INTERIM RESPONSE
CONSTRUCTION SUMMARY REPORT FOR
AREA WIDE ABANDONED CONTAINER REMOVAL

ABANDONED MINING WASTES – TORCH LAKE NON-SUPERFUND SITE
CHLL AND CHTC AREAS
HOUGHTON COUNTY, MICHIGAN
SITE ID# 31000098

NOVEMBER 2017
PREPARED FOR:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION & REDEVELOPMENT DIVISION
CALUMET FIELD OFFICE
CALUMET, MICHIGAN
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Interim Response Construction Summary Report for  
Area Wide Abandoned Container Removal  
Site ID: 31000098  
Houghton County, Michigan

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1.0 INTRODUCTION

The Mannik & Smith Group, Inc. (MSG) has prepared this Interim Response Construction Summary Report for Area Wide Abandoned Container Removal (CSR) as part of the Abandoned Mining Wastes – Torch Lake non-Superfund Site (Project) http://www.michigan.gov/deq/0,4561,7-135-3311_4109_9846_76560----,00.html (Site ID: 31000098). This CSR summarizes the area wide abandoned container interim response (IR) completed at the:

- Calumet & Hecla Lake Linden Operations Area (CHLL)
  - Torch Lake Backwater Area (Lake Linden)
  - Hubbell Processing Area – Coal Dock and Mineral Building Properties (Hubbell)
  - Hubbell Slag Dump and Beach Area (Hubbell)
- Calumet & Hecla Tamarack City Operations Area (CHTC)
  - Tamarack Processing Area (Tamarack City)
  - Tamarack Sands Area (Tamarack City)

The IR entailed the removal and disposal of abandoned containers. The abandoned containers were located in Lake Linden, Hubbell, and Tamarack City, Houghton County, Michigan. This CSR was prepared in accordance with the Indefinite Scope Indefinite Delivery (ISID) Discretionary Proposal for FS and Remedial Action Activities (24 February 2016) prepared by MSG in response to a request from the Michigan Department of Environmental Quality (DEQ), Remediation and Redevelopment Division (RRD), Calumet Field Office under MSG’s 2015 Environmental Services ISID Contract Number 00538 with the State of Michigan.

1.1 Project Location

The Project area is located along the shoreline and in Torch Lake, Houghton County, Michigan. Due to the complex nature and very large area RRD subdivided the Project into study areas based on past use and known issues. Depicted on Figure 1, Project Location Map are the CHLL and CHTC areas and their respective former industrial operations.

Centralized around Calumet & Hecla’s copper mining and processing operations near Lake Linden and Hubbell, Michigan, the CHLL consists of approximately 155 acres of land extending approximately two miles along the shoreline of Torch Lake and incorporates over 40 different parcels with multiple property owners.

The CHLL Torch Lake Backwater Area is located within and northeast of Lake Linden along the south side of 9th Street/Bootjack Road and is comprised of a mining era clinker disposal area and a former municipal dump. The Torch Lake Backwater Area is bordered by residential (single-family residences), commercial (restaurant and retail business), and vacant land uses, and Torch Lake.

The CHLL Hubbell Processing Area is located between Lake Linden and Hubbell along the southeast side of Highway M-26 and is comprised of three mining era industrial properties including the Hubbell Coal Dock and Mineral Building that are vacant, and the Hubbell Smelter that is the location of an operating industrial facility. The Hubbell Processing Area is bordered by residential (single-family residences and an apartment complex), commercial (restaurant and retail business), and industrial (sand and gravel pit, construction company, and manufacturing) land uses, and Torch Lake.

The CHLL Hubbell Slag Dump and Beach Area is located south and adjacent to the Hubbell Processing Area and is comprised of the Hubbell Red Slags, the Hubbell Slag Dump, and a reported municipal landfill that was collocated with the slag dump. The Hubbell Red Slags and the Hubbell Slag Dump were smelting waste generated by the Hubbell Smelter. The Hubbell Slag Dump and Beach Area is bordered by residential (single-family residences), commercial (restaurant and nursing home), municipal (garage), and recreational (public beach and playground) land uses, and Torch Lake.
The CHTC, centralized around Calumet & Hecla’s copper mining and processing operations near Tamarack City, Michigan, consists of approximately 110 acres of land extending approximately 1.25 miles along the shoreline of Torch Lake, and incorporates over 187 different parcels with multiple property owners.

The CHTC Tamarack Processing Area is located just south of Tamarack City along the southwest side of Highway M-26 and is comprised of mining era industrial properties including the Tamarack Reclamation Plant and three stamp mills, being Tamarack Mill No. 1, Lake Stamp Mill No. 2, and Osceola Stamp Mill. Currently the ruins of the Tamarack Reclamation Plant property are used as a scrap yard while the mill areas are largely ruins with residences also located on the properties. The Tamarack Processing Area is bordered by residential (single-family residences), commercial (trucking company), and industrial (capped stamp sands) land uses.

The CHTC Tamarack Sands Area is located just south of Tamarack City along the southeast side of Highway M-26 and is comprised of mining era industrial properties, historic municipal dump, and a capped in-lake stamp sand deposit associated with the industrial operations in the Ahmeek Mill and Tamarack Processing Areas. The Tamarack Sands Area is bordered by residential (single-family residences) and industrial (vacant mining era properties and a scrap yard) land uses, and Torch Lake.

The IR for abandoned container removal included mining era containers throughout the CHLL and CHTC. Figures 2 through 7 depict features and the former location of removed abandoned containers.

1.2 Project Background

Copper mining was extensive in the Keweenaw and formed the backbone of the regional economy and society. Copper ore milling and smelting operations conducted from the mid-1860s to the 1960s, included the importation, reprocessing, and smelting of various scrap metals in the later years of operation. Consistent with past industrial practices, Torch Lake served as dumping grounds for virtually all mining industry related waste products produced, including tailings, slag, and various chemicals. It is estimated that at least 20 percent of Torch Lake’s volume was filled with tailings and other waste products.

The environmental legacy resulting from over 100 years of mining and reclamation led to Torch Lake and its western shoreline to be designated as a Superfund site by the United States Environmental Protection Agency (EPA) [https://cumulis.epa.gov/superpad/cursites/csitinfo.cfm?id=0503034](https://cumulis.epa.gov/superpad/cursites/csitinfo.cfm?id=0503034) and a Great Lakes Area of Concern by the U.S./Canada Great Lakes Water Quality Agreement [https://www.epa.gov/torch-lake-aoc](https://www.epa.gov/torch-lake-aoc). The EPA undertook cleanup activities to address some of the byproducts of the mining industry while others were not addressed or left to recover through natural processes.

The DEQ Project is addressing some of the remaining concerns in Houghton County not addressed by the EPA. The Project concerns involve groundwater, surface water, sediments, and "upland" media. Known or suspected problems which are being evaluated include: an unidentified, significant in-lake and/or terrestrial source of polychlorinated biphenyls (PCBs); uncharacterized waste deposits and >750 uncharacterized drums on the lake bottom; slag; landfills; industrial ruins; coal storage areas; underground storage tanks (USTs); residual process materials (RPM); asbestos containing materials (ACM); and any other waste materials identified during future investigations.

During 2014 and 2015, RRD conducted Site Investigation activities and confirmed the remaining concerns in the Project area involve groundwater, surface water, sediments, and "upland" media. Priority concerns which were evaluated and deemed to require IRs include: significant terrestrial sources of PCBs; ACM; RPM; abandoned mining era containers; seeps; limited areas of soil in which there are Direct Contact Criteria (DCC) and Particulate Soil Inhalation Criteria (PSIC) exceedances; and, physical hazards.

In the case of the CHLL and CHTC Torch Lake Backwater Area, Hubbell Processing Area, Hubbell Beach and Slag Dump, Tamarack Processing Area, and Tamarack Sands Area the identified risks from abandoned...
mining era containers posed potential threats to human and ecological receptors, including but not limited to human health risks in the event of direct contact with affected media and inhalation of particulates and asbestos; physical hazards; and, erosion and deposition of PCB-contaminated wastes into Torch Lake.

Based on these conditions the Upper Peninsula RRD staff prepared an Emergency Procurement Action Form included in Appendix A, Emergency Procurement Action Form. Upon authorization, RRD staff completed an IR that removed and disposed of abandoned mining era containers to mitigate potential risks to human health and the environment.

2.0 OBJECTIVE AND SCOPE OF WORK

The objective of the IR was to remove and dispose of abandoned mining era containers within the CHLL and CHTC to mitigate potential risks to human health and the environment. To meet this objective MSG developed a Trade Contractor (TC) scope of work and assisted DEQ with soliciting bids in accordance with DEQ RRD Emergency Funding and Procurement Procedures.

3.0 INTERIM RESPONSE ACTIVITIES

MSG supported the DEQ RRD in the procurement and oversight of a TC during implementation of the IR. The TC selected and retained by the State of Michigan was UP Environmental Services (UPES) of Bark River, Michigan. Refer to Appendix B, Purchase Order. UPES completed the work in accordance with the TC procurement package included in Appendix C, Area Wide Abandoned Container Removal Interim Response Scope of Work during September, October, and November 2016. Appendix D, Removed Abandoned Container Inventory details the 118 abandoned containers removed by area, including 59 containers discovered during test pitting of a suspect drum disposal area at the Hubbell Processing Area Coal Dock property. Based on analytical testing and an evaluation of waste disposal methods:

- 25 of the containers were disposed of as liquid or solid hazardous wastes based on the levels of lead and/or selenium and/or the flammability of the material;
- 36 of the containers were combined and disposed of as a non-hazardous solid waste; and,
- 57 of the drums were determined to be empty and were recycled.

The contents of the drums were unknown, but based on field observations, drum contents appeared to include, but were not limited to, pine oil, silver paint-like material, lubricating oils, petroleum, granular materials, tailings and slag-like materials, and a watery white substance. Documentation of abandoned container disposal is included in Appendix E, Waste Management Records. Photographs of the IR operations are included in Appendix F, Photographic Log.

4.0 SUMMARY AND CONCLUSIONS

Completed Abandoned Container IR operations within the CHLL and CHTC included test pitting and characterization, transportation, and disposal of the following abandoned containers:

- 1 from the Torch Lake Backwater Area.
- 67 from the Hubbell Processing Area Coal Dock property.
- 16 from the Hubbell Processing Area Mineral Building property.
- 2 from the Hubbell Slag Dump and Beach Area.
- 22 from the Tamarack Processing Area.
- 10 from the Tamarack Sands Area.

The completed IR operations met the objective of abandoned container removal to mitigate potential risks to human health and the environment.
5.0 RECOMMENDATIONS

MSG has the following recommendations:

- Conduct characterization, transportation, and disposal of any additional abandoned containers identified during future Project SI or IR activities.
Figure 1
Project Location Map
Houghton County, Michigan
Figure 2
Abandoned Container Location Map
Torch Lake Backwater Area
Lake Linden, Houghton County, Michigan
Abandoned Container Location Map
Hubbell Processing Area - Hubbell Coal Dock
Hubbell, Houghton County, Michigan

Figure 3

Image Source: ESRI World Imagery (NAIP 2014)
Map Extent
Coordinate System: MIGeoRef(m)
Abandoned Container Location Map
Hubbell Processing Area - Hubbell Mineral Building
Hubbell, Houghton County, Michigan

Figure 4
Abandoned Container Location Map
Hubbell Processing Area - Hubbell Mineral Building
Hubbell, Houghton County, Michigan
APPENDIX A

Emergency Procurement Action Form
Site Name: Abandoned Mining Wastes
County: Houghton

Index: 44251 PCA: 30872 Project #: 456990

ERD Staff Contact: Amy Keranen Date of Emergency: May 2016

District Supervisor’s Signature:

Site Description: The “Abandoned Mining Wastes- abandoned container removal” portion of the Abandoned Mining Wastes (AMW) project involves multiple properties in Lake Linden, Hubbell and Tamarack City where various drums and containers containing waste materials were recently discovered as being left behind after copper mine processing and reclamation activities ended in ~1969. Approximately 40 containers have been identified on 8 different properties. These containers are present in areas accessible to human direct contact.

Failure to undertake emergency response actions will allow for the on-going release of contaminants into Torch Lake and continued presence in areas accessible to the public.

Cause of Emergency: drums and other containers of waste materials were left behind after the mining era and are present in areas accessible to leaching into the soil and groundwater, for erosion into the lake and for human direct contact.

Specific Threats: Concentrations of contaminants exceeding residential direct contact and characteristic hazardous waste criteria are present in locations accessible to human direct contact and leaking into the soils, groundwater and surface waters at Torch Lake.

Action Taken: Because of the imminent threat the emergency procurement process is being utilized to contract abandoned container pick up. Specifications have been developed and a Pre-Bid Meeting was conducted August 10, 2016 to obtain firm bids for the work.

Additional Information:

2 bids were obtained on August 25, 2016 and evaluated. Based on the evaluation, it is recommended that the bid be awarded to UP Environmental Services for $91,464.00

Their address is:
UP Environmental Services, Inc,  attn.: Wayne Stenberg
P.O. Box 127
Bark River, MI 49807
(906)466-9900
Funding Source: CMI Funds: SWQIF Funds: $91,464.00

Authorized by:

Responsible Party: none identified

Cost Recovery:
APPENDIX B
Purchase Order
**STATE OF MICHIGAN**

**FORM DMB-287**

**PURCHASE ORDER**

**PURCHASE ORDER NUMBER**

---

**REQUESTING DEPARTMENT OR AGENCY:** RD - CONTRACTS I  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
CONSTITUTION HALL, 4TH FLOOR  
525 WEST ALLEGAN  
LANSING, MI 48933  

**CONTACT:** TRACEY CURTIS  
517-284-5083 EXT:  

**DELIVERY REQUIRED**

---

**AGENCY REF #:** 76120100  
**REQ NO:** 761R6600719  
**ORDER DATE:** 09/02/16  
**CASH DISCOUNT:** NET 30 DAYS  
**DELIVERY REQUIRED:**  
**FREIGHT CARRIER:**  
**F.O.B.:** DELIVERED  

---

**UP ENVIRONMENTAL SERVICES INC**  
P.O. BOX 127  
BARK RIVER, MI 49807-0127  

**VENDOR PHONE:** -

---

**SHIP TO:**  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
CALUMET FIELD OFFICE - RRD  
55195 U.S. 41  
CALUMET, MI 49913  

---

**BILL TO:**  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
REMEDIATION AND REDEVELOPMENT DIVISION  
ADMINISTRATION 5TH FLOOR SOUTH TOWER  
PO BOX 30426  
LANSING, MI 48909-7926  

---

**ITEM**  
COMMODITY ID  
COMMODITY NAME/SPECIFICATIONS  
QUANTITY  
UNIT  
UNIT PRICE  
TOTAL PRICE  

| 1 | 912-68 | 1.00 | EA | 91,464.0000 | 91,464.00 |

**MANAGEMENT, CONSTRUCTION #**

**FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND RELATED WORK REQUIRED FOR REMOVAL AND PROPER DISPOSAL OF APPROXIMATELY 40 ABANDONED CONTAINERS AND DRUMS ON 8 DIFFERENT PROPERTIES WITHIN THE ABANDONED MINING WASTE SITE #31000098**

**PM:** A. KERANEN  
**START:** 9/1/16  
**END:** 10/31/16  

---

**BILL TO:**  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
REMEDIATION AND REDEVELOPMENT DIVISION  
ADMINISTRATION 5TH FLOOR SOUTH TOWER  
PO BOX 30426  
LANSING, MI, 48909-7926  

**SHIP TO:**  
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY  
CALUMET FIELD OFFICE - RRD  
55195 U.S. 41  
CALUMET, MI, 49913  

**GRAND TOTAL**

| 91,464.00 |
STATE OF MICHIGAN

ADDITIONAL REQUIREMENTS:

AUTHORITY: ACT 431 OF 1984. RESPONSE: REQUIRED. PENALTY: FAILURE TO DELIVER MAY RESULT IN CANCELLATION OF ORDER OR CONTRACT.

[Signature]

AUTHORIZED SIGNATURE

ACCOUNTING INFORMATION:
SX AGY Y INDEX PCA COBJ AOBJ GRANT PH PROJ PH AG1 AG2 AG3 TOTAL
01 761 4 44251 30872 6127 45699000 91464.00

PENALTY: FAILURE TO DELIVER MAY RESULT IN CANCELLATION OF ORDER OR CONTRACT.

--- END OF DOCUMENT ---
APPENDIX C

Area Wide Abandoned Container Removal Interim Response
Scope of Work
Scope of Work and Bid Table
Area Wide Abandoned Container Removal Interim Response
Abandoned Mining Wastes – Torch Lake Non-Superfund Site

The Michigan Department of Environmental Quality (MDEQ) has identified the presence of numerous abandoned containers, primarily drums, at several locations associated with the Abandoned Mining Wastes – Torch Lake Non-Superfund Site (Project). To reduce potential risks to the public and the environment, MDEQ is seeking cost estimates to remove and properly dispose abandoned containers identified during Project activities from the following locations within the Calumet & Hecla (C&H) Lake Linden Operations Area (CHLL) and C&H Tamarack City Operations Area (CHTC):

- CHLL Torch Lake Backwater Area – Traprock Dump;
- CHLL Hubbell Processing Area – Hubbell Coal Dock and Mineral Building;
- CHLL Hubbell Slag Dump and Beach Area – Hubbell Slag Dump;
- CHTC Tamarack Sands Area – Historic Municipal Dump;
- CHTC Tamarack Processing Area – Tamarack Reclamation Plant Complex and Tamarack Stamp Mill Complex; and,
- Additional containers as they may be located at the above listed locations or other locations associated with the Project within five miles of Tamarack City, Michigan.

Figure 1 depicts the area locations. Figure 2 through Figure 8 depict the container locations at the individual areas along with existing sample results for characterization and health and safety planning purposes. Table 1 through Table 5 provide known information on each container.

Removal and disposal as referenced in the attached Bid Table shall consist of the following:

- Waste profiling and disposal facility coordination and acceptance.
- As may be applicable to the location, limited excavation of whole and/or partial containers and their contents, over-packing, bulking of containers, hand and/or mechanical pick-up of whole and/or partial containers and their contents, retrieval of containers from shallow water, and any other means and methods required to safely retrieve containers (and their contents if not empty) and prepare them for shipping for disposal.
- Transportation of properly packaged, labeled, and placarded containers and their contents (as may be applicable) to proper disposal facilities, including all manifests.
- Disposal of hazardous and non-hazardous containers and provision to MDEQ of fully executed manifests and any other disposal documentation as may be appropriate (such as scale receipts, destruction records, etc.).

The Contractor is responsible for compliance with all State and Federal health and safety, transportation, and disposal regulations. This also includes work practices and engineering controls to prevent contaminant release and potential exposure to site workers, the public, and the environment.

If the Contractor intends to use Waste Management, please coordinate with Mr. Dan Roddan at droddan1@wm.com / 920-539-1167 for project-specific rates.
The MDEQ shall be provided all waste characterization and disposal documents for review and approval at least two business days in advance of when they are needed. MDEQ will sign all disposal documents as the waste generator.

MDEQ will be responsible for securing access to the various parcels that comprise the work locations. The Contractor shall provide MDEQ and/or its designated agent at least one week notice before (each) mobilization. Work hours on occupied parcels shall be between 7:00 a.m. and 6:00 p.m. local time. Work hours on unoccupied parcels may extend earlier or later than these times if it is agreeable to MDEQ and is respectful of neighboring property owners and occupants.

40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training is required for all on-site persons that may encounter contaminated media. A summary of existing data for the above listed work locations is provided on the figures. The Contractor is responsible for their own health and safety, including compliance with 29 Code of Federal Regulations (CFR) Part 1910 and 29 CFR Part 1926.

Refer to Attachment A for Conditions for Emergency Bids that will apply to the work. In addition, the selected Contractor must supply the following written information within five business days after receiving a telephone authorization from the MDEQ district Project Manager to start the work:

- Copy of Certificate of Awardability, for contracts over $100,000.
- Proof of 40-hour hazardous waste safety training for on-site personnel.

The Contractor’s invoice(s) shall be submitted to the invoicing address on the Purchase Order as well as a copy to Amy Keranan, the MDEQ Project Manager at 55195 US 41, Calumet, MI 49913.

Schedule:
- Week of 8 August 2016 – Pre-Bid Meeting/Walkovers at the areas
- 18 August 2016 – Bids due at 5:00 p.m. local time via electronic mail
- 22 August 2016 – Award work locations (tentative)
- 29 August 2016 – Issue Purchase Order (tentative)
- Week of 29 August 2016 – Develop a mutually agreeable schedule for the initial round of container removals with the Contractor. Removals may occur as funding is available
- No on-site work shall occur on weekends or government holidays without prior written approval.

The bid table details the tasks that comprise the Scope of Work. Note that MDEQ may award all, some, or none of the Work Items or may award the Work Items individually or in groups over time depending on funding availability. Quantities shown are estimated for bid comparison purposes. Actual quantities may be more or less than the estimated value. Unit rates will be paid for the actual work performed. Fully executed disposal documentation will be required for payment of “remove and dispose” Work Items. Bids shall remain valid through 31 October 2017.
### Table: Tamarack Hubbell

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### Notes

- TSCA = Toxics Substances Control Act
- AEP = Abandoned Electrical Plant
- PPM = Parts Per Million
- Unit = Unit of Measure
-grass = parts per million
- BID = Bid Number
- SET = Setting of Treatment
- PG = Phase of Treatment
- PC = Phase of Cleanup
- DC = Day of Cleanup
TABLES