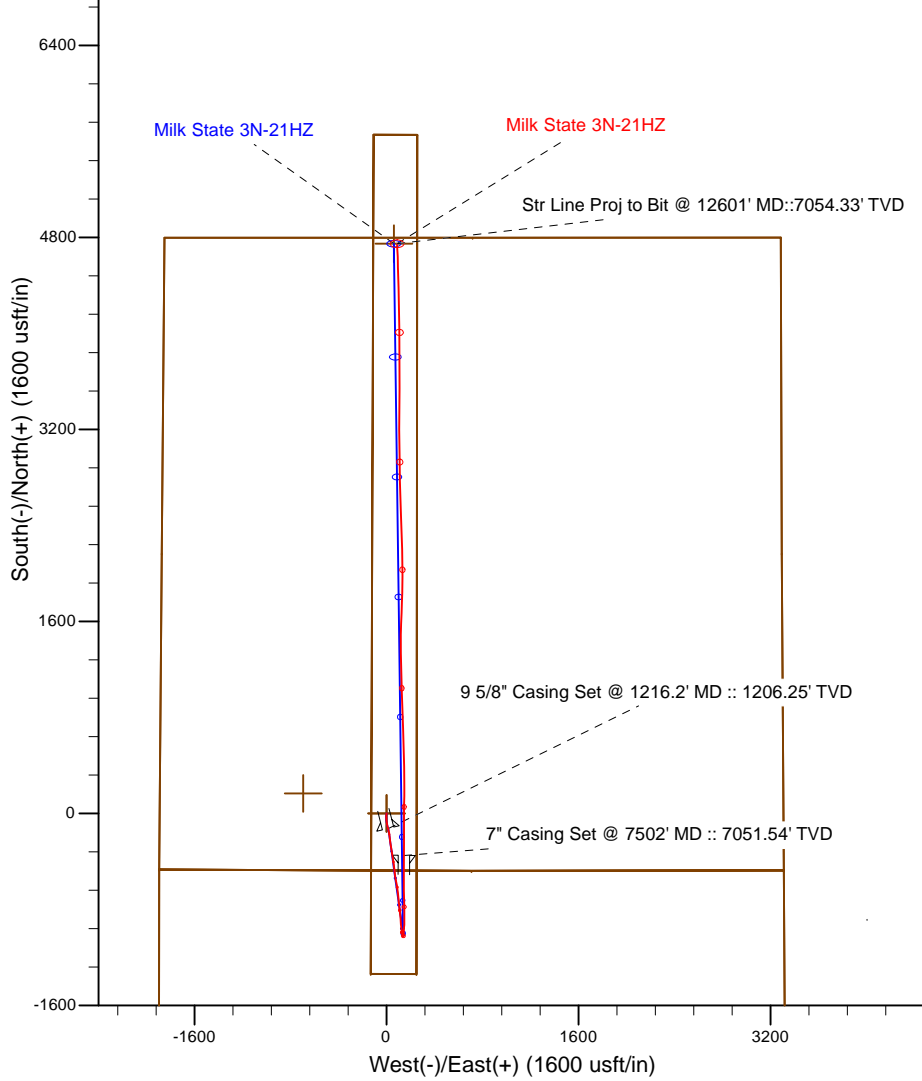
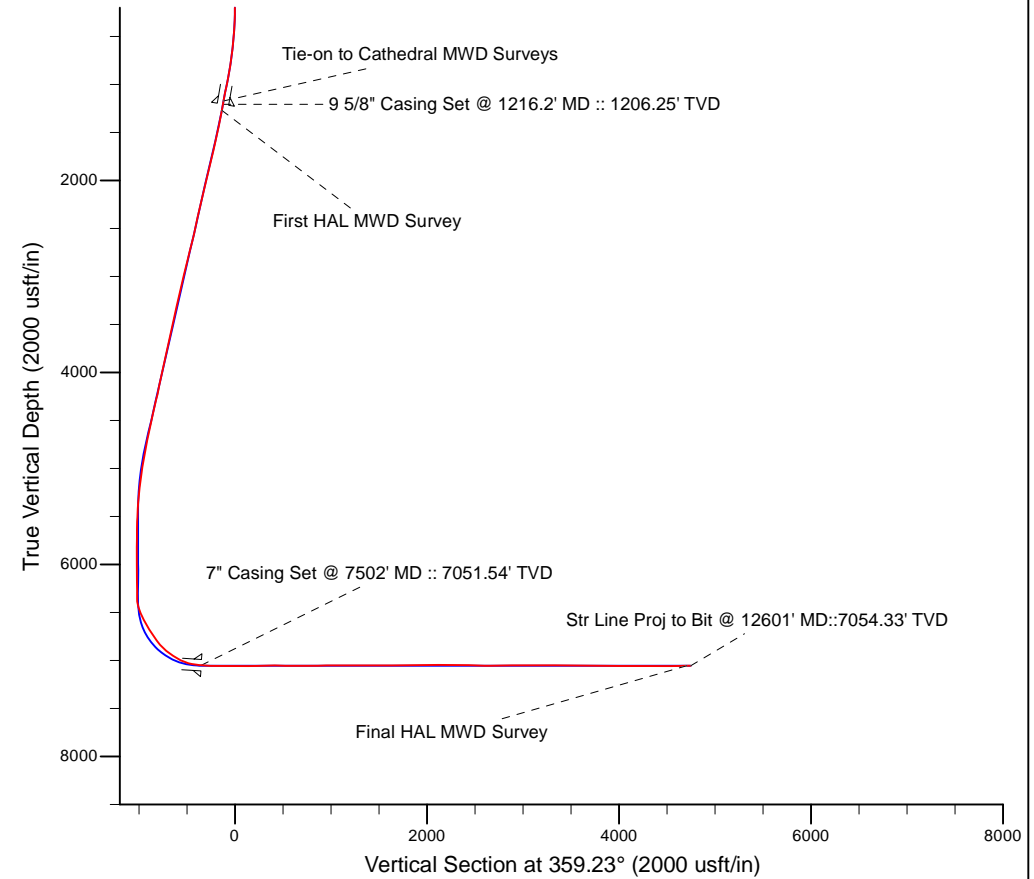


Project: WELD-NAD83-UTMFT13N
 Site: 3N-65W-21 Milk 4-21HZ Pad
 Well: Milk State 3N-21HZ
 Wellbore: Plan C
 Design: Actual Surveys



LEGEND

- ▲ Milk State 3N-21HZ, Plan C, Rev C0 V0
- Actual Surveys



7" Casing: ~126.47' FSL, ~2038.70' FWL
 Lat/Long: 40.204036 N, -104.670605 E
 UTM - NAD 83 - Zone 13N: 14,601,203.21' N, 1,732,389.17' E
 Location: Sec. 21-T3N-R65W

BHL: ~50.20' FNL, ~1939.73' FWL
 Lat/Long: 40.218033 N, -104.670809 E
 UTM - NAD 83 - Zone 13N: 14,606,300.02' N, 1,732,313.06' E
 Location: Sec. 21-T3N-R65W

WELL DETAILS: Milk State 3N-21HZ	
Ground Level: 4837.00	RKB = 13' @ 4850.00usft (Ensign 145)
Design: Actual Surveys (Milk State 3N-21HZ/Plan C)	
Created By: Clint Eshelman	Date: 5/6/2015
Reviewed: _____	Date: _____

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N
3N-65W-21 Milk 4-21HZ Pad
Milk State 3N-21HZ
05-123-40993

Design: Actual Surveys

Sperry Drilling Services Standard Report

06 May, 2015

Surface UWI : 05-123-40993

Well Coordinates: 14,601,551.88 N, 1,732,242.22 E (40° 12' 17.98" N, 104° 40' 16.05" W)
Ground Level: 4,837.00 usft

Local Coordinate Origin:	Centered on Well Milk State 3N-21HZ
Viewing Datum:	RKB = 13' @ 4850.00usft (Ensign 145)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for Milk State 3N-21HZ - Actual 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
90.00	0.20	77.80	90.00	0.03	0.15	0.03	0.22
First Cathedral MWD Survey							
153.00	0.40	119.60	153.00	-0.05	0.45	-0.06	0.45
212.00	1.00	183.30	211.99	-0.67	0.60	-0.68	1.52
273.00	1.30	200.30	272.98	-1.85	0.33	-1.85	0.74
332.00	1.90	190.50	331.96	-3.44	-0.08	-3.44	1.11
395.00	2.90	187.60	394.90	-6.04	-0.48	-6.04	1.60
458.00	4.00	178.30	457.79	-9.82	-0.63	-9.81	1.95
522.00	5.40	184.70	521.57	-15.05	-0.81	-15.04	2.33
586.00	6.50	185.90	585.23	-21.66	-1.43	-21.64	1.73
650.00	6.90	182.70	648.79	-29.10	-1.98	-29.07	0.85
712.00	7.30	179.40	710.31	-36.76	-2.11	-36.73	0.92
776.00	8.00	175.30	773.75	-45.27	-1.71	-45.24	1.39
838.00	9.20	171.80	835.05	-54.47	-0.65	-54.46	2.11
903.00	10.50	172.60	899.09	-65.49	0.86	-65.49	2.01
964.00	11.30	170.80	958.99	-76.90	2.53	-76.93	1.43
1,027.00	12.20	169.30	1,020.67	-89.53	4.75	-89.59	1.51
1,091.00	11.70	165.40	1,083.28	-102.46	7.64	-102.55	1.48
1,182.00	10.30	167.00	1,172.61	-119.32	11.80	-119.46	1.57
Tie-on to Cathedral MWD Surveys							
1,216.20	10.36	166.02	1,206.25	-125.28	13.23	-125.45	0.55
9 5/8" Casing Set @ 1216.2' MD :: 1206.25' TVD							
1,283.00	10.50	164.15	1,271.95	-136.97	16.34	-137.17	0.55
First HAL MWD Survey							
1,470.00	12.08	173.86	1,455.34	-172.82	23.09	-173.11	1.32
1,563.00	12.68	173.53	1,546.18	-192.64	25.28	-192.96	0.65
1,657.00	12.41	171.73	1,637.93	-212.88	27.90	-213.24	0.51
1,750.00	14.04	172.77	1,728.46	-233.96	30.76	-234.36	1.77
1,844.00	13.44	172.24	1,819.77	-256.10	33.67	-256.53	0.65
1,938.00	13.45	169.95	1,911.20	-277.69	37.05	-278.16	0.57
2,031.00	13.31	167.78	2,001.67	-298.80	41.20	-299.33	0.56
2,125.00	13.86	173.88	2,093.05	-320.57	44.69	-321.14	1.63
2,218.00	13.54	171.20	2,183.40	-342.41	47.55	-343.02	0.76
2,405.00	12.42	168.16	2,365.62	-383.72	55.02	-384.43	0.70
2,498.00	13.05	174.93	2,456.34	-403.97	58.00	-404.72	1.74
2,592.00	12.51	173.08	2,548.01	-424.65	60.17	-425.42	0.72
2,686.00	13.90	173.88	2,639.53	-445.98	62.60	-446.78	1.49
2,779.00	13.98	172.44	2,729.79	-468.23	65.27	-469.06	0.38
2,872.00	14.15	172.67	2,820.00	-490.64	68.19	-491.51	0.19
2,963.00	14.20	171.60	2,908.23	-512.71	71.24	-513.62	0.29
3,053.00	14.00	170.85	2,995.52	-534.38	74.59	-535.33	0.30
3,143.00	13.43	170.12	3,082.95	-555.42	78.11	-556.42	0.66
3,233.00	13.22	169.37	3,170.53	-575.84	81.80	-576.88	0.30
3,323.00	11.94	167.78	3,258.36	-595.05	85.67	-596.15	1.47
3,413.00	12.91	169.77	3,346.26	-614.04	89.43	-615.19	1.18
3,503.00	13.24	173.53	3,433.92	-634.18	92.38	-635.36	1.01
3,593.00	12.33	175.18	3,521.69	-654.00	94.34	-655.20	1.09
3,683.00	11.37	173.29	3,609.77	-672.38	96.19	-673.61	1.15
3,773.00	12.87	174.47	3,697.77	-691.17	98.19	-692.43	1.69

Design Report for Milk State 3N-21HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
3,863.00	12.59	176.08	3,785.55	-710.93	99.83	-712.21	0.50
3,953.00	12.50	175.38	3,873.40	-730.43	101.28	-731.72	0.20
4,043.00	12.63	173.85	3,961.25	-749.92	103.12	-751.24	0.40
4,132.00	12.61	174.35	4,048.10	-769.26	105.12	-770.60	0.12
4,222.00	12.11	171.34	4,136.01	-788.37	107.51	-789.74	0.91
4,312.00	11.45	170.86	4,224.12	-806.52	110.35	-807.93	0.74
4,492.00	13.23	175.48	4,399.96	-844.70	114.81	-846.17	1.13
4,581.00	12.96	176.67	4,486.64	-864.81	116.19	-866.30	0.43
4,671.00	12.45	175.63	4,574.44	-884.56	117.52	-886.06	0.62
4,761.00	12.49	177.02	4,662.32	-903.96	118.76	-905.47	0.34
4,851.00	11.14	173.82	4,750.41	-922.32	120.21	-923.85	1.67
4,941.00	10.23	173.79	4,838.85	-938.91	122.01	-940.46	1.01
5,030.00	8.82	171.47	4,926.62	-953.51	123.87	-955.09	1.64
5,120.00	8.17	170.56	5,015.63	-966.65	125.95	-968.25	0.74
5,210.00	7.92	167.61	5,104.74	-979.01	128.33	-980.65	0.54
5,300.00	6.04	175.34	5,194.07	-989.79	130.04	-991.45	2.33
5,390.00	5.48	175.79	5,283.62	-998.79	130.74	-1,000.46	0.62
5,480.00	5.15	173.94	5,373.23	-1,007.10	131.48	-1,008.77	0.41
5,570.00	3.46	180.09	5,462.98	-1,013.83	131.91	-1,015.51	1.94
5,659.00	1.58	170.30	5,551.89	-1,017.72	132.11	-1,019.41	2.16
5,749.00	0.85	116.78	5,641.87	-1,019.25	132.91	-1,020.94	1.42
5,839.00	2.02	96.47	5,731.84	-1,019.73	135.08	-1,021.45	1.40
5,929.00	2.34	105.52	5,821.77	-1,020.40	138.43	-1,022.17	0.52
6,019.00	0.25	279.61	5,911.75	-1,020.86	140.01	-1,022.65	2.88
6,109.00	0.54	39.48	6,001.75	-1,020.50	140.08	-1,022.29	0.78
6,199.00	0.46	17.32	6,091.75	-1,019.82	140.46	-1,021.62	0.23
6,289.00	0.51	17.40	6,181.74	-1,019.10	140.69	-1,020.90	0.06
6,379.00	0.76	3.00	6,271.74	-1,018.12	140.84	-1,019.92	0.33
6,469.00	0.97	354.10	6,361.73	-1,016.76	140.79	-1,018.57	0.28
6,514.00	7.83	3.65	6,406.57	-1,013.32	140.95	-1,015.13	15.28
6,604.00	24.00	6.18	6,492.83	-988.84	143.33	-990.68	17.98
6,694.00	28.16	3.12	6,573.65	-949.42	146.45	-951.31	4.86
6,739.00	28.29	1.61	6,613.30	-928.16	147.33	-930.06	1.61
6,829.00	31.77	0.87	6,691.21	-883.14	148.29	-885.05	3.89
6,919.00	35.27	359.83	6,766.23	-833.45	148.57	-835.37	3.94
7,009.00	40.23	358.29	6,837.37	-778.38	147.63	-780.29	5.61
7,099.00	50.15	359.12	6,900.72	-714.62	146.23	-716.52	11.04
7,189.00	57.21	359.19	6,954.00	-642.16	145.16	-644.05	7.84
7,279.00	62.98	0.25	6,998.85	-564.18	144.80	-566.08	6.49
7,369.00	74.68	0.11	7,031.30	-480.40	145.06	-482.31	13.00
7,466.00	84.66	0.36	7,048.67	-385.09	145.45	-387.01	10.29
7,502.00	86.18	0.30	7,051.54	-349.21	145.66	-351.14	4.23
7" Casing Set @ 7502' MD :: 7051.54' TVD							
7,542.00	87.87	0.24	7,053.62	-309.27	145.85	-311.20	4.23
7,636.00	88.67	359.92	7,056.46	-215.31	145.98	-217.25	0.92
7,726.00	88.98	0.06	7,058.30	-125.33	145.97	-127.28	0.38
7,816.00	89.32	0.50	7,059.64	-35.34	146.40	-37.31	0.62
7,906.00	90.40	0.47	7,059.86	54.65	147.17	52.67	1.20
7,996.00	91.42	0.73	7,058.43	144.64	148.11	142.63	1.17
8,086.00	91.54	359.99	7,056.10	234.60	148.67	232.59	0.83
8,266.00	90.00	359.31	7,053.68	414.58	147.57	412.56	0.94

Design Report for Milk State 3N-21HZ - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
8,356.00	88.80	357.52	7,054.63	504.53	145.09	502.54	2.39
8,446.00	89.69	357.98	7,055.81	594.46	141.55	592.50	1.11
8,536.00	89.94	358.06	7,056.10	684.40	138.44	682.48	0.29
8,626.00	90.65	358.22	7,055.64	774.35	135.52	772.46	0.81
8,716.00	91.17	358.18	7,054.21	864.30	132.70	862.43	0.58
8,806.00	90.92	358.58	7,052.57	954.24	130.15	952.41	0.52
8,896.00	89.35	358.12	7,052.36	1,044.20	127.56	1,042.40	1.82
8,986.00	90.15	358.25	7,052.75	1,134.16	124.71	1,132.38	0.90
9,075.00	89.45	358.91	7,053.06	1,223.13	122.50	1,221.37	1.08
9,165.00	90.55	358.93	7,053.06	1,313.11	120.81	1,311.37	1.22
9,255.00	90.55	359.48	7,052.20	1,403.10	119.56	1,401.36	0.61
9,434.00	89.11	2.29	7,052.73	1,582.05	122.32	1,580.27	1.76
9,524.00	89.85	1.86	7,053.54	1,671.99	125.58	1,670.15	0.95
9,614.00	90.89	1.80	7,052.96	1,761.94	128.46	1,760.05	1.16
9,704.00	91.79	1.70	7,050.86	1,851.87	131.20	1,849.94	1.01
9,793.00	90.89	0.16	7,048.78	1,940.83	132.65	1,938.88	2.00
9,883.00	90.58	359.62	7,047.62	2,030.82	132.47	2,028.86	0.69
9,973.00	91.26	359.48	7,046.18	2,120.81	131.77	2,118.85	0.77
10,063.00	89.32	358.19	7,045.72	2,210.78	129.94	2,208.84	2.59
10,153.00	88.68	358.22	7,047.29	2,300.73	127.12	2,298.81	0.71
10,243.00	88.80	358.00	7,049.27	2,390.65	124.15	2,388.77	0.28
10,333.00	88.49	357.65	7,051.40	2,480.56	120.74	2,478.72	0.52
10,423.00	87.87	357.85	7,054.26	2,570.45	117.21	2,568.64	0.72
10,512.00	89.94	358.99	7,055.96	2,659.39	114.75	2,657.61	2.66
10,602.00	90.83	358.55	7,055.35	2,749.37	112.82	2,747.60	1.10
10,692.00	92.03	359.39	7,053.11	2,839.32	111.20	2,837.57	1.63
10,782.00	90.71	359.41	7,050.96	2,929.29	110.26	2,927.55	1.47
10,872.00	89.97	358.65	7,050.42	3,019.28	108.74	3,017.54	1.18
11,052.00	89.94	0.11	7,050.56	3,199.26	106.79	3,197.54	0.81
11,142.00	89.75	359.96	7,050.81	3,289.26	106.84	3,287.53	0.27
11,232.00	89.01	0.10	7,051.78	3,379.25	106.89	3,377.51	0.84
11,322.00	89.54	0.34	7,052.92	3,469.25	107.24	3,467.49	0.65
11,502.00	89.14	0.27	7,054.99	3,649.23	108.20	3,647.45	0.23
11,592.00	89.48	0.35	7,056.08	3,739.22	108.68	3,737.42	0.39
11,682.00	90.15	359.78	7,056.37	3,829.22	108.78	3,827.41	0.98
11,772.00	90.37	359.82	7,055.96	3,919.22	108.47	3,917.41	0.25
11,862.00	89.66	358.96	7,055.93	4,009.21	107.51	4,007.41	1.24
11,953.00	89.88	358.75	7,056.30	4,100.19	105.69	4,098.40	0.33
12,043.00	89.07	359.02	7,057.12	4,190.17	103.94	4,188.40	0.95
12,133.00	89.48	358.58	7,058.26	4,280.15	102.06	4,278.39	0.67
12,223.00	89.23	358.99	7,059.28	4,370.12	100.15	4,368.38	0.53
12,313.00	89.85	358.63	7,060.00	4,460.10	98.28	4,458.37	0.80
12,403.00	90.71	358.27	7,059.56	4,550.06	95.85	4,548.36	1.04
12,493.00	91.45	357.94	7,057.86	4,640.00	92.87	4,638.33	0.90
12,559.00	92.06	357.51	7,055.84	4,705.91	90.25	4,704.27	1.13
Final HAL MWD Survey							
12,601.00	92.06	357.51	7,054.33	4,747.85	88.43	4,746.23	0.00
Str Line Proj to Bit @ 12601' MD::7054.33' TVD							

Design Report for Milk State 3N-21HZ - Actual Surveys**Design Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
90.00	90.00	0.03	0.15	First Cathedral MWD Survey
1,182.00	1,172.61	-119.32	11.80	Tie-on to Cathedral MWD Surveys
1,283.00	1,271.95	-136.97	16.34	First HAL MWD Survey
12,559.00	7,055.84	4,705.91	90.25	Final HAL MWD Survey
12,601.00	7,054.33	4,747.85	88.43	Str Line Proj to Bit @ 12601' MD::7054.33' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	359.23	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
90.00	1,182.00	CES Surface Surveys	APC_ISCWSA REV 2 MWD
1,283.00	7,542.00	HAL MWD+IFR+SC Vertical/Build	APC_ISCWSA REV 2 MWD+IFR1+SC
7,636.00	12,559.00	HAL MWD+IFR+SC Lateral	APC_ISCWSA REV 2 MWD+IFR1+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,216.20	1,206.25	9 5/8" Casing Set @ 1216.2' MD :: 1206.25' TVD	9-5/8	13-1/2
7,502.00	7,051.54	7" Casing Set @ 7502' MD :: 7051.54' TVD	7	8-3/4



Design Report for Milk State 3N-21HZ - Actual Surveys

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Milk State 3N-21HZ_BI - actual wellpath misses target center by 27.30usft at 12601.00usft MD (7054.33 TVD, 4747.85 N, 88.43 E) - Point	0.00	0.00	7,054.00	4,748.25	61.13	14,606,300.33	1,732,285.76	40.218034	-104.670907
Milk State 3N-21HZ_SI - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,601,551.88	1,732,242.22	40.204995	-104.671126
Sec. 28 and 21-T3N-R - actual wellpath misses target center by 713.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-14.00	166.43	-693.28	14,601,715.74	1,731,548.32	40.205452	-104.673609
Point 1				-1,157.80	4,631.20	14,606,342.62	1,730,373.37		
Point 2				1,410.20	4,631.80	14,606,352.74	1,732,941.35		
Point 3				3,978.20	4,632.30	14,606,362.75	1,735,509.33		
Point 4				3,987.10	1,999.70	14,603,730.20	1,735,527.99		
Point 5				4,004.20	-640.90	14,601,089.68	1,735,554.87		
Point 6				1,401.70	-644.40	14,601,076.54	1,732,952.40		
Point 7				-1,200.80	-633.90	14,601,077.40	1,730,349.88		
Point 8				1,401.70	-644.40	14,601,076.54	1,732,952.40		
Point 9				4,004.20	-640.90	14,601,089.68	1,735,554.87		
Point 10				4,016.60	-3,289.10	14,598,441.55	1,735,577.08		
Point 11				4,028.80	-5,929.10	14,595,801.61	1,735,599.07		
Point 12				1,413.40	-5,930.40	14,595,790.62	1,732,983.69		
Point 13				-1,202.00	-5,931.80	14,595,779.53	1,730,368.31		
Point 14				-1,201.40	-3,282.80	14,598,428.51	1,730,359.10		
Point 15				-1,200.80	-633.90	14,601,077.40	1,730,349.88		
Point 16				-1,179.30	1,998.70	14,603,710.06	1,730,361.63		
Milk State 3N-21HZ_H - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,601,551.88	1,732,242.22	40.204995	-104.671126
Point 1				-107.31	5,656.21	14,607,207.66	1,732,113.95		
Point 2				256.29	5,655.92	14,607,208.71	1,732,477.55		
Point 3				250.44	-1,337.72	14,600,215.10	1,732,497.62		
Point 4				-132.17	-1,336.70	14,600,214.70	1,732,115.01		

North Reference Sheet for 3N-65W-21 Milk 4-21HZ Pad - Milk State 3N-21HZ - 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' @ 4850.00usft (Ensign 145). Northing and Easting are relative to Milk State 3N-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 -105.000000°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960964

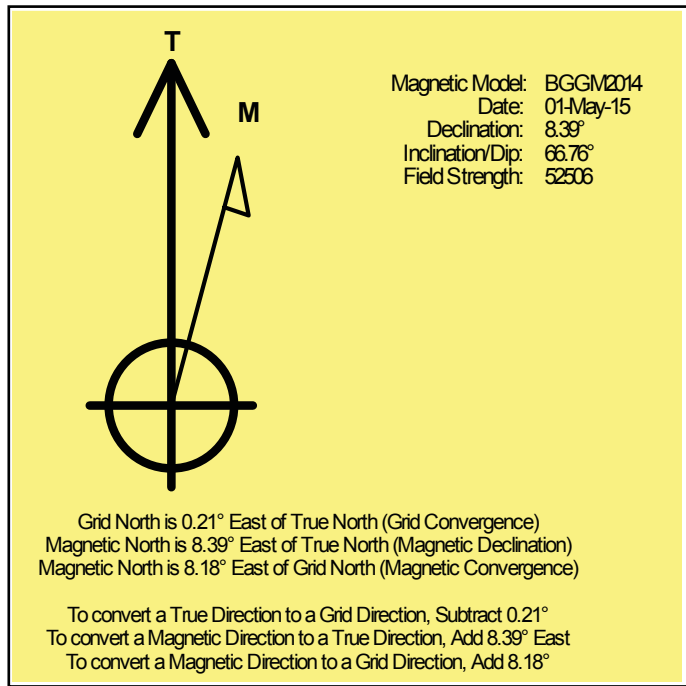
Grid Coordinates of Well: 14,601,551.88 usft N, 1,732,242.22 usft E

Geographical Coordinates of Well: 40° 12' 17.98" N, 104° 40' 16.05" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,601.00usft the Bottom Hole Displacement is 4,748.67usft in the Direction of 1.07° (True).

Magnetic Convergence at surface is: -8.18° (1 May 2015, , BGGM2014)



US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N
3N-65W-21 Milk 4-21HZ Pad
Milk State 3N-21HZ
05-123-40993
Plan C

Design: Actual Surveys

Sperry Drilling Services

Geodetic Report

06 May, 2015

Well Coordinates: 14,601,551.88 N, 1,732,242.22 E (40° 12' 17.98" N, 104° 40' 16.05" W)
Ground Level: 4,837.00 usft

Local Coordinate Origin:	Centered on Well Milk State 3N-21HZ
Viewing Datum:	RKB = 13' @ 4850.00usft (Ensign 145)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for Milk State 3N-21HZ - Actual 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	40.204995	-104.671126	14,601,551.88	1,732,242.22
90.00	0.20	77.80	90.00	0.03	0.15	40.204995	-104.671126	14,601,551.92	1,732,242.37
153.00	0.40	119.60	153.00	-0.05	0.45	40.204995	-104.671125	14,601,551.83	1,732,242.67
212.00	1.00	183.30	211.99	-0.67	0.60	40.204993	-104.671124	14,601,551.22	1,732,242.83
273.00	1.30	200.30	272.98	-1.85	0.33	40.204990	-104.671125	14,601,550.04	1,732,242.56
332.00	1.90	190.50	331.96	-3.44	-0.08	40.204986	-104.671127	14,601,548.44	1,732,242.15
395.00	2.90	187.60	394.90	-6.04	-0.48	40.204979	-104.671128	14,601,545.84	1,732,241.76
458.00	4.00	178.30	457.79	-9.82	-0.63	40.204968	-104.671129	14,601,542.06	1,732,241.63
522.00	5.40	184.70	521.57	-15.05	-0.81	40.204954	-104.671129	14,601,536.83	1,732,241.47
586.00	6.50	185.90	585.23	-21.66	-1.43	40.204936	-104.671131	14,601,530.22	1,732,240.88
650.00	6.90	182.70	648.79	-29.10	-1.98	40.204915	-104.671133	14,601,522.77	1,732,240.35
712.00	7.30	179.40	710.31	-36.76	-2.11	40.204894	-104.671134	14,601,515.11	1,732,240.24
776.00	8.00	175.30	773.75	-45.27	-1.71	40.204871	-104.671132	14,601,506.61	1,732,240.68
838.00	9.20	171.80	835.05	-54.47	-0.65	40.204846	-104.671129	14,601,497.41	1,732,241.78
903.00	10.50	172.60	899.09	-65.49	0.86	40.204815	-104.671123	14,601,486.40	1,732,243.32
964.00	11.30	170.80	958.99	-76.90	2.53	40.204784	-104.671117	14,601,474.99	1,732,245.04
1,027.00	12.20	169.30	1,020.67	-89.53	4.75	40.204749	-104.671109	14,601,462.37	1,732,247.31
1,091.00	11.70	165.40	1,083.28	-102.46	7.64	40.204714	-104.671099	14,601,449.45	1,732,250.24
1,182.00	10.30	167.00	1,172.61	-119.32	11.80	40.204667	-104.671084	14,601,432.61	1,732,254.46
1,216.20	10.36	166.02	1,206.25	-125.28	13.23	40.204651	-104.671079	14,601,426.65	1,732,255.92
1,283.00	10.50	164.15	1,271.95	-136.97	16.34	40.204619	-104.671068	14,601,414.98	1,732,259.07
1,470.00	12.08	173.86	1,455.34	-172.82	23.09	40.204521	-104.671044	14,601,379.15	1,732,265.95
1,563.00	12.68	173.53	1,546.18	-192.64	25.28	40.204466	-104.671036	14,601,359.34	1,732,268.22
1,657.00	12.41	171.73	1,637.93	-212.88	27.90	40.204411	-104.671026	14,601,339.10	1,732,270.91
1,750.00	14.04	172.77	1,728.46	-233.96	30.76	40.204353	-104.671016	14,601,318.03	1,732,273.84
1,844.00	13.44	172.24	1,819.77	-256.10	33.67	40.204292	-104.671006	14,601,295.91	1,732,276.84
1,938.00	13.45	169.95	1,911.20	-277.69	37.05	40.204233	-104.670994	14,601,274.33	1,732,280.30
2,031.00	13.31	167.78	2,001.67	-298.80	41.20	40.204175	-104.670979	14,601,253.24	1,732,284.53
2,125.00	13.86	173.88	2,093.05	-320.57	44.69	40.204115	-104.670966	14,601,231.48	1,732,288.10
2,218.00	13.54	171.20	2,183.40	-342.41	47.55	40.204055	-104.670956	14,601,209.65	1,732,291.04
2,405.00	12.42	168.16	2,365.62	-383.72	55.02	40.203941	-104.670929	14,601,168.37	1,732,298.66
2,498.00	13.05	174.93	2,456.34	-403.97	58.00	40.203886	-104.670919	14,601,148.13	1,732,301.72
2,592.00	12.51	173.08	2,548.01	-424.65	60.17	40.203829	-104.670911	14,601,127.46	1,732,303.96
2,686.00	13.90	173.88	2,639.53	-445.98	62.60	40.203770	-104.670902	14,601,106.13	1,732,306.47
2,779.00	13.98	172.44	2,729.79	-468.23	65.27	40.203709	-104.670893	14,601,083.90	1,732,309.22
2,872.00	14.15	172.67	2,820.00	-490.64	68.19	40.203648	-104.670882	14,601,061.50	1,732,312.23
2,963.00	14.20	171.60	2,908.23	-512.71	71.24	40.203587	-104.670871	14,601,039.44	1,732,315.36
3,053.00	14.00	170.85	2,995.52	-534.38	74.59	40.203528	-104.670859	14,601,017.78	1,732,318.79
3,143.00	13.43	170.12	3,082.95	-555.42	78.11	40.203470	-104.670847	14,600,996.75	1,732,322.39
3,233.00	13.22	169.37	3,170.53	-575.84	81.80	40.203414	-104.670833	14,600,976.35	1,732,326.16
3,323.00	11.94	167.78	3,258.36	-595.05	85.67	40.203361	-104.670819	14,600,957.15	1,732,330.10
3,413.00	12.91	169.77	3,346.26	-614.04	89.43	40.203309	-104.670806	14,600,938.18	1,732,333.92

Design Report for Milk State 3N-21HZ - Actual 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)
3,503.00	13.24	173.53	3,433.92	-634.18	92.38	40.203254	-104.670795	14,600,918.05	1,732,336.95
3,593.00	12.33	175.18	3,521.69	-654.00	94.34	40.203199	-104.670788	14,600,898.24	1,732,338.99
3,683.00	11.37	173.29	3,609.77	-672.38	96.19	40.203149	-104.670782	14,600,879.86	1,732,340.90
3,773.00	12.87	174.47	3,697.77	-691.17	98.19	40.203097	-104.670775	14,600,861.08	1,732,342.97
3,863.00	12.59	176.08	3,785.55	-710.93	99.83	40.203043	-104.670769	14,600,841.32	1,732,344.68
3,953.00	12.50	175.38	3,873.40	-730.43	101.28	40.202989	-104.670764	14,600,821.84	1,732,346.21
4,043.00	12.63	173.85	3,961.25	-749.92	103.12	40.202936	-104.670757	14,600,802.35	1,732,348.12
4,132.00	12.61	174.35	4,048.10	-769.26	105.12	40.202883	-104.670750	14,600,783.02	1,732,350.19
4,222.00	12.11	171.34	4,136.01	-788.37	107.51	40.202830	-104.670741	14,600,763.92	1,732,352.65
4,312.00	11.45	170.86	4,224.12	-806.52	110.35	40.202780	-104.670731	14,600,745.78	1,732,355.56
4,492.00	13.23	175.48	4,399.96	-844.70	114.81	40.202675	-104.670715	14,600,707.62	1,732,360.16
4,581.00	12.96	176.67	4,486.64	-864.81	116.19	40.202620	-104.670710	14,600,687.50	1,732,361.62
4,671.00	12.45	175.63	4,574.44	-884.56	117.52	40.202566	-104.670705	14,600,667.76	1,732,363.02
4,761.00	12.49	177.02	4,662.32	-903.96	118.76	40.202513	-104.670701	14,600,648.37	1,732,364.33
4,851.00	11.14	173.82	4,750.41	-922.32	120.21	40.202462	-104.670696	14,600,630.02	1,732,365.84
4,941.00	10.23	173.79	4,838.85	-938.91	122.01	40.202417	-104.670689	14,600,613.43	1,732,367.71
5,030.00	8.82	171.47	4,926.62	-953.51	123.87	40.202377	-104.670683	14,600,598.83	1,732,369.63
5,120.00	8.17	170.56	5,015.63	-966.65	125.95	40.202341	-104.670675	14,600,585.71	1,732,371.75
5,210.00	7.92	167.61	5,104.74	-979.01	128.33	40.202307	-104.670667	14,600,573.35	1,732,374.17
5,300.00	6.04	175.34	5,194.07	-989.79	130.04	40.202277	-104.670661	14,600,562.58	1,732,375.93
5,390.00	5.48	175.79	5,283.62	-998.79	130.74	40.202252	-104.670658	14,600,553.58	1,732,376.66
5,480.00	5.15	173.94	5,373.23	-1,007.10	131.48	40.202230	-104.670655	14,600,545.28	1,732,377.43
5,570.00	3.46	180.09	5,462.98	-1,013.83	131.91	40.202211	-104.670654	14,600,538.55	1,732,377.88
5,659.00	1.58	170.30	5,551.89	-1,017.72	132.11	40.202200	-104.670653	14,600,534.66	1,732,378.10
5,749.00	0.85	116.78	5,641.87	-1,019.25	132.91	40.202196	-104.670650	14,600,533.13	1,732,378.91
5,839.00	2.02	96.47	5,731.84	-1,019.73	135.08	40.202195	-104.670642	14,600,532.66	1,732,381.08
5,929.00	2.34	105.52	5,821.77	-1,020.40	138.43	40.202193	-104.670630	14,600,532.01	1,732,384.43
6,019.00	0.25	279.61	5,911.75	-1,020.86	140.01	40.202192	-104.670625	14,600,531.55	1,732,386.01
6,109.00	0.54	39.48	6,001.75	-1,020.50	140.08	40.202193	-104.670625	14,600,531.91	1,732,386.09
6,199.00	0.46	17.32	6,091.75	-1,019.82	140.46	40.202195	-104.670623	14,600,532.59	1,732,386.46
6,289.00	0.51	17.40	6,181.74	-1,019.10	140.69	40.202197	-104.670622	14,600,533.31	1,732,386.69
6,379.00	0.76	3.00	6,271.74	-1,018.12	140.84	40.202199	-104.670622	14,600,534.29	1,732,386.83
6,469.00	0.97	354.10	6,361.73	-1,016.76	140.79	40.202203	-104.670622	14,600,535.65	1,732,386.78
6,514.00	7.83	3.65	6,406.57	-1,013.32	140.95	40.202212	-104.670621	14,600,539.09	1,732,386.92
6,604.00	24.00	6.18	6,492.83	-988.84	143.33	40.202280	-104.670613	14,600,563.58	1,732,389.21
6,694.00	28.16	3.12	6,573.65	-949.42	146.45	40.202388	-104.670602	14,600,603.01	1,732,392.19
6,739.00	28.29	1.61	6,613.30	-928.16	147.33	40.202446	-104.670599	14,600,624.27	1,732,392.99
6,829.00	31.77	0.87	6,691.21	-883.14	148.29	40.202570	-104.670595	14,600,669.30	1,732,393.78
6,919.00	35.27	359.83	6,766.23	-833.45	148.57	40.202706	-104.670594	14,600,718.99	1,732,393.88
7,009.00	40.23	358.29	6,837.37	-778.38	147.63	40.202858	-104.670598	14,600,774.06	1,732,392.73
7,099.00	50.15	359.12	6,900.72	-714.62	146.23	40.203033	-104.670603	14,600,837.81	1,732,391.09
7,189.00	57.21	359.19	6,954.00	-642.16	145.16	40.203232	-104.670606	14,600,910.26	1,732,389.76

Design Report for Milk State 3N-21HZ - Actual 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)
7,279.00	62.98	0.25	6,998.85	-564.18	144.80	40.203446	-104.670608	14,600,988.24	1,732,389.11
7,369.00	74.68	0.11	7,031.30	-480.40	145.06	40.203676	-104.670607	14,601,072.02	1,732,389.06
7,466.00	84.66	0.36	7,048.67	-385.09	145.45	40.203938	-104.670605	14,601,167.33	1,732,389.10
7,502.00	86.18	0.30	7,051.54	-349.21	145.66	40.204036	-104.670605	14,601,203.21	1,732,389.17
7,542.00	87.87	0.24	7,053.62	-309.27	145.85	40.204146	-104.670604	14,601,243.16	1,732,389.22
7,636.00	88.67	359.92	7,056.46	-215.31	145.98	40.204404	-104.670603	14,601,337.11	1,732,389.00
7,726.00	88.98	0.06	7,058.30	-125.33	145.97	40.204651	-104.670603	14,601,427.09	1,732,388.65
7,816.00	89.32	0.50	7,059.64	-35.34	146.40	40.204898	-104.670602	14,601,517.08	1,732,388.76
7,906.00	90.40	0.47	7,059.86	54.65	147.17	40.205145	-104.670599	14,601,607.08	1,732,389.18
7,996.00	91.42	0.73	7,058.43	144.64	148.11	40.205392	-104.670596	14,601,697.07	1,732,389.79
8,086.00	91.54	359.99	7,056.10	234.60	148.67	40.205639	-104.670594	14,601,787.04	1,732,390.03
8,266.00	90.00	359.31	7,053.68	414.58	147.57	40.206134	-104.670598	14,601,967.00	1,732,388.26
8,356.00	88.80	357.52	7,054.63	504.53	145.09	40.206381	-104.670607	14,602,056.95	1,732,385.44
8,446.00	89.69	357.98	7,055.81	594.46	141.55	40.206628	-104.670619	14,602,146.86	1,732,381.57
8,536.00	89.94	358.06	7,056.10	684.40	138.44	40.206875	-104.670630	14,602,236.79	1,732,378.13
8,626.00	90.65	358.22	7,055.64	774.35	135.52	40.207122	-104.670641	14,602,326.73	1,732,374.87
8,716.00	91.17	358.18	7,054.21	864.30	132.70	40.207369	-104.670651	14,602,416.66	1,732,371.71
8,806.00	90.92	358.58	7,052.57	954.24	130.15	40.207616	-104.670660	14,602,506.60	1,732,368.84
8,896.00	89.35	358.12	7,052.36	1,044.20	127.56	40.207863	-104.670669	14,602,596.55	1,732,365.91
8,986.00	90.15	358.25	7,052.75	1,134.16	124.71	40.208110	-104.670680	14,602,686.49	1,732,362.73
9,075.00	89.45	358.91	7,053.06	1,223.13	122.50	40.208354	-104.670687	14,602,775.46	1,732,360.19
9,165.00	90.55	358.93	7,053.06	1,313.11	120.81	40.208601	-104.670694	14,602,865.43	1,732,358.16
9,255.00	90.55	359.48	7,052.20	1,403.10	119.56	40.208848	-104.670698	14,602,955.41	1,732,356.58
9,434.00	89.11	2.29	7,052.73	1,582.05	122.32	40.209340	-104.670688	14,603,134.38	1,732,358.68
9,524.00	89.85	1.86	7,053.54	1,671.99	125.58	40.209586	-104.670676	14,603,224.33	1,732,361.61
9,614.00	90.89	1.80	7,052.96	1,761.94	128.46	40.209834	-104.670666	14,603,314.29	1,732,364.15
9,704.00	91.79	1.70	7,050.86	1,851.87	131.20	40.210080	-104.670656	14,603,404.23	1,732,366.56
9,793.00	90.89	0.16	7,048.78	1,940.83	132.65	40.210325	-104.670651	14,603,493.19	1,732,367.68
9,883.00	90.58	359.62	7,047.62	2,030.82	132.47	40.210572	-104.670652	14,603,583.18	1,732,367.17
9,973.00	91.26	359.48	7,046.18	2,120.81	131.77	40.210819	-104.670654	14,603,673.17	1,732,366.13
10,063.00	89.32	358.19	7,045.72	2,210.78	129.94	40.211066	-104.670661	14,603,763.13	1,732,363.97
10,153.00	88.68	358.22	7,047.29	2,300.73	127.12	40.211313	-104.670671	14,603,853.06	1,732,360.81
10,243.00	88.80	358.00	7,049.27	2,390.65	124.15	40.211560	-104.670682	14,603,942.98	1,732,357.51
10,333.00	88.49	357.65	7,051.40	2,480.56	120.74	40.211807	-104.670694	14,604,032.88	1,732,353.77
10,423.00	87.87	357.85	7,054.26	2,570.45	117.21	40.212054	-104.670706	14,604,122.75	1,732,349.90
10,512.00	89.94	358.99	7,055.96	2,659.39	114.75	40.212298	-104.670715	14,604,211.68	1,732,347.12
10,602.00	90.83	358.55	7,055.35	2,749.37	112.82	40.212545	-104.670722	14,604,301.65	1,732,344.85
10,692.00	92.03	359.39	7,053.11	2,839.32	111.20	40.212792	-104.670728	14,604,391.60	1,732,342.90
10,782.00	90.71	359.41	7,050.96	2,929.29	110.26	40.213039	-104.670731	14,604,481.56	1,732,341.63
10,872.00	89.97	358.65	7,050.42	3,019.28	108.74	40.213286	-104.670737	14,604,571.54	1,732,339.77
11,052.00	89.94	0.11	7,050.56	3,199.26	106.79	40.213780	-104.670744	14,604,751.52	1,732,337.16
11,142.00	89.75	359.96	7,050.81	3,289.26	106.84	40.214028	-104.670744	14,604,841.52	1,732,336.88

Design Report for Milk State 3N-21HZ - Actual 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)
11,232.00	89.01	0.10	7,051.78	3,379.25	106.89	40.214275	-104.670743	14,604,931.51	1,732,336.59
11,322.00	89.54	0.34	7,052.92	3,469.25	107.24	40.214522	-104.670742	14,605,021.50	1,732,336.60
11,502.00	89.14	0.27	7,054.99	3,649.23	108.20	40.215016	-104.670739	14,605,201.49	1,732,336.89
11,592.00	89.48	0.35	7,056.08	3,739.22	108.68	40.215263	-104.670737	14,605,291.48	1,732,337.05
11,682.00	90.15	359.78	7,056.37	3,829.22	108.78	40.215510	-104.670737	14,605,381.48	1,732,336.82
11,772.00	90.37	359.82	7,055.96	3,919.22	108.47	40.215758	-104.670738	14,605,471.48	1,732,336.17
11,862.00	89.66	358.96	7,055.93	4,009.21	107.51	40.216005	-104.670741	14,605,561.47	1,732,334.88
11,953.00	89.88	358.75	7,056.30	4,100.19	105.69	40.216255	-104.670748	14,605,652.44	1,732,332.72
12,043.00	89.07	359.02	7,057.12	4,190.17	103.94	40.216502	-104.670754	14,605,742.41	1,732,330.64
12,133.00	89.48	358.58	7,058.26	4,280.15	102.06	40.216749	-104.670761	14,605,832.38	1,732,328.42
12,223.00	89.23	358.99	7,059.28	4,370.12	100.15	40.216996	-104.670768	14,605,922.34	1,732,326.18
12,313.00	89.85	358.63	7,060.00	4,460.10	98.28	40.217243	-104.670774	14,606,012.31	1,732,323.97
12,403.00	90.71	358.27	7,059.56	4,550.06	95.85	40.217490	-104.670783	14,606,102.27	1,732,321.21
12,493.00	91.45	357.94	7,057.86	4,640.00	92.87	40.217737	-104.670794	14,606,192.19	1,732,317.90
12,559.00	92.06	357.51	7,055.84	4,705.91	90.25	40.217918	-104.670803	14,606,258.10	1,732,315.03
12,601.00	92.06	357.51	7,054.33	4,747.85	88.43	40.218033	-104.670809	14,606,300.02	1,732,313.06

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
90.00	90.00	0.03	0.15	First Cathedral MWD Survey
1,182.00	1,172.61	-119.32	11.80	Tie-on to Cathedral MWD Surveys
1,283.00	1,271.95	-136.97	16.34	First HAL MWD Survey
12,559.00	7,055.84	4,705.91	90.25	Final HAL MWD Survey
12,601.00	7,054.33	4,747.85	88.43	Str Line Proj to Bit @ 12601' MD::7054.33' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	359.23	Slot	0.00	0.00	0.00

Design Report for Milk State 3N-21HZ - Actual Surveys

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
90.00	1,182.00	CES Surface Surveys	APC_ISCWSA REV 2 MWD
1,283.00	7,542.00	HAL MWD+IFR+SC Vertical/Build	APC_ISCWSA REV 2 MWD+IFR1+SC
7,636.00	12,559.00	HAL MWD+IFR+SC Lateral	APC_ISCWSA REV 2 MWD+IFR1+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,216.20	1,206.25	9 5/8" Casing Set @ 1216.2' MD :: 1206.25' TVD	9-5/8	13-1/2
7,502.00	7,051.54	7" Casing Set @ 7502' MD :: 7051.54' TVD	7	8-3/4

Targets for Plan C

Shape	Target Name	TVD (usft)	Northing (usft)	Easting (usft)	+N/-S usft	+E/-W usft	Created	Updated
Point	Milk State 3N-21HZ_BHL	7,054.00	14,606,300.33	1,732,285.76	4,748.25	61.13	4/24/2015	4/24/2015
Point	Milk State 3N-21HZ_SHL	0.00	14,601,551.88	1,732,242.22	0.00	0.00	10/11/2014	4/1/2015
Polygon	Sec. 28 and 21-T3N-R65W	-14.00	14,601,715.74	1,731,548.32	166.43	-693.28	10/10/2014	10/10/2014
Polygon	Milk State 3N-21HZ_Hardlines	0.00	14,601,551.88	1,732,242.22	0.00	0.00	3/25/2015	4/1/2015

North Reference Sheet for 3N-65W-21 Milk 4-21HZ Pad - Milk State 3N-21HZ - 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' @ 4850.00usft (Ensign 145). Northing and Easting are relative to Milk State 3N-21HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.000000°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960964

Grid Coordinates of Well: 14,601,551.88 usft N, 1,732,242.22 usft E

Geographical Coordinates of Well: 40° 12' 17.98" N, 104° 40' 16.05" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,601.00usft

the Bottom Hole Displacement is 4,748.67usft in the Direction of 1.07° (True).

Magnetic Convergence at surface is: -8.18° (1 May 2015, , BGGM2014)

