

## **APPENDIX VII**

### **SUMMARY OF KEY PERFORMANCE STANDARDS ASSOCIATED WITH THE REMEDIAL ACTION PLAN FOR LEAD IMPACTED SEDIMENTS MILL RIVER STUDY AREAS I –V, FAIRFIELD CT**

**JUNE 21, 2013**

The following lists selected elements from the Remedial Action Plan ("RAP") that represents performance standards related to implementing the plan. Many other such standards exist and are part of the RAP to which reference is herein made.

#### **Best Management Practices (BMPs)**

1. Project Operations and Maintenance Plan - Contractor prepared with Exide and DEEP review/approval. Plan will include, but not be limited to, items such as routine equipment operation and maintenance practices, Health and Safety manual, material storage practices and contingency planning items such as Spill Prevention Control and Countermeasures Plans (SPCC including fueling of dredge procedures). The objective of the BMPs will be to ensure the project is performed without any resultant negative impact to the upland parcel or Mill River.
  
2. Quality Assurance Project Plan (QAPP) - Contractor prepared with Exide review/approval. Plan will include, but not be limited to, items such as:
  - a. Daily volumetric quantity calculations;
  - b. As-built bathymetric, sediment thickness and coverage area drawings;
  - c. Debris locations;
  - d. Critical structures location and delineation;
  - e. Dredge monitoring system and data analysis;
  - f. High accuracy project tracking;
  - g. O&M Plan for ensuring integrity of dredge slurry line

## **Procedural/Structural**

1. The preferred dredge sequence would be to start work in Area V, then to move downstream to Areas I, II, III, & IV. This sequence will be changed subject to approval from DEEP to accommodate circumstances beyond the control of Exide such as the in-river restricted periods and the project start date.
2. Turbidity curtains will be anchored to the river bottom and will be designed with the maximum amount of breathable material possible to allow acceptable inflow.
3. Fish corridors of at least 15' width by 2' depth (or otherwise as inspected/approved by DEEP) will be maintained at all times during the fish migration season to ensure passage for migratory fish. To confirm that water loss due to dredging does not create inadequate migratory corridors at study area constriction points, these areas will be inspected at a minimum of twice per week during dredging.
4. No dredging will take place in Area IV or Area III during the shellfish blackout period.
5. Area IV will utilize diver assisted vacuum removal of sediments.
6. The following three locations will not be dredged during the river herring spawning migration period from April 1 to June 30: (1) Area II Dredge Cell #2, (2) Area III Dredge Cell #1 and (3) Area IV.
7. State of the art hydraulic dredge technology will be employed using underwater cameras, GPS location devices, and continuous flow monitoring. Due to site specific conditions, diver assisted suction dredging will be performed in Area IV and Area II Dredge Cell #2.
8. Geotubes have been selected as the dewatering method for this project. The Geotubes will be situated on a double lined containment pad prepared to collect filtrate for treatment prior to discharge to the Mill River in accordance with NPDES permit requirements.
9. All sediment remediation (dredging) will be completed to avoid vertical cuts and to allow shallow and gradual slopes in the dredged bottom profile.

### **Field Conditions Observation/Response**

1. Turbidity monitoring up and downstream will include at least four real time stations. Project Engineer and Contractor Project Manager automatic response when downstream turbidity exceeds upstream by more than 5 NTU when upstream (background) is 0 – 20 NTU; 35% when upstream is >20 NTU.
2. 0-30 minutes after exceedance registers, site management will contact dredge operator and monitor trend of real-time turbidity data. Engineer will dispatch to dredge site with hand-held testing equipment. In the event a visual plume is seen leaving the turbidity curtain, dredging will cease immediately.
3. 30-60 minutes after exceedance, Engineer will check real-time turbidity meters and confirm exceedance with hand-held unit. If exceedance is confirmed, engineered controls will be put in place to halt the exceedance.
4. In the event the cause of the exceedance cannot be corrected within 120 minutes, dredging will be halted until corrective action can be implemented.
5. Visual inspection of the active dredge cell will be performed at least every two hours. If a visual turbidity plume is observed leaving the turbidity curtain dredging will cease immediately. A log book of turbidity monitoring data and observations will be maintained on-site.
6. Turbidity monitoring will be 24 hours per day seven days per week with off hour notification to designated Project Engineer/Contractor representatives.
7. Filtrate will be monitored in strict adherence to all conditions in the NPDES permit including continuous monitoring for pH, flow and temperature, weekly monitoring for lead, monthly monitoring for total suspended solids, arsenic, chromium, copper, mercury, nitrogen, selenium, silver and zinc, and quarterly toxicity monitoring.
8. Confirmation sampling will be performed within each dredge cell on a 30 ft grid to ensure that remediation targets are met within a 95% confidence interval, and that no

single sample exceeds twice the level for that area. The dredge and turbidity curtains will not be moved to a new cell until these conditions are met.

9. Final verification sampling will take place on the original 50 foot grid that were utilized for initial sampling, data will be evaluated using surface weighted average concentration (SWAC) to ensure compliance with the cleanup criteria level for each of the five areas. The data gathered from the final post-remediation mapping effort will be reviewed, tabulated, and presented in a final report. Should exceedance of the established remediation standard for lead be determined by final confirmation sampling, Exide will work with the DEEP to develop an appropriate response plan that is protective of human health and the environment. Potential response actions may include, but are not limited to, natural recovery of the system, thin layer covers, and additional sediment removal.