



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



PHILLIP D. ROOS
DIRECTOR

December 20, 2023

VIA E-MAIL

Mr. Jim Saric
Remedial Project Manager
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3511

Mr. Paul Ruesch
On-Scene Coordinator
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SE-5J)
Chicago, Illinois 60604-3590

Dear Mr. Saric and Mr. Ruesch:

SUBJECT: Michigan Department of Environment, Great Lakes, and Energy (EGLE) comments on the Removal Work Plan (RWP) Part 1, Draft 2, dated November 15, 2023 (Draft RWP Part 1, Revision 1), Table 1. Area 4 Analytical Results – Trowbridge Dam and Figure 1- Pre-Design Investigation (PDI) Results: Subarea E Maximum Total Polychlorinated Biphenyl (PCB) Concentration for All Intervals, dated November 2023 (Table 1 and Figure 1), the Area 4 Time Critical Removal Action (TCRA) Part 1 of 2 Design Package, dated November 10, 2023 (Part 1 Design Package), and a response to conditions in the United States Environmental Protection Agency's (U.S. EPA) conditional approval of the Area 4 TCRA RWP, Part 1, dated November 16, 2023 (Response to Conditions), Operable Unit 5 (OU5) Area 4, Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site.

By way of this correspondence, EGLE formally submits this cover letter and detailed comments (attached) on the subject documents for inclusion in the Administrative Record for the Site.

EGLE and Michigan Department of Natural Resources (MDNR) senior staff (collectively, the State of Michigan [SOM]) have reviewed the subject Draft RWP Part 1, Revision 1, Table 1 and Figure 1, the Part 1 Design Package, and the Response to Conditions letter (November 2023 RWP and Design Package) which were submitted by GEI on behalf of NCR Voyix Corporation (formerly NCR Corporation) on November 16, 2023.

The general comments below and the attached detailed comments on the subject documents were collaboratively developed by EGLE and MDNR senior personnel who were, and are, actively involved in the review of removal and remedial actions at OU5. These State personnel include programmatic staff, subject matter experts, and the landowner's representative.

1. The Draft RWP Part 1, Revision 1 references a "30%" and "60%" and "final" design. The U.S. EPA and EGLE have provided comments to on the "30%" and "60%" design packages. The "60% Design" and all attachments contained therein were submitted in August and September 2022 and disapproved by the U.S. EPA in December 2022, and they have not been revised and resubmitted. A "final draft design" has not been provided, so it is unclear what document the text is referencing. The Draft RWP Part 1, Revision 1 also references submittals that have not yet been provided or reviewed and approved, with no schedule for delivery, and the list of future submittals appears to be incomplete and key documents that will be needed to support the TCRA are not identified.

Submittals and design packages must be complete and avoid referencing documents that have been disapproved and have not been revised and resubmitted for review. Submittals and design packages should avoid referencing documents that have not been provided for review and approval, to the extent practicable. If future submittals are referenced, a schedule for delivery must be provided. Documents that are disapproved or approved with conditions and require revisions must be revised and resubmitted, consistent with the process outlined in the Consent Decree and Statement of Work. The Part 1 Design Package and the Draft RWP Part 1, Revision 1 will need to be revised and a complete set of documents for Part 1 will need to be submitted for review and approval.

2. The MDNR made modifications to the Trowbridge Dam in 2019 to expand spillway capacity. The anticipated service life of those repairs was 3 years. Because NCR and GEI did not incorporate comments from the U.S. EPA and the SOM review team into their 60% Design and Revised 60% Design, the TCRA has been stalled and the dam has remained in place longer than expected. The 2023 inspection completed by the EGLE indicated that the Trowbridge Dam is in poor condition.

In the Draft RWP Part 1, Revision 1, the sediment upstream of the auxiliary spillway structure (Beaver Island) is identified as the main constraint in installing the temporary water control structure (WCS). However, this sediment is not addressed until Stage 5 of the General Sequence of Work and installation of the WCS is not proposed until Stage 10. This area could be addressed earlier in the dredging plan allowing for the WCS to be constructed earlier in sequencing. Such an approach would reduce the risk of dam failure and the uncontrolled release of PCB contaminated sediments and soils from Area 4, which the Action

Memorandum determined presents a substantial endangerment to public health, or welfare, and the environment.

The sequencing should be adjusted so that construction of the WCS occurs earlier on in Part 1. If this is not possible, justification as to why it is not possible should be provided.

3. The first paragraph in Section 5.10 of the Draft RWP Part 1, Revision 1, states, "After Part 1 TCRA completion, post-removal maintenance and monitoring of physical site infrastructure (access roads, dredge pad staging area, sheet pile, riverbank temporary containment, temporary upland erosion controls) will continue for a period as determined in consultation with EPA."

The term "post-removal" is not appropriate here since post-removal activities won't begin until "the work" is completed. However, operations, monitoring and maintenance will be required during and after Part 1 (and Part 2). An operations, maintenance, and monitoring plan (OM & M Plan) will need to be developed and provide details on the OM & M activities that will be done during and after the completion of Part 1 and Part 2. However, an OM & M Plan is not included in the list of planning documents provided in Section 8 of the Draft RWP Part 1, Revision 1.

The Action Memorandum requires completion of "the work" before post-removal site control begins and "the work" is outlined in Steps 1-5 in the Description of the Proposed Action. A post-removal site control plan will need to be developed and describe OM & M activities that will occur after completion of "the work".

4. The Part 1 Design Package includes sheets for work that is outside the scope of what the U.S. EPA is requiring for Part 1, which is detailed in the August 2023 letter and includes:
 1. Installation of a temporary water control structure.
 2. Dredging and off-site disposal of PCB-impacted sediments (i.e., in-stream sediment exhibiting PCB concentrations of ≥ 1.0 milligrams per kilogram (mg/kg)).
 3. Installation of temporary riverbank stabilization measures in necessary subareas to prevent erosion of PCB-impacted floodplain and bank soils/near bank sediments into the sediment dredge footprint.

Scanning the sheets provided in the Part 1 Design Package, and beginning at sheet TD-010, there appear to be details and even entire sheets that cover activities that are well outside the scope of Part 1. For example, sheet TD-010, which is the Overall Dam Demolition Sequence Plan, includes 9 Steps, and it appears that all Steps after Step 4 are outside the scope of Part 1. Step #5 and #7 is Lower Reservoir, Step 8 is Riffle Construction at the left embankment, and

Step 9 is Final Dam Removal. Going further into the Part 1 Design Package there are several sheets that are completely devoted to these activities, including (but perhaps not limited to) sheets TD-014 Spillway Partial Demolition and Profile, TD-015 Existing Spillway Partial Demolition, TD-016 Initial Riffle Construction, and TD-017 Final Riffle Construction and Grading Plan. Sheet DE-108, DE-109, and DE-113, include dredging and bank removal plans, although it is difficult to distinguish between the bank and dredging removal areas due to the grey and black color scale that is utilized.

Details and sheets outside of the Part 1 scope must be deleted from the Part 1 Design Package and the Draft RWP Part 1, Revision 1, and both documents will need to be revised resubmitted.

5. The remedial footprints for Osgood spit and the portion of Subarea E near and downstream of the Osgood spit are shown in Stages 4, 7, and 8 of the General Sequence of Work. The limits of excavation for these areas do not appear to encompass sample results that are well above TCRA-specific action levels for soil (≥ 5 mg/kg) and sediment (≥ 1 mg/kg). No explanation has been provided about how the remedial footprints for these areas were generated or have changed over time. EGLE estimates that the remedial footprint in this location needs to be increased by approximately 1 acre to encompass the sample locations that exceed TCRA-specific action levels.
6. Text in the Draft RWP Part 1 Revision 1 states, "Dredge footprints have been established for delineated impacts ≥ 50 mg/kg and ≥ 1 mg/kg PCBs, and for Beaver Island. As stated in Stage 5 of the sequence of work drawings, Beaver Island and its surrounding area will be dredged/excavated and stockpiled with the intention of reuse within the site boundary. A similar path for reuse of non-PCB-impacted soil for the left descending bank soil adjacent to the primary spillway is planned for Part 2."

Dredge footprints for delineated impacts ≥ 50 mg/kg, ≥ 1 mg/kg but < 50 mg/kg, and < 1 mg/kg PCBs are not shown in the Draft RWP Part 1 Revision 1 or the Part 1 Design Package. Core data shown on the cross-sections in the Part 1 Design Package is color coded by Total PCB concentration, but that information does not appear to be utilized in any way. The cross-sections only include a single cut depth, which would result in material with a wide range of in-situ concentrations of total PCBs (e.g., ≥ 50 mg/kg and < 1 mg/kg) being blended together. The cross-sections do not show how PCB concentrations ≥ 50 mg/kg and ≥ 1 mg/kg but < 50 mg/kg will be separated from material that is < 1 mg/kg, consistent with the thresholds and process that is shown in the Material Management Plan (sheet GE-010) and described in Section 5.5.1 of the Draft RWP Part 1 Revision 1.

According to details in Sheet TD-010 Part 1 Design Package, Beaver Island and nearby sediments will be excavated to elevation 646 feet. The elevation of Beaver Island ranges from approximately 658 feet at the flanks to approximately 660 feet at the center of the island. The Response to Conditions letter states that approximately 20,000 cubic yards will be excavated from the Stage 5 footprint.

Looking at the cross-sections provided with the Revised 60% Design Package from August 2022 and the Part 1 Design Package from November 2023, sample locations 4S-EC04-1 and 4S-EC04-2 are both locations generally shallow and only extend to elevation 652 feet and 655 feet, respectively, which is significantly shallower than the proposed Stage 5 dredge footprint (elevation 646 feet). Sample location 4T-01-1 is also shallow and only extends to elevation 656 feet; however, this sample location is near the outer edge of the Stage 5 footprint, which only extends to elevation 654.5 feet in this area. Looking at sheets DE-300 and DE-301 it is evident that only a few core locations downstream and surrounding Beaver Island exist and the cores that in this general area shallow and only appear to extend to elevation 655 feet.

Material in the Stage 5 footprints has not been adequately characterized for PCBs and non-PCB constituents, nor has material in the left embankment. Without adequate characterization none of the material shown in the Stage 5 dredge footprint can be reused, and it is unclear when material in the left embankment will be sampled. Additional characterization will be needed to define the nature and extent of contamination in the Stage 5 dredge footprint and determine appropriate waste handling and disposal requirements.

Many important comments authored by the SOM review team on work plans and design submittals that have been previously provided and are still relevant to the Area 4 TCRA have not been adequately addressed and incorporated into revised submittals. The SOM review team has also authored a significant number of comments on the Draft RWP Part 1, Revision 1 and the Part 1 Design Package, many of which are similar to comments that have been previously provided. As the design advances and comments remain unaddressed, our level of concern continues to rise and there is less and less opportunity to address and incorporate comments on key lingering issues.

The U.S. EPA On-Scene Coordinator (OSC) has gone to great lengths and expended significant effort to foster a collaborative relationship with EGLE, GEI, and NCR for this TCRA. However, it is becoming clear that NCR and GEI do not value this type of collaborative process and they are not operating in good faith and working diligently to adequately address comments and correct errors, omissions, and inconsistencies in work plans and design documents. It is vital that the Agency's find a way to ensure that NCR and GEI adequately address Agency comments that are relevant to Part 1 before approving the subject documents, and it is evident that the Draft RWP Part 1, Revision

1 and Part 1 Design Package will require significant revisions and will need to be resubmitted for review and approval.

EGLE appreciates the opportunity to review and comment on the subject documents, and the efforts made by the U.S EPA OSC to include the SOM review team and incorporate comments that have been provided. If you have any questions, please contact Mr. Daniel Peabody, Environmental Quality Analyst, Remediation and Redevelopment Division, at 517-285-3924; PeabodyD@Michigan.gov; or EGLE, P.O. Box 30426, Lansing, Michigan 48909-7926.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel Peabody".

Daniel Peabody
Environmental Quality Analyst
Remediation and Redevelopment Division

Enclosure

Cc/enc: Dr. Lisa Williams, United States Fish and Wildlife Service
Ms. Megen Miller, Michigan Department of Attorney General
Dr. Keegan Roberts, CDM Smith
Mr. Matt Diana, MDNR
Mr. Patrick Ertel, MDNR
Mr. Mark Mills, MDNR
Mr. Kalan Briggs, EGLE
Ms. Bethany Matousek, EGLE
Mr. Lee Schoen, EGLE
Mr. Luke Trumble, EGLE



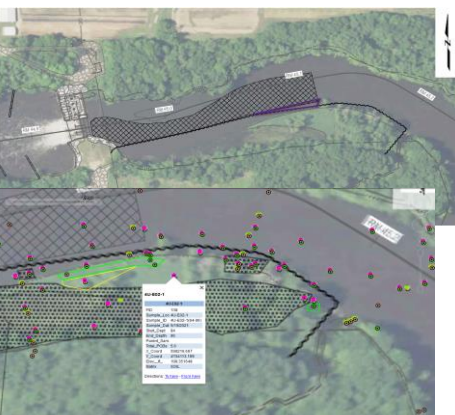
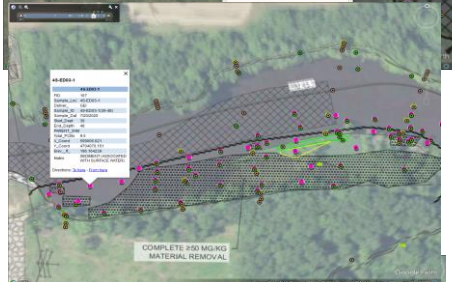
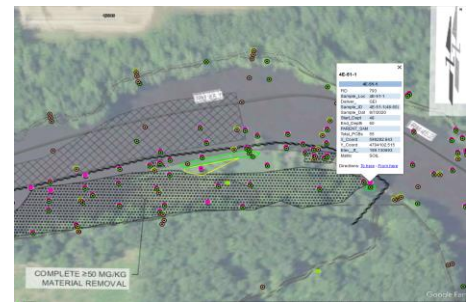
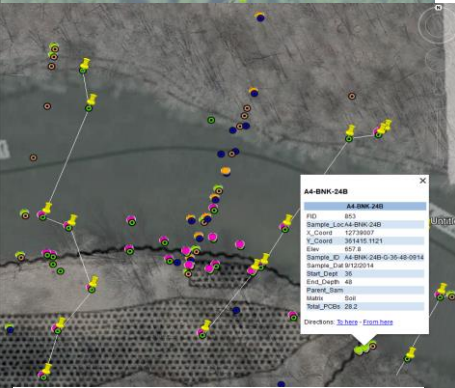
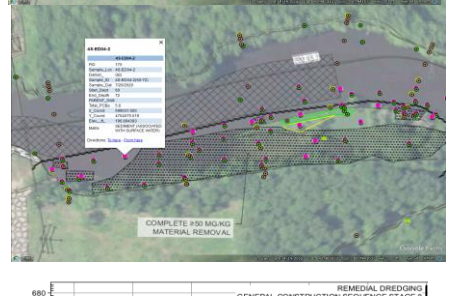
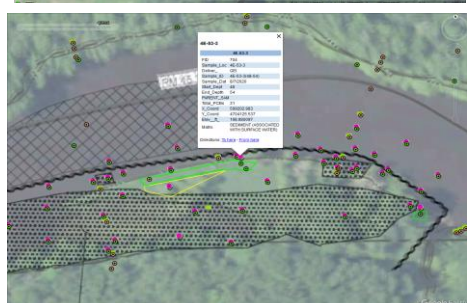
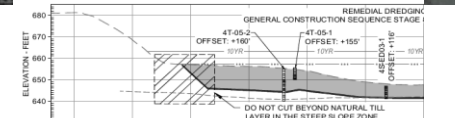
WORK PLAN COMMENT / INPUT FORM
Trowbridge Dam Time Critical Removal Action (TCRA)

DOCUMENT NAME: Removal Work Plan (RWP) Part 1, Draft 2, version November 15, 2023 (Draft RWP Part 1 Revision 1), Table 1. Area 4 Analytical Results - Trowbridge Dam and Figure 1 - Pre-Design Investigation (PDI) Results: Subarea E Maximum Total Polychlorinated Biphenyl (PCB) Concentration for All Intervals, dated November 2023 (Table 1 and Figure 1), the Area 4 TCRA Part 1 of 2 Design Package, version November 10, 2023 (Part 1 Design Package), and a response to conditions in the United States Environmental Protection Agency's (U.S. EPA) conditional approval of the Area 4 TCRA RWP, Part 1, dated November 16, 2023 (Response To Conditions).

ITEM NO.	REVIEWER	REFERENCE TO GEI SUBMITTAL (i.e., Section X.X, Page XX)	COMMENT (+ reference(s) to support)	REQUESTED EDITS	GEI Response to Comments (date)
1	EGLE	General Comment - Risk of Dam Failure/Sequencing	The Michigan Department of Natural Resources (MDNR) made modifications to the Trowbridge Dam in 2019 to expand spillway capacity. The anticipated service life of those repairs was 3 years. Because NCR/GEI did not incorporate comments from the U.S. EPA and the State of Michigan (SOM) review team into their 60% Design and Revised 60% Design, the TCRA has been stalled and the dam has remained in place longer than expected. The 2023 inspection completed by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) indicated that the Trowbridge Dam is in poor condition. In the Draft RWP Part 1, Revision 1, the sediment upstream of the auxiliary spillway structure (Beaver Island) is identified as the main constraint in installing the temporary water control structure (WCS). However, this sediment is not addressed until Stage 5 of the General Sequence of Work and installation of the WCS is not proposed until Stage 10. This area could be addressed earlier in the dredging plan allowing for the WCS to be constructed earlier in sequencing. Such an approach would reduce the risk of dam failure.	Adjust sequencing to move up construction of the WCS. If this is not possible, provide justification as to why it is not possible to adjust the sequencing.	
2	EGLE	General Comment - Content of Nov. 2023 Submittal	<p>The U.S. EPA and EGLE have provided comments on the "30%" and "60%" design packages. The "60% Draft Design" and all attachments contained there-in were submitted in August and September 2022 and disapproved by the U.S. EPA in December 2022. A "final draft design" has not been provided, so it is unclear what document the text is referencing. The Draft RWP Part 1 Revision 1 also references submittals and design packages that have not yet been provided or reviewed and approved.</p> <p>The document is "thin" and contains less information than was provided in the Revised 60% Design Package from August 2022. In recent conversations, NCR/GEI indicated that content and calculations presented in the Dam Removal and River Stabilization (DRRS) Memorandum, which was Appendix A in the Draft RWP from August 2022, were still relevant and are being used to support the design and installation of the WCS. The Revised 60% Design Package from August 2022, including the DRRS, were disapproved in December 2022, and they have not been revised and resubmitted. It is unclear if other sections of the DRRS or other submittals included with the Revised 60% Design Package Documents are also being used to support the Draft RWP Part 1, Revision 1 and Part 1 Design Package that were submitted in November 2023. However, these documents are referenced in the Draft RWP Part 1, Revision 1 and the Part 1 Design Package.</p> <p>Comments on select sections and details in the DRRS that are specific to the installation of the WCS are provided in Comment #49, #50, and #51. If other sections of the DRRS or submittals included with the Revised 60% Design Package Documents (or previously submitted work plans) are also being used to support the Draft RWP Part 1, Revision 1, comments previously provided must be adequately address and documents must be revised and resubmitted.</p> <p>Content in a disapproved document should not be referenced and used to support work that will be performed during "Part 1" or future phases of work (e.g., "Part 2"). The submittal provided does not contain details needed to adequately review the work that will be conducted. Submittals and design packages must be complete and should avoid referencing documents that have not been provided for review and approval. Documents that are disapproved or approved with conditions and require revisions must be revised and resubmitted, consistent with the process outlined in the Consent Decree.</p>	<p>Revise and resubmit work plans that require revision.</p> <p>Submit a complete design package for review.</p>	
3	EGLE	General Scope of Part 1 and Content in Part 1 Design Package	<p>The Part 1 Design Package includes sheets for work that is outside the scope of what the U.S. EPA is requiring for Part 1 and must be removed. Section 3.1 in the Draft RWP Part 1 Revision 1 describes the Part 1 TCRA Scope and states, "The Part 1 TCRA scope of work as detailed in the August 2023 U.S. EPA Letter (U.S. EPA, 2023) is limited to the following:</p> <ol style="list-style-type: none">1. Installation of a temporary water control structure.2. Dredging and off-site disposal of PCB-impacted sediments (i.e., in-stream sediment exhibiting PCB concentrations of ≥1.0 milligrams per kilogram (mg/kg).3. Installation of temporary riverbank stabilization measures in necessary subareas to prevent erosion of PCB-impacted floodplain and bank soils/near bank sediments into the sediment dredge footprint." <p>Language throughout the Draft RWP Part 1 Revision 1 mentions that a WCS will be installed during Part 1, and water levels won't be manipulated and lowered until Part 2.</p> <p>Scanning the sheets provided in the Part 1 Design Package and beginning at sheet TD-010, there appears to be details and even entire sheets provided that cover activities that are well outside the scope of Part 1. For example, sheet TD-010, which is the Overall Dam Demolition Sequence Plan, includes 9 Steps, and it appears that all Steps after Step 4 are outside the scope of Part 1. Step #5 and #7 is Lower Reservoir, Step 8 is Riffle Construction at the left embankment, and Step 9 is Final Dam Removal. Going further into the Part 1 Design Package there are several sheets that are completely devoted to these activities, including (but perhaps not limited to) sheets TD-014 Spillway Partial Demolition and Profile, TD-015 Existing Spillway Partial Demolition, TD-016 Initial Riffle Construction, and TD-017 Final Riffle Construction and Grading Plan. Sheet DE-108, DE-109, and DE-113, include dredging and bank removal plans, although it is difficult to distinguish between the bank and dredging removal areas due to the grey and black color scale that is utilized.</p> <p>EGLE reserves the right to review and comment on these materials in the future, if they are included as part of an approved RWP for Part 1.</p>	All design sheets and details that are outside the scope of Part 1 must be deleted before the Part 1 Design Package and Draft RWP Part 1 Revision 1 can be approved. Revise and resubmit the Part 1 Design Package and Draft RWP Part 1 Revision 1 and remove all sheets and details after Step 4.	
4	EGLE	General Comment - Duration/Sequencing	The SOM review team is concerned with the duration of the proposed work considering later phases and workplans that have not been approved. Impacts to biota are expected from the initial installation of turbidity curtains. The longer these curtains stay in place, the more extended the impact will be. The potential for additional impacts exist through the risk of dam failure, turbidity control failure, and mobilization of sediments that will occur as the project continues. Timely implementation of subsequent phases is required to reduce risk, but designs have not been approved and major impasses have not been addressed. The longer the duration of construction, the greater impacts to recruitment, survival, and habitat for aquatic organisms will compound. The length of time for recovery of the ecology of the project area extends with each year of impact, coupled with potential downstream impacts to biota which will result in longer delays to recovery. Project and Area of Concern goals are closely linked to biological recovery of the waterway.		
5	EGLE	General Comment - Risk of Dam Failure/Sequencing	The MDNR made modifications to the Trowbridge Dam in 2019 to expand spillway capacity. The anticipated service life of those repairs was 3 years. Because NCR/GEI did not incorporate comments from the U.S. EPA and the SOM review team into their 60% Design and Revised 60% Design, the TCRA has been stalled and the dam has remained in place longer than expected. The 2023 inspection completed by (EGLE indicated that the Trowbridge Dam is in poor condition. In the Draft RWP Part 1, Revision 1, the sediment upstream of the auxiliary spillway structure [Beaver Island] is identified as the main constraint in installing the temporary WCS. However, this sediment is not addressed until Stage 5 of the General Sequency of Work and installation of the WCS is not proposed until Stage 10. This area could be addressed earlier in the dredging plan allowing for the WCS to be constructed earlier in sequencing. Such an approach would reduce the risk of dam failure and potential for the discharge of PCB contaminated sediments from Area 4.	Adjust sequencing to move up construction of the WCS. If this is not possible, provide justification as to why it is not possible to adjust the sequencing.	
			<p>The remedial footprints for Osgood Spit and the portion of Subarea E near and downstream of the Osgood Spit are shown in Stages 4, 7, and 8. The limits of excavation for these areas do not appear to encompass sample results that are well above TCRA-specific action levels for soil and sediment. Some of the sample locations that are outside of the remedial footprint in the Draft RWP Part 1 Revision 1 were previously included in the remedial footprints that were shown in cross-sections submitted with the 60% Revised Design Package in August 2022, and footprints shown in the Draft RWP Part 1 Revision 1 don't appear to match footprints shown on figures in the Part 1 Design Package. No explanation has been provided about how the remedial footprints for these areas were generated or have changed over time. EGLE has reviewed the data, which can be accessed via the U.S. EPA's viewer and has been published in summary reports, and has the following comments:</p> <p>1. When examining the available data for Osgood Spit and the portion of Subarea E near and downstream of the Osgood spit, it is evident that virtually all sample locations south of the proposed sheetpile in Osgood Spit and the river have one or more samples that exceeds our action levels for soil and/or sediment. However, many of these sample locations fall outside of the proposed remedial footprint.</p> <p>The few sample locations within Osgood Spit where all sample results were less than the established action levels (shown in the green and yellow polygons) are surrounded by and closely located to samples that are well above TCRA-specific action levels. One sample location where all intervals are less than 1 milligram-per-kilogram (mg/kg) is within approximately 15 feet of a sample with total PCBs measured at 100 mg/kg.</p> <p>Sample locations in Osgood Spit near the upstream section of the sheetpile wall appear to be spatially unbounded, yet the remedial footprint does not extend to the sheetpile wall. Maximum total PCB concentrations in this location are 100mg/kg at a depth of 60 to 63-inches. The nearest samples, which were collected during the Supplemental Remedial Investigation (SRI) and are located across Osgood drain, also exceed TCRA specific action levels.</p> <p>In total, EGLE estimates that the remedial footprint needs to be increased by about 0.77 acres so that is covers the entire spatial area that is within the sheetpile (shown in red).</p> <p>2. As mentioned above, the remedial footprint for Osgood spit near the upstream section of the sheetpile wall does not match the available data. The nearest samples, which were collected during the SRI and are located across Osgood drain, also exceed TCRA specific action levels, yet the remedial footprint does not extend to the sheetpile wall or include these data, and no removal is proposed for this location. Maximum total PCB concentrations at this sample location are 28.2 mg/kg at a depth of 36 to 48-inches. EGLE estimates the remedial footprint needs to be increased by about 0.28 acres (shown in red) to encompass these exceedances and extend approximately half-way to the nearest sample that is below the established action limits.</p> <p>3. There also appears to be a gap between the dredge footprint that is proposed in Stage 7 and the sheetpile wall. The Stage 7 dredge prism extends from just upstream of the dam to just upstream of River Mile 45.1. The southern boundary of the dredge prism generally follows the sheetpile wall, except for the furthest upstream area where it begins to move further north and is no longer in contact with the sheetpile wall. The divergence of the dredge prism from the sheetpile wall and the lack of dredging along the sheetpile in Stage 8 (and other Stages) will leave behind a "wedge" of sediment in this location. Samples collected from nearby locations exceed the TCRA-specific action levels and have fairly high levels of PCBs, suggesting that the wedge of sediment that will be left behind in this area is likely contaminated with high concentrations of PCBs. The dredge prism shown in Stage 7 will need to be adjusted so that it to encompasses the band of contaminated sediment that is present near and along the sheetpile wall but is currently outside of any removal footprint (shown in purple). In total, EGLE estimates that the remedial footprint needs to be increased by about 0.02 acres to address the "wedge" of sediment between the dredge prism in Stage 7 and the sheetpile wall.</p> <p>4. This footprint for Stage 8 that is shown on sheet GE-009 in the Sequence of Work Drawings (Appendix A) included with the Draft RWP Part 1 Revision 1 does not match information presented in cross-sections for this same area that are shown on sheet DE-300 in Part 1 Design Package. The footprint for Stage 8 that is shown on sheet GE-009 only covers select sample locations, suggesting that the proposed dredge line discontinuous. When looking at the cross-sections on sheets DE-300 and looking at sample locations that appear to fall outside of the Stage 8 footprint shown on sheet GE-009 (i.e., 4S-EE03-1, 4S-ED03-1, and 4U-E02-1, etc.), the cross sections suggest that a 7-foot dredge cut will be completed at locations 4S-EE03-1 and 4S-ED03-1, and a 11-foot dredge cut will be completed at location 4U-E02-1.</p> <p>5. Core data shown on the cross-sections in the Part 1 Design Package is color coded by total PCB concentration, but that information does not appear to be utilized in any way. The cross-sections only include a single cut depth, which would result in material with a wide range of in-situ concentrations of total PCBs (e.g., >50 mg/kg and <1 mg/kg) being blended together. The cross-sections do not show how PCB concentrations >50 mg/kg and >1 mg/kg but <50 mg/kg will be separated from each other and from material that is <1 mg/kg, consistent with the thresholds and process that is shown in the Material Management Plan (sheet GE-010) and described in Section 5.5.1 of the Draft RWP Part 1 Rev. 1.</p>	<p>Adjust dredge prisms and increase spatial area approximately 1 acre to account for missing inventory (identified in the red and purple polygons) prior to initiating dredging activities. Make necessary adjustments to the sequencing and account for the increased volume of contaminated material that will be excavated from this location.</p> <p>Provide design drawings and details showing and describing how remedial footprints were generated.</p> <p>Provide design drawings and details showing and describing how individual dredge cells will be generated using the available data. Provide critical details for each cell, including (but not limited to) the estimated depth of contamination, spatial area, and predicted volumes.</p> <p>Provide explanation for differences between the dredge footprints shown on figures and cross-sections.</p> <p>Add simplified dredge lines showing remedial cuts for material <1 mg/kg, >1 but <50 mg/kg, and >50 mg/kg to cross-sections.</p>	

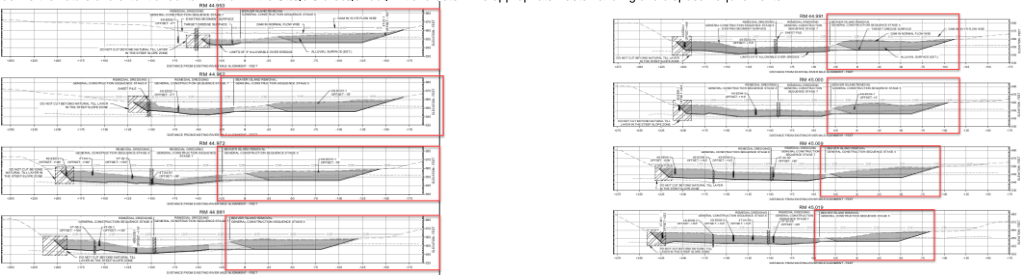
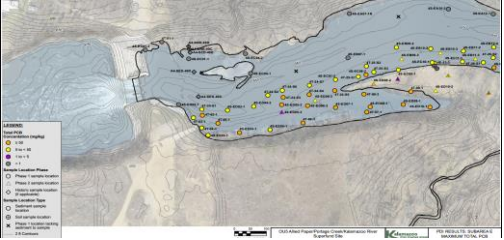

WORK PLAN COMMENT / INPUT FORM
Trowbridge Dam Time Critical Removal Action (TCRA)

DOCUMENT NAME: Removal Work Plan (RWP) Part 1, Draft 2, version November 15, 2023 (Draft RWP Part 1 Revision 1, Table 1. Area 4 Analytical Results - Trowbridge Dam and Figure 1 - Pre-Design Investigation (PDI) Results: Subarea E Maximum Total Polychlorinated Biphenyl (PCB) Concentration for All Intervals, dated November 2023 (Table 1 and Figure 1), the Area 4 TCRA Part 1 of 2 Design Package, version November 10, 2023 (Part 1 Design Package), and a response to conditions in the United States Environmental Protection Agency's (U.S. EPA) conditional approval of the Area 4 TCRA RWP, Part 1, dated November 16, 2023 (Response To Conditions).

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6	EGL	Draft RWP Part 1 Rev. 1 Part 1 Design Package - Subarea E Dredge Prism near Osgood Spit	        		

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7	EGLE	Table 1 and Figure 1 - Data For Beaver Island and Downstream of River Mile 45.1 Draft RWP Part 1 Rev. 1 - Beaver Island Reuse Part 1 Design Package - Sheets DE-107, DE-300, and DE-301	<p>Text in the Draft RWP Part 1 Revision 1 states, "Dredge footprints have been established for delineated impacts ≥ 50 mg/kg and ≥ 1 mg/kg PCBs, and for Beaver Island. As stated in Stage 5 of the sequence of work drawings, Beaver Island and its surrounding area will be dredged/excavated and stockpiled with the intention of reuse within the site boundary. A similar path for reuse of non-PCB-impacted soil for the left descending bank soil adjacent to the primary spillway is planned for Part 2."</p> <p>Dredge footprints for delineated impacts ≥ 50 mg/kg and ≥ 1 mg/kg PCBs are not shown in the Draft RWP Part 1 Revision 1 or the Part 1 Design Package. Core data shown on the cross-sections in the Part 1 Design Package is color coded by total PCB concentration, but that information does not appear to be utilized in any way. The cross-sections only include a single cut depth, which would result in material with a wide range of in-situ concentrations of total PCBs (e.g., >50 mg/kg and <1 mg/kg) being blended together. The cross-sections do not show how PCB concentrations >50 mg/kg and >1 mg/kg but <50 mg/kg will be separated from material that is <1 mg/kg, consistent with the thresholds and process that is shown in the Material Management Plan (sheet GE-010) and described in Section 5.5.1 of the Draft RWP Part 1 Rev. 1.</p> <p>According to details in Sheet TD-010 Part 1 Design Package, Beaver Island and nearby sediments will be excavated to an elevation of 646 feet. The elevation of Beaver Island ranges from approximately 658 feet at the flanks to approximately 660 feet at the center of the island. EGLE estimates Beaver Island is approximately 0.15 acres in size. Assuming Beaver Island is 0.15 acres in size and that 13 feet of material is removed to achieve an elevation of 646 feet, EGLE estimates that approximately 3,146 cubic yards (yd^3) will be excavated from Beaver Island. The Response to Comments letter states that approximately 20,000 yd^3 will be excavated from the Stage 5 footprint, meaning that approximately 16,854 yd^3 of sediment will be excavated from the area surrounding Beaver Island.</p> <p>The data and map provided as Table 1 and Figure 1 highlight samples that are located near Beaver Island and generally downstream of river mile (RM) 45.1. Sheet DE-107 shows a map view of the Beaver Island Removal Plan, and 2 sample locations, 4S-EC01-1 and 4S-EC04-1, are shown in the Stage 5 footprint. Sheets DE-300 and DE-301 include cross-sections showing the available core data and extent of the Stage 5 footprint, and 3 sample locations, 4S-EC01-1, 4S-EC04-1 and 4T-01-1, are shown in the Stage 5 footprint.</p> <p>Only 1 of the 3 sample locations in the Stage 5 footprint, 4S-EC04-1, which is a sediment sample, appears to be near Beaver Island and was collected from approximately 20 feet upstream of the island. Samples were collected from the 0 to 12 and 12 to 24 inch intervals at location 4S-EC04-1, and the total PCB result from both intervals was approximately 0.010 mg/kg. For the remaining 2 sample locations, samples were collected from the 0 to 12 and 12 to 16 inch intervals at location 4S-EC04-2 and the total PCB result from both intervals was approximately 0.010 mg/kg, and samples were collected from the 0 to 12 and 12 to 18 inch intervals at location 4T-01-1 and the total PCB result from the 0 to 12-inch and 12 to 18-inch intervals was approximately 0.8 and 0.3 mg/kg, respectively.</p> <p>Looking at the cross-sections provided with the Revised 60% Design Package from August 2022 and the Part 1 Design Package from November 2023, sample locations 4S-EC04-1 and 4S-EC04-2 are both locations generally shallow and only extend to elevation 652 feet and 655 feet, respectively, which is significantly shallower than the proposed Stage 5 dredge footprint (elevation 646 feet). Sample location 4T-01-1 is also shallow and only extends to elevation 656 feet; however, this sample location is near the outer edge of the Stage 5 footprint, which only extends to elevation 654.5 feet in this area. Looking at sheets DE-300 and DE-301 it is evident that only a few core locations downstream and surrounding Beaver Island exist and the cores that in this general area are shallow and only appear to extend to elevation 655 feet.</p> <p>It is evident that material in the Stage 5 footprints has not been adequately characterized for PCBs and non-PCB constituents. Without adequate characterization none of the material shown in the Stage 5 dredge footprint can be reused. Additional characterization will be needed to define the nature and extent of contamination in the Stage 5 dredge footprint and determine appropriate waste handling and disposal requirements.</p> 	<p>Provide design drawings and details showing and describing how remedial footprints were generated.</p> <p>Provide design drawings and details showing and describing how individual dredge cells will be generated using the available data. Provide critical details for each dredge cell, including (but not limited to) the estimated depth of contamination, spatial area, and predicted volumes.</p> <p>Adequately characterize sediments and soils within the Stage 5 dredge footprint.</p> <p>Make arrangements and plan to dispose of sediments from Beaver Island and the surrounding area.</p>	
8	EGLE	Table 1 and Figure 1 - Figure 1	<p>Figure 1 that is included in the Table 1 and Figure 1 attachment shows the maximum total PCB Concentration (mg/kg) in near-dam soil and sediment samples collected from Subarea E. The Legend on Figure 1 includes a category titled "Historical Sample Location (if applicable)", and those samples locations are identified with a diamond symbol on the figure. Circles and triangles are used to show the maximum total PCB Concentration (mg/kg) in soil and sediment samples collected during the Phase 1 and Phase 2 TCRA PD).</p> <p>Examining Figure 1 (inserted below) it is evident that a significant number of soil and sediment samples are not shown, and no explanation for how historic sample locations were determined to be applicable or not applicable is provided in the Draft RWP Part 1 Revision 1. At least 1 sample collected during the TCRA PDI, 4T-10-S1, is also not shown on the figure. Only 5 samples, 3 bank soil samples and 2 sediment samples, collected during the Area 4 SR) are shown, and the maximum total PCB Concentration at all 5 locations is <1 mg/kg. It is seems odd and it is difficult to believe that all historic sediment, bank, and floodplain sample locations in this area with results >1 mg/kg are not applicable, and that only 5 out of approximately 40 sample locations in this area from the SRI would be considered applicable. Some of the samples that were omitted are sediment collected at-depth (up to 7-feet) or are top-of-bank or floodplain soil locations that are isolated from the river. Data cannot simply be deleted. As a general comment, many of the SRI sediment samples (large green circles) and pre-SRI sediment samples (large orange circles) with Total PCB concentrations >1 mg/kg were reoccupied during the TCRA PDI as part of the sampling strategy, and many of the PDI samples (large pink circles) collected from these nearby locations were also >1 mg/kg.</p>  	<p>Revise the figure and show all available data.</p> <p>Describe the process used and provide evidence to support how and why results from sample locations were determined to not be applicable.</p>	
9	EGLE	Draft RWP Part 1 Rev. 1, Section 3.1 Part 1 TCRA Scope, page 7	<p>Text in Section 3.1 on page 8 states, "The sediment dredging component of Part 1 TCRA will be conducted Subareas E and G depicted in Fig. 5."</p> <p>This sentence is incomplete.</p>	<p>Revise the sentence so that it is consistent with language in the Removal Work Plan from October 2023 and states, "The sediment dredging component of Part 1 TCRA will be conducted in those areas of Subareas E and G depicted in Fig. 5."</p>	
10	EGLE	Draft RWP Part 1 Rev. 1, Section 5.5.1 Dredging	<p>Text in the first paragraph of Section 5.5.1 states, "The material has been defined in a dredge prism and will be removed from the river, segregated, dewatered, and disposed off-site separately as Subtitle D material (PCB concentrations of >1 to <50 mg/kg) or as Subtitle C material (PCB concentrations ≥ 50 mg/kg) dependent on pre-design waste characterization sampling."</p> <p>The Draft RWP Part 1 Revision 1 and the Part 1 Design Package do not clearly show how material will be separated based on the concentration thresholds that are described in Section 5.5.1. Core data shown on the cross-sections in the Part 1 Design Package is color coded by total PCB concentration, but that information does not appear to be utilized in any way. The cross-sections only include a single cut depth, which would result in material with a wide range of in-situ concentrations of total PCBs (e.g., >50 mg/kg and <1 mg/kg) being blended together. The cross-sections do not show how PCB concentrations >50 mg/kg and >1 mg/kg but <50 mg/kg will be separated from each other and from material that is <1 mg/kg. The PCB thresholds identified in Section 5.5.1 of the Draft RWP Part 1 Revision 1 are also inconsistent with the thresholds identified in the Material Management Plan (sheet GE-010).</p>	<p>Please clarify what data is included in the "pre-design waste characterization sampling". Is "other" data being used to characterize the waste that will be generated? For example, how are pre-TCRA data being utilized?</p> <p>Add simplified dredge lines for total PCB thresholds of interest- <1 mg/kg, >1 mg/kg but <50 mg/kg, and >50 mg/kg- to cross-sections and other figures.</p>	
11	EGLE	Draft RWP Part 1 Rev. 1, Section 1.3 Project Schedule and 1.3.1 Transition to Part 2 Work	<p>Text in Section 1.3.1 states, "Significant design work has been done on the next phase of work, Part 2, including submission of a work plan in August 2022 that covered both parts of the TCRA work. Following the U.S. EPA's disapproval of that work plan, technical memoranda were submitted to the U.S. EPA containing proposals for key aspects of the Part 2 work, most notably management of post-dredge sediments and requirements for channel stability as part of the TCRA completion. To ensure a safe and proper transition from Part 1 to Part 2 work, it is important to obtain a U.S. EPA decision on those aspects of the design so the remaining Part 2 design can be completed"</p> <p>It is worth noting that the 60% Design Package was disapproved in December 2022. The design work that was completed and submitted requires significant revisions, and there is no mention of completing revisions to the design work that will be necessary to complete the TCRA. After reviewing the RWP it is evident that the document contains significantly less information and detail than was provided in the 60% Design. Revised designs have not yet been provided. Furthermore, it is still unclear how the comments provided on the 60% Design package are being incorporated into the project. Though the SOM review team strives to provide expedited review and critique of project designs, sampling strategies and workplans, it becomes difficult when submissions do not contain sufficient detail for thorough review. When will the revisions to the various work plans and attachments that were requested at the 60% Design stage be completed? When will a revised design package with final details need to support Part 1 (and Part 2) be provided for review and approval? When will supplementary work plans and documents that are necessary to complete the TCRA and cited in the Part 1 RWP be submitted for review and approval?</p>	<p>Perform required revisions. Provide additional work plans and designs.</p>	

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12	EGLE	Draft RWP Part 1 Rev. 1, Section 2.1 Location and Current Site Description	<p>Text in Section 2.1 states:</p> <p>*Area 4 is divided into the following eight sediment Subareas (Figure 2):</p> <ol style="list-style-type: none">1. Subarea A extends from the former Otsego Dam downstream to approximately RM 48.35, which is near the upstream extent of the historical impoundment of the Trowbridge Dam.2. Subarea B extends from Subarea A (RM 48.35) downstream to approximately RM 47.25, which is the approximate upstream extent of the current Trowbridge Dam impoundment.3. Subarea C extends from Subarea B (RM 47.25) downstream to approximately RM 46.65, which is just upstream of the mouth of the Schnable Brook tributary.4. Subarea D extends from Subarea C (RM 46.65) downstream to approximately RM 45.70, where a change in sediment PCB concentration patterns was observed based on historical sampling data (Amec Foster Wheeler, 2018).5. Subarea E extends from Subarea D (RM 45.70) downstream to the Trowbridge Dam (RM 44.9).6. Subarea F includes the side channel south of Subarea E.7. Subarea G includes the backwater area on the eastern floodplain north of Subarea E.8. Subarea H includes the areas of inundation along Schnable Brook east of Subarea D. <p>Part 1 TCRA work will be limited to Subareas C, D, E, and portions of G, as detailed in Section 3."</p> <p>All of these items are taken directly from the Area 4 SRI Report Section 4.1.1., except for item #7.</p>	<p>Comments for each item are provided below in the order they are provided in the text.</p> <ol style="list-style-type: none">1. When it was at it's maximum elevation, the Trowbridge dam impounded water up to the former Otsego Township dam, as shown in several historic aerial images that are available in the SRI Report (i.e., 1938, 1960, 1967). Revisit the text accordingly.2. Given that the Area 4 TCRA PDI determined that the extent of the current Trowbridge Dam impoundment extends to Subarea B, which is further upstream than the TCRA boundary, contaminated sediments and banks soils in the upstream Subarea(s) could be subject to erosion. How will potential recontamination of the current TCRA footprint and exacerbation of existing conditions be avoided? How will upstream locations be monitored? Edit the last paragraph to include "...evaluation of conditions up to the current extent of the Trowbridge Dam impoundment."3. No change.4. Section 2.1 is titled Location and Current Site Description. However, item #4 references a section of Wood's 2018 SRI Report discussing a "change in sediment PCB concentration patterns". In general, the Area 4 SRI (Table 4-2) shows this "change" is a significant and progressive increase in the total PCB surface area weighted average concentration (SWAC) in surface sediments, and this increase occurs across all depth intervals for all Subareas downstream of Subarea D (Subareas E, F & G). Revise the text to state, "...where a significant increase in sediment PCB concentration patterns was observed based on SRI sampling data (Amec Foster Wheeler, 2018)."5. No change.6. No change.7. All of these items are taken directly from the Area 4 SRI Report Section 4.1.1., except for item #7. Revise the text to be state, "Subarea G includes the inundated area on the right floodplain north of Subarea E (Amec Foster Wheeler, 2018)."8. No change. <p>The Draft RWP Part 1 includes the installation of sheet pile in Subarea F. Operation, Maintenance, and Monitoring Plan (OM & M) and bank protection will be required for all subareas. Revise the last paragraph so that it states, "Part 1 TCRA work requires the installation of temporary riverbank stabilization measures and completion of OM & M in all sub-areas."</p>	
13	EGLE	Draft RWP Part 1 Rev. 1, Section 3.1 Part 1 TCRA Scope and Figure 3	<p>The 30%, 60%, and final draft design plans are referenced including hydraulic, geotechnical, and structural analysis. These plans were not approved in part due to unresolved issues in each of these analyses and design plans. Comments authored and issues identified have not been addressed.</p>	<p>If these plans are to be used, reviewer comments and issues with the analyses and design plans must be addressed. Revise and submit design plans and analyses.</p>	
14	EGLE	Draft RWP Part 1 Rev. 1, Section 3.1 Part 1 TCRA Scope	<p>The last paragraph in Section 3.1 states, "To achieve the tasks discussed above, GEI collected additional soil and sediment PCB data; completed hydraulic, geotechnical, and structural analyses; and developed plans and specifications to support the 30%, 60%, and final draft designs for contractor procurement for the Area 4 TCRA as described in the following sections."</p> <p>The U.S. EPA and EGLE have provided comments on the "30%" and "60%" design packages. The "60% Draft Design" and all attachments contained there-in were submitted in August and September 2022 and disapproved by the U.S. EPA in December 2022. A "final draft design" has not been provided, so it is unclear what document the text is referencing. The Draft RWP Part 1 also references submittals and design packages that have not yet been provided or reviewed and approved.</p> <p>Content in a disapproved document should not be referenced and used to support work that will be performed during "Part 1" or future phases of work (e.g., "Part 2"), and submittals must avoid referencing documents that have not been provided for review and approval. The Draft RWP Part 1 does not include a full resubmission of documents that were provided at the 60% stage and are relevant to Part 1 activities. The document is "thin" and does not contain details needed to adequately review the work that will be conducted.</p>	<p>Address comments provided on the Revised 60% Design Package and other work plans. Submit a revised and complete design package to support "Part 1". Submit documents that are referenced in the Draft RWP Part 1 that have not been provided.</p>	
15	EGLE	Draft RWP Part 1 Rev. 1, Section 3.1 Part 1 TCRA Scope	<p>Text in the fifth paragraph in Section 3.1 states, "Following water level lowering and Trowbridge Dam removal in Part 2 to complete the TCRA, it is anticipated that portions of Subareas F and G that are at present routinely inundated will drain and revert to upland floodplain. Impacts within these areas will be addressed during future floodplain work."</p>	<p>How and when will these areas be evaluated to determine whether or not they have reverted to "upland floodplain"? The derivation of and distinction between soil and sediment criteria is detailed in the Human Health Risk Assessment (HHRA) and the process for applying soil and sediment criteria was further addressed during a Dispute Resolution process that occurred in 2004. Both of these documents can be readily accessed and are available online, and EGLE has cited and shared these documents in our previous submittals.</p> <p>Under the terms of the Dispute Resolution and based on text in the HHRA, the assumption that discrete areas will revert to "upland floodplain" is not an adequate line of evidence to support the application of and boundary between "soil" and "sediment" criteria. The schedule and design provided by GEI/NCR has significantly extended duration of the TCRA which will provide sufficient time and opportunity to resolve "soil" and "sediment" boundaries prior to completion of the TCRA. Future wetland delineations and stability surveys will be needed to evaluate the use of alternate criteria, which requires the consideration of risk-based factors including (but not limited to) the frequency and time of inundation, and the potential for material to migrate in-stream due to ongoing erosion or flooding. Revise the text to include discussions surrounding the application and resolution of soil and sediment boundaries prior to completion of the TCRA.</p>	
16	EGLE	Draft RWP Part 1 Rev. 1, Section 4.0 PDI	<p>Section 4.0 includes a list of tasks and objectives. Item number one (#1) states, "1. Refining the horizontal and vertical extent of PCBs in bank soils and near-bank sediments in Subareas C, D, and E with PCB concentrations equal to or greater than the cleanup standards of 5.0 mg/kg and 1.0 mg/kg, respectively. These data were used in coordination with historical data (as applicable) to define the bank segments requiring removal to meet the TCRA cleanup standards. Historical data were included except for bank areas showing signs of recent erosion."</p> <p>Item number two (#2) in that list states, "2. Refining the horizontal and vertical extent of PCBs in current in-stream sediments in Subareas E, F, and G with PCB concentrations equal to or greater than the cleanup standards of 1.0 mg/kg. These data were used to define the dredge prisms requiring removal to meet the cleanup standards intended to achieve the post-removal surface-area weighted average concentration (SWAC) standard. Historical sediment data were used for sampling design purposes only because older sediment data were unlikely to be representative of sediment conditions at the time of the PDI."</p>	<p>The data handling approach described under #1 is inappropriate. The available Global Positioning System data for "historical data" and PDI data and documentation of the current condition and edge of bank at those locations should provide a good indication if a significant quantity of material has eroded such that the "historical" sample no longer exists. Provide an explanation for how "historical data" was used when bank areas were showing "signs of recent erosion". If historical data were not included because banks were suspected to have eroded, were additional samples collected to evaluate the current nature and extent of contamination on the bank? Were samples collected from the toe of bank to determine if the eroded bank materials had deposited and remained along the edge of the bank in the river channel? In locations where active erosion can be documented, were proximal floodplain samples considered?</p> <p>The approach for data usage described in #2 is confusing. If historical data are unlikely to be representative of sediment conditions at the time of the PDI then how and why was the historical data used to determine where samples would (and would not) be collected during the PDI? How can pre-removal SWACs be calculated if data are no longer representative and newer samples haven't been collected? What analysis has been done showing that the removal action, as planned, will achieve a post-removal SWAC of 0.33 mg/kg?</p>	
17	EGLE	Draft RWP Part 1 Rev. 1, Section 5.0 TCRA Part 1 Tasks	<p>What is the goal of riverbank stabilization measures?</p> <p>Text in Section 5.0 states, "As shown in the sequence of work drawings, temporary riverbank stabilization measures will be installed before dredging to help mitigate migration of remaining PCB-impacted material into the main river channel both during and following dredging."</p> <p>This language is inconsistent with the August 4, 2023, letter from the U.S. EPA to NCR.</p> <p>The August 4, 2023, letter states, "The work plan the U.S. EPA requests at this time is for the implementation of a portion of the Area 4 Removal Response Action described in the Consent Decree. The work plan must have the following elements: 1) Installation of the temporary water control structure; 2) Dredging and off-site disposal of PCB-contaminated sediments; and 3) Installation of temporary riverbank stabilization measures in all sub-areas to prevent erosion of PCB-contaminated floodplain and bank soils/near bank sediments into the sediment dredge footprint described in element 2."</p>	<p>Take active measures to prevent (not mitigate) erosion of contaminated materials, as necessary and where required by the U.S. EPA. Develop and submit a robust, quantitative operations, maintenance, and monitoring (OM & M) plan for Part 1 (and Part 2) activities. The OM & M Plan needs to demonstrate effective capture and containment of mobilized bank soils. If shown to be ineffective to mitigate against mobilization of bank materials, more substantial bank stabilization will be necessary.</p>	
18	EGLE	Draft RWP Part 1 Rev. 1, Section 5.0 TCRA Part 1 Tasks	<p>Text in Section 5.0 states, "Dredge footprints have been established for delineated impacts ≥50 mg/kg and ≥1 mg/kg PCBs, and for Beaver Island. As stated in Stage 5 of the sequence of work drawings, Beaver Island and its surrounding area will be dredged/excavated and stockpiled with the intention of reuse within the site boundary. A similar path for reuse of non-PCB-impacted soil for the left descending bank soil adjacent to the primary spillway is planned for Part 2."</p> <p>Dredge footprints showing how material with PCB concentrations ≥50 mg/kg and ≥1 mg/kg of total PCBs will be separated from each other and from material <1 mg/kg have not been established. Only a single dredge cut is shown on the cross-sections and the removal footprints shown in the design sheets and figures is inconsistent. Reuse and the site boundary are also not defined. The destination and PCB and non PCB contaminant load are critical for evaluating the appropriateness of reuse.</p>	<p>The Draft RWP Part 1 identified at least two locations where GEI anticipates harvesting "clean" soil for use in bank buffer ("Beaver Island" and the left descending bank embankment at the dam). The Revised 60% Design Package included harvesting "clean" soil from the "Osgood spit", but reuse of that material is not described in this version of the RWP.</p> <p>During conversations with the work group while planning the Phase 3 PDI, no desire to harvest and reuse materials outside where the pilot channel would be dredged was expressed. The Phase 3 PDI did not propose characterizing materials in "Beaver Island", the "Osgood spit" or the "LDB embankment at the dam". Therefore, these materials cannot be beneficially reused without first taking steps to appropriately characterize them. If analytical information for these areas exists please provide it, along with design drawings showing excavation plans. Provide additional data and define "reuse" or delete references to reusing these materials.</p>	
19	EGLE	Draft RWP Part 1 Rev. 1, Section 5.1.4 Access Road and Staging Area Construction	<p>It is worth nothing that most of the staging that is proposed is outside of the boundary of the TCRA and/or Superfund Site, and those locations are being used with permission from MDNR. MDNR is okay with temporary stockpiling material, but will not support long-term stockpiling beyond the end of the project and does not intend to approve stockpiles to remain onsite beyond the timeline of the TCRA. MDNR will expect restoration of State-owned properties including removal of work roads, staging areas, and other infrastructure.</p>	<p>Permission from MDNR will be required to use the proposed staging locations and those areas will be used and restored in accordance with MDNR direction, and with support from the On-Scene Coordinator.</p>	

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20	EGLE	Draft RWP Part 1 Rev. 1, Section 5.1.5 Turbidity Controls	<p>Text in Section 5.1.5 states, "Temporary turbidity controls will be evaluated as means of controlling sediment transport during in-stream sediment dredging. Turbidity curtains, turbidity screens, and temporary steel sheet pile cofferdams, as appropriate, will be evaluated as means of isolating impacted material and preventing redistribution of impacted material following dredging. To minimize downstream impacts during dredging, a series of turbidity controls will be installed to manage the active dredge work."</p> <p>There is no detail regarding planned turbidity controls or dredging best management practices (BMPs) that will be implemented. The Draft RWP Part 1 states that different options will be evaluated, as appropriate. There was discussion of a sediment trap in Revised Design Package from August and September 2022, but there is no mention here. A Turbidity Monitoring Plan was previously submitted, but is not referenced in this Section or elsewhere in the document.</p>	<p>Revise the text to state, "Temporary turbidity controls and best management practices (BMPs) will be utilized for controlling sediment transport during in-stream sediment dredging and bank excavation. Turbidity curtains, turbidity screens, and temporary steel sheet pile cofferdams, will be evaluated as means of isolating impacted material and preventing redistribution of impacted material following dredging. To minimize downstream impacts during dredging, BMPs and a series of turbidity controls will be installed to manage the active dredge work.</p> <p>Define specific sediment controls, locations and defend the appropriateness of the proposed technique. Describe how trapped sediment will be handled.</p> <p>Clarify if the Turbidity Monitoring Plan previously provided is going to be utilized. If it will be used, address comments previously provided on the Turbidity Monitoring Plan. If it will not be used, develop and submit a new Turbidity Monitoring Plan. A separate work plan that details turbidity controls and BMPs that will be used during in-stream sediment dredging and bank excavation will need to be developed and submitted.</p>	
21	EGLE	Draft RWP Part 1 Rev. 1, Section 5.2.2 Turbidity Monitoring	<p>Turbidity monitoring is proposed, but not for the duration of the project or for all flows and river conditions (e.g. ice).</p> <p>Turbidity monitoring is a good indicator of increased suspended sediment loads resulting from the project. However, it may not be a good indicator of increased bedloads occurring from mobilization of coarser sediments and bank materials in the project area.</p> <p>EGLE's comments on the Turbidity Monitoring Plan and Field Monitoring Plan that were previously provided have not been addressed and are inserted below in Comment #45</p>	<p>Turbidity monitoring should be conducted throughout the duration of the project. Monitoring should continue during high flow events as this is when potential for erosion will be the highest. Include discussion of turbidity thresholds and responsive actions to be taken if thresholds are exceeded.</p> <p>If erosion is observed or suspected, additional assessment and/or survey work will be necessary to identify areas of erosion and deposition that would not necessarily be captured by turbidity monitoring alone.</p>	
22	EGLE	Draft RWP Part 1 Rev. 1, Section 5.3 Stormwater Controls	Stormwater controls are proposed to facilitate movement of upland runoff to the stream, but no treatment or prevention of sediment associated with the runoff is defined. A soil erosion and sediment control (SESC) plan is mentioned in the text, but the SESC Plan has not been submitted for review and approval.	Provide the SESC Plan. Stormwater and contact water will need to be captured and treated to prevent contaminated sediment mobilization from upland to the river.	
23	EGLE	Draft RWP Part 1 Rev. 1, Section 5.4 Water Control Structure	Last sentence first paragraph: GEI submitted plans and specifications detailing the installation and phasing of the WCS on September 1, 2022 in the "Supplemental Design Submission." Final plans, specifications, and basis of design have not been reviewed and approved by EGLE.	Provide final design plans, specifications, and basis of design for the Water Control Structure for review and approval.	
24	EGLE	Draft RWP Part 1 Rev. 1, Section 5.6 Riverbank Temporary Erosion Control	Only some banks above 5 mg/kg are proposed to be protected, and the locations where protections are proposed is based on documented bank removal areas and field determination of susceptible erosive conditions. If banks adjacent to PCB banks erode, it will create potential for erosion to move into protected banks as well as potential for mass soil movement and bank failures. Uncontrolled erosion of banks with potential non PCB contamination or PCB contamination above risk-based thresholds will result in damages to the public trust.	Provide justification for locations where stabilization measures are not proposed. Take active measures to prevent erosion of contaminated materials in all locations, as needed and where required by the U.S. EPA. Develop and submit a robust, quantitative OM & M plan for Part 1 (and Part 2) activities. The OM & M Plan needs to demonstrate effective capture and containment of mobilized bank soils. If shown to be ineffective to mitigate against mobilization of bank materials, more substantial bank stabilization will be necessary.	
25	EGLE	Draft RWP Part 1 Rev. 1, Section 5.6 Riverbank Temporary Erosion Control	The SOM review team is concerned with the efficacy of turbidity screens to capture materials that would be mobilized by bank erosion, sloughing, etc. Turbidity curtains do not stabilize banks, rather they capture some portion of the sediment erosion. Turbidity screens are effective for temporarily capturing suspended sediment loads and reducing turbidity of water passing through/around the screens, but are less effective for containing coarser bedload materials or any significant build up of sediment behind the screens. Curtains will not prevent erosion during high flow or movement of sediment over flooded substrates into adjacent bank areas for discharge. No description of bank stabilization in addition to controlling released sediment was discussed.	Take active measures to prevent erosion of contaminated materials in all locations, as needed and where required by the U.S. EPA. Develop and submit a robust, quantitative OM & M plan for Part 1 (and Part 2) activities. The OM & M Plan needs to demonstrate effective capture and containment of mobilized bank soils. If shown to be ineffective to mitigate against mobilization of bank materials, more substantial bank stabilization will be necessary.	
26	EGLE	Draft RWP Part 1 Rev. 1, Section 5.6 Riverbank Temporary Erosion Control	<p>Text in section 5.6 states, "Monitoring and maintenance of temporary turbidity screens will be performed monthly or after each storm event. Monitoring will consist of a visual inspection of the bank and turbidity screens to document stability and state of erosion. If the bank demonstrates signs of erosion, the inspection team will verify if the sediment is captured between the bank and screen. If eroded material is observed to be beyond the turbidity screen, the material will be removed and staged in the Trowbridge staging area for transport and disposal. The turbidity screen will be adjusted or repaired as necessary. Inspections from the water are anticipated but will be dependent on weather. Alternative access methods may be employed. This turbidity screen monitoring and maintenance will continue until Part 2 of the work is completed as discussed in Section 5.10. "</p> <p>Visual inspection of banks is subjective and not adequate, and a monthly inspection frequency is unacceptable and needs to be increased. Only sediment that makes it past curtains is proposed for removal. This allows for contaminated sediment to sit behind turbidity curtains and poses a risk for release as curtains fill/fail. Monitoring and maintenance of turbidity screens and banks will need to be included in the OM & M Plan. A thorough inspection of the turbidity screen would require accessing turbidity curtains from the landward side of the bank to inspect portions of the turbidity curtain that extend up to and beyond the top of bank and accessing the turbidity screen from the river to inspect portions of the turbidity curtain that extend into the river and determine if material has eroded into or moved beyond the turbidity screen. fully inspect and repair and/or maintain the turbidity screen. Alternative</p>	<p>Define "storm event".</p> <p>Utilize and enhance the existing erosion pin network or utilize other survey techniques to identify changes to existing bank locations as part of the OM & M Plan .This would allow for quantification of sediment lost and inform subsequent removal to determine how much of the sediment was removed through maintenance activities. Remove material from behind the sediment screen when known erosion is observed. Material behind turbidity screens within the river is not stable and will require excavation through time as screens fill/fail. Increase inspection frequency to a minimum of weekly for all locations where turbidity screens or turbidity controls (i.e., sediment trap) are installed. Utilize "alternative access" (landward access) and access from the river to complete inspections.</p>	
27	EGLE	Draft RWP Part 1 Rev. 1, Section 5.9 Site Cleanup and Demobilization	<p>Text in Section 5.9 states, "After completion of Part 1 TCRA, equipment and resources not necessary for Part 2 work will be demobilized. However, provided the timing (approved scope of Part 2) of future work is amenable, staging areas, roads, and temporary erosion controls will be left in place for use during future TCRA work. Staging areas and roads may be repaired if necessary to prepare these areas for future TCRA work."</p> <p>Of the items listed above and at a minimum, the temporary erosion controls that are installed will need to remain in-place until permanent stabilization measures are implemented and the removal action is completed. It is unclear why other features (e.g., staging areas and roads) would potentially be removed prior to Part 2 beginning, unless they are installed in locations that are not helpful to support work that will be completed under Part 2 or the landowner requests those features be removed.</p>	Revise the text in Section 5.9 so that it states, "After completion of Part 1 TCRA, equipment and resources not necessary for Part 2 work will be demobilized. However, provided the timing (approved scope of Part 2) of future work is amenable, staging areas and roads will be left in place for use during future TCRA work. Temporary erosion controls will remain installed and be maintained until the EPA determines they are no longer necessary. Staging areas and roads may be repaired if necessary to prepare these areas for future TCRA work."	
28	EGLE	Draft RWP Part 1 Rev. 1, Section 5.10 Post-Removal Monitoring and Maintenance	<p>The first paragraph in Section 5.10 states, "After Part 1 TCRA completion, post-removal maintenance and monitoring of physical site infrastructure (access roads, dredge pad staging area, sheet pile, riverbank temporary containment, temporary upland erosion controls) will continue for a period as determined in consultation with U.S. EPA."</p> <p>The term "post-removal" is not appropriate here since post-removal activities won't begin until "the work" is completed. However, operations, monitoring and maintenance will be required during and after Part 1 (and Part 2).</p>	<p>Revise the text to state, "During and after Part 1 TCRA completion, an OM & M Plan will be implemented and will be updated, as necessary, to include monitoring and maintenance during and after completion of Part 2. OM&M will continue until the site transitions into post-removal site control, which will occur when the action is completed. "</p> <p>An OM & M Plan will be required to provide details on the operations, monitoring, and maintenance that will be done during and after the completion of Part 1 and Part 2. The Action Memorandum requires completion of "the work" before post-removal site control begins and "the work" is outlined in Steps 1-5 in the Description of the Proposed Action. A post-removal site control plan (PRSCP) will be required to document OM&M activities that will occur <i>after</i> completion of "the work". See comments related to Section 8 Planning Documents and Section 8.12 PRSCP. When will the OM & M Plan be provided for review and approval?</p> <p>Text the third paragraph references a Long-Term Monitoring Plan (LTMP) and a PRSCP. Are the LTMP and the OM & M Plan the same document? Provide additional information on the content of the LTMP and how this is different than the OM & M Plan and PRSCP.</p>	
29	EGLE	Draft RWP Part 1 Rev. 1, Section 5.10 Post-Removal Monitoring and Maintenance	Text in the third paragraph of Section 5.10 states, "After completion of the Area 4 TCRA maintenance and monitoring phase, a final report will be compiled and submitted to the EPA."	Revise the sentence to state, "After completion of the Area 4 TCRA maintenance and monitoring phase, a final report will be compiled and submitted to the U.S. EPA and EGLE."	
30	EGLE	Draft RWP Part 1 Rev. 1, Section 6.5 U.S. Fish and Wildlife Service Draft RWP Part 1 Rev. 1, Section 6.5.1 Mussel Salvage and Relocation	<p>The title for Section 6.5 should be revised since some of the items in Section 6.5 and 6.5.1 are part of Michigan Department of Natural Resources (MDNR) statutes and purview.</p> <p>For example, State threatened or endangered (T&E) species and the mussel requirements are part of Michigan DNR statutes and purview. There is a Federal review, which defaults to State regs if no federally listed species are present. T&E permits and mussel/fish permits are all handled through MDNR.</p>	Revise the title of Section 6.5 to T&E Species Review, and include discussions on permitting and review from the U.S. Fish and Wildlife Service and MDNR.	
31	EGLE	Draft RWP Part 1 Rev. 1, Section 6 Permitting	<p>The last sentence of Section 6 states, "However, to the extent practicable within the scope of work defined in the CD, meeting the substantive State and local requirements will be demonstrated in consultation with EPA."</p> <p>Are Federal requirements being considered?</p> <p>Documentation of compliance with (Federal?), State and local requirements will be necessary.</p>	<p>Clarify how Federal requirements are being addressed.</p> <p>Revise the text to include consultation and documentation with the U.S. EPA and the State.</p>	
32	EGLE	Draft RWP Part 1 Rev. 1, Section 6.6 Joint Permit Application	<p>Text in Section 6.6 states, "Substantive requirements for a Joint Permit will be considered for TCRA activities to be performed consistent with Inland Lakes and Streams (Part 301), Wetlands (Part 303), Floodplains (Part 31), and Dams (Part 315) of NREPA, 1994, PA 451, as amended."</p> <p>Part 301, Part 303, Part 31, and Part 315 are identified as Applicable or Relevant and Appropriate Requirements (ARAR's) for the TCRA, not To Be Considered (TBCs).</p>	<p>Comply with ARARs to the extent practicable and given the exigencies of the circumstances. Document how and why compliance is/is not achieved.</p> <p>Revise the text in Section 6.6 so that it states, "Substantive requirements documents for a Joint Permit will be completed for TCRA activities consistent with Inland Lakes and Streams (Part 301), Wetlands (Part 303), Floodplains (Part 31), and Dams (Part 315) of Natural Resources and Environmental Protection Act (NREPA), 1994, PA 451, as amended."</p>	

WORK PLAN COMMENT / INPUT FORM
Trowbridge Dam Time Critical Removal Action (TCRA)

DOCUMENT NAME: Removal Work Plan (RWP) Part 1, Draft 2, version November 15, 2023 (Draft RWP Part 1 Revision 1), Table 1. Area 4 Analytical Results - Trowbridge Dam and Figure 1 - Pre-Design Investigation (PDI) Results: Subarea E Maximum Total Polychlorinated Biphenyl (PCB) Concentration for All Intervals, dated November 2023 (Table 1 and Figure 1), the Area 4 TCRA Part 1 of 2 Design Package, version November 10, 2023 (Part 1 Design Package), and a response to conditions in the United States Environmental Protection Agency's (U.S. EPA) conditional approval of the Area 4 TCRA RWP, Part 1, dated November 16, 2023 (Response To Conditions).

ITEM NO.	REVIEWER	REFERENCE TO GEI SUBMITTAL (i.e., Section X.X, Page XX)	COMMENT (+ reference(s) to support)	REQUESTED EDITS	GEI Response to Comments (date)
33	EGLE	Draft RWP Part 1 Rev. 1, Section 8 Planning Documents	A OM & M Plan is not included in this list but will be required. A LTMP was cited earlier in the text but that document is not included in this list. A Turbidity and Water Quality Monitoring plan was already developed and submitted but that document is not included in this list. A plan that guides restoration will be required but is not included in this list. A plan that guides the completion of dredging/excavation activities will be required but is not included in this list. A plan that guides the decontamination of materials and equipment will be required but is not included in this list.	Update Section 8 to include all work plans at were previously provided. Update Section 8 to include delivery of additional plans that are needed but were not identified.	
34	EGLE	Draft RWP Part 1 Rev. 1, Section 8.12 PRSCP	Text in Section 8.12 states, "This plan will describe the measures that will be undertaken to ensure the establishment of erosion controls, vegetation maintenance and replacement (where necessary), and maintenance of engineering controls." The list of elements for the PRSCP that is provided is limited and it may not include all the elements that will be required as part of the PRSCP.	Revise the text so that it is consistent with language Action Memorandum (Step 6 in the Description of the Proposed Action) and states, "This plan will describe the monitoring and maintenance both during and for a defined time period, to be determine in coordination with the State, after completion of the work." It is important to note that the Action Memorandum requires completion of "the work" before post-removal site control begins and "the work" is outlined in Steps 1-5 in the Description of the Proposed Action.	
35	EGLE	Draft RWP Part 1 Rev. 1, Table 2	Table 2 lists Site-specific total toxic equivalency quotient (TEQ) thresholds for soil (PRGs) for each receptor (mammalian, avian, and recreationalist). PRGs for TEQs have not been established, although a range of risk-based soil concentrations was developed for each receptor as part of the risk assessment process.	Delete the individual values from Table 2 as site-specific PRGs for these receptors have not been established, and insert the range of RBCs for each receptor so that the reader has an understanding of the range of TEQ concentrations for soil. Ranges for risk-based soil concentrations are provided below: Mammalian receptors: 91 nanograms/kilograms (ng/kg) to 55,402 ng/kg Avian receptors: 181 ng/kg to 114,300 ng/kg Recreationalists: recreational carcinogenic risk at 1x10 ⁻⁵ risk: 350 ng/kg/non-carcinogenic at HI=1: 1,330 ng/kg. EGLE has repeatedly voiced concerns about the level of protectiveness of the HHRA and the terrestrial baseline ecological risk assessment that was completed for TEQs.	
36	EGLE	Draft RWP Part 1 Rev. 1, Figure 3 Area 4 TCRA Schedule	The Finish Date for the U.S. EPA Approval of Removal Work Plan Part 1 is November 1, 2023. The document wasn't submitted until November 17, 2023. Future work plans that will need to be developed are not identified in the Area 4 TCRA schedule. Water Monitoring (velocity, turbidity, level) has a Finish Date of November 27, 2025.	Revise the Finish Date for the U.S. EPA Approval of Removal Work Plan Part 1. Add work plans to the schedule and assign a Start Date and Finish Date to each. Provide an explanation for the Finish Date for Water Monitoring. Plan to complete water monitoring until "the work" is complete and revise the Finish Data for Water Monitoring (velocity, turbidity, level) so that it reflects the current best estimate for when the removal action will be completed.	
37	EGLE	Draft RWP Part 1 Rev. 1, Figure 7 Proposed Access Roads	Access roads are planned for areas within and outside of the TCRA footprint.	Sampling for PCBs and TEQs in the footprints for the proposed staging areas and haul/access road should be completed prior to installing any of these features, especially if they will remain in-place until the remedial action is implemented.	
38	EGLE	Draft RWP Part 1 Rev. 1, Figure 7 Proposed Access Roads	Note from plan sheet: "Haul roads to be built based on contractor's needs for WCS and Osgood Spit remediation" - no analysis of wetland, stream, floodplain impacts is provided.	Provide assessment of wetland, stream, floodplain impacts along with restoration and mitigation plans, as appropriate.	
39	EGLE	Part 1 Design Package/Draft RWP Part 1 Rev. 1, Work Sequence Plan Sheet 1 of 4 (GE-007) Part 1 Design Package, Sheet TD-010 Overall Dam Demolition Sequence Plan	Note 9: "Complete installation of the WCS (See Sheet TD-10 for dam removal sequence steps)."	Provide final design plans, specifications, and basis of design for dam removal and WCS installation for review and approval.	
40	EGLE	Part 1 Design Package, Work Sequence Plan Sheet 1 of 4 (GE-006)	This figure shows turbidity curtains only proposed for downstream of the dam. No near dredge curtains are depicted. No controls upstream of the dam are present. Curtains angle downstream and would release sediment rather than trap.	What type of turbidity controls will be used in the dredge areas or to capture sediment in the project area? Sediment deposition in the plunge pool will require excavation. Turbidity curtains deployed in herring bone fashion generally need to angle upstream to retain sediment. Revise the document accordingly.	
41	EGLE	Part 1 Design Package/Draft RWP Part 1 Rev. 1, Work Sequence Plan Sheet 1 of 4 (GE-006) Step 2A Draft RWP Part 1 Rev. 1, Figure 6	Intermittent turbidity curtains on outside bends demonstrate the potential for adjacent bank erosion that could undermine turbidity curtain controls in adjacent banks.	Extend turbidity curtains or alternative erosion control methods along the entire outside bend to prevent flanking. Take active measures to prevent (not mitigate) erosion of contaminated materials, as necessary and where required by the U.S. EPA. Develop and submit a robust, quantitative OM & M plan for Part 1 (and Part 2) activities. The OM & M Plan needs to demonstrate effective capture and containment of mobilized bank soils. If shown to be ineffective to mitigate against mobilization of bank materials, more substantial bank stabilization will be necessary.	
42	EGLE	Part 1 Design Package/Draft RWP Part 1 Rev. 1, Work Sequence Plan Sheet 3 of 4 (GE-008)	Dredging in Subarea E is proposed to be completed during Stage 4, it will progress in an upstream to downstream manner from approximately RM 45.7 to the Osgood Spit, and it includes dredging across nearly the entire channel width. Protections for Osgood Spit and the sediments downstream and along the left descending bank, which contain high levels of PCBs are not proposed to be installed until Stage 6. Given the elevated concentrations of PCBs in this location and the planned work throughout the channel prior to Stage 6, sediments and soils in this will likely be susceptible to mobilization as river dynamics are altered and dredging and bank protection is installed.	Take active measures to prevent erosion of contaminated materials in all locations, as needed and where required by the U.S. EPA. Given the relatively high concentrations of PCBs in soils and sediments near and downstream of the Osgood spit, measures to prevent sediments and soils in and near Osgood spit from eroding by using temporary stabilization measures should be taken earlier, perhaps early on or immediately prior to the Stage 4 dredging work. Develop and submit a robust, quantitative OM & M plan for Part 1 (and Part 2) activities. The OM & M Plan needs to demonstrate effective capture and containment of mobilized bank soils. If shown to be ineffective to mitigate against mobilization of bank materials, more substantial bank stabilization will be necessary.	
43	EGLE	Part 1 Design Package/Draft RWP Part 1 Rev. 1, Work Sequence Plan Sheet 4 of 4 (GE-009)	Note 9: "Complete installation of the WCS (See Sheet TD-10 for dam removal sequence steps)." This plan set has not been provided or review/approved.	Provide a complete set of final design plans that includes specifications and a basis of design for dam removal and WCS installation for review and approval.	
44	EGLE	Part 1 Design Package, Sheet GE-010	This decision tree is confusing, as a key component seems to be the box "Meets on-site Reuse Criteria". Under the decision tree, ALL material could be reused on-site, even material that has in-situ Total PCB concentrations >1 mg/kg, >5 mg/kg and >50 mg/kg. The process outlined in the decision tree appears to be in conflict with Section 5.5.1 and it may not meet State and Federal requirements for waste handling. "Recycling" is identified as an option for soil and sediment that does not meet reuse criteria, but "recycling" is not defined. There will be a practical limit on the amount (volume) of material that could be potentially stockpiled and reused on-site as floodplains cannot be filled-in and there are a limited options for reuse on-site and statutory requirements that need to followed . Ultimately, on-site reuse may simply not be an option if there is simply no opportunity to reuse the material on-site, even if it passes all physical and chemical testing requirements for reuse. "Beneficial reuse", under State statute, also includes "construction material" (daily cover) for a licensed landfill. A Borrow Source Evaluation Schematic is also included on sheet GE-010 which includes a box with "Clean Fill Criteria". Fill criteria have not been proposed.	EGLE does not support the path outlined in the decision tree. Material with total PCB concentrations >1 mg/kg will need to be properly disposed of at a licensed landfill. The design does not show how material would be excavated and separated based on the total PCB concentration thresholds shown on sheet GE-010. The origin and estimated volumes for material <1 mg/kg need to be clearly shown. Figures need to show simplified dredge lines for thresholds shown in the Material Management Plan. Reuse needs to be defined. Recycling needs to be defined. Sampling strategies and a work plan need to be proposed and developed to characterize material ex-situ, and those details are not included in this plan. All reasonable alternatives for reuse should be explored. If no opportunity for reuse can be identified or material does not meet reuse standards it may need to be disposed of at a licensed landfill. Define "Clean Fill Criteria".	

WORK PLAN COMMENT / INPUT FORM
Trowbridge Dam Time Critical Removal Action (TCRA)

DOCUMENT NAME: Removal Work Plan (RWP) Part 1, Draft 2, version November 15, 2023 (Draft RWP Part 1 Revision 1), Table 1. Area 4 Analytical Results - Trowbridge Dam and Figure 1 - Pre-Design Investigation (PDI) Results: Subarea E Maximum Total Polychlorinated Biphenyl (PCB) Concentration for All Intervals, dated November 2023 (Table 1 and Figure 1), the Area 4 TCRA Part 1 of 2 Design Package, version November 10, 2023 (Part 1 Design Package), and a response to conditions in the United States Environmental Protection Agency's (U.S. EPA) conditional approval of the Area 4 TCRA RWP, Part 1, dated November 16, 2023 (Response To Conditions).

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45	EGLE	Part 1 Design Package, GE-011 Dredge Pad Design, Soil Erosion and Sediment Control Details Part 1 Design Package, SA-101 Staging Area RM44.9-RM45.3 Part 1 Design Package, SA-102 Staging Area RM44.9 Part 1 Design Package, SA-103 Staging Area RM46.3 Part 1 Design Package, SA-104 Staging Area RM47.0-47.2	Item number 5 (#5) and number 6 (#6) in the Dredge Pad Notes state: 5. RUNOFF AND STORM SURGE FROM 10-YEAR, 24-HOUR EVENT TO BE CONSIDERED IN DREDGE PAD STORAGE DESIGN. 6. SEGREGATE MATERIAL BASED ON PCB CONCENTRATION: 1 - < 50 PPM, > 50 PPM. Thresholds in #6 are inconsistent with thresholds identified on Sheet GE-010. Dredge pads proposed for the Area 4 TCRA and described in #5 are proposed to be constructed at an elevation that is too low, and they do not have adequate capacity to handle storm water. This appears to be particularly true for the dredge pads and staging areas shown in sheets SA-103 and SA-104, which appear to be located very close to the river and in generally low-lying areas relative to the dredge pads and staging area that are located on the earthen embankments and shown on sheets SA-101 and SA-102. For comparison, the sediment processing areas (dredge pads) in Area 1 were constructed at a 25-year flood elevation and were sized with enough capacity to handle a 100-year precipitation event (6-inches of rain). In Area 1, a contingency plan that required halting dredge operations and immediately removing and disposing of all materials in the SPA if flood conditions were predicted was also required. No details are provided for containment areas that will house material that has total PCB concentrations >50 mg/kg.	Long-term stockpiling of any contaminated material at low-elevations should be avoid, to the maximum extent possible. Relocate proposed dredge pads and staging areas to a location that is further away from the river channel and at a higher elevation, if possible. A contingency plan that requires halting dredge operations and immediately removing and disposing of all materials stockpiled on the dredge pad or in the staging area if flood conditions are predicted will need to be developed. Increase storm water capacity to handle a 100-year rain event. Provide details on construction of containment for locations that will house material >50 mg/kg. Avoid stockpiling material >50 mg/kg in low-lying areas.	
46	EGLE	Part 1 Design Package, GE-013 River Erosion And Sediment Control Plan	Item number 4 (#4) in the Notes states: 4. SEDIMENT REMOVED FROM SEDIMENT TRAP TO BE STORED IN UPLAND LOCATION FOR BENEFICIAL REUSE ON SITE. Reuse has not been defined. There is no proposal to characterize sediment removed from the sediment trap.	The destination and PCB and non PCB contaminant load are critical for evaluating the appropriateness of reuse. Material collected from the sediment trap would need to be characterized and meet the chemical and physical requirements for reuse.	
47	EGLE	Part 1 Design Package, SA-001 Area 4 - Potential Staging Areas and River Access Locations	A potential bridge crossing point is identified for Schnable Brook, and the Legend suggests this feature will be installed during Part 1. Have plans for a bridge and work near Schnable Brook been provided? None were included with the Part 1 Design Package or the Draft RWP Part 1 Revision 1.	Provide assessment of wetland, stream, floodplain impacts along with restoration and mitigation plans, as appropriate. Provide final designs, plans, and specifications for all activities that will be completed during Part 1.	
48	EGLE	Turbidity Monitoring Plan & Field Monitoring Plan	EGLE provided comments on the Turbidity Monitoring Plan (TMP) and Field Monitoring Plan (FMP) that have not yet been addressed, so comments on those document are being provided again.	1. Clarify the intent of collecting "background" data in July 2021 and how this information is or is not being used. 2. Given the sequencing of work and the long duration of the project, it would be reasonable to move the monitors as work shifts from dredging to bank work (and vice versa) so that the monitoring network is appropriately designed. And, when hydraulic dredging in Subarea E, it would make sense to keep a monitor at a safe but set distance (i.e., 250-500 ft.) downstream of the hydraulic dredge while operations are ongoing. 3. Following completion of hydraulic dredging in Subarea E, it would make sense to keep a monitor somewhere in Subarea E to monitor the potential for sediment migration into the dredged area and/or water quality exceedance while the next phase of work occurs in Subarea F and G. Following completion of work in Subarea E,F,G, it would make sense to move the remaining monitor located below the dam to the upstream boundary of the PCB dredge (approx. RM 45.7), and then move the monitor used during hydraulic dredging to the downstream boundary of each Subarea where bank work will occur. For example, while completing bank remediation in Subarea C the monitoring network would be configured as follows: one monitor would be located near RM45.7 (the upstream boundary of the PCB dredge in Subarea E); one monitor between RM46.7 and RM46.6 (at the boundary between Subarea C and D); and one monitor would be located at RM47.15 (the reference location). When doing bank work and riffle construction in Subarea E, particularly the furthest downstream banks and the riffle at the current dam location, it would make sense to have one (or even two) monitors located below the current dam. 3. The Revised Design Package includes installation of a "sediment trap" near the Trowbridge dam that is not shown included on figures or text in the TMP and FMP. Relevant documents should be updated to include the sediment trap as well as a frequency for monitoring and maintaining the sediment trap(s). Is there a plan to quantify and/or characterize materials contained in the sediment trap to estimate downstream loading? 4. Given the proposed sequence of work and potential for mobilization of contaminated materials from upstream Subareas into Subarea E during dewatering and construction, the work group should consider adopting lower turbidity action levels to provide real-time information that can be used to asses the effectiveness of BMPs and adjust work, as necessary. Dredging projects that have been recently completed or that are ongoing at the Kalamazoo River Superfund Site have demonstrated that dredging operations can be completed in a way that minimizes and reduces downstream turbidity to levels significantly less than 50 nephelometric turbidity units (nTu) and closer background levels. 5. The document states that turbidity levels will be used to evaluated changes in river conditions that result from dredging, excavation, and restoration. EGLE notes that turbidity levels will also be impacted by dewatering activities and the sediments that are being left behind and allowed to mobilize under the current design. It is possible that this mobilization and the resultant increase in turbidity may (by itself and absent of impacts caused by the previously mentioned activities) exceed water quality standards, and mitigation could be required.	
49	EGLE	DRRS	Item #3, page 12 of the DRRS states, "The WCS should be temporary and function only for the minimum time needed to safely lower the impoundment level and connect the headwater and tailwater elevations." The current phased approach would leave the WCS in place for up to several years at full pond elevation before drawdown occurs. The Part 1 revised designs (November 2023) do not include any additional analysis which would indicate that he WCS is suitable for this longer duration. This raises red flags related to longer term safety and stability of the WCS.	Provide additional analysis related to the safety and stability of the WCS for the duration its expected to be in service. Revise designs as appropriate, if there is unacceptable risk during this longer duration.	
50	EGLE	DRRS	Second Paragraph, page 18 states, "Because the WCS is temporary and will function only for the minimum time needed to safely lower the impoundment level, part of the risk management evaluation included analyzing design flows less than those that would be evaluated for a permanent structure (i.e., permanent structures would need to be designed to accommodate a 500-year or greater flood). Because of the unique nature of the WCS and the stilling basin and the short operational time, there is a risk that the riprap channel downstream and lateral to the stilling basin may erode during flood events. The risk of this occurring is different for each of the dam removal construction steps. It is the intent that the stilling basin and WCS remain intact during and following the flood events evaluated; however, the riprap protection will be subjected to high velocities that could cause a scour hole downstream of and/or lateral to the stilling basin. Therefore, visual observations immediately following a flood event and maintenance repairs to the riprap would likely be needed after flood events." Same comment as above, no additional analysis related to performance of the WCS for a longer duration has been provided.	Provide additional analysis related to the safety and stability of the WCS for the duration its expected to be in service. Revise designs as appropriate, if there is unacceptable risk during this longer duration.	
51	EGLE	DRRS	Section 4.2, Figure 12, Tables 3 and 4, all reference a HEC-RAS model used to model hydraulics at the WCS. It's unclear whether this model was updated for Part 1 upstream and downstream boundary conditions or other changes since the 60% design was completed.	Clarify if the model was/needs to be updated. Provide updated model for review.	
52	EGLE	Response To Conditions	The fourth condition and response provided states, "Non-TSCA waste must be segregated from TSCA waste during sediment dewatering, management, and disposal (Section 5.5.1). Acknowledged. The material with ≥50 mg/kg PCBs has been defined in a dredge prism and will be removed from the river and handled separately as shown on Drawings DE-109 through DE-112." Material ≥1 mg/kg but <50 mg/kg is still subject to requirements of the TSCA. In this case, "Non-TSCA waste" would include material with Total PCB concentrations <1 mg/kg. Segregation, and special handling and disposal of waste with Total PCB concentrations ≥50 mg/kg will be required, and those are different than requirements for material with total PCB concentrations ≥1 mg/kg but <50 mg/kg. However, in both cases, the waste is subject to requirements of the TSCA. The Part 1 Design Package and the Draft RWP Part 1 Revision 1 do not show how material with total PCB concentrations ≥50 mg/kg and ≥1 mg/kg but <50 mg/kg will be separated from each other and from material that is <1 mg/kg. The PCB thresholds identified in Response To Conditions letter are also inconsistent with the thresholds identified in the Material Management Plan (sheet GE-010). The proposed approach only includes a single cut, which would result in material with a wide range of in-situ concentrations of total PCBs (e.g., ≥50 mg/kg and <1 mg/kg) being blended together.	Comply with requirements of the TSCA. Add simplified dredge lines for thresholds of interest- <1 mg/kg, >1 mg/kg but <50 mg/kg, and >50 mg/kg- to cross-sections and other figures.	