

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 8-T3N-R66W

Eisenach Federal 5N-8HZ

Plan B Rev 0

Plan: Plan B Rev 0 - PERMIT

Sperry Drilling Services

Proposal Report

14 May, 2013

Well Coordinates: 1,331,632.91 N, 3,197,363.21 E (40° 14' 29.66" N, 104° 47' 34.82" W)

Ground Level: 4,826.00 ft

Local Coordinate Origin: Centered on Well Eisenach Federal 5N-8HZ

Viewing Datum: RKB=17 @ 4843.00ft (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. 8-T3N-R66W
 Well: Eisenach Federal 5N-8HZ
 Wellbore: Plan B Rev 0
 Design: Plan B Rev 0 - PERMIT

Anadarko Petroleum Corp.



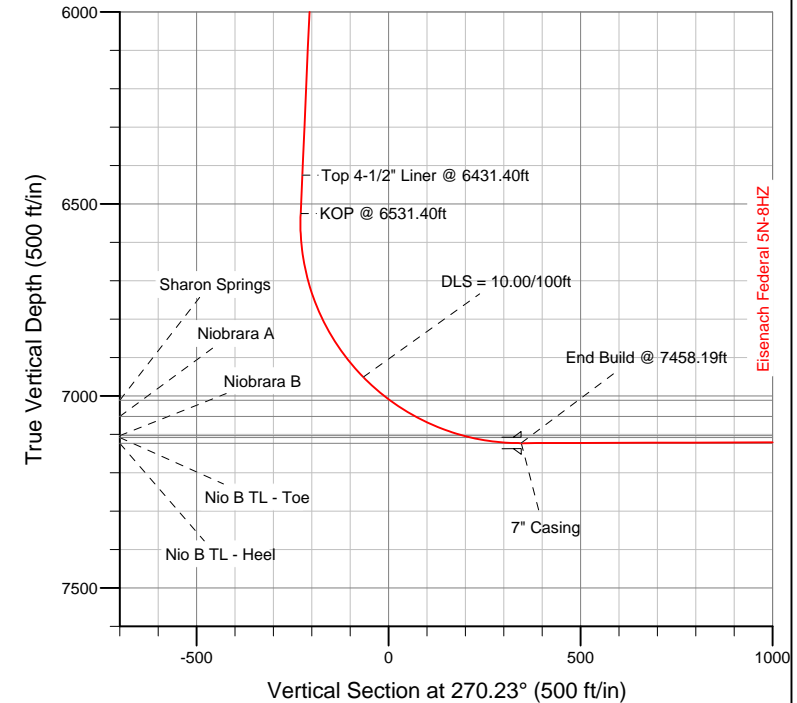
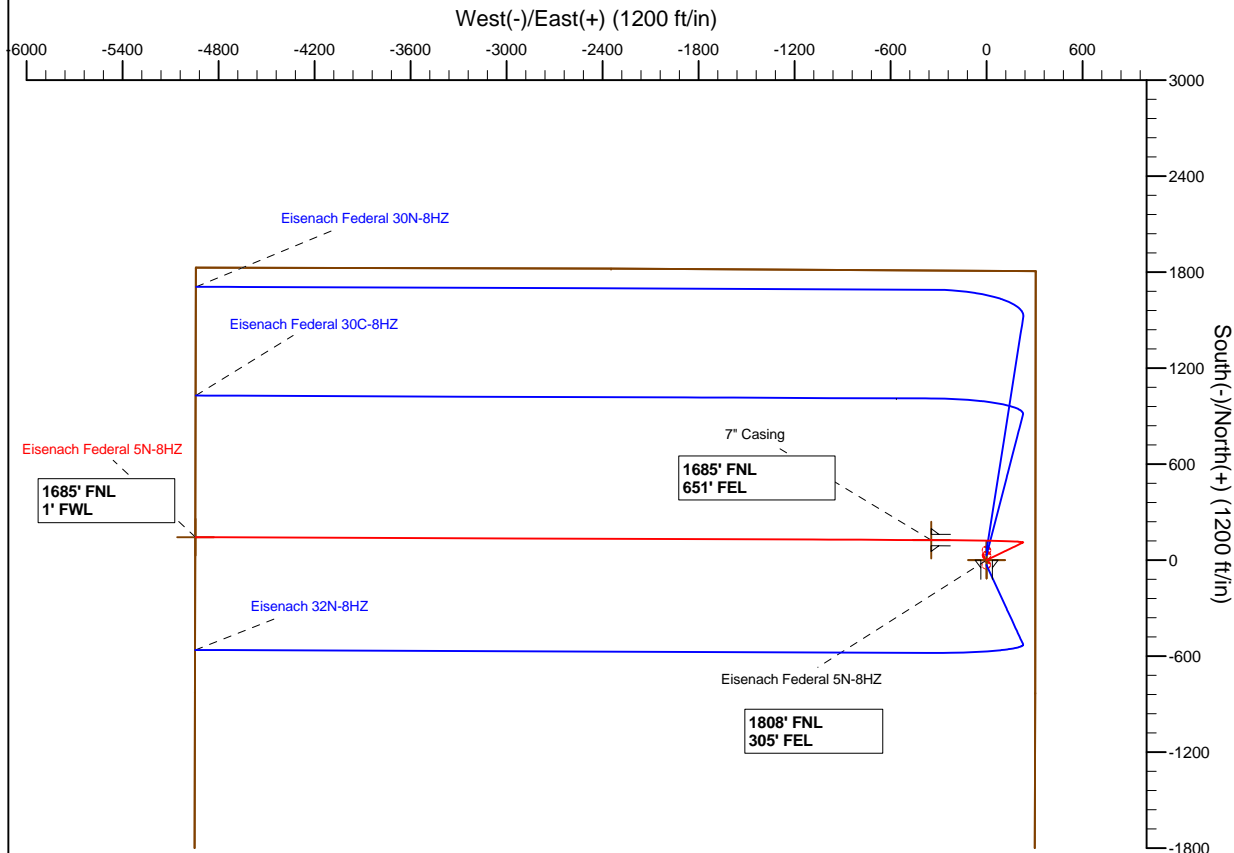
SECTION DETAILS

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1338.60	2.77	64.26	1338.54	1.46	3.02	2.00	64.26	-3.01	
4	6531.40	2.77	64.26	6525.27	110.52	229.23	0.00	0.00	-228.78	
5	7458.19	90.19	270.23	7123.00	125.50	-345.00	10.00	-154.00	345.50	E Fed 5N-8HZ_CP
6	12056.82	90.19	270.23	7108.00	143.66	-4943.57	0.00	0.00	4944.11	E Fed 5N-8HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
E Fed 5N-8HZ_Sec	0.00	0.00	0.00	40.241571	-104.793006	Polygon
E Fed 5N-8HZ_SHL	0.00	0.00	0.00	40.241571	-104.793006	Point
E Fed 5N-8HZ_BHL	7108.00	143.66	-4943.57	40.241964	-104.810714	Point
E Fed 5N-8HZ_CP	7123.00	125.50	-345.00	40.241915	-104.794242	Point

MD	TVD	
6431.40	6425.39	Top 4-1/2" Liner @ 6431.40ft
6531.40	6525.27	KOP @ 6531.40ft



WELL DETAILS: Eisenach Federal 5N-8HZ

Ground Level: 4826.00
 RKB=17 @ 4843.00ft (Drilling Rig)

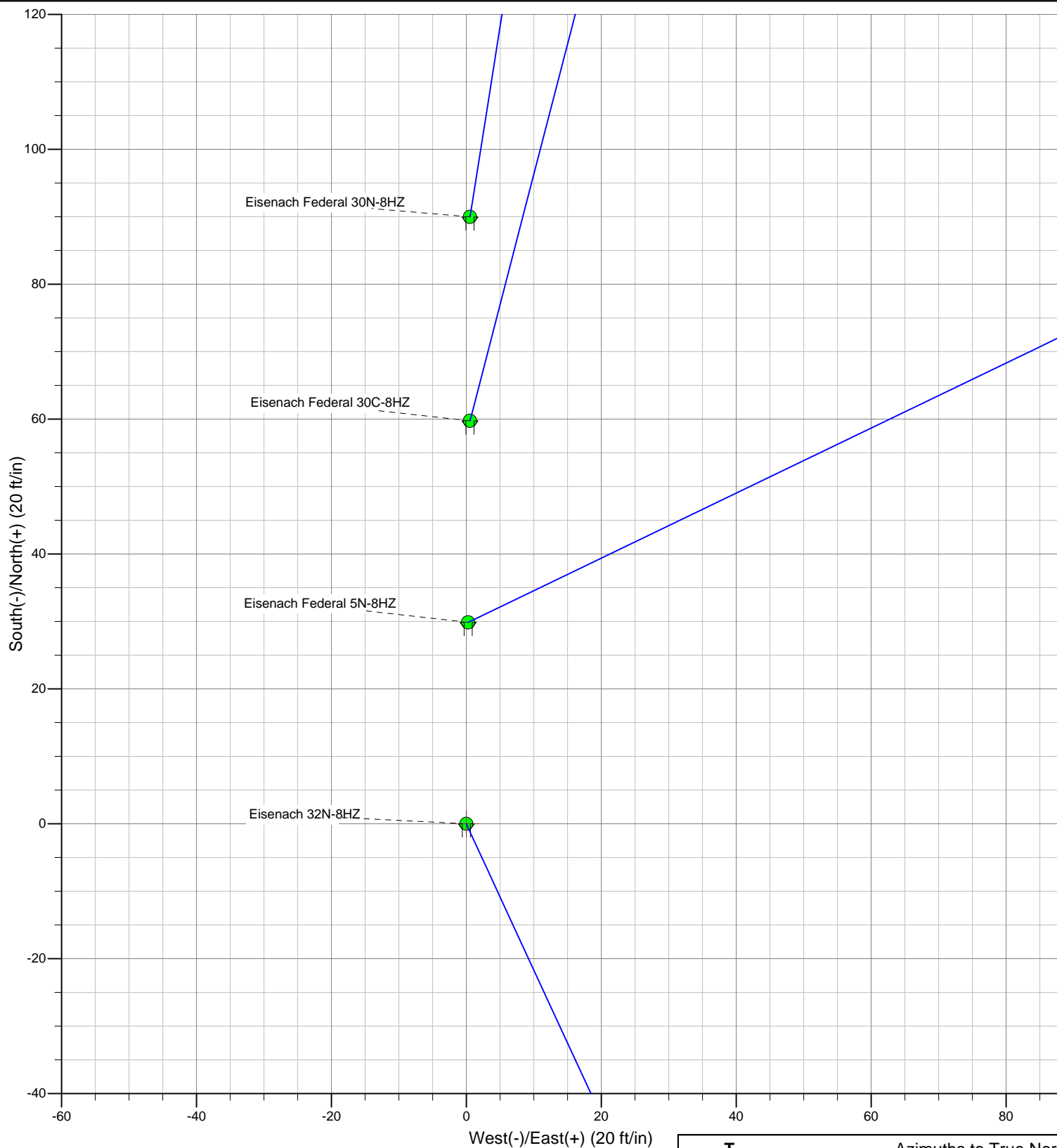
Plan: Plan B Rev 0 - PERMIT (Eisenach Federal 5N-8HZ/Plan B Rev 0)

Created By: Fred Hartmann Date: 05/14/2013
 Reviewed: Date:

Project: Weld County, CO (NAD 83)
Site: Sec. 8-T3N-R66W
Pad: Eisenach 8-8HZ Pad

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling



Azimuths to True North
Magnetic North: 8.66°

Magnetic Field
Strength: 52744.4snT
Dip Angle: 66.82°
Date: 05-14-2013
Model: BGGM2012

Plan Report for Eisenach Federal 5N-8HZ - Plan B Rev 0 - 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
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
637.00	0.00	0.00	637.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Casing										
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
1,100.00	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
Begin Nudge @ 1200.00ft										
1,300.00	2.00	64.26	1,299.98	0.76	1.57	-1.57	2.00	2.00	0.00	64.26
1,338.60	2.77	64.26	1,338.55	1.46	3.02	-3.01	2.00	2.00	0.00	0.00
End Nudge @ 1338.60ft										
1,400.00	2.77	64.26	1,399.87	2.75	5.69	-5.68	0.00	0.00	0.00	0.00
1,500.00	2.77	64.26	1,499.76	4.85	10.05	-10.03	0.00	0.00	0.00	0.00
1,600.00	2.77	64.26	1,599.64	6.95	14.41	-14.38	0.00	0.00	0.00	0.00
1,700.00	2.77	64.26	1,699.52	9.05	18.76	-18.73	0.00	0.00	0.00	0.00
1,800.00	2.77	64.26	1,799.41	11.15	23.12	-23.07	0.00	0.00	0.00	0.00
1,900.00	2.77	64.26	1,899.29	13.25	27.48	-27.42	0.00	0.00	0.00	0.00
2,000.00	2.77	64.26	1,999.17	15.35	31.83	-31.77	0.00	0.00	0.00	0.00
2,100.00	2.77	64.26	2,099.06	17.45	36.19	-36.12	0.00	0.00	0.00	0.00
2,200.00	2.77	64.26	2,198.94	19.55	40.54	-40.47	0.00	0.00	0.00	0.00
2,300.00	2.77	64.26	2,298.82	21.65	44.90	-44.81	0.00	0.00	0.00	0.00
2,400.00	2.77	64.26	2,398.70	23.75	49.26	-49.16	0.00	0.00	0.00	0.00
2,500.00	2.77	64.26	2,498.59	25.85	53.61	-53.51	0.00	0.00	0.00	0.00
2,600.00	2.77	64.26	2,598.47	27.95	57.97	-57.86	0.00	0.00	0.00	0.00
2,700.00	2.77	64.26	2,698.35	30.05	62.33	-62.20	0.00	0.00	0.00	0.00
2,800.00	2.77	64.26	2,798.24	32.15	66.68	-66.55	0.00	0.00	0.00	0.00
2,900.00	2.77	64.26	2,898.12	34.25	71.04	-70.90	0.00	0.00	0.00	0.00
3,000.00	2.77	64.26	2,998.00	36.35	75.39	-75.25	0.00	0.00	0.00	0.00
3,100.00	2.77	64.26	3,097.88	38.45	79.75	-79.60	0.00	0.00	0.00	0.00
3,200.00	2.77	64.26	3,197.77	40.55	84.11	-83.94	0.00	0.00	0.00	0.00
3,300.00	2.77	64.26	3,297.65	42.65	88.46	-88.29	0.00	0.00	0.00	0.00
3,400.00	2.77	64.26	3,397.53	44.75	92.82	-92.64	0.00	0.00	0.00	0.00
3,500.00	2.77	64.26	3,497.42	46.85	97.18	-96.99	0.00	0.00	0.00	0.00
3,600.00	2.77	64.26	3,597.30	48.95	101.53	-101.33	0.00	0.00	0.00	0.00
3,700.00	2.77	64.26	3,697.18	51.05	105.89	-105.68	0.00	0.00	0.00	0.00
3,800.00	2.77	64.26	3,797.07	53.15	110.24	-110.03	0.00	0.00	0.00	0.00
3,808.94	2.77	64.26	3,806.00	53.34	110.63	-110.42	0.00	0.00	0.00	0.00
Parkman										
3,900.00	2.77	64.26	3,896.95	55.25	114.60	-114.38	0.00	0.00	0.00	0.00
4,000.00	2.77	64.26	3,996.83	57.35	118.96	-118.73	0.00	0.00	0.00	0.00
4,100.00	2.77	64.26	4,096.71	59.45	123.31	-123.07	0.00	0.00	0.00	0.00
4,200.00	2.77	64.26	4,196.60	61.55	127.67	-127.42	0.00	0.00	0.00	0.00
4,279.50	2.77	64.26	4,276.00	63.22	131.13	-130.88	0.00	0.00	0.00	0.00
Sussex										
4,300.00	2.77	64.26	4,296.48	63.65	132.02	-131.77	0.00	0.00	0.00	0.00
4,400.00	2.77	64.26	4,396.36	65.75	136.38	-136.12	0.00	0.00	0.00	0.00
4,500.00	2.77	64.26	4,496.25	67.85	140.74	-140.46	0.00	0.00	0.00	0.00
4,600.00	2.77	64.26	4,596.13	69.95	145.09	-144.81	0.00	0.00	0.00	0.00
4,700.00	2.77	64.26	4,696.01	72.05	149.45	-149.16	0.00	0.00	0.00	0.00
4,800.00	2.77	64.26	4,795.90	74.15	153.81	-153.51	0.00	0.00	0.00	0.00

Plan Report for Eisenach Federal 5N-8HZ - Plan B Rev 0 - 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	2.77	64.26	4,895.78	76.25	158.16	-157.85	0.00	0.00	0.00	0.00
5,000.00	2.77	64.26	4,995.66	78.36	162.52	-162.20	0.00	0.00	0.00	0.00
5,100.00	2.77	64.26	5,095.54	80.46	166.87	-166.55	0.00	0.00	0.00	0.00
5,200.00	2.77	64.26	5,195.43	82.56	171.23	-170.90	0.00	0.00	0.00	0.00
5,300.00	2.77	64.26	5,295.31	84.66	175.59	-175.25	0.00	0.00	0.00	0.00
5,400.00	2.77	64.26	5,395.19	86.76	179.94	-179.59	0.00	0.00	0.00	0.00
5,500.00	2.77	64.26	5,495.08	88.86	184.30	-183.94	0.00	0.00	0.00	0.00
5,600.00	2.77	64.26	5,594.96	90.96	188.66	-188.29	0.00	0.00	0.00	0.00
5,700.00	2.77	64.26	5,694.84	93.06	193.01	-192.64	0.00	0.00	0.00	0.00
5,800.00	2.77	64.26	5,794.73	95.16	197.37	-196.98	0.00	0.00	0.00	0.00
5,900.00	2.77	64.26	5,894.61	97.26	201.72	-201.33	0.00	0.00	0.00	0.00
6,000.00	2.77	64.26	5,994.49	99.36	206.08	-205.68	0.00	0.00	0.00	0.00
6,100.00	2.77	64.26	6,094.37	101.46	210.44	-210.03	0.00	0.00	0.00	0.00
6,200.00	2.77	64.26	6,194.26	103.56	214.79	-214.38	0.00	0.00	0.00	0.00
6,300.00	2.77	64.26	6,294.14	105.66	219.15	-218.72	0.00	0.00	0.00	0.00
6,400.00	2.77	64.26	6,394.02	107.76	223.51	-223.07	0.00	0.00	0.00	0.00
6,431.40	2.77	64.26	6,425.39	108.42	224.87	-224.44	0.00	0.00	0.00	0.00
Top 4-1/2" Liner @ 6431.40ft										
6,500.00	2.77	64.26	6,493.91	109.86	227.86	-227.42	0.00	0.00	0.00	0.00
6,531.40	2.77	64.26	6,525.27	110.52	229.23	-228.78	0.00	0.00	0.00	0.00
KOP @ 6531.40ft										
6,600.00	4.53	285.74	6,593.80	111.98	228.11	-227.66	10.00	2.57	-201.92	-154.00
6,700.00	14.42	274.96	6,692.32	114.13	211.86	-211.40	10.00	9.88	-10.78	-15.56
6,800.00	24.40	272.91	6,786.52	116.26	178.75	-178.28	10.00	9.98	-2.05	-4.88
6,900.00	34.39	272.01	6,873.54	118.30	129.78	-129.30	10.00	9.99	-0.90	-2.94
7,000.00	44.38	271.47	6,950.73	120.19	66.44	-65.95	10.00	9.99	-0.53	-2.15
DLS = 10.00/100ft										
7,091.91	53.57	271.13	7,011.00	121.75	-2.81	3.30	10.00	10.00	-0.38	-1.74
Sharon Springs										
7,100.00	54.38	271.10	7,015.76	121.88	-9.35	9.84	10.00	10.00	-0.32	-1.51
7,170.09	61.38	270.89	7,053.00	122.91	-68.67	69.16	10.00	10.00	-0.30	-1.49
Niobrara A										
7,200.00	64.37	270.81	7,066.63	123.30	-95.28	95.78	10.00	10.00	-0.27	-1.38
7,300.00	74.37	270.57	7,101.82	124.42	-188.75	189.25	10.00	10.00	-0.24	-1.35
7,304.46	74.82	270.56	7,103.00	124.47	-193.04	193.54	10.00	10.00	-0.23	-1.26
Niobrara B										
7,400.00	84.37	270.35	7,120.24	125.21	-286.90	287.40	10.00	10.00	-0.22	-1.26
7,458.19	90.19	270.23	7,123.00	125.50	-345.00	345.50	10.00	10.00	-0.21	-1.22
End Build @ 7458.19ft - Nio B TL - Heel - 7" Casing - E Fed 5N-8HZ_CP										
7,500.00	90.19	270.23	7,122.86	125.67	-386.81	387.31	0.00	0.00	0.00	-1.21
7,600.00	90.19	270.23	7,122.54	126.06	-486.81	487.31	0.00	0.00	0.00	0.00
7,700.00	90.19	270.23	7,122.21	126.46	-586.81	587.31	0.00	0.00	0.00	0.00
7,800.00	90.19	270.23	7,121.89	126.85	-686.81	687.31	0.00	0.00	0.00	0.00
7,900.00	90.19	270.23	7,121.56	127.25	-786.81	787.31	0.00	0.00	0.00	0.00
8,000.00	90.19	270.23	7,121.23	127.64	-886.81	887.31	0.00	0.00	0.00	0.00
8,100.00	90.19	270.23	7,120.91	128.04	-986.80	987.31	0.00	0.00	0.00	0.00
8,200.00	90.19	270.23	7,120.58	128.43	-1,086.80	1,087.31	0.00	0.00	0.00	0.00
8,300.00	90.19	270.23	7,120.25	128.83	-1,186.80	1,187.31	0.00	0.00	0.00	0.00
8,400.00	90.19	270.23	7,119.93	129.22	-1,286.80	1,287.31	0.00	0.00	0.00	0.00
8,500.00	90.19	270.23	7,119.60	129.62	-1,386.80	1,387.31	0.00	0.00	0.00	0.00
8,600.00	90.19	270.23	7,119.28	130.01	-1,486.80	1,487.31	0.00	0.00	0.00	0.00
8,700.00	90.19	270.23	7,118.95	130.41	-1,586.80	1,587.31	0.00	0.00	0.00	0.00
8,800.00	90.19	270.23	7,118.62	130.80	-1,686.80	1,687.31	0.00	0.00	0.00	0.00
8,900.00	90.19	270.23	7,118.30	131.19	-1,786.79	1,787.31	0.00	0.00	0.00	0.00
9,000.00	90.19	270.23	7,117.97	131.59	-1,886.79	1,887.31	0.00	0.00	0.00	0.00
9,100.00	90.19	270.23	7,117.64	131.98	-1,986.79	1,987.31	0.00	0.00	0.00	0.00
9,200.00	90.19	270.23	7,117.32	132.38	-2,086.79	2,087.30	0.00	0.00	0.00	0.00
9,300.00	90.19	270.23	7,116.99	132.77	-2,186.79	2,187.30	0.00	0.00	0.00	0.00
9,400.00	90.19	270.23	7,116.67	133.17	-2,286.79	2,287.30	0.00	0.00	0.00	0.00

Plan Report for Eisenach Federal 5N-8HZ - Plan B Rev 0 - 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 (°)
9,500.00	90.19	270.23	7,116.34	133.56	-2,386.79	2,387.30	0.00	0.00	0.00	0.00
9,600.00	90.19	270.23	7,116.01	133.96	-2,486.79	2,487.30	0.00	0.00	0.00	0.00
9,700.00	90.19	270.23	7,115.69	134.35	-2,586.78	2,587.30	0.00	0.00	0.00	0.00
9,800.00	90.19	270.23	7,115.36	134.75	-2,686.78	2,687.30	0.00	0.00	0.00	0.00
9,900.00	90.19	270.23	7,115.04	135.14	-2,786.78	2,787.30	0.00	0.00	0.00	0.00
10,000.00	90.19	270.23	7,114.71	135.54	-2,886.78	2,887.30	0.00	0.00	0.00	0.00
10,100.00	90.19	270.23	7,114.38	135.93	-2,986.78	2,987.30	0.00	0.00	0.00	0.00
10,200.00	90.19	270.23	7,114.06	136.33	-3,086.78	3,087.30	0.00	0.00	0.00	0.00
10,300.00	90.19	270.23	7,113.73	136.72	-3,186.78	3,187.30	0.00	0.00	0.00	0.00
10,400.00	90.19	270.23	7,113.40	137.12	-3,286.77	3,287.30	0.00	0.00	0.00	0.00
10,500.00	90.19	270.23	7,113.08	137.51	-3,386.77	3,387.30	0.00	0.00	0.00	0.00
10,600.00	90.19	270.23	7,112.75	137.91	-3,486.77	3,487.30	0.00	0.00	0.00	0.00
10,700.00	90.19	270.23	7,112.43	138.30	-3,586.77	3,587.30	0.00	0.00	0.00	0.00
10,800.00	90.19	270.23	7,112.10	138.70	-3,686.77	3,687.30	0.00	0.00	0.00	0.00
10,900.00	90.19	270.23	7,111.77	139.09	-3,786.77	3,787.30	0.00	0.00	0.00	0.00
11,000.00	90.19	270.23	7,111.45	139.49	-3,886.77	3,887.30	0.00	0.00	0.00	0.00
11,100.00	90.19	270.23	7,111.12	139.88	-3,986.77	3,987.29	0.00	0.00	0.00	0.00
11,200.00	90.19	270.23	7,110.79	140.28	-4,086.76	4,087.29	0.00	0.00	0.00	0.00
11,300.00	90.19	270.23	7,110.47	140.67	-4,186.76	4,187.29	0.00	0.00	0.00	0.00
11,400.00	90.19	270.23	7,110.14	141.07	-4,286.76	4,287.29	0.00	0.00	0.00	0.00
11,500.00	90.19	270.23	7,109.82	141.46	-4,386.76	4,387.29	0.00	0.00	0.00	0.00
11,600.00	90.19	270.23	7,109.49	141.86	-4,486.76	4,487.29	0.00	0.00	0.00	0.00
11,700.00	90.19	270.23	7,109.16	142.25	-4,586.76	4,587.29	0.00	0.00	0.00	0.00
11,800.00	90.19	270.23	7,108.84	142.65	-4,686.76	4,687.29	0.00	0.00	0.00	0.00
11,900.00	90.19	270.23	7,108.51	143.04	-4,786.75	4,787.29	0.00	0.00	0.00	0.00
12,000.00	90.19	270.23	7,108.19	143.44	-4,886.75	4,887.29	0.00	0.00	0.00	0.00
12,056.81	90.19	270.23	7,108.00	143.66	-4,943.56	4,944.10	0.00	0.00	0.00	0.00
Nio B TL - Toe										
12,056.82	90.19	270.23	7,108.00	143.66	-4,943.57	4,944.11	0.00	0.00	0.00	0.00
E Fed 5N-8HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,338.60	1,338.55	1.46	3.02	End Nudge @ 1338.60ft
6,431.40	6,425.39	108.42	224.87	Top 4-1/2" Liner @ 6431.40ft
6,531.40	6,525.27	110.52	229.23	KOP @ 6531.40ft
7,000.00	6,950.73	120.19	66.44	DLS = 10.00/100ft
7,458.19	7,123.00	125.50	-345.00	End Build @ 7458.19ft
12,056.82	7,108.00	143.66	-4,943.57	TD @ 12056.82ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	270.23	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,056.38	Plan B Rev 0 - PERMIT	MWD

Plan Report for Eisenach Federal 5N-8HZ - Plan B Rev 0 - PERMIT

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
637.00	637.00	9 5/8" Casing	9-5/8	13-1/2
7,458.19	7,123.00	7" Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,808.94	3,806.00	Parkman		0.00	
4,279.50	4,276.00	Sussex		0.00	
7,091.91	7,011.00	Sharon Springs		0.00	
7,170.09	7,053.00	Niobrara A		0.00	
7,304.46	7,103.00	Niobrara B		0.00	
7,458.19	7,123.00	Nio B TL - Heel		0.00	
12,056.81	7,108.00	Nio B TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
E Fed 5N-8HZ_CP	7,123.00	125.50	-345.00	Point
E Fed 5N-8HZ_Sec	0.00	0.00	0.00	Polygon
E Fed 5N-8HZ_BHL	7,108.00	143.66	-4,943.57	Point
E Fed 5N-8HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 8-T3N-R66W - Eisenach Federal 5N-8HZ - Plan B **Rev 0**

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 @ 4843.00ft (Drilling Rig). Northing and Easting are relative to Eisenach Federal 5N-8HZ
 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: 0.99995686
 Grid Coordinates of Well: 1,331,632.91 ft N, 3,197,363.21 ft E
 Geographical Coordinates of Well: 40° 14' 29.66" N, 104° 47' 34.82" W
 Grid Convergence at Surface is: 0.46°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,056.82ft
 the Bottom Hole Displacement is 4,945.66ft in the Direction of 271.66° (True).
 Magnetic Convergence at surface is: -8.20° (14 May 2013, , BGGM2012)

