

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-66W-32 Land Fed 13S-32HZ Pad

LAND FED 35N-29HZ

Plan A

Plan: Permit Rev-1

## Sperry Drilling Services Proposal Report

27 May, 2015

Well Coordinates: 14,562,852.37 N, 1,694,862.08 E (40° 05' 56.49" N, 104° 48' 19.10" W)

Ground Level: 4,897.00 usft

Local Coordinate Origin:

Centered on Well LAND FED 35N-29HZ

Viewing Datum:

RKB = 17' @ 4914.00usft (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: 2N-66W-32 Land Fed 13S-32HZ Pad  
Well: LAND FED 35N-29HZ  
Wellbore: Plan A  
Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

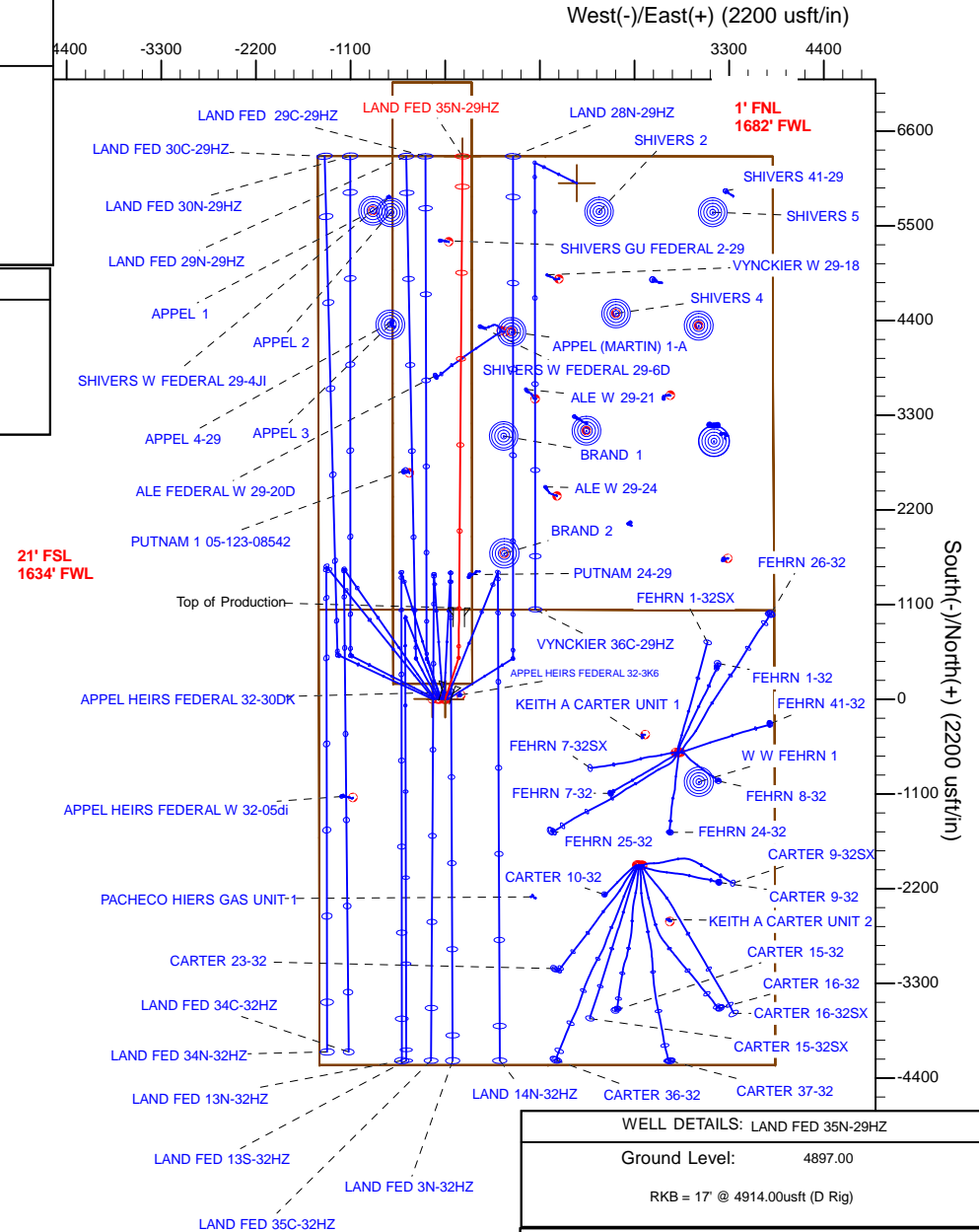
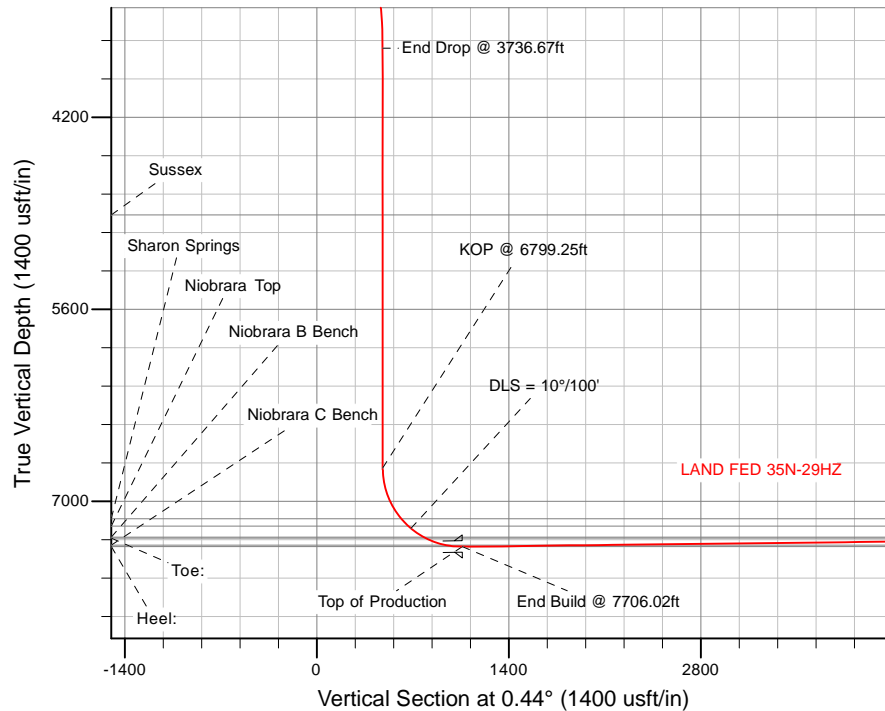
**HALLIBURTON**  
Sperry Drilling

## 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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	916.67	10.00	18.00	913.29	55.19	17.93	1.50	18.00	55.33	
4	3236.67	10.00	18.00	3198.04	438.34	142.42	0.00	0.00	439.42	
5	3736.67	0.00	0.00	3695.51	479.73	155.87	2.00	180.00	480.91	
6	6799.25	0.00	0.00	6758.09	479.73	155.87	0.00	0.00	480.91	
7	7706.02	90.68	0.44	7331.00	1059.44	160.31	10.00	0.44	1060.64	
8	12952.69	90.68	0.44	7269.00	6305.60	200.45	0.00	0.00	6306.95	LAND 35N-29HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
LAND 35N-29HZ_SHL	0.00	0.00	0.00	40.099025	-104.805306	Point
LAND 35N-29HZ_BHL	7269.00	6305.60	200.45	40.116341	-104.804589	Point



## WELL DETAILS: LAND FED 35N-29HZ

Ground Level: 4897.00

RKB = 17" @ 4914.00usft (D Rig)

Plan: Permit Rev-1 (LAND FED 35N-29HZ/Plan A)

Created By: Clint Eshelman

Date: 5/27/2015

Reviewed:

Date:

## Plan Report for LAND FED 35N-29HZ - 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
<b>LAND FED 35N-29HZ_Landing Diagram - 2N-R66W-Sec. 32_Section Lines - LAND 35N-29HZ_SHL</b>										
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>2N-R66W-Sec. 29_Section Lines</b>										
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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 250.00ft</b>										
300.00	0.75	18.00	300.00	0.31	0.10	0.31	1.50	1.50	0.00	18.00
400.00	2.25	18.00	399.96	2.80	0.91	2.81	1.50	1.50	0.00	0.00
500.00	3.75	18.00	499.82	7.78	2.53	7.80	1.50	1.50	0.00	0.00
600.00	5.25	18.00	599.51	15.24	4.95	15.28	1.50	1.50	0.00	0.00
700.00	6.75	18.00	698.96	25.18	8.18	25.24	1.50	1.50	0.00	0.00
800.00	8.25	18.00	798.10	37.59	12.22	37.69	1.50	1.50	0.00	0.00
900.00	9.75	18.00	896.87	52.47	17.05	52.60	1.50	1.50	0.00	0.00
916.67	10.00	18.00	913.29	55.19	17.93	55.33	1.50	1.50	0.00	0.00
<b>End Nudge @ 916.67ft</b>										
1,000.00	10.00	18.00	995.35	68.95	22.40	69.12	0.00	0.00	0.00	0.00
1,100.00	10.00	18.00	1,093.84	85.47	27.77	85.68	0.00	0.00	0.00	0.00
1,200.00	10.00	18.00	1,192.32	101.98	33.14	102.23	0.00	0.00	0.00	0.00
1,300.00	10.00	18.00	1,290.80	118.50	38.50	118.79	0.00	0.00	0.00	0.00
1,317.47	10.00	18.00	1,308.00	121.38	39.44	121.68	0.00	0.00	0.00	0.00
<b>Fox Hills</b>										
1,400.00	10.00	18.00	1,389.28	135.01	43.87	135.34	0.00	0.00	0.00	0.00
1,500.00	10.00	18.00	1,487.76	151.53	49.23	151.90	0.00	0.00	0.00	0.00
1,600.00	10.00	18.00	1,586.24	168.04	54.60	168.46	0.00	0.00	0.00	0.00
1,613.97	10.00	18.00	1,600.00	170.35	55.35	170.77	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,700.00	10.00	18.00	1,684.72	184.56	59.97	185.01	0.00	0.00	0.00	0.00
1,800.00	10.00	18.00	1,783.20	201.07	65.33	201.57	0.00	0.00	0.00	0.00
1,900.00	10.00	18.00	1,881.68	217.59	70.70	218.12	0.00	0.00	0.00	0.00
2,000.00	10.00	18.00	1,980.16	234.10	76.06	234.68	0.00	0.00	0.00	0.00
2,100.00	10.00	18.00	2,078.64	250.62	81.43	251.23	0.00	0.00	0.00	0.00
2,200.00	10.00	18.00	2,177.12	267.13	86.80	267.79	0.00	0.00	0.00	0.00
2,300.00	10.00	18.00	2,275.60	283.65	92.16	284.35	0.00	0.00	0.00	0.00
2,400.00	10.00	18.00	2,374.09	300.16	97.53	300.90	0.00	0.00	0.00	0.00
2,500.00	10.00	18.00	2,472.57	316.68	102.89	317.46	0.00	0.00	0.00	0.00
2,600.00	10.00	18.00	2,571.05	333.19	108.26	334.01	0.00	0.00	0.00	0.00
2,700.00	10.00	18.00	2,669.53	349.71	113.63	350.57	0.00	0.00	0.00	0.00
2,800.00	10.00	18.00	2,768.01	366.22	118.99	367.12	0.00	0.00	0.00	0.00
2,900.00	10.00	18.00	2,866.49	382.74	124.36	383.68	0.00	0.00	0.00	0.00
3,000.00	10.00	18.00	2,964.97	399.25	129.72	400.24	0.00	0.00	0.00	0.00
3,100.00	10.00	18.00	3,063.45	415.77	135.09	416.79	0.00	0.00	0.00	0.00
3,200.00	10.00	18.00	3,161.93	432.28	140.46	433.35	0.00	0.00	0.00	0.00
3,236.67	10.00	18.00	3,198.04	438.34	142.42	439.42	0.00	0.00	0.00	0.00
<b>Begin Drop @ 3236.67ft</b>										
3,300.00	8.73	18.00	3,260.53	448.14	145.61	449.24	2.00	-2.00	0.00	180.00
3,400.00	6.73	18.00	3,359.61	460.94	149.77	462.07	2.00	-2.00	0.00	180.00
3,500.00	4.73	18.00	3,459.11	470.44	152.85	471.60	2.00	-2.00	0.00	180.00
3,600.00	2.73	18.00	3,558.89	476.63	154.87	477.80	2.00	-2.00	0.00	180.00
3,700.00	0.73	18.00	3,658.84	479.51	155.80	480.69	2.00	-2.00	0.00	180.00
3,736.67	0.00	0.00	3,695.51	479.73	155.87	480.91	2.00	-2.00	0.00	-180.00
<b>End Drop @ 3736.67ft</b>										
3,800.00	0.00	0.00	3,758.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,858.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,958.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,058.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,158.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00

## Plan Report for LAND FED 35N-29HZ - 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 (°)
4,300.00	0.00	0.00	4,258.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,358.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,458.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,558.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,658.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,758.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,858.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
4,953.16	0.00	0.00	4,912.00	479.73	155.87	480.91	0.00	0.00	0.00	0.00
<b>Sussex</b>										
5,000.00	0.00	0.00	4,958.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,058.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,158.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,258.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,358.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,458.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,558.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,658.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,758.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,858.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,958.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,058.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,158.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,258.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,358.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,458.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,558.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,658.84	479.73	155.87	480.91	0.00	0.00	0.00	0.00
6,799.25	0.00	0.00	6,758.09	479.73	155.87	480.91	0.00	0.00	0.00	0.00
<b>KOP @ 6799.25ft</b>										
6,800.00	0.08	0.44	6,758.84	479.73	155.87	480.91	10.04	10.04	0.00	0.44
6,900.00	10.08	0.44	6,858.32	488.56	155.94	489.75	10.00	10.00	0.00	0.00
7,000.00	20.08	0.44	6,954.76	514.54	156.14	515.72	10.00	10.00	0.00	0.00
7,100.00	30.08	0.44	7,045.22	556.87	156.46	558.05	10.00	10.00	0.00	0.00
7,200.00	40.08	0.44	7,126.95	614.26	156.90	615.44	10.00	10.00	0.00	0.00
7,200.34	40.11	0.44	7,127.21	614.47	156.90	615.66	10.00	10.00	0.00	0.00
<b>Sharon Springs</b>										
7,273.79	47.45	0.44	7,180.21	665.26	157.29	666.45	10.00	10.00	0.00	0.00
<b>Niobrara Top</b>										
7,300.00	50.08	0.44	7,197.48	684.97	157.44	686.16	10.00	10.00	0.00	0.00
<b>DLS = 10°/100'</b>										
7,400.00	60.08	0.44	7,254.66	766.85	158.07	768.04	10.00	10.00	0.00	0.00
7,414.10	61.49	0.44	7,261.54	779.16	158.16	780.35	10.00	10.00	0.00	0.00
<b>Niobrara B Bench</b>										
7,500.00	70.08	0.44	7,296.75	857.42	158.76	858.61	10.00	10.00	0.00	0.00
7,586.16	78.69	0.44	7,319.92	940.32	159.40	941.52	10.00	10.00	0.00	0.00
<b>Niobrara C Bench</b>										
7,600.00	80.08	0.44	7,322.47	953.92	159.50	955.12	10.00	10.00	0.00	0.00
7,700.00	90.08	0.44	7,331.04	1,053.42	160.26	1,054.62	10.00	10.00	0.00	0.00
7,706.02	90.68	0.44	7,331.00	1,059.44	160.31	1,060.64	10.00	10.00	0.00	0.00
<b>End Build @ 7706.02ft - Heel: - Top of Production</b>										
7,800.00	90.68	0.44	7,329.89	1,153.41	161.03	1,154.62	0.00	0.00	0.00	0.00
7,900.00	90.68	0.44	7,328.71	1,253.40	161.79	1,254.61	0.00	0.00	0.00	0.00
8,000.00	90.68	0.44	7,327.53	1,353.39	162.56	1,354.60	0.00	0.00	0.00	0.00
8,100.00	90.68	0.44	7,326.35	1,453.38	163.32	1,454.59	0.00	0.00	0.00	0.00
8,200.00	90.68	0.44	7,325.17	1,553.37	164.09	1,554.59	0.00	0.00	0.00	0.00
8,300.00	90.68	0.44	7,323.98	1,653.36	164.85	1,654.58	0.00	0.00	0.00	0.00
8,400.00	90.68	0.44	7,322.80	1,753.35	165.62	1,754.57	0.00	0.00	0.00	0.00
8,500.00	90.68	0.44	7,321.62	1,853.34	166.38	1,854.57	0.00	0.00	0.00	0.00

## Plan Report for LAND FED 35N-29HZ - 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 (°)
8,600.00	90.68	0.44	7,320.44	1,953.33	167.15	1,954.56	0.00	0.00	0.00	0.00
8,700.00	90.68	0.44	7,319.26	2,053.32	167.91	2,054.55	0.00	0.00	0.00	0.00
8,800.00	90.68	0.44	7,318.08	2,153.31	168.68	2,154.55	0.00	0.00	0.00	0.00
8,900.00	90.68	0.44	7,316.89	2,253.30	169.45	2,254.54	0.00	0.00	0.00	0.00
9,000.00	90.68	0.44	7,315.71	2,353.29	170.21	2,354.53	0.00	0.00	0.00	0.00
9,100.00	90.68	0.44	7,314.53	2,453.28	170.98	2,454.53	0.00	0.00	0.00	0.00
9,200.00	90.68	0.44	7,313.35	2,553.27	171.74	2,554.52	0.00	0.00	0.00	0.00
9,300.00	90.68	0.44	7,312.17	2,653.26	172.51	2,654.51	0.00	0.00	0.00	0.00
9,400.00	90.68	0.44	7,310.99	2,753.25	173.27	2,754.50	0.00	0.00	0.00	0.00
9,500.00	90.68	0.44	7,309.80	2,853.24	174.04	2,854.50	0.00	0.00	0.00	0.00
9,600.00	90.68	0.44	7,308.62	2,953.23	174.80	2,954.49	0.00	0.00	0.00	0.00
9,700.00	90.68	0.44	7,307.44	3,053.22	175.57	3,054.48	0.00	0.00	0.00	0.00
9,800.00	90.68	0.44	7,306.26	3,153.22	176.33	3,154.48	0.00	0.00	0.00	0.00
9,900.00	90.68	0.44	7,305.08	3,253.21	177.10	3,254.47	0.00	0.00	0.00	0.00
10,000.00	90.68	0.44	7,303.89	3,353.20	177.86	3,354.46	0.00	0.00	0.00	0.00
10,100.00	90.68	0.44	7,302.71	3,453.19	178.63	3,454.46	0.00	0.00	0.00	0.00
10,200.00	90.68	0.44	7,301.53	3,553.18	179.39	3,554.45	0.00	0.00	0.00	0.00
10,300.00	90.68	0.44	7,300.35	3,653.17	180.16	3,654.44	0.00	0.00	0.00	0.00
10,400.00	90.68	0.44	7,299.17	3,753.16	180.92	3,754.43	0.00	0.00	0.00	0.00
10,500.00	90.68	0.44	7,297.99	3,853.15	181.69	3,854.43	0.00	0.00	0.00	0.00
10,600.00	90.68	0.44	7,296.80	3,953.14	182.45	3,954.42	0.00	0.00	0.00	0.00
10,700.00	90.68	0.44	7,295.62	4,053.13	183.22	4,054.41	0.00	0.00	0.00	0.00
10,800.00	90.68	0.44	7,294.44	4,153.12	183.98	4,154.41	0.00	0.00	0.00	0.00
10,900.00	90.68	0.44	7,293.26	4,253.11	184.75	4,254.40	0.00	0.00	0.00	0.00
11,000.00	90.68	0.44	7,292.08	4,353.10	185.51	4,354.39	0.00	0.00	0.00	0.00
11,100.00	90.68	0.44	7,290.89	4,453.09	186.28	4,454.39	0.00	0.00	0.00	0.00
11,200.00	90.68	0.44	7,289.71	4,553.08	187.04	4,554.38	0.00	0.00	0.00	0.00
11,300.00	90.68	0.44	7,288.53	4,653.07	187.81	4,654.37	0.00	0.00	0.00	0.00
11,400.00	90.68	0.44	7,287.35	4,753.06	188.57	4,754.36	0.00	0.00	0.00	0.00
11,500.00	90.68	0.44	7,286.17	4,853.05	189.34	4,854.36	0.00	0.00	0.00	0.00
11,600.00	90.68	0.44	7,284.99	4,953.04	190.10	4,954.35	0.00	0.00	0.00	0.00
11,700.00	90.68	0.44	7,283.80	5,053.03	190.87	5,054.34	0.00	0.00	0.00	0.00
11,800.00	90.68	0.44	7,282.62	5,153.02	191.63	5,154.34	0.00	0.00	0.00	0.00
11,900.00	90.68	0.44	7,281.44	5,253.01	192.40	5,254.33	0.00	0.00	0.00	0.00
12,000.00	90.68	0.44	7,280.26	5,353.00	193.16	5,354.32	0.00	0.00	0.00	0.00
12,100.00	90.68	0.44	7,279.08	5,452.99	193.93	5,454.32	0.00	0.00	0.00	0.00
12,200.00	90.68	0.44	7,277.90	5,552.98	194.70	5,554.31	0.00	0.00	0.00	0.00
12,300.00	90.68	0.44	7,276.71	5,652.97	195.46	5,654.30	0.00	0.00	0.00	0.00
12,400.00	90.68	0.44	7,275.53	5,752.96	196.23	5,754.29	0.00	0.00	0.00	0.00
12,500.00	90.68	0.44	7,274.35	5,852.95	196.99	5,854.29	0.00	0.00	0.00	0.00
12,600.00	90.68	0.44	7,273.17	5,952.94	197.76	5,954.28	0.00	0.00	0.00	0.00
12,700.00	90.68	0.44	7,271.99	6,052.93	198.52	6,054.27	0.00	0.00	0.00	0.00
12,800.00	90.68	0.44	7,270.80	6,152.92	199.29	6,154.27	0.00	0.00	0.00	0.00
12,900.00	90.68	0.44	7,269.62	6,252.91	200.05	6,254.26	0.00	0.00	0.00	0.00
12,952.69	90.68	0.44	7,269.00	6,305.59	200.45	6,306.95	0.00	0.00	0.00	0.00

TD Well @ 12952.69ft - Toe: - LAND 35N-29HZ\_BHL

## Plan Report for LAND FED 35N-29HZ - Permit Rev-1

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
916.67	913.29	55.19	17.93	End Nudge @ 916.67ft
3,236.67	3,198.04	438.34	142.42	Begin Drop @ 3236.67ft
3,736.67	3,695.51	479.73	155.87	End Drop @ 3736.67ft
6,799.25	6,758.09	479.73	155.87	KOP @ 6799.25ft
7,300.00	7,197.48	684.97	157.44	DLS = 10°/100'
7,706.02	7,331.00	1,059.44	160.31	End Build @ 7706.02ft
12,952.69	7,269.00	6,305.59	200.45	TD Well @ 12952.69ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.44	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,706.02	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,706.02	12,952.69	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,613.97	1,600.00	9 5/8"	9-5/8	13-1/2
7,706.02	7,331.00	Top of Production	5-1/2	7-7/8

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,317.47	1,308.00	Fox Hills		0.00	
4,953.16	4,912.00	Sussex		0.00	
7,200.34	7,127.21	Sharon Springs		0.00	
7,273.79	7,180.21	Niobrara Top		0.00	
7,414.10	7,261.54	Niobrara B Bench		0.00	
7,586.16	7,319.92	Niobrara C Bench		0.00	
7,706.02	7,331.00	Heel:		0.00	
12,952.69	7,269.00	Toe:		0.00	

**Plan Report for LAND FED 35N-29HZ - Permit Rev-1**

*Targets associated with this wellbore*

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
LAND 35N-29HZ_BHL	7,269.00	6,305.60	200.45	Point
LAND FED 35N-29HZ_Landing Diagram	0.00	0.00	0.00	Polygon
2N-R66W-Sec. 29_Section Lines	10.00	5,994.29	1,528.46	Polygon
2N-R66W-Sec. 32_Section Lines	0.00	1.46	-149.89	Polygon
LAND 35N-29HZ_SHL	0.00	0.00	0.00	Point

## North Reference Sheet for 2N-66W-32 Land Fed 13S-32HZ Pad - LAND FED 35N-29HZ - 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' @ 4914.00usft (D Rig). Northing and Easting are relative to LAND FED 35N-29HZ

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: 0.99960339

Grid Coordinates of Well: 14,562,852.37 usft N, 1,694,862.08 usft E

Geographical Coordinates of Well: 40° 05' 56.49" N, 104° 48' 19.10" W

Grid Convergence at Surface is: 0.13°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,952.69usft the Bottom Hole Displacement is 6,308.78usft in the Direction of 1.82° ( True).

Magnetic Convergence at surface is: -8.21° (19 May 2015, , IGRF2010)

