

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 15-T3N-R68W

RMF 32C-15HZ

Plan A

Plan: Rev A0

Sperry Drilling Services

Proposal Report

07 October, 2013

Well Coordinates: 1,327,102.88 N, 3,144,806.32 E (40° 13' 48.48" N, 104° 58' 52.91" W)

Ground Level: 4,967.00 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 RMF 32C-15HZ

RKB = 17' @ 4984.00usft (Drilling Rig)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 15-T3N-R68W
 Well: RMF 32C-15HZ
 Wellbore: Plan A
 Design: Rev A0

Anadarko Petroleum Corp.

HALLIBURTON
 Sperry Drilling

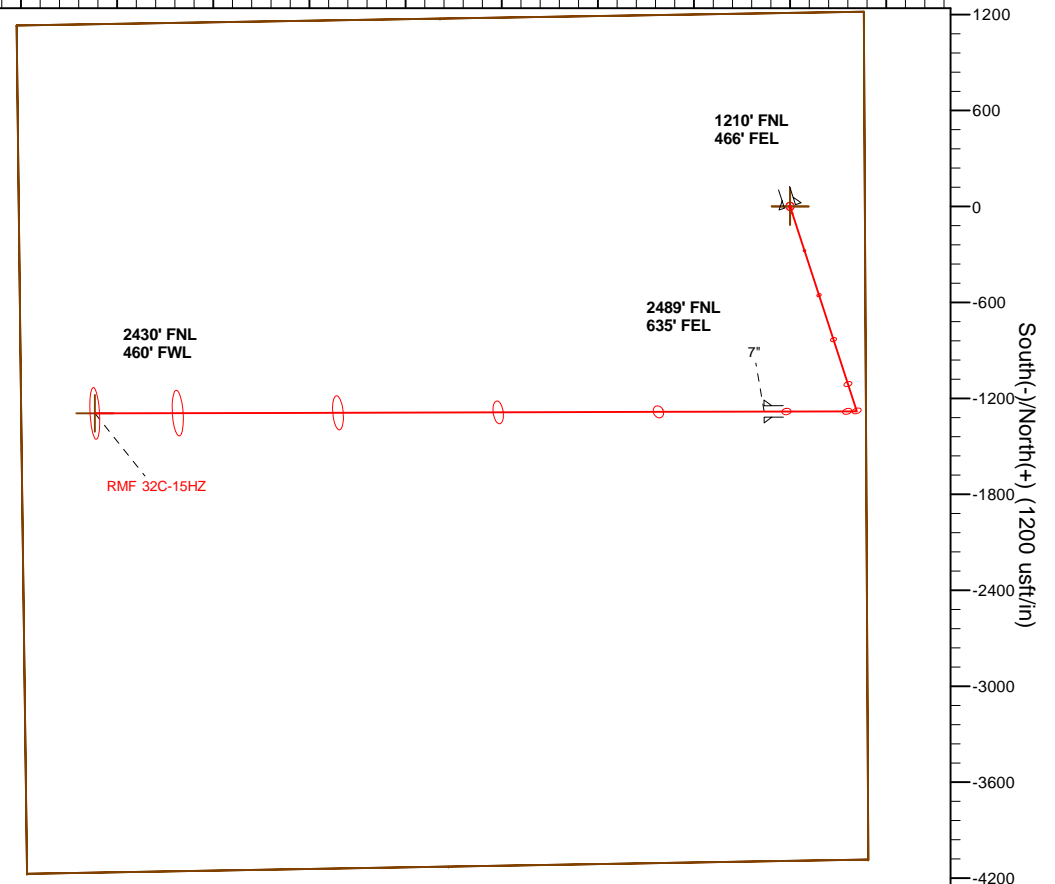
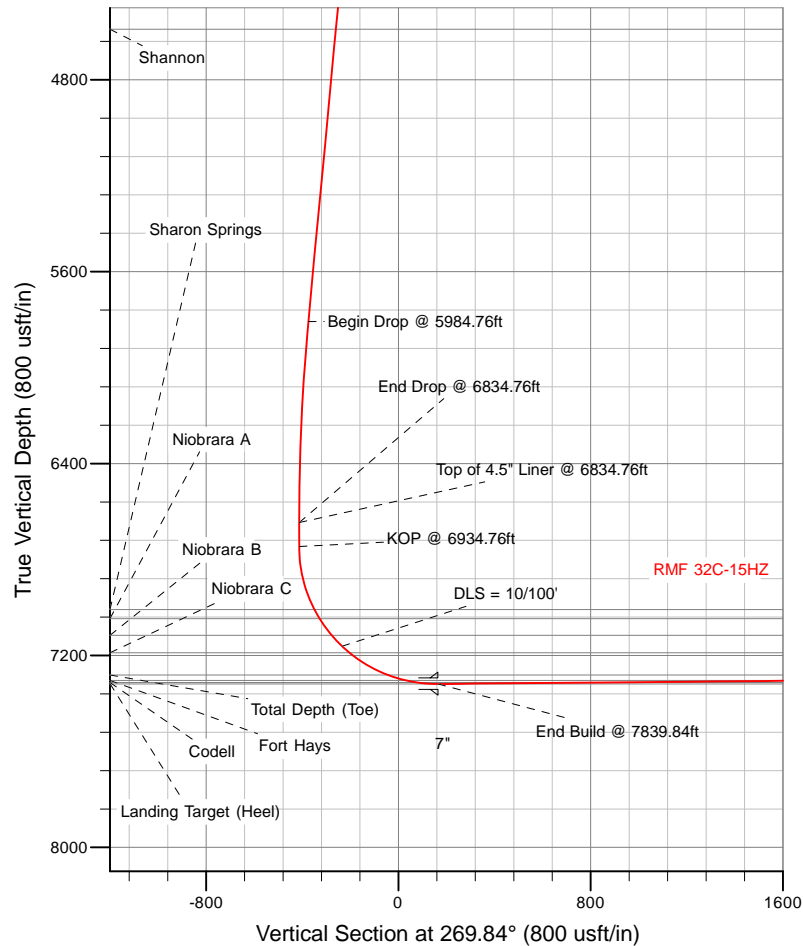
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1384.76	0.00	0.00	1384.76	0.00	0.00	0.00	0.00	0.00	
3	2234.76	17.00	162.00	2222.34	-119.05	38.68	2.00	162.00	-38.35	
4	5984.76	17.00	162.00	5808.49	-1161.78	377.49	0.00	0.00	-374.24	
5	6834.76	0.00	0.00	6646.07	-1280.83	416.17	2.00	180.00	-412.59	
6	6934.76	0.00	0.00	6746.07	-1280.83	416.17	0.00	0.00	-412.59	
7	7839.84	90.51	269.84	7319.00	-1282.43	-161.86	10.00	269.84	165.44	
8	12017.18	90.51	269.84	7282.00	-1293.96	-4339.03	0.00	0.00	4342.63	RMF 32C-15HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

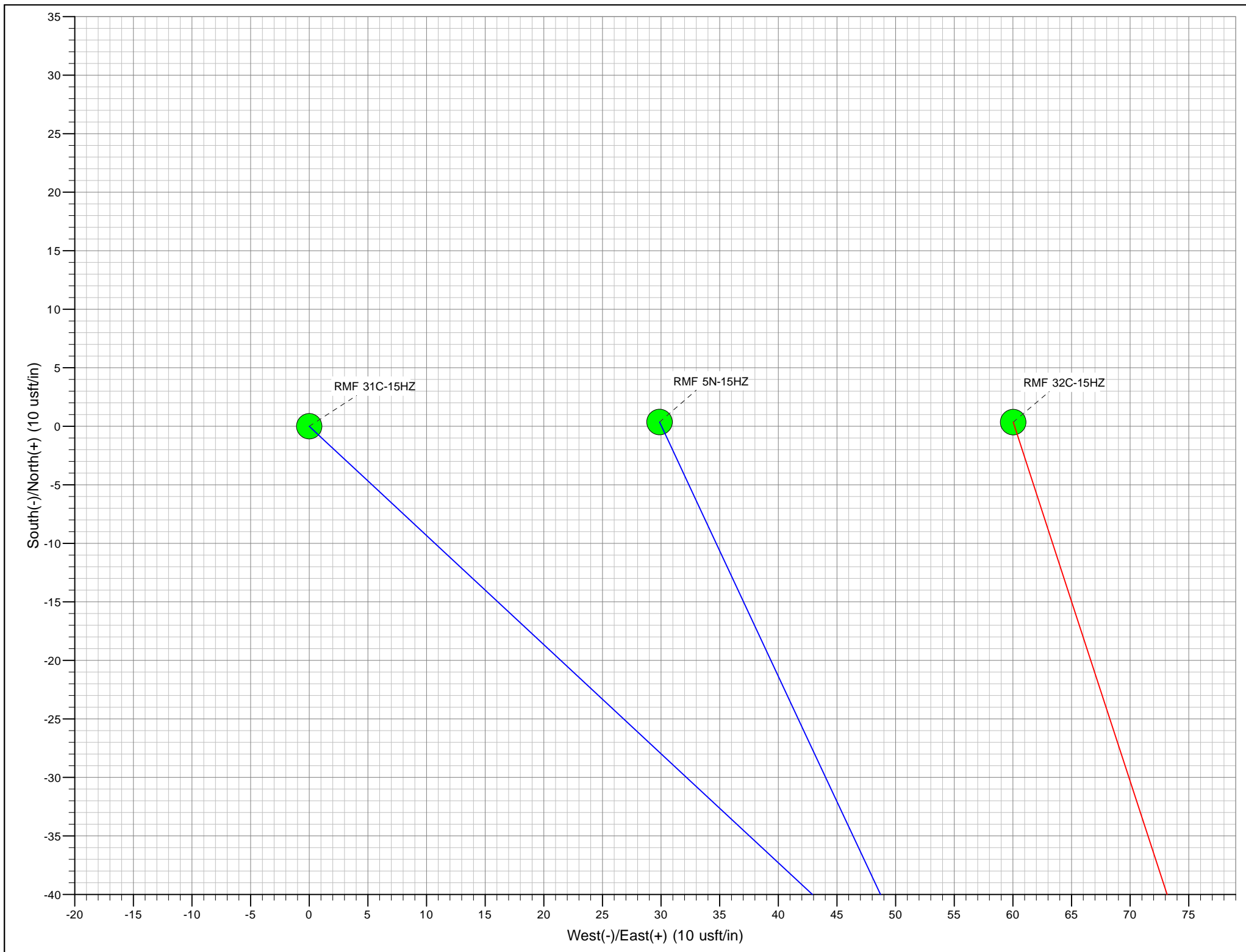
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
RMF 32C-15HZ_SEC	0.00	0.00	0.00	40.230133	-104.981365	Polygon
RMF 32C-15HZ_SHL	0.00	0.00	0.00	40.230133	-104.981365	Point
RMF 32C-15HZ_BHL	7282.00	-1293.96	-4339.03	40.226580	-104.996904	Point

West(-)/East(+) (1200 usft/in)



WELL DETAILS: RMF 32C-15HZ		
Ground Level: 4967.00 RKB = 17" @ 4984.00usft (Drilling Rig)		
Plan: Rev A0 (RMF 32C-15HZ/Plan A)		
Created By: Clint Eshelman		Date: 10/7/2013
Reviewed: _____		Date: _____

TVD	MD	
6646.07	6834.76	Top of 4.5" Liner @ 6834.76ft
6746.07	6934.76	KOP @ 6934.76ft



Plan Report for RMF 32C-15HZ - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RMF 32C-15HZ_SHL - RMF 32C-15HZ_SEC										
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
1,014.00	0.00	0.00	1,014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
1,064.00	0.00	0.00	1,064.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,384.76	0.00	0.00	1,384.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1384.76ft										
1,400.00	0.30	162.00	1,400.00	-0.04	0.01	-0.01	2.00	2.00	0.00	162.00
1,500.00	2.30	162.00	1,499.97	-2.20	0.72	-0.71	2.00	2.00	0.00	0.00
1,600.00	4.30	162.00	1,599.80	-7.69	2.50	-2.48	2.00	2.00	0.00	0.00
1,700.00	6.30	162.00	1,699.36	-16.48	5.35	-5.31	2.00	2.00	0.00	0.00
1,800.00	8.30	162.00	1,798.55	-28.57	9.28	-9.20	2.00	2.00	0.00	0.00
1,900.00	10.30	162.00	1,897.23	-43.95	14.28	-14.16	2.00	2.00	0.00	0.00
2,000.00	12.30	162.00	1,995.28	-62.59	20.34	-20.16	2.00	2.00	0.00	0.00
2,100.00	14.30	162.00	2,092.59	-84.48	27.45	-27.21	2.00	2.00	0.00	0.00
2,200.00	16.30	162.00	2,189.04	-109.58	35.60	-35.30	2.00	2.00	0.00	0.00
2,234.76	17.00	162.00	2,222.34	-119.05	38.68	-38.35	2.00	2.00	0.00	0.00
End Nudge @ 2234.76ft										
2,300.00	17.00	162.00	2,284.73	-137.19	44.58	-44.19	0.00	0.00	0.00	0.00
2,400.00	17.00	162.00	2,380.36	-165.00	53.61	-53.15	0.00	0.00	0.00	0.00
2,500.00	17.00	162.00	2,475.99	-192.80	62.65	-62.11	0.00	0.00	0.00	0.00
2,600.00	17.00	162.00	2,571.62	-220.61	71.68	-71.06	0.00	0.00	0.00	0.00
2,700.00	17.00	162.00	2,667.25	-248.42	80.72	-80.02	0.00	0.00	0.00	0.00
2,800.00	17.00	162.00	2,762.88	-276.22	89.75	-88.98	0.00	0.00	0.00	0.00
2,900.00	17.00	162.00	2,858.52	-304.03	98.79	-97.94	0.00	0.00	0.00	0.00
3,000.00	17.00	162.00	2,954.15	-331.84	107.82	-106.89	0.00	0.00	0.00	0.00
3,100.00	17.00	162.00	3,049.78	-359.64	116.85	-115.85	0.00	0.00	0.00	0.00
3,200.00	17.00	162.00	3,145.41	-387.45	125.89	-124.81	0.00	0.00	0.00	0.00
3,300.00	17.00	162.00	3,241.04	-415.25	134.92	-133.76	0.00	0.00	0.00	0.00
3,400.00	17.00	162.00	3,336.67	-443.06	143.96	-142.72	0.00	0.00	0.00	0.00
3,500.00	17.00	162.00	3,432.30	-470.87	152.99	-151.68	0.00	0.00	0.00	0.00
3,600.00	17.00	162.00	3,527.93	-498.67	162.03	-160.64	0.00	0.00	0.00	0.00
3,700.00	17.00	162.00	3,623.56	-526.48	171.06	-169.59	0.00	0.00	0.00	0.00
3,800.00	17.00	162.00	3,719.19	-554.28	180.10	-178.55	0.00	0.00	0.00	0.00
3,900.00	17.00	162.00	3,814.82	-582.09	189.13	-187.51	0.00	0.00	0.00	0.00
4,000.00	17.00	162.00	3,910.45	-609.90	198.17	-196.46	0.00	0.00	0.00	0.00
4,100.00	17.00	162.00	4,006.08	-637.70	207.20	-205.42	0.00	0.00	0.00	0.00
4,154.29	17.00	162.00	4,058.00	-652.80	212.11	-210.28	0.00	0.00	0.00	0.00
Sussex										
4,200.00	17.00	162.00	4,101.71	-665.51	216.24	-214.38	0.00	0.00	0.00	0.00
4,300.00	17.00	162.00	4,197.34	-693.32	225.27	-223.33	0.00	0.00	0.00	0.00
4,400.00	17.00	162.00	4,292.97	-721.12	234.31	-232.29	0.00	0.00	0.00	0.00
4,500.00	17.00	162.00	4,388.60	-748.93	243.34	-241.25	0.00	0.00	0.00	0.00
4,600.00	17.00	162.00	4,484.23	-776.73	252.38	-250.21	0.00	0.00	0.00	0.00

Plan Report for RMF 32C-15HZ - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
4,700.00	17.00	162.00	4,579.86	-804.54	261.41	-259.16	0.00	0.00	0.00	0.00
4,710.60	17.00	162.00	4,590.00	-807.49	262.37	-260.11	0.00	0.00	0.00	0.00
Shannon										
4,800.00	17.00	162.00	4,675.49	-832.35	270.45	-268.12	0.00	0.00	0.00	0.00
4,900.00	17.00	162.00	4,771.12	-860.15	279.48	-277.08	0.00	0.00	0.00	0.00
5,000.00	17.00	162.00	4,866.76	-887.96	288.52	-286.03	0.00	0.00	0.00	0.00
5,100.00	17.00	162.00	4,962.39	-915.77	297.55	-294.99	0.00	0.00	0.00	0.00
5,200.00	17.00	162.00	5,058.02	-943.57	306.59	-303.95	0.00	0.00	0.00	0.00
5,300.00	17.00	162.00	5,153.65	-971.38	315.62	-312.91	0.00	0.00	0.00	0.00
5,400.00	17.00	162.00	5,249.28	-999.18	324.65	-321.86	0.00	0.00	0.00	0.00
5,500.00	17.00	162.00	5,344.91	-1,026.99	333.69	-330.82	0.00	0.00	0.00	0.00
5,600.00	17.00	162.00	5,440.54	-1,054.80	342.72	-339.78	0.00	0.00	0.00	0.00
5,700.00	17.00	162.00	5,536.17	-1,082.60	351.76	-348.73	0.00	0.00	0.00	0.00
5,800.00	17.00	162.00	5,631.80	-1,110.41	360.79	-357.69	0.00	0.00	0.00	0.00
5,900.00	17.00	162.00	5,727.43	-1,138.22	369.83	-366.65	0.00	0.00	0.00	0.00
5,984.76	17.00	162.00	5,808.49	-1,161.78	377.49	-374.24	0.00	0.00	0.00	0.00
Begin Drop @ 5984.76ft										
6,000.00	16.70	162.00	5,823.07	-1,165.98	378.85	-375.59	2.00	-2.00	0.00	180.00
6,100.00	14.70	162.00	5,919.34	-1,191.71	387.21	-383.88	2.00	-2.00	0.00	180.00
6,200.00	12.70	162.00	6,016.49	-1,214.23	394.53	-391.13	2.00	-2.00	0.00	180.00
6,300.00	10.70	162.00	6,114.41	-1,233.50	400.79	-397.34	2.00	-2.00	0.00	180.00
6,400.00	8.70	162.00	6,212.98	-1,249.52	405.99	-402.50	2.00	-2.00	0.00	180.00
6,500.00	6.70	162.00	6,312.07	-1,262.25	410.13	-406.60	2.00	-2.00	0.00	180.00
6,600.00	4.70	162.00	6,411.57	-1,271.69	413.20	-409.64	2.00	-2.00	0.00	180.00
6,700.00	2.70	162.00	6,511.36	-1,277.82	415.19	-411.62	2.00	-2.00	0.00	180.00
6,800.00	0.70	162.00	6,611.31	-1,280.63	416.10	-412.53	2.00	-2.00	0.00	180.00
6,834.76	0.00	0.00	6,646.07	-1,280.83	416.17	-412.59	2.00	-2.00	0.00	-180.00
End Drop @ 6834.76ft - Top of 4.5" Liner @ 6834.76ft										
6,900.00	0.00	0.00	6,711.31	-1,280.83	416.17	-412.59	0.00	0.00	0.00	0.00
6,934.76	0.00	0.00	6,746.07	-1,280.83	416.17	-412.59	0.00	0.00	0.00	0.00
KOP @ 6934.76ft										
7,000.00	6.52	269.84	6,811.17	-1,280.84	412.46	-408.88	10.00	10.00	0.00	269.84
7,100.00	16.52	269.84	6,909.03	-1,280.90	392.51	-388.93	10.00	10.00	0.00	0.00
7,200.00	26.52	269.84	7,001.94	-1,281.00	355.86	-352.28	10.00	10.00	0.00	0.00
7,207.92	27.32	269.84	7,009.00	-1,281.01	352.28	-348.70	10.00	10.00	0.00	0.00
Sharon Springs										
7,251.59	31.68	269.84	7,047.00	-1,281.07	330.78	-327.20	10.00	10.00	0.00	0.00
Niobrara A										
7,300.00	36.52	269.84	7,087.07	-1,281.15	303.64	-300.07	10.00	10.00	0.00	0.00
7,336.90	40.21	269.84	7,116.00	-1,281.21	280.74	-277.16	10.00	10.00	0.00	0.00
Niobrara B										
7,400.00	46.52	269.84	7,161.84	-1,281.33	237.44	-233.86	10.00	10.00	0.00	0.00
DLS = 10/100'										
7,441.05	50.63	269.84	7,189.00	-1,281.41	206.66	-203.08	10.00	10.00	0.00	0.00
Niobrara C										
7,500.00	56.52	269.84	7,223.98	-1,281.54	159.25	-155.67	10.00	10.00	0.00	0.00
7,600.00	66.52	269.84	7,271.60	-1,281.79	71.46	-67.88	10.00	10.00	0.00	0.00
7,700.00	76.52	269.84	7,303.25	-1,282.05	-23.27	26.85	10.00	10.00	0.00	0.00
7,703.25	76.85	269.84	7,304.00	-1,282.06	-26.43	30.01	10.00	10.00	0.00	0.00
Fort Hays										
7,751.58	81.68	269.84	7,313.00	-1,282.19	-73.90	77.48	10.00	10.00	0.00	0.00
Codell										
7,800.00	86.52	269.84	7,317.97	-1,282.32	-122.05	125.63	10.00	10.00	0.00	0.00
7,839.84	90.51	269.84	7,319.00	-1,282.43	-161.87	165.45	10.00	10.00	0.00	0.00
End Build @ 7839.84ft - Landing Target (Heel) - 7"										
7,900.00	90.51	269.84	7,318.47	-1,282.60	-222.02	225.61	0.00	0.00	0.00	0.00
8,000.00	90.51	269.84	7,317.59	-1,282.87	-322.02	325.60	0.00	0.00	0.00	0.00
8,100.00	90.51	269.84	7,316.70	-1,283.15	-422.02	425.60	0.00	0.00	0.00	0.00

Plan Report for RMF 32C-15HZ - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
8,200.00	90.51	269.84	7,315.81	-1,283.42	-522.01	525.59	0.00	0.00	0.00	0.00
8,300.00	90.51	269.84	7,314.93	-1,283.70	-622.01	625.59	0.00	0.00	0.00	0.00
8,400.00	90.51	269.84	7,314.04	-1,283.98	-722.00	725.59	0.00	0.00	0.00	0.00
8,500.00	90.51	269.84	7,313.16	-1,284.25	-822.00	825.58	0.00	0.00	0.00	0.00
8,600.00	90.51	269.84	7,312.27	-1,284.53	-921.99	925.58	0.00	0.00	0.00	0.00
8,700.00	90.51	269.84	7,311.38	-1,284.81	-1,021.99	1,025.57	0.00	0.00	0.00	0.00
8,800.00	90.51	269.84	7,310.50	-1,285.08	-1,121.99	1,125.57	0.00	0.00	0.00	0.00
8,900.00	90.51	269.84	7,309.61	-1,285.36	-1,221.98	1,225.57	0.00	0.00	0.00	0.00
9,000.00	90.51	269.84	7,308.73	-1,285.63	-1,321.98	1,325.56	0.00	0.00	0.00	0.00
9,100.00	90.51	269.84	7,307.84	-1,285.91	-1,421.97	1,425.56	0.00	0.00	0.00	0.00
9,200.00	90.51	269.84	7,306.96	-1,286.19	-1,521.97	1,525.55	0.00	0.00	0.00	0.00
9,300.00	90.51	269.84	7,306.07	-1,286.46	-1,621.96	1,625.55	0.00	0.00	0.00	0.00
9,400.00	90.51	269.84	7,305.18	-1,286.74	-1,721.96	1,725.55	0.00	0.00	0.00	0.00
9,500.00	90.51	269.84	7,304.30	-1,287.01	-1,821.96	1,825.54	0.00	0.00	0.00	0.00
9,600.00	90.51	269.84	7,303.41	-1,287.29	-1,921.95	1,925.54	0.00	0.00	0.00	0.00
9,700.00	90.51	269.84	7,302.53	-1,287.57	-2,021.95	2,025.53	0.00	0.00	0.00	0.00
9,800.00	90.51	269.84	7,301.64	-1,287.84	-2,121.94	2,125.53	0.00	0.00	0.00	0.00
9,900.00	90.51	269.84	7,300.75	-1,288.12	-2,221.94	2,225.53	0.00	0.00	0.00	0.00
10,000.00	90.51	269.84	7,299.87	-1,288.39	-2,321.93	2,325.52	0.00	0.00	0.00	0.00
10,100.00	90.51	269.84	7,298.98	-1,288.67	-2,421.93	2,425.52	0.00	0.00	0.00	0.00
10,200.00	90.51	269.84	7,298.10	-1,288.95	-2,521.93	2,525.52	0.00	0.00	0.00	0.00
10,300.00	90.51	269.84	7,297.21	-1,289.22	-2,621.92	2,625.51	0.00	0.00	0.00	0.00
10,400.00	90.51	269.84	7,296.33	-1,289.50	-2,721.92	2,725.51	0.00	0.00	0.00	0.00
10,500.00	90.51	269.84	7,295.44	-1,289.77	-2,821.91	2,825.50	0.00	0.00	0.00	0.00
10,600.00	90.51	269.84	7,294.55	-1,290.05	-2,921.91	2,925.50	0.00	0.00	0.00	0.00
10,700.00	90.51	269.84	7,293.67	-1,290.33	-3,021.90	3,025.50	0.00	0.00	0.00	0.00
10,800.00	90.51	269.84	7,292.78	-1,290.60	-3,121.90	3,125.49	0.00	0.00	0.00	0.00
10,900.00	90.51	269.84	7,291.90	-1,290.88	-3,221.90	3,225.49	0.00	0.00	0.00	0.00
11,000.00	90.51	269.84	7,291.01	-1,291.15	-3,321.89	3,325.48	0.00	0.00	0.00	0.00
11,100.00	90.51	269.84	7,290.12	-1,291.43	-3,421.89	3,425.48	0.00	0.00	0.00	0.00
11,200.00	90.51	269.84	7,289.24	-1,291.71	-3,521.88	3,525.48	0.00	0.00	0.00	0.00
11,300.00	90.51	269.84	7,288.35	-1,291.98	-3,621.88	3,625.47	0.00	0.00	0.00	0.00
11,400.00	90.51	269.84	7,287.47	-1,292.26	-3,721.87	3,725.47	0.00	0.00	0.00	0.00
11,500.00	90.51	269.84	7,286.58	-1,292.54	-3,821.87	3,825.46	0.00	0.00	0.00	0.00
11,600.00	90.51	269.84	7,285.70	-1,292.81	-3,921.87	3,925.46	0.00	0.00	0.00	0.00
11,700.00	90.51	269.84	7,284.81	-1,293.09	-4,021.86	4,025.46	0.00	0.00	0.00	0.00
11,800.00	90.51	269.84	7,283.92	-1,293.36	-4,121.86	4,125.45	0.00	0.00	0.00	0.00
11,900.00	90.51	269.84	7,283.04	-1,293.64	-4,221.85	4,225.45	0.00	0.00	0.00	0.00
12,000.00	90.51	269.84	7,282.15	-1,293.92	-4,321.85	4,325.44	0.00	0.00	0.00	0.00
12,017.18	90.51	269.84	7,282.00	-1,293.96	-4,339.03	4,342.62	0.00	0.00	0.00	0.00

TD Well @ 12017.18ft - Total Depth (Toe) - RMF 32C-15HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,384.76	1,384.76	0.00	0.00	Begin Nudge @ 1384.76ft
2,234.76	2,222.34	-119.05	38.68	End Nudge @ 2234.76ft
5,984.76	5,808.49	-1,161.78	377.49	Begin Drop @ 5984.76ft
6,834.76	6,646.07	-1,280.83	416.17	End Drop @ 6834.76ft
6,834.76	6,646.07	-1,280.83	416.17	Top of 4.5" Liner @ 6834.76ft
6,934.76	6,746.07	-1,280.83	416.17	KOP @ 6934.76ft
7,400.00	7,161.84	-1,281.33	237.44	DLS = 10/100'
7,839.84	7,319.00	-1,282.43	-161.87	End Build @ 7839.84ft
12,017.18	7,282.00	-1,293.96	-4,339.03	TD Well @ 12017.18ft

Plan Report for RMF 32C-15HZ - Rev A0

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	269.84	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,839.84	Rev A0	MWD
7,839.84	12,017.18	Rev A0	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,064.00	1,064.00	9 5/8"	9-5/8	13-1/2
7,839.84	7,319.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,014.00	1,014.00	Fox Hills Base		0.00	
4,154.29	4,058.00	Sussex		0.00	
4,710.60	4,590.00	Shannon		0.00	
7,207.92	7,009.00	Sharon Springs		0.00	
7,251.59	7,047.00	Niobrara A		0.00	
7,336.90	7,116.00	Niobrara B		0.00	
7,441.05	7,189.00	Niobrara C		0.00	
7,703.25	7,304.00	Fort Hays		0.00	
7,751.58	7,313.00	Codell		0.00	
7,839.84	7,319.00	Landing Target (Heel)		0.00	
12,017.18	7,282.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
RMF 32C-15HZ_SHL	0.00	0.00	0.00	Point
RMF 32C-15HZ_SEC	0.00	0.00	0.00	Polygon
RMF 32C-15HZ_BHL	7,282.00	-1,293.96	-4,339.03	Point

Directional Difficulty Index

Average Dogleg over Survey:	1.04 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,839.84 usft
Net Tortousity applicable to Plans:	1.04 °/100usft	Directional Difficulty Index:	6.235

Plan Report for RMF 32C-15HZ - Rev A0

Audit Info

North Reference Sheet for Sec. 15-T3N-R68W - RMF 32C-15HZ - Plan A

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' @ 4984.00usft (Drilling Rig). Northing and Easting are relative to RMF 32C-15HZ
 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: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995691

Grid Coordinates of Well: 1,327,102.88 usft N, 3,144,806.32 usft E
 Geographical Coordinates of Well: 40° 13' 48.48" N, 104° 58' 52.91" W
 Grid Convergence at Surface is: 0.34°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,017.18usft
 the Bottom Hole Displacement is 4,527.86usft in the Direction of 253.39° (True).
 Magnetic Convergence at surface is: -8.35° (7 October 2013 , BGGM2013)

