

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22-T2N-R67W

Deepe 13N-27HZ

Plan A Rev 0

Plan: Plan A Rev 0-Permit

Sperry Drilling Services

Proposal Report

11 June, 2013

Well Coordinates: 1,290,513.21 N, 3,172,500.72 E (40° 07' 45.14" N, 104° 52' 59.12" W)

Ground Level: 5,007.00 ft

Local Coordinate Origin: Centered on Well Deepe 13N-27HZ

Viewing Datum: RKB @ 17' @ 5024.00ft (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. 22-T2N-R67W
 Well: Deepe 13N-27HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0-Permit



HALLIBURTON
 Sperry Drilling

SECTION DETAILS

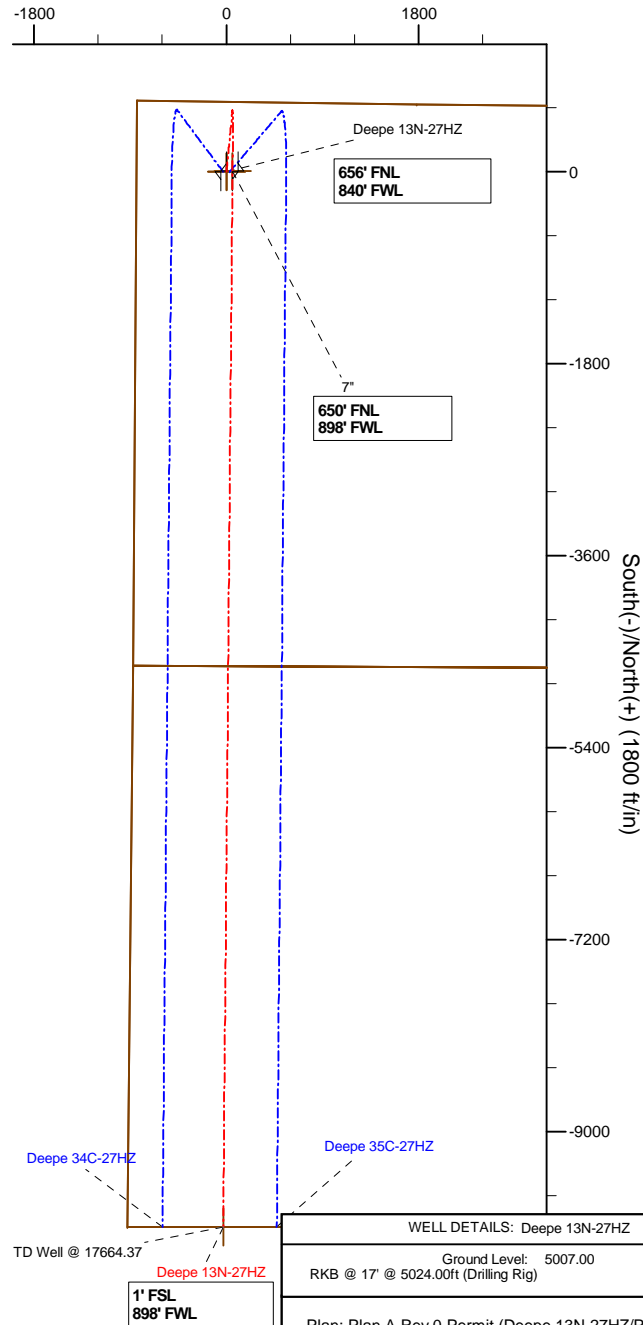
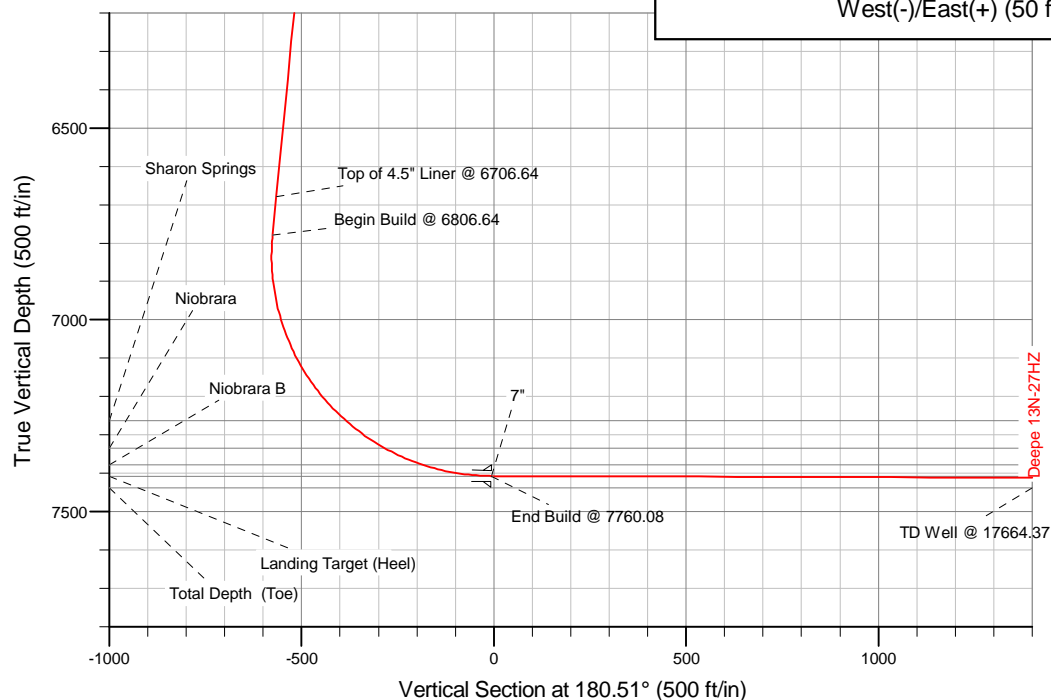
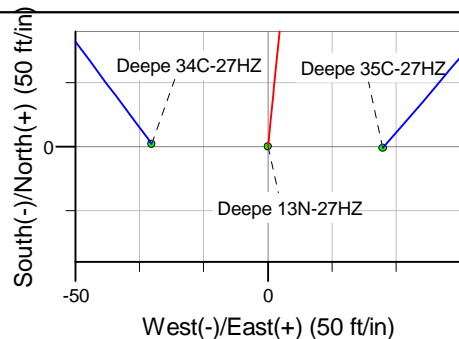
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	977.57	5.55	5.72	977.14	13.37	1.34	2.00	5.72	-13.38	
4	6806.64	5.55	5.72	6778.87	574.47	57.51	0.00	0.00	-574.96	
5	7760.08	89.81	180.51	7407.00	6.00	58.00	10.00	174.77	-6.52	Deepe 13N-27HZ_CP
6	17664.37	89.81	180.51	7439.00	-9897.85	-29.65	0.00	0.00	9897.73	Deepe 13N-27HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Deepe 13N-27HZ_SHL	0.00	0.00	0.00	40.129205	-104.883090	Point
Deepe Sec. Lines	0.00	0.00	0.00	40.129205	-104.883090	Polygon
Deepe 13N-27HZ_CP	7407.00	6.00	58.00	40.129221	-104.882883	Point
Deepe 13N-27HZ_BHL	7439.00	-9897.85	-29.65	40.102035	-104.883196	Point

TVD MD

6679.33 6706.64 Top of 4.5" Liner @ 6706.64
 6778.87 6806.64 Begin Build @ 6806.64



WELL DETAILS: Deepe 13N-27HZ

Ground Level: 5007.00
 RKB @ 17' @ 5024.00ft (Drilling Rig)

Plan: Plan A Rev 0-Permit (Deepe 13N-27HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 06/05/2013

Plan Report for Deepe 13N-27HZ - Plan A 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
9 5/8"										
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
Begin Nudge @ 700.00										
800.00	2.00	5.72	799.98	1.74	0.17	-1.74	2.00	2.00	0.00	5.72
900.00	4.00	5.72	899.84	6.94	0.70	-6.95	2.00	2.00	0.00	0.00
977.57	5.55	5.72	977.14	13.37	1.34	-13.38	2.00	2.00	0.00	0.00
End Nudge @ 977.57										
1,000.00	5.55	5.72	999.46	15.53	1.55	-15.54	0.00	0.00	0.00	0.00
1,100.00	5.55	5.72	1,098.99	25.15	2.52	-25.18	0.00	0.00	0.00	0.00
1,200.00	5.55	5.72	1,198.52	34.78	3.48	-34.81	0.00	0.00	0.00	0.00
1,300.00	5.55	5.72	1,298.05	44.41	4.45	-44.44	0.00	0.00	0.00	0.00
1,400.00	5.55	5.72	1,397.58	54.03	5.41	-54.08	0.00	0.00	0.00	0.00
1,500.00	5.55	5.72	1,497.12	63.66	6.37	-63.71	0.00	0.00	0.00	0.00
1,600.00	5.55	5.72	1,596.65	73.28	7.34	-73.35	0.00	0.00	0.00	0.00
1,700.00	5.55	5.72	1,696.18	82.91	8.30	-82.98	0.00	0.00	0.00	0.00
1,800.00	5.55	5.72	1,795.71	92.54	9.26	-92.61	0.00	0.00	0.00	0.00
1,900.00	5.55	5.72	1,895.24	102.16	10.23	-102.25	0.00	0.00	0.00	0.00
2,000.00	5.55	5.72	1,994.77	111.79	11.19	-111.88	0.00	0.00	0.00	0.00
2,100.00	5.55	5.72	2,094.30	121.41	12.15	-121.52	0.00	0.00	0.00	0.00
2,200.00	5.55	5.72	2,193.83	131.04	13.12	-131.15	0.00	0.00	0.00	0.00
2,300.00	5.55	5.72	2,293.36	140.66	14.08	-140.78	0.00	0.00	0.00	0.00
2,400.00	5.55	5.72	2,392.89	150.29	15.04	-150.42	0.00	0.00	0.00	0.00
2,500.00	5.55	5.72	2,492.43	159.92	16.01	-160.05	0.00	0.00	0.00	0.00
2,600.00	5.55	5.72	2,591.96	169.54	16.97	-169.69	0.00	0.00	0.00	0.00
2,700.00	5.55	5.72	2,691.49	179.17	17.94	-179.32	0.00	0.00	0.00	0.00
2,800.00	5.55	5.72	2,791.02	188.79	18.90	-188.95	0.00	0.00	0.00	0.00
2,900.00	5.55	5.72	2,890.55	198.42	19.86	-198.59	0.00	0.00	0.00	0.00
3,000.00	5.55	5.72	2,990.08	208.05	20.83	-208.22	0.00	0.00	0.00	0.00
3,100.00	5.55	5.72	3,089.61	217.67	21.79	-217.86	0.00	0.00	0.00	0.00
3,200.00	5.55	5.72	3,189.14	227.30	22.75	-227.49	0.00	0.00	0.00	0.00
3,300.00	5.55	5.72	3,288.67	236.92	23.72	-237.13	0.00	0.00	0.00	0.00
3,400.00	5.55	5.72	3,388.20	246.55	24.68	-246.76	0.00	0.00	0.00	0.00
3,500.00	5.55	5.72	3,487.74	256.18	25.64	-256.39	0.00	0.00	0.00	0.00
3,600.00	5.55	5.72	3,587.27	265.80	26.61	-266.03	0.00	0.00	0.00	0.00
3,700.00	5.55	5.72	3,686.80	275.43	27.57	-275.66	0.00	0.00	0.00	0.00
3,800.00	5.55	5.72	3,786.33	285.05	28.53	-285.30	0.00	0.00	0.00	0.00
3,900.00	5.55	5.72	3,885.86	294.68	29.50	-294.93	0.00	0.00	0.00	0.00
4,000.00	5.55	5.72	3,985.39	304.30	30.46	-304.56	0.00	0.00	0.00	0.00
4,100.00	5.55	5.72	4,084.92	313.93	31.43	-314.20	0.00	0.00	0.00	0.00
4,200.00	5.55	5.72	4,184.45	323.56	32.39	-323.83	0.00	0.00	0.00	0.00
4,300.00	5.55	5.72	4,283.98	333.18	33.35	-333.47	0.00	0.00	0.00	0.00
4,400.00	5.55	5.72	4,383.51	342.81	34.32	-343.10	0.00	0.00	0.00	0.00
4,500.00	5.55	5.72	4,483.04	352.43	35.28	-352.73	0.00	0.00	0.00	0.00
4,600.00	5.55	5.72	4,582.58	362.06	36.24	-362.37	0.00	0.00	0.00	0.00
4,700.00	5.55	5.72	4,682.11	371.69	37.21	-372.00	0.00	0.00	0.00	0.00
4,800.00	5.55	5.72	4,781.64	381.31	38.17	-381.64	0.00	0.00	0.00	0.00
4,900.00	5.55	5.72	4,881.17	390.94	39.13	-391.27	0.00	0.00	0.00	0.00
5,000.00	5.55	5.72	4,980.70	400.56	40.10	-400.90	0.00	0.00	0.00	0.00
5,100.00	5.55	5.72	5,080.23	410.19	41.06	-410.54	0.00	0.00	0.00	0.00
5,200.00	5.55	5.72	5,179.76	419.81	42.02	-420.17	0.00	0.00	0.00	0.00
5,300.00	5.55	5.72	5,279.29	429.44	42.99	-429.81	0.00	0.00	0.00	0.00

Plan Report for Deepe 13N-27HZ - Plan A 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 (°)
5,400.00	5.55	5.72	5,378.82	439.07	43.95	-439.44	0.00	0.00	0.00	0.00
5,500.00	5.55	5.72	5,478.35	448.69	44.92	-449.07	0.00	0.00	0.00	0.00
5,600.00	5.55	5.72	5,577.89	458.32	45.88	-458.71	0.00	0.00	0.00	0.00
5,700.00	5.55	5.72	5,677.42	467.94	46.84	-468.34	0.00	0.00	0.00	0.00
5,800.00	5.55	5.72	5,776.95	477.57	47.81	-477.98	0.00	0.00	0.00	0.00
5,900.00	5.55	5.72	5,876.48	487.20	48.77	-487.61	0.00	0.00	0.00	0.00
6,000.00	5.55	5.72	5,976.01	496.82	49.73	-497.24	0.00	0.00	0.00	0.00
6,100.00	5.55	5.72	6,075.54	506.45	50.70	-506.88	0.00	0.00	0.00	0.00
6,200.00	5.55	5.72	6,175.07	516.07	51.66	-516.51	0.00	0.00	0.00	0.00
6,300.00	5.55	5.72	6,274.60	525.70	52.62	-526.15	0.00	0.00	0.00	0.00
6,400.00	5.55	5.72	6,374.13	535.33	53.59	-535.78	0.00	0.00	0.00	0.00
6,500.00	5.55	5.72	6,473.66	544.95	54.55	-545.41	0.00	0.00	0.00	0.00
6,600.00	5.55	5.72	6,573.20	554.58	55.51	-555.05	0.00	0.00	0.00	0.00
6,700.00	5.55	5.72	6,672.73	564.20	56.48	-564.68	0.00	0.00	0.00	0.00
6,706.64	5.55	5.72	6,679.33	564.84	56.54	-565.32	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6706.64										
6,800.00	5.55	5.72	6,772.26	573.83	57.44	-574.32	0.00	0.00	0.00	0.00
6,806.64	5.55	5.72	6,778.87	574.47	57.51	-574.96	0.00	0.00	0.00	0.00
Begin Build @ 6806.64										
6,900.00	3.84	172.96	6,872.11	575.86	58.34	-576.36	10.00	-1.83	179.14	174.77
7,000.00	13.82	178.45	6,970.80	560.56	59.08	-561.07	10.00	9.98	5.50	7.57
7,100.00	23.81	179.36	7,065.34	528.36	59.62	-528.87	10.00	10.00	0.91	2.12
7,200.00	33.81	179.75	7,152.85	480.23	59.97	-480.74	10.00	10.00	0.39	1.25
7,300.00	43.81	179.98	7,230.67	417.64	60.10	-418.15	10.00	10.00	0.23	0.91
7,345.17	48.33	180.06	7,262.00	385.12	60.09	-385.64	10.00	10.00	0.17	0.73
Sharon Springs										
7,400.00	53.81	180.14	7,296.45	342.48	60.01	-343.00	10.00	10.00	0.15	0.68
7,469.53	60.76	180.23	7,334.00	284.02	59.82	-284.54	10.00	10.00	0.12	0.63
Niobrara										
7,500.00	63.81	180.26	7,348.17	257.04	59.71	-257.57	10.00	10.00	0.11	0.58
7,575.69	71.38	180.34	7,377.00	187.12	59.34	-187.65	10.00	10.00	0.10	0.56
Niobrara B										
7,600.00	73.81	180.36	7,384.27	163.93	59.20	-164.45	10.00	10.00	0.10	0.53
7,700.00	83.81	180.45	7,403.66	65.96	58.50	-66.47	10.00	10.00	0.09	0.53
7,760.08	89.81	180.51	7,407.00	6.00	58.00	-6.52	10.00	10.00	0.09	0.51
End Build @ 7760.08 - Landing Target (Heel) - 7" - Deepe 13N-27HZ_CP										
7,800.00	89.81	180.51	7,407.13	-33.92	57.65	33.41	0.00	0.00	0.00	0.00
7,900.00	89.81	180.51	7,407.45	-133.92	56.76	133.40	0.00	0.00	0.00	0.00
8,000.00	89.81	180.51	7,407.78	-233.91	55.88	233.40	0.00	0.00	0.00	0.00
8,100.00	89.81	180.51	7,408.10	-333.91	54.99	333.40	0.00	0.00	0.00	0.00
8,200.00	89.81	180.51	7,408.42	-433.90	54.11	433.40	0.00	0.00	0.00	0.00
8,300.00	89.81	180.51	7,408.74	-533.90	53.22	533.40	0.00	0.00	0.00	0.00
8,400.00	89.81	180.51	7,409.07	-633.89	52.34	633.40	0.00	0.00	0.00	0.00
8,500.00	89.81	180.51	7,409.39	-733.89	51.45	733.40	0.00	0.00	0.00	0.00
8,600.00	89.81	180.51	7,409.71	-833.88	50.57	833.40	0.00	0.00	0.00	0.00
8,700.00	89.81	180.51	7,410.04	-933.88	49.68	933.40	0.00	0.00	0.00	0.00
8,800.00	89.81	180.51	7,410.36	-1,033.88	48.80	1,033.40	0.00	0.00	0.00	0.00
8,900.00	89.81	180.51	7,410.68	-1,133.87	47.91	1,133.40	0.00	0.00	0.00	0.00
9,000.00	89.81	180.51	7,411.01	-1,233.87	47.03	1,233.40	0.00	0.00	0.00	0.00
9,100.00	89.81	180.51	7,411.33	-1,333.86	46.14	1,333.40	0.00	0.00	0.00	0.00
9,200.00	89.81	180.51	7,411.65	-1,433.86	45.26	1,433.40	0.00	0.00	0.00	0.00
9,300.00	89.81	180.51	7,411.98	-1,533.85	44.37	1,533.40	0.00	0.00	0.00	0.00
9,400.00	89.81	180.51	7,412.30	-1,633.85	43.49	1,633.40	0.00	0.00	0.00	0.00
9,500.00	89.81	180.51	7,412.62	-1,733.84	42.60	1,733.40	0.00	0.00	0.00	0.00
9,600.00	89.81	180.51	7,412.94	-1,833.84	41.72	1,833.40	0.00	0.00	0.00	0.00
9,700.00	89.81	180.51	7,413.27	-1,933.84	40.83	1,933.40	0.00	0.00	0.00	0.00
9,800.00	89.81	180.51	7,413.59	-2,033.83	39.95	2,033.40	0.00	0.00	0.00	0.00
9,900.00	89.81	180.51	7,413.91	-2,133.83	39.06	2,133.39	0.00	0.00	0.00	0.00
10,000.00	89.81	180.51	7,414.24	-2,233.82	38.18	2,233.39	0.00	0.00	0.00	0.00

Plan Report for Deepe 13N-27HZ - Plan A 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 (°)
10,100.00	89.81	180.51	7,414.56	-2,333.82	37.29	2,333.39	0.00	0.00	0.00	0.00
10,200.00	89.81	180.51	7,414.88	-2,433.81	36.41	2,433.39	0.00	0.00	0.00	0.00
10,300.00	89.81	180.51	7,415.21	-2,533.81	35.52	2,533.39	0.00	0.00	0.00	0.00
10,400.00	89.81	180.51	7,415.53	-2,633.80	34.64	2,633.39	0.00	0.00	0.00	0.00
10,500.00	89.81	180.51	7,415.85	-2,733.80	33.75	2,733.39	0.00	0.00	0.00	0.00
10,600.00	89.81	180.51	7,416.18	-2,833.80	32.87	2,833.39	0.00	0.00	0.00	0.00
10,700.00	89.81	180.51	7,416.50	-2,933.79	31.98	2,933.39	0.00	0.00	0.00	0.00
10,800.00	89.81	180.51	7,416.82	-3,033.79	31.10	3,033.39	0.00	0.00	0.00	0.00
10,900.00	89.81	180.51	7,417.14	-3,133.78	30.21	3,133.39	0.00	0.00	0.00	0.00
11,000.00	89.81	180.51	7,417.47	-3,233.78	29.33	3,233.39	0.00	0.00	0.00	0.00
11,100.00	89.81	180.51	7,417.79	-3,333.77	28.44	3,333.39	0.00	0.00	0.00	0.00
11,200.00	89.81	180.51	7,418.11	-3,433.77	27.56	3,433.39	0.00	0.00	0.00	0.00
11,300.00	89.81	180.51	7,418.44	-3,533.76	26.67	3,533.39	0.00	0.00	0.00	0.00
11,400.00	89.81	180.51	7,418.76	-3,633.76	25.79	3,633.39	0.00	0.00	0.00	0.00
11,500.00	89.81	180.51	7,419.08	-3,733.76	24.90	3,733.39	0.00	0.00	0.00	0.00
11,600.00	89.81	180.51	7,419.41	-3,833.75	24.02	3,833.39	0.00	0.00	0.00	0.00
11,700.00	89.81	180.51	7,419.73	-3,933.75	23.13	3,933.39	0.00	0.00	0.00	0.00
11,800.00	89.81	180.51	7,420.05	-4,033.74	22.25	4,033.38	0.00	0.00	0.00	0.00
11,900.00	89.81	180.51	7,420.38	-4,133.74	21.36	4,133.38	0.00	0.00	0.00	0.00
12,000.00	89.81	180.51	7,420.70	-4,233.73	20.48	4,233.38	0.00	0.00	0.00	0.00
12,100.00	89.81	180.51	7,421.02	-4,333.73	19.59	4,333.38	0.00	0.00	0.00	0.00
12,200.00	89.81	180.51	7,421.35	-4,433.72	18.71	4,433.38	0.00	0.00	0.00	0.00
12,300.00	89.81	180.51	7,421.67	-4,533.72	17.82	4,533.38	0.00	0.00	0.00	0.00
12,400.00	89.81	180.51	7,421.99	-4,633.72	16.94	4,633.38	0.00	0.00	0.00	0.00
12,500.00	89.81	180.51	7,422.31	-4,733.71	16.05	4,733.38	0.00	0.00	0.00	0.00
12,600.00	89.81	180.51	7,422.64	-4,833.71	15.17	4,833.38	0.00	0.00	0.00	0.00
12,700.00	89.81	180.51	7,422.96	-4,933.70	14.28	4,933.38	0.00	0.00	0.00	0.00
12,800.00	89.81	180.51	7,423.28	-5,033.70	13.40	5,033.38	0.00	0.00	0.00	0.00
12,900.00	89.81	180.51	7,423.61	-5,133.69	12.51	5,133.38	0.00	0.00	0.00	0.00
13,000.00	89.81	180.51	7,423.93	-5,233.69	11.63	5,233.38	0.00	0.00	0.00	0.00
13,100.00	89.81	180.51	7,424.25	-5,333.68	10.74	5,333.38	0.00	0.00	0.00	0.00
13,200.00	89.81	180.51	7,424.58	-5,433.68	9.86	5,433.38	0.00	0.00	0.00	0.00
13,300.00	89.81	180.51	7,424.90	-5,533.68	8.97	5,533.38	0.00	0.00	0.00	0.00
13,400.00	89.81	180.51	7,425.22	-5,633.67	8.09	5,633.38	0.00	0.00	0.00	0.00
13,500.00	89.81	180.51	7,425.55	-5,733.67	7.20	5,733.38	0.00	0.00	0.00	0.00
13,600.00	89.81	180.51	7,425.87	-5,833.66	6.32	5,833.38	0.00	0.00	0.00	0.00
13,700.00	89.81	180.51	7,426.19	-5,933.66	5.43	5,933.37	0.00	0.00	0.00	0.00
13,800.00	89.81	180.51	7,426.51	-6,033.65	4.55	6,033.37	0.00	0.00	0.00	0.00
13,900.00	89.81	180.51	7,426.84	-6,133.65	3.66	6,133.37	0.00	0.00	0.00	0.00
14,000.00	89.81	180.51	7,427.16	-6,233.64	2.78	6,233.37	0.00	0.00	0.00	0.00
14,100.00	89.81	180.51	7,427.48	-6,333.64	1.89	6,333.37	0.00	0.00	0.00	0.00
14,200.00	89.81	180.51	7,427.81	-6,433.64	1.01	6,433.37	0.00	0.00	0.00	0.00
14,300.00	89.81	180.51	7,428.13	-6,533.63	0.12	6,533.37	0.00	0.00	0.00	0.00
14,400.00	89.81	180.51	7,428.45	-6,633.63	-0.76	6,633.37	0.00	0.00	0.00	0.00
14,500.00	89.81	180.51	7,428.78	-6,733.62	-1.65	6,733.37	0.00	0.00	0.00	0.00
14,600.00	89.81	180.51	7,429.10	-6,833.62	-2.53	6,833.37	0.00	0.00	0.00	0.00
14,700.00	89.81	180.51	7,429.42	-6,933.61	-3.42	6,933.37	0.00	0.00	0.00	0.00
14,800.00	89.81	180.51	7,429.75	-7,033.61	-4.30	7,033.37	0.00	0.00	0.00	0.00
14,900.00	89.81	180.51	7,430.07	-7,133.60	-5.19	7,133.37	0.00	0.00	0.00	0.00
15,000.00	89.81	180.51	7,430.39	-7,233.60	-6.07	7,233.37	0.00	0.00	0.00	0.00
15,100.00	89.81	180.51	7,430.71	-7,333.60	-6.96	7,333.37	0.00	0.00	0.00	0.00
15,200.00	89.81	180.51	7,431.04	-7,433.59	-7.84	7,433.37	0.00	0.00	0.00	0.00
15,300.00	89.81	180.51	7,431.36	-7,533.59	-8.73	7,533.37	0.00	0.00	0.00	0.00
15,400.00	89.81	180.51	7,431.68	-7,633.58	-9.61	7,633.37	0.00	0.00	0.00	0.00
15,500.00	89.81	180.51	7,432.01	-7,733.58	-10.50	7,733.37	0.00	0.00	0.00	0.00
15,600.00	89.81	180.51	7,432.33	-7,833.57	-11.38	7,833.36	0.00	0.00	0.00	0.00
15,700.00	89.81	180.51	7,432.65	-7,933.57	-12.27	7,933.36	0.00	0.00	0.00	0.00
15,800.00	89.81	180.51	7,432.98	-8,033.56	-13.15	8,033.36	0.00	0.00	0.00	0.00
15,900.00	89.81	180.51	7,433.30	-8,133.56	-14.04	8,133.36	0.00	0.00	0.00	0.00
16,000.00	89.81	180.51	7,433.62	-8,233.56	-14.92	8,233.36	0.00	0.00	0.00	0.00

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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 (°)
16,100.00	89.81	180.51	7,433.95	-8,333.55	-15.81	8,333.36	0.00	0.00	0.00	0.00
16,200.00	89.81	180.51	7,434.27	-8,433.55	-16.69	8,433.36	0.00	0.00	0.00	0.00
16,300.00	89.81	180.51	7,434.59	-8,533.54	-17.58	8,533.36	0.00	0.00	0.00	0.00
16,400.00	89.81	180.51	7,434.91	-8,633.54	-18.46	8,633.36	0.00	0.00	0.00	0.00
16,500.00	89.81	180.51	7,435.24	-8,733.53	-19.35	8,733.36	0.00	0.00	0.00	0.00
16,600.00	89.81	180.51	7,435.56	-8,833.53	-20.23	8,833.36	0.00	0.00	0.00	0.00
16,700.00	89.81	180.51	7,435.88	-8,933.52	-21.12	8,933.36	0.00	0.00	0.00	0.00
16,800.00	89.81	180.51	7,436.21	-9,033.52	-22.00	9,033.36	0.00	0.00	0.00	0.00
16,900.00	89.81	180.51	7,436.53	-9,133.52	-22.89	9,133.36	0.00	0.00	0.00	0.00
17,000.00	89.81	180.51	7,436.85	-9,233.51	-23.77	9,233.36	0.00	0.00	0.00	0.00
17,100.00	89.81	180.51	7,437.18	-9,333.51	-24.66	9,333.36	0.00	0.00	0.00	0.00
17,200.00	89.81	180.51	7,437.50	-9,433.50	-25.54	9,433.36	0.00	0.00	0.00	0.00
17,300.00	89.81	180.51	7,437.82	-9,533.50	-26.43	9,533.36	0.00	0.00	0.00	0.00
17,400.00	89.81	180.51	7,438.15	-9,633.49	-27.31	9,633.36	0.00	0.00	0.00	0.00
17,500.00	89.81	180.51	7,438.47	-9,733.49	-28.20	9,733.35	0.00	0.00	0.00	0.00
17,600.00	89.81	180.51	7,438.79	-9,833.49	-29.08	9,833.35	0.00	0.00	0.00	0.00
17,664.37	89.81	180.51	7,439.00	-9,897.85	-29.65	9,897.72	0.00	0.00	0.00	0.00

TD Well @ 17664.37 - Total Depth (Toe) - Deepe 13N-27HZ_BHL

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
700.00	700.00	0.00	0.00	Begin Nudge @ 700.00
977.57	977.14	13.37	1.34	End Nudge @ 977.57
6,706.64	6,679.33	564.84	56.54	Top of 4.5" Liner @ 6706.64
6,806.64	6,778.87	574.47	57.51	Begin Build @ 6806.64
7,760.08	7,407.00	6.00	58.00	End Build @ 7760.08
17,664.37	7,439.00	-9,897.85	-29.65	TD Well @ 17664.37

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	180.51	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	17,664.37	Plan A Rev 0-Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
500.00	500.00	9 5/8"	9-5/8	13-1/2
7,760.08	7,407.00	7"	7	8-3/4

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Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,345.17	7,262.00	Sharon Springs		0.00	
7,469.53	7,334.00	Niobrara		0.00	
7,575.69	7,377.00	Niobrara B		0.00	
7,760.08	7,407.00	Landing Target (Heel)		0.00	
17,664.37	7,439.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Deepe 13N-27HZ_BHL	7,439.00	-9,897.85	-29.65	Point
Deepe Sec. Lines	0.00	0.00	0.00	Polygon
Deepe 13N-27HZ_SHL	0.00	0.00	0.00	Point
Deepe 13N-27HZ_CP	7,407.00	6.00	58.00	Point

North Reference Sheet for Sec. 22-T2N-R67W - Deepe 13N-27HZ - Plan A 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" @ 5024.00ft (Drilling Rig). Northing and Easting are relative to Deepe 13N-27HZ

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: 0.99995908

Grid Coordinates of Well: 1,290,513.21 ft N, 3,172,500.72 ft E

Geographical Coordinates of Well: 40° 07' 45.14" N, 104° 52' 59.12" W

Grid Convergence at Surface is: 0.40°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,664.37ft
the Bottom Hole Displacement is 9,897.90ft in the Direction of 180.17° (True).

Magnetic Convergence at surface is: -8.27° (10 June 2013, , BGGM2013)

