



November 13, 2014

[REDACTED]

CERTIFIED MAIL NO. [REDACTED]

Re: 58 Pa. C.S. § 3218 Determination  
Complaint ID 300692  
Wysox Township, Bradford County

Dear [REDACTED]

The Department has investigated the possible degradation of your water supply well located at the above mentioned address in response to a report that recent gas well drilling activities may have affected your water well.

On 10/22/2013, 11/19/2013, 3/4/2014, 4/2/2014, 5/7/2014, 8/20/2014 and 9/15/2014, the Department collected samples from your water supply. The samples were submitted to the Department's laboratory in Harrisburg for analysis and those results were previously provided to you. The sample results showed manganese in your water at 0.25 milligrams per liter (mg/l) on 10/22/2013, 0.24 mg/l on 11/19/2013, 0.08 mg/l on 4/2/2014, 0.12 mg/l on 5/7/2014, 0.14 mg/l on 8/20/2014 and 0.10 mg/l on 9/15/2014. In addition, the sample results showed iron in your water at 0.72 mg/l on 10/22/2013, 0.42 mg/l on 11/19/2013, 0.46 mg/l on 4/2/2014, 0.98 mg/l on 5/7/2014 and 1.16 mg/l on 8/20/2014. These concentrations exceed the secondary maximum contaminant level (SMCL) of 0.05 mg/l for manganese and 0.3 mg/l for iron. SMCLs are guidelines regulating compounds that may cause aesthetic effects (taste, odor, color) in drinking water.

The sample results showed methane was present in your water supply at 24.6 mg/l on 10/22/2013, 23.9 mg/l on 11/19/2013, 0.046 mg/l on 3/4/2014, 0.107 mg/l on 4/2/2014, 0.072 mg/l on 5/7/2014, 6.28 mg/l on 8/20/2014 and 24.7 mg/l on 9/15/2014. In addition, ethane was detected in your water supply at 0.383 mg/l on 10/22/2013, 0.376 mg/l on 11/19/2013, 0.087 mg/l on 8/20/2014 and 0.469 mg/l on 9/15/2014. The predrilling sample results collected on 10/1/2010 indicated that methane and ethane were not detected in your water supply above 0.02 mg/l. The Department's investigation indicates that gas well drilling has impacted your water supply.

Methane is the predominant component of natural gas. Federal water standard limitations have not been established for methane gas. The level of concern begins above 28 mg/l methane, which is referred to as the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional methane in solution. This may allow the gas to come out of the water and concentrate in the air space of your home or building. There is a physical danger of fire or explosion due to the migration of natural gas into water wells or through soils into dwellings where it could be ignited by sources that are present in most homes/buildings. Natural gas can also cause a threat of asphyxiation, although this is extremely rare.

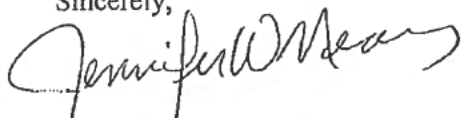
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When the Department is made aware of methane levels greater than 7 mg/l, we notify the water supply owner of the hazards associated with methane in their water supply. Please be aware however, that the methane levels can fluctuate. This means that even with a relatively low level of methane, you should be vigilant of changes in your water that could indicate an increase in methane concentration.

It is the Department's recommendation that all water wells should be equipped with a working vent. The Department understands that such a vent has been installed on your water well. This will help alleviate the possibility of concentrating these gases in areas where ignition would pose a threat to life or property. Please note that it is not possible to completely eliminate the hazards of having natural gas in your water supply by simply venting your well.

The Department is continuing to work to permanently resolve this issue. Should you have any questions concerning this matter, please feel free to contact Eric Rooney, P.G. at 570-346-5543.

Sincerely,



Jennifer W. Means  
Environmental Program Manager  
Oil and Gas Management

Enclosures:

Laboratory Analytical Results  
"How to Interpret A Water Analysis Report"

cc:

Jennifer Means  
Marc B. Cooley  
David Engle  
Sharon Steinbacher  
Eric Rooney, P.G.  
[Redacted]