



March 21, 2019

CERTIFIED MAIL NO. [REDACTED]

Re: Water Supply Request for Investigation 336475  
Determination of Temporary Impact - 58 Pa. C.S § 3218  
Bradford Township, McKean County

Dear [REDACTED]

The Department has completed its investigation of your water supply listed in Exhibit A ("Water Supply"). Based on the sample results reviewed and supplementary information obtained to date, the Department has determined that the Water Supply was temporarily affected by oil and gas activities but has returned to expected conditions. The Department's investigation into your complaint is set forth below.

**Summary of Investigation**

On August 22, 2018 while investigating a water supply impact at a neighboring property, Water Quality Specialist Brian Ayers checked the specific conductivity of the spring box at your camp. The specific conductivity of the water in the spring box was elevated, which indicated that your camp's water supply may have also been impacted by operations at a nearby oil and gas lease. Mr. Ayers subsequently contacted you to apprise you of the situation and ask permission to collect a water sample. You stated that the camp had not been inhabited in recent weeks and that you were unaware of any issues with the Water Supply. Samples from the Water Supply were collected as shown in the table below and submitted to the Department's laboratory in Harrisburg for analysis. Those analytical results are enclosed.

Initial results of samples from the Water Supply showed that the Water Supply had levels of Total Dissolved Solids (TDS), Chloride, Specific Conductivity (SPC), Magnesium, Calcium, Hardness and Sodium above pre-drill levels and expected conditions. However, additional sampling results revealed that those levels returned to expected conditions.

The following table compares the results of the parameters that were elevated as a result of this incident.

| Contaminant or Parameter | Unit  | Standards or Recommended Levels | Pre-Drill Survey 2/12/09 | Sample Result 8/23/18 | Sample Result 9/17/18 | Sample Result 10/2/18 | Sample Result 11/8/18 |
|--------------------------|-------|---------------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| TDS                      | mg/l  | 500                             | 35                       | 454                   | 342                   | 162                   | 64                    |
| Chloride                 | mg/l  | 250                             | < 1                      | 168                   | 133                   | 57                    | 16                    |
| SPC                      | uS/cm |                                 | 87                       | 593                   | 477                   | 238                   | 93                    |

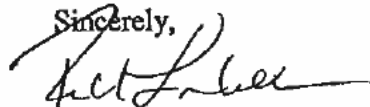
|           |      |  |     |      |      |      |     |
|-----------|------|--|-----|------|------|------|-----|
| Magnesium | mg/l |  | 1.6 | 10.9 | 8.9  | 4.8  | 2.1 |
| Calcium   | mg/l |  | 6.4 | 48.1 | 36.3 | 18.9 | 8.0 |
| Sodium    | mg/l |  | < 1 | 50   | 37   | 15   | 5   |
| Hardness  | mg/l |  | NA  | 165  | 127  | 67   | 29  |

On August 22, 2018 USEDC discovered an underground gathering line leak at their Pierce No. 1 well. This well is located [REDACTED] of your spring box. The Department has determined that the leak from the compromised gathering line allowed production water to infiltrate the aquifer that feeds your spring. Upon USEDC's repair of this line, the quality of your water began to improve and has since returned to expected conditions.

Based on the Department's investigation, the Department has determined that the impacts on the Water Supply were temporary and that the quality of the Water Supply has now returned to expected conditions. Because the Water Supply has returned to expected conditions, the Department does not plan to require further action regarding the Water Supply.

Please contact Brian Ayers at 814.723.0977 if you have any questions about the Water Supply.

Sincerely,



Richard L. Neville  
District Oil and Gas Manager  
District Oil and Gas Operations

Enclosures:

- Exhibit A
- Fact Sheet – Interpreting Water Supply Results
- Sample Results

cc: File through Lichtinger  
Richard Sheriff (via email)  
Brian Ayers (via email)  
[REDACTED] U.S. Energy Development Corporation [REDACTED]  
Michael Braymer (via email)  
Kayla Despenses (via email)

BBA:br