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pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

July 7, 2017

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]

[REDACTED]

Re: Water Supply Request for Investigation 317342
Determination of Temporary Impact - 58 Pa. C.S § 3218
Derry Township, Westmoreland County

[REDACTED]

[REDACTED]

Dear [REDACTED]

The Department has completed its investigation of your water supply [REDACTED]

[REDACTED] 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. Nevertheless, please note that your water quality does not meet (*i.e.*, is worse than) the following health and/or aesthetic statewide standards unrelated to oil and gas activities:

Parameters	Unit	Statewide Standards or Recommended Levels	Your Sample Results that Are Above Statewide Standards/Levels
Calcium	mg/L	75	89.40
Hardness	mg/L	30-150	393

You may consider exploring remedial actions regarding the levels of the above results. The Department's investigation into your complaint is set forth below.



Summary of Investigation

On January 15, 2016, you complained to the Department that your water supply contained sediment and possible gas. On the dates of the Department's inspections, your water contained sediment. Samples from the Water Supply were collected as shown in the table below, and submitted to the Department's laboratory in Harrisburg for analysis.

Initial results of samples from the Water Supply showed that the Water Supply had levels of hardness, iron, manganese, turbidity and total coliform above pre-drill levels. However, additional sampling results revealed that those levels returned to expected conditions. The following table compares those results.

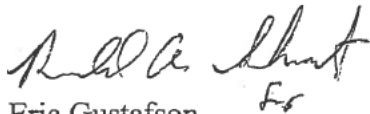
Contaminant or Parameter	Unit	Standards or Recommended Levels	Pre-Drill Survey 9/4/2014	Sample Result 1/19/2015	Sample Result 3/3/2016	Sample Result 4/25/2016
Alkalinity	mg/l	30-500	305	320.8	324	317.4
Aluminum	µg/l	200	NS	<200	<200	<200
Arsenic	µg/l	10	NS	3.83.0	<3.0	<3.0
Barium	mg/l	2	0.090	0.086	0.087	0.085
Bromide	mg/l	NS	NS	<0.2	<0.2	<2
Calcium	mg/l	75	68	68.13	73.7	80.10
Chloride	mg/l	250	7	5.74	8.52	10.80
Hardness	mg/l	30-150	320	319	332	369
Iron	mg/l	0.3	0.310	1.540	0.040	0.043
Lithium	µg/l	NS	NS	<25	<25	<25
Magnesium	mg/l	NS	36.4	36.18	35.99	41.00
Manganese	mg/l	0.05	ND	0.173	0.011	0.013
pH		6.5-8.5	7.62	7.7	7.5	7.9
Potassium	mg/l	NS	1.22	1.179	1.264	1.258
Selenium	µg/l	50	NS	<7	<7	<7
Sodium	mg/l	20	16.5	14.7	13.2	15.30
Specific Cond.	µS/cm	NS	594.7	653	673	662
Strontium	mg/l	NS	2.58	2.50	2.79	2.77
Sulfate	mg/l	250	37.2	50.73	52.58	48.94
TDS	mg/l	500	328	388	388	380
Total Suspended Solids	mg/l	NS	ND	6	<5	<5
Turbidity	NTU	1,5	NS	2.63	<1	<1
Zinc	µg/l	5,000	NS	10	<10	19
E. Coli	(Col/100mL)	0	Absent	<1/100	<1/100	NS

Total Coliform	(Col/100mL)	0	Present	<i>19/100</i>	<1/100	NS
Ethane	µg/l	0	NS	ND	NS	NS
Methane	µg/l	0	NS	ND	NS	NS
Propane	µg/l	0	NS	ND	NS	NS

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 pre-drilling conditions. Because the Water Supply has returned to pre-drilling conditions, the Department does not plan to require further action regarding the Water Supply.

Please contact Sam Steingrabe at 724-925-5430 if you have any questions about the Water Supply.

Sincerely,



Eric Gustafson
Southwest District Oil and Gas Manager
District Oil and Gas Operations

Enclosures:

Exhibit A
Fact Sheet – Interpreting Water Supply Results
Sample Results

cc: 317342 Complaint File
Sam Steingrabe
April Weiland
Kareen Milcic