

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 23-T2N-R66W

Turkey Springs 27N-14HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

27 November, 2012

Well Coordinates: 1,291,186.70 N, 3,212,979.08 E (40° 07' 48.68" N, 104° 44' 17.93" W)

Ground Level: 5,102.00 ft

Local Coordinate Origin: Centered on Well Turkey Springs 27N-14HZ

Viewing Datum: RKB=17 @ 5119.00ft (Drilling Rig)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 23-T2N-R66W
 Well: Turkey Springs 27N-14HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.

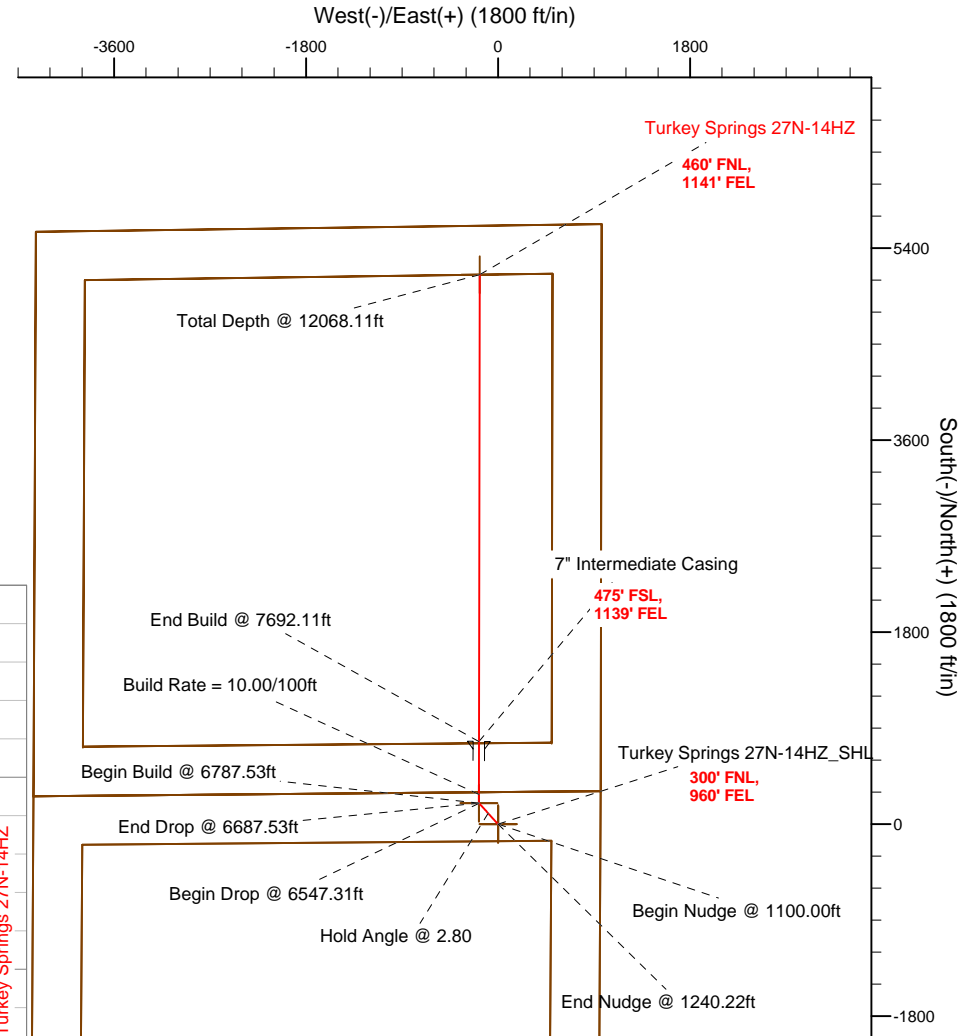
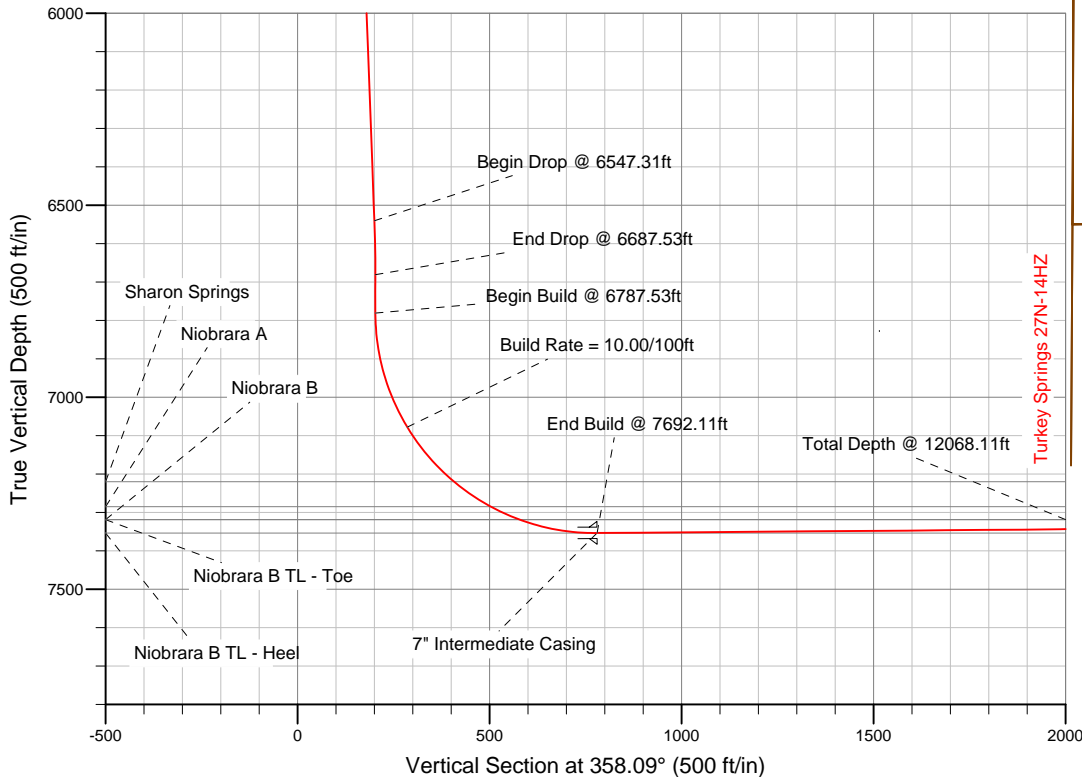


SECTION DETAILS

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	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1240.22	2.80	317.66	1240.16	2.54	-2.31	2.00	317.66	2.61	
4	6547.31	2.80	317.66	6540.90	194.46	-177.19	0.00	0.00	200.26	
5	6687.53	0.00	0.00	6681.06	197.00	-179.50	2.00	180.00	202.87	Turkey Springs 27N-14HZ_DPtgt
6	6787.53	0.00	0.00	6781.06	197.00	-179.50	0.00	0.00	202.87	Turkey Springs 27N-14HZ_DPtgt2
7	7692.11	90.46	0.09	7354.00	774.54	-178.59	10.00	0.09	780.06	
8	12068.11	90.46	0.09	7319.00	5150.40	-171.66	0.00	0.00	5153.26	Turkey Springs 27N-14HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Turkey Springs 27N-14HZ_SB22	0.00	0.00	0.00	40.130190	-104.738314	Polygon
Turkey Springs 27N-14HZ_SB23	0.00	0.00	0.00	40.130190	-104.738314	Polygon
Turkey Springs 27N-14HZ_Sec22	0.00	0.00	0.00	40.130190	-104.738314	Polygon
Turkey Springs 27N-14HZ_Sec23	0.00	0.00	0.00	40.130190	-104.738314	Polygon
Turkey Springs 27N-14HZ_SHL	0.00	0.00	0.00	40.130190	-104.738314	Point
Turkey Springs 27N-14HZ_DPtgt	6681.06	197.00	-179.50	40.130731	-104.738956	Point
Turkey Springs 27N-14HZ_DPtgt2	6781.06	197.00	-179.50	40.130731	-104.738956	Point
Turkey Springs 27N-14HZ_BHL	7319.00	5150.40	-171.66	40.144328	-104.738928	Point



WELL DETAILS: Turkey Springs 27N-14HZ

Ground Level 5102.00 RKB=17 @ 5119.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Turkey Springs 27N-14HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 12/14/2012
 Reviewed: _____ Date: _____

Plan Report for Turkey Springs 27N-14HZ - 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
Turkey Springs 27N-14HZ_SB22 - Turkey Springs 27N-14HZ_SB23 - Turkey Springs 27N-14HZ_SHL - Turkey Springs 27N-14HZ_										
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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1100.00ft										
1,200.00	2.00	317.66	1,199.98	1.29	-1.18	1.33	2.00	2.00	0.00	317.66
1,240.22	2.80	317.66	1,240.16	2.54	-2.31	2.61	2.00	2.00	0.00	0.00
End Nudge @ 1240.22ft										
1,300.00	2.80	317.66	1,299.87	4.70	-4.28	4.84	0.00	0.00	0.00	0.00
1,400.00	2.80	317.66	1,399.75	8.31	-7.58	8.56	0.00	0.00	0.00	0.00
1,500.00	2.80	317.66	1,499.63	11.93	-10.87	12.29	0.00	0.00	0.00	0.00
1,600.00	2.80	317.66	1,599.51	15.55	-14.17	16.01	0.00	0.00	0.00	0.00
1,700.00	2.80	317.66	1,699.39	19.16	-17.46	19.73	0.00	0.00	0.00	0.00
1,800.00	2.80	317.66	1,799.27	22.78	-20.76	23.46	0.00	0.00	0.00	0.00
1,900.00	2.80	317.66	1,899.15	26.40	-24.05	27.18	0.00	0.00	0.00	0.00
2,000.00	2.80	317.66	1,999.03	30.01	-27.35	30.91	0.00	0.00	0.00	0.00
2,100.00	2.80	317.66	2,098.91	33.63	-30.64	34.63	0.00	0.00	0.00	0.00
2,200.00	2.80	317.66	2,198.79	37.25	-33.94	38.36	0.00	0.00	0.00	0.00
2,300.00	2.80	317.66	2,298.67	40.86	-37.23	42.08	0.00	0.00	0.00	0.00
2,400.00	2.80	317.66	2,398.56	44.48	-40.53	45.80	0.00	0.00	0.00	0.00
2,500.00	2.80	317.66	2,498.44	48.10	-43.82	49.53	0.00	0.00	0.00	0.00
2,600.00	2.80	317.66	2,598.32	51.71	-47.12	53.25	0.00	0.00	0.00	0.00
2,700.00	2.80	317.66	2,698.20	55.33	-50.41	56.98	0.00	0.00	0.00	0.00
2,800.00	2.80	317.66	2,798.08	58.94	-53.71	60.70	0.00	0.00	0.00	0.00
2,900.00	2.80	317.66	2,897.96	62.56	-57.00	64.43	0.00	0.00	0.00	0.00
3,000.00	2.80	317.66	2,997.84	66.18	-60.30	68.15	0.00	0.00	0.00	0.00
3,100.00	2.80	317.66	3,097.72	69.79	-63.59	71.87	0.00	0.00	0.00	0.00
3,200.00	2.80	317.66	3,197.60	73.41	-66.89	75.60	0.00	0.00	0.00	0.00
3,300.00	2.80	317.66	3,297.48	77.03	-70.18	79.32	0.00	0.00	0.00	0.00
3,400.00	2.80	317.66	3,397.36	80.64	-73.48	83.05	0.00	0.00	0.00	0.00
3,500.00	2.80	317.66	3,497.24	84.26	-76.77	86.77	0.00	0.00	0.00	0.00
3,600.00	2.80	317.66	3,597.12	87.88	-80.07	90.49	0.00	0.00	0.00	0.00
3,700.00	2.80	317.66	3,697.00	91.49	-83.37	94.22	0.00	0.00	0.00	0.00
3,800.00	2.80	317.66	3,796.88	95.11	-86.66	97.94	0.00	0.00	0.00	0.00
3,900.00	2.80	317.66	3,896.76	98.73	-89.96	101.67	0.00	0.00	0.00	0.00
4,000.00	2.80	317.66	3,996.64	102.34	-93.25	105.39	0.00	0.00	0.00	0.00
Hold Angle @ 2.80										
4,100.00	2.80	317.66	4,096.52	105.96	-96.55	109.12	0.00	0.00	0.00	0.00
4,200.00	2.80	317.66	4,196.40	109.57	-99.84	112.84	0.00	0.00	0.00	0.00
4,228.63	2.80	317.66	4,225.00	110.61	-100.78	113.91	0.00	0.00	0.00	0.00
Parkman										
4,300.00	2.80	317.66	4,296.28	113.19	-103.14	116.56	0.00	0.00	0.00	0.00
4,400.00	2.80	317.66	4,396.16	116.81	-106.43	120.29	0.00	0.00	0.00	0.00
4,500.00	2.80	317.66	4,496.04	120.42	-109.73	124.01	0.00	0.00	0.00	0.00
4,600.00	2.80	317.66	4,595.92	124.04	-113.02	127.74	0.00	0.00	0.00	0.00
4,620.10	2.80	317.66	4,616.00	124.77	-113.68	128.49	0.00	0.00	0.00	0.00
Sussex										
4,700.00	2.80	317.66	4,695.80	127.66	-116.32	131.46	0.00	0.00	0.00	0.00
4,800.00	2.80	317.66	4,795.68	131.27	-119.61	135.19	0.00	0.00	0.00	0.00

Plan Report for Turkey Springs 27N-14HZ - 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 (°)
4,900.00	2.80	317.66	4,895.56	134.89	-122.91	138.91	0.00	0.00	0.00	0.00
5,000.00	2.80	317.66	4,995.44	138.51	-126.20	142.63	0.00	0.00	0.00	0.00
5,100.00	2.80	317.66	5,095.32	142.12	-129.50	146.36	0.00	0.00	0.00	0.00
5,200.00	2.80	317.66	5,195.20	145.74	-132.79	150.08	0.00	0.00	0.00	0.00
5,300.00	2.80	317.66	5,295.08	149.36	-136.09	153.81	0.00	0.00	0.00	0.00
5,400.00	2.80	317.66	5,394.96	152.97	-139.38	157.53	0.00	0.00	0.00	0.00
5,500.00	2.80	317.66	5,494.84	156.59	-142.68	161.25	0.00	0.00	0.00	0.00
5,600.00	2.80	317.66	5,594.72	160.21	-145.97	164.98	0.00	0.00	0.00	0.00
5,700.00	2.80	317.66	5,694.60	163.82	-149.27	168.70	0.00	0.00	0.00	0.00
5,800.00	2.80	317.66	5,794.48	167.44	-152.56	172.43	0.00	0.00	0.00	0.00
5,900.00	2.80	317.66	5,894.36	171.05	-155.86	176.15	0.00	0.00	0.00	0.00
6,000.00	2.80	317.66	5,994.24	174.67	-159.15	179.88	0.00	0.00	0.00	0.00
6,100.00	2.80	317.66	6,094.12	178.29	-162.45	183.60	0.00	0.00	0.00	0.00
6,200.00	2.80	317.66	6,194.00	181.90	-165.74	187.32	0.00	0.00	0.00	0.00
6,300.00	2.80	317.66	6,293.88	185.52	-169.04	191.05	0.00	0.00	0.00	0.00
6,400.00	2.80	317.66	6,393.76	189.14	-172.34	194.77	0.00	0.00	0.00	0.00
6,500.00	2.80	317.66	6,493.65	192.75	-175.63	198.50	0.00	0.00	0.00	0.00
6,547.31	2.80	317.66	6,540.90	194.46	-177.19	200.26	0.00	0.00	0.00	0.00
Begin Drop @ 6547.31ft										
6,600.00	1.75	317.66	6,593.55	196.01	-178.60	201.85	2.00	-2.00	0.00	180.00
6,687.53	0.00	0.00	6,681.06	197.00	-179.50	202.87	2.00	-2.00	48.37	180.00
End Drop @ 6687.53ft - Turkey Springs 27N-14HZ_DPtgt										
6,700.00	0.00	0.00	6,693.53	197.00	-179.50	202.87	0.00	0.00	0.00	180.00
6,787.53	0.00	0.00	6,781.06	197.00	-179.50	202.87	0.00	0.00	0.00	0.00
Begin Build @ 6787.53ft - Turkey Springs 27N-14HZ_DPtgt2										
6,800.00	1.25	0.09	6,793.53	197.14	-179.50	203.01	10.00	10.00	0.00	0.09
6,900.00	11.25	0.09	6,892.81	208.00	-179.48	213.87	10.00	10.00	0.00	0.00
7,000.00	21.25	0.09	6,988.70	235.95	-179.44	241.79	10.00	10.00	0.00	0.00
7,100.00	31.25	0.09	7,078.27	280.11	-179.37	285.93	10.00	10.00	0.00	0.00
Build Rate = 10.00/100ft										
7,200.00	41.25	0.09	7,158.82	339.17	-179.27	344.95	10.00	10.00	0.00	0.00
7,287.57	50.00	0.09	7,220.00	401.70	-179.18	407.45	10.00	10.00	0.00	0.00
Sharon Springs										
7,300.00	51.25	0.09	7,227.88	411.31	-179.16	417.05	10.00	10.00	0.00	0.00
7,400.00	61.25	0.09	7,283.37	494.35	-179.03	500.04	10.00	10.00	0.00	0.00
7,403.40	61.59	0.09	7,285.00	497.33	-179.02	503.02	10.00	10.00	0.00	0.00
Niobrara A										
7,486.17	69.86	0.09	7,319.00	572.72	-178.91	578.37	10.00	10.00	0.00	0.00
Niobrara B										
7,500.00	71.25	0.09	7,323.60	585.76	-178.88	591.39	10.00	10.00	0.00	0.00
7,600.00	81.25	0.09	7,347.35	682.77	-178.73	688.34	10.00	10.00	0.00	0.00
7,692.04	90.46	0.09	7,354.00	774.47	-178.59	779.99	10.01	10.01	0.00	0.00
Niobrara B TL - Heel										
7,692.11	90.46	0.09	7,354.00	774.54	-178.59	780.06	0.03	-0.03	0.00	-180.00
End Build @ 7692.11ft - 7" Intermediate Casing										
7,700.00	90.46	0.09	7,353.94	782.43	-178.57	787.94	0.00	0.00	0.00	0.00
7,800.00	90.46	0.09	7,353.14	882.43	-178.41	887.88	0.00	0.00	0.00	0.00
7,900.00	90.46	0.09	7,352.34	982.42	-178.26	987.82	0.00	0.00	0.00	0.00
8,000.00	90.46	0.09	7,351.54	1,082.42	-178.10	1,087.75	0.00	0.00	0.00	0.00
8,100.00	90.46	0.09	7,350.74	1,182.42	-177.94	1,187.69	0.00	0.00	0.00	0.00
8,200.00	90.46	0.09	7,349.94	1,282.41	-177.78	1,287.62	0.00	0.00	0.00	0.00
8,300.00	90.46	0.09	7,349.14	1,382.41	-177.62	1,387.56	0.00	0.00	0.00	0.00
8,400.00	90.46	0.09	7,348.34	1,482.41	-177.46	1,487.49	0.00	0.00	0.00	0.00
8,500.00	90.46	0.09	7,347.54	1,582.40	-177.31	1,587.43	0.00	0.00	0.00	0.00
8,600.00	90.46	0.09	7,346.74	1,682.40	-177.15	1,687.37	0.00	0.00	0.00	0.00
8,700.00	90.46	0.09	7,345.94	1,782.40	-176.99	1,787.30	0.00	0.00	0.00	0.00
8,800.00	90.46	0.09	7,345.14	1,882.39	-176.83	1,887.24	0.00	0.00	0.00	0.00
8,900.00	90.46	0.09	7,344.34	1,982.39	-176.67	1,987.17	0.00	0.00	0.00	0.00

Plan Report for Turkey Springs 27N-14HZ - 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)	Tooface Azimuth (°)
9,000.00	90.46	0.09	7,343.54	2,082.39	-176.51	2,087.11	0.00	0.00	0.00	0.00
9,100.00	90.46	0.09	7,342.74	2,182.38	-176.36	2,187.05	0.00	0.00	0.00	0.00
9,200.00	90.46	0.09	7,341.94	2,282.38	-176.20	2,286.98	0.00	0.00	0.00	0.00
9,300.00	90.46	0.09	7,341.14	2,382.38	-176.04	2,386.92	0.00	0.00	0.00	0.00
9,400.00	90.46	0.09	7,340.34	2,482.37	-175.88	2,486.85	0.00	0.00	0.00	0.00
9,500.00	90.46	0.09	7,339.54	2,582.37	-175.72	2,586.79	0.00	0.00	0.00	0.00
9,600.00	90.46	0.09	7,338.74	2,682.37	-175.56	2,686.73	0.00	0.00	0.00	0.00
9,700.00	90.46	0.09	7,337.94	2,782.36	-175.41	2,786.66	0.00	0.00	0.00	0.00
9,800.00	90.46	0.09	7,337.14	2,882.36	-175.25	2,886.60	0.00	0.00	0.00	0.00
9,900.00	90.46	0.09	7,336.34	2,982.36	-175.09	2,986.53	0.00	0.00	0.00	0.00
10,000.00	90.46	0.09	7,335.54	3,082.35	-174.93	3,086.47	0.00	0.00	0.00	0.00
10,100.00	90.46	0.09	7,334.74	3,182.35	-174.77	3,186.41	0.00	0.00	0.00	0.00
10,200.00	90.46	0.09	7,333.94	3,282.35	-174.61	3,286.34	0.00	0.00	0.00	0.00
10,300.00	90.46	0.09	7,333.14	3,382.34	-174.46	3,386.28	0.00	0.00	0.00	0.00
10,400.00	90.46	0.09	7,332.34	3,482.34	-174.30	3,486.21	0.00	0.00	0.00	0.00
10,500.00	90.46	0.09	7,331.54	3,582.34	-174.14	3,586.15	0.00	0.00	0.00	0.00
10,600.00	90.46	0.09	7,330.74	3,682.33	-173.98	3,686.08	0.00	0.00	0.00	0.00
10,700.00	90.46	0.09	7,329.94	3,782.33	-173.82	3,786.02	0.00	0.00	0.00	0.00
10,800.00	90.46	0.09	7,329.14	3,882.33	-173.67	3,885.96	0.00	0.00	0.00	0.00
10,900.00	90.46	0.09	7,328.34	3,982.32	-173.51	3,985.89	0.00	0.00	0.00	0.00
11,000.00	90.46	0.09	7,327.54	4,082.32	-173.35	4,085.83	0.00	0.00	0.00	0.00
11,100.00	90.46	0.09	7,326.74	4,182.32	-173.19	4,185.76	0.00	0.00	0.00	0.00
11,200.00	90.46	0.09	7,325.94	4,282.31	-173.03	4,285.70	0.00	0.00	0.00	0.00
11,300.00	90.46	0.09	7,325.14	4,382.31	-172.87	4,385.64	0.00	0.00	0.00	0.00
11,400.00	90.46	0.09	7,324.34	4,482.31	-172.72	4,485.57	0.00	0.00	0.00	0.00
11,500.00	90.46	0.09	7,323.54	4,582.30	-172.56	4,585.51	0.00	0.00	0.00	0.00
11,600.00	90.46	0.09	7,322.74	4,682.30	-172.40	4,685.44	0.00	0.00	0.00	0.00
11,700.00	90.46	0.09	7,321.94	4,782.30	-172.24	4,785.38	0.00	0.00	0.00	0.00
11,800.00	90.46	0.09	7,321.14	4,882.29	-172.08	4,885.32	0.00	0.00	0.00	0.00
11,900.00	90.46	0.09	7,320.34	4,982.29	-171.92	4,985.25	0.00	0.00	0.00	0.00
12,000.00	90.46	0.09	7,319.54	5,082.29	-171.77	5,085.19	0.00	0.00	0.00	0.00
12,068.10	90.46	0.09	7,319.00	5,150.38	-171.66	5,153.24	0.00	0.00	0.00	0.00
Niobrara B TL - Toe										
12,068.11	90.46	0.09	7,319.00	5,150.39	-171.66	5,153.25	0.00	0.00	0.00	0.00
Total Depth @ 12068.11ft - Turkey Springs 27N-14HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,240.22	1,240.16	2.54	-2.31	End Nudge @ 1240.22ft
4,000.00	3,996.64	102.34	-93.25	Hold Angle @ 2.80
6,547.31	6,540.90	194.46	-177.19	Begin Drop @ 6547.31ft
6,687.53	6,681.06	197.00	-179.50	End Drop @ 6687.53ft
6,787.53	6,781.06	197.00	-179.50	Begin Build @ 6787.53ft
7,100.00	7,078.27	280.11	-179.37	Build Rate = 10.00/100ft
7,692.11	7,354.00	774.54	-178.59	End Build @ 7692.11ft
12,068.11	7,319.00	5,150.39	-171.66	Total Depth @ 12068.11ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Turkey Springs 27N-14HZ_BHL	358.09	Slot	0.00	0.00	0.00

Plan Report for Turkey Springs 27N-14HZ - Plan A Rev 0 Permit**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,068.11	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,692.11	7,354.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,228.63	4,225.00	Parkman		0.00	
4,620.10	4,616.00	Sussex		0.00	
7,287.57	7,220.00	Sharon Springs		0.00	
7,403.40	7,285.00	Niobrara A		0.00	
7,486.17	7,319.00	Niobrara B		0.00	
7,692.04	7,354.00	Niobrara B TL - Heel		0.00	
12,068.10	7,319.00	Niobrara B TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Turkey Springs 27N-14HZ_Sec23	0.00	0.00	0.00	Polygon
Turkey Springs 27N-14HZ_SB22	0.00	0.00	0.00	Polygon
Turkey Springs 27N-14HZ_DPtgt2	6,781.06	197.00	-179.50	Point
Turkey Springs 27N-14HZ_SB23	0.00	0.00	0.00	Polygon
Turkey Springs 27N-14HZ_DPtgt	6,681.06	197.00	-179.50	Point
Turkey Springs 27N-14HZ_Sec22	0.00	0.00	0.00	Polygon
Turkey Springs 27N-14HZ_SHL	0.00	0.00	0.00	Point
Turkey Springs 27N-14HZ_BHL	7,319.00	5,150.40	-171.66	Point

North Reference Sheet for Sec. 23-T2N-R66W - Turkey Springs 27N-14HZ - 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 @ 5119.00ft (Drilling Rig). Northing and Easting are relative to Turkey Springs 27N-14HZ

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: 0.99995905

Grid Coordinates of Well: 1,291,186.70 ft N, 3,212,979.08 ft E

Geographical Coordinates of Well: 40° 07' 48.68" N, 104° 44' 17.93" W

Grid Convergence at Surface is: 0.49°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,068.11ft
the Bottom Hole Displacement is 5,153.25ft in the Direction of 358.09° (True).

Magnetic Convergence at surface is: -8.19° (26 November 2012, , BGGM2012)

