

# **CRESTONE PEAK RESOURCES**

**ARAPAHOE COUNTY**

**SEC 21-T5S-R64W**

**STATE WETTERHORN 5-64 20-19 1AH**

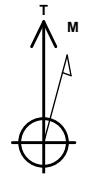
**OWB**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**04 June, 2025**

Project: ARAPAHOE COUNTY  
 Site: SEC 21-T5S-R64W  
 Well: STATE WETTERHORN 5-64 20-19 1AH  
 Wellbore: OWB  
 Design: PROPOSAL 1



Azimuths to True North  
 Magnetic North: 7.27°  
 Magnetic Field  
 Strength: 51148.5nT  
 Dip Angle: 65.89°  
 Date: 3/19/2025  
 Model: IGRF2020

WELL DETAILS: STATE WETTERHORN 5-64 20-19 1AH

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1645070.04	3263668.50	39.600779°N	104.564260°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	VSect	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
1065.37	19.31	352.01	1047.20	159.56	-22.40	60.06	161.12	Start 6686.91 hold at 1065.37 MD
7752.28	19.31	352.01	7358.03	2349.03	-329.78	884.18	2372.06	Start DLS 10.00 TFO -81.99
8624.32	90.00	270.49	7873.00	2532.37	-900.50	1482.23	2999.46	Start 5119.95 hold at 8624.32 MD
13744.27	90.00	270.49	7873.00	2576.34	-6020.26	6462.76	8119.41	Start DLS 2.00 TFO 90.00
13814.37	90.00	271.89	7873.00	2577.80	-6090.34	6531.14	8189.50	Start 5002.09 hold at 13814.37 MD
18816.45	90.00	271.89	7873.00	2743.12	-11089.70	11423.92	13191.59	TD at 18816.45

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	1065.37	19.31	352.01	1047.20	159.56	-22.40	2.00	352.01	60.06	
4	7752.28	19.31	352.01	7358.03	2349.03	-329.78	0.00	0.00	884.18	
5	8624.32	90.00	270.49	7873.00	2532.37	-900.50	10.00	-81.99	1482.23	LP-ST. WETTERHORN 5-64 20-19 1AH
6	13744.27	90.00	270.49	7873.00	2576.34	-6020.26	0.00	0.00	6462.76	MP-ST. WETTERHORN 5-64 20-19 1AH
7	13814.37	90.00	271.89	7873.00	2577.80	-6090.34	2.00	90.00	6531.14	PBHL-ST. WETTERHORN 5-64 20-19 1AH
8	18816.45	90.00	271.89	7873.00	2743.12	-11089.70	0.00	0.00	11423.92	

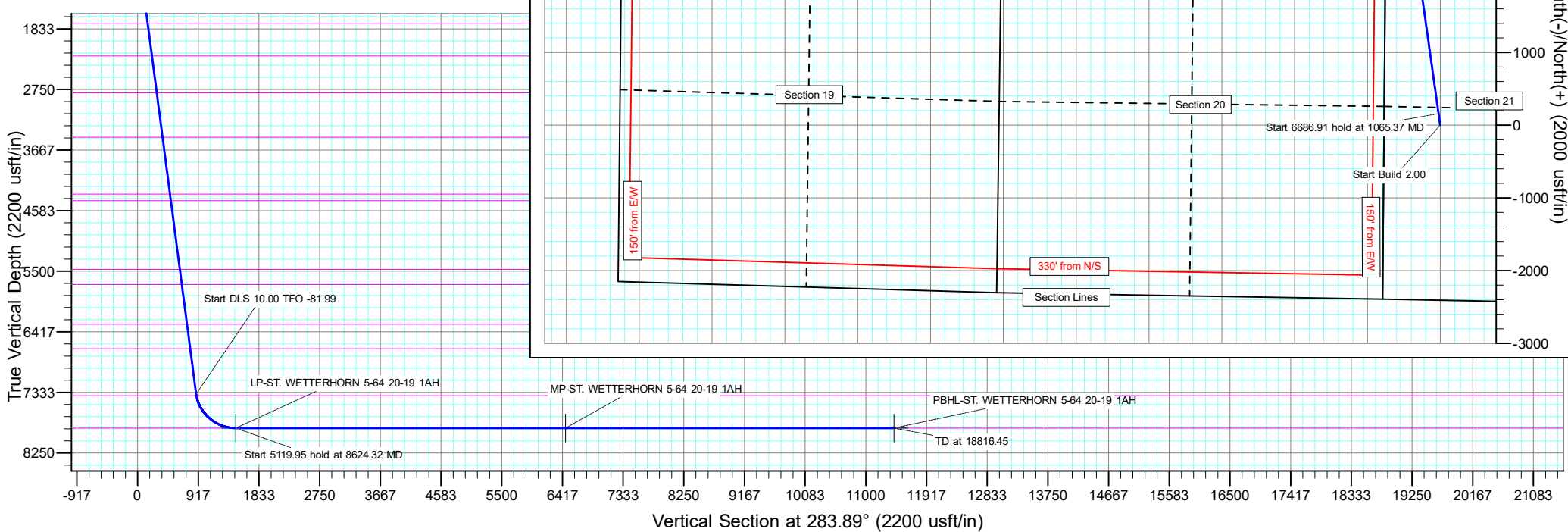
DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
LP-ST. WETTERHORN 5-64 20-19 1AH	7873.00	2532.37	-900.50	1647592.94	3262741.98	39.607731°N	104.567456°W	Point
MP-ST. WETTERHORN 5-64 20-19 1AH	7873.00	2576.34	-6020.26	1647584.17	3257622.17	39.607850°N	104.585627°W	Point
PBHL-ST. WETTERHORN 5-64 20-19 1AH	7873.00	2743.12	-11089.70	1647698.72	3252551.42	39.608303°N	104.603619°W	Point

PROJECT DETAILS: ARAPAHOE COUNTY

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

SHL:  
 2407' FSL, 771' FWL  
 SEC 21-T5S-R64W  
 LP:  
 380' FNL, 150' FEL  
 SEC 20-T5S-R64W  
 BHL:  
 380' FNL, 150' FWL  
 SEC 19-T5S-R64W



# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE WETTERHORN 5-64 20-19 1AH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KBE 25' @ 6011.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	ARAPAHOE COUNTY		
<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 Central Zone		Using geodetic scale factor

<b>Site</b>	SEC 21-T5S-R64W				
<b>Site Position:</b>		<b>Northing:</b>	1,647,972.95 usft	<b>Latitude:</b>	39.608770°N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,262,891.36 usft	<b>Longitude:</b>	104.566912°W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	STATE WETTERHORN 5-64 20-19 1AH					
<b>Well Position</b>	<b>+N/-S</b>	-2,910.81 usft	<b>Northing:</b>	1,645,070.04 usft	<b>Latitude:</b>	39.600779°N
	<b>+E/-W</b>	747.30 usft	<b>Easting:</b>	3,263,668.50 usft	<b>Longitude:</b>	104.564260°W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,986.00 usft

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	3/19/2025	7.27	65.89	51,148.45153302

<b>Design</b>	PROPOSAL 1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	283.89	

<b>Plan Survey Tool Program</b>	<b>Date</b>	6/4/2025			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	18,816.45	PROPOSAL 1 (OWB)	MWD OWSG	
				OWSG MWD - Standard	

<b>Plan Sections</b>										
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	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,065.37	19.31	352.01	1,047.20	159.56	-22.40	2.00	2.00	0.00	352.01	
7,752.28	19.31	352.01	7,358.03	2,349.03	-329.78	0.00	0.00	0.00	0.00	
8,624.32	90.00	270.49	7,873.00	2,532.37	-900.50	10.00	8.11	-9.35	-81.99	LP-ST. WETTERHOF
13,744.27	90.00	270.49	7,873.00	2,576.34	-6,020.26	0.00	0.00	0.00	0.00	MP-ST. WETTERHOI
13,814.37	90.00	271.89	7,873.00	2,577.80	-6,090.34	2.00	0.00	2.00	90.00	
18,816.45	90.00	271.89	7,873.00	2,743.12	-11,089.70	0.00	0.00	0.00	0.00	PBHL-ST. WETTERH

# Civitas Resources

## Planning Report

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<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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	
24.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Denver</b>										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Start Build 2.00</b>										
200.00	2.00	352.01	199.98	1.73	-0.24	0.65	2.00	2.00	0.00	
300.00	4.00	352.01	299.84	6.91	-0.97	2.60	2.00	2.00	0.00	
400.00	6.00	352.01	399.45	15.54	-2.18	5.85	2.00	2.00	0.00	
500.00	8.00	352.01	498.70	27.61	-3.88	10.39	2.00	2.00	0.00	
600.00	10.00	352.01	597.47	43.10	-6.05	16.22	2.00	2.00	0.00	
700.00	12.00	352.01	695.62	61.99	-8.70	23.34	2.00	2.00	0.00	
800.00	14.00	352.01	793.06	84.27	-11.83	31.72	2.00	2.00	0.00	
900.00	16.00	352.01	889.64	109.90	-15.43	41.37	2.00	2.00	0.00	
1,000.00	18.00	352.01	985.27	138.85	-19.49	52.26	2.00	2.00	0.00	
1,065.37	19.31	352.01	1,047.20	159.56	-22.40	60.06	2.00	2.00	0.00	
<b>Start 6686.91 hold at 1065.37 MD</b>										
1,100.00	19.31	352.01	1,079.89	170.90	-23.99	64.33	0.00	0.00	0.00	
1,145.68	19.31	352.01	1,123.00	185.85	-26.09	69.96	0.00	0.00	0.00	
<b>Arapahoe</b>										
1,200.00	19.31	352.01	1,174.26	203.64	-28.59	76.65	0.00	0.00	0.00	
1,300.00	19.31	352.01	1,268.64	236.38	-33.19	88.97	0.00	0.00	0.00	
1,400.00	19.31	352.01	1,363.01	269.12	-37.78	101.30	0.00	0.00	0.00	
1,500.00	19.31	352.01	1,457.39	301.87	-42.38	113.62	0.00	0.00	0.00	
1,600.00	19.31	352.01	1,551.76	334.61	-46.98	125.95	0.00	0.00	0.00	
1,700.00	19.31	352.01	1,646.14	367.35	-51.57	138.27	0.00	0.00	0.00	
1,800.00	19.31	352.01	1,740.52	400.09	-56.17	150.60	0.00	0.00	0.00	
1,807.93	19.31	352.01	1,748.00	402.69	-56.53	151.57	0.00	0.00	0.00	
<b>Laramie-Fox Hills Formation</b>										
1,900.00	19.31	352.01	1,834.89	432.84	-60.77	162.92	0.00	0.00	0.00	
2,000.00	19.31	352.01	1,929.27	465.58	-65.36	175.25	0.00	0.00	0.00	
2,100.00	19.31	352.01	2,023.64	498.32	-69.96	187.57	0.00	0.00	0.00	
2,200.00	19.31	352.01	2,118.02	531.06	-74.56	199.89	0.00	0.00	0.00	
2,300.00	19.31	352.01	2,212.40	563.81	-79.15	212.22	0.00	0.00	0.00	
2,332.43	19.31	352.01	2,243.00	574.42	-80.64	216.22	0.00	0.00	0.00	
<b>Pierre Formation</b>										
2,400.00	19.31	352.01	2,306.77	596.55	-83.75	224.54	0.00	0.00	0.00	
2,500.00	19.31	352.01	2,401.15	629.29	-88.35	236.87	0.00	0.00	0.00	
2,600.00	19.31	352.01	2,495.52	662.03	-92.94	249.19	0.00	0.00	0.00	
2,700.00	19.31	352.01	2,589.90	694.78	-97.54	261.52	0.00	0.00	0.00	
2,800.00	19.31	352.01	2,684.27	727.52	-102.14	273.84	0.00	0.00	0.00	
2,900.00	19.31	352.01	2,778.65	760.26	-106.73	286.17	0.00	0.00	0.00	
2,925.80	19.31	352.01	2,803.00	768.71	-107.92	289.35	0.00	0.00	0.00	
<b>Upper Pierre aquifer</b>										
3,000.00	19.31	352.01	2,873.03	793.00	-111.33	298.49	0.00	0.00	0.00	
3,100.00	19.31	352.01	2,967.40	825.75	-115.93	310.82	0.00	0.00	0.00	
3,200.00	19.31	352.01	3,061.78	858.49	-120.52	323.14	0.00	0.00	0.00	
3,300.00	19.31	352.01	3,156.15	891.23	-125.12	335.46	0.00	0.00	0.00	
3,400.00	19.31	352.01	3,250.53	923.97	-129.72	347.79	0.00	0.00	0.00	
3,500.00	19.31	352.01	3,344.90	956.72	-134.32	360.11	0.00	0.00	0.00	
3,600.00	19.31	352.01	3,439.28	989.46	-138.91	372.44	0.00	0.00	0.00	
3,635.73	19.31	352.01	3,473.00	1,001.16	-140.55	376.84	0.00	0.00	0.00	
<b>Base of Upper Pierre aquifer</b>										
3,700.00	19.31	352.01	3,533.66	1,022.20	-143.51	384.76	0.00	0.00	0.00	

# Civitas Resources

## Planning Report

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<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
3,800.00	19.31	352.01	3,628.03	1,054.95	-148.11	397.09	0.00	0.00	0.00	
3,900.00	19.31	352.01	3,722.41	1,087.69	-152.70	409.41	0.00	0.00	0.00	
4,000.00	19.31	352.01	3,816.78	1,120.43	-157.30	421.74	0.00	0.00	0.00	
4,100.00	19.31	352.01	3,911.16	1,153.17	-161.90	434.06	0.00	0.00	0.00	
4,200.00	19.31	352.01	4,005.54	1,185.92	-166.49	446.38	0.00	0.00	0.00	
4,300.00	19.31	352.01	4,099.91	1,218.66	-171.09	458.71	0.00	0.00	0.00	
4,400.00	19.31	352.01	4,194.29	1,251.40	-175.69	471.03	0.00	0.00	0.00	
4,500.00	19.31	352.01	4,288.66	1,284.14	-180.28	483.36	0.00	0.00	0.00	
4,546.98	19.31	352.01	4,333.00	1,299.53	-182.44	489.15	0.00	0.00	0.00	
<b>Larimer ("Parkman") sandstone</b>										
4,600.00	19.31	352.01	4,383.04	1,316.89	-184.88	495.68	0.00	0.00	0.00	
4,652.94	19.31	352.01	4,433.00	1,334.22	-187.31	502.21	0.00	0.00	0.00	
<b>Pierre Formation</b>										
4,700.00	19.31	352.01	4,477.41	1,349.63	-189.48	508.01	0.00	0.00	0.00	
4,800.00	19.31	352.01	4,571.79	1,382.37	-194.07	520.33	0.00	0.00	0.00	
4,900.00	19.31	352.01	4,666.17	1,415.11	-198.67	532.66	0.00	0.00	0.00	
5,000.00	19.31	352.01	4,760.54	1,447.86	-203.27	544.98	0.00	0.00	0.00	
5,100.00	19.31	352.01	4,854.92	1,480.60	-207.86	557.30	0.00	0.00	0.00	
5,200.00	19.31	352.01	4,949.29	1,513.34	-212.46	569.63	0.00	0.00	0.00	
5,300.00	19.31	352.01	5,043.67	1,546.08	-217.06	581.95	0.00	0.00	0.00	
5,400.00	19.31	352.01	5,138.04	1,578.83	-221.65	594.28	0.00	0.00	0.00	
5,500.00	19.31	352.01	5,232.42	1,611.57	-226.25	606.60	0.00	0.00	0.00	
5,600.00	19.31	352.01	5,326.80	1,644.31	-230.85	618.93	0.00	0.00	0.00	
5,700.00	19.31	352.01	5,421.17	1,677.05	-235.44	631.25	0.00	0.00	0.00	
5,754.92	19.31	352.01	5,473.00	1,695.04	-237.97	638.02	0.00	0.00	0.00	
<b>Terry ("Sussex") sandstone</b>										
5,800.00	19.31	352.01	5,515.55	1,709.80	-240.04	643.58	0.00	0.00	0.00	
5,900.00	19.31	352.01	5,609.92	1,742.54	-244.64	655.90	0.00	0.00	0.00	
5,998.62	19.31	352.01	5,703.00	1,774.83	-249.17	668.05	0.00	0.00	0.00	
<b>Pierre Formation</b>										
6,000.00	19.31	352.01	5,704.30	1,775.28	-249.23	668.22	0.00	0.00	0.00	
6,100.00	19.31	352.01	5,798.68	1,808.03	-253.83	680.55	0.00	0.00	0.00	
6,200.00	19.31	352.01	5,893.05	1,840.77	-258.43	692.87	0.00	0.00	0.00	
6,300.00	19.31	352.01	5,987.43	1,873.51	-263.02	705.20	0.00	0.00	0.00	
6,400.00	19.31	352.01	6,081.80	1,906.25	-267.62	717.52	0.00	0.00	0.00	
6,500.00	19.31	352.01	6,176.18	1,939.00	-272.22	729.85	0.00	0.00	0.00	
6,600.00	19.31	352.01	6,270.55	1,971.74	-276.82	742.17	0.00	0.00	0.00	
6,634.38	19.31	352.01	6,303.00	1,982.99	-278.40	746.41	0.00	0.00	0.00	
<b>Hygiene ("Shannon") sandstone</b>										
6,700.00	19.31	352.01	6,364.93	2,004.48	-281.41	754.50	0.00	0.00	0.00	
6,800.00	19.31	352.01	6,459.31	2,037.22	-286.01	766.82	0.00	0.00	0.00	
6,900.00	19.31	352.01	6,553.68	2,069.97	-290.61	779.14	0.00	0.00	0.00	
7,000.00	19.31	352.01	6,648.06	2,102.71	-295.20	791.47	0.00	0.00	0.00	
7,026.43	19.31	352.01	6,673.00	2,111.36	-296.42	794.73	0.00	0.00	0.00	
<b>Pierre Formation</b>										
7,100.00	19.31	352.01	6,742.43	2,135.45	-299.80	803.79	0.00	0.00	0.00	
7,200.00	19.31	352.01	6,836.81	2,168.19	-304.40	816.12	0.00	0.00	0.00	
7,300.00	19.31	352.01	6,931.19	2,200.94	-308.99	828.44	0.00	0.00	0.00	
7,400.00	19.31	352.01	7,025.56	2,233.68	-313.59	840.77	0.00	0.00	0.00	
7,500.00	19.31	352.01	7,119.94	2,266.42	-318.19	853.09	0.00	0.00	0.00	
7,600.00	19.31	352.01	7,214.31	2,299.16	-322.78	865.42	0.00	0.00	0.00	
7,700.00	19.31	352.01	7,308.69	2,331.91	-327.38	877.74	0.00	0.00	0.00	
7,752.28	19.31	352.01	7,358.03	2,349.03	-329.78	884.18	0.00	0.00	0.00	

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE WETTERHORN 5-64 20-19 1AH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KBE 25' @ 6011.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
<b>Start DLS 10.00 TFO -81.99</b>										
7,778.78	19.84	344.26	7,383.00	2,357.69	-331.61	888.04	10.00	2.03	-29.25	
<b>Sharon Springs Member</b>										
7,800.00	20.50	338.41	7,402.92	2,364.62	-333.96	891.98	10.00	3.10	-27.58	
7,850.00	22.74	326.24	7,449.42	2,380.80	-342.56	904.21	10.00	4.48	-24.33	
7,900.00	25.73	316.45	7,495.03	2,396.72	-355.41	920.52	10.00	5.98	-19.57	
7,950.00	29.25	308.72	7,539.39	2,412.24	-372.43	940.76	10.00	7.02	-15.46	
8,000.00	33.11	302.59	7,582.17	2,427.24	-393.48	964.80	10.00	7.73	-12.28	
8,050.00	37.22	297.63	7,623.04	2,441.62	-418.40	992.44	10.00	8.22	-9.91	
8,100.00	41.50	293.55	7,661.70	2,455.26	-447.01	1,023.49	10.00	8.56	-8.16	
8,150.00	45.90	290.11	7,697.84	2,468.06	-479.07	1,057.69	10.00	8.80	-6.88	
8,200.00	50.39	287.15	7,731.20	2,479.92	-514.36	1,094.79	10.00	8.98	-5.91	
8,250.00	54.95	284.56	7,761.52	2,490.75	-552.59	1,134.51	10.00	9.11	-5.19	
8,300.00	59.55	282.24	7,788.56	2,500.48	-593.49	1,176.54	10.00	9.21	-4.63	
8,350.00	64.20	280.14	7,812.13	2,509.01	-636.73	1,220.57	10.00	9.28	-4.21	
8,400.00	68.87	278.19	7,832.03	2,516.30	-682.00	1,266.26	10.00	9.34	-3.89	
8,450.00	73.56	276.36	7,848.14	2,522.28	-728.94	1,313.27	10.00	9.38	-3.66	
8,500.00	78.26	274.62	7,860.31	2,526.92	-777.20	1,361.22	10.00	9.41	-3.48	
8,550.00	82.98	272.94	7,868.45	2,530.16	-826.41	1,409.77	10.00	9.43	-3.37	
8,600.00	87.70	271.29	7,872.51	2,532.00	-876.19	1,458.54	10.00	9.44	-3.30	
8,624.32	90.00	270.49	7,873.00	2,532.37	-900.50	1,482.23	10.00	9.45	-3.28	
<b>Start 5119.95 hold at 8624.32 MD - Niobrara Formation</b>										
8,700.00	90.00	270.49	7,873.00	2,533.02	-976.18	1,555.85	0.00	0.00	0.00	
8,800.00	90.00	270.49	7,873.00	2,533.88	-1,076.18	1,653.13	0.00	0.00	0.00	
8,900.00	90.00	270.49	7,873.00	2,534.74	-1,176.17	1,750.40	0.00	0.00	0.00	
9,000.00	90.00	270.49	7,873.00	2,535.60	-1,276.17	1,847.68	0.00	0.00	0.00	
9,100.00	90.00	270.49	7,873.00	2,536.46	-1,376.16	1,944.96	0.00	0.00	0.00	
9,200.00	90.00	270.49	7,873.00	2,537.32	-1,476.16	2,042.24	0.00	0.00	0.00	
9,300.00	90.00	270.49	7,873.00	2,538.18	-1,576.16	2,139.51	0.00	0.00	0.00	
9,400.00	90.00	270.49	7,873.00	2,539.04	-1,676.15	2,236.79	0.00	0.00	0.00	
9,500.00	90.00	270.49	7,873.00	2,539.89	-1,776.15	2,334.07	0.00	0.00	0.00	
9,600.00	90.00	270.49	7,873.00	2,540.75	-1,876.15	2,431.34	0.00	0.00	0.00	
9,700.00	90.00	270.49	7,873.00	2,541.61	-1,976.14	2,528.62	0.00	0.00	0.00	
9,800.00	90.00	270.49	7,873.00	2,542.47	-2,076.14	2,625.90	0.00	0.00	0.00	
9,900.00	90.00	270.49	7,873.00	2,543.33	-2,176.14	2,723.17	0.00	0.00	0.00	
10,000.00	90.00	270.49	7,873.00	2,544.19	-2,276.13	2,820.45	0.00	0.00	0.00	
10,100.00	90.00	270.49	7,873.00	2,545.05	-2,376.13	2,917.73	0.00	0.00	0.00	
10,200.00	90.00	270.49	7,873.00	2,545.90	-2,476.12	3,015.00	0.00	0.00	0.00	
10,300.00	90.00	270.49	7,873.00	2,546.76	-2,576.12	3,112.28	0.00	0.00	0.00	
10,400.00	90.00	270.49	7,873.00	2,547.62	-2,676.12	3,209.56	0.00	0.00	0.00	
10,500.00	90.00	270.49	7,873.00	2,548.48	-2,776.11	3,306.84	0.00	0.00	0.00	
10,600.00	90.00	270.49	7,873.00	2,549.34	-2,876.11	3,404.11	0.00	0.00	0.00	
10,700.00	90.00	270.49	7,873.00	2,550.20	-2,976.11	3,501.39	0.00	0.00	0.00	
10,800.00	90.00	270.49	7,873.00	2,551.06	-3,076.10	3,598.67	0.00	0.00	0.00	
10,900.00	90.00	270.49	7,873.00	2,551.92	-3,176.10	3,695.94	0.00	0.00	0.00	
11,000.00	90.00	270.49	7,873.00	2,552.77	-3,276.09	3,793.22	0.00	0.00	0.00	
11,100.00	90.00	270.49	7,873.00	2,553.63	-3,376.09	3,890.50	0.00	0.00	0.00	
11,200.00	90.00	270.49	7,873.00	2,554.49	-3,476.09	3,987.77	0.00	0.00	0.00	
11,300.00	90.00	270.49	7,873.00	2,555.35	-3,576.08	4,085.05	0.00	0.00	0.00	
11,400.00	90.00	270.49	7,873.00	2,556.21	-3,676.08	4,182.33	0.00	0.00	0.00	
11,500.00	90.00	270.49	7,873.00	2,557.07	-3,776.08	4,279.60	0.00	0.00	0.00	
11,600.00	90.00	270.49	7,873.00	2,557.93	-3,876.07	4,376.88	0.00	0.00	0.00	
11,700.00	90.00	270.49	7,873.00	2,558.79	-3,976.07	4,474.16	0.00	0.00	0.00	

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE WETTERHORN 5-64 20-19 1AH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KBE 25' @ 6011.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)
11,800.00	90.00	270.49	7,873.00	2,559.64	-4,076.07	4,571.44	0.00	0.00	0.00
11,900.00	90.00	270.49	7,873.00	2,560.50	-4,176.06	4,668.71	0.00	0.00	0.00
12,000.00	90.00	270.49	7,873.00	2,561.36	-4,276.06	4,765.99	0.00	0.00	0.00
12,100.00	90.00	270.49	7,873.00	2,562.22	-4,376.05	4,863.27	0.00	0.00	0.00
12,200.00	90.00	270.49	7,873.00	2,563.08	-4,476.05	4,960.54	0.00	0.00	0.00
12,300.00	90.00	270.49	7,873.00	2,563.94	-4,576.05	5,057.82	0.00	0.00	0.00
12,400.00	90.00	270.49	7,873.00	2,564.80	-4,676.04	5,155.10	0.00	0.00	0.00
12,500.00	90.00	270.49	7,873.00	2,565.66	-4,776.04	5,252.37	0.00	0.00	0.00
12,600.00	90.00	270.49	7,873.00	2,566.51	-4,876.04	5,349.65	0.00	0.00	0.00
12,700.00	90.00	270.49	7,873.00	2,567.37	-4,976.03	5,446.93	0.00	0.00	0.00
12,800.00	90.00	270.49	7,873.00	2,568.23	-5,076.03	5,544.20	0.00	0.00	0.00
12,900.00	90.00	270.49	7,873.00	2,569.09	-5,176.02	5,641.48	0.00	0.00	0.00
13,000.00	90.00	270.49	7,873.00	2,569.95	-5,276.02	5,738.76	0.00	0.00	0.00
13,100.00	90.00	270.49	7,873.00	2,570.81	-5,376.02	5,836.04	0.00	0.00	0.00
13,200.00	90.00	270.49	7,873.00	2,571.67	-5,476.01	5,933.31	0.00	0.00	0.00
13,300.00	90.00	270.49	7,873.00	2,572.53	-5,576.01	6,030.59	0.00	0.00	0.00
13,400.00	90.00	270.49	7,873.00	2,573.38	-5,676.01	6,127.87	0.00	0.00	0.00
13,500.00	90.00	270.49	7,873.00	2,574.24	-5,776.00	6,225.14	0.00	0.00	0.00
13,600.00	90.00	270.49	7,873.00	2,575.10	-5,876.00	6,322.42	0.00	0.00	0.00
13,700.00	90.00	270.49	7,873.00	2,575.96	-5,976.00	6,419.70	0.00	0.00	0.00
13,744.27	90.00	270.49	7,873.00	2,576.34	-6,020.26	6,462.76	0.00	0.00	0.00
<b>Start DLS 2.00 TFO 90.00</b>									
13,800.00	90.00	271.61	7,873.00	2,577.36	-6,075.98	6,517.10	2.00	0.00	2.00
13,814.37	90.00	271.89	7,873.00	2,577.80	-6,090.34	6,531.14	2.00	0.00	2.00
<b>Start 5002.09 hold at 13814.37 MD</b>									
13,900.00	90.00	271.89	7,873.00	2,580.63	-6,175.93	6,614.90	0.00	0.00	0.00
14,000.00	90.00	271.89	7,873.00	2,583.93	-6,275.88	6,712.72	0.00	0.00	0.00
14,100.00	90.00	271.89	7,873.00	2,587.24	-6,375.82	6,810.53	0.00	0.00	0.00
14,200.00	90.00	271.89	7,873.00	2,590.54	-6,475.77	6,908.35	0.00	0.00	0.00
14,300.00	90.00	271.89	7,873.00	2,593.85	-6,575.71	7,006.16	0.00	0.00	0.00
14,400.00	90.00	271.89	7,873.00	2,597.15	-6,675.66	7,103.98	0.00	0.00	0.00
14,500.00	90.00	271.89	7,873.00	2,600.46	-6,775.60	7,201.79	0.00	0.00	0.00
14,600.00	90.00	271.89	7,873.00	2,603.76	-6,875.55	7,299.61	0.00	0.00	0.00
14,700.00	90.00	271.89	7,873.00	2,607.07	-6,975.49	7,397.42	0.00	0.00	0.00
14,800.00	90.00	271.89	7,873.00	2,610.37	-7,075.44	7,495.24	0.00	0.00	0.00
14,900.00	90.00	271.89	7,873.00	2,613.68	-7,175.38	7,593.05	0.00	0.00	0.00
15,000.00	90.00	271.89	7,873.00	2,616.98	-7,275.33	7,690.87	0.00	0.00	0.00
15,100.00	90.00	271.89	7,873.00	2,620.29	-7,375.27	7,788.68	0.00	0.00	0.00
15,200.00	90.00	271.89	7,873.00	2,623.59	-7,475.22	7,886.50	0.00	0.00	0.00
15,300.00	90.00	271.89	7,873.00	2,626.90	-7,575.17	7,984.31	0.00	0.00	0.00
15,400.00	90.00	271.89	7,873.00	2,630.20	-7,675.11	8,082.13	0.00	0.00	0.00
15,500.00	90.00	271.89	7,873.00	2,633.51	-7,775.06	8,179.94	0.00	0.00	0.00
15,600.00	90.00	271.89	7,873.00	2,636.81	-7,875.00	8,277.76	0.00	0.00	0.00
15,700.00	90.00	271.89	7,873.00	2,640.12	-7,974.95	8,375.57	0.00	0.00	0.00
15,800.00	90.00	271.89	7,873.00	2,643.42	-8,074.89	8,473.39	0.00	0.00	0.00
15,900.00	90.00	271.89	7,873.00	2,646.73	-8,174.84	8,571.20	0.00	0.00	0.00
16,000.00	90.00	271.89	7,873.00	2,650.03	-8,274.78	8,669.02	0.00	0.00	0.00
16,100.00	90.00	271.89	7,873.00	2,653.34	-8,374.73	8,766.83	0.00	0.00	0.00
16,200.00	90.00	271.89	7,873.00	2,656.64	-8,474.67	8,864.65	0.00	0.00	0.00
16,300.00	90.00	271.89	7,873.00	2,659.95	-8,574.62	8,962.46	0.00	0.00	0.00
16,400.00	90.00	271.89	7,873.00	2,663.25	-8,674.56	9,060.28	0.00	0.00	0.00
16,500.00	90.00	271.89	7,873.00	2,666.56	-8,774.51	9,158.09	0.00	0.00	0.00
16,600.00	90.00	271.89	7,873.00	2,669.86	-8,874.46	9,255.91	0.00	0.00	0.00
16,700.00	90.00	271.89	7,873.00	2,673.17	-8,974.40	9,353.72	0.00	0.00	0.00

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE WETTERHORN 5-64 20-19 1AH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KBE 25' @ 6011.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)
16,800.00	90.00	271.89	7,873.00	2,676.47	-9,074.35	9,451.53	0.00	0.00	0.00
16,900.00	90.00	271.89	7,873.00	2,679.78	-9,174.29	9,549.35	0.00	0.00	0.00
17,000.00	90.00	271.89	7,873.00	2,683.08	-9,274.24	9,647.16	0.00	0.00	0.00
17,100.00	90.00	271.89	7,873.00	2,686.39	-9,374.18	9,744.98	0.00	0.00	0.00
17,200.00	90.00	271.89	7,873.00	2,689.69	-9,474.13	9,842.79	0.00	0.00	0.00
17,300.00	90.00	271.89	7,873.00	2,693.00	-9,574.07	9,940.61	0.00	0.00	0.00
17,400.00	90.00	271.89	7,873.00	2,696.30	-9,674.02	10,038.42	0.00	0.00	0.00
17,500.00	90.00	271.89	7,873.00	2,699.61	-9,773.96	10,136.24	0.00	0.00	0.00
17,600.00	90.00	271.89	7,873.00	2,702.91	-9,873.91	10,234.05	0.00	0.00	0.00
17,700.00	90.00	271.89	7,873.00	2,706.22	-9,973.85	10,331.87	0.00	0.00	0.00
17,800.00	90.00	271.89	7,873.00	2,709.52	-10,073.80	10,429.68	0.00	0.00	0.00
17,900.00	90.00	271.89	7,873.00	2,712.83	-10,173.74	10,527.50	0.00	0.00	0.00
18,000.00	90.00	271.89	7,873.00	2,716.13	-10,273.69	10,625.31	0.00	0.00	0.00
18,100.00	90.00	271.89	7,873.00	2,719.44	-10,373.64	10,723.13	0.00	0.00	0.00
18,200.00	90.00	271.89	7,873.00	2,722.74	-10,473.58	10,820.94	0.00	0.00	0.00
18,300.00	90.00	271.89	7,873.00	2,726.05	-10,573.53	10,918.76	0.00	0.00	0.00
18,400.00	90.00	271.89	7,873.00	2,729.35	-10,673.47	11,016.57	0.00	0.00	0.00
18,500.00	90.00	271.89	7,873.00	2,732.66	-10,773.42	11,114.39	0.00	0.00	0.00
18,600.00	90.00	271.89	7,873.00	2,735.96	-10,873.36	11,212.20	0.00	0.00	0.00
18,700.00	90.00	271.89	7,873.00	2,739.27	-10,973.31	11,310.02	0.00	0.00	0.00
18,800.00	90.00	271.89	7,873.00	2,742.57	-11,073.25	11,407.83	0.00	0.00	0.00
18,816.45	90.00	271.89	7,873.00	2,743.12	-11,089.70	11,423.92	0.00	0.00	0.00
<b>TD at 18816.45</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP-ST. WETTERHORN - plan hits target center - Point	0.00	0.00	7,873.00	2,532.37	-900.50	1,647,592.94	3,262,741.98	39.607731°N	104.567456°W
MP-ST. WETTERHORN - plan hits target center - Point	0.00	0.00	7,873.00	2,576.34	-6,020.26	1,647,584.17	3,257,622.18	39.607850°N	104.585627°W
PBHL-ST. WETTERHORN - plan hits target center - Point	0.00	0.00	7,873.00	2,743.12	-11,089.70	1,647,698.72	3,252,551.43	39.608303°N	104.603619°W

# Civitas Resources

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well STATE WETTERHORN 5-64 20-19 1AH
<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>TVD Reference:</b>	KBE 25' @ 6011.00usft
<b>Project:</b>	ARAPAHOE COUNTY	<b>MD Reference:</b>	KBE 25' @ 6011.00usft
<b>Site:</b>	SEC 21-T5S-R64W	<b>North Reference:</b>	True
<b>Well:</b>	STATE WETTERHORN 5-64 20-19 1AH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
24.00	24.00	Denver			
1,145.68	1,123.00	Arapahoe			
1,807.93	1,748.00	Laramie-Fox Hills Formation			
2,332.43	2,243.00	Pierre Formation			
2,925.80	2,803.00	Upper Pierre aquifer			
3,635.73	3,473.00	Base of Upper Pierre aquifer			
4,546.98	4,333.00	Larimer ("Parkman") sandstone			
4,652.94	4,433.00	Pierre Formation			
5,754.92	5,473.00	Terry ("Sussex") sandstone			
5,998.62	5,703.00	Pierre Formation			
6,634.38	6,303.00	Hygiene ("Shannon") sandstone			
7,026.43	6,673.00	Pierre Formation			
7,778.78	7,383.00	Sharon Springs Member			
8,624.32	7,873.00	Niobrara Formation			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
100.00	100.00	0.00	0.00		Start Build 2.00
1,065.37	1,047.20	159.56	-22.40		Start 6686.91 hold at 1065.37 MD
7,752.28	7,358.03	2,349.03	-329.78		Start DLS 10.00 TFO -81.99
8,624.32	7,873.00	2,532.37	-900.50		Start 5119.95 hold at 8624.32 MD
13,744.27	7,873.00	2,576.34	-6,020.26		Start DLS 2.00 TFO 90.00
13,814.37	7,873.00	2,577.80	-6,090.34		Start 5002.09 hold at 13814.37 MD
18,816.45	7,873.00	2,743.12	-11,089.70		TD at 18816.45