

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 36-T4N-R66W

Dejane State 1C-36HZ

Plan B

Plan: Rev B0 Permit

Sperry Drilling Services

Proposal Report

17 March, 2014

Well Coordinates: 1,339,749.08 N, 3,216,903.34 E (40° 15' 48.24" N, 104° 43' 21.93" W)

Ground Level: 4,865.00 usft

Local Coordinate Origin:

Centered on Well Dejane State 1C-36HZ

Viewing Datum:

RKB = 17' @ 4882.00usft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 36-T4N-R66W
 Well: DeJane State 1C-36HZ
 Wellbore: Plan B
 Design: Rev B0 Permit

Anadarko Petroleum Corp.



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	1235.00	0.00	0.00	1235.00	0.00	0.00	0.00	0.00	0.00	
3	2373.99	22.78	141.42	2344.22	-174.69	139.34	2.00	141.42	-173.73	
4	6969.34	22.78	141.42	6581.13	-1565.66	1248.85	0.00	0.00	-1557.12	
5	8042.94	89.84	0.39	7302.00	-1022.18	1442.36	10.00	-138.78	-1012.34	DeJane State 1C-36HZ_CP
6	13258.81	89.84	0.39	7317.00	4193.55	1478.06	0.00	0.00	4203.51	DeJane State 1C-36HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
DeJane State 1C-36HZ_LD	0.00	0.00	0.00	40.263401	-104.722758	
DeJane State 1C-36HZ_SEC	0.00	0.00	0.00	40.263401	-104.722758	Polygon
DeJane State 1C-36HZ_SHL	0.00	0.00	0.00	40.263401	-104.722758	
DeJane State 1C-36HZ_CP	7302.00	-1022.18	1442.36	40.260595	-104.717590	
DeJane State 1C-36HZ_BHL	7317.00	4193.55	1478.06	40.274912	-104.717461	Point

WELL DETAILS: DeJane State 1C-36HZ

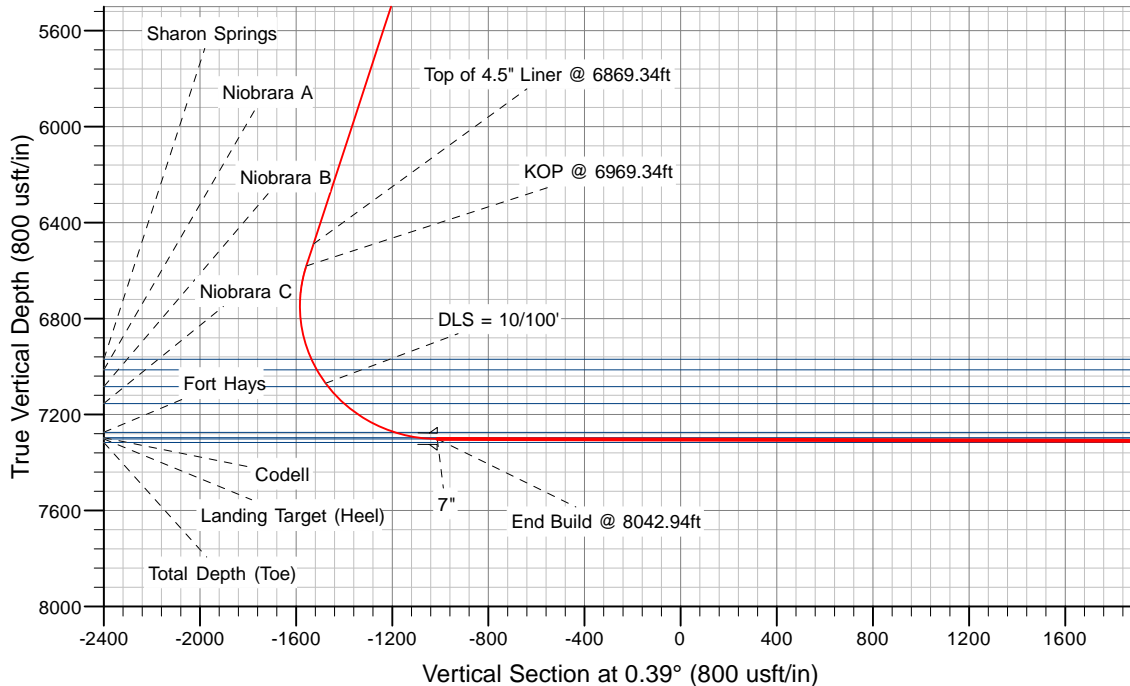
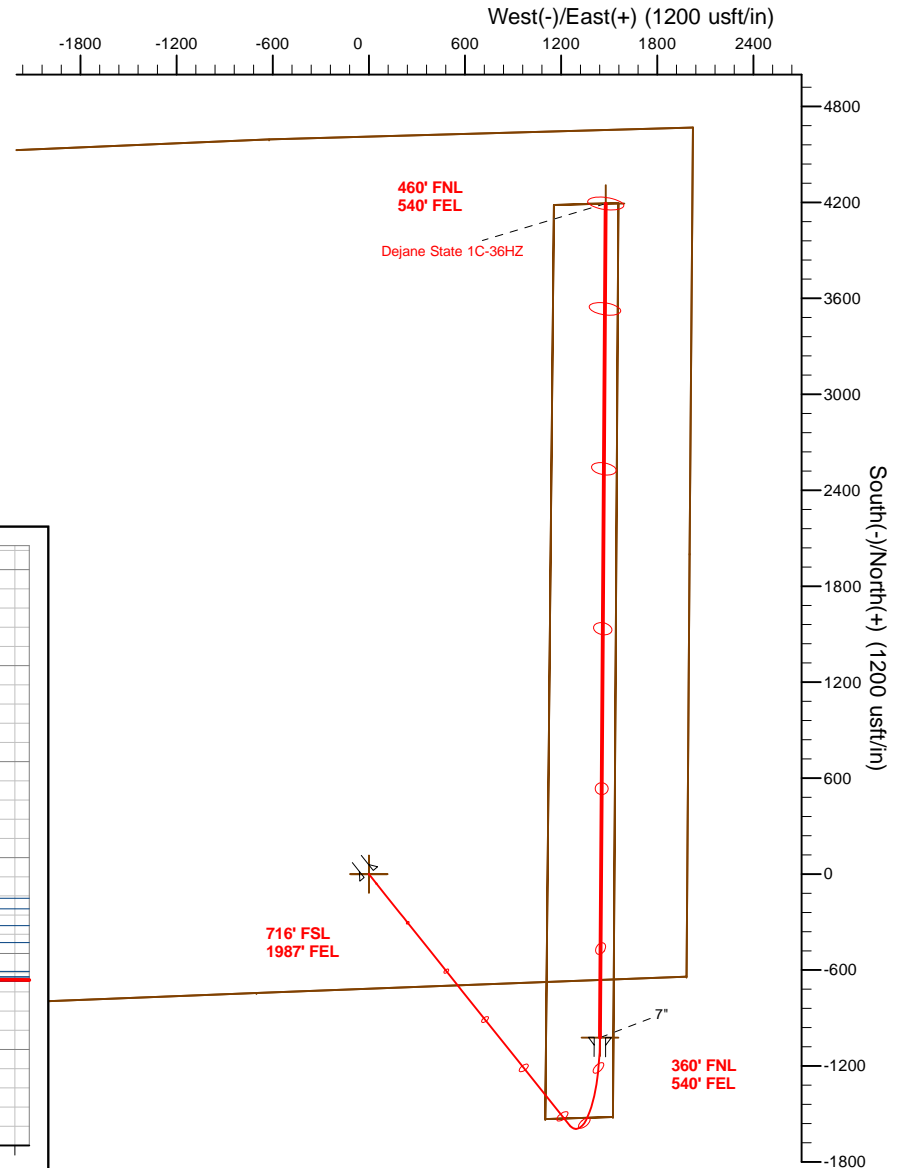
Ground Level: 4865.00

RKB = 17' @ 4882.00usft (Drilling Rig)

Plan: Rev B0 Permit (DeJane State 1C-36HZ/Plan B)

Created By: Clint Eshelman Date: 3/17/2013
 Reviewed: _____ Date: _____

TVD	MD	Description
6488.93	6869.34	Top of 4.5" Liner @ 6869.34ft
6581.13	6969.34	KOP @ 6969.34ft



Plan Report for Dejene State 1C-36HZ - Rev B0 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
Dejene State 1C-36HZ_SEC - Dejene State 1C-36HZ_SHL - Dejene State 1C-36HZ_LD										
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
1,038.00	0.00	0.00	1,038.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,088.00	0.00	0.00	1,088.00	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
1,235.00	0.00	0.00	1,235.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1235.00ft										
1,300.00	1.30	141.42	1,299.99	-0.58	0.46	-0.57	2.00	2.00	0.00	141.42
1,400.00	3.30	141.42	1,399.91	-3.71	2.96	-3.69	2.00	2.00	0.00	0.00
1,500.00	5.30	141.42	1,499.62	-9.57	7.64	-9.52	2.00	2.00	0.00	0.00
1,600.00	7.30	141.42	1,599.01	-18.15	14.48	-18.05	2.00	2.00	0.00	0.00
1,700.00	9.30	141.42	1,697.96	-29.44	23.48	-29.28	2.00	2.00	0.00	0.00
1,800.00	11.30	141.42	1,796.34	-43.42	34.63	-43.18	2.00	2.00	0.00	0.00
1,900.00	13.30	141.42	1,894.04	-60.07	47.91	-59.74	2.00	2.00	0.00	0.00
2,000.00	15.30	141.42	1,990.94	-79.38	63.31	-78.94	2.00	2.00	0.00	0.00
2,100.00	17.30	141.42	2,086.92	-101.32	80.82	-100.76	2.00	2.00	0.00	0.00
2,200.00	19.30	141.42	2,181.85	-125.86	100.39	-125.18	2.00	2.00	0.00	0.00
2,300.00	21.30	141.42	2,275.64	-152.98	122.03	-152.15	2.00	2.00	0.00	0.00
2,373.99	22.78	141.42	2,344.22	-174.69	139.34	-173.74	2.00	2.00	0.00	0.00
End Nudge @ 2373.99ft										
2,400.00	22.78	141.42	2,368.20	-182.56	145.62	-181.57	0.00	0.00	0.00	0.00
2,500.00	22.78	141.42	2,460.40	-212.83	169.76	-211.67	0.00	0.00	0.00	0.00
2,600.00	22.78	141.42	2,552.60	-243.10	193.91	-241.77	0.00	0.00	0.00	0.00
2,700.00	22.78	141.42	2,644.80	-273.37	218.05	-271.88	0.00	0.00	0.00	0.00
2,800.00	22.78	141.42	2,737.00	-303.64	242.20	-301.98	0.00	0.00	0.00	0.00
2,900.00	22.78	141.42	2,829.20	-333.91	266.34	-332.09	0.00	0.00	0.00	0.00
3,000.00	22.78	141.42	2,921.40	-364.18	290.48	-362.19	0.00	0.00	0.00	0.00
3,100.00	22.78	141.42	3,013.60	-394.45	314.63	-392.29	0.00	0.00	0.00	0.00
3,200.00	22.78	141.42	3,105.80	-424.71	338.77	-422.40	0.00	0.00	0.00	0.00
3,300.00	22.78	141.42	3,198.00	-454.98	362.92	-452.50	0.00	0.00	0.00	0.00
3,400.00	22.78	141.42	3,290.20	-485.25	387.06	-482.61	0.00	0.00	0.00	0.00
3,500.00	22.78	141.42	3,382.40	-515.52	411.21	-512.71	0.00	0.00	0.00	0.00
3,600.00	22.78	141.42	3,474.60	-545.79	435.35	-542.81	0.00	0.00	0.00	0.00
3,700.00	22.78	141.42	3,566.80	-576.06	459.49	-572.92	0.00	0.00	0.00	0.00
3,800.00	22.78	141.42	3,659.00	-606.33	483.64	-603.02	0.00	0.00	0.00	0.00
3,900.00	22.78	141.42	3,751.20	-636.60	507.78	-633.13	0.00	0.00	0.00	0.00
3,957.27	22.78	141.42	3,804.00	-653.93	521.61	-650.37	0.00	0.00	0.00	0.00
Parkman										
4,000.00	22.78	141.42	3,843.40	-666.87	531.93	-663.23	0.00	0.00	0.00	0.00
4,100.00	22.78	141.42	3,935.60	-697.14	556.07	-693.33	0.00	0.00	0.00	0.00
4,200.00	22.78	141.42	4,027.80	-727.41	580.21	-723.44	0.00	0.00	0.00	0.00
4,300.00	22.78	141.42	4,120.00	-757.67	604.36	-753.54	0.00	0.00	0.00	0.00
4,400.00	22.78	141.42	4,212.20	-787.94	628.50	-783.65	0.00	0.00	0.00	0.00
4,438.83	22.78	141.42	4,248.00	-799.70	637.88	-795.34	0.00	0.00	0.00	0.00

Plan Report for DeJane State 1C-36HZ - Rev B0 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 (°)
Sussex										
4,500.00	22.78	141.42	4,304.40	-818.21	652.65	-813.75	0.00	0.00	0.00	0.00
4,600.00	22.78	141.42	4,396.60	-848.48	676.79	-843.86	0.00	0.00	0.00	0.00
4,700.00	22.78	141.42	4,488.80	-878.75	700.93	-873.96	0.00	0.00	0.00	0.00
4,800.00	22.78	141.42	4,581.00	-909.02	725.08	-904.06	0.00	0.00	0.00	0.00
4,900.00	22.78	141.42	4,673.20	-939.29	749.22	-934.17	0.00	0.00	0.00	0.00
5,000.00	22.78	141.42	4,765.40	-969.56	773.37	-964.27	0.00	0.00	0.00	0.00
5,100.00	22.78	141.42	4,857.60	-999.83	797.51	-994.38	0.00	0.00	0.00	0.00
5,200.00	22.78	141.42	4,949.80	-1,030.10	821.65	-1,024.48	0.00	0.00	0.00	0.00
5,300.00	22.78	141.42	5,042.00	-1,060.37	845.80	-1,054.58	0.00	0.00	0.00	0.00
5,400.00	22.78	141.42	5,134.20	-1,090.63	869.94	-1,084.69	0.00	0.00	0.00	0.00
5,500.00	22.78	141.42	5,226.40	-1,120.90	894.09	-1,114.79	0.00	0.00	0.00	0.00
5,600.00	22.78	141.42	5,318.60	-1,151.17	918.23	-1,144.90	0.00	0.00	0.00	0.00
5,700.00	22.78	141.42	5,410.80	-1,181.44	942.38	-1,175.00	0.00	0.00	0.00	0.00
5,800.00	22.78	141.42	5,503.00	-1,211.71	966.52	-1,205.10	0.00	0.00	0.00	0.00
5,900.00	22.78	141.42	5,595.20	-1,241.98	990.66	-1,235.21	0.00	0.00	0.00	0.00
6,000.00	22.78	141.42	5,687.40	-1,272.25	1,014.81	-1,265.31	0.00	0.00	0.00	0.00
6,100.00	22.78	141.42	5,779.60	-1,302.52	1,038.95	-1,295.42	0.00	0.00	0.00	0.00
6,200.00	22.78	141.42	5,871.80	-1,332.79	1,063.10	-1,325.52	0.00	0.00	0.00	0.00
6,300.00	22.78	141.42	5,964.00	-1,363.06	1,087.24	-1,355.62	0.00	0.00	0.00	0.00
6,400.00	22.78	141.42	6,056.20	-1,393.33	1,111.38	-1,385.73	0.00	0.00	0.00	0.00
6,500.00	22.78	141.42	6,148.40	-1,423.59	1,135.53	-1,415.83	0.00	0.00	0.00	0.00
6,600.00	22.78	141.42	6,240.60	-1,453.86	1,159.67	-1,445.94	0.00	0.00	0.00	0.00
6,700.00	22.78	141.42	6,332.80	-1,484.13	1,183.82	-1,476.04	0.00	0.00	0.00	0.00
6,800.00	22.78	141.42	6,425.00	-1,514.40	1,207.96	-1,506.14	0.00	0.00	0.00	0.00
6,869.34	22.78	141.42	6,488.93	-1,535.39	1,224.70	-1,527.02	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6869.34ft										
6,900.00	22.78	141.42	6,517.20	-1,544.67	1,232.10	-1,536.25	0.00	0.00	0.00	0.00
6,969.34	22.78	141.42	6,581.13	-1,565.66	1,248.85	-1,557.12	0.00	0.00	0.00	0.00
KOP @ 6969.34ft										
7,000.00	20.57	135.66	6,609.63	-1,574.15	1,256.31	-1,565.57	10.00	-7.22	-18.78	-138.78
7,100.00	15.43	107.36	6,704.88	-1,590.73	1,281.35	-1,581.97	10.00	-5.14	-28.30	-133.43
7,200.00	15.76	69.55	6,801.44	-1,589.95	1,306.83	-1,581.02	10.00	0.34	-37.82	-106.44
7,300.00	21.32	42.89	6,896.38	-1,571.84	1,331.99	-1,562.74	10.00	5.56	-26.66	-69.92
7,380.87	27.64	30.60	6,970.00	-1,544.88	1,351.58	-1,535.65	10.00	7.82	-15.19	-44.57
Sharon Springs										
7,400.00	29.25	28.45	6,986.82	-1,536.95	1,356.07	-1,527.69	10.00	8.44	-11.25	-33.36
7,431.59	31.99	25.34	7,014.00	-1,522.60	1,363.33	-1,513.29	10.00	8.65	-9.86	-31.47
Niobrara A										
7,500.00	38.11	20.01	7,069.99	-1,486.35	1,378.32	-1,476.93	10.00	8.95	-7.80	-28.79
DLS = 10/100'										
7,518.01	39.76	18.84	7,084.00	-1,475.67	1,382.08	-1,466.23	10.00	9.14	-6.46	-24.42
Niobrara B										
7,600.00	47.37	14.41	7,143.38	-1,421.56	1,398.08	-1,412.01	10.00	9.28	-5.41	-23.51
7,617.42	49.00	13.61	7,155.00	-1,408.96	1,401.22	-1,399.39	10.00	9.40	-4.59	-20.29
Niobrara C										
7,700.00	56.83	10.28	7,204.76	-1,344.55	1,414.74	-1,334.89	10.00	9.47	-4.03	-19.76
7,800.00	66.40	6.97	7,252.26	-1,257.67	1,427.81	-1,247.93	10.00	9.57	-3.31	-17.75
7,865.02	72.65	5.08	7,275.00	-1,197.13	1,434.17	-1,187.34	10.00	9.62	-2.91	-16.17
Fort Hays										
7,900.00	76.02	4.11	7,284.44	-1,163.56	1,436.87	-1,153.75	10.00	9.64	-2.75	-15.50
7,967.59	82.55	2.33	7,297.00	-1,097.29	1,440.59	-1,087.46	10.00	9.66	-2.65	-15.24
Codell										
8,000.00	85.68	1.49	7,300.32	-1,065.08	1,441.66	-1,055.24	10.00	9.67	-2.58	-14.91
8,042.94	89.84	0.39	7,302.00	-1,022.18	1,442.36	-1,012.34	10.00	9.67	-2.56	-14.82
End Build @ 8042.94ft - Landing Target (Heel) - 7" - DeJane State 1C-36HZ_CP										
8,100.00	89.84	0.39	7,302.16	-965.13	1,442.75	-955.28	0.00	0.00	0.00	-14.78
8,200.00	89.84	0.39	7,302.45	-865.13	1,443.44	-855.28	0.00	0.00	0.00	0.00

Plan Report for DeJane State 1C-36HZ - Rev B0 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 (°)
8,300.00	89.84	0.39	7,302.74	-765.13	1,444.12	-755.28	0.00	0.00	0.00	0.00
8,400.00	89.84	0.39	7,303.03	-665.13	1,444.81	-655.28	0.00	0.00	0.00	0.00
8,500.00	89.84	0.39	7,303.31	-565.14	1,445.49	-555.29	0.00	0.00	0.00	0.00
8,600.00	89.84	0.39	7,303.60	-465.14	1,446.18	-455.29	0.00	0.00	0.00	0.00
8,700.00	89.84	0.39	7,303.89	-365.14	1,446.86	-355.29	0.00	0.00	0.00	0.00
8,800.00	89.84	0.39	7,304.18	-265.15	1,447.54	-255.29	0.00	0.00	0.00	0.00
8,900.00	89.84	0.39	7,304.46	-165.15	1,448.23	-155.29	0.00	0.00	0.00	0.00
9,000.00	89.84	0.39	7,304.75	-65.15	1,448.91	-55.29	0.00	0.00	0.00	0.00
9,100.00	89.84	0.39	7,305.04	34.85	1,449.60	44.71	0.00	0.00	0.00	0.00
9,200.00	89.84	0.39	7,305.33	134.84	1,450.28	144.71	0.00	0.00	0.00	0.00
9,300.00	89.84	0.39	7,305.62	234.84	1,450.97	244.71	0.00	0.00	0.00	0.00
9,400.00	89.84	0.39	7,305.90	334.84	1,451.65	344.71	0.00	0.00	0.00	0.00
9,500.00	89.84	0.39	7,306.19	434.84	1,452.33	444.71	0.00	0.00	0.00	0.00
9,600.00	89.84	0.39	7,306.48	534.83	1,453.02	544.71	0.00	0.00	0.00	0.00
9,700.00	89.84	0.39	7,306.77	634.83	1,453.70	644.71	0.00	0.00	0.00	0.00
9,800.00	89.84	0.39	7,307.05	734.83	1,454.39	744.71	0.00	0.00	0.00	0.00
9,900.00	89.84	0.39	7,307.34	834.82	1,455.07	844.71	0.00	0.00	0.00	0.00
10,000.00	89.84	0.39	7,307.63	934.82	1,455.76	944.71	0.00	0.00	0.00	0.00
10,100.00	89.84	0.39	7,307.92	1,034.82	1,456.44	1,044.71	0.00	0.00	0.00	0.00
10,200.00	89.84	0.39	7,308.20	1,134.82	1,457.12	1,144.71	0.00	0.00	0.00	0.00
10,300.00	89.84	0.39	7,308.49	1,234.81	1,457.81	1,244.71	0.00	0.00	0.00	0.00
10,400.00	89.84	0.39	7,308.78	1,334.81	1,458.49	1,344.71	0.00	0.00	0.00	0.00
10,500.00	89.84	0.39	7,309.07	1,434.81	1,459.18	1,444.71	0.00	0.00	0.00	0.00
10,600.00	89.84	0.39	7,309.35	1,534.80	1,459.86	1,544.71	0.00	0.00	0.00	0.00
10,700.00	89.84	0.39	7,309.64	1,634.80	1,460.55	1,644.71	0.00	0.00	0.00	0.00
10,800.00	89.84	0.39	7,309.93	1,734.80	1,461.23	1,744.71	0.00	0.00	0.00	0.00
10,900.00	89.84	0.39	7,310.22	1,834.80	1,461.91	1,844.71	0.00	0.00	0.00	0.00
11,000.00	89.84	0.39	7,310.50	1,934.79	1,462.60	1,944.70	0.00	0.00	0.00	0.00
11,100.00	89.84	0.39	7,310.79	2,034.79	1,463.28	2,044.70	0.00	0.00	0.00	0.00
11,200.00	89.84	0.39	7,311.08	2,134.79	1,463.97	2,144.70	0.00	0.00	0.00	0.00
11,300.00	89.84	0.39	7,311.37	2,234.79	1,464.65	2,244.70	0.00	0.00	0.00	0.00
11,400.00	89.84	0.39	7,311.65	2,334.78	1,465.34	2,344.70	0.00	0.00	0.00	0.00
11,500.00	89.84	0.39	7,311.94	2,434.78	1,466.02	2,444.70	0.00	0.00	0.00	0.00
11,600.00	89.84	0.39	7,312.23	2,534.78	1,466.70	2,544.70	0.00	0.00	0.00	0.00
11,700.00	89.84	0.39	7,312.52	2,634.77	1,467.39	2,644.70	0.00	0.00	0.00	0.00
11,800.00	89.84	0.39	7,312.80	2,734.77	1,468.07	2,744.70	0.00	0.00	0.00	0.00
11,900.00	89.84	0.39	7,313.09	2,834.77	1,468.76	2,844.70	0.00	0.00	0.00	0.00
12,000.00	89.84	0.39	7,313.38	2,934.77	1,469.44	2,944.70	0.00	0.00	0.00	0.00
12,100.00	89.84	0.39	7,313.67	3,034.76	1,470.13	3,044.70	0.00	0.00	0.00	0.00
12,200.00	89.84	0.39	7,313.96	3,134.76	1,470.81	3,144.70	0.00	0.00	0.00	0.00
12,300.00	89.84	0.39	7,314.24	3,234.76	1,471.49	3,244.70	0.00	0.00	0.00	0.00
12,400.00	89.84	0.39	7,314.53	3,334.76	1,472.18	3,344.70	0.00	0.00	0.00	0.00
12,500.00	89.84	0.39	7,314.82	3,434.75	1,472.86	3,444.70	0.00	0.00	0.00	0.00
12,600.00	89.84	0.39	7,315.11	3,534.75	1,473.55	3,544.70	0.00	0.00	0.00	0.00
12,700.00	89.84	0.39	7,315.39	3,634.75	1,474.23	3,644.70	0.00	0.00	0.00	0.00
12,800.00	89.84	0.39	7,315.68	3,734.74	1,474.92	3,744.70	0.00	0.00	0.00	0.00
12,900.00	89.84	0.39	7,315.97	3,834.74	1,475.60	3,844.70	0.00	0.00	0.00	0.00
13,000.00	89.84	0.39	7,316.26	3,934.74	1,476.28	3,944.70	0.00	0.00	0.00	0.00
13,100.00	89.84	0.39	7,316.54	4,034.74	1,476.97	4,044.70	0.00	0.00	0.00	0.00
13,200.00	89.84	0.39	7,316.83	4,134.73	1,477.65	4,144.70	0.00	0.00	0.00	0.00
13,258.81	89.84	0.39	7,317.00	4,193.54	1,478.06	4,203.51	0.00	0.00	0.00	0.00

TD Well @ 13258.81ft - DeJane State 1C-36HZ_BHL

Plan Report for DeJane State 1C-36HZ - Rev B0 Permit**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,235.00	1,235.00	0.00	0.00	Begin Nudge @ 1235.00ft
2,373.99	2,344.22	-174.69	139.34	End Nudge @ 2373.99ft
6,869.34	6,488.93	-1,535.39	1,224.70	Top of 4.5" Liner @ 6869.34ft
6,969.34	6,581.13	-1,565.66	1,248.85	KOP @ 6969.34ft
7,500.00	7,069.99	-1,486.35	1,378.32	DLS = 10/100'
8,042.94	7,302.00	-1,022.18	1,442.36	End Build @ 8042.94ft
13,258.81	7,317.00	4,193.54	1,478.06	TD Well @ 13258.81ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.39	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	8,042.94	Rev B0 Permit	MWD
8,042.94	13,258.81	Rev B0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,088.00	1,088.00	9 5/8"	9-5/8	13-1/2
8,042.94	7,302.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,038.00	1,038.00	Fox Hills Marker		0.00	
3,957.27	3,804.00	Parkman		0.00	
4,438.83	4,248.00	Sussex		0.00	
7,380.87	6,970.00	Sharon Springs		0.00	
7,431.59	7,014.00	Niobrara A		0.00	
7,518.01	7,084.00	Niobrara B		0.00	
7,617.42	7,155.00	Niobrara C		0.00	
7,865.02	7,275.00	Fort Hays		0.00	
7,967.59	7,297.00	Codell		0.00	
8,042.94	7,302.00	Landing Target (Heel)		0.00	
13,258.81	7,317.00	Total Depth (Toe)		0.00	



Plan Report for DeJane State 1C-36HZ - Rev B0 Permit

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
DeJane State 1C-36HZ_SEC	0.00	0.00	0.00	Polygon
DeJane State 1C-36HZ_SHL	0.00	0.00	0.00	Point
DeJane State 1C-36HZ_LD	0.00	0.00	0.00	Polygon
DeJane State 1C-36HZ_CP	7,302.00	-1,022.18	1,442.36	Point
DeJane State 1C-36HZ_BHL	7,317.00	4,193.55	1,478.06	Point

Directional Difficulty Index

Average Dogleg over Survey:	1.07 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,887.50 usft
Net Tortousity applicable to Plans:	1.07 °/100usft	Directional Difficulty Index:	6.423

Audit Info

North Reference Sheet for Sec. 36-T4N-R66W - DeJane State 1C-36HZ - Plan B

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' @ 4882.00usft (Drilling Rig). Northing and Easting are relative to DeJane State 1C-36HZ
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: 0.99995687

Grid Coordinates of Well: 1,339,749.08 usft N, 3,216,903.34 usft E
Geographical Coordinates of Well: 40° 15' 48.24" N, 104° 43' 21.93" W
Grid Convergence at Surface is: 0.50°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,258.81usft
the Bottom Hole Displacement is 4,446.40usft in the Direction of 19.42° (True).

Magnetic Convergence at surface is: -8.02° (23 December 2013, , BGGM2013)

Magnetic Model: BGGM2013
Date: 23-Dec-13
Declination: 8.53°
Inclination/Dip: 66.85°
Field Strength: 52722

Grid North is 0.50° East of True North (Grid Convergence)
Magnetic North is 8.53° East of True North (Magnetic Declination)
Magnetic North is 8.02° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.50°
To convert a Magnetic Direction to a True Direction, Add 8.53° East
To convert a Magnetic Direction to a Grid Direction, Add 8.02°