



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

April 10, 2024

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]

Re: Water Supply Request for Investigation ID: 370045
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 a complaint received on February 16, 2023, 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 February 16, 2023 you reported that water from your Water Supply developed turbidity and effervescence issues. The Department collected water samples from your Water Supply on February 22, 2023 (“Department’s Sampling Event”) and submitted them to the Department’s laboratory in Harrisburg for analysis. The results were previously provided to you but are summarized for your convenience in the enclosed Table 1 along with sample results collected by Chesapeake Appalachia, LLC (“CALLC”).

The Department’s Sampling Event yielded results that showed several parameters that were elevated above pre-drill sample levels and Department standards. Levels of arsenic, iron, and manganese were detected in excess of predrill concentrations. Aluminum was not tested for during the pre-drill sample analysis. Arsenic was present at 0.0134 milligrams per liter (“mg/L”) which exceeds the primary maximum contaminant level (“MCL”) of 0.010 mg/L. Aluminum, Iron and Manganese exceeded their respective secondary MCLs. Primary MCLs are intended to reflect potential dangers to human health, while secondary MCLs reflect the aesthetics effects of the water (i.e. taste, smell, etc.). Below is a summary of the analytes that exceeded Department standards or action levels during the Department’s Sampling Event.

Parameters	Unit	Statewide Standards or Recommended Levels	Your Sample Results that Are Above Statewide Standards/Levels
Aluminum	mg/L	0.2	3.615
Arsenic	mg/L	0.01	0.0134
Iron	mg/L	0.3	5.840
Manganese	mg/L	0.05	1.970
Methane	mg/L	7 (Action Level)	31.70

Presently, there is no standard set for dissolved ethane, but the Department does look at its levels when considering whether water has been adversely affected by oil and gas activities. Dissolved ethane was not detected in your pre-drill water sample above the detection limit of 0.005 mg/L. However, the Department's Sampling Event yielded a concentration of 1.30 mg/L.

In addition, dissolved methane was not detected in your pre-drill water sample above the detection limit of 0.005 mg/L. However, the Department's Sampling Event yielded a dissolved methane concentration of 31.70 mg/L. Combustible gas was also detected in your Water Supply well headspace.

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 the gas present in the Water Supply. The isotope and compositional analyses indicate that the stray gas in your Water Supply appears to be associated with oil and gas activities.

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.

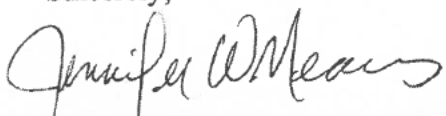
When the Department is made aware of methane levels greater than 7 mg/L, it notifies the water supply owner of the hazards associated with methane in their water supply. Please be aware however, that the methane levels can fluctuate. This means that even with a relatively low level of methane, you should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

It is the Department's understanding that your water well has been 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 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

Enclosure:
Laboratory Analytical Results Table

cc:
Michael O'Donnell (email)
Briana Cunningham (email)
Eric Rooney, P.G. (email)
Complaint File # 370045