



# Scientific Drilling

## Northeast District

Company: Chevron

Date : 10/31/2014

Field: Marcellus

North Ref: TRUE

Well: Francis 7H

Grid Correction: 0.76

County: Marshall County

Declination : -7.98

State: WV

VS Azimuth: 124.51°

Rig: Nabors X07

RKB-GL: 32' ft. + 1260' = 1292'

MWD: R. Mayercheck, A. Langford

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	Course Length
0	0	0	0	0	0	0	Invalid	Invalid
100	0.15	244.2	100	-0.06	-0.06	-0.12	0.15	100
200	0.24	254.66	200	-0.26	-0.17	-0.44	0.1	100
300	0.26	253.84	300	-0.54	-0.29	-0.86	0.02	100
400	0.17	274.72	400	-0.82	-0.34	-1.22	0.12	100
500	0.11	228.83	500	-0.97	-0.39	-1.44	0.12	100
600	0.05	32.19	600	-0.99	-0.42	-1.49	0.16	100
700	0.09	26.48	700	-1.01	-0.31	-1.43	0.04	100
711	0.11	339.74	711	-1.02	-0.29	-1.43	0.74	11
805	0.25	353.01	805	-1.23	0	-1.49	0.15	94
900	0.49	341.54	899.99	-1.69	0.59	-1.64	0.26	95
1000	1.24	20.34	999.98	-2.29	2.01	-1.4	0.91	100
1100	3.62	49.95	1099.89	-1.72	5.05	1.39	2.61	100
1200	4.53	55.79	1199.64	0.56	9.31	7.07	1	100
1300	4.48	70.49	1299.33	4.28	12.83	14.02	1.15	100
1400	4.25	81.68	1399.04	9.3	14.67	21.37	0.88	100
1500	4.5	81.62	1498.75	14.89	15.78	28.92	0.25	100
1600	4.96	73	1598.41	20.45	17.62	36.93	0.85	100
1653	5.11	77.13	1651.21	23.48	18.81	41.42	0.74	53
1698	5.15	86.93	1696.03	26.44	19.37	45.39	1.95	45
1793	5.33	90.31	1790.63	33.47	19.57	54.07	0.37	95
1887	5.3	87.02	1884.23	40.52	19.77	62.77	0.33	94
1982	5.59	81.01	1978.8	47.36	20.72	71.72	0.67	95
2077	5.82	79.57	2073.33	54.12	22.32	81.02	0.29	95
2170	6.44	75.85	2165.8	60.91	24.45	90.72	0.79	93
2265	5.86	70.07	2260.25	67.25	27.4	100.45	0.9	95
2360	5.39	63.71	2354.79	72.24	31.03	109	0.82	95
2454	4.37	70.2	2448.45	76.49	34.2	116.33	1.23	94
2548	3.44	82.43	2542.23	80.67	35.78	122.5	1.33	94
2622	2.99	73.29	2616.12	83.52	36.63	126.54	0.92	74
2779	2.05	58.31	2772.97	87.22	39.29	132.86	0.72	157
2873	1.69	56.43	2866.92	88.42	40.94	135.45	0.39	94
2968	1.44	52.99	2961.88	89.32	42.43	137.57	0.28	95
3062	1.06	37.21	3055.86	89.74	43.83	139.04	0.55	94
3157	1.04	18.13	3150.84	89.53	45.35	139.84	0.37	95
3252	0.76	16.35	3245.83	89.09	46.78	140.28	0.3	95

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3346	0.61	354.82	3339.82	88.58	47.87	140.41	0.32	94
3440	0.7	2.35	3433.82	87.96	48.94	140.39	0.14	94
3535	0.4	320.86	3528.81	87.33	49.79	140.21	0.51	95
3629	0.61	312.25	3622.81	86.51	50.38	139.63	0.23	94
3724	1.09	316.66	3717.8	85.13	51.37	138.64	0.51	95
3819	1.12	316.9	3812.78	83.35	52.7	137.39	0.03	95
3913	0.9	318.1	3906.77	81.73	53.92	136.26	0.23	94
4008	0.57	334.03	4001.76	80.59	54.91	135.56	0.41	95
4102	0.45	324.27	4095.76	79.84	55.63	135.13	0.16	94
4197	0.33	346.84	4190.75	79.28	56.2	134.85	0.2	95
4292	0.65	353.7	4285.75	78.73	57	134.73	0.34	95
4386	0.71	348.62	4379.74	77.96	58.1	134.56	0.09	94
4481	0.54	345.56	4474.74	77.2	59.11	134.33	0.19	95
4576	0.62	328.36	4569.73	76.4	59.98	133.95	0.2	95
4670	0.44	331.05	4663.73	75.62	60.72	133.51	0.19	94
4794	0.83	290.22	4787.72	74.32	61.45	132.44	0.47	124
4888	0.54	280.74	4881.71	73.26	61.76	131.37	0.33	94
4983	0.34	284.78	4976.71	72.59	61.92	130.66	0.21	95
5077	0.22	318.97	5070.71	72.16	62.12	130.28	0.21	94
5172	0.54	312.56	5165.71	71.54	62.56	129.83	0.34	95
5267	0.51	303.07	5260.7	70.68	63.09	129.15	0.1	95
5361	2.36	59.68	5354.68	71.08	64.3	130.47	2.8	94
5456	7.09	63.22	5449.33	74.73	67.93	137.4	4.98	95
5551	10.44	58.65	5543.21	81.07	75.05	149.98	3.6	95
5639	11.89	65.3	5629.54	88.97	82.98	165.03	2.2	88
5734	14.84	61.24	5721.96	99.46	92.93	184.59	3.26	95
5829	28.95	62.77	5809.89	115.9	109.39	215.86	14.86	95
5923	46.42	63.64	5883.99	143.46	135.12	267	18.59	94
6018	57.26	64.5	5942.6	180.29	167.7	334.09	11.42	95
6112	61.73	65.04	5990.31	221.1	202.2	407.33	4.78	94
6207	65.58	65.35	6032.46	264.54	237.91	484.6	4.07	95
6301	66.24	65.2	6070.83	308.43	273.8	562.55	0.72	94
6396	65.78	65.32	6109.45	352.81	310.13	641.38	0.5	95
6490	66.74	61	6147.3	394.04	348.98	718.12	4.33	94
6584	67.81	58.87	6183.62	431.25	392.42	793.15	2.37	94
6679	68.1	58.56	6219.28	467.35	438.14	868.4	0.44	95
6774	69.87	59.03	6253.34	503.83	484.08	944.25	1.91	95
6869	65.53	63.08	6289.4	543.04	526.64	1021.1	6.03	95
6964	65.42	73.91	6328.93	591.26	558.27	1101.35	10.37	95
7059	67.32	82.59	6367.06	651.39	575.91	1186.46	8.61	95
7106	67.96	85.64	6384.95	684.49	580.37	1229.69	6.15	47
7153	69.21	88.44	6402.11	719.22	582.62	1273.38	6.15	47
7200	69.65	93.22	6418.63	755.82	581.98	1317.37	9.58	47
7248	70.59	100.26	6434.97	795.74	576.68	1362.16	13.92	48
7295	72.79	107.54	6449.75	837.47	565.95	1405.43	15.43	47
7342	74.09	115	6463.16	881.29	549.61	1447.37	15.47	47
7389	74.59	117.11	6475.85	926.05	529.73	1488.02	4.45	47
7436	74.8	119.9	6488.26	971.13	508.09	1527.86	5.74	47
7483	77.15	121.41	6499.65	1016.63	484.84	1567.08	5.89	47
7531	78.26	124.56	6509.87	1063.5	459.31	1606.41	6.81	48
7578	79.23	127.02	6519.05	1109.58	432.35	1643.79	5.53	47
7626	79.49	130.54	6527.91	1156.62	402.81	1680.56	7.22	48
7673	81.87	133.08	6535.52	1202.61	371.9	1715.13	7.36	47
7721	83.1	136.6	6541.81	1249.42	338.34	1748.86	7.7	48

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7768	87.05	138.45	6545.84	1295.03	303.81	1780.47	9.28	47
7816	88.81	139.68	6547.57	1341.46	267.58	1811.9	4.47	48
7871	89.6	141.35	6548.33	1394.32	225.14	1846.87	3.36	55
7911	88.02	142.84	6549.16	1432.44	193.59	1871.44	5.44	40
8005	87.85	142.84	6552.55	1521.61	118.72	1928.18	0.19	94
8100	86.53	140.91	6557.21	1612.17	44.09	1986.76	2.46	95
8195	86.44	140.2	6563.04	1703.3	-29.14	2047.01	0.74	95
8289	86.53	139.24	6568.81	1793.83	-100.71	2107.66	1.03	94
8384	90.84	137.92	6571	1885.93	-171.91	2170.48	4.74	95
8479	91.36	139.41	6569.17	1978.03	-243.23	2233.21	1.67	95
8574	90.13	139.76	6567.93	2069.75	-315.55	2294.79	1.35	95
8668	88.37	142.05	6569.16	2159.91	-388.5	2354.06	3.07	94
8763	89.25	143.37	6571.13	2250.13	-464.06	2411.6	1.67	95
8858	89.87	144.25	6571.86	2339.79	-540.72	2467.7	1.13	95
8953	88.81	144.07	6572.95	2429.25	-617.73	2523.32	1.13	95
9048	87.67	141.96	6575.87	2519.29	-693.57	2580.44	2.52	95
9142	88.11	140.03	6579.33	2609.36	-766.56	2639.56	2.11	94
9237	89.52	141.17	6581.3	2700.62	-839.95	2699.84	1.91	95
9331	89.34	142.4	6582.23	2790.37	-913.8	2757.99	1.32	94
9425	86.09	142.49	6585.98	2879.72	-988.26	2815.23	3.46	94
9520	87.49	142.23	6591.3	2970.01	-1063.36	2873.16	1.51	95
9614	89.25	142.49	6593.97	3059.44	-1137.76	2930.54	1.89	94
9709	90.31	144.16	6594.34	3149.36	-1213.95	2987.28	2.08	95
9803	89.25	142.49	6594.7	3238.33	-1289.33	3043.42	2.1	94
9898	90.66	140.99	6594.77	3329.07	-1363.92	3102.24	2.16	95
9993	90.31	141.35	6593.97	3420.07	-1437.93	3161.81	0.52	95
10088	88.37	140.73	6595.06	3511.14	-1511.79	3221.54	2.14	95
10182	88.55	140.29	6597.58	3601.46	-1584.31	3281.29	0.5	94
10277	88.9	140.29	6599.7	3692.86	-1657.37	3341.97	0.37	95
10371	89.87	140.56	6600.71	3783.25	-1729.82	3401.85	1.07	94
10466	88.81	140.73	6601.8	3874.5	-1803.27	3462.09	1.13	95
10561	87.23	141.08	6605.08	3965.58	-1876.95	3521.96	1.71	95
10656	88.11	141.26	6608.94	4056.52	-1950.9	3581.48	0.94	95
10750	88.64	141.7	6611.61	4146.39	-2024.41	3640	0.73	94
10846	89.08	140.2	6613.53	4238.44	-2098.95	3700.46	1.62	96
10940	89.34	139.15	6614.83	4329.16	-2170.61	3761.28	1.16	94
11035	89.08	140.38	6616.14	4420.8	-2243.12	3822.64	1.32	95
11130	90.13	142.05	6616.79	4511.78	-2317.17	3882.15	2.08	95
11224	88.72	142.49	6617.73	4601.3	-2391.5	3939.67	1.57	94
11319	89.16	142.93	6619.48	4691.53	-2467.07	3997.21	0.65	95
11413	89.78	141.61	6620.35	4781.05	-2541.41	4054.73	1.55	94
11508	90.57	142.93	6620.06	4871.52	-2616.54	4112.87	1.62	95
11602	88.99	142.05	6620.42	4960.92	-2691.1	4170.1	1.93	94
11697	89.16	141.61	6621.95	5051.6	-2765.78	4228.8	0.5	95
11792	89.87	142.58	6622.75	5142.16	-2840.73	4287.17	1.26	95
11886	88.55	140.82	6624.05	5231.95	-2914.48	4345.42	2.34	94
11981	88.72	140.73	6626.31	5323.12	-2988.06	4405.48	0.21	95
12009	88.9	140.29	6626.89	5350.03	-3009.66	4423.28	1.69	28
12083	88.9	140.29	6628.31	5421.23	-3066.58	4470.55	0	74

**LANDING POINT**

\*\*Survey at 12083' MD is a projection to bit.

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