



June 30, 2008

Gregg A. Townsend, P.E.
Regional Hazardous Waste
Remediation Engineer
New York State Department of Environmental Conservation
Region 7
615 Erie Boulevard West
Syracuse, NY 13204-2400

Re: Response to NYSDEC Comments
Supplemental Remedial Program/Alternatives Analysis Report
Emerson Power Transmission, Ithaca, New York
Order on Consent #A7-0125-87-09

Dear Mr. Townsend:

WSP Engineering of New York, P.C., on behalf of Emerson and Emerson Power Transmission (EPT), is responding to comments on the Supplemental Remedial Program/Alternatives Analysis report for the EPT facility in Ithaca, New York (April 25, 2008) presented in correspondence from the New York State Department of Environmental Conservation (NYSDEC), dated May 30, 2008. Listed below are the NYSDEC comments in order as presented in the letter, followed by our responses. In addition, we have incorporated the comments into the attached revised plan itself and have included four copies of the revised document with this letter.

NYSDEC Comments Part I – Supplemental Remedial Program

1.5.1 Fire Water Reservoir Area

In order for the NYSDEC and the NYSDOH to properly evaluate the proposed scope of the pre-design investigation, the conceptual site model must include an illustration(s) of the lateral and vertical extent of impacted groundwater as it is currently understood by WSP. In particular, iso-concentration lines and groundwater contours for each geologic zone should be depicted.

Response

Two figures have been prepared showing the distribution of affected groundwater as it is currently understood at the site in the B-zone and C-zone. The figures are based on results of groundwater samples collected during the 2007 Supplemental Remedial Investigation and samples collected during quarterly and semi-annual sampling events. The figure showing the distribution of affected groundwater within the B-zone (Figure 5) is based on data from 16 monitoring wells. The figure showing the distribution of affected groundwater within the C-zone (Figure 6) is based on data from 13 extraction/monitoring wells, which are open to the bedding plane fracture at 515 feet above mean sea level. Groundwater contour maps have also been prepared to show groundwater flow within the B and C zones (Figures 7 and 8)

In addition, Figure 4 has been modified to show the vertical extent of affected groundwater within the fire water reservoir area (B and C zones). The text in Section 1.5.1 has been

amended accordingly and the figure numbers from Figure 5 forward have been revised to reflect the addition of the four new figures.

1.5.2 Sanitary Sewers

Based upon a review of the borings installed along the impacted sewers, the depiction of the B-zone in Figure 5 does not appear to be accurate. Please review the boring logs and revise the figure as appropriate.

Response

Figure 5 (revised as Figure 9) has been modified to accurately show the B-zone along Turner Place as a thin zone of fractured unsaturated bedrock.

3.3.1 Exploratory Borings

The text indicates that exploratory boring EXB-11 will be completed within the C-zone, yet Figures 10 and 11 identify it as a D-zone boring. In addition, D-zone boring EXB-12 has not been depicted.

Response

Exploratory boring EXB-11 was intended as a D-zone boring. The text and Figures 14 and 15 in Section 3.3.1 have been revised accordingly.

3.3.2.3 Background Water Level Monitoring

Pressure transducers should be installed prior to shutdown of the recovery system to provide a long-term aquifer rebound test. This information should be compared to the data obtained during the 48-hour pump test to confirm the results.

Response

As discussed with NYSDEC on June 3, 2008, the groundwater extraction system was shut down on Friday May 30th so that the pre-design investigation and quarterly sampling could be completed during non-pumping conditions. As an alternative, WSP will collect post-aquifer test water levels once the system has been restarted.

In addition, minor edits were made to Section 3.3.2 Aquifer Testing to accurately identify the list of observation wells to be monitored during the test and to indicate that the test will run from 24 to 72 hours.

3.3.2.6 Discharge Sampling and Analysis

Please confirm that an appropriate number of samples will be collected and analyzed to properly design the system upgrades.

Response

WSP is confident that the number of effluent samples to be collected and analyzed during the aquifer testing is sufficient. This data in combination with the available 18 years of system operation data are deemed to be sufficient to design the proposed system modifications.

4.2 Description of Groundwater and Fire Water Reservoir IRM

The third sentence states that four new extraction wells will be installed within three existing borings. Please explain. Also, one of the borings has been incorrectly identified as EB-6.

With respect to the second paragraph, although operation of the enhanced system is expected to result in some mass removal, past performance of the existing system indicates that its primary function will be to provide hydraulic control. This should be clarified in the text.

Response

The text has been revised to state that three new extraction wells will be installed. In addition, EB-6 has been correctly identified as EXB-6.

The text in Section 4.2 has been modified to indicate that the primary objectives are to provide hydraulic control of affected groundwater and enhance/maximize mass removal of VOCs in the B-zone and C-zone.

4.2.1 New Extraction Wells

Please explain the reference to EXB-7. This borehole has not been designated for installation of an extraction well.

This section indicates that a minimum of 11 extraction wells will be utilized, whereas Section 4.2.5 and Figure 11 identify 10.

Response

The reference to EXB-7 is incorrect. Section 4.2.1 has been revised to indicate that exploratory borings EXB-5 and EXB-6 will be completed as extraction wells. Section 4.2.1 has also been revised to indicate that 10 extraction wells may be utilized.

4.2.6 Performance Evaluation

A separate OM&M Plan needs to be prepared for the treatment system.

Response

As requested, a separate OM&M Plan will be prepared for the upgraded treatment system.

4.3 Potential Treatment Technologies for Below Fire Water Reservoir

The report lists six in situ treatment technologies to be evaluated for application to the chlorinated VOC mass at the base of the reservoir (i.e., AOC 24). However, the report fails to evaluate and select one or more of these technologies for pilot-scale testing as specified in the NYSDEC's March 19, 2008 letter.

Response

Emerson will conduct an evaluation of the six *In-situ* technologies. However, before conducting this evaluation we want the opportunity to evaluate the results of the pre-design investigations conducted around the fire water reservoir and also to evaluate the performance of the IRM that will be implemented as part of the supplemental remedial program. This information is considered critical to completing an evaluation of *In-situ* treatment technologies and is necessary for selecting one or more technologies for pilot testing. A schedule for completing the evaluation will be provided following start up of the IRM.

5.0 Actions to Address Vapor Intrusion – EPT Facility

A comparison of the indoor air and sub-slab soil vapor concentrations detected in eight on-site buildings indicates that the potential for soil vapor intrusion exists or a complete exposure pathway is present which required mitigation. These buildings, and the rationale for mitigation, include the following:

- 1. Building 3 – The concentration of PCE in sub-slab soil vapor indicated that the potential for SVI exists.*
- 2. Building 4 – The concentration of TCE detected under the slab indicated that the potential for SVI exists. In addition, the concentration of PCE detected in the indoor air and sub-slab soil vapor indicates that exposure to PCE currently exists via the SVI pathway.*
- 3. Building 6A – The concentration of TCE detected in the indoor air and sub-slab soil vapor indicates that exposure to TCE currently exists via the SVI pathway.*
- 4. Building 33 – The concentration of TCE detected in the indoor air and sub-slab soil vapor indicates that exposure to TCE currently exists via the SVI pathway.*
- 5. Building 34 – The sub-slab soil vapor concentrations for PCE and TCE indicate that the potential for SVI to impact indoor air exists.*
- 6. Building 10 – The concentration of TCE detected under the slab indicates that the potential for SVI exists. In addition, the concentration of PCE detected in the indoor air and sub-slab soil vapor indicated that exposure to PCE currently exists via the SVI pathway.*
- 7. Building 8 – The sub-slab soil vapor concentrations for PCE and TCE indicate that the potential for SVI to impact indoor air exists.*
- 8. Building 24 – The sub-slab soil vapor concentrations for TCE indicate that the potential for SVI to impact indoor air exists.*

It is therefore recommended that these buildings be actively mitigated (e.g., installation and operation of a sub-slab depressurization system).

The proposed approach (i.e., limit time in a building, seal the floors, collect air samples) is inadequate and should be revised to more actively reduce current and potential exposure. Should EPT desire to mitigate in a phased approach, this may be acceptable.

However, additional sampling (e.g., initial complete SVI sampling followed by indoor air monitoring every six months) will be required and provisions for mitigation should be included in the Site Management Plan. The additional samples should be analyzed for all VOCs included in the EPA TO-15 list and the required minimum reporting limits should be met. Please revise the proposed strategy to reduce current exposure and address the potential for exposure in these buildings and resubmit for review and approval.

Response

Emerson is reviewing the above comments internally. In addition, Emerson would like to have a discussion with NYSDEC and NYSDOH before finalizing a response. We will contact you to arrange a meeting regarding this matter.

7.0 Schedule

Upon completion of pre-design activities, the final details of the proposed enhancements to the groundwater extraction and treatment system must be submitted to the NYSDEC and NYSDOH as a final design document for review and approval prior to the start of construction.

Response

Following completion of the Pre-Design Investigation, a design document will be submitted to NYSDEC and NYSDOH. WSP anticipates completing the pre-design field activities by June 30th and submitting a design document by July 30, 2008. This assumes no additional pre-design work is required.

Part II – Alternatives Analysis Report for AOCs 1,4,15, and 24

General

Please revise the text throughout Part II to accurately reflect that the remedial technologies evaluated for the Fire Water Reservoir are only intended to address the LNAPL contamination in this area (vs. the technologies identified in Section 4.3 that are intended to address the chlorinated VOC contaminant mass).

Response

The text in Part II has been revised accordingly.

9.1 Summary of AOC Investigation Findings

Please revise the fourth paragraph to acknowledge that only STARS VOCs were analyzed in the AOC 15 soil sample.

Response

The fourth paragraph of Section 9.1 has been revised accordingly.

10.2 RAOs

The remedial goals identified in the second paragraph are actually Remedial Action Objectives (RAOs), as discussed in the first bullet at the top of Page 49. Remedial goals are defined in Section 4.1(b) of DER-10, and should be set forth separately from the RAOs.

Response

The text in Section 10.2 has been revised accordingly.

11 Pre-design Investigations

Sample locations, types, and intervals designated for each of the AOCs are subject to modification pending future discussions with the NYSDEC.

Response

On June 3, 2008, a conference call was held between NYSDEC and WSP to review NYSDEC's proposed modifications to the scope of the Pre-Design Investigation. The following scope modifications were agreed to:

AOC 1, AOC -4, AOC-15 and AOC 24

- Continuously sample and log each boring to the termination depth of the boring. Based on field screening results, collect one unsaturated soil sample for analysis of VOCs.
- If product or product sludge is encountered, collect a sample for analysis of VOCs and Hydrocarbon Fingerprinting using EPA Method 31013.
- If no product is encountered, collect a groundwater sample for analysis of VOCs.

The text for each has been revised accordingly.

11.3 AOC 15 – Former 500-gallon Gasoline Aboveground Tank

Both the text and Figure 13 specify the installation of two soil borings in this AOC, while Table 4 indicates five. Please clarify. (It is noted that the text acknowledges the potential for the installation of an additional boring.)

In addition to the product samples proposed, soil samples should be collected from each boring and analyzed for total VOCs using EPA Method 8260.

Response

Table 4 has been revised to indicate that initially two soil borings will be drilled and logged.

See comment response above regarding discussions with the NYSDEC on soil samples collected for analysis of VOCs.

11.4 AOC 24 – Fire Water Reservoir

With respect to the first sentence, MW-7B has not been depicted on Figure 13.

Due to previous investigation results (e.g., elevated concentrations of TCE detected at the base of the Fire Water Reservoir), the borings proposed for installation in the vicinity of the reservoir (24a and 24b) should be sampled over their entire depth to delineate the extent of both LNAPL and TCE contamination. Should the nature and extent of contamination not be determined with these two borings, additional borings should be installed, sampled, and analyzed. Appropriate drilling techniques should be used to obtain this information which is essential for evaluation and implementation of an appropriate remedial technology.

Response

Figure 13, which is now Figure 17, has been revised to show monitoring well MW-7B.

As for the comments related to the sampling procedures for the proposed borings in this area, see the response above under Item 11 “Pre-Design Investigation”. WSP agreed to the suggested modifications made by the NYSDEC.

12.1 Scope of Work

At least one additional soil vapor sample probe should be installed and sampled along East Spencer Street between South Cayuga Street and SV-33 to support the proposed conceptual site model for vapor mitigation along the sanitary sewers.

Response

One additional soil vapor point will be installed, as requested. The text in Section 12.1 has been revised to incorporate this change.

13.0 Identification and Screening of Potentially Feasible Technologies

The evaluation of remedial alternatives is to be completed in accordance with the provisions of Section 375-2.8(c) of 6 NYCRR Part 375 and Section 4.3(b) of DER-10, Technical Guidance for Site Investigation and Remediation, as specified in the NYSDEC’s February 1, 2008 letter. Section 4.2(a)5.ii. of DER-10 (included by reference in Section 4.3(b)) required the “no-action” alternative to be carried forward for detailed analysis.

Response

In the NYSDEC letter dated March 19, 2008, the last paragraph on Page 2 under Report Submittal states that WSP will prepare a Supplemental Remedial Program/Alternatives Analysis Report in lieu of a Feasibility Study Report. In order to streamline the alternatives evaluation portion of this document and because the document is not a Feasibility Study as described in Section 4.3(b) of DER-10, WSP presented an evaluation of potentially feasible technologies which considered effectiveness, implementability, relative cost, and estimated timeframe to determine the appropriateness and suitability for achieving the RAOs at each AOC. Tables 5 and 6 present evaluation matrices for potential groundwater and soil remediation technologies in each AOC.

Each of the AOCs addressed in this report required additional pre-design investigation activities to further delineate the extent of VOCs in groundwater and soil (AOC 1) and the extent of free product (AOCs 4, 15, and 24). Therefore, a discussion of each criteria specified in Section 4.1(e) and Section 375-1.8(f) could not be completed. For example, a discussion of the reduction of toxicity, mobility or volume with treatment cannot be completed without knowledge of the extent of contamination. Also, an estimated capital, operation, maintenance, and monitoring costs cannot be calculated for each remedy with a present worth basis without completing the pre-design investigation activities.

The evaluation criteria presented in the report provides the necessary information to recommend a remedial strategy for the four AOCs without the pre-design investigation data and pre-design treatability testing required for some of the remedial technologies (i.e., chemical oxidation and bioremediation).

14.0 Detailed Evaluation of Potentially Feasible Technologies

Again with respect to the NYSDEC's February 1, 2008 letter, the detailed analysis of remedial alternatives must utilize the specific criteria set forth in Part 375 and DER-10 (Sections 375-1.8(f) and 4.1(e), respectively).

Response

See the response above for comment 13.0.

Potentially Feasible Technologies for Groundwater for AOCs 4,15, and 24

Section 13 should be referenced, rather than Section 4.

Response

Section 13 has been referenced where appropriate.

14.1 AOC 1

Please clarify if the sub-surface investigation discussed in Section 15. 1 (fifth paragraph) is the same investigation discussed in Section 11.1.

Response

The sub-surface investigation discussed in Section 15.1 is the same investigation detailed in Section 11.

Figures

Please modify Figures 9 and 13 to accurately depict the area of concern associated with, and construction of the fire water reservoir relative to Building 19. In addition, proposed boring SB-24 should be labeled SB-24a on Figure 13.

Figure 15 should be revised to include all previous soil vapor sample locations and results, including the 2004 sample results along South Cayuga Street.

Response

Figures 9 and 13, now Figures 13 and 17, have been revised to accurately show the area of concern associated with the fire water reservoir relative to Building 19.

As requested, proposed boring SB-24a has been added to revised Figure 15.

Figure 17, now Figure 19, has been revised to include previous soil vapor sample locations and results, including the 2004 sample results along South Cayuga Street.

Please contact us if you have any questions.

Sincerely yours,



James P. Bulman
Executive Vice President

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Enclosures

cc/encl. Derek Chase, Emerson
 Susan Shearer, NYSDOH
 Tompkins County Library