

U.S. ENVIRONMENTAL PROTECTION AGENCY
 POLLUTION/SITUATION REPORT
 Seerley Road Fire - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region V

Subject: POLREP #4
 Progress
 Seerley Road Fire
 C59J
 Indianapolis, IN
 Latitude: 39.7137550 Longitude: -86.2579630

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From: Jason Sewell, On Scene Coordinator

Date: 10/25/2015

Reporting Period: 10/24/2015 to 10/25/2015

1. Introduction

1.1 Background

| | | | |
|----------------------------|------------|--------------------------------|----------------|
| Site Number: | C59J | Contract Number: | PR-R5-15-00704 |
| D.O. Number: | | Action Memo Date: | |
| Response Authority: | CERCLA | Response Type: | Emergency |
| Response Lead: | EPA | Incident Category: | Removal Action |
| NPL Status: | Non NPL | Operable Unit: | |
| Mobilization Date: | 10/20/2015 | Start Date: | 10/20/2015 |
| Demob Date: | | Completion Date: | |
| CERCLIS ID: | | RCRIS ID: | |
| ERNS No.: | | State Notification: | |
| FPN#: | | Reimbursable Account #: | |

1.1.1 Incident Category

CERCLA Emergency - waste storage at vacant farm

1.1.2 Site Description

The Site is the location of a barn fire that involved water reactive materials. Five approximately 35 gallon stainless steel containers are present and believed to contain water reactive materials. Two of the five containers were formerly over-packed in sand and wooden crates. The crates were stenciled "Caution, Potassium Metal, Keep Water Away". There are no markings visible directly on any of the steel containers. Although all three containers appear to be of the same size and stainless steel construction, the three containers that were not over-packed in crates labeled potassium have different fill port fittings than the other two. The exact contents of the containers are unknown; however, at least one container has been involved in three separate air/water reactive incidents.

The Site is a vacant farm homestead consisting of approximately 54 acres of farm field, wooded areas, a farm house and several barns. The Site is not generally maintained and barnyard areas are grown up with shrubs and small trees. Numerous items have been discarded around the property, including old vehicles, concrete pipe, metals plating equipment, and more.

Surrounding land uses include the Windsong mobile home park / residential neighborhood located immediately to the northeast, grass fields and wooded areas to the east and south, and Interstate 70 and commercial/industrial lands to the west and north. Windsong is approximately a 300 lot mobile home park; approximately half (150) of the lots have mobile homes, the remainder are vacant with no trailers or occupants.

1.1.2.1 Location

The Seerley Road Fire Site is located at 5453 Seerley Road (also known as 5452 Seerley Road), Indianapolis, Marion County, Indiana, 46241. The approximate coordinates of the barn where the potassium containers are located are 39.715886, -86.256444.

1.1.2.2 Description of Threat

The threat of fire and explosion exists at the Site. Containers labeled metal potassium are present; metal potassium is a water reactive element. When potassium comes into contact with water (precipitation, humidity, other) a violent reaction is possible and hydrogen gas and potassium hydroxide are created. The hydrogen gas detonate violently. Potassium hydroxide is a strong caustic with a pH of 14. Potassium hydroxide vapors can be present in fires involving metal potassium, and the fire smoke can be toxic and strongly corrosive.

The actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants exists at the Site. When water and metal potassium react, potassium hydroxide is created. Potassium hydroxide is a CERCLA hazardous substance with a reportable quantity of 1000 pounds. A residential neighborhood is located nearby. Homes located at the Site are currently vacant and the Site owner states children and adults routinely trespass on the Site. Trespassers may come into contact with metal potassium or potassium hydroxide.

Containers labeled metal potassium are present at the Site. Metal potassium is a hazardous substance and the containers are leaking and/or pose a threat of release exist at the Site. The containers of potassium have been involved in at least three fires and show signs of compromise, including: rust, metal flaking, and rupture.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface and that may migrate are present at the Site. Spilled materials around the base of containers labeled metal potassium have a pH of 14.

Other unknown materials are located at the Site. Metals plating equipment, including dip tanks, are abandoned at the Site. Small piles of various substances are at the Site, including: white salt/cake like material, yellow salt/cake like material, black/green molten material.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Three fires have resulted from containers at the Site since May 19, 2015. The containers had been stored for an undetermined number of years in a barn at the Site. On May 19, the Site owner disturbed one of the containers and a waste-high flash fire resulted. The owner tried to apply water to the fire and caused an even larger water reactive fire. The owner advised the fire resulted in burns to his face. The fire department, Marion County Public Health Department (MCPHD) and Indiana Department of

Environmental Management (IDEM) investigated the flash fire and water reactivity. MCPHD issued an order to the Site owner to stabilize and dispose of the five containers believed to be potassium. The owner hired an environmental contractor who moved the containers from the barn (to avoid any future fire from burning the barn down), over-packed and wrapped the containers to keep them dry pending disposal arrangements. The environmental contractor advised at least one container dripped what he thought was a liquid and the liquid burst into flames until the material was consumed. The owner stated he has had difficulty with finding disposal options following the over-packing of the containers. One bid from a local contractor was for \$75,000 and the owner had not made any further progress.

On October 20, 2015, a fire started in the barn where the potassium containers had been stored. The fire fully engulfed the barn and the heat from the fire spread to the drums. The plastic visqueen wraps and poly/plastic overpacks in which the drums had been stored were burned away and the metal drums were compromised. The drums show degradation, including rust, metal flaking, rupture and bulging. The fire department reported sparking and reactivity to fire suppression water around one of the potassium containers. The MCPHD responded to the fire and requested assistance with stabilization and disposal of the potassium containers from IDEM and EPA.

On October 20, 2015, On-Scene Coordinator (OSC) Jason Sewell responded to the Site and mobilized EPA Superfund Technical Assessment and Response Team (START) contractors to assist with fire suppression water runoff and ambient air monitoring. START used air monitors for particulates, volatile organic compounds (VOC), hydrogen cyanide (HCN), hydrogen sulfide (H₂S), and oxygen to monitor ambient air quality in the residential neighborhood downwind of the fire. The fire had been mostly extinguished by the time of arrival of the OSC and START; however, the fire continued to smolder for several more hours. START documented no detections of VOCs, HCN or H₂S. START documented particulate (PM₁₀) levels ranging from 3 to 60 micrograms per cubic meter (ug/m³) with a brief peak detection of 300 ug/m³. The EPA National Ambient Air Quality Standard (NAAQS) for PM₁₀ is 150 ug/m³ over a 24 hour period. There were no sustained particulate levels over 150 ug/m³. START performed visual observations of nearby Little Seerley Creek to look for signs of fire water runoff; START found Little Seerley Creek to be dry and with no recent signs of water.

On October 21, 2015, Wayne Township Fire/Hazmat team collected small samples of white powdery materials near the base of one potassium vessel. START conducted several field tests on the samples, including:

-Xray Fluorescence (XRF) for potassium: no potassium was detected

-Water reactivity: no reaction was observed

-pH: the pH of the aqueous sample had a pH of 13 and was believed to be potassium hydroxide

-FTIR: hydroxide was detected, but hydroxide could indicate simple water (the materials were well wetted the night before during active fire suppression).

The results of the field testing were somewhat inconclusive. The material sampled was near one of the vessels, but it was unclear whether the material came from the vessel itself. The XRF instrument did not detect potassium in the sample, but XRF is only good for detecting metals. If the material was potassium that had already reacted to water, it may not have been detectable to the XRF. The pH of the sample was a strong corrosive (pH of 13) and judged to be consistent with potassium hydroxide. The FTIR detection of hydroxide was determined to be inconclusive; the detection of hydroxide could not discern between (potential) potassium or other metal hydroxides or water.

Given the previously documented water reactivity of the containers, the results of field tests or potential lab tests are unnecessary to establish the reactive, ignitable and corrosive hazards of the vessels.

On October 22, 2015, the OSC contacted Summit Environmental. Summit had performed the emergency over-packing of the potassium containers after the May 19, 2015 fire. The Summit representative advised they hand carried the potassium drums from the barn to the outdoors and over-packed the drums. The rep advised while carrying one of the containers, a liquid was dripping from the container. Liquid had dribbled out of the container from where it was picked up, along where it was carried and where it was placed outdoors. The rep advised the liquid burst into flames and was completely consumed in the fire. The fire ceased when the liquid on the ground was consumed; no

containers were involved in the fire. The rep stated you could not tell what the liquid was due to the prompt and complete combustion.

On October 22, 2015, ERRS requested a quote from a second specialty subcontractor. ERRS shared pictures of the containers and described the water reactivity. The subcontractor advised the potassium containers appear similar to liquid Sodium Potassium alloy (NaK) containers. NaK is an alloy of metal sodium and metal potassium. Unlike the pure sodium and potassium elements, NaK is a liquid but with all the same water reactive qualities of sodium and potassium solids.

On October 22, 2015 around 1600 hours, MCPHD collected temperature readings of the five potassium containers. The air temperature was approximately 76 degrees F. Ground temperature was approximately 75 degrees F. Four potassium containers were in the mid-80 degrees F. **The fifth potassium container was 95 degrees F.** Elevated temperatures may indicate ongoing exothermic reaction within the container.

Although very little smoke was generated during daylight hours on October 22, 2015, smoldering continues in the burned out barn. START conducted air monitoring for particulates and VOCs in the nearest downwind neighborhood and documented 16 to 30 ug/m3 particulates and 0 ppm VOCs.

On October 23, 2015, the five containers were individually named for tracking purposes. A Drum ID Key photograph is posted in the Images section and Documents section of www.epaosc.org/seerleyroadfire.

On October 23, 2015, MCPHD collected infrared pictures of the five containers. The pictures may indicate the amount of material in each container based on heat signature. The pictures indicate:

- Drum 1 may be 2/3 full
- Drum 2 may be 1/2 full
- Drum 3 may be full
- Drum 4 may be 2/3 full
- Drum 5 is inconclusive because it is over-packed in sand and a wooden crate

On October 23, 2015, soil down gradient of drums 1 and 2 appeared to be wetter than surrounding soils. The wetness is new from October 22, 2015. ERRS used pH paper to test the wet soil; pH was 14.

October 24 and 25, 2015, ERRS collected drum temperature readings for the five containers. Drum temps have remained cool and steady ranging between 62 to 65 degrees F.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

On October 20, 2015, the Site owner granted EPA access to stabilize the potassium containers. The OSC mobilized EPA Emergency and Rapid Response Services (ERRS) contractors to assess the site and to begin planning for stabilization. START also provides support.

2.1.2 Response Actions to Date

For October 24 and 25, 2015:

- Steady rain/drizzle fell over October 24. No storm water accumulated, storm water mostly soaked into dry soils. No problems to report with the two rain shelters covering the water reactive drums.
- ERRS continues to provide 24 hour site security to prevent unauthorized access to drums.
- ERRS granted an extension for the deadline to submit sub-contractor bids; sub-contractors now have until Noon, Monday October 26.
- No direct actions were taken on product containers. See Planning Section for more details.

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

The OSC contacted an EPA Region 5 Office of Regional Counsel (ORC) attorney. The OSC has identified potentially responsible parties as: Joel Williamson, Steven Williamson, and Williamson and Cathy Sue Spurgeon Trustee-Spurgeon Revocable Trust.

EPA has established an enforcement team for the Seerley Road Fire. The team includes: the OSC, an EPA Attorney, and an EPA Enforcement Specialist.

On October 22, 2015, the OSC and Attorney verbally issued a General Notice Letter to one PRP. The letter carried a 24 hour deadline to respond to EPA. General Notice Letters were mailed to two PRPs October 23, 2015. EPA received no response for the General Notice verbally issued October 22.

2.1.4 Progress Metrics

| <i>Waste Stream</i> | <i>Medium</i> | <i>Quantity</i> | <i>Manifest #</i> | <i>Treatment</i> | <i>Disposal</i> |
|---------------------|---------------|-----------------|-------------------|------------------|-----------------|
| Soil, caustic | solid | 55 gallons | TBD | TBD | TBD |
| | | | | | |
| | | | | | |

2.2 Planning Section

2.2.1 Anticipated Activities

Research continues in order to determine the best way to render the metal (elemental) potassium containers safe and to dispose of the potassium wastes.

2.2.1.1 Planned Response Activities

No response activities are anticipated until the render-safe and disposal strategy is determined.

2.2.1.2 Next Steps

Sub-contractor proposals are due at noon on October 26. Proposals will be evaluated by Unified Command and technical support. A Unified Command/Tech call is anticipated the afternoon of October 26.

2.2.2 Issues

The age of the containers and precise chemical makeup of the material inside the containers are unknown; however, contents are known to be water reactive. Rain is forecast over coming days. Precipitation and high humidity will create additional safety hazard when working around the containers. The containers may be designed for holding liquid metal potassium at elevated temperature or the liquid alloy NaK. Filling/emptying of potassium can involve heating the container to 170 degrees F. Filling/emptying heated liquid potassium or liquid NaK can require pressurizing the container with inert gas. The age and degraded condition of the containers may affect the ability to empty the containers as designed.

2.3 Logistics Section

ERRS is providing for EPA's logistics needs at the Site.

2.4 Finance Section

2.4.1 Narrative

The OSC mobilized START to the Site. A START Technical Directive Document will be eventually be issued for the scope of START support. The OSC established an initial ceiling amount for START support at \$10,000.

The OSC mobilized ERRS to the Site. An ERRS Task Order will eventually be issued with a scope of work for ERRS support. The OSC established an initial ceiling amount for ERRS support at \$50,000.

Estimated Costs *

| | Budgeted | Total To Date | Remaining | % Remaining |
|---------------------------|-------------|---------------|-------------|-------------|
| Extramural Costs | | | | |
| ERRS - Cleanup Contractor | \$50,000.00 | \$6,000.00 | \$44,000.00 | 88.00% |
| TAT/START | \$10,000.00 | \$2,100.00 | \$7,900.00 | 79.00% |
| Intramural Costs | | | | |
| USEPA - Direct | \$10,000.00 | \$3,200.00 | \$6,800.00 | 68.00% |
| Total Site Costs | | | | |
| | \$70,000.00 | \$11,300.00 | \$58,700.00 | 83.86% |

* 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

The EPA OSC is responsible for overall safety at the Site; however, the ERRS Response Manager will serve as the Safety Officer and all workers are expected to follow established safety practices.

2.5.2 Liaison Officer

Unified Command Agencies will liaison as necessary.

2.5.3 Information Officer

The EPA OSC serves as the EPA Information Officer at the Site. All participating agencies will be sharing information and may respond to respective media inquiries.

Information requests regarding health and exposure will be deferred to MCPHD.

3. Participating Entities

3.1 Unified Command

EPA

MCPHD

IDEM

3.2 Cooperating Agencies

EPA ERT

Wayne Twp Fire Hazmat Team

4. Personnel On Site

ERRS - 1 (alternative shifts) for site security for this period

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

www.epaosc.org/seerleyroadfire

6.2 Reporting Schedule

The next POLREP will be issued October 26, 2015.

7. Situational Reference Materials

No information available at this time.