Appendix H

Ohio EPA Letter Dated November 16, 2004, to Bainbridge Township Trustees Regarding Natural Gas in Police Station Well at 8353 Bainbridge Road

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 E. Aurora Road
Twinsburg, Ohio 44087-1969

TELE: (330) 963-1200 FAX: (330) 487-0769
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Bob Taft, Governor
Jennette Bradley, Lieutenant Governor
Christopher Jones, Director

November 16, 2004

RE: BAINBRIDGE TOWNSHIP POLICE STATION
GEAUGA COUNTY
PWS ID# 2872012
NON-TRANSIENT NON-COMMUNITY PWS

Bainbridge Township Trustees
17826 Chillicothe Rd
Chagrin Falls, OH 44023

Dear Owner/Operator:

Ohio EPA has completed the assessment of your source of drinking water. Enclosed is a Drinking Water Source Assessment Report for Bainbridge Township Police Station. This report provides a map of your drinking water source protection area showing the locations of potential contaminant sources, and an evaluation of how susceptible your water source is to contamination. This report is based on available information and the inventory of potential contaminant sources that Ohio EPA staff recently conducted at your facility.

The attached report includes a checklist of suggested protective strategies for each type of potential contaminant source identified within your protection area. Ohio EPA strongly encourages you to check off those actions you consider feasible, propose a deadline for completing them, and fax or mail a copy of the checklist back to Ohio EPA. This completed checklist then will serve as your Drinking Water Source Protection Plan.

Please take a moment to review the attached report. Any request to revise this report must be received in writing, by Ohio EPA, postmarked no later than thirty days from the date indicated at the top of this letter. This report may ultimately be posted on Ohio EPA's web site (http://www.epa.state.oh.us/ddagw/pdu/swap.html) for public viewing.

If you have any questions concerning this report, please feel free to contact me at Ohio EPA's Northeast District Office (330-963-1149).

Sincerely,

Kathy Metropulos
Geologist
Division of Drinking and Ground Waters

KM:bo

attachments: Drinking Water Source Assessment Report

pc: Nancy Rice, Manager, DDAGW-DW, NEDO
Barb Lubberger, DDAGW-CO (cover letter only)

Police Station personnel. Based on visual observation during the site visit, eight potential sources of contamination were identified within and near the protection area (see Figure 1). A facility or activity is included if it has the **potential** to release a contaminant, based on the kinds and amounts of chemicals typically associated with that type of facility or activity. It is beyond the scope of this assessment to determine whether any specific potential source is **actually** releasing (or has released) a contaminant to ground water. Bainbridge Township Police Station staff should be alert to the possible presence of potential sources of contamination that are not on this list.

GROUND WATER QUALITY. A review of Bainbridge Township Police Station's water quality record currently available in Ohio EPA's drinking water compliance database did not reveal any evidence of chemical contamination at levels of concern in the aquifer. However, information in the public drinking water file indicates that there is a problem with natural gas in the well. Arsenic was also detected on seven occasions below the concentration of concern of 10.0 micrograms per liter (µg/l), and on one occasion at 24 µg/l. Please note that while the presence of arsenic can be due to manmade contamination, arsenic is also a naturally occurring metal commonly present in Ohio's ground waters. Since Bainbridge Township Police Station's inventory did not reveal any current or historic facilities within the protection area handling significant amounts of arsenic-containing materials (such as pesticides, embalming fluids, wood preservatives, etc.), the presence of arsenic in the ground water is assumed to be naturally-occurring and does not in itself indicate a high susceptibility to manmade contamination. Please contact your drinking water inspector if you have any questions about your system's arsenic levels.

Please note that this water quality evaluation has some limitations:

- Ohio EPA water quality requirements are for water that is actually being provided to the public for consumption (tap water). If a treatment system is used, the water quality data evaluated is for treated water only, and not the water before treatment.

  Sampling results for coliform bacteria and naturally-occurring inorganics were not evaluated for this assessment, because they are not a reliable indicator of aquifer contamination.

SUSCEPTIBILITY ANALYSIS. The susceptibility of the aquifer (source of drinking water) to contamination was determined by evaluating: (1) available site-specific and regional information (i.e., aquifer material, topography, soils, rate of ground water recharge, etc.), (2) pollution potential rating of the drinking water source protection area, (3) available ground water quality data, and (4) potential contaminant sources that were identified within the drinking water source protection area. The results of this evaluation indicate that the aquifer within the protection area has a high susceptibility because of the following reasons:

- Potential significant contaminant sources in the in the form of natural gas, possibly from nearby oil and gas well activity, exist near the protection area.

PROTECTIVE STRATEGIES. Each public water supplier can take a few simple steps to protect the drinking water source. The attached checklist identifies strategies for protecting your drinking water source from the potential contaminant sources located on your property. Please be aware that the oil and gas activity warrants concern. Future regulations may require treatment of arsenic if it is found above the new arsenic standard of 10 µg/l (to be implemented in 2006). More information and technical assistance are available by contacting your drinking water representative at Ohio EPA. There are several protective strategies, listed at the top of the checklist, that address potential threats from off-property sources. Ohio EPA encourages all parties to work together to address water quality concerns and help protect Ohio's valuable drinking water

DRINKING WATER SOURCE ASSESSMENT for Bainbridge Township Police Station (PWS ID #2872012)

Protecting Ohio's Drinking Water Sources
OhioEPA

November 2004

INTRODUCTION. The 1996 Amendments to the Safe Drinking Water Act establish a program for all states to assess the drinking water source for all public water systems. Ohio's Source Water Assessment and Protection (SWAP) Program is designed to help public water systems protect their sources of drinking water from becoming contaminated. This assessment:

- Identifies the drinking water source protection area, based on the area that supplies water to the wells;
- Inventories the potential contaminant sources in the area;
- Evaluates the susceptibility of the drinking water source to contamination; and
- Recommends protective strategies.

The purpose of this assessment is to provide information that Bainbridge Township Police Station can use to help protect its source of drinking water from contamination.

SYSTEM DESCRIPTION. Bainbridge Township Police Station is located on Bainbridge Road in Bainbridge, Ohio. This facility is a non-transient non-community public water system that pumps approximately 560 gallons of water per day (GPD) from one well located behind the police station. The well is 280 feet deep below the ground surface and has a casing length of 138 feet. Bainbridge Township Police Station draws water from a sandstone aquifer (water-rich zone), called the Berea Sandstone. The aquifer is covered by 111 feet of low-permeability material, which may provide protection from contamination. The top of the aquifer is 229 feet below the ground surface. Depth to water in this aquifer is 163 feet below the ground surface.

PROTECTION AREA. The drinking water source protection area for Bainbridge Township Police Station's well is a half-circle shaped area (Figure 1) that includes two zones, one inside the other. The "inner protection zone" is the area that provides ground water to Bainbridge Township Police Station's well within one year of pumping. A chemical spill in this zone poses a greater threat to the drinking water, so this area warrants more stringent protection. The "outer protection zone" is the additional area that contributes water when the well is pumped for five years.

The protection areas were determined using a variation of the volumetric equation, which requires values for the well's pumping rate, the aquifer thickness, and the aquifer porosity. Information on regional ground water flow direction was available from water level elevation map supplied by the United States Geological Survey (USGS). The value for pumping rate was taken from Ohio EPA's files, aquifer thickness was determined from the well log, and aquifer porosity was a default value for sandstone aquifers (listed on Figure 1). A more precise protection area could be determined if more detailed aquifer information were available. If you would like to have more information about how this protection area was derived, or if you would like to collect additional information and revise your protection area, please call Ohio EPA staff listed at the end of this report.

INVENTORY. On October 19, 2004, an inventory of potential contaminant sources located within the drinking water source protection area was conducted by Ohio EPA with the assistance of Bainbridge Township

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