



November 18, 2019

**CERTIFIED MAIL NO.** [REDACTED]

**Re:** 58 Pa. C.S. § 3218 Determination  
Water Supply Request for Investigation No. 341500  
Liberty Township, Tioga County

Dear [REDACTED]

The Department has completed an investigation of the possible degradation (reported turbidity) of your water supply ("Water Supply") located at the above referenced address, in response to an April, 19 2019 complaint that gas well drilling activities may have affected your Water Supply. On April 22, 2019, the Department collected samples from your Water Supply and submitted samples to the Department's laboratory in Harrisburg for analysis. The analytical results for those samples were previously provided to you with a determination letter dated June 25, 2019, along with documents to assist you in interpreting those sample results.

The determination letter previously sent to you indicated that your Water Supply was presumed to have been impacted by oil and gas activity pursuant to Section 3218 of the 2012 Oil and Gas Act. Section 3218 of the 2012 Oil and Gas Act allows an oil and gas operator the opportunity to rebut this presumption. Based on the water samples and other information obtained to date, including the review of a technical report submitted in rebuttal to the Department's Notice of Presumption Letter to Southwestern Energy (SWN), the Department has determined that the Water Supply which was previously presumed to be impacted has return to a background condition. The information upon which this determination is based is summarized below.

You reported that your Water Supply contained sediment and had become "cloudy". Subsequently, water quality samples were collected by the Department, and were submitted to the Department's laboratory for analysis. Laboratory analytical data indicated that turbidity was present at 20.3 Nephelometric Turbidity Units (NTU). This value was higher than observed during pre-drill sampling of the Water Supply (1.07 NTU). Turbidity is caused by the presence of suspended matter such as sediment, nonliving organic particulates, plankton, or other microscopic organisms. In the case of your Water Supply, it appears the turbidity detected is mainly related to sediment.

Additionally, iron was detected at a concentration of 0.336 mg/L, manganese at a concentration of 0.862 mg/L, and aluminum at a concentration of 0.625 mg/L. These values are higher than their Secondary Maximum Contaminant Levels (SMCLs) and higher than the values detected during pre-drill sampling. The increases in metals appear related to sediment (turbidity). However, subsequent samples collected on May 31, 2019 and July 30, 2019, indicate that the previously observed concentrations of turbidity and metals have return to levels at or below pre-drill conditions.

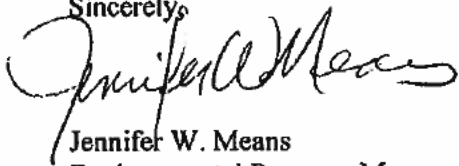
Bacteria, including E. Coli, were detected above their respective MCLs during the course of the investigation, including during pre-drill sampling. It is recommended that the supply be properly

disinfected and that you consult with a water treatment professional regarding the installation of treatment for bacteria. Information regarding proper disinfection procedures has been included for your reference.

While the Department has determined that your Water Supply has returned to a background condition, please do note that your water quality does not meet (*i.e.* is worse than) health and/or aesthetic statewide standards. You may consider exploring remedial actions regarding the level of bacteria in your Water Supply, as identified on the enclosed table and also set forth in the previously provided sample results.

The Department considers this complaint closed and does not anticipate any further action. Please contact William Kosmer, P.G. at 570-974-2613 if you have any questions about the Department's determination regarding the Water Supply.

Sincerely,



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

Enclosures:

Laboratory Analytical Table  
"How to Interpret A Water Analysis Report"  
"Disinfection of Home Wells and Springs"

cc:

William J. Kosmer, P.G.  
Stephanie Wharton  
Sara Metz  
Sharon Steinbacher  
Complaint File # 341500



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

June 25, 2019

**CERTIFIED MAIL NO.** [REDACTED]

[REDACTED]

**Re: Water Supply Request for Investigation ID: 341500**  
**58 Pa. C.S. § 3218 Determination**  
**Liberty Township, Tioga 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 April 19, 2019 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 April 19, 2019, you claimed your Water Supply was cloudy. On April 19, 2019, the Department initiated its investigation of your Water Supply, and you further clarified that your water would become cloudy after letting the water sit in a container for 2-3 days. On April 22, 2019, the Department collected samples from your Water Supply. 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.

The April 22, 2019 sample results from the Water Supply showed that the Water Supply had levels of manganese, iron, aluminum, and turbidity above pre-drill levels and the respective primary or secondary Maximum Contaminant Levels (MCLs or SMCLs). Specifically, the Department's April 22, 2019 sample results revealed manganese was detected at 0.862 milligrams per liter (mg/L) with a pre-drill analysis detection of 0.051 mg/L. The SMCL is 0.05 mg/L. Iron was detected at 0.336 mg/L with a pre-drill analysis detection of <0.050 mg/L. The SMCL is 0.3 mg/L. Aluminum was detected at 0.62500 mg/L with a pre-drill analysis detection of <0.050 mg/L. The SMCL is 0.2 mg/L. Lastly, turbidity was detected at 20.3 nephelometric turbidity units (NTU) with a pre-drill analysis detection of 1.07 NTU. The MCL is 1 NTU.

Because drilling 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

June 25, 2019

those activities, under Section 3218 of the Oil & Gas Act (58 Pa C.S. § 3218), the gas well operator is presumed to be responsible for the degradation of your Water Supply.

Additionally, the sample results collected by the Department on April 22, 2019 showed microbiological contaminants. Total Coliform was detected at 6 MPN/100 mL, which exceeds the Department's standard. Enclosed are documents that may assist in understanding disinfection and associated information regarding private water wells.

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 Sara Metz, Environmental Trainee/Water Quality Specialist, at 570-327-3780.

Sincerely



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

**Enclosures:**

Fact Sheet – Interpreting Water Supply Results  
Fact Sheet – Disinfection of Home Wells and Springs  
Results Table  
Sample Results

cc: Stephanie Wharton  
Sasha Minium  
Sara Metz  
William Kosmer, PG  
Sharon Steinbacher  
Complaint File #: 341500