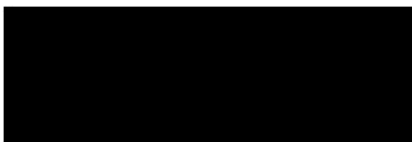




Pennsylvania
Department of
Environmental Protection

October 24, 2024

CERTIFIED MAIL NO. 958907105270062137



Re: Water Supply Investigation
DEP Identifier 362602
Positive Determination -- 58 Pa. C.S § 3218
South Bend Township, Armstrong County

Dear 

The Department has completed its investigation of your property shown on Figure 1 (attached). Based on the information obtained to date, the Department has determined that your property was impacted by active oil and gas operations. Based on our investigation, the operation of a nearby coal bed methane ("CBM") well 005-29814 (Kenneth Kisiel et ux NT3) is believed to be the cause of your water quantity issue. The investigation is summarized below.

CASE INFORMATION

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color, gas)
February 28, 2022	Wells would dry up when nearby CBM well was operating

INVESTIGATION SUMMARY

The Department completed a site visit on March 3, 2022. Three water wells are on the property. Two of the water wells were drilled in 2002 when the house was built. One of the wells is about 135 feet deep ("House Well 1") and the other is about 275 feet deep ("Farm Well"). You reported you bought the house in 2011 and had issues with your supply of water, so you drilled another water well that is 400 feet deep ("House Well 2"). In addition, two 400-gallon holding tanks were installed in the basement. The house wells are on an alternating switch controlled by a float in the holding tanks. The Farm Well is used for husbandry, primarily for watering horses.

NORTHWEST DISTRICT OIL & GAS OPERATIONS
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If needed, you can divert water from the farm well to the holding tanks for house use. Water from the two house wells flows through an in-line sediment filter before it flows into the holding tanks. The water then flows through a water softener before it gets used in the house. The farm well gets pumped through an in-line sediment filter and water softener before it gets used on the farm.

The Department met with Diversified Energy ("Diversified") on March 23, 2022 to discuss the diminution. Kenneth Kisiel et ux NT3 (Permit No. 005-29814), which is a coal bed methane well, is located approximately 390 feet from the house. It was drilled in 2008 by CNX and was later bought by Diversified. Diversified stated that they are pumping directly off the coal seam about 800 feet below ground surface. The water pump is on a timer that runs for 15 minutes, then is off for a full 60 minutes before it kicks on again. From February 18, 2022 to May 2, 2022 Diversified reported a total of 27,409.20 gallons of water pumped from 005-29814. The Department collected a water sample from 005-29814. In addition, the Department collected a water sample from the Farm Well and from the house wells.

On April 15, 2022, you reported to the Department that you started running out of water from the Farm Well, and sometime between May 30, 2022 and June 4, 2022, you started running out of water from the house wells. On June 7, 2022, the Department contacted Diversified to see if they could stop producing the 005-29814 well. They stopped production that day and agreed to keep it off all summer. Even though the summer was dryer than normal, you reported that you were able to fill the holding tanks by manually overriding the house well system and using the Farm Well while 005-29814 was not producing.

On November 8, 2022, the Department attempted to run a pump test. The Department installed a Level Troll 700 (Troll) water level logger and 200 feet of vented cable in House Well 2. The water level was measured at 25.10 feet below top of casing ("BTOC"), and the Troll was set at 156.17 feet BTOC. On November 11, 2022, 005-29814 was put back into production. On November 13, 2022, you contacted the Department stating that you started running low on water. The Department returned to the site on November 14, 2022 and found the Troll was giving false readings due to iron/sediment on the probe. The Troll was pulled, and the Department observed the water level had decreased to below the level of the Troll and iron staining was observed the entire length of the cable from approximately the original water level at 25 feet BTOC to the Troll. The Department contacted Diversified and let them know of the situation and asked them to shut the well back down. Diversified shut the well back down that day. On November 23, 2022, you reported you were able to fill the tanks from the house wells without having manually override or use the farm well.

LABORATORY RESULTS

Parameter	Diversified well 005-29814 3/31/22	Devitt Farm Water Well 3/31/22	Devitt House Water Wells 3/31/22	DEP Drinking Water MCLs
Alkalinity (mg/l)	205.2	475.2	250.4	
Barium (mg/l)	0.926	0.011	0.068	2
Bromide (mg/l)	12.593	<0.2	<0.2	
Calcium (mg/l)	217	359	135	
Chloride (mg/l)	1692.07	4.22	200.43	250
Hardness (mg/l)	646	1528	517	
Iron (mg/l)	12.2	16.3	<0.100	0.3
Magnesium (mg/l)	25	153	43.5	
Manganese (mg/l)	0.428	5.68	<0.010	0.05
pH	7.9	7.2	7.7	6.5 - 8.5
Potassium (mg/l)	4.96	4.05	2.04	
Sodium (mg/l)	1566	411	18.9	
Specific Cond (umhos/cm)	8070	3740	1056	
Strontium (mg/l)	6.36	4.35	0.719	
Sulfate (mg/l)	1715.07	2017.62	44.14	250
TDS (mg/l)	5420	3454	658	500
TSS (mg/l)	74	28	<20	
Methane (mg/l)	30.1	0.035	<0.0116	*7
Ethane (mg/l)	1.53	<0.0124	<0.0124	
Propane (mg/l)	0.334	<0.0142	<0.0142	
Turbidity (NTU)	62	209	<1	**1
Aluminum (ug/l)	<15	<15	<15	200
Arsenic (ug/l)	<3	<3	<3	10
Selenium (ug/l)	<4	<4	<4	50
Lithium (ug/l)	116	82	<25.0	
Zinc (ug/l)	<30	<30	<30	5000

BOLD- Above Drinking Water MCLs.

***** DEP Action Level

****** Only applicable to unfiltered surface water sources

The above chart shows the total dissolved solids ("TDS") sample results collected at 005-29814, the Farm Well, and the house wells. The TDS results came back above the Department's Division of Drinking Water Management Maximum Contamination Levels, Maximum Residual Disinfectant Levels (MCLs). Specifically, Iron, Manganese, Sulfate, and TDS results for the Farm Well were above MCLs. Iron, Manganese, Sulfate and TDS are listed as a Secondary

Contaminant. Secondary Contaminants are not known to have any negative health affects. They generally cause issues with aesthetics, taste and possibly technical issues with household appliances. None of the other parameters were above MCLs.

There are nine gas wells mapped within 2,500' of the wells. Based on the Department's records, all nine wells are active conventional wells, with 4 being CBM wells. The permit dates range from 1980-2008. The southeast corner of Eastern Gas Transmission and Storage's South Bend Storage Field and buffer is also inside the 2,500' buffer. One of the gas wells (005-29879) had violation 78.57(a)- Control, Storage and Disposal of Production Fluids noted on the inspection report. The violation was due to a leaking valve. The valve was replaced shortly after the inspection, and the well is no longer in violation.

Based on observations during the site visits, information provided by you, and the review of relevant documents, the Department determines that your diminished water supply was impacted by oil and gas activity water being pumped from 005-29814 for production. The operator has reported that 005-29814 can be produced without pumping water and has been producing the well without pumping water since November 14, 2022. The Department is working with the Diversified to get a written plan that includes production of 005-29814 without pumping.

Please contact Alicia Furey at 814-332-6132 if you have any questions about the Department's determination regarding this water supply investigation.

Sincerely,

Scott M. Dudzic

Scott M. Dudzic
Northwest District Oil and Gas Manager
District Oil and Gas Operations

Enclosures: Figure 1
Laboratory Results

cc: Lichtinger (email)
Furey (email)
Strobel (email)
McDonough (email)

Attachments

CONFIDENTIAL

Figure 1

