

# GMT Exploration

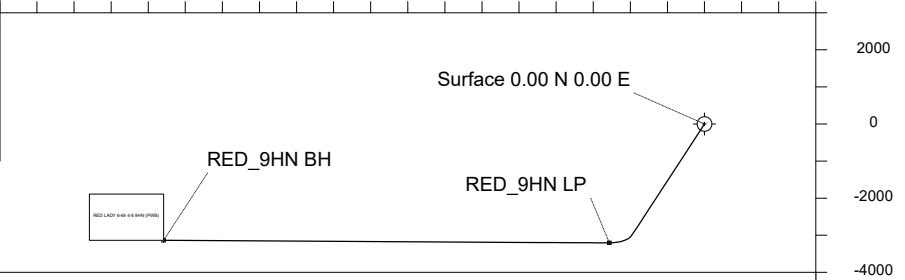
Location	DJ Basin	Slot	RED LADY 6-64 4-6 9HN
Field	Elbert County Wells	Well	RED LADY 6-64 4-6 9HN
Installation	Ragged 6-64 4 Pad	Wellbore	RED LADY 6-64 4-6 9HN (PWB)

Created by	cdoke
Date plotted	4-Apr-2023
Plot reference is RED LADY 6-64 4-6 9HN (PWB).	
Ref wellpath is RED LADY 6-64 4-6 9HN (PWB).	
Coordinates are in Feet reference RED LADY 6-64 4-6 9HN.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig Datum: Planned Datum #1	
Rig Datum to Mean Sea Level: 6014.70 ft.	
Plot North is aligned to TRUE North.	

Scale 1 cm = 1000 ft

East (Feet) ->

-18000 -16000 -14000 -12000 -10000 -8000 -6000 -4000 -2000 0 2000

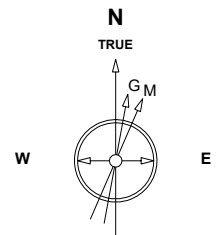
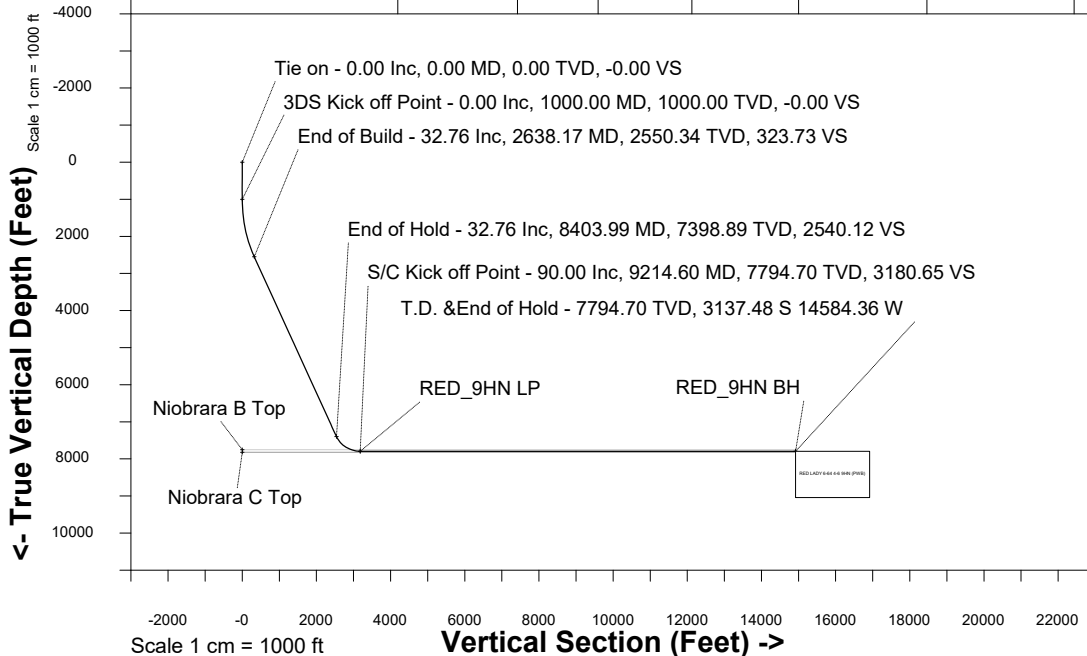


## WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	0.00	0.00	0.00	0.00	S 0.00	W 0.00		-0.00
KOP	1000.00	0.00	213.12	1000.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2638.17	32.76	213.12	2550.34	S 381.71	W 249.02	2.00	323.73
End of Hold	8403.99	32.76	213.12	7398.89	S 2995.05	W 1953.92	0.00	2540.12
Target RED_9HN LP	9214.60	90.00	270.33	7794.70	S 3205.71	W 2563.78	9.00	3180.65
T.D. & Target RED... BH	21235.38	90.00	270.33	7794.70	S 3137.48	W 14584.36	0.00	14918.03

<- North(Feet)

Scale 1 cm = 1000 ft



Jan-3-2023  
IGRF-13 Dip: 65.95 deg Field: 51361.9 nT  
Lat: N39 33.44.1720 Long: W104 33 5.5800 Elev: 6016.70 ft  
Magnetic North is 7.50 deg East of TRUE North  
To correct azimuth from Magnetic to TRUE add 7.50 deg

Scale 1 cm = 1000 ft

Vertical Section (Feet) ->

Azimuth 257.86 with reference 0.00 N, 0.00 E from RED LADY 6-64 4-6 9HN

### Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Installation [ft]
RED LADY 6-64 4-6 9HN	N39 33 42.5844	W104 33 4.4460	1084665.5007	3267502.5700	160.64S	88.81E	-2.00

### Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment	Ground Level Elev [ft]
Ragged 6-64 4 Pad	N39 33 44.1720	W104 33 5.5800	1084825.1840	3267412.0415	NAD83 Colorado State Planes, North Zone, US Foot	True	6016.70

### Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
0.00	0.00	0.00	0.00	-6014.70	0.00N	0.00E		0.00
1000.00	0.00	213.12	1000.00	-5014.70	0.00N	0.00E	==>	0.00
2638.17	32.76	213.12	2550.34	-3464.36	381.71S	249.02W	2.00	323.73
8403.99	32.76	213.12	7398.89	1384.19	2995.05S	1953.92W	==>	2540.12
9214.60	90.00	270.33	7794.70	1780.00	3205.71S	2563.78W	9.00	3180.65
21235.38	90.00	270.33	7794.70	1780.00	3137.48S	14584.36W	==>	14918.03

### Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)	All Station Comments
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	N39 33 42.5844	W104 33 4.4460	Tie on, Slot Datum
77.00	0.00	0.00	77.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	Lower Dawson
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
202.00	0.00	0.00	202.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	Denver
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	
1000.00	0.00	213.12	1000.00	0.00N	0.00E	==>	0.00	N39 33 42.5844	W104 33 4.4460	3DS Kick off Point
1089.01	1.78	213.12	1089.00	1.16S	0.76W	2.00	0.98	N39 33 42.5730	W104 33 4.4556	Upper Arapahoe
1100.00	2.00	213.12	1099.98	1.46S	0.95W	2.00	1.24	N39 33 42.5700	W104 33 4.4582	
1200.00	4.00	213.12	1199.84	5.84S	3.81W	2.00	4.96	N39 33 42.5266	W104 33 4.4947	
1300.00	6.00	213.12	1299.45	13.14S	8.57W	2.00	11.15	N39 33 42.4545	W104 33 4.5555	
1400.00	8.00	213.12	1398.70	23.35S	15.23W	2.00	19.80	N39 33 42.3536	W104 33 4.6405	
1500.00	10.00	213.12	1497.47	36.45S	23.78W	2.00	30.91	N39 33 42.2241	W104 33 4.7496	
1600.00	12.00	213.12	1595.62	52.43S	34.21W	2.00	44.47	N39 33 42.0662	W104 33 4.8827	
1700.00	14.00	213.12	1693.06	71.27S	46.50W	2.00	60.45	N39 33 41.8800	W104 33 5.0397	
1800.00	16.00	213.12	1789.64	92.95S	60.64W	2.00	78.83	N39 33 41.6658	W104 33 5.2202	
1900.00	18.00	213.12	1885.27	117.43S	76.61W	2.00	99.60	N39 33 41.4238	W104 33 5.4242	
1909.19	18.18	213.12	1894.00	119.82S	78.17W	2.00	101.62	N39 33 41.4002	W104 33 5.4441	Laramie - Fox Hills
2000.00	20.00	213.12	1979.82	144.70S	94.40W	2.00	122.72	N39 33 41.1543	W104 33 5.6513	
2100.00	22.00	213.12	2073.17	174.71S	113.98W	2.00	148.17	N39 33 40.8577	W104 33 5.9013	
2159.39	23.19	213.12	2128.00	193.82S	126.45W	2.00	164.38	N39 33 40.6688	W104 33 6.0605	Pierre Shale (Base of Fox Hills)
2200.00	24.00	213.12	2165.21	207.43S	135.33W	2.00	175.93	N39 33 40.5343	W104 33 6.1739	
2300.00	26.00	213.12	2255.84	242.83S	158.42W	2.00	205.94	N39 33 40.1845	W104 33 6.4687	
2400.00	28.00	213.12	2344.94	280.85S	183.22W	2.00	238.19	N39 33 39.8087	W104 33 6.7854	
2500.00	30.00	213.12	2432.39	321.45S	209.71W	2.00	272.63	N39 33 39.4075	W104 33 7.1236	
2600.00	32.00	213.12	2518.11	364.59S	237.85W	2.00	309.21	N39 33 38.9812	W104 33 7.4829	
2638.17	32.76	213.12	2550.34	381.71S	249.02W	2.00	323.73	N39 33 38.8120	W104 33 7.6255	End of Build
2700.00	32.76	213.12	2602.33	409.73S	267.30W	==>	347.50	N39 33 38.5350	W104 33 7.8590	
2800.00	32.76	213.12	2686.43	455.06S	296.87W	==>	385.94	N39 33 38.0870	W104 33 8.2365	
2900.00	32.76	213.12	2770.52	500.38S	326.44W	==>	424.38	N39 33 37.6391	W104 33 8.6140	
3000.00	32.76	213.12	2854.61	545.70S	356.01W	==>	462.82	N39 33 37.1911	W104 33 8.9916	
3100.00	32.76	213.12	2938.70	591.03S	385.58W	==>	501.26	N39 33 36.7432	W104 33 9.3691	
3200.00	32.76	213.12	3022.79	636.35S	415.15W	==>	539.70	N39 33 36.2952	W104 33 9.7466	
3300.00	32.76	213.12	3106.88	681.68S	444.72W	==>	578.14	N39 33 35.8473	W104 33 10.1242	
3400.00	32.76	213.12	3190.97	727.00S	474.29W	==>	616.58	N39 33 35.3993	W104 33 10.5017	
3500.00	32.76	213.12	3275.06	772.33S	503.85W	==>	655.02	N39 33 34.9514	W104 33 10.8792	
3600.00	32.76	213.12	3359.16	817.65S	533.42W	==>	693.46	N39 33 34.5034	W104 33 11.2567	
3700.00	32.76	213.12	3443.25	862.98S	562.99W	==>	731.90	N39 33 34.0555	W104 33 11.6343	
3800.00	32.76	213.12	3527.34	908.30S	592.56W	==>	770.34	N39 33 33.6075	W104 33 12.0118	
3900.00	32.76	213.12	3611.43	953.63S	622.13W	==>	808.78	N39 33 33.1596	W104 33 12.3893	
4000.00	32.76	213.12	3695.52	998.95S	651.70W	==>	847.22	N39 33 32.7116	W104 33 12.7668	
4100.00	32.76	213.12	3779.61	1044.28S	681.27W	==>	885.66	N39 33 32.2636	W104 33 13.1443	
4200.00	32.76	213.12	3863.70	1089.60S	710.84W	==>	924.10	N39 33 31.8157	W104 33 13.5219	
4300.00	32.76	213.12	3947.79	1134.93S	740.41W	==>	962.54	N39 33 31.3677	W104 33 13.8994	
4400.00	32.76	213.12	4031.89	1180.25S	769.98W	==>	1000.98	N39 33 30.9198	W104 33 14.2769	
4500.00	32.76	213.12	4115.98	1225.58S	799.55W	==>	1039.42	N39 33 30.4718	W104 33 14.6544	

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 6014.7ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 257.86 degrees  
Bottom hole distance is 14918.03 Feet on azimuth 257.86 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 6-Apr-2023

Interpolated Wellpath										
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)	All Station Comments
4600.00	32.76	213.12	4200.07	1270.90S	829.11W	==>	1077.86	N39 33 30.0239	W104 33 15.0319	
4700.00	32.76	213.12	4284.16	1316.22S	858.68W	==>	1116.30	N39 33 29.5759	W104 33 15.4094	
4800.00	32.76	213.12	4368.25	1361.55S	888.25W	==>	1154.74	N39 33 29.1280	W104 33 15.7869	
4900.00	32.76	213.12	4452.34	1406.87S	917.82W	==>	1193.18	N39 33 28.6800	W104 33 16.1645	
5000.00	32.76	213.12	4536.43	1452.20S	947.39W	==>	1231.62	N39 33 28.2320	W104 33 16.5420	
5100.00	32.76	213.12	4620.52	1497.52S	976.96W	==>	1270.06	N39 33 27.7841	W104 33 16.9195	
5200.00	32.76	213.12	4704.62	1542.85S	1006.53W	==>	1308.50	N39 33 27.3361	W104 33 17.2970	
5300.00	32.76	213.12	4788.71	1588.17S	1036.10W	==>	1346.94	N39 33 26.8882	W104 33 17.6745	
5400.00	32.76	213.12	4872.80	1633.50S	1065.67W	==>	1385.38	N39 33 26.4402	W104 33 18.0520	
5500.00	32.76	213.12	4956.89	1678.82S	1095.24W	==>	1423.82	N39 33 25.9922	W104 33 18.4295	
5600.00	32.76	213.12	5040.98	1724.15S	1124.81W	==>	1462.26	N39 33 25.5443	W104 33 18.8070	
5700.00	32.76	213.12	5125.07	1769.47S	1154.37W	==>	1500.70	N39 33 25.0963	W104 33 19.1845	
5800.00	32.76	213.12	5209.16	1814.80S	1183.94W	==>	1539.14	N39 33 24.6484	W104 33 19.5620	
5900.00	32.76	213.12	5293.25	1860.12S	1213.51W	==>	1577.58	N39 33 24.2004	W104 33 19.9395	
6000.00	32.76	213.12	5377.35	1905.45S	1243.08W	==>	1616.02	N39 33 23.7524	W104 33 20.3170	
6095.91	32.76	213.12	5458.00	1948.92S	1271.44W	==>	1652.89	N39 33 23.3228	W104 33 20.6790	Sussex Sandstone
6100.00	32.76	213.12	5461.44	1950.77S	1272.65W	==>	1654.46	N39 33 23.3045	W104 33 20.6944	
6200.00	32.76	213.12	5545.53	1996.10S	1302.22W	==>	1692.90	N39 33 22.8565	W104 33 21.0719	
6300.00	32.76	213.12	5629.62	2041.42S	1331.79W	==>	1731.34	N39 33 22.4085	W104 33 21.4494	
6400.00	32.76	213.12	5713.71	2086.75S	1361.36W	==>	1769.78	N39 33 21.9606	W104 33 21.8269	
6500.00	32.76	213.12	5797.80	2132.07S	1390.93W	==>	1808.22	N39 33 21.5126	W104 33 22.2044	
6600.00	32.76	213.12	5881.89	2177.39S	1420.50W	==>	1846.66	N39 33 21.0647	W104 33 22.5819	
6700.00	32.76	213.12	5965.98	2222.72S	1450.07W	==>	1885.10	N39 33 20.6167	W104 33 22.9594	
6800.00	32.76	213.12	6050.08	2268.04S	1479.63W	==>	1923.54	N39 33 20.1687	W104 33 23.3368	
6900.00	32.76	213.12	6134.17	2313.37S	1509.20W	==>	1961.98	N39 33 19.7208	W104 33 23.7143	
7000.00	32.76	213.12	6218.26	2358.69S	1538.77W	==>	2000.42	N39 33 19.2728	W104 33 24.0918	
7100.00	32.76	213.12	6302.35	2404.02S	1568.34W	==>	2038.86	N39 33 18.8248	W104 33 24.4693	
7200.00	32.76	213.12	6386.44	2449.34S	1597.91W	==>	2077.30	N39 33 18.3769	W104 33 24.8468	
7300.00	32.76	213.12	6470.53	2494.67S	1627.48W	==>	2115.74	N39 33 17.9289	W104 33 25.2242	
7400.00	32.76	213.12	6554.62	2539.99S	1657.05W	==>	2154.18	N39 33 17.4809	W104 33 25.6017	
7500.00	32.76	213.12	6638.71	2585.32S	1686.62W	==>	2192.63	N39 33 17.0330	W104 33 25.9792	
7600.00	32.76	213.12	6722.81	2630.64S	1716.19W	==>	2231.07	N39 33 16.5850	W104 33 26.3567	
7700.00	32.76	213.12	6806.90	2675.97S	1745.76W	==>	2269.51	N39 33 16.1370	W104 33 26.7341	
7800.00	32.76	213.12	6890.99	2721.29S	1775.33W	==>	2307.95	N39 33 15.6891	W104 33 27.1116	
7900.00	32.76	213.12	6975.08	2766.62S	1804.89W	==>	2346.39	N39 33 15.2411	W104 33 27.4891	
8000.00	32.76	213.12	7059.17	2811.94S	1834.46W	==>	2384.83	N39 33 14.7931	W104 33 27.8665	
8100.00	32.76	213.12	7143.26	2857.27S	1864.03W	==>	2423.27	N39 33 14.3452	W104 33 28.2440	
8200.00	32.76	213.12	7227.35	2902.59S	1893.60W	==>	2461.71	N39 33 13.8972	W104 33 28.6215	
8300.00	32.76	213.12	7311.44	2947.91S	1923.17W	==>	2500.15	N39 33 13.4492	W104 33 28.9989	
8400.00	32.76	213.12	7395.54	2993.24S	1952.74W	==>	2538.59	N39 33 13.0013	W104 33 29.3764	
8403.99	32.76	213.12	7398.89	2995.05S	1953.92W	==>	2540.12	N39 33 12.9834	W104 33 29.3914	End of Hold
8500.00	37.57	225.63	7477.46	3037.35S	1989.10W	9.00	2583.42	N39 33 12.5653	W104 33 29.8406	
8600.00	43.68	235.82	7553.41	3078.15S	2039.57W	9.00	2641.33	N39 33 12.1620	W104 33 30.4848	
8620.41	45.02	237.60	7568.01	3085.98S	2051.49W	9.00	2654.64	N39 33 12.0846	W104 33 30.6371	Sharon Springs Shale Niobrara
8694.51	50.11	243.45	7618.00	3112.76S	2099.10W	9.00	2706.81	N39 33 11.8199	W104 33 31.2449	
8700.00	50.50	243.84	7621.51	3114.64S	2102.89W	9.00	2710.91	N39 33 11.8013	W104 33 31.2932	
8710.30	51.23	244.58	7628.01	3118.11S	2110.08W	9.00	2718.67	N39 33 11.7670	W104 33 31.3850	Niobrara A
8800.00	57.78	250.39	7680.09	3145.91S	2177.52W	9.00	2790.45	N39 33 11.4923	W104 33 32.2460	
8900.00	65.34	255.95	7727.71	3171.19S	2261.63W	9.00	2877.99	N39 33 11.2423	W104 33 33.3197	
8967.38	70.55	259.31	7753.01	3184.53S	2322.60W	9.00	2940.41	N39 33 11.1104	W104 33 34.0981	Niobrara B Top
9000.00	73.09	260.86	7763.19	3189.86S	2353.13W	9.00	2971.37	N39 33 11.0577	W104 33 34.4878	
9100.00	80.94	265.38	7785.65	3201.47S	2449.77W	9.00	3068.29	N39 33 10.9429	W104 33 35.7216	
9200.00	88.84	269.70	7794.55	3205.72S	2549.18W	9.00	3166.37	N39 33 10.9008	W104 33 36.9908	S/C Kick off Point/Target, RED_9HN LP
9214.60	90.00	270.33	7794.70	3205.71S	2563.78W	9.00	3180.65	N39 33 10.9008	W104 33 37.1772	
9300.00	90.00	270.33	7794.70	3205.23S	2649.18W	==>	3264.03	N39 33 10.9055	W104 33 38.2674	
9400.00	90.00	270.33	7794.70	3204.66S	2749.17W	==>	3361.67	N39 33 10.9110	W104 33 39.5441	
9500.00	90.00	270.33	7794.70	3204.09S	2849.17W	==>	3459.32	N39 33 10.9165	W104 33 40.8207	
9600.00	90.00	270.33	7794.70	3203.53S	2949.17W	==>	3556.96	N39 33 10.9220	W104 33 42.0974	
9700.00	90.00	270.33	7794.70	3202.96S	3049.17W	==>	3654.60	N39 33 10.9275	W104 33 43.3740	
9800.00	90.00	270.33	7794.70	3202.39S	3149.17W	==>	3752.24	N39 33 10.9330	W104 33 44.6507	
9900.00	90.00	270.33	7794.70	3201.82S	3249.17W	==>	3849.89	N39 33 10.9385	W104 33 45.9273	
10000.00	90.00	270.33	7794.70	3201.26S	3349.16W	==>	3947.53	N39 33 10.9439	W104 33 47.2040	
10100.00	90.00	270.33	7794.70	3200.69S	3449.16W	==>	4045.17	N39 33 10.9494	W104 33 48.4807	
10200.00	90.00	270.33	7794.70	3200.12S	3549.16W	==>	4142.81	N39 33 10.9549	W104 33 49.7573	
10300.00	90.00	270.33	7794.70	3199.55S	3649.16W	==>	4240.46	N39 33 10.9604	W104 33 51.0340	
10400.00	90.00	270.33	7794.70	3198.98S	3749.16W	==>	4338.10	N39 33 10.9658	W104 33 52.3106	
10500.00	90.00	270.33	7794.70	3198.42S	3849.16W	==>	4435.74	N39 33 10.9713	W104 33 53.5873	
10600.00	90.00	270.33	7794.70	3197.85S	3949.16W	==>	4533.38	N39 33 10.9767	W104 33 54.8639	
10700.00	90.00	270.33	7794.70	3197.28S	4049.15W	==>	4631.03	N39 33 10.9822	W104 33 56.1406	
10800.00	90.00	270.33	7794.70	3196.72S	4149.15W	==>	4728.67	N39 33 10.9876	W104 33 57.4173	
10900.00	90.00	270.33	7794.70	3196.15S	4249.15W	==>	4826.31	N39 33 10.9931	W104 33 58.6939	
11000.00	90.00	270.33	7794.70	3195.58S	4349.15W	==>	4923.95	N39 33 10.9985	W104 33 59.9706	
11100.00	90.00	270.33	7794.70	3195.01S	4449.15W	==>	5021.60	N39 33 11.0040	W104 34 1.2472	
11200.00	90.00	270.33	7794.70	3194.45S	4549.15W	==>	5119.24	N39 33 11.0094	W104 34 2.5239	
11300.00	90.00	270.33	7794.70	3193.88S	4649.14W	==>	5216.88	N39 33 11.0148	W104 34 3.8005	
11400.00	90.00	270.33	7794.70	3193.31S	4749.14W	==>	5314.52	N39 33 11.0202	W104 34 5.0772	
11500.00	90.00	270.33	7794.70	3192.74S	4849.14W	==>	5412.16	N39 33 11.0257	W104 34 6.3539	
11600.00	90.00	270.33	7794.70	3192.18S	4949.14W	==>	5509.81	N39 33 11.0311	W104 34 7.6305	
11700.00	90.00	270.33	7794.70	3191.61S	5049.14W	==>	5607.45	N39 33 11.0365	W104 34 8.9072	
11800.00	90.00	270.33	7794.70	3191.04S	5149.14W	==>	5705.09	N39 33 11.0419	W104 34 10.1838	
11900.00	90.00	270.33	7794.70	3190.47S	5249.13W	==>	5802.73	N39 33 11.0473	W104 34 11.4605	
12000.00	90.00	270.33	7794.70	3189.90S	5349.13W	==>	5900.38	N39 33 11.0527	W104 34 12.7371	
12100.00	90.00	270.33	7794.70	3189.34S	5449.13W	==>	5998.02	N39 33 11.0581	W104 34 14.0138	

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig ( Planned Datum #1 6014.7ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 257.86 degrees  
Bottom hole distance is 14918.03 Feet on azimuth 257.86 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 6-Apr-2023

Interpolated Wellpath										
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)	All Station Comments
12200.00	90.00	270.33	7794.70	3188.77S	5549.13W	==>	6095.66	N39 33 11.0635	W104 34 15.2905	
12300.00	90.00	270.33	7794.70	3188.20S	5649.13W	==>	6193.30	N39 33 11.0689	W104 34 16.5671	
12400.00	90.00	270.33	7794.70	3187.63S	5749.13W	==>	6290.95	N39 33 11.0743	W104 34 17.8438	
12500.00	90.00	270.33	7794.70	3187.07S	5849.12W	==>	6388.59	N39 33 11.0796	W104 34 19.1204	
12600.00	90.00	270.33	7794.70	3186.50S	5949.12W	==>	6486.23	N39 33 11.0850	W104 34 20.3971	
12700.00	90.00	270.33	7794.70	3185.93S	6049.12W	==>	6583.87	N39 33 11.0904	W104 34 21.6738	
12800.00	90.00	270.33	7794.70	3185.36S	6149.12W	==>	6681.52	N39 33 11.0958	W104 34 22.9504	
12900.00	90.00	270.33	7794.70	3184.80S	6249.12W	==>	6779.16	N39 33 11.1011	W104 34 24.2271	
13000.00	90.00	270.33	7794.70	3184.23S	6349.12W	==>	6876.80	N39 33 11.1065	W104 34 25.5037	
13100.00	90.00	270.33	7794.70	3183.66S	6449.11W	==>	6974.44	N39 33 11.1118	W104 34 26.7804	
13200.00	90.00	270.33	7794.70	3183.09S	6549.11W	==>	7072.09	N39 33 11.1172	W104 34 28.0570	
13300.00	90.00	270.33	7794.70	3182.53S	6649.11W	==>	7169.73	N39 33 11.1225	W104 34 29.3337	
13400.00	90.00	270.33	7794.70	3181.96S	6749.11W	==>	7267.37	N39 33 11.1279	W104 34 30.6104	
13500.00	90.00	270.33	7794.70	3181.39S	6849.11W	==>	7365.01	N39 33 11.1332	W104 34 31.8870	
13600.00	90.00	270.33	7794.70	3180.82S	6949.11W	==>	7462.66	N39 33 11.1386	W104 34 33.1637	
13700.00	90.00	270.33	7794.70	3180.26S	7049.11W	==>	7560.30	N39 33 11.1439	W104 34 34.4403	
13800.00	90.00	270.33	7794.70	3179.69S	7149.10W	==>	7657.94	N39 33 11.1492	W104 34 35.7170	
13900.00	90.00	270.33	7794.70	3179.12S	7249.10W	==>	7755.58	N39 33 11.1546	W104 34 36.9937	
14000.00	90.00	270.33	7794.70	3178.55S	7349.10W	==>	7853.23	N39 33 11.1599	W104 34 38.2703	
14100.00	90.00	270.33	7794.70	3177.98S	7449.10W	==>	7950.87	N39 33 11.1652	W104 34 39.5470	
14200.00	90.00	270.33	7794.70	3177.42S	7549.10W	==>	8048.51	N39 33 11.1705	W104 34 40.8236	
14300.00	90.00	270.33	7794.70	3176.85S	7649.10W	==>	8146.15	N39 33 11.1758	W104 34 42.1003	
14400.00	90.00	270.33	7794.70	3176.28S	7749.09W	==>	8243.79	N39 33 11.1811	W104 34 43.3770	
14500.00	90.00	270.33	7794.70	3175.71S	7849.09W	==>	8341.44	N39 33 11.1864	W104 34 44.6536	
14600.00	90.00	270.33	7794.70	3175.15S	7949.09W	==>	8439.08	N39 33 11.1917	W104 34 45.9303	
14700.00	90.00	270.33	7794.70	3174.58S	8049.09W	==>	8536.72	N39 33 11.1970	W104 34 47.2069	
14800.00	90.00	270.33	7794.70	3174.01S	8149.09W	==>	8634.36	N39 33 11.2023	W104 34 48.4836	
14900.00	90.00	270.33	7794.70	3173.44S	8249.09W	==>	8732.01	N39 33 11.2076	W104 34 49.7603	
15000.00	90.00	270.33	7794.70	3172.88S	8349.08W	==>	8829.65	N39 33 11.2129	W104 34 51.0369	
15100.00	90.00	270.33	7794.70	3172.31S	8449.08W	==>	8927.29	N39 33 11.2181	W104 34 52.3136	
15200.00	90.00	270.33	7794.70	3171.74S	8549.08W	==>	9024.93	N39 33 11.2234	W104 34 53.5902	
15300.00	90.00	270.33	7794.70	3171.17S	8649.08W	==>	9122.58	N39 33 11.2287	W104 34 54.8669	
15400.00	90.00	270.33	7794.70	3170.61S	8749.08W	==>	9220.22	N39 33 11.2340	W104 34 56.1436	
15500.00	90.00	270.33	7794.70	3170.04S	8849.08W	==>	9317.86	N39 33 11.2392	W104 34 57.4202	
15600.00	90.00	270.33	7794.70	3169.47S	8949.07W	==>	9415.50	N39 33 11.2445	W104 34 58.6969	
15700.00	90.00	270.33	7794.70	3168.90S	9049.07W	==>	9513.15	N39 33 11.2497	W104 34 59.9735	
15800.00	90.00	270.33	7794.70	3168.34S	9149.07W	==>	9610.79	N39 33 11.2550	W104 35 1.2502	
15900.00	90.00	270.33	7794.70	3167.77S	9249.07W	==>	9708.43	N39 33 11.2602	W104 35 2.5269	
16000.00	90.00	270.33	7794.70	3167.20S	9349.07W	==>	9806.07	N39 33 11.2655	W104 35 3.8035	
16100.00	90.00	270.33	7794.70	3166.63S	9449.07W	==>	9903.72	N39 33 11.2707	W104 35 5.0802	
16200.00	90.00	270.33	7794.70	3166.06S	9549.06W	==>	10001.36	N39 33 11.2759	W104 35 6.3568	
16300.00	90.00	270.33	7794.70	3165.50S	9649.06W	==>	10099.00	N39 33 11.2812	W104 35 7.6335	
16400.00	90.00	270.33	7794.70	3164.93S	9749.06W	==>	10196.64	N39 33 11.2864	W104 35 8.9102	
16500.00	90.00	270.33	7794.70	3164.36S	9849.06W	==>	10294.29	N39 33 11.2916	W104 35 10.1868	
16600.00	90.00	270.33	7794.70	3163.79S	9949.06W	==>	10391.93	N39 33 11.2968	W104 35 11.4635	
16700.00	90.00	270.33	7794.70	3163.23S	10049.06W	==>	10489.57	N39 33 11.3021	W104 35 12.7401	
16800.00	90.00	270.33	7794.70	3162.66S	10149.06W	==>	10587.21	N39 33 11.3073	W104 35 14.0168	
16900.00	90.00	270.33	7794.70	3162.09S	10249.05W	==>	10684.86	N39 33 11.3125	W104 35 15.2935	
17000.00	90.00	270.33	7794.70	3161.52S	10349.05W	==>	10782.50	N39 33 11.3177	W104 35 16.5701	
17100.00	90.00	270.33	7794.70	3160.96S	10449.05W	==>	10880.14	N39 33 11.3229	W104 35 17.8468	
17200.00	90.00	270.33	7794.70	3160.39S	10549.05W	==>	10977.78	N39 33 11.3281	W104 35 19.1234	
17300.00	90.00	270.33	7794.70	3159.82S	10649.05W	==>	11075.42	N39 33 11.3333	W104 35 20.4001	
17400.00	90.00	270.33	7794.70	3159.25S	10749.05W	==>	11173.07	N39 33 11.3384	W104 35 21.6768	
17500.00	90.00	270.33	7794.70	3158.69S	10849.04W	==>	11270.71	N39 33 11.3436	W104 35 22.9534	
17600.00	90.00	270.33	7794.70	3158.12S	10949.04W	==>	11368.35	N39 33 11.3488	W104 35 24.2301	
17700.00	90.00	270.33	7794.70	3157.55S	11049.04W	==>	11465.99	N39 33 11.3540	W104 35 25.5067	
17800.00	90.00	270.33	7794.70	3156.98S	11149.04W	==>	11563.64	N39 33 11.3592	W104 35 26.7834	
17900.00	90.00	270.33	7794.70	3156.42S	11249.04W	==>	11661.28	N39 33 11.3643	W104 35 28.0601	
18000.00	90.00	270.33	7794.70	3155.85S	11349.04W	==>	11758.92	N39 33 11.3695	W104 35 29.3367	
18100.00	90.00	270.33	7794.70	3155.28S	11449.03W	==>	11856.56	N39 33 11.3746	W104 35 30.6134	
18200.00	90.00	270.33	7794.70	3154.71S	11549.03W	==>	11954.21	N39 33 11.3798	W104 35 31.8900	
18300.00	90.00	270.33	7794.70	3154.14S	11649.03W	==>	12051.85	N39 33 11.3850	W104 35 33.1667	
18400.00	90.00	270.33	7794.70	3153.58S	11749.03W	==>	12149.49	N39 33 11.3901	W104 35 34.4434	
18500.00	90.00	270.33	7794.70	3153.01S	11849.03W	==>	12247.13	N39 33 11.3952	W104 35 35.7200	
18600.00	90.00	270.33	7794.70	3152.44S	11949.03W	==>	12344.78	N39 33 11.4004	W104 35 36.9967	
18700.00	90.00	270.33	7794.70	3151.87S	12049.02W	==>	12442.42	N39 33 11.4055	W104 35 38.2734	
18800.00	90.00	270.33	7794.70	3151.31S	12149.02W	==>	12540.06	N39 33 11.4106	W104 35 39.5500	
18900.00	90.00	270.33	7794.70	3150.74S	12249.02W	==>	12637.70	N39 33 11.4158	W104 35 40.8267	
19000.00	90.00	270.33	7794.70	3150.17S	12349.02W	==>	12735.35	N39 33 11.4209	W104 35 42.1033	
19100.00	90.00	270.33	7794.70	3149.60S	12449.02W	==>	12832.99	N39 33 11.4260	W104 35 43.3800	
19200.00	90.00	270.33	7794.70	3149.04S	12549.02W	==>	12930.63	N39 33 11.4311	W104 35 44.6567	
19300.00	90.00	270.33	7794.70	3148.47S	12649.02W	==>	13028.27	N39 33 11.4362	W104 35 45.9333	
19400.00	90.00	270.33	7794.70	3147.90S	12749.01W	==>	13125.92	N39 33 11.4414	W104 35 47.2100	
19500.00	90.00	270.33	7794.70	3147.33S	12849.01W	==>	13223.56	N39 33 11.4465	W104 35 48.4867	
19600.00	90.00	270.33	7794.70	3146.77S	12949.01W	==>	13321.20	N39 33 11.4516	W104 35 49.7633	
19700.00	90.00	270.33	7794.70	3146.20S	13049.01W	==>	13418.84	N39 33 11.4567	W104 35 51.0400	
19800.00	90.00	270.33	7794.70	3145.63S	13149.01W	==>	13516.49	N39 33 11.4617	W104 35 52.3166	
19900.00	90.00	270.33	7794.70	3145.06S	13249.01W	==>	13614.13	N39 33 11.4668	W104 35 53.5933	
20000.00	90.00	270.33	7794.70	3144.50S	13349.00W	==>	13711.77	N39 33 11.4719	W104 35 54.8700	
20100.00	90.00	270.33	7794.70	3143.93S	13449.00W	==>	13809.41	N39 33 11.4770	W104 35 56.1466	
20200.00	90.00	270.33	7794.70	3143.36S	13549.00W	==>	13907.05	N39 33 11.4821	W104 35 57.4233	
20300.00	90.00	270.33	7794.70	3142.79S	13649.00W	==>	14004.70	N39 33 11.4871	W104 35 58.6999	
20400.00	90.00	270.33	7794.70	3142.23S	13749.00W	==>	14102.34	N39 33 11.4922	W104 35 59.9766	
20500.00	90.00	270.33	7794.70	3141.66S	13849.00W	==>	14199.98	N39 33 11.4973	W104 36 1.2533	
20600.00	90.00	270.33	7794.70	3141.09S	13948.99W	==>	14297.62	N39 33 11.5023	W104 36 2.5299	

All data is in Feet unless otherwise stated

Interpolated Wellpath										
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)	All Station Comments
20700.00	90.00	270.33	7794.70	3140.52S	14048.99W	==>	14395.27	N39 33 11.5074	W104 36 3.8066	
20800.00	90.00	270.33	7794.70	3139.95S	14148.99W	==>	14492.91	N39 33 11.5124	W104 36 5.0833	
20900.00	90.00	270.33	7794.70	3139.39S	14248.99W	==>	14590.55	N39 33 11.5175	W104 36 6.3599	
21000.00	90.00	270.33	7794.70	3138.82S	14348.99W	==>	14688.19	N39 33 11.5225	W104 36 7.6366	
21100.00	90.00	270.33	7794.70	3138.25S	14448.99W	==>	14785.84	N39 33 11.5276	W104 36 8.9133	
21200.00	90.00	270.33	7794.70	3137.68S	14548.98W	==>	14883.48	N39 33 11.5326	W104 36 10.1899	
21235.38	90.00	270.33	7794.70	3137.48S	14584.36W	==>	14918.03	N39 33 11.5344	W104 36 10.6416	End of Hold/Target, RED_9HN BH

All data is in Feet unless otherwise stated  
 Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 6014.7ft above Mean Sea Level )  
 Vertical Section is from 0.00N 0.00E on azimuth 257.86 degrees  
 Bottom hole distance is 14918.03 Feet on azimuth 257.86 degrees from Wellhead  
 Calculation method uses Minimum Curvature method  
 Prepared by  
 Date Printed: 6-Apr-2023

Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
RED 9HN BH	3137.48S	14584.36W	7794.70	N39 33 11.5344	W104 36 10.6416	1081372.07	3252952.22
RED 9HN LP	3205.71S	2563.78W	7794.70	N39 33 10.9008	W104 33 37.1772	1081432.45	3264973.17

Formations						
Formation Name	Formation MD	Formation TVD	Wellpath Inc	Incidence Angle	North	East
Lower Dawson	77.00	77.00	0.00	90.00	0.00N	0.00E
Denver	202.00	202.00	0.00	90.00	0.00N	0.00E
Upper Arapahoe	1089.01	1089.00	1.78	88.22	1.16S	0.76W
Laramie - Fox Hills	1909.19	1894.00	18.18	71.82	119.82S	78.17W
Pierre Shale (Base of Fox Hills)	2159.39	2128.00	23.19	66.81	193.82S	126.45W
Sussex Sandstone	6095.91	5458.00	32.76	57.24	1948.92S	1271.44W
Sharon Springs Shale	8620.41	7568.01	45.02	44.98	3085.98S	2051.49W
Niobrara	8694.51	7618.00	50.11	39.89	3112.76S	2099.10W
Niobrara A	8710.30	7628.01	51.23	38.77	3118.11S	2110.08W
Niobrara B Top	8967.38	7753.01	70.55	19.45	3184.53S	2322.60W

Survey Tool Program					
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
1095838	Planned	21235.38	7794.70	WdW Rate Gyro	Standard

Notes