

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 6-T1N-R65W

PARAGON 9N-31HZ

Plan B

Plan: Plan B0 Permit

Sperry Drilling Services

Proposal Report

04 September, 2013

Well Coordinates: 1,270,968.13 N, 3,224,345.41 E (40° 04' 27.89" N, 104° 41' 53.95" W)

Ground Level: 4,975.00 ft

Local Coordinate Origin:

Centered on Well PARAGON 9N-31HZ

Viewing Datum:

RKB = 17' @ 4992.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 6-T1N-R65W
 Well: PARAGON 9N-31HZ
 Wellbore: Plan B
 Design: Plan B0 Permit

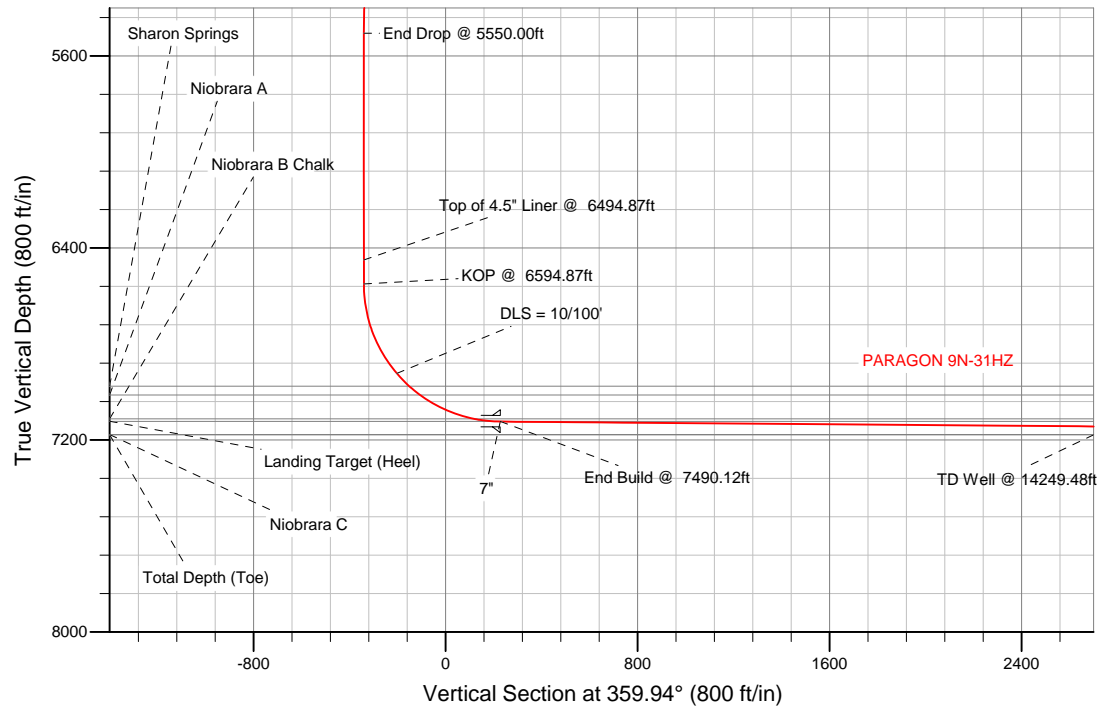


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2500.00	10.00	230.00	2497.47	-27.98	-33.34	2.00	230.00	-27.94	
4	5050.00	10.00	230.00	5008.73	-312.60	-372.55	0.00	0.00	-312.21	
5	5550.00	0.00	0.00	5506.19	-340.58	-405.89	2.00	180.00	-340.15	
6	6594.87	0.00	0.00	6551.06	-340.58	-405.89	0.00	0.00	-340.15	
7	7490.12	89.53	359.94	7124.00	227.63	-406.46	10.00	359.94	228.06	
8	14249.48	89.53	359.94	7180.00	6986.75	-413.23	0.00	0.00	6987.18	Paragon 9N-31HZ_BHL

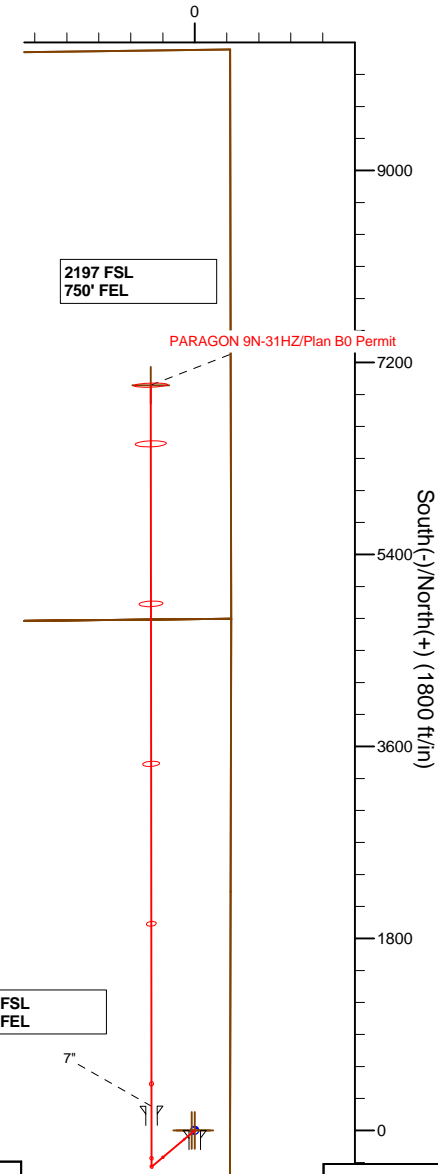
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason_Section	-25.00	0.00	-30.22	40.074414	-104.698428	Polygon
Paragon 9N-31HZ_SHL	0.00	0.00	0.00	40.074414	-104.698320	Point
Paragon 9N-31HZ_BHL	7180.00	6986.75	-413.23	40.093593	-104.699797	Point



TVD	MD	
6451.06	6494.87	Top of 4.5" Liner @ 6494.87ft
6551.06	6594.87	KOP @ 6594.87ft

West(-)/East(+) (1800 ft/in)



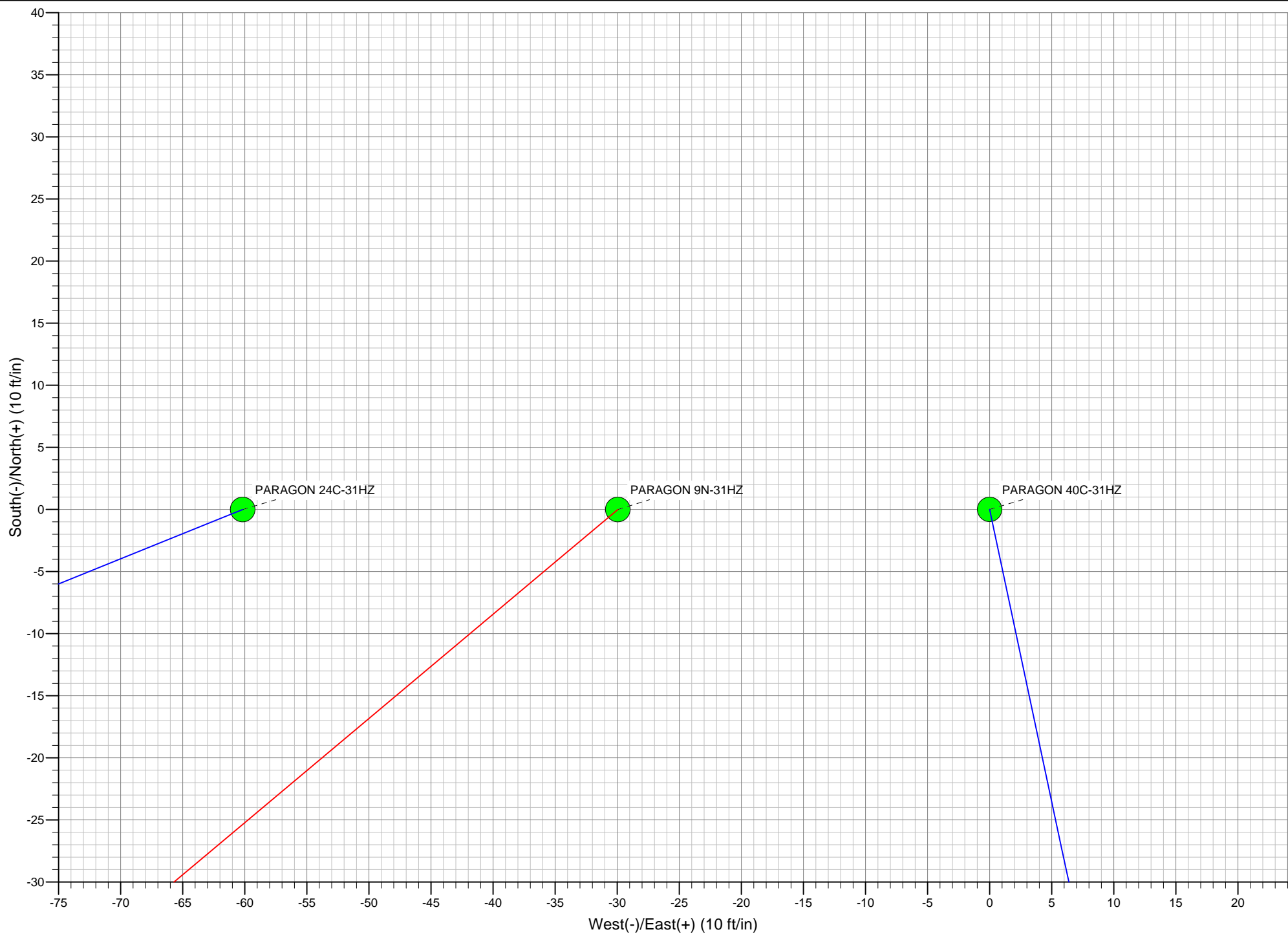
South(-)/North(+) (1800 ft/in)

WELL DETAILS: PARAGON 9N-31HZ

Ground Level: 4975.00
 RKB = 17' @ 4992.00ft (Drilling Rig)

Plan: Plan B0 Permit (PARAGON 9N-31HZ/Plan B)

Created By: Clint Eshelman Date: 09/04/2013



Plan Report for PARAGON 9N-31HZ - Plan B0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paragon 9N-31HZ_SHL - Thomason Section										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,025.00	0.00	0.00	1,025.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
1,075.00	0.00	0.00	1,075.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2000.00ft										
2,100.00	2.00	230.00	2,099.98	-1.12	-1.34	-1.12	2.00	2.00	0.00	230.00
2,200.00	4.00	230.00	2,199.84	-4.49	-5.35	-4.48	2.00	2.00	0.00	0.00
2,300.00	6.00	230.00	2,299.45	-10.09	-12.02	-10.08	2.00	2.00	0.00	0.00
2,400.00	8.00	230.00	2,398.70	-17.92	-21.36	-17.90	2.00	2.00	0.00	0.00
2,500.00	10.00	230.00	2,497.47	-27.98	-33.34	-27.94	2.00	2.00	0.00	0.00
End Nudge @ 2500.00ft										
2,600.00	10.00	230.00	2,595.95	-39.14	-46.64	-39.09	0.00	0.00	0.00	0.00
2,700.00	10.00	230.00	2,694.43	-50.30	-59.94	-50.24	0.00	0.00	0.00	0.00
2,800.00	10.00	230.00	2,792.91	-61.46	-73.25	-61.38	0.00	0.00	0.00	0.00
2,900.00	10.00	230.00	2,891.39	-72.62	-86.55	-72.53	0.00	0.00	0.00	0.00
3,000.00	10.00	230.00	2,989.87	-83.79	-99.85	-83.68	0.00	0.00	0.00	0.00
3,100.00	10.00	230.00	3,088.35	-94.95	-113.15	-94.83	0.00	0.00	0.00	0.00
3,200.00	10.00	230.00	3,186.83	-106.11	-126.46	-105.98	0.00	0.00	0.00	0.00
3,300.00	10.00	230.00	3,285.31	-117.27	-139.76	-117.12	0.00	0.00	0.00	0.00
3,400.00	10.00	230.00	3,383.79	-128.43	-153.06	-128.27	0.00	0.00	0.00	0.00
3,500.00	10.00	230.00	3,482.27	-139.59	-166.36	-139.42	0.00	0.00	0.00	0.00
3,600.00	10.00	230.00	3,580.75	-150.76	-179.66	-150.57	0.00	0.00	0.00	0.00
3,700.00	10.00	230.00	3,679.23	-161.92	-192.97	-161.72	0.00	0.00	0.00	0.00
3,800.00	10.00	230.00	3,777.72	-173.08	-206.27	-172.86	0.00	0.00	0.00	0.00
3,900.00	10.00	230.00	3,876.20	-184.24	-219.57	-184.01	0.00	0.00	0.00	0.00
4,000.00	10.00	230.00	3,974.68	-195.40	-232.87	-195.16	0.00	0.00	0.00	0.00
4,100.00	10.00	230.00	4,073.16	-206.57	-246.18	-206.31	0.00	0.00	0.00	0.00
4,200.00	10.00	230.00	4,171.64	-217.73	-259.48	-217.46	0.00	0.00	0.00	0.00
4,300.00	10.00	230.00	4,270.12	-228.89	-272.78	-228.60	0.00	0.00	0.00	0.00
4,400.00	10.00	230.00	4,368.60	-240.05	-286.08	-239.75	0.00	0.00	0.00	0.00
4,500.00	10.00	230.00	4,467.08	-251.21	-299.38	-250.90	0.00	0.00	0.00	0.00
4,583.18	10.00	230.00	4,549.00	-260.50	-310.45	-260.17	0.00	0.00	0.00	0.00
Parkman										
4,600.00	10.00	230.00	4,565.56	-262.38	-312.69	-262.05	0.00	0.00	0.00	0.00
4,700.00	10.00	230.00	4,664.04	-273.54	-325.99	-273.20	0.00	0.00	0.00	0.00
4,800.00	10.00	230.00	4,762.52	-284.70	-339.29	-284.34	0.00	0.00	0.00	0.00

Plan Report for PARAGON 9N-31HZ - Plan B0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,900.00	10.00	230.00	4,861.00	-295.86	-352.59	-295.49	0.00	0.00	0.00	0.00
5,000.00	10.00	230.00	4,959.48	-307.02	-365.90	-306.64	0.00	0.00	0.00	0.00
5,050.00	10.00	230.00	5,008.73	-312.60	-372.55	-312.21	0.00	0.00	0.00	0.00
Begin Drop @ 5050.00ft										
5,100.00	9.00	230.00	5,058.04	-317.91	-378.87	-317.51	2.00	-2.00	0.00	180.00
5,200.00	7.00	230.00	5,157.06	-326.85	-389.53	-326.45	2.00	-2.00	0.00	180.00
5,250.26	5.99	230.00	5,207.00	-330.51	-393.89	-330.10	2.00	-2.00	0.00	180.00
Sussex										
5,300.00	5.00	230.00	5,256.51	-333.57	-397.54	-333.16	2.00	-2.00	0.00	-180.00
5,400.00	3.00	230.00	5,356.26	-338.06	-402.88	-337.63	2.00	-2.00	0.00	180.00
5,500.00	1.00	230.00	5,456.19	-340.30	-405.55	-339.87	2.00	-2.00	0.00	180.00
5,550.00	0.00	0.00	5,506.19	-340.58	-405.89	-340.15	2.00	-2.00	260.00	180.00
End Drop @ 5550.00ft										
5,600.00	0.00	0.00	5,556.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	180.00
5,700.00	0.00	0.00	5,656.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,756.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,856.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,956.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,056.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,156.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,256.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,356.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,494.87	0.00	0.00	6,451.06	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6494.87ft										
6,500.00	0.00	0.00	6,456.19	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
6,594.87	0.00	0.00	6,551.06	-340.58	-405.89	-340.15	0.00	0.00	0.00	0.00
KOP @ 6594.87ft										
6,600.00	0.51	359.94	6,556.19	-340.56	-405.89	-340.13	10.00	10.00	0.00	359.94
6,700.00	10.51	359.94	6,655.60	-330.96	-405.90	-330.54	10.00	10.00	0.00	0.00
6,800.00	20.51	359.94	6,751.84	-304.25	-405.92	-303.82	10.00	10.00	0.00	0.00
6,900.00	30.51	359.94	6,841.97	-261.23	-405.97	-260.81	10.00	10.00	0.00	0.00
7,000.00	40.51	359.94	6,923.27	-203.22	-406.02	-202.79	10.00	10.00	0.00	0.00
DLS = 10/100'										
7,073.60	47.87	359.94	6,976.00	-151.95	-406.08	-151.52	10.00	10.00	0.00	0.00
Sharon Springs										
7,100.00	50.51	359.94	6,993.25	-131.97	-406.10	-131.54	10.00	10.00	0.00	0.00
7,132.17	53.73	359.94	7,013.00	-106.58	-406.12	-106.15	10.00	10.00	0.00	0.00
Niobrara A										
7,200.00	60.51	359.94	7,049.80	-49.65	-406.18	-49.22	10.00	10.00	0.00	0.00
7,300.00	70.51	359.94	7,091.20	41.24	-406.27	41.67	10.00	10.00	0.00	0.00
7,377.31	78.24	359.94	7,112.00	115.64	-406.34	116.07	10.00	10.00	0.00	0.00
Niobrara B Chalk										
7,400.00	80.51	359.94	7,116.18	137.94	-406.37	138.37	10.00	10.00	0.00	0.00
7,490.12	89.52	359.94	7,124.00	227.63	-406.46	228.05	10.00	10.00	0.00	0.00
End Build @ 7490.12ft - Landing Target (Heel) - 7"										
7,500.00	89.53	359.94	7,124.08	237.51	-406.47	237.93	0.00	0.00	0.00	0.00
7,600.00	89.53	359.94	7,124.91	337.50	-406.57	337.93	0.00	0.00	0.00	0.00
7,700.00	89.53	359.94	7,125.74	437.50	-406.67	437.93	0.00	0.00	0.00	0.00
7,800.00	89.53	359.94	7,126.57	537.50	-406.77	537.92	0.00	0.00	0.00	0.00
7,900.00	89.53	359.94	7,127.39	637.49	-406.87	637.92	0.00	0.00	0.00	0.00
8,000.00	89.53	359.94	7,128.22	737.49	-406.97	737.92	0.00	0.00	0.00	0.00
8,100.00	89.53	359.94	7,129.05	837.49	-407.07	837.91	0.00	0.00	0.00	0.00
8,200.00	89.53	359.94	7,129.88	937.48	-407.17	937.91	0.00	0.00	0.00	0.00
8,300.00	89.53	359.94	7,130.71	1,037.48	-407.27	1,037.91	0.00	0.00	0.00	0.00
8,400.00	89.53	359.94	7,131.54	1,137.48	-407.37	1,137.90	0.00	0.00	0.00	0.00
8,500.00	89.53	359.94	7,132.37	1,237.47	-407.47	1,237.90	0.00	0.00	0.00	0.00
8,600.00	89.53	359.94	7,133.19	1,337.47	-407.57	1,337.90	0.00	0.00	0.00	0.00
8,700.00	89.53	359.94	7,134.02	1,437.47	-407.67	1,437.89	0.00	0.00	0.00	0.00

Plan Report for PARAGON 9N-31HZ - Plan B0 Permit

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
8,800.00	89.53	359.94	7,134.85	1,537.46	-407.77	1,537.89	0.00	0.00	0.00	0.00
8,900.00	89.53	359.94	7,135.68	1,637.46	-407.87	1,637.88	0.00	0.00	0.00	0.00
9,000.00	89.53	359.94	7,136.51	1,737.46	-407.97	1,737.88	0.00	0.00	0.00	0.00
9,100.00	89.53	359.94	7,137.34	1,837.45	-408.07	1,837.88	0.00	0.00	0.00	0.00
9,200.00	89.53	359.94	7,138.17	1,937.45	-408.17	1,937.87	0.00	0.00	0.00	0.00
9,300.00	89.53	359.94	7,138.99	2,037.44	-408.27	2,037.87	0.00	0.00	0.00	0.00
9,400.00	89.53	359.94	7,139.82	2,137.44	-408.37	2,137.87	0.00	0.00	0.00	0.00
9,500.00	89.53	359.94	7,140.65	2,237.44	-408.47	2,237.86	0.00	0.00	0.00	0.00
9,600.00	89.53	359.94	7,141.48	2,337.43	-408.57	2,337.86	0.00	0.00	0.00	0.00
9,700.00	89.53	359.94	7,142.31	2,437.43	-408.67	2,437.86	0.00	0.00	0.00	0.00
9,800.00	89.53	359.94	7,143.14	2,537.43	-408.77	2,537.85	0.00	0.00	0.00	0.00
9,900.00	89.53	359.94	7,143.96	2,637.42	-408.87	2,637.85	0.00	0.00	0.00	0.00
10,000.00	89.53	359.94	7,144.79	2,737.42	-408.97	2,737.85	0.00	0.00	0.00	0.00
10,100.00	89.53	359.94	7,145.62	2,837.42	-409.07	2,837.84	0.00	0.00	0.00	0.00
10,200.00	89.53	359.94	7,146.45	2,937.41	-409.17	2,937.84	0.00	0.00	0.00	0.00
10,300.00	89.53	359.94	7,147.28	3,037.41	-409.27	3,037.84	0.00	0.00	0.00	0.00
10,400.00	89.53	359.94	7,148.11	3,137.41	-409.37	3,137.83	0.00	0.00	0.00	0.00
10,500.00	89.53	359.94	7,148.94	3,237.40	-409.48	3,237.83	0.00	0.00	0.00	0.00
10,600.00	89.53	359.94	7,149.76	3,337.40	-409.58	3,337.83	0.00	0.00	0.00	0.00
10,700.00	89.53	359.94	7,150.59	3,437.40	-409.68	3,437.82	0.00	0.00	0.00	0.00
10,800.00	89.53	359.94	7,151.42	3,537.39	-409.78	3,537.82	0.00	0.00	0.00	0.00
10,900.00	89.53	359.94	7,152.25	3,637.39	-409.88	3,637.82	0.00	0.00	0.00	0.00
11,000.00	89.53	359.94	7,153.08	3,737.39	-409.98	3,737.81	0.00	0.00	0.00	0.00
11,100.00	89.53	359.94	7,153.91	3,837.38	-410.08	3,837.81	0.00	0.00	0.00	0.00
11,200.00	89.53	359.94	7,154.74	3,937.38	-410.18	3,937.81	0.00	0.00	0.00	0.00
11,300.00	89.53	359.94	7,155.56	4,037.38	-410.28	4,037.80	0.00	0.00	0.00	0.00
11,400.00	89.53	359.94	7,156.39	4,137.37	-410.38	4,137.80	0.00	0.00	0.00	0.00
11,500.00	89.53	359.94	7,157.22	4,237.37	-410.48	4,237.80	0.00	0.00	0.00	0.00
11,600.00	89.53	359.94	7,158.05	4,337.36	-410.58	4,337.79	0.00	0.00	0.00	0.00
11,700.00	89.53	359.94	7,158.88	4,437.36	-410.68	4,437.79	0.00	0.00	0.00	0.00
11,800.00	89.53	359.94	7,159.71	4,537.36	-410.78	4,537.79	0.00	0.00	0.00	0.00
11,900.00	89.53	359.94	7,160.53	4,637.35	-410.88	4,637.78	0.00	0.00	0.00	0.00
12,000.00	89.53	359.94	7,161.36	4,737.35	-410.98	4,737.78	0.00	0.00	0.00	0.00
12,100.00	89.53	359.94	7,162.19	4,837.35	-411.08	4,837.78	0.00	0.00	0.00	0.00
12,200.00	89.53	359.94	7,163.02	4,937.34	-411.18	4,937.77	0.00	0.00	0.00	0.00
12,300.00	89.53	359.94	7,163.85	5,037.34	-411.28	5,037.77	0.00	0.00	0.00	0.00
12,400.00	89.53	359.94	7,164.68	5,137.34	-411.38	5,137.76	0.00	0.00	0.00	0.00
12,500.00	89.53	359.94	7,165.51	5,237.33	-411.48	5,237.76	0.00	0.00	0.00	0.00
12,600.00	89.53	359.94	7,166.33	5,337.33	-411.58	5,337.76	0.00	0.00	0.00	0.00
12,700.00	89.53	359.94	7,167.16	5,437.33	-411.68	5,437.75	0.00	0.00	0.00	0.00
12,800.00	89.53	359.94	7,167.99	5,537.32	-411.78	5,537.75	0.00	0.00	0.00	0.00
12,900.00	89.53	359.94	7,168.82	5,637.32	-411.88	5,637.75	0.00	0.00	0.00	0.00
13,000.00	89.53	359.94	7,169.65	5,737.32	-411.98	5,737.74	0.00	0.00	0.00	0.00
13,100.00	89.53	359.94	7,170.48	5,837.31	-412.08	5,837.74	0.00	0.00	0.00	0.00
13,200.00	89.53	359.94	7,171.31	5,937.31	-412.18	5,937.74	0.00	0.00	0.00	0.00
13,300.00	89.53	359.94	7,172.13	6,037.31	-412.28	6,037.73	0.00	0.00	0.00	0.00
13,400.00	89.53	359.94	7,172.96	6,137.30	-412.38	6,137.73	0.00	0.00	0.00	0.00
13,500.00	89.53	359.94	7,173.79	6,237.30	-412.48	6,237.73	0.00	0.00	0.00	0.00
13,600.00	89.53	359.94	7,174.62	6,337.30	-412.58	6,337.72	0.00	0.00	0.00	0.00
13,700.00	89.53	359.94	7,175.45	6,437.29	-412.68	6,437.72	0.00	0.00	0.00	0.00
13,800.00	89.53	359.94	7,176.28	6,537.29	-412.78	6,537.72	0.00	0.00	0.00	0.00
13,900.00	89.53	359.94	7,177.10	6,637.28	-412.88	6,637.71	0.00	0.00	0.00	0.00
14,000.00	89.53	359.94	7,177.93	6,737.28	-412.98	6,737.71	0.00	0.00	0.00	0.00
14,008.08	89.53	359.94	7,178.00	6,745.36	-412.99	6,745.79	0.00	0.00	0.00	0.00
Niobrara C										
14,100.00	89.53	359.94	7,178.76	6,837.28	-413.08	6,837.71	0.00	0.00	0.00	0.00
14,200.00	89.53	359.94	7,179.59	6,937.27	-413.19	6,937.70	0.00	0.00	0.00	0.00
14,249.48	89.53	359.94	7,180.00	6,986.75	-413.23	6,987.18	0.00	0.00	0.00	0.00
TD Well @ 14249.48ft - Total Depth (Toe) - Paragon 9N-31HZ_BHL										

Plan Report for PARAGON 9N-31HZ - Plan B0 Permit

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Begin Nudge @ 2000.00ft
2,500.00	2,497.47	-27.98	-33.34	End Nudge @ 2500.00ft
5,050.00	5,008.73	-312.60	-372.55	Begin Drop @ 5050.00ft
5,550.00	5,506.19	-340.58	-405.89	End Drop @ 5550.00ft
6,494.87	6,451.06	-340.58	-405.89	Top of 4.5" Liner @ 6494.87ft
6,594.87	6,551.06	-340.58	-405.89	KOP @ 6594.87ft
7,000.00	6,923.27	-203.22	-406.02	DLS = 10/100'
7,490.12	7,124.00	227.63	-406.46	End Build @ 7490.12ft
14,249.48	7,180.00	6,986.75	-413.23	TD Well @ 14249.48ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	359.94	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,490.12	Plan B0 Permit	MWD
7,490.12	14,249.48	Plan B0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,075.00	1,075.00	9 5/8"	9-5/8	13-1/2
7,490.12	7,124.00	7"	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,025.00	1,025.00	Fox Hills Base		0.00	
4,583.18	4,549.00	Parkman		0.00	
5,250.26	5,207.00	Sussex		0.00	
7,073.60	6,976.00	Sharon Springs		0.00	
7,132.17	7,013.00	Niobrara A		0.00	
7,377.31	7,112.00	Niobrara B Chalk		0.00	
7,490.12	7,124.00	Landing Target (Heel)		0.00	
14,008.08	7,178.00	Niobrara C		0.00	
14,249.48	7,180.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Thomason_Section	-25.00	0.00	-30.22	Polygon
Paragon 9N-31HZ_BHL	7,180.00	6,986.75	-413.23	Point
Paragon 9N-31HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 6-T1N-R65W - PARAGON 9N-31HZ - Plan B

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 17' @ 4992.00ft (Drilling Rig). Northing and Easting are relative to PARAGON 9N-31HZ

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99996156

Grid Coordinates of Well: 1,270,968.13 ft N, 3,224,345.41 ft E

Geographical Coordinates of Well: 40° 04' 27.89" N, 104° 41' 53.95" W

Grid Convergence at Surface is: 0.52°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,249.48ft
the Bottom Hole Displacement is 6,998.96ft in the Direction of 356.62° (True).

Magnetic Convergence at surface is: -8.02° (3 September 2013, , BGGM2013)

