

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

Analysis Date-24hr Time: April 24, 2020 - 10:16
Client: Crestone Peak Resources
Field: CO, Arapahoe County (NAD 83 CZ)
 Crestone Peak 02-05S-65W (State Massive 5-65 2-3 Pad)
Structure: State Massive 5-65 2-3 2AH
Slot: State Massive 5-65 2-3 2AH
Well: Original Hole
Borehole: Original Hole
Scan MD Range: 0.00ft - 18044.97ft

Analysis Method: 3D Least Distance
Reference Trajectory: State Massive 5-65 2-3 2AH Plan #1 (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: us1164app01\drilling-CO, Arapahoe County 2.10

Trajectory Error Model: ISCWSA0 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: Restricted within 59055.47 ft
 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 5-65 2-3 1CH Plan #0 (Def Plan)

Warning Alert

49.91	32.81	48.92	17.10	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
49.91	32.81	48.92	17.10	10009.16	MAS = 10.00 (m)	28.00	28.00					WRP	
49.91	32.81	39.14	17.10	5.00	MAS = 10.00 (m)	1620.00	1620.00		OSF<5.00			Enter Alert	
49.91	32.81	35.10	17.10	3.54	MAS = 10.00 (m)	2490.00	2490.00					MinPts	
49.91	32.81	35.09	17.10	3.54	MAS = 10.00 (m)	2500.00	2500.00					MINPT-O-EU	
49.92	32.81	35.10	17.11	3.54	MAS = 10.00 (m)	2510.00	2510.00					MinPt-O-SF	
71.60	32.81	56.40	38.79	4.97	MAS = 10.00 (m)	2910.00	2910.00		OSF>5.00			Exit Alert	
605.46	182.37	483.55	423.09	5.00	OSF1.50	11260.00	7920.00		OSF<5.00			Enter Alert	
605.22	529.28	252.04	75.94	1.72	OSF1.50	18030.00	7920.00					MinPt-CtCt	
605.26	529.92	251.65	75.34	1.71	OSF1.50	18044.97	7920.00					MinPts	

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

Warning Alert

49.94	32.81	48.96	17.13	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
49.91	32.81	48.92	17.10	N/A	MAS = 10.00 (m)	28.00	28.00					WRP	
49.91	32.81	39.09	17.10	4.97	MAS = 10.00 (m)	1630.00	1630.00		OSF<5.00			Enter Alert	
49.91	32.81	34.40	17.10	3.37	MAS = 10.00 (m)	3000.00	3000.00					MinPts	
49.91	32.81	34.39	17.11	3.37	MAS = 10.00 (m)	3010.00	3010.00					MINPT-O-EU	
49.94	32.81	34.41	17.13	3.37	MAS = 10.00 (m)	3020.00	3020.00					MinPt-O-SF	
75.16	32.81	59.24	42.35	4.97	MAS = 10.00 (m)	3450.00	3450.00		OSF>5.00			Exit Alert	
614.79	50.54	580.77	564.25	18.58	OSF1.50	8390.00	7920.00					MinPt-CtCt	
614.79	185.15	491.03	429.64	5.00	OSF1.50	11360.00	7920.00		OSF<5.00			Enter Alert	
614.80	528.02	262.46	86.78	1.75	OSF1.50	18044.97	7920.00					MinPts	

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

Warning Alert

556.00	32.81	554.19	523.19	174118.24	MAS = 10.00 (m)	0.00	0.00					Surface	
556.00	32.81	554.12	523.19	8446.34	MAS = 10.00 (m)	28.00	28.00					WRP	
555.91	32.81	553.44	523.10	834.78	MAS = 10.00 (m)	180.00	180.00					MinPts	
555.72	32.81	550.40	522.91	158.02	MAS = 10.00 (m)	850.00	850.00					MinPts	
555.45	32.81	547.77	522.64	94.34	MAS = 10.00 (m)	1360.00	1360.00					MinPts	
553.57	32.81	542.21	520.76	57.81	MAS = 10.00 (m)	2190.00	2190.00					MINPT-O-EU	
553.48	32.81	542.20	520.67	57.07	MAS = 10.00 (m)	2240.00	2240.00					MinPts	
553.49	32.81	542.19	520.68	56.94	MAS = 10.00 (m)	2250.00	2250.00					MINPT-O-EU	
553.88	32.81	542.47	521.07	56.33	MAS = 10.00 (m)	2300.00	2300.00					MinPt-O-SF	
677.98	32.81	665.29	645.17	61.04	MAS = 10.00 (m)	3360.00	3360.00					MinPt-O-SF	
690.86	32.81	677.98	658.06	61.10	MAS = 10.00 (m)	3440.00	3440.00					MinPt-O-SF	
902.89	32.81	887.68	870.08	66.23	MAS = 10.00 (m)	4740.00	4724.85					MinPt-O-SF	
1357.78	36.69	1332.78	1321.09	57.98	OSF1.50	7128.01	7072.05					MinPt-O-SF	
1362.07	36.79	1337.01	1325.28	57.99	OSF1.50	7200.00	7143.36					MinPt-O-SF	
1192.96	106.73	1121.27	1086.23	17.00	OSF1.50	9560.00	7920.00					MinPt-CtCt	
1192.95	126.57	1108.03	1066.37	14.30	OSF1.50	9830.00	7920.00					MinPt-CtCt	
1193.24	210.71	1052.23	982.53	8.55	OSF1.50	10930.00	7920.00					MinPt-CtCt	
1201.40	275.38	1017.28	926.02	6.57	OSF1.50	11760.00	7920.00					MinPt-CtCt	
1193.76	334.75	970.05	859.01	5.37	OSF1.50	12520.00	7920.00					MinPt-CtCt	
1198.31	360.66	957.33	837.64	5.00	OSF1.50	12860.00	7920.00		OSF<5.00			Enter Alert	
1196.22	442.28	900.83	753.93	4.07	OSF1.50	13890.00	7920.00					MinPt-CtCt	
1196.28	473.63	879.99	722.65	3.80	OSF1.50	14290.00	7920.00					MinPt-CtCt	
1196.65	504.21	859.98	692.44	3.57	OSF1.50	14680.00	7920.00					MinPt-CtCt	
1198.24	540.16	837.59	658.07	3.33	OSF1.50	15140.00	7920.00					MinPt-CtCt	
1201.10	575.34	817.01	625.76	3.14	OSF1.50	15590.00	7920.00					MinPt-CtCt	
1173.22	722.30	691.15	450.92	2.44	OSF1.50	17460.00	7920.00					MinPt-CtCt	
1173.26	722.51	691.05	450.75	2.44	OSF1.50	17470.00	7920.00					MINPT-O-EU	
1173.39	722.66	691.08	450.73	2.44	OSF1.50	17480.00	7920.00					MinPts	
1310.80	658.98	870.95	651.83	2.99	OSF1.50	18044.97	7920.00					TD	

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

Warning Alert

2399.06	32.81	2397.24	2366.25	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
2399.06	32.81	2397.19	2366.25	49035.49	MAS = 10.00 (m)	28.00	28.00					WRP	
2398.73	32.81	2395.61	2365.92	1826.77	MAS = 10.00 (m)	320.00	320.00					MinPts	
2395.36	32.81	2384.01	2362.55	250.86	MAS = 10.00 (m)	2190.00	2190.00					MINPT-O-EU	
2395.11	32.81	2383.71	2362.30	244.43	MAS = 10.00 (m)	2300.00	2300.00					MinPt-O-SF	
2395.02	32.81	2383.58	2362.22	243.20	MAS = 10.00 (m)	2570.00	2570.00					MinPts	
2395.09	32.81	2383.21	2362.29	232.88	MAS = 10.00 (m)	2970.00	2970.00					MinPts	
2395.10	32.81	2382.59	2362.29	219.56	MAS = 10.00 (m)	3330.00	3330.00					MinPts	
1115.43	159.84	1008.05	955.59	10.61	OSF1.50	9400.00	7920.00					MinPt-CtCt	
1123.60	182.55	1001.06	941.07	9.34	OSF1.50	9760.00	7920.00					MINPT-O-EU	
1128.67	188.67	1002.03	940.00	9.08	OSF1.50	9870.00	7920.00					MinPt-O-ADP	
1134.22	196.54	1002.33	937.68	8.75	OSF1.50	9970.00	7920.00					MINPT-O-EU	
1142.87	206.51	1004.34	936.36	8.39	OSF1.50	10120.00	7920.00					MinPt-O-ADP	
1193.41	327.38	974.36	866.03	5.50	OSF1.50	11590.00	7920.00					MinPt-CtCt	
1202.75	362.57	960.22	840.17	5.00	OSF1.50	12070.00	7920.00		OSF<5.00			Enter Alert	
1211.45	379.82	957.41	831.63	4.81	OSF1.50	12330.00	7920.00					MINPT-O-EU	
1225.03	401.13	956.78	823.90	4.60	OSF1.50	12610.00	7920.00					MINPT-O-EU	
1217.51	497.97	884.74	719.54	3.68	OSF1.50	13770.00	7920.00					MinPt-CtCt	

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

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		
	1229.60	546.76	864.29	682.85	3.38	OSF1.50	14450.00	7920.00				MINPT-O-EQU	
	1232.14	549.94	864.69	682.20	3.37	OSF1.50	14510.00	7920.00				MinPt-O-ADP	
	1194.30	788.87	867.60	405.43	2.27	OSF1.50	17460.00	7920.00				MinPts	
	1194.25	788.76	867.62	405.49	2.27	OSF1.50	17470.00	7920.00				MinPt-CtCt	
	1325.50	704.38	854.86	621.13	2.83	OSF1.50	18044.97	7920.00				TD	

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

Warning Alert

2399.06	32.81	2397.24	2366.25	N/A	MAS = 10.00 (m)	0.00	0.00	
2399.06	32.81	2397.19	2366.25	49035.49	MAS = 10.00 (m)	28.00	28.00	
2398.73	32.81	2395.61	2365.92	1826.77	MAS = 10.00 (m)	320.00	320.00	
2395.36	32.81	2384.01	2362.55	250.86	MAS = 10.00 (m)	2190.00	2190.00	
2395.11	32.81	2383.71	2362.30	244.43	MAS = 10.00 (m)	2300.00	2300.00	
2395.05	32.81	2383.62	2362.25	243.52	MAS = 10.00 (m)	2550.00	2550.00	
2395.09	32.81	2383.59	2362.28	241.91	MAS = 10.00 (m)	2630.00	2630.00	
2395.11	32.81	2382.70	2362.30	221.58	MAS = 10.00 (m)	3300.00	3300.00	
1939.82	49.39	1906.36	1890.43	60.84	OSF1.50	7210.00	7153.33	
1939.91	49.59	1906.32	1890.32	60.59	OSF1.50	7230.00	7173.30	
1940.00	49.70	1906.33	1890.30	60.45	OSF1.50	7240.00	7183.29	
1948.99	101.02	1881.11	1847.97	29.38	OSF1.50	8550.00	7920.00	
1949.89	103.77	1880.18	1846.12	28.60	OSF1.50	8630.00	7920.00	
1951.06	105.15	1880.43	1845.91	28.24	OSF1.50	8670.00	7920.00	
2014.84	142.67	1919.19	1872.17	21.41	OSF1.50	9300.00	7920.00	
2027.03	162.38	1918.24	1864.65	18.90	OSF1.50	9470.00	7920.00	
2030.32	166.09	1919.05	1864.22	18.50	OSF1.50	9540.00	7920.00	
2038.45	173.90	1921.99	1864.56	17.73	OSF1.50	9670.00	7920.00	
2007.14	283.00	1817.94	1724.14	10.69	OSF1.50	10970.00	7920.00	
2007.78	340.65	1780.15	1667.14	8.88	OSF1.50	11710.00	7920.00	
2009.90	348.46	1777.06	1661.44	8.69	OSF1.50	11860.00	7920.00	
2012.19	351.25	1777.49	1660.94	8.63	OSF1.50	11920.00	7920.00	
2033.50	482.60	1711.24	1550.91	6.34	OSF1.50	13520.00	7920.00	
2037.39	495.01	1706.85	1542.38	6.19	OSF1.50	13740.00	7920.00	
2051.98	514.48	1708.46	1537.50	6.00	OSF1.50	14020.00	7920.00	
2050.59	602.70	1648.25	1447.89	5.11	OSF1.50	15050.00	7920.00	
2052.91	617.54	1640.68	1435.37	5.00	OSF1.50	15270.00	7920.00	
2070.13	666.99	1624.94	1403.15	4.66	OSF1.50	15930.00	7920.00	
2076.23	674.19	1626.23	1402.04	4.63	OSF1.50	16060.00	7920.00	
2075.78	792.65	1546.81	1283.13	3.93	OSF1.50	17460.00	7920.00	
2075.96	793.20	1546.63	1282.76	3.93	OSF1.50	17490.00	7920.00	
2076.58	793.59	1546.99	1282.99	3.93	OSF1.50	17520.00	7920.00	
2156.08	775.41	1638.54	1380.68	4.18	OSF1.50	18044.97	7920.00	

OSF<5.00

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

Pass

75.06	32.81	74.08	42.25	N/A	MAS = 10.00 (m)	0.00	0.00	
75.04	32.81	74.06	42.23	N/A	MAS = 10.00 (m)	28.00	28.00	
75.04	32.81	60.64	42.23	5.52	MAS = 10.00 (m)	2200.00	2200.00	
75.05	32.81	60.62	42.25	5.51	MAS = 10.00 (m)	2210.00	2210.00	
75.43	32.81	60.87	42.62	5.48	MAS = 10.00 (m)	2250.00	2250.00	
2585.79	64.18	2542.67	2521.61	61.35	OSF1.50	8240.00	7905.27	
2865.60	72.04	2817.25	2793.56	60.48	OSF1.50	9080.00	7920.00	
2883.94	72.49	2835.28	2811.45	60.48	OSF1.50	9120.00	7920.00	
2920.31	534.01	2563.97	2386.29	8.22	OSF1.50	18044.97	7920.00	

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

Pass

515.47	32.81	513.64	482.66	41365.24	MAS = 10.00 (m)	0.00	0.00	
515.34	32.81	513.43	482.53	5577.69	MAS = 10.00 (m)	28.00	28.00	
506.52	32.81	492.71	473.71	42.07	MAS = 10.00 (m)	2190.00	2190.00	
506.05	32.81	492.15	473.24	41.02	MAS = 10.00 (m)	2310.00	2310.00	
506.25	32.81	492.34	473.44	41.01	MAS = 10.00 (m)	2350.00	2350.00	
847.53	32.81	829.94	814.72	52.91	MAS = 10.00 (m)	4660.00	4646.22	
919.96	32.81	900.94	887.15	52.73	MAS = 10.00 (m)	5130.00	5108.19	
926.70	32.81	907.56	893.90	52.73	MAS = 10.00 (m)	5170.00	5147.50	
996.90	32.81	976.23	964.09	52.20	MAS = 10.00 (m)	5570.00	5540.67	
1226.84	40.94	1199.01	1185.90	46.72	OSF1.50	7128.01	7072.05	
1229.24	41.04	1201.35	1188.20	46.70	OSF1.50	7200.00	7143.36	
1196.56	40.86	1168.78	1155.69	45.66	OSF1.50	7640.00	7665.77	
1197.09	40.92	1169.28	1156.17	45.62	OSF1.50	7680.00	7599.71	
1198.33	40.95	1170.50	1157.38	45.63	OSF1.50	7710.00	7624.35	
10251.56	65.99	10207.03	10185.57	238.81	OSF1.50	18044.97	7920.00	

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

Pass

2716.17	32.81	2714.36	2683.36	N/A	MAS = 10.00 (m)	0.00	0.00	
2712.90	32.81	2710.58	2680.10	5350.45	MAS = 10.00 (m)	28.00	28.00	
2695.95	99.39	2629.09	2596.57	41.42	OSF1.50	1980.00	1980.00	
2695.97	99.44	2629.07	2596.53	41.39	OSF1.50	1990.00	1990.00	
2696.11	99.45	2629.20	2596.66	41.39	OSF1.50	2010.00	2010.00	
9289.58	125.61	9205.31	9163.98	112.35	OSF1.50	13400.00	7920.00	
13088.83	155.20	12984.83	12933.63	127.80	OSF1.50	18044.97	7920.00	

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

Pass

5228.69	32.81	5226.87	5195.88	597950.14	MAS = 10.00 (m)	0.00	0.00	
5228.71	32.81	5226.83	5195.90	79623.47	MAS = 10.00 (m)	28.00	28.00	
5230.41	32.81	5226.13	5197.60	2119.09	MAS = 10.00 (m)	600.00	600.00	
5233.07	32.81	5226.11	5200.26	1016.77	MAS = 10.00 (m)	1200.00	1200.00	
5243.30	32.81	5231.79	5210.49	529.28	MAS = 10.00 (m)	2290.00	2290.00	
5172.13	32.81	5158.90	5139.32	446.61	MAS = 10.00 (m)	3510.00	3510.00	
5149.51	32.81	5136.14	5116.70	440.11	MAS = 10.00 (m)	3770.00	3769.60	
4056.98	193.94	3927.09	3863.03	31.65	OSF1.50	8040.00	7838.26	
4054.42	332.64	3832.07	3721.77	18.37	OSF1.50	9920.00	7920.00	
4061.18	413.69	3784.80	3647.48	14.78	OSF1.50	10980.00	7920.00	
4063.16	449.98	3762.60	3613.19	13.59	OSF1.50	11450.00	7920.00	
4063.31	464.68	3752.95	3598.64	13.16	OSF1.50	11640.00	7920.00	
4066.81	476.21	3748.72	3590.60	12.85	OSF1.50	11890.00	7920.00	
4069.50	479.90	3748.95	3589.60	12.76	OSF1.50	11970.00	7920.00	
4064.43	554.40	3694.24	3510.02	11.03	OSF1.50	12790.00	7920.00	
4064.57	554.89	3694.05	3509.68	11.02	OSF1.50	12830.00	7920.00	
4064.67	555.01	3694.07	3509.67	11.02	OSF1.50	12840.00	7920.00	
4068.63	556.27	3697.15	3512.36	11.00	OSF1.50	12980.00	7920.00	
6639.43	394.89	6375.63	6244.54	25.32	OSF1.50	18044.97	7920.00	

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