



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

July 2, 2020



CERTIFIED MAIL NO. [REDACTED]

Re: Water Supply Request for Investigation ID: 346886
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 November 30, 2019 complaint 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 November 30, 2019, during screening operations for a nearby investigation, the Department received information regarding the presence of methane in your Water Supply. On December 10, 2019, the Department collected a water sample from your Water Supply which was 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. The attached results table shows an increase in the concentrations of arsenic, methane, ethane, manganese, total dissolved solids (“TDS”), and total chloride over Department standards and pre-drill levels.

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

Parameters	Unit	Statewide Standards or Recommended Levels	Your Sample Results that Are Above Statewide Standards/Levels
Arsenic	mg/L	0.01 (Primary MCL)	0.0128 – 0.0169
Manganese	mg/L	0.05 (Secondary MCL)	0.051 -0.214
Methane	mg/L	7 (Action Level)	9.74 - 19
TDS	mg/L	500 (Secondary MCL)	772 - 2040
Total Chloride	mg/L	250 (Secondary MCL)	322 - 1020

Laboratory analytical results from your Water Supply over the investigation period indicated elevated dissolved methane concentrations ranging from 9.74 milligrams per liter (“mg/L”) collected on December 27, 2019 to 19 mg/L collected on January 22, 2020. Ethane was also detected in the Department’s January 22, 2020 sample at 0.013 mg/L.

Samples of the 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 water quality analysis, isotope and compositional analyses, and increase in concentrations of dissolved methane indicate that the stray gas in your Water Supply is most likely associated with oil and gas activities.

In addition to the increases noted above, it was noted that the concentrations of alkalinity, barium, bromide, lithium, potassium, sodium, specific conductivity, and strontium have also increased, although not to levels above Department standards.

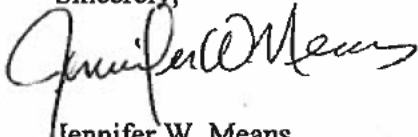
Methane is the predominant component of natural gas. Federal water standard limitations have not been established for methane gas. The level of concern begins above 28 mg/L methane, which is referred to as the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional 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.

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 # 346886