

State Massive 5-65 2-3 1CH Plan #0 Anti-Collision Summary Report

Analysis Date-24hr Time: March 23, 2020 - 08:38

Client: Crestone Peak Resources

Field: CO, Arapahoe County (NAD 83 CZ)

Structure: Crestone Peak 02-05S-65W (State Massive 5-65 2-3 Pad)

Slot: State Massive 5-65 2-3 1CH

Well: State Massive 5-65 2-3 1CH

Borehole: Original Hole

Scan MD Range: 0.00ft - 17980.61ft

Analysis Method: 3D Least Distance

Reference Trajectory: State Massive 5-65 2-3 1CH Plan #0 (Def Plan)

Depth Interval: Every 10.00 Measured Depth (ft)

Rule Set: D&M AntiCollision Standard S002 v5.1/5.2

Min Pts: All local minima indicated.

Version / Patch: 2.10.787.0

Database \ Project: localhost\drilling-Colorado

Trajectory Error Model: ISCSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

State Massive 1H MWD 0' to 16841' - PR (Def Survey)

Fail Minor

506.12	32.81	504.31	473.31	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
506.11	32.81	504.24	473.30	8312.54	MAS = 10.00 (m)	28.00	28.00					WRP
506.03	32.81	503.56	473.22	763.58	MAS = 10.00 (m)	180.00	180.00					MinPts
505.85	32.81	500.53	473.04	143.80	MAS = 10.00 (m)	850.00	850.00					MinPts
505.58	32.81	497.90	472.77	85.87	MAS = 10.00 (m)	1360.00	1360.00					MinPts
503.70	32.81	492.34	470.89	52.58	MAS = 10.00 (m)	2190.00	2190.00					MINPT-O-EOU
503.61	32.81	492.33	470.80	51.91	MAS = 10.00 (m)	2240.00	2240.00					MinPts
503.61	32.81	492.31	470.80	51.79	MAS = 10.00 (m)	2250.00	2250.00					MINPT-O-EOU
503.98	32.81	492.57	471.17	51.24	MAS = 10.00 (m)	2300.00	2300.00					MinPt-O-SF
540.63	32.81	528.84	507.83	52.89	MAS = 10.00 (m)	2860.00	2859.05					MinPt-O-SF
546.09	32.81	534.18	513.29	52.83	MAS = 10.00 (m)	2950.00	2948.15					MinPt-O-SF
941.93	41.94	913.44	899.99	34.97	OSF1.50	7100.00	7028.71					MinPt-O-SF
599.97	52.42	564.49	547.55	17.66	OSF1.50	8590.00	7840.00					MinPt-CtCt
601.43	56.56	563.19	544.87	16.37	OSF1.50	8710.00	7840.00					MINPT-O-EOU
597.24	126.54	512.34	470.70	7.15	OSF1.50	9780.00	7840.00					MinPt-CtCt
600.83	182.15	478.86	418.68	4.98	OSF1.50	10510.00	7840.00	OSF<5.00				Enter Alert
595.98	210.10	455.38	385.88	4.28	OSF1.50	10880.00	7840.00					MinPt-CtCt
604.12	273.59	421.19	330.53	3.32	OSF1.50	11700.00	7840.00					MinPt-CtCt
597.48	331.31	376.07	266.17	2.71	OSF1.50	12450.00	7840.00					MinPt-CtCt
603.02	436.02	311.80	167.00	2.08	OSF1.50	13820.00	7840.00					MinPt-CtCt
606.67	494.78	276.27	111.88	1.84	OSF1.50	14610.00	7840.00					MinPt-CtCt
615.62	562.31	240.21	53.31	1.64	OSF1.50	15540.00	7840.00					MinPt-CtCt
633.86	634.66	210.22	-0.80	1.50	OSF1.50	16480.00	7840.00		OSF<1.50			Enter Minor
588.54	703.86	118.77	-115.32	1.25	OSF1.50	17400.00	7840.00					MinPt-CtCt
588.58	704.13	118.62	-115.55	1.25	OSF1.50	17410.00	7840.00					MinPts
646.26	648.93	213.11	-2.66	1.49	OSF1.50	17670.00	7840.00		OSF>1.50			Exit Minor
824.61	516.51	479.74	308.11	2.40	OSF1.50	17980.61	7840.00					TD

State Massive 5-65 2-3 2AH Plan #0 (Def Plan)

Warning Alert

24.87	20.01	23.88	4.86	N/A	MAS = 6.10 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert
24.77	20.01	23.79	4.76	N/A	MAS = 6.10 (m)	28.00	28.00					WRP
24.77	21.72	9.96	3.05	1.72	OSF1.50	2500.00	2500.00					MinPts
24.78	21.73	9.97	3.05	1.72	OSF1.50	2510.00	2510.00					MinPts
74.07	22.93	58.45	51.14	5.00	OSF1.50	3070.00	3066.31	OSF>5.00				Exit Alert
605.46	182.65	483.37	422.81	4.99	OSF1.50	11210.00	7840.00	OSF<5.00				Enter Alert
605.22	529.63	251.81	75.59	1.71	OSF1.50	17980.61	7840.00					MinPts

State Massive 5-65 2-3 2CH Plan #0 (Def Plan)

Warning Alert

74.78	32.81	73.80	41.98	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
74.68	32.81	73.69	41.87	N/A	MAS = 10.00 (m)	28.00	28.00					WRP
74.68	32.81	59.87	41.87	5.33	MAS = 10.00 (m)	2500.00	2500.00					MinPts
74.72	32.81	59.90	41.91	5.33	MAS = 10.00 (m)	2520.00	2520.00					MinPt-O-SF
1209.54	363.86	966.64	845.68	5.00	OSF1.50	14760.00	7840.00	OSF<5.00				Enter Alert
1209.43	530.75	855.28	678.70	3.42	OSF1.50	17980.61	7840.00					MinPts

State Challenger 5-65 2-3 3BYH MWD 2370' to 17847' - PR (Def Survey)

Warning Alert

2437.62	32.81	2435.80	2404.81	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
2437.62	32.81	2435.76	2404.81	59073.74	MAS = 10.00 (m)	28.00	28.00					WRP
2437.30	32.81	2434.17	2404.49	1852.61	MAS = 10.00 (m)	320.00	320.00					MinPts
2433.97	32.81	2422.61	2401.16	254.91	MAS = 10.00 (m)	2190.00	2190.00					MINPT-O-EOU
2433.72	32.81	2422.32	2400.91	248.36	MAS = 10.00 (m)	2300.00	2300.00					MinPt-O-SF
2433.17	32.81	2421.31	2400.36	237.15	MAS = 10.00 (m)	3020.00	3017.15					MinPts
2433.28	32.81	2421.20	2400.47	232.12	MAS = 10.00 (m)	3150.00	3144.97					MINPT-O-EOU
2453.18	34.12	2429.90	2419.06	113.09	OSF1.50	6120.00	6065.14					MinPt-CtCt
1716.80	160.68	1609.11	1556.12	16.18	OSF1.50	9350.00	7840.00					MinPt-CtCt
1724.90	182.38	1602.72	1542.52	14.31	OSF1.50	9710.00	7840.00					MINPT-O-EOU
1729.66	188.06	1603.68	1541.60	13.92	OSF1.50	9820.00	7840.00					MinPt-O-ADP
1736.82	197.64	1604.46	1539.18	13.29	OSF1.50	9950.00	7840.00					MINPT-O-EOU
1743.03	204.70	1605.95	1538.33	12.87	OSF1.50	10060.00	7840.00					MinPt-O-ADP
1797.99	246.23	1633.23	1551.76	11.02	OSF1.50	10670.00	7840.00					MINPT-O-EOU
1795.21	326.98	1576.68	1468.23	8.27	OSF1.50	11530.00	7840.00					MinPt-CtCt
1808.67	370.94	1560.81	1437.74	7.34	OSF1.50	12170.00	7840.00					MINPT-O-EOU
1813.56	378.11	1560.25	1434.45	7.20	OSF1.50	12290.00	7840.00					MINPT-O-EOU
1827.62	400.90	1559.78	1426.72	6.86	OSF1.50	12580.00	7840.00					MINPT-O-EOU
1820.08	497.00	1488.21	1323.08	5.51	OSF1.50	13710.00	7840.00					MinPt-CtCt
1832.44	545.36	1468.35	1287.14	5.05	OSF1.50	14400.00	7840.00					MINPT-O-EOU
1835.27	548.79	1468.85	1286.48	5.03	OSF1.50	14470.00	7840.00					MinPt-O-ADP
1842.17	554.07	1472.21	1288.10	5.00	OSF1.50	14590.00	7840.00	OSF<5.00				Enter Alert
1798.15	787.31	1272.74	1010.84	3.43	OSF1.50	17400.00	7840.00					MinPt-O-SF
1798.10	787.28	1272.71	1010.82	3.43	OSF1.50	17410.00	7840.00					MinPts
1885.68	748.72	1385.78	1136.96	3.78	OSF1.50	17980.61	7840.00					TD

State Massive 5-65 2-3 4AH Plan #0 (Def Plan)

Pass

...State Massive 5-65 2-3 1CH\Original Hole\State Massive 5-65 2-3 1CH Plan #0

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	99.94	32.81	98.95	67.13	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.81	32.81	98.83	67.00	N/A	MAS = 10.00 (m)	28.00	28.00				WRP	
	99.81	32.81	85.42	67.00	7.37	MAS = 10.00 (m)	2200.00	2200.00				MinPts	
	99.82	32.81	85.39	67.01	7.35	MAS = 10.00 (m)	2210.00	2210.00				MINPT-O-EOU	
	100.50	32.81	85.89	67.69	7.30	MAS = 10.00 (m)	2270.00	2270.00				MinPt-O-SF	
	3518.98	533.59	3162.92	2985.39	9.91	OSF1.50	17980.61	7840.00				MinPts	

State Elbert 1H GYRO+MWD 0' to 12263' - PR (Def Survey)

Pass

465.58	32.81	463.76	432.77	75489.97	MAS = 10.00 (m)	0.00	0.00	Surface
465.46	32.81	463.56	432.65	5443.42	MAS = 10.00 (m)	28.00	28.00	WRP
456.65	32.81	442.85	423.85	37.95	MAS = 10.00 (m)	2190.00	2190.00	MINPT-O-EOU
456.18	32.81	442.28	423.37	36.99	MAS = 10.00 (m)	2310.00	2310.00	MinPts
456.36	32.81	442.46	423.55	36.98	MAS = 10.00 (m)	2350.00	2350.00	MinPt-O-SF
715.84	45.33	685.08	670.50	24.50	OSF1.50	7250.00	7177.38	MinPt-O-SF
627.86	45.68	596.89	582.21	21.33	OSF1.50	7690.00	7577.66	MinPts
628.84	45.77	597.79	583.07	21.30	OSF1.50	7720.00	7600.37	MinPt-O-SF
10186.06	57.70	10147.06	10128.36	272.32	OSF1.50	17980.61	7840.00	TD

State Challenger 5-65 2-3 3BYH MWD 0' to 17613' - PR (Def Survey)

Pass

2437.62	32.81	2435.80	2404.81	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
2437.62	32.81	2435.76	2404.81	59073.74	MAS = 10.00 (m)	28.00	28.00	WRP
2437.30	32.81	2434.17	2404.49	1852.61	MAS = 10.00 (m)	320.00	320.00	MinPts
2433.97	32.81	2422.61	2401.16	254.91	MAS = 10.00 (m)	2190.00	2190.00	MINPT-O-EOU
2433.72	32.81	2422.32	2400.91	248.36	MAS = 10.00 (m)	2300.00	2300.00	MinPt-O-SF
2433.64	32.81	2422.16	2400.83	246.27	MAS = 10.00 (m)	2630.00	2629.96	MinPts
2433.24	32.81	2421.35	2400.43	236.48	MAS = 10.00 (m)	3040.00	3036.81	MinPts
2433.34	32.81	2421.29	2400.53	232.25	MAS = 10.00 (m)	3170.00	3164.63	MINPT-O-EOU
2453.70	33.98	2430.51	2419.72	113.61	OSF1.50	6120.00	6065.14	MinPt-CtCt
2433.99	44.79	2403.60	2389.20	84.48	OSF1.50	6680.00	6615.75	MinPt-CtCt
2434.29	45.68	2403.31	2388.62	82.80	OSF1.50	6730.00	6664.91	MINPT-O-EOU
2434.55	46.03	2403.33	2388.53	82.15	OSF1.50	6750.00	6684.58	MinPt-O-ADP
2550.01	103.30	2480.61	2446.71	37.59	OSF1.50	8500.00	7840.00	MinPt-CtCt
2550.72	105.40	2479.91	2445.31	36.84	OSF1.50	8570.00	7840.00	MINPT-O-EOU
2551.98	106.90	2480.18	2445.08	36.33	OSF1.50	8620.00	7840.00	MinPt-O-ADP
2622.83	151.35	2521.40	2471.49	26.26	OSF1.50	9350.00	7840.00	MINPT-O-EOU
2628.18	163.44	2518.68	2464.73	24.34	OSF1.50	9430.00	7840.00	MINPT-O-EOU
2630.84	166.46	2519.34	2464.38	23.92	OSF1.50	9490.00	7840.00	MinPt-O-ADP
2637.85	172.62	2522.24	2465.23	23.12	OSF1.50	9610.00	7840.00	MinPt-O-ADP
2650.40	185.05	2526.50	2465.36	21.66	OSF1.50	9790.00	7840.00	MinPt-O-ADP
2608.11	284.03	2418.22	2324.08	13.84	OSF1.50	10920.00	7840.00	MinPt-CtCt
2608.88	340.93	2381.06	2267.95	11.53	OSF1.50	11650.00	7840.00	MinPt-CtCt
2610.97	348.68	2378.00	2262.32	11.28	OSF1.50	11810.00	7840.00	MINPT-O-EOU
2613.07	351.20	2378.41	2261.88	11.21	OSF1.50	11870.00	7840.00	MinPt-O-ADP
2635.10	483.19	2312.44	2151.91	8.20	OSF1.50	13470.00	7840.00	MinPt-CtCt
2638.56	494.22	2308.54	2144.34	8.03	OSF1.50	13680.00	7840.00	MINPT-O-EOU
2642.63	499.16	2309.32	2143.47	7.96	OSF1.50	13780.00	7840.00	MinPt-O-ADP
2654.76	515.42	2310.61	2139.34	7.75	OSF1.50	14000.00	7840.00	MINPT-O-EOU
2652.37	602.54	2250.14	2049.83	6.62	OSF1.50	14990.00	7840.00	MinPt-CtCt
2671.84	666.41	2226.99	2005.37	6.02	OSF1.50	15880.00	7840.00	MINPT-O-EOU
2678.11	673.68	2228.45	2004.43	5.97	OSF1.50	16020.00	7840.00	MinPt-O-ADP
2677.71	792.40	2148.91	1885.31	5.08	OSF1.50	17400.00	7840.00	MinPt-CtCt
2677.83	792.94	2148.67	1884.89	5.07	OSF1.50	17430.00	7840.00	MINPT-O-EOU
2677.94	793.10	2148.67	1884.84	5.07	OSF1.50	17440.00	7840.00	MinPt-O-ADP
2679.07	793.72	2149.38	1885.34	5.07	OSF1.50	17490.00	7840.00	MinPt-O-SF
2738.93	785.80	2214.53	1953.13	5.24	OSF1.50	17980.61	7840.00	TD

Degen 1 Blind 0' to 1650' - DRY (Def Survey)

Pass

2754.57	32.81	2752.76	2721.76	N/A	MAS = 10.00 (m)	0.00	0.00	Surface
2751.33	32.81	2749.01	2718.52	5463.44	MAS = 10.00 (m)	28.00	28.00	MinPt-O-SF
2734.37	99.28	2667.58	2635.09	42.05	OSF1.50	1980.00	1980.00	MinPt-CtCt
2734.38	99.47	2667.46	2634.91	41.97	OSF1.50	1990.00	1990.00	MinPts
2734.62	99.49	2667.69	2635.13	41.97	OSF1.50	2020.00	2020.00	MinPt-O-SF
9513.70	129.02	9427.15	9384.68	111.98	OSF1.50	13510.00	7840.00	MinPt-O-SF
13155.08	158.54	13048.85	12996.53	125.72	OSF1.50	17980.61	7840.00	TD

State Harvard 1H MWD 0' to 15236' - PR (Def Survey)

Pass

5268.74	32.81	5266.92	5235.93	N/A	MAS = 10.00 (m)	0.00	0.00	MinPts
5268.76	32.81	5266.88	5235.95	86190.53	MAS = 10.00 (m)	28.00	28.00	WRP
5270.45	32.81	5266.17	5237.64	2135.46	MAS = 10.00 (m)	600.00	600.00	MINPT-O-EOU
5273.12	32.81	5266.16	5240.31	1024.80	MAS = 10.00 (m)	1200.00	1200.00	MINPT-O-EOU
5283.36	32.81	5271.85	5250.55	533.35	MAS = 10.00 (m)	2290.00	2290.00	MinPt-O-SF
5216.68	32.81	5203.53	5183.88	452.98	MAS = 10.00 (m)	3520.00	3508.76	MinPt-O-SF
4647.45	167.51	4535.24	4479.94	42.01	OSF1.50	7080.00	7009.04	MinPt-O-SF
4633.53	171.70	4518.52	4461.82	40.85	OSF1.50	7450.00	7371.17	MinPt-CtCt
4637.13	179.69	4516.80	4457.44	39.04	OSF1.50	7660.00	7554.15	MINPT-O-EOU
4654.61	332.96	4432.10	4321.65	21.06	OSF1.50	9860.00	7840.00	MinPt-CtCt
4661.57	413.02	4385.68	4248.54	16.99	OSF1.50	10910.00	7840.00	MinPt-CtCt
4663.72	450.01	4363.18	4213.71	15.60	OSF1.50	11390.00	7840.00	MinPt-CtCt
4663.91	464.77	4353.53	4199.14	15.10	OSF1.50	11580.00	7840.00	MinPt-CtCt
4667.11	475.62	4349.50	4191.49	14.76	OSF1.50	11830.00	7840.00	MINPT-O-EOU
4665.16	554.63	4294.87	4110.53	12.65	OSF1.50	12740.00	7840.00	MinPt-CtCt
4665.27	554.96	4294.76	4110.31	12.64	OSF1.50	12770.00	7840.00	MINPT-O-EOU
4665.45	555.17	4294.80	4110.28	12.64	OSF1.50	12790.00	7840.00	MinPt-O-ADP
4670.93	556.65	4299.30	4114.28	12.62	OSF1.50	12970.00	7840.00	MinPt-O-SF
7017.88	426.81	6732.80	6591.07	24.75	OSF1.50	17980.61	7840.00	TD