



June 9, 2016

CERTIFIED MAIL NO. [REDACTED]

Re: 2012 Oil and Gas Act, (§)3218 Determination
DEP Identifier 314644
Determination of Temporary Impact
Pulaski Township, Lawrence County

Dear [REDACTED]

The Department has completed its investigation of your water supply ("Water Supply"). Based on the sample results reviewed and supplementary information obtained to date, the Department has determined that the Water Supply was likely temporarily affected by oil and gas activities but has returned to expected conditions.

Samples from the Water Supply were collected as shown in the table below, and submitted to the Department's laboratory in Harrisburg for analysis. A copy of those analytical results are enclosed. A copy of the guidance entitled "How to Interpret A Water Analysis Report" is also enclosed to assist you with interpreting these results.

CASE INFORMATION

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color)	Sample Results Above Statewide Standards
August 27, 2015	"post-drill results show elevated levels of methane and total suspended solids; eyes burning in shower"	<u>Parameter 10/1/15 result 10/15/15 result</u> Iron 0.54 mg/l Manganese 0.063 mg/l 0.057 mg/l

Results of the August 27, 2015 sample from your Water Supply showed elevated iron and manganese compared to the August 19, 2014 pre-drill results. Based upon these initial results the Department determined that water supply was impacted by oil and gas activity and that Hilcorp was presumed responsible for this impact. The Department continued with its investigation and observed that the initial elevated levels may be the result of sampling procedures that varied from the pre-drill sampling procedures. Therefore, the August 27, 2015 results may not represent the pre-drill sample collection conditions of the Water Supply and those results cannot be compared to the pre-drill sample results.

Subsequent sampling (October 1 and 15, 2015) was conducted using the same purge rate and volume as the pre-drill. Results from those samples indicate the water quality of the Water Supply was consistent with expected range of quality observed in the area as determined by comparison to pre-

drill analysis of the Water Supply as well as 11 other water supplies within 2000 feet of the Water Supply.

The elevated iron and manganese levels in the August 27, 2015 sample results may be the result of a temporary impact to the Water Supply due to oil and gas activities, or the result of sample purging variance from between pre-drill collection and August 27, 2015 sample collection. Regardless, the elevated iron and manganese levels were determined to be temporary with subsequent sample results for all sampled parameters falling within the expected range of water quality observed in the area.

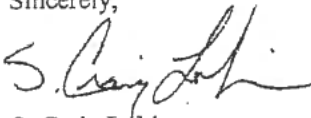
Additionally, related to your original complaint, laboratory results did not detect methane above laboratory detection limits in any of the analyzed samples. Also, total suspended solids (TSS) were found above laboratory detection limits in only the August 27, 2015 sample, all other TSS results were below laboratory detection limits.

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

Please do note that your water quality exceeds health and/or aesthetic statewide standards. You may consider exploring remedial actions regarding the parameters listed in the table above.

Please contact Joe Lichtinger at (814) 332-6869 if you have any questions about the Department's determination regarding the Water Supply.

Sincerely,



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

cc: WQSS Scott Lux\WQS Cory Deniker (via email)
Michael A. Braymer (via email)
Katherine M. Knickelbein (via email)
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Enclosures:

Sample Results
"How to Interpret a Water Analysis Report" booklet