

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Sybil Kolon, Pall Life Science (PLS) Project Manager
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FROM: Jim Coger, Geologist
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Jackson District Office

DATE: April 27, 2009

SUBJECT: Review of the PLS, April 15, 2009 Work Plan for Well/Borings Evergreen System
(Work Plan)

I have reviewed the subject Work Plan. The Well Boring/Well Installation Methods Section of the Work Plan appears to follow generally acceptable drilling/monitoring well installation methods.

Pall, however, should minimize the amount of water added to the augers during vertical profiling activities. The addition of water and the maintenance of a positive hydraulic head in the drill string may defeat the Simulprobe's capability of collecting representative formation water. For the area north of Dexter/Ann Arbor Road, the identification and characterization of contaminant preferential flow paths, may be contingent on vertical profiling methodologies that are capable of detecting 1,4-Dioxane in the low microgram per liter range.

As we discussed at the April 3, 2009 meeting with the Pall group, a minimum of two nested monitoring wells are needed for the area between Dexter/Ann Arbor Rd. and Sequoia Parkway. At least two additional nested wells are needed to evaluate/calibrate the potentiometric contouring, depicted on Pall's most recent Evergreen Study flow maps.

The monitoring well location (Bernice and Center) proposed by Pall in the Work Plan appears to be a good location. A single additional monitoring well location, however, will not provide a sufficient data set to evaluate hydraulic gradients for the area between Bernice and Center and Maple Road along Sequoia Parkway. A second well nest should be installed in the general area of Maple Road and Sequoia Parkway. The second location (Maple/Sequoia) will provide regionally proximate hydraulic head elevations, across the northern portion of the Evergreen Study area.

Upon installation and development of the two new monitoring well nests, groundwater elevations should be measured in several of the Evergreen area wells. As noted in the Recommendations Section of Rick Mandle's April 21, 2009 memo, groundwater elevations should be measured on the same day in the new monitoring wells, and MW-120s&d, MW-121s&d, MW-54s&d, MW-122s&d, MW-KD1s, MW-113, MW-BE1s&d, MW-107, MW-47s&d, MW-101, MW-92, and MW-110. The groundwater elevations from the new and existing wells should provide additional data points for evaluating the "under pumping" potentiometric contouring depicted by Pall in the Evergreen Study figures.

Additional performance monitoring wells will be needed north of Dexter/Ann Arbor Road to address noted changes in groundwater flow direction due to variable purging scenario's, and/or as sentinel wells for compliance monitoring.

If you have any questions or comments please let me know.

JC/KJ

cc: Mitchell Adelman, RRD
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