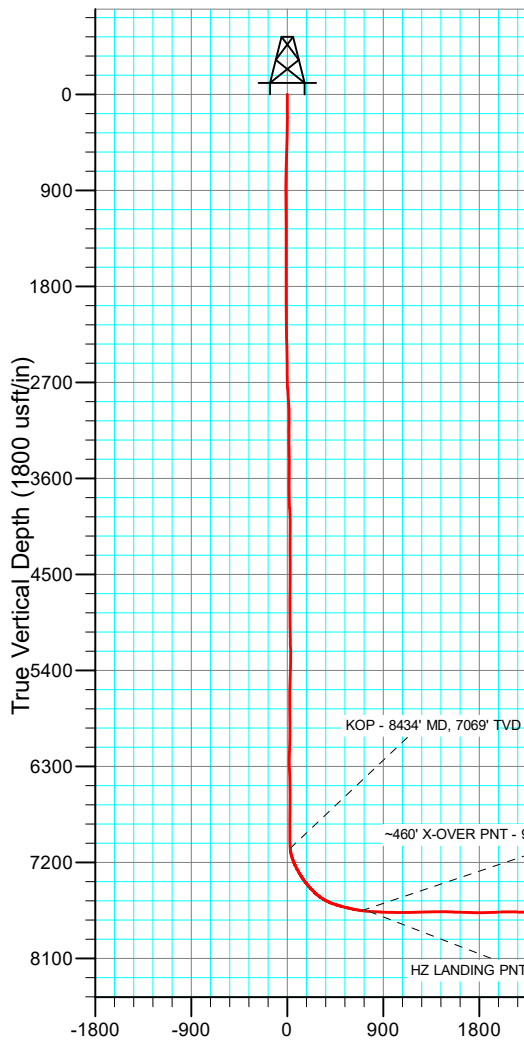
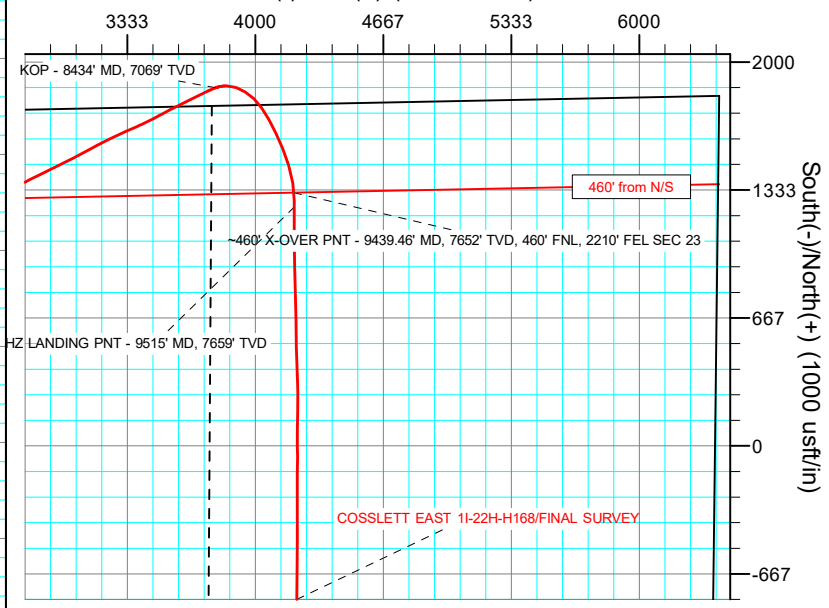
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
8434.00	35.78	69.62	7068.80	1865.27	3792.71	28.03	4236.53	KOP - 8434' MD, 7069' TVD
9439.46	83.09	175.52	7652.25	1319.45	4200.23	698.49	4996.27	~460' X-OVER PNT - 9439.46' MD, 7652' TVD, 460' FNL, 2210' FEL SEC 23
9515.00	85.95	179.84	7659.00	1244.27	4202.23	766.62	5071.39	HZ LANDING PNT - 9515' MD, 7659' TVD
19081.00	91.15	178.62	7766.69	-8316.75	4200.82	9317.40	14634.16	LAST SURVEY - 19081' MD, 7767' TVD
19169.00	91.15	178.62	7764.92	-8404.71	4202.94	9397.01	14722.14	EXTRAPOLATION TO TD - 19169' MD, 7765' TVD, 460' FSL, 2150' FEL SEC 26

SHL:
 1715' FNL, 1128' FEL
 Sec 22-T1N-R68W
 ~460' X-OVER PNT:
 460' FNL, 2210' FEL
 Sec 23-T1N-R68W
 BHL:
 460' FSL, 2150' FEL
 Sec 26-T1N-R68W

West(-)/East(+) (2100 usft/in)



West(-)/East(+) (1000 usft/in)



Vertical Section at 153.43° (1800 usft/in)

Survey Report

Company: CRESTONE PEAK RESOURCES	Local Co-ordinate Reference: Well COSSLETT EAST 1I-22H-H168
Project: WELD COUNTY	TVD Reference: KB 25' @ 5207.00usft
Site: SEC 22-T1N-R68W	MD Reference: KB 25' @ 5207.00usft
Well: COSSLETT EAST 1I-22H-H168	North Reference: True
Wellbore: OWB	Survey Calculation Method: Minimum Curvature
Design: FINAL SURVEY	Database: EDT_32Bit_ODBC

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 1I-22H-H168			
Well Position +N/-S 0.00 usft	Northing: 1,257,557.54 usft	Latitude: 40.039230°N	
+E/-W 0.00 usft	Easting: 3,144,452.88 usft	Longitude: 104.984080°W	
Position Uncertainty 0.00 usft	Wellhead Elevation: usft	Ground Level: 5,182.00 usft	

Wellbore OWB					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/8/2023	7.73	66.26	51,538.97205640

Design FINAL SURVEY				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	153.43

Survey Program		Date 5/16/2023			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
128.00	2,586.00	SURFACE SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	
2,719.00	19,169.00	FINAL SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	

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
128.00	0.38	232.31	128.00	-0.26	-0.34	0.08	0.30	0.30	0.00
219.00	0.35	283.27	219.00	-0.38	-0.85	-0.04	0.35	-0.03	56.00
310.00	0.51	300.31	309.99	-0.11	-1.47	-0.56	0.22	0.18	18.73
402.00	1.07	6.08	401.99	0.95	-1.73	-1.62	1.06	0.61	71.49
496.00	2.66	25.45	495.94	3.79	-0.70	-3.70	1.80	1.69	20.61
685.00	3.64	31.41	684.65	12.87	4.31	-9.58	0.55	0.52	3.15
780.00	4.03	41.47	779.44	17.95	8.10	-12.43	0.82	0.41	10.59
876.00	5.55	58.12	875.10	22.93	14.27	-14.12	2.13	1.58	17.34
971.00	7.23	69.19	969.51	27.48	23.76	-13.95	2.19	1.77	11.65

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 11-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 11-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
1,066.00	8.25	68.32	1,063.65	32.12	35.69	-12.77	1.08	1.07	-0.92	
1,161.00	10.71	68.32	1,157.34	37.90	50.22	-11.43	2.59	2.59	0.00	
1,256.00	12.89	63.76	1,250.33	45.85	67.93	-10.62	2.49	2.29	-4.80	
1,350.00	15.51	64.53	1,341.45	55.89	88.69	-10.32	2.79	2.79	0.82	
1,446.00	17.83	63.01	1,433.41	68.08	113.38	-10.18	2.46	2.42	-1.58	
1,541.00	19.87	63.49	1,523.31	81.89	140.79	-10.27	2.15	2.15	0.51	
1,635.00	21.66	64.66	1,611.20	96.44	170.76	-9.88	1.95	1.90	1.24	
1,731.00	22.69	63.87	1,700.10	112.18	203.40	-9.36	1.12	1.07	-0.82	
1,825.00	23.79	63.06	1,786.47	128.76	236.58	-9.35	1.22	1.17	-0.86	
1,920.00	25.92	62.85	1,872.67	146.91	272.14	-9.68	2.24	2.24	-0.22	
2,015.00	27.45	63.44	1,957.55	166.18	310.20	-9.89	1.63	1.61	0.62	
2,111.00	28.75	64.24	2,042.23	186.11	350.79	-9.56	1.41	1.35	0.83	
2,205.00	30.56	65.35	2,123.91	205.90	392.87	-8.44	2.01	1.93	1.18	
2,300.00	32.79	64.98	2,204.76	226.86	438.14	-6.94	2.36	2.35	-0.39	
2,395.00	34.38	64.58	2,283.90	249.25	485.68	-5.71	1.69	1.67	-0.42	
2,491.00	35.64	65.15	2,362.52	272.64	535.54	-4.32	1.36	1.31	0.59	
2,586.00	37.40	65.24	2,438.87	296.36	586.86	-2.58	1.85	1.85	0.09	
2,719.00	36.34	63.31	2,545.27	330.98	658.75	-1.39	1.18	-0.80	-1.45	
2,814.00	36.39	62.82	2,621.77	356.49	708.96	-1.75	0.31	0.05	-0.52	
2,909.00	35.76	68.00	2,698.57	379.77	759.78	0.16	3.28	-0.66	5.45	
3,028.00	38.57	68.50	2,793.39	406.40	826.55	6.20	2.37	2.36	0.42	
3,124.00	39.33	69.31	2,868.05	428.11	882.86	11.96	0.95	0.79	0.84	
3,218.00	39.33	65.57	2,940.77	450.96	937.85	16.13	2.52	0.00	-3.98	
3,313.00	39.16	62.64	3,014.35	477.20	991.91	16.84	1.96	-0.18	-3.08	
3,407.00	38.13	63.15	3,087.77	503.95	1,044.16	16.28	1.15	-1.10	0.54	
3,503.00	35.32	61.83	3,164.70	530.44	1,095.08	15.36	3.04	-2.93	-1.37	
3,598.00	36.75	64.47	3,241.53	555.66	1,144.94	15.11	2.22	1.51	2.78	
3,693.00	37.98	65.80	3,317.03	579.89	1,197.25	16.83	1.55	1.29	1.40	
3,882.00	38.70	63.61	3,465.28	629.99	1,303.22	19.42	0.81	0.38	-1.16	
3,977.00	38.45	61.88	3,539.55	657.11	1,355.88	18.71	1.17	-0.26	-1.82	
4,072.00	37.51	62.94	3,614.43	684.19	1,407.69	17.66	1.20	-0.99	1.12	
4,166.00	37.36	64.32	3,689.08	709.57	1,458.88	17.86	0.91	-0.16	1.47	
4,261.00	37.18	64.05	3,764.68	734.63	1,510.67	18.62	0.26	-0.19	-0.28	
4,356.00	38.03	65.65	3,839.94	759.25	1,563.14	20.06	1.36	0.89	1.68	
4,451.00	39.18	68.70	3,914.18	782.22	1,617.77	23.95	2.34	1.21	3.21	
4,545.00	39.07	64.35	3,987.12	805.84	1,672.14	27.15	2.92	-0.12	-4.63	
4,641.00	38.82	63.17	4,061.79	832.51	1,726.27	27.50	0.82	-0.26	-1.23	
4,736.00	37.07	61.61	4,136.70	859.57	1,778.03	26.45	2.10	-1.84	-1.64	
4,831.00	36.16	63.25	4,212.96	885.80	1,828.25	25.45	1.41	-0.96	1.73	
4,927.00	36.50	64.89	4,290.30	910.66	1,879.40	26.09	1.07	0.35	1.71	
5,022.00	36.53	63.68	4,366.65	935.19	1,930.33	26.93	0.76	0.03	-1.27	
5,117.00	37.92	63.75	4,442.29	960.64	1,981.85	27.21	1.46	1.46	0.07	
5,212.00	39.20	63.49	4,516.58	986.95	2,034.90	27.41	1.36	1.35	-0.27	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 11-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 11-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
5,307.00	39.41	60.40	4,590.09	1,015.25	2,087.99	25.84	2.07	0.22	-3.25	
5,402.00	37.89	62.72	4,664.29	1,043.52	2,140.14	23.88	2.21	-1.60	2.44	
5,497.00	37.93	64.40	4,739.24	1,069.51	2,192.41	24.01	1.09	0.04	1.77	
5,591.00	37.39	63.53	4,813.66	1,094.71	2,244.01	24.55	0.81	-0.57	-0.93	
5,685.00	38.05	64.88	4,888.01	1,119.73	2,295.79	25.33	1.12	0.70	1.44	
5,781.00	36.77	63.93	4,964.27	1,144.92	2,348.39	26.33	1.46	-1.33	-0.99	
5,876.00	38.66	65.47	5,039.42	1,169.74	2,400.93	27.63	2.22	1.99	1.62	
5,971.00	36.46	64.34	5,114.72	1,194.28	2,453.37	29.14	2.43	-2.32	-1.19	
6,067.00	36.04	65.36	5,192.14	1,218.41	2,504.75	30.54	0.77	-0.44	1.06	
6,161.00	35.44	63.27	5,268.44	1,242.20	2,554.23	31.39	1.45	-0.64	-2.22	
6,256.00	36.54	62.75	5,345.31	1,267.53	2,603.98	30.98	1.20	1.16	-0.55	
6,351.00	38.54	59.60	5,420.64	1,295.46	2,654.65	28.66	2.92	2.11	-3.32	
6,446.00	38.15	60.64	5,495.14	1,324.83	2,705.75	25.26	0.79	-0.41	1.09	
6,541.00	36.26	62.92	5,570.81	1,352.01	2,756.35	23.58	2.46	-1.99	2.40	
6,635.00	36.01	63.48	5,646.73	1,377.00	2,805.82	23.35	0.44	-0.27	0.60	
6,730.00	36.57	63.32	5,723.30	1,402.18	2,856.10	23.32	0.60	0.59	-0.17	
6,826.00	37.19	63.78	5,800.09	1,427.84	2,907.68	23.44	0.71	0.65	0.48	
6,920.00	36.92	64.23	5,875.11	1,452.66	2,958.59	24.01	0.41	-0.29	0.48	
7,015.00	37.61	63.29	5,950.71	1,478.10	3,010.19	24.33	0.94	0.73	-0.99	
7,109.00	38.11	61.80	6,024.93	1,504.70	3,061.37	23.43	1.11	0.53	-1.59	
7,205.00	38.35	62.26	6,100.34	1,532.56	3,113.84	21.98	0.39	0.25	0.48	
7,300.00	37.62	61.63	6,175.22	1,560.06	3,165.44	20.47	0.87	-0.77	-0.66	
7,395.00	38.68	63.09	6,249.92	1,587.27	3,217.43	19.38	1.46	1.12	1.54	
7,490.00	39.33	65.79	6,323.75	1,613.05	3,271.36	20.44	1.92	0.68	2.84	
7,680.00	38.97	65.53	6,471.10	1,662.49	3,380.66	25.11	0.21	-0.19	-0.14	
7,773.00	39.86	64.50	6,542.95	1,687.44	3,434.17	26.73	1.19	0.96	-1.11	
7,868.00	38.51	61.67	6,616.59	1,714.58	3,487.69	26.39	2.36	-1.42	-2.98	
7,962.00	36.11	61.84	6,691.34	1,741.55	3,537.88	24.72	2.56	-2.55	0.18	
8,057.00	37.30	63.55	6,767.51	1,767.58	3,588.33	24.00	1.65	1.25	1.80	
8,153.00	36.93	63.86	6,844.06	1,793.24	3,640.27	24.28	0.43	-0.39	0.32	
8,344.00	37.23	63.76	6,996.44	1,844.07	3,743.60	25.04	0.16	0.16	-0.05	
8,434.00	35.78	69.62	7,068.80	1,865.27	3,792.71	28.03	4.19	-1.61	6.51	
KOP - 8434' MD, 7069' TVD										
8,439.00	35.71	69.96	7,072.86	1,866.28	3,795.45	28.36	4.19	-1.44	6.75	
8,534.00	33.74	91.24	7,151.23	1,875.25	3,848.07	43.88	12.87	-2.07	22.40	
8,628.00	34.21	108.11	7,229.35	1,866.45	3,899.40	74.70	10.02	0.50	17.95	
8,723.00	34.90	122.26	7,307.72	1,843.60	3,947.84	116.80	8.46	0.73	14.89	
8,818.00	38.66	134.47	7,383.90	1,808.25	3,992.08	168.21	8.64	3.96	12.85	
8,913.00	44.08	144.47	7,455.25	1,760.48	4,032.53	229.02	8.98	5.71	10.53	
9,008.00	52.63	151.25	7,518.36	1,700.35	4,069.98	299.56	10.45	9.00	7.14	
9,102.00	64.73	153.75	7,567.14	1,629.21	4,106.89	379.70	13.07	12.87	2.66	
9,197.00	73.59	158.25	7,600.91	1,548.16	4,142.86	468.27	10.32	9.33	4.74	
9,292.00	76.44	163.34	7,625.49	1,461.53	4,173.01	559.24	5.98	3.00	5.36	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 11-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 11-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
9,388.00	80.34	170.65	7,644.83	1,369.98	4,194.11	650.56	8.49	4.06	7.61	
9,439.46	83.09	175.52	7,652.25	1,319.45	4,200.23	698.49	10.78	5.34	9.47	
~460' X-OVER PNT - 9439.46' MD, 7652' TVD, 460' FNL, 2210' FEL SEC 23										
9,483.00	85.45	179.60	7,656.60	1,276.18	4,202.07	738.01	10.78	5.43	9.36	
9,515.00	85.95	179.84	7,659.00	1,244.27	4,202.23	766.62	1.71	1.55	0.74	
HZ LANDING PNT - 9515' MD, 7659' TVD										
9,578.00	86.92	180.30	7,662.92	1,181.39	4,202.15	822.83	1.71	1.55	0.74	
9,673.00	88.44	179.66	7,666.77	1,086.47	4,202.18	907.74	1.74	1.60	-0.67	
9,768.00	89.12	179.07	7,668.79	991.50	4,203.24	993.15	0.95	0.72	-0.62	
9,864.00	89.99	178.56	7,669.54	895.53	4,205.22	1,079.88	1.05	0.91	-0.53	
9,959.00	91.24	177.88	7,668.52	800.58	4,208.17	1,166.12	1.50	1.32	-0.72	
10,054.00	90.79	179.31	7,666.83	705.63	4,210.50	1,252.09	1.58	-0.47	1.51	
10,148.00	91.63	179.13	7,664.85	611.66	4,211.78	1,336.71	0.91	0.89	-0.19	
10,244.00	90.66	178.36	7,662.93	515.70	4,213.88	1,423.47	1.29	-1.01	-0.80	
10,339.00	88.17	178.63	7,663.90	420.75	4,216.38	1,509.51	2.64	-2.62	0.28	
10,435.00	88.93	177.82	7,666.33	324.83	4,219.35	1,596.64	1.16	0.79	-0.84	
10,529.00	87.92	180.95	7,668.91	230.88	4,220.36	1,681.11	3.50	-1.07	3.33	
10,624.00	89.15	180.38	7,671.34	135.92	4,219.26	1,765.55	1.43	1.29	-0.60	
10,719.00	91.11	180.07	7,671.13	40.92	4,218.88	1,850.35	2.09	2.06	-0.33	
10,814.00	92.97	179.65	7,667.75	-54.01	4,219.12	1,935.36	2.01	1.96	-0.44	
10,909.00	91.24	180.67	7,664.26	-148.94	4,218.85	2,020.15	2.11	-1.82	1.07	
11,005.00	88.66	180.14	7,664.34	-244.93	4,218.17	2,105.70	2.74	-2.69	-0.55	
11,099.00	89.58	179.85	7,665.78	-338.92	4,218.18	2,189.77	1.03	0.98	-0.31	
11,195.00	90.93	179.29	7,665.36	-434.91	4,218.90	2,275.95	1.52	1.41	-0.58	
11,290.00	89.04	180.94	7,665.38	-529.90	4,218.71	2,360.82	2.64	-1.99	1.74	
11,385.00	90.28	180.89	7,665.94	-624.89	4,217.19	2,445.10	1.31	1.31	-0.05	
11,480.00	89.80	180.34	7,665.88	-719.88	4,216.17	2,529.60	0.77	-0.51	-0.58	
11,575.00	91.44	180.32	7,664.85	-814.87	4,215.63	2,614.32	1.73	1.73	-0.02	
11,670.00	89.54	180.41	7,664.04	-909.86	4,215.02	2,699.01	2.00	-2.00	0.09	
11,765.00	90.35	179.71	7,664.13	-1,004.86	4,214.92	2,783.93	1.13	0.85	-0.74	
11,860.00	89.95	179.64	7,663.88	-1,099.86	4,215.46	2,869.14	0.43	-0.42	-0.07	
11,956.00	91.04	179.68	7,663.05	-1,195.85	4,216.03	2,955.25	1.14	1.14	0.04	
12,051.00	89.77	181.22	7,662.38	-1,290.84	4,215.28	3,039.87	2.10	-1.34	1.62	
12,147.00	90.83	180.90	7,661.88	-1,386.82	4,213.51	3,124.93	1.15	1.10	-0.33	
12,241.00	88.64	181.37	7,662.31	-1,480.80	4,211.65	3,208.14	2.38	-2.33	0.50	
12,336.00	89.62	181.45	7,663.75	-1,575.76	4,209.31	3,292.03	1.04	1.03	0.08	
12,431.00	89.47	182.02	7,664.51	-1,670.71	4,206.43	3,375.67	0.62	-0.16	0.60	
12,526.00	88.43	182.97	7,666.25	-1,765.60	4,202.30	3,458.69	1.48	-1.09	1.00	
12,620.00	89.85	182.66	7,667.66	-1,859.47	4,197.68	3,540.59	1.55	1.51	-0.33	
12,715.00	91.88	182.29	7,666.23	-1,954.37	4,193.58	3,623.63	2.17	2.14	-0.39	
12,810.00	88.60	181.75	7,665.83	-2,049.30	4,190.23	3,707.03	3.50	-3.45	-0.57	
12,905.00	86.82	181.14	7,669.62	-2,144.19	4,187.84	3,790.83	1.98	-1.87	-0.64	
13,000.00	87.34	181.15	7,674.46	-2,239.04	4,185.94	3,874.82	0.55	0.55	0.01	
13,096.00	88.06	180.87	7,678.32	-2,334.95	4,184.25	3,959.85	0.80	0.75	-0.29	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 11-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 11-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
13,191.00	89.34	182.32	7,680.47	-2,429.88	4,181.61	4,043.58	2.04	1.35	1.53	
13,286.00	87.03	181.43	7,683.48	-2,524.78	4,178.50	4,127.06	2.61	-2.43	-0.94	
13,382.00	87.10	181.67	7,688.40	-2,620.62	4,175.91	4,211.62	0.26	0.07	0.25	
13,477.00	86.52	181.25	7,693.68	-2,715.44	4,173.49	4,295.35	0.75	-0.61	-0.44	
13,571.00	85.76	181.03	7,700.01	-2,809.21	4,171.62	4,378.38	0.84	-0.81	-0.23	
13,666.00	86.90	180.11	7,706.09	-2,904.00	4,170.68	4,462.74	1.54	1.20	-0.97	
13,762.00	87.41	179.87	7,710.86	-2,999.89	4,170.70	4,548.51	0.59	0.53	-0.25	
13,857.00	88.62	180.21	7,714.15	-3,094.83	4,170.63	4,633.39	1.32	1.27	0.36	
13,952.00	90.24	180.56	7,715.09	-3,189.82	4,169.99	4,718.07	1.74	1.71	0.37	
14,047.00	88.19	179.34	7,716.39	-3,284.80	4,170.08	4,803.06	2.51	-2.16	-1.28	
14,142.00	88.72	179.01	7,718.95	-3,379.76	4,171.44	4,888.60	0.66	0.56	-0.35	
14,237.00	88.91	178.35	7,720.92	-3,474.71	4,173.63	4,974.50	0.72	0.20	-0.69	
14,332.00	88.92	178.23	7,722.72	-3,569.65	4,176.47	5,060.68	0.13	0.01	-0.13	
14,426.00	89.65	178.36	7,723.89	-3,663.60	4,179.26	5,145.96	0.79	0.78	0.14	
14,521.00	89.97	178.70	7,724.21	-3,758.57	4,181.70	5,231.99	0.49	0.34	0.36	
14,616.00	89.96	179.55	7,724.26	-3,853.56	4,183.15	5,317.60	0.89	-0.01	0.89	
14,711.00	90.31	179.62	7,724.04	-3,948.55	4,183.84	5,402.87	0.38	0.37	0.07	
14,807.00	91.25	178.97	7,722.73	-4,044.54	4,185.02	5,489.25	1.19	0.98	-0.68	
14,901.00	92.16	179.51	7,719.94	-4,138.49	4,186.27	5,573.83	1.13	0.97	0.57	
14,996.00	91.22	180.94	7,717.13	-4,233.44	4,185.89	5,658.60	1.80	-0.99	1.51	
15,091.00	91.91	180.75	7,714.54	-4,328.39	4,184.49	5,742.90	0.75	0.73	-0.20	
15,187.00	89.58	180.81	7,713.29	-4,424.37	4,183.19	5,828.15	2.43	-2.43	0.06	
15,282.00	90.63	180.36	7,713.12	-4,519.36	4,182.22	5,912.68	1.20	1.11	-0.47	
15,377.00	91.79	179.19	7,711.11	-4,614.34	4,182.59	5,997.79	1.73	1.22	-1.23	
15,472.00	89.38	179.55	7,710.14	-4,709.32	4,183.63	6,083.21	2.56	-2.54	0.38	
15,565.00	90.01	179.35	7,710.64	-4,802.31	4,184.53	6,166.79	0.71	0.68	-0.22	
15,661.00	90.78	179.21	7,709.98	-4,898.30	4,185.73	6,253.18	0.82	0.80	-0.15	
15,756.00	92.09	178.85	7,707.60	-4,993.26	4,187.34	6,338.82	1.43	1.38	-0.38	
15,851.00	90.76	177.93	7,705.23	-5,088.19	4,190.01	6,424.92	1.70	-1.40	-0.97	
15,946.00	89.16	179.16	7,705.30	-5,183.15	4,192.42	6,510.94	2.12	-1.68	1.29	
16,042.00	90.12	178.41	7,705.90	-5,279.13	4,194.46	6,597.69	1.27	1.00	-0.78	
16,137.00	87.89	179.65	7,707.55	-5,374.09	4,196.06	6,683.35	2.69	-2.35	1.31	
16,231.00	89.28	179.00	7,709.87	-5,468.05	4,197.17	6,767.88	1.63	1.48	-0.69	
16,325.00	88.38	179.18	7,711.79	-5,562.02	4,198.66	6,852.59	0.98	-0.96	0.19	
16,420.00	89.25	178.48	7,713.76	-5,656.98	4,200.60	6,938.39	1.18	0.92	-0.74	
16,514.00	90.13	178.00	7,714.27	-5,750.93	4,203.49	7,023.71	1.07	0.94	-0.51	
16,610.00	88.12	179.72	7,715.73	-5,846.89	4,205.40	7,110.40	2.76	-2.09	1.79	
16,705.00	88.81	179.16	7,718.28	-5,941.85	4,206.33	7,195.74	0.94	0.73	-0.59	
16,799.00	89.71	178.83	7,719.49	-6,035.83	4,207.98	7,280.53	1.02	0.96	-0.35	
16,894.00	87.84	179.25	7,721.52	-6,130.79	4,209.57	7,366.18	2.02	-1.97	0.44	
16,989.00	88.35	179.36	7,724.68	-6,225.73	4,210.72	7,451.61	0.55	0.54	0.12	
17,085.00	89.00	179.04	7,726.90	-6,321.70	4,212.06	7,538.04	0.75	0.68	-0.33	
17,180.00	87.88	181.71	7,729.49	-6,416.65	4,211.44	7,622.69	3.05	-1.18	2.81	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 11-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 11-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
17,275.00	88.69	181.39	7,732.33	-6,511.57	4,208.87	7,706.44	0.92	0.85	-0.34	
17,370.00	89.64	181.48	7,733.71	-6,606.53	4,206.49	7,790.30	1.00	1.00	0.09	
17,465.00	90.67	181.50	7,733.46	-6,701.49	4,204.02	7,874.14	1.08	1.08	0.02	
17,560.00	88.21	181.33	7,734.39	-6,796.45	4,201.68	7,958.02	2.60	-2.59	-0.18	
17,656.00	89.25	181.31	7,736.51	-6,892.40	4,199.47	8,042.85	1.08	1.08	-0.02	
17,750.00	90.21	180.75	7,736.96	-6,986.39	4,197.78	8,126.15	1.18	1.02	-0.60	
17,846.00	87.53	181.02	7,738.85	-7,082.35	4,196.29	8,211.32	2.81	-2.79	0.28	
17,940.00	88.30	180.48	7,742.27	-7,176.28	4,195.06	8,294.78	1.00	0.82	-0.57	
18,035.00	88.84	180.52	7,744.64	-7,271.24	4,194.24	8,379.34	0.57	0.57	0.04	
18,130.00	89.40	180.28	7,746.10	-7,366.23	4,193.57	8,464.00	0.64	0.59	-0.25	
18,225.00	90.56	179.14	7,746.13	-7,461.22	4,194.05	8,549.18	1.71	1.22	-1.20	
18,320.00	87.87	179.36	7,747.43	-7,556.20	4,195.30	8,634.68	2.84	-2.83	0.23	
18,415.00	88.29	179.09	7,750.62	-7,651.14	4,196.58	8,720.17	0.53	0.44	-0.28	
18,510.00	89.75	178.97	7,752.24	-7,746.11	4,198.19	8,805.83	1.54	1.54	-0.13	
18,605.00	86.92	180.37	7,755.00	-7,841.05	4,198.74	8,891.00	3.32	-2.98	1.47	
18,700.00	87.00	180.25	7,760.04	-7,935.92	4,198.22	8,975.61	0.15	0.08	-0.13	
18,795.00	87.88	179.63	7,764.28	-8,030.82	4,198.32	9,060.54	1.13	0.93	-0.65	
18,890.00	89.08	180.19	7,766.80	-8,125.78	4,198.47	9,145.54	1.39	1.26	0.59	
18,986.00	89.96	179.18	7,767.61	-8,221.78	4,199.00	9,231.64	1.40	0.92	-1.05	
19,081.00	91.15	178.62	7,766.69	-8,316.75	4,200.82	9,317.40	1.38	1.25	-0.59	
LAST SURVEY - 19081' MD, 7767' TVD										
19,169.00	91.15	178.62	7,764.92	-8,404.71	4,202.94	9,397.01	0.00	0.00	0.00	
EXTRAPOLATION TO TD - 19169' MD, 7765' TVD, 460' FSL, 2150' FEL SEC 26										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
LP-COSSLETT E 11-H16	0.00	0.00	7,665.00	1,319.45	4,209.90	1,258,901.41	3,148,654.88	40.042851°N	104.969044°W	
- actual wellpath misses target center by 15.85usft at 9441.14usft MD (7652.45 TVD, 1317.79 N, 4200.36 E)										
- Point										
PBHL-COSSLETT E 11-H	0.00	0.00	7,755.00	-8,404.86	4,177.09	1,249,177.42	3,148,678.65	40.016157°N	104.969167°W	
- actual wellpath misses target center by 27.69usft at 19168.73usft MD (7764.93 TVD, -8404.44 N, 4202.94 E)										
- Point										

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1I-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5207.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5207.00usft
Well:	COSSLETT EAST 1I-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,434.00	7,068.80	1,865.27	3,792.71	KOP - 8434' MD, 7069' TVD
9,439.46	7,652.25	1,319.45	4,200.23	~460' X-OVER PNT - 9439.46' MD, 7652' TVD, 460' FNL, 2210' FEL SEC 23
9,515.00	7,659.00	1,244.27	4,202.23	HZ LANDING PNT - 9515' MD, 7659' TVD
19,081.00	7,766.69	-8,316.75	4,200.82	LAST SURVEY - 19081' MD, 7767' TVD
19,169.00	7,764.92	-8,404.71	4,202.94	EXTRAPOLATION TO TD - 19169' MD, 7765' TVD, 460' FSL, 2150' FEL SEC 2

Checked By: _____ Approved By: _____ Date: _____