

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-21 Meguire 21-2HZ Pad

MEGUIRE 28C-16HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

23 April, 2015

Well Coordinates: 14,572,370.64 N, 1,732,564.11 E (40° 07' 29.49" N, 104° 40' 13.30" W)

Ground Level: 4,888.00 usft

Local Coordinate Origin:

Centered on Well MEGUIRE 28C-16HZ

Viewing Datum:

RKB = 17' @ 4905.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

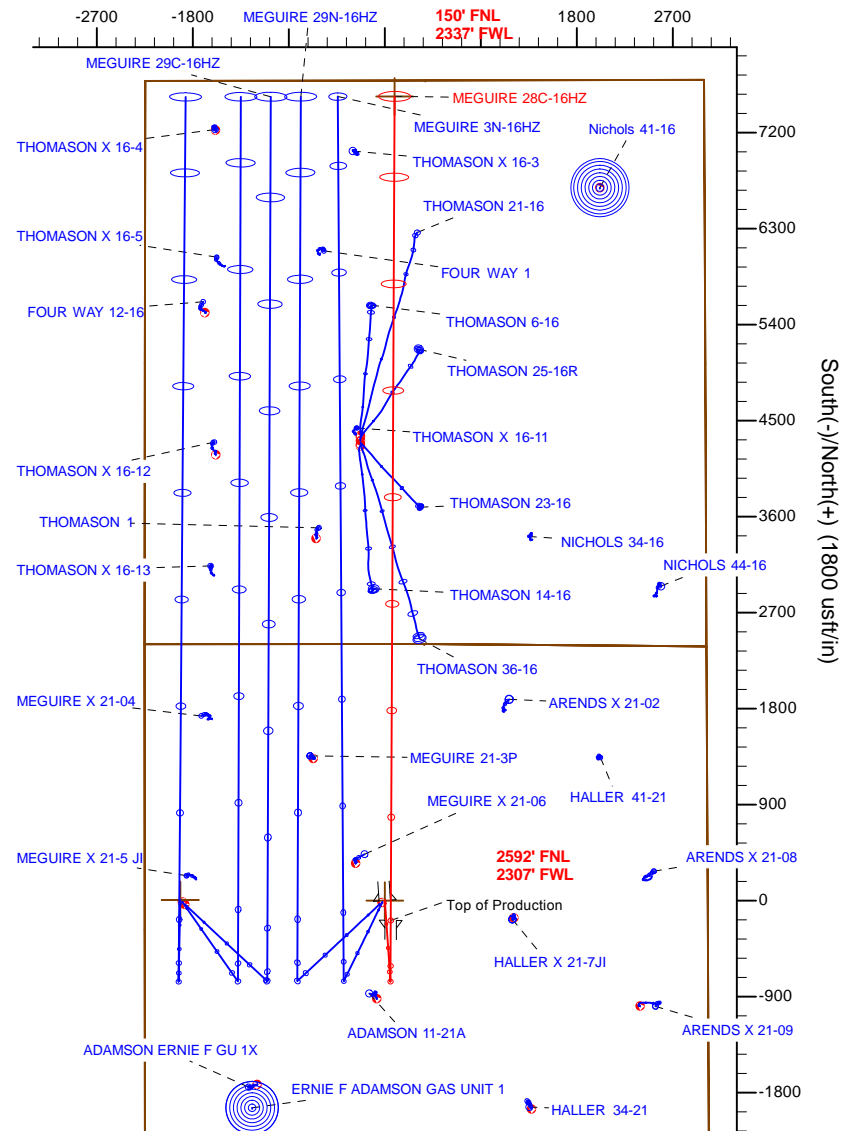
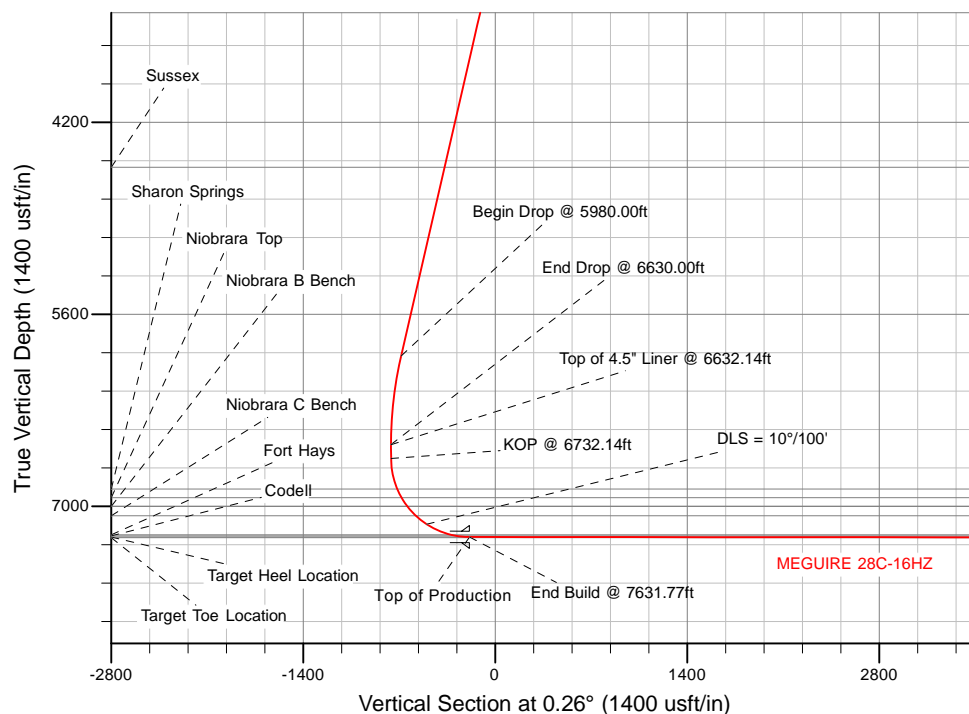
Sperry Drilling

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	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	
3	3250.00	13.00	176.00	3244.44	-73.25	5.12	2.00	176.00	-73.22	
4	5980.00	13.00	176.00	5904.47	-685.87	47.96	0.00	0.00	-685.64	
5	6630.00	0.00	0.00	6548.90	-759.11	53.08	2.00	180.00	-759.86	
6	6732.14	0.00	0.00	6651.04	-759.11	53.08	0.00	0.00	-759.86	
7	7631.77	89.96	0.26	7224.04	-186.53	55.72	10.00	0.26	-186.28	
8	15356.70	89.96	0.26	7229.00	7538.32	91.38	0.00	0.00	7538.66	MEGUIRE 280C-16HZ BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MEGUIRE 28C-16HZ_SHL	0.00	-0.00	0.00	40.124858	-104.670361
MEGUIRE 28C-16HZ_BHL	7229.00	7538.32	91.38	40.145559	-104.670034



TVD MD

6651.04 6732.14 KOP @ 6732.14ft

WELL DETAILS: MEGUIRE 28C-16HZ

Ground Level: 4888.00

RKB = 17' @ 4905.00usft (D Rig)

Plan: Permit Rev-1 (MEGUIRE 28C-16HZ/Plan A)

Created By: Clint Eshelman
Reviewed:

Date: 1/27/2015
Date:

Plan Report for MEGUIRE 28C-16HZ - Permit Rev-1

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
2N-R65W-Sec. 16_Section Lines - MEGUIRE 28C-16HZ_SHL - 2N-R65W-Sec. 21_Section 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
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
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
1,357.00	0.00	0.00	1,357.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2600.00ft										
2,700.00	2.00	176.00	2,699.98	-1.74	0.12	-1.74	2.00	2.00	0.00	176.00
2,800.00	4.00	176.00	2,799.84	-6.96	0.49	-6.96	2.00	2.00	0.00	0.00
2,900.00	6.00	176.00	2,899.45	-15.66	1.09	-15.65	2.00	2.00	0.00	0.00
3,000.00	8.00	176.00	2,998.70	-27.81	1.94	-27.80	2.00	2.00	0.00	0.00
3,100.00	10.00	176.00	3,097.47	-43.42	3.04	-43.40	2.00	2.00	0.00	0.00
3,200.00	12.00	176.00	3,195.62	-62.45	4.37	-62.43	2.00	2.00	0.00	0.00
3,250.00	13.00	176.00	3,244.44	-73.25	5.12	-73.22	2.00	2.00	0.00	0.00
End Nudge @ 3250.00ft										
3,300.00	13.00	176.00	3,293.16	-84.47	5.91	-84.44	0.00	0.00	0.00	0.00
3,400.00	13.00	176.00	3,390.59	-106.91	7.48	-106.87	0.00	0.00	0.00	0.00
3,500.00	13.00	176.00	3,488.03	-129.35	9.04	-129.30	0.00	0.00	0.00	0.00
3,600.00	13.00	176.00	3,585.47	-151.79	10.61	-151.74	0.00	0.00	0.00	0.00
3,700.00	13.00	176.00	3,682.90	-174.23	12.18	-174.17	0.00	0.00	0.00	0.00
3,800.00	13.00	176.00	3,780.34	-196.67	13.75	-196.60	0.00	0.00	0.00	0.00
3,900.00	13.00	176.00	3,877.78	-219.11	15.32	-219.04	0.00	0.00	0.00	0.00
4,000.00	13.00	176.00	3,975.21	-241.55	16.89	-241.47	0.00	0.00	0.00	0.00
4,100.00	13.00	176.00	4,072.65	-263.99	18.46	-263.90	0.00	0.00	0.00	0.00
4,200.00	13.00	176.00	4,170.09	-286.43	20.03	-286.33	0.00	0.00	0.00	0.00
4,300.00	13.00	176.00	4,267.53	-308.87	21.60	-308.77	0.00	0.00	0.00	0.00
4,400.00	13.00	176.00	4,364.96	-331.31	23.17	-331.20	0.00	0.00	0.00	0.00
4,500.00	13.00	176.00	4,462.40	-353.75	24.74	-353.63	0.00	0.00	0.00	0.00
4,566.30	13.00	176.00	4,527.00	-368.63	25.78	-368.51	0.00	0.00	0.00	0.00
Sussex										
4,600.00	13.00	176.00	4,559.84	-376.19	26.31	-376.07	0.00	0.00	0.00	0.00
4,700.00	13.00	176.00	4,657.27	-398.63	27.87	-398.50	0.00	0.00	0.00	0.00
4,800.00	13.00	176.00	4,754.71	-421.07	29.44	-420.93	0.00	0.00	0.00	0.00
4,900.00	13.00	176.00	4,852.15	-443.51	31.01	-443.37	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 28C-16HZ - Permit Rev-1

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 (°)
5,000.00	13.00	176.00	4,949.58	-465.95	32.58	-465.80	0.00	0.00	0.00	0.00
5,100.00	13.00	176.00	5,047.02	-488.39	34.15	-488.23	0.00	0.00	0.00	0.00
5,200.00	13.00	176.00	5,144.46	-510.83	35.72	-510.66	0.00	0.00	0.00	0.00
5,300.00	13.00	176.00	5,241.90	-533.27	37.29	-533.10	0.00	0.00	0.00	0.00
5,400.00	13.00	176.00	5,339.33	-555.71	38.86	-555.53	0.00	0.00	0.00	0.00
5,500.00	13.00	176.00	5,436.77	-578.15	40.43	-577.96	0.00	0.00	0.00	0.00
5,600.00	13.00	176.00	5,534.21	-600.59	42.00	-600.40	0.00	0.00	0.00	0.00
5,700.00	13.00	176.00	5,631.64	-623.03	43.57	-622.83	0.00	0.00	0.00	0.00
5,800.00	13.00	176.00	5,729.08	-645.47	45.14	-645.26	0.00	0.00	0.00	0.00
5,900.00	13.00	176.00	5,826.52	-667.91	46.71	-667.69	0.00	0.00	0.00	0.00
5,980.00	13.00	176.00	5,904.47	-685.87	47.96	-685.64	0.00	0.00	0.00	0.00
Begin Drop @ 5980.00ft										
6,000.00	12.60	176.00	5,923.97	-690.29	48.27	-690.06	2.00	-2.00	0.00	180.00
6,100.00	10.60	176.00	6,021.92	-710.34	49.67	-710.11	2.00	-2.00	0.00	180.00
6,200.00	8.60	176.00	6,120.52	-726.98	50.84	-726.74	2.00	-2.00	0.00	180.00
6,300.00	6.60	176.00	6,219.63	-740.17	51.76	-739.93	2.00	-2.00	0.00	180.00
6,400.00	4.60	176.00	6,319.15	-749.91	52.44	-749.66	2.00	-2.00	0.00	180.00
6,500.00	2.60	176.00	6,418.95	-756.17	52.88	-755.92	2.00	-2.00	0.00	180.00
6,600.00	0.60	176.00	6,518.91	-758.95	53.07	-758.71	2.00	-2.00	0.00	180.00
6,630.00	0.00	0.00	6,548.90	-759.11	53.08	-758.86	2.00	-2.00	0.00	-180.00
End Drop @ 6630.00ft										
6,632.14	0.00	0.00	6,551.04	-759.11	53.08	-758.86	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6632.14ft										
6,700.00	0.00	0.00	6,618.90	-759.11	53.08	-758.86	0.00	0.00	0.00	0.00
6,732.14	0.00	0.00	6,651.04	-759.11	53.08	-758.86	0.00	0.00	0.00	0.00
KOP @ 6732.14ft										
6,800.00	6.79	0.26	6,718.75	-755.10	53.10	-754.85	10.00	10.00	0.00	0.26
6,900.00	16.79	0.26	6,816.51	-734.70	53.19	-734.45	10.00	10.00	0.00	0.00
6,961.95	22.98	0.26	6,874.75	-713.64	53.29	-713.39	10.00	10.00	0.00	0.00
Sharon Springs										
7,000.00	26.79	0.26	6,909.25	-697.63	53.37	-697.38	10.00	10.00	0.00	0.00
7,031.24	29.91	0.26	6,936.75	-682.80	53.43	-682.55	10.00	10.00	0.00	0.00
Niobrara Top										
7,100.00	36.79	0.26	6,994.15	-645.02	53.61	-644.77	10.00	10.00	0.00	0.00
7,106.64	37.45	0.26	6,999.44	-641.02	53.63	-640.77	10.00	10.00	0.00	0.00
Niobrara B Bench										
7,199.27	46.71	0.26	7,068.12	-579.01	53.91	-578.76	10.00	10.00	0.00	0.00
Niobrara C Bench										
7,200.00	46.79	0.26	7,068.62	-578.47	53.92	-578.22	10.00	10.00	0.00	0.00
7,300.00	56.79	0.26	7,130.40	-500.00	54.28	-499.75	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,400.00	66.79	0.26	7,177.62	-412.00	54.68	-411.75	10.00	10.00	0.00	0.00
7,492.69	76.05	0.26	7,207.12	-324.24	55.09	-323.99	10.00	10.00	0.00	0.00
Fort Hays										
7,500.00	76.79	0.26	7,208.83	-317.13	55.12	-316.88	10.00	10.00	0.00	0.00
7,537.03	80.49	0.26	7,216.13	-280.83	55.29	-280.58	10.00	10.00	0.00	0.00
Codell										
7,600.00	86.79	0.26	7,223.10	-218.28	55.58	-218.03	10.00	10.00	0.00	0.00
7,631.77	89.96	0.26	7,224.00	-186.53	55.72	-186.27	10.00	10.00	0.00	0.00
End Build @ 7631.77ft - Target Heel Location - Top of Production										
7,700.00	89.96	0.26	7,224.05	-118.30	56.04	-118.04	0.00	0.00	0.00	0.00
7,800.00	89.96	0.26	7,224.11	-18.30	56.50	-18.05	0.00	0.00	0.00	0.00
7,900.00	89.96	0.26	7,224.18	81.70	56.96	81.95	0.00	0.00	0.00	0.00
8,000.00	89.96	0.26	7,224.24	181.70	57.42	181.95	0.00	0.00	0.00	0.00
8,100.00	89.96	0.26	7,224.31	281.70	57.89	281.95	0.00	0.00	0.00	0.00
8,200.00	89.96	0.26	7,224.37	381.69	58.35	381.95	0.00	0.00	0.00	0.00
8,300.00	89.96	0.26	7,224.43	481.69	58.81	481.95	0.00	0.00	0.00	0.00
8,400.00	89.96	0.26	7,224.50	581.69	59.27	581.95	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 28C-16HZ - Permit Rev-1

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 (°)
8,500.00	89.96	0.26	7,224.56	681.69	59.73	681.95	0.00	0.00	0.00	0.00
8,600.00	89.96	0.26	7,224.63	781.69	60.19	781.95	0.00	0.00	0.00	0.00
8,700.00	89.96	0.26	7,224.69	881.69	60.66	881.95	0.00	0.00	0.00	0.00
8,800.00	89.96	0.26	7,224.76	981.69	61.12	981.95	0.00	0.00	0.00	0.00
8,900.00	89.96	0.26	7,224.82	1,081.69	61.58	1,081.95	0.00	0.00	0.00	0.00
9,000.00	89.96	0.26	7,224.89	1,181.69	62.04	1,181.95	0.00	0.00	0.00	0.00
9,100.00	89.96	0.26	7,224.95	1,281.68	62.50	1,281.95	0.00	0.00	0.00	0.00
9,200.00	89.96	0.26	7,225.02	1,381.68	62.96	1,381.95	0.00	0.00	0.00	0.00
9,300.00	89.96	0.26	7,225.08	1,481.68	63.42	1,481.95	0.00	0.00	0.00	0.00
9,400.00	89.96	0.26	7,225.15	1,581.68	63.89	1,581.95	0.00	0.00	0.00	0.00
9,500.00	89.96	0.26	7,225.21	1,681.68	64.35	1,681.95	0.00	0.00	0.00	0.00
9,600.00	89.96	0.26	7,225.28	1,781.68	64.81	1,781.95	0.00	0.00	0.00	0.00
9,700.00	89.96	0.26	7,225.34	1,881.68	65.27	1,881.95	0.00	0.00	0.00	0.00
9,800.00	89.96	0.26	7,225.41	1,981.68	65.73	1,981.95	0.00	0.00	0.00	0.00
9,900.00	89.96	0.26	7,225.47	2,081.68	66.19	2,081.95	0.00	0.00	0.00	0.00
10,000.00	89.96	0.26	7,225.53	2,181.67	66.66	2,181.95	0.00	0.00	0.00	0.00
10,100.00	89.96	0.26	7,225.60	2,281.67	67.12	2,281.95	0.00	0.00	0.00	0.00
10,200.00	89.96	0.26	7,225.66	2,381.67	67.58	2,381.95	0.00	0.00	0.00	0.00
10,300.00	89.96	0.26	7,225.73	2,481.67	68.04	2,481.95	0.00	0.00	0.00	0.00
10,400.00	89.96	0.26	7,225.79	2,581.67	68.50	2,581.95	0.00	0.00	0.00	0.00
10,500.00	89.96	0.26	7,225.86	2,681.67	68.96	2,681.95	0.00	0.00	0.00	0.00
10,600.00	89.96	0.26	7,225.92	2,781.67	69.42	2,781.95	0.00	0.00	0.00	0.00
10,700.00	89.96	0.26	7,225.99	2,881.67	69.89	2,881.95	0.00	0.00	0.00	0.00
10,800.00	89.96	0.26	7,226.05	2,981.67	70.35	2,981.95	0.00	0.00	0.00	0.00
10,900.00	89.96	0.26	7,226.12	3,081.66	70.81	3,081.95	0.00	0.00	0.00	0.00
11,000.00	89.96	0.26	7,226.18	3,181.66	71.27	3,181.95	0.00	0.00	0.00	0.00
11,100.00	89.96	0.26	7,226.25	3,281.66	71.73	3,281.95	0.00	0.00	0.00	0.00
11,200.00	89.96	0.26	7,226.31	3,381.66	72.19	3,381.95	0.00	0.00	0.00	0.00
11,300.00	89.96	0.26	7,226.38	3,481.66	72.66	3,481.95	0.00	0.00	0.00	0.00
11,400.00	89.96	0.26	7,226.44	3,581.66	73.12	3,581.95	0.00	0.00	0.00	0.00
11,500.00	89.96	0.26	7,226.51	3,681.66	73.58	3,681.95	0.00	0.00	0.00	0.00
11,600.00	89.96	0.26	7,226.57	3,781.66	74.04	3,781.95	0.00	0.00	0.00	0.00
11,700.00	89.96	0.26	7,226.63	3,881.66	74.50	3,881.95	0.00	0.00	0.00	0.00
11,800.00	89.96	0.26	7,226.70	3,981.65	74.96	3,981.95	0.00	0.00	0.00	0.00
11,900.00	89.96	0.26	7,226.76	4,081.65	75.42	4,081.95	0.00	0.00	0.00	0.00
12,000.00	89.96	0.26	7,226.83	4,181.65	75.89	4,181.95	0.00	0.00	0.00	0.00
12,100.00	89.96	0.26	7,226.89	4,281.65	76.35	4,281.95	0.00	0.00	0.00	0.00
12,200.00	89.96	0.26	7,226.96	4,381.65	76.81	4,381.95	0.00	0.00	0.00	0.00
12,300.00	89.96	0.26	7,227.02	4,481.65	77.27	4,481.95	0.00	0.00	0.00	0.00
12,400.00	89.96	0.26	7,227.09	4,581.65	77.73	4,581.95	0.00	0.00	0.00	0.00
12,500.00	89.96	0.26	7,227.15	4,681.65	78.19	4,681.95	0.00	0.00	0.00	0.00
12,600.00	89.96	0.26	7,227.22	4,781.65	78.66	4,781.95	0.00	0.00	0.00	0.00
12,700.00	89.96	0.26	7,227.28	4,881.65	79.12	4,881.95	0.00	0.00	0.00	0.00
12,800.00	89.96	0.26	7,227.35	4,981.64	79.58	4,981.95	0.00	0.00	0.00	0.00
12,900.00	89.96	0.26	7,227.41	5,081.64	80.04	5,081.95	0.00	0.00	0.00	0.00
13,000.00	89.96	0.26	7,227.48	5,181.64	80.50	5,181.95	0.00	0.00	0.00	0.00
13,100.00	89.96	0.26	7,227.54	5,281.64	80.96	5,281.95	0.00	0.00	0.00	0.00
13,200.00	89.96	0.26	7,227.60	5,381.64	81.42	5,381.95	0.00	0.00	0.00	0.00
13,300.00	89.96	0.26	7,227.67	5,481.64	81.89	5,481.95	0.00	0.00	0.00	0.00
13,400.00	89.96	0.26	7,227.73	5,581.64	82.35	5,581.95	0.00	0.00	0.00	0.00
13,500.00	89.96	0.26	7,227.80	5,681.64	82.81	5,681.95	0.00	0.00	0.00	0.00
13,600.00	89.96	0.26	7,227.86	5,781.64	83.27	5,781.95	0.00	0.00	0.00	0.00
13,700.00	89.96	0.26	7,227.93	5,881.63	83.73	5,881.95	0.00	0.00	0.00	0.00
13,800.00	89.96	0.26	7,227.99	5,981.63	84.19	5,981.95	0.00	0.00	0.00	0.00
13,900.00	89.96	0.26	7,228.06	6,081.63	84.66	6,081.95	0.00	0.00	0.00	0.00
14,000.00	89.96	0.26	7,228.12	6,181.63	85.12	6,181.95	0.00	0.00	0.00	0.00
14,100.00	89.96	0.26	7,228.19	6,281.63	85.58	6,281.95	0.00	0.00	0.00	0.00
14,200.00	89.96	0.26	7,228.25	6,381.63	86.04	6,381.95	0.00	0.00	0.00	0.00
14,300.00	89.96	0.26	7,228.32	6,481.63	86.50	6,481.95	0.00	0.00	0.00	0.00
14,400.00	89.96	0.26	7,228.38	6,581.63	86.96	6,581.95	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 28C-16HZ - Permit Rev-1

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 (°)
14,500.00	89.96	0.26	7,228.45	6,681.63	87.42	6,681.95	0.00	0.00	0.00	0.00
14,600.00	89.96	0.26	7,228.51	6,781.62	87.89	6,781.95	0.00	0.00	0.00	0.00
14,700.00	89.96	0.26	7,228.58	6,881.62	88.35	6,881.95	0.00	0.00	0.00	0.00
14,800.00	89.96	0.26	7,228.64	6,981.62	88.81	6,981.95	0.00	0.00	0.00	0.00
14,900.00	89.96	0.26	7,228.70	7,081.62	89.27	7,081.95	0.00	0.00	0.00	0.00
15,000.00	89.96	0.26	7,228.77	7,181.62	89.73	7,181.95	0.00	0.00	0.00	0.00
15,100.00	89.96	0.26	7,228.83	7,281.62	90.19	7,281.95	0.00	0.00	0.00	0.00
15,200.00	89.96	0.26	7,228.90	7,381.62	90.66	7,381.95	0.00	0.00	0.00	0.00
15,300.00	89.96	0.26	7,228.96	7,481.62	91.12	7,481.95	0.00	0.00	0.00	0.00
15,356.70	89.96	0.26	7,229.00	7,538.32	91.38	7,538.65	0.00	0.00	0.00	0.00

TD Well @ 15356.70ft - Target Toe Location - MEGUIRE 28C-16HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,600.00	2,600.00	0.00	0.00	Begin Nudge @ 2600.00ft
3,250.00	3,244.44	-73.25	5.12	End Nudge @ 3250.00ft
5,980.00	5,904.47	-685.87	47.96	Begin Drop @ 5980.00ft
6,630.00	6,548.90	-759.11	53.08	End Drop @ 6630.00ft
6,632.14	6,551.04	-759.11	53.08	Top of 4.5" Liner @ 6632.14ft
6,732.14	6,651.04	-759.11	53.08	KOP @ 6732.14ft
7,300.00	7,130.40	-500.00	54.28	DLS = 10°/100'
7,631.77	7,224.00	-186.53	55.72	End Build @ 7631.77ft
15,356.70	7,229.00	7,538.32	91.38	TD Well @ 15356.70ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.26	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,631.77	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,631.77	15,356.70	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,357.00	1,357.00	9 5/8"	9-5/8	13-1/2
7,631.77	7,224.00	Top of Production	5-1/2	7-7/8

Plan Report for MEGUIRE 28C-16HZ - Permit Rev-1**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,566.30	4,527.00	Sussex		0.00	
6,961.95	6,874.75	Sharon Springs		0.00	
7,031.24	6,936.75	Niobrara Top		0.00	
7,106.64	6,999.44	Niobrara B Bench		0.00	
7,199.27	7,068.12	Niobrara C Bench		0.00	
7,492.69	7,207.12	Fort Hays		0.00	
7,537.03	7,216.13	Codell		0.00	
7,631.77	7,224.00	Target Heel Location		0.00	
15,356.70	7,229.00	Target Toe Location		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
2N-R65W-Sec. 16_Section Lines	-8.00	4.81	-1,919.06	Polygon
MEGUIRE 28C-16HZ_BHL	7,229.00	7,538.32	91.38	Point
MEGUIRE 28C-16HZ_SHL	0.00	0.00	0.00	Point
2N-R65W-Sec. 21_Section Lines	-8.00	4.81	-1,919.06	Polygon

North Reference Sheet for 2N-65W-21 Meguire 21-2HZ Pad - MEGUIRE 28C-16HZ - 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' @ 4905.00usft (D Rig). Northing and Easting are relative to MEGUIRE 28C-16HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960971

Grid Coordinates of Well: 14,572,370.64 usft N, 1,732,564.11 usft E

Geographical Coordinates of Well: 40° 07' 29.49" N, 104° 40' 13.30" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 15,356.70usft the Bottom Hole Displacement is 7,538.87usft in the Direction of 0.69° (True).

Magnetic Convergence at surface is: -8.09° (26 January 2015, , IGRF2010)

