



State of Ohio Environmental Protection Agency

Northwest District Office

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

Re: April 2007 Ground Water Event
GMPT Landfill, Defiance County

July 24, 2007

Mr. Chuck Renn
Environmental Engineering
General Motors Powertrain
P. O. Box 70
Defiance, Ohio 43512-0070

Dear Mr. Renn:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the June 2007, report documenting the statistical evaluation of ground water monitoring data. The report documents for the April 23-25, 2007, sampling event for the General Motors Powertrain Landfill. The submittal was reviewed to determine compliance with OAC Rule 3745-30-08. Ohio EPA comments are detailed below.

COMMENTS

Violations

1. **OAC Rule 3745-30-08(C)(5):** GM Powertrain is in violation of OAC Rule 3745-30-08(C)(5) requiring that "...*The statistical method specified shall ensure protection of human health and safety and the environment...*" GM Powertrain needs to evaluate the current statistical methods (to address all issues in this comment and in Comment No. 2 below) and submit all necessary documentation to Ohio EPA.

As detailed in Comment No. 2 below, compliance with OAC Rule 3745-30-08(B)(1)(a) cannot be determined at this time because Ohio EPA is questioning the use of elevated iron data from MW-10DR in the statistical background database. These elevated iron data from MW-10DR have significantly increased the tolerance limit (trigger level) for iron in the downgradient wells. For example, the tolerance limit for iron (for all downgradient wells) has increased from 5,400 µg/L in October 2003, to 18,000 µg/L in April 2007. This means that iron concentrations at the downgradient monitoring wells, which generally range from less than 100 µg/L to approximately 1,800 µg/L could increase on the order of 10- to 100-fold without causing a statistical trigger.

Therefore, potential releases from the landfill, impacting the ground water quality for iron, could easily be masked by the current statistical method. This conflicts with the fundamental purpose of the ground water monitoring program (to detect and assess potential releases from the landfill) and as such does not ensure the protection of human health and safety and the environment. Therefore, the owner/operator is in violation of OAC Rule 3745-30-08(C)(5).

More Information Needed to Determine Compliance

2. OAC Rule 3745-30-08(B)(1)(a): Compliance with OAC Rule 3745-30-08(B)(1)(a) cannot be determined at this time.

As stated in the January 25 and July 10, 2006, letters from Ohio EPA, "**OAC Rule 3745-30-08(B)(1)(a) requires that the ground water monitoring network include wells which can yield samples which *Represent the quality of the ground water that has not been affected by past or present operations at the landfill facility.***"

The concentrations of dissolved iron at upgradient well MW-10DR exhibit an increasing trend over the past few years....the dissolved iron concentrations at MW-10DR have increased and have been in the range of 2,400 to 3,750 µg/L during the last seven sampling events....these concentrations at MW-10DR are well above those at the other upgradient wells, which typically exhibit dissolved iron concentrations below 600 µg/L....

Therefore, while MW-10DR is an upgradient monitoring well for the landfill facility, Ohio EPA questions whether or not the ground water quality data from MW-10DR represents the quality of the ground water that has not been affected by past or present operations at the landfill facility....

This issue was first documented in the September 8, 2004, letter from Ohio EPA and was restated in the February 1, 2005, letter from Ohio EPA. Further, this issue was discussed during a February 8, 2005, meeting between representatives of the owner/operator, RMT, Inc. and Ohio EPA. The owner/operator needs to notify Ohio EPA of its intentions regarding this issue as soon as possible."

In response to this comment, GM Powertrain has asserted that MW-10DR is capable of yielding samples which represent the quality of the ground water that has not been affected by past or present operations at the landfill facility.

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It appears that GM Powertrain is basing this assertion on a demonstration submitted in a September 9, 2004, letter (from GM Powertrain) and the point that MW-10DR is upgradient of the residual waste landfill and the secondary basin.

However, the December 15, 2004, letter from Ohio EPA disputed the demonstration in the September 9, 2004, letter from GM Powertrain. Further, the fact that MW-10DR is upgradient of the landfill and secondary basin does not necessarily mean that the quality of ground water at MW-10DR represents the quality of the ground water that has not been affected by past or present operations at the landfill facility.

Considering this, Ohio EPA maintains its position that to assure compliance with OAC Rule 3745-30-08(B)(1)(a), GM Powertrain needs to do one of the following:

- Submit documentation to Ohio EPA which provides support for a demonstration that MW-10DR is capable of yielding samples which represent the quality of the ground water that has not been affected by past or present operations at the landfill facility;

OR

- Remove dissolved iron data collected from MW-10DR from the statistical background database. Specifically, data dissolved iron data from MW-10DR from October 2001 to present;

OR

- Switch to an intra-well statistical method for the downgradient monitoring wells. This would be done after the Sampling & Analysis Plan (SAP) was revised to document these changes to the statistical methods;

GM Powertrain needs to notify Ohio EPA of its intentions regarding this issue as soon as possible.

3. OAC Rules 3745-30-08(C)(1) and (C)(1)(C) As detailed below, more information is needed to determine compliance with OAC Rules 3745-30-08(C)(1) and (C)(1)(C).

OAC Rule 3745-30-08(C)(1) requires that **“the ground water monitoring program shall include consistent sampling and analysis procedures...that are designed to ensure monitoring results that provide an accurate representation of ground water quality...”**.

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Further, OAC Rule 3745-30-08(C)(1)(C) requires that the Sampling & Analysis Plan (SAP) include a detailed description of the procedures and techniques to be used for the performance of "field analysis".

The SAP states "Purging will be considered complete, and stabilization reached, when three of the four following conditions have been reached for three consecutive readings:

Temperature: three consecutive readings within ± 0.5 C
pH: three consecutive readings within ± 0.2 Standards Units (SU)
Specific conductance: three consecutive readings within ± 5 percent
Turbidity: three consecutive readings within ± 10 percent, or two consecutive readings below 10 NTU".

Based on review of current technical literature, Ohio EPA agrees with the stated parameter fluctuation for stabilization of temperature and that parameter fluctuation be monitored for stabilization over three consecutive measurements. However, Ohio EPA also believes that the stabilization of purge water within ± 0.1 SU for pH and within ± 3 percent for specific conductance are essential in evaluating when purging can be terminated.

To assure compliance with OAC Rules 3745-30-08(C)(1) in the future, the owner/operator needs to do one of the following:

revise the SAP to document the field parameter stabilization criteria noted above, followed by field implementation;

OR

demonstrate to Ohio EPA how the current field parameter stabilization criteria in the SAP meet the requirements of OAC Rule 3745-30-08(C)(1).

Statements

4. As previously stated in the January 25, 2006, August 25, 2006 and January 23, 2007 letters from Ohio EPA, "The concentrations of sodium, sulfate and total dissolved solids (TDS) at upgradient well MW-11D have increased significantly in recent events. For sodium, the concentrations ranged between 146 mg/L and 160 mg/L, but jumped to 270 mg/L for the October 2005 sampling event. For sulfate, historical concentrations were usually less than 500 mg/L. However, the sulfate concentrations have been increasing and reached 1,800 mg/L for the October 2005 sampling event.

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For TDS, historical concentrations were usually less than 1,000 mg/L. However, the TDS concentrations have been increasing and reached 2,840 mg/L for the October 2005, sampling event.

Of these constituents, sulfate and TDS are statistical parameters. Although elevated, these recent concentrations of sulfate and TDS now approximate concentrations observed typically at upgradient well MW-10DR. Considering this, the elevated sulfate and TDS concentrations at MW-11D have not affected (have not increased) the statistical tolerance limits for sulfate or TDS. The owner/operator should closely monitor the sodium, sulfate and TDS concentrations at MW-11D in future sampling events."

For the April 2007, semi-annual sampling event, sulfate and TDS concentrations at MW-11D increased to the highest concentrations ever recorded for MW-11D (sodium was not monitored during this event). The concentration of sulfate reached 2,000 mg/L and the concentration of TDS reached 3,210 mg/L. Although the highest at MW-11D, these concentrations are similar to those seen at upgradient well MW-10DR in the past. Considering this, Ohio EPA maintains its position that the owner/operator should closely monitor the sodium, sulfate and TDS concentrations at MW-11D in future sampling events.

If you have any questions please feel free to contact Ken Brock at the Ohio EPA Northwest District Office (419-373-3143). Any written correspondence should be sent to the attention of Mike Reiser, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,

Michael A. Reiser

Michael A. Reiser, R.S.
Environmental Supervisor
Division of Solid and Infectious Waste Management

//lr

pc: Tamara Moorman, RMT, Inc.
Jack Leow, DDAGW, NWDO
Ken Brock, DDAGW, NWDO
~~Defiance County, GMP, Landfill, Ground Water~~
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