U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Velsicol Athletic Fields Site - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #7**
AMENDED Final
Velsicol Athletic Fields Site
0532-OU3
St. Louis, MI
Latitude: 43.4112240 Longitude: -84.6009850

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From: Jeff Lippert, On-Scene Coordinator
Date: 6/1/2016
Reporting Period: 11/21/2016 - 11/23/2016

1. Introduction

1.1 Background

Site Number:	0532	**Contract Number:**	EP-S4-16-03
D.O. Number:	16	**Action Memo Date:**	9/28/2016
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	NPL	**Operable Unit:**	03
Mobilization Date:	11/20/2016	**Start Date:**	11/20/2016
Demob Date:	11/23/2016	**Completion Date:**	11/23/2016
CERCLIS ID:	MID00722439	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Time Critical Removal Action

1.1.2 Site Description

The United States Environmental Protection Agency (EPA) Velsicol Chemical Corporation/Pine River Superfund Site (Site), National Superfund Database Identification Number MID00722439, is located in St. Louis, Gratiot County, Michigan. The Site has been divided into three Operable Units (OUs). OU1 includes 52-acres commonly referred to as the former plant site (FPS) and adjacent residential areas. The Pine River flows along the western and northern

boundary of the FPS into Mill Pond, where a hydroelectric dam is located (about ¼-mile east of the FPS). OU2 consisted of contaminated sediments in the Pine River upstream of the St. Louis dam and adjacent to the FPS. The remedy for OU2 was completed in 2006. OU3 consists of contaminated sediments in the Pine River downstream of the St. Louis dam, including the Athletic Fields of the St. Louis Public Schools.

The FPS was used for modern industrial operations beginning in the mid-1930s until the plant was closed in 1977. Historical operations at the FPS included a lumber mill, oil refinery, salt processing plant, and chemical manufacturing plant. In 1935, Michigan Chemical Corporation (MCC) purchased the property and operated a chemical manufacturing business. In 1965, Velsicol Chemical Corporation gained a controlling interest in MCC.

MCC manufactured a wide variety of products at the FPS from 1936 through 1977, including various salts, magnesium oxide, rare earth chemicals, fire retardants (hexabromobenxene [HBB], polybrominated biphenyl [PBB], tris (2,3-dibromopropyl) phosphate [TRIS]), and pesticides (dichlorodiphenyl trichlorethane [DDT] and 1,2-dibromo-3-chloropropane [DBCP]).

Velsicol closed the chemical plant in 1977 and demolished the facility. An agreement was reached through a consent judgment between Velsicol Chemical, EPA and the Michigan Department of Environmental Management (MDEQ) in 1982 to address the FPS. A slurry wall and cap was placed over the 52-acre FPS. The consent judgment did not require remediation of the contaminated sediments in the Pine River because the parties to the consent judgment concluded that the most appropriate alternative was to leave the contaminated sediments in place. The 1982 consent judgment gave Velsicol Chemical Corporation a release from any liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Resource Conservation and Recovery Act of 1976 (RCRA), and State laws, with a limited reopener.

In January 2015, EPA sampled the St. Louis High School Athletic Fields as part of the Velsicol-OU3 Superfund Site. The objective of the investigation was to further define the nature and extent of hexabromobenzene and DDT at the fields. The field investigation activities were based on the additional scope of work identified in the Technical Directive Memorandum received from EPA on July 21, 2014. The results of the sampling event indicate that thirty-eight (38) sample results exceed the ecological Preliminary Remediation Goal (PRG) established for DDT (5 mg/kg) at the Site.

The removal action was completed in April of 2016.

1.1.2.1 Location
The Site is located at the St. Louis High School athletic field complex in St. Louis, Gratiot County, Michigan. The Site includes a baseball field, softball field, practice football field, and green area near the flood plain of the Pine River. The Site is located behind the NS Nurnberger Middle School. The Site is located within OU-03 and includes the flood plain associated with the Pine River. Land use around the Site includes school property, park and residential. Residential homes are located within 100 feet of the Site. The Site topography is relatively flat and dips slightly to the southwest towards the Pine River.

1.1.2.2 Description of Threat
Ecological receptors could become exposed to site contaminants through direct contact with soils contaminated by off-site deposited sediments; ingestion of soils contaminated by off-site deposited sediments; and ingestion of contaminated food (e.g., sediment- or soil-dwelling insects, vegetation).

Analytical results described above indicate that hazardous substances, as defined by CERCLA Section 101(14), pollutants, and contaminants are present at the Site, and represent an actual or potential exposure threat to nearby animal populations. Concentrations of DDT exceed the PRG (5 mg/kg). An initial PRG range of 2-9 mg/kg total DDT in soil for robin reproduction is based on a high quality laboratory toxicological study (performed with Japanese quail showing decreased post-hatch chick survival) and a robin exposure model based on site-specific data on soil-earthworm bioaccumulation. A laboratory study of ring doves performed with a single exposure treatment at a dose intermediate to the ones bracketing adverse effects in the Japanese quail study also showed decreased post-hatch chick survival. The soil PRG for Velsicol conditions derived from this study is 5.6 mg/kg. Selection of this PRG decreases the likelihood of encountering the possible developmental effects indicated by the aforementioned studies. A spatially-averaged 5 mg/kg total DDT soil concentration is recommended for a preliminary remedial goal (PRG) for acceptable robin reproduction and development of offspring.

The Site is located behind the Pine River Elementary School in a residential neighborhood and includes a baseball field, softball field, track and practice football field, and open play fields associated with the St. Louis High School. The Site is bordered on the south by the Pine River and by additional adjacent residential houses and properties to the north within 100 feet of the Site.

According to the Agency for Toxic Substances and Disease Registry (ATSDR), DDT (dichlorodiphenyltrichloroethane) is a pesticide once widely used to control insects in agriculture and insects that carry diseases such as malaria. DDT is a white, crystalline solid with no odor or taste. Its use in the U.S. was banned in 1972 because of damage to wildlife, but is still used in some countries.

DDT affects the nervous system. People who accidentally swallowed large amounts of DDT became excitable and had tremors and seizures. These effects went away after the exposure stopped. No effects were seen in people who took small daily doses of DDT by capsule for 18 months. A study in humans showed that women who had high amounts of a form of DDE in their breast milk were unable to breast feed their babies for as long as women who had little DDT in the breast milk. Another study in humans showed that women who had high amounts of DDT in the blood had an increased chance of having premature babies. In animals, short-term exposure to large amounts of DDT in food affected the nervous system, while long-term exposure to smaller amounts affected the liver. Also in animals, short-term oral exposure to small amounts of DDT or its breakdown products may also have harmful effects on reproduction.

The removal action was completed in April 2016.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
EPA documented the presence of elevated levels of hazardous substances at the Site, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), including DDT within the flood plain boundary. Samples taken in the area showed total

DDT in the soil at depths of 1-2 bgs in levels exceeding the PRG (5 mg/kg).

The removal action was completed in April 2016.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

2.1.2 Response Actions to Date

On April 25, 2016, EPA completed the removal action for OU-03. In August of 2016, the St. Louis Athletic Director sent a message to EPA requesting action on the athletic fields. There was a portion of the site that was not draining properly and allowing storm water to pond. On November 20, 2016, EPA mobilized to the site and constructed a drainage layer in this area. The two areas where storm water was ponding were excavated down two feet, backfilled with pea gravel and perforated pipe and connected to a gravity flow solid-wall pipe which drains out to the Pine River. Restoration was completed by rolling the entire field with a smooth-drum roller and then re-seeding by hydro-seeding. EPA demobilizded on November 23, 2016.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

N/A

2.1.4 Progress Metrics

Regional Metrics		
This is an Integrated River Assessment. The numbers should overlap.	Miles of river systems cleaned and/or restored	0
	Cubic yards of contaminated sediments removed and/or capped	0
	Gallons of oil/water recovered	0
	Acres of soil/sediment cleaned up in floodplains and riverbanks	2
Stand Alone Assessment	Number of contaminated residential yards cleaned up	0
	Number of workers on site	0
Contaminant(s) of Concern		

Oil Response Tracking		
Estimated volume	Initial amount released	N/A
	Final amount collected	N/A
CANAPS Info	FPN Ceiling Amount	N/A
	FPN Number	N/A
	Body of Water affected	N/A

Administrative and Logistical Factors (Place X where applicable)					
Precedent-Setting HQ Consultations (e.g., fracking, asbestos)	X	Community challenges or high involvement		Radiological	
More than one PRP		Endangered Species Act / Essential Fish Habitat issues		Explosives	
AOC		Historic preservation issues		Residential impacts	
UAO	X	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	X	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)	
CID confirms Criminal Charges Have Been Filed					

Green Metrics		
Metric	**Amount**	**Units**
Diesel Fuel Used	Unknown	gallons
Unleaded Fuel Used	Unknown	gallons
Alternative/E-85 Fuel Used	0	gallons
Electricity from electric company	None	kWh

Electric Company Name and Account #	N/A	
Electricity from sources other than the electric company	All from generator	kWh
Solid waste reused	None	enter
Solid waste recycled	None	enter
Water Used	Unknown	gallons

2.2 Planning Section

2.2.1 Anticipated Activities
- None

2.2.1.1 Planned Response Activities
- None

2.2.1.2 Next Steps
- None

2.2.2 Issues
None.

2.3 Logistics Section
N/A

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer
N/A

2.5.2 Liaison Officer
N/A

2.5.3 Information Officer
The Information Officer for this site is Diane Russell, U.S. EPA Community Involvement Coordinator. For more information regarding the Remedial Project: http://www.epa.gov/region5/cleanup/velsicol/index.htm

3. Participating Entities

3.1 Unified Command
N/A

3.2 Cooperating Agencies
U.S. EPA-Remedial Branch
MDEQ

4. Personnel On Site

EPA-1
ERRS-6

5. Definition of Terms

ATSDR	Agency for Toxic Substances and Disease Registry
BZ	Breathing Zone
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ERRS	Emergency and Rapid Response Service
MDEQ	Michigan Department of Environmental Quality

NCP	National Oil and Hazardous Substance Pollution Contingency Plan
mg/m3	miligrams per cublic meter
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NRC	National Response Center
OSC	On Scene Coordinator
PPE	Personal Protective Equipment
PPM	Parts per million
RCRIS	Resource Conservation and Recovery Act Information System
RP	Responsible Party
RRT	Regional Response Team
START	Superfund Technical Assessment and Response Team
ug/m3	micrograms per cubic meter
US FWS	United States Fish and Wildlife Service
USCG	United States Coast Guard
VOC	Volatile Organic Compound

6. Additional sources of information

6.1 Internet location of additional information/report
http://www.epa.gov/region5/cleanup/velsicol/index.htm

6.2 Reporting Schedule
N/A

7. Situational Reference Materials

NCP
CERCLA