

12/14/2009

Unsuccessful Frac for the Upper and Lower Marcellus with the following:

CONFIDENTIAL

Stage 1 Lower Marcellus: 500 gals 15% HCl spotted above the perforations prior to the frac
15,483 gals Water

State 2 Upper Marcellus: 2,000 gals 15% HCl
325,725 gals of Water
11,300# 100 Mesh and 1,000# 40/70

1/29/2010

Frac'd Upper and Lower Marcellus from within intervals from 7578-7580' and 7619-7627' with the following:

13,855 bbls of water
205,900 lbs of 100 Mesh
290,000 lbs of 40/70 Sand
2000 Gals 15% HCl Acid
80,000 Gals X-Linked Gel

Ran FET's on the following dates pumping at total of 204.8 bbls of water within the intervals from the Upper Marcellus to the Onadaga.

10/24/09, 10/30/09, 11/10/09, 11/16/09, 12/09/09

<u>Formation Tops</u>	<u>Measured Depth (Ft)</u>	<u>Source</u>
Upper Freeport Coal	20	Mudlog
Middle Kittanning Coal	175	Mudlog
Lower Kittanning Coal	220	Mudlog
Upper Sewell Coal	815	Mudlog
Lower Sewell Coal	865	Mudlog
Pottsville Sandstone	890	Mudlog
Mauch Chunk	1050	Mudlog
Little Lime	1450	Mudlog
Big Lime	1515	Mudlog
Big Injun	1675	Mudlog
Sand and Shale	1775	Mudlog
Bayard	2370	Mudlog
Sand and Shale	2460	Mudlog
Elizabeth	2530	Mudlog
Sand and Shale	2550	Mudlog
Speechley	2878	Mudlog
Sand and Shale	2975	Mudlog
Balltown	3120	Mudlog
Sand and Shale	3150	Mudlog
Bradford	3340	Mudlog
Sand and Shale	3370	Mudlog
Benson	3800	Mudlog
Sand and Shale	3820	Mudlog
Elk	5000	Mudlog
Sand and Shale	5090	Mudlog
Burket Shale	7350	Mudlog
Tully Limestone	7385	Mudlog
Hamilton Shale	7410	Mudlog
Upper Marcellus Shale	7550	Mudlog
Purcell Limestone	7590	Mudlog
Lower Marcellus Shale	7605	Mudlog
Onondaga Limestone	7644	Mudlog
Huntersville Chert	7670	Mudlog

Addendum

Formation	Top Depth	Bottom Depth	Source
Allegheny Fm. Sandstone & Shale	0	175	MudLog/Log
Middle Kittanning Coal	175	182	MudLog/Log
Sandstone & Shale	182	205	MudLog/Log
Lower Kittanning Coal	205	215	MudLog/Log
Sandstone & Shale	215	538	MudLog/Log
Coal	538	542	MudLog/Log
Sandstone & Shale	542	640	MudLog/Log
Coal	640	650	MudLog/Log
Sandstone	650	810	MudLog/Log
Upper Sewell Coal	810	820	MudLog/Log
Sandstone & Shale	820	865	MudLog/Log
Lower Sewell Coal	865	870	MudLog/Log
Sandstone	870	890	MudLog/Log
Pottsville Sandstone	890	1050	MudLog/Log
Mauch Chunk Sandstone & Shale	1050	1449	MudLog/Log
Little Lime - Limestone	1449	1515	MudLog/Log
Big Lime - Limestone	1515	1670	MudLog/Log
Big Injun - Sandstone	1670	1750	MudLog/Log
Sand & Shale	1750	2172	MudLog/Log
Sunbury Shale	2172	2185	MudLog/Log
Berea Sandstone	2185	2271	MudLog/Log
Fourth Sandstone	2271	2336	MudLog/Log
Fifth Sandstone	2336	2370	MudLog/Log
Bayard Sandstone	2370	2460	MudLog/Log
Sand & Shale	2460	2527	MudLog/Log
Elizabeth Sandstone	2527	2550	MudLog/Log
Sandstone & Shale	2550	2876	MudLog/Log
Speechley Sandstone & Shale	2876	2975	MudLog/Log
Sandstone & Shale	2975	3122	MudLog/Log
Balltown Sandstone	3122	3150	MudLog/Log
Sandstone & Shale	3150	3340	MudLog/Log
Bradford Sandstone	3340	3370	MudLog/Log
Sandstone & Shale	3370	3796	MudLog/Log
Benson Sandstone	3796	3820	MudLog/Log
Sandstone & Siltstone	3820	5000	MudLog/Log
ELK Sandstone	5000	5090	MudLog/Log
Siltstone & Shale	5090	7350	MudLog/Log
Burket Shale	7350	7385	MudLog/Log
Tully Limestone	7385	7418	MudLog/Log
Hamilton Shale	7418	7547	MudLog/Log
Upper Marcellus Shale	7547	7590	MudLog/Log
Purcell Limestone	7590	7608	MudLog/Log
Lower Marcellus Shale	7608	7644	MudLog/Log
Onondaga Limestone	7644	7671	MudLog/Log
Huntersville Chert	7671	7815 TD	MudLog/Log