



State of Ohio Environmental Protection Agency

Northeast District Office

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

May 6, 2009

**RE: ALCOA LANDFILL
GROUND WATER MONITORING**

Mr. Richard King, Jr.
Aluminum Company of America
1600 Harvard Avenue
Cleveland, Ohio 44105

Dear Mr. King:

The Ohio Environmental Protection Agency (Ohio EPA) Northeast District Office (NEDO) Division of Solid and Infectious Waste Management (DSIWM) received the "Semi-Annual Sampling and Analysis Report, June 2007 Sampling Event and Assessment Monitoring Report." The document was dated August 31, 2007 and received by Ohio EPA on September 4, 2007. It was prepared for ALCOA's Cleveland Works Landfill by Environmental Management and Consulting, Inc. (EM&C). The document was submitted in accordance with Ohio Administrative Code (OAC) Rules 3745-30-08(C) and (E) of the revised 2003 Residual and Industrial Solid Waste Disposal Regulations.

The June 2007 results are consistent with this site's historic ground water quality data.

- Volatile organic compounds (VOCs) are above background concentrations at upper aquifer system (UAS) well AL-21, where vinyl chloride is 2.9 ug/L and cis-1,2-DCE is 5.8 ug/L.
- VOCs are also above background at significant zone of saturation (SZS) wells AL-24 and AL-28. Well AL-24 contains 1,1-DCA (18 ug/L), 1,1,1-TCA (1.9 ug/L), TCE (1.0 ug/l) and cis-1,2-DCE (2.7 ug/L). Well AL-28 contains 1,1-DCA (30 ug/L), vinyl chloride (5.3 ug/L), TCE (1.1 ug/l) and cis-1,2-DCE (4.6 ug/L).
- Upgradient SZS wells AL-27 and AL23S also contain VOCs. AL-27 contains 1,1-DCA (1.8 ug/L). AL-23S contains chloroethane (1.9 ug/L) and 1,1-DCA (8.8 ug/L).
- Ammonia is significant at UAS wells AL-21 (8.1mg/L) and AL-25 (7.6 mg/L)
- Nitrate-nitrite is significant at the SZS well AL-24 (2.8 mg/L).
- The MCL for arsenic (10 ug/L) is exceeded at UAS downgradient well AL-25 (arsenic, 19.9 ug/L). However, arsenic at UAS background well AL-22 is 54.4 ug/l which is higher than the downgradient well.
- Potassium is at least three times the background concentration at UAS wells MW-1 (16.4 mg/L), AL-20 (9.89 mg/L), AL-21 (19 mg/L) and AL-25 (45.2 mg/L).
- Other parameters above background are: sulfate, alkalinity, barium and manganese in the UAS; and sodium and vanadium in the SZS.

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Upon review of the document, Ohio EPA determined that Alcoa is in violation of the following:

OAC Rule 3745-30-08(C)(1) states "The ground water monitoring program shall include consistent sampling and analysis procedures that are protective of human health and safety and the environment and that are designed to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells installed in accordance with paragraph (B) of this rule. Sampling and analysis procedures employed in the ground water monitoring program shall be documented in a sampling and analysis plan which shall be included in the ground water monitoring program plan required by paragraph (A) of this rule, and which shall also be available for inspection at the landfill facility. The owner or operator shall use the methods documented in the sampling and analysis plan. Changes to the plan shall be submitted to Ohio EPA sixty days before implementation..."

OAC Rule 3745-30-08 (C)(8) states "All ground water analysis results, statistical analysis results, and ground-water elevation data generated in accordance with paragraphs (C), (D), (E), and (F) of this rule shall be submitted to Ohio EPA not later than seventy-five days after sampling the well. All ground water data and accompanying text shall be submitted on a form specified by the director."

Alcoa is in violation for failing to use the methods documented in the sampling and analysis plan and therefore also failing to submit all ground water analysis results. The sampling and analysis plan (revised 11/29/2003 and updated 2/22/2005) states on page 18 that laboratory analyses will be performed utilizing USEPA approved test procedures for water and wastewater analysis. According to USEPA SW846 method 8260B section 5.9 "each sample undergoing GC/MS analysis must be spiked with surrogate spiking solution prior to analysis." The laboratory Analytical Report (Appendix 3) of the subject document is missing analyses of surrogate compounds for each individual well sample for VOCs. Surrogate analyses were only reported for the method blank and the laboratory control sample.

To return to compliance Alcoa must submit a corrected laboratory report if available. Subsequent analyses of VOCs must be conducted in accordance with the plan and USEPA SW846.

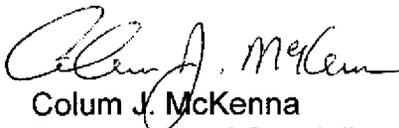
In addition, Ohio EPA identified that VOCs and high concentrations of ammonia have been detected in SZS upgradient wells AL-27 and AL-23S. Ohio EPA recommends that Alcoa determine of the source of these contaminants.

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Ohio EPA recommends that the extent of waste be shown on the Groundwater Elevations and Flow Maps of the Uppermost Aquifer and the Significant Zone of Saturation.

If you have any technical questions regarding this review, please contact Kathryn Epp at (330) 963-1233. Please submit all correspondence to Colum McKenna, Division of Solid and Infectious Waste Management, Northeast District Office, Ohio EPA, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Sincerely,



Colum J. McKenna
Environmental Specialist
Division of Solid and Infectious Waste Management

CJM:cl

cc: Kathryn Epp, DDAGW-NEDO
Patrick Cook, Tetra Tech NUS
Andy Mehalko, URS
Tom Anderson, EM&C
Dane Tussel, Cuyahoga County Board of Health
File: [Kurko/LAND/Alcoa Landfill/COR/18]

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