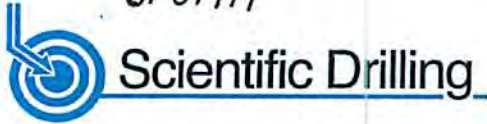


51-01719



## Scientific Drilling

Northeast District

**Company:** Chevron  
**Field:** Marcellus  
**Well:** Francis 12H  
**County:** Marshall  
**State:** WV  
**Rig:** Nabors X7

**Date:** 6/30/2015  
**North Ref:** TRUE  
**Grid corr:** 0.76°  
**VS Azi:** 302.66°  
**RKB-GL:** 32'  
**Surveyor:** D. Kilby/A. Langford

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft
0	0	0	0	0	0	0	Invalid
25	0.05	233.79	25	0	-0.01	-0.01	0.2
50	0.09	233.79	50	0.01	-0.02	-0.03	0.16
75	0.14	233.79	75	0.03	-0.05	-0.07	0.2
100	0.18	233.73	100	0.06	-0.1	-0.13	0.16
125	0.12	228.2	125	0.08	-0.14	-0.18	0.25
150	0.13	223.49	150	0.09	-0.17	-0.22	0.06
175	0.15	191.11	175	0.08	-0.23	-0.25	0.32
200	0.16	183.43	200	0.06	-0.29	-0.25	0.09
225	0.25	179.61	225	0.01	-0.38	-0.26	0.36
250	0.23	191.77	250	-0.04	-0.49	-0.27	0.22
275	0.33	200.13	275	-0.07	-0.6	-0.3	0.43
300	0.33	214.54	300	-0.09	-0.73	-0.37	0.33
325	0.24	226.02	325	-0.07	-0.83	-0.45	0.42
350	0.29	230.41	350	-0.04	-0.9	-0.53	0.22
375	0.13	216.33	375	-0.02	-0.97	-0.6	0.67
400	0.01	97.48	400	-0.02	-0.99	-0.61	0.54
425	0.05	75.37	425	-0.03	-0.99	-0.6	0.16
450	0.04	167.94	450	-0.04	-0.99	-0.59	0.26
475	0.04	27.85	475	-0.05	-0.99	-0.58	0.3
500	0.11	356.45	500	-0.03	-0.96	-0.58	0.31
525	0.2	23.5	525	-0.01	-0.9	-0.56	0.45
550	0.15	48.36	550	-0.01	-0.84	-0.52	0.36
575	0.18	41.09	575	-0.03	-0.78	-0.47	0.15
600	0.13	29.76	600	-0.03	-0.73	-0.43	0.23
625	0.18	73.8	625	-0.06	-0.69	-0.38	0.5
647	0.29	120.51	647	-0.13	-0.71	-0.3	0.96
747	0.03	257.52	747	-0.37	-0.85	-0.11	0.32
842	0.17	27.77	842	-0.33	-0.73	-0.07	0.2
938	0.67	63.93	937.99	-0.61	-0.35	0.5	0.57
1031	1.76	218.33	1030.98	-0.76	-1.24	0.11	2.56
1125	3.88	224.79	1124.86	0.05	-4.62	-3.03	2.27
1220	5.62	221.65	1219.53	1.45	-10.38	-8.38	1.85
1314	6.97	220.92	1312.97	2.99	-18.12	-15.17	1.44
1409	7.67	220.03	1407.19	4.63	-27.33	-23.02	0.75
1503	8.04	221.59	1500.31	6.46	-37.05	-31.42	0.45
1598	8.68	221.96	1594.3	8.65	-47.35	-40.63	0.68
1692	9.11	224.5	1687.17	11.33	-57.94	-50.59	0.62
1787	9.89	227.25	1780.86	14.93	-68.84	-61.86	0.95
1881	8.03	218.49	1873.72	17.63	-79.47	-71.88	2.45
1976	8.49	211.85	1967.73	18.2	-90.62	-79.71	1.12
2071	7.09	211.69	2061.85	18	-101.56	-86.49	1.48
2165	5.68	217.62	2155.27	18.31	-110.18	-92.37	1.65
2260	5.01	216.61	2249.85	19	-117.24	-97.72	0.71
2355	4.48	216.57	2344.53	19.54	-123.55	-102.41	0.56
2449	3.86	215.54	2438.28	19.95	-129.07	-106.43	0.67
2544	3.52	212.3	2533.08	20.09	-134.14	-109.85	0.42
2684	2.57	205.59	2672.88	19.68	-140.61	-113.5	0.72
2779	1.75	190.14	2767.82	18.86	-143.95	-114.68	1.06
2873	0.8	163.32	2861.79	17.82	-145.99	-114.74	1.16
2968	0.19	144.39	2956.79	17.17	-146.75	-114.46	0.65
3063	0.47	20.16	3051.79	17.11	-146.52	-114.24	0.63

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3157	0.96	8.84	3145.78	17.51	-145.38	-113.98	0.54
3251	1.28	349.68	3239.76	18.54	-143.57	-114.05	0.52
3346	1.35	329.92	3334.74	20.26	-141.55	-114.8	0.48
3440	0.88	300.24	3428.72	21.97	-140.23	-115.98	0.78
3535	0.77	292.23	3523.71	23.33	-139.62	-117.21	0.16
3630	1.07	286.1	3618.7	24.81	-139.13	-118.66	0.33
3724	1.29	285.09	3712.68	26.67	-138.61	-120.53	0.23
3819	0.14	248.77	3807.67	27.76	-138.37	-121.67	1.24
3913	0.31	87.65	3901.67	27.62	-138.41	-121.52	0.47
4008	0.46	63.23	3996.67	27.22	-138.22	-120.93	0.23
4102	0.17	21.69	4090.67	27.05	-137.93	-120.54	0.37
4197	0.17	260	4185.67	27.18	-137.82	-120.63	0.31
4291	0.2	99.83	4279.66	27.13	-137.88	-120.61	0.39
4386	0.38	75.59	4374.66	26.76	-137.83	-120.13	0.22
4481	0.19	352.94	4469.66	26.64	-137.59	-119.84	0.43
4575	0.59	312.44	4563.66	27.22	-137.11	-120.22	0.49
4670	0.78	290.71	4658.65	28.33	-136.56	-121.18	0.34
4764	0.98	288	4752.64	29.74	-136.08	-122.55	0.21
4789	1.01	301	4777.64	30.16	-135.9	-122.94	0.91
4834	1.04	305.27	4822.63	30.96	-135.46	-123.61	0.19
4883	1.07	302.02	4871.62	31.87	-134.96	-124.36	0.14
4928	1.6	293.39	4916.61	32.91	-134.49	-125.3	1.26
4978	4.12	258.15	4966.55	34.88	-134.58	-127.69	5.92
5025	7.27	246.71	5013.31	37.75	-136.1	-132.08	7.1
5073	12.56	242.13	5060.58	42.02	-139.75	-139.49	11.12
5167	23.84	233.88	5149.75	53.96	-155.78	-163.95	12.29
5263	26.32	228.64	5236.7	66.85	-181.29	-195.61	3.47
5357	33.63	223.98	5318.08	77.71	-213.84	-229.38	8.16
5451	44.33	225.44	5391.04	90.12	-255.74	-270.98	11.42
5546	57.29	229.18	5450.96	108.91	-305.38	-325.11	13.98
5640	56.77	228.87	5502.11	131.13	-357.09	-384.66	0.62
5735	57.45	228.48	5553.7	153.14	-409.77	-444.56	0.79
5829	58	228.77	5603.89	175	-462.29	-504.2	0.64
5924	55.79	227.57	5655.78	196.29	-515.35	-563.5	2.56
6018	52.75	225.62	5710.67	214.7	-567.75	-618.95	3.64
6113	52.61	225.6	5768.26	231.63	-620.61	-672.94	0.15
6208	52.38	225.67	5826.1	248.54	-673.3	-726.81	0.25
6303	51.77	225.62	5884.49	265.38	-725.69	-780.39	0.65
6398	51.08	225.84	5943.73	282.18	-777.53	-833.58	0.74
6492	49.94	225.7	6003.51	298.64	-828.13	-885.56	1.22
6587	49.53	230.06	6064.93	317.65	-876.73	-939.3	3.52
6634	51.38	240.42	6094.9	331.57	-897.31	-969.02	17.44
6681	52.7	246.32	6123.82	350.5	-913.89	-1002.13	10.29
6728	54.27	252.81	6151.81	373.18	-927.05	-1037.5	11.6
6775	56.09	256.72	6178.65	399.05	-937.17	-1074.72	7.84
6822	57.75	260.41	6204.3	427.34	-944.96	-1113.31	7.47
6870	59.35	263.5	6229.35	458.38	-950.68	-1153.85	6.42
6917	62.32	266.24	6252.26	490.81	-954.33	-1194.72	8.13
6965	62.86	268.05	6274.35	525.5	-956.45	-1237.28	3.52
7012	64.02	268.21	6295.37	560.13	-957.82	-1279.3	2.49
7060	65.17	272.36	6315.96	596.74	-957.6	-1322.64	8.16
7107	65.73	277.33	6335.5	634.54	-953.99	-1365.22	9.71
7155	67.19	283.51	6354.69	675.25	-946.02	-1408.47	12.17
7202	69.47	291.44	6372.06	717.37	-932.89	-1450.08	16.43
7250	70.18	298.24	6388.64	761.97	-913.98	-1490.93	13.36
7297	69.63	301.8	6404.79	806.05	-891.9	-1529.14	7.22
7344	69.62	301.66	6421.15	850.11	-868.73	-1566.62	0.28
7391	69.76	301.51	6437.47	894.18	-845.64	-1604.17	0.43
7439	68.93	304.28	6454.4	939.08	-821.25	-1641.88	5.68
7486	67.51	307.27	6471.84	982.66	-795.74	-1677.28	10.88
7534	72.53	308.82	6488.24	1027.55	-767.94	-1712.79	7.73
7581	76.14	309.25	6500.93	1072.52	-739.45	-1747.92	7.38
7628	77.08	312.68	6511.82	1117.75	-709.48	-1782.45	13.62
7675	79.74	316.68	6521.26	1162.77	-677.11	-1815.17	1.37
7723	84.76	320.91	6527.74	1208.43	-641.33	-1846.48	0.31
7818	84.05	322.01	6537	1297.93	-567.38	-1905.38	8.2
7913	84.02	321.72	6546.88	1387.16	-493.06	-1963.73	10/23/2015
8007	89.7	323.03	6552.03	1475.47	-418.75	-2021	

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8102	91.24	323.8	6551.25	1564.3	-342.47	-2077.61	1.81
8197	89.34	325.34	6550.77	1652.43	-265.07	-2132.68	2.58
8291	87.76	325.52	6553.15	1739.07	-187.7	-2186	1.69
8386	88.2	324.9	6556.5	1826.75	-109.73	-2240.17	0.8
8481	90.22	328.24	6557.82	1913.58	-30.46	-2292.49	4.11
8576	89.52	328.77	6558.03	1999.07	50.54	-2342.11	0.93
8670	92.62	323.94	6556.28	2085.1	128.75	-2394.16	6.11
8764	92.92	322.11	6551.74	2173.11	203.75	-2450.63	1.97
8859	94.17	322.67	6545.87	2262.36	278.86	-2508.5	1.44
8953	92.89	318.82	6540.08	2351.53	351.5	-2567.86	4.31
9048	92.15	317.97	6535.91	2442.88	422.47	-2630.87	1.18
9142	90.77	318.07	6533.51	2533.49	492.32	-2693.72	1.47
9237	89.43	318.42	6533.35	2624.99	563.2	-2756.97	1.46
9332	89.93	318.48	6533.87	2716.41	634.29	-2819.98	0.53
9427	90.54	317.75	6533.48	2807.97	705.02	-2883.41	1
9521	88.15	318.18	6534.56	2898.62	774.82	-2946.34	2.58
9616	87.38	318.67	6538.26	2989.98	845.84	-3009.34	0.96
9711	89.5	320.01	6540.85	3080.94	917.87	-3071.21	2.63
9805	90.84	319.63	6540.57	3170.75	989.69	-3131.85	1.48
9900	91.36	319.63	6538.75	3261.6	1062.05	-3193.37	0.55
9995	89.96	321.65	6537.65	3351.95	1135.49	-3253.61	2.59
10089	90.4	320.24	6537.36	3441.2	1208.49	-3312.84	1.57
10184	90.66	320.6	6536.49	3531.67	1281.7	-3373.36	0.46
10279	91.63	320.77	6534.59	3621.99	1355.18	-3433.54	1.03
10374	90.4	320.68	6532.92	3712.29	1428.71	-3493.67	1.3
10468	90.92	319.98	6531.84	3801.84	1501.07	-3553.67	0.94
10563	91.54	319.89	6529.79	3892.54	1573.75	-3614.8	0.65
10657	89.16	319.28	6529.22	3982.46	1645.32	-3675.74	2.61
10752	89.52	318.84	6530.31	4073.59	1717.07	-3737.99	0.59
10846	90.57	317.87	6530.24	4164.08	1787.31	-3800.45	1.52
10941	91.1	317.17	6528.85	4255.89	1857.37	-3864.6	0.93
11035	91.98	316.99	6526.33	4346.9	1926.18	-3928.59	0.95
11130	89.25	319.8	6525.31	4438.31	1997.2	-3991.65	4.12
11225	89.16	321.65	6526.62	4528.62	2070.73	-4051.78	1.94
11320	89.78	321.56	6527.5	4618.47	2145.18	-4110.78	0.65
11414	91.28	323.85	6526.63	4706.76	2219.95	-4167.73	2.9
11509	92.07	323.5	6523.86	4795.41	2296.45	-4223.98	0.91
11604	91.89	321.74	6520.58	4884.64	2371.89	-4281.62	1.86
11698	89.96	318.31	6519.07	4974.33	2443.9	-4342	4.19
11793	90.84	317.87	6518.41	5065.9	2514.6	-4405.45	1.03
11888	90.31	318.13	6517.46	5157.51	2585.19	-4469.01	0.62
11982	91.19	322	6516.24	5247.18	2657.25	-4529.33	4.22
12076	90.13	320.6	6515.15	5336.24	2730.6	-4588.1	1.87
12171	90.48	320.68	6514.64	5426.6	2804.05	-4648.35	0.38
12266	91.71	324.64	6512.82	5515.84	2879.55	-4705.95	4.36
12360	89.69	323.23	6511.67	5603.42	2955.53	-4761.28	2.62
12419	90.4	323.94	6511.62	5658.53	3003	-4796.3	1.69
12491	90.4	323.94	6511.12	5725.62	3061.21	-4838.68	0.01