

CRESTONE PEAK RESOURCES

ARAPAHOE COUNTY

SEC 6-T5S-R64W

ALAMOSA 5-64 6-1 1BH

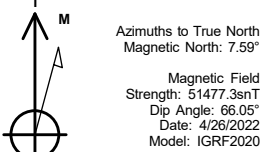
OWB

Plan: PROPOSAL 1

Standard Planning Report

02 May, 2022

Project: ARAPAHOE COUNTY
Site: SEC 6-T5S-R64W
Well: ALAMOSA 5-64 6-1 1BH
Wellbore: OWB
Design: PROPOSAL 1



WELL DETAILS: ALAMOSA 5-64 6-1 1BH

5997.71					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1662995.99	3257413.17	39.650164°N	104.585818°W

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	554.36	7.09	59.67	553.46	11.05	18.89	2.00	59.67	-19.19	
4	7219.02	7.09	59.67	7167.20	426.28	728.64	0.00	0.00	-740.04	
5	8179.32	90.00	271.31	7799.00	480.47	159.94	10.00	-148.17	-173.03	LP- ALAMOSA 5-64 6-1 1BH
6	11884.11	90.00	271.31	7799.00	565.00	-3543.89	0.00	0.00	3527.09	IP 1- ALAMOSA 5-64 6-1 1BH
7	12557.95	90.00	251.09	7799.00	462.44	-4206.35	3.00	-90.00	4192.11	IP 2- ALAMOSA 5-64 6-1 1BH
8	14512.73	90.00	251.09	7799.00	-171.00	-6055.65	0.00	0.00	6058.06	IP 2- ALAMOSA 5-64 6-1 1BH
9	15143.15	90.00	270.00	7799.00	-274.05	-6674.69	3.00	90.00	6679.69	PBHL- ALAMOSA 5-64 6-1 1BH
10	18464.08	90.00	270.00	7799.00	-273.79	-9995.62	0.00	0.00	9999.37	PBHL- ALAMOSA 5-64 6-1 1BH

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	Start Build 2.00
554.36	7.09	59.67	553.46	11.05	18.89	-19.19	21.89	Start 6664.66 hold at 554.36 MD
7219.02	7.09	59.67	7167.20	426.28	728.64	-740.04	844.17	Start DLS 10.00 TFO -148.17
8179.32	90.00	271.31	7799.00	480.47	159.94	-173.03	1427.41	Start 3704.79 hold at 8179.32 MD
11884.11	90.00	271.31	7799.00	565.00	-3543.89	3527.09	5132.20	Start DLS 3.00 TFO -90.00
12557.95	90.00	251.09	7799.00	462.44	-4206.35	4192.11	5806.04	Start 1954.78 hold at 12557.95 MD
14512.73	90.00	251.09	7799.00	-171.00	-6055.65	6058.06	7760.82	Start Turn 3.00
15143.15	90.00	270.00	7799.00	-274.05	-6674.69	6679.69	8391.24	Start 3320.93 hold at 15143.15 MD
18464.08	90.00	270.00	7799.00	-273.79	-9995.62	9999.37	11712.17	TD at 18464.08

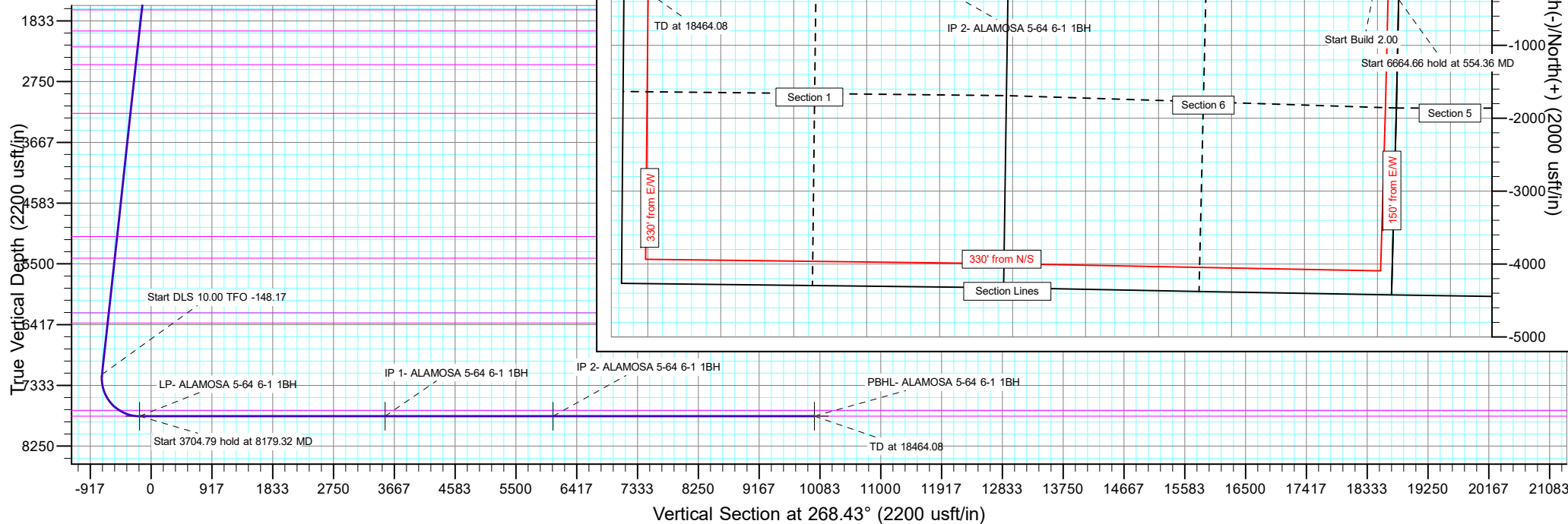
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
IP 1- ALAMOSA 5-64 6-1 1BH	7799.00	565.00	-3543.89	1663525.29	3253863.84	39.651714°N	104.598404°W	Point
- plan hits target center								
IP 2- ALAMOSA 5-64 6-1 1BH	7799.00	-171.00	-6055.65	1662764.07	3251359.66	39.649693°N	104.607323°W	Point
- plan hits target center								
LP- ALAMOSA 5-64 6-1 1BH	7799.00	480.47	159.94	1663478.04	3257568.27	39.651483°N	104.585250°W	Point
- plan hits target center								
PBHL- ALAMOSA 5-64 6-1 1BH	7799.00	-273.79	-9995.62	1662621.64	3247421.00	39.649407°N	104.621315°W	Point
- plan hits target center								

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:
834' FNL, 300' FEL
SEC 6-T5S-R64W
LP:
350' FNL, 150' FEL
SEC 6-T5S-R64W
BHL:
1244' FNL, 330' FWL
SEC 1-T5S-R65W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

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

Site		SEC 6-T5S-R64W			
Site Position:		Northing:	1,663,826.01 usft	Latitude:	39.652434°N
From:	Lat/Long	Easting:	3,257,721.89 usft	Longitude:	104.584692°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.58 °

Well	ALAMOSA 5-64 6-1 1BH					
Well Position	+N/-S	-826.89 usft	Northing:	1,662,995.99 usft	Latitude:	39.650164°N
	+E/-W	-317.07 usft	Easting:	3,257,413.18 usft	Longitude:	104.585818°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,997.71 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/26/2022	7.59	66.05	51,477.32741507

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	268.43	

Plan Survey Tool Program	Date	5/2/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,464.08	PROPOSAL 1 (OWB)	MWD OWSG	
				OWSG MWD - Standard	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
554.36	7.09	59.67	553.46	11.05	18.89	2.00	2.00	0.00	59.67	
7,219.02	7.09	59.67	7,167.20	426.28	728.64	0.00	0.00	0.00	0.00	
8,179.32	90.00	271.31	7,799.00	480.47	159.94	10.00	8.63	-15.45	-148.17	LP- ALAMOSA 5-64 6
11,884.11	90.00	271.31	7,799.00	565.00	-3,543.89	0.00	0.00	0.00	0.00	IP 1- ALAMOSA 5-64
12,557.95	90.00	251.09	7,799.00	462.44	-4,206.35	3.00	0.00	-3.00	-90.00	IP 2- ALAMOSA 5-64
14,512.73	90.00	251.09	7,799.00	-171.00	-6,055.65	0.00	0.00	0.00	0.00	IP 2- ALAMOSA 5-64
15,143.15	90.00	270.00	7,799.00	-274.05	-6,674.69	3.00	0.00	3.00	90.00	PBHL- ALAMOSA 5-6
18,464.08	90.00	270.00	7,799.00	-273.79	-9,995.62	0.00	0.00	0.00	0.00	PBHL- ALAMOSA 5-6

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	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	
100.00	0.00	0.00	100.00	0.00	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	0.00	
Start Build 2.00										
208.00	0.16	59.67	208.00	0.01	0.01	-0.01	2.00	2.00	0.00	
Denver Formation										
300.00	2.00	59.67	299.98	0.88	1.51	-1.53	2.00	2.00	0.00	
400.00	4.00	59.67	399.84	3.52	6.02	-6.12	2.00	2.00	0.00	
500.00	6.00	59.67	499.45	7.92	13.55	-13.76	2.00	2.00	0.00	
554.36	7.09	59.67	553.46	11.05	18.89	-19.19	2.00	2.00	0.00	
Start 6664.66 hold at 554.36 MD										
600.00	7.09	59.67	598.75	13.90	23.75	-24.12	0.00	0.00	0.00	
700.00	7.09	59.67	697.98	20.13	34.40	-34.94	0.00	0.00	0.00	
800.00	7.09	59.67	797.22	26.36	45.05	-45.76	0.00	0.00	0.00	
900.00	7.09	59.67	896.46	32.59	55.70	-56.57	0.00	0.00	0.00	
1,000.00	7.09	59.67	995.69	38.82	66.35	-67.39	0.00	0.00	0.00	
1,100.00	7.09	59.67	1,094.93	45.05	77.00	-78.20	0.00	0.00	0.00	
1,200.00	7.09	59.67	1,194.16	51.28	87.65	-89.02	0.00	0.00	0.00	
1,300.00	7.09	59.67	1,293.40	57.51	98.30	-99.84	0.00	0.00	0.00	
1,400.00	7.09	59.67	1,392.64	63.74	108.95	-110.65	0.00	0.00	0.00	
1,500.00	7.09	59.67	1,491.87	69.97	119.60	-121.47	0.00	0.00	0.00	
1,600.00	7.09	59.67	1,591.11	76.20	130.25	-132.28	0.00	0.00	0.00	
1,675.47	7.09	59.67	1,666.00	80.90	138.28	-140.45	0.00	0.00	0.00	
Laramie Formation										
1,700.00	7.09	59.67	1,690.34	82.43	140.90	-143.10	0.00	0.00	0.00	
1,800.00	7.09	59.67	1,789.58	88.66	151.55	-153.92	0.00	0.00	0.00	
1,900.00	7.09	59.67	1,888.82	94.89	162.19	-164.73	0.00	0.00	0.00	
1,996.92	7.09	59.67	1,985.00	100.93	172.52	-175.22	0.00	0.00	0.00	
Fox Hills sandstone										
2,000.00	7.09	59.67	1,988.05	101.12	172.84	-175.55	0.00	0.00	0.00	
2,100.00	7.09	59.67	2,087.29	107.35	183.49	-186.36	0.00	0.00	0.00	
2,200.00	7.09	59.67	2,186.52	113.58	194.14	-197.18	0.00	0.00	0.00	
2,239.78	7.09	59.67	2,226.00	116.06	198.38	-201.48	0.00	0.00	0.00	
Pierre Formation										
2,300.00	7.09	59.67	2,285.76	119.81	204.79	-208.00	0.00	0.00	0.00	
2,400.00	7.09	59.67	2,385.00	126.04	215.44	-218.81	0.00	0.00	0.00	
2,500.00	7.09	59.67	2,484.23	132.27	226.09	-229.63	0.00	0.00	0.00	
2,510.85	7.09	59.67	2,495.00	132.95	227.25	-230.80	0.00	0.00	0.00	
Upper Pierre aquifer										
2,600.00	7.09	59.67	2,583.47	138.50	236.74	-240.44	0.00	0.00	0.00	
2,700.00	7.09	59.67	2,682.70	144.73	247.39	-251.26	0.00	0.00	0.00	
2,800.00	7.09	59.67	2,781.94	150.96	258.04	-262.08	0.00	0.00	0.00	
2,900.00	7.09	59.67	2,881.18	157.19	268.69	-272.89	0.00	0.00	0.00	
3,000.00	7.09	59.67	2,980.41	163.42	279.34	-283.71	0.00	0.00	0.00	
3,100.00	7.09	59.67	3,079.65	169.65	289.99	-294.52	0.00	0.00	0.00	
3,200.00	7.09	59.67	3,178.88	175.88	300.64	-305.34	0.00	0.00	0.00	
3,250.50	7.09	59.67	3,229.00	179.03	306.01	-310.80	0.00	0.00	0.00	
Base of Upper Pierre aquifer										
3,300.00	7.09	59.67	3,278.12	182.11	311.29	-316.16	0.00	0.00	0.00	
3,400.00	7.09	59.67	3,377.36	188.34	321.94	-326.97	0.00	0.00	0.00	
3,500.00	7.09	59.67	3,476.59	194.58	332.58	-337.79	0.00	0.00	0.00	
3,600.00	7.09	59.67	3,575.83	200.81	343.23	-348.60	0.00	0.00	0.00	
3,700.00	7.09	59.67	3,675.06	207.04	353.88	-359.42	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	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)
3,800.00	7.09	59.67	3,774.30	213.27	364.53	-370.24	0.00	0.00	0.00
3,900.00	7.09	59.67	3,873.53	219.50	375.18	-381.05	0.00	0.00	0.00
4,000.00	7.09	59.67	3,972.77	225.73	385.83	-391.87	0.00	0.00	0.00
4,100.00	7.09	59.67	4,072.01	231.96	396.48	-402.68	0.00	0.00	0.00
4,200.00	7.09	59.67	4,171.24	238.19	407.13	-413.50	0.00	0.00	0.00
4,300.00	7.09	59.67	4,270.48	244.42	417.78	-424.31	0.00	0.00	0.00
4,400.00	7.09	59.67	4,369.71	250.65	428.43	-435.13	0.00	0.00	0.00
4,500.00	7.09	59.67	4,468.95	256.88	439.08	-445.95	0.00	0.00	0.00
4,600.00	7.09	59.67	4,568.19	263.11	449.73	-456.76	0.00	0.00	0.00
4,700.00	7.09	59.67	4,667.42	269.34	460.38	-467.58	0.00	0.00	0.00
4,800.00	7.09	59.67	4,766.66	275.57	471.03	-478.39	0.00	0.00	0.00
4,900.00	7.09	59.67	4,865.89	281.80	481.68	-489.21	0.00	0.00	0.00
5,000.00	7.09	59.67	4,965.13	288.03	492.33	-500.03	0.00	0.00	0.00
5,100.00	7.09	59.67	5,064.37	294.26	502.97	-510.84	0.00	0.00	0.00
5,124.82	7.09	59.67	5,089.00	295.81	505.62	-513.53	0.00	0.00	0.00
Larimer sandstone									
5,200.00	7.09	59.67	5,163.60	300.49	513.62	-521.66	0.00	0.00	0.00
5,300.00	7.09	59.67	5,262.84	306.72	524.27	-532.47	0.00	0.00	0.00
5,400.00	7.09	59.67	5,362.07	312.95	534.92	-543.29	0.00	0.00	0.00
5,452.33	7.09	59.67	5,414.00	316.21	540.49	-548.95	0.00	0.00	0.00
Terry ("Sussex") sandstone									
5,500.00	7.09	59.67	5,461.31	319.18	545.57	-554.11	0.00	0.00	0.00
5,600.00	7.09	59.67	5,560.55	325.41	556.22	-564.92	0.00	0.00	0.00
5,700.00	7.09	59.67	5,659.78	331.64	566.87	-575.74	0.00	0.00	0.00
5,800.00	7.09	59.67	5,759.02	337.87	577.52	-586.55	0.00	0.00	0.00
5,900.00	7.09	59.67	5,858.25	344.10	588.17	-597.37	0.00	0.00	0.00
6,000.00	7.09	59.67	5,957.49	350.33	598.82	-608.19	0.00	0.00	0.00
6,100.00	7.09	59.67	6,056.73	356.56	609.47	-619.00	0.00	0.00	0.00
6,200.00	7.09	59.67	6,155.96	362.79	620.12	-629.82	0.00	0.00	0.00
6,283.68	7.09	59.67	6,239.00	368.01	629.03	-638.87	0.00	0.00	0.00
Hygiene ("Shannon") sandstone									
6,300.00	7.09	59.67	6,255.20	369.02	630.77	-640.63	0.00	0.00	0.00
6,400.00	7.09	59.67	6,354.43	375.25	641.42	-651.45	0.00	0.00	0.00
6,437.86	7.09	59.67	6,392.00	377.61	645.45	-655.54	0.00	0.00	0.00
Pierre shale									
6,500.00	7.09	59.67	6,453.67	381.48	652.07	-662.27	0.00	0.00	0.00
6,600.00	7.09	59.67	6,552.91	387.71	662.72	-673.08	0.00	0.00	0.00
6,700.00	7.09	59.67	6,652.14	393.94	673.36	-683.90	0.00	0.00	0.00
6,800.00	7.09	59.67	6,751.38	400.18	684.01	-694.71	0.00	0.00	0.00
6,900.00	7.09	59.67	6,850.61	406.41	694.66	-705.53	0.00	0.00	0.00
7,000.00	7.09	59.67	6,949.85	412.64	705.31	-716.35	0.00	0.00	0.00
7,100.00	7.09	59.67	7,049.09	418.87	715.96	-727.16	0.00	0.00	0.00
7,200.00	7.09	59.67	7,148.32	425.10	726.61	-737.98	0.00	0.00	0.00
7,219.02	7.09	59.67	7,167.20	426.28	728.64	-740.04	0.00	0.00	0.00
Start DLS 10.00 TFO -148.17									
7,250.00	4.74	39.51	7,198.01	428.24	731.10	-742.55	10.00	-7.56	-65.08
7,300.00	4.27	332.28	7,247.89	431.48	731.55	-743.09	10.00	-0.96	-134.46
7,350.00	7.99	299.00	7,297.61	434.81	727.65	-739.28	10.00	7.45	-66.57
7,400.00	12.62	288.24	7,346.79	438.21	719.41	-731.14	10.00	9.27	-21.53
7,450.00	17.46	283.27	7,395.07	441.64	706.92	-718.74	10.00	9.67	-9.92
7,500.00	22.37	280.43	7,442.07	445.09	690.25	-702.18	10.00	9.81	-5.70
7,550.00	27.30	278.56	7,487.43	448.52	669.54	-681.57	10.00	9.88	-3.72
7,600.00	32.26	277.24	7,530.81	451.91	644.95	-657.08	10.00	9.91	-2.65
7,650.00	37.23	276.23	7,571.88	455.24	616.66	-628.89	10.00	9.93	-2.01

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	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)
7,700.00	42.20	275.43	7,610.33	458.47	584.88	-597.22	10.00	9.95	-1.60
7,750.00	47.18	274.77	7,645.87	461.59	549.87	-562.30	10.00	9.96	-1.32
7,800.00	52.16	274.21	7,678.21	464.56	511.88	-524.41	10.00	9.96	-1.12
7,850.00	57.15	273.72	7,707.13	467.38	471.20	-483.82	10.00	9.97	-0.98
7,859.09	58.05	273.64	7,712.00	467.87	463.55	-476.18	10.00	9.97	-0.91
Sharon Springs Member									
7,900.00	62.13	273.28	7,732.39	470.01	428.16	-440.86	10.00	9.97	-0.87
7,950.00	67.12	272.88	7,753.81	472.43	383.06	-395.85	10.00	9.97	-0.80
8,000.00	72.11	272.51	7,771.23	474.64	336.26	-349.13	10.00	9.98	-0.74
8,050.00	77.10	272.16	7,784.50	476.60	288.11	-301.05	10.00	9.98	-0.70
8,100.00	82.09	271.83	7,793.53	478.31	238.98	-251.98	10.00	9.98	-0.67
8,150.00	87.07	271.50	7,798.25	479.76	189.24	-202.30	10.00	9.98	-0.66
8,179.32	90.00	271.31	7,799.00	480.47	159.94	-173.03	10.00	9.98	-0.65
Start 3704.79 hold at 8179.32 MD - Niobrara Formation									
8,200.00	90.00	271.31	7,799.00	480.95	139.26	-152.38	0.00	0.00	0.00
8,300.00	90.00	271.31	7,799.00	483.23	39.29	-52.50	0.00	0.00	0.00
8,400.00	90.00	271.31	7,799.00	485.51	-60.68	47.37	0.00	0.00	0.00
8,500.00	90.00	271.31	7,799.00	487.79	-160.66	147.24	0.00	0.00	0.00
8,600.00	90.00	271.31	7,799.00	490.07	-260.63	247.12	0.00	0.00	0.00
8,700.00	90.00	271.31	7,799.00	492.35	-360.61	346.99	0.00	0.00	0.00
8,800.00	90.00	271.31	7,799.00	494.63	-460.58	446.87	0.00	0.00	0.00
8,900.00	90.00	271.31	7,799.00	496.92	-560.55	546.74	0.00	0.00	0.00
9,000.00	90.00	271.31	7,799.00	499.20	-660.53	646.61	0.00	0.00	0.00
9,100.00	90.00	271.31	7,799.00	501.48	-760.50	746.49	0.00	0.00	0.00
9,200.00	90.00	271.31	7,799.00	503.76	-860.48	846.36	0.00	0.00	0.00
9,300.00	90.00	271.31	7,799.00	506.04	-960.45	946.24	0.00	0.00	0.00
9,400.00	90.00	271.31	7,799.00	508.32	-1,060.42	1,046.11	0.00	0.00	0.00
9,500.00	90.00	271.31	7,799.00	510.61	-1,160.40	1,145.98	0.00	0.00	0.00
9,600.00	90.00	271.31	7,799.00	512.89	-1,260.37	1,245.86	0.00	0.00	0.00
9,700.00	90.00	271.31	7,799.00	515.17	-1,360.35	1,345.73	0.00	0.00	0.00
9,800.00	90.00	271.31	7,799.00	517.45	-1,460.32	1,445.61	0.00	0.00	0.00
9,900.00	90.00	271.31	7,799.00	519.73	-1,560.29	1,545.48	0.00	0.00	0.00
10,000.00	90.00	271.31	7,799.00	522.01	-1,660.27	1,645.35	0.00	0.00	0.00
10,100.00	90.00	271.31	7,799.00	524.29	-1,760.24	1,745.23	0.00	0.00	0.00
10,200.00	90.00	271.31	7,799.00	526.58	-1,860.22	1,845.10	0.00	0.00	0.00
10,300.00	90.00	271.31	7,799.00	528.86	-1,960.19	1,944.98	0.00	0.00	0.00
10,400.00	90.00	271.31	7,799.00	531.14	-2,060.16	2,044.85	0.00	0.00	0.00
10,500.00	90.00	271.31	7,799.00	533.42	-2,160.14	2,144.72	0.00	0.00	0.00
10,600.00	90.00	271.31	7,799.00	535.70	-2,260.11	2,244.60	0.00	0.00	0.00
10,700.00	90.00	271.31	7,799.00	537.98	-2,360.09	2,344.47	0.00	0.00	0.00
10,800.00	90.00	271.31	7,799.00	540.27	-2,460.06	2,444.35	0.00	0.00	0.00
10,900.00	90.00	271.31	7,799.00	542.55	-2,560.03	2,544.22	0.00	0.00	0.00
11,000.00	90.00	271.31	7,799.00	544.83	-2,660.01	2,644.09	0.00	0.00	0.00
11,100.00	90.00	271.31	7,799.00	547.11	-2,759.98	2,743.97	0.00	0.00	0.00
11,200.00	90.00	271.31	7,799.00	549.39	-2,859.96	2,843.84	0.00	0.00	0.00
11,300.00	90.00	271.31	7,799.00	551.67	-2,959.93	2,943.72	0.00	0.00	0.00
11,400.00	90.00	271.31	7,799.00	553.95	-3,059.90	3,043.59	0.00	0.00	0.00
11,500.00	90.00	271.31	7,799.00	556.24	-3,159.88	3,143.46	0.00	0.00	0.00
11,600.00	90.00	271.31	7,799.00	558.52	-3,259.85	3,243.34	0.00	0.00	0.00
11,700.00	90.00	271.31	7,799.00	560.80	-3,359.83	3,343.21	0.00	0.00	0.00
11,800.00	90.00	271.31	7,799.00	563.08	-3,459.80	3,443.09	0.00	0.00	0.00
11,884.11	90.00	271.31	7,799.00	565.00	-3,543.89	3,527.09	0.00	0.00	0.00
Start DLS 3.00 TFO -90.00									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	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)
11,900.00	90.00	270.83	7,799.00	565.30	-3,559.78	3,542.96	3.00	0.00	-3.00
12,000.00	90.00	267.83	7,799.00	564.13	-3,659.76	3,642.94	3.00	0.00	-3.00
12,100.00	90.00	264.83	7,799.00	557.73	-3,759.54	3,742.86	3.00	0.00	-3.00
12,200.00	90.00	261.83	7,799.00	546.12	-3,858.85	3,842.45	3.00	0.00	-3.00
12,300.00	90.00	258.83	7,799.00	529.32	-3,957.42	3,941.44	3.00	0.00	-3.00
12,400.00	90.00	255.83	7,799.00	507.39	-4,054.97	4,039.56	3.00	0.00	-3.00
12,500.00	90.00	252.83	7,799.00	480.39	-4,151.25	4,136.54	3.00	0.00	-3.00
12,557.95	90.00	251.09	7,799.00	462.44	-4,206.35	4,192.11	3.00	0.00	-3.00
Start 1954.78 hold at 12557.95 MD									
12,600.00	90.00	251.09	7,799.00	448.82	-4,246.13	4,232.25	0.00	0.00	0.00
12,700.00	90.00	251.09	7,799.00	416.41	-4,340.73	4,327.70	0.00	0.00	0.00
12,800.00	90.00	251.09	7,799.00	384.01	-4,435.34	4,423.16	0.00	0.00	0.00
12,900.00	90.00	251.09	7,799.00	351.60	-4,529.94	4,518.62	0.00	0.00	0.00
13,000.00	90.00	251.09	7,799.00	319.20	-4,624.54	4,614.07	0.00	0.00	0.00
13,100.00	90.00	251.09	7,799.00	286.79	-4,719.15	4,709.53	0.00	0.00	0.00
13,200.00	90.00	251.09	7,799.00	254.39	-4,813.75	4,804.98	0.00	0.00	0.00
13,300.00	90.00	251.09	7,799.00	221.98	-4,908.36	4,900.44	0.00	0.00	0.00
13,400.00	90.00	251.09	7,799.00	189.58	-5,002.96	4,995.89	0.00	0.00	0.00
13,500.00	90.00	251.09	7,799.00	157.17	-5,097.56	5,091.35	0.00	0.00	0.00
13,600.00	90.00	251.09	7,799.00	124.77	-5,192.17	5,186.81	0.00	0.00	0.00
13,700.00	90.00	251.09	7,799.00	92.36	-5,286.77	5,282.26	0.00	0.00	0.00
13,800.00	90.00	251.09	7,799.00	59.96	-5,381.38	5,377.72	0.00	0.00	0.00
13,900.00	90.00	251.09	7,799.00	27.55	-5,475.98	5,473.17	0.00	0.00	0.00
14,000.00	90.00	251.09	7,799.00	-4.85	-5,570.58	5,568.63	0.00	0.00	0.00
14,100.00	90.00	251.09	7,799.00	-37.25	-5,665.19	5,664.09	0.00	0.00	0.00
14,200.00	90.00	251.09	7,799.00	-69.66	-5,759.79	5,759.54	0.00	0.00	0.00
14,300.00	90.00	251.09	7,799.00	-102.06	-5,854.40	5,855.00	0.00	0.00	0.00
14,400.00	90.00	251.09	7,799.00	-134.47	-5,949.00	5,950.45	0.00	0.00	0.00
14,500.00	90.00	251.09	7,799.00	-166.87	-6,043.61	6,045.91	0.00	0.00	0.00
14,512.73	90.00	251.09	7,799.00	-171.00	-6,055.65	6,058.06	0.00	0.00	0.00
Start Turn 3.00									
14,600.00	90.00	253.71	7,799.00	-197.38	-6,138.83	6,141.93	3.00	0.00	3.00
14,700.00	90.00	256.71	7,799.00	-222.91	-6,235.50	6,239.27	3.00	0.00	3.00
14,800.00	90.00	259.71	7,799.00	-243.34	-6,333.38	6,337.67	3.00	0.00	3.00
14,900.00	90.00	262.71	7,799.00	-258.62	-6,432.20	6,436.87	3.00	0.00	3.00
15,000.00	90.00	265.71	7,799.00	-268.70	-6,531.67	6,536.58	3.00	0.00	3.00
15,100.00	90.00	268.71	7,799.00	-273.57	-6,631.54	6,636.55	3.00	0.00	3.00
15,143.15	90.00	270.00	7,799.00	-274.05	-6,674.69	6,679.69	3.00	0.00	3.00
Start 3320.93 hold at 15143.15 MD									
15,200.00	90.00	270.00	7,799.00	-274.05	-6,731.54	6,736.52	0.00	0.00	0.00
15,300.00	90.00	270.00	7,799.00	-274.04	-6,831.54	6,836.48	0.00	0.00	0.00
15,400.00	90.00	270.00	7,799.00	-274.03	-6,931.54	6,936.44	0.00	0.00	0.00
15,500.00	90.00	270.00	7,799.00	-274.03	-7,031.54	7,036.41	0.00	0.00	0.00
15,600.00	90.00	270.00	7,799.00	-274.02	-7,131.54	7,136.37	0.00	0.00	0.00
15,700.00	90.00	270.00	7,799.00	-274.01	-7,231.54	7,236.33	0.00	0.00	0.00
15,800.00	90.00	270.00	7,799.00	-274.00	-7,331.54	7,336.29	0.00	0.00	0.00
15,900.00	90.00	270.00	7,799.00	-273.99	-7,431.54	7,436.26	0.00	0.00	0.00
16,000.00	90.00	270.00	7,799.00	-273.99	-7,531.54	7,536.22	0.00	0.00	0.00
16,100.00	90.00	270.00	7,799.00	-273.98	-7,631.54	7,636.18	0.00	0.00	0.00
16,200.00	90.00	270.00	7,799.00	-273.97	-7,731.54	7,736.14	0.00	0.00	0.00
16,300.00	90.00	270.00	7,799.00	-273.96	-7,831.54	7,836.11	0.00	0.00	0.00
16,400.00	90.00	270.00	7,799.00	-273.95	-7,931.54	7,936.07	0.00	0.00	0.00
16,500.00	90.00	270.00	7,799.00	-273.95	-8,031.54	8,036.03	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	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)	
16,600.00	90.00	270.00	7,799.00	-273.94	-8,131.54	8,135.99	0.00	0.00	0.00	
16,700.00	90.00	270.00	7,799.00	-273.93	-8,231.54	8,235.95	0.00	0.00	0.00	
16,800.00	90.00	270.00	7,799.00	-273.92	-8,331.54	8,335.92	0.00	0.00	0.00	
16,900.00	90.00	270.00	7,799.00	-273.91	-8,431.54	8,435.88	0.00	0.00	0.00	
17,000.00	90.00	270.00	7,799.00	-273.90	-8,531.54	8,535.84	0.00	0.00	0.00	
17,100.00	90.00	270.00	7,799.00	-273.90	-8,631.54	8,635.80	0.00	0.00	0.00	
17,200.00	90.00	270.00	7,799.00	-273.89	-8,731.54	8,735.77	0.00	0.00	0.00	
17,300.00	90.00	270.00	7,799.00	-273.88	-8,831.54	8,835.73	0.00	0.00	0.00	
17,400.00	90.00	270.00	7,799.00	-273.87	-8,931.54	8,935.69	0.00	0.00	0.00	
17,500.00	90.00	270.00	7,799.00	-273.86	-9,031.54	9,035.65	0.00	0.00	0.00	
17,600.00	90.00	270.00	7,799.00	-273.86	-9,131.54	9,135.62	0.00	0.00	0.00	
17,700.00	90.00	270.00	7,799.00	-273.85	-9,231.54	9,235.58	0.00	0.00	0.00	
17,800.00	90.00	270.00	7,799.00	-273.84	-9,331.54	9,335.54	0.00	0.00	0.00	
17,900.00	90.00	270.00	7,799.00	-273.83	-9,431.54	9,435.50	0.00	0.00	0.00	
18,000.00	90.00	270.00	7,799.00	-273.82	-9,531.54	9,535.46	0.00	0.00	0.00	
18,100.00	90.00	270.00	7,799.00	-273.82	-9,631.54	9,635.43	0.00	0.00	0.00	
18,200.00	90.00	270.00	7,799.00	-273.81	-9,731.54	9,735.39	0.00	0.00	0.00	
18,300.00	90.00	270.00	7,799.00	-273.80	-9,831.54	9,835.35	0.00	0.00	0.00	
18,400.00	90.00	270.00	7,799.00	-273.79	-9,931.54	9,935.31	0.00	0.00	0.00	
18,464.08	90.00	270.00	7,799.00	-273.79	-9,995.62	9,999.37	0.00	0.00	0.00	
TD at 18464.08										

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	
IP 1- ALAMOSA 5-64 6-1 - plan hits target center - Point	0.00	0.00	7,799.00	565.00	-3,543.89	1,663,525.29	3,253,863.84	39.651714°N	104.598404°W	
LP- ALAMOSA 5-64 6-1 - plan hits target center - Point	0.00	0.00	7,799.00	480.47	159.94	1,663,478.04	3,257,568.27	39.651483°N	104.585250°W	
PBHL- ALAMOSA 5-64 6-1 - plan hits target center - Point	0.00	0.00	7,799.00	-273.79	-9,995.62	1,662,621.64	3,247,421.00	39.649407°N	104.621315°W	
IP 2- ALAMOSA 5-64 6-1 - plan hits target center - Point	0.00	0.00	7,799.00	-171.00	-6,055.65	1,662,764.06	3,251,359.66	39.649693°N	104.607324°W	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALAMOSA 5-64 6-1 1BH
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 24' @ 6021.71usft
Project:	ARAPAHOE COUNTY	MD Reference:	KB 24' @ 6021.71usft
Site:	SEC 6-T5S-R64W	North Reference:	True
Well:	ALAMOSA 5-64 6-1 1BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
208.00	208.00	Denver Formation				
1,675.47	1,666.00	Laramie Formation				
1,996.92	1,985.00	Fox Hills sandstone				
2,239.78	2,226.00	Pierre Formation				
2,510.85	2,495.00	Upper Pierre aquifer				
3,250.50	3,229.00	Base of Upper Pierre aquifer				
5,124.82	5,089.00	Larimer sandstone				
5,452.33	5,414.00	Terry ("Sussex") sandstone				
6,283.68	6,239.00	Hygiene ("Shannon") sandstone				
6,437.86	6,392.00	Pierre shale				
7,859.09	7,712.00	Sharon Springs Member				
8,179.32	7,799.00	Niobrara Formation				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
554.36	553.46	11.05	18.89	Start 6664.66 hold at 554.36 MD	
7,219.02	7,167.20	426.28	728.64	Start DLS 10.00 TFO -148.17	
8,179.32	7,799.00	480.47	159.94	Start 3704.79 hold at 8179.32 MD	
11,884.11	7,799.00	565.00	-3,543.89	Start DLS 3.00 TFO -90.00	
12,557.95	7,799.00	462.44	-4,206.35	Start 1954.78 hold at 12557.95 MD	
14,512.73	7,799.00	-171.00	-6,055.65	Start Turn 3.00	
15,143.15	7,799.00	-274.05	-6,674.69	Start 3320.93 hold at 15143.15 MD	
18,464.08	7,799.00	-273.79	-9,995.62	TD at 18464.08	