



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

July 2, 2020



CERTIFIED MAIL NO [REDACTED]

Re: Water Supply Request for Investigation ID: 345209 & 346697
58 Pa.C.S. § 3218 Determination
Meshoppen Township, Wyoming County

Dear [REDACTED]

The Department of Environmental Protection (“Department”) has been investigating the possible degradation of your water supply located at the above referenced address (“Water Supply”), in response to complaints received on September 18, 2019 and November 27, 2019 that recent oil and gas activities may have affected your Water Supply. The Department’s investigation, prompted by information you provided, has determined that your Water Supply was adversely affected by oil and gas activities, including but not limited to the drilling, alteration, or operation of an oil or gas well. The information upon which this determination is based is summarized below.

Summary of Investigation

On September 18, 2019, you reported that on September 3, 2019, your water became turbid. The Department collected a number of samples from your Water Supply. Samples were collected and submitted to the Department’s laboratory in Harrisburg for analysis. Those results were previously provided to you but are summarized for your convenience in the enclosed table along with sample results provided by Chesapeake Appalachia, LLC. In addition to the water samples collected from your Water Supply, combustible gas screening was conducted at your Water Supply well. Combustible gas was detected at your Water Supply well coincidental with the drilling of nearby gas wells.

The attached sample results table shows that the following analytes exceeded Department standards during one or more of the sampling events.

Parameters	Unit	Statewide Standards or Recommended Levels	Your Sample Results that Are Above Statewide Standards/Levels
Turbidity	NTU	1(Primary MCL)	12.7

Note that a primary Maximum Contaminant Level ("MCL") is intended to reflect potential dangers to human health, while a secondary MCL reflects the aesthetics of the water (i.e. taste, smell, etc.). It should be noted that the primary turbidity MCL is only applicable to regulated surface water sources or regulated groundwater sources under the direct influence of surface water.

Laboratory analytical results from your Water Supply over the investigation period indicated dissolved methane ranged from non-detect to 0.715 milligrams per liter ("mg/L"). Free gas was not detected in the headspace of the water well until November 26, 2019. Since that time, as much as 9% methane gas by volume has been detected in your Water Supply well headspace. Dissolved methane was not detected in pre-drill samples collected from the Water Supply on July 9, 2019.

Samples of methane from the Water Supply were collected and sent to a specialized laboratory for isotopic and compositional analysis. These analyses allowed for a more detailed characterization of gas present in the Water Supply. The isotopic and compositional analyses indicate that the stray gas in your Water Supply appears to be associated with oil and gas activities. The results are attached for your records.

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. While the concentration of dissolved methane detected in your Water Supply was below this level, free gas was detected in the headspace of the Water Supply as described above. Please be aware 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 understanding that your Water Supply has been vented and a temporary treatment system has been added. 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 about the Department's determination regarding the Water Supply, feel free to contact Eric Rooney, P.G. at 570-346-5543 or erooney@pa.gov.

Sincerely,



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

Enclosures:

Laboratory Analytical Results Table
Fact Sheet – Interpreting Water Supply Results

cc:

Michael O'Donnell (email)
Briana Cunningham (email)
Eric Rooney, P.G. (email)
Complaint File # 345209 & 346697