



HAND
DETERMINED
3/6/18
JFJ

March 6, 2018

[REDACTED]

Re: 2012 Oil and Gas Act, Section 3218 Determination
DEP Identifier Number 318101
Positive Determination -- 58 Pa. C.S § 3218
Washington Township, Erie County

[REDACTED]

The Department has completed its investigation of your water supply [REDACTED] ("Water Supply"). Based on the sample results and other information obtained, the Department has determined that the 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.

CASE INFORMATION		
Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color)	Sample Results Above Statewide Standards or Recommended Levels
February 26, 2016	Black water, cloudiness and bubbles in the water	February 29, 2016: Iron (1.26 mg/l), Manganese (0.056 mg/l), Turbidity (6.04 NTU), and Methane (25.8 mg/l)

Pre-drilling water samples were not available for comparison to present samples, as there has been no recent well drilling in your area. Raw water samples obtained by [REDACTED] February 29, 2016 indicated that iron and manganese were elevated above secondary drinking water standard. Turbidity was elevated above the surface water standard of 1 NTU. Also, elevated dissolved methane was present at 25.8 mg/l. Isotopic samples for dissolved gas characterization were collected on this same date. Interpretation of all the accumulated information regarding the methane and other associated natural gases in the water supply indicated that the gas was likely bacterially altered deep thermogenic gas. Subsequent water analyses were obtained from your Water Supply on the dates of March 9, 2016, March 10, 2016, March 15, 2016, March 31, 2016, September 7, 2016, November 30, 2016, June 14, 2017, and October 3, 2017. Analyses taken in year 2017 indicate the levels of methane were below the Department's action level of 7 mg/l.

Due to the confirmed gas in your Water Supply, the operators of oil or gas wells within 2,500 feet of your Water Supply were notified of their requirements under 25 Pa. Code Chapter 78.89 regarding gas migration investigation actions. One operator, Medina Resources Development

Company, LLC (Medina), plugged one well within 2,500 feet of your Water Supply, and then two additional wells in the immediate area. Medina and other operators in the area cooperated with the investigation by venting their wells or performing other tests as requested or required by

Erie County Oil and Gas Inspector, [REDACTED] In all, there were eight area wells which were either plugged, vented, pressure tested, or pressure monitored during the investigation.

Monitoring of your Water Supply headspace was also performed on a regular basis, particularly to note any changes when there was gas well plugging or venting occurring. The gas seemed to diminish after September of 2016, and was no longer evident in any of the three headspace monitoring events in 2017. It was at that time that DEP believed the gas had been mitigated by the plugging efforts of Medina Resources; although, it is unknown which particular well may have been causing the migration.

Isotopic characterization results and recent Water Supply sample results are enclosed. Natural gas fact sheets, interpretation sheets, and historic analyses were sent to you in previous mailings, or hand delivered. Please be vigilant of our Water Supply quality, and contact the Department if your water changes in any way. Thank you for your patience in this matter. If you have any questions, please contact Christine Miner, P.G. at 814.332.6867 for assistance.

Sincerely,



S. Craig Lobins
District Manager
Northwest District Oil and Gas Operations

Enclosures: Exhibit A, Downhole Water Well Camera Findings, Analyses Table, Recent Analyses, Isotopic Location Table, Isotopic Analyses Results, Isotope Crossplot

cc: John Yanc (elec. w/encl.)
Doug Welsh (elec. w/encl.)
Michael Braymer (elec. w/encl.)
Kayla Desperes (elec. w/encl.)
Christine Miner (elec. w/encl.)
File: (through Joseph F. Lichtinger, P.G. Manager) Erie County Gas Migration Investigation, DEP Identifier No. 318101