

CRESTONE PEAK RESOURCES

ARAPAHOE COUNTY

SEC 15-T4S-R65W

LONE TREE 4-65 15-16 2BH

OWB

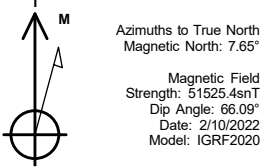
Design: FINAL SURVEY

Standard Survey Report

09 November, 2022

Project: ARAPAHOE COUNTY
Site: SEC 15-T4S-R65W
Well: LONE TREE 4-65 15-16 2BH
Wellbore: OWB
Design: FINAL SURVEY

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

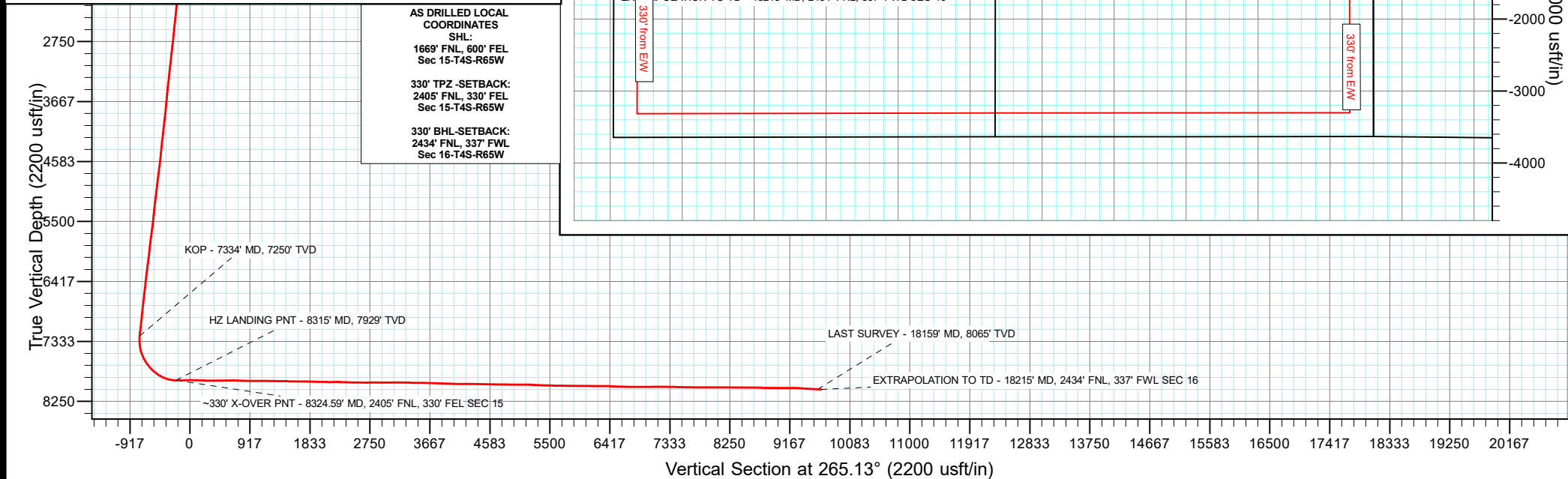
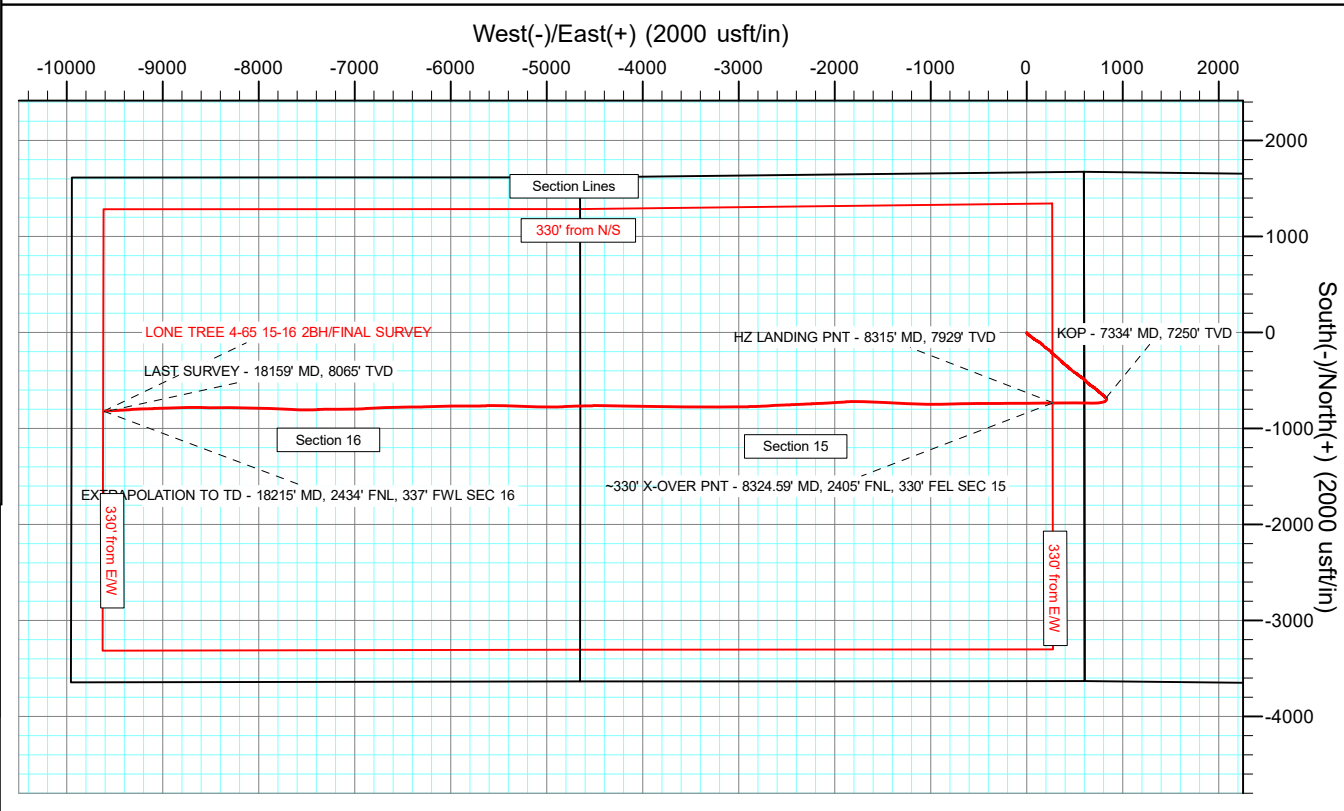
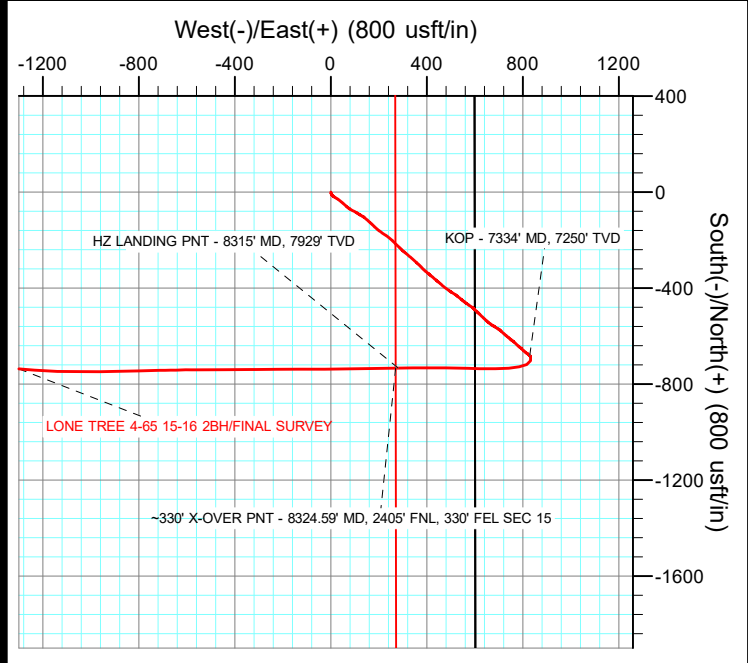


WELL DETAILS: LONE TREE 4-65 15-16 2BH

+N/-S	+E/-W	Northing	Easting	5693.40 Latitude	Longitude	Slot
0.00	0.00	1683380.17	3241109.43	39.706558°N	104.643033°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
7334.00	8.64	141.86	7249.87	-680.11	829.24	-768.57	1077.81	KOP - 7334' MD, 7250' TVD
8315.00	90.37	269.10	7928.88	-732.34	280.26	-217.13	1664.55	HZ LANDING PNT - 8315' MD, 7929' TVD
8324.59	90.70	269.02	7928.78	-732.50	270.67	-207.56	1674.13	~330' X-OVER PNT - 8324.59' MD, 2405' FNL, 330' FEL SEC 15
18159.00	87.53	267.11	8065.02	-815.44	-9556.21	9590.94	11506.14	LAST SURVEY - 18159' MD, 8065' TVD
18215.00	87.53	267.11	8067.44	-818.26	-9612.09	9646.86	11562.09	EXTRAPOLATION TO TD - 18215' MD, 2434' FNL, 337' FWL SEC 16



Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well LONE TREE 4-65 15-16 2BH
Project:	ARAPAHOE COUNTY	TVD Reference:	KB 25' @ 5718.40usft
Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
Well:	LONE TREE 4-65 15-16 2BH	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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 15-T4S-R65W			
Site Position:		Northing:	1,685,061.36 usft	Latitude:	39.711158°N
From:	Lat/Long	Easting:	3,241,690.88 usft	Longitude:	104.640910°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	LONE TREE 4-65 15-16 2BH					
Well Position	+N/-S	0.00 usft	Northing:	1,683,380.17 usft	Latitude:	39.706558°N
	+E/-W	0.00 usft	Easting:	3,241,109.43 usft	Longitude:	104.643033°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,693.40 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/10/2022	7.65	66.09	51,525.38796151

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	265.13	

Survey Program	Date	11/9/2022			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
210.00	3,276.00	SURFACE SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	
3,400.00	18,215.00	FINAL SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	

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	
210.00	0.50	178.90	210.00	-0.92	0.02	0.06	0.24	0.24	0.00	
302.00	2.90	160.10	301.95	-3.51	0.82	-0.52	2.64	2.61	-20.43	
376.00	3.80	148.80	375.82	-7.36	2.73	-2.09	1.50	1.22	-15.27	
463.00	5.90	139.90	462.51	-13.25	7.10	-5.95	2.56	2.41	-10.23	
550.00	7.30	122.60	548.94	-19.65	14.64	-12.92	2.78	1.61	-19.89	
637.00	8.10	120.90	635.15	-25.78	24.55	-22.28	0.96	0.92	-1.95	
724.00	7.30	127.90	721.37	-32.32	34.17	-31.31	1.42	-0.92	8.05	
812.00	7.90	129.10	808.60	-39.57	43.28	-39.77	0.71	0.68	1.36	
899.00	8.80	131.70	894.67	-47.77	52.89	-48.65	1.12	1.03	2.99	

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Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
Well:	LONE TREE 4-65 15-16 2BH	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)
986.00	9.10	131.80	980.61	-56.78	62.99	-57.94	0.35	0.34	0.11
1,073.00	10.50	128.40	1,066.34	-66.29	74.33	-68.44	1.74	1.61	-3.91
1,160.00	10.60	117.40	1,151.88	-74.90	87.65	-80.98	2.31	0.11	-12.64
1,248.00	10.40	118.00	1,238.41	-82.35	101.84	-94.49	0.26	-0.23	0.68
1,335.00	8.50	122.80	1,324.23	-89.52	114.18	-106.18	2.36	-2.18	5.52
1,422.00	6.30	118.90	1,410.50	-95.31	123.77	-115.24	2.59	-2.53	-4.48
1,509.00	6.90	119.70	1,496.92	-100.21	132.49	-123.51	0.70	0.69	0.92
1,597.00	7.40	130.10	1,584.24	-106.48	141.41	-131.87	1.57	0.57	11.82
1,684.00	7.60	130.50	1,670.49	-113.82	150.07	-139.88	0.24	0.23	0.46
1,771.00	8.30	133.80	1,756.66	-121.90	158.98	-148.07	0.96	0.80	3.79
1,858.00	9.40	131.90	1,842.62	-131.00	168.80	-157.08	1.31	1.26	-2.18
1,945.00	10.40	134.20	1,928.32	-141.22	179.72	-167.09	1.24	1.15	2.64
2,032.00	10.70	131.80	2,013.85	-152.07	191.37	-177.78	0.61	0.34	-2.76
2,120.00	9.80	125.90	2,100.45	-161.91	203.53	-189.06	1.57	-1.02	-6.70
2,207.00	9.80	124.20	2,186.18	-170.41	215.65	-200.42	0.33	0.00	-1.95
2,294.00	7.70	124.20	2,272.16	-177.85	226.60	-210.69	2.41	-2.41	0.00
2,381.00	8.20	126.30	2,358.33	-184.80	236.42	-219.89	0.66	0.57	2.41
2,468.00	8.40	130.20	2,444.42	-192.58	246.27	-229.05	0.69	0.23	4.48
2,556.00	8.70	131.80	2,531.44	-201.16	256.14	-238.16	0.44	0.34	1.82
2,643.00	9.40	138.30	2,617.36	-210.85	265.77	-246.93	1.42	0.80	7.47
2,730.00	9.10	132.10	2,703.23	-220.77	275.60	-255.88	1.20	-0.34	-7.13
2,817.00	9.10	132.60	2,789.13	-230.04	285.77	-265.23	0.09	0.00	0.57
2,904.00	9.80	134.80	2,874.95	-239.91	296.09	-274.67	0.91	0.80	2.53
2,991.00	8.40	129.30	2,960.86	-249.16	306.26	-284.03	1.89	-1.61	-6.32
3,078.00	9.00	129.60	3,046.86	-257.52	316.42	-293.44	0.69	0.69	0.34
3,166.00	9.10	130.60	3,133.76	-266.43	327.01	-303.23	0.21	0.11	1.14
3,253.00	9.20	131.10	3,219.65	-275.48	337.48	-312.89	0.15	0.11	0.57
3,276.00	9.30	132.10	3,242.35	-277.94	340.24	-315.44	0.82	0.43	4.35
3,400.00	9.48	131.64	3,364.69	-291.44	355.31	-329.30	0.16	0.15	-0.37
3,495.00	8.06	132.48	3,458.58	-301.14	366.06	-339.20	1.50	-1.49	0.88
3,590.00	8.91	136.38	3,552.54	-310.96	376.05	-348.32	1.08	0.89	4.11
3,684.00	7.84	135.69	3,645.54	-320.82	385.55	-356.95	1.14	-1.14	-0.73
3,779.00	8.20	129.21	3,739.61	-329.74	395.33	-365.94	1.02	0.38	-6.82
3,874.00	7.61	129.95	3,833.71	-338.06	405.40	-375.26	0.63	-0.62	0.78
3,968.00	10.17	129.70	3,926.57	-347.36	416.56	-385.59	2.72	2.72	-0.27
4,063.00	9.03	129.94	4,020.24	-357.50	428.73	-396.86	1.20	-1.20	0.25
4,157.00	7.73	130.69	4,113.23	-366.36	439.18	-406.52	1.39	-1.38	0.80
4,251.00	9.77	130.26	4,206.13	-375.64	450.06	-416.57	2.17	2.17	-0.46
4,346.00	8.65	130.75	4,299.91	-385.51	461.62	-427.26	1.18	-1.18	0.52
4,630.00	7.54	125.05	4,581.08	-410.15	493.06	-456.49	0.48	-0.39	-2.01
4,725.00	9.81	121.93	4,674.98	-418.01	505.03	-467.75	2.44	2.39	-3.28
4,820.00	8.41	121.86	4,768.78	-425.96	517.80	-479.80	1.47	-1.47	-0.07
4,914.00	10.53	130.06	4,861.50	-435.12	530.21	-491.40	2.67	2.26	8.72

Survey Report

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Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
Well:	LONE TREE 4-65 15-16 2BH	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)
5,009.00	9.36	129.74	4,955.07	-445.64	542.80	-503.04	1.23	-1.23	-0.34
5,104.00	7.62	127.54	5,049.03	-454.42	553.73	-513.19	1.86	-1.83	-2.32
5,199.00	10.26	126.00	5,142.87	-463.23	565.57	-524.24	2.79	2.78	-1.62
5,293.00	8.80	124.79	5,235.57	-472.26	578.25	-536.11	1.57	-1.55	-1.29
5,387.00	6.92	124.75	5,328.68	-479.59	588.81	-546.01	2.00	-2.00	-0.04
5,482.00	9.74	133.21	5,422.67	-488.36	599.37	-555.79	3.23	2.97	8.91
5,577.00	8.58	133.21	5,516.46	-498.71	610.40	-565.90	1.22	-1.22	0.00
5,671.00	12.13	135.03	5,608.91	-510.50	622.49	-576.95	3.79	3.78	1.94
5,766.00	11.41	133.49	5,701.91	-524.03	636.36	-589.62	0.83	-0.76	-1.62
5,860.00	10.37	132.49	5,794.22	-536.14	649.35	-601.53	1.12	-1.11	-1.06
5,955.00	8.56	126.15	5,887.93	-546.09	661.36	-612.66	2.20	-1.91	-6.67
6,050.00	7.06	122.56	5,982.04	-553.40	671.99	-622.63	1.66	-1.58	-3.78
6,144.00	9.98	122.19	6,074.99	-560.85	683.76	-633.72	3.11	3.11	-0.39
6,238.00	8.71	120.74	6,167.75	-568.83	696.77	-646.01	1.37	-1.35	-1.54
6,333.00	10.71	133.11	6,261.39	-578.54	709.40	-657.77	3.03	2.11	13.02
6,428.00	9.72	131.52	6,354.88	-589.89	721.85	-669.21	1.08	-1.04	-1.67
6,522.00	8.22	129.27	6,447.73	-599.41	732.99	-679.51	1.64	-1.60	-2.39
6,617.00	9.90	130.38	6,541.54	-609.00	744.47	-690.13	1.78	1.77	1.17
6,712.00	7.88	127.15	6,635.40	-618.22	755.88	-700.72	2.19	-2.13	-3.40
6,806.00	10.43	132.94	6,728.19	-627.91	767.25	-711.22	2.88	2.71	6.16
6,901.00	9.07	131.77	6,821.82	-638.76	779.13	-722.14	1.45	-1.43	-1.23
6,995.00	7.29	128.05	6,914.86	-647.37	789.35	-731.60	1.97	-1.89	-3.96
7,090.00	9.70	134.32	7,008.81	-656.68	799.83	-741.24	2.71	2.54	6.60
7,184.00	8.45	129.03	7,101.64	-666.56	810.86	-751.40	1.60	-1.33	-5.63
7,278.00	9.18	119.47	7,194.53	-674.60	822.75	-762.57	1.74	0.78	-10.17
7,334.00	8.64	141.86	7,249.87	-680.11	829.24	-768.57	6.23	-0.96	39.98
KOP - 7334' MD, 7250' TVD									
7,373.00	9.07	157.44	7,288.41	-685.25	832.23	-771.11	6.23	1.10	39.95
7,467.00	12.66	197.29	7,380.84	-701.96	832.01	-769.47	8.62	3.82	42.39
7,562.00	17.05	242.89	7,472.94	-718.30	816.46	-752.59	12.74	4.62	48.00
7,656.00	23.83	259.82	7,561.04	-727.96	785.44	-720.87	9.50	7.21	18.01
7,750.00	31.73	266.21	7,644.16	-732.96	742.01	-677.17	8.97	8.40	6.80
7,845.00	40.37	268.05	7,720.90	-735.66	686.23	-621.36	9.16	9.09	1.94
7,939.00	49.51	271.34	7,787.37	-735.86	619.92	-555.27	10.03	9.72	3.50
8,034.00	57.18	271.77	7,844.05	-733.78	543.79	-479.59	8.08	8.07	0.45
8,128.00	65.28	270.31	7,889.25	-732.33	461.48	-397.70	8.72	8.62	-1.55
8,222.00	77.57	270.31	7,919.14	-731.85	372.55	-309.13	13.07	13.07	0.00
8,315.00	90.37	269.10	7,928.88	-732.34	280.26	-217.13	13.83	13.77	-1.31
HZ LANDING PNT - 8315' MD, 7929' TVD									
8,317.00	90.65	269.07	7,928.87	-732.37	278.26	-215.13	13.83	13.77	-1.29
8,324.59	90.70	269.02	7,928.78	-732.50	270.67	-207.56	0.98	0.71	-0.67
-330' X-OVER PNT - 8324.59' MD, 2405' FNL, 330' FEL SEC 15									
8,411.00	91.32	268.44	7,927.25	-734.41	184.29	-121.34	0.98	0.71	-0.67
8,506.00	91.16	269.03	7,925.19	-736.51	89.34	-26.55	0.64	-0.17	0.62

Survey Report

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Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
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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)	
8,600.00	87.94	270.29	7,925.93	-737.07	-4.64	67.14	3.68	-3.43	1.34	
8,695.00	87.87	269.88	7,929.41	-736.92	-99.58	161.73	0.44	-0.07	-0.43	
8,790.00	88.64	269.33	7,932.30	-737.58	-194.53	256.39	1.00	0.81	-0.58	
8,884.00	89.91	269.38	7,933.49	-738.64	-288.51	350.13	1.35	1.35	0.05	
8,979.00	91.18	269.48	7,932.58	-739.58	-383.50	444.85	1.34	1.34	0.11	
9,073.00	90.22	270.04	7,931.44	-739.98	-477.49	538.54	1.18	-1.02	0.60	
9,168.00	90.85	269.62	7,930.55	-740.26	-572.49	633.22	0.80	0.66	-0.44	
9,262.00	88.14	268.96	7,931.38	-741.42	-666.47	726.96	2.97	-2.88	-0.70	
9,356.00	88.29	268.60	7,934.30	-743.42	-760.40	820.72	0.41	0.16	-0.38	
9,451.00	88.54	268.39	7,936.93	-745.92	-855.33	915.52	0.34	0.26	-0.22	
9,641.00	90.74	270.39	7,938.13	-747.94	-1,045.30	1,104.97	1.56	1.16	1.05	
9,735.00	89.29	271.27	7,938.10	-746.58	-1,139.28	1,198.50	1.80	-1.54	0.94	
9,830.00	88.71	275.27	7,939.76	-741.16	-1,234.09	1,292.51	4.25	-0.61	4.21	
9,924.00	89.45	272.87	7,941.27	-734.49	-1,327.84	1,385.35	2.67	0.79	-2.55	
10,019.00	89.27	270.97	7,942.33	-731.31	-1,422.77	1,479.68	2.01	-0.19	-2.00	
10,114.00	89.04	273.25	7,943.73	-727.81	-1,517.69	1,573.96	2.41	-0.24	2.40	
10,209.00	89.18	271.80	7,945.21	-723.63	-1,612.59	1,668.15	1.53	0.15	-1.53	
10,303.00	89.34	272.12	7,946.42	-720.41	-1,706.52	1,761.48	0.38	0.17	0.34	
10,398.00	88.51	269.41	7,948.20	-719.14	-1,801.49	1,856.00	2.98	-0.87	-2.85	
10,492.00	88.34	266.02	7,950.79	-722.89	-1,895.36	1,949.85	3.61	-0.18	-3.61	
10,587.00	89.14	266.24	7,952.88	-729.30	-1,990.12	2,044.81	0.87	0.84	0.23	
10,682.00	89.70	266.97	7,953.84	-734.93	-2,084.95	2,139.78	0.97	0.59	0.77	
10,776.00	90.62	267.48	7,953.58	-739.48	-2,178.84	2,233.71	1.12	0.98	0.54	
10,871.00	87.73	267.62	7,954.94	-743.54	-2,273.73	2,328.61	3.05	-3.04	0.15	
10,966.00	87.59	266.64	7,958.82	-748.29	-2,368.53	2,423.47	1.04	-0.15	-1.03	
11,060.00	89.16	268.66	7,961.49	-752.14	-2,462.41	2,517.33	2.72	1.67	2.15	
11,156.00	89.75	267.22	7,962.40	-755.59	-2,558.34	2,613.21	1.62	0.61	-1.50	
11,250.00	89.82	266.42	7,962.76	-760.81	-2,652.19	2,707.17	0.85	0.07	-0.85	
11,344.00	90.62	266.38	7,962.39	-766.71	-2,746.01	2,801.14	0.85	0.85	-0.04	
11,439.00	89.35	268.51	7,962.42	-770.94	-2,840.90	2,896.06	2.61	-1.34	2.24	
11,534.00	90.30	269.94	7,962.71	-772.23	-2,935.89	2,990.81	1.81	1.00	1.51	
11,628.00	91.20	269.68	7,961.48	-772.54	-3,029.88	3,084.49	1.00	0.96	-0.28	
11,723.00	89.11	269.57	7,961.22	-773.16	-3,124.87	3,179.19	2.20	-2.20	-0.12	
11,817.00	88.90	268.59	7,962.85	-774.67	-3,218.85	3,272.96	1.07	-0.22	-1.04	
11,912.00	89.08	267.71	7,964.53	-777.74	-3,313.78	3,367.81	0.95	0.19	-0.93	
12,007.00	89.24	272.19	7,965.92	-777.82	-3,408.75	3,462.44	4.72	0.17	4.72	
12,102.00	89.12	270.83	7,967.28	-775.32	-3,503.70	3,556.84	1.44	-0.13	-1.43	
12,196.00	89.18	270.83	7,968.68	-773.95	-3,597.68	3,650.36	0.06	0.06	0.00	
12,291.00	87.45	270.97	7,971.47	-772.46	-3,692.63	3,744.84	1.83	-1.82	0.15	
12,386.00	87.59	270.64	7,975.58	-771.13	-3,787.53	3,839.29	0.38	0.15	-0.35	
12,481.00	87.67	270.05	7,979.51	-770.56	-3,882.44	3,933.81	0.63	0.08	-0.62	
12,575.00	87.94	270.71	7,983.11	-769.93	-3,976.37	4,027.35	0.76	0.29	0.70	
12,670.00	89.22	271.35	7,985.46	-768.23	-4,071.33	4,121.82	1.51	1.35	0.67	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well LONE TREE 4-65 15-16 2BH
Project:	ARAPAHOE COUNTY	TVD Reference:	KB 25' @ 5718.40usft
Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
Well:	LONE TREE 4-65 15-16 2BH	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)	
12,765.00	90.09	271.81	7,986.04	-765.61	-4,166.29	4,216.21	1.04	0.92	0.48	
12,859.00	90.62	271.38	7,985.45	-762.99	-4,260.25	4,309.61	0.73	0.56	-0.46	
12,954.00	89.06	270.24	7,985.72	-761.65	-4,355.23	4,404.14	2.03	-1.64	-1.20	
13,049.00	88.71	269.86	7,987.57	-761.57	-4,450.22	4,498.77	0.54	-0.37	-0.40	
13,143.00	89.35	269.24	7,989.16	-762.30	-4,544.20	4,592.48	0.95	0.68	-0.66	
13,238.00	88.81	268.12	7,990.68	-764.49	-4,639.16	4,687.29	1.31	-0.57	-1.18	
13,333.00	89.43	267.88	7,992.14	-767.81	-4,734.09	4,782.15	0.70	0.65	-0.25	
13,428.00	89.26	266.76	7,993.23	-772.25	-4,828.98	4,877.08	1.19	-0.18	-1.18	
13,522.00	89.75	270.36	7,994.04	-774.61	-4,922.93	4,970.89	3.86	0.52	3.83	
13,617.00	90.08	269.93	7,994.18	-774.37	-5,017.93	5,065.53	0.57	0.35	-0.45	
13,712.00	89.10	272.20	7,994.86	-772.60	-5,112.90	5,160.01	2.60	-1.03	2.39	
13,806.00	87.15	271.52	7,997.94	-769.56	-5,206.80	5,253.31	2.20	-2.07	-0.72	
13,901.00	87.44	271.80	8,002.42	-766.81	-5,301.65	5,347.59	0.42	0.31	0.29	
13,996.00	88.07	271.28	8,006.14	-764.26	-5,396.54	5,441.92	0.86	0.66	-0.55	
14,091.00	89.22	271.79	8,008.39	-761.71	-5,491.48	5,536.30	1.32	1.21	0.54	
14,186.00	89.05	268.99	8,009.82	-761.06	-5,586.46	5,630.88	2.95	-0.18	-2.95	
14,280.00	89.80	267.64	8,010.77	-763.83	-5,680.41	5,724.73	1.64	0.80	-1.44	
14,375.00	89.08	270.81	8,011.70	-765.11	-5,775.38	5,819.47	3.42	-0.76	3.34	
14,470.00	89.37	270.06	8,012.98	-764.39	-5,870.37	5,914.05	0.85	0.31	-0.79	
14,564.00	90.08	268.70	8,013.43	-765.41	-5,964.36	6,007.79	1.63	0.76	-1.45	
14,659.00	88.47	268.16	8,014.63	-768.01	-6,059.31	6,102.62	1.79	-1.69	-0.57	
14,753.00	89.92	269.07	8,015.95	-770.28	-6,153.27	6,196.44	1.82	1.54	0.97	
14,848.00	90.37	268.02	8,015.71	-772.70	-6,248.24	6,291.27	1.20	0.47	-1.11	
14,943.00	87.50	269.21	8,017.48	-774.99	-6,343.19	6,386.06	3.27	-3.02	1.25	
15,037.00	87.87	269.50	8,021.28	-776.05	-6,437.10	6,479.73	0.50	0.39	0.31	
15,227.00	88.51	268.11	8,027.28	-780.01	-6,626.96	6,669.24	0.81	0.34	-0.73	
15,321.00	88.94	267.84	8,029.37	-783.33	-6,720.88	6,763.10	0.54	0.46	-0.29	
15,416.00	89.79	266.79	8,030.42	-787.78	-6,815.77	6,858.02	1.42	0.89	-1.11	
15,511.00	90.13	266.20	8,030.49	-793.59	-6,910.59	6,953.00	0.72	0.36	-0.62	
15,605.00	90.56	268.81	8,029.92	-797.68	-7,004.49	7,046.91	2.81	0.46	2.78	
15,700.00	91.53	268.81	8,028.19	-799.65	-7,099.45	7,141.69	1.02	1.02	0.00	
15,795.00	89.08	271.03	8,027.68	-799.78	-7,194.44	7,236.35	3.48	-2.58	2.34	
15,889.00	89.30	269.55	8,029.01	-799.31	-7,288.42	7,329.96	1.59	0.23	-1.57	
15,984.00	89.04	266.83	8,030.39	-802.31	-7,383.36	7,424.80	2.88	-0.27	-2.86	
16,078.00	88.66	268.92	8,032.28	-805.79	-7,477.27	7,518.67	2.26	-0.40	2.22	
16,173.00	89.08	272.34	8,034.15	-804.75	-7,572.23	7,613.20	3.63	0.44	3.60	
16,268.00	89.11	272.39	8,035.65	-800.83	-7,667.14	7,707.43	0.06	0.03	0.05	
16,363.00	89.51	272.31	8,036.80	-796.93	-7,762.05	7,801.67	0.43	0.42	-0.08	
16,457.00	89.92	272.85	8,037.26	-792.70	-7,855.95	7,894.88	0.72	0.44	0.57	
16,552.00	90.04	271.84	8,037.30	-788.82	-7,950.87	7,989.13	1.07	0.13	-1.06	
16,646.00	91.49	272.46	8,036.04	-785.29	-8,044.80	8,082.41	1.68	1.54	0.66	
16,741.00	88.94	270.35	8,035.68	-782.96	-8,139.75	8,176.83	3.48	-2.68	-2.22	
16,836.00	89.11	269.18	8,037.30	-783.35	-8,234.74	8,271.51	1.24	0.18	-1.23	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well LONE TREE 4-65 15-16 2BH
Project:	ARAPAHOE COUNTY	TVD Reference:	KB 25' @ 5718.40usft
Site:	SEC 15-T4S-R65W	MD Reference:	KB 25' @ 5718.40usft
Well:	LONE TREE 4-65 15-16 2BH	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)
17,025.00	89.94	270.73	8,038.87	-783.50	-8,423.72	8,459.82	0.93	0.44	0.82
17,119.00	89.39	270.09	8,039.42	-782.83	-8,517.72	8,553.42	0.90	-0.59	-0.68
17,214.00	89.58	271.85	8,040.27	-781.22	-8,612.70	8,647.92	1.86	0.20	1.85
17,308.00	88.62	269.19	8,041.75	-780.37	-8,706.67	8,741.49	3.01	-1.02	-2.83
17,403.00	88.99	268.65	8,043.73	-782.16	-8,801.63	8,836.26	0.69	0.39	-0.57
17,498.00	89.29	268.01	8,045.16	-784.92	-8,896.58	8,931.10	0.74	0.32	-0.67
17,592.00	90.37	268.12	8,045.43	-788.10	-8,990.53	9,024.97	1.15	1.15	0.12
17,687.00	89.20	267.77	8,045.79	-791.50	-9,085.46	9,119.86	1.29	-1.23	-0.37
17,782.00	90.82	268.81	8,045.77	-794.34	-9,180.42	9,214.71	2.03	1.71	1.09
17,876.00	86.06	266.31	8,048.33	-798.34	-9,274.26	9,308.56	5.72	-5.06	-2.66
17,971.00	85.56	265.74	8,055.27	-804.90	-9,368.78	9,403.29	0.80	-0.53	-0.60
18,065.00	87.51	267.14	8,060.96	-810.73	-9,462.42	9,497.09	2.55	2.07	1.49
18,159.00	87.53	267.11	8,065.02	-815.44	-9,556.21	9,590.94	0.04	0.02	-0.03
LAST SURVEY - 18159' MD, 8065' TVD									
18,215.00	87.53	267.11	8,067.44	-818.26	-9,612.09	9,646.86	0.00	0.00	0.00
EXTRAPOLATION TO TD - 18215' MD, 2434' FNL, 337' FWL SEC 16									

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-LT 4-65 2BH - actual wellpath misses target center by 10.17usft at 8324.85usft MD (7928.77 TVD, -732.50 N, 270.41 E) - Point	0.00	0.00	7,920.00	-737.64	270.67	1,682,645.12	3,241,387.05	39.704533°N	104.642071°W
PBHL-LT 4-65 2BH - actual wellpath misses target center by 44.95usft at 18215.00usft MD (8067.44 TVD, -818.26 N, -9612.09 E) - Point	0.00	0.00	8,030.00	-794.47	-9,619.39	1,682,495.00	3,231,498.05	39.704372°N	104.677221°W

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,334.00	7,249.87	-680.11	829.24	KOP - 7334' MD, 7250' TVD	
8,315.00	7,928.88	-732.34	280.26	HZ LANDING PNT - 8315' MD, 7929' TVD	
8,324.59	7,928.78	-732.50	270.67	~330' X-OVER PNT - 8324.59' MD, 2405' FNL, 330' FEL SEC 15	
18,159.00	8,065.02	-815.44	-9,556.21	LAST SURVEY - 18159' MD, 8065' TVD	
18,215.00	8,067.44	-818.26	-9,612.09	EXTRAPOLATION TO TD - 18215' MD, 2434' FNL, 337' FWL SEC 16	

Checked By: _____ Approved By: _____ Date: _____