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April 16, 2008

Ms. Isabel Rocha Rodrigues
Kentucky Avenue Site Project Coordinator
U.S. Environmental Protection Agency, Region II
Emergency and Remedial Response Division
290 Broadway, 20th Floor
New York, NY 10007-1866

**Re: Responses to Comments, Revised Remedial Investigation/Feasibility Study
Work Plan, Koppers Pond, Kentucky Avenue Wellfield Site, Operable Unit 4,
Horseheads, New York**

Dear Ms. Rodrigues:

This letter transmits responses to the comments of the U.S. Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC) regarding the Revised Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Koppers Pond. This RI/FS is being conducted as Operable Unit 4 of the Kentucky Avenue Wellfield Site pursuant to an Administrative Settlement Agreement and Settlement on Consent (the "Settlement Agreement") entered between EPA and the Respondents in September 2006. The EPA and NYSDEC comments were forwarded via your letter of March 24, 2008.

Attachment A provides comment-by-comment responses that reflect the discussions and agreements reached during our conference call of March 31, 2008. The responses provided in Attachment A are incorporated by reference in and comprise an addendum to the Revised RI/FS Work Plan. Under separate cover, the Respondents are forwarding the revised Quality Assurance Project Plan that addresses EPA comments on that document using the format of the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) in revising the prior submittal.

The Respondents understand that, once you confirm that these responses and revised QAPP adequately address EPA's comments, the RI/FS Work Plan is approved. The Respondents will at that time proceed with RI/FS activities in accordance with the Work Plan and an

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updated project schedule. If you have questions regarding this submittal or related project matters, please do not hesitate to contact me.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Leo M. Brausch', with a long horizontal flourish extending to the right.

Leo M. Brausch
Project Coordinator

LMB:

Attachment

cc: Koppers Pond RI/FS Group
P. D. Anderson
R. E. Keenan
D. Laudebauche
B. R. Maurer
J. H. Samuelian

ATTACHMENT A
RESPONSES TO COMMENTS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
KOPPERS POND
KENTUCKY AVENUE WELLFIELD SITE, OPERABLE UNIT 4
HORSEHEADS, NEW YORK

RESPONSES TO COMMENTS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
KOPPERS POND
KENTUCKY AVENUE WELLFIELD SITE, OPERABLE UNIT 4
HORSEHEADS, NEW YORK¹

Human Health Risk

1. Page 45 - The document discusses identifying a reference pond. It appears from the discussion that if the risk exceeds the risk range that the reference pond will be used as a background location. In developing the PAR and other documents, the determination of the reference location and its use in this assessment should be discussed further.

Agreed. The need for and use of a reference pond in human health and ecological risk evaluations will be made once the Task 3 Site Characterization data are compiled and will be specifically addressed in the Draft Site Characterization Summary Report, the Pathways Analysis Report (PAR), and the Screening-Level Ecological Risk Assessment (SLERA). The PAR will discuss the procedures used to identify a reference pond and the use of the data from the reference pond (if employed) in the human health risk assessment. The data from the reference pond would not be available until after the PAR is submitted.

2. Page 60 - This section does not address the need for coordination with EPA Region 2 regarding the identification of Tier III toxicity values. As this project moves forward, the PRP's consultants must coordinate with EPA Region 2's Risk assessor regarding obtaining information on PRRTVs and Tier III toxicity values that may need to be included in the assessment. This information should be received as early in the process as possible.

Agreed.

3. Page 61 - In developing the PAR exposure assumptions, the Exposure Factors Handbook for children should also be considered.

If children are identified as receptors in the Memorandum of Exposure Scenarios and Assumptions (MESA), the Exposure Factors Handbook for children will be considered in developing the PAR exposure assumptions.

¹ The responses do not address the EPA comments on the Quality Assurance Project Plan (QAPP) included in the March 24, 2008 letter. These QAPP comments, which were reviewed with EPA via a conference call on April 8, 2008, will be address in the submittal, under separate cover, of a revised QAPP.

Ecological Risk

2.0 Site Description and Setting

1. Page 5 - Section 2.1 - Site Features - It should be noted in the text that although Koppers Pond maybe man induced, it has natural origins.

Understood. As noted on in Section 2.1, the pond apparently originated when a low-lying area became flooded due to local industrial activities.

2. Page 5 - Section 2.1.1- Pond - The average pond depth used to calculate the basin volume was approximately 4.5 feet; the text should be revised to reflect this.

The comment is correct. An average pond depth of 4.5 feet was used to estimate the pond volume of 12 million gallons as reported in Section 2.1.

3. Page 6 - Section 2.1.1 - Pond - The Section of the pond within the "V" was filled after 1979 and not 1969 as indicated in text. Figure 1 shows a topographic quadrangle dated 1979 with open water within the "V".

As indicated in Section 2.1, a Chemung County Sewer and Water Conservation District aerial photograph from 1977 shows Koppers Pond in its present configuration, whereas an aerial photograph from 1964 shows the former, more rectilinear configuration. Apparently, the pond configuration on the U.S. Geological Survey (USGS) topographic quadrangle map was not changed in the 1978 photorevision. Based on the aerial photographs, and not relying on the USGS maps, it would be more precise to state that the "V" was filled after 1964. According to reports filed with the New York State Department of Environmental Conservation (NYSDEC), the landfill received no waste material after 1973.

3.0 Summary of Previous Investigations

1. Pages 15 through 33 - Section 3.0 – Summary of Previous Investigations - Unless direct citations from historic reports, speculations regarding the source of contaminants should be deleted.

This discussion is largely taken from the Preliminary Conceptual Site Model (PCSM), which was submitted to EPA pursuant to Paragraph 27a.(1) of the Settlement Agreement on February 19, 2007. In accordance with the Statement of Work and relevant EPA guidance, the intent of these discussions was not to speculate, but to provide understanding of potential sources and preliminary interpretations regarding how such sources may have contributed to the observed constituent concentrations.

2. Page 26 - Section 3.3.3 - Sediment Data Assessment - In discussing sediment data and NYSDEC screening values, the same units should be used to make the

comparison more transparent. In addition, TOC data and the equations used to calculate the site-specific Aroclor 1254 NYSDEC sediment screening value should be provided.

In presenting data in the Draft Site Characterization Summary Report, SLERA, and subsequent deliverables, concentration data in sediments will be reported in consistent units. Concentrations of total organic carbon (TOC) will also be reported where needed to compare to benchmarks based on the TOC content of the sediments.

3. Page 27 - Section 3.3.3 - Sediment Data Assessment - Add to the summary of the benthic community evaluation that the data will be reevaluated using appropriate metrics and may be compared to a reference.

If chemical analyses of the sediments show concentrations above screening-level benchmarks and further evaluations of benthic communities are warranted, benthic community data will be collected from Koppers Pond and from a reference pond to provide comparative data to assess the degree of impact.

4.0 Preliminary Conceptual Site Model

1. Pages 34 through 38 - Section 4.0 – Preliminary Conceptual Site Model - This section needs substantial revision and does not address the comments provided previously. Moreover, it does not follow the Ecological Risk Assessment Guidance for Superfund (ERAGS). As stated in previous comments, the conceptual site model should include the following five components: 1) environmental setting and contaminants known or suspected to exist at the site; 2) contaminant fate and transport mechanisms that might exist at the site; 3) the mechanisms of ecotoxicity associated with contaminants and likely categories of receptors that could be affected; 4) what complete exposure pathways might exist at the site; and, 5) selection of endpoints to screen for ecological risk. The conceptual site model should also include working hypotheses or questions about the assessment endpoints and the relationship between exposure and effects that the site investigation will address.

The discussion presented in this section was adapted from the PCSM submitted to EPA pursuant to Paragraph 27a.(1) of the Settlement Agreement on February 19, 2007. The information requested by this comment will be provided as part of the SLERA to be submitted coincidentally with the Draft Site Characterization Summary Report following completion of the Task 3 field investigations.

2. Page 37 - Section 4.2.2 - Pond Sediments - As PAHs are metabolized by fish, it is not unusual that PAHs were not detected in fish tissue samples. However, it should be noted that the proposed fish tissue collection will include examination for physical anomalies, which could be attributed to PAHs (Appendix A, Section 4.7 Fish Sampling, page A-14).

So noted.

5.0 Objectives

1. Page 39 - Section 5.1 - Data Quality Objectives - The bullets in this section are not data quality objectives. Data quality objectives ask specific questions that data will be used to answer (i.e., is the toxicity of sediment in Koppers pond significantly greater than in the reference pond?).

The objectives set forth in this section are the overarching data objectives to be applied in the RI studies. Through the data quality objectives (DQO) process, more-specific DQO requirements will be developed as needed for subsequent deliverables, such as those prepared pursuant to ERAGS guidance.

2. Pages 40 through 41- Section 5.2.1 - Remedial Investigation - It needs to be clarified that a complete risk assessment, consistent with the guidance, will be conducted for the site. The implication of this section is that the proposed risk assessment will simply supplement the existing assessment, when in fact, a completely new assessment will be conducted. The new assessment may include existing data as well as newly generated data.

As defined in Paragraph 27f. of the Settlement Agreement (Task VI – Baseline Risk Assessment), the Respondents will evaluate the findings of the previously conducted risk assessments (i.e., both human health and ecological) following receipt of the data generated in the Task 3 field investigation and compare these data to the prior data set. At that time, the Respondents will apprise EPA of the extent to which the Respondents believe additional risk assessment is warranted. Under several outcomes, a completely new risk assessment may not be needed. The Respondents concur that data evaluation conducted after implementation of Task 3 would include both new and historic data.

3. Page 41 - Section 5.2.3 - Baseline Ecological Risk Assessment - As previously noted, and as indicated in Section 5.2.1 (Remedial Investigation, page 40), the objective of the RI is not only to fill in the data gaps, but to update the existing water and sediment data to characterize current site conditions. This should be reflected in Section 6.3.

So noted.

4. Page 41 - Section 5.2.3 - Baseline Ecological Risk Assessment - As the data currently being collected will be used for the forthcoming Screening Level Ecological Risk Assessment (SLERA), this section should be renamed. It should be clearly noted that previously collected data will not be used to assess risk in the forthcoming SLERA.

Historic data may be used in future risk assessment if comparisons to recently collected data indicate that the historic data remain representative of current conditions.

5. Page 41 - Section 5.2.3 - Baseline Ecological Risk Assessment - A problem formulation is needed. It was mentioned in Section 4.0 that Steps 1 and 2 of ERAGS will be completed and will include a problem formulation.

Agreed.

6.0 RI/FS Implementation

1. Page 41 - Section 6.3.1 - Field Investigation - As the conditions under which the existing data were collected are different than those that exist now, the new dataset will stand alone and (for the most part) be evaluated independently and not as part of a larger dataset.

Historic data may be used in site characterization and future risk assessment if comparisons to recently collected data indicate that the historic data remain representative of current conditions.

2. Page 48 - Section 6.3.1- Field Investigation - It should be pointed out that all field decisions and changes to any element of this Work Plan should be communicated to the EPA Project Manager prior to implementing the decision so that collaborative approach can be followed.

The Respondents will endeavor to apprise the EPA Remedial Project Manager (RPM) of field decisions and proposed changes to the procedures described in the RI/FS Work Plan so that the parties can reach agreement on such changes before implementation. If the EPA RPM is unavailable and a timely field decision is needed, however, the field supervisor will document any changes made and the field conditions that led to the change and forward this information to the EPA RPM as soon as practicable.

3. Page 47 - Section 6.3.1.2 - Task 3.2 - Surface Water and Sediment Sampling - Please add another near-shore shallow sediment sample location on the northern side of the pond, in the Eastern half.

As shown in the attached (revised) Figure 8, sample locations have been adjusted to ensure a sample is collected near the north shore of the east leg of the pond where the pond abuts the Old Horseheads Landfill.

4. Page 47 - Section 6.3.1.2 - Task 3.2 - Surface Water and Sediment Sampling - It is noted that "Sampling increments will be determined from the visual inspection of the retrieved samples." Please provide additional detail information regarding the sampling increments.

Visual inspection of the retrieved sample is needed in selecting sampling intervals in the event there is less than 100-percent recovery of the sampling interval.

5. Page 52 - Section 6.3.1.7 - Task 3.7 - Fish Tissue Sampling - Please indicate which fish(s) will be used for ecological risk assessment purposes, as an assessment endpoint and as a measurement endpoint.

The composites of smaller forage fish (30 to 100 millimeters [mm]) and composites of larger forage fish/minnows (100 to 300 mm) will be used to support the ecological risk assessment because these fish represent prey for ecologically relevant higher trophic level receptors. A full discussion of assessment and measurement endpoints will be presented in the SLERA.

6. Page 61-Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment - As previously noted, and as indicated on page 66 of this Section, the first step in the ecological risk assessment process is the SLERA. As previously collected data will not be used in the ecological risk assessment, the forthcoming deliverable will not be a "supplemental baseline ecological risk assessment."

Historic data may be used in future risk assessment if comparisons to recently collected data indicate that the historic data remain representative of current conditions.

7. Page 62 - Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment - Please note that Guidelines for Ecological Risk Assessment (May 1998) expand on and replace the 1992 report Framework for Ecological Risk Assessment. Please delete this document from the list of guidance documents used to develop this Work Plan.

Agreed.

8. Page 62 - Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment - Risk management decisions are not typically made using screening data as they tend to be fairly conservative, however if the screen suggests that risks are acceptable, remedial decisions can be made.

Agreed.

9. Page 64 - Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment - It should be pointed that species are not the same thing as receptors. A receptor is a generic group of organisms that, by virtue of their life history, are exposed to contaminants through a number of complete pathways. A species is to be selected to represent a receptor group.

Agreed.

10. Page 65 - Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment, Benthic Macroinvertebrates - It should be clearly noted that previous investigations indicated that the benthic community was impaired. Further, as current site conditions do not reflect past site conditions (dissolved oxygen levels have increased, AVS may be reduced and more divalent metals may be available), comparing current site

chemistry with past toxicity test results, may not lead to any real conclusions regarding current site toxicity. Rather than making such comparisons, toxicity tests should be conducted, if warranted, based on current site chemistry.

The data are not currently available to determine whether or not current site conditions reflect past site conditions, so conclusions regarding the efficacy of comparing current site chemistry with past toxicity test results cannot be made at this time. The data generated in the Task 3 field investigation will provide that basis for assessing whether the past toxicity data are useful in assessing potential ecological risk.

11. Pages 61 through 64 - Section 6.6.2 - Supplemental Baseline Ecological Risk Assessment - It understood that the baseline risk assessment will rely on models and comparisons to benchmark values. (It should be pointed out that the risk assessment approach, including model parameters and benchmarks, need to be developed in the early stages of the process and the screen should be complete by Step 2 of ERAGS.) A reference will be selected only in the event that risk is found to be unacceptable, however it is not clear how this assessment will be able to discern trends in potential risk. As currently written, the assessment will use newly collected data to evaluate risk to a number of receptor groups. As no empirical data will be collected other than fish residue concentrations, it is understood that exposure models will be used and compared to benchmarks or reference values. It is further understood that once this process is complete, the data will be evaluated to determine if there are data gaps or areas and receptors that may need additional evaluation, including the selection of a reference location and, potentially, additional data collection.

The comment is consistent with the approach the group plans to use in the evaluation of potential risk at the site.

New York State Department of Environmental Conservation

1. To meet the Department's requirements, the Work Plan needs to include acute and chronic toxicity tests, bio-accumulation data, and benthic community analysis. Since reference sites will be identified in the Remedial Investigation, benthic community samples should be collected from these identified reference sites.

The Respondents will evaluate the need for and scope of any additional acute and chronic toxicity tests or benthic community analysis in Koppers Pond or a reference pond after completing the evaluation of the data collected in the Task 3 field investigation and conducting the comparisons of the sediment and surface water quality data to applicable screening-level benchmarks.

2. The RI/FS Work Plans states "The draft BERA (CDM, February 1999) found no evidence of benthic toxicity..." (Section 6.6.2 page 66); however, the EPA's 1999 supplemental assessment of environmental and ecological risk concluded the benthic community is severely impacted (Section 5.3, page 5-8). Hence, further benthic community sampling and analysis is warranted and needs to be included in the RI/FS

Work Plan to assess current conditions. The benthic study design needs to be outlined in the Work Plan.

The Respondents will evaluate the need for and scope of any benthic community analysis in Koppers Pond or a reference pond after completing the evaluation of the data collected in the Task 3 field investigation and conducting the comparisons of the sediment data to applicable screening-level benchmarks. Further benthic studies may not be needed if conditions in the pond have improved or if concentrations are below screening benchmarks.

3. The Work Plan includes the use of AVS/SEM to analyze for metals; however, AVS/SEM should be viewed as one tool, but not the sole tool, for predicting toxicity of divalent metals. Therefore, AVS/SEM should not be used as the sole line of evidence when assessing the toxicity of metals in sediments. The proposal to use AVS/SEM for a predictive (risk assessment) tool at Koppers Pond needs to include collection and analysis for AVS/SEM at all sampling locations, as well as acute and chronic toxicity tests, bioaccumulation data, and benthic community analysis for more complete assessment of toxicity of sediments.

The chemical analyses of sediment samples will primarily be conducted using SW-846 methods for determination of total metals concentrations. Acid volatile sulfide/ simultaneously extracted metals (AVS/SEM) analyses will be conducted on a small subset of the sediment samples analyzed for total metals (see Table 11).

After compiling the data generated in the Task 3 field investigation, the approach for Koppers Pond will include the evaluation of several lines of evidence to assess sediment quality:

- *Comparing total metals concentrations to screening benchmarks;*
- *Examining AVS/SEM at selected sampling locations; and*
- *Comparing historic to new data.*

If the newly developed data indicate that conditions have improved or that concentrations are below screening-level benchmarks or if the AVS/SEM data indicate that divalent metals are not bioavailable, additional toxicity testing or benthic community analysis will not be needed. Invertebrate bioaccumulation testing is not proposed.

4. Page 52, first bullet states "Collect 10 individual carp of one size (10 to 13 inches)." Because larger fish tend to have higher contaminant levels, the Work Plan should strive to catch and analyze the largest fish possible for the fillet samples. In the past larger carp have been caught in Koppers Pond. The Work Plan should specify not to release non-target species until all samples are collected.

In addition to the goal of collecting fish representative of what might be consumed from the pond by anglers, another goal of the sampling effort is to enable

comparisons of current concentrations of constituents in fish to historic concentrations. To improve the representativeness of the comparison, an attempt will be made to capture and analyze carp as close to the same size as were analyzed during the July 2003 investigation. Because of this additional goal, an effort will be made to collect edible-sized carp larger than the 13-inch maximum length specified in the Work Plan. Depending on the success of the sampling effort, some samples may be comprised of more than one individual carp. If individual fish are combined into one sample, the fish will be of similar size (i.e., within three inches of each other).

5. Page 52, second bullet states "Collect 10 individual fish of similar-sized sunfish or crappie (8 to 10 inches)." The sampling plan should include additional sampling of 10 large mouth bass (particularly legal-sized fish $\geq$ 12 inches) if feasible. Previous collections from Koppers Pond have included largemouth bass (in 2003).

Consistent with the fish sampling goals outlined in the response to the preceding comment, edible-sized largemouth bass similar in size to those collected in the July 2003 investigation will also be collected and analyzed. It is anticipated that up to 20 edible-size game fish samples (i.e., carp, largemouth bass, crappie, and sunfish) will be submitted for analysis, equal to the number proposed in the current Work Plan. The final distribution of samples among the various game fish species will target the species distribution of the historic samples and the success at capturing fish during the upcoming effort.

Tables and Figures

1. Table 9 - New York State Ambient Water Quality Criteria for Class C Surface Waters - Please include the appropriate year for these criteria.

New York State ambient water quality criteria are given in 6 NYCRR Part 703. According to the NYSDEC web site, these criteria were last amended in August 1999. (See <http://www.dec.ny.gov/regs/4590.html>.)

2. Please include a table which contains appropriate ecological sediment screening values (NYSDEC, January 1999), similar to Table 9 which contains surface water screening values.

Sediment benchmarks will be provided as part of the sediment screening in the SLERA.

3. Figure 7 - Generic Conceptual Site Model for the Koppers Pond Supplemental Baseline Ecological Risk Assessment - Please provide information regarding the depth of "deeper" sediments. Potential sources should also include the additional sources discussed in the document, including industrial and urban runoff and the Old Horseheads Landfill.

The following clarifications will be made to this (or similar) figures used in the SLERA or other ecological risk assessment submittals:

- *“Deeper” sediments refer to those below the bioturbation zone, which is typically considered to be 10 centimeters (4 inches).*
 - *The term “discharges” describing potential sources refers to all discharges of surface water to the Industrial Drainageway and Koppers Pond, including the industrial and urban runoff and runoff from the Old Horseheads Landfill.*
4. Figure 9 - Potential Ongoing Sources Investigation - There are three sample locations proposed in a straight line due south of the Industrial Drainageway. If probing shows greater sediment thickness to the sides of the channel, then at least one of these sample locations should be moved toward the shore to evaluate the deeper sediments.

Agreed (although the comment refers to Figure 8, not Figure 9).

5. Figure A-1 - Add figure number, title, the location of the Cutler-Hammer discharge, the location of the historical low water elevation and the location of the existing monitor wells.

Based on our March 31, 2008 conference call discussions, some of the concerns regarding this figure may have been caused in printing. With regard to other aspects of this comment, please note the following:

- *The Cutler-Hammer discharge is located approximately ½ mile north of the area covered by this figure.*
- *The historical low water elevation is not known.*
- *The existing groundwater monitoring wells are shown on Figure 5.*

Appendix A, Sampling and Analysis Plan/Volume I – Field Sampling Plan

1. Page A-2-3 - Section 1.0 - Introduction - Please include a survey of the aquatic biota: amphibians, reptiles, water insects, etc.

A qualitative survey of aquatic biota will be conducted as part of the Task 3 field investigation.

2. Page A-3 - Section 1.0 - Introduction - Delete the word “potentially” from “.... But not potentially affected Site Sources.” Explain the circumstances that would trigger the need for a reference area.

Agreed. If employed, the reference pond will be one that is not affected by site sources. The need for sampling a reference pond will depend on whether the data collected as part Task 3 suggest a potential risk exists at Koppers Pond. If no unacceptable risk is found, a reference pond will not need to be sampled.

3. Page A-4 - Section 2.0 - Project Approach and Sampling Objectives - It needs to be clarified that a complete Baseline Ecological Risk Assessment, consistent with the ERAGS, will be conducted for the site. The implication of this section is that the proposed Ecological Risk Assessment will simply supplement the existing 1999 Ecological Risk Assessment, when, in fact, a completely new assessment will be conducted. The new assessment will use newly generated data, but may also use existing data if appropriate.

As defined in Paragraph 27.f. of the Settlement Agreement (Task VI – Baseline Risk Assessment), the Respondents will evaluate the findings of the previously conducted risk assessments (i.e., both human health and ecological) following receipt of the data generated in the Task 3 field investigation and comparison of these data to the prior data set. At that time, the Respondents will apprise EPA of the extent to which the Respondents believe additional risk assessment is warranted. Under several outcomes, a completely new risk assessment may not be needed.

4. Page A-4 - Section 2.1 - Surveying and Mapping - Discuss the installation of the staff gauge (to be consistent with other sections).

Installation of the staff gauge is discussed in Section 6.3.1.1 of the RI/FS Work Plan (Task 3.1 – Surveying and Mapping).

5. Page A-5 – Section 2.5 - Evaluation of Potential Ongoing Sources - It is unclear what the term “concentrated flows” mean. Please clarify.

“Concentrated flow” means that the water flow has a measureable depth (i.e., as opposed to sheet flow) and is amenable to collection of a water sample. In this usage, concentrated flow is synonymous with channelized flow.

6. Page A-6 - Section 2.7 - Fish Sampling - Describe or provide a reference that details the method that will be used to collect the qualitative fish habitat data.

The qualitative fish habit assessment will be performed consistent with the approach presented in Chapter 5 of the Lake and Reservoir Bioassessment and Biocriteria Technical Guidance Document (EPA 1998; EPA 841-B-98-007).

7. Page A-8 – Section 3.0 – Constituents of Potential Concern – It should be noted that the preliminary conceptual site model presented Section 4.0 of the RI/FS Work Plan does not identify contaminants of potential concern per ERAGS (e.g., it does not use a screening process to develop a list of contaminants of concern). It simply states the contaminants that are known or likely to be contaminants of concern on this site. It implies that the list of COPCs will be developed as the investigation proceeds and that the Problem Formulation of the Ecological Risk Assessment will address this issue.

Agreed.

8. Page A-10 - Section 4.4 - Sediment Thickness - There should be enough data points that sediment volume can be determined.

Agreed.

9. Page A-11 - Section 4.5 - Surface Water and Sediment Sampling - Specify the method and instrument that will be used to collected water quality data in the field or cite the appropriate Standard Operating Procedure.

Field water quality data will be collected in accordance with the Standard Operating Procedures in Attachment A-1 of the Field Sampling Plan.

10. Page A-11- Section 4.5 - Surface Water and Sediment Sampling - Given that it is relatively inexpensive to perform grain size determinations, it is unclear why all samples will not be submitted to a laboratory for this characterization. Unless performed by an expert and accompanied by a physical examination of the sediment, a visual inspection provides insufficient information to screen the samples. Further, it is expected that samples for potential grain size analysis will be collected from all locations and depths and archived until all sampling is complete. Following this, the samples will be “visually inspected” and those selected will be submitted to the laboratory. It should be pointed out that inferences made regarding the size distribution of pond sediment will be limited by the uncertainty of this approach. It is recommended that all samples be submitted for grain size analysis.

As discussed in our March 31, 2008 conference call, we are amenable to examining a few initial sediment samples, confirming these are uniformly muck, submitting those for grain size analysis, and then only submitting additional samples with visibly unique physical characteristics for grain size analysis.

11. Page A-12 - Section 4.6.1 - Chemung Street Outfall Pipes - It is unclear how the proposed chemical analysis of the floc will answer the question: “what is the floc.” As this question has figured prominently at this site, it is recommended that a more thorough evaluation of the floc be made, including a microbiological characterization. Without this information, interpretation of the contaminant residue concentration will be limited.

The New York State Department of Health previously conducted microbial studies of the floc, concluding that the material is fungal in nature. We do not believe that further microbial characterization of the floc, if present, would produce information that is essential to the RI/FS or associated risk assessments.

12. Page A-13 - Section 4.6.3 - Storm Water Runoff - The text implies that only the north shore and east bank of the lower reach of the Industrial Drainageway will be inspected for the presence of seeps whereas Figure A-2 highlights a larger area. Please clarify.

The text is correct; the figure may be misleading. Only the north shore and east bank of the lower reach of the Industrial Drainageway (i.e., where the Old Horseheads Landfill abuts the drainageway and pond) will be inspected for seeps.

13. Page A-14 - Section 4.7 - Fish Sampling - A citation needs to be provided which details the methods used to examine and characterize external deformities, tumors, or lesions in fish.

External and internal gross abnormalities will be examined following methods outlined in Section 6.3.1.5 of the Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories - Volume 1: Fish Sampling and Analysis (EPA 2000; EPA 823-B-00-008).

14. Page A-17 - Section 5.4 - Sediment Thickness - Given the size of the study area and the variety of locations selected for sampling, it is unlikely that the sediment thickness will be uniform. The term "non-uniform" should be defined and the number of additional depth measurements proposed be proposed.

Sufficient data will be collected to allow for mapping an isopach of sediment thickness and calculation of the estimated sediment volume. The survey will begin with sediment thickness measurements at the 13 identified sampling locations, and additional thickness measurements will be made as needed to accomplish these objectives. The number of samples required for such mapping will be determined based on the uniformity of the sediment thickness.

15. Page A-17 - Section 5.5 - Sediment Sampling - Be aware that the proposed sampling device will collect approximately 0.75- to 1.0-liters of sediment and that additional collocated samples at each depth interval may be required to fulfill the volume requirements for the analyses. Please clarify the procedure that will be used.

The sampling procedures, including alternative procedures, are those defined in this Section 5.5 of the Field Sampling Plan. It is recognized that, depending on sample recovery and volumes required for analyses, multiple probes may be required at some sample locations.

16. Page A-17 - Section 5.5 - Sediment Sampling - The depth of the initial core will need to be to 6-inches, 18-inches, or 30-inches, and not 24-inches as proposed. The upper sample will be collected from the 0- to 6-inch depth interval, and if needed, the next samples will be collected from the 6- to 18-inch depth interval and the 18- to 30-inch depth interval. While the 24-inch depth corresponds to the length of the proposed sampling device, collection of a core to 24-inches will enable only the upper two samples to be collected and will require the sampler to extract a 18- to 42 inch interval if needed.

The comment is correct in pointing out that the 0- to 6-inch sediment sample will first need to be removed before the two underlying samples (6 to 18 inches and 18 to 30 inches) are collected. Note that, in general, sediment thickness in excess of 24

inches are not anticipated, but, in any case, the bathymetric survey and sediment thickness determinations will be conducted sufficiently in advance of the sediment sampling so that the depth of sampling will be know at each location.

17. Page A-18 - Section 5.5 - Sediment Sampling - It is unclear how the samples will be collected from a 3-inch PVC pipe - will be entire pipe be withdrawn from the sediment or will be material within be sampled while in situ.

The 3-inch polyvinyl chloride (PVC) pipe only provides a casing in which the sediment collection can occur, and the PVC pipe itself will not be used as a sample collection device.

18. Page A-18 - Section 5.5 - Sediment Sampling - The EPA Remedial Project Manager should be notified in a real time basis if an alternative approach and field trials are required. The results of the field trials should be formally communicated to the EPA Remedial Project Manager.

The Respondents will endeavor to apprise the EPA RPM if an alternative approach and/or field trials are required. If the EPA RPM is unavailable, however, the field supervisor will document the methods attempted and their results and forward this information to the EPA RPM as soon as practicable.

19. Page A-18 - Section 5.5 - Sediment Sampling - To avoid losing fine particles, extreme care should be used when decanting the free water. It is recommended that the sample be allowed to settle for a period of time prior to decanting the free water.

Agreed.

20. Page A-19 - Section 5.6 – Surface Water Sampling - Given the instruments proposed, it is unclear why field water quality measurements will be collected from sample container rather than in situ. In any event, the water used for field determinations should be discarded and not be transferred to the sample containers for laboratory analyses.

Field water quality data will be collected in accordance with the Standard Operating Procedures provided in Attachment A-1 of the Field Sampling Plan. Water used for field measurements will be discarded.

21. Page A-20 - Section 5.9 - Fish Sampling - Fish can be measured using total length, but due to the potential for fin erosion, it is strongly recommended that standard length be use as a uniform measure of size.

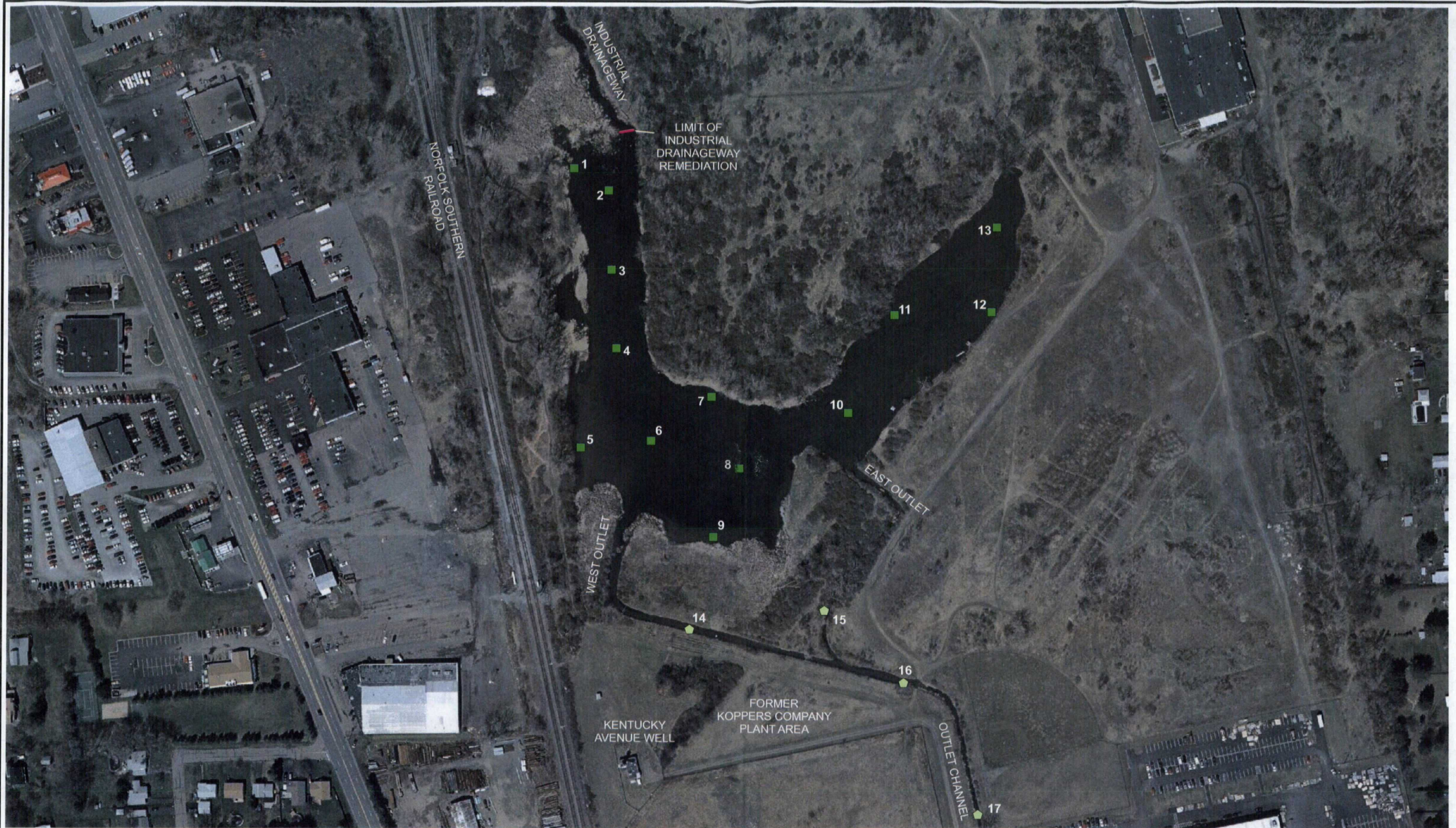
Agreed.

22. Page A-20 - Section 5.9 - Fish Sampling - It is unclear of all fish collected will be weighted and measured or just those selected for analyses.

The plan is to weigh and measure collected fish as needed to select and document specimens selected for chemical analysis.

23. Page A-21- Section 5.9 - Fish Sampling - Given the potential for shipping issues it is recommended that the fish be filleted in the field and frozen prior to shipment. At a minimum, samples should be shipped to the laboratory on a daily basis and not accumulated and archived in the field until the fish sampling task has been completed. It should be pointed out that whole body analyses of fish (for ecological risk assessment) can be frozen in the field and shipped on dry ice.

The plan is to ship whole fish on ice in coolers via overnight delivery. Shipments will be made on a daily basis whenever fish sampling is conducted in the field. The laboratory is better equipped to prepare samples for analysis and control the potential for cross-contamination.



- Proposed Pond Sample Location
 - ◆ Proposed Outlet Channel Sample Location
- 0 200 400
Feet

Prepared For:
KOPPERS POND RI/FS GROUP
**CUMMINGS
RITER**
CONSULTANTS, INC.

FIGURE 8
PROPOSED POND AND OUTLET CHANNEL
SAMPLING LOCATIONS
KENTUCKY AVE. WELLFIELD SITE - OU4
HORSEHEADS, NEW YORK