U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Knoxville College - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #5**
Continuation of Emergency Response Operations
Knoxville College
B43S
Knoxville, TN
Latitude: 35.9709164 Longitude: -83.9434094

To:
From: Kevin Eichinger, OSC
Date: 6/19/2014
Reporting Period: June 18, 2014 through June 27, 2014

1. Introduction

1.1 Background

Site Number:	B43S	**Contract Number:**	EP-S4-07-02, TO: 0127
D.O. Number:		**Action Memo Date:**	6/7/2014
Response Authority:	CERCLA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	6/5/2014	**Start Date:**	6/5/2014
Demob Date:		**Completion Date:**	
CERCLIS ID:	TNN000401009	**RCRIS ID:**	
ERNS No.:	1084952	**State Notification:**	06/05/2014
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Emergency Response, inactive facility.

1.1.2 Site Description

The incident occurred at an abandoned laboratory science teaching facility on the campus of the Knoxville College. The AK Stewart Science Hall is a three story brick structure located in the center of the campus. The facility is unsecured with many broken windows and doors at ground level. There are 39 rooms and laboratories containing various containers or hazardous substances. The college is in a residential neighborhood, with residences directly across the street. The facility is not fenced. There are numerous dilapidated structures on the campus that show evidence of trespassers and use by vagrants. Currently, the College is only utilizing one building for education and administrative purposes.

1.1.2.1 Location

The Site is located at 901 Knoxville College Drive, Knoxville, Knox County, Tennessee. The geographical coordinates are 35.970870, -83.943343.

1.1.2.2 Description of Threat

There are numerous containers of hazardous materials, including some extremely hazardous substances, unsecured. Many are broken, and rain infiltration threatens to wash them from the building into the environment. Continued vandalism and theft in the building will only exacerbate the problem. The nature and type of the chemicals present pose toxicity, flammability, and reactivity threats to anyone mixing or playing with the chemicals.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Knoxville College reportedly discontinued their science program in 2007. Since then, time, vandalism, and theft have led to the destruction and degradation of much of the containers stored in the A. K. Stewart Science Hall. Tennessee Department of Environmental Conservation (TDEC) performed a site reconnaissance on June 5, 2014, and immediately contacted the Region 4 Emergency Response and Removal Branch (ERRB) to report the conditions. Thousands of bottles of hazardous chemicals, including acids, bases, oxidizers, organic peroxides, cyanides, radioactive sources, and asbestos are all present in the building. Container size ranges from 5-gallon buckets to milliliter-sized small containers. Many

containers have no, or illegible, labels. Many containers are spilled, broken, or otherwise destroyed. Flammable and corrosive liquids are spilled onto the floor. Vandals have thrown containers from upper windows onto the ground below, causing the bottles to break and spill. Elevated mercury levels were detected throughout the facility. Three radioactive sources were found unsecured in the building.

The building is dilapidated, with leaks in the roof and a flooded ground floor. There is no security for the building; the windows are broken and the doors not functional. Entry into the building is unrestricted. The building does not have automatic sprinklers.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

There are numerous containers of hazardous materials, including some extremely hazardous substances, unsecured. Many are already broken, and the rain infiltration threatens to wash them from the building into the environment. Continued vandalism and theft in the building will only exacerbate the problem. The nature and type of the chemicals present pose toxicity, flammability, and reactivity threats to anyone mixing or playing with the chemicals. This poses the greatest threat to neighborhood children exploring the abandoned building. In consideration of these factors, the OSC elected to initiate an emergency response to address the potential risk of fire, explosion, and release of hazardous substances to the environment.

2.1.2 Response Actions to Date

See previous Pollution Reports for details of response actions taken and complete during past reporting periods.

June 18, 2014

Crews continued consolidating and packing chemical bottles into shipping containers. Crews performed mercury and radiation contamination surveys on the second and first floors. No issues with radiation contamination were found. The average ambient breathing zone mercury levels on the first and second floor were below 3000 nano-grams/cubic meters. Visible beads of metallic mercury were found in a few localized areas in cabinets, on shelves and on the floor that will need secondary mitigation.

There were no detections observed on the exterior air monitoring equipment of concern. There was no detection of any asbestos fibers on the exterior monitors. Fiber detections just above the laboratory detection limits on the interior and personnel samplers were observed.

June 19, 2014

All chemicals were consolidated and packed. Mercury and radiation contamination surveys complete. OSC Stilman arrived on-site to assist with the disposition and disposal of the radioactive materials.

No detections observed on the exterior air monitoring equipment of concern. There was no detection of any asbestos fibers on the exterior monitors. Fiber detections just above the laboratory detection limits on the interior and personnel samplers were observed.

June 20, 2014

Crews mitigated mercury contamination hot spots identified during the surveys. Equipment to complete the unknown remote opening operation arrived on-site and crews prepared the area. OSC Stilman worked with TDEC on the disposition of the radioactive materials. Of the 42 potential sources/suspect material identified, less than half will need to be shipped off for disposal. OSC Terry Stilman provided over-sight on Friday and through the weekend.

No detections observed on the exterior air monitoring equipment of concern. There was no detection of any asbestos fibers on the exterior monitors. Fiber detections just above the laboratory detection limits on the interior and personnel samplers were observed.

June 21, 2014

Areas of spilled powders and chemical contamination were mitigated. Crew containerized medical waste (blood, cultures) from a refrigerator on the First Floor. Unknowns were removed from the building and placed in storage containers in preparation for the crushing operation.

There were no detections observed on the exterior air monitoring equipment of concern. There was no detection of any asbestos fibers on the exterior monitors. Fiber detections just above the laboratory detection limits on the interior and personnel samplers were observed.

June 22, 2014

Crews did not work at the site on Sunday, June 22, 2014. Crews finalized waste inventories and organized packing slips for off-site waste disposal

June 23, 2014

Seventeen 55-gallon drums of unknowns were neutralized and solidified. Numerous reactions occurred but engineering controls and plans worked to keep everything contained. 24-hour air monitoring was established. No detections observed on the exterior air monitoring equipment of concern.

June 24, 2014

A project close out meeting was held, with TDEC, Knox County, City of Knoxville, and the Knoxville College. TDEC and Knox County will work with the Knoxville College to address the damage presumed asbestos containing building materials and remaining environmental concerns.

All drums and containers were removed from the building and placed into storage boxes pending off-site disposal. There was no detection of any asbestos fibers on the exterior monitors. Fiber detections just above the laboratory detection limits on the interior and personnel samplers were observed.

June 25, 2014

All the contents from the crushing/mixing box was containerized into drums, and then placed into the storage boxes. Crews removed the stainless steel box and backfilled the hole with the native dirt. Samples of the material in the crushing/mixing box were taken and sent to a laboratory for RCRA hazardous waste determination. Equipment was decontaminated.

A Ludlum Model 2241 was used to scan the outside of the container box with the radiation sources. Radiation levels dectected were within safely acceptable limits.

June 26, 2014

A load of gravel was spread throughout the area that was used for the crushing operation. A welding contractor reattached the fire escape handrails that were removed to facilitate drum and container removal. The building was re-secured with sheets of plywood. Equipment was demobilized from the site.

June 27, 2014

All personnel and equipment was demobilized from the site. TDEC/TEMA began their daily check of the storage boxes.

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

Knoxville College has stated they are the property owners and former operators of the Science Hall, but are financially unable to perform the removal. OSC Eichinger reviewed records and files found in the Science Hall. To date, no other PRPs has been identified from the information reviewed.

2.1.4 Progress Metrics

No pertinent information to report at this time.

2.2 Planning Section

2.2.1 Anticipated Activities

Anticipated removal activities for the Site include, but are not limited to, the following:

- Secure the site to limit trespassing or other unauthorized entry.
- Conduct inventory of hazardous materials stored at the Site.
- Stabilize hazardous materials pending testing and disposal.
- Segregate hazardous materials into hazard categories.
- Sample for hazard categorization and disposal profiling.
- Consolidate, repack, over-pack, and lab-pack materials.
- Off-site disposal, treatment, or recycling of materials.
- Additional cleanup activities that may include demolition as necessary to provide a safe and efficient work environment, excavation of contaminated soils, as necessary, decontamination of personnel and equipment.
- Conduct comprehensive air monitoring for employee and community protection.
- Continue coordination with Local and State Agencies.

2.2.1.1 Planned Response Activities

1. Perform quality control checks on drums and containers that will be shipped for disposal. Label and mark containers per US Department of Transportation requirements.
2. Return to the site to ship drums and containers off-site for appropriate disposal.

2.2.1.2 Next Steps

1. Submit transportation and disposal package to vendors and solicit bids for disposal.
2. Submit perspective disposal facility for CERCLA Off-site Disposal approval.

2.2.2 Issues

- Large number of unknown chemicals have been found. Many are air and moisture reactive.
- Additional Radioactive Sources have been found.
- Metallic Mercury has been found on the floors and in the cabinets/drawers.
- Additional hazardous materials were found during a final sweep by the OSC. The radioactive materials were hidden in packing material on a storage shelf. The steel container of mercury was corroded and hidden on a bottom shelf of a storage cabinet in a room with limited lights. Additional sweeps will need to be completed to find hidden materials.

2.3 Logistics Section

Logistical support is being provided by ERRS, START and Q-Solutions/EPA Warehouse contractors and EPA personnel.

START, ERRS and EPA demobilized all equipment and personnel from the site.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

OSC Eichinger is serving as the Safety Officer with START and ERRS each providing an Assistant Safety Officer. An initial assessment of the structure was complete. All activities in the building will need to be conducted in Level B or C personal protective equipment.

Emergency responders will be exposed to serious risk of injury due to numerous containers of hazardous materials, including some extremely hazardous substances, that are unsecured, broken and leaking. There is also damaged friable asbestos containing building material throughout the facility.

Crews continue to clear debris and tripping hazards from the floors to provide safe access to the laboratories. Carts are used to transport chemical bottles to minimize the risk of dropping. A fix air monitoring station has been established on the floor the crews are working on. Crews also carry around a portable monitor with them when they are working in the laboratories. All air monitors are equipped with remote web-based data collection and alert capabilities (using EPA's VIPER system); no adverse conditions have been observed. Asbestos air sampling is being performed in the building, at the personnel decontamination area and at the Command Post. These samples are analyzed at an off-site analytical laboratory. There is a 24-hour delay in asbestos results.

Airborne asbestos sampling results were received for samples taken on June 10, 2014, June 11, 2014 and June 12, 2014. No asbestos fibers were detected in any of the samples taken at the exterior air monitoring locations. Fibers were detected at very low levels in interior personal samples. The results were less than the OSHA permissible exposure limit (PEL) for airborne asbestos. Crews will continue to wear Level C Personal Protective Equipment (PPE). Crews will increase water wetting and misting operations while clearing and managing debris in the building.

On June 16, 2014, crews found two highly reactive liquids while they were identifying unknowns. The cap broke on one of the containers. Crews ued wet pH paper in the vapor and it was acidic. Due to this incident all unknowns will be remotely opened and crushed. Necessary equipment and air monitors are mobilizing to the site.

A work plan, activity hazard analysis and site map for the unknown remote opening and crushing operation that was reviewed and approved by Response Partners, START and ERRS.

2.5.2 Liaison Officer

OSC Eichinger is currently coordinating will Local and State Response Partners.

The Knoxville Knox County Emergency Management Agency (EMA) hosted OSC Eichinger and CIC Atashi in order to provide a briefing for Local and State partners at the Emergency Operations Center (EOC). Numerous personnel from the City of Knoxville, TDEC, TEMA, Knox County EMA and Knox County were in attendance. OSC Eichinger resented on the situation, what EPA is doing and how we are assuring that the local community is protected. Response partners were given access to the response website so they can view response information and the real-time air monitoring data. Knoxville Fire Department, TEMA and TDEC visit the site daily.

OSC Eichinger created a detailed Emergency Response Plan (ERP) for the local EMA's and the Fire Department. The response plan details fire suppression run-off locations, potential evacuation zones and estimated plume models should a fire occur. The ERP can be found at http://epaosc.org/sites/9307/files/Knoxville_College_Emergency_Response_Plan_Printed_06112014.pdf.

The project close out meeting with TDEC, Knox County, City of Knoxville, and the Knoxville College was held on June 24, 2014. TDEC and Knox County will work with the Knoxville College on the remaining environmental concerns. The Knoxville College was advised that there is still damaged presumed asbestos containing building materials through all three floors. The College was also advised that there may still be residual mercury contamination hidden under cabinetry, is sink traps and is inaccessible locations. TDEC and the College was provided a map that detailed the average ambient mercury air concentrations at breathing zone level for each room in the building.

2.5.3 Community Involvement Coordinator (CIC)

CIC Atashi arrived on-site mid-afternoon on June 9, 2014

A fact sheet for the response has been created. The fact sheet was shared with local and State response partners. It is at http://epaosc.org/sites/9307/files/Knoxville%20College-%20Fact%20Sheet%20Number%201.pdf. CIC Atashi visited homes within 1/4 mile radius of the site and handed out the fact sheet and met with residents. This fact sheets was mailed out to those residents in the 1/4 mile radius.

EPA visited 101 properties including 2 churches and conducted community interviews to date.

OSC Eichinger and CIC Atashi provided a briefing to the Mechanicsville Neighborhood Association and the Knoxville City Development Corporation (KCDC) on June 13, 2014 at 7 pm at Clinton Chapel, on College Street.

There is high media interest in the response. OSC Eichinger has provided numbers interviews to the local media.

CIC Atashi is developing a second fact sheet that details the work completed and future activities. This fact sheet will be mailed out to residents within 1/4 mile radius of the site.

3. Participating Entities

3.1 Unified Command

An incident command structure has been established for this incident. At this time, OSC Eichinger is filling the role of Incident Commander with personnel from START and ERRS filling the Operation Section Chief, Assistance Safety Officer, HAZMAT Team Leader, Decontamination Team Leader, Air Monitoring Group Supervisor, Resource Unit Leader and Documentation Unit Leader positions. At this time, a Unified Command structure is not needed due to the size of the incident. Local and State Agencies will participate in the incident command structure as Assisting Agencies

3.2 Assisting Agencies

The following local and state agencies are providing support:

- Tennessee Department of Environmental Conservation (TDEC)
- Tennessee Department of Emergency Management (TEMA)
- City of Knoxville/Knox County Emergency Management
- City of Knoxville Mayor's Office
- City of Knoxville Fire Department

4. Personnel On Site

The following personnel were on-site at various times throughout this reporting period:

- EPA - 2
- START - 3
- ERRS - 6
- TDEC - 2-4
- TEMA - 2-4
- City of Knoxville (from various departments) - 2-4
- PRP - 2

5. Definition of Terms

Abbreviations and acronyms are spelled out within the text of the Pollution Report. Definitions will be added to this section as necessary.

6. Additional sources of information

6.1 Internet location of additional information/report

Documents, photographs, maps and other important/pertinent information can be found at http://epaosc.org/knoxvillecollege. Log-in credentials may be required to view certain documents.

6.2 Reporting Schedule

Pollution Reports (POLREP) will initially be drafted as significant events occur. This schedule will change and be less frequent as the emergency response progresses. Please note that POLREP must be review and approved prior to publication, so there may be a delay.

7. Situational Reference Materials

All situational reference materials will be uploaded to http://epaosc.org/knoxvillecollege. Log-in credentials may be required to access certain documents.