

51-01717



**Scientific Drilling**  
Northeast District

Company: Chevron  
Field: Marcellus  
Well: Francis 10H  
County: Marshall  
State: WV  
Rig: Nabors X7

Date: 6/30/2015  
North Ref: TRUE  
Grid corr: 0.76°  
VS Azi: 312.30°  
RKB-GL: 32'  
Surveyor: R. Mayercheck / A. Langford / D. Kilby

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	0
100	0.38	328.42	100	0.32	0.28	-0.17	0.38
200	0.11	312.43	200	0.73	0.63	-0.42	0.28
300	0.07	123.57	300	0.77	0.66	-0.44	0.18
400	0.13	79.06	400	0.64	0.65	-0.28	0.09
500	0.15	356.87	500	0.67	0.8	-0.17	0.18
600	0.22	35.27	600	0.78	1.09	-0.07	0.14
700	0.18	249.52	700	0.88	1.19	-0.1	0.38
800	0.46	281.98	800	1.3	1.22	-0.64	0.32
900	0.71	295.77	899.99	2.24	1.57	-1.59	0.29
1000	1.6	272.59	999.97	3.9	1.9	-3.55	0.99
1100	2.95	257.34	1099.89	6.46	1.4	-7.45	1.47
1200	3.23	256.88	1199.74	9.53	0.2	-12.71	0.28
1300	3.91	255.26	1299.55	12.99	-1.31	-18.75	0.69
1400	4.64	254.69	1399.27	17.01	-3.24	-25.95	0.73
1500	5.49	253.01	1498.88	21.62	-5.71	-34.42	0.86
1600	5.97	252.79	1598.38	26.7	-8.65	-43.97	0.48
1700	3.49	256.07	1698.03	31.03	-10.92	-51.89	2.49
1800	1.37	278.58	1797.94	33.72	-11.47	-56.03	2.29
1900	1.67	307.05	1897.9	36.16	-10.42	-58.37	0.8
2000	2.23	304.5	1997.84	39.54	-8.44	-61.14	0.57
2100	2.69	303.77	2097.75	43.79	-6.03	-64.69	0.46
2200	3.01	297.55	2197.63	48.65	-3.51	-68.97	0.44
2300	3.43	293.95	2297.47	54.03	-1.08	-74.03	0.47
2400	3.5	290.2	2397.29	59.7	1.19	-79.63	0.24
2500	2.43	284.86	2497.15	64.4	2.78	-84.54	1.1
2569	2.24	281.79	2566.1	66.86	3.43	-87.28	0.33
2682	1.89	276.35	2679.02	70.28	4.09	-91.29	0.36
2776	1.16	273.75	2772.99	72.28	4.33	-93.78	0.77
2871	1.01	275.5	2867.97	73.7	4.47	-95.58	0.17
2965	1.01	287.1	2961.96	75.12	4.79	-97.2	0.22
3060	0.72	281.33	3056.95	76.39	5.16	-98.59	0.32
3154	0.59	271.52	3150.94	77.27	5.29	-99.66	0.18
3249	0.38	308.17	3245.94	77.95	5.49	-100.39	0.39
3343	0.47	336.08	3339.93	78.61	6.03	-100.79	0.24
3438	0.61	333.66	3434.93	79.44	6.84	-101.17	0.15
3532	0.7	336.24	3528.92	80.42	7.81	-101.62	0.1
3627	0.76	304.77	3623.92	81.58	8.7	-102.37	0.42
3721	0.74	319.11	3717.91	82.8	9.52	-103.28	0.2
3816	0.66	312.76	3812.9	83.96	10.36	-104.09	0.12
3910	0.42	15.45	3906.9	84.65	11.06	-104.39	0.64
4005	0.51	17.78	4001.89	84.99	11.8	-104.17	0.1
4100	0.62	341.95	4096.89	85.61	12.69	-104.2	0.38
4194	0.53	341.58	4190.89	86.43	13.58	-104.5	0.1
4289	0.6	315.94	4285.88	87.31	14.35	-104.98	0.28
4383	0.51	320.09	4379.88	88.21	15.03	-105.59	0.11
4478	0.39	282.73	4474.87	88.91	15.42	-106.18	0.32 Gas
4573	0.39	298.37	4569.87	89.51	15.65	-106.78	0.11
4600	0.59	303.48	4596.87	89.74	15.77	-106.98	0.11
4695	0.59	296.51	4691.87	90.69	16.26	-107.84	0.08
4789	0.49	300.64	4785.86	91.55	16.68	-108.6	0.11
4884	0.5	279.6	4880.86	92.29	16.95	-109.36	0.19
4978	0.54	288.02	4974.85	93.04	17.16	-110.18	0.09
5025	1.39	186.3	5021.85	92.91	16.66	-110.45	3.39
5073	3.54	178.76	5069.8	91.54	14.6	-110.48	4.52

Received  
Office of Oil & Gas  
JUL 16 2015

10/23/2015



51-01717

5120	6.07	177.39	5116.63	88.79	10.66	-110.34	5.39
5168	7.92	184.16	5164.27	84.95	4.83	-110.46	4.2
5215	10.27	186.02	5210.68	80.48	-2.56	-111.14	5.04
5246	11.67	187.31	5241.11	77.04	-8.42	-111.83	4.61
5262	12.31	188.68	5256.76	75.17	-11.71	-112.29	4.38
5294	13.43	190.38	5287.96	71.32	-18.74	-113.47	3.68
5325	14.45	193.66	5318.05	67.56	-26.04	-115.04	4.18
5357	15.37	194.64	5348.97	63.68	-34.03	-117.05	2.97
5420	18	195.95	5409.31	55.48	-51.47	-121.84	4.21
5450	19.42	196.37	5437.73	51.24	-60.71	-124.52	4.76
5497	22.09	198.52	5481.67	44.26	-76.59	-129.53	5.9
5545	25.38	200.49	5525.61	36.8	-94.79	-136	7.06
5592	29.04	202.04	5567.4	29.1	-114.8	-143.81	7.93
5640	32.37	203.55	5608.66	20.93	-137.39	-153.31	7.1
5687	35.08	205.84	5647.75	13.06	-161.08	-164.23	6.38
5734	38.2	207.68	5685.46	5.56	-186.12	-176.87	7.04
5781	41.62	210.23	5721.51	-1.37	-212.48	-191.49	8.07
5829	44.99	214.5	5756.44	-7.01	-240.25	-209.13	9.29
5876	48.94	216.26	5788.51	-11.13	-268.25	-229.03	8.83
5924	50.75	211.04	5819.47	-16.67	-298.78	-249.33	9.12
5971	52.17	205.36	5848.77	-25.63	-331.16	-266.67	9.93
6018	53.97	199.03	5877.02	-38.56	-365.93	-280.83	11.43
6065	51.35	199.41	5905.53	-53.21	-401.21	-293.13	5.61
6113	45.27	204.56	5937.45	-65.72	-434.44	-306.46	14.99
6160	38.81	210.02	5972.35	-73.95	-462.42	-320.79	15.79
6207	34.49	215.76	6010.06	-78.6	-485.98	-335.95	11.72
6254	33.84	221.67	6048.96	-80.26	-506.56	-352.43	7.19
6302	34.04	228.75	6088.79	-78.89	-525.41	-371.42	8.24
6349	36.53	235.17	6127.17	-74.3	-542.09	-392.81	9.5
6396	39.6	239.07	6164.18	-66.86	-557.78	-417.15	8.29
6443	43.21	242.87	6199.43	-56.88	-572.82	-444.33	9.37
6491	44.79	249.26	6233.97	-43.43	-586.31	-474.78	9.81
6538	45.86	256.21	6267.04	-26.51	-596.2	-506.67	10.76
6585	47.96	261.73	6299.16	-6	-602.74	-540.33	9.68
6632	49.89	267.73	6330.05	17.9	-605.96	-575.59	10.46
6679	52.41	273.22	6359.54	45.18	-605.63	-612.16	10.56
6726	54.85	277.81	6387.42	75.49	-601.97	-649.81	9.43
6774	57.51	283.89	6414.15	109.5	-594.44	-688.94	11.88
6821	61.06	289.12	6438.16	145.87	-582.93	-727.64	12.19
6869	64.24	293.24	6460.22	185.63	-567.52	-767.38	10.1
6916	68.89	296.64	6478.91	226.77	-549.32	-806.45	11.91
6964	72.31	299.65	6494.86	270.66	-527.96	-846.35	9.26
7011	73.05	301.42	6508.85	314.59	-505.17	-884.99	3.92
7059	74.97	304.19	6522.08	360.09	-480.17	-923.77	6.84
7106	77.52	307.5	6533.25	405.44	-453.44	-960.76	8.73
7154	82.25	310.5	6541.68	452.6	-423.7	-997.47	11.62
7249	86.24	313.96	6551.21	547.09	-360.19	-1067.43	5.55
7343	89.08	313.72	6555.05	640.97	-295.14	-1135.16	3.03
7438	92.51	313.02	6553.74	735.93	-229.93	-1204.21	3.68
7532	91.63	315.74	6550.35	829.79	-164.23	-1271.34	3.04
7627	90.57	319.96	6548.52	924.31	-93.83	-1335.06	4.58
7722	91.36	321.45	6546.92	1018.27	-20.32	-1395.21	1.78
7817	88.99	320.93	6546.63	1112.12	53.7	-1454.75	2.56
7912	88.9	321.01	6548.38	1206.02	127.49	-1514.56	0.13
8007	89.69	321.45	6549.55	1299.86	201.55	-1574.04	0.95
8101	90.57	321.19	6549.33	1392.69	274.94	-1632.78	0.98
8196	89.87	320.05	6548.96	1486.69	348.36	-1693.06	1.41
8291	90.92	319.7	6548.31	1580.86	421	-1754.28	1.17
8385	91.98	319.78	6545.93	1674.04	492.71	-1815.01	1.13
8480	90.22	321.63	6544.11	1767.99	566.21	-1875.16	2.68
8575	90.57	323.74	6543.45	1861.43	641.76	-1932.74	2.25
8669	91.19	323.48	6542.01	1953.59	717.42	-1988.5	0.71
8764	92.33	323.92	6539.09	2046.67	793.94	-2044.7	1.29
8859	89.96	321.81	6537.2	2140.03	869.64	-2102.06	3.34
8954	90.13	320.66	6537.12	2233.88	943.72	-2167.55	1.22
9049	91.01	321.28	6536.18	2327.79	1017.51	-2221.37	0.85
9143	91.8	321.37	6533.87	2420.6	1090.87	-2280.6	0.85
9238	90.13	319.87	6532.26	2514.58	1164.28	-2340.35	2.36
9333	90.22	320.49	6531.97	2608.68	1237.25	-2401.19	0.65
9427	91.1	319.43	6530.89	2701.83	1309.21	-2461.66	1.46
9521	88.81	320.14	6530.96	2795.02	1380.98	-2522.35	2.54

Received  
 2102.06 of Oil Gas  
 2167.55  
 JUL 16 2015

10/23/2015



51-01717

9616	90.48	322.25	6531.55	2888.87	1455	-2581.88	2.83
9710	91.63	322.42	6529.81	2981.42	1529.4	-2639.31	1.23
9805	90.57	322.86	6527.99	3074.86	1604.89	-2696.94	1.2
9899	87.76	321.54	6529.36	3167.43	1679.15	-2754.54	3.31
9994	87.49	321.1	6533.3	3261.18	1753.25	-2813.86	0.54
10089	88.02	320.84	6537.02	3355.02	1826.99	-2873.64	0.62
10184	89.52	321.1	6539.06	3448.91	1900.77	-2933.45	1.6
10278	90.22	320.93	6539.27	3541.82	1973.84	-2992.58	0.77
10373	91.28	319.7	6538.03	3635.89	2046.93	-3053.24	1.71
10468	91.98	321.37	6535.34	3729.87	2120.24	-3113.6	1.91
10562	91.98	321.81	6532.09	3822.58	2193.85	-3171.97	0.47
10657	90.48	323.12	6530.05	3916.06	2269.16	-3229.84	2.1
10752	90.4	323.04	6529.32	4009.38	2345.11	-3286.9	0.13
10846	91.01	321.28	6528.17	4101.98	2419.33	-3344.56	1.98
10941	89.87	320.84	6527.44	4195.87	2493.22	-3404.27	1.29
11036	90.57	320.75	6527.07	4289.83	2566.83	-3464.32	0.75
11131	91.28	319.96	6525.54	4383.88	2639.97	-3524.92	1.11
11225	90.4	321.28	6524.17	4476.87	2712.62	-3584.55	1.69
11319	91.28	324.09	6522.8	4569.31	2787.36	-3641.53	3.13
11414	91.89	324.44	6520.18	4662.21	2864.45	-3696.99	0.75
11508	89.69	324.09	6518.88	4754.16	2940.74	-3751.87	2.37
11603	90.22	324.62	6518.95	4847.06	3017.94	-3807.24	0.79
11698	90.4	325.32	6518.44	4939.75	3095.73	-3861.77	0.76
11792	89.16	324.27	6518.8	5031.52	3172.53	-3915.96	1.72
11887	89.25	322.95	6520.11	5124.66	3248.99	-3972.32	1.39
11982	89.69	319.78	6520.99	5218.46	3323.19	-4031.62	3.36
12077	90.48	319.78	6520.84	5312.65	3395.73	-4092.96	0.83
12171	91.36	319.96	6519.33	5405.81	3467.59	-4153.53	0.95
12266	91.8	319.78	6516.7	5499.95	3540.2	-4214.73	0.5
12361	90.75	318.73	6514.59	5594.22	3612.16	-4276.72	1.57
12455	89.25	319.52	6514.59	5687.56	3683.24	-4338.23	1.8
12550	89.69	319.7	6515.47	5781.78	3755.59	-4399.79	0.5
12644	90.22	319.17	6515.54	5875.05	3826.99	-4460.92	0.79
12739	90.75	317.76	6514.74	5969.5	3898.1	-4523.91	1.58
12833	90.31	319.61	6513.87	6062.9	3968.7	-4585.96	2.02
12928	90.57	319.61	6513.14	6157.13	4041.05	-4647.52	0.28
13023	89.96	321.45	6512.7	6251.15	4114.38	-4707.91	2.05
13117	90.57	321.81	6512.27	6343.9	4188.08	-4766.25	0.75
13212	91.19	321.72	6510.81	6437.6	4262.69	-4825.05	0.65
13306	91.8	321.45	6508.36	6530.33	4336.32	-4883.43	0.71
13400	89.87	322.16	6506.99	6623.03	4410.18	-4941.54	2.19
13494	90.13	323.04	6506.99	6715.51	4484.85	-4998.64	0.98
13589	90.92	323.04	6506.12	6808.84	4560.75	-5055.76	0.83
13635	91.45	322.86	6505.16	6854.04	4597.46	-5083.47	1.21
13707	91.45	322.86	6503.34	6924.8	4654.84	-5126.93	0

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Office of Oil & Gas  
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10/23/2015