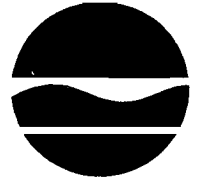


**New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 7**

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Denise M. Sheehan
Acting
Commissioner

June 2, 2005

Mr Derek Chase
Emerson Power Transmission
8000 West Florissant Avenue
St. Louis, Missouri 63136

Re: March 2005 Aquifer Testing and Design Modification Work Plan
March 2005 Groundwater Evaluation of the Remediation Area Report

Dear Mr Chase:

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have reviewed the above referenced work plan and report.

DISCUSSION:

In performing a review of the above referenced work plan and report, the Departments have referred to and co-ordinated data from several historical documents describing known site conditions. These include the February 1990 Remedial Investigation Report, the August 1994 Feasibility Study and the March 2005 Groundwater Evaluation of the Remediation Area.

In order to evaluate the appropriateness of modifications to the present recovery system, it is necessary to understand hydraulic characteristics of the "B" Zone in the area near the present recovery system as well as general contaminate transport and fate throughout the site. Although the proposed pump test will provide valuable information toward that end, it will be necessary to review all of the available site information and perhaps collect additional information to make a complete evaluation of the effectiveness of any proposed modification to the recovery system. What follows are comments and requests for specific information.

A major issue is the lack of any one time assessment of all possible data collection points. The Department has put together a snapshot of the site based on data from different time frames and although The Department can achieve a reasonable picture of site conditions, it is uncertain how accurate this picture is or how conditions change over time with relationship to one another.

This site lacks comprehensive periodic monitoring. Although several of the wells in the immediate area of the extraction wells have been monitored regularly, there is no periodic monitoring over the entire site and affected off site areas from which to evaluate trends over time.

SPECIFIC TECHNICAL ISSUES:

Land surface elevations at the monitoring well locations taken from the coring logs from the February 1990 Remedial Investigation Report cannot be reconciled with the Top of Casing

elevations from the March 2005 Groundwater Evaluation of the Remediation Area Report. This reconciliation would facilitate the correlation of identified horizontal fracture zones with the static water levels and an evaluation of their role in horizontal transport through the "C" zone. Please provide the Department with all well head ground surface elevations reconciled to a common datum.

Emerson's assumption that the "C" zone is being recharged from the "A" and "B" zones (February 1990 Remedial Investigation Report, page 3-9) is reasonable given the occurrence of vertical fractures and joints. The pump test from October 1988 done on MW3-31 confirms a hydraulic connection between the upper "A" zone and the underlying "B" zone but does not confirm a connection between the "B" zone and the "C" zone (February 1990 Remedial Investigation Report, page 3-10). There is a discrepancy between the definition of top of bedrock from the February 1990 Remedial Investigation Report (Appendix C) and the March 2005 Groundwater Evaluation of the Remediation Area Report (Appendix A), so it is unclear whether the "C" zone responded to this pump test or whether actual recharge to the pumping well was from the "B" zone. However, the pattern of chemical results discussed in section 4.3 (of this same report) indicates a probable hydraulic connection between shallow ("B") and intermediate ("C") depths in bedrock. Given this complex interaction between the different zones and the ambiguous definition of the top of bedrock, the elevations of the well heads need to be reconciled so that correlations of specific zones and other features can be made. As asked for in the above paragraph, please provide well head ground surface elevations reconciled to the same datum to facilitate this evaluation.

Potentiometric Surface Hydrographs (August 1994 Feasibility Study, figures 4-2 and 4-3) indicate a lack of response of the water levels in wells in the "B" zone to fluctuating levels in the "C" zone. This indicates the leakage rate from the "B" zone into the "C" zone is independent of the water levels in the "C" zone. It also points to a discharge or horizontal transport from the "C" zone, most likely through a horizontal fracture zone. This discharge zone must be identified as part of the aquifer characterization. The coring and geophysical logs will help define potential discharge zones but vertical flow or packer testing in the bore holes would more accurately define the flow. Please propose such testing.

Appendix E from the February 1990 Remedial Investigation Report consists of geophysical logs of several site wells. These logs are not useful as it is impossible to distinguish the different parameters from one another. Please provide legible copies of these logs to aid in the evaluation of aquifer properties.

SPECIFIC RESPONSES to the March 2005 Aquifer Testing and Design Modification Work Plan:

1.0 Introduction: The scope of work should be expanded to encompass the transport and fate of contaminant in the groundwater.

2.1 Site Location: Cayuga Lake is to the north of the site.

3.1 General: You are proposing to pump the shallower "B" zone. Historical water level data from well EW-3, a well Emerson proposes to use as part of the monitoring network for the pump test, has never been shown to rise above the elevation of 540 feet amsl and is often well below this level. The bottom of the proposed extraction well (EW1-B) is at 545 feet amsl. Even a complete de-watering of the extraction well (EW1-B) would not effect EW-3. Although two other wells proposed as part of the monitoring network, MW3-31 and MW2 exhibit static water levels above the bottom of the proposed extraction well (EW1-B), the levels are not substantially higher than the bottom of the extraction well (EW1-B), and may not respond to the pumping. Also, as stated in the Specific Technical Issues above, the hydrographs do not indicate an effect on MW 2 or MW 3-31 with varying levels in EW3 and so it is reasonable to expect no response in these wells to the pumping of a well constructed as the proposed extraction well, EW1-B. Please explain how this test would calculate leakage between the "B" zone and the "C" zone. Please add MW3-13 to the wells being monitored for the pump tests.

3.3.1 Water Level Monitoring: Monitor ALL monitoring wells in the area for static, non pumping conditions. Include MW5 (cluster), MW15-40, MW11-40, MW13-25, MW6 (cluster), MW7-40, MW 16-100, MW4, MW9 (cluster) and MW8-40.

3.3.2 Step Draw-down Testing: See comment to 3.1 for an evaluation of the relevance of the wells chosen for draw-down testing. Please add MW3-13 to the wells being monitored for this test.

4.1 Analysis of Pumping Test Data: Both analytical methods proposed for the analysis of pump test data, the Hantush-Jacob Method and the Theis Method are designed for confined aquifer scenarios. Previous reports, (February 1990 Remedial Investigation Report, section 3.2; the August 1994 Feasibility Study Report, page 1-6 and the March 2005 Groundwater Evaluation of the Remediation Area Report, section 2.4) indicate unconfined conditions in the "B" zone, the zone in which the test is to be preformed. Although the March 2005 Groundwater Evaluation of the Remediation Area Report notes that the deeper areas, zones "C" and "D" are "under semi-confined conditions", no pumping is proposed on these zones. Please explain your reason for choosing an analysis method for a confined aquifer.

March 2005 Groundwater Evaluation of the Remediation area Report.

Page 2: Cayuga Lake is to the North of the site.

Section 2.2: Although the fire water reservoir is confirmed to be a source for the on site groundwater contamination, it is not clear if it is the only source. The Department reserves the opinion that there may be more than one source area.

MR. DEREK CHASE

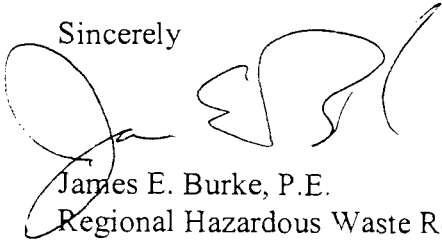
JUNE 2, 2005

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Page 6, Paragraph 2: There is no discussion of the construction details of MW-1B or MW-4B. Please include these wells in the final report.

Please respond within ten business days. If there are any questions please call (315) 426-7519.

Sincerely

A handwritten signature in black ink, appearing to read 'James E. Burke', with a stylized flourish at the end.

James E. Burke, P.E.

Regional Hazardous Waste Remediation Engineer

JEB/cr

c: Henri Hamel, NYSDOH
Geoff Laccetti, NYSDOH
Mary Jane Peachey, NYSDEC
Carl Cuipylo, NYSDEC
Stephen Maybee, Tompkins County DOH
Tompkins County Public Library