This fact sheet provides an update on the assistance provided to U.S. Environmental Protection Agency (EPA) regional offices under the EPA’s Superfund Sediment Resource Center (SSRC) in fiscal year (FY) 2010. In April 2004, EPA created the SSRC to provide technical assistance to EPA remedial project managers (RPMs) with site-specific technical issues related to assessment and management of risks at contaminated sediment sites. In the first two quarters of FY 2013, SSRC provided support for two sites, to bring the total number of projects to 40. This fact sheet describes the types of support available, organizations providing support, and summaries of completed SSRC projects. It also contains information on how regional and state project managers can access the SSRC support.

Areas of focus for the SSRC include the following:

- Geomorphology and sediment transport and stability
- Modeling (hydrodynamic, fate and transport, and food chain)
- Sampling design and statistical analysis
- Remedy evaluation, design, and implementation (dredging and excavation, capping, monitored natural recovery (MNR), treatment technologies, confined disposal facilities, upland disposal and reuse, and innovative technologies)
- Monitoring plan design and implementation

The SSRC provides timely and helpful input on draft technical work products prepared by EPA, responsible parties, states, and federal facilities. The types of assistance provided include the following:

- Reviewing documents and deliverables such as work plans
- Providing general input on the results of engineering studies, modeling work, statistical and sampling designs, and bioaccumulation studies

### ACCESSING SSRC FOR ASSISTANCE

**Contact:**

- Steve Ells, 703-603-8822, Ells.Steve@epa.gov
- Matthew Lambert, 703-603-7174, Lambert.Matthew@epa.gov

**Federal Project Managers**

When requesting assistance from SSRC, please provide your name, affiliation, telephone and e-mail, the name and location of the site and indicate the cleanup program under which the site is being addressed (e.g., Superfund), and a complete description of the support requested.

**State Project Managers**

Please contact your EPA regional counterparts to request assistance from SSRC.

**Level and Duration of Effort**

The level of effort for most requests is expected to be less than 40 hours, and response turnaround times are typically less than 30 days. For requests requiring greater level of effort, the region may provide additional funding to complete the effort.

### SUMMARY

This report provides a status update and brief summary of the technical assistance provided to EPA RPMs under the SSRC.

- Table 1 lists a total of 40 projects that SSRC has provided technical support from FY04 to FY13.
- The appendix provides summaries of each project.
Managed and funded by the Office of Superfund Remediation and Technology Innovation (OSRTI), the SSRC is intended to provide access to experts within and outside the federal government. Assistance for the SSRC is provided primarily by U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC), contractors, and experts from academia. Additionally, the SSRC coordinates with EPA programs such as the Technical Support Centers under the Office of Research and Development to provide expertise. The SSRC works with the requesting RPM to access the appropriate expertise. The level of effort for most requests is expected to be less than 40 hours, and response turnaround times are typically less than 30 days. For requests requiring greater level of effort, the region may provide additional funding to complete the effort.

SSRC Website: [http://www.epa.gov/superfund/health/conmedia/sediment/ssrc.htm](http://www.epa.gov/superfund/health/conmedia/sediment/ssrc.htm)

**SITE-SPECIFIC TECHNICAL ASSISTANCE REQUESTS RECEIVED**

Table 1 lists the requests received as of March 31, 2013, and the focus of the request is underlined. In the first two quarters of FY 2013, SSRC provided support for two sites, for a total of 40 assistance projects since FY04. The Appendix provides a summary of each technical assistance request.

<table>
<thead>
<tr>
<th>Site Name</th>
<th>EPA Region</th>
<th>Request Date</th>
<th>Subject of Request</th>
<th>Response Lead</th>
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</thead>
<tbody>
<tr>
<td>FY13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newtown Creek Superfund Site, New York City, New York</td>
<td>2</td>
<td>10/17/12</td>
<td>Provide technical assistance during the modeling study to develop models for the Newtown Creek Superfund site. The model study included a combined sewer overflow/stormwater model, a hydrodynamic model, a sediment transport model, a chemical fate and transport model, and a bioaccumulation model.</td>
<td>Earl Hayter USACE</td>
</tr>
<tr>
<td>FY12</td>
<td></td>
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</tbody>
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</thead>
<tbody>
<tr>
<td>Palos Verdes Shelf, OU 5 of the Montrose Chemical Corp. Superfund Site Los Angeles County, California</td>
<td>9</td>
<td>9/8/2011</td>
<td>MVS modeling</td>
<td>Jackie Burton and John Shafer, Sundance (Tetra Tech’s subcontractor)</td>
</tr>
<tr>
<td>Stevens Point Former Manufactured Gas Plant Site Stevens Point, Wisconsin</td>
<td>5</td>
<td>8/26/2011</td>
<td>Evaluation of the Feasibility Study Comparison of sediment remedies</td>
<td>Karl Gustavson, USACE</td>
</tr>
</tbody>
</table>

**FY11**

None

**FY10**

<table>
<thead>
<tr>
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<th>Response Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newport Naval Education and Training Center (OU6), Newport, Rhode Island</td>
<td>1</td>
<td>7/12/2010</td>
<td>Review of Sediment Transport Model</td>
<td>Earl Hayter USACE</td>
</tr>
<tr>
<td>Newport Naval Education and Training Center (OU5), Newport, Rhode Island</td>
<td>1</td>
<td>6/18/2010</td>
<td>Analysis of MNR</td>
<td>Karl Gustavson, USACE</td>
</tr>
<tr>
<td>Universal Oil Products Superfund Site (OU2), East Rutherford, New Jersey</td>
<td>2</td>
<td>6/03/2010</td>
<td>Review of Sediment Transport Model</td>
<td>Earl Hayter USACE</td>
</tr>
<tr>
<td>Grasse River Superfund Site, Massena, New York</td>
<td>2</td>
<td>3/31/2010</td>
<td>Review of questions posed by the stakeholder group related to the field of fluvial geomorphology</td>
<td>Dave Richardson, Tetra Tech</td>
</tr>
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</table>

**FY09**

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<thead>
<tr>
<th>Site Name</th>
<th>EPA Region</th>
<th>Request Date</th>
<th>Subject of Request</th>
<th>Response Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tittabawassee River, Saginaw River and Bay site, Midland, Michigan*</td>
<td>5</td>
<td>10/29/2009</td>
<td>Review Volumes 1, 2 and 3 of the report assessing sediment and bank stability</td>
<td>Karl Gustavson, and Joe Gallani, USACE</td>
</tr>
<tr>
<td>United Heckathorn Superfund Site, Richmond, California</td>
<td>9</td>
<td>2/17/2009</td>
<td>Evaluate analyses of solid-phase microextraction (SPME) samplers.</td>
<td>Gustavo E. Davico, USACE</td>
</tr>
<tr>
<td>Coeur d'Alene Superfund Site, Coeur d'Alene, Idaho</td>
<td>10</td>
<td>12/12/2008</td>
<td>Review of the Coeur d’Alene River Basin's Enhanced CSM Memo.</td>
<td>Earl Hayder &amp; Joe Gallani, USACE</td>
</tr>
</tbody>
</table>

**FY08**

<table>
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<tr>
<th>Site Name</th>
<th>EPA Region</th>
<th>Request Date</th>
<th>Subject of Request</th>
<th>Response Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callahan Mine Superfund Site, Brookeville, Maine</td>
<td>1</td>
<td>10/24/08</td>
<td>Review RI/FS and perform site visit</td>
<td>Paul Schroeder, USACE</td>
</tr>
</tbody>
</table>
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<th>Response Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick Bayou Superfund Site, Deer Park, Texas</td>
<td>6</td>
<td>7/21/08</td>
<td>Review sediment transport modeling report.</td>
<td>Earl Hayter, USACE</td>
</tr>
<tr>
<td>Lower Duwamish Waterway Superfund Site, Seattle, Washington</td>
<td>10</td>
<td>3/25/08</td>
<td>Review analysis for monitored natural recovery (MNR) and identify additional data gaps.</td>
<td>Karl Gustavson, USACE</td>
</tr>
<tr>
<td>Quendall Terminals Superfund Site, Lake Washington, Renton, Washington</td>
<td>10</td>
<td>2/6/08</td>
<td>Evaluate whether attenuation and/or recovery are viable technologies without the use of other more aggressive technologies and identify additional data gaps.</td>
<td>Karl Gustavson, USACE</td>
</tr>
<tr>
<td>FY07</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ciba-Geigy Corporation Superfund Site (OU3), McIntosh, Alabama</td>
<td>4</td>
<td>10/25/07</td>
<td>Review two reports on design of the remedy and sampling conducted at OU 3 and address specific issues.</td>
<td>Paul Schroeder, USACE</td>
</tr>
<tr>
<td>Metal Bank Superfund Site, Philadelphia, Pennsylvania</td>
<td>3</td>
<td>8/28/07</td>
<td>Attend meeting with PRP and EPA to resolve the issue of composition of the cap material.</td>
<td>Paul Schroeder, USACE</td>
</tr>
<tr>
<td>Pine Street Canal Superfund Site, Burlington, Vermont</td>
<td>1</td>
<td>7/19/07</td>
<td>Review and provide comments on the updated conceptual site model (CSM); provide input on the benefits of installing trenches to recover non-aqueous phase liquids (NAPL); and provide feedback on the use of reactive core mats (RCM) as a control measure.</td>
<td>Carlos Ruiz, USACE</td>
</tr>
<tr>
<td>FY06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slip 4 - Lower Duwamish Waterway Superfund Site, Seattle, Washington</td>
<td>10</td>
<td>11/16/06</td>
<td>Assess specific issues with a sediment cap design</td>
<td>Mike Palermo, (Michael R. Palermo Consulting)</td>
</tr>
<tr>
<td>Atlantic Wood Industries, Inc. Superfund Site, Portsmouth, Virginia</td>
<td>3</td>
<td>11/3/06</td>
<td>Evaluate remedial alternatives for river sediments contaminated with creosote, polycyclic aromatic hydrocarbons (PAH), pentachlorophenol (PCP), dioxins, and metals</td>
<td>Mike Palermo, (Michael R. Palermo Consulting)</td>
</tr>
<tr>
<td>Indiana Harbor Canal (Lake George Branch) Site, East Chicago, Indiana</td>
<td>5</td>
<td>9/11/06</td>
<td>Assess initial evaluation on the feasibility of dredging and/or capping contaminated sediments containing a high percentage (10-30%) of oil.</td>
<td>Ed Barth, EPA and Kelly Madalinski, EPA</td>
</tr>
<tr>
<td>Weyerhaeuser Company Plymouth Wood Treating Plant, Plymouth, North Carolina</td>
<td>4</td>
<td>9/9/06</td>
<td>Review feasibility study (FS) report on remedial alternatives for addressing dioxin and mercury contamination in Welch Creek</td>
<td>Paul Schroeder, USACE</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td>Lower Fox River and Green Bay site, Green Bay, Wisconsin</td>
<td>5</td>
<td>7/19/06</td>
<td>Evaluate propellant wash effect studies using JETWASH/PROPWASH modeling</td>
<td>Joe Gailani, USACE</td>
</tr>
<tr>
<td>Six Former Manufactured Gas Plant (MGP) Sites, Various locations, Wisconsin</td>
<td>5</td>
<td>7/19/06</td>
<td>Review risk assessment framework, CSM, and multi-site field sampling plan (FSP) for sediment contaminated with PAHs; benzene, toluene, ethylbenzene, and xylenes (BTEX); and cyanide</td>
<td>Burton Suedel, USACE</td>
</tr>
<tr>
<td>Metal Bank Superfund Site, Philadelphia, Pennsylvania</td>
<td>3</td>
<td>3/21/06</td>
<td>Evaluate FS report on capping design for PCB-contaminated sediments</td>
<td>Paul Schroeder, USACE</td>
</tr>
<tr>
<td>Atlantic Wood Industries, Inc., Superfund Site, Portsmouth, Virginia</td>
<td>3</td>
<td>3/20/06</td>
<td>Assess remedial alternatives for river sediments contaminated with creosote, PAHs, PCP, dioxins, and metals</td>
<td>Mike Palermo, (Michael R. Palermo Consulting)</td>
</tr>
<tr>
<td>Lower Duwamish Waterway Superfund Site, Seattle, Washington</td>
<td>10</td>
<td>3/7/06</td>
<td>Review statistical analysis of surficial sediment chemistry data sets for polychlorinated biphenyls (PCBs)</td>
<td>Bill Thayer, (Syracuse Research Corporation)</td>
</tr>
<tr>
<td>Koppers Wood Treating (Beazer East, Inc. [Beazer East]) Site, Carbondale, Illinois</td>
<td>5</td>
<td>1/17/06</td>
<td>Evaluate MNR and screening-level ecological risk assessment (SLERA) of sediments contaminated with coal-tar creosote, PAHs, and PCP</td>
<td>Burton Suedel, USACE</td>
</tr>
<tr>
<td><strong>FY05</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Atlantic Wood Industries, Inc., Superfund Site, Portsmouth, Virginia</td>
<td>3</td>
<td>12/15/05</td>
<td>Assess remedial alternatives for river sediments contaminated with creosote, PAHs, PCP, dioxins, and metals</td>
<td>Mike Palermo, (Michael R. Palermo Consulting)</td>
</tr>
<tr>
<td>Olin Corporation (McIntosh Plant) Superfund Site, OU 2, McIntosh, Alabama</td>
<td>4</td>
<td>9/13/05</td>
<td>Evaluate fluvial sedimentation, berm design and permitting, and capping of mercury-contaminated sediments</td>
<td>Susan Bailey, USACE</td>
</tr>
<tr>
<td>Indiana Harbor Canal (IHC) Site, Indiana</td>
<td>5</td>
<td>3/1/05</td>
<td>Evaluate the three remedial alternatives that include invasive aeration of the sediments, sonic aided aeration, and sediment washing.</td>
<td>Kelly Madalinski, EPA</td>
</tr>
<tr>
<td><strong>FY04</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver Lake Sediments, Housatonic River Project Site, Pittsfield, Massachusetts</td>
<td>1</td>
<td>10/7/04</td>
<td>Review objectives for testing cap implementation</td>
<td>Danny Reible, University of Texas, Austin</td>
</tr>
<tr>
<td>Onandaga Lake Superfund Site, Syracuse, New York</td>
<td>2</td>
<td>9/15/04</td>
<td>Assess MNR modeling for contaminated sediment</td>
<td>Carlos Ruiz, USACE</td>
</tr>
<tr>
<td>Harbor Island Superfund Site, Seattle, Washington</td>
<td>10</td>
<td>8/16/04</td>
<td>Review focused FS for dredging</td>
<td>Tommy Myers, USACE</td>
</tr>
</tbody>
</table>
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</thead>
<tbody>
<tr>
<td>Silver Lake Sediments, Housatonic River Project Site, Pittsfield, Massachusetts</td>
<td>1</td>
<td>4/15/04</td>
<td>Review conceptual design for capping</td>
<td>Danny Reible, University of Texas, Austin</td>
</tr>
</tbody>
</table>
Appendix

SUMMARIES OF SITE-SPECIFIC TECHNICAL ASSISTANCE REQUESTS RECEIVED
Quendall Terminals Superfund Site

Location: Lake Washington, Renton, Washington
Requested by: Lynda Priddy, EPA Region 10
Date: November 6, 2012

Site Background/Request:
The Quendall Terminals Superfund site is a 23-acre former creosote manufacturing facility. Almost the entire subsurface, from generally 25 ft below ground surface, is contaminated with mobile and non-mobile DNAPL and dissolved contaminants from the DNAPL. This material has been leaking into Lake Washington for decades. The near shore sediments are contaminated with DNAPL and contaminated groundwater up-welling into the surface and subsurface sediments.

The Washington Department of Ecology (Ecology) issued an enforcement order requiring the PRPs to remediate the site. In the 20-year period that Ecology had overseen the RI/FS stage of the cleanup, only the RI was approved by the Ecology. EPA has reviewed the information that supported the RI and is in the process of identifying data gaps. EPA acknowledges that there is a large amount of data with varying levels of quality. There is enough data for EPA to (1) understand the Conceptual Site Model (CSM) for this site, (2) review and evaluate existing data, and (3) determine specific data gaps. The RPM estimates that 80 percent of what is needed for RI has been completed. The FS has started, concurrent with the last stages of the RI and risk assessment being completed.

EPA Region 10 is seeking review of Appendix B in the Draft Feasibility Study which includes the following Appendices:

1. Appendix B1 - Water Quality Impacts Evaluation
2. Appendix B2 - Dredging Residuals Evaluation,
3. Appendix B3 - Cap Isolation Layer Modeling
4. Appendix B4 - Cap Armor Layer Evaluation, and
5. Appendix B5 - Cap Geotechnical Considerations.

Lead on Response: Karl Gustavson, USACE, ERDC
Response Date: December 11, 2012

Response Provided/Comments: Karl Gustavson reviewed Appendix B and select sections of the feasibility study and provided review comments in a memorandum date December 11, 2012.

Newtown Creek Superfund Site

Location: City of New York, NY
Requested by: Caroline Kwan, EPA Region 2
Request Date: October 17, 2012

Site Background/Request:
Newtown Creek and its five tributaries (Dutch Kills, Whale Creek, Maspeth Creek, East Branch, and English Kills) comprise an estuarine waterbody with an overall length of about 3.8 miles. A substantial portion of the shoreline is contained by bulkheads or protected by riprap. The typical width of Newtown Creek is about 200 to 300 feet. Newtown Creek is a federally designated navigation channel with authorized project water depths of 20 feet or greater. Circulation within Newtown Creek is primarily affected by two mechanisms: tidal motion in the East River and freshwater inflows. The semi-diurnal tidal cycle has a vertical range of approximately 5 to 7
feet. Freshwater sources to Newtown Creek include CSOs, stormwater outfalls, municipal/industrial outfalls, and groundwater. Generally, fresher (less dense) water flows in a surface layer toward the East River, with saltier (more dense) water flowing upstream (away from the East River) in a bottom layer of the water column.

The EPA Region 2 is requesting technical assistance during the modeling study to develop models for the Newtown Creek Superfund site. The potentially responsible parties and EPA will discuss the framework for developing the model and the data inputs necessary to run the model. The model will likely include a combined sewer overflow/stormwater model, a hydrodynamic model, a sediment transport model, a chemical fate and transport model, and a bioaccumulation model. The primary objective of the modeling study is to develop a reliable management tool that can be used to inform the conceptual site model (CSM) for the study area, support risk assessment, and evaluate the efficacy of remedial alternatives. The response lead would also attend a modeling workshop on November 15\textsuperscript{th}, 2012.

**Lead on Response:** Earl Hayter, USACE, ERDC
**Response Date:** November 15, 2012

**Response Provided/Comments:** Earl Hayter reviewed the Modeling Approach Memorandum and provided review comments. Prepared and submitted a summary report of the proposed modeling approach, including the identification of necessary data input, technical issues, and any necessary revisions. Earl attended the modeling workshop on November 15\textsuperscript{th}, 2012 to discuss model development for the Newtown Creek Superfund site.

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**Yosemite Slough Sediment Site**

**Location:** San Francisco, California
**Requested by:** Craig Cooper, EPA Region 9
**Request Date:** March 28, 2012

**Site Background/Request:**
The Yosemite Slough (Slough) is an inlet channel connected to central San Francisco Bay located between the Hunters Point Naval Shipyard to the north and the Candlestick Point State Recreational Area to the south. At low tide, the majority of the sediments in the inlet channel are exposed creating a mudflat. Yosemite Slough once consisted of a large network of natural marine habitats. Between 1900 and 1970, Yosemite Slough underwent significant narrowing by placement of fill soils and debris in wetlands and along the original edges of the slough. Until 1962, combined sanitary sewer and storm water flows discharged directly to the Slough through three separate outfall pipes. EPA believes the Slough became contaminated in the past due to discharges from these three pipes and impacts from contaminated properties adjacent to and nearby the Slough.

**Request:** EPA Region 9 requested technical assistance and peer review of a presentation on removal action alternatives development and screening for the Yosemite Creek Sediment site. Eventually this presentation would be expanded to included detailed evaluation of alternatives and identification of the recommended alternative.

**Lead on Response:** Karl Gustavson, USACE, ERDC
**Response Date:** April 9, 2012

**Response Provided/Comments:** Karl Gustavson reviewed the presentation and provide comments on the alternatives listed in the presentation.
Palos Verdes Shelf, OU5, Montrose Chemical Corp. Superfund Site

Location: Los Angeles County, California
Requested by: Carmen White, EPA Region 9
Request Date: September 08, 2011

Site Background/Request:
The Palos Verdes Shelf (PV Shelf) is a large sediment site off the coast of the Palos Verdes Peninsula that is contaminated with dichlorodiphenyltrichloroethane (DDT) and polychlorinated biphenyls (PCBs). PV Shelf is operable unit 5 of the Montrose Chemical Corporation Superfund Site, located in Torrance, CA. Montrose Chemical Corp. was the world’s largest manufacturer of DDT. From the 1950s through 1971, DDT waste from Montrose and PCBs from other industrial sources entered the Los Angeles County sanitation system, ultimately to be discharged from submarine outfalls onto PV Shelf.

Request: EPA Region 9 requested the review of the contractor’s (CDM) model of sediment fate and transport at the Palos Verdes Shelf Superfund Site, specifically to 1) ensure that the calculations were performed accurately and completely and 2) to determine if the assumptions and interpretations of the model are appropriate and conservative. The results of the CDM model indicate that the quantities of DDT and PCBs at this site are about an order of magnitude less than the quantities that were found by an NRDA study in 1992 and 1994.

Lead on Response: John Shafer and Jackie Burton, Sundance (Tetra Tech’s Subcontractor)
Response Date: December 05, 2011 and January 19, 2012

Response Provided/Comments: John Shafer and Jackie Burton reviewed the CDM MVS Palos Verdes Shelf Contaminant Mass Model. On December 5, 2011, a technical memo was prepared and delivered to EPA addressing the following questions:
1. Is the MVS-based approach used by CDM for PV contaminant mass calculations reproducible?
2. Are CDM MVS-based contaminant mass estimates reasonable for the PV datasets analyzed?
3. If Question #2 is true – why are CDM’s contaminant mass calculations significantly lower than previous mass calculations?

On January 12, 2012, Sundance prepared and delivered a second technical memorandum describing the MVS-based Analysis of 1992 Palos Verdes Shelf p,p’-DDE Mass calculations. The objectives of this second analysis included:

1. Using 1992 PV Shelf sediment core concentrations for p,p’-DDE perform mass estimates following Sundance’s MVS-based approach to analyzing the 2009 PV Shelf core data previously demonstrated.
Stevens Point Former Manufactured Gas Plant Site

Location: Stevens Point, Wisconsin
Requested by: Leslie Patterson, EPA Region 5
Request Date: August 26, 2011

Site Background/Request:
The WPSC Stevens Point MGP Site is located at 1111 Crosby Avenue in Stevens Point, Portage County, Wisconsin. The Site is about 3 acres in size and residential, commercial and recreational use properties are found in the vicinity. The property is currently a grass covered lot bounded by Crosby Avenue to the west; a City of Stevens Point parking lot to the south and east; and a residential area, West Street, and apartment buildings to the north. Pfiffner Pioneer Park, owned by the city, lies west of the property across Crosby Avenue and is bordered on the west by the Wisconsin River. The Site currently consists of an open field (WPSC property), a portion of the adjacent City park (Pfiffner Pioneer Park), a City asphalt parking lot (the parking lot is a total of approximately 1.5 acres) and adjacent streets. There are no buildings or structures on the WPSC property. An open-air band shell and the Riverfront Art Center are located within the City park, which is approximately 6 acres in total, adjacent to the Wisconsin River and the Pfiffner Pioneer Park pond.

The Site is located in an area that was historically industrial, including lumber operations and other industrial processes. The gas plant was in operation from approximately the 1890s to the late 1940s or 1950s. During plant operations, a former slough (Moses Creek) was adjacent to the site and the water in the slough was pumped into the small pond (currently in Pioneer Park) connected to the Wisconsin River. In the late 1980's, Moses Creek was re-routed using perforated storm sewers to convey the water and discharge it to the Wisconsin River down river from the Main Street Dam. WPSC currently owns the Site, and the planned future use has not been determined. Groundwater depth ranges from 2 feet in Pioneer Park to 10 feet below ground surface on the south side of the Site. Flow is generally to the west away from the Wisconsin River (due to the Site being upstream of the Main Street Dam). Assessment of the bedrock groundwater is underway. Contaminants in groundwater include: BTEX; PAHs; cyanide; and lead. Routine groundwater monitoring occurs quarterly for select wells, and semi-annually for others.

A sediment coring survey was conducted in 2000, which included the nearby Wisconsin River and a small pond (about 0.2 acres) in Pioneer Park. A supplemental diver survey was conducted in the river in 2002. Based on the studies, total PAHs in the pond were from 10 to 260 mg/kg. Coal tar was observed in a core sample collected in the River adjacent to the pond. In the river the highest total PAHs were found near the outlet from the former slough and ranged from 11,000 to 20,000 mg/kg. These samples also showed elevated BTEX concentrations. Water depths in the pond in Pioneer Park range from 2 to 3 feet. Water depths in the Wisconsin River adjacent to the park range from about 3 to 21 feet. Sediment thickness in the pond is about 2 feet, and in the river sediment thickness ranges from less than 1 to 2 feet. The river bottom contains large amounts of woody debris with sandy sediment in the interstices. The contaminants found in soils, sediment and groundwater at the Site, including: BTEX; PAHs; cyanide; and lead.

Request: EPA Region 5 requested the Evaluation of the Feasibility Study Comparison of sediment remedies at the Stevens Point Former Manufactured Gas Plant Site, Stevens Point, WI.

Lead on Response: Karl Gustavson, USACE, ERDC
Response Date: November 4, 2011

Response Provided/Comments: Karl Gustavson reviewed the Feasibility Study (Revision 1) for the Stevens Point Former Manufactured Gas Plant Site. The purpose of this evaluation was to review the technical basis of and risk tradeoffs associated with the Feasibility Study’s conclusion that Alternative 3 (6-inch
sand cap in the Pfiffner Pond and no-action in the Wisconsin River areas of the site) is the preferred alternative. A memo was prepared which discussed the fundamental questions for evaluating remediation at this location based on information and analyses in the site documents.

Newport Naval Education and Training Center Site, OU 6

Location: Newport, Rhode Island
Requested by: Kymberlee Kecklerr, EPA Region 1
Request Date: July 12, 2010

Site Background/Request:
The Naval Education and Training Center (NETC) site is spread along 6 miles of the western shoreline of Aquidneck Island, north of Newport, Newport County, Rhode Island. The 1,063-acre NETC site has been used by the Navy as a refueling depot since 1900. An 11-acre portion of the site along the shore of Narragansett Bay, known as McAllister Point Landfill, accepted wastes consisting primarily of domestic refuse, acids, solvents, paint, waste oil, and oil contaminated with polychlorinated biphenyls (PCBs) from 1955 to the mid-1970s. Sludge from nearby tank farms was dumped on the ground or burned in chambers. Other contaminated areas on site, such as the Melville North Landfill, are classified as Formerly Used Defense sites and are being addressed separately. Surface water and groundwater flow toward the bay, which is used for boating and fishing. One tank farm is located 300 feet from a coastal wetland. Other areas of concern include Old Fire Fighting Training Area/Site 09, Tank Farm Four/Site 12, Tank Farm Five/Site 13, Gould Island, and Derecktor Shipyard. Gould Island (OU 6) lies between Aquidneck and Conanicut Islands, about 1.5 miles from the Newport shoreline. Electroplating and degreasing operations were performed in Building 32 during the mid-1940s, when it was used to service and store torpedoes. Field work for the remedial investigation at Building 32 on Gould Island began in the spring of 2006. Selection of a final cleanup remedy is planned for December 2012.

Request: EPA Region 1 requested the review and analysis of the sediment transport modeling conducted for OU6 of the site (Site 17, Building 32, Gould Island).

Lead on Response: Earl Hayter, USACE, ERDC
Response Date: August 8, 2010

Response Provided/Comments: Earl Hayter reviewed the memo titled Physical Sediment Conditions, Site 17 Gould Island NAVSTA Newport, Jamestown RI and provided written comments to the EPA Region 1 on August 8, 2010. Early Hayter also participated in a conference call with the EPA RPM, the Navy RPM, and the Navy's contractor and reviewed drawings from the Navy which showed proposed locations where Sedflume cores were to be collected as well as proposed locations where bottom-mounted Acoustic Doppler Current Profilers (ADCPs) were going to be located. Comments were provided to the EPA RPM regarding these proposed locations.

Newport Naval Education and Training Center Site, OU 5

Location: Newport, Rhode Island
Requested by: Kymberlee Kecklerr, EPA Region 1
Request Date: June 18, 2010
Site Background/Request:
The Naval Education and Training Center (NETC) site is spread along 6 miles of the western shoreline of Aquidneck Island, north of Newport, Newport County, Rhode Island. The 1,063-acre NETC site has been used by the Navy as a refueling depot since 1900. An 11-acre portion of the site along the shore of Narragansett Bay, known as McAllister Point Landfill, accepted wastes consisting primarily of domestic refuse, acids, solvents, paint, waste oil, and oil contaminated with polychlorinated biphenyls (PCBs) from 1955 to the mid-1970s. Sludge from nearby tank farms was dumped on the ground or burned in chambers. Other contaminated areas on site, such as the Melville North Landfill, are classified as Formerly Used Defense sites and are being addressed separately. Surface water and groundwater flow toward the bay, which is used for boating and fishing. One tank farm is located 300 feet from a coastal wetland. Other areas of concern include Old Fire Fighting Training Area/Site 09, Tank Farm Four/Site 12, Tank Farm Five/Site 13, Gould Island, and Derecktor Shipyard. The Navy is currently evaluating alternatives to address the contamination in the sediments offshore of the Derecktor shipyard (OU5). A revised FS is currently under review. A ROD is planned for December 2010.

Request: EPA Region 1 is requesting an analysis of MNR for OU5 of the site (Site 19, Former Robert E. Derecktor Shipyard Marine Sediment Naval Station).

Lead on Response: Karl Gustavson, USACE, ERDC
Response Date: June 29, 2010

Response Provided/Comments: Karl Gustavson reviewed the “Technical Memorandum on Monitored Natural Recovery Site 19, Former Robert E. Derecktor Shipyard Marine Sediment Naval Station Newport, Newport RI” (“the memo”) and provided a summary of the review to EPA Region 1. The review evaluated the lines of evidence used in the memo to document that MNR is occurring at the site. The review concluded that no sufficient information was provided to establish a technical basis for the overall conclusion that natural recovery of sediment contamination is occurring and can be relied upon as a remedial action.

Universal Oil Product Superfund Site

Location: East Rutherford, New Jersey
Requested by: Doug Tomchuk, EPA Region 2
Request Date: June 3, 2010

Site Background/Request:
The Universal Oil Products (UOP) site is located on 75 acres adjacent to Route 17 in East Rutherford, New Jersey. The property was developed in 1932 by Trubeck Laboratories, which built an aroma chemicals laboratory. Various chemicals were manufactured from 1932 to 1979, when the company ceased operations and dismantled the plant. The company also recovered solvents and waste chemicals at the site from 1960 through 1979. Approximately 4.5 million gallons of waste solvents and solid chemical wastes were dumped into two unlined lagoons, which resulted in contamination of the soil, surface water, and shallow groundwater. Approximately 36,500 people within 3 miles of the site depend on groundwater for their source of drinking water. Groundwater also provides process cooling water to local industries. The site is in the coastal wetland management area of the Hackensack River Basin. Berry’s Creek borders the southeastern part of the site and a system of natural and artificial surface-water channels crosses the property. Due to its location, the site is regularly subject to tidal flooding. Creek sediments are contaminated with mercury, PCBs, and other chemicals. Some fish in Berry’s Creek and adjacent water bodies have been found to be contaminated with chemicals at levels that exceed U.S. Food and Drug Administration guidelines for human consumption. The UOP property is
currently surrounded by undeveloped tidal marshes, highways, and commercial and light industrial properties. OU2 is currently under investigation.

Request: EPA Region 2 requested the review of the sediment transport modeling being conducted for OU2 of the Universal Oil Products site. This review included the review of two Potentially Responsible Party (PRP) documents and participation in a conference call regarding the modeling efforts at the site.

Lead on Response: Earl Hayter, USACE, ERDC  
Response Date: June 28, 2010 (Ongoing)

Response Provided/Comments: Earl Hayter reviewed two reports by the PRP and participated in a conference call that was held with the EPA contractor on June 28, 2010 regarding sediment transport modeling efforts. After the call, Earl Hater provided review comments to EPA Region 2.

Grasse River

Location: Massena, New York  
Requested by: Young Chang, EPA Region 2  
Request Date: March 31, 2010

Site Background/Request:  
Alcoa Inc. has been investigating PCB contamination in the Lower Grasse River downstream of their Massena, New York facility. Alcoa has submitted their Draft Analysis of Alternatives Report. As part of this review and a request from the trustees, USEPA has requested a fluvial geomorphology review of the existing data set. The trustee’s prepared 12 questions that they wanted addressed by a fluvial geomorphologist after review of the Draft Analysis of Alternatives Report and other pertinent documents. The response to the questions was submitted and reviewed by USEPA, Alcoa, and the trustees. A meeting was held in Albany, New York to discuss the response to the comments and any additional questions. After the meeting, the trustees have had additional questions as they review the Draft Analysis of Alternatives Report. The fluvial geomorphologist has reviewed data and responded to these questions.

Request: EPA Region 2 has requested the fluvial geomorphologist remain active in the project to address trustee questions or other technical issues.

Lead on Response: Dave Richardson, Tetra Tech  
Response Date: November 16, 2010 (ongoing)

Response Provided/Comments: The trustee comments relate to a gravel lag in a portion of the river that contains high concentrations of PCBs. The source of the gravel lag is important to determine the time line for the gravel and the associated PCB contamination. Additional sediment core data was requested to further evaluate this sample location. Comments and a request for additional information were provided to the EPA RPM to resolve this issue.

Stevens Point Former Manufactured Gas Plant Site

Location: Stevens Point, Wisconsin  
Requested by: Tanaisha Lee, EPA Region 5  
Request Date: March 23, 2010
Site Background/Request:
The WPSC Stevens Point MGP Site is located at 1111 Crosby Avenue in Stevens Point, Portage County, Wisconsin. The Site is about 3 acres in size and residential, commercial and recreational use properties are found in the vicinity. The property is currently a grass covered lot bounded by Crosby Avenue to the west; a City of Stevens Point parking lot to the south and east; and a residential area, West Street, and apartment buildings to the north. Pfiffner Pioneer Park, owned by the city, lies west of the property across Crosby Avenue and is bordered on the west by the Wisconsin River. The Site currently consists of an open field (WPSC property), a portion of the adjacent City park (Pfiffner Pioneer Park), a City asphalt parking lot (the parking lot is a total of approximately 1.5 acres) and adjacent streets. There are no buildings or structures on the WPSC property. An open-air band shell and the Riverfront Art Center are located within the City park, which is approximately 6 acres in total, adjacent to the Wisconsin River and the Pfiffner Pioneer Park pond.

The Site is located in an area that was historically industrial, including lumber operations and other industrial processes. The gas plant was in operation from approximately the 1890s to the late 1940s or 1950s. During plant operations, a former slough (Moses Creek) was adjacent to the site and the water in the slough was pumped into the small pond (currently in Pioneer Park) connected to the Wisconsin River. In the late 1980's, Moses Creek was re-routed using perforated storm sewers to convey the water and discharge it to the Wisconsin River down river from the Main Street Dam. WPSC currently owns the Site, and the planned future use has not been determined. Groundwater depth ranges from 2 feet in Pioneer Park to 10 feet below ground surface on the south side of the Site. Flow is generally to the west away from the Wisconsin River (due to the Site being upstream of the Main Street Dam). Assessment of the bedrock groundwater is underway. Contaminants in groundwater include: BTEX; PAHs; cyanide; and lead. Routine groundwater monitoring occurs quarterly for select wells, and semi-annually for others.

A sediment coring survey was conducted in 2000, which included the nearby Wisconsin River and a small pond (about 0.2 acres) in Pioneer Park. A supplemental diver survey was conducted in the river in 2002. Based on the studies, total PAHs in the pond were from 10 to 260 mg/kg. Coal tar was observed in a core sample collected in the River adjacent to the pond. In the river the highest total PAHs were found near the outlet from the former slough and ranged from 11,000 to 20,000 mg/kg. These samples also showed elevated BTEX concentrations. Water depths in the pond in Pioneer Park range from 2 to 3 feet. Water depths in the Wisconsin River adjacent to the park range from about 3 to 21 feet. Sediment thickness in the pond is about 2 feet, and in the river sediment thickness ranges from less than 1 to 2 feet. The river bottom contains large amounts of woody debris with sandy sediment in the interstices. The contaminants found in soils, sediment and groundwater at the Site, including: BTEX; PAHs; cyanide; and lead.

Request: EPA Region 5 requested a quick review of the 6-inch sand caps proposed in Alternative 3 and Alternative 4 in the Feasibility Study Report (FS) for Pfiffner Pioneer Park Pond sediment and the Wisconsin River sediment.

Lead on Response: Karl Gustavson and Carlos Ruiz, USACE ERDC
Response Date: June 10, 2010

Response Provided/Comments: Karl Gustavson and Carlos Ruiz provided a summary of the review to EPA Region 5. The evaluation was performed using the RECOVERY (Ruiz et al. 2007 and 2001) model and data available in the report or on line. The evaluation focused on the permanence and effectiveness of the alternatives, no effort was made to evaluate the stability of the cap.
The Dow Chemical Company began operations in 1897. The facility covers approximately 1,900 acres. It abuts the Tittabawassee River, with the majority of the plant located on the east side of the river and south of the city of Midland. Past waste disposal practices, fugitive emissions, and incineration at Dow have resulted in on and off-site contamination. Off-site contamination extends over 50 miles downstream of the Dow Midland facility through the Tittabawassee and Saginaw Rivers and into Saginaw Bay.

Dioxins (including furans) are the primary contaminants found off-site, although other contaminants have been identified as well. Dioxins are a group of chemicals that persist in the environment and build up in the food chain. The toxicity of individual dioxins is assessed and combined to determine the "toxic equivalence concentration," or TEQ, of the mixture. The Agency for Toxic Substances and Disease Registry Web site has a description of dioxin and its associated risk factors.

At various times during operation, the Midland Plant produced over 1,000 different organic and inorganic chemicals. Dioxins and furans were byproducts formed during the manufacture of chlorine-based products, including chlorophenolic compounds manufactured at the plant since the 1930s. Elevated dioxin levels in and along the Tittabawassee River appear to be primarily attributable to liquid wastes that were discharged in the past directly into the river from the Dow Midland facility. Over time, changes in waste management practices included installation and operation of a wastewater treatment plant. Changes in the wastewater treatment plant and subsequent incorporation of pollution controls have reduced or eliminated releases from the Midland Plant to the river. The Tittabawassee River may also be subject to flooding and stream bank erosion, particularly during high-energy stream flow events. As a result, dioxin contamination has spread to other locations within the flood plain of the Tittabawassee River, as well as to downstream locations.

The highest dioxin concentrations detected to date are 110,000 parts per trillion TEQ in the Tittabawassee River and 1,600,000 parts per trillion TEQ in the Saginaw River. These high levels led to Dow's cleanup of four hot spots in 2007, with EPA oversight. Fish and invertebrates within the Tittabawassee and Saginaw Rivers are contaminated. The Michigan Department of Community Health has issued fish and game consumption advisories.


Response: Karl Gustavson and Joe Gailani, USACE, ERDC reviewed portions of Volume I, and Volume III, of the Final GeoMorph Site Characterization Report (2009) and provided feedback to EPA Region 5. On April 16, 2010, Karl Gustavson and Joe Gailani attended a meeting with EPA Region 5 to discuss the findings of the review.
**Welch Creek, OU 04**

*Location:* Plymouth, North Carolina  
*Requested by:* Randy Bryant, EPA Region 4  
*Request Date:* October 2, 2009  

**Site Background/Request:**  
The facility has been used for pulp and paper production since 1937 and, at different times, treated wastewater from the operation was discharged into either Welch Creek or the Lower Roanoke River. Wastewater effluent associated with bleached pulp was discharged directly to the Lower Roanoke River by the original owner from approximately 1937 to 1956. Due to the hydrologic setting and stable sediment conditions, wastewater solids have accumulated at the bottom of Welch Creek, which is a tributary to the Lower Roanoke River system. In 1988, the Mill's permitted wastewater treatment plant discharge was permanently rerouted into the Lower Roanoke River. Subsequently, the facility upgraded their bleaching process from free chlorine to chlorine dioxide. This modification has been demonstrated at other facilities to eliminate or significantly reduce formation of dioxin congeners, specifically 2,3,7,8 TCDD. This upgrade was initiated in 1992 and completed in 1994.  

Request: EPA Region 4 requested the review of the conceptual design for the sand cap at Welch Creek. The review included the evaluation of the Conceptual Design Report and the Final Remedial Design Report. 

*Lead on Response:* Paul Schroder, U.S. Army Corps of Engineers, Engineer Research and Development Center  
*Response Date:* November 15, 2009 and April 13, 2010  


**United Heckathorn Superfund Site**

*Location:* Richmond, California  
*Requested by:* Sharon Lin, EPA Region 9  
*Request Date:* February 17, 2009  

**Site Background/Request:**  
The United Heckathorn Superfund site is located in Richmond Harbor, an inlet of San Francisco Bay, in Contra Costa County, CA. It includes five acres of land and about 15 acres of marine sediments in two channels (Lauritzen and Parr) of Richmond Harbor. From 1947 through 1966, several companies, including R.J. Prentiss, Heckathorn and Company, United Heckathorn, United Chemetrics, and Chemwest Inc. used the site to formulate, package, and ship pesticides. No chemicals were manufactured on site. Heckathorn would receive technical grade pesticides from chemical manufacturers, grind them in air mills, mix them with other ingredients such as clays or solvents, and package them for final use in liquid or powder form. Although many pesticides were handled at United Heckathorn, dichlorodiphenyl trichloroethane (DDT) accounted for approximately 95 percent of Heckathorn's operations.  

Request: EPA region 9 is in the process of preparing a focused feasibility study for the marine sediment portion of the United Heckathorn site (the channel is approx. 1800' long, 120' width on the northern end and 350' width on the southern end). It has been a challenge to accurately measure the dissolved phase concentration of DDTs
and dieldrin in the water column. EPA Remedial Project Manager (RPM) Sharon Lin collaborated with EPA’s Office of Research and Development (ORD), National Health and Environmental Effects Research Laboratory (NHEERL) to explore passive sampler application at the site. Rob Burgess and Mark Cantwell (ORD-NHEERL) visited the site in summer 2008. Rob assembled a team of researchers and academics including Army Corps of Engineers/ERDC and MIT (Department of Civil and Environmental Engineering) to carry out the passive sampler study at the site. EPA Region 9 contractor will provide appropriate field and analytical support such as deployment and collection of the passive samplers and mussels. There are 3 components in the current passive sampler study:

1. Analysis of PEDs for DDT and dieldrin (performed at MIT)
   Preparation work will be done at ORD Lab under Rob's supervision. EPA will fund ERDC approx. $40K. MIT will receive approx. 28K from ERDC to perform the work. ERDC will take $12K for administration and management oversight.

2. Analysis of transplant mussels - performed at MIT under the above funding of $28K.

3. Analysis of SPME - can be done by ERDC, but need funding.
   Analysis of solid-phase microextraction (SPME) samplers deployed at two depths in the water column of the United Heckathorn site in Region 9. Approximately, 54 samples from nine stations will be analyzed. The cost of analysis is approximately $270/sample.

Data resulting from this pilot study will provide two types of information: (1) the uptake of DDTs and dieldrin by the SPME and (2) estimates of dissolved phase concentration of DDTs and dieldrin in the water column. This information will be comparable to polyethylene devices (PEDs) deployed at the same stations and, simultaneously-deployed transplant mussels.

**Lead on Response:** Gustavo E. Davico, USACE, ERDC, Environmental Chemistry Research and Analytical Services

**Response Date:** Summer 2009

**Response Provided/Comments:** Passive samplers including polyethylene devices (PEDs) and solid phase microextraction (SPME), were deployed to assess dissolved pesticides in the water column and bed pore waters. The results of this pilot project were summarized in a poster format.

**Coeur d’Alene Superfund Site**

**Location:** Coeur d’Alene, Idaho

**Requested by:** Ed Moreen, EPA Region 10

**Request Date:** December 12, 2008

**Site Background/Request:**
The Coeur d’Alene Mining District is located within the Coeur d’Alene River basin in the eastern portion of the panhandle of northern Idaho. Mining in the district began more than 100 years ago. The district has been one of the leading lead-, zinc- and silver-producing areas in the world, with production of approximately 1.2 billion ounces of silver, 8 million tons of lead, and 3.2 million tons of zinc (Long 1998). Mining, milling, and smelting practices used in the district have resulted in substantial portions of the basin being contaminated by hazardous substances. The contamination resulted from the discharge or erosion of mill tailings and other mine-generated waste into the Coeur d’Alene River system and its tributaries. These mill tailings and other mine-generated waste contained metals, such as cadmium, lead and zinc. Exposures to high concentrations of such metals have been associated with adverse impacts to human health and the environment.
Request: Review key background documents and the overview technical memorandum related to the Enhanced Conceptual Site Model for the Lower Coeur d'Alene River. Current level of effort is anticipated to be no more than 40 hours unless otherwise directed by the project officer.

Lead on Response: Earl Hayder and Joe Gallani, USACE, ERDC
Response Date: April 2009

Response Provided/Comments: Earl Hayter & Joe Gallani reviewed the enhanced CSM of the Coeur d'Alene River Basin's and provided review comments. Earl Hayter participated in several conference calls, and attended the site inspection tour that was held April 2009.

Callahan Mine Superfund Site

Location: Callahan Mine Superfund Site, Brookeville, Maine
Requested by: Ed Hathaway, EPA Region 1
Request Date: October 24, 2008

Site Background/Request:
The Callahan Mine Superfund site is located approximately 1,000 feet east-southeast of Harbor side Village in the Town of Brooksville, Hancock County, Maine. The site is the former location of a zinc/copper open-pit mine. The mining operations were conducted adjacent to and beneath Goose Pond, a tidal estuary. The property comprises 150 acres and is located in a coastal, rural setting on the Cape Rosier peninsula. The property abuts Goose Pond to the east, and private properties to the west, south, and north. Facility features include large waste piles (waste rock piles), a tailings pond, and mine operations buildings and structures. The open pit mine ceased operations in 1972 and was flooded by opening a dam at Goose Falls. The mine is currently under water and is subject to daily tidal exchange in Goose Pond. Goose Pond is connected to Goose Cove to the north by a reversing falls known as Goose Falls. Goose Cove is located on the southern part of Penobscot Bay.

The Site RI identified area of sediments that exceeded preliminary remediation goal (PRGs). The sediment contamination extends over about 25 acres and has an estimated 100,000 cubic yards of volume. The area is fairly shallow 2-6 feet in depth.

EPA Region 1 is requesting technical support to evaluate the excavation/dredging options at the Site specifically the following:

1. Obtain technical input to make sure the PRPs contractor has identified the: appropriate range of technologies to perform the remediation; the work items most likely to impact cost; and an approach to implementation that makes sense.

2. Truth in the cost estimate for the remediation, including the associated handling and sediment management activities, so that EPA can have confidence in the cost estimate.

3. Identify any major data needs for the FS or Design.

4. Identify any issues regarding implementation that may warrant consideration in the FS, such as raising the water level in the pond or lowering the water level; installing temporary dams; best ways to place material into the pit.
5. Have a technical expert identify whether there are any other issues or concerns that need to be addressed in developing a Feasibility Study or Design.

**Lead on Response:** Paul Schroder, USACE, ERDC  
**Response Date:** August 9, 2009

*Response Provided/Comments:* Paul Schroder provided written comments for the RI/FS on August 9, 2009 which included the trip memo for the Callahan site visit in November 2008 to close out the initial interim request.

**Patrick Bayou Superfund Site**

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<thead>
<tr>
<th>Location:</th>
<th>Deer Park, Texas</th>
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<tbody>
<tr>
<td>Requested by:</td>
<td>Phil Allen, EPA Region 6</td>
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<tr>
<td>Request Date:</td>
<td>July 21, 2008</td>
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*Site Background/Request:*  
Patrick Bayou is a small bayou tributary and is tidally influenced by Galveston Bay and the Houston Ship Channel. The bayou, located north of Deer Park, Texas, drains to the north into the Houston Ship Channel. The lower portion of the bayou contains earthen banks and a soft mud bottom, while the upper portion consists of a series of concrete/gunite-lined storm water channels/culverts installed by the city for runoff control. In addition, the bayou receives discharges from three petrochemical facilities, a wastewater treatment plant, and an air separation plant. Hazardous substances in the sediments have likely resulted from these permitted discharges and/or spilled material transported along the surface water pathway. Primary COCs include pesticides, heavy metals, PAHs, PCBs, and dioxins. EPA Region 6 is requesting feedback and review of the sediment transport model report prepared by the PRP.

**Lead on Response:** Earl Hayter, USACE, ERDC  
**Response Date:** August 1, 2009

*Response Provided/Comments:* Earl Hayter reviewed the Draft Sediment Transport Modeling Report for Patrick Bayou and provided written comments on August 1, 2009.

**Lower Duwamish Waterway Superfund Site**

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<tr>
<td>Requested by:</td>
<td>Allison Hiltner, EPA Region 10</td>
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<tr>
<td>Request Date:</td>
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*Site Background/Request:*  
The Lower Duwamish Waterway Superfund site consists of approximately 5.5 miles of the downstream portion of the Duwamish River, which flows into Elliott Bay at Seattle, Washington. Contaminants in the Lower Duwamish Waterway sediments include PCBs, PAHs, mercury and other metals, and phthalates. The levels of sediment contamination in the Lower Duwamish Waterway vary widely.

EPA Region 10 is requesting assistance with the MNR remedy for the site. The PRP developed a bed composition model (BCM) using the output of a sediment transport model and adapting it to allow for the
evaluation of MNR. EPA Region 10 is requesting feedback on the model and assistance to address specific issues and questions listed below:

1. Types of data sources that should be used to estimate sediment loading. Adequacy of the available upstream water quality and upstream surface sediment data, turning basin data, site data, and suspended sediment data.

2. Other methods/data collection activities that could be used to derive better upstream load values.

3. Anticipated impact of seasonal/temporal/storm variability on the load estimate.

4. Additional information needed to support MNR in terms of risk reduction, as well as to determine a baseline for long-term evaluation.

Lead on Response: Karl Gustavson, USACE, ERDC

Response Date: June 6, 2008

Response Provided/Comments: Karl Gustavson reviewed the BCM and associated questions and provided written comments on June 6, 2008.

Quendall Terminals Superfund Site

Location: Lake Washington, Renton, Washington
Requested by: Lynda Priddy, EPA Region 10
Date: February 6, 2008

Site Background/Request:
The Quendall Terminals Superfund site is a 23-acre former creosote manufacturing facility. Almost the entire subsurface, from generally 25 ft below ground surface, is contaminated with mobile and non-mobile DNAPL and dissolved contaminants from the DNAPL. This material has been leaking into Lake Washington for decades. The near shore sediments are contaminated with DNAPL and contaminated groundwater up-welling into the surface and subsurface sediments.

The Washington Department of Ecology (Ecology) issued an enforcement order requiring the PRPs to remediate the site. In the 20-year period that Ecology had overseen the RI/FS stage of the cleanup, only the RI was approved by the Ecology. EPA has reviewed the information that supported the RI and is in the process of identifying data gaps. EPA acknowledges that there is a large amount of data with varying levels of quality. There is enough data for EPA to (1) understand the Conceptual Site Model (CSM) for this site, (2) review and evaluate existing data, and (3) determine specific data gaps. The RPM estimates that 80 percent of what is needed for RI has been completed. The FS has started, concurrent with the last stages of the RI and risk assessment being completed. There is enough information to realistically discuss likely remedial alternatives.

The PRPs are proposing the following remedial alternatives with an estimated cost of roughly $8 million:

- Enhanced natural recovery to remediate contaminated non near-shore sediments in the lake (in the area of the T-dock). This contamination is the result of a spill in 1937. The area of contamination includes DNAPL and high and low levels of contaminated sediments.
Enhanced natural attenuation with a thin cap (that may or may not contain absorptive material) to address contaminated sediments near the shore.

Limited pumping and collection of recoverable mobile fractions to the extent practicable (on the uplands portion).

EPA Region 10 is seeking further insight on whether attenuation and/or recovery are viable technologies to be used at the Quendall site, without the use of other more aggressive technologies. According to the PRPs, data is available to support the viability of these technologies for remediation at the site. EPA needs to determine (1) if there is information that suggests that recovery/attenuation are promising technologies for the site and (2) if additional data is needed to select these technologies in the FS.

Specific tasks include (1) reviewing PRP information and data regarding the use of the above remedial alternative, and (2) providing comments and identification of data gaps. It is anticipated that there will be several conference calls before and after the review to clarify questions/answers and address the PRPs follow-up questions/data.

Lead on Response: Karl Gustavson, USACE, ERDC
Response Date: April 14, 2008

Response Provided/Comments:
USACE provided a summary on the use of the Boudreau model for describing contaminant concentration declines during groundwater transport and the use of that information to evaluate the impact of contaminated groundwater on surface sediment pore water at the Quendall site. The intent of the review was to document outstanding questions or data gaps in the Boudreau modeling and associated analyses so that their appropriateness and their output could be understood.

USACE attended a meeting in Seattle with EPA Region 10 and PRP consultants (April 2008) to discuss model review findings and type of data needed to support a remedial decision. PRPs will be responding to the Region with a plan for conducting additional site characterization to support remedy selection.

Ciba-Geigy Corporation Superfund Site, OU 3

Location: McIntosh, Alabama
Requested by: Charles King, EPA Region 4
Request Date: October 25, 2007

Site Background/Request:
The Ciba-Geigy Corporation in McIntosh is a 1,500 acre industrial facility built in the early 1950s. The facility produced industrial organic chemicals and synthetic resins and disposed of waste in several unlined pits on the property. The disposal areas are primarily contaminated with dichlorodiphenyl-trichloroethane (DDT), and its metabolites DDD and DDE; hexachlorocyclohexane (BHC) and its isomers alpha, beta, delta and gamma BHC; and chlorobenzenes. In 1998, the floodplain portion of the site was remediated through excavation of soil and sediment to meet the average of 15 ppm DDTr within OU 3. Approximately 23,000 cubic yards of contaminated sediment was removed. In September 2006, a Five-Year Review recommended additional remediation of the sediments based on elevated body burdens in Gambusia (Mosquito fish). While the original remedy did meet the average 15 ppm goal, the ongoing source is likely a large continuous sediment area with elevated DDTr concentrations surrounding the previously remediated area. Ciba-Geigy Corporation Superfund site will be conducting additional remedial measures to address this contaminated sediment area.
The proposed approach for additional remediation consists of capping and MNR for approximately 43 acres (referred to as the Focus Area). A sand cap with varying thicknesses is planned for areas where sediment concentrations exceed 15 ppm DDTr (roughly 22 acres). MNR would play a role in portions of the Focus Area where there are low level DDTr sediment concentrations (less than 15 ppm).

The proposed remedy was outlined in the PRP report, Preliminary Basis of Design Report: Additional Remediation in OU3, dated June 2007. For the cap portion of the remedy, this report outlined the use of carbon amendments (in the form of mulch) in the sand cap for several specific areas based on sediment concentrations and modeling. However, based on EPA Region 4 comments and other stakeholders, the mulch amendment for the sand cap is no longer being considered. Another technical memorandum, Proposed Additional Sediment Sampling – Operable Unit No. 3 (OU3) Ciba Specialty Chemicals – McIntosh, Alabama, dated July 12, 2007 discussed additional sampling conducted by the PRP to support the proposed remedy.

EPA Region 4 requested assistance from a capping expert to review the two reports mentioned above and address specific issues and questions to be addressed through the review, including:

- Suggest alternative, cost-effective carbon amendments for the sand cap if deemed necessary.
- Evaluate the potential of horizontal pore water transport during flooding via ground water/surface water exchange.
- Suggest techniques/approaches for monitoring the effectiveness of the cap.

Lead on Response: Paul Schroeder, USACE, ERDC
Response Date: November 30, 2007

Response Provided/Comments: Dr. Schroeder reviewed Revised Basis of Design Report, Additional Remediation in Operational Unit 3 (OU 3), dated September 2007 and provided written comments on November 30, 2007. A teleconference call was held on December 5, 2007 to discuss the submitted comments with the PRP and EPA Region 4.

Metal Bank Superfund Site

Location: Philadelphia, Pennsylvania
Requested by: Pat McManus, EPA Region 3
Request Date: August 28, 2007

Site Background/Request:
The Metal Bank site occupies approximately 10 acres along the Delaware River in an industrial section of northeast Philadelphia. As a result of Metal Bank’s recycling of electrical transformers between 1968 and 1972, PCB-contaminated oil releases occurred at various locations on the property. PCBs and various other hazardous substances have been detected in groundwater, soils, and mudflat and river sediments. The remedial plan for the contaminated sediments includes excavation of the sediments within the reach of land-based equipment (approximately 75 feet from the shore line) and 2 to 4 feet from the surface, and installation of a sub-aqueous cap over areas outside the excavation zone. The sub-aqueous cap will be approximately 24 inches thick.

By order of a consent decree, the PRP was ordered to submit a final design for the sub-aqueous cap and a monitoring plan for the cap areas. The final design was to also identify the precise boundaries of the areas to be capped. EPA Region 3 requested that Paul Schroeder participate in a one-day meeting with the PRP in Philadelphia on September 6, 2007 to resolve the issue of the material composition for the sub-aqueous cap.
**Lead on Response:** Paul Schroeder, USACE, ERDC  
**Response Date:** September 6, 2007

**Response Provided/Comments:**
Dr. Schroeder attended the one-day meeting with the PRP in Philadelphia on 09/06/2007 to discuss the appropriate type of material to be used for the sub-aqueous cap.

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**Pine Street Canal Superfund Site**

**Location:** Burlington, Vermont  
**Requested by:** Karen Lumino, EPA Region 1  
**Request Date:** July 19, 2007

**Site Background/Request:**
The Pine Street Canal Superfund site is located in Burlington, Vermont near the shore of Lake Champlain. The site is situated in an urban residential/industrial area about 0.5 miles south of downtown Burlington and is surrounded by manufacturing and commercial facilities, as well as residential neighborhoods with medium to high population density. The overall area of the site is approximately 70 acres and substantially underdeveloped. The primary physical features of the site are an abandoned barge canal and turning basin, which are hydraulically connected to Lake Champlain through a partially restricted inlet/outlet under the Vermont Railroad trestle bridge. The canal and turning basin are approximately 5 to 6 acres and constructed during the industrialization of the area (approximately 1868). The site also consists of a 21-acre vegetated wetland area and a 45-acre upland area. A Burlington Light & Power MGP was located east of the canal on Pine Street. Operations from the former MGP resulted in coal tar releases in and around the Pine Street Canal.

In 2003 and 2004, construction of a cap for the canal sediments and west bank of the canal was completed. Subsequent to the capping, NAPL was encountered on probes of the cap surface, and sheens associated with methane bubbles were noted, most predominantly in the areas between Transects T9 and T12 (approximately 1 acre). The presence of NAPL on the cap prompted the need for additional studies, described in a NAPL investigation report, to determine the source of the NAPL and mechanism by which NAPL is migrating to the canal. Based on the information obtained through the investigation, a proposed cap modification to control the NAPL would include one or more layers of an organoclay RCM™ over the area of active NAPL seepage (between Transects T9 and T12). In addition, a horizontal permeable layer maybe implemented directly underneath the RCM™ to increase the design life of the RCM™ and decrease life-cycle costs.

EPA Region 1 requested assistance to address specific questions:

1. Provide overall comments on the updated CSM, and specific comments on the PRP’s conclusion that the most significant ongoing NAPL migration pathway is gas bubble-induced transport.
2. Provide input on the potential additional benefit of installing NAPL recovery trenches along the canal for enhancing the RCM™ control measure.
3. Provide general feedback on the use of RCM™ as a control measure as it relates to Pine Street Canal and specific feedback on expected design life, performance monitoring parameters, ability to replace RCM™ over time, and other installation or performance issues.

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**Lead on Response:** Carlos Ruiz, USACE, ERDC  
**Response Date:** November 1, 2007
Carlos Ruiz participated in a preliminary conference call on August 13, 2007 to discuss initial comments and clarify questions on the updated CSM, the NAPL recovery trenches, and the RCM™ control measure. Final written comments were provided to EPA Region 1 on 11/01/2007.

## Metal Bank Superfund Site

**Location:** Philadelphia, Pennsylvania  
**Requested by:** Pat McManus, EPA Region 3  
**Request Date:** February 13, 2007

**Site Background/Request:**  
The Metal Bank site occupies approximately 10 acres along the Delaware River in an industrial section of northeast Philadelphia. As a result of Metal Bank’s recycling of electrical transformers between 1968 and 1972, PCB-contaminated oil releases occurred at various locations on the property. PCBs and various other hazardous substances have been detected in groundwater, soils, and mudflat and river sediments. The remedial plan for the contaminated sediments includes excavation of the sediments within the reach of land-based equipment (approximately 75 feet from the shore line) and 2 to 4 feet from the surface, and installation of a sub-aqueous cap over areas outside the excavation zone. The sub-aqueous cap will be approximately 24 inches thick.

By order of a consent decree, the PRP was ordered to submit a final design for the sub-aqueous cap and a monitoring plan for the cap areas. The final design was to also identify the precise boundaries of the areas to be capped. EPA Region 3 requested assistance to review the (1) Final Design Report and (2) Volume One of the Remedial Action Work Plan which details the sub-aqueous cap design. The PRP and EPA are in final negotiations in reaching approval over the final remedial design. The remaining issue to be resolved involves the appropriate type of material to be used for the sub-aqueous cap and backfill in the sediment dredging operation.

**Lead on Response:** Paul Schroeder, USACE, ERDC  
**Response Date:** April 23, 2007

## Slip 4 – Lower Duwamish Waterway Superfund Site

**Location:** Seattle, Washington  
**Requested by:** Karen Keeley, EPA Region 10  
**Request Date:** November 16, 2006

**Site Background/Request:**  
The Lower Duwamish Waterway Superfund site consists of approximately 5.5 miles of the downstream portion of the Duwamish River, which flows into Elliott Bay at Seattle, Washington. Contaminants in the Lower Duwamish Waterway sediments include PCBs, PAHs, mercury and other metals, and phthalates. The Slip 4 Early Action Area is on the east side of the Lower Duwamish Waterway. Sediment cleanup activities in this area include dredging, excavating, and capping an area of approximately 3.6 acres. Under EPA oversight, the
City of Seattle and King County are investigating the sediment contamination. In May 2006, EPA selected a cleanup plan for the area, which included removing sediments with the highest contamination and capping the remaining sediments. This project is scheduled to start in October 2007.

EPA Region 10 requested assistance in addressing three specific questions of the sediment cap design as a result of the Design Analysis Report.

**Lead on Response:** Michael R. Palermo, Mike Palermo Consulting  
**Response Date:** December 14, 2006

**Response Provided/Comments:**  
Mike Palermo reviewed the sediment cap design and submitted a written response to EPA Region 10 on December 14, 2006.

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### Atlantic Wood Industries, Inc., Superfund Site

**Location:** Portsmouth, Virginia  
**Requested by:** Randy Sturgeon, EPA Region 3  
**Request Date:** November 3, 2006

**Site Background/Request:**  
The Atlantic Wood Industries, Inc., Superfund site occupies 47.5 acres on the industrialized waterfront area of Portsmouth, Virginia. The site is surrounded by the Norfolk Naval Shipyard, a maintenance facility of the Portsmouth City School District, the Southern Branch of the Elizabeth River, and a small industrial property. The site was contaminated from wood treatment operations, storage of treated wood, and waste disposal at the site. Groundwater, soil, and sediments at the site are heavily contaminated with creosote, PAHs, PCPs, dioxins, and metals (mainly arsenic, chromium, and zinc). Sediments in the Elizabeth River contain creosote as free product. Most likely, contamination migrated to the river through surface discharges, discharges from leaking sewers, and subsurface migration at the shoreline. A FS is being developed to evaluate alternatives to address the contaminated sediments. A list of five to seven remedial alternatives has been generated, and EPA Region 3 requested assistance for reviewing the draft FS evaluating the alternatives.

**Lead on Response:** Michael R. Palermo, Mike Palermo Consulting  
**Response Date:** February 15, 2007

**Response Provided/Comments:**  
Mike Palermo reviewed the draft FS outlining the alternatives and submitted a draft written response on December 12, 2006. Based on comments from the RPM, Dr. Palermo resubmitted a revised response on February 15, 2007.

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### Indiana Harbor Canal (Lake George Branch) Site

**Location:** East Chicago, Indiana  
**Requested by:** Josie Clark, EPA Region 5  
**Request Date:** September 11, 2006

**Site Background/Request:**  
The Lake George Branch (LGB) is one segment of the Indiana Harbor Canal where the canal sediments are primarily contaminated with weathered oil as a result of numerous historic releases from oil refineries and steel
mills. The LGB area is heavily used by migratory waterfowl. The LGB has active oil releases as observed through oil sheens at the canal water surface. EPA Region 5 is evaluating remedial alternatives under an emergency response with plans to use the Oil Pollution Fund to conduct a portion of remedy work. EPA Region 5 requested support as they begin to assess the feasibility of dredging and/or capping alternatives at this site. Dredging and/or capping are now being considered after an initial evaluation of several in situ treatment approaches were deemed not feasible (see Additional Major Activities for further information on this analysis).

**Lead on Response:** Ed Barth, EPA ORD and Kelly Madalinski, EPA OSRTI  
**Response Date:** Site visit on October 26, 2006

**Response Provided/Comments:**
Ed Barth (EPA ORD), Kelly Madalinski (EPA OSRTI), Josie Clark (EPA R5), Wally Nied (EPA R5), and Scott Ireland (EPA R5 GLNPO) conducted a half day site visit on October 26, 2006. The remainder of the day was spent discussing issues and data needs for evaluating dredging and/or capping as remedial alternatives for the LGB. A primary issue is the considerable amount of suspended particles in the water column immediately above the sediment bed. This “fluff layer” or “fluidized mud layer” is primarily clay/organic particles coated with oil creating a neutral buoyant effect. During a bench-scale study to evaluate in situ treatment options, these sediment particles did not settle in the water column after 80 hours—making a particle size analysis impossible. Under these current conditions, dredging or capping would be ineffective. One possibility to overcome this issue is to use a flocculation technique to settle the particles out of the water column. As a result of the discussions, ORD plans to conduct some bench-scale studies to determine a possible flocculent. On-going support and follow-up is anticipated.

**Weyerhaeuser Company Plymouth Wood Treating Plant**

**Location:** Plymouth, North Carolina  
**Requested by:** Randy Bryant, EPA Region 4  
**Request Date:** September 9, 2006

**Site Background/Request:**
The Weyerhaeuser Company Plymouth Wood Treating Plant is an active wood and paper products manufacturing facility. Weyerhaeuser Company has been the owner/operator of this facility since 1957. The facility encompasses 2,400 acres near the confluence of Welch Creek and the Roanoke River about 1.5 miles from the Town of Plymouth and approximately 7 miles upstream from Albemarle Sound. Three areas of the plant are being investigated, including the Former Chlorine Production Plant, where soil and groundwater had been contaminated with mercury; the Former Landfill 1, where mercury cells from the Former Chlorine Production Plant were placed; and Welch Creek, which received pre-permitted discharge of wastewater contaminated with dioxin and mercury.

Remedial action has been completed at Former Landfill #1 and is essentially complete for the Former Chlorine Production Plant. A draft remedial action report is due in mid-September 2006.

A remedial investigation that includes a risk assessment for Welch Creek indicates that dioxin-contaminated wastewater solids are present along certain stretches of the Welch Creek bed. An FS was conducted in late 2005 and early 2006 to evaluate the benefits and drawbacks of the different alternatives, including MNR, capping, dredging, or various combinations of these alternatives.

An EPA-funded remedial investigation for the Lower Roanoke River has been completed and will be used in conjunction with studies of Welch Creek.
EPA Region 4 requested expert assistance to review and provide comments on the draft FS report submitted by the PRPs. The FS addresses dioxin and mercury contamination in sediment in Welch Creek and discusses various alternatives such as MNR, capping, dredging, rerouting of portions of Welch Creek, and combinations thereof.

**Lead on Response:** Paul Schroeder, USACE ERDC  
**Response Date:** November 7, 2006

**Response Provided/Comments:**  
Dr. Paul Schroeder reviewed and provided written comments on the draft FS report on November 7, 2006.

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**Lower Fox River and Green Bay Site**

**Location:** Lower Fox River and Green Bay, Wisconsin  
**Requested by:** Jim Hahnenberg, EPA Region 5 and WDNR  
**Request Date:** July 19, 2006

**Site Background/Request:**  
The Lower Fox River and Green Bay site includes a 39-mile stretch that extends from the outlet of Lake Winnebago and continues downstream to the bay that enters Lake Michigan. The site is contaminated with PCBs from paper companies using PCBs to make carbonless copy paper from the 1950s to the 1970s. It is estimated that 14 million cubic yards of contaminated sediments contain over 65,000 pounds of PCBs, and at least several hundred million cubic yards of sediments in Green Bay are contaminated with as much as 150,000 pounds of PCBs. Two Records of Decisions (ROD) were finalized in 2002 and 2003 for five OUs at the site. Both RODs contain a contingent remedy for capping of contaminated sediments. Dredging began at OU 1 in September 2004 and is expected to continue until 2010. A remedy is being designed for the downstream portion of the river, with the expectation that remedial actions would begin by 2010. Part of the design effort includes consideration of possible capping of some areas in the downstream portion of the river. An evaluation on propellant wash effects is being conducted to determine the permanence/long-term effectiveness of capping. This assessment primarily entails the use of two models – JETWASH and VH-PU.

EPA Region 5 and WDNR representatives are seeking expert(s) to review and provide comments on the PROPWASH/JETWASH modeling and evaluation provided by the PRP. Specific tasks include the following:

- Review the model output and appropriateness of the use of this model in this application
- Provide guidance and suggestions on important parameters to study when analyzing propolent wash effects of various types of water craft
- Suggestions and recommendations on how to approach the study

**Lead on Response:** Joe Gailani and Steve Maynord, USACE  
**Response Date:** August-December 2006

**Response Provided/Comments:**  
Dr. Joe Gailani has participated in numerous conference calls with EPA Region 5, WDNR, and the PRP and provided written comments on several occasions. In December 2006, Dr. Gailini participated in a meeting at WI to further discuss the issues with the prop wash analysis.
Six Former MGP Sites

(Location: Various locations, Wisconsin
Requested by: Mary Logan, EPA Region 5
Request Date: July 19, 2006)

Site Background/Request:
Wisconsin Public Service Corporation (WPSC) is the PRP for six MGP sites located throughout the state of Wisconsin in Green Bay, Manitowoc, Marinette, Oshkosh, Stevens Point, and Two Rivers. The Wisconsin Department of Natural Resources (WDNR) previously managed the sites. Varying degrees of upland and/or groundwater remediation have been conducted at each site. At all six MGP sites, sediment in the adjacent water body is contaminated. Contaminants of concern in the sediment primarily include PAHs, BTEX, and cyanide. In May 2006, EPA signed a Settlement Agreement and Administrative Order on Consent (AOC) with WPSC to conduct remedial investigations and FSs at the six sites. The agreement provides that WPSC will complete multi-site documents, including (among others) a generalized CSM, risk assessment framework, and multi-site FSP.

EPA Region 5 is seeking technical support in reviewing deliverables and participating in a meeting on September 21, 2006, to discuss multi-site documents. Potential issues identified by the RPM include the ecological risk assessment and the establishment of preliminary remediation goals/remedial action objectives.

Specific multi-site documents for the September 21, 2006, review include following:

- Draft risk assessment framework and CSM
- Portions of the FSP related to sediments

Lead on Response: Burton Suedel, Research Biologist, USACE
Response Date: September 21, 2006

Response Provided/Comments:
Dr. Burton Suedel attended a meeting on September 21, 2006, to discuss the multi-site documents. On October 10, 2006, Dr. Burton Suedel reviewed and provided comments on the draft risk assessment framework, conceptual site model, and field sampling plans submitted by the PRP.

Ashland/Northern States Power Company Lakefront Superfund Site

(Location: Ashland, Wisconsin
Requested by: Scott Hansen, EPA Region 5
Request Date: April 10, 2006)

Site Background/Request:
Ashland/Northern States Power Company (NSP) Lakefront Superfund site encompasses approximately 12 acres and is bordered to the north by Chequamegon Bay, an inlet of Lake Superior. Former MGP activities and landfilling material from former lumber mills are the primary cause of site contamination. The PRPs are Xcel Energy, the city of Ashland, and the Wisconsin Central Limited Railroad.

The subsurface soil, groundwater, lake sediments and surface water are primarily contaminated with PAHs and VOCs. As an interim cleanup action, the PRPs are pumping out coal tar from the groundwater on the property. The site is currently completing the Remedial Investigation and Feasibility Study (RI/FS) stage of the cleanup.
Sediment in the Chequamegon Bay pose a risk if agitated by wave action, boat anchoring, swimming, and/or wading since the coal tars and light non-aqueous phase liquids (LNAPL) are released into the water column and form "slicks" on the water surface. Fish sampling in Chequamegon Bay indicates that fish do not contain levels of site-related chemicals that are a health concern. However, people continue to follow fish consumption advisories for Lake Superior.

As part of the RI, the PRP submitted a sediment stability assessment report to EPA.

EPA Region 5 is seeking an expert to review and provide comments on the sediment stability assessment report provided by the PRP.

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<th>Lead on Response:</th>
<th>Joe Gailani, USACE</th>
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<td>On March 29, 2006, Dr. Joe Gailani reviewed and provided comments on the sediment stability assessment report submitted by the PRP.</td>
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**Metal Bank Superfund Site**

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<th>Location:</th>
<th>Philadelphia, Pennsylvania</th>
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<td>Pat McManus, EPA Region 3</td>
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**Site Background/Request:**

The Metal Bank site occupies approximately 10 acres along the Delaware River in an industrial section of northeast Philadelphia. As a result of Metal Bank’s recycling of electrical transformers between 1968 and 1972, PCB-contaminated oil releases occurred at various locations on the property. PCBs and various other hazardous substances have been detected in groundwater, soils, and mudflat and river sediments. The remedial plan for the contaminated sediments includes excavation of the sediments within the reach of land-based equipment (approximately 75 feet from the shore line) and 2 to 4 feet from the surface, and installation of a sub-aqueous cap over areas outside the excavation zone. The sub-aqueous cap will be approximately 24 inches thick.

By order of a consent decree, the PRP was ordered to submit a final design for the sub-aqueous cap and a monitoring plan for the cap areas. The final design was to also identify the precise boundaries of the areas to be capped. EPA Region 3 requested assistance in reviewing the PRP’s proposed cap design.

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<td>On March 28, 2006, Dr. Schroeder attended a meeting between EPA and the PRP to discuss the final cap design. Dr. Schroeder reviewed the final cap design submittal and provided written comments to EPA Region 3.</td>
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Atlantic Wood Industries, Inc., Superfund Site

**Location:** Portsmouth, Virginia
**Requested by:** Randy Sturgeon, EPA Region 3
**Request Date:** March 20, 2006; December 15, 2005

**Site Background/Request:**
The Atlantic Wood Industries, Inc., Superfund site occupies 47.5 acres on the industrialized waterfront area of Portsmouth, Virginia. The site is surrounded by the Norfolk Naval Shipyard, a maintenance facility of the Portsmouth City School District, the Southern Branch of the Elizabeth River, and a small industrial property. The site was contaminated from wood treatment operations, storage of treated wood, and waste disposal at the site. Groundwater, soil, and sediments at the site are heavily contaminated with creosote, PAHs, PCPs, dioxins, and metals (mainly arsenic, chromium, and zinc). Sediments in the Elizabeth River contain creosote as free product. Most likely, contamination migrated to the river through surface discharges, discharges from leaking sewers, and subsurface migration at the shoreline. A FS is being developed to evaluate alternatives to address the contaminated sediments. A list of five to seven remedial alternatives has been generated, and EPA Region 3 requested an expert to provide input on conceptual issues regarding the alternatives.

**Lead on Response:** Michael R. Palermo, Mike Palermo Consulting

**Response Date:** April-July, 2006; December 22, 2005

**Response Provided/Comments:**
Michael Palermo participated in a conference call with Randy Sturgeon (RPM) and an EPA consultant (CDM) on December 22, 2005. Dr. Palermo provided written comments on potential issues and considerations in developing the remedial alternatives as EPA Region 3 moves forward with the detailed FS evaluation. Dr. Palermo continued to participate in a series of conference calls with EPA Region 3 (or replied to e-mail messages) and provided input on potential issues and items to incorporate into the FS report preparation. Much of the assistance was provided from April 1 through July 1, 2006.

Lower Duwamish Waterway Superfund Site

**Location:** Seattle, Washington
**Requested by:** Allison Hiltner and Lon Kissinger, EPA Region 10
**Request Date:** March 7, 2006

**Site Background/Request:**
The Lower Duwamish Waterway Superfund site consists of approximately 5.5 miles of the downstream portion of the Duwamish River, which flows into Elliott Bay at Seattle, Washington. Contaminants in the Lower Duwamish Waterway sediments include PCBs, PAHs, mercury and other metals, and phthalates. The levels of sediment contamination in the Lower Duwamish Waterway vary widely. Many areas contain contaminants at levels exceeding the Washington Sediment Management Standards and/or regional Dredged Material Management Program criteria. In assessing potential risks to human, fish, and wildlife receptors and the environment, the PRPs proposed the use of spatial statistics (kriging) methods instead of classical statistics and survey sampling to estimate exposure point concentrations for the risk assessment.

EPA Region 10 requested an expert to examine surficial sediment chemistry data sets (in particular, for PCBs) and recommend the most appropriate approach(es) for computing surface area-weighted 95 percent upper
confidence limits (UCL) for these data sets. The values developed in consultation with the expert would support assessment of the risks posed through direct human contact with sediment contaminants.

**Lead on Response:** Bill Thayer, Syracuse Research Corporation  
**Response Date:** March 22, 2006

**Response Provided/Comments:**  
On March 22, 2006, Dr. Bill Thayer participated in a conference call with EPA to determine the level of support that EPA Region 10 required for this task.

On May 16, 2006, Dr. Bill Thayer reviewed the technical memorandum prepared by the PRPs and provided draft review comments to EPA Region 10. Dr. Thayer also participated in a conference call with EPA personnel and other contractors on May 18, 2006, to discuss the draft comments.

In June 2006, Dr. Thayer participated in a second conference call with EPA Region 10 and representatives for the PRP contractors. On July 12, 2006, Dr. Bill Thayer participated in a conference call with EPA (Allison Hiltner and Lon Kissinger) and a PRP representative (Tad Deschler). Dr. Thayer then prepared a memorandum that describes the statistical performance of the spatially-weighted estimator proposed by the PRP for use in the human health risk assessment. The memorandum was submitted to the Region 10 RPM on July 18, 2006.

In September 2006, Dr. Thayer reviewed sections related to sediments of the baseline human health risk assessment dated August 2006 for the Lower Duwamish Waterway Superfund site.

**Koppers Wood Treating (Beazer East) Site**

**Location:** Carbondale, Illinois  
**Requested by:** Ms. Carolyn Bury, EPA Region 5  
**Request Date:** January 17, 2006

**Site Background/Request:**  
The former Koppers Wood Treating (Beazer East) site is located in Carbondale, Illinois. The Koppers Company operated a wood-treating plant on site from 1902 to 1991. Until the mid-1980s, wood products (railroad cross ties and utility poles) were treated using chemical preservatives including creosote and PCP. Chemical spills from plant operations and storage and handling of these chemicals contaminated soil, groundwater, an on-site pond, sediment, and the waters of Glade Creek, Piles Fork Creek, Smith Ditch, and Crab Orchard Creek.

Beazer East, the current site owner, has nearly completed construction of several remedies to remove, contain, and manage contaminated media. The contaminants of concern are coal-tar creosote, PAHs, and PCP. One of the major remedies under way is MNR of sediments in the creeks.

In accordance with EPA guidelines and policies, the MNR remedy for the residual contaminated sediments is expected to include an MNR analysis plan to designate a preliminary remediation goal, model the predicted effectiveness of the remedy, monitor constituent levels to determine whether natural recovery is occurring as predicted, and include a contingency plan to become effective if contamination levels persist above acceptable levels as predicted in the MNR schedule. EPA requested that Beazer East prepare an MNR plan, including a SLERA for sediments contaminated with coal-tar creosote, PAHs, and PCP. Beazer East submitted a technical memorandum (TM) and is proposing to apply the results of macro invertebrate toxicity investigations conducted at five other wood-treating sites at Carbondale to establish a remediation goal of 100 to 200 parts per million (ppm) total PAHs for all impacted sediments.
Ms. Carolyn Bury from the Resource Conservation and Recovery Act (RCRA) Corrective Action Program in EPA Region 5 sought assistance to evaluate the MNR plan and TM.

**Lead on Response:** Burton Suedel, Research Biologist, USACE, ERDC  
**Response Date:** March 1, 2006

**Response Provided/Comments:**
Dr. Burton Suedel conducted a technical review of the document titled “Technical Memorandum: Summary of Benthic Macro invertebrate Toxicity Investigation at Five Wood Treating Sites.” On March 1, 2006, Dr. Suedel provided review comments and summarized technical deficiencies identified in the methodology in the TM.

**Olin Corporation (McIntosh Plant) Superfund Site, OU-2**

**Location:** McIntosh, Alabama  
**Requested by:** Humberto Guzman, EPA Region 4  
**Request Date:** September 13, 2005

**Site Background/Request:**
The Olin Corporation (McIntosh Plant) Superfund site is located approximately 1 mile east-southeast of McIntosh, Washington County, Alabama. Olin Corporation operated a mercury cell chlor-alkali plant from 1952 to 1982 and produced chlorinated organic pesticides, chlorine, caustic soda, and sodium hypochlorite at the site. Past releases of mercury and organic chemicals have resulted in contamination of the shallow groundwater beneath the plant area, which is referred to as OU-1. The site also includes OU-2, which consists of a basin, floodplain, and wastewater ditch leading to the basin. Past wastewater discharges containing mercury resulted in contamination of the wastewater ditch (approximately 3,000 linear feet), the floodplain area (approximately 220 acres), and the basin (approximately 76 acres) adjacent to the Tombigbee River. Remedial alternatives for the contaminated sediments were evaluated during the FS in 1996 and included no action, institutional controls, backfilling, capping, or dredging. However, each remedial alternative had substantial drawbacks, and no remedy has been selected. Olin Corporation proposed a new alternative, enhanced natural sedimentation, which is currently being evaluated by EPA, the Alabama Department of Environmental Management (ADEM), and State and Federal Trustees. The proposed enhanced natural sedimentation remedy would include construction of a 10-foot high-berm (with floodgates) across the opening of the floodplain area adjacent to the Tombigbee River.

EPA Region 4 requested an expert with experience in the following areas to provide insights on the proposed enhanced sedimentation remedy:

1. Fluvial sedimentation  
2. Berm design and permitting  
3. Capping of mercury-contaminated sediments

**Lead on Response:** Susan Bailey, USACE, ERDC  
**Response Date:** September 22, 2005

**Response Provided/Comments:**
Susan Bailey from the USACE participated in a meeting with EPA, the PRP, ADEM, and State and Federal Trustees. The meeting was held on September 22, 2005, and the PRP presented the proposed enhanced natural sedimentation remedy. Ms. Bailey provided insights on the use of this proposed remedy. Since the meeting, three teams (capping, sedimentation, and mercury) have been formed to help evaluate the proposed study at the Olin Corporation site. As a member of the capping team, Ms. Bailey has participated in several conference calls.
and has provided recommendations on sampling and monitoring to evaluate the success of the proposed remedy. In addition, other USACE-ERDC staff, Steve Scott and Herb Fredrickson, are serving on the sedimentation and mercury team. SSRC provided initial financial support for this request. EPA Region 4 provided additional funding ($20,000) to USACE, ERDC, to fund continued support.

Indiana Harbor Canal (IHC) Site, Indiana

Location: East Chicago, Indiana
Requested by: Ms. Josie Clark, EPA Region 5
Request Date: March 1, 2005

Site Background/Request:
The Indiana Harbor Canal (IHC) is a man-made canal that connects the Grand Calumet River and Lake Michigan in northwestern Indiana. The canal served heavy industry in the area, and as a result, contains significant sediment contamination, including metals, PCBs, and PAHs. The IHC was identified as an area of concern under the Great Lakes Water Quality Agreement of 1978. EPA Region 5 was evaluating three alternatives to “dredge and landfill” sediments in the IHC that had extensive oil contamination from historic industrial activities. EPA Region 5 requested support to evaluate the three alternatives that include invasive aeration of the sediments, sonic aided aeration, and sediment washing.

Lead on Response: Kelly Madalinski, EPA
Response Date: March, 2005

Response Provided/Comments:
A team of EPA personnel discussed the three remediation options proposed by Region 5 for the IHC and proposed a more inclusive option for the sediment treatment. The final proposed remedy includes (1) in situ application of super-heated water or detergent agitation of the canal sediment, and (2) transfer of the agitated water to a separation basin, where the heavier PAHs could be burned or recycled and the lighter PAHs and alkanes could be treated by chemical oxidation or biological treatment.

Silver Lake Sediments, Housatonic River Project Site

Location: Pittsfield, Massachusetts
Requested by: Jim Dilorenzo, EPA Region 1
Request Date: October 7, 2004

Site Background/Request:
The requester sought assistance in reviewing an eight-page GE letter dated September 15, 2004, that outlines the proposal for supplemental predesign investigations and describes the objectives for a bench-scale study. EPA Region 1 was seeking feedback on whether the planned approach to characterize total petroleum hydrocarbons (TPH) was adequate, whether the rationales supplied by GE were sound (based on the rationales, it was concluded that further metal testing is not required), whether the study objectives were correctly focused, and whether any key areas were missing from the additional studies or objectives.

Lead on Response: Danny Reible, Director, Hazardous Substance Research Center South & Southwest (HSRC/SSW)
Response Date: October 7, 2004
Response Provided/Comments:
Dr. Reible concluded that the proposed program to characterize TPH will likely achieve the goals, although the proposed screening evaluation procedure appeared to de-emphasize direct use of total pore water concentrations and the apparent partition coefficient. With regard to further metal testing, Dr. Reible concluded that he could not assess the current importance of metals as a source of risk in the overlying water. If metals are currently considered to be an important risk factor, it would be appropriate to conduct additional sediment testing for metals in order to predict future (post-capping) metal migration. Regarding the study objectives, Dr. Reible noted that the stated objectives were appropriate and directed toward the sources of greatest uncertainty in cap design and implementation.

Onandaga Lake Superfund Site

| Location: | Syracuse, New York |
| Requested by: | Bob Nunes, EPA Region 2 |
| Request Date: | September 15, 2004 |

Site Background/Request:
EPA Region 2 requested assistance in reviewing the MNR modeling approach prepared by the responsible party, Honeywell. Specifically, the region wanted feedback on (1) the appropriateness of Honeywell’s response to comments provided by the New York State Department of Environmental Conservation (NYSDEC) and (2) any other general concerns or issues regarding the methodology and underlying assumptions of the Honeywell analysis that were not raised in the NYSDEC review.

| Lead on Response: | Carlos E. Ruiz, USACE, ERDC |
| Response Date: | October 7, 2004 |

Response Provided/Comments:
USACE reviewed the model and concluded that it was generally appropriate but that several modifications could be made to improve overall confidence in the modeling approach. For example, the model could be run using several sediment columns representing different areas of the lake instead of using an average sediment column.

Harbor Island Superfund Site

| Location: | Seattle, Washington |
| Requested by: | Lynda Priddy, EPA Region 10 |
| Request Date: | August 16, 2004 |

Site Background/Request:
Part of the remedial action for the site’s Lockheed Shipyard OU entails dredging contaminated sediments. Limited dredging for the OU began in 2003, but problems were encountered because of the extensive amounts of shipyard debris present. As a consequence, the responsible party was required to conduct a focused FS in order to identify a better design for future dredging that addresses the problems encountered. EPA Region 10 requested input on the focused FS.

| Lead on Response: | Tommy Myers, USACE, ERDC, Vicksburg, MS |
| Response Date: | October 2004 |
Response Provided/Comments:
USACE provided the RPM with verbal feedback on the focused FS during telephone calls.

Silver Lake Sediments, Housatonic River Project Site (Initial Request)

Location: Pittsfield, Massachusetts
Requested by: Jim Dilorenzo, EPA Region 1
Request Date: April 15, 2004

Site Background/Request:
The requester sought assistance in reviewing comments on a General Electric (GE) predesign investigation report and sediment response action conceptual design report for the site. The report highlights the results of field activities conducted during summer 2003 and identifies additional data collection needs. The requester wanted to determine whether the comments identified the key data items that GE needs to collect so that the objective(s) for future pilot studies can be determined.

Lead on Response: Danny Reible, Director, Hazardous Substance Research Center South & Southwest (HSRC/SSW)
Response Date: June 21, 2004

Response Provided/Comments:
Dr. Reible concluded that the proposed conceptual design appears to be appropriate based on the data in the report. However, Dr. Reible identified several key areas of uncertainty that he stated needed to be addressed through additional measurements or monitoring during a pilot testing program. On July 12, 2004, a final conference call was conducted with EPA Region 1 to review Dr. Reible’s comments. The region stated that it might require additional SSRC assistance to review the pilot study work plan, which was expected to be developed by GE in Fall 200