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April 3, 2017

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]

Re: Water Supply Request for Investigation ID: 325361
58 Pa.C.S. § 3218 Determination
Auburn Township, Susquehanna County

Dear [REDACTED]

The Department is investigating the possible degradation of your water supply well located at the above referenced address ("Water Supply"), in response to a complaint received on March 2, 2017 that recent gas well drilling activities may have affected your Water Supply well. The Department's investigation to this point, prompted by information you provided, indicates that oil and gas activities are presumed to be the cause of the pollution of your water supply.

Summary of Investigation

On March 2, 2017, you complained to the Department that your Water Supply had become effervescent. On that date, the Department initiated its investigation of your Water Supply and collected samples. Samples were collected as shown in the enclosed table, and submitted to the Department's laboratory in Harrisburg for analysis. The analytical results are enclosed as well.

Initial results of samples from the Water Supply showed that the Water Supply had levels of methane, ethane, and propane above pre-drill levels. Specifically, on March 2, 2017, methane was detected at 13.5 mg/L, ethane at 0.871 mg/L, and propane at 0.021 mg/L. These levels are elevated above both predrill samples collected on October 18, 2014 and June 22, 2015 with a value of <0.005mg/L for all three analytes.

Because drilling and completion activities occurred at a gas well within two thousand five hundred feet of your Water Supply, and the pollution occurred and was reported within one year after completion of those activities, under Section 3218 of the Oil and Gas Act (58 Pa C.S. §3218), the gas well operator is presumed to be responsible for the degradation of 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.

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.

Additionally, the sample results showed a microbiological contaminant elevated above Department standards. Total Coliform was detected at 1/100 mL. The presence of a microbiological contaminant exceeds the Department's standard. Enclosed are documents that may assist in understanding disinfection and associated information regarding private water wells.

It is the Department's understanding that you are currently being provided bottled water. The Department is continuing to investigate and 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
Eastern Oil and Gas District



cc:

Eric Rooney, P.G.
Mike O'Donnell (email)
Matthew Shope (email)
Complaint File #325361