

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



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: POLREP #1
Initial
United Community Hospital
C5J3
Detroit, MI
Latitude: 42.3297850 Longitude: -83.0841190

To: Mark Johnson, ATSDR
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From: Elizabeth Nightingale, OSC
Date: 7/19/2013
Reporting Period: 7/15-2013-7/19/2013

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

The crew mobilized to the site on July 15, 2013. The crew conducted a site walkthrough, and then began preparing the site for the removal.

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 is now 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 will focus on cleaning up these rooms first, and then addressing other rooms, if mercury is found, in that wing of the third floor.

As of Friday, July 19, cleanup work has been initiated on 4 of the standing mercury spills.

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 is now 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 have been removed.

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 $3,000 \text{ ng}/\text{m}^3$.

For screening objects, and debris, the Michigan Department of Community Health recommends that objects with mercury levels above $10,000 \text{ ng}/\text{m}^3$ be disposed of outright. Objects with mercury levels between $10,000$ and $1,000 \text{ ng}/\text{m}^3$ may be aired out to reduce levels, and objects with mercury levels below $1,000 \text{ ng}/\text{m}^3$ 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 $10,000 \text{ ng}/\text{m}^3$, the debris will be disposed of as mercury contaminated debris.

Daily Activities Summary

On July 15th the crew:

- Revised the Health and Safety Plan
- Drafted an Emergency Contingency Plan
- Verified the hospital route
- Cleared paths through the area where work will occur, and set up lighting
- Measured background mercury levels at the time project started
- Conducted monitoring with the Lumex mercury detector, and visually screened the third floor to locate standing mercury spills
- Began collecting and bagging mercury contaminated debris on the third floor
- Measured mercury levels in bagged debris

On July 16th the crew:

- Finalized the emergency contingency plan, and delivered copies to the 3 local responding fire houses for the site, and the responding police precinct
- Continued monitoring mercury levels on the third floor
- Completed clearing debris from patient room #7, third floor; initiated collection of visible mercury with mercury vacuum; washed floor; located additional free mercury below linoleum; removed linoleum, and collected additional free mercury
- Began clearing debris from patient room #4, third floor, and bagging this debris for screening with Lumex mercury detector

On July 17th the crew:

- Continued monitoring mercury levels on the third floor
- Completed removal and/or bagging of the debris in room #4, and the initiated vacuuming of this room with a mercury-specific vacuum.
- Completed sorting through debris, and collecting and containerizing sharps and biowaste located in the examination room area southern wing of the ground floor of the building.
- Completed a walk-through on fourth floor of the building, to check nurses stations for additional biowaste reported by property management staff to be on the floor. No discernable issues were found on the fourth floor of the building.

On July 18th the crew:

- Continued monitoring mercury levels on the third floor.
- Began removal and bagging of the debris in room #3.
- Removed additional mercury from the floor and south baseboard of Room # 7 and from the north baseboard of Room #4.
- Completed sorting through debris, and collecting and containerizing biowaste located in the laboratory wing of the facility. The majority of the biowaste was found in room # 7 in this wing. All known locations with biowaste accumulations have now been addressed on the first floor.

On July 19th the crew:

- Continued monitoring mercury levels on the third floor.
- Continued removal and bagging of the debris in room #3, and the initiated vacuuming of this room with a mercury-specific vacuum, and washed the floor with water.
- Continued mercury removal (through vacuuming) from the floor and northern baseboard of room #4.
- Began removal and bagging of the building debris located in Room 8 and the removal of mercury through vacuuming.
- Surveyed third floor for remaining thermostats - remaining thermostats were found to be of a design that does not contain mercury.
- Completed sorting through debris, and collecting and containerizing sharps and biowaste located at the nurses station on the third floor and in a nearby patient room. All known locations with biowaste accumulations have now been addressed within the building.

Monitoring Results

July 15, 2013:

START recorded a total of seventeen readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 78.2 to 85.9°F.

Of these readings, eight were in the breathing zone (e.g., height of five to six feet above the floor), six were within one to two inches of the floor, and three were taken inside bags of containerized debris.

The range of readings, on the ground floor, was between 634 to 1,137 ng/m³, and the range of readings in the third floor stairway and hallway, were between 6,700 and 30,030 ng/m³.

The range of readings in Rooms 3, 4, and 7, was between 3,046 and 28,800 ng/m³.

The range of readings in the three bags screened in Rooms 3, 4, and 7 ranged up to 50,000 ng/m³. These bags will be disposed of as mercury contaminated debris.

July 16, 2013:

START recorded a total of thirteen readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 80.0 to 81.9°F.

Of these readings, six were in the breathing zone, six were within one to two inches of the floor, and one was taken inside a bag of containerized debris located in Room 4 on the third floor.

The range of readings inside Rooms 3, 4, 7, and 8 on the third floor, was 3,721 and 50,000 ng/m³, and the range of readings in the third floor hallway was between 11,550 and 17,220 ng/m³.

July 17, 2013:

START recorded a total of eight readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was 80.6 to 84.5°F.

Of these readings, seven were in the breathing zone, and one was within one to two inches of the floor. Additionally, four of these readings were recorded on the ground floor, while the other four readings were recorded on the third floor stairwell and hallway.

The ground floor readings were between 120 and 411 ng/m³. The third floor readings were between 1,989 and 6,982 ng/m³.

July 18, 2013:

START recorded a total of 38 readings from the Lumex mercury detector. The ambient temperature range during the recording of these readings was over 70.0 to 84.0°F.

Of these readings, ten were in the breathing zone; sixteen were within one to two inches of the floor; eleven were inside debris bags; and one was from a pile of debris located in Room 3. All of these readings were recorded on the third floor of the building.

The third floor stairwell readings were between 1,900 and 2,325 ng/m³. The third floor hallway readings were between 546 and 5,451 ng/m³.

The first round of readings in Room 7 were between 436 (BZ) and 50,000 ng/m³ (floor where prior mercury removal had taken place). The first round of readings in Room 4 were between 2,944 (BZ) and 17,000 ng/m³ (north base board). After additional cleaning as completed, the second round of readings in Room 7 were between 7,489 and 10,089 ng/m³, while a second BZ reading in Room 4 was 20,824 ng/m³.

All four debris-filled bags located in Room 4 were above 35,000 ng/m³, and all four debris-filled bags in Room 3 were above 48,000 ng/m³. These bags will be disposed of as mercury contaminated debris. The pile of rubble located in Room 3 was above 30,000 ng/m³. This material will be disposed of as mercury contaminated debris.

In the main room of the laboratory wing, EPA ph-tested a liquid located in a glass drain pipe and a yellow liquid located in a glass jar. The ph of the liquid in the glass drain was 8, while the pH of the liquid inside the glass jar was 1. This material will be disposed of as an acid.

Also in the laboratory wing, removal personnel noted an odor emanating from the last room of the wing. MultiRAE readings in this room were 0 or 0.0 for carbon monoxide (CO), volatile organic compounds (VOCs), hydrogen sulfide (H₂S), and lower explosive limit (LEL), and were 20.9% for oxygen (O₂). Following a slow walk down the length of the laboratory wing hallway, all MultiRAE readings remained the same, with the exception of CO which varied between 1 to 5 parts per million (ppm).

July 19, 2013

START recorded a total of ten readings from the Lumex mercury detector. The ambient temperature during the recording of these readings was 83.1°F.

Of these readings, six were in the breathing zone and four were within one inch of the floor. All of these readings were recorded on the third floor of the building.

The third floor hallway readings were between 331 and 2,189 ng/m³. The readings inside Room 4 were 601 (BZ), 6,500 ng/m³ (middle of floor where prior mercury removal had taken place), and 2,000 to 6,000 ng/m³, with a peak reading of 17,000 ng/m³s (baseboard). The readings inside Room 3 were 711 (BZ) and 1,500 to 4,200 ng/m³, with a peak reading of 16,000 ng/m³s (baseboard). The reading inside Room 7 was 135 ng/m³ (BZ).

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

<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

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, work will continue to remove mercury spilled in patient rooms on the third floor.

2.2.1.2 Next Steps

The crew will continue to monitor mercury levels, remove mercury and mercury contaminated debris from the third floor, and arrange for proper disposal of waste generated.

2.2.2 Issues

None.

2.3 Logistics Section

ERRS in managing site logistics.

2.4 Finance Section

2.4.1 Narrative

ERRS date are estimated through July 18, 2013. START costs are estimated through July 19, 2013.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
ERRS - Cleanup Contractor	\$50,000.00	\$20,082.00	\$29,918.00	59.84%
TAT/START	\$25,000.00	\$4,787.00	\$20,213.00	80.85%
Intramural Costs				
Total Site Costs	\$75,000.00	\$24,869.00	\$50,131.00	66.84%

* 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 7/15/13:

EPA: 1

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

Personnel on site on 7/16/13:

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

Personnel on site on 7/17/13:

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

Personnel on site on 7/18/13:

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

Personnel on site on 7/19/13:

EPA: 1
START: 1
ERRS: 7
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.epaossc.org/unitedcomm

6.2 Reporting Schedule

POLREPs will be issued weekly.

7. Situational Reference Materials

n/a

POLREP #1 Last Updated 7/26/2013