U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
United Community Hospital - Removal Polrep

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**Region V**

**Subject:** **POLREP #2**
**Progress**
**United Community Hospital**
**C5J3**
**Detroit, MI**
**Latitude: 42.3297850 Longitude: -83.0841190**

**To:** Mark Johnson, ATSDR
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Dan Wyant, MDEQ
Bill Schuette, Michigan Department of Attorney General
Rodney Stokes, Michigan DNR
Todd Goeks, NOAA
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**From:** Elizabeth Nightingale, OSC
**Date:** 7/22/2013
**Reporting Period:** 7/22/2013-7/26/2013

## 1. Introduction

### 1.1 Background

| | | | |
|---|---|---|---|
| **Site Number:** | C5J3 | **Contract Number:** | |
| **D.O. Number:** | | **Action Memo Date:** | 2/4/2013 |
| **Response Authority:** | CERCLA | **Response Type:** | Time-Critical |
| **Response Lead:** | EPA | **Incident Category:** | Removal Action |
| **NPL Status:** | Non NPL | **Operable Unit:** | |
| **Mobilization Date:** | 7/15/2013 | **Start Date:** | 7/15/2013 |
| **Demob Date:** | | **Completion Date:** | |
| **CERCLIS ID:** | MIN000510837 | **RCRIS ID:** | |
| **ERNS No.:** | | **State Notification:** | MDEQ, MDCH, MDNR |
| **FPN#:** | | **Reimbursable Account #:** | |

#### 1.1.1 Incident Category

Time Critical Removal Action

#### 1.1.2 Site Description

The United Community Hospital was originally opened in southwest Detroit as Southwest Detroit Hospital in 1974. The hospital was operated by various owners under various names until 2006, when it was liquidated by the State of Michigan. The building has remained closed and unoccupied since 2006. The City of Detroit requested EPA assistance with this site in June 2012.

EPA conducted a site assessment on June 21, 2012, and returned to the site on August 8, 2012 to collect additional information. During the site visits, EPA observed:
• Six mercury spills visible on the floor in former patient rooms in a wing on the third floor which appeared to be from broken blood pressure cuffs;
• Medical waste including syringes, sharps containers and vials of dried blood on the first and third floors of

the building; and
• Bottles of liquid medications including Heparin, Ketorolac, and Levaquin on the 3rd floor near the nurse's station.

Ambient levels of mercury at the site of up to 50,000 nanograms/cubic meter were later measured at the site.

The site was in disrepair, with evidence of trespassing including broken windows, paintballs and graffiti; and evidence of scrapping activity including removal of power cords from machines and of lead from walls of x-ray rooms. The building is locked however, trespassers continue to gain access to the building. The site grounds are unfenced, allowing access by the public.

The site consists of an approximately 7-acre property in an urban mixed commercial residential area, and contains a 5 story building. The parcel is generally bordered by commercial facilities to the east, and commercial and residential facilities to the north, south and west. A railroad track borders the property immediately to the south, and a major interstate highway borders the property immediately to the west and north.

#### 1.1.2.1 Location

The site is located at 2401 20th Street, Detroit, Wayne County, Michigan, 48216. The location coordinates for the site are latitude 42.329895° and longitude -83.083995°. The site is situated west of 20th Street, south of Michigan Avenue, east of I-75, and north of West Vernor Highway.

#### 1.1.2.2 Description of Threat

Mercury is a characteristically hazardous waste under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq., as amended, and 40 CFR 261.24. Mercury exhibits the characteristic of toxicity (D009), and is therefore a hazardous substance under Section 101 (14) of CERCLA, 42 U.S.C. 9601(14).

The health effects of mercury are detailed by the ATSDR as follows:

> The nervous system is very sensitive to all forms of mercury. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems. Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

Medical waste is not a listed or characteristically hazardous substance, however is considered to be a pollutant or contaminant under Section 101 (33) of CERCLA, 42 U.S.C. 9601(14). Pollutant or contaminant is defined as "any substance…including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism…will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions…" The biological waste at the site was not organized, secured, or maintained in a manner necessary to prevent exposure and/or release. Medical waste transport and disposal is heavily regulated by a number of governmental agencies due to its potentially infectious nature.

The health effects of exposure to medical waste and sharps are described by the Center for Disease Control and other public health agencies as:

> The concern created by medical waste is that it can cause infection and/or disease. In order for this to happen, several things must occur. First, infectious agents (for example, viruses) must be present in the waste. It is important to keep in mind that certain types of materials are classified as medical waste because they might cause disease. Blood, for example, is considered infectious because it might contain viruses, bacteria, parasites, and prions. Used needles and other sharps are dangerous to people and animals if not disposed of safely because they can injure people and spread infections that cause serious health conditions. The most common infections (spread in this manner) are: Hepatitis B (HBV), Hepatitis C (HCV), and Human Immunodeficiency Virus (HIV).

At this site, the medical waste present is older, presumably generated before hospital closure in 2006, however, the remaining infectiousness of this waste is unknown. Available research indicates that viruses may not survive long outside the human body in medical waste, however less is known about the long term infectivity of other blood borne disease causing organisms in blood samples and medical waste. For example, there are many gram positive bacterial species which can undergo spore formation and can remain infectious for a number of years. According to ATSDR and EPA toxicologists, the conservative approach is to assume that the waste is infectious. As a note, in the 1980's, the CDC introduced "Universal Precautions". This

practice is taught to all medical, laboratory, and emergency response personnel. Universal precautions means to treat all body fluids as infectious, especially those containing blood.

Given the site conditions, the nature of the known and suspected hazardous substances, pollutants and contaminants on site, and the potential exposure pathways, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in the Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. Therefore, a time critical removal action was initiated at this site on July 15, 2013. This removal action will directly address actual or potential releases of hazardous substances at the site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

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

Described above.

## 2. Current Activities

### 2.1 Operations Section

#### 2.1.1 Narrative

Planned removal activities on-site include:

a) Developing and implementing a site-specific Health and Safety Plan that includes an Air Monitoring Plan and a Site Emergency Contingency Plan;

b) Developing and implementing a Site Work Plan and Site Security Plan;

c) Securing, staging, sampling and characterizing spilled mercury, mercury contaminated waste and piles of biological wastes;

d) Consolidating and packaging all materials containing hazardous substances, pollutants and contaminants for transportation and off-site disposal; and

e) Transporting and disposing of all characterized or identified hazardous substances, pollutants, wastes, or contaminants that pose a substantial threat of release at a Resource Conservation and Recovery Act/CERCLA-approved disposal facility in accordance with EPA's Off-site Rule (40 C.F.R. § 300.440).

#### 2.1.2 Response Actions to Date

Specific actions taken the week of July 15, 2013 are summarized in POLREP 1.

**General Overview of Response Actions to Date**

Six mercury spills in six separate hospital rooms on the third floor were identified in the site assessment. All the mercury spills were located within one wing of the third floor. Upon arrival, the rooms in this wing were numbered 1-12. Since the assessment, a large amount of additional debris was lying on the floors in the hallway and in these rooms, making it difficult to see the spilled mercury. At the start of the removal, rooms in the wing were assessed visually and with the Lumex, and liquid mercury was detected in 5 rooms, room numbers 3, 4, 7, 8, and 12. Work focused on cleaning up these rooms and associated hallway first. After cleanup of these rooms, the other rooms within the wing were assessed visually and with the Lumex mercury detector for visible mercury and mercury vapors. Mercury vapors in the breathing zone were elevated above the 3,000 ng/m^3 action level (see below) in an additional 5 rooms (rooms 5,6, 9, 10, and 11). Standing mercury was visible in a number of these rooms as well. Also, over the course of the mercury removal, during inspections of the third floor, an additional 8 blood pressure cuffs were recovered and drained of mercury.

*As of Thursday, July 25, all 10 rooms and associated halls within the affected wing of the third floor have been cleared – mercury levels within the breathing zone were below 3,000 ng/m^3 in all areas.*

Biological waste was identified on the first and on the third floors during the site assessment. As with the mercury spills, since the assessment, a large amount of additional debris was lying on the floors in the areas previously identified to contain this waste, making it difficult to see and collect the waste. At the start of the removal, biowaste was visible in several rooms in the southern wing of the first floor, in several rooms in the former lab area on the first floor, and at a nurses' station on the third floor.

*As of Friday, July 19, all known deposits of biological waste throughout the hospital had been collected, consolidated and staged for disposal.*

This week, the crew also became aware of an approximately 1,000 square foot former maintenance room on the second floor of the building with about 1 inch of liquid on the floor. The liquid appears to be a mix of waste oil from 2 transformers mixed with waste spilled from various small containers (appear to be paints, paint thinners, potentially additional mercury from mercury containing equipment and rainwater). We tested a sample for polychlorinated biphenyls (PCBs) with a test kit, and did not detect PCBs in the sample. Because of the potential hazards and threats associated with leaving this material in place, the crew will remove the standing liquid, characterize it and properly dispose of it as a part of this action.

***Mercury Action Levels***

According to the Agency for Toxic Substances and Disease Registry (ATSDR) and the Michigan Department of Community Health, a non-residential, non-school, non-mercury related business structure has been cleaned up sufficiently for reoccupancy when mercury levels are below 3,000 nanograms/cubic meter ($ng/m^3$), in the breathing zone. Hospital rooms will be considered cleaned up at this site when the visible mercury has been removed, any inaccessible mercury has been encapsulated, and mercury levels in the breathing zone

are less than 3,000 ng/m^3.

For screening objects, and debris, the Michigan Department of Community Health recommends that objects with mercury levels above 10,000 ng/$m^3$ be disposed of outright. Objects with mercury levels between 10,000 and 1,000 ng/m^3 may aired out to reduce levels, and objects with mercury levels below 1,000 ng/m^3 may be kept. At this site, debris that is suspected to be contaminated with mercury is being bagged and mercury levels within the bags are being measured. If the mercury level of the bagged debris exceeds 10,000 ng/m^3, the debris will be disposed of outright as mercury contaminated debris.

***Daily Activities Summary***

**On July 22nd the crew:**
- Finalized the Health and Safety Plan, and integrating revisions
- Continued monitoring mercury levels on the third floor.
- Measured mercury levels in remaining rooms in wing on third floor. Specific results are detailed in the monitoring section below. Mercury was consistently above the action level 3,000 ng/m^3 in the breathing zone 5 additional rooms - rooms 5, 6, 9, 10, and 11.
- Measured mercury levels in bagged debris.
- Completed clearing debris from patient room #8, third floor; continued collection of visible mercury with mercury vacuum; and washed the room floor.
- Removed additional mercury (through vacuuming) from the northern baseboard and an electrical outlet in patient room # 4, and installed foam in cracks along wall base to encapsulate any remaining mercury.
- Began clearing debris from patient room #12, collecting of visible mercury with mercury vacuum, and installation of foam in cracks along wall base to encapsulate any remaining mercury.
- Consolidated sharps and biowaste collected from throughout the building at a location near the eastern entrance to the hospital.

**On July 23nd the crew:**
- Cleared debris from patient rooms 1, 2, 5, 6, 9,10 and 11 of the third floor. Debris was screened with the Lumex mercury detector, and disposed of as mercury contaminated.
- Vacuumed mercury from the floors of Rooms 11 and 12.

**On July 24th the crew:**
- Continued mercury vacuuming in Room 11, as well as the removal of debris from Rooms 11 and 12, and associated hallway and nurses station. Debris was screened with the Lumex mercury detector, and disposed of as mercury contaminated.

-Staged 55-gallon drums filled with mercury contaminated debris along the northern end of the east hallway.

-Tested waste oil located in a second floor room with a Chlor-N-Oil test kit (Note: The result of the test indicated that no PCBs were present in the oil).

**On July 25th the crew:**
-Cleared debris from behind the third floor nurses' station located at the south end of the west hallway, and placed this debris into 55-gallon drums. Debris was screened with the Lumex mercury detector, and disposed of as mercury contaminated.

-Moved 28 55-gallon drums, containing mercury-contaminated debris, from the third floor to the driveway via a manlift, and restaged the drums inside the east entrance to the hospital.

-Conducted additional mercury vacuuming in Rooms 5, 11, and 12, and sprayed foam along the bottom edge of the southern wall in Rooms 5 and 11, and the bottom edge of the northern wall in Room 12.

**On July 26th the crew:**
- Collected a sample of the waste found in the former maintenance room on the second floor and sent the sample in for analysis.

***Monitoring Results***

***July 22, 2013:***
START recorded a total of 24 readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 75.6 to 82.7 °F.

Of these readings, seventeen were in the breathing zone; three were within one inch of the floor; and four were taken from within debris backs located in Room 8. All of these readings were recorded on the third floor of the building.

All readings from the debris bags from room 8 exceeded 10,000 ng/m^3. Therefore this waste will be disposed of as mercury contaminated.

The third floor hallway readings were between 1,345 (south end) and 6,478 ng/$m^3$ (central area).

The breathing zone reading inside Room 1 was 1,416 ng/$m^3$. The BZ readings in Room 2, 5, 6, 9, and 10 were 2,166 ng/$m^3$, 6,046 ng/$m^3$, 4,931 ng/$m^3$, 3,935 ng/$m^3$, and 4,367 ng/$m^3$, respectively. The first BZ reading inside Room 11 was 2,986 ng/$m^3$, while the second BZ reading was 5,986 ng/$m^3$.

Following the spraying of foam along the northern baseboard and inside an electrical outlet, in Room 4, the breathing zone reading in Room 4 was 2,487 $ng^3$. Given that the breathing zone reading inside room 4 was below 3,000 ng/m3, no further cleanup action was required in this room.

***July 23, 2013:***

No screening took place.

***July 24, 2013:***

START recorded a total of 12 readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 70.9 to 72.3°F.

Of these readings, nine were in the breathing zone, and three were within one inch of the debris located behind the third floor nurses' station. All of these readings were recorded on the third floor of the building.

The breathing zone readings inside Rooms 5, 6, 8, 9, 10, 11, and 12 were 5,674 ng/$m^3$; 2,742 ng/$m^3$; 1,789 ng/$m^3$; 1,924 ng/$m^3$; 1,273 ng/$m^3$; and 6,998 ng/$m^3$, respectively. Given that the breathing zone readings inside rooms 6, 8, 9 and 10 were below 3,000 ng/m3, no further cleanup action was required in any of these rooms.

The two breathing zone readings in the nurses' station were 2,832 ng/$m^3$ and 15,270 ng/$m^3$. The readings taken within one inch of the debris, located behind the nurses' station, were >50,000 ng/$m^3$; 10,061 ng/$m^3$; and 15,000 ng/$m^3$.

***July 25, 2013:***

START recorded a total of seven readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 70.3 to 71.6°F.

All of these readings were recorded in the breathing zone of the third floor.

The readings inside Rooms 3, 5, 11, and 12 were 2,826 ng/$m^3$; 2,392 ng/$m^3$; 2,192 ng/$m^3$; and 1,004 ng/$m^3$, respectively. Given that the breathing zone readings inside each of these room was below 3,000 ng/m3, no further cleanup action was required in any of these rooms.

The reading behind the nurses' station, located at the south end of the West Hallway of the third floor, was 767 ng/$m^3$. The two hallway readings were 2,808 and 1,480 ng/$m^3$. Given that the breathing zone readings behind the nurses' station and in the hallway were below 3,000 ng/m3, no further cleanup action was required in these areas.

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

A General Notice Letter was issued to the company that owns the hospital property on December 12, 2013. Extensive efforts were made to negotiate and implement a voluntary cleanup of the site during January and February 2013. Those efforts were unsuccessful. A Unilateral Administrative Order was issued on April 19, 2013. No response was received. Efforts are ongoing to further develop information and continue to pursue enforcement activities.

**2.1.4 Progress Metrics**

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

**2.2 Planning Section**

**2.2.1 Anticipated Activities**

The following activities were planned for this removal action:
- Securing, staging, sampling and characterizing spilled mercury, mercury contaminated waste and piles of biological wastes;

- Consolidating and packaging all materials containing hazardous substances, pollutants and contaminants for transportation and off-site disposal; and

- Transporting and disposing of all characterized or identified hazardous substances, pollutants, wastes, or contaminants that pose a substantial threat of release at a Resource Conservation and Recovery Act/CERCLA-approved disposal facility in accordance with EPA's Off-site Rule (40 C.F.R. § 300.440).

**2.2.1.1 Planned Response Activities**
Next week, the crew will remove the standing liquid in the former maintenance room on the second floor of the hospital, characterize it and properly dispose of it. The crew will also arrange for proper disposal of waste that has already been staged (mercury, mercury contaminated debris and biowaste).

***2.2.1.2 Next Steps***
We anticipate completing the removal action next week.

**2.2.2 Issues**
None.

**2.3 Logistics Section**

ERRS is managing site logistics.

**2.4 Finance Section**

**2.4.1 Narrative**

ERRS date are estimated through July 24, 2013. START costs are estimated through July 26, 2013.

**Estimated Costs ***

| | Budgeted | Total To Date | Remaining | % Remaining |
|---|---|---|---|---|
| **Extramural Costs** | | | | |
| ERRS - Cleanup Contractor | $200,000.00 | $45,908.00 | $154,092.00 | 77.05% |
| TAT/START | $25,000.00 | $10,423.00 | $14,577.00 | 58.31% |
| **Intramural Costs** | | | | |
| | | | | |
| **Total Site Costs** | $225,000.00 | $56,331.00 | $168,669.00 | 74.96% |

* 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 OSC is serving in this role for the site.

**2.5.2 Liaison Officer**
The OSC is serving in this role for the site.

**2.5.3 Information Officer**
The OSC is serving in this role for the site.

**3. Participating Entities**

**3.1 Unified Command**
N/A

**3.2 Cooperating Agencies**
City of Detroit
Michigan Department of Environmental Quality

**4. Personnel On Site**

Personnel on site on 7/22/13:

EPA: 1
START: 1
ERRS: 6
Community Health Care Providers: 1
GPA Protection LLC: 0

Personnel on site on 7/23/13:

EPA: 1
START: 1
ERRS: 7
Community Health Care Providers: 2
GPA Protection LLC: 1

Personnel on site on 7/24/13:

EPA: 1
START: 1
ERRS: 7
Community Health Care Providers: 0
GPA Protection LLC: 1

Personnel on site on 7/25/13:

EPA: 1
START: 1
ERRS: 7

Community Health Care Providers: 1
GPA Protection LLC: 1

Personnel on site on 7/26/13:

EPA: 0
START: 1
ERRS: 1
Community Health Care Providers: 0
GPA Protection LLC: 1

**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 |
| NG/M^3 | nanograms per cubic meter |
| NCP | National Oil and Hazardous Substance Pollution Contingency Plan |
| 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 |
| 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**
www.epaosc.org/unitedcomm

**6.2 Reporting Schedule**

POLREPs will be issued weekly.

**7. Situational Reference Materials**

n/a