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pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISTRICT OIL AND GAS OPERATIONS

July 18, 2014

CERTIFIED MAIL NO. [REDACTED]

Re: 2012 Oil and Gas Act, Section 3218 Determination
DEP Identifier 273024
Madison Township, Clarion County

Dear [REDACTED]

On October 4, 2010, the Department forwarded to you the results associated with the sampling of the water supplies located at [REDACTED]. I have enclosed a copy of that letter and its attachments. In review of the files associated with the DEP Identifier under which [REDACTED] water wells were investigated, it is evident that the Department did not send you a final determination letter, as is our protocol. As you may remember, the gas migration into the [REDACTED] water wells was explained to you as being sourced from the historic abandoned gas and or oil wells in the area. These wells have yet to be plugged under Pennsylvania's Abandoned Well Plugging Fund.

The Department has made a determination that the [REDACTED] water supplies have been affected by oil and gas drilling. Should you have any questions or updates to report, please contact Chris Miner at 814.332.6860. Thank you for your patience in this matter.

Sincerely,

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

Enclosures

Cc: Travis Walker (w/encl.)
Chris Miner (w/encl.)
[REDACTED]



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHWEST REGIONAL OFFICE

October 4, 2010

[REDACTED]

Re: Water Sample Results/Hazards of Natural Gas in a Water Well
Complaint ID No. CID No. 273024
Madison Township, Clarion County

Dear [REDACTED]

Our investigation of your area conducted on July 26, 2010 and August 26, 2010, indicates there is natural gas in your water supply. This natural gas was found to be in the headspace and dissolved in water of the water well that was drilled approximately during the year 2000. As you explained, natural gas was known to be in your previous water supply on site, a 20 to 30 foot deep water well. The previous well had experienced several explosions which were likely related to natural gas, as you informed us. The analyses and other related information are enclosed for your records.

Methane is the predominant component of natural gas. Drinking water standard limitations have not been established for methane gas and we do not know of any associated health risks. In general, methane levels in water wells are under .5 mg/l. The true level of concern begins above 28 mg/l methane, which is what we call the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional methane. The potential hazard occurs when the water is used for extended periods of time. This may allow the gas to come out of the water and concentrate in the air space of your home or building. There is a **physical danger of fire or explosion** due to the migration of natural gas into water wells or through soils into dwellings where it could be ignited by sources that are present in most homes/buildings. Natural gas migration can also cause a threat of asphyxiation, although this is extremely rare.

When the Department is made aware of methane levels greater than 3 mg/l, we notify the water supply owner of the hazards associated with methane in their water supply. Please be aware however, that the methane levels can fluctuate somewhat. This means that even with a relatively low level of methane, you should be ~~vigilant~~ of changes in your water that could indicate an increase in methane concentration.

October 4, 2010

It is the Department's recommendation that all water wells should be equipped with a working vent. This will help alleviate the possibility of concentrating these gases in areas where ignition would pose a threat to life or property. Please note that it is not possible to completely eliminate the hazards of having natural gas in your water supply by simply venting your well.

The sample results reveal that your water supply is affected by natural gas contamination. The cause of the gas migration in your area is currently unknown and remains under investigation by DEP. We will continue monitoring events in and around your area. Should you have any questions concerning this matter, please feel free to contact me.

Sincerely,



Christine J. Miner, P.G.
Licensed Professional Geologist
Oil and Gas Management

Enclosures

cc: Brian Shank
Chad Meyer
Don Cornell
Steve Lencer
Christine Miner
File

CJM:lsf