

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Superior Refining Company Explosion - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V

**Subject:** POLREP #3  
Sitrep 3  
Superior Refining Company Explosion  
  
Superior, WI

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John Sager, WDNR  
Andrew Savagian, WDNR  
Ed Chu, EPA  
Joy Wiecks, Fond du Lac

**From:** David Morrison, OSC  
**Date:** 5/1/2018  
**Reporting Period:** 04/29/18 - 05/01/18

**1. Introduction**

**1.1 Background**

<b>Site Number:</b>	<b>Contract Number:</b>
<b>D.O. Number:</b>	<b>Action Memo Date:</b>
<b>Response Authority:</b> OPA	<b>Response Type:</b> Emergency
<b>Response Lead:</b> EPA	<b>Incident Category:</b>
<b>NPL Status:</b> Non NPL	<b>Operable Unit:</b>
<b>Mobilization Date:</b> 4/26/2018	<b>Start Date:</b> 4/26/2018
<b>Demob Date:</b>	<b>Completion Date:</b>
<b>CERCLIS ID:</b>	<b>RCRIS ID:</b>
<b>ERNS No.:</b>	<b>State Notification:</b>
<b>FPN#:</b> E18516	<b>Reimbursable Account #:</b>

**1.1.1 Incident Category**  
Emergency Response

**1.1.2 Site Description**

**1.1.2.1 Location**

The Superior Refining Company Refinery is located at 2407 Stinson Ave, Superior, Douglas County, WI 54880. The refinery is located southeast of the city center of Superior. Lake Superior is located to the north/northeast of the refinery.

**1.1.2.2 Description of Threat**

An explosion in the facility resulted in an asphalt tank fire and a significant smoke plume as well as several smaller fires, and the threat of a hydrogen fluoride (HF) release to the community. Oil continues to leak from damaged tanks and piping on the refinery, resulting in a potential continued discharge to Newton Creek. Newton Creek drains into Lake Superior. EPA has observed a sheen leaving the refinery property in the ditch and in the Creek on 4/27 and 4/28, 2018.

**1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results**

Following arrival at the scene, EPA began to conduct air monitoring.

**2. Current Activities**

**2.1 Operations Section**

**2.1.1 Narrative**

On 4/26/18 at approximately 1000 CST, Superior Refining Company was shutting down equipment at the refinery when an explosion occurred. It is believed that an unknown hydrocarbon was released, which ignited. By 1100 CST, the small fire was extinguished. During the explosion, however, a piece of shrapnel damaged tank 101, which was full of asphalt (50,400 barrels). Around 1200 CST, a second fire began in the breached Tank 101. Due to the ensuing fire, the refinery was subsequently evacuated. A community evacuation was also ordered by the Fire Department. The evacuation was approximately 6 miles (3 miles east, 3 miles west, by 10 miles south), primarily driven in size due to a concern about a potential failure of a 15,000 pounds hydrofluoric acid (HF) container.

The fire spread at the facility to process units, ground fires by tanks 103 and 104, a vac tower, a crude unit, tank 100, gate 101, tank 103 mixer, and a main column. 7 tanks were affected and had insulation burned off. The fire in tank 101 was initially extinguished at 1842 CST, however, hot spots associated with the tank were not completely extinguished until 2355 CST.

Superior Refining Company filed an NRC report (#1210367) at 1126 EST on 4/26/18 reporting an air release of an unknown hydrocarbon which resulted in an explosion.

Situational update for current reporting period:

04/29 – 05/01: Site stabilization efforts continued while the facility remained on a high state of readiness. Leaks, as discovered, were stopped as risk assessments continued. Subject matter experts were brought to the site and integrated into planning to address critical elements such as a leaning stripping tower and removal of HF acid. Nitrogen Purging of reactor beds and flare systems was begun. Insulation, which was blown to the other side of a road, is being sampled to verify if asbestos is present. Systematic inventorying and prioritization for de-inventorying the damaged portions of the facility was begun.

**2.1.2 Response Actions to Date**

During prior reporting period

See POLREP #2 for operations during second reporting period

During current reporting period

EPA has overseen the establishment of a three-tiered air monitoring network and has been involved with the development of the air monitoring plan for the response. One monitoring zone is inside the work areas of the damaged facility (hot zone), one at the perimeter (fence-line), and one throughout the community. Superior Refinery currently has a network consisting of 23 Area RAEs and multiple particulate meters. Each Area Rae collects O2, LEL, H2S, VOCs, and CO.

The EPA Emergency Response Team (ERT) has developed a web-based viewer to manage the air data as it is submitted by the Refinery's consultant GHD. All air monitoring data is also shared with the Wisconsin State Health Department and the Douglas County Dept. of Health and Human Services. As a contingency, Superior Refinery has agreed to forward live data from their existing monitoring network to EPA's Viper Server during an emergency. In the event of an emergency GHD will enable the connection. EPA will then coordinate with GHD, see where they have deployed their mobile response teams and direct our START team(s) to fill in any gaps. EPA and GHD can then easily share this data with appropriate health agencies.

The Wisconsin DNR has required cleanup of oil sheens, fire fighting foam and oiled debris from Newton Creek and the on-site ponds as well as a host of other program efforts such as overseeing the repair and re-start of the WWTF and evaluation of wildlife impacts. EPA is providing technical support as needed.

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

The refinery is owned by Superior Refining Company, LLC. A notice of federal interest has been issued to Superior Refining Company, LLC.

**2.1.4 Progress Metrics**

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

**2.2 Planning Section**

**2.2.1 Anticipated Activities**

EPA will continue to ensure that Superior Refining Company's air monitoring plan is maintained while continued operations at the facility occur that could result in off-site releases. EPA will be conducting some air monitoring as an independent validation of GHD data and is on standby in case another fire occurs on site or an off-site air release is detected. Superior Refinery plans to remove the HF acid and anhydrous ammonia when it can safely be done. Likewise, chlorine cylinders will be moved to a more secure location.

Newton Creek and off-site water impacts and response actions by the responsible party will continue to be monitored.

**2.2.1.1 Planned Response Activities**

Continue to monitor the response efforts

**2.2.1.2 Next Steps**

Continue to monitor the response efforts.

**2.2.2 Issues**

None

**2.3 Logistics Section**

R5 EPA Emergency Response Staff assisted with logistics

**2.4 Finance Section**

**2.4.1 Narrative**

An FPN was initially opened for \$50,000. An increase to \$100,000 was approved by the fund center on 4/28/18.

**Estimated Costs \***

	Budgeted	Total To Date	Remaining	% Remaining
<b>Extramural Costs</b>				
TAT/START	\$50,000.00	\$0.00	\$50,000.00	100.00%
<b>Intramural Costs</b>				
<b>Total Site Costs</b>	\$50,000.00	\$0.00	\$50,000.00	100.00%

\* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

**2.5 Other Command Staff**

**2.5.1 Safety Officer**

OSC and Superior Refining Safety Officer are filling this role.

**2.5.2 Liaison Officer**

OSC and Superior Refining Liaison Officer are filling this role.

**2.5.3 Information Officer**

EPA Press Officer Rachel Bassler and Superior Refining PO are serving this role.

**3. Participating Entities**

**3.1 Unified Command**

EPA is not currently in a Unified Command role but continues to be involved in the command structure and planning process.

**3.2 Cooperating Agencies**

- Superior Fire Department
- Douglas County Emergency Management
- Superior Police Department
- Wisconsin Department of Natural Resources (WDNR)
- Minnesota Pollution Control Agency (MPCA)
- Agency for Toxic Substances and Disease Registry (ATSDR)
- Douglas County Health Department
- Wisconsin Department of Health Services
- Minnesota Department of Health
- Occupational Safety and Health Administration (OSHA)
- Chemical Safety Board (CSB)

**4. Personnel On Site**

- EPA Region 5: One on-site, 3 off-site
- EPA ERT and contractors: 3
- START: 2
- WDNR: 3
- Superior Refining Company, TBD
- local and state officials: TBD

**5. Definition of Terms**

- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
- WDNR Wisconsin Department of Natural Resources
- EPA Environmental Protection Agency
- ERRS Emergency and Rapid Response Service
- NCP National Oil and Hazardous Substance Pollution Contingency Plan
- OPA Oil Pollution Act
- NOAA National Oceanic and Atmospheric Administration
- NPL National Priorities List
- NRC National Response Center
- OSC On Scene Coordinator
- RCRIS Resource Conservation and Recovery Act Information System
- PRP Potentially Responsible Party
- CWA Clean Water Act

START	Superfund Technical Assessment and Response Team
US FWS	United States Fish and Wildlife Service
USCG	United States Coast Guard

## **6. Additional sources of information**

### **6.1 Internet location of additional information/report**

Additional information can be found on the Douglas County Website: <https://www.douglascountywi.org/>

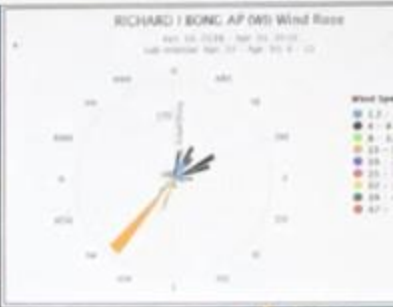
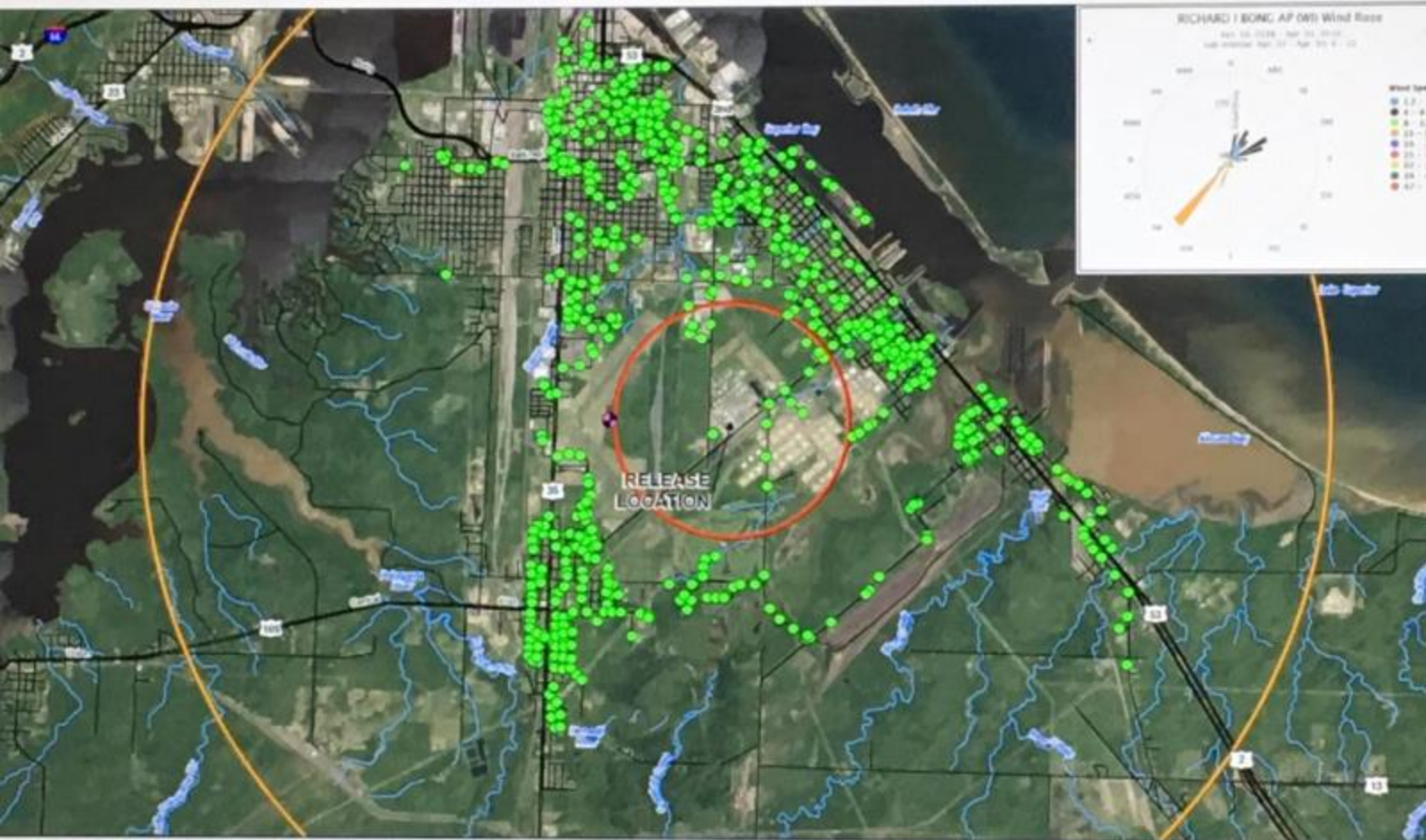
### **6.2 Reporting Schedule**

Additional and Final Polreps TBD

## **7. Situational Reference Materials**

An SDS was supplied by the PRP.

A Final Air Monitoring plan is being implemented.



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Coordinate System:  
 NAD 1983 StatePlane  
 Wisconsin North Zone, 8301 Feet

**Legend**

- 1 Mile Buffer
- 3 Mile Buffer
- Richard I Song Weather Station
- Realtime Handheld Air Monitoring Location
- Strike Action Levels

**COMMUNITY MONITORING**  
**MANUALLY LOGGED REAL-TIME RESULTS**  
 23:30 APRIL 29 TO 23:59 APRIL 30, 2018

110  
May

