

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22-T3N-R66W

Roberts 35N-22HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

17 September, 2012

Well Coordinates: 1,322,447.64 N, 3,203,497.53 E (40° 12' 58.40" N, 104° 46' 16.69" W)

Ground Level: 4,885.00 ft

Local Coordinate Origin:	Centered on Well Roberts 35N-22HZ
Viewing Datum:	RKB=17 @ 4902.00ft (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. 22-T3N-R66W
 Well: Roberts 35N-22HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.



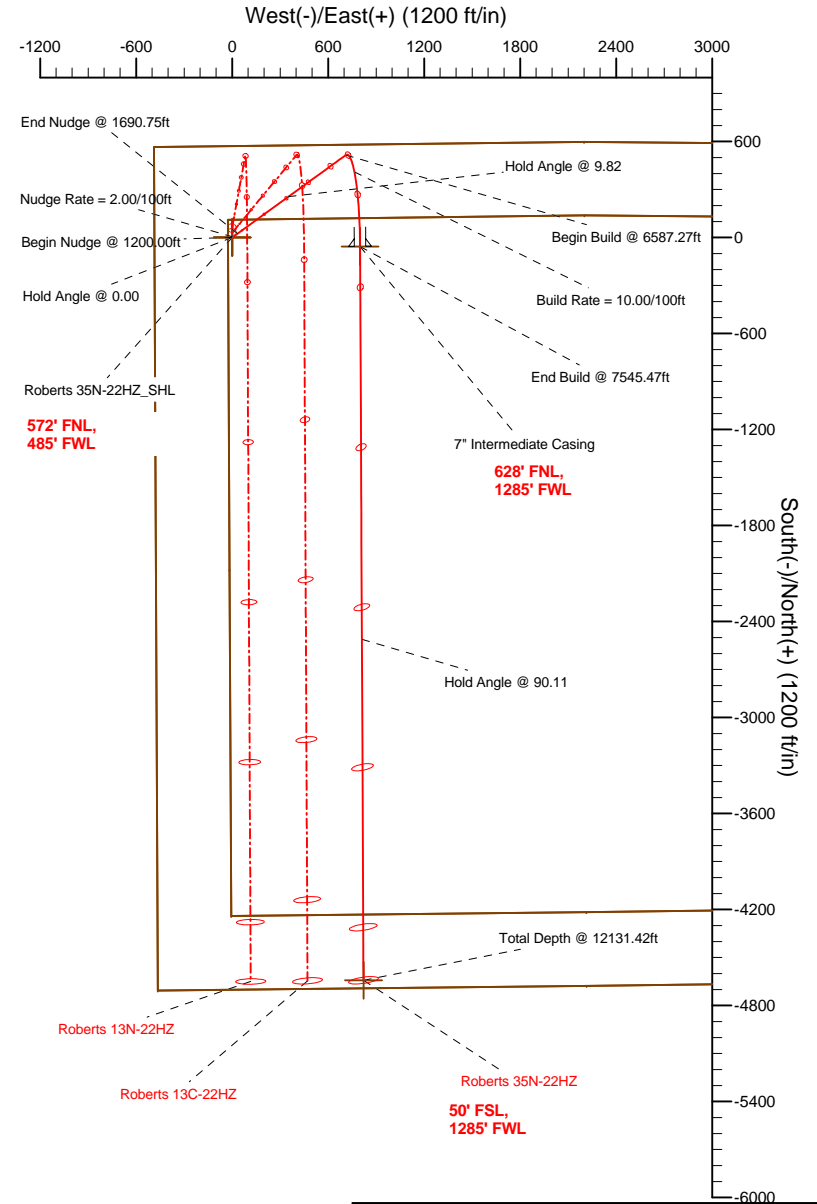
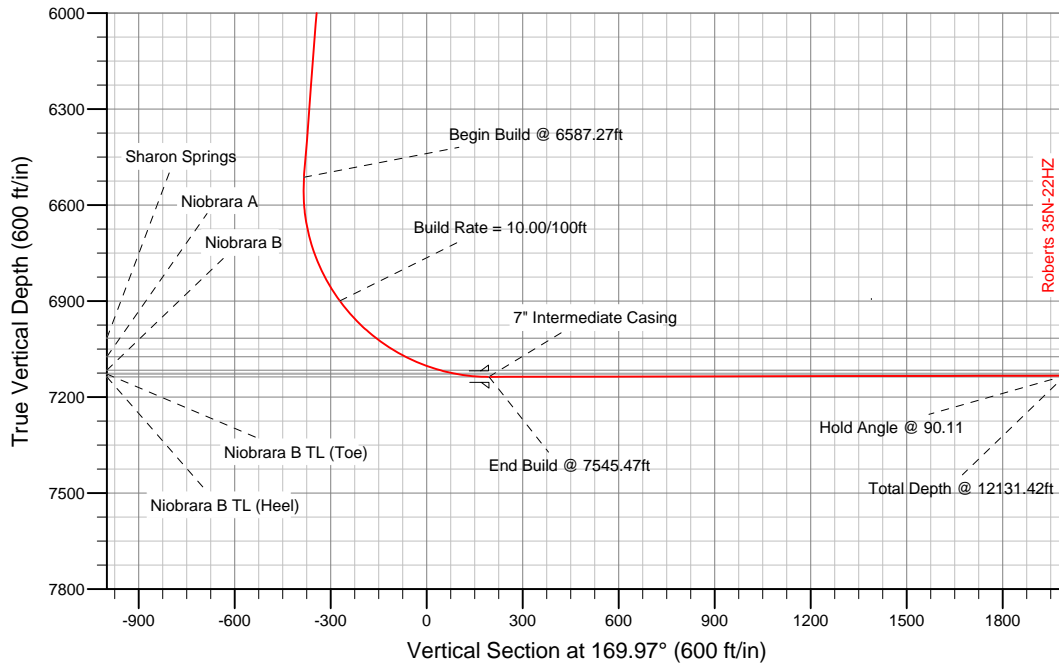
SECTION DETAILS

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1690.75	9.82	54.04	1688.36	24.62	33.94	2.00	54.04	-18.34	
4	6587.27	9.82	54.04	6513.20	514.82	709.54	0.00	0.00	-383.33	
5	7545.47	90.11	179.73	7137.00	-56.00	800.00	10.00	125.28	194.51	Roberts 35N-22HZ_Casing Point
6	12131.42	90.11	179.73	7128.00	-4641.89	821.23	0.00	0.00	4713.97	Roberts 35N-22HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Roberts 35N-22HZ_Section Lines	0.00	0.00	0.00	40.216221	-104.771303	Polygon
Roberts 35N-22HZ_Setback Lines	0.00	0.00	0.00	40.216221	-104.771303	Polygon
Roberts 35N-22HZ_SHL	0.00	0.00	0.00	40.216221	-104.771303	Point
Roberts 35N-22HZ_BHL	7128.00	-4641.89	821.23	40.203479	-104.768363	Point
Roberts 35N-22HZ_Casing Point	7137.00	-56.00	800.00	40.216067	-104.768438	Point

Target Line:
7137.05' TVDkb @ 0' VS Drilling 90.11°



WELL DETAILS: Roberts 35N-22HZ

Ground Level: 4885.00 RKB=17 @ 4902.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Roberts 35N-22HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 09/17/2012
 Reviewed: _____ Date: _____

Plan Report for Roberts 35N-22HZ - 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
Roberts 35N-22HZ_SHL - Roberts 35N-22HZ_Section Lines - Roberts 35N-22HZ_Setback Lines										
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
Hold Angle @ 0.00										
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
751.00	0.00	0.00	751.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
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	54.04	1,299.98	1.02	1.41	-0.76	2.00	2.00	0.00	54.04
1,400.00	4.00	54.04	1,399.84	4.10	5.65	-3.05	2.00	2.00	0.00	0.00
Nudge Rate = 2.00/100ft										
1,500.00	6.00	54.04	1,499.45	9.22	12.70	-6.86	2.00	2.00	0.00	0.00
1,600.00	8.00	54.04	1,598.70	16.37	22.57	-12.19	2.00	2.00	0.00	0.00
1,690.75	9.82	54.04	1,688.35	24.62	33.94	-18.34	2.00	2.00	0.00	0.00
End Nudge @ 1690.75ft										
1,700.00	9.82	54.04	1,697.47	25.55	35.22	-19.03	0.00	0.00	0.00	0.00
1,800.00	9.82	54.04	1,796.00	35.56	49.01	-26.48	0.00	0.00	0.00	0.00
1,900.00	9.82	54.04	1,894.54	45.57	62.81	-33.93	0.00	0.00	0.00	0.00
2,000.00	9.82	54.04	1,993.08	55.58	76.61	-41.39	0.00	0.00	0.00	0.00
2,100.00	9.82	54.04	2,091.61	65.59	90.41	-48.84	0.00	0.00	0.00	0.00
2,200.00	9.82	54.04	2,190.15	75.61	104.20	-56.30	0.00	0.00	0.00	0.00
2,300.00	9.82	54.04	2,288.69	85.62	118.00	-63.75	0.00	0.00	0.00	0.00
2,400.00	9.82	54.04	2,387.22	95.63	131.80	-71.20	0.00	0.00	0.00	0.00
2,500.00	9.82	54.04	2,485.76	105.64	145.60	-78.66	0.00	0.00	0.00	0.00
2,600.00	9.82	54.04	2,584.29	115.65	159.39	-86.11	0.00	0.00	0.00	0.00
2,700.00	9.82	54.04	2,682.83	125.66	173.19	-93.57	0.00	0.00	0.00	0.00
2,800.00	9.82	54.04	2,781.37	135.67	186.99	-101.02	0.00	0.00	0.00	0.00
2,900.00	9.82	54.04	2,879.90	145.68	200.79	-108.48	0.00	0.00	0.00	0.00
3,000.00	9.82	54.04	2,978.44	155.69	214.58	-115.93	0.00	0.00	0.00	0.00
3,100.00	9.82	54.04	3,076.98	165.71	228.38	-123.38	0.00	0.00	0.00	0.00
3,200.00	9.82	54.04	3,175.51	175.72	242.18	-130.84	0.00	0.00	0.00	0.00
3,300.00	9.82	54.04	3,274.05	185.73	255.98	-138.29	0.00	0.00	0.00	0.00
3,400.00	9.82	54.04	3,372.59	195.74	269.77	-145.75	0.00	0.00	0.00	0.00
3,500.00	9.82	54.04	3,471.12	205.75	283.57	-153.20	0.00	0.00	0.00	0.00
3,600.00	9.82	54.04	3,569.66	215.76	297.37	-160.66	0.00	0.00	0.00	0.00
3,700.00	9.82	54.04	3,668.19	225.77	311.17	-168.11	0.00	0.00	0.00	0.00
3,800.00	9.82	54.04	3,766.73	235.78	324.96	-175.56	0.00	0.00	0.00	0.00
3,900.00	9.82	54.04	3,865.27	245.79	338.76	-183.02	0.00	0.00	0.00	0.00
3,903.79	9.82	54.04	3,869.00	246.17	339.29	-183.30	0.00	0.00	0.00	0.00
Parkman										
4,000.00	9.82	54.04	3,963.80	255.80	352.56	-190.47	0.00	0.00	0.00	0.00
Hold Angle @ 9.82										
4,100.00	9.82	54.04	4,062.34	265.82	366.36	-197.93	0.00	0.00	0.00	0.00
4,200.00	9.82	54.04	4,160.88	275.83	380.16	-205.38	0.00	0.00	0.00	0.00
4,300.00	9.82	54.04	4,259.41	285.84	393.95	-212.84	0.00	0.00	0.00	0.00
4,400.00	9.82	54.04	4,357.95	295.85	407.75	-220.29	0.00	0.00	0.00	0.00
4,459.93	9.82	54.04	4,417.00	301.85	416.02	-224.76	0.00	0.00	0.00	0.00
Sussex										

Plan Report for Roberts 35N-22HZ - 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 (°)
4,500.00	9.82	54.04	4,456.48	305.86	421.55	-227.74	0.00	0.00	0.00	0.00
4,600.00	9.82	54.04	4,555.02	315.87	435.35	-235.20	0.00	0.00	0.00	0.00
4,700.00	9.82	54.04	4,653.56	325.88	449.14	-242.65	0.00	0.00	0.00	0.00
4,800.00	9.82	54.04	4,752.09	335.89	462.94	-250.11	0.00	0.00	0.00	0.00
4,900.00	9.82	54.04	4,850.63	345.90	476.74	-257.56	0.00	0.00	0.00	0.00
5,000.00	9.82	54.04	4,949.17	355.92	490.54	-265.02	0.00	0.00	0.00	0.00
5,100.00	9.82	54.04	5,047.70	365.93	504.33	-272.47	0.00	0.00	0.00	0.00
5,200.00	9.82	54.04	5,146.24	375.94	518.13	-279.92	0.00	0.00	0.00	0.00
5,300.00	9.82	54.04	5,244.78	385.95	531.93	-287.38	0.00	0.00	0.00	0.00
5,400.00	9.82	54.04	5,343.31	395.96	545.73	-294.83	0.00	0.00	0.00	0.00
5,500.00	9.82	54.04	5,441.85	405.97	559.52	-302.29	0.00	0.00	0.00	0.00
5,600.00	9.82	54.04	5,540.38	415.98	573.32	-309.74	0.00	0.00	0.00	0.00
5,700.00	9.82	54.04	5,638.92	425.99	587.12	-317.20	0.00	0.00	0.00	0.00
5,800.00	9.82	54.04	5,737.46	436.00	600.92	-324.65	0.00	0.00	0.00	0.00
5,900.00	9.82	54.04	5,835.99	446.01	614.71	-332.10	0.00	0.00	0.00	0.00
6,000.00	9.82	54.04	5,934.53	456.03	628.51	-339.56	0.00	0.00	0.00	0.00
6,100.00	9.82	54.04	6,033.07	466.04	642.31	-347.01	0.00	0.00	0.00	0.00
6,200.00	9.82	54.04	6,131.60	476.05	656.11	-354.47	0.00	0.00	0.00	0.00
6,300.00	9.82	54.04	6,230.14	486.06	669.91	-361.92	0.00	0.00	0.00	0.00
6,400.00	9.82	54.04	6,328.67	496.07	683.70	-369.37	0.00	0.00	0.00	0.00
6,500.00	9.82	54.04	6,427.21	506.08	697.50	-376.83	0.00	0.00	0.00	0.00
6,587.27	9.82	54.04	6,513.20	514.82	709.54	-383.33	0.00	0.00	0.00	0.00
Begin Build @ 6587.27ft										
6,600.00	9.14	60.59	6,525.76	515.95	711.30	-384.14	10.00	-5.32	51.52	125.28
6,700.00	9.73	124.73	6,624.66	515.03	725.20	-380.82	10.00	0.60	64.13	118.81
6,800.00	17.46	153.18	6,721.88	496.78	738.95	-360.45	10.00	7.72	28.45	55.38
6,900.00	26.71	163.50	6,814.48	461.76	752.14	-323.67	10.00	9.25	10.32	27.64
7,000.00	36.34	168.71	6,899.64	411.03	764.35	-271.59	10.00	9.63	5.21	18.04
Build Rate = 10.00/100ft										
7,100.00	46.11	171.95	6,974.77	346.13	775.23	-205.79	10.00	9.77	3.24	13.58
7,163.15	52.32	173.49	7,016.00	298.73	781.26	-158.05	10.00	9.83	2.44	11.13
Sharon Springs										
7,200.00	55.95	174.27	7,037.59	269.04	784.44	-128.27	10.00	9.85	2.12	10.13
7,271.76	63.03	175.62	7,074.00	207.49	789.85	-66.72	10.00	9.87	1.88	9.67
Niobrara A										
7,300.00	65.82	176.10	7,086.19	182.09	791.69	-41.39	10.00	9.88	1.71	8.98
7,387.96	74.52	177.49	7,116.00	99.56	796.29	40.68	10.00	9.89	1.58	8.77
Niobrara B										
7,400.00	75.71	177.67	7,119.09	87.93	796.78	52.22	10.00	9.90	1.49	8.30
7,500.00	85.61	179.10	7,135.30	-10.58	799.54	149.70	10.00	9.90	1.43	8.26
7,545.47	90.11	179.73	7,137.00	-56.00	800.00	194.51	10.00	9.90	1.39	8.02
End Build @ 7545.47ft - Niobrara B TL (Heel) - 7" Intermediate Casing - Roberts 35N-22HZ_Casing Point										
7,600.00	90.11	179.73	7,136.89	-110.53	800.25	248.25	0.00	0.00	0.00	8.00
7,700.00	90.11	179.73	7,136.70	-210.53	800.72	346.80	0.00	0.00	0.00	0.00
7,800.00	90.11	179.73	7,136.50	-310.53	801.18	445.35	0.00	0.00	0.00	0.00
7,900.00	90.11	179.73	7,136.30	-410.53	801.64	543.90	0.00	0.00	0.00	0.00
8,000.00	90.11	179.73	7,136.11	-510.53	802.10	642.45	0.00	0.00	0.00	0.00
8,100.00	90.11	179.73	7,135.91	-610.52	802.57	741.01	0.00	0.00	0.00	0.00
8,200.00	90.11	179.73	7,135.72	-710.52	803.03	839.56	0.00	0.00	0.00	0.00
8,300.00	90.11	179.73	7,135.52	-810.52	803.49	938.11	0.00	0.00	0.00	0.00
8,400.00	90.11	179.73	7,135.32	-910.52	803.96	1,036.66	0.00	0.00	0.00	0.00
8,500.00	90.11	179.73	7,135.13	-1,010.52	804.42	1,135.21	0.00	0.00	0.00	0.00
8,600.00	90.11	179.73	7,134.93	-1,110.52	804.88	1,233.76	0.00	0.00	0.00	0.00
8,700.00	90.11	179.73	7,134.73	-1,210.52	805.34	1,332.31	0.00	0.00	0.00	0.00
8,800.00	90.11	179.73	7,134.54	-1,310.52	805.81	1,430.86	0.00	0.00	0.00	0.00
8,900.00	90.11	179.73	7,134.34	-1,410.51	806.27	1,529.41	0.00	0.00	0.00	0.00
9,000.00	90.11	179.73	7,134.15	-1,510.51	806.73	1,627.96	0.00	0.00	0.00	0.00
9,100.00	90.11	179.73	7,133.95	-1,610.51	807.20	1,726.51	0.00	0.00	0.00	0.00
9,200.00	90.11	179.73	7,133.75	-1,710.51	807.66	1,825.06	0.00	0.00	0.00	0.00

Plan Report for Roberts 35N-22HZ - 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 (°)
9,300.00	90.11	179.73	7,133.56	-1,810.51	808.12	1,923.61	0.00	0.00	0.00	0.00
9,400.00	90.11	179.73	7,133.36	-1,910.51	808.59	2,022.16	0.00	0.00	0.00	0.00
9,500.00	90.11	179.73	7,133.16	-2,010.51	809.05	2,120.71	0.00	0.00	0.00	0.00
9,600.00	90.11	179.73	7,132.97	-2,110.51	809.51	2,219.26	0.00	0.00	0.00	0.00
9,700.00	90.11	179.73	7,132.77	-2,210.50	809.97	2,317.81	0.00	0.00	0.00	0.00
9,800.00	90.11	179.73	7,132.58	-2,310.50	810.44	2,416.36	0.00	0.00	0.00	0.00
9,900.00	90.11	179.73	7,132.38	-2,410.50	810.90	2,514.91	0.00	0.00	0.00	0.00
10,000.00	90.11	179.73	7,132.18	-2,510.50	811.36	2,613.46	0.00	0.00	0.00	0.00
Hold Angle @ 90.11										
10,100.00	90.11	179.73	7,131.99	-2,610.50	811.83	2,712.01	0.00	0.00	0.00	0.00
10,200.00	90.11	179.73	7,131.79	-2,710.50	812.29	2,810.56	0.00	0.00	0.00	0.00
10,300.00	90.11	179.73	7,131.59	-2,810.50	812.75	2,909.11	0.00	0.00	0.00	0.00
10,400.00	90.11	179.73	7,131.40	-2,910.50	813.21	3,007.66	0.00	0.00	0.00	0.00
10,500.00	90.11	179.73	7,131.20	-3,010.49	813.68	3,106.21	0.00	0.00	0.00	0.00
10,600.00	90.11	179.73	7,131.01	-3,110.49	814.14	3,204.76	0.00	0.00	0.00	0.00
10,700.00	90.11	179.73	7,130.81	-3,210.49	814.60	3,303.31	0.00	0.00	0.00	0.00
10,800.00	90.11	179.73	7,130.61	-3,310.49	815.07	3,401.86	0.00	0.00	0.00	0.00
10,900.00	90.11	179.73	7,130.42	-3,410.49	815.53	3,500.41	0.00	0.00	0.00	0.00
11,000.00	90.11	179.73	7,130.22	-3,510.49	815.99	3,598.96	0.00	0.00	0.00	0.00
11,100.00	90.11	179.73	7,130.02	-3,610.49	816.45	3,697.51	0.00	0.00	0.00	0.00
11,200.00	90.11	179.73	7,129.83	-3,710.49	816.92	3,796.06	0.00	0.00	0.00	0.00
11,300.00	90.11	179.73	7,129.63	-3,810.48	817.38	3,894.61	0.00	0.00	0.00	0.00
11,400.00	90.11	179.73	7,129.44	-3,910.48	817.84	3,993.16	0.00	0.00	0.00	0.00
11,500.00	90.11	179.73	7,129.24	-4,010.48	818.31	4,091.71	0.00	0.00	0.00	0.00
11,600.00	90.11	179.73	7,129.04	-4,110.48	818.77	4,190.26	0.00	0.00	0.00	0.00
11,700.00	90.11	179.73	7,128.85	-4,210.48	819.23	4,288.81	0.00	0.00	0.00	0.00
11,800.00	90.11	179.73	7,128.65	-4,310.48	819.70	4,387.36	0.00	0.00	0.00	0.00
11,900.00	90.11	179.73	7,128.45	-4,410.48	820.16	4,485.91	0.00	0.00	0.00	0.00
12,000.00	90.11	179.73	7,128.26	-4,510.48	820.62	4,584.46	0.00	0.00	0.00	0.00
12,100.00	90.11	179.73	7,128.06	-4,610.47	821.08	4,683.01	0.00	0.00	0.00	0.00
12,131.41	90.11	179.73	7,128.00	-4,641.88	821.23	4,713.97	0.00	0.00	0.00	0.00
Niobrara B TL (Toe)										
12,131.42	90.11	179.73	7,128.00	-4,641.89	821.23	4,713.97	0.00	0.00	0.00	0.00
Roberts 35N-22HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.00	600.00	0.00	0.00	Hold Angle @ 0.00
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,400.00	1,399.84	4.10	5.65	Nudge Rate = 2.00/100ft
1,690.75	1,688.35	24.62	33.94	End Nudge @ 1690.75ft
4,000.00	3,963.80	255.80	352.56	Hold Angle @ 9.82
6,587.27	6,513.20	514.82	709.54	Begin Build @ 6587.27ft
7,000.00	6,899.64	411.03	764.35	Build Rate = 10.00/100ft
7,545.47	7,137.00	-56.00	800.00	End Build @ 7545.47ft
10,000.00	7,132.18	-2,510.50	811.36	Hold Angle @ 90.11
12,131.42	7,128.00	-4,641.89	821.23	Total Depth @ 12131.42ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Roberts 35N-22HZ_BHL	169.97	Slot	0.00	0.00	7,128.00

Plan Report for Roberts 35N-22HZ - Plan A Rev 0 Permit**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,131.42	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,545.47	7,137.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
751.00	751.00	Fox Hills		0.00	
3,903.79	3,869.00	Parkman		0.00	
4,459.93	4,417.00	Sussex		0.00	
7,163.15	7,016.00	Sharon Springs		0.00	
7,271.76	7,074.00	Niobrara A		0.00	
7,387.96	7,116.00	Niobrara B		0.00	
7,545.47	7,137.00	Niobrara B TL (Heel)		0.00	
12,131.41	7,128.00	Niobrara B TL (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Roberts 35N-22HZ_SHL	0.00	0.00	0.00	Point
Roberts 35N-22HZ_BHL	7,128.00	-4,641.89	821.23	Point
Roberts 35N-22HZ_Casing Point	7,137.00	-56.00	800.00	Point
Roberts 35N-22HZ_Setback Lines	0.00	0.00	0.00	Polygon
Roberts 35N-22HZ_Section Lines	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 22-T3N-R66W - Roberts 35N-22HZ - 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 @ 4902.00ft (Drilling Rig). Northing and Easting are relative to Roberts 35N-22HZ
 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: 0.99995703

Grid Coordinates of Well: 1,322,447.64 ft N, 3,203,497.53 ft E
 Geographical Coordinates of Well: 40° 12' 58.40" N, 104° 46' 16.69" W
 Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,131.42ft
 the Bottom Hole Displacement is 4,713.97ft in the Direction of 169.97° (True).

Magnetic Convergence at surface is: -8.26° (17 September 2012, , BGGM2012)

