# Superfund Program

**Proposed Plan** July 2012
**WPSC Campmarina Former MGP Site – River Operable Unit**

## INTRODUCTION

This Proposed Plan identifies the preferred cleanup option to address polycyclic aromatic hydrocarbon (PAH)-contaminated river sediment at the River Operable Unit (River OU) of the WPSC Campmarina Former Manufactured Gas Plant (MGP) Site (the Site) and provides the rationale for this preference. This document is issued by the United States Environmental Protection Agency (EPA), the lead agency for site activities. The Wisconsin Department of Natural Resources (WDNR) is the support agency. EPA, in consultation with WDNR, will select a final remedy for the River OU after reviewing and considering all information submitted during the 30-day public comment period which runs from July 18, 2012 through August 17, 2012. Members of the public are also encouraged to attend and participate in a public meeting at the Mead Public Library at 710 N 8th Street, Sheboygan, Wisconsin 53081 on August 8, 2012, at 7:00 pm. EPA, in consultation with WDNR, may modify the preferred alternative or select another response action based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed action for the River OU.

EPA proposes **No Further Action After Completion of the Time-Critical Removal Action** for the River OU of the WPSC Campmarina MGP Site. WPSC implemented dredging work at the site under a Time-Critical Removal Action (TCRA) from June 2011 through December 2011. The TCRA achieved – or will achieve upon placement of clean backfill materials that may still be needed – all of the remedial action objectives that had been identified for the River OU, and EPA officials believe WPSC's cleanup will effectively protect people and the environment.

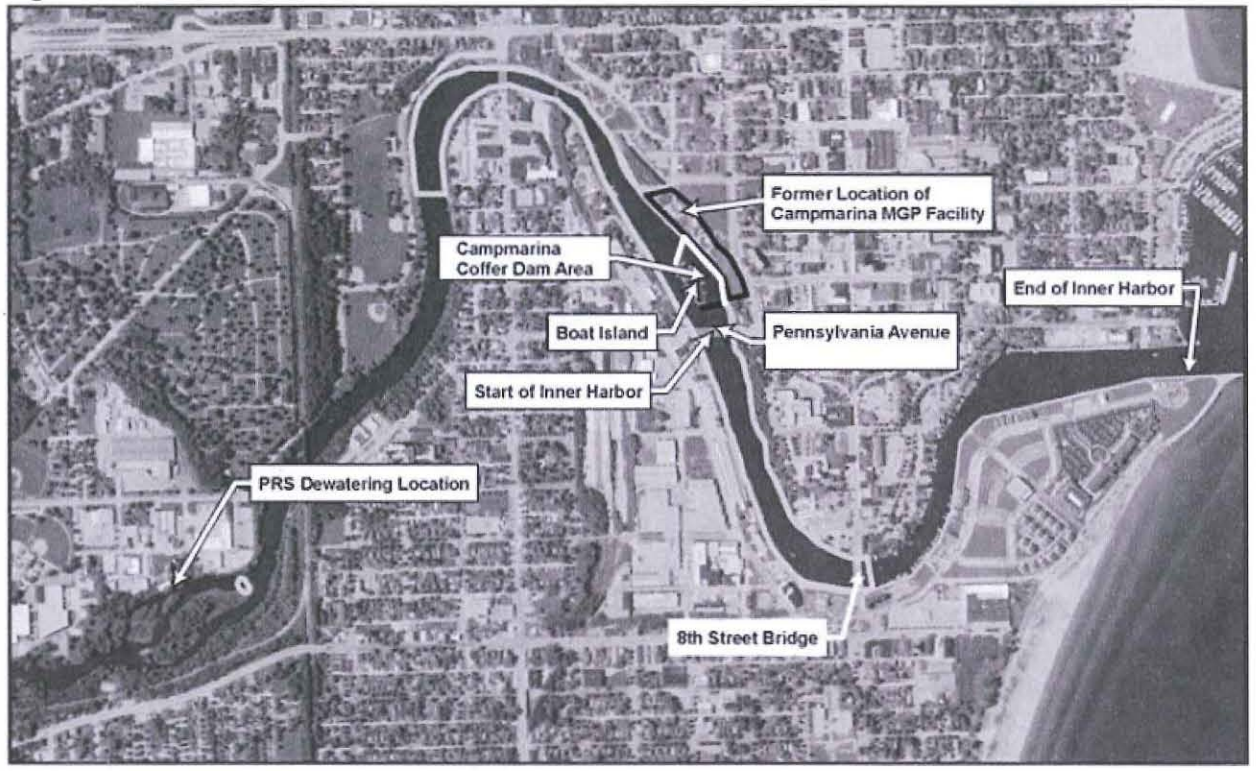
EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed plan summarizes information that can be found in greater detail in the remedial investigation (RI) report and draft feasibility study (FS) report and other documents contained in the Administrative Record file for this site. EPA and the state encourage the public to review these documents to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted at the Site to date.

## SITE BACKGROUND

The WPSC Campmarina MGP Site is located at 732 North Water Street, Sheboygan, Sheboygan County, Wisconsin. The geographical coordinates of the Site are 43.7525140 North latitude and -87.7182090 West longitude. The Site consists of two operable units: the Upland OU and the River OU. The Upland OU encompasses an area of approximately 2.3 acres adjacent to the Sheboygan River (see Figure 1), approximately 1 mile west of Lake Michigan, and has undergone remediation under

state authorities. The River OU is located immediately adjacent to the Upland OU and is approximately 4.5 acres in size (Figure 1). The River OU extends 80 feet upstream of the former northern property boundary, as much as 200 feet outward from the shoreline, and about 1,000 feet downstream of the former southern property line. The River OU is located within the limits of the larger Sheboygan River and Harbor Superfund Site, which is contaminated with polychlorinated biphenyls (PCBs). The WPSC Campmarina MGP Site is not listed on the Superfund National Priorities List but is being addressed using the Superfund Alternative Approach.

**Figure 1 – Site Location**




Boat Island is a man-made land mass located within the River OU, approximately 180 feet from the western shoreline of the Upland OU (see Figure 1). The island is approximately 375 feet long by 105 feet wide (at its widest point) and has several buildings used to store materials and supplies for the Sheboygan Outboard Club, located to the north. The City of Sheboygan owns Boat Island. The island has seasonal docking for boats. There is a polyethylene conduit that was horizontally bored approximately 15 feet below the river bed, between the Sheboygan Outboard Club and Boat Island, containing one or more electrical power lines and a sanitary sewer line to service the island.

The County of Sheboygan includes approximately 514 square miles of area, with agricultural land use being the dominant classification. The population of Sheboygan County is approximately 115,507 people (2010 Census), with the majority of people residing in incorporated areas. The greatest concentrations of people are located in the City of Sheboygan, Sheboygan Falls, and the Village of Kohler.

The City of Sheboygan encompasses 14.5 square miles. The population base in Sheboygan is 49,288 (2010 Census). The City of Sheboygan has a mixture of agricultural, residential, and industrial land use, with residential use being dominant.

The former MGP Site is located on property owned by the City of Sheboygan, known as Campmarina. After 1966, Campmarina was equipped with parking areas, electrical power and potable water for recreational vehicle (RV) use. A docking area was also provided for recreational boat use on the Sheboygan River. After WPSC completed the state-mandated remediation work at the former MGP facility (now called the Upland OU) in 2001, the City of Sheboygan redeveloped both Campmarina and the adjoining property to the south into a park, a condominium complex, and a river walk.

The Upland OU is now within Riverside Park with landscaped lawn, recreational areas, seating, and sidewalks. The park generally extends from the river on the west to 10$^{th}$ Street/North Water Street on the east, and from the extension of Center Avenue on the south to Wisconsin Avenue on the north. The park footprint includes the former MGP property and abandoned right-of-ways for North Water Street, Center Street, and New York Avenue.

An asphalt parking lot is located on the north side of the park, with access from Wisconsin Avenue. A small building constructed adjacent to this parking lot is shared by the Outboard Club and WPSC. WPSC's use is related to the remediation work at the Upland OU, while the Outboard Club uses it to store equipment. The adjacent parking lot provides access to shoreline boat docks as well as additional docks on Boat Island. North of the park adjacent to the river is the former toy factory building, which has been rehabilitated into multi-tenant housing.

South of the park is a narrow parcel with a condominium unit at the northwest corner of Water Street and Pennsylvania Avenue. The Pennsylvania Avenue Bridge crosses the river just downstream of the park and former MGP. North Commerce Street parallels the river on its west side, with industrial/commercial buildings located between the street and river.

Alternative Programs School, Jefferson School, Longfellow Elementary School, Sheboygan Area District School, Sheridan Elementary School, and Trinity Lutheran School are located within one-half mile of the former MGP facility.

Site History

Two methods of coal gas production were used at the WPSC Campmarina MGP. The coal carbonization method, used from 1872 to 1886, involved heating the coal in an airtight chamber (retort) that produced coke and gases containing a variety of volatilized organic constituents. The process also produced tar, which was sold for roofing, wood treatment, and paving roads. The gas was passed through purifiers to remove impurities such as sulfur, carbon dioxide, cyanide, and ammonia. Dry purifiers contained

lime or hydrated iron oxide mixed with wood chips. The gas was then stored in large holders on the property prior to distribution for lighting and heating.

The carbureted water gas process, used from 1886 to 1929, involved passing air and steam over the incandescent coal in a brick-filled vessel to form a combustible gas which was then enriched by injecting a fine mist of oil over the bricks. The gas was then purified and stored in holders prior to distribution. The Campmarina MGP ceased operations in 1929. Former aboveground MGP-related structures were removed between 1950 and 1966.

Historical development activities adjacent to (north of) the upland portion of the Site include a property formerly used as a tannery, then as a toy factory. Tannery operations terminated sometime between 1903 and 1940 and the property was sold to Garton Toy Company (Garton). Garton used a portion of the property adjacent to the river, directly north of the former New York Avenue, for paint and lacquer spraying. This building was subsequently demolished. Garton also occupied a building north of Wisconsin Avenue that is now a multi-tenant complex.

Historic Sanborn Fire Insurance maps for the subject property depict the shorelines of the Sheboygan River over time at the MGP site. Between 1891 and 1903, the channel appears to have been straightened by fill that extended approximately 60 feet into the river. Later maps show that the shoreline has not changed substantially since 1903.

The U.S. Army Corps of Engineers (USACE) Detroit District is responsible for maintaining a navigation channel and turning basin within the river downstream of the former MGP Site. The upstream limit of the USACE navigation channel is located approximately 500 feet downstream of the former MGP facility, just below the Pennsylvania Avenue Bridge. From the Pennsylvania Avenue Bridge and extending approximately 2,300 feet downstream to near the Eighth Street Bridge, the channel has a USACE project depth of 15 feet. The remainder of the navigation channel (4,200 feet) downstream to the harbor has a USACE project channel depth of 21 feet.

Maintenance dredging of the Sheboygan Harbor last occurred in 1991. Dredged materials were disposed of south of the harbor as part of a beach nourishment project. The channel above the Eighth Street Bridge has not been dredged since 1956.

Water depths are much shallower than the USACE project depths according to a June 2005 USACE bathymetric survey of the Sheboygan River. In the June 2005 survey, observed water depths within the 21-foot project depth portion of the channel were between 5 and 15 feet, while observed water depths within the 15-foot project depth portion of the channel were between 4 and 7 feet.

Geologic/ Hydrogeologic Setting

Near surface geology of Sheboygan County consists of unconsolidated glacial drift comprised of unsorted till as ground and end moraines, outwash as sorted and stratified

sand and gravel, and glacial lake deposits as organic materials and stratified clays, silt and sand. Low permeable soils are indicative of the high clayey tills and lake bed deposits which blanket the majority of Sheboygan County. Moderate and high permeable soils are typically associated with the less clayey till, outwash and end moraine. The glacial drift is Pleistocene to Recent in age and ranges in thickness from 50 to 200 feet.

Regionally, unconsolidated deposits in the area are generally less than one hundred feet thick. Unconsolidated deposits in the area range in thickness from approximately 50 to 95 feet based on available logs for wells within approximately one-half mile of the Site.

Bedrock geology beneath the glacial drift consists of Silurian and Ordovician aged sedimentary dolomite, shale and sandstone, and Cambrian sandstones overlying Precambrian crystalline rock. The Silurian aged dolomite is generally undifferentiated and comprised predominantly of the Niagara dolomite. This dolomite is fine to medium grained containing sandy chert nodules. These dolomites lie approximately 100 feet below ground surface (bgs) in the Sheboygan County area and are approximately 750 feet thick.

Three aquifer systems exist beneath the Site area and are (from shallowest to deepest): the sand and gravel, the Niagara, and the sandstone. A description of these units is presented below.

The sand and gravel aquifer in the site area consists of buried highly permeable glacial sand and gravel and is most significant where thicknesses are greater than 50 feet. Local glacial sands and gravel may yield significant amounts of water for local use. Thicknesses range from 0 to 300 feet. The top of this aquifer ranges from 0 to 140 feet bgs.

The Niagara aquifer is the principal aquifer overlying the Maquoketa shale and consists of Silurian aged dolomites approximately 300 feet thick. The majority of the aquifer is under artesian conditions due to the overlying confining clayey till. In areas where the clayey till is not present, the aquifer is hydraulically connected with the overlying sand and gravel aquifer. The main source of recharge for the Niagara aquifer is from infiltration through the sand and gravel aquifer or through the overlying glacial outwash and till. Natural discharge occurs into Lake Michigan, nearby rivers and through wells. The Niagara aquifer is used for local domestic wells.

The sandstone aquifer is approximately 600 feet thick beneath Sheboygan County and includes Ordovician and Cambrian units beneath the confining Maquoketa shale and above the Precambrian crystalline rock. Local use of the sandstone aquifer for drinking water is low to moderate.

Surficial sediments in the Sheboygan River are dominated by fine-grained materials with varying amounts of organic material. These soft/loose sediments are organic

silt/clay to organic sand deposits. Sandy deposits are common in the upstream portions of the investigation area. The soft/loose sediments are organic silt/clay to organic sand deposits that overlie silt and clay soils. The remedial investigation activities at the Site found that the soft/loose sediments ranged in thickness from approximately 5 to 89 inches. In some areas, the soft sediment was overlain by 5 to 18 inches of loose, well-graded medium sand. Much of this sand was likely deposited during regional flooding that occurred in June 2008. The soft/loose sediment layer was encountered from sample location BKG-6 at the upstream end of the investigation area, downstream to the last transect sampled (T16) located approximately 800 feet downstream of the Pennsylvania Avenue Bridge.

Upstream of the BKG-6 sample location, the majority of the river bed is composed of coarse sand and gravel which could not be penetrated with the vibrocore drilling equipment.

Underlying the soft/loose sediments are soils, generally comprised of clay and silt with varying amounts of sand and gravel (referred to as parent material). A laterally continuous layer of clay, interpreted as glacial diamicton, underlies the parent material and upland soils.

Flow in the shallow groundwater is generally to the west-southwest, mimicking ground surface contours with a general flow direction toward the Sheboygan River. As part of the state-mandated Upland OU remedial action, a Waterloo® barrier system was installed to provide a barrier with a hydraulic conductivity of $1x10^{-7}$ cm/sec or less. Therefore, localized contaminated shallow groundwater does not discharge directly to the Sheboygan River or the deeper Niagara aquifer.

Based on the United States Geologic Survey (USGS) Sheboygan North Quadrangle, photo revised 1973, relief within one mile of the Site is approximately 95 feet, ranging from approximately 580 feet mean sea level (msl) at Lake Michigan to approximately 675 feet msl northwest of the Site in the City of Sheboygan. The low water datum for Lake Michigan at Sheboygan is 578 feet msl.

The ground surface elevation for the majority of existing Site groundwater monitoring wells ranges between elevation 588 and 591. The Upland OU slopes downward from Water Street to the Sheboygan River. The elevation of the Sheboygan River adjacent to the Upland OU varies depending on seasonal fluctuations and the level of Lake Michigan.

The Sheboygan River is classified a Class C surface water by the WDNR. Class C surface waters are not suitable as drinking water sources; however, they are suitable for fishing and fish propagation. Class C waters are also designated for primary (e.g., swimming) and secondary (e.g., boating) contact recreation. The River OU is within a portion of the Sheboygan River classified as a warm water sport fish (WWSF) community. A WWSF community includes surface waters capable of supporting a

community of warm water sport fish or serving as a spawning area for warm water sport fish.

The Sheboygan River drains 427 square miles, with its headwaters located in Fond du Lac County. Near Lake Michigan, the Sheboygan River is a gaining stream that receives groundwater and surface water from the Sheboygan area and discharges into Lake Michigan. Near the Site, the river varies in width from approximately 180 feet on either the east or west side of Boat Island to 300 feet just upstream of Boat Island. Boat Island is in the approximate center of the river resulting in an east and a west channel adjacent to the Upland OU. A gauging station active from October 1993 through September 1995 recorded an average flow rate of 177 cubic feet per second at the mouth of the river (approximately one mile downstream from the Upland OU).

The river bed elevation within the River OU ranges from approximately elevation 569 to 577 based on the 2008 RI sediment sampling data. Water depths within the River OU ranged from approximately 1.5 to 9.5 feet at the time. The river water elevation, measured from the site staff gauge during RI sediment poling, ranged from 578.4 to 578.8.

Flow of the Sheboygan River is generally easterly, toward Lake Michigan, but southerly past the Site, and is controlled by upstream dams located at Sheboygan Falls and Kohler.

EPA's May 2000 Record of Decision for the Sheboygan River and Harbor Superfund Site indicated that boat propeller wash may cause localized scour of up to 1 foot of sediment in water 5 feet or more in depth, based on historic observations of bathymetry and hydrodynamic modeling. Additionally, EPA anticipated that localized scour from boat propeller wash would be no more than 2 feet in water depths less than 5 feet deep.

## SITE CHARACTERISTICS

### Investigation Results

Beginning in 1987, Blasland, Bouck & Lee Inc. (BBL) conducted sediment sampling for PCBs, volatile organic compounds, PAHs, and metals as part of the Sheboygan River and Harbor remedial investigation. Fifteen samples were collected along the length of the river, with 10 samples collected upstream of the Pennsylvania Avenue Bridge and 5 samples downstream of the bridge.

A number of sediment samples were collected near or just downstream of the MGP Site. Three samples had oil or high concentrations of PAHs. One of the samples was collected near the downstream end of Boat Island and the sediment was described as "oil saturated" from 2 to 6 feet below the sediment surface. Two additional sediment samples were collected immediately downstream of the Pennsylvania Avenue Bridge. One was described as "oil saturated" from 4 to 6 feet below the sediment surface; however, none of these samples were analyzed for PAHs. Sample H-20 was described

as "oil saturated" from 4 to 16 feet below the sediment surface and had a total PAH concentration of 70 parts per million (ppm) in the 2 to 4 foot sediment sample. BBL made no mention of elevated PAHs downstream of sample location H-20, and no mention was made of oil-saturated sediments for samples R-99 and R-101, collected on the west side of Boat Island, opposite the former MGP.

In 1993, river sediment sampling was performed for the Wisconsin Department of Transportation (WDOT) construction project on the Eighth Street Bridge. The bridge is located approximately 3,000 feet downstream of the MGP Site. PAHs were found in the sediments around the Eighth Street Bridge in concentrations ranging from 5 to 97 ppm in the top 2 feet of sediment.

In February 1995, WDNR collected one sediment sample within the River OU, approximately 20 to 30 feet from the shoreline, close to the downstream end of Boat Island. This sample contained apparent coal tar and had reported PAH concentrations greater than 3,000 ppm.

WPSC performed preliminary sediment investigations in 1995 and 1996. Results are detailed in the Sediment Investigation Report (NRT, November 1998), which is part of the Administrative Record for this site. Sediment sampling focused on identifying the preliminary nature and extent of MGP residuals in river sediments or natural soil (parent material) underlying the Sheboygan River. Sediment/soil samples were collected from as deep as 10.5 feet below the bottom of the river, although in some locations parent materials were encountered beneath the soft sediments, and this material was also sampled.

EPA and WPSC entered into an Administrative Settlement Agreement and Order on Consent in 2007 that required WPSC to conduct a remedial investigation and feasibility study for the River OU to address PAH impacts on the Sheboygan River sediments. The RI Report was finalized on July 21, 2009. The FS Report was never finalized, for reasons discussed later in this proposed plan. Both the RI Report and the Draft FS Report are part of the Administrative Record for this site.

During the RI, WPSC took visual observations of sediment borings and MGP residuals using the non-aqueous phase liquid (NAPL) standard descriptors summarized in Table 1.

The occurrence of MGP residuals was documented on sediment logs (Appendix F of the 2009 RI Report). The areas depicting MGP residuals were interpolated based on the residuals observed in surrounding borings and professional judgment. Where present, MGP residuals were most often observed in the form of staining on soft sediments, and were coincident with elevated concentrations of PAHs. Staining was also observed in sediment borings with concentrations at or below the ambient concentration and may not be attributable to MGP residuals. The maximum total PAH concentration of 22,310 ppm occurred at the base of boring T06A (at the 6.3-7.4 foot (ft) interval). In addition, boring T08A had a maximum PAH concentration of 7,872 ppm in

| Table 1 – NAPL Standard Descriptions | |
|---|---|
| **Descriptive Term** | **Definition** |
| No Visible Evidence | No visible evidence of oil on soil or sediment sample. |
| Sheen | Any visible sheen in the water on soil or sediment particles or the core. |
| Staining | Visible brown or black staining in soil or sediment; can be visible as mottling or in bands; typically associated with fine grained soil or sediment. |
| Coating | Visible brown or black oil coating soil or sediment particles; typically associated with coarse-grained soil or sediment such as coarse sand, gravels, and cobbles. |
| Oil Wetted | Visible brown or black oil wetting the soil or sediment sample; oil appears as a liquid and is not held by soil or sediment grains. |

the 2.7-3.8 ft interval and boring T09A had a maximum PAH concentration of 6,522 ppm in the 0.5-1.5 ft interval. Figure 2 shows the locations of these borings. EPA's Great Lakes National Program Office (GLNPO) conducted a sampling effort during the summer of 2010 and found the following maximum PAH concentrations with visual observations of NAPL in the Sheboygan River within the site area: sample SD-086 had a PAH concentration of 7,690 ppm at the 7-8 ft interval, SD-086 had a maximum PAH concentration of 817 ppm at the 1-3.5 ft interval, and SD-079 had a maximum PAH concentration of 408 ppm at the 5-7 ft interval. The approximate locations of these GLNPO sample locations is noted on Figure 2.

What are the "Contaminants of Concern"?

The primary contaminants of concern (COCs) associated with the Site are PAHs, including high concentrations of PAHs in the form of NAPL. The PAHs and NAPL originated from the former MGP. PCBs were identified within the River OU boundaries but the PCBs originated from other sources, including the former Tecumseh die-casting operations located many miles upriver from the Site, and are associated with the Sheboygan River and Harbor Site.

The highest sediment PAH concentrations and most abundant NAPL in the form of oil-coated/oil-wetted sediment were adjacent to the former MGP, at the eastern shore of the Sheboygan River. To address these high concentrations, EPA and WPSC entered into an Administrative Order on Consent (AOC) in June 2011 for a time-critical removal action, which will be discussed in more detail later in this document. Approximately 550 feet of the shoreline and 3 acres of the river were addressed under the TCRA. Toxic Substances Control Act (TSCA)-level PCB sediment (>50 ppm) was also located in this

## Figure 2 – Aerial Image Showing WPSC Campmarina Sample Locations

area. The concentrations and distributions of COCs were used as the basis for the removal action cleanup design, including the delineation of the dredge areas and the dredge depths.

## SCOPE AND ROLE OF THE ACTION

This action for the River OU will be the first of two remedial decisions for the WPSC Campmarina Site and addresses river sediment contamination. There was an earlier cleanup implemented at the Upland OU of the WPSC Campmarina Site, conducted under state authorities and state oversight, that addressed the soil and groundwater contamination at the former MGP facility. EPA has initiated a review of the actions implemented at the Upland OU to determine whether the risks associated with soil and groundwater have been properly addressed. As part of EPA's ongoing review of the Upland OU, monitoring data has shown that contamination in groundwater and soils at the Upland OU is not migrating to the river because of the actions implemented at the Upland OU, and EPA does not anticipate recontamination of the Sheboygan River from the Upland OU. Institutional controls still need to be implemented at the Upland OU, however, to restrict land and/or groundwater use and to protect the remedy components at the Upland OU, and the State of Wisconsin intends to work with WPSC to ensure that appropriate institutional controls are put in place. When EPA's evaluation of the Upland OU is complete, EPA will issue a Proposed Plan and a Record of Decision to select a final remedy for the Upland OU.

## SUMMARY OF SITE RISKS

The Baseline Risk Assessment (BLRA) in the 2009 RI Report focused on the River OU and did not evaluate the Upland OU. The BLRA consisted of a human health risk assessment (HHRA) and an ecological risk assessment (ERA).

The HHRA evaluted potential risks to people using the Sheboygan River. The ERA focused on evaluating risks to ecological receptors utilizing the Sheboygan River. The evaluation of Boat Island soil and Sheboygan River surface water was limited to a screening assessment due to the low levels of contaminants detected in each of these media.

An evaluation of ambient river sediment conditions was an important element of both the HHRA and ERA. Previous investigations of the Sheboygan River and Harbor Site, which overlays the footprint of the former MGP site, indicated that elevated concentrations of PCBs, PAHs, and metals existed upstream of the WPSC Campmarina Site and were unrelated to the former MGP activities. For this reason, it was important to characterize the ambient conditions to estimate where influence from the MGP began and ended and where conditions similar to ambient conditions occurred.

Statistical analysis of the ambient sediment data collected during the RI was examined to characterize the sediment quality upstream of the Site. The river sediments contain PCBs associated with up-river sources. The risks associated with up-river sources and

PCBs were assessed as part of the RI/FS for the Sheboygan River and Harbor Superfund Site and were used as the basis for EPA's May 2000 river-wide Record of Decision for the Sheboygan River and Harbor Site. PCBs are not associated with the MGP site and, while present in the site area due to downstream migration, they were not evaluated in the risk assessment for the Campmarina Site. However, during the Campmarina RI, PCBs were measured in a subset of the sediment samples collected in the river. These results were used to determine if PCBs might be a confounding factor in the interpretation of sediment toxicity tests and to provide information regarding the presence of PCBs adjacent to the former MGP. For example, in the ERA, the PCB sediment results were used as a covariate to explain any apparent additive effects to benthic invertebrates that may be caused by the presence of PCBs and PAHs together in the sediment samples.

The HHRA included a site-specific evaluation of potential exposure to MGP constituents in the sediment of the Sheboygan River. This assessment focused on areas where people could potentially wade and be in contact with affected sediments. The ERA incorporated site-specific sediment toxicity testing to evaluate the potential for the Sheboygan River sediment to affect benthic invertebrates that reside on or in the sediments. More details about the human health and ecological risk assessments are provided below.

Human Health Risk Assessment

To evaluate the potential risks to humans from MGP constituents, a HHRA was conducted using data collected during the RI. Specifically, three media were evaluated: *surface soils* on Boat Island and *surface water* and *sediment* in the Sheboygan River. The results of this risk assessment should be considered in the context that EPA typically considers the cancer risk range from $1x10^{-6}$ to $1x10^{-4}$ as being acceptable. Cumulative cancer risks below $1x10^{-6}$ are below levels requiring further consideration. Cumulative cancer risk above $1x10^{-4}$ (i.e., above EPA's acceptable risk range) and non-cancer hazard indices greater than 1 generally need to be addressed. Additionally, a risk manager may decide that a risk level less than $1x10^{-4}$ is unacceptable due to site-specific circumstances.

Based on an evaluation of current and reasonably foreseeable future land use scenarios, the following receptors and exposure pathways were considered in the HHRA for the River OU:

> *Recreational Land Use – Visitor*: exposure through incidental ingestion and dermal contact with surface soil on Boat Island and with surface water and sediment in the river.

Boat Island surface soil was not associated with calculated risks above $1x10^{-6}$ for the MGP-related constituents above ambient levels and would not pose a human health concern under current or reasonably foreseeable future land use.

The Sheboygan River surface water carcinogenic risk was estimated to be within EPA's acceptable risk range of $1x10^{-6}$ to $1x10^{-4}$ for human health risks related to MGP constituents.

Gas ebullition in areas of affected sediment may increase human health exposure through the presence of sheens on the water or the potential for release of volatiles into the air in the vicinity of where the gas reaches the surface of the water. The occurrence of gas ebullition is sporadic and was not quantified as part of the risk assessment, but the near-shore soil and sediment with NAPL, which could cause gas ebullition, were addressed as part of the time-critical removal action.

During the time-critical removal action, NAPL material, which was considered principal threat waste at the Site, was removed to the extent practicable. Therefore, it was not necessary to quantify the mechanisms and level of risk associated with this pathway. Carcinogenic risk for the Sheboygan River sediment was estimated to be within EPA's acceptable risk range of $1x10^{-6}$ to $1x10^{-4}$ for human health risks related to MGP residuals under current or reasonably foreseeable future conditions.

Because most of the PAH contamination at the River OU was buried beneath cleaner layers of sediment, the current cancer risk (at the time the risk assessment was conducted) was estimated to be $8x10^{-6}$, within the acceptable risk range. However, because the Sheboygan River and Harbor Superfund Site cleanup was scheduled to take place prior to implementing the WPSC Campmarina MGP Site remedial action, different assumptions were made in the HHRA. Based on this information, a cancer risk estimate was calculated for the *new* "existing" sediment surface (i.e., the new surface that would exist following required cleanup actions for the Sheboygan River and Harbor Site) and was found to be $2x10^{-5}$. For non-cancer hazards, both the current and new "existing" sediment surface hazard index was calculated to be 0.003. The cancer risk for reasonably foreseeable future scenarios (i.e., taking into account flood scour events and propeller wash, which could expose deeper sediments) was also estimated to be $2x10^{-5}$, and the non-cancer hazard index was estimated to be 0.01. As mentioned earlier, all NAPL-containing sediment was addressed and removed to the extent practicable as part of the time-critical removal action.

In summary, the current and reasonably foreseeable future scenarios did not result in unacceptable cancer risks or non-cancer hazards to humans.

Ecological Risk Assessment

An initial habitat assessment was performed in December 2007 as part of the RI/FS Work Plan activities. A follow-up site reconnaissance performed as part of the qualitative habitat assessment was completed in August 2008. The qualitative habitat assessment concluded that the River and Upland OUs do not provide sufficient habitat for populations of birds and small mammals. Additionally, the evaluation of small

**What is Risk to Human Health and How is it Calculated?**

A Superfund human health risk assessment estimates the "baseline risk" to people posed by a site. This is an estimate of the likelihood of health problems occurring if no cleanup action were taken at a site. To estimate the baseline risk at a Superfund site, EPA undertakes a four-step process:

Step 1: Analyze Contamination
Step 2: Estimate Exposure
Step 3: Assess Potential Health Dangers
Step 4: Characterize Site Risk

In Step 1, EPA looks at the concentrations of contaminants found at a site as well as past scientific studies on the effects these contaminants have had on people (or animals, when human studies are unavailable). Comparisons between site-specific concentrations and concentrations reported in past studies help EPA to determine which contaminants are most likely to pose the greatest threat to human health.

In Step 2, EPA considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency and duration of exposure. Using this information, EPA calculates a "reasonable maximum exposure" (RME) scenario, which portrays the highest level of human exposure that could reasonably be expected to occur.

In Step 3, EPA uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. EPA considers two types of risk: cancer risk and non-cancer risk. The likelihood of any kind of cancer resulting from a Superfund site is generally expressed as an upper bound probability; for example, a "1 in 10,000 chance." In other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants. An extra cancer case means that one more person could get cancer than would normally be expected to from all other causes. For non-cancer health effects, EPA calculates a "hazard index." The key concept here is that a "threshold level" (measured usually as a hazard index of less than 1) exists below which non-cancer health effects are no longer predicted.

In Step 4, EPA determines whether site risks are great enough to cause health problems for people at or near the Superfund site. The results of the three previous steps are then combined, evaluated and summarized.

mammals and birds performed as part of the investigative tasks for the Sheboygan River and Harbor Superfund Site concluded that PAHs and metals (which are constituents associated with MGP residuals) did not pose a risk to these receptors.

Fish habitat (i.e., spawning grounds, foraging areas, etc.) adjacent to the former MGP was also evaluated in the qualitative habitat survey. Fish were not considered a primary ecological receptor due to:

- Limited cover for fish (i.e., lack of aquatic vegetation, deadfalls, etc.)
- Sandy silt texture of the substrate which provides minimal habitat for spawning
- Limited colonization of benthic invertebrates (i.e., food source for fish)
- Spatial extent of affected surface compared to the habitat required
- Mobility of fish

Based on the qualitative habitat assessment and comparison of surface water and sediment to screening benchmarks, the following ecological receptors and pathways were considered:

> *Benthic Invertebrates*: exposure through incidental ingestion and dermal contact with sediment.

"Total-PAH" sediment benchmarks were considered to best represent the toxicity of the mixture of PAHs, which are known to cause narcotic effects on benthic invertebrates. The total-PAH sediment benchmarks were developed based on the sum of the PAH concentrations for a specific list of 13 PAHs. Comparisons were therefore made using the total concentration of the 13 PAHs listed in Table 2.

| Table 2 – List of 13 PAHs Comprising Total PAHs | |
|---|---|
| Acenaphtene | Chrysene |
| Acenaphthylene | Fluoranthene |
| Anthracene | Fluorene |
| Benzo(a)anthracene | Naphthalene |
| Benzo(b)fluoranthene | Phenanthrene |
| Benzo(k)floranthene | Pyrene |
| Benzo(a)pyrene | |

The screening evaluation for sediments included a comparison to ecological benchmarks and an evaluation of the ambient sediment quality of the river. A separate screening evaluation was performed for surface sediments (0-6 in.) and near-surface sediment (0-30 in.). The surface sediments represent the biologically active zone where ecological receptors may be exposed. The near-surface sediments represent a layer of sediment that is not currently accessible. The evaluation of near-surface sediments was performed to evaluate the potential risk associated with these sediments if they were exposed in the future due to the cleanup action at the Sheboygan Harbor and River site or otherwise. Ecological screening sediment benchmarks were compared to the maximum analyte sediment concentration within each depth interval (surface and near-surface) and also to the average of the detected concentrations. The comparison to the

average concentration of the detected values was used to better evaluate a more typical concentration to which ecological receptors would be exposed.

The comparison to screening level ecological benchmarks showed that there were a number of sediment sample locations that exceeded ecological screening values. Based on the surface and near-surface screening evaluations, total PAHs was the analyte group with the greatest number of exceedances of ecological screening levels, and was the main COPC requiring further ecological evaluation. The additional sediment evaluations included toxicity testing and prediction of total PAH bioavailability using EPA's methods for deriving Equilibrium Partitioning Sediment Benchmarks (ESBs). The purpose of the toxicity testing was to provide a site-specific evaluation of the Sheboygan River sediments to determine if the levels of COPCs (primarily PAHs) above generic ecological screening benchmarks would be toxic to sensitive ecological receptors (i.e., benthic invertebrates).

A subset of 23 near-surface sediment samples, 19 from within the River OU and 4 ambient samples upstream of the former MGP facility, were selected for sediment toxicity testing. The 19 investigative sediment samples covered the range of PAH concentrations specified in the RI/FS work plan ranging from 10 ppm to greater than 1,000 ppm total PAHs. Twenty-eight-day sediment toxicity tests with the freshwater amphipod Hyalella azteca were conducted on the subset of 23 samples. This freshwater amphipod is considered relatively sensitive to MGP-related constituents (i.e., PAHs) and thus is a reliable barometer of the health of benthic invertebrates. The sediments were also analyzed for chemical and physical characteristics, including 34-PAHs, volatile organic compounds, PCBs, inorganics, total organic carbon (TOC), and black carbon. The TOC and black carbon data were used with the 34-PAH data to estimate the bioavailability of the PAHs and predict whether the total PAH concentrations would be toxic to benthic invertebrates using EPA's ESB methodology.

Based on the results of the sediment toxicity testing (and ESB calculations), some of the sediment samples were clearly toxic to benthic invertebrates. Results of the sediment toxicity testing indicated that the driving analyte group that was causing toxicity to Hyalella azteca was PAHs, while there was no relationship with PCBs or metals. For this reason, the relationship between survival and growth and the total PAH concentrations was evaluated further to define zones of exposure and risk for benthic invertebrates.

Similar to the assumptions made in the HHRA, the ERA made the assumption that the Sheboygan River and Harbor Superfund Site cleanup would proceed before the WPSC Campmarina MGP Site remedial action. For conditions existing prior to the Sheboygan River and Harbor Site PCB dredging, there were two surface sediment sample locations (i.e., within the top 6 inches of sediment) that were predicted to pose a risk to the survival of benthic invertebrates. Based on the post-PCB dredging scenario, there were a total of four surface sediment sample locations predicted to pose a risk to the survival of benthic invertebrates. These locations, which were situated along the eastern shoreline of the river, represented the "potential for exposure" zone. For near-surface

sediments (considered to be sediments 6 to 30 inches deep), there were 13 sample locations that were predicted to pose a risk to the survival of benthic invertebrates based on the conditions existing prior to the PCB dredging, and the post-PCB dredging scenario was not significantly different. These locations were also situated along the eastern shoreline of the river and downstream of Boat Island.

Based on the results of the site-specific toxicity testing, there is a potential risk to sensitive aquatic receptors (i.e., benthic invertebrates) if near-surface sediment is exposed. The actual effects on the benthic invertebrate community would depend on the spatial extent of the near-surface sediments that become exposed and the respective concentrations.

The April 2007 Multi-Site Risk Assessment Framework for MGP sites describes the general procedures to evaluate the spatial extent of benthic community risks associated with contaminated sediments. The outcome of the assessment was used to define the following four risk zones: "potential for exposure to benthic population," "potential for low exposure to benthic population," "no significant risk to benthic population," and "ambient conditions." The zones have both a spatial and vertical component and provide a context for the risk assessment, and focus evaluations on the delineation of the boundaries between zones.

Based on the information obtained from the toxicity testing that was conducted at the River OU, which showed that the PAH contamination posed risk to benthic invertebrates, several different risk zones were developed for the River OU. See Table 3 below for a description of the risk zones that were developed.

**Table 3 – Risk Zones Based on Ecological Risk Assessment**

Note: The levels of PAHs found in specific areas of the Sheboygan River were divided into zones based on the concentration of PAHs (measured in parts per million) and the resulting degree of risk to benthic invertebrates.

| Zone | Description |
|---|---|
| Zone A | Pre-existing PAH contamination not attributable to Campmarina MGP operations (18 ppm and below). |
| Zone B | Minimal amount of risk posed by the PAH sediment contamination caused by Campmarina operations (18-45 ppm). |
| Zone C | Moderate amount of risk posed by the PAH sediment contamination caused by Campmarina operations (45-125 ppm). |
| Zone D | Definite risk posed by the PAH sediment contamination caused by Campmarina operations (125 ppm and above). |
| Zone E | PAH NAPL or PAH free product. |

As noted in Table 3, the four risk zones at the River OU of the WPSC Campmarina Site are referred to as Zones A, B, C, and D. Additionally, the near-shore sediment along the eastern shoreline of the river, where spatially-connected NAPL was visually observed in the sediment, is referred to as Zone E.

TIME-CRITICAL REMOVAL ACTION

In June 2011, WPSC entered into an AOC with EPA to conduct a time-critical removal action. Mobilization activities started on June 20, 2011. The TCRA addressed PAH-contaminated sediment in the Sheboygan River near Boat Island. EPA required this cleanup in order to prevent the release and movement of PAHs from the Campmarina site as a result of the ongoing PCB cleanup of the nearby Sheboygan River and Harbor site. The TCRA required that PCB-, PAH-, and NAPL-impacted sediments underneath the former MGP shoreline and in the Sheboygan River be mechanically removed. PCB-impacted sediments were defined by grids consistent with the Sheboygan River and Harbor Site cleanup plan. Several PCB grids contained TSCA-level PCBs. TSCA-level PCB sediments were to be removed independently from the non-TSCA impacted sediments. For NAPL, the TCRA goal was to remove all NAPL material to the extent practicable, with visual confirmation. For river sediments, the TCRA goal was to remove all sediments with a PAH concentration greater than or equal to 45 ppm within the top 2.5 feet of the sediment surface. The 45 ppm cleanup number was selected in order to address ecological risks at the River OU. Based on the results of the site-specific toxicity testing discussed above, moderate toxic effects to benthic organisms were evident at PAH concentrations of 45 ppm and above.

In addition to the TCRA goals for NAPL and sediments, the AOC required WPSC to place clean cover on areas in the river where, after removing the top 2.5 feet, the PAH sediment concentration still exceeded 45 ppm at the completion of the TCRA dredging work. However, due to the fact that EPA's Great Lakes National Program Office (GLNPO) was planning to implement a Great Lakes Legacy Act (GLLA) project to address beneficial use impairments for the Sheboygan River Area of Concern, with additional dredging work slated for the same areas being addressed by the TCRA, EPA did not require WPSC to cover the areas that still exceeded 45 ppm at the end of the TCRA dredging, pending completion of the GLLA project. This approach was taken in order to allow the GLLA project to proceed without the added effort of removing clean cover materials that had just recently been placed.

PAH- and NAPL-impacted sediment areas were defined into dredge management units (DMUs) based upon data from the RI. Each DMU had predetermined dredge outlines and required removal depths based on elevations at the time of the RI. PAH DMUs were considered complete upon achieving the removal elevation in at least 90% of the DMU. NAPL DMUs were considered complete once there was no undisturbed NAPL visually remaining in the DMU, or less than 6 inches of disturbed (generated from dredging) NAPL residuals remaining.

Due to the potential for NAPL and NAPL-impacted sediments migrating downstream during removal operations, a temporary sheet pile cofferdam was installed. The cofferdam was comprised of two segments: one upstream of the removal area and one downstream, with the removal area also contained by Boat Island. A subsurface containment system comprised of a Waterloo sheet pile barrier and geosynthetic cover was present along part of the shoreline in the Upland OU at the Site (Figure 3). This system was constructed during previous state-mandated remedial activities for the Upland OU. NAPL-impacted sediments were present along the Waterloo Barrier up to 18 feet below the top of the sheet pile. The Waterloo Barrier was not designed for unbalanced earth pressures that the removal of the NAPL-impacted sediment adjacent to it would cause. Consequently, a system of buttress piles and wales was designed and installed during the TCRA to provide temporary support for the Waterloo Barrier as the NAPL-impacted soil and sediment adjacent to it was removed.

Ground pressure restrictions from construction equipment were imposed in the area of the former upland remedy to prevent damage to the geosynthetic cover. The removal action contractor deployed timber matting in work areas that traversed the geosynthetic cover to meet these restrictions.

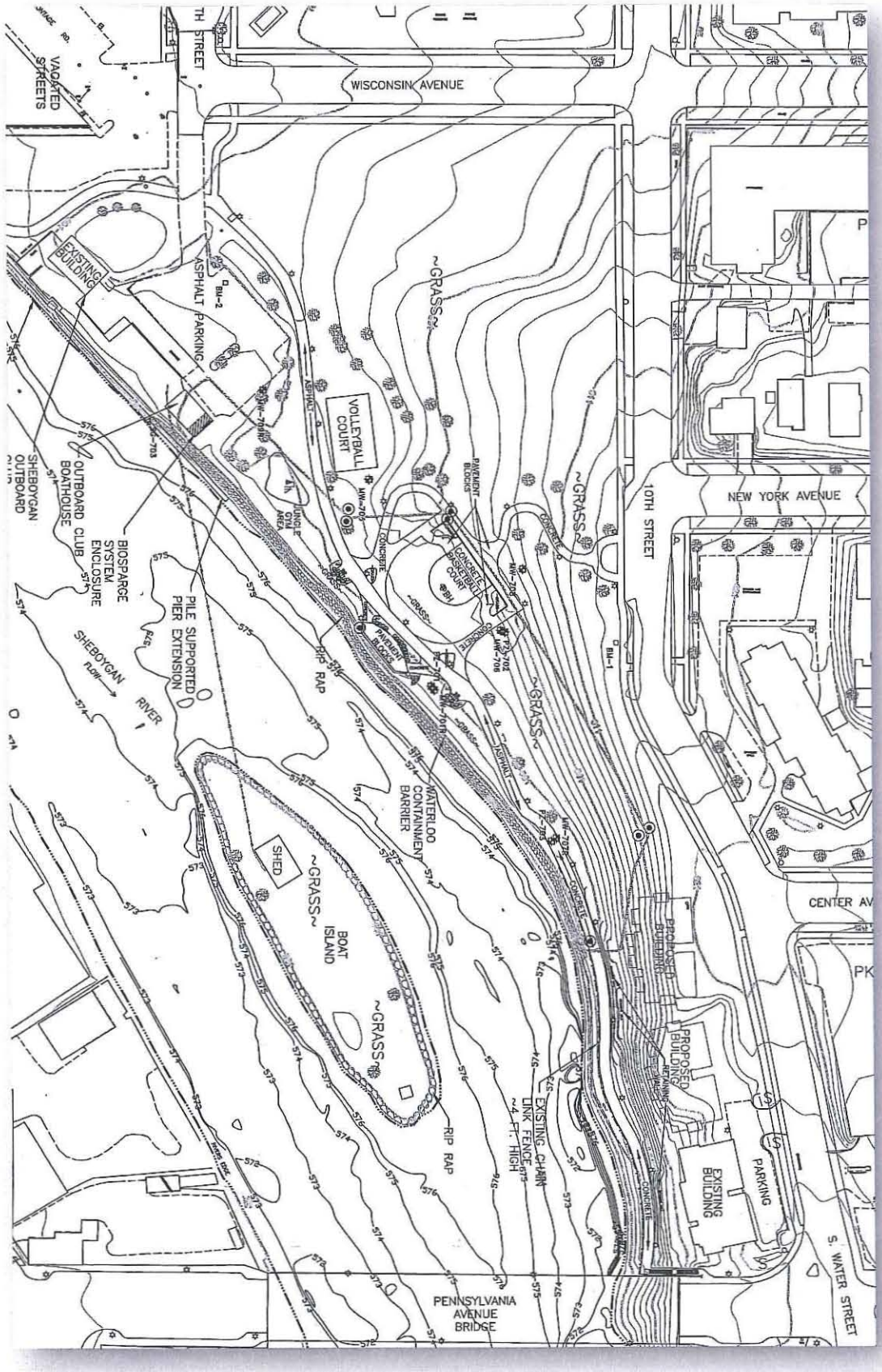
Once removed, the impacted sediments were transported to a stabilization pad constructed in the upland support area where they were mixed with a stabilization amendment to meet strength requirements imposed by the approved disposal facility for non-TSCA regulated sediments, the Veolia Hickory Meadows Landfill located in Hilbert, Wisconsin. TSCA-regulated PCB-contaminated sediments were disposed by Pollution Risk Services (a potentially responsible party at the Sheboygan River and Harbor Site) at Clean Harbors Lone Mountain Landfill located in Waynoka, Oklahoma.

Air sampling was conducted during the removal action to monitor exposure to COCs. WPSC's construction contractor monitored their construction workers for compliance with permissible exposure levels established by the Occupational Safety and Health Administration (OSHA) in addition to monitoring the site perimeter for fugitive emissions, dust, and odor, to measure public exposure off-site. Action levels were established for perimeter monitoring to ensure removal operations were conducted in a manner that minimized public exposure.

Dredging was mechanically performed with a long-reach excavator mounted on a barge. Dredgepak software was installed on the excavator to allow the operator to use a laptop and RTK-GPS to identify the excavator bucket positioning and elevation in each of the DMUs.

An environmental dredging bucket, comprised of a standard excavator bucket modified to have a hydraulically operated lid, was mounted on the dredge excavator to keep sediment from washing out of the bucket as it moved below the water surface. After dredged sediment was removed from the DMU with the bucket, it was placed into one of two roll-off boxes welded to a transport barge. When both boxes were filled, the transport barge was pushed to the offload area in the upland support area for

**Figure 3 – Location of Waterloo Sheetpile Barrier and Geosynthetic Cover in Upland OU**



unloading and transportation of the dredged sediments to the sediment stabilization pad. At the same time, another transport barge was mobilized to the dredge barge to allow dredging to continue.

The transport barges were off-loaded by a long-reach excavator on the shore in the upland support area. Sediment removed from the boxes was placed into the bed of an on-road dump truck. The truck transported the sediment to the stabilization pad. At the stabilization pad, front-end loaders and excavators mixed the dredged sediment with Calciment to reduce the water content by hydration, which also increased the shear strength of the sediment.

Upon completing a DMU, a Quality Assurance (QA) bathymetric survey to demonstrate compliance with the specified post-dredge elevations was completed. Figure 4 shows the DMU areas. During dredging operations, oil booms were placed along the inside of the north and south cofferdams and along Boat Island. This was done to control and collect any NAPL that was released from the sediment during NAPL dredging, and to prevent this NAPL from impacting Boat Island or leaving the interlocks of the cofferdam. During the project, the PRP contractor would periodically collect floating NAPL from the water surface inside of the cofferdam with oil booms and pads to help with fugitive odors.

Post-dredge sediment sampling was performed following evaluation of the post-dredge bathymetric survey showing that the target elevation had been achieved in 90% or more of the DMU. Sediment sampling was performed in accordance with EPA-approved RI standard operating procedures (SOPs) using a push core sampler. Coordinates for sediment sample locations were randomly located within the DMUs. The actual sediment sample locations were recorded. Sediment cores were logged in accordance with the approved SOPs.

WPSC's contractor used 2 5/8-inch inside diameter, clear polycarbonate tubes for sediment sampling, cut to 30 inches in length. The sampling tubes were pushed two feet into the sediment, where possible. Sediment recovery in the tube was targeted to be a minimum of 75% of the push depth to be acceptable for sampling. When sediment recovery was less than 75% of the push depth, the core was saved and another tube was pushed. The additional tube was offset approximately two to five feet from the location of the first tube. Up to three attempts were made to obtain 75% or greater recovery. If 75% or greater recovery was not achieved, the sample having the highest recovery was selected for sampling.

The objective of post-dredge sampling in the areas where PAH dredging was completed was to document the residual PAHs in the new surface sediment as well as the concentration of any undredged PAHs. A total of five PAH sediment cores from the NAPL DMUs were collected from inside the temporary cofferdam. Each two-foot core was subdivided into a 0- to 6-inch sample and a 6- to 24-inch sample. Sample intervals were composited and submitted to a laboratory for analysis of PCBs and PAHs. Post-dredge sampling in the NAPL DMUs was conducted to visually confirm that there was

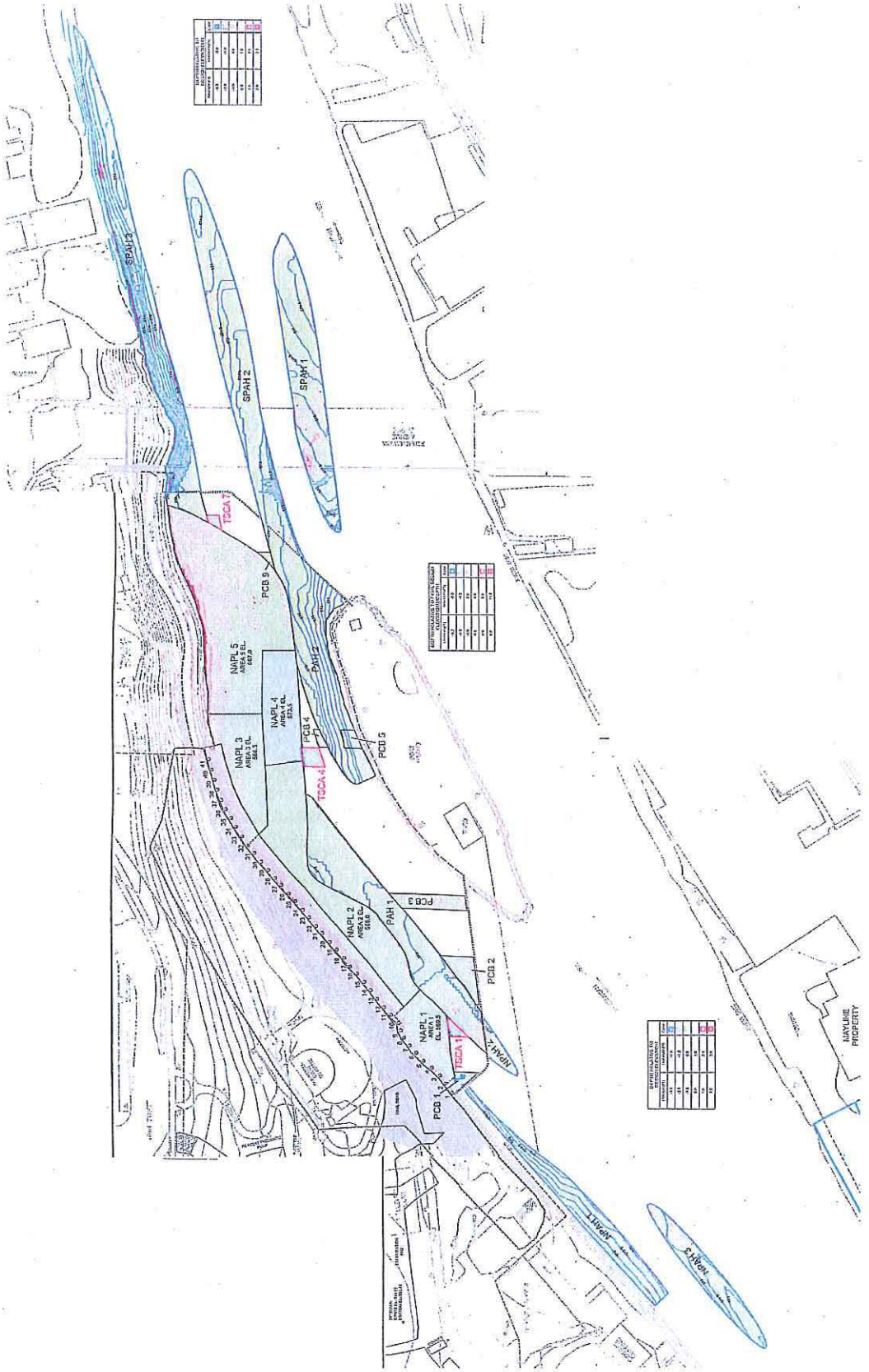



**Figure 4 – WPSC Campmarina Time Critical Removal NAPL and PAH DMUs**

no undisturbed NAPL remaining in the DMU and to characterize the remaining PAH concentrations following removal of the NAPL. One to two sediment cores were collected in each of the NAPL dredge DMUs. Each core was photographed and observations of NAPL were noted in the sampling logs. EPA's oversight contractor was present during all sampling activities to ensure that observations for NAPL were accurate and photographic documentation of the visual cores was collected and included in the TCRA completion report. Each core was subdivided into a 0- to 6-inch sample and a 6- to 24-inch sample. Sample intervals were composited and submitted to the laboratory for analysis of PAHs to document PAH residuals as well as concentrations remaining in the underlying sediment.

As noted above, the TCRA specifications called for 2.5 feet of clean backfill to be placed in dredged areas where analytical results from post-dredge QA confirmation samples exceeded the cleanup goal of 45 ppm total PAHs. However, during the course of the project, EPA's Superfund program decided that backfill placement was not necessary at this time due to plans for additional dredging in 2012 under a GLLA dredging project to remove additional PCB- and PAH-impacted sediments from the river. However, EPA's Superfund and GLNPO programs will continue to closely coordinate and share data, and EPA may still require WPSC to place clean cover materials if necessary.

As part of the TCRA, WPSC mechanically removed 6,910 cubic yards of PAH-contaminated sediment that met Risk Zones C and D characteristics within the top 2.5 feet of river sediment. WPSC also removed a total of 14,789 cubic yards of NAPL (Risk Zone E), which was considered principal threat waste[1].

Laboratory analytical results for all the final sediment core samples are summarized in Table 4. As shown in Table 4, there are still some locations within the River OU where PAH concentrations exceed 45 ppm, including one location (Dredge Area NAPL5-1) where the post-dredge confirmation sample results are two orders of magnitude higher than 45 ppm throughout the 2-ft. sample interval. Although these concentrations are high, EPA's oversight contractor confirmed that all visual NAPL[2] was removed from the River OU and at least the top 2.5 feet of sediments that exceeded 45 ppm were removed. All of the areas where the post-dredge confirmation sample results exceed 45 ppm would have been covered with 2.5 feet of clean backfill, but were not covered pending completion of the GLLA project. If the areas that exceeded 45 ppm at the completion of the TCRA dredging work still exceed 45 ppm after completion of the GLLA dredging work, then clean cover materials will be placed over the areas in accordance with the TCRA AOC.

---

[1] Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. NAPL materials are generally considered to be principal threat wastes.

[2] NAPL materials would be expected to have concentrations in the tens-of-thousands ppm range.

Table 4 - WPSC Camparina MGP Site Time Critical Removal Post Dredged NAPL and PAH Confirmation Sample Results Summary Table
Construction Completion Report - Focused NAPL and Sediment Removal Action
WPSC - Camparmina MGP River OU
Sheboygan, WI

| Sample Date | Sample Time | Sample ID | Sample Location | | Sample Coordinates, Sheboygan County[1,5] | | Sample Coordinates, Wisconsin State Plane[1] | | Water Surface Elevation, NAVD 88[10] (ft) | Water Depth (ft) | Top of Sediment Elevation, NAVD 88[10] (ft) | Penetration Depth (ft) | Sediment Recovered (ft) | Total PAH Results[3] (mg/kg) | Total PCB Results[4] (mg/kg) | QA/QC Samples |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PRS Grid# | Environcon Dredge Area | Northing | Easting | Northing | Easting | | | | | | | | |
| 9/14/2011 | 0930 | 110914008 | 231 | NPAH1 N (0-0.5') | 177,082.1 | 217,502.5 | 646,928.7 | 2,571,275.3 | 577.9 | 3.4 | 574.5 | 2.0 | 1.7 | 11.596 | 1.97 | |
| 9/14/2011 | 0930 | 110914009 | 231 | NPAH1 N (0.5-2.0') | 177,082.1 | 217,502.5 | 646,928.7 | 2,571,275.3 | 577.9 | 3.4 | 574.5 | 2.0 | 1.7 | 18.582 | 0.374 | |
| 9/14/2011 | 0940 | 110914010 | 229 | NPAH1 S (0-0.5') | 176,998.2 | 217,578.8 | 646,847.1 | 2,571,364.1 | 577.9 | 3.6 | 574.3 | 2.0 | 1.6 | 4.241 | 3.34 | |
| 9/14/2011 | 0940 | 110914011 | 229 | NPAH1 S (0.5-2.0') | 176,998.2 | 217,578.8 | 646,847.1 | 2,571,364.1 | 577.9 | 3.6 | 574.3 | 2.0 | 1.6 | 21.127 | <0.0385 | |
| 9/14/2011 | 0947 | 110914012 | 221 | NPAH2 (0-0.5') | 176,842.7 | 217,660.3 | 646,694.1 | 2,571,440.1 | 577.9 | 6.2 | 571.7 | 2.0 | 1.78 | 10.509 | 1.65 | |
| 9/14/2011 | 0947 | 110914013 | 221 | NPAH2 (0.5-2.0') | 176,842.7 | 217,660.3 | 646,694.1 | 2,571,440.1 | 577.9 | 6.2 | 571.7 | 2.0 | 1.8 | 40.051 | <0.0375 | |
| 9/14/2011 | 0959 | 110914014 | 233 | NPAH3 (0-0.5') | 177,100.6 | 217,407.1 | 646,944.4 | 2,571,179.4 | 577.9 | 7.0 | 570.9 | 2.0 | 1.5 | 5.269 | 0.577 | |
| 9/14/2011 | 0959 | 110914015 | 233 | NPAH3 (0.5-2.0') | 177,100.6 | 217,407.1 | 646,944.4 | 2,571,179.4 | 577.9 | 7.0 | 570.9 | 2.0 | 1.5 | 3.934 | 0.172 | |
| 10/18/2011 | 0749 | 111018001 | 195 | PAH2-1 (0-0.5') | 179,348.0 | 217,875.7 | 649,204.4 | 2,571,581.8 | 577.7 | 2.8 | 574.9 | 1.8 | 1.75 | 28.284 | 4.78 | |
| 10/18/2011 | 0749 | 111018002 | 195 | PAH2-1 (0.5-2.0') | 179,348.0 | 217,875.7 | 649,204.4 | 2,571,581.8 | 577.7 | 2.8 | 574.9 | 1.8 | 1.75 | 26.795 | 0.656 | |
| 10/18/2011 | 0802 | 111018003 | 201 | PAH2-2 (0-0.5') | 176,456.4 | 217,856.8 | 646,313.7 | 2,571,647.8 | 577.7 | 4.4 | 573.3 | 2.0 | 1.85 | 43.886 | 4.52 | |
| 10/18/2011 | 0802 | 111018004 | 201 | PAH2-2 (0.5-2.0') | 176,456.4 | 217,856.8 | 646,313.7 | 2,571,647.8 | 577.7 | 4.4 | 573.3 | 2.0 | 1.85 | 15.798 | < 0.032 | |
| 10/18/2011 | 0833 | 111018005 | 207/209 | PAH1-1 (0-0.5') | 176,609.4 | 217,857.1 | 646,466.7 | 2,571,643.7 | 577.7 | 6.9 | 570.8 | 2.0 | 1.25 | 301.490 | 6.38 | |
| 10/18/2011 | 0833 | 111018006 | 207/209 | PAH1-1 (0.5-2.0') | 176,609.4 | 217,857.1 | 646,466.7 | 2,571,643.7 | 577.7 | 6.9 | 570.8 | 2.0 | 1.25 | 9.179 | 21.4 | |
| 10/18/2011 | 0850 | 111018007 | 215/217 | PAH1-2 (0-0.5') | 176,755.1 | 217,752.5 | 646,609.2 | 2,571,534.8 | 577.7 | 6.3 | 571.4 | 1.4 | 1.10 | 209.990 | 7.37 | |
| 10/18/2011 | 0850 | 111018008 | 215/217 | PAH1-2 (0.5-2.0') | 176,755.1 | 217,752.5 | 646,609.2 | 2,571,534.8 | 577.7 | 6.3 | 571.4 | 1.4 | 1.10 | 165.001 | 0.442 | |
| 10/18/2011 | 0859 | 111018009 | 215/217 | PAH1-2 (0-0.5') | 176,755.1 | 217,752.5 | 646,609.2 | 2,571,534.8 | 577.7 | 6.3 | 571.4 | 2.0 | 1.50 | 201.630 | 1.47 | Duplicate |
| 10/18/2011 | 0859 | 111018010 | 215/217 | PAH1-2 (0.5-2.0') | 176,755.1 | 217,752.5 | 646,609.2 | 2,571,534.8 | 577.7 | 6.3 | 571.4 | 2.0 | 1.50 | 126.559 | 0.0416 | Duplicate |
| 10/18/2011 | 0908 | 111018012 | 215 | PCB2 S | 176,741.4 | 217,710.7 | 646,594.3 | 2,571,493.4 | 577.7 | 3.9 | 573.8 | 1.1 | 0.75 | NA | 0.505 | |
| 10/18/2011 | 0925 | 111018013 | 217 | PCB2 C (0-0.5') | 176,766.0 | 217,693.7 | 646,618.4 | 2,571,475.7 | 577.7 | 3.4 | 574.3 | 2.0 | 0.90 | NA | 1.95 | |
| 10/18/2011 | 0930 | 111018014 | 217 | PCB2 C (0-2') | 176,766.0 | 217,693.7 | 646,618.4 | 2,571,475.7 | 577.7 | 3.4 | 574.3 | 2.0 | 1.50 | NA | 20.6 | |
| 10/18/2011 | 0958 | 111018016 | 211A | PCB3 N | 176,683.4 | 217,720.4 | 646,536.6 | 2,571,504.8 | 577.7 | 5.0 | 572.7 | 2.0 | 2.00 | NA | 0.386 | |
| 10/18/2011 | 0949 | 111018017 | 211A | PCB3 C (0-2.0') | 176,676.0 | 217,717.4 | 646,529.1 | 2,571,502.1 | 577.7 | 5.0 | 572.7 | 2.0 | 2.00 | NA | 0.301 | |
| 10/18/2011 | 0954 | 111018018 | 211A | PCB3 C (0-0.5') | 176,676.0 | 217,717.4 | 646,529.1 | 2,571,502.1 | 577.7 | 5.0 | 572.7 | 2.0 | 1.50 | NA | 0.381 | |
| 10/19/2011 | 0848 | 111019008 | 211A | PCB3 S | 176,673.8 | 217,710.1 | 646,526.7 | 2,571,494.8 | 577.9 | 3.9 | 574.0 | 2.0 | 1.25 | NA | 0.275 | |
| 10/19/2011 | 0902 | 111019009 | 211A | PCB3 S | 176,673.8 | 217,710.1 | 646,526.7 | 2,571,494.8 | 577.9 | 3.9 | 574.0 | 1.4 | 1.25 | NA | 1.93 | Duplicate |
| 10/19/2011 | 0837 | 111019007 | 203C | PCB4 E | 176,499.6 | 217,864.2 | 646,357.1 | 2,571,654.0 | 577.9 | 5.5 | 572.4 | 1.1 | 1.10 | NA | 0.579 | MS/MSD |
| 10/26/2011 | 0918 | 111026001 | 193B/193D | NAPL5-1 (0-0.5') | 176,301.2 | 217,964.3 | 646,161.8 | 2,571,759.9 | 578.4 | 11.3 | 567.1 | 1.5 | 1.10 | 3775.100 | NA | |
| 10/26/2011 | 0918 | 111026002 | 193B/193D | NAPL5-1 (0.5-2.0') | 176,301.2 | 217,964.3 | 646,161.8 | 2,571,759.9 | 578.4 | 11.3 | 567.1 | 1.5 | 1.10 | 2809.100 | NA | |
| 10/26/2011 | 0930 | 111026003 | 197 | NAPL5-2 (0-0.5') | 176,388.5 | 217,955.8 | 646,248.8 | 2,571,748.8 | 578.4 | 12.3 | 566.1 | 1.2 | 1.10 | 83.456 | NA | |
| 10/26/2011 | 0930 | 111026004 | 197 | NAPL5-2 (0.5-2.0') | 176,388.5 | 217,955.8 | 646,248.8 | 2,571,748.8 | 578.4 | 12.3 | 566.1 | 1.5 | 1.10 | 15.994 | NA | |
| 10/26/2011 | 1007 | 111026005 | 219B/219E | NAPL1-1 (0-0.5') | 176,814.7 | 217,756.1 | 646,668.9 | 2,571,536.7 | 578.4 | 9.5 | 568.9 | 1.1 | 0.90 | 24.132 | NA | |
| 10/26/2011 | 1007 | 111026006 | 219B/219E | NAPL1-1 (0.5-2.0') | 176,814.7 | 217,756.1 | 646,668.9 | 2,571,536.7 | 578.4 | 9.5 | 568.9 | 1.1 | 0.90 | 28.643 | NA | |
| 10/26/2011 | 1039 | 111026009 | 189C | PAH3-1 (0-0.5') | 176,224.6 | 218,015.7 | 646,086.7 | 2,571,813.5 | 578.4 | 8.6 | 569.8 | 2.0 | 1.50 | 90.384 | 1.16 | |
| 10/26/2011 | 1039 | 111026010 | 189C | PAH3-1 (0.5-2.0') | 176,224.6 | 218,015.7 | 646,086.7 | 2,571,813.5 | 578.4 | 8.6 | 569.8 | 2.0 | 1.50 | 8.100 | 0.0592 | MS/MSD |
| 10/26/2011 | 1039 | 111026011 | 189C | PAH3-1 (0.5-2.0') | 176,224.6 | 218,015.7 | 646,086.7 | 2,571,813.5 | 578.4 | 8.6 | 569.8 | 2.0 | 1.50 | 5.509 | <0.0444 | Duplicate |
| 10/27/2011 | 1445 | 111027001 | 193D | PCB9 S | 176,267.0 | 217,928.1 | 646,146.5 | 2,571,724.1 | 578.3 | 7.2 | 571.1 | 2.0 | 1.70 | NA | 124 | Duplicate |
| 10/27/2011 | 1445 | 111027002 | 193D | PCB9 S | 176,267.0 | 217,928.1 | 646,146.5 | 2,571,724.1 | 578.3 | 7.2 | 571.1 | 2.0 | 1.70 | NA | 11.2 | MS/MSD |
| 10/31/2011 | 1623 | 111031001 | 223 | PCB 1 C (0-0.5') | 176,876.1 | 217,700.8 | 646,728.6 | 2,571,479.6 | 578.1 | 11.7 | 566.4 | 2.0 / 1.6[9] | 1.25 / 1.0[9] | 280.630 | 0.511 | |
| 10/31/2011 | 1623 | 111031002 | 223 | PCB1 C (0.5-2.0') | 176,876.1 | 217,700.8 | 646,728.6 | 2,571,479.6 | 578.1 | 11.7 | 566.4 | 2.0 / 1.6[9] | 1.25 / 1.0[9] | 39.250 | <0.0356 | MS/MSD |
| 10/31/2011 | 1623 | 111031003 | 223 | PCB1 C (0.5-2.0') | 176,876.1 | 217,700.8 | 646,728.6 | 2,571,479.6 | 578.1 | 11.7 | 566.4 | 2.0 / 1.6[9] | 1.25 / 1.0[9] | 29.960 | <0.0399 | Duplicate |
| 11/1/2011 | 1341 | 111101007 | 203C | PCB 5 | 176,493.5 | 217,932.4 | 646,353.0 | 2,571,722.3 | 578.1 | 4.1 | 574.0 | 2.0 | 1.90 | NA | 0.12 | MS/MSD |
| 11/1/2011 | 1341 | 111101008 | 203C | PCB 5 | 176,493.5 | 217,932.4 | 646,353.0 | 2,571,722.3 | 578.1 | 4.1 | 574.0 | 2.0 | 1.90 | NA | 0.0779 | Duplicate |
| 11/3/2011 | 1430 | 111103003 | 199B | NAPL4-2-2 (0-0.5') | 176,423.5 | 217,922.8 | 646282.8 | 2571714.8 | 578.2 | 11.4 | 566.8 | 1.15 | 1.15 | 226.350 | NA | |
| 11/3/2011 | 1430 | 111103004 | 199B | NAPL4-2-2 (0-0.5') | 176,423.5 | 217,922.8 | 646282.8 | 2571714.8 | 578.2 | 11.4 | 566.8 | 1.15 | 1.15 | 310.700 | NA | Duplicate |
| 11/3/2011 | 1430 | 111103005 | 199B | NAPL4-2-2 (0.5-2.0') | 176,423.5 | 217,922.8 | 646282.8 | 2571714.8 | 578.2 | 11.4 | 566.8 | 1.15 | 1.15 | 311.620 | NA | MS/MSD |
| 11/4/2011 | 1541 | 111104001 | 207 | NAPL3-2-2 (0-0.5') | 176,569.5 | 217,937.3 | 646429.2 | 2571725.0 | 578.1 | 11.8 | 566.3 | 0.4 | 0.35 | 3.975 | NA | |
| 11/4/2011 | 1541 | 111104002 | 207 | NAPL3-2-2 (0-0.5') | 176,569.5 | 217,937.3 | 646429.2 | 2571725.0 | 578.1 | 11.8 | 566.3 | 0.4 | 0.35 | 17.116 | NA | Duplicate |
| 11/8/2011 | 910 | 111108001 | 207 | NAPL2-3-1/2 (0-0.5') | 176,599.4 | 217,907.7 | 646458.2 | 2571694.5 | 578.1 | 13.9 | 564.2 | 0.5/0.4 | 0.50/0.40 | 32.441 | NA | |
| 11/8/2011 | 910 | 111108002 | 207 | NAPL2-3-1/2 (0-0.5') | 176,599.4 | 217,907.7 | 646458.2 | 2571694.5 | 578.1 | 13.9 | 564.2 | 0.5/0.4 | 0.50/0.40 | 27.027 | NA | Duplicate |
| 11/8/2011 | 947 | 111108003 | 207 | NAPL2-6 (0-0.5') | 176,686.5 | 217,851.8 | 646543.6 | 2571636.2 | 578.1 | 14.5 | 563.6 | 0.5 | 0.40 | 5.321 | NA | |
| 11/15/2011 | 1119 | 111115001 | 189A | SPAH2-1 R1/R2 (0-0.5') | 176,234.6 | 217,918.4 | 646093.9 | 2571715.9 | 577.9 | 5.2 | 572.7 | 2.0 | 2.00 | 0.815 | 2.54 | |
| 11/15/2011 | 1119 | 111115002 | 189A | SPAH2-1 R1/R2 (0-0.5') | 176,234.6 | 217,918.4 | 646093.9 | 2571715.9 | 577.9 | 5.2 | 572.7 | 2.0 | 2.00 | 0.720 | 10.3 | Duplicate |
| 11/15/2011 | 1119 | 111115003 | 189A | SPAH2-1 R1/R2 (0.5-2.0') | 176,234.6 | 217,918.4 | 646093.9 | 2571715.9 | 577.9 | 5.2 | 572.7 | 2.0 | 2.00 | 92.997 | 0.394 | MS/MSD |
| 11/15/2011 | 1145 | 111115004 | 181 | SPAH2-2 (0-0.5') | 176,031.0 | 217,968.1 | 645891.8 | 2571771.6 | 577.9 | 6.7 | 571.2 | 2.0 | 1.75 | 35.433 | 0.119 | |
| 11/15/2011 | 1145 | 111115005 | 181 | SPAH2-2 (0.5-2.0') | 176,031.0 | 217,968.1 | 645891.8 | 2571771.6 | 577.9 | 6.7 | 571.2 | 2.0 | 1.75 | 45.420 | <0.0316 | |
| 12/1/2011 | 1301 | 111201001 | 188 | SPAH1-1 (0-0.5') | 175,993.2 | 217,904.2 | 645852.159 | 2571708.808 | 578.2 | 8.1 | 570.1 | 2.0 | 1.90 | 138.210 | 0.37 | |
| 12/1/2011 | 1301 | 111201002 | 188 | SPAH1-1 (0.5-2.0') | 175,993.2 | 217,904.2 | 645852.159 | 2571708.808 | 578.2 | 8.1 | 570.1 | 2.0 | 1.90 | 495.920 | <0.032 | MS/MSD |
| 12/1/2011 | 1240 | 111201003 | 189E | SPAH3-2 (0-0.5') | 176,202.8 | 218,028.6 | 646065.332 | 2571826.982 | 578.2 | 6.5 | 571.7 | 2.0 | 0.90 | 26.943 | 26.8 | |
| 12/1/2011 | 1240 | 111201004 | 189E | SPAH3-2 (0.5-2.0') | 176,202.8 | 218,028.6 | 646065.332 | 2571826.982 | 578.2 | 6.5 | 571.7 | 2.0 | 0.90 | 24.779 | 0.691 | |
| 12/1/2011 | 1232 | 111201005 | 183 | SPAH3-1 (0-0.5') | 176,069.9 | 218,051.0 | 645933.158 | 2571853.335 | 578.2 | 4.9 | 573.3 | 2.0 | 1.75 | 5.646 | 17.1 | |
| 12/1/2011 | 1232 | 111201006 | 183 | SPAH3-1 (0.5-2.0') | 176,069.9 | 218,051.0 | 645933.158 | 2571853.335 | 578.2 | 4.9 | 573.3 | 2.0 | 1.75 | 67.514 | 5.38 | |
| 12/1/2011 | 1232 | 111201007 | 183 | SPAH3-1 (0.5-2.0') | 176,069.9 | 218,051.0 | 645933.158 | 2571853.335 | 578.2 | 4.9 | 573.3 | 2.0 | 1.75 | 51.636 | 7.58 | Duplicate |
| 12/1/2011 | 1314 | 111201008 | 198E | SPAH1-2 (0-0.5') | 176,204.9 | 217,864.3 | 646062.638 | 2571662.741 | 578.2 | 3.4 | 574.8 | 1.0 | 1.00 | 32.769 | 1.86 | |
| 12/1/2011 | 1314 | 111201009 | 198E | SPAH1-2 (0.5-2.0') | 176,204.9 | 217,864.3 | 646062.638 | 2571662.741 | 578.2 | 3.4 | 574.8 | 1.0 | 1.00 | 84.299 | 0.173 | |

e: RJB, EJT; RJS, EJT; NWS, EJT; CJM, KRM 12/19/11; RJB 5/17/12 c: RJB 5/22/12; AMM 11/2/11; CJM, NWD, KRM 12/5/11, NWD 12/20/11 t: EJT 5/16/12

Notes:

1) Coordinate systems are as shown (Wisconsin County Coordinate, Sheboygan; or Wisconsin State Plane, Southern Zone), U.S. survey feet.
2) Samples collected by NRT with 2.75 inch OD, Lexan push core sampling device.
3) PAH analytical results from Pace Analytical Services, Green Bay, Wisconsin per EPA Method 8270, Preparation Method EPA 3546.
4) PCB analytical results from Pace Analytical Services, Green Bay, Wisconsin per EPA Method 8082, Preparation Method EPA 3541.
5) Sample coordinates were obtained using Trimble GPS equipment.
6) < indicates sample results are non-detect at the limit of detection.
7) J flag qualifier indicates estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
8) NA: Sample not analyzed for total PAHs.
9) Sample obtained from composite of two cores from the same location. Penetration depths and recovery lengths for both cores are reported.
10) Observed water elevation referenced to Benchmark SG-703 located near the Outboard Club Boathouse. Elevations refer to North American Vertical Datum of 1988 (NAVD 88).

N = sample from north side of PRS excavation grid
E = sample from east side of PRS excavation grid
W = sample from west side of PRS excavation grid
S = sample from south side of PRS excavation grid
C = sample from center of PRS excavation grid
(Note a 2-foot core and a 1-foot core were taken in the center of each grid)

Following completion of sediment removal, stabilization, and load-out activities during the TCRA, backfill was imported and placed to restore the shoreline. As noted above, no backfill was placed in the river sediment excavations because of the GLLA project slated for 2012. After substantial completion of the TCRA project, demobilization activities started on December 21, 2011. Restoration of the upland support area is scheduled for completion in August 2012.

## REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are general descriptions of the goals established for protecting human health and the environment, to be accomplished through remedial actions. RAOs identify the medium of concern, contaminants of concern, allowable risk levels, potential exposure routes, and potential receptors.

During the RI/FS, the following RAOs were identified for the River OU of the WPSC Campmarina MGP Site based on the summary of receptor risks and hazards for the exposure scenarios presented in the Baseline Risk Assessment.

*Protection of Human Health RAOs*

RAO 1 – Minimize dermal contact to, and incidental ingestion of, sediment with NAPL (coal tar), visually described as oil-coated or oil-wetted sediment (Zone E), under future exposure scenarios of shallow/wadable (0 to 3.5 feet) water.

*Protection of Ecological Health RAOs*

RAO 2 – Minimize exposure of benthic invertebrate populations to areas of sediment that exceed the 45 mg/kg PAH concentration (Zone C) in the biologically active zone (the top 6 inches of sediment).

RAO 3 – Minimize exposure of benthic invertebrate populations to sediment with NAPL (coal tar), visually described as oil-coated or oil-wetted sediment (Zone E), or to areas that exceed the 129 mg/kg PAH concentration (Zone D) in the biologically active zone (the top 6 inches of sediment).

*Protection of Environment RAOs*

RAO 4 – Mitigate the potential for releases from sediment with NAPL (coal tar), visually described as oil-coated or oil-wetted sediment (Zone E).

RAO 5 – Mitigate or eliminate the potential for resuspension of PAH-contaminated sediment in the water column due to boat propeller wash by removing contaminated sediment with PAH concentrations at or above 45 mg/kg (Zones C, D, and E) within the top 2.5 feet of sediment. (Note: This estimate of boat propeller wash is based on the assumptions used for the cleanup action at the Sheboygan River and Harbor Superfund Site, which estimated a maximum

scour of 2 feet due to boat propeller wash. An additional 0.5 ft was added for additional protectiveness.)

As noted earlier, the draft FS Report (February 2010) for the River OU was never finalized because of the need to conduct a TCRA to ensure that PAH NAPL materials were not exposed and released during the Sheboygan River and Harbor cleanup. The draft FS Report, which is part of the Administrative Record, had developed various remedial action alternatives designed to achieve the RAOs described above. Although a remedial action was not conducted at the River OU, the TCRA that was implemented has achieved -or will achieve upon placement of clean backfill materials that may still be needed after the GLLA dredging work is completed- all of the RAOs that were identified.

SUMMARY OF THE PROPOSED ACTION

EPA proposes **No Further Action After Completion of the Time-Critical Removal Action** for the River OU of the WPSC Campmarina MGP Site. WPSC implemented TCRA dredging work at the site from June 2011 through December 2011. The TCRA achieved -or will achieve upon placement of clean backfill materials that may still be needed- all of the remedial action objectives that had been identified during the RI/FS for the River OU, and EPA officials believe WPSC's cleanup will effectively protect people and the environment.

### Similarities between the Campmarina Site and the Sheboygan River and Harbor Superfund site:

- Both projects address sediment contamination in the lower river near Boat Island.
- Both projects involve dredging.
- Both projects address human health and the environment.
- Both projects involve coordination between EPA, WDNR, Pollution Risk Services (the company responsible for the Sheboygan Harbor and River cleanup) and WPSC.

### Differences between the Campmarina Site and the Sheboygan River and Harbor Superfund site:

- The Sheboygan River and Harbor Superfund site involves PCBs; Campmarina involves PAHs.
- Contamination in the Sheboygan River and Harbor Site is found in 14 miles of river; Campmarina includes approximately one-half mile of river.
- Pollution Risk Services is responsible for the Sheboygan River and Harbor Site Cleanup; WPSC is responsible for the Campmarina cleanup.

As noted earlier, the draft FS Report for the River OU was never finalized. The draft FS Report had developed and evaluated several cleanup alternatives to address the risks

posed by the PAH contamination. The cleanup actions evaluated in the draft FS were designed to addressed PAH sediment contamination exceeding 45 ppm within the top 2.5 feet[3] of the sediment surface (Risk Zones C and D), as well as the principal threat PAH NAPL materials (Risk Zone E). By implementing the TCRA, WPSC removed all of the PAH NAPL materials to the extent practicable as well as all PAHs in the top 2.5 feet of the river sediment with concentrations greater than or equal to 45 ppm. The TCRA will not be considered complete until (1) all final cover materials are placed in areas that exceeded 45 ppm at the completion of the TCRA dredging and that still exceed 45 ppm following the GLLA dredging, and (2) EPA approves the final removal action completion report.

Based on the actions that have been taken, EPA believes that the risks associated with the PAH contamination at the River OU of the WPSC Campmarina MGP Site have been adequately addressed. The TCRA achieved or will achieve at the completion of the TCRA all of the remedial action objectives that had been identified for the River OU. Therefore, EPA believes that no further action will be required at the River OU of the WPSC Camp Marina MGP Site following completion of the TCRA.

## COMMUNITY PARTICIPATION

EPA and WDNR provide information to the public regarding the cleanup of the WPSC Campmarina MGP Site through public meetings, the Administrative Record file for the Site, the Site Information Repository maintained at the Mead Public Library, and announcements published in the Sheboygan Press news. EPA and the state encourage the public to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted at the Site. The dates for the public comment period, the date, location, and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this Proposed Plan.

For Further Information on the WPSC Campmarina MGP Site, please contact:


Pablo N. Valentín
Remedial Project Manager
(312) 353-2886
valentin.pablo@epa.gov

Susan Pastor
Community Involvement Coordinator
(312) 353-1325
pastor.susan@epa.gov

US EPA – Region 5
77 W Jackson Blvd
Chicago, IL 60604

Toll Free Number: 1-800-621-8431
Web Site: www.epa.gov/region5/cleanup/campmarina


[3] Removing contamination only to a depth of 2.5 feet is consistent with the approach used for the co-located Sheboygan River and Harbor Superfund Site which estimated that the maximum scour due to boat propeller wash in this area of the river is 2 feet.