U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Two Rivers Manufactured Gas Plant (MGP) Site - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #5**
Final polrep
Two Rivers Manufactured Gas Plant (MGP) Site
B5BU
Two Rivers, WI
Latitude: 44.1526653 Longitude: -87.5653165

To: Naren Prasad, Integrys Business Support
Thomas Wentland, WDNR

From: Bradley Benning, OSC
Date: 9/8/2015
Reporting Period: 03/21/2015 to 06/02/2015

1. Introduction

1.1 Background

Site Number:	B5BU	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	7/28/2014
Response Authority:	CERCLA	**Response Type:**	PRP Oversight
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	8/18/2014	**Start Date:**	8/18/2014
Demob Date:	5/22/2015	**Completion Date:**	6/2/2015
CERCLIS ID:	WIN000509953	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

The WPSC Two Rivers MGP Site is being addressed through potentially responsible party (PRP) actions under state and federal oversight. This Time-critical Removal Action will assist in achieving long-term cleanup goals by mitigating MGP source materials on-site through excavation and off-site disposal and on-site stabilization.

1.1.2 Site Description

The WPSC Two Rivers MGP Site located at 200 21st Street, encompasses approximately 4-acres. Features include historic concrete building foundations. A chain link fence secures the Site perimeter. A wetland exists in the center and western portion of the property (approximately 2 acres). Large portions of the Site east of the wetland are covered in crushed stone and asphalt. The vegetation in the wetland consists of a fringe scrub-shrub on the eastern edge of the wetland dominated by aspen and dogwood. Emergent and wet meadow species such as green bulrush and horsetail are located closer to the bank of the West Twin River.

The Site has elevations ranging from approximately 579 feet (MSL) to 584 feet MSL. Surface water drainage flows overland to the West Twin River. The majority of the Site is within the 100-year flood zone as mapped by Federal Emergency Management Agency (FEMA, 2011).

1.1.2.1 Location

The approximately 4-acre Site is located on vacant land between 22nd Street and School Street in Two Rivers, Manitowoc County, Wisconsin.

- 2022 School Street to the south, owned by Manitowoc County
- School Street right-of-way and the following private properties to the east:
  - 2100 School Street
  - 2104 School Street
  - 2110 School Street
  - 1913 22nd Street
- 1926 22nd Street to the north, owned by the US Oil Company, Inc.

The West Twin River to the west

1.1.2.2 Description of Threat

The high levels of hazardous substances in surface and sub-surface soil at concentrations that exceed U.S. Environmental Protection Agency Removal Management Levels (RMLs) and the Wisconsin Department of Natural Resources (WDNR) Removal Action Levels (RALs), the Site's plans for future construction, the potential of exposure to children trespassers and the industrial/commercial use of nearby property requires that this action be classified as a time-critical removal. Analytical results from historical samples in the proposed removal areas indicate the presence of elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) in the DNAPL present in both the surface and subsurface. In particular, this past data indicates the presence of TCLP benzene concentrations exceeding 0.5 mg/l in addition to concentrations exceeding the 340 mg/kg RML. Depth to groundwater in the area varies from 2-5 feet below ground surface. Groundwater flows east toward Lake Michigan and organics contained in the DNAPL, may leach into the groundwater and migrate to Lake Michigan.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Previous actions at the Site include a 1986 Phase 1 Investigation performed by EDI Engineering and Science, Inc. and the 1994 Phase II Investigation performed by NRT. NRT performed the Phase II Addendum Investigation in 1996, a Pre-Remedial Design Site Investigation in 2003, and annual Groundwater Quality Data Transmittals from 2005 through 2013.

Contaminants such as VOCs, specifically benzene, toluene, ethylbenzene, and xylene ('BTEX"), PAHs, metals, and cyanide were detected in sediment, soil and groundwater samples collected in various locations at the WPSC Two Rivers MGP Site as summarized by Natural Resource Technology Inc. ('NRT"), on behalf of WPSC, in the 1994 Phase II Investigation and 1996 Phase II Addendum Investigation. Concentrations ranges are as follows: BETX detected above Wisconsin Action Concentrations ("WAC") NR 720 Residual Contaminant Levels values; total PAHs at surface and subsurface ranging from 0-616 ppm; groundwater samples with BETX, cyanide, cadmium, lead detected in some instances above WAC NR 140 Enforcement Standards.
NRT conducted a pre-remedial design investigation during development of a Remedial Action Options Report in 2003 (NRT, 2003), the RAOR is included as Appendix A. Soil samples collected in August 2003 from test pits in the vicinity of the former MGP structures were generally unsaturated to moist and contained large amounts of fill material (ash/cinders, wood, brick, etc.). Soil samples collected from test pits and soil borings west of the former MGP structures were generally saturated and represent the intervals exhibiting potential MGP impacts based on visual and/or olfactory observations or elevated PID measurements. Emulsified coal tar was observed in soil borings and test pits generally located within and to the west of the wetland area. Beneath a majority of the Site, a clay layer was present between 4 and 7 feet bgs and extends to the bottom of the piezometer borings (25 to 30 feet bgs).
Analytical results of soil sampling indicated the following contaminant distribution trends:

- Off-property soils to the north were not impacted by benzene and naphthalene.
- Analytical results of off-property soils to the south indicated benzene and naphthalene concentrations above the generic groundwater pathway NR720 RCLs, in effect at the time.

Site soils are generally above the NR720 standards for benzene and naphthalene at low levels across the Site. Concentrations are significantly higher at select locations where coal tar was observed to occur within the soil matrix.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The PRP shall implement the EPA approved Removal Action Work Plan for WPSC Site, dated February 24, 2014. The main components of the work plan include the following provisions which require compliance:

a) Preliminary activities such as site security and controls.
b) Site preparation, including clearing and grubbing.
c) Targeted excavation within defined removal areas A, B and C.
d) Transportation and off-site disposal of excavated material from areas A, B and C.
e) In-Situ Solidification/Stabilization construction and operations in area B and C. ISS solidified material will remain on-site until future land use requires removal and disposal.
f) Backfilling with excess swell material and/or clean fill.
g) Compliance with State and Local requirements.
h) Construction Quality Assurance Measures such as
   - Air Monitoring
   - Fugitive Emission Management Plan
   - Health and Safety Plan
   - Sampling and Analysis Plan
   - ISS Construction Quality Assurance Plan
i) Schedule for Completion.
j) Submission of Weekly and Final Reports.
k) Take any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA OSC determines may pose an imminent and substantial endangerment to public health or the environment.

2.1.2 Response Actions to Date

EPA Site inspections on 06/02/2015
Otie (START) on site Wed. thru Friday and stopped oversight as of 03/20/2015

The Site removal action activities involved ISS treatments and soil excavation alternatives. During the course of the removal action, the removal scope was expanded to include ISS and shallow excavation activities within portions of the U.S. Oil property located along the northern property line. The scope was also revised to address MGP source material encountered at depths below some of the soil excavation areas. Due to the depth of the source material, ISS was performed in this area rather than to excavate and backfill these areas.

By September 10, 2014, twelve ISS pilot test columns were completed at four different locations on the Site. Different water-to-solids ratios and reagent additions were tested during the pilot studies and a sample from each column was collected for unconfined compressive strength analysis and hydraulic conductivity determination. Suring the week of September 15, 2014, a turbidity barrier was installed along the West Twin River banks to control soil/sediment erosion.

Full-scale ISS construction, excavation, trucking and disposal of peat material from within the ISS areas, and concrete debris from excavation and demolition of subsurface structures, began the week of September 22, 2014. Full-scale ISS CQA sampling and full-scale air sampling schedule began the week of September 29, 2014.

The removal of peat material from excavation areas were initiated during the week of October 20, 2014. During the weeks of October 13 and 20, 2014, abandoned gas lines insulated with asbestos containing material (ACM) and abandoned U.S. Oil pipeline were removed from the site. These ACM pipelines were removed and disposed of at a landfill by subcontractor Asbestos Removal, Inc. Approximately 12.79 tons of ACM wrapped pipes were disposed off-site at the landfill. They were individually wrapped with poly sheeting, and then tied together and again wrapped with an additional layer of poly sheeting, and transported to the landfill in two roll-off containers. The remaining section of ACM insulated gas line that runs beneath the West Twin River was filled with grout on December 22, 2014.

In December 2014, PRP's consultant submitted an amendment to the RAWP outlining groundwater modeling results and management design of the ISS monolith.

During the removal action activities, contact water was managed on-site in a frac tank. The water was used for ISS grout production using 50% to 100% contact water that passed CQA analyses.

After soil excavations, soil samples were collected from the excavation sidewalls and floor to delineate excavation limits. The floor and sidewalls of the project excavation area s were lined with WINFAB 7000N geo-fabric and then backfilled with 3-inch clear stone. The backfilled material was again covered with the fabric, effectively wrapping the backfill material with the geo-fabric.

Grading of ISS swell material began the week of February 9, 2015. ISS column construction was completed during the week of March 2, 2015. General fill placement activities occurred soon after this ISS completion and was verified with swell grade elevation surveys. Backfilling of the project excavation areas were completed during the week of March 9, 2015. As of May 10, 2015, a total of 79,742 cubic yards of soil had been treated by ISS, a total of 30,754 tons of peat soils had been transported to the landfill, and a total of 13,543 tons of ISS swell material had been transported to the landfill.

During the week of March 16, 2015, the clean corridor trench cut through the ISS monolith was backfilled with general fill to accommodate the future reinstallation of the U.S. Oil pipeline that was removed prior to ISS activities. A drainage trench was also cut, leading from the project excavation area, along the southern margin of the ISS monolith, toward the U.S. Oil pipeline trench, and backfilled with general fill to accommodate the potential for groundwater mounding, as addressed in Addendum 4 to the RAWP.

PRP's contractor performed continuous air monitoring to protect human health and the environment during the removal action. Fugitive emission controls have been employed when and where as necessary, as outlined in the RAWP. During this PRP removal action, no action levels were exceeded with respect to human health and environment exposure criteria. ISS construction and shallow excavation was performed in accordance with the RAWP and subsequent addenda.

Fugitive emission controls at the Site consisted of water spray for dust suppression, Rusmar™ foam for odor and VOC emissions, and plastic sheeting cover for stockpiles and excavations. An odor control misting system was installed on the south and east Site perimeter fence and employed daily as a preventative measure until the system was winterized.

Topsoil was placed and loosely compacted using bulldozers to achieve final site restoration grades. GSI and NRT surveyed topsoil elevations during grading operations to ensure design grades were achieved and final topsoil elevations were documented by REL. Fertilizing, seeding, and mulching were performed by RL, in May 2015. A four-seed mix was used consisting of 35% Kentucky Bluegrass, 25% Quest III Perennial Ryegrass, 20% Creeping Red Fescue, and 20% Hard Fescue.

During site restoration, rip rap was placed along the shoreline of the West Twin River in lieu of general fill and topsoil to protect the shoreline from erosion due to elevated water levels of the West Twin River during the removal action. In addition to rip rap placement, 3-inch clean stone was placed instead of topsoil from the eastern edge of the rip rap to the 580.5 feet topsoil contour elevation.. Three inch clean stone was used in place of topsoil due to continued elevated river elevations of the West Twin River.

2.1.4 Progress Metrics
Thru 05/22/2015

Waste Stream	***Medium***	***Quantity***	***Manifest #***	***Treatment***	***Disposal***	% Completed
Soil	solid	79,742 CY		ISS	On-site	100%
Soil/ISS Swell	solid	13,543 tons		ISS	Off-site subtitle D Landfill	100%
Asbestos Pipe	solid	13 tons			Off-site Subtitle D Landfill	100%
Concrete/debris	solid	1,167 tons			Off-site Subtitle D Landfill	100%

Peat	solid	30,754 tons			Off-site Subtitle D Landfill	100%

Regional Metrics

This is an Integrated River Assessment. The numbers should overlap.	Miles of river systems cleaned and/or restored	NA
	Cubic yards of contaminated sediments removed and/or capped	NA
	Gallons of oil/water recovered	NA
	Acres of soil/sediment cleaned up in floodplains and riverbanks	NA
Stand Alone Assessment	Number of contaminated residential yards cleaned up	NA
	Number of workers on site	NA

Contaminant(s) of Concern

Oil Response Tracking

Estimated volume	Initial amount released	NA
	Final amount collected	NA
CANAPS Info	FPN Ceiling Amount	NA
	FPN Number	NA
	Body of Water affected	NA

Administrative and Logistical Factors (Place X where applicable)

	Precedent-Setting HQ Consultations (e.g., fracking, asbestos)	Community challenges or high involvement	Radiological
	More than one PRP	Endangered Species Act / Essential Fish Habitat issues	Explosives
X	AOC	Historic preservation issues	Residential impacts
	UAO	NPL site	Relocation
	DOJ involved	Remote location	Drinking water impacted
	Criminal Investigation Division involved	Extreme weather or abnormal field season	Environmental justice
	Tribal consultation or coordination or other issues	Congressional involvement	High media interest
	Statutory Exemption for $2 Million	Statutory Exemption for 1 Year	Active fire present
	Hazmat Entry Conducted – Level A, B or C	Incident or Unified Command established	Actual air release (not threatened)

Green Metrics

Metric	Amount	Units
Diesel Fuel Used	PRP Action	gallons
Unleaded Fuel Used	PRP Action	gallons
Alternative/E-85 Fuel Used	PRP Action	gallons
Electricity from electric company	PRP Action	kWh
Electric Company Name and Account #	PRP Action	
Electricity from sources other than the electric company	PRP Action	kWh
Solid waste reused	PRP Action	enter
Solid waste recycled	PRP Action	enter
Water Used	PRP Action	gallons

2.2 Planning Section

2.2.1 Anticipated Activities

Approval of Final Report

2.2.1.1 Planned Response Activities

No planned Response Activities

2.2.1.2 Next Steps

AOC completion letter pending EPA and WDNR comments

2.2.2 Issues

None at this time

2.3 Logistics Section

WPSC as PRP is in charge of all logistics.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

Aaron Handle was the GSI Safety Officer, EPA was the overall Safety officer.

2.5.2 Liaison Officer

Ken Mika (NRT) Project Manager

2.5.3 Information Officer

Dayna Watson (WPSC)

3. Participating Entities

3.1 Unified Command

EPA
WDNR
WPSC

3.2 Cooperating Agencies

City of Two Rivers
Manitowac County
Wisconsin Department of Helath

4. Personnel On Site

EPA - routine visits
WDNR - routine visits
OTIE - 1
GSI - 7
NRT - 3

5. Definition of Terms

FOSC - Federal On Scene Coordinator
HASP - Health and Safety Plan
mg/kg - milligrams per kilogram
mg/m3 - milligrams per cubic meter
WDNR - Wisconsin Department of Natural Resources
NPL - National Priorities List
ppm - parts per million
START - Superfund Technical Assessment and Response Team
U.S. EPA - United States Environmental Protection Agency
WPSC - Wisconsin Public Service Corporation
NRT - Natural Resource Technology Inc.
GSI - GeoSolutions Inc.
IBS - Integrys Bussiness Support

6. Additional sources of information

6.1 Internet location of additional information/report

www.epaosc.org/TwoRiversMGP
www.epa.gov/region5/cleanup/tworivers

6.2 Reporting Schedule

None anticipated

7. Situational Reference Materials

No information available at this time.