

**Remedial Action Work Plan**  
**Sheboygan River and Harbor Superfund Site**  
**Sheboygan County, Wisconsin**

**December 2010**

**Prepared By**

**Pollution Risk Services, LLC**



# CONTENTS

	Page
1.0 INTRODUCTION .....	2
1.1 Referenced Areas .....	2
2.0 MOBILIZATION .....	3
2.1 Scope of Work .....	3
3.0 SEDIMENT REMOVAL.....	5
3.1 Dredging .....	5
3.1.1 Scope of Work .....	5
3.1.2 Performance Standards - Dredging.....	5
3.2 Dredge Slurry Operations.....	5
3.2.1 Scope of Work .....	5
3.2.2 Performance Standards – Dredge Slurry Operations .....	6
3.3 Sediment Cover .....	6
3.3.1 Scope of Work .....	6
3.3.2 Performance Standards - Sediment Cover .....	6
4.0 TRANSPORTATION AND DISPOSAL OF SEDIMENT WASTE.....	8
4.1 Scope of Work .....	8
4.2 Performance Standards .....	8
5.0 DE-MOBILIZATION.....	9
5.1 Scope of Work .....	9
5.2 Performance Standards .....	9
6.0 QUALITY ASSURANCE/QUALITY CONTROL .....	10
7.0 SCHEDULING AND PROJECT COORDINATION.....	11
7.1 Scheduling.....	11
7.2 Project Coordination .....	11
8.0 REPORTING AND RECORDKEEPING .....	13
8.1 Daily Reports .....	13
8.2 Recordkeeping.....	13
9.0 REFERENCES .....	14

## Appendices

Appendix A	Design Figures
Appendix B	Environmental Protection Plan (EPP)
Appendix C	Dredge Plan
Appendix D	Water Management Plan (WMP)
Appendix E	Sediment Management Plan (SMP)
Appendix F	Stormwater Pollution Prevention Plan (SWPPP)
Appendix G	Construction Quality Plan (CQP)
Appendix H	Schedule

## 1.0 INTRODUCTION

The Sheboygan River and Harbor CERCLA remedy is discussed in the Record of Decision (ROD) and further defined in the Lower River Remedial Design. The Lower River Remedial Design (Design) is the set of Design Documents; including the plans, specifications, and supportive plans that identify the contaminated sediment in the Sheboygan River and Harbor that will be removed to meet the Remedial Objectives of the ROD. This Remedial Action Work Plan (RAWP) presents further detail associated with performance standards, implementation, quality assurance, and quality control for the Lower River Remedial Action. The Remedial Action is the set of physical activities that are performed to remove the contaminated sediment identified in the Design. All Remedial Activities or Remedial Actions are performed within the context of defined work activities.

Lower River Remedial Action has the following *Defined Work Activities*:

- Mobilization
- Sediment Removal
  - Dredging
  - Dredge Slurry Operation
  - Sediment Cover
- Transportation and Disposal of Sediment Waste
- De-mobilization

### 1.1 Referenced Areas

#### **De-watering Area and Wastewater Treatment Plant (WWTP)**

The Remedial Design has identified the location and set up for the slurry de-watering. The de-watering area, at 2025 Maryland Avenue, Sheboygan, WI, consists of the WWTP and the de-watering pad for the Geo Tubes. The dewatering pad was constructed above the flood zone so that run-on and run-off could be controlled. The WWTP equipment was installed in an area outside the flood zone and with secondary containment. Surveying was performed prior to construction to document the baseline conditions of the dewatering area.

#### **Job Site Office**

The Remedial Action Job Site office will be a trailer, as identified in Design plans, found on the property at 2025 Maryland Avenue outside the flood zone.

#### **Lower River**

The Lower River is identified in the ROD as well as in the Design. This RAWP will refer to the portion of the Lower River requiring Remedial Action. The Lower River requiring Remedial Action is found from Station 580+00 to the Pennsylvania Avenue Bridge. For ease of use and reference, this RAWP has provided Remedial Design Figure 3 and 4 in Appendix A.

#### **Inner Harbor**

As with the Lower River, the Inner Harbor is identified in the ROD as well as in the Design. This RAWP will refer to the portion of the Inner Harbor River requiring Remedial Action. The Inner Harbor requiring Remedial Action is found from the Pennsylvania Avenue Bridge to

Station 680+00. For ease of use and reference, this RAWP has provided Remedial Design Figure 5 in Appendix A.

## **2.0 MOBILIZATION**

### **2.1 *Scope of Work***

Mobilization defined work activities are the actions necessary to staff and place in physical service the resources necessary for the remedial action. The Mobilization defined work activities are:

- Preparing River Access
- Equipment Delivery
- Project fueling set up

#### **Preparing River Access**

The dredge and booster pumps will be launched from an access area east of the boat ramp off of 14<sup>th</sup> Street near Station 630+00. This area is a property owned by the City of Sheboygan. To prepare for the river access, the City of Sheboygan Deputy Director of Public Works has granted PRS river access. Before any access activities, photographs will document the pre-existing conditions of the road and surrounding area. Boats will be launched, as necessary, using the existing boat ramps near 14<sup>th</sup> Street and 8<sup>th</sup> Street bridges.

The 8” HDPE Pipe used to carry dredge slurry will be deployed to the river from the dewatering area. Again, photographs will document the pre-existing conditions and any need to restore the river bank.

#### **Equipment Delivery**

The dredge, booster pumps, and maintenance boat “launching” will be performed with a mobile crane. The equipment is stored in Sheboygan Falls, where it will be loaded and transported by truck to the access area east of the boat ramp off of 14<sup>th</sup> Street. At this area, the equipment will be lifted by the crane and placed in the river.

After the equipment is delivered, the 8” slurry pipe will be connected to the Dredge and Booster pumps. All connections will be tested for leaks and baseline settings will be established.

#### **Project Fueling Set Up**

Ultra-low sulfur diesel (ULSD) fuel will be utilized on the following equipment:

- Dredge
- Booster Pumps
- Wastewater Treatment Plant (WWTP) Pumps

Gasoline used for pumps, generators, outboards, and other equipment is standard unleaded regular gasoline.

Fuel transfers will be performed in accordance with U.S. Coast Guard oil transfer procedures aboard the dredge, booster pumps, WWTP pumps, and fuel boat. Diesel fuel will be stored in a 150 gallon double-wall fuel tank aboard the fuel boat and in 550 gallon double-wall fuel tanks at

the dewatering area. All fuel transfer hoses will be inspected, tested, and maintained in accordance with U.S. Coast Guard requirements. Booms, pad, and absorbent dry will be used to cleanup any spill or release on the dredge, booster pumps, WWTP pumps, and fuel boat. The *Contingency Plan* and *Environmental Protection Plan* (EPP; Appendix B) provide additional detail on spill prevention procedures and materials.

## 3.0 SEDIMENT REMOVAL

Sediment Removal has three defined work activities:

- Dredging
- Dredge Slurry Operations
- Sediment Cover

### 3.1 *Dredging*

#### 3.1.1 Scope of Work

In this RAWP, “**dredging**” is the defined work associated with operating the dredge equipment to remove the contaminated sediment identified in the Design and pumping the slurry to the de-watering area. For ease of use, Remedial Design Figure 3, 4 and 5 in Appendix A provides the plan view of the actionable sediment removal locations in relationship to the respective energy zone. The Design sediment quantities are the specific contaminated sediment volumes and the estimated over cut volumes that will be generated during the **dredging**. The Design estimates 50,548 cubic yards of sediment will be dredged in total with 39,755 cubic yards requiring removal because of PCB contamination. The extra sediment quantity is estimated from over cut dredging allowances. Dredge operations are estimated for 8-10 hours of operating activity during a sediment removal work day (10-12 hours).

The *Dredge Plan*, provided in Appendix C, provides additional detail on the sediment removal operation.

#### 3.1.2 Performance Standards - Dredging

The Performance Standards for Dredging are as follow:

- Remove all contaminated sediment as described in the *100% Design*.
- Dredge to the elevations and surface boundaries identified in the *100% Design*, specifically
  - Dredge to the “X, Y, and Z” coordinates identified in the Design, (Northing, Easting, and Elevation)
  - Verify the sediment meets the requirements of the *Mitigation Plan, Decision Tree*
- Conduct the dredging work activities consistent with best management practices (BMPs)
  - Maintain records and inspection of water Turbidity during Dredging
  - Stop dredging when Turbidity is elevated and make corrections to the dredging work activities to reduce the turbidity
  - Minimize the potential for contaminated sediment movement into unintended areas by following the *Water Management Plan* (Appendix D)

### 3.2 *Dredge Slurry Operations*

#### 3.2.1 Scope of Work

In this RAWP, **dredge slurry operations** are the defined work activities performed at the de-watering area to separate the dredge slurry into its components - sediment and water. Dredging

will pump approximately 1,000,000 gallons of slurry to the de-watering area on operating days. Slurry enters geo-textile sediment separating bags. Sediment is retained in the geo-textile tube and the carriage water flows for processing in the Wastewater Treatment Plant (WWTP). Independent geo-textile tubes are identified for TSCA and non-TSCA sediment. Carriage water is treated before being discharging back into the Sheboygan River. The WWTP will process and discharge approximately 110,000 gallons of treated carriage water, hourly. Dredge and dredge slurry operations are estimated for 8-10 hours of operating activity during a sediment removal work day (10-12 hours).

The *Dredge Plan*, provided in Appendix C, provides additional detail on the sediment cover operation.

### **3.2.2 Performance Standards – Dredge Slurry Operations**

Performance standards for dredge slurry operations are as follow:

- Use the geo-textile tube and flocculent identified in the Design
- Conduct work and discharge effluent carriage water consistent with the *Water Management Plan* (Appendix D)

## **3.3 Sediment Cover**

### **3.3.1 Scope of Work**

If necessary and as identified in the Design's Mitigation Plan Decision Tree, a sand/aggregate/riprap layer will be placed over sediment surfaces that have elevated PCB concentrations in the residual sediment. The residual sediment concentrations will be measured as identified in the Design's Verification Sampling Plan.

The *Dredge Plan*, provided in Appendix C, provides detail on the sediment cover operation.

### **3.3.2 Performance Standards - Sediment Cover**

Performance standards for sediment cover.

- Verify the sediment surface meets the SWAC requirements of the *Mitigation Plan, Decision Tree*
- Sediment Cover in High Energy Zones
  - Typical aggregate material and thickness identified in the Mitigation Plan. If typical cover design does not meet river condition criteria, Type B riprap (12 inch minus) will be placed at a thickness of 2 times the maximum particle size (i.e. largest riprap size).
  - Cover thickness and coverage area will be verified by conducting bathymetric survey one week after placement.
- Sediment Cover in Low Energy Zones
  - Typical sand material and thickness identified in the Mitigation Plan. If typical cover design does not meet river condition criteria, Type B riprap (12 inch minus)

will be placed at a thickness of 1.5 times the maximum particle size (i.e. largest riprap size).

- Cover thickness and coverage area will be verified by conducting bathymetric survey one week after placement.
- Cover Placement will be performed consistent with best management practices (BMPs)
  - Cover will be placed within the Turbidity guidelines identified in the *Water Management Plan* (Appendix D)

## 4.0 TRANSPORTATION AND DISPOSAL OF SEDIMENT WASTE

The *Sediment Management Plan*, Appendix E, provides additional detail on the transportation and disposal of sediment waste operation.

### 4.1 *Scope of Work*

In this RAWP, the Transportation and Disposal of Sediment Waste are **defined work activities** associated with the sediment removed from the geo-textile tubes and shipped to the disposal locations. When the work activities are performed, approximately 800 to 1,000 tons of sediment waste will be transported and disposed, daily. The Defined work Activities are:

- Separate water from sediment
  - Geotextile tube – primary method
  - Air drying – secondary method
  - Drying Agent – tertiary method
- Sampling sediment in geo-textile tubes
- Loading the waste sediment onto the transportation trucks
- Completing the Manifests and coordinating the disposal at the appropriate waste disposal facility (TSCA or non-TSCA). The TSCA landfill will be Environmental Quality located in Wayne, Michigan. The non-TSCA landfill will either be Veolia located in Chilton, Wisconsin or Waste Management located in Manitowoc, Wisconsin.

### 4.2 *Performance Standards*

Performance standards are described below for the transportation and disposal of sediment waste.

- Sample and analyze waste for the appropriate physical and chemical disposal standards
- Manifest all sediment waste that is disposed
- Conduct the work consistent with best management practices (BMPs) described in the *Sediment Management Plan* (Appendix E) to minimize the movement of material with elevated chemical concentration into unintended areas.

## 5.0 DE-MOBILIZATION

### 5.1 *Scope of Work*

The De-mobilization defined work activities are the actions/resources necessary to remove equipment from the river operation, remove the equipment from the de-watering area, and restore the respective areas to the appropriate condition.

#### **Dredging Equipment De Mobilization**

The dredge, booster pumps, and maintenance boat will be removed from the river with a crane located at the access east of the boat ramp off of 14<sup>th</sup> Street near Station 630+00. This area is property owned by the City of Sheboygan. To prepare for the river access, the City of Sheboygan Deputy Director of Public Works has granted PRS river access. Photographs from the mobilization activities will be used to establish the appropriate or needed restoration. Boats will be removed from existing boat ramps located near the 14<sup>th</sup> Street and 8<sup>th</sup> Street bridges.

The 8" HDPE Pipe will be removed from the river at the de-watering area, size reduced into manageable lengths, and removed. Again, the mobilization photographs will be used to set the appropriate restoration activity standard.

#### **Dredge Slurry Operation**

The dredge slurry operation de-mobilization defined work activities are:

- Removing, sampling, and disposing of the asphalt and hard fill from the de-watering pad footprint
- Dismantling and removing wastewater treatment plant (WWTP)
- Removing de-watering area fencing
- Dismantling and removing job trailer
- A site assessment in conformance with Wisconsin Administrative Code, ch. NR 700 (NR 700) will be performed on the entire dewatering area property, including paved and unpaved areas. If soil or groundwater contamination is discovered, soil and groundwater will be remediated in conformance with NR 700. Site assessment will include sampling for PCBs, PAHs, and Resource Conservation and Recovery Act (RCRA) heavy metals. If final remediation includes a protective cap, a cap maintenance plan shall be developed in accordance with NR 700.
- Post-construction site survey will be conducted to demonstrate that no changes to the floodplain have occurred and the requirements of NR 116 have been met.

### 5.2 *Performance Standards*

Performance standards are described below for the de-mobilization.

- Conduct the work consistent with best management practices (BMPs) described in the *Stormwater Pollution Prevention Plan* (Appendix F) to restore area to pre-construction survey conditions.

## **6.0 QUALITY ASSURANCE/QUALITY CONTROL**

The details of quality assurance and quality control are provided in the *Construction Quality Plan* (CQP, Appendix G) by defined work activity. The Project Manager will be responsible for the implementation of CQP. The Quality Coordinator is responsible for the execution of the CQP. The Quality Coordinator will conduct inspections on all aspects of the work specified and will report to the Project Manager. Quality control records of all inspections and tests performed will be documented in a daily Quality Control Report. These records will include evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, or causes for rejection; proposed remedial action; and correct actions taken.

## **7.0 SCHEDULING AND PROJECT COORDINATION**

### **7.1 Scheduling**

Appendix H presents the anticipated schedule for the project work. Work hours are 6 am to 8 pm. Monday through Saturday. Sundays may have activity at the de-watering area.

Typical work days will be a 10-12 hour single shift, 6 days per week. Weekly schedules will be prepared and provided at the respective weekly progress meetings.

### **7.2 Project Coordination**

The following official coordination is part of the Remedial Actions.

- Notification to USEPA of anticipated start of remediation
- Pre-construction meeting
- Daily Health and safety meetings
- Weekly progress meetings
- Pre-final walkthrough meeting
- Final walkthrough meeting

#### **Pre-Construction Meeting**

A Pre-Construction Meeting will be held prior to the Mobilization defined work activity. The Pre-Construction Meeting will be attended by city officials, local responders, as well as any Agency individuals who will be involved during the remedial activities or Remedial Action. This RAWP and the *Health and Safety Plan (HASP)* will have been reviewed and approved before that meeting. The meeting will be documented and minutes shall be transmitted to all participants in a timely manner.

#### **Health and Safety Meetings**

Health and Safety Meetings will be held daily before commencing work activities. Each employee working on the job site will be required to attend the Health and Safety Meetings. These meetings shall address progress, planned activities for the day, health and safety concerns or any other issues deemed necessary. If any matter remains unresolved at the end of the meetings, the Project Manger will be responsible for the resolution of the matter and communication of the decision to the appropriate parties. The meetings will be documented on the Health & Safety Report as part of the daily Production Report.

#### **Weekly Progress Meetings**

Progress meetings will be held on a weekly basis to review Site activities and schedule. The Project Manager, USEPA, and WDNR representatives will participate in these meetings. An agenda for the upcoming meeting will be provided at least 2 days prior to the meeting date for all attendees. These meeting will be documented and minutes shall be transmitted to all participants in a timely manner. Topics to be covered at the meeting include, but are not limited to the following:

- Health and Safety Activities/Concerns
- Production Activities/Concerns

- Quality Activities/Concerns
- Field Activities/Concerns
- Schedule

**Pre-final Walk-through Meeting**

Upon completion of all site activities, a pre-final meeting shall be held at the Site. The Project Manager, USEPA, and WDNR representatives will participate in the final meeting. The meeting shall consist of a walk-through of the Site to verify that the project was completed in accordance with Design Documents. Any deficiencies will be noted and corrections made within 2-3 weeks.

**Final Walk-through Meeting**

Upon completion of all noted deficiencies, a final meeting shall be held at the Site. The Project Manager, USEPA, and WDNR representatives will participate in the final meeting. The meeting shall consist of a walk-through of the Site to verify that the deficiencies were corrected in accordance with direction provided in the Pre-final Walk-through Meeting.

## **8.0 REPORTING AND RECORDKEEPING**

### **8.1 *Daily Reports***

During remedial activities, the Quality Coordinator and Project Manager will prepare a daily Quality Control Report and Production Report, respectively. Details regarding the contents of these reports are provided in the *Construction Quality Plan*, Appendix G.

### **8.2 *Recordkeeping***

On-site files will be maintained and kept in the office trailer. A record copy of the Design will be maintained during the life of the project, including any addenda, change orders, and other modifications. All project correspondence, Request for Clarification, shop drawings, submittals, product data, samples, purchases, weigh tickets, logbooks, O&M manuals, related documents, and revisions will maintained in the project files located in the office trailer.

## **9.0 REFERENCES**

U.S. EPA. 2000. *U.S. EPA Superfund Record of Decision (ROD), Sheboygan River and Harbor, Sheboygan, Wisconsin*, May 2000.

PRS. 2010. *100% Design, Sheboygan River and Harbor, Sheboygan, Wisconsin*, November 2010.