Project: Weld County, CO (NAD 83)
Site: Sec. 4-T6N-R63W (NCLP PC AA04 Pads)
Well: NCLP PC AA04-65HN
Wellbore: Plan A
Design: Final Surveys

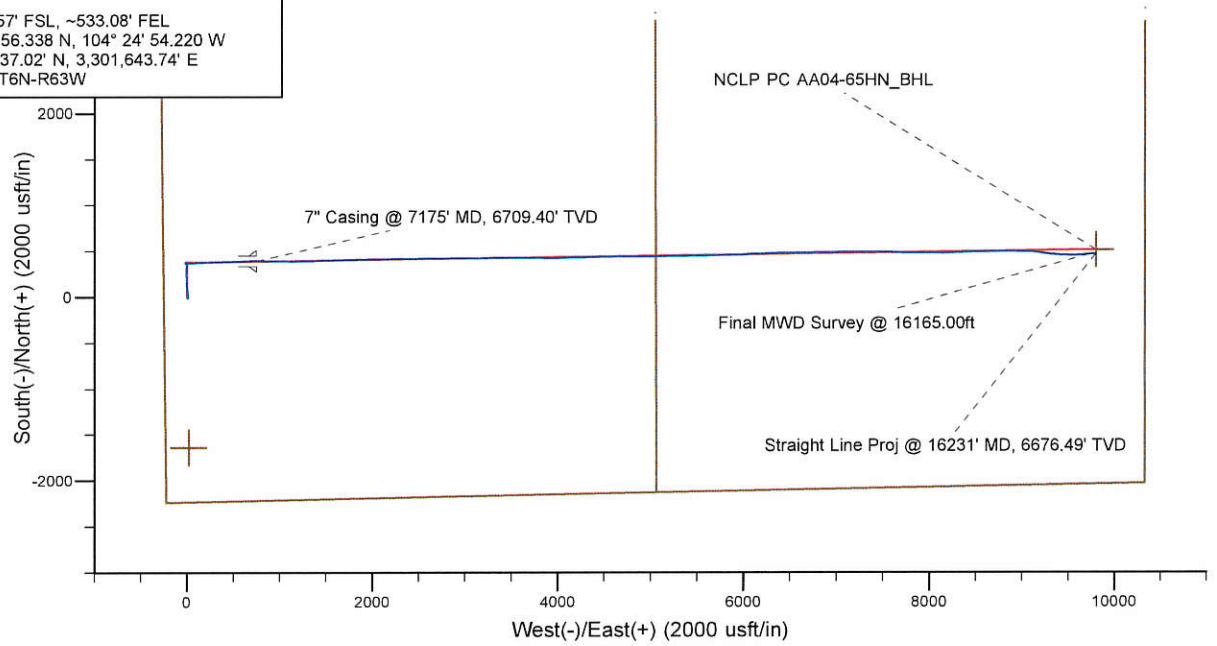
Noble Energy

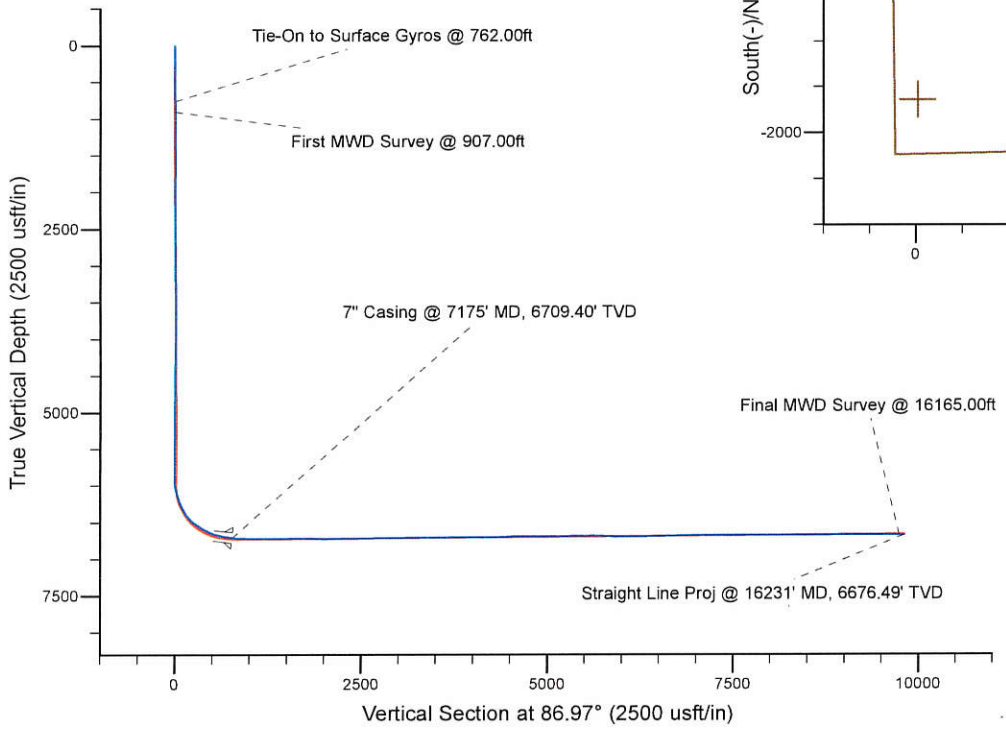
HALLIBURTON
Sperry Drilling

Platted SHL:	2238' FSL, 250' FWL
Platted Lat/Long:	40.51467° N, 104.45032° W
Location:	Sec. 4-T6N-R63W
7" Casing:	~2614.09' FSL, ~1005.02' FWL
Lat/Long:	40° 30' 56.595 N, 104° 26' 51.379 W
State Planes - CO Northern:	1,432,453.95' N, 3,292,595.63' E
Location:	Sec. 4-T6N-R63W
BHL:	~2513.57' FSL, ~533.08' FEL
Lat/Long:	40° 30' 56.338 N, 104° 24' 54.220 W
State Planes - CO Northern:	1,432,537.02' N, 3,301,643.74' E
Location:	Sec. 3-T6N-R63W

LEGEND

NCLP PC AA04-65HN, Plan A, A0 - PROPOSAL V0
Final Surveys





WELL DETAILS: NCLP PC AA04-65HN	
Ground Level:	4711.00
RKB=24 @ 4735.00usft (H&P 343)	

Created By: Fred Hartmann
Created On: 11/20/2013

Noble Energy

Weld County, CO (NAD 83)
Sec. 4-T6N-R63W (NCLP PC AA04 Pads)
NCLP PC AA04-65HN

Design: Final Surveys

Sperry Drilling Services

Final Survey Report

20 November, 2013

Surface UWI : 900859732

Well Coordinates: 1,432,062.21 N, 3,291,845.43 E (40° 30' 52.81" N, 104° 27' 01.15" W)
Ground Level: 4,711.00 usft

Local Coordinate Origin:	Centered on Well NCLP PC AA04-65HN
Viewing Datum:	RKB=24 @ 4735.00usft (H&P 343)
TVDs to System:	N
North Reference:	Grid
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied
Version: 5000.1 Build: 70

HALLIBURTON

Design Report for NCLP PC AA04-65HN - Final 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
360.00	0.60	107.43	359.99	-0.56	1.80	1.77	0.17
762.00	1.20	152.83	761.95	-4.94	5.73	5.46	0.22
Tie-On to Surface Gyros @ 762.00ft							
907.00	2.25	159.47	906.88	-8.96	7.42	6.94	0.74
First MWD Survey @ 907.00ft							
1,001.00	1.87	101.41	1,000.83	-10.99	9.57	8.98	2.16
1,094.00	2.00	12.78	1,093.79	-9.71	11.42	10.89	2.91
1,186.00	2.12	351.74	1,185.73	-6.46	11.53	11.17	0.83
1,279.00	2.08	349.84	1,278.67	-3.09	10.98	10.80	0.09
1,374.00	2.36	355.03	1,373.60	0.55	10.51	10.52	0.36
1,469.00	2.33	351.89	1,468.52	4.41	10.07	10.29	0.14
1,564.00	2.72	357.44	1,563.43	8.58	9.70	10.13	0.48
1,659.00	2.70	355.61	1,658.32	13.06	9.42	10.10	0.09
1,754.00	2.94	355.47	1,753.21	17.72	9.06	9.98	0.25
1,848.00	2.62	353.96	1,847.10	22.26	8.64	9.81	0.35
1,943.00	2.64	351.55	1,942.00	26.58	8.09	9.49	0.12
2,038.00	5.09	355.53	2,036.77	32.95	7.44	9.17	2.59
2,133.00	6.51	347.47	2,131.29	42.41	5.95	8.18	1.72
2,228.00	8.81	351.22	2,225.43	54.86	3.67	6.56	2.48
2,322.00	11.23	357.12	2,317.99	71.12	2.11	5.86	2.79
2,417.00	14.07	357.14	2,410.68	91.89	1.07	5.92	2.99
2,606.00	13.76	357.06	2,594.13	137.28	-1.23	6.03	0.16
2,700.00	13.33	355.75	2,685.52	159.26	-2.61	5.81	0.56
2,794.00	15.86	1.50	2,776.48	182.91	-3.08	6.60	3.10
2,889.00	16.41	0.36	2,867.74	209.30	-2.65	8.42	0.67
2,984.00	16.42	0.28	2,958.87	236.15	-2.50	9.99	0.03
3,079.00	13.91	358.00	3,050.55	260.99	-2.83	10.97	2.72
3,174.00	13.41	356.96	3,142.86	283.41	-3.82	11.17	0.59
3,268.00	9.43	358.56	3,234.99	302.00	-4.59	11.38	4.25
3,363.00	8.54	1.11	3,328.82	316.83	-4.65	12.11	1.03
3,458.00	7.22	1.52	3,422.92	329.85	-4.35	13.09	1.39
3,553.00	6.46	10.45	3,517.25	341.07	-3.23	14.81	1.37
3,648.00	7.29	7.96	3,611.56	352.30	-1.42	17.21	0.93
3,742.00	6.55	1.55	3,704.88	363.56	-0.45	18.77	1.14
3,837.00	4.78	350.88	3,799.41	372.89	-0.93	18.78	2.16
3,932.00	3.48	331.38	3,894.17	379.33	-2.94	17.12	2.00
4,028.00	1.55	248.58	3,990.09	381.41	-5.55	14.63	3.78
4,123.00	1.25	244.02	4,085.07	380.49	-7.67	12.45	0.34
4,217.00	1.25	228.26	4,179.04	379.36	-9.36	10.71	0.36
4,312.00	1.11	227.71	4,274.02	378.05	-10.81	9.19	0.15
4,407.00	0.57	195.52	4,369.01	376.98	-11.62	8.33	0.73
4,502.00	0.55	187.60	4,464.01	376.07	-11.81	8.09	0.08
4,597.00	0.59	204.48	4,559.00	375.17	-12.07	7.78	0.18
4,692.00	0.83	206.45	4,654.00	374.11	-12.58	7.22	0.25
4,787.00	1.17	201.93	4,748.98	372.59	-13.25	6.47	0.37
4,881.00	0.71	227.06	4,842.97	371.31	-14.03	5.62	0.65
4,976.00	0.34	207.82	4,937.97	370.66	-14.60	5.02	0.43
5,071.00	0.34	220.49	5,032.96	370.19	-14.91	4.68	0.08
5,166.00	0.36	252.62	5,127.96	369.89	-15.38	4.20	0.20

Design Report for NCLP PC AA04-65HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
5,261.00	1.00	222.12	5,222.96	369.19	-16.22	3.32	0.75
5,450.00	0.72	196.83	5,411.94	366.83	-17.67	1.75	0.25
5,640.00	0.26	137.28	5,601.93	365.37	-17.72	1.62	0.33
5,735.00	0.19	243.40	5,696.93	365.14	-17.72	1.61	0.38
5,830.00	0.09	317.62	5,791.93	365.12	-17.91	1.42	0.20
5,925.00	0.37	330.98	5,886.93	365.44	-18.11	1.24	0.30
6,008.00	3.88	78.81	5,969.86	366.22	-15.48	3.90	4.83
6,056.00	8.58	85.56	6,017.57	366.82	-10.31	9.09	9.89
6,103.00	12.05	88.05	6,063.80	367.26	-1.91	17.51	7.44
6,151.00	15.56	88.40	6,110.41	367.61	9.53	28.95	7.31
6,197.00	17.48	83.13	6,154.51	368.60	22.56	42.02	5.29
6,245.00	20.14	83.09	6,199.94	370.46	37.92	57.46	5.54
6,292.00	22.61	88.37	6,243.71	371.69	54.99	74.57	6.66
6,340.00	24.86	92.52	6,287.65	371.51	74.30	93.84	5.84
6,387.00	26.23	90.54	6,330.06	370.98	94.56	114.04	3.43
6,435.00	30.26	88.50	6,372.33	371.20	117.26	136.72	8.63
6,482.00	36.63	85.88	6,411.53	372.51	143.11	162.61	13.89
6,576.00	49.61	88.10	6,480.00	375.73	207.14	226.71	13.90
6,671.00	57.31	88.47	6,536.52	378.00	283.38	302.96	8.11
6,719.00	57.62	87.88	6,562.34	379.29	323.82	343.42	1.22
6,766.00	58.00	87.50	6,587.37	380.89	363.56	383.19	1.06
6,861.00	65.67	88.63	6,632.18	383.69	447.20	466.86	8.14
6,956.00	72.70	87.42	6,665.92	386.77	535.89	555.59	7.49
7,051.00	79.34	88.44	6,688.86	390.09	627.97	647.71	7.07
7,131.00	80.29	89.50	6,703.01	391.50	706.69	726.40	1.76
7,175.00	82.99	89.84	6,709.40	391.75	750.22	769.88	6.18
7" Casing @ 7175' MD, 6709.40' TVD							
7,233.00	86.55	90.28	6,714.69	391.69	807.97	827.55	6.18
7,328.00	86.80	90.59	6,720.20	390.97	902.81	922.21	0.42
7,423.00	89.60	91.60	6,723.18	389.15	997.73	1,016.91	3.13
7,517.00	89.26	90.57	6,724.12	387.37	1,091.71	1,110.66	1.15
7,612.00	91.17	90.83	6,723.76	386.21	1,186.70	1,205.45	2.03
7,707.00	92.31	89.47	6,720.88	385.97	1,281.65	1,300.26	1.87
7,801.00	88.80	86.84	6,719.97	388.99	1,375.57	1,394.21	4.67
7,896.00	89.48	86.34	6,721.39	394.64	1,470.39	1,489.20	0.89
7,991.00	89.38	88.67	6,722.34	398.78	1,565.29	1,584.18	2.45
8,086.00	91.64	88.74	6,721.49	400.92	1,660.26	1,679.13	2.38
8,181.00	90.00	88.38	6,720.13	403.31	1,755.21	1,774.08	1.77
8,276.00	88.58	88.38	6,721.31	406.00	1,850.16	1,869.04	1.49
8,371.00	88.86	88.67	6,723.43	408.44	1,945.11	1,963.98	0.42
8,465.00	91.67	88.83	6,723.00	410.49	2,039.08	2,057.93	2.99
8,560.00	91.88	89.25	6,720.05	412.08	2,134.02	2,152.82	0.49
8,655.00	90.71	89.71	6,717.91	412.94	2,228.99	2,247.70	1.32
8,750.00	89.23	89.95	6,717.96	413.23	2,323.98	2,342.58	1.58
8,845.00	92.50	90.82	6,716.52	412.59	2,418.96	2,437.39	3.56
8,940.00	90.96	89.25	6,713.66	412.53	2,513.91	2,532.20	2.31
9,035.00	90.25	89.64	6,712.65	413.45	2,608.90	2,627.11	0.85
9,130.00	89.57	88.86	6,712.80	414.69	2,703.89	2,722.03	1.09
9,224.00	88.77	88.94	6,714.16	416.50	2,797.86	2,815.97	0.86
9,319.00	89.23	88.66	6,715.82	418.49	2,892.82	2,910.90	0.57
9,414.00	89.29	88.22	6,717.05	421.07	2,987.78	3,005.86	0.47

Design Report for NCLP PC AA04-65HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
9,509.00	92.41	89.62	6,715.64	422.86	3,082.74	3,100.78	3.60
9,604.00	91.33	89.03	6,712.54	423.98	3,177.68	3,195.65	1.30
9,703.00	92.59	89.49	6,709.15	425.26	3,276.61	3,294.51	1.35
9,798.00	91.51	88.73	6,705.75	426.74	3,371.54	3,389.38	1.39
9,893.00	88.61	89.21	6,705.65	428.44	3,466.51	3,484.32	3.09
9,988.00	90.52	89.83	6,706.38	429.24	3,561.50	3,579.21	2.11
10,083.00	90.92	91.37	6,705.18	428.24	3,656.49	3,674.01	1.67
10,176.00	89.97	90.69	6,704.46	426.57	3,749.47	3,766.77	1.26
10,268.00	90.03	90.38	6,704.46	425.71	3,841.46	3,858.60	0.34
10,361.00	90.09	90.23	6,704.36	425.22	3,934.46	3,951.44	0.17
10,453.00	89.82	89.46	6,704.43	425.47	4,026.46	4,043.32	0.89
10,546.00	88.21	86.43	6,706.03	428.80	4,119.37	4,136.28	3.69
10,639.00	91.29	88.80	6,706.44	432.67	4,212.27	4,229.26	4.18
10,732.00	91.60	89.13	6,704.09	434.35	4,305.23	4,322.17	0.49
10,825.00	93.21	88.97	6,700.19	435.89	4,398.13	4,415.02	1.74
10,917.00	92.40	88.38	6,695.69	438.01	4,489.99	4,506.87	1.09
11,010.00	91.67	87.81	6,692.39	441.10	4,582.88	4,599.79	1.00
11,102.00	90.37	89.10	6,690.75	443.58	4,674.83	4,691.74	1.99
11,196.00	90.80	91.58	6,689.79	443.03	4,768.82	4,785.57	2.68
11,289.00	87.63	89.05	6,691.06	442.51	4,861.79	4,878.38	4.36
11,382.00	90.00	88.93	6,692.99	444.15	4,954.75	4,971.30	2.55
11,476.00	90.00	89.09	6,692.99	445.78	5,048.73	5,065.24	0.17
11,568.00	90.03	90.20	6,692.96	446.35	5,140.73	5,157.14	1.21
11,661.00	92.77	89.19	6,690.69	446.84	5,233.69	5,249.99	3.14
11,756.00	91.20	87.07	6,687.40	449.94	5,328.57	5,344.91	2.78
11,851.00	89.45	89.17	6,686.86	453.06	5,423.51	5,439.88	2.88
11,945.00	92.19	90.67	6,685.52	453.19	5,517.49	5,533.73	3.32
12,041.00	89.14	88.44	6,684.40	453.93	5,613.46	5,629.61	3.94
12,136.00	87.90	89.59	6,686.86	455.57	5,708.42	5,724.52	1.78
12,231.00	87.72	88.74	6,690.49	456.95	5,803.33	5,819.38	0.91
12,325.00	86.70	87.62	6,695.06	459.93	5,897.17	5,913.24	1.61
12,419.00	90.99	86.58	6,696.96	464.69	5,991.01	6,007.20	4.70
12,510.00	90.25	88.12	6,695.97	468.89	6,081.90	6,098.19	1.88
12,605.00	91.05	87.64	6,694.89	472.41	6,176.83	6,193.17	0.98
12,700.00	88.76	85.94	6,695.05	477.73	6,271.67	6,288.16	3.00
12,800.00	90.59	87.82	6,695.62	483.17	6,371.51	6,388.15	2.62
12,895.00	92.87	90.19	6,692.75	484.82	6,466.44	6,483.03	3.46
12,990.00	92.22	89.29	6,688.53	485.25	6,561.35	6,577.83	1.17
13,085.00	90.37	88.82	6,686.38	486.82	6,656.31	6,672.73	2.01
13,179.00	91.54	89.69	6,684.82	488.04	6,750.28	6,766.64	1.55
13,274.00	91.55	88.44	6,682.26	489.59	6,845.23	6,861.54	1.32
13,369.00	91.69	88.50	6,679.57	492.12	6,940.16	6,956.47	0.16
13,464.00	90.49	89.43	6,677.76	493.84	7,035.13	7,051.40	1.60
13,559.00	90.03	90.46	6,677.33	493.93	7,130.12	7,146.27	1.19
13,654.00	89.97	90.59	6,677.33	493.06	7,225.12	7,241.08	0.15
13,749.00	88.92	89.28	6,678.25	493.17	7,320.11	7,335.95	1.77
13,844.00	90.06	89.00	6,679.10	494.59	7,415.10	7,430.87	1.24
13,939.00	89.94	91.66	6,679.10	494.05	7,510.09	7,525.70	2.80
14,034.00	89.51	91.38	6,679.55	491.53	7,605.05	7,620.40	0.54
14,129.00	90.83	92.59	6,679.27	488.23	7,699.99	7,715.03	1.88
14,224.00	88.74	89.76	6,679.63	486.29	7,794.95	7,809.76	3.70

Design Report for NCLP PC AA04-65HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
14,318.00	90.28	90.33	6,680.43	486.21	7,888.95	7,903.62	1.75
14,413.00	89.75	89.49	6,680.41	486.36	7,983.95	7,998.49	1.05
14,508.00	90.43	92.71	6,680.26	484.54	8,078.92	8,093.23	3.46
14,603.00	89.75	88.61	6,680.11	483.44	8,173.89	8,188.02	4.37
14,698.00	90.12	87.02	6,680.22	487.07	8,268.82	8,283.00	1.72
14,793.00	90.00	87.33	6,680.12	491.75	8,363.70	8,378.00	0.35
14,887.00	90.55	88.05	6,679.67	495.54	8,457.62	8,471.99	0.96
14,982.00	91.97	89.10	6,677.58	497.90	8,552.57	8,566.93	1.86
15,077.00	89.91	88.38	6,676.02	499.99	8,647.52	8,661.86	2.30
15,172.00	90.22	87.56	6,675.91	503.35	8,742.46	8,756.85	0.92
15,267.00	90.46	90.32	6,675.35	505.11	8,837.44	8,851.78	2.92
15,362.00	90.96	91.76	6,674.17	503.39	8,932.41	8,946.53	1.60
15,456.00	89.63	90.25	6,673.69	501.74	9,026.39	9,040.29	2.14
15,551.00	90.43	95.72	6,673.64	496.79	9,121.22	9,134.73	5.82
15,646.00	89.11	99.51	6,674.02	484.21	9,215.37	9,228.08	4.22
15,741.00	91.42	96.22	6,673.58	471.21	9,309.45	9,321.35	4.23
15,836.00	90.25	92.00	6,672.19	464.40	9,404.18	9,415.58	4.61
15,931.00	89.57	91.67	6,672.34	461.36	9,499.13	9,510.23	0.80
16,026.00	88.98	88.17	6,673.54	461.49	9,594.10	9,605.08	3.74
16,121.00	88.98	85.86	6,675.24	466.44	9,688.95	9,700.06	2.43
16,165.00	89.44	85.57	6,675.84	469.73	9,732.83	9,744.05	1.24
Final MWD Survey @ 16165.00ft							
16,231.00	89.44	85.57	6,676.49	474.82	9,798.62	9,810.02	0.00
Straight Line Proj @ 16231' MD, 6676.49' TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
762.00	761.95	-4.94	5.73	Tie-On to Surface Gyros @ 762.00ft
907.00	906.88	-8.96	7.42	First MWD Survey @ 907.00ft
16,165.00	6,675.84	469.73	9,732.83	Final MWD Survey @ 16165.00ft
16,231.00	6,676.49	474.82	9,798.62	Straight Line Proj @ 16231' MD, 6676.49' TVD

Vertical Section Information

	Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target		NCLP PC AA04-65HN_BHL	86.97	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
360.00	762.00	Surface Gyros	Flexi-Shot
907.00	7,131.00	MWD Surveys - Vert/Build	MWD+IFR1+MS_WY
7,233.00	16,165.00	MWD Surveys - Lateral	MWD+IFR1+MS_WY

Design Report for NCLP PC AA04-65HN - Final Surveys

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,175.00	6,709.40	7" Casing @ 7175' MD, 6709.40' TVD	7	8-3/4

Wellbore 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
NCLP PC AA04-65HN	0.00	0.00	0.00	0.02	0.00	1,432,062.23	3,291,845.43	40° 30' 52.812 N	104° 27' 1.152 W
- actual wellpath misses target center by 0.02usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Sec. 4-T6N-R63W_46I	0.00	0.00	-5.00	-1,639.29	19.41	1,430,422.97	3,291,864.84	40° 30' 36.612 N	104° 27' 1.152 W
- actual wellpath misses target center by 1639.42usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-5.00	4,210.91	154.49	1,434,633.74	3,292,019.32		
Point 2			-5.00	-144.02	216.88	1,430,278.95	3,292,081.71		
Point 3			-5.00	-33.48	5,050.45	1,430,389.49	3,296,915.12		
Point 4			-5.00	70.50	9,850.70	1,430,493.47	3,301,715.22		
Point 5			-5.00	4,324.23	9,854.02	1,434,747.06	3,301,718.54		
Point 6			-5.00	4,270.97	5,032.02	1,434,693.80	3,296,896.70		
Point 7			-5.00	4,210.91	154.49	1,434,633.74	3,292,019.32		
Sec. 4-T6N-R63W_SL	0.00	0.00	-5.00	-1,639.29	19.41	1,430,422.97	3,291,864.84	40° 30' 36.612 N	104° 27' 1.152 W
- actual wellpath misses target center by 1639.42usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-5.00	4,670.92	-305.53	1,435,093.74	3,291,559.32		
Point 2			-5.00	-604.04	-243.14	1,429,818.95	3,291,621.71		
Point 3			-5.00	-493.50	5,050.45	1,429,929.49	3,296,915.12		
Point 4			-5.00	4,730.99	5,032.02	1,435,153.81	3,296,896.70		
Point 5			-5.00	-493.50	5,050.45	1,429,929.49	3,296,915.12		
Point 6			-5.00	-389.51	10,310.71	1,430,033.47	3,302,175.21		
Point 7			-5.00	4,784.25	10,314.03	1,435,207.06	3,302,178.53		
Point 8			-5.00	4,730.99	5,032.02	1,435,153.81	3,296,896.70		
Point 9			-5.00	4,670.92	-305.53	1,435,093.74	3,291,559.32		
NCLP PC AA04-65HN	0.00	0.00	6,666.43	518.74	9,798.37	1,432,580.94	3,301,643.48	40° 30' 56.772 N	104° 24' 54.216 W
- actual wellpath misses target center by 45.06usft at 16231.00usft MD (6676.49 TVD, 474.82 N, 9798.62 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.99 °/100usft	Maximum Dogleg over Survey:	13.90 °/100usft at 6,576.00 usft
Net Tortousity applicable to Plans:	1.26 °/100usft	Directional Difficulty Index:	6.904

Audit Info

North Reference Sheet for Sec. 4-T6N-R63W (NCLP PC AA04 Pads) - NCLP PC AA04-65HN

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

Vertical Depths are relative to RKB=24 @ 4735.00usft (H&P 343). Northing and Easting are relative to NCLP PC AA04-65HN

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° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996743

Grid Coordinates of Well: 1,432,062.21 usft N, 3,291,845.43 usft E

Geographical Coordinates of Well: 40° 30' 52.81" N, 104° 27' 01.15" W

Grid Convergence at Surface is: 0.68°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,231.00usft

the Bottom Hole Displacement is 9,810.12usft in the Direction of 87.23° (Grid).

Magnetic Convergence at surface is: -7.73° (4 November 2013, , BGGM2013)