

M-0001



## OFFICE MEMORANDUM

**Date:** August 4, 2009

**Subject:** Document Review  
Former Union Street Sunoco  
FID#9672

**From:** Steve Winters

A summary of the past work and correspondence related to this site is as follows:

**May 10, 2007:** Quality Environmental Professionals, Inc. (QEPI) prepared a Limited Phase II Sampling and Analysis Report for the Former Union Street Sunoco Service Station located at 1126 South Union Street, Mishawaka, Indiana. Results indicated that the on-site soils exceeded the Indiana Department of Environmental Management (IDEM) Risk Integrated System of Closure (RISC) Residential Cleanup Criteria and that the groundwater exceeded the IDEM RISC Industrial Cleanup Criteria.

**May 12, 2008:** QEPI prepared a Further Site Investigation Report for the Former Union Street Sunoco Service Station. The report was prepared to further characterize and delineate onsite impacts to the groundwater. Results indicated that groundwater samples collected on-site exceeded the IDEM RISC Industrial Cleanup Criteria. QEPI recommended that an additional investigation be performed to evaluate the potential for groundwater impacts to exist off-site.

**July 21, 2008:** QEPI prepared a Further Site Investigation Offsite Sampling and Analysis Report for the Former Union Street Sunoco Service Station. The report was prepared to determine if soil and groundwater impacts from the project site had migrated onto adjoining properties to the north and the south. Based on the results from the investigation, QEPI concluded that it did not appear that soil or groundwater is impacted on the properties to the north and the south of the site.

**August 29, 2008:** IDEM issues a letter to the City of Mishawaka indicating that based on the results of the QEPI Limited Phase II Sampling and Analysis Report for the Former Union Street Sunoco Service Station, Mishawaka, Indiana that IDEM is reactivating the old LUST incident number and that the City of Mishawaka must comply with the LUST requirements.

**January 1, 2009:** IDEM issued a letter to the City of Mishawaka pertaining to the review of the Further Site Investigation Report, dated May 12, 2008 and the Further Site Investigation Offsite Sampling and Analysis Report, dated July 21, 2008. Based on a review of the documents IDEM

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concluded that the City of Mishawaka must conduct a Further Site Investigation in order to fully delineate the nature and the extent of contamination in accordance with IC 13-23 and 329 IAC 9-5-6. In addition, IDEM identified 17 specific comments/deficiencies pertaining to the previously completed studies.

**February 22, 2009:** QEPI prepared a response letter to the IDEM Letter, dated January 1, 2009. QEPI prepared responses to the 17 specific comments/deficiencies identified by IDEM.

**March 17, 2009:** IDEM prepared a response letter to the QEPI Letter, dated February 22, 2009. IDEM responded to QEPI comments and identified the additional work that needs to be performed.

**April 24, 2009:** QEPI prepared a Further Site Investigation, Corrective Action Plan Preparation and Quarterly Monitoring Scope of Work for the City of Mishawaka.

Based on a review of the previously identified documents;

- The correct list of Chemicals of Concern (COC's) was not analyzed for as part of the previous studies. IDEM is requiring additional samples be collected and analyzed for the correct list of COC's.
- The vertical extent of contamination has not been defined. IDEM requires vertical sampling be performed until contamination is no longer encountered. Confirmatory samples are required to be taken below the contamination so as to define the extent of the contamination. IDEM is requiring that the vertical extent of contamination be defined.
- The horizontal extent of contamination has not been defined. Groundwater impacts exist above the RISC Industrial Cleanup Criteria along the western property line. IDEM is requiring that the horizontal extent of contamination be defined. In addition, the groundwater flow map contained in the Further Site Investigation Report, dated May 12, 2008 shows groundwater flow being to the northeast. DLZ recommends that the elevation data be reviewed to verify the groundwater flow direction because the contaminant dispersion does not coincide with the groundwater flow direction.

The Further Site Investigation, Corrective Action Plan Preparation and Quarterly Monitoring Scope of Work prepared by QEPI dated April 24, 2009 appears to address the following IDEM concerns:


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- QEPI will install soil borings in areas previously investigated and shall have the soils and groundwater analyzed for the COC's identified by IDEM.
- QEPI will install soil borings to define the horizontal extent of contamination to the east and the west of the site. It is not clear if there Scope of Work addresses the Step-Out Procedures to be used when determining the extent of contamination around the former SB-11.
- QEPI will install one soil boring on the property located west of the project site. The City will need to arrange site access.

 The Scope of Work does not appear to address the following IDEM concerns:

- IDEM is requiring a work plan be submitted to IDEM prior to conducting Further Site Investigation activities on-site. There was no reference in QEPI's Scope of Work that indicates that they will be performing this task.
- IDEM is requiring that the vertical extent of contamination needs to be defined. IDEM requires vertical sampling be performed until contamination is no longer encountered. The Scope of Work prepared by QEPI does not appear to address the vertical profiling of the contamination. They are proposing to install the soil borings to a maximum depth of 16 feet below-grade and collect groundwater samples at the water table elevation. They make no reference to collecting additional groundwater samples at depth to define the vertical extent. The Initial Site Characterization and Further Site Investigation will not be approved by IDEM unless the vertical extent of contamination has been defined.

The Scope of Work also identifies that QEPI will prepare a Corrective Action Plan (CAP) and perform Quarterly monitoring associated with the CAP. QEPI has assumed that monitored natural attenuation is a suitable course of action to obtain a No Further Action (NFA) status from IDEM. It appears that QEPI is getting ahead of themselves.

A CAP is a document that summarizes an evaluation of remediation technologies that would be suitable for a specific site based on soil conditions, groundwater conditions, contaminant concentrations, and potential receptors. The CAP then identifies the most cost-effective remedial solution.

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Before a CAP can be completed and submitted to IDEM for their approval, the Initial Site Characterization and any Further Site Investigations must be approved by IDEM. In order for these documents to be approved by IDEM, the extent of contamination must be fully defined. Based on the proposed QEPI Scope of Work it does not appear that they will meet this requirement. Thus the discussion of a CAP appears to be premature.

Furthermore, QEPI makes reference in their Scope of Work that the CAP will be prepared to indicate that monitored natural attenuation would be the preferred remedial solution. This approach may also be premature since the horizontal and vertical extent of contamination has not been defined. In order to use monitored natural attenuation, the Owner must have legal control of the land-use (deed restrictions) for properties impacted. This poses a problem if the impacts extend off-site, which is not yet been determined for this site. There are several other factors pertaining to monitored natural attenuation that may need to be further evaluated based on the final delineation of contaminants.

X Based on the review, it is recommended that the QEPI Scope of Work be revised to include only the Further Site Investigation Activities. The Scope of Work required as part of the Further Site Investigation Activities shall be revised to include the preparation and submittal of a Further Site Investigation Work Plan and the vertical delineation of groundwater impacts.

Upon IDEM approval of the Initial Site Characterization and Further Site Investigation, the city should request a scope and fee for the preparation of the CAP and CAP monitoring.

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