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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject:	**POLREP #2** **Progress** **Seerley Road Fire** **C59J** **Indianapolis, IN** **Latitude: 39.7137550 Longitude: -86.2579630**
To:	Amanda Sierp, Marion County Public Health Dept Max Michael, IDEM Mark Johnson, ATSDR Valencia Darby, U.S. DOI Sam Borries, U.S. EPA Jason El-Zein, U.S. EPA Charlie Gebien, U.S. EPA Brian Schlieger, U.S. EPA Todd Taylor, Wayne TWP Fire / Hazmat Pascal Arnes, Decatur TWP FD
From:	Jason Sewell, On Scene Coordinator
Date:	10/22/2015
Reporting Period:	10/21/2015 to 10/22/2015

1. Introduction

1.1 Background

Site Number:		**Contract Number:**	
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. The reactive materials are contained within five approximately 35 gallon steel containers. Container markings had read, "Caution, Potassium Metal, Keep Water Away".

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 a 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.

1.1.2.1 Location

The Seerley Road Fire Site is located at 5453 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. Metal potassium is a water reactive element. When potassium comes into contact with water (precipitation, humidity, other) a violent reaction is possible, hydrogen gas is created, and the hydrogen gas can auto-ignite.

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 of metal potassium, a hazardous substance, are located at the Site and pose a threat of release exist at the Site. The containers of potassium have been involved in at least two fires and show signs of compromise, including: rust, metal flaking, rupture, and bulging.

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

Two fires have resulted from these containers of metal potassium 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 potassium containers. The movement of the container caused a waist-high flash fire. Not knowing the hazards of metal potassium, the owner tried to apply water to the fire which caused an even larger flash fire and 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 of 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 owner stated he has had difficulty with finding disposal options. 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.

****New Info**

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 between potassium and water.

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.

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

As of October 22, 2015:

-Rain is forecast for Saturday, October 24th and for the middle of the following week. ERRS fully enclosed the five potassium containers within a rain shelter by installing a fourth visqueen wall.

-ERRS is maintaining 24 hour site security to prevent unauthorized access at the Site.

-No direct actions were taken on the potassium 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 PRPs. The PRP has until 1600 hours on October 23, 2015 to respond to the Notice.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

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

Technical work group calls were held on October 22, 2015 and are planned for October 23, 2015. Two specialty subcontractors will be touring the Site October 23rd and are expected to submit bids for services by the end of the day.

The OSC requested support from EPA's Community Involvement Section in order to inform nearby residential populations of the hazards that exist at the Site, of proper shelter in place procedures (if instructed by fire department) and of contact information for the MCPHD for health or exposure related questions. Community Involvement Coordinators (CICs) will be knocking on doors October 23 and possibly October 24.

The OSC, MCPHD and IDEM consulted on a unified message for media release. As of this POLREP, the final draft of the release is pending approval by all agencies.

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 for October 24 and beyond. Precipitation and high humidity will create additional safety hazard when working around the containers. The containers may be designed for holding the liquid alloy NaK. Filling/emptying of the liquid 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 mobilized ERRS to the Site. An ERRS Task Order will eventually be issued with a scope of work for ERRS support.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
ERRS - Cleanup Contractor	$10,000.00	$3,300.00	$6,700.00	67.00%
TAT/START	$10,000.00	$1,900.00	$8,100.00	81.00%
Intramural Costs				
USEPA - Direct	$10,000.00	$2,200.00	$7,800.00	78.00%
Total Site Costs	$30,000.00	$7,400.00	$22,600.00	75.33%

* 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

The EPA OSC serves as the Liaison Officer for EPA at the Site.

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.

3. Participating Entities

3.1 Unified Command

EPA OSC

MCPHD

IDEM

3.2 Cooperating Agencies

EPA ERT

Wayne Twp Fire Hazmat Team

4. Personnel On Site

EPA - 1

MCPHD - 1

IDEM - 1

START - 1

ERRS - 2

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 23, 2015.

7. Situational Reference Materials

No information available at this time.