

Schuh 3-65 21-20 4BH Plan #0 Anti-Collision Summary Report

Analysis Date-24hr Time: March 03, 2020 - 12:12

Client: Crestone Peak Resources

Field: CO, Adams County (NAD 83 NZ)

Structure: Crestone Peak 21-03S-65W (Shuh Pad)

Slot: Schuh 3-65 21-20 4BH

Well: Schuh 3-65 21-20 4BH

Borehole: Original Hole

Scan MD Range: 0.00ft - 18400.59ft

Analysis Method: 3D Least Distance

Reference Trajectory: Schuh 3-65 21-20 4BH 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: us1164app01\drilling-CO, Adams 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: 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	Sep.	Controlling	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

Schuh 3-65 21-20 4AH Plan #0
(Def Plan)

Warning Alert

32.46	26.16	31.47	6.30	N/A	MAS = 7.97 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
32.46	26.16	31.47	6.30	141668.83	MAS = 7.97 (m)	28.00	28.00					WRP	
32.46	26.16	18.08	6.30	2.35	MAS = 7.97 (m)	2300.00	2300.00					MinPts	
68.73	26.16	54.81	43.58	4.93	MAS = 7.97 (m)	2960.00	2954.18		OSF<5.00			Exit Alert	
682.51	205.51	545.18	477.00	5.00	OSF1.50	11860.00	7950.00		OSF<5.00			Enter Alert	
682.73	541.55	321.37	141.19	1.89	OSF1.50	18400.59	7950.00					MinPts	

Schuh 3-65 21-20 3BH Plan #0
(Def Plan)

Warning Alert

63.79	32.81	62.80	30.98	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
63.79	32.81	62.80	30.98	N/A	MAS = 10.00 (m)	28.00	28.00					WRP	
63.79	32.81	50.20	30.98	4.98	MAS = 10.00 (m)	2070.00	2070.00		OSF<5.00			Enter Alert	
63.79	32.81	49.40	30.98	4.69	MAS = 10.00 (m)	2300.00	2300.00					MinPts	
67.93	32.81	53.51	35.12	4.98	MAS = 10.00 (m)	2450.00	2449.93		OSF<5.00			Exit Alert	
1359.72	408.67	1086.95	951.05	5.00	OSF1.50	15790.00	7950.00		OSF<5.00			Enter Alert	
1359.81	543.82	996.93	815.99	3.75	OSF1.50	18400.59	7950.00					MinPts	

Schuh 3-65 21-20 3AH MWD 0'
to 18028' - DRL (Def Survey)

Warning Alert

95.55	32.81	93.73	62.74	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
95.48	32.81	93.67	62.67	N/A	MAS = 10.00 (m)	28.00	28.00					MinPts	
95.53	32.81	93.61	62.72	926.01	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EQU	
106.80	32.81	96.37	73.99	15.88	MAS = 10.00 (m)	1540.00	1540.00					MINPT-O-EQU	
107.81	32.81	96.40	75.00	11.05	MAS = 10.00 (m)	2180.00	2180.00					MINPT-O-EQU	
107.65	32.81	96.40	74.84	11.00	MAS = 10.00 (m)	2260.00	2260.00					MinPt-O-SF	
107.58	32.81	96.35	74.77	11.01	MAS = 10.00 (m)	2310.00	2310.00					MinPts	
2060.87	89.03	2000.98	1971.84	35.33	OSF1.50	9200.00	7950.00					MinPt-CtCt	
2063.75	96.73	1998.74	1967.03	32.52	OSF1.50	9360.00	7950.00					MINPT-O-EQU	
2067.97	101.80	1999.57	1966.17	30.93	OSF1.50	9460.00	7950.00					MinPt-O-ADP	
2079.73	122.28	1997.68	1957.46	25.83	OSF1.50	9730.00	7950.00					MINPT-O-EQU	
2069.61	216.97	1924.42	1852.63	14.40	OSF1.50	10930.00	7950.00					MinPt-CtCt	
2084.48	255.64	1913.52	1828.84	12.30	OSF1.50	11500.00	7950.00					MINPT-O-EQU	
2068.03	357.06	1829.46	1710.97	8.72	OSF1.50	12730.00	7950.00					MinPt-CtCt	
2065.97	383.75	1809.60	1682.22	8.10	OSF1.50	13070.00	7950.00					MinPt-CtCt	
2081.57	425.13	1797.61	1656.43	7.37	OSF1.50	13670.00	7950.00					MINPT-O-EQU	
2042.18	558.80	1669.10	1483.37	5.49	OSF1.50	15300.00	7950.00					MinPt-CtCt	
2057.32	618.64	1644.36	1438.68	5.00	OSF1.50	16110.00	7950.00		OSF<5.00			Enter Alert	
2061.06	625.10	1643.79	1435.96	4.95	OSF1.50	16210.00	7950.00					MINPT-O-EQU	
2037.67	720.99	1556.47	1316.67	4.25	OSF1.50	17360.00	7950.00					MinPt-CtCt	
2034.09	784.92	1510.28	1249.17	3.89	OSF1.50	18170.00	7950.00					MinPt-CtCt	
2036.14	792.89	1507.02	1243.26	3.86	OSF1.50	18320.00	7950.00					MINPT-O-EQU	
2037.95	795.04	1507.39	1242.92	3.85	OSF1.50	18370.00	7950.00					MinPt-O-ADP	
2039.36	796.29	1507.97	1243.07	3.85	OSF1.50	18400.59	7950.00					MinPt-O-SF	

Emma E McVay 1 Blind 0' to
8831' - DA (Def Survey)

Warning Alert

7015.77	32.81	7013.95	6982.96	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
7015.53	32.81	7013.69	6982.72	242476.15	MAS = 10.00 (m)	28.00	28.00					MinPt-O-SF	
7015.39	129.21	6928.72	6886.18	82.45	OSF1.50	2300.00	2300.00					MinPt-CtCt	
7019.13	140.47	6924.95	6878.66	75.80	OSF1.50	2490.00	2489.86					MINPT-O-EQU	
7024.09	146.38	6925.97	6877.71	72.76	OSF1.50	2590.00	2589.50					MinPt-O-ADP	
1628.99	493.78	1297.49	1135.22	5.00	OSF1.50	14160.00	7950.00		OSF<5.00			Enter Alert	
1043.79	543.40	680.61	500.38	2.89	OSF1.50	15410.00	7950.00					MinPt-CtCt	
1043.83	543.54	680.59	500.29	2.89	OSF1.50	15420.00	7950.00					MinPts	
1044.20	543.77	680.85	500.43	2.89	OSF1.50	15440.00	7950.00					MinPt-O-SF	
1690.16	509.66	1349.86	1180.51	4.99	OSF1.50	16740.00	7950.00		OSF<5.00			Exit Alert	
3166.89	485.17	2842.91	2681.72	9.82	OSF1.50	18400.59	7950.00					TD	

Bear 3-65 22-23 3CH
GYRO-MWD 0' to 17995' - PR
(Def Survey)

Pass

1077.28	32.81	1075.47	1044.47	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
1076.25	32.81	1074.33	1043.44	9911.21	MAS = 10.00 (m)	28.00	28.00					MinPt-O-SF	
1071.00	32.81	1059.13	1038.19	106.35	MAS = 10.00 (m)	2080.00	2080.00					MinPts	
1071.03	32.81	1058.78	1038.22	102.43	MAS = 10.00 (m)	2180.00	2180.00					MINPT-O-EQU	
1071.05	32.81	1058.96	1038.24	102.00	MAS = 10.00 (m)	2200.00	2200.00					MinPts	
765.43	36.76	740.39	728.67	32.59	OSF1.50	6030.00	5937.51					MinPt-CtCt	
765.49	36.98	740.30	728.51	32.39	OSF1.50	6060.00	5966.67					MINPT-O-EQU	
765.54	37.05	740.31	728.49	32.33	OSF1.50	6070.00	5976.38					MinPt-O-ADP	
796.24	40.63	768.62	755.61	30.54	OSF1.50	6580.00	6471.98					MinPt-O-SF	
813.72	41.42	785.58	772.30	30.60	OSF1.50	6700.00	6588.60					MinPt-O-SF	
974.60	46.87	942.82	927.73	32.24	OSF1.50	7400.00	7270.84					MinPt-O-SF	
1055.44	45.98	1024.25	1009.46	35.62	OSF1.50	7870.00	7696.54					MinPts	
10406.41	59.97	10365.89	10346.43	267.39	OSF1.50	18400.59	7950.00					TD	

Bear 3-65 22-23 3CH
GYRO-MWD 0' to 17968' - PR
(Def Survey)

Pass

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		
	1033.72	32.81	1031.91	1000.91	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1032.64	32.81	1030.72	999.84	9123.73	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1028.72	32.81	1018.19	995.91	117.73	MAS = 10.00 (m)	1770.00	1770.00				MinPts	
	1029.32	32.81	1017.21	996.51	99.74	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1029.35	32.81	1017.38	996.54	99.17	MAS = 10.00 (m)	2200.00	2200.00				MINPT-O-EOU	
	786.76	32.81	766.10	753.95	41.24	MAS = 10.00 (m)	5370.00	5296.15				MinPts	
	786.82	32.81	766.03	754.01	40.95	MAS = 10.00 (m)	5400.00	5325.30				MINPT-O-EOU	
	856.86	37.31	831.46	819.56	35.93	OSF1.50	6350.00	6248.48				MinPt-O-SF	
	1264.30	44.29	1234.25	1220.02	44.38	OSF1.50	7600.00	7464.75				MinPt-O-SF	
	1574.83	49.57	1541.25	1525.26	49.20	OSF1.50	8780.00	7950.00				MinPt-O-SF	
	10382.82	67.18	10337.49	10315.64	237.46	OSF1.50	18400.59	7950.00				TD	

Bear 3-65 22-23 3BH
GYRO-MWD 0' to 18165' - PR
(Def Survey)

	1040.46	32.81	1038.65	1007.65	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	1039.37	32.81	1037.44	1006.56	8896.81	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1039.02	32.81	1037.11	1006.21	10502.60	MAS = 10.00 (m)	70.00	70.00				MinPts	
	1039.32	32.81	1035.53	1006.52	524.54	MAS = 10.00 (m)	480.00	480.00				MinPts	
	1037.81	32.81	1030.50	1005.00	188.22	MAS = 10.00 (m)	1210.00	1210.00				MinPts	
	1035.28	32.81	1023.04	1002.48	99.10	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1035.12	32.81	1022.98	1002.31	98.14	MAS = 10.00 (m)	2280.00	2280.00				MinPts	
	1035.12	32.81	1022.98	1002.31	98.10	MAS = 10.00 (m)	2290.00	2290.00				MINPT-O-EOU	
	803.63	32.81	781.44	770.82	38.95	MAS = 10.00 (m)	5460.00	5383.61				MinPts	
	803.72	32.88	781.27	770.84	38.47	OSF1.50	5510.00	5432.20				MINPT-O-EOU	
	803.85	33.04	781.29	770.81	38.28	OSF1.50	5530.00	5451.63				MinPt-O-ADP	
	832.46	36.22	807.78	796.24	36.01	OSF1.50	5980.00	5888.92				MinPt-O-SF	
	1797.13	55.68	1759.48	1741.45	49.80	OSF1.50	8970.00	7950.00				MinPt-O-SF	
	10393.56	73.21	10344.22	10320.35	217.68	OSF1.50	18400.59	7950.00				TD	

Bear 3-65 22-23 3AH
GYRO-MWD 0' to 18081' - PR
(Def Survey)

	1096.08	32.81	1094.26	1063.27	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	1095.04	32.81	1093.11	1062.23	9876.28	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1084.53	32.81	1070.94	1051.72	91.99	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1084.41	32.81	1070.91	1051.61	91.01	MAS = 10.00 (m)	2270.00	2270.00				MinPts	
	1084.42	32.81	1070.91	1051.61	90.97	MAS = 10.00 (m)	2280.00	2280.00				MINPT-O-EOU	
	864.76	32.81	843.94	831.95	45.05	MAS = 10.00 (m)	5100.00	5033.77				MinPts	
	864.78	32.81	843.89	831.98	44.84	MAS = 10.00 (m)	5120.00	5053.21				MINPT-O-EOU	
	905.60	34.01	882.39	871.58	41.85	OSF1.50	5680.00	5597.40				MinPt-O-SF	
	2239.35	61.63	2197.72	2177.71	55.92	OSF1.50	9260.00	7950.00				MinPt-O-SF	
	10508.23	83.83	10451.81	10424.40	191.67	OSF1.50	18400.59	7950.00				TD	

King Ranch 1 Blind 0' to 8631' -
DA (Def Survey)

	3429.65	32.81	3427.84	3396.85	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	3429.23	32.81	3427.37	3396.42	68673.68	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	3429.02	131.60	3340.75	3297.42	39.55	OSF1.50	2300.00	2300.00				MinPt-CtCt	
	3432.37	141.68	3337.39	3290.70	36.74	OSF1.50	2470.00	2469.90				MINPT-O-EOU	
	3436.27	146.41	3338.13	3289.86	35.58	OSF1.50	2550.00	2549.68				MinPt-O-ADP	
	4224.13	470.27	3910.09	3753.87	13.51	OSF1.50	8830.00	7950.00				MinPt-CtCt	
	4224.14	470.28	3910.08	3753.85	13.51	OSF1.50	8840.00	7950.00				MinPts	
	4225.24	470.51	3911.03	3754.73	13.51	OSF1.50	8830.00	7950.00				MinPt-O-SF	
	10458.44	490.87	10130.66	9967.57	32.06	OSF1.50	18400.59	7950.00				TD	

Quicksilver 18E-20-15 - Plan
(Def Plan)

	9295.79	458.14	8989.76	8837.65	30.55	OSF1.50	0.00	0.00				Surface	Pass
	9271.41	458.93	8964.85	8812.47	30.42	OSF1.50	28.00	28.00				WRP	
	5365.69	774.14	4848.18	4591.55	10.45	OSF1.50	8640.00	7950.00				MinPts	
	5381.74	409.02	5107.71	4972.72	19.92	OSF1.50	18400.59	7950.00				MinPts	

Scranton Well Blind 0' to 801' -
DRY (Def Survey)

	6292.20	32.81	6290.39	6259.40	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6291.73	32.81	6289.85	6258.92	94037.88	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	6291.05	48.11	6258.37	6242.94	203.76	OSF1.50	920.00	920.00				MinPt-CtCt	
	6291.05	48.22	6258.30	6242.83	203.28	OSF1.50	930.00	930.00				MinPts	
	6319.43	48.67	6286.38	6270.76	202.24	OSF1.50	1520.00	1520.00				MinPt-O-SF	
	8939.77	140.75	8845.40	8799.02	96.35	OSF1.50	12800.00	7950.00				MinPt-CtCt	
	8941.27	145.28	8843.88	8795.98	93.33	OSF1.50	12960.00	7950.00				MINPT-O-EOU	
	8943.37	147.82	8844.29	8795.55	91.73	OSF1.50	13050.00	7950.00				MinPt-O-ADP	
	10471.96	256.57	10300.38	10215.39	61.60	OSF1.50	18250.00	7950.00				MinPt-O-SF	
	10551.17	258.44	10378.34	10292.73	61.61	OSF1.50	18400.59	7950.00				TD	