CUT-OFF AND CONTAINMENT

BACKGROUND
The Plant Site is located in Florida Location, Houghton County, Michigan. Florida Location is part of Calumet Township, Michigan. The Plant Site is a former Manufactured Gas Plant (MGP) property located in the northeast quadrant of the intersection of Franklin Street and Lake Linden Avenue (M-26). The drainage ditch, which historically received uncontrolled discharges of coal tar waste, is located adjacent to a residential community, surface water body, and a wetland. The imminent and substantial threat is related to the off-site migration of coal tar and dense and light non-aqueous phase liquids (D/LNAPL) in groundwater near the site that may be used as a drinking water source for area residents and the wetland aquatic ecosystems which present an exposure risk to human health and the environment.

PROJECT SCOPE
Engineering control measures include the use of a low permeability vinyl sheet pile wall to abate the ongoing migration of contaminants, which are leading to contamination of the ditch. Time Critical Removal Action at the site was implemented per the recommendations of the Site Assessment Report (WESTON, 2007). Additionally, six monitoring wells were installed at the site for the purpose of monitoring the effectiveness of the sheet pile barrier.

PERFORMANCE
Construction was completed in September of 2007. WESTON subsequently conducted three rounds (October 2007, January 2007, April 2007) of groundwater monitoring and monthly static water level/free product checks. The ground-water monitoring and free product checks provided a base-line to determine current/future contaminate movement, if any. The results of the monitoring and product checks indicated the sheet pile barrier is effective in preventing further off-site migration of gross contamination; and contaminates did not move beyond the margins of the barrier during the monitoring period. The final field activity was conducted on July 10, 2008. The sheet piling wall, without sealant, contained the site.

CONSTRUCTION
In August 2007, the process of installing the impermeable barrier around the site was initiated. This impermeable barrier consists of vinyl sheet piling that were driven into the ground based on historic and site assessment soil and plume data. Sheet pile installation began on the NW corner of the property and followed the fence line south along M-26 to Franklin Street and east along Franklin Street to the NE corner of the property.

WALL SPECIFICATION
SG 525
Date: August 2007

Location: Calmet Township, MI EPA Region IV

Engineers: Weston Solutions & Earth Tech Inc.
Owner: Peninsular gas Company

<table>
<thead>
<tr>
<th>Depth</th>
<th>17 ft.</th>
<th>5 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>612 ft.</td>
<td>187 m</td>
</tr>
<tr>
<td>Wall Area</td>
<td>10,404 ft²</td>
<td>967 m²</td>
</tr>
</tbody>
</table>

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7.2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of any CMI product for particular applications or the results obtained there from. Crane Materials International is a Crane Building Products® company. CRANE MATERIALS INTERNATIONAL products are covered by one or more of the following U.S. Patents and International Patents: 4,674,921; 4,690,588; 5,292,208; 5,145,287; 6,000,883; 6,033,155; 6,053,666; D420,154; 6,575,667; 7,059,807; 7,056,066; 7,025,539; 7,393,482; 5,803,672; 8,253,271; 1,945,016; 1,794,237 and other patents pending. ©2005-2015 Crane Materials International. All Rights Reserved.

Crane Materials International (CMI) manufactures innovative products which provide value added sustainable solutions for the construction and engineering communities.