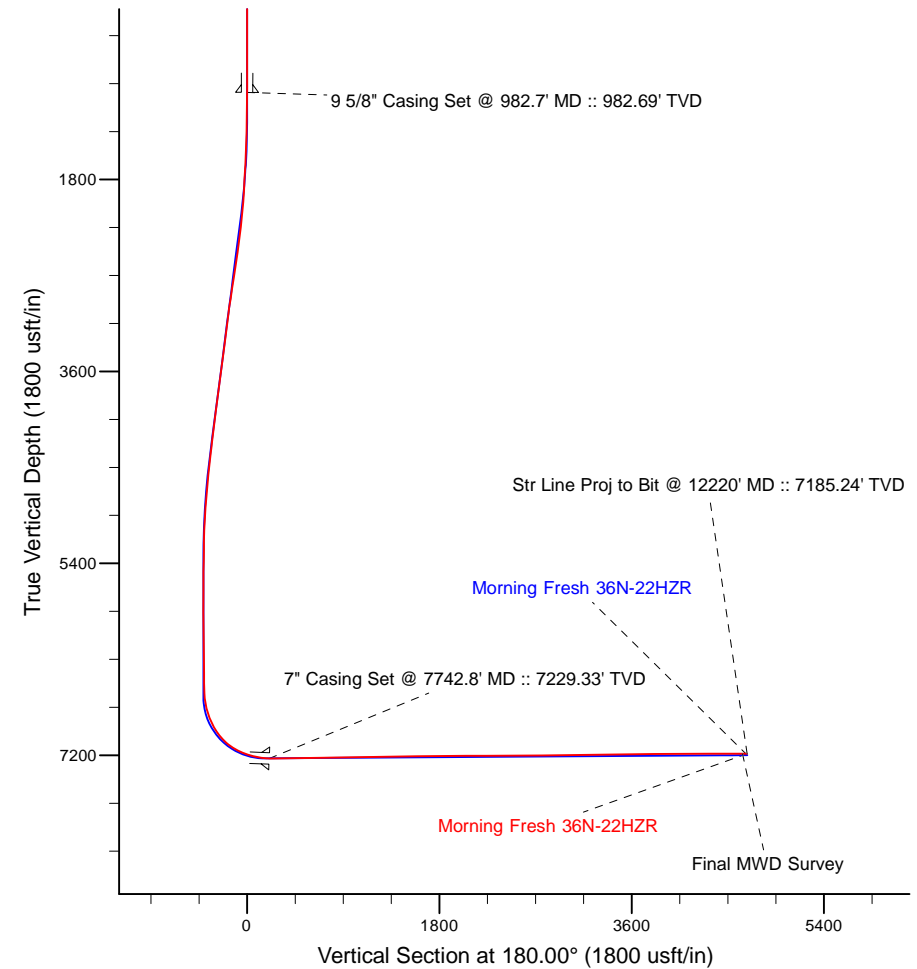
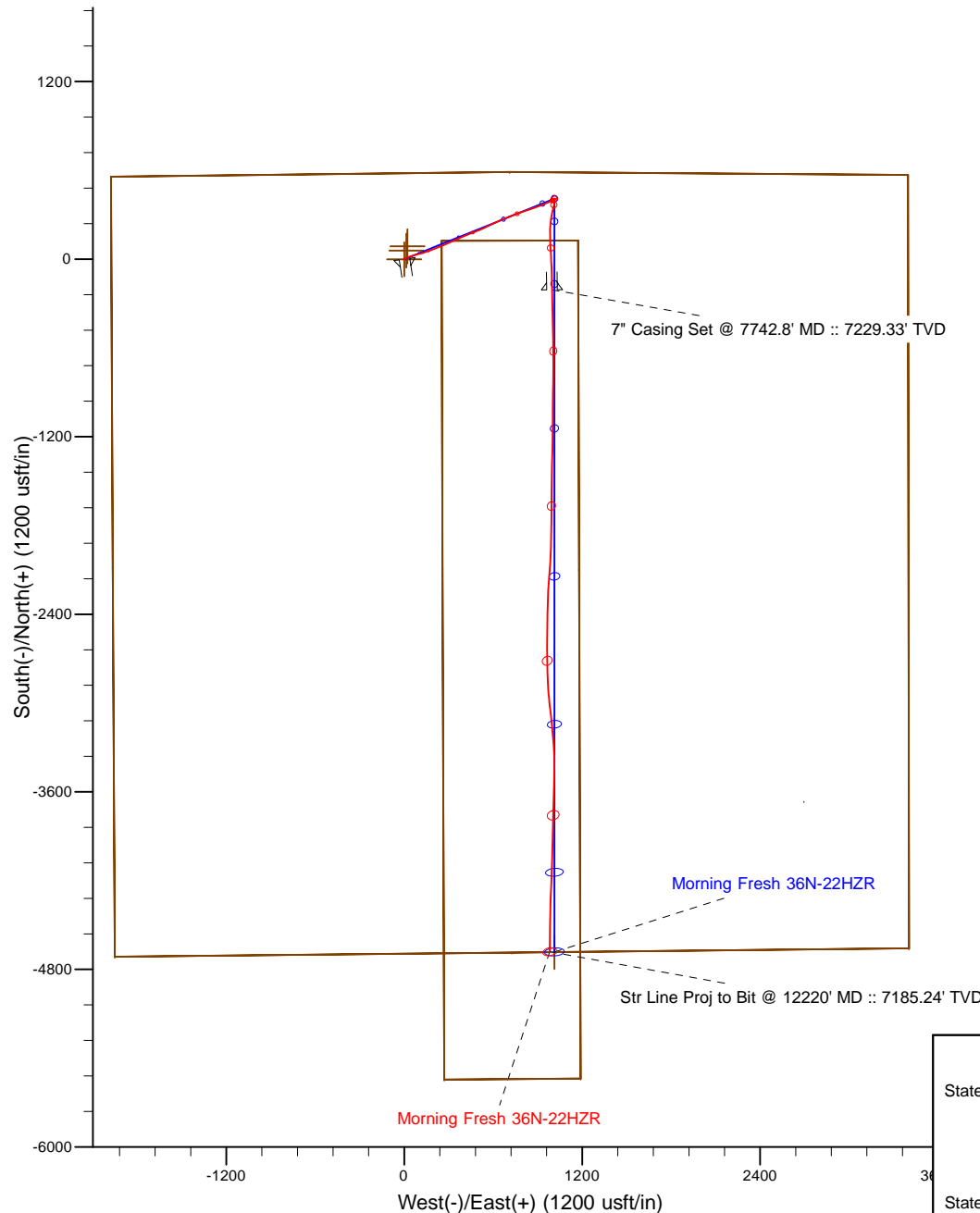


Project: Weld County, CO (NAD 83)
 Site: Sec. 22-T3N-R66W
 Well: Morning Fresh 36N-22HZR
 Wellbore: Plan C
 Design: Actual Field Surveys



LEGEND

- ✕ Morning Fresh 36N-22HZR, Plan C, Rev C0 V0
- Actual Field Surveys



7" Casing: ~794.61' FNL, ~2401.82' FEL
 Lat/Long: 40.215677 N, -104.762402 E
 State Planes - CO Northern: 1,322,269.83' N, 3,205,984.87' E
 Location: Sec. 22-T3N-R66W

BHL: ~2.56' FSL, ~2423.97' FEL
 Lat/Long: 40.203398 N, -104.762460 E
 State Planes - CO Northern: 1,317,796.89' N, 3,206,005.98' E
 Location: Sec. 22-T3N-R66W

WELL DETAILS: Morning Fresh 36N-22HZR	
Ground Level:	4886.00
RKB = 13' @ 4899.00usft (Ensign 132)	
Design: Actual Field Surveys (Morning Fresh 36N-22HZR/Plan C)	
Created By: Clint Eshelman	Date: 8/13/2014
Reviewed: _____	Date: _____

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22-T3N-R66W

Morning Fresh 36N-22HZR

Plan C

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

13 August, 2014

Well Coordinates: 1,322,468.28 N, 3,204,985.90 E (40° 12' 58.48" N, 104° 45' 57.50" W)

Ground Level: 4,886.00 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 Morning Fresh 36N-22HZR

RKB = 13' @ 4899.00usft (Ensign 132)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
142.00	0.11	307.08	142.00	0.08	-0.11	-0.08	0.08
First MWD Survey							
329.00	0.37	78.88	329.00	0.31	0.34	-0.31	0.24
451.00	0.25	99.98	451.00	0.34	0.99	-0.34	0.13
544.00	0.25	105.64	544.00	0.25	1.38	-0.25	0.03
638.00	0.22	69.44	638.00	0.25	1.75	-0.25	0.16
731.00	0.25	50.99	730.99	0.45	2.08	-0.45	0.09
940.00	0.17	30.18	939.99	1.00	2.59	-1.00	0.05
982.70	0.30	351.39	982.69	1.17	2.60	-1.17	0.47
9 5/8" Casing Set @ 982.7' MD :: 982.69' TVD							
1,033.00	0.52	337.43	1,032.99	1.51	2.49	-1.51	0.47
1,098.00	0.48	333.34	1,097.99	2.03	2.26	-2.03	0.08
1,192.00	0.51	0.43	1,191.99	2.80	2.08	-2.80	0.25
1,287.00	1.52	56.77	1,286.97	3.91	3.14	-3.91	1.38
1,381.00	4.27	65.48	1,380.84	6.04	7.37	-6.04	2.95
1,475.00	5.68	66.65	1,474.49	9.34	14.82	-9.34	1.50
1,569.00	7.44	69.99	1,567.87	13.27	24.81	-13.27	1.92
1,663.00	8.25	69.03	1,660.99	17.76	36.83	-17.76	0.87
1,851.00	12.44	76.12	1,845.90	27.45	69.10	-27.45	2.33
1,946.00	13.62	75.55	1,938.45	32.70	89.86	-32.70	1.25
2,040.00	15.12	75.61	2,029.51	38.51	112.46	-38.51	1.60
2,134.00	17.01	71.44	2,119.83	45.93	137.37	-45.93	2.35
2,228.00	18.24	69.49	2,209.42	55.46	164.18	-55.46	1.45
2,323.00	19.84	68.03	2,299.22	66.70	193.06	-66.70	1.76
2,416.00	18.83	69.49	2,386.97	77.87	221.76	-77.87	1.20
2,511.00	20.04	67.67	2,476.56	89.42	251.17	-89.42	1.42
2,605.00	19.30	68.76	2,565.08	101.17	280.55	-101.17	0.88
2,699.00	20.60	65.07	2,653.44	113.77	310.03	-113.77	1.92
2,793.00	20.84	65.22	2,741.36	127.75	340.20	-127.75	0.26
2,887.00	20.95	65.71	2,829.17	141.67	370.70	-141.67	0.22
2,983.00	21.33	65.79	2,918.71	155.89	402.27	-155.89	0.40
3,077.00	20.13	68.98	3,006.63	168.70	432.96	-168.70	1.75
3,172.00	19.11	68.38	3,096.11	180.30	462.68	-180.30	1.09
3,267.00	18.73	69.62	3,185.98	191.34	491.43	-191.34	0.58
3,363.00	17.81	68.26	3,277.14	202.14	519.52	-202.14	1.06
3,458.00	18.03	63.94	3,367.54	213.98	546.22	-213.98	1.42
3,553.00	16.68	62.87	3,458.21	226.66	571.57	-226.66	1.46
3,648.00	17.51	65.86	3,549.01	238.72	596.74	-238.72	1.27
3,743.00	19.09	65.94	3,639.20	250.90	623.97	-250.90	1.66
3,838.00	16.80	64.06	3,729.58	263.24	650.51	-263.24	2.49
3,933.00	17.46	68.01	3,820.37	274.59	676.07	-274.59	1.41
4,028.00	17.99	68.96	3,910.86	285.19	702.98	-285.19	0.64
4,218.00	20.76	69.87	4,090.08	307.32	761.99	-307.32	1.47
4,313.00	21.38	70.88	4,178.73	318.78	794.16	-318.78	0.76
4,408.00	20.52	71.16	4,267.45	329.83	826.28	-329.83	0.91
4,504.00	18.94	70.51	4,357.81	340.46	856.89	-340.46	1.66
4,599.00	18.27	70.56	4,447.84	350.56	885.47	-350.56	0.71
4,694.00	16.14	69.19	4,538.59	360.21	911.86	-360.21	2.28
4,789.00	13.73	67.34	4,630.37	369.25	934.61	-369.25	2.59

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
4,884.00	13.61	67.12	4,722.68	377.94	955.31	-377.94	0.14
4,979.00	11.73	68.25	4,815.36	385.86	974.58	-385.86	2.00
5,073.00	8.08	65.52	4,907.95	392.14	989.47	-392.14	3.91
5,168.00	6.57	59.93	5,002.17	397.63	1,000.25	-397.63	1.76
5,263.00	5.01	63.33	5,096.68	402.22	1,008.66	-402.22	1.68
5,358.00	3.53	74.79	5,191.42	404.85	1,015.19	-404.85	1.79
5,453.00	1.55	65.50	5,286.32	406.15	1,019.18	-406.15	2.12
5,548.00	1.42	59.68	5,381.29	407.27	1,021.37	-407.27	0.21
5,643.00	0.47	357.36	5,476.28	408.26	1,022.36	-408.26	1.34
5,738.00	0.57	289.54	5,571.27	408.80	1,021.90	-408.80	0.62
5,834.00	0.68	275.21	5,667.27	409.02	1,020.88	-409.02	0.20
6,024.00	1.22	267.94	5,857.24	409.05	1,017.74	-409.05	0.29
6,119.00	0.51	250.95	5,952.23	408.87	1,016.33	-408.87	0.79
6,214.00	0.99	267.62	6,047.22	408.70	1,015.11	-408.70	0.55
6,309.00	0.97	169.02	6,142.21	407.88	1,014.44	-407.88	1.56
6,405.00	1.43	178.39	6,238.19	405.88	1,014.63	-405.88	0.52
6,500.00	0.35	122.34	6,333.18	404.54	1,014.91	-404.54	1.33
6,595.00	0.58	177.71	6,428.18	403.90	1,015.17	-403.90	0.50
6,690.00	0.96	205.73	6,523.17	402.71	1,014.85	-402.71	0.55
6,785.00	2.29	194.79	6,618.13	400.16	1,014.02	-400.16	1.43
6,833.00	6.21	188.14	6,665.99	396.66	1,013.41	-396.66	8.22
6,880.00	9.61	185.90	6,712.53	390.24	1,012.64	-390.24	7.26
6,928.00	13.97	186.83	6,759.51	380.49	1,011.54	-380.49	9.09
6,975.00	18.15	192.19	6,804.67	367.70	1,009.32	-367.70	9.43
7,023.00	22.35	190.91	6,849.69	351.42	1,006.01	-351.42	8.80
7,070.00	26.18	190.32	6,892.53	332.44	1,002.46	-332.44	8.17
7,118.00	28.56	192.13	6,935.15	310.80	998.15	-310.80	5.25
7,165.00	33.75	189.85	6,975.36	286.94	993.56	-286.94	11.32
7,213.00	37.52	187.75	7,014.37	259.31	989.30	-259.31	8.26
7,260.00	44.35	185.84	7,049.86	228.74	985.70	-228.74	14.77
7,307.00	49.81	181.58	7,081.86	194.42	983.53	-194.42	13.37
7,355.00	54.05	179.37	7,111.45	156.65	983.23	-156.65	9.55
7,403.00	58.50	175.41	7,138.10	116.79	985.09	-116.79	11.53
7,450.00	63.76	176.04	7,160.79	75.76	988.15	-75.76	11.25
7,498.00	69.11	177.64	7,179.97	31.85	990.56	-31.85	11.56
7,546.00	72.86	178.10	7,195.61	-13.49	992.25	13.49	7.86
7,594.00	76.58	177.45	7,208.26	-59.75	994.04	59.75	7.86
7,641.00	79.11	177.87	7,218.15	-105.66	995.92	105.66	5.45
7,706.00	85.12	179.97	7,227.06	-170.00	997.12	170.00	9.78
7,742.80	87.81	179.37	7,229.33	-206.72	997.33	206.72	7.49
7" Casing Set @ 7742.8' MD :: 7229.33' TVD							
7,777.00	90.31	178.82	7,229.89	-240.91	997.87	240.91	7.49
7,872.00	89.82	178.08	7,229.79	-335.88	1,000.44	335.88	0.93
7,967.00	91.17	178.60	7,228.97	-430.83	1,003.20	430.83	1.52
8,062.00	91.05	179.58	7,227.13	-525.80	1,004.70	525.80	1.04
8,157.00	91.48	179.93	7,225.03	-620.77	1,005.11	620.77	0.58
8,253.00	91.54	180.24	7,222.50	-716.74	1,004.97	716.74	0.33
8,348.00	91.11	180.18	7,220.30	-811.71	1,004.62	811.71	0.46
8,443.00	91.42	180.63	7,218.20	-906.69	1,003.95	906.69	0.58
8,538.00	90.98	180.34	7,216.22	-1,001.66	1,003.14	1,001.66	0.55
8,633.00	90.74	180.67	7,214.79	-1,096.65	1,002.31	1,096.65	0.43

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
8,728.00	90.55	180.72	7,213.72	-1,191.64	1,001.16	1,191.64	0.21
8,823.00	90.12	181.13	7,213.16	-1,286.62	999.62	1,286.62	0.63
8,919.00	91.11	181.09	7,212.13	-1,382.60	997.76	1,382.60	1.03
9,109.00	90.86	180.94	7,208.87	-1,572.54	994.40	1,572.54	0.15
9,204.00	90.65	180.63	7,207.62	-1,667.52	993.10	1,667.52	0.39
9,299.00	89.91	179.79	7,207.15	-1,762.52	992.75	1,762.52	1.18
9,394.00	90.52	180.78	7,206.80	-1,857.52	992.27	1,857.52	1.22
9,489.00	90.43	181.89	7,206.01	-1,952.48	990.06	1,952.48	1.17
9,585.00	90.31	183.47	7,205.39	-2,048.37	985.57	2,048.37	1.65
9,680.00	90.22	185.47	7,204.95	-2,143.08	978.17	2,143.08	2.11
9,775.00	90.06	183.41	7,204.72	-2,237.79	970.82	2,237.79	2.17
9,965.00	90.22	180.20	7,204.25	-2,427.67	964.83	2,427.67	1.69
10,060.00	90.25	179.90	7,203.86	-2,522.67	964.75	2,522.67	0.32
10,155.00	90.06	180.01	7,203.61	-2,617.67	964.82	2,617.67	0.23
10,251.00	92.32	180.02	7,201.61	-2,713.64	964.80	2,713.64	2.35
10,441.00	90.34	175.84	7,197.20	-2,903.41	971.66	2,903.41	2.43
10,536.00	90.56	173.66	7,196.45	-2,998.01	980.35	2,998.01	2.31
10,631.00	89.88	173.46	7,196.09	-3,092.41	991.01	3,092.41	0.75
10,726.00	90.65	175.30	7,195.65	-3,186.94	1,000.31	3,186.94	2.10
10,822.00	89.54	175.61	7,195.49	-3,282.64	1,007.92	3,282.64	1.20
10,917.00	90.43	178.21	7,195.52	-3,377.49	1,013.04	3,377.49	2.89
11,012.00	91.48	182.24	7,193.93	-3,472.46	1,012.67	3,472.46	4.38
11,107.00	92.06	181.31	7,191.00	-3,567.37	1,009.72	3,567.37	1.15
11,202.00	90.96	181.55	7,188.49	-3,662.30	1,007.35	3,662.30	1.19
11,297.00	90.46	181.15	7,187.32	-3,757.27	1,005.12	3,757.27	0.67
11,392.00	89.88	181.17	7,187.03	-3,852.25	1,003.19	3,852.25	0.61
11,487.00	90.09	180.52	7,187.06	-3,947.24	1,001.79	3,947.24	0.72
11,582.00	90.25	182.14	7,186.78	-4,042.21	999.59	4,042.21	1.71
11,677.00	90.25	182.56	7,186.36	-4,137.13	995.69	4,137.13	0.44
11,772.00	90.28	183.06	7,185.92	-4,232.01	991.03	4,232.01	0.53
11,867.00	90.49	181.17	7,185.28	-4,326.94	987.53	4,326.94	2.00
11,962.00	89.78	181.10	7,185.06	-4,421.92	985.65	4,421.92	0.75
12,057.00	89.47	180.97	7,185.68	-4,516.90	983.93	4,516.90	0.35
12,176.00	90.55	180.83	7,185.66	-4,635.89	982.06	4,635.89	0.92
Final MWD Survey							
12,220.00	90.55	180.83	7,185.24	-4,679.88	981.42	4,679.88	0.00
Str Line Proj to Bit @ 12220' MD :: 7185.24' TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
142.00	142.00	0.08	-0.11	First MWD Survey
12,176.00	7,185.66	-4,635.89	982.06	Final MWD Survey
12,220.00	7,185.24	-4,679.88	981.42	Str Line Proj to Bit @ 12220' MD :: 7185.24' TVD

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	180.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
142.00	1,033.00	MWD Surface Surveys	MWD+IFR1+SC
1,098.00	7,777.00	MWD Vertical/Build Surveys	MWD+IFR1+SC
7,872.00	12,176.00	MWD Lateral Surveys	MWD+IFR1+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
982.70	982.69	9 5/8" Casing Set @ 982.7' MD :: 982.69' TVD	9-5/8	13-1/2
7,742.80	7,229.33	7" Casing Set @ 7742.8' MD :: 7229.33' TVD	7	8-3/4

Wellbore Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Morning Fresh 23N-22	0.00	0.00	0.00	58.30	14.52	1,322,526.69	3,204,999.94	40.216404	-104.765921
- actual wellpath misses target center by 60.08usft at 0.02usft MD (0.02 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				0.00	498.79	-1,991.05	1,323,008.96	3,203,004.91	
Point 2				0.00	531.92	696.61	1,323,064.34	3,205,692.09	
Point 3				0.00	510.57	3,383.77	1,323,065.23	3,208,379.22	
Point 4				0.00	-2,166.57	3,387.12	1,320,388.33	3,208,404.73	
Point 5				0.00	-4,714.68	3,390.94	1,317,840.45	3,208,429.64	
Point 6				0.00	-4,743.47	711.99	1,317,789.48	3,205,751.13	
Point 7				0.00	-4,772.31	-1,966.85	1,317,738.47	3,203,072.74	
Point 8				0.00	-2,140.63	-1,978.99	1,320,369.85	3,203,038.82	
Morning Fresh 36N-22	0.00	0.00	0.00	0.00	0.00	1,322,468.28	3,204,985.90	40.216244	-104.765973
- actual wellpath hits target center									
- Point									
Morning Fresh 36N-22	0.00	0.00	0.00	87.44	21.78	1,322,555.90	3,205,006.95	40.216484	-104.765895
- actual wellpath misses target center by 90.11usft at 0.03usft MD (0.03 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				0.00	37.22	230.77	1,322,595.02	3,205,237.40	
Point 2				0.00	39.21	1,150.81	1,322,604.63	3,206,157.35	
Point 3				0.00	-2,184.93	1,157.35	1,320,380.71	3,206,182.30	
Point 4				0.00	-5,624.43	1,168.39	1,316,941.57	3,206,221.81	
Point 5				0.00	-5,632.49	248.37	1,316,925.90	3,205,301.93	
Point 6				0.00	-2,180.48	237.28	1,320,377.55	3,205,262.26	
Morning Fresh 36N-22	0.00	0.00	7,198.00	-4,681.21	1,013.41	1,317,795.82	3,206,037.98	40.203394	-104.762345
- actual wellpath misses target center by 34.46usft at 12220.00usft MD (7185.24 TVD, -4679.88 N, 981.42 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.80 °/100usft	Maximum Dogleg over Survey:	14.77 °/100usft at 7,260.00 usft
Net Tortousity applicable to Plans:	0.75 °/100usft	Directional Difficulty Index:	6.363

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

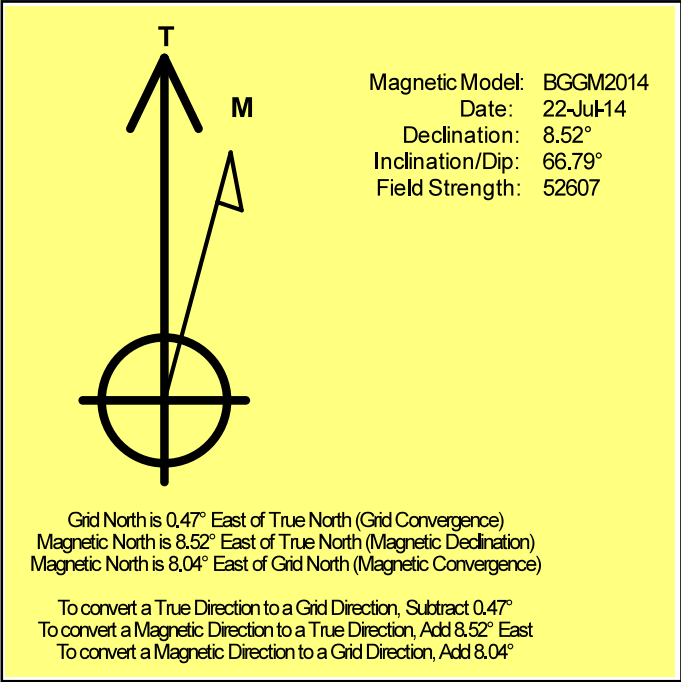
Audit Info

North Reference Sheet for Sec. 22-T3N-R66W - Morning Fresh 36N-22HZR - Plan C

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB = 13' @ 4899.00usft (Ensign 132). Northing and Easting are relative to Morning Fresh 36N-22HZR
 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 -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995703

Grid Coordinates of Well: 1,322,468.28 usft N, 3,204,985.90 usft E
 Geographical Coordinates of Well: 40° 12' 58.48" N, 104° 45' 57.50" W
 Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,220.00usft
 the Bottom Hole Displacement is 4,781.68usft in the Direction of 168.16° (True).
 Magnetic Convergence at surface is: -8.04° (22 July 2014, , BGGM2014)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22-T3N-R66W

Morning Fresh 36N-22HZR

Plan C

Design: Actual Field Surveys

Sperry Drilling Services

Geodetic Report

13 August, 2014

Well Coordinates: 1,322,468.28 N, 3,204,985.90 E (40° 12' 58.48" N, 104° 45' 57.50" W)

Ground Level: 4,886.00 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 Morning Fresh 36N-22HZR

RKB = 13' @ 4899.00usft (Ensign 132)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	40.216244	-104.765973	1,322,468.28	3,204,985.90
142.00	0.11	307.08	142.00	0.08	-0.11	40.216244	-104.765974	1,322,468.36	3,204,985.79
329.00	0.37	78.88	329.00	0.31	0.34	40.216245	-104.765972	1,322,468.59	3,204,986.23
451.00	0.25	99.98	451.00	0.34	0.99	40.216245	-104.765970	1,322,468.63	3,204,986.88
544.00	0.25	105.64	544.00	0.25	1.38	40.216245	-104.765968	1,322,468.54	3,204,987.28
638.00	0.22	69.44	638.00	0.25	1.75	40.216245	-104.765967	1,322,468.55	3,204,987.65
731.00	0.25	50.99	730.99	0.45	2.08	40.216245	-104.765966	1,322,468.74	3,204,987.97
940.00	0.17	30.18	939.99	1.00	2.59	40.216247	-104.765964	1,322,469.30	3,204,988.47
982.70	0.30	351.39	982.69	1.17	2.60	40.216247	-104.765964	1,322,469.47	3,204,988.49
1,033.00	0.52	337.43	1,032.99	1.51	2.49	40.216248	-104.765964	1,322,469.81	3,204,988.38
1,098.00	0.48	333.34	1,097.99	2.03	2.26	40.216250	-104.765965	1,322,470.33	3,204,988.14
1,192.00	0.51	0.43	1,191.99	2.80	2.08	40.216252	-104.765966	1,322,471.09	3,204,987.96
1,287.00	1.52	56.77	1,286.97	3.91	3.14	40.216255	-104.765962	1,322,472.22	3,204,989.01
1,381.00	4.27	65.48	1,380.84	6.04	7.37	40.216261	-104.765947	1,322,474.39	3,204,993.22
1,475.00	5.68	66.65	1,474.49	9.34	14.82	40.216270	-104.765920	1,322,477.74	3,205,000.64
1,569.00	7.44	69.99	1,567.87	13.27	24.81	40.216280	-104.765884	1,322,481.75	3,205,010.60
1,663.00	8.25	69.03	1,660.99	17.76	36.83	40.216293	-104.765841	1,322,486.35	3,205,022.58
1,851.00	12.44	76.12	1,845.90	27.45	69.10	40.216319	-104.765726	1,322,496.30	3,205,054.76
1,946.00	13.62	75.55	1,938.45	32.70	89.86	40.216334	-104.765651	1,322,501.72	3,205,075.48
2,040.00	15.12	75.61	2,029.51	38.51	112.46	40.216350	-104.765571	1,322,507.72	3,205,098.03
2,134.00	17.01	71.44	2,119.83	45.93	137.37	40.216370	-104.765481	1,322,515.35	3,205,122.88
2,228.00	18.24	69.49	2,209.42	55.46	164.18	40.216396	-104.765385	1,322,525.10	3,205,149.61
2,323.00	19.84	68.03	2,299.22	66.70	193.06	40.216427	-104.765282	1,322,536.58	3,205,178.39
2,416.00	18.83	69.49	2,386.97	77.87	221.76	40.216458	-104.765179	1,322,547.98	3,205,206.99
2,511.00	20.04	67.67	2,476.56	89.42	251.17	40.216490	-104.765074	1,322,559.78	3,205,236.31
2,605.00	19.30	68.76	2,565.08	101.17	280.55	40.216522	-104.764969	1,322,571.77	3,205,265.59
2,699.00	20.60	65.07	2,653.44	113.77	310.03	40.216556	-104.764863	1,322,584.61	3,205,294.96
2,793.00	20.84	65.22	2,741.36	127.75	340.20	40.216595	-104.764755	1,322,598.84	3,205,325.02
2,887.00	20.95	65.71	2,829.17	141.67	370.70	40.216633	-104.764646	1,322,613.01	3,205,355.40
2,983.00	21.33	65.79	2,918.71	155.89	402.27	40.216672	-104.764533	1,322,627.49	3,205,386.85
3,077.00	20.13	68.98	3,006.63	168.70	432.96	40.216707	-104.764423	1,322,640.56	3,205,417.43
3,172.00	19.11	68.38	3,096.11	180.30	462.68	40.216739	-104.764317	1,322,652.39	3,205,447.05
3,267.00	18.73	69.62	3,185.98	191.34	491.43	40.216769	-104.764214	1,322,663.67	3,205,475.71
3,363.00	17.81	68.26	3,277.14	202.14	519.52	40.216799	-104.764113	1,322,674.71	3,205,503.70
3,458.00	18.03	63.94	3,367.54	213.98	546.22	40.216831	-104.764017	1,322,686.77	3,205,530.31
3,553.00	16.68	62.87	3,458.21	226.66	571.57	40.216866	-104.763927	1,322,699.66	3,205,555.54
3,648.00	17.51	65.86	3,549.01	238.72	596.74	40.216899	-104.763837	1,322,711.93	3,205,580.62
3,743.00	19.09	65.94	3,639.20	250.90	623.97	40.216933	-104.763739	1,322,724.33	3,205,607.74
3,838.00	16.80	64.06	3,729.58	263.24	650.51	40.216967	-104.763644	1,322,736.89	3,205,634.17
3,933.00	17.46	68.01	3,820.37	274.59	676.07	40.216998	-104.763552	1,322,748.44	3,205,659.64
4,028.00	17.99	68.96	3,910.86	285.19	702.98	40.217027	-104.763456	1,322,759.27	3,205,686.46
4,218.00	20.76	69.87	4,090.08	307.32	761.99	40.217088	-104.763245	1,322,781.88	3,205,745.28

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
4,313.00	21.38	70.88	4,178.73	318.78	794.16	40.217119	-104.763130	1,322,793.61	3,205,777.36
4,408.00	20.52	71.16	4,267.45	329.83	826.28	40.217149	-104.763015	1,322,804.93	3,205,809.38
4,504.00	18.94	70.51	4,357.81	340.46	856.89	40.217179	-104.762905	1,322,815.81	3,205,839.90
4,599.00	18.27	70.56	4,447.84	350.56	885.47	40.217206	-104.762803	1,322,826.15	3,205,868.39
4,694.00	16.14	69.19	4,538.59	360.21	911.86	40.217233	-104.762708	1,322,836.01	3,205,894.70
4,789.00	13.73	67.34	4,630.37	369.25	934.61	40.217258	-104.762627	1,322,845.24	3,205,917.37
4,884.00	13.61	67.12	4,722.68	377.94	955.31	40.217281	-104.762553	1,322,854.10	3,205,938.00
4,979.00	11.73	68.25	4,815.36	385.86	974.58	40.217303	-104.762484	1,322,862.18	3,205,957.20
5,073.00	8.08	65.52	4,907.95	392.14	989.47	40.217320	-104.762430	1,322,868.58	3,205,972.04
5,168.00	6.57	59.93	5,002.17	397.63	1,000.25	40.217335	-104.762392	1,322,874.16	3,205,982.78
5,263.00	5.01	63.33	5,096.68	402.22	1,008.66	40.217348	-104.762362	1,322,878.82	3,205,991.15
5,358.00	3.53	74.79	5,191.42	404.85	1,015.19	40.217355	-104.762338	1,322,881.50	3,205,997.66
5,453.00	1.55	65.50	5,286.32	406.15	1,019.18	40.217359	-104.762324	1,322,882.83	3,206,001.64
5,548.00	1.42	59.68	5,381.29	407.27	1,021.37	40.217362	-104.762316	1,322,883.98	3,206,003.81
5,643.00	0.47	357.36	5,476.28	408.26	1,022.36	40.217365	-104.762312	1,322,884.97	3,206,004.80
5,738.00	0.57	289.54	5,571.27	408.80	1,021.90	40.217366	-104.762314	1,322,885.51	3,206,004.34
5,834.00	0.68	275.21	5,667.27	409.02	1,020.88	40.217367	-104.762318	1,322,885.72	3,206,003.32
6,024.00	1.22	267.94	5,857.24	409.05	1,017.74	40.217367	-104.762329	1,322,885.72	3,206,000.17
6,119.00	0.51	250.95	5,952.23	408.87	1,016.33	40.217366	-104.762334	1,322,885.53	3,205,998.76
6,214.00	0.99	267.62	6,047.22	408.70	1,015.11	40.217366	-104.762338	1,322,885.35	3,205,997.55
6,309.00	0.97	169.02	6,142.21	407.88	1,014.44	40.217364	-104.762341	1,322,884.52	3,205,996.89
6,405.00	1.43	178.39	6,238.19	405.88	1,014.63	40.217358	-104.762340	1,322,882.53	3,205,997.09
6,500.00	0.35	122.34	6,333.18	404.54	1,014.91	40.217354	-104.762339	1,322,881.19	3,205,997.38
6,595.00	0.58	177.71	6,428.18	403.90	1,015.17	40.217353	-104.762338	1,322,880.56	3,205,997.65
6,690.00	0.96	205.73	6,523.17	402.71	1,014.85	40.217349	-104.762339	1,322,879.36	3,205,997.33
6,785.00	2.29	194.79	6,618.13	400.16	1,014.02	40.217342	-104.762342	1,322,876.80	3,205,996.52
6,833.00	6.21	188.14	6,665.99	396.66	1,013.41	40.217333	-104.762345	1,322,873.30	3,205,995.94
6,880.00	9.61	185.90	6,712.53	390.24	1,012.64	40.217315	-104.762347	1,322,866.87	3,205,995.23
6,928.00	13.97	186.83	6,759.51	380.49	1,011.54	40.217288	-104.762351	1,322,857.12	3,205,994.21
6,975.00	18.15	192.19	6,804.67	367.70	1,009.32	40.217253	-104.762359	1,322,844.31	3,205,992.09
7,023.00	22.35	190.91	6,849.69	351.42	1,006.01	40.217209	-104.762371	1,322,828.00	3,205,988.92
7,070.00	26.18	190.32	6,892.53	332.44	1,002.46	40.217157	-104.762384	1,322,808.99	3,205,985.53
7,118.00	28.56	192.13	6,935.15	310.80	998.15	40.217097	-104.762399	1,322,787.32	3,205,981.40
7,165.00	33.75	189.85	6,975.36	286.94	993.56	40.217032	-104.762416	1,322,763.42	3,205,977.00
7,213.00	37.52	187.75	7,014.37	259.31	989.30	40.216956	-104.762431	1,322,735.76	3,205,972.98
7,260.00	44.35	185.84	7,049.86	228.74	985.70	40.216872	-104.762444	1,322,705.17	3,205,969.62
7,307.00	49.81	181.58	7,081.86	194.42	983.53	40.216778	-104.762452	1,322,670.83	3,205,967.74
7,355.00	54.05	179.37	7,111.45	156.65	983.23	40.216674	-104.762453	1,322,633.06	3,205,967.76
7,403.00	58.50	175.41	7,138.10	116.79	985.09	40.216565	-104.762446	1,322,593.22	3,205,969.94
7,450.00	63.76	176.04	7,160.79	75.76	988.15	40.216452	-104.762435	1,322,552.22	3,205,973.34
7,498.00	69.11	177.64	7,179.97	31.85	990.56	40.216331	-104.762426	1,322,508.33	3,205,976.12
7,546.00	72.86	178.10	7,195.61	-13.49	992.25	40.216207	-104.762420	1,322,463.00	3,205,978.18

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
7,594.00	76.58	177.45	7,208.26	-59.75	994.04	40.216080	-104.762414	1,322,416.76	3,205,980.36
7,641.00	79.11	177.87	7,218.15	-105.66	995.92	40.215954	-104.762407	1,322,370.88	3,205,982.61
7,706.00	85.12	179.97	7,227.06	-170.00	997.12	40.215777	-104.762403	1,322,306.55	3,205,984.35
7,742.80	87.81	179.37	7,229.33	-206.72	997.33	40.215677	-104.762402	1,322,269.83	3,205,984.87
7,777.00	90.31	178.82	7,229.89	-240.91	997.87	40.215583	-104.762400	1,322,235.65	3,205,985.69
7,872.00	89.82	178.08	7,229.79	-335.88	1,000.44	40.215322	-104.762391	1,322,140.71	3,205,989.04
7,967.00	91.17	178.60	7,228.97	-430.83	1,003.20	40.215061	-104.762381	1,322,045.79	3,205,992.58
8,062.00	91.05	179.58	7,227.13	-525.80	1,004.70	40.214801	-104.762376	1,321,950.84	3,205,994.88
8,157.00	91.48	179.93	7,225.03	-620.77	1,005.11	40.214540	-104.762374	1,321,855.87	3,205,996.07
8,253.00	91.54	180.24	7,222.50	-716.74	1,004.97	40.214277	-104.762375	1,321,759.91	3,205,996.72
8,348.00	91.11	180.18	7,220.30	-811.71	1,004.62	40.214016	-104.762376	1,321,664.95	3,205,997.16
8,443.00	91.42	180.63	7,218.20	-906.69	1,003.95	40.213755	-104.762379	1,321,569.97	3,205,997.27
8,538.00	90.98	180.34	7,216.22	-1,001.66	1,003.14	40.213494	-104.762381	1,321,475.00	3,205,997.25
8,633.00	90.74	180.67	7,214.79	-1,096.65	1,002.31	40.213234	-104.762384	1,321,380.01	3,205,997.20
8,728.00	90.55	180.72	7,213.72	-1,191.64	1,001.16	40.212973	-104.762389	1,321,285.02	3,205,996.84
8,823.00	90.12	181.13	7,213.16	-1,286.62	999.62	40.212712	-104.762394	1,321,190.03	3,205,996.09
8,919.00	91.11	181.09	7,212.13	-1,382.60	997.76	40.212449	-104.762401	1,321,094.05	3,205,995.03
9,109.00	90.86	180.94	7,208.87	-1,572.54	994.40	40.211927	-104.762413	1,320,904.09	3,205,993.23
9,204.00	90.65	180.63	7,207.62	-1,667.52	993.10	40.211667	-104.762418	1,320,809.11	3,205,992.72
9,299.00	89.91	179.79	7,207.15	-1,762.52	992.75	40.211406	-104.762419	1,320,714.12	3,205,993.16
9,394.00	90.52	180.78	7,206.80	-1,857.52	992.27	40.211145	-104.762421	1,320,619.12	3,205,993.47
9,489.00	90.43	181.89	7,206.01	-1,952.48	990.06	40.210884	-104.762428	1,320,524.14	3,205,992.04
9,585.00	90.31	183.47	7,205.39	-2,048.37	985.57	40.210621	-104.762445	1,320,428.22	3,205,988.35
9,680.00	90.22	185.47	7,204.95	-2,143.08	978.17	40.210361	-104.762471	1,320,333.46	3,205,981.73
9,775.00	90.06	183.41	7,204.72	-2,237.79	970.82	40.210101	-104.762497	1,320,238.70	3,205,975.16
9,965.00	90.22	180.20	7,204.25	-2,427.67	964.83	40.209580	-104.762519	1,320,048.79	3,205,970.75
10,060.00	90.25	179.90	7,203.86	-2,522.67	964.75	40.209319	-104.762519	1,319,953.79	3,205,971.45
10,155.00	90.06	180.01	7,203.61	-2,617.67	964.82	40.209059	-104.762519	1,319,858.80	3,205,972.31
10,251.00	92.32	180.02	7,201.61	-2,713.64	964.80	40.208795	-104.762519	1,319,762.84	3,205,973.08
10,441.00	90.34	175.84	7,197.20	-2,903.41	971.66	40.208274	-104.762494	1,319,573.13	3,205,981.51
10,536.00	90.56	173.66	7,196.45	-2,998.01	980.35	40.208014	-104.762463	1,319,478.62	3,205,990.99
10,631.00	89.88	173.46	7,196.09	-3,092.41	991.01	40.207755	-104.762425	1,319,384.32	3,206,002.42
10,726.00	90.65	175.30	7,195.65	-3,186.94	1,000.31	40.207496	-104.762392	1,319,289.86	3,206,012.51
10,822.00	89.54	175.61	7,195.49	-3,282.64	1,007.92	40.207233	-104.762365	1,319,194.24	3,206,020.91
10,917.00	90.43	178.21	7,195.52	-3,377.49	1,013.04	40.206973	-104.762346	1,319,099.43	3,206,026.81
11,012.00	91.48	182.24	7,193.93	-3,472.46	1,012.67	40.206712	-104.762348	1,319,004.47	3,206,027.23
11,107.00	92.06	181.31	7,191.00	-3,567.37	1,009.72	40.206452	-104.762358	1,318,909.55	3,206,025.07
11,202.00	90.96	181.55	7,188.49	-3,662.30	1,007.35	40.206191	-104.762367	1,318,814.60	3,206,023.49
11,297.00	90.46	181.15	7,187.32	-3,757.27	1,005.12	40.205930	-104.762375	1,318,719.62	3,206,022.04
11,392.00	89.88	181.17	7,187.03	-3,852.25	1,003.19	40.205670	-104.762382	1,318,624.64	3,206,020.90
11,487.00	90.09	180.52	7,187.06	-3,947.24	1,001.79	40.205409	-104.762387	1,318,529.64	3,206,020.28
11,582.00	90.25	182.14	7,186.78	-4,042.21	999.59	40.205148	-104.762395	1,318,434.66	3,206,018.86

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
11,677.00	90.25	182.56	7,186.36	-4,137.13	995.69	40.204888	-104.762409	1,318,339.72	3,206,015.76
11,772.00	90.28	183.06	7,185.92	-4,232.01	991.03	40.204627	-104.762425	1,318,244.80	3,206,011.88
11,867.00	90.49	181.17	7,185.28	-4,326.94	987.53	40.204367	-104.762438	1,318,149.85	3,206,009.16
11,962.00	89.78	181.10	7,185.06	-4,421.92	985.65	40.204106	-104.762445	1,318,054.86	3,206,008.07
12,057.00	89.47	180.97	7,185.68	-4,516.90	983.93	40.203845	-104.762451	1,317,959.87	3,206,007.14
12,176.00	90.55	180.83	7,185.66	-4,635.89	982.06	40.203519	-104.762457	1,317,840.88	3,206,006.26
12,220.00	90.55	180.83	7,185.24	-4,679.88	981.42	40.203398	-104.762460	1,317,796.89	3,206,005.98

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
142.00	142.00	0.08	-0.11	First MWD Survey
12,176.00	7,185.66	-4,635.89	982.06	Final MWD Survey
12,220.00	7,185.24	-4,679.88	981.42	Str Line Proj to Bit @ 12220' MD :: 7185.24' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	180.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
142.00	1,033.00	MWD Surface Surveys	MWD+IFR1+SC
1,098.00	7,777.00	MWD Vertical/Build Surveys	MWD+IFR1+SC
7,872.00	12,176.00	MWD Lateral Surveys	MWD+IFR1+SC

Design Report for Morning Fresh 36N-22HZR - Actual Field Surveys

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
982.70	982.69	9 5/8" Casing Set @ 982.7' MD :: 982.69' TVD	9-5/8	13-1/2
7,742.80	7,229.33	7" Casing Set @ 7742.8' MD :: 7229.33' TVD	7	8-3/4

Design Targets

Shape	Target Name	TVD (')	Northing (')	Easting (')	+N/-S	+E/-W	Created	Updated
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Directional Difficulty Index

Average Dogleg over Survey:	1.80 °/100usft	Maximum Dogleg over Survey:	14.77 °/100usft at 7,260.00 usft
Net Tortosity applicable to Plans:	0.75 °/100usft	Directional Difficulty Index:	6.363

Audit Info

North Reference Sheet for Sec. 22-T3N-R66W - Morning Fresh 36N-22HZR - Plan C

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 13' @ 4899.00usft (Ensign 132). Northing and Easting are relative to Morning Fresh 36N-22HZR

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 -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995703

Grid Coordinates of Well: 1,322,468.28 usft N, 3,204,985.90 usft E

Geographical Coordinates of Well: 40° 12' 58.48" N, 104° 45' 57.50" W

Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,220.00usft

the Bottom Hole Displacement is 4,781.68usft in the Direction of 168.16° (True).

Magnetic Convergence at surface is: -8.04° (22 July 2014, , BGGM2014)

