

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 29-T10N-R57W

Horsetail #29F-3206B

Plan B

Plan: Rev B0

Sperry Drilling Services

Proposal Report

08 October, 2014

Well Coordinates: 1,542,760.94 N, 3,476,884.01 E (40° 48' 37.96" N, 103° 46' 37.89" W)

Ground Level: 4,700.30 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Horsetail #29F-3206B

RKB = 22' @ 4722.30usft (Frontier 26)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO
Site: Sec. 29-T10N-R57W
Well: Horsetail #29F-3206B
Wellbore: Plan B
Plan: Rev B0

Whiting Oil and Gas Corporation

HALLIBURTON
Sperry Drilling

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	700.00	4.00	187.00	699.84	-6.93	-0.85	2.00	187.00	6.92	
4	5039.19	4.00	187.00	5028.46	-307.36	-37.74	0.00	0.00	307.04	
5	5821.01	90.00	187.00	5513.00	-823.09	-101.06	11.00	0.00	822.24	
6	5896.01	90.00	187.00	5513.00	-897.53	-110.20	0.00	0.00	896.60	
7	6181.35	90.00	178.44	5513.00	-1182.28	-123.73	3.00	-90.00	1181.24	
8	13158.53	90.00	178.44	5513.00	-8156.88	66.24	0.00	0.00	8157.14	Horsetail #29F-3206B_Rev B0_BHL Tgt

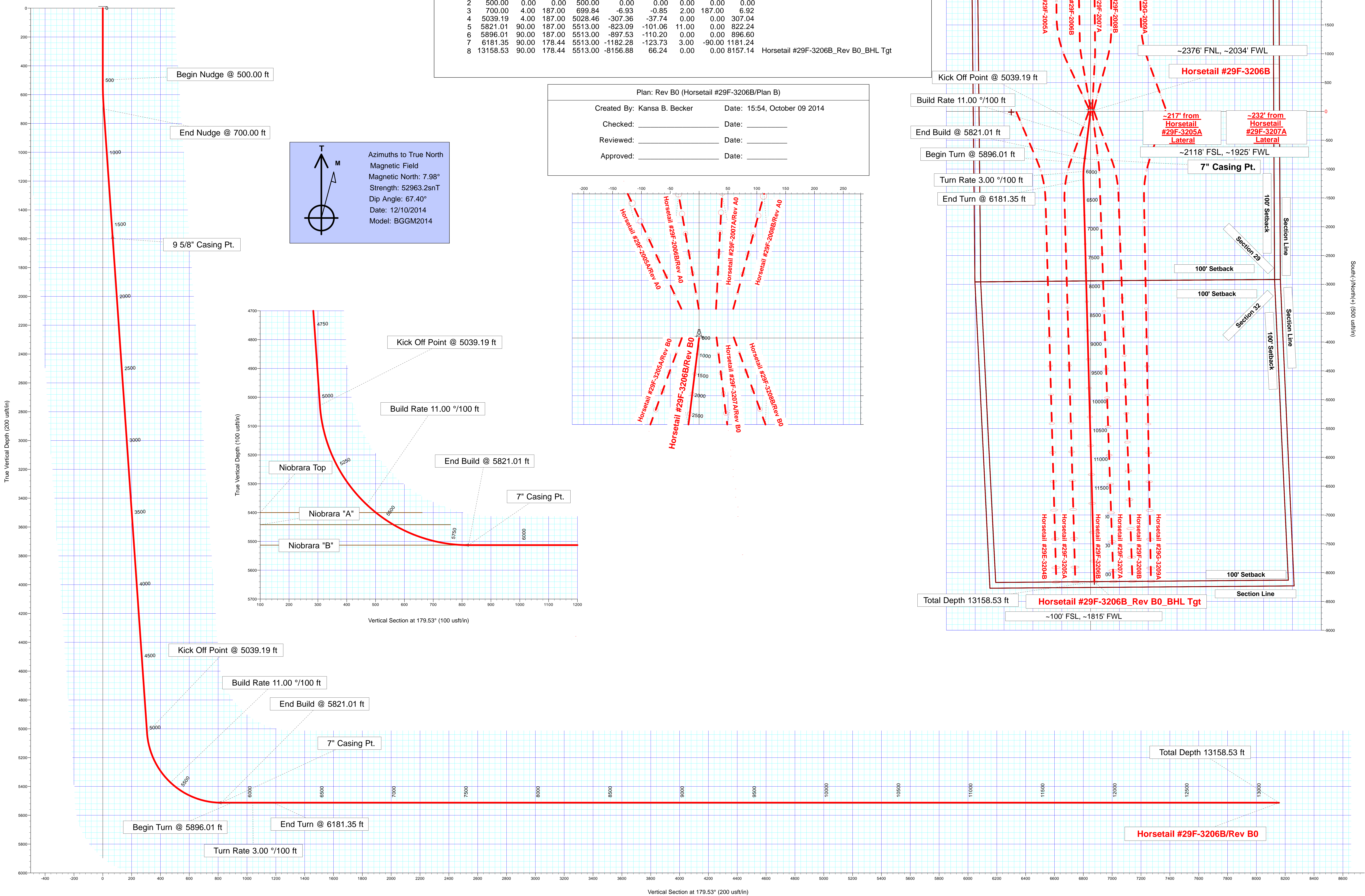
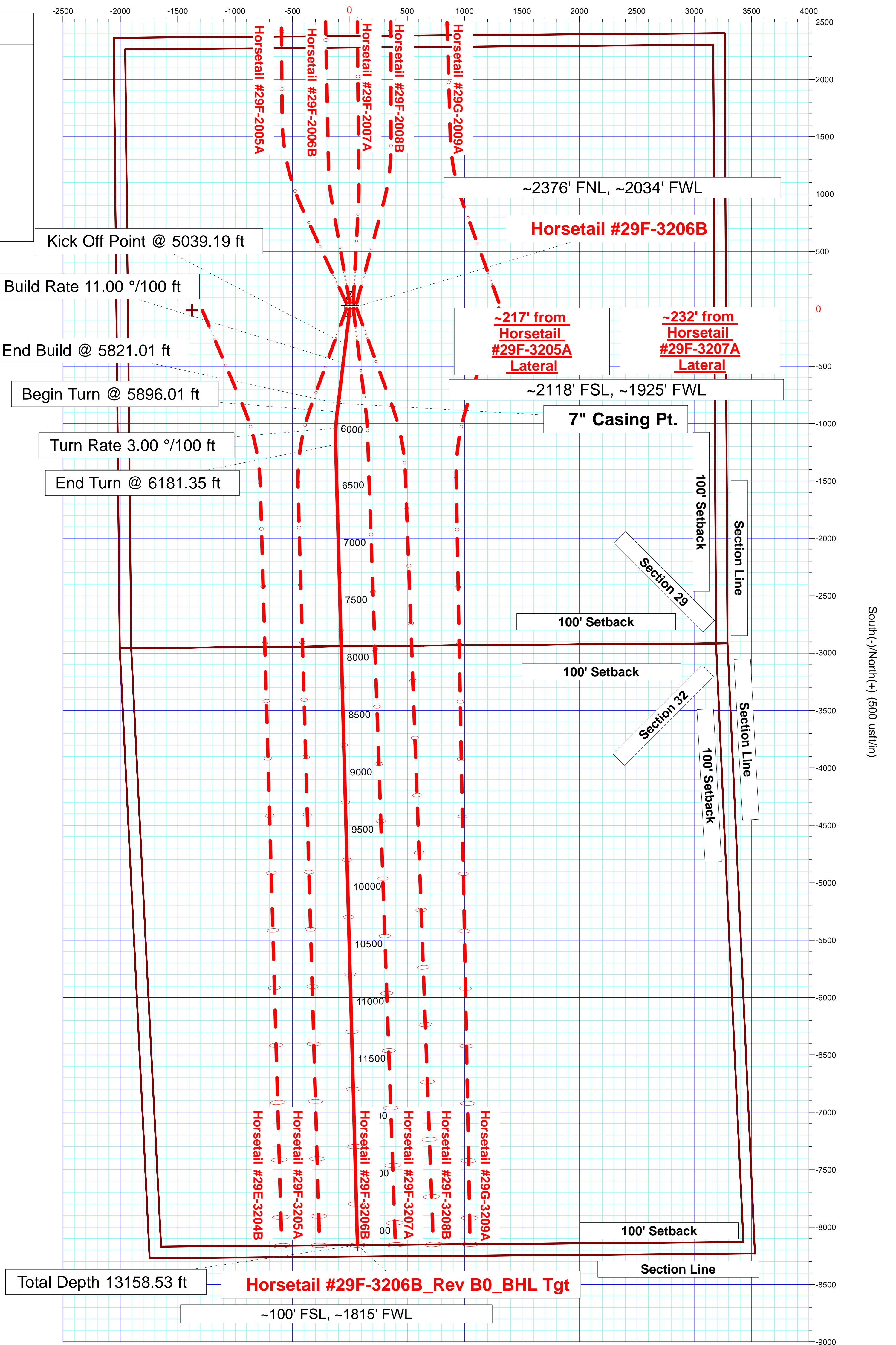
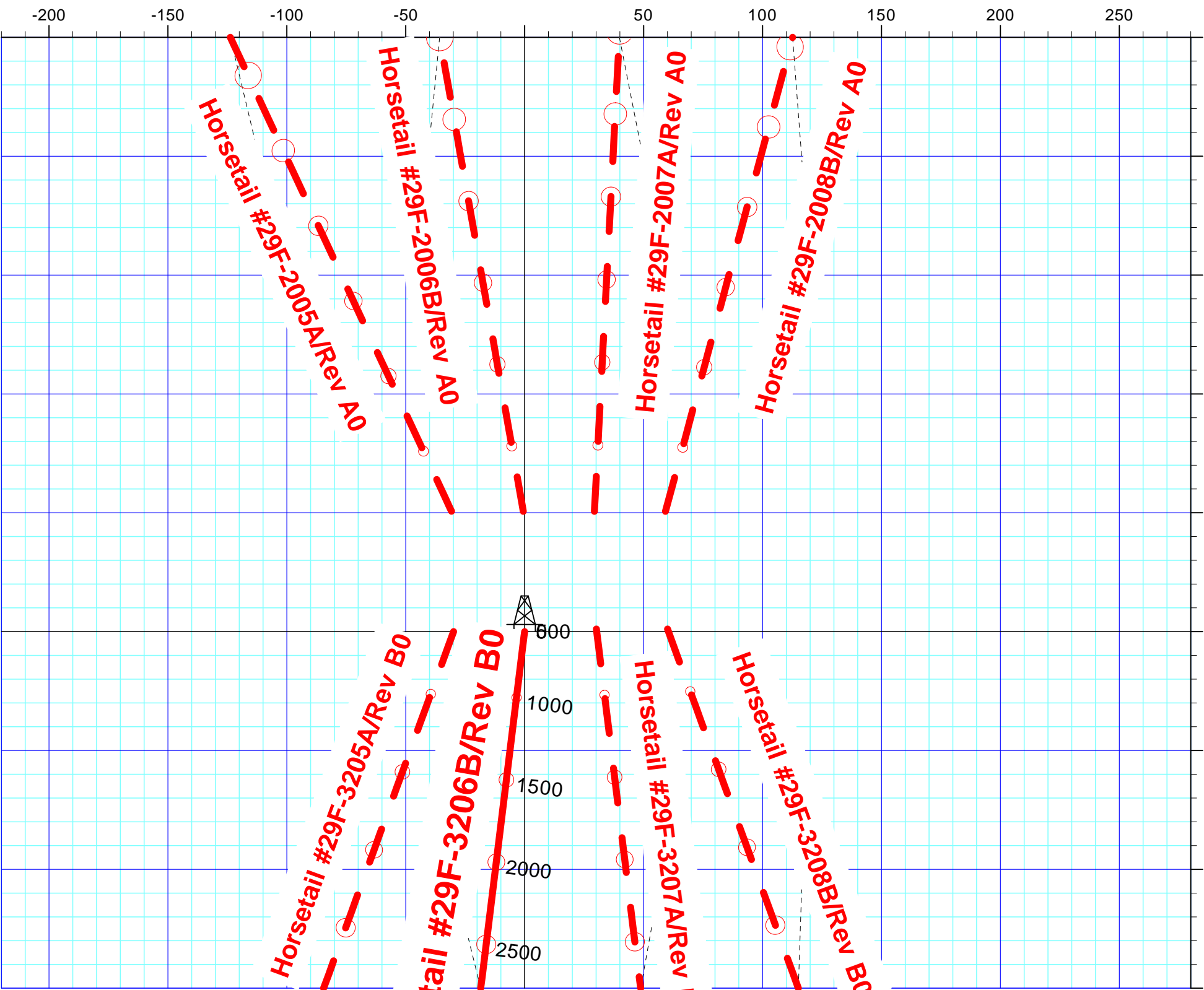
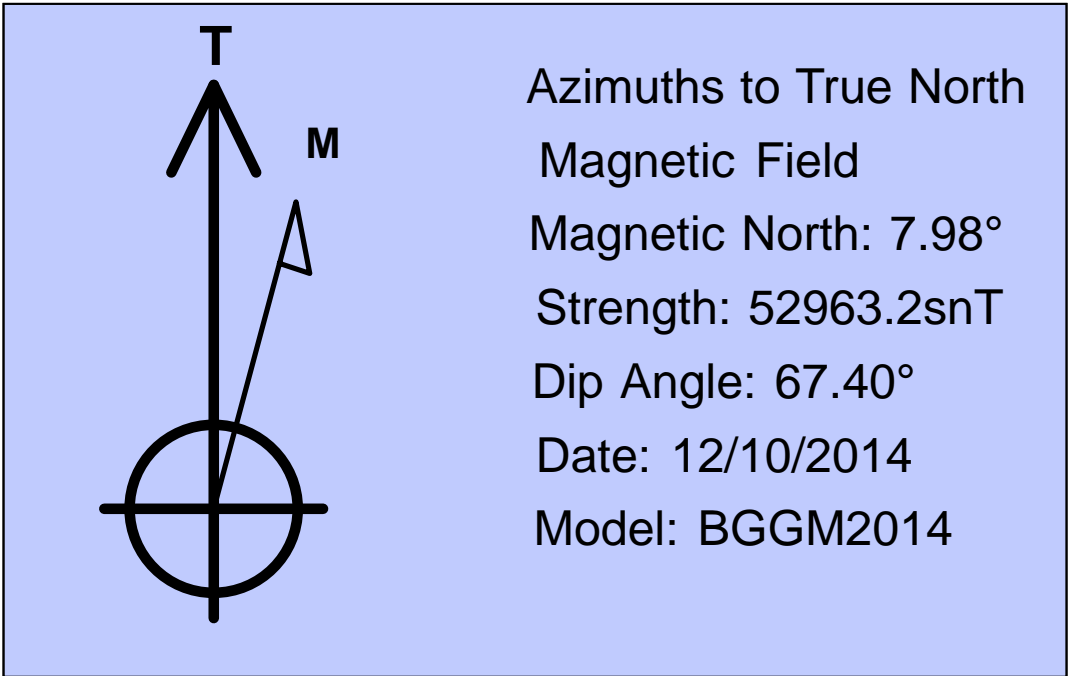
Plan: Rev B0 (Horsetail #29F-3206B/Plan B)

Created By: Kansa B. Becker Date: 15:54, October 09 2014

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____



Plan Report for Horsetail #29F-3206B - Rev B0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
Begin Nudge @ 500.00 ft										
600.00	2.00	187.00	599.98	-1.73	-0.21	1.73	2.00	2.00	0.00	187.00
700.00	4.00	187.00	699.84	-6.93	-0.85	6.92	2.00	2.00	0.00	0.00
End Nudge @ 700.00 ft										
800.00	4.00	187.00	799.59	-13.85	-1.70	13.84	0.00	0.00	0.00	0.00
900.00	4.00	187.00	899.35	-20.77	-2.55	20.75	0.00	0.00	0.00	0.00
1,000.00	4.00	187.00	999.11	-27.70	-3.40	27.67	0.00	0.00	0.00	0.00
1,100.00	4.00	187.00	1,098.86	-34.62	-4.25	34.59	0.00	0.00	0.00	0.00
1,200.00	4.00	187.00	1,198.62	-41.54	-5.10	41.50	0.00	0.00	0.00	0.00
1,300.00	4.00	187.00	1,298.38	-48.47	-5.95	48.42	0.00	0.00	0.00	0.00
1,400.00	4.00	187.00	1,398.13	-55.39	-6.80	55.33	0.00	0.00	0.00	0.00
1,500.00	4.00	187.00	1,497.89	-62.32	-7.65	62.25	0.00	0.00	0.00	0.00
1,600.00	4.00	187.00	1,597.65	-69.24	-8.50	69.17	0.00	0.00	0.00	0.00
9 5/8" Casing Pt.										
1,700.00	4.00	187.00	1,697.40	-76.16	-9.35	76.08	0.00	0.00	0.00	0.00
1,800.00	4.00	187.00	1,797.16	-83.09	-10.20	83.00	0.00	0.00	0.00	0.00
1,900.00	4.00	187.00	1,896.91	-90.01	-11.05	89.92	0.00	0.00	0.00	0.00
2,000.00	4.00	187.00	1,996.67	-96.93	-11.90	96.83	0.00	0.00	0.00	0.00
2,100.00	4.00	187.00	2,096.43	-103.86	-12.75	103.75	0.00	0.00	0.00	0.00
2,200.00	4.00	187.00	2,196.18	-110.78	-13.60	110.67	0.00	0.00	0.00	0.00
2,300.00	4.00	187.00	2,295.94	-117.70	-14.45	117.58	0.00	0.00	0.00	0.00
2,400.00	4.00	187.00	2,395.70	-124.63	-15.30	124.50	0.00	0.00	0.00	0.00
2,500.00	4.00	187.00	2,495.45	-131.55	-16.15	131.42	0.00	0.00	0.00	0.00
2,600.00	4.00	187.00	2,595.21	-138.48	-17.00	138.33	0.00	0.00	0.00	0.00
2,700.00	4.00	187.00	2,694.97	-145.40	-17.85	145.25	0.00	0.00	0.00	0.00
2,800.00	4.00	187.00	2,794.72	-152.32	-18.70	152.17	0.00	0.00	0.00	0.00
2,900.00	4.00	187.00	2,894.48	-159.25	-19.55	159.08	0.00	0.00	0.00	0.00
3,000.00	4.00	187.00	2,994.23	-166.17	-20.40	166.00	0.00	0.00	0.00	0.00
3,100.00	4.00	187.00	3,093.99	-173.09	-21.25	172.92	0.00	0.00	0.00	0.00
3,200.00	4.00	187.00	3,193.75	-180.02	-22.10	179.83	0.00	0.00	0.00	0.00
3,300.00	4.00	187.00	3,293.50	-186.94	-22.95	186.75	0.00	0.00	0.00	0.00
3,400.00	4.00	187.00	3,393.26	-193.87	-23.80	193.67	0.00	0.00	0.00	0.00
3,500.00	4.00	187.00	3,493.02	-200.79	-24.65	200.58	0.00	0.00	0.00	0.00
3,600.00	4.00	187.00	3,592.77	-207.71	-25.50	207.50	0.00	0.00	0.00	0.00
3,700.00	4.00	187.00	3,692.53	-214.64	-26.35	214.41	0.00	0.00	0.00	0.00
3,800.00	4.00	187.00	3,792.29	-221.56	-27.20	221.33	0.00	0.00	0.00	0.00
3,900.00	4.00	187.00	3,892.04	-228.48	-28.05	228.25	0.00	0.00	0.00	0.00
4,000.00	4.00	187.00	3,991.80	-235.41	-28.90	235.16	0.00	0.00	0.00	0.00
4,100.00	4.00	187.00	4,091.56	-242.33	-29.75	242.08	0.00	0.00	0.00	0.00
4,200.00	4.00	187.00	4,191.31	-249.25	-30.60	249.00	0.00	0.00	0.00	0.00
4,300.00	4.00	187.00	4,291.07	-256.18	-31.45	255.91	0.00	0.00	0.00	0.00
4,400.00	4.00	187.00	4,390.82	-263.10	-32.30	262.83	0.00	0.00	0.00	0.00
4,500.00	4.00	187.00	4,490.58	-270.03	-33.15	269.75	0.00	0.00	0.00	0.00
4,600.00	4.00	187.00	4,590.34	-276.95	-34.01	276.66	0.00	0.00	0.00	0.00
4,700.00	4.00	187.00	4,690.09	-283.87	-34.86	283.58	0.00	0.00	0.00	0.00
4,800.00	4.00	187.00	4,789.85	-290.80	-35.71	290.50	0.00	0.00	0.00	0.00
4,900.00	4.00	187.00	4,889.61	-297.72	-36.56	297.41	0.00	0.00	0.00	0.00
5,000.00	4.00	187.00	4,989.36	-304.64	-37.41	304.33	0.00	0.00	0.00	0.00
5,039.19	4.00	187.00	5,028.46	-307.36	-37.74	307.04	0.00	0.00	0.00	0.00
Kick Off Point @ 5039.19 ft										
5,100.00	10.69	187.00	5,088.73	-315.07	-38.69	314.74	11.00	11.00	0.00	0.00
5,200.00	21.69	187.00	5,184.62	-342.70	-42.08	342.35	11.00	11.00	0.00	0.00

Plan Report for Horsetail #29F-3206B - Rev B0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
5,300.00	32.69	187.00	5,273.44	-387.98	-47.64	387.58	11.00	11.00	0.00	0.00
5,400.00	43.69	187.00	5,351.91	-449.25	-55.16	448.79	11.00	11.00	0.00	0.00
5,430.00	46.99	187.00	5,373.00	-470.43	-57.76	469.94	11.00	11.00	0.00	0.00
Build Rate 11.00 °/100 ft										
5,471.39	51.54	187.00	5,400.00	-501.55	-61.58	501.03	11.00	11.00	0.00	0.00
Niobrara Top										
5,500.00	54.69	187.00	5,417.17	-524.26	-64.37	523.72	11.00	11.00	0.00	0.00
5,545.87	59.73	187.00	5,442.00	-562.52	-69.07	561.94	11.00	11.00	0.00	0.00
Niobrara "A"										
5,600.00	65.69	187.00	5,466.81	-610.25	-74.93	609.62	11.00	11.00	0.00	0.00
5,700.00	76.69	187.00	5,499.00	-704.05	-86.45	703.33	11.00	11.00	0.00	0.00
5,800.00	87.69	187.00	5,512.57	-802.24	-98.50	801.41	11.00	11.00	0.00	0.00
5,821.01	90.00	187.00	5,513.00	-823.09	-101.06	822.24	11.00	11.00	0.00	0.00
End Build @ 5821.01 ft - Niobrara "B" - 7" Casing Pt.										
5,896.01	90.00	187.00	5,513.00	-897.53	-110.20	896.60	0.00	0.00	0.00	0.00
Begin Turn @ 5896.01 ft										
5,900.00	90.00	186.88	5,513.00	-901.49	-110.68	900.56	3.00	0.00	-3.00	-90.00
6,000.00	90.00	183.88	5,513.00	-1,001.04	-120.06	1,000.03	3.00	0.00	-3.00	-90.00
6,040.00	90.00	182.68	5,513.00	-1,040.97	-122.35	1,039.94	3.00	0.00	-3.00	-90.00
Turn Rate 3.00 °/100 ft										
6,100.00	90.00	180.88	5,513.00	-1,100.94	-124.21	1,099.89	3.00	0.00	-3.00	-90.00
6,181.35	90.00	178.44	5,513.00	-1,182.28	-123.73	1,181.24	3.00	0.00	-3.00	-90.00
End Turn @ 6181.35 ft										
6,200.00	90.00	178.44	5,513.00	-1,200.92	-123.22	1,199.88	0.00	0.00	0.00	0.00
6,300.00	90.00	178.44	5,513.00	-1,300.89	-120.50	1,299.86	0.00	0.00	0.00	0.00
6,400.00	90.00	178.44	5,513.00	-1,400.85	-117.78	1,399.85	0.00	0.00	0.00	0.00
6,500.00	90.00	178.44	5,513.00	-1,500.81	-115.05	1,499.83	0.00	0.00	0.00	0.00
6,600.00	90.00	178.44	5,513.00	-1,600.77	-112.33	1,599.81	0.00	0.00	0.00	0.00
6,700.00	90.00	178.44	5,513.00	-1,700.74	-109.61	1,699.79	0.00	0.00	0.00	0.00
6,800.00	90.00	178.44	5,513.00	-1,800.70	-106.89	1,799.77	0.00	0.00	0.00	0.00
6,900.00	90.00	178.44	5,513.00	-1,900.66	-104.16	1,899.75	0.00	0.00	0.00	0.00
7,000.00	90.00	178.44	5,513.00	-2,000.63	-101.44	1,999.74	0.00	0.00	0.00	0.00
7,100.00	90.00	178.44	5,513.00	-2,100.59	-98.72	2,099.72	0.00	0.00	0.00	0.00
7,200.00	90.00	178.44	5,513.00	-2,200.55	-95.99	2,199.70	0.00	0.00	0.00	0.00
7,300.00	90.00	178.44	5,513.00	-2,300.52	-93.27	2,299.68	0.00	0.00	0.00	0.00
7,400.00	90.00	178.44	5,513.00	-2,400.48	-90.55	2,399.66	0.00	0.00	0.00	0.00
7,500.00	90.00	178.44	5,513.00	-2,500.44	-87.83	2,499.65	0.00	0.00	0.00	0.00
7,600.00	90.00	178.44	5,513.00	-2,600.40	-85.10	2,599.63	0.00	0.00	0.00	0.00
7,700.00	90.00	178.44	5,513.00	-2,700.37	-82.38	2,699.61	0.00	0.00	0.00	0.00
7,800.00	90.00	178.44	5,513.00	-2,800.33	-79.66	2,799.59	0.00	0.00	0.00	0.00
7,900.00	90.00	178.44	5,513.00	-2,900.29	-76.93	2,899.57	0.00	0.00	0.00	0.00
8,000.00	90.00	178.44	5,513.00	-3,000.26	-74.21	2,999.55	0.00	0.00	0.00	0.00
8,100.00	90.00	178.44	5,513.00	-3,100.22	-71.49	3,099.54	0.00	0.00	0.00	0.00
8,200.00	90.00	178.44	5,513.00	-3,200.18	-68.77	3,199.52	0.00	0.00	0.00	0.00
8,300.00	90.00	178.44	5,513.00	-3,300.14	-66.04	3,299.50	0.00	0.00	0.00	0.00
8,400.00	90.00	178.44	5,513.00	-3,400.11	-63.32	3,399.48	0.00	0.00	0.00	0.00
8,500.00	90.00	178.44	5,513.00	-3,500.07	-60.60	3,499.46	0.00	0.00	0.00	0.00
8,600.00	90.00	178.44	5,513.00	-3,600.03	-57.88	3,599.44	0.00	0.00	0.00	0.00
8,700.00	90.00	178.44	5,513.00	-3,700.00	-55.15	3,699.43	0.00	0.00	0.00	0.00
8,800.00	90.00	178.44	5,513.00	-3,799.96	-52.43	3,799.41	0.00	0.00	0.00	0.00
8,900.00	90.00	178.44	5,513.00	-3,899.92	-49.71	3,899.39	0.00	0.00	0.00	0.00
9,000.00	90.00	178.44	5,513.00	-3,999.88	-46.98	3,999.37	0.00	0.00	0.00	0.00
9,100.00	90.00	178.44	5,513.00	-4,099.85	-44.26	4,099.35	0.00	0.00	0.00	0.00
9,200.00	90.00	178.44	5,513.00	-4,199.81	-41.54	4,199.33	0.00	0.00	0.00	0.00
9,300.00	90.00	178.44	5,513.00	-4,299.77	-38.82	4,299.32	0.00	0.00	0.00	0.00
9,400.00	90.00	178.44	5,513.00	-4,399.74	-36.09	4,399.30	0.00	0.00	0.00	0.00
9,500.00	90.00	178.44	5,513.00	-4,499.70	-33.37	4,499.28	0.00	0.00	0.00	0.00
9,600.00	90.00	178.44	5,513.00	-4,599.66	-30.65	4,599.26	0.00	0.00	0.00	0.00

Plan Report for Horsetail #29F-3206B - Rev B0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
9,700.00	90.00	178.44	5,513.00	-4,699.63	-27.92	4,699.24	0.00	0.00	0.00	0.00
9,800.00	90.00	178.44	5,513.00	-4,799.59	-25.20	4,799.23	0.00	0.00	0.00	0.00
9,900.00	90.00	178.44	5,513.00	-4,899.55	-22.48	4,899.21	0.00	0.00	0.00	0.00
10,000.00	90.00	178.44	5,513.00	-4,999.51	-19.76	4,999.19	0.00	0.00	0.00	0.00
10,100.00	90.00	178.44	5,513.00	-5,099.48	-17.03	5,099.17	0.00	0.00	0.00	0.00
10,200.00	90.00	178.44	5,513.00	-5,199.44	-14.31	5,199.15	0.00	0.00	0.00	0.00
10,300.00	90.00	178.44	5,513.00	-5,299.40	-11.59	5,299.13	0.00	0.00	0.00	0.00
10,400.00	90.00	178.44	5,513.00	-5,399.37	-8.87	5,399.12	0.00	0.00	0.00	0.00
10,500.00	90.00	178.44	5,513.00	-5,499.33	-6.14	5,499.10	0.00	0.00	0.00	0.00
10,600.00	90.00	178.44	5,513.00	-5,599.29	-3.42	5,599.08	0.00	0.00	0.00	0.00
10,700.00	90.00	178.44	5,513.00	-5,699.25	-0.70	5,699.06	0.00	0.00	0.00	0.00
10,800.00	90.00	178.44	5,513.00	-5,799.22	2.03	5,799.04	0.00	0.00	0.00	0.00
10,900.00	90.00	178.44	5,513.00	-5,899.18	4.75	5,899.02	0.00	0.00	0.00	0.00
11,000.00	90.00	178.44	5,513.00	-5,999.14	7.47	5,999.01	0.00	0.00	0.00	0.00
11,100.00	90.00	178.44	5,513.00	-6,099.11	10.19	6,098.99	0.00	0.00	0.00	0.00
11,200.00	90.00	178.44	5,513.00	-6,199.07	12.92	6,198.97	0.00	0.00	0.00	0.00
11,300.00	90.00	178.44	5,513.00	-6,299.03	15.64	6,298.95	0.00	0.00	0.00	0.00
11,400.00	90.00	178.44	5,513.00	-6,398.99	18.36	6,398.93	0.00	0.00	0.00	0.00
11,500.00	90.00	178.44	5,513.00	-6,498.96	21.09	6,498.91	0.00	0.00	0.00	0.00
11,600.00	90.00	178.44	5,513.00	-6,598.92	23.81	6,598.90	0.00	0.00	0.00	0.00
11,700.00	90.00	178.44	5,513.00	-6,698.88	26.53	6,698.88	0.00	0.00	0.00	0.00
11,800.00	90.00	178.44	5,513.00	-6,798.85	29.25	6,798.86	0.00	0.00	0.00	0.00
11,900.00	90.00	178.44	5,513.00	-6,898.81	31.98	6,898.84	0.00	0.00	0.00	0.00
12,000.00	90.00	178.44	5,513.00	-6,998.77	34.70	6,998.82	0.00	0.00	0.00	0.00
12,100.00	90.00	178.44	5,513.00	-7,098.74	37.42	7,098.81	0.00	0.00	0.00	0.00
12,200.00	90.00	178.44	5,513.00	-7,198.70	40.15	7,198.79	0.00	0.00	0.00	0.00
12,300.00	90.00	178.44	5,513.00	-7,298.66	42.87	7,298.77	0.00	0.00	0.00	0.00
12,400.00	90.00	178.44	5,513.00	-7,398.62	45.59	7,398.75	0.00	0.00	0.00	0.00
12,500.00	90.00	178.44	5,513.00	-7,498.59	48.31	7,498.73	0.00	0.00	0.00	0.00
12,600.00	90.00	178.44	5,513.00	-7,598.55	51.04	7,598.71	0.00	0.00	0.00	0.00
12,700.00	90.00	178.44	5,513.00	-7,698.51	53.76	7,698.70	0.00	0.00	0.00	0.00
12,800.00	90.00	178.44	5,513.00	-7,798.48	56.48	7,798.68	0.00	0.00	0.00	0.00
12,900.00	90.00	178.44	5,513.00	-7,898.44	59.20	7,898.66	0.00	0.00	0.00	0.00
13,000.00	90.00	178.44	5,513.00	-7,998.40	61.93	7,998.64	0.00	0.00	0.00	0.00
13,100.00	90.00	178.44	5,513.00	-8,098.36	64.65	8,098.62	0.00	0.00	0.00	0.00
13,158.53	90.00	178.44	5,513.00	-8,156.88	66.24	8,157.14	0.00	0.00	0.00	0.00
Total Depth 13158.53 ft										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Begin Nudge @ 500.00 ft
700.00	699.84	-6.93	-0.85	End Nudge @ 700.00 ft
5,039.19	5,028.46	-307.36	-37.74	Kick Off Point @ 5039.19 ft
5,430.00	5,373.00	-470.43	-57.76	Build Rate 11.00 °/100 ft
5,821.01	5,513.00	-823.09	-101.06	End Build @ 5821.01 ft
5,896.01	5,513.00	-897.53	-110.20	Begin Turn @ 5896.01 ft
6,040.00	5,513.00	-1,040.97	-122.35	Turn Rate 3.00 °/100 ft
6,181.35	5,513.00	-1,182.28	-123.73	End Turn @ 6181.35 ft
13,158.53	5,513.00	-8,156.88	66.24	Total Depth 13158.53 ft

Plan Report for Horsetail #29F-3206B - Rev B0

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target	Horsetail #29F-3206B_Rev B0_BHL Tgt	179.53	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,600.00	Rev B0	MWD+IFR1+MS+sag
1,600.00	5,821.01	Rev B0	MWD+IFR1+MS+sag
5,821.01	13,158.53	Rev B0	MWD+IFR1+MS+sag

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,600.00	1,597.65	9 5/8" Casing Pt.	9-5/8	13-1/2
5,821.01	5,513.00	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,471.39	5,400.00	Niobrara Top			
5,545.87	5,442.00	Niobrara "A"			
5,821.01	5,513.00	Niobrara "B"			

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Sec 29 & 32_SL	-9.90	-13.07	-1,374.70	Polygon
Sec 29 & 32_SB	-9.90	-13.07	-1,374.70	Polygon
Horsetail #29F-3206B_Rev B0_BHL Tgt	5,513.00	-8,156.88	66.24	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.75 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 5,821.01 usft
Net Tortosity applicable to Plans:	0.75 °/100usft	Directional Difficulty Index:	6.489

Audit Info

North Reference Sheet for Sec. 29-T10N-R57W - Horsetail #29F-3206B - 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 = 22' @ 4722.30usft (Frontier 26). Northing and Easting are relative to Horsetail #29F-3206B

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° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 1.00000453

Grid Coordinates of Well: 1,542,760.94 usft N, 3,476,884.01 usft E

Geographical Coordinates of Well: 40° 48' 37.96" N, 103° 46' 37.89" W

Grid Convergence at Surface is: 1.11°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,158.53usft

the Bottom Hole Displacement is 8,157.14usft in the Direction of 179.53° (True).

Magnetic Convergence at surface is: -6.86° (10 December 2014, , BGGM2014)

