

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Milk 4-21HZ Pad

Milk State 28N-21HZ

Plan A

Plan: Rev A0 Permit

Sperry Drilling Services

Proposal Report

13 October, 2014

Well Coordinates: 14,601,551.63 N, 1,732,272.10 E (40° 12' 17.98" N, 104° 40' 15.67" W)

Ground Level: 4,837.00 usft

Local Coordinate Origin:	Centered on Well Milk State 28N-21HZ
Viewing Datum:	RKB = 17' @ 4854.00usft (D Rig)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N
 Site: Milk 4-21HZ Pad
 Well: Milk State 28N-21HZ
 Wellbore: Plan A
 Design: Rev A0 Permit

US ROCKIES WATTENBERG PLANNING

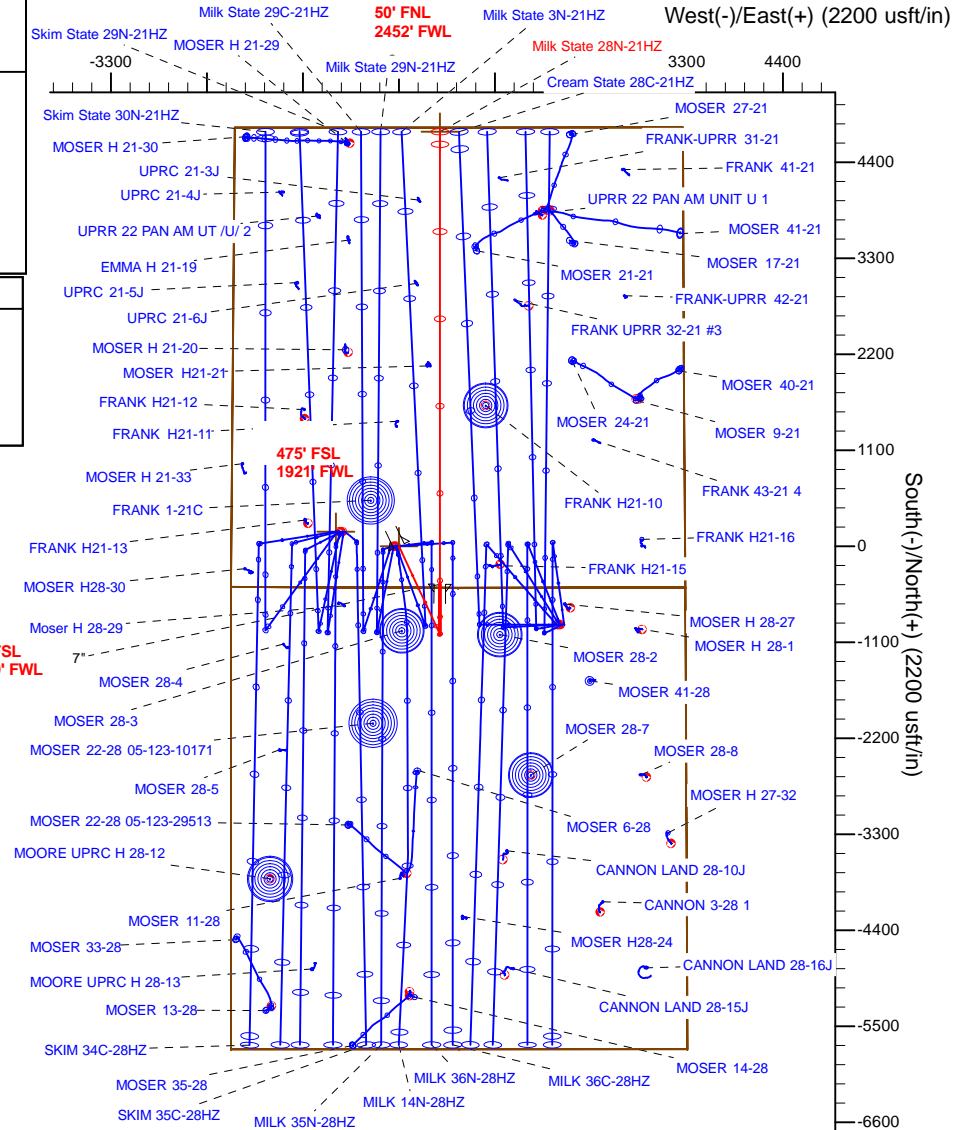
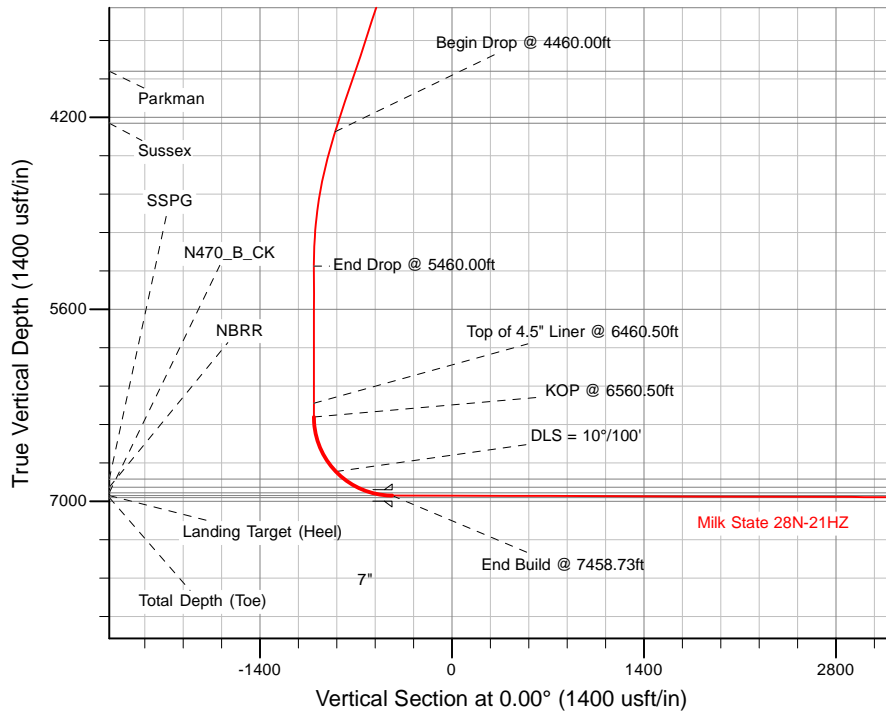


SECTION DETAILS

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	1220.00	0.00	0.00	1220.00	0.00	0.00	0.00	0.00	0.00	
3	2220.00	20.00	155.00	2199.82	-156.58	73.01	2.00	155.00	-156.58	
4	4460.00	20.00	155.00	4304.73	-850.93	396.79	0.00	0.00	-850.93	
5	5460.00	0.00	0.00	5284.54	-1007.51	469.81	2.00	180.00	-1007.51	
6	6560.50	0.00	0.00	6385.04	-1007.51	469.81	0.00	0.00	-1007.51	
7	7458.73	89.82	0.00	6958.00	-436.32	469.83	10.00	0.00	-436.32	
8	12643.69	89.82	0.00	6974.00	4748.62	470.05	0.00	0.00	4748.62	Milk State 28N-21HZ_Bhl

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Sec. 28 and 21-T3N-R65W	-10.00	- 166.79	-723.16	40.205452	-104.673609	
Milk State 28N-21HZ_SHL	0.00	0.00	0.00	40.204994	-104.671019	
Milk State 28N-21HZ_Bhl	6974.00	4748.62	470.05	40.218034	-104.669335	



TVD		MD	Notes
6285.04	6460.50	Top of 4.5" Liner @ 6460.50ft	
6385.04	6560.50	KOP @ 6560.50ft	

WELL DETAILS: Milk State 28N-21HZ	
Ground Level:	4837.00
RKB = 17' @ 4854.00usft (D Rig)	
Plan: Rev A0 Permit (Milk State 28N-21HZ/Plan A)	
Created By: Clint Eshelman	Date: 10/13/2014
Reviewed:	Date:



Plan Report for Milk State 28N-21HZ - Rev A0 Permit

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
Sec. 28 and 21-T3N-R65W - Milk State 28N-21HZ_SHL										
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
613.00	0.00	0.00	613.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills										
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
1,126.00	0.00	0.00	1,126.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Csg Setting Depth - 9 5/8"										
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,220.00	0.00	0.00	1,220.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1220.00ft										
1,300.00	1.60	155.00	1,299.99	-1.01	0.47	-1.01	2.00	2.00	0.00	155.00
1,400.00	3.60	155.00	1,399.88	-5.12	2.39	-5.12	2.00	2.00	0.00	0.00
1,500.00	5.60	155.00	1,499.55	-12.39	5.78	-12.39	2.00	2.00	0.00	0.00
1,600.00	7.60	155.00	1,598.89	-22.81	10.64	-22.81	2.00	2.00	0.00	0.00
1,700.00	9.60	155.00	1,697.76	-36.36	16.95	-36.36	2.00	2.00	0.00	0.00
1,800.00	11.60	155.00	1,796.05	-53.03	24.73	-53.03	2.00	2.00	0.00	0.00
1,900.00	13.60	155.00	1,893.63	-72.80	33.95	-72.80	2.00	2.00	0.00	0.00
2,000.00	15.60	155.00	1,990.40	-95.64	44.60	-95.64	2.00	2.00	0.00	0.00
2,100.00	17.60	155.00	2,086.23	-121.53	56.67	-121.53	2.00	2.00	0.00	0.00
2,200.00	19.60	155.00	2,181.00	-150.44	70.15	-150.44	2.00	2.00	0.00	0.00
2,220.00	20.00	155.00	2,199.82	-156.58	73.01	-156.58	2.00	2.00	0.00	0.00
End Nudge @ 2220.00ft										
2,300.00	20.00	155.00	2,274.99	-181.38	84.58	-181.38	0.00	0.00	0.00	0.00
2,400.00	20.00	155.00	2,368.96	-212.38	99.03	-212.38	0.00	0.00	0.00	0.00
2,500.00	20.00	155.00	2,462.93	-243.37	113.49	-243.37	0.00	0.00	0.00	0.00
2,600.00	20.00	155.00	2,556.90	-274.37	127.94	-274.37	0.00	0.00	0.00	0.00
2,700.00	20.00	155.00	2,650.87	-305.37	142.40	-305.37	0.00	0.00	0.00	0.00
2,800.00	20.00	155.00	2,744.84	-336.37	156.85	-336.37	0.00	0.00	0.00	0.00
2,900.00	20.00	155.00	2,838.81	-367.36	171.30	-367.36	0.00	0.00	0.00	0.00
3,000.00	20.00	155.00	2,932.78	-398.36	185.76	-398.36	0.00	0.00	0.00	0.00
3,100.00	20.00	155.00	3,026.75	-429.36	200.21	-429.36	0.00	0.00	0.00	0.00
3,200.00	20.00	155.00	3,120.71	-460.36	214.67	-460.36	0.00	0.00	0.00	0.00
3,300.00	20.00	155.00	3,214.68	-491.35	229.12	-491.35	0.00	0.00	0.00	0.00
3,400.00	20.00	155.00	3,308.65	-522.35	243.58	-522.35	0.00	0.00	0.00	0.00
3,500.00	20.00	155.00	3,402.62	-553.35	258.03	-553.35	0.00	0.00	0.00	0.00
3,600.00	20.00	155.00	3,496.59	-584.35	272.49	-584.35	0.00	0.00	0.00	0.00
3,700.00	20.00	155.00	3,590.56	-615.34	286.94	-615.34	0.00	0.00	0.00	0.00
3,800.00	20.00	155.00	3,684.53	-646.34	301.39	-646.34	0.00	0.00	0.00	0.00
3,900.00	20.00	155.00	3,778.50	-677.34	315.85	-677.34	0.00	0.00	0.00	0.00
3,990.99	20.00	155.00	3,864.00	-705.54	329.00	-705.54	0.00	0.00	0.00	0.00
Parkman										
4,000.00	20.00	155.00	3,872.47	-708.34	330.30	-708.34	0.00	0.00	0.00	0.00
4,100.00	20.00	155.00	3,966.44	-739.33	344.76	-739.33	0.00	0.00	0.00	0.00
4,200.00	20.00	155.00	4,060.41	-770.33	359.21	-770.33	0.00	0.00	0.00	0.00
4,300.00	20.00	155.00	4,154.38	-801.33	373.67	-801.33	0.00	0.00	0.00	0.00
4,395.38	20.00	155.00	4,244.00	-830.89	387.45	-830.89	0.00	0.00	0.00	0.00
Sussex										



Plan Report for Milk State 28N-21HZ - Rev A0 Permit

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 (°)
4,400.00	20.00	155.00	4,248.35	-832.33	388.12	-832.33	0.00	0.00	0.00	0.00
4,460.00	20.00	155.00	4,304.73	-850.93	396.79	-850.93	0.00	0.00	0.00	0.00
Begin Drop @ 4460.00ft										
4,500.00	19.20	155.00	4,342.41	-863.09	402.46	-863.09	2.00	-2.00	0.00	180.00
4,600.00	17.20	155.00	4,437.40	-891.39	415.66	-891.39	2.00	-2.00	0.00	180.00
4,700.00	15.20	155.00	4,533.43	-916.68	427.45	-916.68	2.00	-2.00	0.00	180.00
4,800.00	13.20	155.00	4,630.37	-938.91	437.82	-938.91	2.00	-2.00	0.00	180.00
4,900.00	11.20	155.00	4,728.10	-958.06	446.75	-958.06	2.00	-2.00	0.00	180.00
5,000.00	9.20	155.00	4,826.52	-974.11	454.23	-974.11	2.00	-2.00	0.00	180.00
5,100.00	7.20	155.00	4,925.49	-987.03	460.26	-987.03	2.00	-2.00	0.00	180.00
5,200.00	5.20	155.00	5,024.90	-996.82	464.83	-996.82	2.00	-2.00	0.00	-180.00
5,300.00	3.20	155.00	5,124.63	-1,003.46	467.92	-1,003.46	2.00	-2.00	0.00	180.00
5,400.00	1.20	155.00	5,224.55	-1,006.94	469.54	-1,006.94	2.00	-2.00	0.00	-180.00
5,460.00	0.00	0.00	5,284.54	-1,007.51	469.81	-1,007.51	2.00	-2.00	-258.33	-180.00
End Drop @ 5460.00ft										
5,500.00	0.00	0.00	5,324.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	180.00
5,600.00	0.00	0.00	5,424.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,524.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,624.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,724.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,824.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	5,924.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,024.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,124.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,224.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,460.50	0.00	0.00	6,285.04	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6460.50ft										
6,500.00	0.00	0.00	6,324.54	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
6,560.50	0.00	0.00	6,385.04	-1,007.51	469.81	-1,007.51	0.00	0.00	0.00	0.00
KOP @ 6560.50ft										
6,600.00	3.95	0.00	6,424.51	-1,006.15	469.81	-1,006.15	10.00	10.00	0.00	0.00
6,700.00	13.95	0.00	6,523.17	-990.61	469.81	-990.61	10.00	10.00	0.00	0.00
6,800.00	23.95	0.00	6,617.63	-958.18	469.81	-958.18	10.00	10.00	0.00	0.00
6,900.00	33.95	0.00	6,705.02	-909.83	469.81	-909.83	10.00	10.00	0.00	0.00
7,000.00	43.95	0.00	6,782.69	-847.05	469.81	-847.05	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,082.88	52.24	0.00	6,838.00	-785.42	469.82	-785.42	10.00	10.00	0.00	0.00
SSPG										
7,100.00	53.95	0.00	6,848.28	-771.73	469.82	-771.73	10.00	10.00	0.00	0.00
7,195.94	63.54	0.00	6,898.00	-689.80	469.82	-689.80	10.00	10.00	0.00	0.00
NBRR										
7,200.00	63.95	0.00	6,899.79	-686.17	469.82	-686.17	10.00	10.00	0.00	0.00
7,300.00	73.95	0.00	6,935.67	-592.96	469.83	-592.96	10.00	10.00	0.00	0.00
7,308.67	74.82	0.00	6,938.00	-584.61	469.83	-584.61	10.00	10.00	0.00	0.00
N470_B_CK										
7,400.00	83.95	0.00	6,954.81	-494.94	469.83	-494.94	10.00	10.00	0.00	0.00
7,458.73	89.82	0.00	6,958.00	-436.32	469.83	-436.32	10.00	10.00	0.00	0.00
End Build @ 7458.73ft - Landing Target (Heel) - 7"										
7,500.00	89.82	0.00	6,958.13	-395.05	469.83	-395.05	0.00	0.00	0.00	0.00
7,600.00	89.82	0.00	6,958.43	-295.05	469.84	-295.05	0.00	0.00	0.00	0.00
7,700.00	89.82	0.00	6,958.74	-195.05	469.84	-195.05	0.00	0.00	0.00	0.00
7,800.00	89.82	0.00	6,959.05	-95.05	469.85	-95.05	0.00	0.00	0.00	0.00
7,900.00	89.82	0.00	6,959.36	4.95	469.85	4.95	0.00	0.00	0.00	0.00
8,000.00	89.82	0.00	6,959.67	104.95	469.85	104.95	0.00	0.00	0.00	0.00
8,100.00	89.82	0.00	6,959.98	204.95	469.86	204.95	0.00	0.00	0.00	0.00
8,200.00	89.82	0.00	6,960.29	304.95	469.86	304.95	0.00	0.00	0.00	0.00
8,300.00	89.82	0.00	6,960.59	404.95	469.87	404.95	0.00	0.00	0.00	0.00
8,400.00	89.82	0.00	6,960.90	504.95	469.87	504.95	0.00	0.00	0.00	0.00
8,500.00	89.82	0.00	6,961.21	604.95	469.88	604.95	0.00	0.00	0.00	0.00



Plan Report for Milk State 28N-21HZ - Rev A0 Permit

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 (°)
8,600.00	89.82	0.00	6,961.52	704.95	469.88	704.95	0.00	0.00	0.00	0.00
8,700.00	89.82	0.00	6,961.83	804.94	469.88	804.94	0.00	0.00	0.00	0.00
8,800.00	89.82	0.00	6,962.14	904.94	469.89	904.94	0.00	0.00	0.00	0.00
8,900.00	89.82	0.00	6,962.45	1,004.94	469.89	1,004.94	0.00	0.00	0.00	0.00
9,000.00	89.82	0.00	6,962.75	1,104.94	469.90	1,104.94	0.00	0.00	0.00	0.00
9,100.00	89.82	0.00	6,963.06	1,204.94	469.90	1,204.94	0.00	0.00	0.00	0.00
9,200.00	89.82	0.00	6,963.37	1,304.94	469.91	1,304.94	0.00	0.00	0.00	0.00
9,300.00	89.82	0.00	6,963.68	1,404.94	469.91	1,404.94	0.00	0.00	0.00	0.00
9,400.00	89.82	0.00	6,963.99	1,504.94	469.91	1,504.94	0.00	0.00	0.00	0.00
9,500.00	89.82	0.00	6,964.30	1,604.94	469.92	1,604.94	0.00	0.00	0.00	0.00
9,600.00	89.82	0.00	6,964.61	1,704.94	469.92	1,704.94	0.00	0.00	0.00	0.00
9,700.00	89.82	0.00	6,964.91	1,804.94	469.93	1,804.94	0.00	0.00	0.00	0.00
9,800.00	89.82	0.00	6,965.22	1,904.94	469.93	1,904.94	0.00	0.00	0.00	0.00
9,900.00	89.82	0.00	6,965.53	2,004.94	469.93	2,004.94	0.00	0.00	0.00	0.00
10,000.00	89.82	0.00	6,965.84	2,104.94	469.94	2,104.94	0.00	0.00	0.00	0.00
10,100.00	89.82	0.00	6,966.15	2,204.94	469.94	2,204.94	0.00	0.00	0.00	0.00
10,200.00	89.82	0.00	6,966.46	2,304.94	469.95	2,304.94	0.00	0.00	0.00	0.00
10,300.00	89.82	0.00	6,966.77	2,404.94	469.95	2,404.94	0.00	0.00	0.00	0.00
10,400.00	89.82	0.00	6,967.08	2,504.94	469.96	2,504.94	0.00	0.00	0.00	0.00
10,500.00	89.82	0.00	6,967.38	2,604.94	469.96	2,604.94	0.00	0.00	0.00	0.00
10,600.00	89.82	0.00	6,967.69	2,704.94	469.96	2,704.94	0.00	0.00	0.00	0.00
10,700.00	89.82	0.00	6,968.00	2,804.94	469.97	2,804.94	0.00	0.00	0.00	0.00
10,800.00	89.82	0.00	6,968.31	2,904.93	469.97	2,904.93	0.00	0.00	0.00	0.00
10,900.00	89.82	0.00	6,968.62	3,004.93	469.98	3,004.93	0.00	0.00	0.00	0.00
11,000.00	89.82	0.00	6,968.93	3,104.93	469.98	3,104.93	0.00	0.00	0.00	0.00
11,100.00	89.82	0.00	6,969.24	3,204.93	469.99	3,204.93	0.00	0.00	0.00	0.00
11,200.00	89.82	0.00	6,969.54	3,304.93	469.99	3,304.93	0.00	0.00	0.00	0.00
11,300.00	89.82	0.00	6,969.85	3,404.93	469.99	3,404.93	0.00	0.00	0.00	0.00
11,400.00	89.82	0.00	6,970.16	3,504.93	470.00	3,504.93	0.00	0.00	0.00	0.00
11,500.00	89.82	0.00	6,970.47	3,604.93	470.00	3,604.93	0.00	0.00	0.00	0.00
11,600.00	89.82	0.00	6,970.78	3,704.93	470.01	3,704.93	0.00	0.00	0.00	0.00
11,700.00	89.82	0.00	6,971.09	3,804.93	470.01	3,804.93	0.00	0.00	0.00	0.00
11,800.00	89.82	0.00	6,971.40	3,904.93	470.01	3,904.93	0.00	0.00	0.00	0.00
11,900.00	89.82	0.00	6,971.70	4,004.93	470.02	4,004.93	0.00	0.00	0.00	0.00
12,000.00	89.82	0.00	6,972.01	4,104.93	470.02	4,104.93	0.00	0.00	0.00	0.00
12,100.00	89.82	0.00	6,972.32	4,204.93	470.03	4,204.93	0.00	0.00	0.00	0.00
12,200.00	89.82	0.00	6,972.63	4,304.93	470.03	4,304.93	0.00	0.00	0.00	0.00
12,300.00	89.82	0.00	6,972.94	4,404.93	470.04	4,404.93	0.00	0.00	0.00	0.00
12,400.00	89.82	0.00	6,973.25	4,504.93	470.04	4,504.93	0.00	0.00	0.00	0.00
12,500.00	89.82	0.00	6,973.56	4,604.93	470.04	4,604.93	0.00	0.00	0.00	0.00
12,600.00	89.82	0.00	6,973.87	4,704.93	470.05	4,704.93	0.00	0.00	0.00	0.00
12,643.69	89.82	0.00	6,974.00	4,748.62	470.05	4,748.62	0.00	0.00	0.00	0.00

TD Well @ 12643.69ft - Milk State 28N-21HZ_Bhl

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,220.00	1,220.00	0.00	0.00	Begin Nudge @ 1220.00ft
2,220.00	2,199.82	-156.58	73.01	End Nudge @ 2220.00ft
4,460.00	4,304.73	-850.93	396.79	Begin Drop @ 4460.00ft
5,460.00	5,284.54	-1,007.51	469.81	End Drop @ 5460.00ft
6,460.50	6,285.04	-1,007.51	469.81	Top of 4.5" Liner @ 6460.50ft
6,560.50	6,385.04	-1,007.51	469.81	KOP @ 6560.50ft
7,000.00	6,782.69	-847.05	469.81	DLS = 10°/100'
7,458.73	6,958.00	-436.32	469.83	End Build @ 7458.73ft
12,643.69	6,974.00	4,748.62	470.05	TD Well @ 12643.69ft

Plan Report for Milk State 28N-21HZ - Rev A0 Permit

Vertical Section Information

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

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,458.73	Rev A0 Permit	MWD+IFR1
7,458.73	12,643.69	Rev A0 Permit	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,126.00	1,126.00	9 5/8"	9-5/8	13-1/2
7,458.73	6,958.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
613.00	613.00	Base Fox Hills		0.00	
1,126.00	1,126.00	Surface Csg Setting Depth		0.00	
3,990.99	3,864.00	Parkman		0.00	
4,395.38	4,244.00	Sussex		0.00	
7,082.88	6,838.00	SSPG		0.00	
7,195.94	6,898.00	NBRR		0.00	
7,308.67	6,938.00	N470_B_CK		0.00	
7,458.73	6,958.00	Landing Target (Heel)		0.00	
12,643.69	6,974.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Sec. 28 and 21-T3N-R65W	-10.00	166.79	-723.16	Polygon
Milk State 28N-21HZ_SHL	0.00	0.00	0.00	Point
Milk State 28N-21HZ_Bhl	6,974.00	4,748.62	470.05	Point

North Reference Sheet for Milk 4-21HZ Pad - Milk State 28N-21HZ - 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' @ 4854.00usft (D Rig). Northing and Easting are relative to Milk State 28N-21HZ
 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: 0.99960965

Grid Coordinates of Well: 14,601,551.63 usft N, 1,732,272.10 usft E
 Geographical Coordinates of Well: 40° 12' 17.98" N, 104° 40' 15.67" W
 Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,643.69usft
 the Bottom Hole Displacement is 4,771.82usft in the Direction of 5.65° (True).

Magnetic Convergence at surface is: -8.14° (11 October 2014, , IGRF2010)

