



State of Ohio Environmental Protection Agency

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January 31, 2006

Mr. Johnny Reising
U. S. Department of Energy
Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246

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RE: COMMENTS ON ADDENDUM TO WSA PHASE II DESIGN REPORT

Dear Mr. Reising:

This letter provides Ohio Environmental Protection Agency comments on the Addendum to the Waste Storage Area Phase II Design Report and on your responses to our comments on Revision A of that document.

If you have any questions please contact Tom Ontko or me.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric, U.S. EPA
Mark Shupe, GeoTrans, Inc.
Michelle Cullerton, Tetra Tech EM Inc.

Ohio Environmental Protection Agency Comments on the Addendum and the Responses to Comments on the Waste Storage Area Phase II Design Report

- 1) Commenting Organization: Ohio EPA Commentor: OFFO
 Section #: Pg #: Line #: Code: general
 Comment: We are writing these comments with the assumption that the contamination in the wells monitoring the perched system to the northeast portion of the Waste pits is indeed a limited, perched system. Should that prove not to be the case and remediation of the perched system becomes necessary, please specify what documents or submittals will address the remediation of the perched system.
- 2) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
 Section #: 1.0 Pg.#: 1 Line #: 27 Code: C
 Original Comment #
 Comment: The sample used to investigate speciation was collected from Geoprobe 13342, located in very close proximity to Monitoring Well 2010, a well that is believed to have been impacted by biofouling. The occurrence of biofouling is inferred from the observed elevated manganese concentrations in this well relative to the Geoprobe sample. The speciation analysis, therefore, is likely representative of biofouled aquifer near the well. Assuming that the affects of biofouling are highly localized to the immediate vicinity of the affected monitoring wells, the resulting kd determined from this analysis is, therefore, questionable regarding to its general applicability to aquifer that is unimpacted by biofouling. For example, where biofouling is actively occurring, Cullimore (1993) indicates that oxidizing or precipitating bacteria within the bacterial growth cause the precipitation of iron and manganese oxides while iron reducing bacteria cause the release of iron and manganese back into solution. In order to determine manganese speciation that is more representative of the aquifer (e.g., away from isolated locations that are biofouled), therefore, groundwater speciation and kd determination analyses should also consider groundwater samples collected from a non-biofouled portion of the aquifer.
- 3) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
 Section #: 3.0 Pg.#: 4 Line #: 6 Code: C
 Original Comment #
 Comment: The text indicates that the difference between the manganese concentrations in Monitoring Well 2010 and Location 13342 implies that biofouling is occurring in the vicinity of this well. In addition, the text indicates that the net result of this biofouling is the concentration of manganese around the well screen. Metallic compounds are often bioaccumulated in a sequential manner around water wells. Iron and zinc concentrate very close to the well screen, while manganese accumulates further out (Cullimore, 1993). The results from Geoprobe 13342, however, seem to contradict the anticipated pattern. In addition, biofouling is not inferred at other Waste Storage Area monitoring wells (2649, 3009, 2008, 2034, etc.) monitored (and therefore pumped) for a similar period as was done for Monitoring Well 2010. Given the

at
large, will the elevated manganese concentrations in the Waste
Storage Area in any way compromise remedy effectiveness by
causing a greater incidence of screen/formation plugging?

Reference

Cullimore, D.R., 1993. Practical Manual of Groundwater Microbiology. Lewis
Publishers, Boca Raton, Florida.