



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHCENTRAL REGIONAL OFFICE

March 7, 2011

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Re: Act 223, Section 208 Determination
Complaint No. 274348
Tuscarora Township, Bradford County

Dear [REDACTED]

The Department has investigated the possible degradation of your water supply well at your residence located at [REDACTED] in response to a September 16, 2010 complaint that recent gas well drilling activities may have affected your water well. On September 16, 2010 and December 6, 2010, the Department collected samples from your water supply. The samples were submitted to the Department's laboratory in Harrisburg for analysis. The analytical reports for the samples are included, as well as documents that will assist you with interpreting the sample results. The sample results showed methane is present at 23.1 mg/l and 14.8 mg/l, respectively, in your water supply. Methane gas was also detected in the headspace of your water well. The Department investigation indicates that gas well drilling has impacted your water supply.

Methane is the predominant component of natural gas. Drinking water standard limitations have not been established for methane gas and the Department is not aware of any associated health risks. The true 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. The potential hazard occurs when the water is used for extended periods of time. 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 3 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. 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.

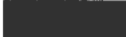
The Department is continuing to work to permanently resolve this issue. Should you have any questions concerning this matter, please feel free to contact Eric Rooney at 570.346.5543.

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 Cooley
William J. Kosmer, P.G.
Eric Rooney
Complaint File




November 7, 2014

[REDACTED]

CERTIFIED MAIL NO. [REDACTED]

Re: 58 Pa. C.S. § 3218 Determination
Complaint No. 274348
Tuscarora Township, Bradford County

Dear [REDACTED]

The Department has investigated the degradation of your home's water supply well located at the above mentioned address in Tuscarora Township, Bradford County, in response to a complaint that gas well drilling activities may have affected your water well. The Department collected combustible gas readings and water samples from your well. The combustible gas readings and water sample results indicated that gas well drilling had impacted your water supply, and on 3/7/2011, the Department issued a letter of positive determination describing this impact.

Subsequent to the issuance of the 3/7/2011 determination letter, additional combustible gas readings and water samples were collected from your water supply as part of an intensive investigation. The combustible gas readings and water samples were collected by the Department and a qualified third party and samples were submitted to the Department's laboratory and an independent accredited laboratory for analysis. The analytical reports for those samples were previously submitted to you. On 6/9/2014 and 8/12/2014, the Department collected additional samples from your home water supply. The samples were submitted to the Department's laboratory in Harrisburg for analysis. The analytical reports for the 6/9/2014 and 8/12/2014 sampling events are included with documents to assist you with interpreting the sample results. The Department's investigation indicates that the previous impact to your water supply was temporary and your water supply appears to have returned to the background conditions which existed before gas well drilling occurred near your home.

Based on water quality sample results to date, the Department does not anticipate requiring any further action in relation to this matter. Should you have any questions, please feel free to contact Eric Rooney, P.G. at 570-346-5543.

Sincerely,

Jennifer W. Means
Environmental Program Manager
District Oil and Gas Operations

Enclosures:
Laboratory Analytical Results
"How To Interpret A Water Analysis Report"