

Michael Schmoller  
Wisconsin Department of Natural Resources  
South Central Region  
3911 Fish Hatchery Road  
Fitchburg, WI 53711

Subject:

Groundwater Remedial Strategy, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin. Facility ID No. 113125320, BRRTS No. 02-13-001569

Dear Mr. Schmoller:

On June 26, 2013, ARCADIS, on behalf of Madison-Kipp Corporation, presented a summary of the in-situ chemical oxidation (ISCO) pilot test, an overall bedrock remediation overview, the results of the site-specific groundwater fate and transport modeling, and a proposed groundwater remedial strategy at a meeting held at Madison-Kipp. Representatives from the Wisconsin Department of Natural Resources (WDNR), United States Environmental Protection Agency, Wisconsin Department of Justice, City of Madison Department of Public Health, and the Wisconsin Department of Health Services attended the meeting.

Based on subsequent discussions with WDNR, a meeting was held on September 24, 2013, with Madison-Kipp, ARCADIS and WDNR at Madison-Kipp. The intent of the meeting was to focus on the groundwater remedial strategy for the site. As discussed during this meeting, Madison-Kipp has agreed to implement a groundwater remedial strategy for the site that consists of groundwater extraction and treatment for the bedrock groundwater in addition to a focused ISCO injection event for groundwater within the unconsolidated zone. Additional details of each item are presented below.

### **Groundwater Extraction**

As agreed to during the meeting on September 24, 2013, Madison-Kipp will incorporate groundwater extraction to facilitate the removal of volatile organic compound (VOC) mass in addition to providing hydraulic containment of VOCs in groundwater in order to minimize off-site VOC migration. This remedial action will include the following:

- Installation of one groundwater extraction well in the northern parking lot to a depth up to 170 feet below land surface. The final depth and screened interval of the extraction well will be based on the current understanding of VOC vertical distribution and the known primary fracture intervals that control VOC bedrock

Imagine the result

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WI001368.0006

transport across the site. The location and construction of the well will be confirmed with WDNR prior to installation.

- Completion of a pump test to determine the necessary operational requirements of the extraction well and to guide final design specifications for the groundwater extraction and treatment system.
- A summary of the results of the pump test will be provided to WDNR with the basis of design for the extraction system.
- Installation of a groundwater extraction and treatment system. An ongoing evaluation is being completed relative to the long-term discharge and/or re-use of the extracted groundwater.
- Utilization of the existing groundwater monitoring well network to evaluate the following during groundwater extraction:
  - Mass removal
  - Hydraulic gradients
  - VOC concentration trends

An additional northern monitoring well will be installed (with up to two screened intervals) as presented in the *Northern Well Installations Work Plan*, dated August 1, 2013 and modified during the Work Plan Discussion with WDNR on September 19, 2013 (removal of the unconsolidated screened interval).

A long-term monitoring plan will be provided to WDNR for approval following completion of the pump test and installation and sampling of the northern well nest. This monitoring plan will include sampling of select monitoring wells for the groundwater extraction system as well as overall groundwater quality related to the site.

### **ISCO Injection**

Madison-Kipp will proceed with implementation of a focused ISCO injection event in the existing shallow injection well (IW-1S) screened in the unconsolidated zone. This task is above and beyond what was requested of the WDNR during the meeting. The intent of the ISCO injection is to promote additional treatment of VOCs within the unconsolidated zone in addition to targeting the deeper bedrock groundwater through extraction as presented above. This task includes the following:

- Renewal and/or notification, as necessary, of the Request for Coverage Under Wisconsin Pollutant Discharge Elimination System and Temporary Exemption for Injection of Remedial Materials permits to complete the injection event.
- Completion of one additional injection event at existing injection well (IW-1S) utilizing sodium permanganate.
- Groundwater monitoring as part of the permit requirements and overall monitoring program referenced above.

### Schedule

With concurrence from WDNR regarding the information contained herein, it is anticipated that installation of the extraction well and execution of the pump test will be completed in 2013. The design of the groundwater extraction and treatment system would be completed this winter with installation and startup of the system expected in spring 2014. The ISCO injection will be completed prior to startup of the groundwater extraction and treatment system.

Should you require additional information, please contact one of the undersigned.

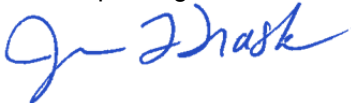
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